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Central Valley Regional Water Quality Control Board

22 March 2017

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**REVISED MONITORING AND REPORTING PROGRAM ORDER NO. R5-2012-0059,
CAWELO WATER DISTRICT AND VALLEY WATER MANAGEMENT COMPANY,
PRODUCED WATER RECLAMATION PROJECT, KERN FRONT NO. 2 TREATMENT
FACILITY, KERN COUNTY**

Enclosed are Revised Monitoring and Reporting Program Order No. R5-2012-0059 (Revised MRP) and our response to comments from Cawelo Water District (Cawelo) and Valley Water Management Company (Valley Water) regarding the draft Revised MRP. The Revised MRP is for Waste Discharge Requirements Order No. R5-2012-0059 that regulates the discharge of produced water to Cawelo's Reservoir B and Famoso Basins, and Valley Water's Kern Front No. 2 Treatment Facility.

This Revised MRP requires Cawelo and Valley Water to perform produced wastewater and groundwater monitoring at specific frequencies. New requirements for submitting monitoring and compliance reports are included in the Revised MRP. Failure to comply with the Revised MRP will subject you to enforcement actions, including the potential assessment of civil liability.

Central Valley Regional Water Quality Control Board (Central Valley Water Board) staff made the draft Revised MRP available, as a courtesy, to Cawelo and Valley Water on 25 July 2016. On 22 August and 23 August 2016, Valley Water and Cawelo (respectively) submitted comments on the draft Revised MRP.

Revised Monitoring and Reporting
Program Order No. R5-2012-0059
Cawelo Water District and Valley Water Management Company
Kern Front No. 2 Treatment Facility
Kern County

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22 March 2017

Enclosed is a response, prepared by Central Valley Water Board staff, to the comments received. Comments or suggestions that were found to be appropriate by Central Valley Water Board staff were incorporated in this Revised MRP.

If you have any questions regarding this matter, please contact Joshua Mahoney of this office at (559) 444 – 2449 or via email at Joshua.Mahoney@waterboards.ca.gov.



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Enclosures

cc: Julie Macedo, Office of Enforcement, State Water Resources Control Board
Patrick Pulupa, Office of Chief Counsel, State Water Resources Control Board
John Borkovich, Division of Water Quality, State Water Resources Control Board

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

REVISED MONITORING AND REPORTING PROGRAM R5-2012-0059
FOR
CAWELO WATER DISTRICT
VALLEY WATER MANAGEMENT COMPANY
PRODUCED WASTEWATER RECLAMATION PROJECT
KERN FRONT NO. 2 TREATMENT FACILITY
KERN FRONT OIL FIELD
KERN COUNTY

This Revised Monitoring and Reporting Program (MRP) supersedes the Monitoring and Reporting Program signed on 8 June 2012 and is required pursuant to section 13267 of the California Water Code.

Cawelo Water District and Valley Water Management Company (hereafter jointly referred to as Discharger) shall not implement any changes to this MRP unless and until the Central Valley Water Board adopts, or the Executive Officer issues, a revised MRP. Changes to any sample location shall be established with concurrence of Central Valley Water Board staff, and a description of the revised station shall be submitted for approval by the Executive Officer.

This MRP includes monitoring, record-keeping, and reporting requirements. Monitoring requirements include: groundwater samples; visual inspections; produced wastewater samples; identification of chemicals and additives used during petroleum exploration, production, and treatment; solid waste; and application of recycled materials (wastewater and solids); in order to determine if the Dischargers are in compliance with applicable laws, regulations, and policies.

All samples shall be representative of the volume and nature of the discharge or matrix of material sampled. All analyses shall be performed in accordance with applicable provisions of the **Standard Provisions and Reporting Requirements for Waste Discharge Requirements**, dated 1 March 1991 (Standard Provisions).

Field test instruments (such as a pH meter) may be used provided that the operator is trained in the proper use of the instrument and each instrument is serviced and/or calibrated at the recommended frequency by the manufacturer or in accordance with manufacturer instructions.

Analytical procedures shall comply with the methods and holding times specified in the following: *Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater* (EPA); *Test Methods for Evaluating Solid Waste* (EPA); *Methods for Chemical Analysis of Water and Wastes* (EPA); *Methods for Determination of Inorganic Substances in Environmental Samples* (EPA); *Standard Methods for the Examination of Water and Wastewater* (APHA/AWWA/WEF); and *Soil, Plant and Water Reference Methods for the Western Region* (WREP 125). Approved editions shall be those that are approved for use by the United States Environmental Protection Agency or the State Water Board's Environmental Laboratory Accreditation Program. The Discharger may propose alternative methods for approval by the Executive Officer.

If monitoring consistently shows no significant variation in magnitude of a constituent concentration or parameter after a statistically significant number of sampling events, the Discharger may request this MRP be revised by the Executive Officer to reduce the monitoring frequency or to minimize the list of constituents. The proposal must include adequate technical justification for reduction in monitoring frequency.

This MRP requires the Discharger to keep and maintain records for five years from the date the monitoring activities occurred and to prepare and submit reports containing the results of monitoring

specified below. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge, or when requested by the Central Valley Water Board.

A complete list of substances that are tested for and reported on by the testing laboratory shall be provided to the Central Valley Water Board. All peaks must be reported. In addition, both the method detection limit (MDL) and the practical quantification limit (PQL) shall be reported. Detection limits for all liquid samples shall be equal to or more precise than USEPA methodologies. Analysis with an MDL greater than the most stringent drinking water standard that results in non-detection needs to be reanalyzed with the MDL set lower than the drinking water standard or at the lowest level achievable by the laboratory. All quality assurance/quality control (QA/QC) samples must be run on the same dates when samples were actually analyzed. Proper chain of custody procedures must be followed and a copy of the completed chain of custody form shall be submitted with the report. All analyses must be performed by an Environmental Laboratory Accreditation Program (ELAP) certified laboratory.

Central Valley Water Board staff inspected Valley Water Management Company's Kern Front No. 2 Treatment Facility on 27 February 2015 and 26 June 2015. The main portion of the facility consists of five surface impoundments (ponds) and two WEMCOs that are used during normal operations. During reduced irrigation demands or incidents that prevent the discharge of produced wastewater to Cawelo Water District's Reservoir B, fourteen idle ponds are available along the south end of the facility for additional storage capacity. Facilities regulated under this MRP consist of nineteen ponds at the Kern Front No. 2 Treatment Facility, Reservoir B, and Cawelo Water District's Famoso Basins.

PRODUCED WASTEWATER MONITORING

Water samples shall be representative of the volume and nature of the discharges. The Discharger shall maintain all sampling and analytical results: date, exact place, and time of sampling; dates analyses were performed; analyst's name; analytical techniques used; and results of all analyses.

If the discharge is intermittent rather than continuous, then on the first day of each such intermittent discharge, the Discharger shall monitor and record data for all of the constituents listed below, after which the frequencies of analysis given in the schedule shall apply for the duration of each such intermittent discharge.

DISCHARGE 001

Monitoring shall be completed at the Kern Front No. 2 Treatment Facility downstream from the treatment system and prior to the discharge to Reservoir B. Produced wastewater monitoring for Discharge 001 shall include at least the following:

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>	<u>Frequency</u>
Flow to the Kern Front No. 2 Treatment Facility ¹	mgd	Metered ²	Continuous
Table I – Water Quality Monitoring	Varies	Grab	Varies

¹ Individual volumes shall be monitored and all sources defined (e.g., petroleum leases and operators).

² Metered or alternatively calculated by the Discharger based on pump efficiencies or weir observations.

DISCHARGE 002

Produced wastewater samples shall be collected immediately downstream of the Reservoir B outfall structure. Produced wastewater monitoring for Discharge 002 shall include at least the following:

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>	<u>Frequency</u>
Inlet			
Produced Wastewater ¹	ac-ft/d ²	Metered ³	Daily
Blending Water ¹	ac-ft/d	Metered	Daily
Total Volume	ac-ft/d	Calculated	Daily
Outlet ⁴			
Blended Produced Wastewater	ac-ft/d	Calculated	Daily
Blending Ratio ⁵	-	Calculated	Monthly
Table I – Water Quality Monitoring	Varies	Grab	Varies

¹ Individual volumes shall be monitored and all sources of water defined in each monitoring report (e.g., petroleum production leases and operators, irrigation well names, and surface water sources).

² Acre-feet per day.

³ Metered or alternatively calculated by the Discharger based on pump efficiencies or weir observations.

⁴ Individual volumes shall be monitored and all locations where blended produced wastewater is discharged to land shall be defined in each monitoring report.

⁵ The blending ratio shall be calculated using the sum of blending water and produced wastewater that are mixed.

CHEMICAL AND ADDITIVE MONITORING

The Discharger shall monitor all chemicals and additives used during petroleum exploration, production, and/or treatment that have the potential to be in produced wastewater used for irrigation. The Discharger is responsible for reporting all chemicals and additives, including those that may have entered produced wastewater prior to being discharged to the Kern Front No. 2 Treatment Facility. The Discharger shall provide the following:

<u>Requirement</u>	<u>Frequency</u>
A list of all chemicals and additives used.	Quarterly
The volume and mass of each chemical and additive used in gallons and kilograms.	Quarterly
A list of the leases and facilities where the chemicals and additives are being used.	Quarterly
Safety data sheets for each chemical and/or additive.	Annually

SOLID WASTE MONITORING

The Discharger shall monitor the generation and use of solid wastes, including sludge, generated at the Facility from activities, such as tank or pond maintenance. Solid waste volumes, disposal

methods, disposal facilities, and analytical results from waste characterization shall be reported in the subsequent quarterly and annual monitoring reports.

The Discharger shall provide the volumes and destination, including facility permit numbers, for all solid wastes, including hazardous wastes that are disposed of off-site.

The disposal of solid waste on-site requires the submittal of a Solid Waste Management Plan for review and approval by the Central Valley Water Board. At a minimum, the Solid Waste Management Plan shall include the information below.

1. Sampling frequencies,
2. Average volume of solid waste generated annually,
3. Solid waste criteria for on-site disposal (e.g., non-hazardous and not within 100 feet of a surface waterways),
4. Disposal method(s) and procedures,
5. Disposal location(s), and
6. Reporting requirements.

Prior to the disposal of solid waste on-site, the Solid Waste Management Plan must be approved, in writing, by the Central Valley Water Board. Modifications to the Solid Waste Management Plan need to be submitted in an addendum report that requires written approval by the Central Valley Water Board prior to implementation. On-site solid waste monitoring shall consist of the reporting requirements specified in the approved Solid Waste Management Plan.

IRRIGATION WATER MONITORING

The Discharger shall monitor the volumes of fluid discharged to Cawelo Water District for use as irrigation. Monitoring shall include at least the following:

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>	<u>Frequency</u>
Volume ¹ of Produced Wastewater	Gallons	Calculated	Monthly
Volume ¹ of Blending Water	Gallons	Calculated	Monthly
Blending Ratio ²	-	Calculated	Monthly
Area of Cropland Receiving Blended Water	Acres	Calculated	Monthly

¹ Volumes shall be monitored and all sources of water defined in each monitoring report (e.g., petroleum companies, petroleum leases, irrigation well names, and surface water sources).

² The blending ratio shall be calculated using the sum of blending water and produced wastewater that are mixed and used for irrigation.

GROUNDWATER WELL SURVEY

The Discharger shall conduct a well survey to identify all water supply wells within one mile of Reservoir B, Kern Front No. 2 Treatment Facility, and Famoso Basins. **Within 90 days** of the

signature date of this MRP, the Discharger shall submit a technical report that includes at least the following:

1. The location and designated use for all water supply wells within one mile of these system components.
2. Analytical results for all domestic water supply wells within 0.25 miles of these system components. Analytical results shall consist of the constituents identified in Table II of this MRP.
3. A proposed schedule for collecting water samples from all domestic water supply wells within one mile of these system components. The proposed time schedule shall be based on the groundwater results, required in Item 2 of this section, and other relevant data that may indicate water supply wells near these system components are threatened by the discharge of produced wastewater or blended produced wastewater to land.

GROUNDWATER MONITORING WELL NETWORK INSTALLATION

A Monitoring Well Installation and Sampling Plan (MWISP) shall be submitted **within 90 days** of the signature date of this MRP for the Kern Front No. 2 Treatment Facility and Reservoir B. If the Discharger demonstrates, in the MWISP, that the wastes discharged to the ponds cannot affect the quality of groundwater, the Executive Officer may rescind by signed letter all or part of the requirements to complete the groundwater investigation and groundwater monitoring portions of this Order.

At a minimum, the MWISP shall include the information below.

General Information:

1. Topographic map showing any existing nearby (about 2,000 feet) domestic, irrigation, and municipal supply wells and monitoring wells known to the Discharger, utilities, surface water bodies, drainage courses and their tributaries/destinations, and other major physical and man-made features, as appropriate.
2. Site plan showing proposed well locations, other existing wells, unused and/or abandoned wells, major physical site structures, any waste handling facilities, irrigated cropland and pasture, and on-site surface water features.
3. Rationale for the number of proposed monitoring wells, their locations and depths, and identification of anticipated depth to groundwater.
4. Local permitting information (as required for drilling, well seals, boring/well abandonment).
5. Drilling details, including methods and types of equipment for drilling and logging activities. Equipment decontamination procedures (as appropriate) should be described.
6. Health and Safety Plan.

Proposed Drilling Details:

1. Drilling techniques.
2. Well logging method.
3. Proposed Monitoring Well Design - all proposed well construction information must be displayed on a construction diagram or schematic to accurately identify the following:
4. Well depth.

5. Borehole depth and diameter.
6. Well construction materials.
7. Casing material and diameter – include conductor casing, if appropriate.
8. Location and length of perforation interval, size of perforations, and rationale.
9. Location and thickness of filter pack, type and size of filter pack material, and rationale.
10. Location and thickness of bentonite seal.
11. Location, thickness, and type of annular seal.
12. Surface seal depth and material.
13. Type of well cap(s).
14. Type of well surface completion.
15. Well protection devices (such as below-grade water tight-vaults, locking steel monument, bollards, etc.).

Proposed Monitoring Well Development:

1. Schedule for development (not less than 48 hours or more than 10 days after well completion).
2. Method of development.
3. Method of determining when development is complete.
4. Parameters to be monitored during development.
5. Method for storage and disposal of development water.

Proposed Surveying:

1. How horizontal and vertical position of each monitoring well will be determined.
2. The accuracy of horizontal and vertical measurements to be obtained.
3. The California licensed professional (licensed land surveyor or civil engineer) to perform the survey.

Proposed Groundwater Monitoring:

1. Schedule (at least 48 hours after well development).
2. Depth to groundwater measuring equipment (e.g., electric sounder or chalked tape capable of ± 0.01 -foot measurements).
3. Well purging method, equipment, and amount of purge water.
4. Sample collection (e.g., bottles and preservation methods), handling procedures, and holding times.
5. Quality assurance/quality control (QA/QC) procedures (as appropriate).
6. Analytical procedures.
7. Equipment decontamination procedures (as appropriate).

Proposed Schedule:

1. Fieldwork.
2. Laboratory analyses.
3. Report submittal.

MONITORING WELL INSTALLATION COMPLETION REPORT

Within **90 days** of installation of the groundwater monitoring system, a Monitoring Well Installation Completion Report (MWICR) shall be submitted. At a minimum, the MWICR shall summarize the field activities as described below.

General Information:

1. Brief overview of field activities including well installation summary (such as number, depths), and description and resolution of difficulties encountered during field program.
2. Topographic map showing any existing nearby domestic, irrigation, and municipal supply wells and monitoring wells, utilities, surface water bodies, drainage courses and their tributaries/destinations, and other major physical and man-made features.
3. Site plan showing monitoring well locations, other existing wells, unused and/or abandoned wells, major physical site structures, any waste handling facilities, and on-site surface water features.
4. Period of field activities and milestone events (e.g., distinguish between dates of well installation, development, and sampling).

Monitoring Well Construction:

1. Number and depths of monitoring wells installed.
2. Monitoring well identification (i.e., numbers).
3. Date(s) of drilling and well installation.
4. Description of monitoring well locations including field-implemented changes (from proposed locations) due to physical obstacles or safety hazards.
5. Description of drilling and construction, including equipment, methods, and difficulties encountered (such as hole collapse, lost circulation, need for fishing).
6. Name of drilling company, driller, and logger (site geologist to be identified).
7. As-built for each monitoring well with the following details:
 - i. Well identification.
 - ii. Total borehole and well depth.
 - iii. Date of installation.
 - iv. Boring diameter.
 - v. Casing material and diameter (include conductor casing, if appropriate).
 - vi. Location and thickness of slotted casing, perforation size.
 - vii. Location, thickness, type, and size of filter pack.
 - viii. Location and thickness of bentonite seal.
 - ix. Location, thickness, and type of annular seal.
 - x. Depth of surface seal.
 - xi. Type of well cap.
 - xii. Type of surface completion.
 - xiii. Depth to water (note any rises in water level from initial measurement) and date of measurement.
 - xiv. Well protection device (such as below-grade water tight vaults, stovepipe, bollards, etc.).
8. All depth to groundwater measurements during field program.
9. Field notes from drilling and installation activities (i.e., all subcontractor dailies, as appropriate).

10. Construction summary table of pertinent information such as date of installation, well depth, casing diameter, screen interval, bentonite seal interval, and well elevation.

Monitoring Well Development:

1. Date(s) and time of development.
2. Name of developer.
3. Method of development.
4. Methods used to identify completion of development.
5. Development log: volume of water purged and measurements of temperature, pH and electrical conductivity during and after development.
6. Disposition of development water.
7. Field notes (such as bailing to dryness, recovery time, number of development cycles).

Monitoring Well Survey:

1. Identify coordinate system or reference points used.
2. Description of measuring points (i.e., ground surface, top of casing, etc.).
3. Horizontal and vertical coordinates of well casing with cap removed.
4. Name, license number, and signature of California licensed professional who conducted survey.
5. Surveyor's field notes.
6. Tabulated survey data.

GROUNDWATER MONITORING

The Discharger shall collect and analyze water samples from the groundwater monitoring systems at the Famoso Basins, Reservoir B, and Kern Front No. 2 Treatment Facility. Existing monitoring well networks shall comply with this section of the MRP upon the issuance date of this MRP. Compliance with this section of the MRP for individuals monitoring wells, constructed after the implementation date of this MRP, shall begin on the first day of the month following the well completion date.

Groundwater samples shall be representative of first encountered groundwater at each system component. After measuring water levels and prior to collecting samples, each groundwater well shall be adequately purged to remove water that has been standing within the well screen and casing that may not be chemically representative of formation water. Depending on the hydraulic conductivity of the geologic setting, the volume removed during purging is typically from 3 to 5 volumes of the standing water within the well casing and screen, or additionally the filter pack pore volume. A proposal for the use of alternative methods for collecting groundwater samples may be submitted to the Central Valley Water Board for review and approval.

The following wells, which are shown on Attachment D of the WDRs, shall be used in the required assessment for the Famoso Basins.

Well I.D. No	Township and Range, MDB&M	Approximate Distance from the Famoso Basins, miles
17D	T27S R26E	0.25 miles south
7F	T27S R26E	0.5 miles west
6P1	T27S R26E	0.5 miles west northwest
18E	T27S R26E	1 mile west southwest
18N2	T27S R26E	1.3 miles southwest
12R	T27S R25E	1.1 miles west

The Discharger shall monitor groundwater wells for the following:

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>	<u>Frequency</u>
Depth to groundwater	Feet ¹	Measured	Quarterly
Groundwater elevation	Feet	Calculated	Quarterly
Table II – Groundwater Quality Monitoring	Varies	Grab	Quarterly

¹ Recorded to one hundredth of a foot

Within 30 days of notification that permission to sample a well(s) is denied, or a well(s) has been damaged, the Discharger shall submit for review and approval by Central Valley Water Board staff a report that either: (1) demonstrates that a reduction in the number of monitoring wells will not impair the ability to clearly and accurately assess potential groundwater impacts, or (2) proposes the installation of a new monitoring well(s) to offset the well(s) that is no longer able to be sampled.

FACILITY MONITORING

Markers shall be in place with calibrations indicating the water level at design capacity and available operational freeboard. The freeboard shall be monitored at the ponds and reservoir to the nearest tenth of a foot monthly and results included in the quarterly report.

Annually, prior to the anticipated rainy season, but no later than 30 September, the Discharger shall conduct an inspection of the facility. The inspection shall assess repair and maintenance needed for: oil booms; drainage control systems; slope failure; any change in site conditions that could impair the integrity of the waste management unit or precipitation and drainage control structures; and shall assess preparedness for winter conditions including, but not limited to, erosion and sedimentation control. The Discharger shall take photos of any problem areas before and after repairs. Any necessary construction, maintenance, or repairs shall be completed by 31 October. Annual facility inspection reporting shall be submitted by 30 November.

The Discharger shall inspect all precipitation, diversion, and drainage facilities for damage within 7 days following major storm events (e.g., a storm that causes continual runoff for at least one hour) capable of causing flooding, damage, or significant erosion. The Discharger shall take photos of any problem areas before and after repairs. Necessary repairs shall be completed within 30 days of the inspection.

REPORTING REQUIREMENTS

All monitoring results shall be reported in Quarterly Monitoring Reports which are due by the first day of the second month after the calendar quarter. Therefore, monitoring reports are due as follows:

First Quarter Monitoring Report: 1 May
Second Quarter Monitoring Report: 1 August
Third Quarter Monitoring Report: 1 November
Fourth Quarter Monitoring Report: 1 February

A transmittal letter shall accompany each monitoring report. The transmittal letter shall discuss any violations that occurred during the reporting period and all actions taken or planned for correcting violations, such as operation or facility modifications. If the Discharger has previously submitted a report describing corrective actions or a time schedule for implementing the corrective actions, reference to the previous correspondence is satisfactory. **Reports shall be submitted whether or not there is a discharge.**

The following information is to be included on all monitoring reports, as well as report transmittal letters:

Cawelo Water District and Valley Water Management Company
Produced Wastewater Reclamation Project
Kern Front No. 2 Treatment Facility
Monitoring and Reporting Program Order No. R5-2012-0059
GeoTracker Site Global ID: T10000007744

In reporting monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible for all historical and current data. The data shall be summarized in such a manner that illustrates clearly, whether the Discharger complies with waste discharge requirements.

In addition to the details specified in Standard Provision C.3, monitoring information shall include the MDL and the Reporting limit (RL) or PQL. If the regulatory limit for a given constituent is less than the RL (or PQL), then any analytical results for that constituent that are below the RL (or PQL) but above the MDL shall be reported and flagged as estimated.

If the Discharger monitors any pollutant at the locations designated herein more frequently than is required by this Order, the results of such monitoring shall be included in the calculation and reporting of the values required in the quarterly monitoring reports. Such increased frequency shall be indicated on the quarterly monitoring reports.

Monitoring reports submitted by the Discharger may include reports, in the appendix, prepared by a third party that discharges produced wastewater to the Kern Front No. 2 Treatment Facility. Failure to comply with the requirements of this MRP via the Discharger's monitoring report or third party report in the appendix shall result in the rejection of the monitoring report. The Discharger is responsible for satisfying all requirements of this MRP and verifying that all information included in the monitoring report is true and accurate of the discharge.

In preparing monitoring reports, the Discharger shall comply with the signatory requirements in Standard Provision B.3. All monitoring reports that involve planning, investigation, evaluation, or design, or other work requiring interpretation and proper application of engineering or geologic sciences, shall be prepared by or under the direction of persons registered to practice in California pursuant to California Business and Professions Code sections 6735, 7835, and 7835.1.

The Discharger shall submit electronic copies of all work plans, reports, analytical results, and groundwater elevation data over the Internet to the State Water Board Geographic Environmental Information Management System database (GeoTracker) at http://www.waterboards.ca.gov/ust/electronic_submittal/index.shtml.

Frequently asked questions for GeoTracker can be found at http://www.waterboards.ca.gov/ust/electronic_submittal/docs/faq.pdf.

Electronic submittals shall comply with GeoTracker standards and procedures, as specified on the State Water Board's website. Uploads to GeoTracker shall be completed on or prior to the due date. In addition, a copy of each document shall be sent via electronic mail to CentralValleyFresno@waterboards.ca.gov. Include a copy of the transmittal letter. Laboratory reports submitted in compliance with this MRP shall be accompanied by an Excel file that includes the analytical data found in the laboratory report. Excel files shall be either generated by the laboratory or compiled by the Discharger. At a minimum, the Excel file shall include the constituent name, sample location, sample name, sample date, analysis date, analytical method, result, unit, MDL, RL, and dilution factor. If reports are 50 MB or more, they shall be transferred to a disk and mailed to 1685 E Street, Fresno, CA 93706.

A. All Quarterly Monitoring Reports shall include the following:

Produced Wastewater Reporting:

1. Tabular summary of current and historical flow and analytical results for Produced Wastewater Monitoring as specified on pages 2 and 3.

Chemical and Additive Reporting:

1. Identify all chemicals and additives that have the potential to be in produced wastewater discharged to Reservoir B.
2. Tabular summary of the volume and mass of chemicals and additives each quarter and total volume and mass for that calendar year.
3. List all leases and facilities that chemicals and additives may be introduced into produced wastewater.

Solid Waste Reporting:

1. Tabular summary of current and historical results as specified on pages 3 and 4.
2. Waste manifests or documentation for all off-site solid waste disposals.
3. Tabular summary of current and historical results as specified in the approved Solid Waste Management Plan.

Irrigation Water Reporting:

1. Tabular summary of current and historical volumes of water discharged to Reservoir B and Cawelo Water District's distribution network as specified on page 3.

2. Identify the total cropland that receives blended produced wastewater for irrigation.

Groundwater Reporting:

1. The results of groundwater monitoring specified on pages 7 and 8.
2. For each monitoring well, a tabular summary of current and historical concentrations.
3. A groundwater contour map based on groundwater elevations for that quarter. The map shall show the gradient and direction of groundwater flow under/around the Famoso Basins, Reservoir B, and Kern Front No. 2 Treatment Facility. The map shall also include the locations of monitoring wells, wastewater storage facilities, and application areas of blended produced wastewater used for irrigation.

- B. **Fourth Quarter Monitoring Reports**, in addition to the above, by 1 February of each year, the Discharger shall submit a written report to the Executive Officer containing the following:

Facility information:

1. The names and general responsibilities of all persons employed to operate the produced wastewater treatment systems.
2. The names and telephone numbers of persons to contact regarding the Facility for emergency and routine situations.
3. A statement certifying when the flow meters and other monitoring instruments and devices were last calibrated, including identification of who performed the calibration (Standard Provision C.4).
4. A summary of all spills/releases, if any, that occurred during the year, tasks undertaken in response to the spills, and the results of the tasks undertaken.
5. A summary of all leases and facilities that generated produced wastewater that was discharged to Cawelo Water District's Reservoir B.
6. A summary (i.e., flow diagram, or description) that clearly illustrates all processes and locations for produced wastewater during extraction, treatment, storage, and disposal.
7. A map of the following:
 - Facility within the oil field,
 - Facility(s)/lease(s) boundaries,
 - Produced wastewater distribution network, and
 - Distribution network for blended produced wastewater.

Produced Wastewater Reporting:

1. Tabular summary of current and historical total annual flow for Produced Wastewater Monitoring as specified on pages 2 and 3.

Irrigation Water Reporting

1. Tabular summary of the current and historical average annual blending ratios.

Chemical and additive reporting:

1. Safety Data Sheets for all chemicals and additives that are identified in quarterly monitoring reports for that respective calendar year.
2. Tabular summary of current and historical annual volume and mass for all chemicals and additives.
3. Summary that identifies if any chemicals and additives were detected in produced wastewater.

Requesting Administrative Review by the State Water Board. Any person aggrieved by an action of the Central Valley Water Board that is subject to review as set forth in Water Code section 13320(a), may petition the State Water Board to review the action. Any petition must be made in accordance with Water Code section 13320 and California Code of Regulations, title 23, section 2050 and following. The State Water Board must receive the petition within thirty (30) days of the date the action was taken, except that if the thirtieth day following the date the action was taken falls on a Saturday, Sunday, or state holiday, then the State Water Board must receive the petition by 5:00 p.m. on the next business day. Copies of the laws and regulations applicable to filing petitions may be found on the internet at http://www.waterboards.ca.gov/public_notices/petitions/water_quality/index.shtml or will be provided upon request.

Modifications. Any modification to this Monitoring and Reporting Program shall be in writing and approved by the Assistant Executive Officer, including any extensions. Any written extension request by the Discharger shall include justification for the delay.

The Discharger shall implement the above monitoring program on the first day of the month following adoption of this MRP.

Ordered by:


- For -

PAMELA C. CREEDON, Executive Officer

3/22/2017

(Date)

Table I – Water Quality Monitoring

<u>Parameters</u>	<u>Units</u>	<u>Monitoring Frequency</u>	<u>US EPA or other Method</u> ¹⁰	<u>Reporting Frequency</u>
<u>Field Parameters</u>				
Temperature	°F ¹	Monthly	Meter	Quarterly
Electrical Conductivity	µmhos/cm ²	Monthly	Meter	Quarterly
pH	pH units	Monthly	Meter	Quarterly
<u>Monitoring Parameters</u>				
Total Dissolved Solids (TDS)	mg/L ³	Monthly	160.1	Quarterly
Total Suspended Solids (TSS)	mg/L	Monthly	160.2	Quarterly
Electrical Conductivity	µmhos/cm	Monthly	2510B	Quarterly
Total Organic Carbon (TOC)	mg/L	Monthly	415.3	Quarterly
Boron, dissolved	mg/L	Monthly	6010B	Quarterly
<u>Standard Minerals</u>				
Alkalinity as CaCO ₃	mg/L	Monthly	310.1	Quarterly
Bicarbonate Alkalinity as CaCO ₃	mg/L	Monthly	310.1	Quarterly
Carbonate Alkalinity as CaCO ₃	mg/L	Monthly	310.1	Quarterly
Hydroxide Alkalinity as CaCO ₃	mg/L	Monthly	310.1	Quarterly
Sulfate, dissolved	mg/L	Monthly	300.0	Quarterly
Nitrate N, dissolved	mg/L	Monthly	300.0	Quarterly
Calcium, dissolved	mg/L	Monthly	6010B	Quarterly
Magnesium, dissolved	mg/L	Monthly	6010B	Quarterly
Sodium, dissolved	mg/L	Monthly	6010B	Quarterly
Potassium	mg/L	Monthly	6010B	Quarterly
Chloride	mg/L	Monthly	300.0	Quarterly
<u>PAHs</u> ⁴	µg/L ⁵	Quarterly	8270	Quarterly
<u>Total Petroleum Hydrocarbons (TPH)</u>	µg/L	Quarterly	418.1	Quarterly
<u>Volatile Organic Compounds</u>				
Full Scan	µg/L	Bi-Monthly ⁶	8260B	Quarterly
<u>Stable Isotopes</u>				
Oxygen (¹⁸ O)	o/oo ⁷	Quarterly	900.0	Quarterly
Deuterium (Hydrogen 2, ² H, or D)	o/oo	Quarterly	900.0	Quarterly
<u>Radionuclides</u>				
Radium 226	pCi/L ⁸	Quarterly	SM ⁹ 7500 Ra	Quarterly
Radium 228	pCi/L	Quarterly	SM 7500 Ra	Quarterly
Gross Alpha particle (excluding radon and uranium)	pCi/L	Quarterly	SM 7110	Quarterly
Uranium	pCi/L	Quarterly	200.8	Quarterly

Table I – Water Quality Monitoring (continued)

<u>Parameters</u>	<u>Units</u>	<u>Monitoring Frequency</u>	<u>US EPA or other Method</u>	<u>Reporting Frequency</u>
<u>Oil and Grease</u>	mg/L	Monthly	1664A	Quarterly
<u>Constituents of Concern</u>				
Lithium	mg/L	Quarterly	200.7	Quarterly
Strontium	mg/L	Quarterly	200.7	Quarterly
Iron	mg/L	Quarterly	200.8	Quarterly
Manganese	mg/L	Quarterly	200.8	Quarterly
Antimony	mg/L	Quarterly	200.8	Quarterly
Arsenic	mg/L	Quarterly	200.8	Quarterly
Barium	mg/L	Quarterly	200.8	Quarterly
Beryllium	mg/L	Quarterly	200.8	Quarterly
Cadmium	mg/L	Quarterly	200.8	Quarterly
Chromium (total)	mg/L	Quarterly	200.8	Quarterly
Chromium (hexavalent)	mg/L	Quarterly	7196A	Quarterly
Cobalt	mg/L	Quarterly	200.8	Quarterly
Copper	mg/L	Quarterly	200.8	Quarterly
Lead	mg/L	Quarterly	200.8	Quarterly
Mercury	mg/L	Quarterly	7470A	Quarterly
Molybdenum	mg/L	Quarterly	200.8	Quarterly
Nickel	mg/L	Quarterly	200.8	Quarterly
Selenium	mg/L	Quarterly	200.8	Quarterly
Silver	mg/L	Quarterly	200.8	Quarterly
Thallium	mg/L	Quarterly	200.8	Quarterly
Vanadium	mg/L	Quarterly	200.8	Quarterly
Zinc	mg/L	Quarterly	200.8	Quarterly
<u>Oil Production and Process Chemicals and Additives</u> ¹⁰	µg/L	Quarterly	As Appropriate ¹¹	Quarterly

¹ Degrees Fahrenheit.

² Micromhos per centimeter.

³ Milligrams per liter.

⁴ Polycyclic aromatic hydrocarbons.

⁵ Micrograms per liter.

⁶ Samples shall be collected every other month.

⁷ Parts per thousand.

⁸ Picocuries per liter.

⁹ Standard Methods.

¹⁰ The Discharger shall provide analytical results for all chemicals and additives used in the production and or processing of all oil and wastewater discharged into surface impoundments or on to the ground surface as described under the Chemical and Additive Monitoring section of the MRP for which there are ELAP approved analyses. For those constituents for which there are not ELAP approved analytical methods, the Discharger shall submit a technical report describing how it intends to address this issue.

¹¹ Appropriate analytical methods may be proposed by the Discharger but are subject to the approval of the Assistant Executive Officer.

Table II – Groundwater Quality Monitoring

<u>Parameters</u>	<u>Units</u>	<u>Monitoring Frequency</u>	<u>US EPA or other Method</u> ¹⁰	<u>Reporting Frequency</u>
<u>Field Parameters</u>				
Temperature	°F ¹	Quarterly	Meter	Quarterly
Electrical Conductivity	µmhos/cm ²	Quarterly	Meter	Quarterly
pH	pH units	Quarterly	Meter	Quarterly
<u>Monitoring Parameters</u>				
Total Dissolved Solids (TDS)	mg/L ³	Quarterly	160.1	Quarterly
Total Organic Carbon (TOC)	mg/L	Quarterly	415.3	Quarterly
Electrical Conductivity	µmhos/cm	Quarterly	2510B	Quarterly
Boron, dissolved	mg/L	Quarterly	6010B	Quarterly
<u>Standard Minerals</u>				
Alkalinity as CaCO ₃	mg/L	Quarterly	310.1	Quarterly
Bicarbonate Alkalinity as CaCO ₃	mg/L	Quarterly	310.1	Quarterly
Carbonate Alkalinity as CaCO ₃	mg/L	Quarterly	310.1	Quarterly
Hydroxide Alkalinity as CaCO ₃	mg/L	Quarterly	310.1	Quarterly
Sulfate, dissolved	mg/L	Quarterly	300.0	Quarterly
Nitrate N, dissolved	mg/L	Quarterly	300.0	Quarterly
Calcium, dissolved	mg/L	Quarterly	6010B	Quarterly
Magnesium, dissolved	mg/L	Quarterly	6010B	Quarterly
Sodium, dissolved	mg/L	Quarterly	6010B	Quarterly
Potassium	mg/L	Quarterly	6010B	Quarterly
Chloride	mg/L	Quarterly	300.0	Quarterly
<u>PAHs</u> ⁴	µg/L ⁵	Quarterly	8270	Quarterly
<u>Total Petroleum Hydrocarbons (TPH)</u>	µg/L	Quarterly	418.1	Quarterly
<u>Volatile Organic Compounds</u>				
Full Scan	µg/L	Quarterly	8260B	Quarterly
<u>Stable Isotopes</u>				
Oxygen (¹⁸ O)	o/oo ⁶	Quarterly	900.0	Quarterly
Deuterium (Hydrogen 2, ² H, or D)	o/oo	Quarterly	900.0	Quarterly
<u>Radionuclides</u>				
Radium 226	pCi/L ⁷	Quarterly	SM ⁸ 7500 Ra	Quarterly
Radium 228	pCi/L	Quarterly	SM 7500 Ra	Quarterly
Gross Alpha particle (excluding radon and uranium)	pCi/L	Quarterly	SM 7110	Quarterly
Uranium	pCi/L	Quarterly	200.8	Quarterly

Table II – Groundwater Quality Monitoring (continued)

<u>Parameters</u>	<u>Units</u>	<u>Monitoring Frequency</u>	<u>US EPA or other Method</u>	<u>Reporting Frequency</u>
<u>Constituents of Concern</u>				
Lithium	mg/L	Quarterly	200.7	Quarterly
Strontium	mg/L	Quarterly	200.7	Quarterly
Iron	mg/L	Quarterly	200.8	Quarterly
Manganese	mg/L	Quarterly	200.8	Quarterly
Antimony	mg/L	Quarterly	200.8	Quarterly
Arsenic	mg/L	Quarterly	200.8	Quarterly
Barium	mg/L	Quarterly	200.8	Quarterly
Beryllium	mg/L	Quarterly	200.8	Quarterly
Cadmium	mg/L	Quarterly	200.8	Quarterly
Chromium (total)	mg/L	Quarterly	200.8	Quarterly
Chromium (hexavalent)	mg/L	Quarterly	7196A	Quarterly
Cobalt	mg/L	Quarterly	200.8	Quarterly
Copper	mg/L	Quarterly	200.8	Quarterly
Lead	mg/L	Quarterly	200.8	Quarterly
Mercury	mg/L	Quarterly	7470A	Quarterly
Molybdenum	mg/L	Quarterly	200.8	Quarterly
Nickel	mg/L	Quarterly	200.8	Quarterly
Selenium	mg/L	Quarterly	200.8	Quarterly
Silver	mg/L	Quarterly	200.8	Quarterly
Thallium	mg/L	Quarterly	200.8	Quarterly
Vanadium	mg/L	Quarterly	200.8	Quarterly
Zinc	mg/L	Quarterly	200.8	Quarterly
<u>Oil Production and Process Chemicals and Additives</u> ⁹	µg/L	Quarterly	As Appropriate ¹⁰	Quarterly

¹ Degrees Fahrenheit.

² Micromhos per centimeter.

³ Milligrams per liter.

⁴ Polycyclic aromatic hydrocarbons.

⁵ Micrograms per liter.

⁶ Parts per thousand.

⁷ Picocuries per liter.

⁸ Standard Methods.

⁹ The Discharger shall provide analytical results for all chemicals and additives used in the production and or processing of all oil and wastewater discharged into surface impoundments or on to the ground surface as described under the Chemical and Additive Monitoring section of the MRP for which there are ELAP approved analyses. For those constituents for which there are not ELAP approved analytical methods, the Discharger shall submit a technical report describing how it intends to address this issue.

¹⁰ Appropriate analytical methods may be proposed by the Discharger but are subject to the approval of the Assistant Executive Officer.

**Regional Water Quality Control Board
Central Valley Region**

**Response to Written Comments for the Kern Front No. 2 Treatment Facility,
Revised Monitoring and Reporting Program Order No. R5-2012-0059**

Central Valley Regional Water Quality Control Board (Central Valley Water Board) staff made the draft Revised Monitoring and Reporting Program Order No. R5-2012-0059 (MRP) available, as a courtesy, to Valley Water Management Company (Valley Water) and Cawelo Water District (Cawelo) on 25 July 2016. The Kern Front No. 2 Treatment Facility is regulated under Waste Discharge Requirements Order No. R5-2012-0059. On 22 August and 23 August 2016, Valley Water and Cawelo (respectively) submitted comments on the draft MRP.

Comments from Valley Water and Cawelo are summarized in the appropriate sections below, followed by responses from Central Valley Water Board staff. Based on the comments, Central Valley Water Board staff has made some minor changes to the final MRP. Staff also made a few minor changes to improve clarity and fix typographical errors. Where specific changes are presented below, additions are in bold text and deletions are in strikeout.

VALLEY WATER MANAGEMENT COMPANY (VALLEY WATER)

COMMENT No. 1: Valley Water states that Bellaire Oil Company and California Resources Production Corporation are not identified in the WDRs and should not be included in the MRP.

RESPONSE: Central Valley Water Board staff removed California Resources Production Corporation and Bellaire Oil Company from the following sections from the MRP: Introduction, Chemical and Additive Monitoring, and Reporting Requirements.

COMMENT No. 2: Valley Water notes that it has historical monitoring data and asks if past data can be used to reduce the monitoring frequency.

RESPONSE: Yes, historical monitoring data may be used to request changes in the MRP. Valley Water did not submit historical monitoring data, or request to modify the list of monitoring constituents or their monitoring frequencies with its comments; therefore, no changes have been made to the MRP in response to this comment.

COMMENT No. 3: Valley Water and Cawelo do not have access to chemicals and additives used during petroleum exploration and production and, therefore, should not be required to report this information in monitoring reports.

RESPONSE: Valley Water is responsible for produced wastewater accepted at the Kern Front No. 2 Treatment Facility; Valley Water and Cawelo are responsible for blended produced wastewater distributed across Cawelo for irrigation. As such, Valley Water and Cawelo have an obligation and are responsible for the characterization of waste discharged to land under Waste Discharge Requirements Order No. R5-2012-0059. A complete characterization of produced wastewater cannot be made without the identification and quantification of chemicals and additives from petroleum production and exploration that may be in the waste stream accepted at the Kern Front No. 2 Treatment Facility. It is the responsibility of Cawelo and Valley Water to provide the information necessary to adequately characterize the discharge of waste to land authorized under the WDRs. No changes have been made to the MRP in response to this comment.

COMMENT No. 4: Valley Water states the required record retention period for documents is three years, not five years.

RESPONSE: California Water Code section 13263.2 requires Dischargers that treat groundwater that qualifies as a hazardous waste to retain records for three years. This requirement does not apply to the facilities regulated under the WDRs and does not limit the Central Valley Water Board's authority to require a greater record retention period. Under section 13267 of the California Water Code, the Central Valley Water Board has the authority to issue Monitoring and Reporting Programs that are protective of groundwater quality. Central Valley Water Board staff finds the requirement to retain records for five years adequate for verification that the discharge is in compliance with the WDRs and protective of groundwater quality. No changes have been made to the MRP for this comment.

COMMENT No. 5: Valley Water suggests that "effluent" be changed to "produced water" in the MRP.

RESPONSE: The Oil Field Wastewater section of the Water Quality Control Plan for the Tulare Lake Basin, second edition, uses the term "produced wastewater." The final MRP has been modified to change "effluent" to "produced wastewater."

COMMENT No. 6: Valley Water states solid waste is not adequately defined.

RESPONSE: Central Valley Water Board staff has modified the introduction of the Solid Waste Monitoring section of the MRP to read as follows:

The Discharger shall monitor the generation and use of solid wastes, including sludge, generated at the Facility from activities, such as tank or pond maintenance. Solid waste volumes, disposal methods, disposal facilities, and analytical results from waste characterization shall be reported in the subsequent quarterly and annual monitoring reports.

~~Solid waste generated at the Facility, such as tank or surface impoundment maintenance, shall be characterized for disposal. Non-hazardous solid wastes may be disposed of on-site as road or berm construction material, for instance, if such disposal does not pose a threat to water quality.~~

COMMENT No. 7: Valley Water states that waste characterization should not be required for all types of waste generated at the facility (i.e., trash).

RESPONSE: See response to Comment No. 6.

COMMENT No. 8: Valley Water states the requirement to identify water supply wells within one mile of each facility and collect water samples, prior to supporting evidence that a plume exists beneath either facility, is premature. Valley Water requests that the groundwater well survey is deferred until monitoring wells are installed and there is evidence of a plume.

RESPONSE: The Groundwater Well Survey section of the final MRP has been modified to read as follows:

The Discharger shall conduct a well survey to identify all water supply wells within one mile of Reservoir B, Kern Front No. 2 Treatment Facility, and Famoso Basins. Within 90 days of the signature date of this MRP, the Discharger shall submit a technical report that includes at least the following:

- 1. The location and designated use for all water supply wells within one mile of these system components.**
- 2. Analytical results for all domestic water supply wells within 0.25 miles of these system components. Analytical results shall consist of the constituents identified in Table II of this MRP.**
- 3. A proposed schedule for collecting water samples from all domestic water supply wells within one mile of these system components. The proposed time schedule shall be based on the groundwater results, required in Item 2 of this section, and other relevant data that may indicate water supply wells near these system components are threatened by the discharge of produced wastewater or blended produced wastewater to land.**

~~The Discharger shall conduct a well survey to identify all water supply wells within one mile of Reservoir B, Kern Front No. 2 Treatment Facility, and Famoso Basins. Domestic water supply wells that are within 0.25 miles of these system components shall be sampled and analyzed for the constituents identified in Table II. Within 90 days of the signature date of this MRP, the Discharger shall submit a technical report that includes the locations of all water supply wells within one mile of these system components and analytical results for constituents identified in Table II.~~

~~Domestic water supply samples shall be representative of the groundwater source for that specific well. Detection limits shall be equal to or more precise than USEPA methodologies. Analysis with an MDL greater than the most stringent drinking water standard that results in non-detection needs to be reanalyzed with the MDL set lower than the drinking water standard or at the lowest level achievable by the laboratory. If access to private property is requested and denied, a demonstration of that is to be submitted to the Central Valley Water Board for review.~~

COMMENT No. 9: The Reporting Requirements specify that a transmittal letter shall accompany each monitoring report and shall discuss any violations that occurred during the reporting period. Valley Water states that “violation” is a term of art and should not be defined as such until a hearing has determined there are no excuses or exceptions for the “violation.” Valley Water requests that “exceedances of applicable effluent or groundwater limitations or other instances of non-compliance” be included in the MRP in lieu of “violations.”

RESPONSE: Central Valley Water Board staff does not agree with Valley Water’s conclusion. No changes have been made to the MRP for this comment.

COMMENT No. 10: Valley Water states that the requirement to include the method detection limits (MDLs) and reporting limits (RLs) is discussed in the Effluent Monitoring and the Reporting Requirements sections of the MRP. One of the sections should remove this language to prevent duplicate information.

RESPONSE: The Effluent Monitoring and Reporting Requirements sections of the MRP require the Discharger to complete unique monitoring/reporting requirements regarding MDLs and RLs. Central Valley Water Board staff does not agree that the language from these sections need to be modified to prevent duplicate information in the MRP. No changes have been made to the MRP for this comment.

COMMENT No. 11: Valley Water does not have the authority to require California Resources Production Corporation or Bellaire Oil Company to provide chemicals and additives that are used during petroleum production. In addition, Valley Water and Cawelo would not be able to certify that the

information provided was true and accurate. The Central Valley Water Board should issue an individual Monitoring and Reporting Program or 13267 Order for the collection of this data.

RESPONSE: See response to Comment No. 3.

COMMENT No. 12: Effluent Reporting requirements for quarterly and fourth quarter monitoring reports appear to require the same information.

RESPONSE: Central Valley Water Board staff does not agree that both sections require the same information. The Effluent Reporting section states that quarterly monitoring reports shall include current and historical continuous and monthly flows for each discharge location. Effluent Reporting for fourth quarter monitoring reports require the submittal of current and historical annual flows for each discharge location. No changes have been made to the MRP for this comment.

COMMENT No. 13: Valley Water is concerned regarding the monitoring requirement for Total Suspended Solids and Total Organic Carbon. These constituents are either not required in the general order, or do not require analysis in groundwater monitoring.

RESPONSE: Produced water from the Kern Front No. 2 Treatment Facility is discharged to Reservoir B for disposal via irrigation. To monitor the quality of water used for irrigation, total suspended solid and total organic carbon are included in the MRP. This requirement has been included in the draft General Orders expected to go in front of the Board in 2017. No changes have been made to the MRP for this comment.

COMMENT No. 14: Valley Water requests a reduction in the monitoring frequency for Constituents of Concern that yield non-detect results for four sampling events.

RESPONSE: See response to Comment No. 2.

CAWELO WATER DISTRICT (CAWELO)

COMMENT No. 1: The MRP should only include legal entities identified in the WDRs. Bellaire Oil Company and California Resources Production Corporation should not be included in the MRP for the Kern Front No. 2 Treatment Facility.

RESPONSE: See the response to Valley Water's Comment No. 1.

COMMENT No. 2: Solid waste is not adequately defined in the MRP. Solid waste monitoring requirements need to be adequately defined for all facilities and parties.

RESPONSE: See the response to Valley Water's Comment No. 6.

COMMENT No. 3: The MRP requires a groundwater investigation report for Reservoir B, which is located adjacent to active oil field operations in the Poso Creek Oil Field. Data collected from groundwater monitoring wells is unlikely to yield results that would differentiate between field operations located adjacent to the property, and the discharge of produced wastewater to Reservoir B.

RESPONSE: The Groundwater Monitoring Well Network Installation section of the MRP states that the Discharger may submit a technical report to the Central Valley Water Board that adequately demonstrates that waste discharged to the ponds cannot impact underlying groundwater quality. Upon review by the Central Valley Water Board, the Discharger shall receive written notification that, either, the groundwater investigation requirements have been rescinded, or the Central Valley Water Board does not agree with the findings in the technical report. The submittal of a technical report provides Cawelo the opportunity to seek recession of the groundwater investigation requirements in the MRP. No changes have been made to the MRP for this comment.

COMMENT No. 4: Cawelo states that monitoring groundwater elevation to one hundredth of a foot is not attainable and is more stringent of a requirement than other regulatory programs at the Central Valley Water Board.

RESPONSE: Virtually all the regulatory programs of the Central Valley Water Board require groundwater elevation to be measured to one hundredth of a foot. This requirement has become standard and devices are available for wells as deep as 1,000 feet. No changes have been made to the MRP for this comment.

COMMENT No. 5: Cawelo is concerned that drinking water standards for the minimum detection limit are too stringent for the analysis of produced wastewater. Produced wastewater discharged to Reservoir B is used for irrigation, not drinking water. Standards for analysis should follow procedures that are identified for irrigation water practices, not potable water uses.

RESPONSE: The Effluent Monitoring section of the draft MRP requires MDLs to be at or below drinking water standards for all non-detect results. The Central Valley Water Board uses drinking water standards to evaluate the quality of produced wastewater. Produced wastewater applied to land for irrigation has the potential to migrate to groundwater designated for municipal and industrial beneficial uses in the Water Quality Control Plan for the Tulare Lake Basin, Second Edition. Non-detectable results that have MDLs above drinking water standards do not yield results that can be used to assess whether the discharge may adversely affect the designated beneficial uses of groundwater. Drinking water standards for produced wastewater are appropriate. No changes have been made to the MRP for this comment.

COMMENT No. 6: Discharge 002 in the WDRs and Waste Discharge Requirements Order No. R5-2012-0058 are the same location. Cawelo requests that analytical results from a single sampling event be permitted in the monitoring reports for each set of Waste Discharge Requirements.

RESPONSE: The Produced Wastewater Monitoring section of the draft MRP requires a grab sample from Discharge 002 at various monitoring frequencies. If one sample from Discharge 002 is analyzed for all requirements in each of the Effluent Monitoring sections, analytical results may be submitted in corresponding monitoring reports to comply with each Monitoring and Reporting Program. No changes have been made to the MRP for this comment.

COMMENT No. 7: Cawelo requests calculated flow measurements at Discharge 002 in lieu of metered.

RESPONSE: The draft MRP requires the flow at Discharge 002 to be calculated daily. No changes have been made to the MRP for this comment.

COMMENT No. 8: The MRP states that a reduction of the monitoring frequency may be approved, upon submittal of a technical report that includes a statistically significant number of sampling events that show no significant variation in magnitude of a constituent concentration. Cawelo requests a definition for a statistically number of sampling events for requesting a reduction in the monitoring frequency.

RESPONSE: The introduction of the draft Revised MRP states that the monitoring frequency may be reduced upon submittal of a technical report demonstrating, with a statistically significant number of sampling events, that such a reduction is appropriate. Upon submittal of a technical report for reducing the monitoring frequency, the licensed professional drafting the technical report shall make a demonstration that the number of sampling events available is statistically significant. No changes have been made to the MRP for this comment.

COMMENT No. 9: Groundwater monitoring at wells that are not owned by Cawelo, Valley Water, or Chevron USA, Inc., have relied on limited analysis and monitoring frequency. If any of the parties are denied access to sample the monitoring wells, Cawelo requests that the parties not be deemed non-compliant. Cawelo will use all reasonable efforts to sample the wells and work with the Central Valley Water Board to address potential groundwater monitoring deficiencies.

RESPONSE: The last paragraph of the Groundwater Monitoring section of the MRP identifies the responsibilities of the Discharger in the event that permission to sample a well(s) is revoked or denied. No changes have been made to the MRP for this comment.