

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER R5-2017-0093

AMENDING WASTE DISCHARGE REQUIREMENTS
ORDER R5-2014-0081 (NPDES PERMIT NO. CA0078662)
AND RESCISSION OF TIME SCHEDULE ORDER R5-2013-0901

EL DORADO IRRIGATION DISTRICT
DEER CREEK WASTEWATER TREATMENT PLANT
EL DORADO COUNTY

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

1. The Deer Creek Wastewater Treatment Plant (Facility) is a Publicly-Owned Treatment Works, owned and operated by El Dorado Irrigation District (Discharger). The Facility provides sewerage service for the areas of Cameron Park, Shingle Springs, and Mother Lode, with a service population of approximately 20,000. The treatment system consists of influent headworks, (consisting of manual bar screen and fine screen with grinder, and grit removal), influent equalization and emergency storage basin, primary clarification, secondary treatment consisting of biological nutrient removal (BNR), waste activated sludge and secondary clarification, a polymer feed system, and granular and cloth tertiary filtration. The Discharger achieves denitrification under anoxic conditions in the BNR tank to remove ammonia and nitrite, and removes nitrate from the waste stream by oxidation in an activated sludge tank. Tertiary treated wastewater is disinfected by ultraviolet light disinfection prior to discharge to Deer Creek. Sodium hypochlorite is used in maintaining the recycled water distribution system.
2. On 21 November 2013, the Central Valley Water Board adopted Time Schedule Order (TSO) R5-2013-0901, providing a time schedule for the El Dorado Irrigation District, Deer Creek Wastewater Treatment Plant, El Dorado County, to comply with final effluent limitations for zinc prescribed in Waste Discharge Requirements (WDRs) Order R5-2008-0173-01 and subsequently adopted orders, NPDES Permit No. CA0078662. TSO R5-2013-0901 provided interim effluent limitations for zinc and required compliance with applicable final zinc effluent limitations by 1 October 2017.
3. On 6 June 2014, the Central Valley Water Board adopted WDRs Order R5-2014-0081, renewing NPDES Permit No. CA0078662 that prescribes waste discharge requirements for the Discharger. Order R5-2014-0081 contains final effluent limitations and effluent monitoring for zinc. TSO R5-2013-0901 remains in effect for Order R5-2014-0081.
4. TSO R5-2013-0901 required the Discharger to submit a final water-effect ratio (WER) study report by 1 May 2017 and comply with final zinc effluent limitations by 1 October 2017. The Discharger submitted the final WER study report on 16 December 2016, and a revised final report on 18 January 2017. The reports are in accordance with applicable USEPA guidance (i.e., EPA-822-R-01-005 and EPA-823-B-94-001), and the results concluded that a site-specific WER of 1.7 for total recoverable zinc and for dissolved zinc apply to the discharge. Conducting a reasonable potential analysis for zinc using the WER of 1.7 demonstrates that reasonable potential no longer exists to

cause or contribute to exceedance of the water quality objective for zinc. Therefore, TSO R5-2013-0901 is no longer necessary and is rescinded by this Order. Also, this Order amends Order R5-2014-0081 to remove the final effluent limitations and effluent monitoring requirements for zinc.

5. Issuance of this Order is exempt from the provisions of the California Environmental Quality Act (Pub. Resources Code, § 21000 et seq.) ("CEQA") pursuant to Water Code section 13389, since the adoption or modification of a NPDES permit for an existing source is statutorily exempt and this Order only serves to modify a NPDES permit (*Pacific Water Conditioning Ass'n, Inc. v. City Council of City of Riverside* (1977) 73 Cal.App.3d 546, 555-556.).
6. The Central Valley Water Board has notified the Discharger and interested agencies and persons of its intent to amend the NPDES permit and rescind the TSO for this discharge and has provided them with an opportunity to submit written comments.

IT IS HEREBY ORDERED THAT:

1. Time Schedule Order R5-2013-0901 is rescinded upon the effective date of this Order except for enforcement purposes.
2. Waste Discharge Requirements Order R5-2014-0081 (NPDES No. CA0078662) is amended in order to remove effluent limitations and regular effluent monitoring for zinc.

Effective immediately upon adoption, Order R5-2014-0081 is amended as shown in Items a through p below:

- a. Change the Order number throughout to R5-2014-0081-01.
- b. **Cover Page.** Modify the paragraph above the signatory line on the Cover Page, as shown in underline format below:

I, PAMELA C. CREEDON, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of the Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on the date indicated above, and amended by Order R5-2017-0093 on 11 August 2017.

- c. **Effluent Limitations and Discharge Specifications.** Modify Table 4 (in part) in section IV.A.1.a of the Limitations and Discharge Requirements, as shown in strikeout format below:

Table 4. Effluent Limitations – Discharge Point 001

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Priority Pollutants						
Zinc	µg/L	45	65	--	--	--

d. **Provisions.** Modify section VI.C.1.e of the Limitations and Discharge Requirements, as shown in underline/strikeout format below:

e. **Water Effects Ratios (WER) and Metal Translators.** With the exceptions of copper and zinc, a default WER of 1.0 has been used in this Order for calculating CTR criteria for applicable priority pollutant inorganic constituents. The Discharger conducted a site-specific WER in accordance with applicable USEPA guidance (i.e., EPA-822-R-01-005 and EPA-821-R-02-012), and the results concluded that a site-specific WER of 9.7 for total recoverable copper and 8.6 for dissolved copper apply to the discharge. Based on this new information, the Central Valley Water Board adopted an amendment to Order No. R5-2002-0210 on 25 January 2007 and effluent limitations for copper were removed. The Discharger also conducted a site-specific WER for zinc (Final Report prepared by Robertson-Bryan, Inc., dated November 2016), and updated the Final Report (dated January 2017) in accordance with applicable USEPA guidance (i.e., EPA-822-R-01-005 and EPA-823-B-94-001), and the results concluded that a site-specific WER of 1.7 for total recoverable zinc and for dissolved zinc apply to the discharge. Based on this new information, the Central Valley Water Board adopted an amendment to Order No. R5-2014-0081 on 11 August 2017 and effluent limitations for zinc were removed. ~~With the exception of copper, a default WER of 1.0 has been used in this Order for calculating CTR criteria for applicable priority pollutant inorganic constituents. The Discharger has proposed to conduct a zinc site-specific WER. If the Discharger performs studies to determine site-specific zinc WER, or other site-specific WERs and/or site-specific dissolved to total metal translators, this Order may be reopened to modify the effluent limitations for the applicable inorganic constituents.~~

e. **Effluent Monitoring Requirements.** Modify Table E-3 (in part) in section IV.A.1 of Attachment E - Monitoring and Reporting Program, as shown in strikeout format below:

Table E-3. Effluent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Zinc, Total Recoverable	µg/L	Grab	1/Month	4

f. **Rational for Effluent Limitations and Discharge Specifications.** Add section IV.C.3.a.iii to Attachment F – Fact Sheet, as shown in underline/strikeout format below:

iii. Zinc

(a) **WQO.** The CTR includes hardness-dependent criteria for the protection of freshwater aquatic life for zinc. These criteria for zinc are presented in dissolved concentrations. USEPA recommends conversion factors to translate dissolved concentrations to total concentrations.

The Discharger conducted a site-specific WER for zinc (Final Report prepared by Robertson-Bryan, Inc., dated November 2016), and updated the Final Report (dated January 2017) in accordance with applicable USEPA guidance (i.e., EPA-822-R-01-005 and EPA-823-B-94-001), and the results concluded that a site-specific WER of 1.7 for total recoverable zinc and for dissolved zinc apply to the discharge. This site-specific WER of 1.7 is used in place of the default WER.

(b) **RPA Results.** Section IV.C.2.d of this Fact Sheet includes procedures for conducting the RPA for hardness-dependent CTR metals, such as zinc. The CTR includes hardness-dependent criteria for zinc for the receiving water. The upstream receiving water hardness and reasonable worst-case downstream hardness, plus the site-specific WER of 1.7, were used to calculate the criteria. The acute and chronic criterion were calculated to be 110 µg/L. The maximum background concentration was 14 µg/L and the MEC is 100 µg/L, detected in 75 effluent samples obtained between 8 April 2009 and 25 June 2013. Therefore, zinc in the discharge does not have reasonable potential to cause or contribute to an in-stream excursion above the water quality criteria. Removal of zinc effluent limitations is in accordance with federal and antibacksliding regulations (see section IV.D.3 of the Fact Sheet).

g. Rational for Effluent Limitations and Discharge Specifications. Modify section IV.C.3.c of Attachment F – Fact Sheet, as shown in strikeout format below:

c. Constituents with Reasonable Potential. The Central Valley Water Board finds that the discharge has a reasonable potential to cause or contribute to an in-stream excursion above a water quality standard for ammonia, mercury, nitrate plus nitrite, zinc, pathogens (BOD₅, and TSS), pH, and salinity. WQBELs for these constituents are included in this Order. A summary of the RPA is provided in Attachment G, and a detailed discussion of the RPA for each constituent is provided below.

h. Rational for Effluent Limitations and Discharge Specifications. Modify section IV.C.3.c.vii of Attachment F – Fact Sheet, as shown in strikeout format below:

vii. Zinc

(a) ~~**WQO.** The CTR includes hardness-dependent criteria for the protection of freshwater aquatic life for zinc. These criteria for zinc are presented in dissolved concentrations. USEPA recommends conversion factors to translate dissolved concentrations to total concentrations.~~

~~USEPA's default water effects ratio (WER) of 1.0 was used to calculate the criteria; however the Discharger may conduct a site specific water effects ratio which can be used in replace of the default WER.~~

- (b) ~~**RPA.** Section IV.C.2.d of this Fact Sheet includes procedures for conducting the RPA for hardness-dependent CTR metals, such as zinc. The CTR includes hardness-dependent criteria for zinc for the receiving water. The RPA was conducted using the upstream receiving water hardness to calculate the criteria for comparison to the maximum ambient background concentration, and likewise using the reasonable worst-case downstream hardness to compare to the MEC. The MEC of 100 µg/L was detected in 75 effluent samples obtained between 8 April 2009 and 25 June 2013; therefore, zinc in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criteria for the protection of freshwater aquatic life criterion and WQBELs are necessary. The table below shows the specific criteria used for the RPA.~~

	CTR Chronic Criterion (Total Recoverable)	Maximum Concentration (Total Recoverable)	Reasonable Potential? (Y/N)
Receiving Water	64 µg/L ¹	14 µg/L	No ²
Effluent	65 µg/L ³	100 µg/L	Yes ⁴

¹ Based on lowest observed upstream hardness of 48 mg/L (as CaCO₃)

² Per Section 1.3, step 6 of the SIP.

³ Based on reasonable worst-case downstream hardness of 49 mg/L (as CaCO₃)

⁴ Per Section 1.3, step 4 of the SIP.

- (c) ~~**WQBELs.** This Order contains a final AMEL and MDEL for zinc of 45 µg/L and 65 µg/L, respectively, based on the CTR criterion for the protection of freshwater aquatic life.~~
- (d) ~~**Plant Performance and Attainability.** Analysis of the effluent data shows that the MEC is greater than applicable WQBELs. Based on the sample results for the effluent, the limitations appear to put the Discharger in immediate non-compliance. TSO R5-2013-0901 provided the Discharger additional time to comply with the zinc effluent limitations.~~
- i. **Rational for Effluent Limitations and Discharge Specifications.** Modify section IV.C.4.a of Attachment F – Fact Sheet, as shown in strikeout format below:

4. WQBEL Calculations

- a. This Order includes WQBELs for ammonia, mercury, nitrate plus nitrite, zinc, pathogens (BOD₅, and TSS), pH, and salinity. The general methodology for calculating WQBELs based on the different criteria/objectives is described in subsections IV.C.4.b through e, below. See Attachment H for the WQBEL calculations.
- j. **Rational for Effluent Limitations and Discharge Specifications.** Modify Table F-10 (in part) in section IV.C.4.e of Attachment F – Fact Sheet, as shown in strikeout format below:

**Table F-10. Summary of Water Quality-Based Effluent Limitations
 (Monitoring Location EFF-001)**

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Priority Pollutants						
Zinc	µg/L	45	65	–	–	–

- k. **Rational for Effluent Limitations and Discharge Specifications.** Modify section IV.D.3 (in part) of Attachment F – Fact Sheet, as shown in underline/strikeout format below:

3. Anti-Backsliding Requirements

The Clean Water Act specifies that a revised permit may not include effluent limitations that are less stringent than the previous permit unless a less stringent limitation is justified based on exceptions to the anti-backsliding provisions contained in Clean Water Act sections 402(o) or 303(d)(4), or, where applicable, 40 CFR 122.44(l).

The effluent limitations in this Order are at least as stringent as the effluent limitations in previous Order R5-2008-0173-01, with the exception of effluent limitations for aluminum, ammonia, chronic toxicity, dichlorobromomethane, and zinc. The effluent limitations for ammonia ~~and zinc~~ are less stringent in this Order than those in Order R5-2008-0173-01. This relaxation of effluent limitations is consistent with the anti-backsliding requirements of the CWA and federal regulations.

Order R5-2008-0173-01 required that the effluent comply with recommend NAWQC acute criterion and Secondary Maximum Contaminant Levels for aluminum, and CTR criterion for dichlorobromomethane. New information obtained from February 2009 through July 2013 indicated that the discharge does not cause or contribute to exceedances of these standards in Deer Creek. Removal of these effluent limitations is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution No. 68-16. Any impact on existing water quality will be insignificant.

Order R5-2008-0173-01 required that the effluent comply with recommend CTR criterion for zinc. New information obtained from July 2015 through August 2016 indicated that the discharge does not cause or contribute to exceedances of these standards in Deer Creek. Removal of these effluent limitations is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution No. 68-16. Any impact on existing water quality will be insignificant.

- a. **CWA sections 402(o)(1) and 303(d)(4).** CWA section 402(o)(1) specifies that, in the case of effluent imitations established on the basis of CWA

section 301(b)(1)(C) (i.e., WQBELs), a permit may not be renewed, reissued, or modified to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit except in compliance with CWA section 303(d)(4). The effluent limitations for aluminum, ammonia, chronic toxicity, dichlorobromomethane, and zinc established in Order R5-2008-0173-01 are WQBELs and may be relaxed if the requirements of CWA section 303(d)(4) are satisfied.

CWA section 303(d)(4) has two parts: paragraph (A) which applies to nonattainment waters and paragraph (B) which applies to attainment waters. For attainment waters, CWA section 303(d)(4)(B) specifies that a limitation based on a water quality standard may be relaxed where the action is consistent with the antidegradation policy. Deer Creek is not a 303(d) listed water body as described in section III.D.1 of this Fact Sheet for aluminum, ammonia, chronic toxicity, dichlorobromomethane, and zinc. Thus the receiving water is an attainment water for these constituents.

The removal of the WQBELs for aluminum, chronic toxicity, ~~and dichlorobromomethane, and zinc,~~ or implementation of the less stringent WQBEL for ammonia, ~~and zinc,~~ will not result in an increase in pollutant concentration or loading, a decrease in the level of treatment or control, or a reduction of water quality. Therefore, the removal of aluminum, ~~and dichlorobromomethane, and zinc~~ WQBELs, ~~and the implementation of the less stringent WQBEL for zinc~~ complies with antidegradation requirements and does not violate anti-backsliding requirements and is consistent with CWA sections 402(o)(1) and 303(d)(4) and, as described in section IV.D.4 of this Fact Sheet, the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution No. 68-16. Therefore, the modifications to these effluent limitations do not violate anti-backsliding requirements.

- i. **Aluminum.** New effluent monitoring data collected between February 2011 and April 2013 indicates that the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the Secondary MCL or NAWQC acute criterion.
- ii. **Dichlorobromomethane.** New effluent monitoring data collected between February 2011 and April 2013 indicates that the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the CTR human health criteria of 0.56 µg/L.
- iii. **Zinc.** The Discharger conducted a site-specific WER for zinc (Final Report prepared by Robertson-Bryan, Inc., dated November 2016), and updated the Final Report (dated January 2017) in accordance with applicable USEPA guidance (i.e., EPA-822-R-01-005 and EPA-823-B-94-001), and the results concluded that a site-specific WER of 1.7 for total recoverable zinc and for dissolved zinc apply to the discharge. Application of the site-specific WER to the effluent discharge results in the Facility no longer exhibiting reasonable potential to cause or contribute to exceedance of the water quality objective for zinc. Order R5-2008-0173-01 used the default coefficient of variation (CV) of 0.6 in calculating the

~~zinc effluent limitations since enough data had not been obtained at that time. New effluent monitoring data collected between 8 April 2009 and 9 July 2013 provided an adequate dataset to calculate a site-specific coefficient of variation (CV). The site-specific CV was calculated at 0.25 and therefore this Order contains a less stringent zinc effluent limitation based on the new effluent monitoring data and CV calculated in accordance with the SIP.~~

- iv. **Chronic Toxicity.** New effluent monitoring data collected between April 2009 and January 2013 indicates that the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the Basin Plan narrative toxicity objective.
- v. **Ammonia.** Order R5-2008-0173-01 contained an ammonia effluent limitation based on a maximum permitted effluent pH of 8.5. This Order contains a maximum permitted effluent pH of 8.3 based on 1,646 new monitoring samples taken between 1 February 2009 and 31 July 2013. Therefore, this Order contains a new ammonia effluent limit that was calculated using this new information.

- I. **Rational for Effluent Limitations and Discharge Specifications.** Modify Table F-12 (in part) in section IV.D.5 of Attachment F – Fact Sheet, as shown in strikeout format below:

**Summary of Final Effluent Limitations
 Discharge Point No. -001**

Table F-12. Summary of Final Effluent Limitations

Parameter	Units	Effluent Limitations					Basis ¹
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
<i>Priority Pollutants</i>							
Zinc	µg/L	45	65	--	--	--	CTR

- m. **Rational for Provisions.** Modify section VI.B.1.c of Attachment F – Fact Sheet, as shown in underline/strikeout format below:

c. **Water Effects Ratio (WER) and Metal Translators.** ~~With the exceptions of copper and zinc, a~~ default WER of 1.0 has been used in this Order for calculating CTR criteria for applicable priority pollutant inorganic constituents, ~~with the exception of zinc for which the discharger has proposed to conduct a WER study.~~ In addition, default dissolved-to-total metal translators have been used to convert water quality objectives from dissolved to total recoverable. If the Discharger performs studies to determine site-specific WERs and/or site-specific dissolved-to-total metal translators, this Order may be reopened to modify the effluent limitations for the applicable inorganic constituents.

- n. **Rational for Monitoring and Reporting Requirements.** Modify section VII.B.2 and VII.B.3 of Attachment F – Fact Sheet, as shown in underline/strikeout format below:

B. Effluent Monitoring

2. Effluent monitoring frequencies and sample types for flow (continuous), ammonia (weekly), pH (daily), nitrate nitrogen (weekly), nitrite nitrogen (weekly), ~~zinc (monthly)~~, and temperature (daily), have been retained from Order R5-2008-0173-01 to determine compliance with effluent limitations for these parameters.
 4. Monitoring data collected over the previous permit term for Bis (2-ethylhexyl phthalate), bromodichloromethane, zinc, and aluminum did not demonstrate reasonable potential to exceed water quality objectives/criteria. Thus, specific monitoring requirements for these parameters have not been retained from Order R5-2008-0173-01.
- o. Attachment G.** Remove the "Zinc" row from the table in Attachment G in its entirety.
- p. Attachment H.** Remove the "Zinc" row from the table in Attachment H in its entirety.

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 Water Code 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 of this Order, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, 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.

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 **11 August 2017**.

Original signed by

PAMELA C. CREEDON, Executive Officer