CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

REVISED MONITORING AND REPORTING PROGRAM R5-2011-0046
FOR
CHEMICAL WASTE MANAGEMENT, INC.
FOR
POST-CLOSURE MAINTENANCE AND CORRECTIVE ACTION
BAKERSFIELD FACILITY
KERN COUNTY

Compliance with this revised Monitoring and Reporting Program (MRP), Title 27, California Code of Regulations, Division 2, Subdivision 1, Section 20005 and following (hereafter Title 27), and with the Standard Provisions and Reporting Requirements for Title 27 (27 CCR §20005, et seq.) dated September 2003, is ordered by Waste Discharge Requirements (WDRs) Order No. R5-2011-0046.

Failure to comply with this revised Program, or with the Standard Provisions and Reporting Requirements, constitutes noncompliance with the WDRs and the California Water Code, which can result in the imposition of civil monetary liability.

A. REQUIRED REPORTS

	Report	Due
1.	Groundwater Monitoring (Section D.1)	**Annually**
2.	Leachate Monitoring (Section D.2)	**Semiannually**
3.	Facility Monitoring (Section D.3)	**Annually and as necessary in accordance with the Facility Post-Closure Maintenance Plan**

B. REPORTING

The Discharger shall report monitoring data and information as required in this revised MRP and as required by appropriate sections of the Standard Provisions and Reporting Requirements. Reports that do not comply with the required format will be **REJECTED** and the Discharger shall be deemed to be in noncompliance with the waste discharge requirements. In reporting the monitoring data, the Discharger shall provide the data in computer format approved by Central Valley Water Board staff. The data needs to be arranged so that the date, the constituents, the concentrations, and the units are readily discernible. The data shall be summarized in such a manner so as to illustrate clearly the compliance with waste discharge requirements or lack thereof.

C. WATER QUALITY PROTECTION STANDARD AND COMPLIANCE PERIOD

For the closed Eastern Waste Management Unit (EWMU) and the closed Western Waste Management Unit (WWMU), the water quality protection standard consists of 1) a list of constituents of concern (COCs) and monitoring parameters (MPs), 2) concentration limits for each constituent of concern and each monitoring parameter, and 3) the points of compliance.

This water quality protection standard shall apply during the post-closure maintenance period and for as long as waste under the closure caps poses a threat to water quality.

1. Constituents of Concern and Monitoring Parameters

COCs are the waste constituents and reaction by-products of waste disposal that are reasonably expected to be in or derived from waste contained in the EWMU and WWMU. The COCs are listed in Table 1. Analysis for COCs is due **every 5 years** and includes all the constituents listed in Table 1.

MPs are the waste constituents, reaction by-products of waste disposal, and physical parameters that are reasonably expected to be in or derived from waste contained in the closed units. The MPs are listed in Table 2.

2. Statistical Evaluation

Detection Monitoring

The statistical analysis of individual inorganic monitoring parameters is not a reliable data analysis procedure for indicating a release from the closed units. Detection monitoring concentration limits, by which possible releases will be determined, shall be derived statistically by calculating sulfate to calcium ratio and sodium ion percent prediction limits. Concentration limits shall be updated with submittal of annual monitoring.

Corrective Action Monitoring

The effectiveness of the Corrective Action Monitoring Program will be determined by a non-parametric trend analysis procedure (Sen's test) where increasing or decreasing trends of the sulfate to calcium ratio and sodium ion percent will be monitored.

3. Points of Compliance and Monitoring Points

Title 27 defines the point of compliance as the vertical surface located at the hydraulically downgradient limit of the waste management unit that extends through the uppermost aquifer underlying the unit. However, due to the complex hydrogeology beneath the facility, the point of compliance for the EWMU is

detection monitoring well MW02. The point of compliance for the WWMU shall be detection monitoring wells MW02 and MW11.

For corrective action monitoring of the WWMU, the monitoring points shall be wells MW01, MW06, and CW10, and NWC.

The point of compliance wells for detection monitoring and corrective action are shown on revised Attachment C contained in this revised MRP. Table 3 lists all the monitoring wells and piezometers that are part of the Bakersfield facility groundwater monitoring system.

4. Compliance Period

The compliance period is the minimum period during which the Discharger shall conduct water quality monitoring subsequent to a release. The compliance period begins anew each time the Discharger initiates an evaluation monitoring program. For the corrective action monitoring program, the compliance period shall be extended until the Discharger can demonstrate that wells MW01, MW06, CW10, and NWC have been in continuous compliance with the Water Quality Protection Standard for a period of three consecutive years.

D. MONITORING

1. Groundwater Monitoring

Groundwater shall be monitored **annually** following the groundwater sampling procedures and protocol contained in the most recent version of the approved Site-Specific Water Quality Monitoring Plan (SSWQMP). The SSWQMP is incorporated by reference into this revised MRP. Reporting is due according to the following schedule:

Report	Reporting Period Ends	Report Due Date
Annual	31 December	28 February

Each annual groundwater monitoring report shall include at a minimum the certified analytical results submitted in an electronic format, groundwater elevation tables, hydrographs for each well, groundwater elevations map(s) showing groundwater flow direction and gradients, calculation of groundwater flow velocity, Field Information Forms, Time Series Graphs of the Sulfate/Calcium Ratio and the Sodium Ion Percent for each detection monitoring well showing the current calculated prediction limit on each graph, Sen's Slope Estimator Graphs of the Sulfate/Calcium Ratio and the Sodium Ion Percent for each corrective action well, and Piper and Stiff Plots.

The Discharger may use analytical methods other than those contained in this MRP provided the method has equal or lower reporting limits, can detect all the required COCs and MPs, and is an approved US EPA method.

2. Leachate Monitoring

The leachate riser pipes in the EWMU and shown on Attachment B of the WDRs (P01 LCRS, P02 LCRS, P03 LCRS, P05 LCRS, and P06 LCRS) shall have their respective fluid levels measured **semiannually**. The fluid levels and any fluid removed shall be reported in the annual report following the reporting schedule listed in **D.1.** above. Any fluid removed from an LCRS riser shall be analyzed **annually** for the constituents listed in Table 1. The analytical results can be presented in either semiannual report.

3. Facility Monitoring

a. Facility Post-Closure Maintenance Plan and Annual Inspection

Facility Post-Closure Maintenance Plan

As required by Provision F.8. in the WDRs, the Discharger shall submit a Facility Post-Closure Maintenance Plan (Plan) that is consistent with Facility Specifications and Post-Closure Maintenance Specifications contained in the WDRs.

Annual Post-Closure Inspection

Prior to the anticipated rainy season, but not later than **30 August,** the Plan shall specify that an **Annual Post-Closure Inspection** of the facility be performed indicating that the facility is in compliance with the Facility Specifications and Post-Closure Maintenance Specifications contained in the WDRs, the General Post-Closure Duties contained in Section 21090 (c) of Title 27, and any other maintenance items called out in the Plan. The **Annual Post-Closure Inspection Report** shall be submitted by **30 September** of each year.

b. Storm Events - as necessary

The Discharger shall inspect all precipitation, diversion, and drainage control facilities for damage **within 7 days** following a storm yielding one inch or more of precipitation within 24 hours. Necessary repairs shall be completed **within 30 days** of the inspection. The Discharger shall report any damage and subsequent repairs **within 45** days of completion of the repairs.

c. Seismic Events - as necessary

The Discharger shall perform a full-scale facility inspection **within 7 days** following an earthquake that could potentially damage waste management units and/or the facility. Necessary repairs shall be completed **within 30 days** of the inspection. The Discharger shall report any damage and subsequent repairs **within 45 days** of completion of the repairs.

The Discharger shall implement the above monitoring program on the effective date of this revised Program.

Ordered by: Clay L. Rodgers
for PATRICK PULUPA, Executive Officer
2/16/2021
(Date)

10 June 2011
Revised: 6 December 2011
Revised: 11 January 2021

TABLE 1

CONSTITUENTS OF CONCERN (COCs)

COCs	US EPA Method
Total Dissolved Solids	2540C
Sulfate, dissolved	300.0
Sodium, dissolved	6010B
Iron, dissolved	6010B
Alkalinity, dissolved	2320B
Antimony, dissolved	6010B
Arsenic, dissolved	6010B
Barium, dissolved	6010B
Calcium, dissolved	6010B
Cadmium, dissolved	6010B
Chloride, dissolved	300.0
Chromium, dissolved	6010B
Copper, dissolved	6010B
Lead, dissolved	6010B
Magnesium, dissolved	6010B
Mercury, dissolved	7470A
Molybdenum, dissolved	6010B
Nickel, dissolved	6010B
Selenium, dissolved	6010B
Thallium, dissolved	6010B
Zinc, dissolved	6010B
Phenols (total), dissolved	420.2

TABLE 1 (Cont.)

CONSTITUENTS OF CONCERN (COCs)

Volatile Organic Constituents
(US EPA Method 8260B)

Acetone
Benzene
Bromoform
2-Butanone (MEK)
n-Butlybenzene
sec-Butlybenzene
tert-Butlybenzene
Chlorobenzene
Dibromochloromethane
1,2-Dichlorobenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
1,1-Dichloroethane
1,1-Dichloroethene
1,2-Dichloroethene (total)
Ethylbenzene
2-Hexanone
4-Isopropyltoluene
Isopropylbenzene
Methylene chloride
4-Methyl-2-pentanone
Naphthalene
n-Propylbenzene
Tetrachloroethene
Toluene
1,2,3-Trichlorobenzene
Trichloroethene
1,2,4-Trimethlybenzene
1,3,5-Trimethlybenzene
m-Xylene & p-Xylene
o-Xylene
Xylene (total)

TABLE 1 (Cont.)

CONSTITUENTS OF CONCERN (COCs)

Semivolatile Organic Constituents
(US EPA Method 8270C)

Acenaphthene

Anthracene

Benzo(a)anthracene

Benzo(b)fluoranthene

Benzo(a)pyrene

bis(2-Ethylhexyl) phthalate

Chrysene

Di-n-butyl phthalate

Fluoranthene

Fluorene

2-Methylnaphthalene

4-Methylphenol

Pentachlorophenol

Phenanthrene

Pyrene

TABLE 2

MONITORING PARAMETERS (MPs)

MPs For Detection Monitoring

Parameters For Statistical Evaluation

- Sulfate to Calcium Ratio (calculated prediction limit)
- Sodium ion percent (calculated prediction limit)

MPs For Corrective Action

Trend Analysis

- Sulfate to Calcium Ratio (Sen's Slope Estimator Graph)
- Sodium ion percent (Sen's Slope Estimator Graph)

Field Parameters

- pH
- Specific Conductance
- Temperature
- Turbidity

TABLE 3

BAKERSFIELD FACILITY
GROUNDWATER MONITORING SYSTEM

Round Mountain Silt
Background Well

CW17

Round Mountain Silt
Detection Monitoring Wells

MW02*

MW11

Round Mountain Silt
Corrective Action Wells

NWC

MW01

MW06

CW10

Round Mountain Silt
Piezometers

MW08

MW09

*Detection Monitoring Well for both EWMU and WWMU