

**STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION**

STAFF REPORT FOR REGULAR MEETING OF APRIL 14-16, 2021

Prepared on March 18, 2021

ITEM NUMBER: 9

SUBJECT: Revision of Waste Discharge Requirements, Reissuance of National Pollutant Discharge Elimination System (NPDES) Permit No. CA0050628 for Sentinel Peak Resources, San Luis Obispo County, Consideration of Order No. R3-2021-0010

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KEY INFORMATION

Location: 1821 Price Canyon Road, San Luis Obispo, San Luis Obispo County
Type of Discharge: Tertiary-treated produced water from oil extraction operations
Design Capacity: 0.84 million gallons per day (MGD)
Treatment: Softening, microfiltration, reverse osmosis, ammonia removal, polishing, cooling, and aeration
Disposal: Inland surface water discharge to Pismo Creek
Reclamation: Irrigation of onsite landscaping
Existing Orders: Waste Discharge Requirements Order No. R3-2013-0029

ACTION: Adopt Proposed Order No. R3-2021-0010

SUMMARY

This staff report provides a brief overview of the proposed renewal of existing Waste Discharge Requirements Order No. R3-2013-0029 for the Arroyo Grande Produced Water Reclamation Facility (Facility). The Facility is operated by Sentinel Peak Resources California LLC (Discharger). The Facility was previously owned by Freeport-McMoRan Oil and Gas and Plains Exploration and Production. Proposed Order No. R3-2021-0010 has effluent limitation and monitoring changes based on the results of a

reasonable potential analysis.¹ The proposed order was published for a 30-day public comment period. No comments were received during that time. A detailed discussion of all changes from the existing order is provided in the discussion below. Staff recommends adoption of the proposed order. This proposed order implements adopted water quality objectives for the protection of beneficial uses, and is protective of water quality and the environment.

DISCUSSION

The Discharger is currently discharging tertiary-treated produced water pursuant to Order No. R3-2013-0029, NPDES Permit No. CA0050628. The Discharger submitted a Report of Waste Discharge (i.e., permit renewal application), dated July 19, 2018, to continue discharging up to 0.84 MGD of treated wastewater from the Facility.

The Discharger owns and operates a crude oil recovery facility within the Arroyo Grande Oil Field. As part of those operations, the Discharger operates an industrial wastewater reclamation facility for treatment of the produced water generated by the oil extraction process. Produced water is all water associated with oil and gas producing formations when the reservoir is produced and brought to the surface. The water may include flow from above or below the hydrocarbon zone or flow from an injection recovery facility. No municipal or domestic wastewater is treated at the Facility.

The treatment process utilizes two phases. The first phase consists of warm-lime softening, microfiltration to remove particulates, strong-acid cation softening, and cooling of the produced water as a pretreatment before the second phase. Miscellaneous plant wastewater is incorporated into the wastestream before the beginning of the second phase. The second phase of treatment includes a two-pass reverse osmosis system, weak-ion exchange ammonia removal, chemical polishing, storage, cooling, and aeration. A portion of the treated water goes into a storage tank for periodic onsite irrigation uses, while the remainder of the treated water is discharged into Pismo Creek, with volumes not to exceed 0.84 MGD. The produced water reclamation facility is located approximately 1,700 feet from Pismo Creek.

The renewal and associated revisions of this proposed order do not regulate or authorize the Discharger's oil field production operations. The proposed order authorizes the manner and volume of discharge of treated effluent consistent with information presented in the Discharger's Report of Waste Discharge and the wastewater treatment facility's design capacity. Pursuant to the proposed order's conditions and standard provisions, the Discharger is required to apply for a revision to the proposed order in the event it proposes to change the treatment processes or wishes to increase treatment/discharge flows that exceed currently approved limitations.

¹ A reasonable potential analysis is used to determine whether a discharge, alone or in combination with other sources of pollutants to a waterbody and under a set of conditions arrived at by making a series of reasonable assumptions, could lead to an excursion above an applicable water quality standard. The regulation also specifies that the reasonable potential determination must apply not only to numeric criteria, but also to narrative criteria.

Compliance History

The Discharger has an excellent compliance history since beginning effluent discharge in 2014. There have been no violations of limitations during the previous order, and only one late monitoring event during one annual sampling cycle. Recycled water has been used in relatively limited volume onsite, and typically only for a few months of the year. The treated effluent discharge to Pismo Creek has not been reported or observed to cause any erosion, flooding, or adverse impacts to habitat. During the late fall and early winter, the natural creek flows are reduced to less than one cubic foot per second due to background conditions. The effluent discharge during those periods makes up the majority of creek flow below the effluent discharge point, providing additional flow for the South-Central California Coast steelhead and critical habitat for the species. The Discharger continues to provide the Central Coast Water Board copies of the reports produced as part of the Discharger's monitoring related to National Marine Fisheries Service and County of San Luis Obispo requirements.

The proposed order represents the first time the Discharger and Central Coast Water Board have had real-world monitoring data from the Facility and receiving waters to evaluate during preparation of discharge limitations and conditions. The analysis of the data indicates the Facility is operating as well as, or better than, originally designed.

CHANGES FROM THE EXISTING ORDER

The proposed order is structured in accordance with the statewide NPDES permit template. The proposed order is generally consistent with the previous order with the exception of the following changes and modifications, which are also discussed in detail in the proposed order fact sheet:

Accessibility updates. The State Water Resources Control Board (State Water Board) template for NPDES permits has been updated and revised to accommodate web accessibility needs. Most notably, there are numerous changes to table formatting and outline structure from the previous order.

Updated Owner, Contact Information, and Facility Name. The Facility has undergone changes to its name, ownership, and contacts since the adoption of the previous order. The proposed order updates the ownership, contact, and Facility name to reflect current information (Attachment F – Fact Sheet, Table F-1).

Updated references. Many guidance documents, policies, and orders referenced in the previous order have been updated or amended since 2013. The proposed order has updated references and website links where direct access to current versions of guidance documents are available.

Minimum Levels. Language has been added to several sections in the proposed order to emphasize the selection of testing methods to meet the state's required minimum levels for analytic method sensitivity and United States Environmental Protection Agency's (USEPA) Sufficiently Sensitive Methods Rule (Attachment E – Monitoring and Reporting Program (MRP) sections 1.5 and 1.6).

Effluent Limitations Changes. The effluent limitations for benzene and phenol have been removed from the proposed order. This removal of effluent limitations is consistent with the exceptions listed in the anti-backsliding requirements of the Clean Water Act (CWA) and federal regulations. Section 402(o)(2)(B)(i) of the CWA states that a permit may be renewed, reissued, or modified to contain a less stringent effluent limitation if "information is available which was not available at the time of the permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance." The previous order's effluent limitations for benzene and phenol were derived from untreated samples of effluent, before construction of the treatment processes had been completed. The current monitoring data, reflecting actual treatment performance, was not available at the time of the original permitting for the Facility and therefore represent new information which was not available at the time of original permit issuance. Benzene and phenol do not demonstrate a reasonable potential to exceed water quality objectives as shown in the proposed order (Attachment F- Fact Sheet section 4.3), and the removal of these effluent limitations is consistent with the anti-backsliding exception for new information (Attachment F - Fact Sheet section 4.4.1).

Influent Monitoring Additions. Annual influent monitoring for salts and other minerals has been added (Attachment E - MRP, Table E-2) consistent with other Central Coast Water Board monitoring programs. This additional testing will help support assessing background contributions from facilities within the area, should the need arise. The mineral balances can help forensically identify potential sources of groundwater pollution where multiple contributors are possible.

Effluent Monitoring Decreases. Benzene and phenol monitoring requirements have been reduced from monthly to annual (Attachment E - MRP, Table E-3) based on the results of the reasonable potential analysis, consistency of the existing monitoring data, and level of treatment provided at the Facility. In addition, radium-226+radium-228 sampling has been reduced from quarterly to annual based on the results of the reasonable potential analysis, consistency of the existing monitoring data, and level of treatment provided at the Facility. The previous order required a minimum of eight consecutive quarters of radium sampling before potential reduction to annual monitoring frequency, and the Discharger has completed 15 consecutive quarters. The new minimum sampling frequencies for these effluent parameters will be adequate for assessing permit compliance and provide needed data for future reasonable potential analyses.

Effluent Monitoring Additions. Annual effluent monitoring (Attachment E - MRP, Table E-3) for phthalate esters, boron, cobalt, iron, lithium, manganese, methylene blue activated substances, molybdenum, vanadium, calcium, magnesium, sodium, potassium, chloride, sulfate, bicarbonate, and carbonate has been added consistent with other Central Coast Water Board monitoring programs, such as Central Coast Ambient Monitoring Program and Irrigated Lands Program. The additional parameters will help:

- Efforts to discern sources of water quality impacts in the watershed through cation and anion mapping of various water sources.
- Address the lack of effluent data for chloride in the reasonable potential analysis, which yielded an inconclusive result.
- Address the absence of effluent data for corresponding receiving water quality limitations derived from Basin Plan objectives.

Recycled Water Monitoring Decreases. Monitoring requirements are retained from the previous order, with frequencies established consistent with effluent monitoring requirements, with the exception of benzene and phenol (Attachment E – MRP Table E-6). The recycled water is treated with the same processes and to the same quality as effluent at the Facility. Therefore, the requirements for effluent sampling for benzene and phenol are adequate, since effluent and recycled water both have the same influent source and treatment level at the Facility.

303(d) Listings. The discussion regarding Pismo Creek’s Clean Water Act 303(d) listing status has been updated (Attachment F – Fact Sheet section 3.4). The 2014/2016 303(d) list identifies Pismo Creek as impaired for E. coli, fecal coliform, dissolved oxygen, turbidity, and salinity (sodium and chloride). At the time of the previous order’s adoption, Pismo Creek was not listed for turbidity. Currently there are no total maximum daily loads (TMDLs) established for Pismo Creek. A TMDL for turbidity is scheduled to be completed by 2023, and the remaining pollutants’ TMDLs are scheduled to be completed by 2027.

Discharge Monitoring Report-Quality Assurance (DMR-QA) Study. Language has been added to ensure that, if and when required, the results of the DMR-QA Study or the most recent Water Pollution Performance Evaluation Study are submitted annually to the State Water Board (Attachment E – MRP section 1.8 and Attachment F – Fact Sheet section 7.5.1).

Pollutant Minimization Program. Language has been added, consistent with the language found in the State Water Board’s *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (SIP), describing when the Discharger is required to develop a Pollutant Minimization Program (proposed order section 6.3.3.1). The goal of a PMP is to reduce all potential sources of a priority pollutant(s) through pollutant minimization

(control) strategies, and is generally required in situations where the approved analytical method(s) for a parameter have reporting and/or detection limit(s) greater than the parameter's effluent limitations.

Latitude/Longitude: The latitude and longitude of all monitoring locations have been added (Attachment E – Monitoring and Reporting Program, Table E-1).

Maps and Process Flow Diagrams. Attachments B and C have been updated with higher quality maps and process flow diagrams.

Mercury Water Quality Objective. Since the adoption of the previous Order, the State Water Board adopted and approved *Part 2 of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California – Tribal and Subsistence Fishing Beneficial Uses and Mercury Provisions* (SIP Part 2). With SIP Part 2's approval, the State Water Board approved one new narrative and four new numeric mercury water quality objectives to apply to those inland surface waters, enclosed bays, and estuaries of the state that have any of the following beneficial use designations: commercial and sport fishing (COMM), tribal tradition and culture (CUL), tribal subsistence fishing (T-SUB), wildlife habitat (WILD), marine habitat (MAR), preservation of rare and endangered species (RARE), warm freshwater habitat (WARM), cold freshwater habitat (COLD), estuarine habitat (EST), or inland saline water habitat (SAL). The new mercury objectives are applicable to this proposed order due to Pismo Creek's designated beneficial uses. The proposed order implements the new mercury objectives and revised mercury-specific procedures during the development of water quality-based effluent limitations.

Order Findings. The proposed order (Findings, section 2) has been updated to include findings for Long-Term Planning and Implementation, Response to Climate Change, Human Right to Water Quality, and Disadvantaged Community Status.

CHANGES FROM THE PUBLIC DRAFT

The proposed order was published for public comment on January 11, 2021, and comments were due by February 12, 2021. No comments were received during the public comment period, and no substantive changes have been made to the proposed order since the public comment period. The only change was to Attachment F Fact Sheet section 8.2 to confirm there were no public comments received.

CLIMATE CHANGE

The State Water Board's Resolution No. 2017-0012, *Comprehensive Response to Climate Change*, requires a proactive response to climate change in all California Water Board actions, with the intent to embed climate change consideration into all programs and activities. Aligning with Resolution No. 2017-0012, the proposed order allows beneficial reuse of the Facility's treated effluent to offset potable water supplies for irrigation and dedicated in-stream flows to critical creek habitat. This permit increases

water supply reliability as a climate adaptation strategy, in addition to maintaining minimum instream discharges to provide water quality benefits and aquatic habitat.

HUMAN RIGHT TO WATER

Water Code section 106.3 establishes the policy that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. On January 26, 2017, the Central Coast Water Board adopted Resolution No. R3-2017-0004, *Adopting the Human Right to Water as a Core Value and Directing Its Implementation in Central Coast Water Board Programs and Activities*, which adopts the human right to water as a core value and affirms the realization of the human right to water and protecting human health as the Central Coast Water Board's top priorities. The proposed order incorporates requirements for the Facility to beneficially reuse treated effluent to prepare for uncertainties in water resources due to the changing climate. The proposed order establishes effluent discharge limitations to protect the municipal and domestic supply drinking water beneficial use and improve drinking water quality for those that depend on groundwater and surface waters as their drinking water source. Additionally, the proposed order implements recently updated mercury water quality objectives that are more stringent than previous objectives in order to more adequately protect beneficial uses related to water and fish consumption.

DISADVANTAGED COMMUNITIES

The Central Coast Water Board prioritizes the implementation of regulatory programs in a manner that ensures the fair treatment of people of all races, cultures, and income levels, including disadvantaged communities. Staff has evaluated the disadvantaged community status for the Discharger. Sentinel Peak Resources California LLC is the Discharger for this permit and is not considered a disadvantaged community. The discharge location (an unincorporated area of San Luis Obispo County) and downstream receiving water areas (San Luis Obispo County and the City of Pismo Beach) are also not disadvantaged communities.

CONCLUSIONS

Proposed Order No. R3-2021-0010 has been drafted and prepared in compliance with state and federal guidance and regulations. The proposed order is protective of water quality and requires a monitoring and reporting program sufficient to demonstrate compliance with the proposed order's limitations given the results of the reasonable potential analysis. The Discharger has an excellent history of compliance and operations.

RECOMMENDATION

Adopt Proposed Order No. R3-2021-0010

ATTACHMENTS

1. Proposed Order No. R3-2021-0010

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