

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

TIME SCHEDULE ORDER NO. R5-2007-0037-01
as amended by Order No. R5-2010-0028

REQUIRING THE CITY OF TRACY
TRACY WASTEWATER TREATMENT PLANT
SAN JOAQUIN COUNTY
TO COMPLY WITH REQUIREMENTS PRESCRIBED IN ORDER NO. R5-2007-0036
(NPDES PERMIT NO. CA0079154)

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

1. On 4 May 2007, the Regional Water Board adopted Waste Discharge Requirements (WDR) Order No. R5-2007-0036, prescribing waste discharge requirements for the City of Tracy (hereafter Discharger) at the Tracy Wastewater Treatment Plant (hereafter Facility), San Joaquin County. On 12 June 2008, the Central Valley Water Board amended the NPDES permit by adopting Resolution No. R5-2007-0086 prescribing compliance schedules for dichlorobromomethane and chlorodibromomethane with full compliance required by 18 May 2010.
2. Amended WDR Order No. R5-2007-0036 contains Final Effluent Limitations IV.A.2.a, IV.A.3.a., and IV.A.4.a. For the parameters listed below with mass loading limitations, the concentration limitations remain the same for effluent limitations b, c, and d, but the mass loading limitations increase with increases in approved discharge rates. Final Effluent Limitations IV.A.2.a. reads, in part, as follows:

Table 5. Effluent Limitations (9 mgd)

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Nitrate (as N)	mg/L	10	--	--	--	--
	lbs/day ¹	750.6	--	--	--	--
Nitrite (as N)	mg/L	1	--	--	--	--
	lbs/day ¹	75.1	--	--	--	--
Dichlorobromomethane	µg/L	6.8	--	9.5	--	--
Chlorodibromomethane	µg/L	3.6	--	7.6	--	--

¹ Based on a design treatment capacity of 9 mgd

The final effluent limitations as specified in Amended Order No. R5-2007-0036 for dichlorobromomethane and chlorodibromomethane become effective on 18 May 2010. Amended WDR Order No. R5-2007-0036 contains, in part, the following interim limits that are in effect through 18 May 2010:

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Dichlorobromomethane	µg/L	--	--	37.0	--	--
Chlorodibromomethane	µg/L	--	--	28.0	--	--

3. Amended WDR Order No. R5-2007-0036 contains Final Effluent Limitations IV.A.1.h., which states, “*Dissolved Oxygen (DO). The daily average effluent DO concentration shall not be less than 5.0 mg/L.*”
4. The effluent limitations specified in Amended Order No. R5-2007-0036 for nitrate and nitrite are based on implementation of the Basin Plan narrative chemical constituents objective, and the effluent limitations for dissolved oxygen are based on a Basin Plan site-specific water quality objective. These limitations are based on existing Basin Plan water quality objectives that were adopted prior to 25 September 1995. Effluent limitations for dissolved oxygen, nitrate, and nitrite are new limitations, which were not prescribed in previous Order No. 96-104, adopted by the Regional Water Board on 3 May 1996.
5. California Water Code (CWC) section 13300 states: “*Whenever a regional board finds that a discharge of waste is taking place or threatening to take place that violates or will violate requirements prescribed by the regional board, or the state board, or that the waste collection, treatment, or disposal facilities of a discharger are approaching capacity, the board may require the discharger to submit for approval of the board, with such modifications as it may deem necessary, a detailed time schedule of specific actions the discharger shall take in order to correct or prevent a violation of requirements.*”
6. On 18 August 2009, the Discharger submitted justification to extend the compliance schedule for dichlorobromomethane and chlorodibromomethane. The Discharger’s submittal included: (a) documentation that diligent efforts have been made to quantify pollutant levels in the discharge and the sources of the pollutant in the waste stream; (b) documentation of source control measures and/or pollution minimization measures efforts currently underway or completed; and (c) a proposal for additional or future source control measures, pollutant minimization actions, or waste treatment (i.e., facility upgrades) with projected time schedules to achieve compliance with final effluent limitations. The Discharger indicated that the proposed schedule is as short as practicable, and that full compliance by 18 May 2010 may not provide adequate time for the Discharger to implement actions for the Facility to consistently comply with the final effluent limits for dichlorobromomethane and chlorodibromomethane.
7. The Facility has undergone significant upgrades that have improved the water quality of the effluent discharge. The Facility improvements that have the most significant impact on the formation of trihalomethanes (THMs)¹ include the conversion of the conventional activated sludge process to the modified Ludzack-Ettinger(MLE) process to achieve full

¹ THMs are disinfection byproducts (e.g., dichlorobromomethane and chlorodibromomethane) that can be formed during the chlorine disinfection process.

nitrification, the addition of tertiary filters, and the rehabilitation of the chlorine gas system. The Discharger has collected data for the THMs reduction evaluation since November 2007. The evaluation of the historical data was completed in April 2008 and the Discharger resumed efforts for the implementation of the chloramination system and the evaluation of other alternatives to reduce disinfection byproducts in the effluent discharge.

8. In May 2008, the Discharger started the investigation of other alternatives to reduce disinfection byproducts in the effluent discharge. The Discharger selected to evaluate different disinfection technologies that will not result in the formation of THMs. This evaluation started with a qualitative identification of technologies that could achieve simultaneous reduction of pathogen, nitrogen, and disinfection byproducts required in the NPDES permit and to get an estimate of the range of disinfectant dosages that may be necessary for the specific water quality conditions at the Facility. Due to multiple factors involved in the disinfection process, various laboratory scale test were necessary to identify the disinfectant dosage required. In June 2009, a detailed testing plan was prepared and the first screening test was performed in July 2009. The technologies evaluated included ozone, ultra violet (UV) light deactivation, UV/Chloramination, and Ozone/UV. Since evaluation of these technologies requires specialized equipment, these evaluations had to be conducted at an outside laboratory where treatability analyses services were available for all of these technologies. The process of identifying types of disinfection technologies, securing funding for specialized laboratory services, preparing testing requirements, and coordinating with a specialized laboratory to accommodate all the analyses required delayed the execution of some elements of the compliance schedule.
9. In December 2008, the Discharger implemented a temporary pilot system for chloramination alternative evaluation. Data from 30 July 2009 to 6 August 2009, show successful reduction in THMs. However, ammonia concentrations exceeded the target concentration at chloramination doses that were required for successful THM reductions. Currently, alternative injection points and chemical dosages are being evaluated, operational issues influencing the chloramination process performance need to be addressed, and installation of a fully engineered system that accounts for automation, reliability, safety, and power requirements are needed.
10. The Discharger requests time for additional evaluation and testing, and given the uncertainty as to the full-scale permanent solution at the Facility, the Discharger requests additional time to complete a treatment feasibility study and design and construction of the selected alternative to comply with the final effluent limits for dichlorobromomethane and chlorodibromomethane contained in Amended WDR Order No. R5-2007-0036. On 18 August 2009, the Discharger submitted justification to extend the compliance schedule for dichlorobromomethane and chlorodibromomethane. The Discharger's submittal included: (a) documentation that diligent efforts have been made to quantify pollutant levels in the discharge and the sources of the pollutant in the waste stream; (b) documentation of source control measures and/or pollution minimization measures efforts currently underway or completed; and (c) a proposal for additional or future source control measures, pollutant minimization actions, or waste treatment (i.e., facility upgrades) with projected time schedules to achieve compliance with final effluent

limitations. The Discharger indicated that the proposed schedule is as short as practicable, and that full compliance by 18 May 2010 may not provide adequate time for the Discharger to implement actions for the Facility to consistently comply with the final effluent limits for dichlorobromomethane and chlorodibromomethane.

11. Federal regulations, 40 CFR Part 122.44 (d)(1)(i), require that NPDES permit effluent limitations must control all pollutants which are or may be discharged at a level which will cause or have the reasonable potential to cause or contribute to an in-stream excursion above any State water quality standard, including any narrative criteria for water quality. Beneficial uses, together with their corresponding water quality objectives or promulgated water quality criteria, can be defined per federal regulations as water quality standards.
12. In accordance with CWC section 13385(j)(3), the Regional Water Board finds that, based upon results of effluent monitoring and statistically projected effluent concentrations, the Discharger is not able to consistently comply with the new effluent limitations for nitrate, and nitrite, dichlorobromomethane, and chlorodibromomethane. In addition, effluent data for dissolved oxygen is not available, therefore, consistent compliance with the new dissolved oxygen effluent limitations cannot be determined. These limitations are new requirements that become applicable to the Order after the effective date of adoption of the waste discharge requirements, and after 1 July 2000, for which new or modified control measures are necessary in order to comply with the limitation, and the new or modified control measures cannot be designed, installed, and put into operation within 30 calendar days.
13. Immediate compliance with these new effluent limitations for dissolved oxygen, nitrate, and nitrite, dichlorobromomethane, and chlorodibromomethane is not possible or practicable. The Clean Water Act and the California Water Code authorize time schedules for achieving compliance.
14. This Order provides time schedules for the Discharger to develop, submit, and implement methods of compliance, including completing a mixing zone analysis, utilize pollution prevention activities, or construct necessary treatment facilities to meet these new effluent limitations.

Mandatory Minimum Penalties

15. CWC section 13385(h) and (i) require the Regional Water Board to impose mandatory minimum penalties (MMPs) upon dischargers that violate certain effluent limitations. CWC section 13385(j) exempts certain violations from the mandatory minimum penalties. CWC section 13385(j)(3) exempts the discharge from mandatory minimum penalties *“where the waste discharge is in compliance with either a cease and desist order issued pursuant to Section 13301 or a time schedule order issued pursuant to Section 13300, if all the [specified] requirements are met...For the purposes of this subdivision, the time schedule may not exceed five years in length....”*
16. By statute, a Cease and Desist Order or Time Schedule Order may provide protection from MMPs for no more than five years. Compliance with this Order exempts the Discharger from mandatory penalties for violations of the final effluent limitations for

nitrate, nitrite, dissolved oxygen, dichlorobromomethane, and chlorodibromomethane in accordance with CWC section 13385(j)(3). Protection from MMPs for the final effluent limitations for nitrate and nitrite begins on 4 May 2007 and may not extend beyond the compliance schedule listed in this Order (i.e., 1 August 2008). Protection from MMPs for the final effluent limitations for dissolved oxygen begins on 4 May 2007 and may not extend beyond the compliance schedule listed in this Order (i.e., 30 April 2012). The Regional Water Board has not previously issued an enforcement Order to provide MMP protection from dichlorobromomethane and chlorodibromomethane exceedance for this facility. Therefore, protection from MMPs for the final effluent limitations for dichlorobromomethane and chlorodibromomethane begins on 18 March 2010 and may not extend beyond the compliance schedule listed in this Order (i.e., 1 March 2015).

17. Since the time schedules for completion of action necessary to bring the waste discharge into compliance exceed one year, this Order includes interim requirements and dates for their achievement. The time schedules do not exceed five years.

The compliance time schedules in this Order include interim performance-based effluent limitations for nitrate and nitrite, dichlorobromomethane, and chlorodibromomethane. The interim effluent limitations are based on the current treatment plant performance and consist of a maximum daily effluent concentration derived using sample data provided by the Discharger. In developing the interim limitations, where there are ten sampling data points or more, sampling and laboratory variability is accounted for by establishing interim limits that are based on normally distributed data where 99.9% of the data points will lie within 3.3 standard deviations of the mean (*Basic Statistical Methods for Engineers and Scientists, Kennedy and Neville, Harper and Row*). Therefore, the interim limitations in this Order are established as the mean plus 3.3 standard deviations of the available data. Where actual sampling shows an exceedance of the proposed 3.3-standard deviation interim limit, the maximum detected concentration has been established as the interim limitation. The maximum daily interim limitations for dichlorobromomethane and chlorodibromomethane in Amended WDR Order R5-2007-0036 are reestablished in this Order.

For nitrate and nitrite the method described above for calculating interim limitations is not appropriate. The Discharger is in the process of upgrading the Facility to include nitrification/denitrification. During start up of the new process, the nitrate and nitrite in the effluent may change dramatically, due to possible incomplete nitrification/denitrification.

During the nitrification process, ammonia is converted to nitrite then nitrate. Therefore, interim performance-based limitations for nitrate and nitrite have been estimated using existing effluent ammonia, nitrate, and nitrite data. The projected maximum effluent concentrations (MEC) for ammonia, nitrate, and nitrite are 42 mg/L, 9.4mg/L, and 3.3 mg/L, respectively. An interim limitation for nitrate plus nitrite of 55 mg/L has been developed based on the sum of these projected MECs.

Dissolved oxygen effluent data is not available to determine performance-based interim limitations, which makes it impracticable to develop an interim limitation. Therefore, this Order does not include an interim effluent limitation for dissolved oxygen.

Other Regulatory Requirements

18. On May 4, 2007, in Sacramento, California, after due notice to the Discharger and all other affected persons, the Board conducted a public hearing at which evidence was received to consider a Time Schedule Order under CWC section 13300 to establish a time schedule to achieve compliance with waste discharge requirements.
19. The issuance of this Order is not a “project” as defined by the California Environmental Quality Act (Public Resources Code, Section 21000, *et seq.*) (CEQA), and does not have the potential to cause a significant adverse impact on the environment (Title 14 CCR section 15061(b)(3)). This Order enforces preexisting requirements to improve the quality of ongoing discharges that are part of the CEQA “baseline”; and includes interim effluent limitations to ensure that discharges do not increase above the CEQA baseline. Any measures to meet effluent limitations are the result of Amended WDR Order R5-2007-0036 and not this Order. Even assuming the issuance of this Order is a “project” within the meaning of CEQA, issuance of this Order is exempt from the provisions of in accordance with Water Code Section 13389, which exempts the adoption or modification of a NPDES Permit for an existing source. This Order only serves to implement a NPDES permit and is therefore exempt under Section 13389. The issuance of this Order is also exempt under Section 15321(a)(2), Title 14, California Code of Regulations (CCR).
20. Any person adversely affected by this action of the Board may petition the State Water Resources Control Board to review this action. The petition must be received by the State Water Resources Control Board, Office of the Chief Counsel, P.O. Box 100, Sacramento, CA 95812-0100, within 30 days of the date on which this action was taken. Copies of the law and regulations applicable to filing petitions will be provided on request.

IT IS HEREBY ORDERED THAT:

1. The Discharger shall comply with the following time schedule to ensure compliance with the nitrate and nitrite effluent limitations contained in Amended WDR Order No. R5-2007-0036 as described in the above Findings:

<u>Task</u>	<u>Date Due</u>
Progress Reports ¹	1 June, annually, until final compliance
Full compliance with nitrate and nitrite effluent limitations	1 August 2008

¹ The progress reports shall detail what steps have been implemented towards achieving compliance with waste discharge requirements, including studies, construction progress, evaluation of measures implemented, and recommendations for additional measures as necessary to achieve full compliance by the final date.

2. The Discharger shall comply with the following time schedule to ensure compliance with the dissolved oxygen effluent limitations contained in Amended WDR Order No. R5-2007-0036 as described in the above Findings:

<u>Task</u>	<u>Date Due</u>
Submit Method of Compliance Workplan/schedule	1 August 2007
Progress Reports ¹	1 January, annually, after approval of work plan until final compliance
Full compliance with dissolved oxygen effluent limitations	30 April 2012

¹ The progress reports shall detail what steps have been implemented towards achieving compliance with waste discharge requirements, including studies, construction progress, evaluation of measures implemented, and recommendations for additional measures as necessary to achieve full compliance by the final date.

3. The Discharger shall comply with the following time schedule to ensure compliance with the final effluent limitations for dichlorobromomethane and chlorodibromomethane contained in Amended WDR Order No. R5-2007-0036 as described in the above Findings:

<u>Task</u>	<u>Date Due</u>
Implement a Pollution Prevention Plan (PPP) pursuant to CWC section 13263.3	1 December 2010
Annual Progress Reports ¹	1 December, annually
Full compliance with the final effluent limitations for dichlorobromomethane and chlorodibromomethane	1 March 2015

¹ The progress reports for dichlorobromomethane and chlorodibromomethane shall detail what steps have been implemented towards achieving compliance with waste discharge requirements, including studies, construction progress, evaluation of measures implemented, and recommendations for additional measures as necessary to achieve full compliance by the final date.

4. The following interim effluent limitations shall be effective immediately. The interim effluent limitations for nitrate and nitrite shall be effective until **31 July 2008**, or upon compliance with Special Provisions VI.C.4.b. of Order No. R5-2007-0036, whichever is sooner.

	Maximum Daily Effluent Limitation
Nitrate plus Nitrite (as N) (mg/L)	55

5. The following interim effluent limitations shall be effective immediately and until **1 March 2015**, or when the Discharger is able to come into compliance, whichever is sooner.

Parameter	Units	Maximum Daily Effluent Limitation
Dichlorobromomethane	µg/L	37
Chlorodibromomethane	µg/L	28

6. For the compliance schedules required by this Order, the Discharger shall submit to the Regional Water Board on or before each compliance report due date, the specified document or, if appropriate, a written report detailing compliance or noncompliance with the specific schedule date and task. If noncompliance is being reported, the reasons for such noncompliance shall be stated, and shall include an estimate of the date when the

Discharger will be in compliance. The Discharger shall notify the Regional Water Board by letter when it returns to compliance with the time schedule.

7. If, in the opinion of the Executive Officer, the City of Tracy fails to comply with the provisions of this Order, the Executive Officer may apply to the Attorney General for judicial enforcement. If compliance with these effluent limitations is not achieved by the Full Compliance date, the discharge would not be exempt from the mandatory minimum penalties for violation of certain effluent limitations, and would be subject to issuance of a Cease and Desist Order in accordance with CWC section 13301.

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 4 May 2007 and amended on 18 March 2010 by Order No. R5-2010-0028.

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