

Central Valley Regional Water Quality Control Board  
12/13 June 2008 Board Meeting

Response to Comments for the City of Roseville  
Dry Creek Wastewater Treatment Plant  
Tentative Waste Discharge Requirements and Time Schedule Order

---

The following are Regional Water Quality Control Board, Central Valley Region (Regional Water Board) staff responses to comments submitted by interested parties regarding the tentative Waste Discharge Requirements (NPDES Permit renewal) and Time Schedule Order (TSO) for the City of Roseville, Dry Creek Wastewater Treatment Plant. Public comments regarding the proposed Orders were required to be submitted to the Regional Water Board by 5:00 p.m. on 5 May 2008 in order to receive full consideration.

The Regional Water Board received comments regarding the proposed NPDES Permit renewal and TSO by the due date from the City of Roseville (Discharger). The submitted comments were accepted into the record, and are summarized below, followed by Regional Water Board staff responses.

---

**CITY OF ROSEVILLE (DISCHARGER) COMMENTS**

---

**Discharger Comment No. 1. Compliance Schedules** - The Discharger requested in-permit compliance schedules through 18 May 2010 for the following California Toxic Rule (CTR) constituents: cadmium, mercury, zinc, cyanide, carbon tetrachloride, dibromochloromethane, and dichlorobromomethane. Because the in-permit compliance schedules are unable to provide adequate time to ensure compliance with the final effluent limitations for these constituents, the Discharger also requests that the Regional Water Board adopt a TSO for these constituents that provide concurrent, yet longer, time schedules. The TSO should be effective upon permit adoption and provide the Discharger protection from mandatory minimum penalties for the additional time necessary, beyond the 18 May 2010 CTR compliance date, to comply with final effluent limits for the CTR constituents. The Discharger has provided appropriate justification for the in-permit compliance schedules and the additional time schedules in the TSO that will protect the Discharger from mandatory minimum penalties. The Discharger requests the following additional time schedules in the TSO:

- Compliance with final effluent limits for carbon tetrachloride, dibromochloromethane and dichlorobromomethane by 31 May 2011; and
- Compliance with the final effluent limits for cadmium, cyanide, mercury and zinc by 31 May 2013.

In all cases, the request for protection from mandatory minimum penalties will not cause the TSO to exceed five years, and all time schedules in the TSO are as short as possible.

Additionally, the following items need to be address in the tentative documents:

1. In Section IV.A.2. (page 12) of the proposed NPDES Permit, the tables and compliance dates should be consistent with the Update to the Infeasibility Analysis and interim effluent limits should also be consistent with those listed in the TSO. Therefore, in addition to interim limits for cadmium and zinc, the tentative NPDES permit and TSO should contain interim effluent limits for carbon tetrachloride, cyanide, dibromochloromethane, dichlorobromomethane, and mercury.
2. Section VI.C.7 (page 31) of the proposed NPDES Permit, Compliance Schedules, needs to be consistent with other sections in the proposed permit and TSO. Therefore, in addition to compliance schedules for cadmium and zinc, this section should include compliance schedules for carbon tetrachloride, cyanide, dibromochloromethane, dichlorobromomethane, and mercury .
3. Attachment F, Section IV.C.3.j. of the proposed NPDES Permit, Cadmium (page F-22,) and IV.C.3.dd (p. F-34, zinc) should be revised to reflect the need for a five year compliance schedule that will be included in the TSO and that would be effective upon permit adoption, with the following recommended revisions for both of the referenced sections of the Fact Sheet are:

~~Based on the Discharger's performance in implementing their correctly action plan to comply by 18 May 2010, the Regional Water Board may consider at a future date issuance of a Time Schedule Order to provide additional time to comply with the final effluent limits for [zinc/cadmium].~~ The Discharger has indicated that additional time may be necessary to comply with final effluent limitations for [cadmium/zinc] beyond 18 May 2010. To allow for additional time beyond 18 May 2010, a time schedule order for compliance with [cadmium/zinc] final effluent limitations is established in Order No. R5-2008-xxxx in accordance with CWC sections 13300 and 13385. Order No. R5-2008-xxxx also requires preparation and implementation of a pollution prevention plan in compliance with CWC section 13263.3.

4. Attachment F, Section IV.E of the proposed NPDES Permit (p. F-46), the Interim Effluent Limitations needs to be changed commensurate with the Update to the Infeasibility Analyses for the Dry Creek Wastewater Treatment Plant (DCWWTP) dated 17 March 2008. Similar updates are to be made in the TSO.
5. Attachment F, Section VII.B.7.a of the proposed NPDES Permit (page F-64) should include all constituents for which compliance schedules have been requested. Specifically, mercury, cyanide, carbon tetrachloride, dibromochloromethane, and dichlorobromomethane should be added to this section. Additionally, the time requested for compliance should be consistent with the Update to the Infeasibility Analyses for the DCWWTP.

6. All proposed compliance dates in the NPDES permit and TSO should be consistent with the dates in the Infeasibility Analyses.

**RESPONSE:** Regional Water Board staff concludes that compliance schedules are to be either in the permit or in an enforcement order, but not in both with overlapping and/or conflicting findings and requirements. Based on the anticipated compliance dates included in the Discharger's Infeasibility Study (dated 17 March 2008 and amended on 2 May 2008), staff believes that it is appropriate to include time schedules in the TSO only, for the Discharger to achieve compliance with final effluent limitations for cadmium, carbon tetrachloride, cyanide, dibromochloromethane, dichlorobromomethane, mercury, and zinc. Time schedules for compliance with final limitations for these constituents are therefore not included in the proposed NPDES Permit.

Through staff discussion with the Discharger regarding measures necessary to comply with the final effluent limitations for cyanide, the cyanide compliance date has been modified from 31 May 2013 to 1 June 2011. This modification is based on staff's conclusion that monitoring and analysis procedures for cyanide, as well as planned source identification efforts, should be initiated concurrently with, not subsequent to, the implementation of the ultraviolet light (UV) light disinfection system.

**Discharger Comment No. 2. Total Residual Chlorine** - The Discharger commented that the final effluent limitations for Total Residual Chlorine in Sections IV.A.1.d (page 11) of the proposed NPDES permit indicate a need to measure total residual chlorine to the one-thousandth (1/1000th) mg/L (e.g. 0.011 mg/L, as a 4-day average; and 0.019 mg/L, as a 1-hour average). The Discharger understands that these limits are derived from a draft State Water Resources Control Board (State Water Board) policy for statewide chlorine limitations. However, there has been much concern regarding the ability of continuous monitoring equipment (e.g. on-line chlorine analyzers) to measure, in the field, to this level of accuracy. These concerns have been expressed by on-line chlorine analyzer manufacturers, consulting engineers and the Instrumentation Testing Association (ITA) and presented as formal public comments to the State Water Board. The comments are summarized below:

- On-line (i.e. amperometric) chlorine analyzers are susceptible to inaccuracy from a variety of common interferents. Depending on the residual concentration being measured, the following interferents can create inaccuracies:
  - (1) Dissolved Oxygen
  - (2) Bromine
  - (3) Iodine
  - (4) Sulfites
  - (5) Sulfides

- Published on-line chlorine analyzer accuracies can vary from 1% to 5% of the reading, or 0.002 mg/L to 0.010 mg/L, whichever value is greater, for a typical analyzer spanned to 10 mg/L range. Manufacturer-stated sensitivity is 0.001 mg/L; however the accuracy is, at a minimum, two times greater than the stated sensitivity. These stated sensitivities apply during bench-top studies, not during field applications. Field applications have significantly lower sensitivities as discussed below.

The Discharger additionally comments that although a chlorine analyzer provides a reading with digits to the one-thousandth mg/L, there is little significance to the value indicated in the one-thousandth column. Based on our 15 years of optimizing online chlorine analyzers for process control and compliance reporting, it is the Discharger's experience that the field application of these online analyzers, considering the calibrations and maintenance, can only be relied upon to accurately measure to the one-hundredth mg/L in wastewater effluent. Therefore, the Discharger requests that the total chlorine residual effluent limitations be revised to:

- i. 0.01 mg/L, as a 4-day average; and*
- ii. 0.02 mg/L, as a 1-hour average*

These limits are as protective of the receiving water aquatic life as the more stringent limitations in the proposed NPDES Permit and will allow real in-field measurements of chlorine residual and dechlorination agent. The Discharger cannot provide any measurement device that reliably, in the field, measures to the one-thousandth mg/L. Commensurate changes should be made in Attachment F, Section IV.C.3 .I, first full paragraph on p. F-23 of the proposed NPDES Permit and in Section IV.D.4 on p. F-45.

Additionally, in Section IV.A.1.d. (page 11) of the NPDES permit, the following sentence should be added after the total chlorine residual limitations':

*The total residual chlorine effluent limitations are effective until the Discharger submits written certification that a chlorine-based disinfection system is no longer in use and chlorine-containing chemicals are not added to the treatment process for wastewater discharged to the receiving water.*

This language is consistent with the proposed NPDES Permit for the City of Roseville Pleasant Grove WWTP, Section IV.A.1.d, p. 13.

**RESPONSE:** Page 111 of USEPA's *Technical Support Document for Water Quality-based Toxics Control* (EPA/505/2-90-001) or TSD suggests that, in situations where the expression of calculated limitations for specific chemicals where the concentration of the limitation is below the analytical detection level for the pollutant of concern, the permitting authority should include the appropriate permit limitation, regardless of the proximity of the limit to the analytical detection level. The TSD suggests that the compliance level be defined in the permit as

the minimum level (ML). Additionally, section 2.4.5 of the SIP states, in part, that “Dischargers shall be deemed out of compliance with an effluent limitation, if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the RL.” (Although the SIP applies directly to the control of California Toxics Rule (CTR) priority pollutants, the State Water Board has held that the Regional Water Board may use the SIP as guidance for water quality-based toxics control.<sup>1</sup>) On this basis, Regional Water Board staff disagrees that the total chlorine residual effluent limitations in the proposed NPDES Permit adjusted to accommodate the sensitivity of analytical methods.

Staff does, however, acknowledge the issues associated with determining compliance with the total residual chlorine effluent limitations due to analytical limitations, and has therefore included compliance determination language in section VII.E of the proposed NPDES Permit. The compliance determination language at section VII.E of the proposed permit specifies that, for dischargers that dechlorinate, monitoring showing a positive dechlorination agent residual is sufficient to show compliance with the total residual chlorine effluent limitations. Additionally, footnote 2 in Table E-3 of Attachment E, Monitoring and Reporting Program (MRP) has been revised to acknowledge the analytical method detection level that must be achieved when monitoring for total residual chlorine (0.01 µg/L; representing the most sensitive analytical method approved by EPA).

Through its comment above, the Discharger also requested that the total residual chlorine effluent limitations become ineffective upon certification that chlorine and/or chlorine-containing agents are no longer in use at the treatment plant due to installation of the UV light disinfection system. Staff does not concur with this request and believes that the total chlorine residual effluent limitations must remain effective throughout the term of this permit or until the permit is modified accordingly. However, to address the Discharger’s comment, in place of making the effluent limitations ineffective upon certification of no use of chlorine in the treatment process, the proposed MRP has been modified make the required compliance monitoring requirement for chlorine residual ineffective upon Discharger certification of non-use. This approach negates the need for the Regional Water Board to reopen the NPDES permit should the Discharger, during the life of the permit, need to use chlorine in the treatment process.

**Discharger Comment No. 3. Compliance Determination Language - The** Discharger comments that the compliance determination language in Section VII (page 31) of the proposed NPDES Permit should be revised to include a provision for Effluent Mass Limitations. The Discharger recommends that the proposed NPDES Permit includes language similar to other Central Valley Regional Water Board NPDES permits

---

<sup>1</sup> See Order WQO 2001-16 (Napa) and Order WQO 2004-0013 (Yuba City).

(e.g., City of Tracy – Order No. R5-2007-0036 and City of Vacaville –Order No. R5 - 2008-0055). The following language should be added to Section VII on p. 32:

*Effluent Mass Limitations. The effluent mass limitations contained in Final Effluent Limitations IV.A.1.a. and Interim Effluent Limitations IV.A.2.a. are based on the permitted average dry weather flow calculated as follows:*

*Mass (lbs/day) = Flow (mgd) x Concentration (mg/L) x 8.34 (conversion factor)*

*If the effluent flow exceeds the permitted average dry weather flow due to wet weather storm events, or is outside the three consecutive dry weather months or when groundwater is above normal and runoff is occurring, the effluent mass limitations contained in Final Effluent Limitations IV.A.1.a. and Interim Effluent Limitations IV.A.2.a shall not apply.*

**RESPONSE:** Regional Water Board staff concurs that compliance determination language regarding mass limitations should be added to Section VII of the proposed NPDES Permit, staff disagrees with the exact language proposed by the Discharger. A new subsection in Section VII has been added to the NPDES Permit specifying that compliance with mass-based limitations will be determined during average dry weather flow periods only.

**Discharger Comment No. 4. Use of Inhibition Concentration – 25 Percent (IC25) Evaluation of Chronic Toxicity** - The Discharger requests that the following statement be added after the first sentence in Section VI.C.2.a. iii. (page 22) of the proposed NPDES Permit,:

*IC25 may be substituted for NOEC at the discretion of the Executive Officer.*

The Discharger requests the option of substituting the IC25 for the No Observed Effects Concentration (NOEC) when measuring toxicity in the effluent. The Discharger currently reports toxicity as  $TU = 100/IC25$ . The Discharger believes that the IC25 method is a more dependable approximation of the no effect level and provides a better indication of the ability to see an effect in the toxicity test. This perspective is supported by USEPA. USEPA has consistently recommended the use of point estimates (e.g., IC25) rather than hypothesis tests to analyze whole effluent toxicity data since the issuance of the Technical Support Document for Water Quality-based Toxics Control in 1991. (TSD, EPA/505/2-90/001, page 6). In the TSD, the USEPA discusses the relative merits and limitations of both techniques, and concludes, “comparisons of both types of data indicate that an IC25 is approximately the analogue of an NOEC derived using hypothesis testing. For the above reasons, if possible, the IC25 is the preferred statistical method.”

**RESPONSE:** The No Observed Effect Concentration (NOEC) method is required in NPDES permits to calculate chronic toxic units because the NOEC

endpoint represents no toxicity. This is consistent with the Regional Water Board Basin Plan's narrative toxicity objective and toxicity testing required in the other Regional Water Board's regulatory programs.

The point estimate, IC25, assumes that some level of toxicity is acceptable. The selection of an acceptable level of toxicity to ensure compliance with the narrative toxicity objective is not consistent with the Basin Plan narrative toxicity objective. Staff believes that approval of a future use of the IC25 chronic toxicity assessment in an NPDES permit is an amendment that should have Regional Water Board approval. If the IC25 chronic toxicity assessment method becomes acceptable to the Regional Water Board prior to the next renewal of the NPDES permit, the permit may be modified accordingly through the adoption of a Regional Water Board resolution.

**Discharger Comment No. 5. Monitoring and Reporting Program (MRP) General Provisions** - The first sentence of Section I.C is repetitious with respect to I.B. on p. E-1, and the Discharger requests that it be deleted. Additionally, to simplify the reporting requirements, the Discharger requests that the requirement in the second sentence of I.C, to report all laboratories used, be changed to a requirement that only requires maintaining records of all laboratories used. The Discharger's justification is that, depending on the constituents, several laboratories may be used to perform the various analyses.. In addition, the Discharger's laboratory services may change for other reasons including City purchasing guidelines and other City policies. The Discharger proposes maintaining records of all laboratories used as, in place of the reporting requirement described in Attachment E to the MRP. This change also necessitates a commensurate change in Section VI.A.2.n on p. 18.

**RESPONSE:** Although Regional Water Board staff concurs that language redundancy exists in the General Monitoring Provisions contained in Section I of the MRP, the proposed language remains unchanged since it is standard language NPDES permits adopted by the Regional Water Board. Change in this language will be considered when the standardized language in NPDES permits is revised. Regardless, the requirements remain unchanged.

Staff does not concur with the Discharger's request to maintain records of the laboratories that are used in lieu of reporting this information to the Regional Water board in the monthly self-monitoring reports (SMRs). Information regarding the laboratory used to gather monitoring data is part of the Regional Water Board's public monitoring record for this facility, and often used by staff in its review of monitoring reports.

**Discharger Comment No. 6. Editorial Comment** – The Discharger comments that Section II.B. (page 3) of the proposed NPDES Permit, the last sentence of the first paragraph should be revised to read:

---

*“Other purposes of the emergency storage basins are to store partially treated wastewater and to divert influent that would be harmful to the treatment process.”*

This is consistent with the description in VI.C.4.a. on p. 26.

**RESPONSE:** Regional Water Board staff concurs with this comment and has made the suggested clarifications in the proposed permit.

**Discharger Comment No. 7. Editorial Comment** - The Discharger comments that the Reopener Provision for aluminum in Section VI.C.1.f. (page 20) of the proposed NPDES Permit indicates that there is not an aluminum effluent limit in the permit. The language should be revised to read:

*“...this Order may be reopened for revision of the effluent limitation and requirements for aluminum.”*

**RESPONSE:** Regional Water Board staff concurs and has made the suggested clarification in the proposed NPDES permit.

**Discharger Comment No. 8. Editorial Comment.** - The Discharger comments that the compliance date specified in Provision VI.C.2.c (page 24) of the proposed NPDES Permit should be corrected to read “and/or 2 years” instead of “and/or ii years”.

**RESPONSE:** Regional Water Board staff concurs and has made the suggested correction.

**Discharger Comment No. 9. Influent Monitoring Location.** The Discharger comments that the language in Table E-1 of Attachment E (page E-2): “prior to any treatment processes” should be deleted from the description of INF-001 to allow for sample collection at the most practical location. For example, influent samples are best collected downstream of the bar screens but, under certain interpretations, bar screens may be considered a treatment process.

**RESPONSE:** Regional Water Board staff concurs that influent samples may be taken downstream of the bar screen and has made the suggested edit.

**Discharger Comment No. 10. Effluent Monitoring Location.** The Discharger comments that the description of EFF-001 in Table E-1 of Attachment E (page E-2) should be revised to read “*Location(s) representative of...*” because it may be necessary to collect samples at more than one location downstream of the last treatment process to get representative effluent samples, depending on the constituent.

In footnote 3 of Table E-3 on p. E-4, the effluent monitoring locations are not at the outfall. The Discharger requests that this footnote be revised to read:

*Effluent temperature monitoring shall be at EFF-001.*

**RESPONSE:** Regional Water Board staff concurs and has made the suggested edits for clarification.

**Discharger Comment No. 11. Sample Type for Pesticides** - The Discharger comments that the monitoring sample type for persistent chlorinated hydrocarbon pesticides in Table E-3 of Attachment E (page E-4) should be changed from “Grab” to “Composite”.

**RESPONSE:** Regional Water Board staff concurs with the request to change the sample type from “grab” to “composite” since the acceptable analytical methods allows a 7-day holding time for these pesticides, and composite sampling will provide more thorough characterization of the pesticide concentration in the effluent.

**Discharger Comment No. 12. Whole Effluent Toxicity (WET) Report Submissions-** The Discharger comments that the last sentence of Section V.D.1, and Section V.D.2. on page E-7 of Attachment E, should refer to “quarterly” discharger self-monitoring reports instead of “monthly” discharger self-monitoring reports, to be consistent with the first sentence in V.D.1 that states “*chronic toxicity monitoring results shall be reported to the Regional Water Board on the schedule for quarterly sampling...*”

Additionally, the Discharger comments that in Attachment E, Section V.D.2. on p E-7, Acute WET Reporting should refer to “quarterly” discharger self-monitoring reports instead of “monthly” discharger self-monitoring reports to be consistent with the Monitoring Frequency in V.A.1 that states “The Discharger shall perform quarterly flow-through acute toxicity sampling.

**RESPONSE:** Regional Water Board concurs and has corrected the language in the MRP.

**Discharger Comment No. 13. Wastewater Treatment Plant Description** - The Discharger comments that the description of the ponds in Attachment F, Section II.A, (page F-4) should be consistent with Section IV.C.4.a (page 26), and requests revision of the second sentence in the second paragraph to add the phrase: “*to store partially treated wastewater*” so that the sentence reads: “*...to prevent overwhelming of the treatment process, to store partially treated wastewater, and to prevent...*”.

**RESPONSE:** Regional Water Board staff concurs and has made the suggested edits for clarification.

**Discharger Comment No. 14.** The Discharger comments that in Attachment F, Table F-16, (page F-39), the upper pH limit should be changed from “8.5” to “8.0” to be consistent with Table 6 (page11) and Table F-5 (page F-15).

**RESPONSE:** Regional Water Board staff does not concur with the suggested edits. Table 6 in the proposed NPDES permit contains the pH effluent limitations for this discharge. The values in Table F-15 are the federal technology-based pH limitations, which are different from the water quality-based pH effluent limitation in its Basin Plan.

**Discharger Comment No. 15.** The Discharger comments that Section VII.B.2.b. (page F- 61) of Attachment F should be revised to be consistent with the requirements in Section VI.C.2.c (page 23-24) of the proposed NPDES Permit and with the wording used in the proposed Time Schedule Order for the City of Roseville Pleasant Grove WWTP. The recommended revision is:

*“If the monitoring shows that any constituent concentrations are increased above background water quality, ~~by 30 months after the effective date of this Order~~ within 6 months after the 1<sup>st</sup> full year of monitoring that documents constituent concentrations increased beyond background water quality, the Discharger shall submit a...”*

**RESPONSE:** Regional Water Board staff concurs and has made the suggested edits.