

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION**

ORDER R5-2022-0063

**AMENDING
TIME SCHEDULE ORDER R5-2017-0087
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT
CA0085332
DEPARTMENT OF PARKS AND RECREATION
MALAKOFF DIGGINS STATE HISTORIC PARK
NEVADA COUNTY**

FINDINGS

The Central Valley Regional Water Quality Control Board (Central Valley Water Board) finds that:

1. Department of Parks and Recreation (Discharger), owns and operates the Malakoff Diggins State Historic Park (Park). The Park includes the remnants of a former hydraulic mine, including a large pit, the pit walls, spoils piles, a pond, and a short tunnel that discharges stormwater to Humbug Creek via Diggins Creek. Humbug Creek is a tributary of the South Yuba River; both are waters of the United States.
2. On 11 August 2017, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) adopted Waste Discharge Requirements (WDRs) Order R5-2017-0086, an NPDES Permit prescribing waste discharge requirements for the Park, which included, in part, final effluent limitations for copper, mercury, and nickel. Order R5-2017-0086 also prescribed interim effluent limitations for pH and manganese.
3. On 11 August 2017, the Central Valley Water Board adopted Time Schedule Order (TSO) R5-2017-0087 prescribing interim effluent limitations for copper, mercury, and nickel and a compliance schedule for compliance with the final limitations for these constituents.
4. The compliance schedule in TSO R5-2017-0087 requires the submittal the following:
 - a. An Engineering Work Plan,
 - b. A Watershed Assessment,
 - c. An Engineering Evaluation Report,
 - d. A Best Management Practices (BMP) Options Assessment/Engineering Evaluation,
 - e. A BMP Plan for Executive Officer approval,
 - f. Confirmation of financial resource commitment for selected BMPs,
 - g. A technical report documenting implementation of BMPs,
 - h. A technical report assessing mitigation and/or control alternative and a time schedule for implementation of the selected alternatives to achieve compliance with final effluent limitations at EFF-001 by 30 September 2022, and
 - i. Compliance with the final effluent limitations in Order R5-2017-0086 for copper, mercury, and nickel.
5. The Discharger has submitted items “a” through “f” from Finding 4 above.

MARK BRADFORD, CHAIR | PATRICK PULUPA, ESQ., EXECUTIVE OFFICER

6. On 20 July 2022, the Discharger requested to have a similar compliance schedule in TSO R5-2017-0087 for copper, mercury, and nickel to the compliance schedule in Order R5-2017-0086 for manganese and pH. Both compliance schedules are designed to develop and implement best management practices, collect additional monitoring data, and evaluate, construct and monitor treatment and/or controls. TSOs generally may only provide protection from MMPs for up to five years. However, Water Code section 13385, subdivision (j)(3)(C)(ii)(II), authorizes the Board to grant an additional five years if the Board finds, following a public hearing, that a Discharger is making diligent progress toward bringing the waste discharge into compliance and that the additional time is necessary to comply with the effluent limitations.
7. The Discharger provided a proposed schedule with updated dates for the compliance schedules in Order R5-2017-0086 and TSO R5-2017-0087. Central Valley permitting staff determined the dates proposed by the Discharger would not cause the TSO to exceed ten (10) years in length from the date the final effluent limitations became effective.
8. This Order revises the interim effluent limitations to better represent variability of the discharge. The revised interim effluent limitations are based on the current and more robust dataset collected after adoption of TSO R5-2017-0087 in August 2017.
9. This Order amends the compliance schedule in TSO R5-2017-0087 to include a date for compliance with the final effluent limitations for copper, mercury, and nickel to 13 October 2027 because the Discharger cannot consistently comply with final copper, mercury, and nickel effluent limitations. To address the issue, the following BMPs are proposed for deployment at the Park:
 - Brush barriers and a grade control structure to capture and retain gravel and sand in the eastern portion of the Pit,
 - An Interceptor and diversion swale in the south-central portion of the Pit to redirect flows from the eastern portion of the Pit away from the Hiller Tunnel and to the northwest into the Pit lake to allow for additional fine sediment settling, and
 - Enhancement of the Pit lake to increase its sediment settling capacity with construction of a soldier pile wall to manage water discharge to the Hiller Tunnel.
 - If needed, deployment of anionic polyacrylamide flocculant in a solid form in certain channels within the Pit may also be considered.
 - If needed, deployment of synthetic vinyl copolymer soil stabilizer upgradient of the grade control structure and on alluvial fan deposits within the Pit may also be considered to reduce erosion in these areas.
10. Issuance of this Order is exempt from the provisions of the California Environmental Quality Act (Pub. Resources Code, § 21000 et seq.) pursuant to Water Code section 13389, since the adoption or modification of an NPDES permit for an existing source is statutorily exempt and this Order only serves to implement a NPDES permit.

(Pacific Water Conditioning Ass'n, Inc. v. City Council of City of Riverside (1977) 73 Cal.App.3d 546, 555-556.)

11. On 14 October 2022, virtually and in Redding, California, after due notice to the Discharger and all other affected persons, the Central Valley Water Board conducted a public hearing at which evidence was received to consider amending TSO R5-2017-0087.

BOARD ACTION

IT IS HEREBY ORDERED THAT:

Effective immediately, Time Schedule Order R5-2017-0087 (TSO) is amended solely as shown in items 1 through 14, below.

1. The Order number is changed from R5-2017-0087 to R5-2017-0087-01 throughout the TSO where appropriate.
2. The Findings throughout the TSO have been renumbered as new Findings have been added.
3. The term "WDR Order" was revised to "Order" throughout the TSO.
4. Any variation calling out the California Water Code (Water Code, CWC, etc.) was revised to "California Water Code" throughout the TSO.
5. **Page 1.** Modify the language in Finding 3 as shown below:
 3. To date, there are no treatment and/or control systems in place at the Park. Order R5-2017-0086 (NPDES Permit CA0085332) requires compliance with final effluent limitations for copper, mercury, and nickel by 1 October 2017. Order R5-2017-0086 also includes a compliance schedule and interim limitations for manganese and pH. Compliance with the final effluent limitations for manganese and pH is required by 30 September 2027. New treatment and/or control measures are necessary in order to comply with the final effluent limitations for copper, mercury, and nickel. New treatment and/or control measures cannot be designed, installed, and put into operation within one year. For compliance with the final effluent limitations for copper, mercury, and nickel, the Discharger originally requested time to develop and implement best management practices, collect additional monitoring data, and evaluate alternative treatment and/or control options. TSO R5-2017-0087 was issued on 11 August 2017, becoming effective on 1 October 2017, and prescribed interim effluent limitations for copper, mercury, and nickel as well as a compliance schedule to comply with the final effluent limitations in Order R5-2017-0086 for these parameters by 30 September 2022.
6. **Pages 1 through 3.** Add the language below as Findings 4 through 13:
 4. The compliance schedule in TSO R5-2017-0087 requires the submittal the following:
 - a. An Engineering Work Plan,

- b. A Watershed Assessment,
 - c. An Engineering Evaluation Report,
 - d. A Best Management Practices (BMP) Options Assessment/Engineering Evaluation,
 - e. A BMP Plan for Executive Officer approval,
 - f. Confirmation of financial resource commitment for selected BMPs,
 - g. A technical report documenting implementation of BMPs,
 - h. A technical report assessing mitigation and/or control alternative and a time schedule for implementation of the selected alternatives to achieve compliance with final effluent limitations at EFF-001 by 30 September 2022, and
 - i. Compliance with the final effluent limitations in Order R5-2017-0086 for copper, mercury, and nickel.
5. On 30 March 2018 the Discharger submitted an Engineering Work Plan (Work Plan) which included a plan to define spoils piles within the hydraulic mine pit (Pit), conduct a slope stability analysis of pit walls, compile GPS coordinates for RSW-001 and RSW-002, and conduct an assessment on the Pit.
 6. On 1 October 2018 the Discharger submitted a watershed assessment that identified other sources that may flow into Diggins Creek (between Hiller Tunnel and Humbug Creek) and researched additional sources of mercury, hardness-dependent metals, aluminum, iron and manganese in Humbug Creek upstream and downstream of the confluence with Diggins Creek to the boundary of the Park.
 7. On 1 October 2019 the Discharger submitted an Engineering Evaluation Report addressing the items in the Work Plan. The Engineering Evaluation Report provided recommendations to assess BMP alternatives for mitigating sediment discharge from the Park to be addressed with the BMP Options Assessment/Engineering Evaluation.
 8. On 1 April 2020 the Discharger submitted a BMP Options Assessment/Engineering Evaluation containing an assessment and recommendations of the BMP options to prevent or minimize constituent concentrations in surface water discharges from the Pit. The BMP Options Assessment/Engineering Evaluation provided a Conceptual BMP Plan that discussed the following in further detail:
 - a. Coarse sediment management in the eastern portion of the Pit using grade control structure and brush barriers to capture and retain gravel and sand
 - b. Interceptor and diversion swale development in the south-central portion of the Pit to redirect flows from the eastern portion of the Pit away from the

- Hiller Tunnel and to the northwest into the Pit lake to allow for additional fine sediment settling, and
- c. Enhancement of the Pit lake to increase its sediment settling capacity with construction of a soldier pile wall to manage water discharge to the Hiller Tunnel.
 - d. Deployment of anionic polyacrylamide flocculant in a solid form in certain channels within the Pit may also be considered to improve settling of fine particles.
 - e. Deployment of synthetic vinyl copolymer soil stabilizer upgradient of the grade control structure and on alluvial fan deposits within the Pit may also be considered to reduce erosion in these areas.
9. On 1 September 2021 the Discharger submitted, for Executive Officer approval, a BMP plan comprised of construction plans and construction specifications per the Conceptual BMP Plan in Finding 8.
 10. On 15 November 2021 the Discharger submitted a letter confirming a commitment to provide the financial resources necessary to complete the BMP installation as described in Conceptual BMP Plan in Finding 8.
 11. On 13 July 2022 the Discharger, the Discharger's consultants, and Central Valley Water Board permitting staff and enforcement staff met to discuss the status of the implementation/construction of the BMPs and changes to the compliance schedules in the Order and TSO.
 12. On 20 July 2022 for compliance with the final effluent limitations for copper, mercury, and nickel, the Discharger requested additional time to have a similar compliance schedule in this Order to the compliance schedule in Order R5-2017-0086 for manganese and pH to develop and implement best management practices, collect additional monitoring data, and evaluate, construct and monitor treatment and/or controls since they will be designed to treat copper, mercury, nickel, manganese, and pH as a whole.
 13. The Discharger provided a proposed schedule with updated dates for the compliance schedules in Order R5-2017-0086 and TSO R5-2017-0087. Central Valley permitting staff determined the dates proposed by the Discharger would not cause the TSO to exceed ten (10) years in length from the date the final effluent limitations became effective.
7. **Page 3.** Add the language below as Finding 15.b, in lieu of prior Finding 5.b:
 - b. To comply with the final effluent limitations for copper, mercury, and nickel, the Discharger has requested an additional 5 years to implement the selected alternatives in Finding 4, items g through i.
 8. **Page 3.** Add the language below as Findings 16 through 18, in lieu of prior Findings 6 through 8:
 16. Time Schedule Orders generally may only provide protection from MMPs for up to five years. However, Water Code section 13385, subdivision

- (j)(3)(C)(ii)(II), authorizes the Board to grant an additional five years if the Board finds, following a public hearing, that a discharger is making diligent progress toward bringing the waste discharge into compliance and that the additional time is necessary to comply with the effluent limitations. Based on the evidence in the record, the Board finds that the Discharger is making diligent progress toward bringing the waste discharge into compliance and that an additional five years is necessary to comply with the effluent limitations for copper, mercury, and nickel.
17. The time schedule under TSO R5-2017-0087 expired on 30 September 2022. From 1 October 2022 until the effective date of this amendment, the Discharger will not have protection from MMPs for copper, mercury, or nickel.
18. Compliance with this TSO provides protection for the Discharger from MMPs for copper, mercury, and nickel. Order R5-2017-0086 imposed new final effluent limits for copper, mercury, and nickel that went into effect on 1 October 2017. TSO R5-2017-0087 provided the Discharger with MMP protection for copper, mercury, and nickel violations for five (5) years from 1 October 2017 until 30 September 2022. This TSO carries forward MMP protections for copper, mercury, and nickel for five (5) years from 14 October 2022 through 13 October 2027. This time schedule is as short as possible and does not exceed ten (10) years in length from the date the final effluent limitations became effective.
9. **Page 4.** Modify the language of Finding 20 as shown below:
20. This Order includes new discharge-concentration-based interim effluent limitations for copper, mercury, and nickel.
- To calculate an average monthly effluent limitation (AMEL) multiplier as per EPA's *Technical Support Document for Water Quality-based Toxics Control* (TSD), a relationship between the percentile represented by the highest effluent concentration and the upper bound (99%) of the lognormal effluent distribution was determined. EPA's effluent data base suggests that the lognormal distribution well characterizes effluent concentrations. Therefore, interim average monthly effluent limitations (AMELs) for copper, mercury, and nickel were calculated by multiplying an AMEL multiplier, calculated per the TSD, to the maximum effluent concentration. Interim maximum daily effluent limitations (MDELs) for copper, mercury, and nickel were calculated based on the AMELs and the MDEL/AMEL multiplier from Table 2 of the SIP.
- In calculating interim effluent limitations for copper, mercury, and nickel, effluent data for the period between November 2017 and April 2022 were used. The following table summarizes the information used to calculate the interim effluent limitations for copper, mercury, and nickel:

Parameter	Units	MEC	Data points (n)	Mean	SD	CV	MDEL/AMEL Multiplier	Interim Effluent Limitations	
								Average Monthly	Maximum Daily
Copper, Total Recoverable	µg/L	95	39	12.3	20.8	1.7	2.97	340	1,000
Mercury, Total Recoverable	µg/L	0.58	57	0.48	0.11	2.2	3.1	2.2	6.9
Nickel, Total Recoverable	µg/L	200	44	54	28	0.52	1.88	330	620

10. Page 5. Add the language below as Finding 28:

28. On 14 October 2022, virtually and in Redding, California, and after due notice to the Discharger and all other affected persons, the Central Valley Water Board conducted a public hearing at which evidence was received to consider amending TSO R5-2017-0087 under Water Code Section 13300 to establish a time schedule to achieve compliance with waste discharge requirements.

11. Pages 5 and 6. Modify Item 1 as shown below:

1. Pursuant to California Water Code Sections 13300 and 13267, the Discharger shall comply with the following time schedule to submit reports and ensure completion of the compliance project described in Finding 4, above:

Task	Compliance Date
1. Submit all monitoring data from wet season 2016-2017.	Complete
2. Submit a Work Plan for an Engineering Evaluation that includes: <ul style="list-style-type: none"> a. Definition of spoils piles within the Pit; b. Slope Stability Analysis of Pit walls; c. Compilation of GPS coordinates for RSW-001 and RSW-002 d. Pit Assessment (that may include but is not limited to): <ul style="list-style-type: none"> • Detailed Topographic Survey. • Hydrologic Model. 	Complete
3. Submit a Watershed Assessment <ul style="list-style-type: none"> a. Diggins Creek <ul style="list-style-type: none"> • Assess any other sources that may flow into Diggins Creek between Hiller Tunnel and Humbug Creek b. Humbug Creek, upstream of the confluence with Diggins Creek <ul style="list-style-type: none"> • Research additional sources of mercury, hardness-dependent metals, aluminum, iron, and manganese c. Humbug Creek, downstream of the confluence with Diggins Creek to the boundary of the Park <ul style="list-style-type: none"> • Research additional sources of mercury, hardness-dependent metals, aluminum, iron, and manganese, including but not limited to the Shaft 5 discharge to Humbug Creek and the NBT Outlet discharge to Humbug Creek. 	Complete
4. Submit the Engineering Evaluation Report from Task 2.	Complete
5. Submit a BMP Options Assessment/Engineering Evaluation, including but not limited to the following Practices:	Complete

Task	Compliance Date
a. Flow Diversion Practices such as storm water conveyance, diversion dikes, and graded areas. b. Exposure Minimization Practices such as containment diking, curbing, collection basins, sumps, and covering. c. Sediment and Erosion Prevention Practices such as preservation of natural vegetation, permanent seeding and planting, interceptor dikes and swales, pipe slope drains, subsurface drains, filter fences, brush and hay bale barriers, berms, sediment traps, sediment basins, check dams, and gradient terraces. d. Infiltration Practices such as vegetated filter strips, grassed swales, and infiltration trenches. e. Mitigation Practices such as excavation, filtration units, and sedimentation basins. f. Other Minimization, Preventive, and Mitigation Practices not listed here.	
6. Submit a BMP Plan for Executive Officer approval.	Complete
7. Submit confirmation of financial resource commitment for selected BMPs.	Complete
8. Submit a technical report documenting implementation of BMPs.	15 December 2023
9. Submit a technical report assessing mitigation and/or control alternatives and a time schedule for implementation of the selected alternatives to achieve compliance with final effluent limitations at EFF-001 by 13 October 2027.	30 June 2025
10. Comply with the Final Effluent Limitations for copper, mercury, and nickel.	13 October 2027
11. Submit Annual Progress Reports documenting the steps taken to comply with this Order, describing the completion of tasks, progress of construction, evaluation of the effectiveness of the implemented measures, and an assessment of whether additional measures are necessary to meet the final compliance date.	1 July annually, beginning 1 July 2023

12. Page 6. Modify Item 2 as shown below:

2. Order R5-2017-0086 contains a schedule for compliance with the final effluent limitations for manganese and pH. Tasks 1 through 7 are the same in both compliance schedules.

13. Page 7. Add the language below as Item 3:

3. Tasks 8, 9, and 10 and submittal dates for Annual Progress Reports (1 July Annually) of this Order do not match the compliance schedule in Order R5-2017-0086; however, the Board will consider revising the compliance schedule in Order R5-2017-0086 per the Discharger’s updated schedule when renewed to match the compliance schedule in this Order.

14. Page 7. Modify Item 4 as shown below:

4. Discharge from Discharge Point 001 shall not exceed the following interim effluent limitations. These interim effluent limitations for copper, mercury, and nickel are effective upon adoption of this Order. The Discharger shall comply with the following interim effluent limitations through 13 October 2027.

Parameter	Units	MEC	Data points (n)	Mean	SD	CV	MDEL/AMEL Multiplier	Interim Effluent Limitations	
								Average Monthly	Maximum Daily
Copper, Total Recoverable	µg/L	95	39	12.3	20.8	1.7	2.97	340	1,000
Mercury, Total Recoverable	µg/L	0.58	47	0.048	0.11	2.2	3.1	2.2	6.9
Nickel, Total Recoverable	µg/L	200	44	54	28	0.52	1.88	330	620

15. **Page 8.** Modify the last paragraph to the text shown below:

I, PATRICK PULUPA, 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 and amended by Order R5-2022-0063 on 14 October 2022.

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 California Water Code section 13320 and California Code of Regulations, title 23, section 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, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Links to the laws and regulations applicable to filing petitions (http://www.waterboards.ca.gov/public_notices/petitions/water_quality) may be found on the Internet or will be provided upon request.

I, PATRICK PULUPA, 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 14 October 2022.

PATRICK PULUPA, Executive Officer