

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

ORDER NO. R5-2014-0164

WASTE DISCHARGE REQUIREMENTS  
FOR  
KINGS WASTE AND RECYCLING AUTHORITY  
CORCORAN LANDFILL  
CLASS III LANDFILL  
POST-CLOSURE MAINTENANCE AND CORRECTIVE ACTION  
KINGS COUNTY

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

1. Kings Waste and Recycling Authority (hereinafter Discharger) owns and maintains the closed Corcoran Landfill (facility) about one mile north of Corcoran, in Section 3, T21S, R22E, MDB&M, as shown in Attachment A, which is incorporated herein and made part of this Order by reference. The Kings Waste and Recycling Authority was created by a name change from the Kings Waste Management Authority in 1995. The Kings Waste Management Authority was created as a Joint Powers Authority consisting of the County of Kings and the Cities of Hanford, Corcoran, and Lemoore. The facility is a solid waste landfill regulated under authority given in Water Code section 13000 et seq. and California Code of Regulations, title 27 ("Title 27"), section 20005 et seq.
2. The facility is on a 60-acre property at the intersection of Nevada Avenue and State Route 43, Corcoran. The existing landfill area consists of one unlined waste management unit. The existing permitted landfill area is shown in Attachment B, which is incorporated herein and made part of this Order by reference. The facility is comprised of Assessor's Parcel Numbers (APN) 34-01-102.
3. The Discharger submitted an Amended Report of Waste Discharge (ROWD) in the form of a corrective action program (CAP). The information in the CAP has been used in revising these waste discharge requirements (WDRs). The CAP contains the applicable information required in Title 27.
4. On 16 June 2000, the Central Valley Water Board adopted Order No. 5-00-159 in which the landfill waste management units at the facility were classified as Class III units for the discharge of non-hazardous waste and municipal solid waste. This Order continues to classify the landfill units as Class III units in accordance with Title 27.
5. The Discharger accepted wastes for disposal from 1973 through 30 June 1990.

6. On-site facilities at the Corcoran Landfill include: groundwater monitoring wells, an unsaturated zone monitoring system, an on-site storm water retention basin, and a final cover system.
7. This Order implements the applicable regulations for discharges of solid waste to land through Prohibitions, Specifications, Provisions, and monitoring and reporting requirements. Prohibitions, Specifications, and Provisions are listed in Sections A through G of these WDRs below, and in the Standard Provisions and Reporting Requirements for Waste Discharge Requirements for Nonhazardous Solid Waste Discharges Regulated by Subtitle D and/or Title 27 (SPRRs), dated January 2012, which are attached hereto and made part of this Order by reference. Monitoring and reporting requirements are included in the Monitoring and Reporting Program (MRP) No. R5-2014-0164 and in the SPRRs. In general, requirements that are either in regulation or otherwise apply to all MSW landfills are considered to be "standard" and are therefore in the SPRRs. Any site-specific changes to a requirement in the SPRRs are included in the applicable section (A through G) of these WDRs, and the requirement in the WDRs supersedes the requirement in the SPRRs.
8. Title 27 contains regulatory standards for discharges of solid waste promulgated by the State Water Board and the California Department of Resources Recovery and Recycling (CalRecycle). In certain instances, this Order cites CalRecycle regulatory sections. Title 27, section 20012 allows the Central Valley Water Board to cite CalRecycle regulations from Title 27 where necessary to protect water quality provided it does not duplicate or conflict with actions taken by the Local Enforcement Agency in charge of implementing CalRecycle's regulations.

#### **WASTE CLASSIFICATION AND UNIT CLASSIFICATION**

9. The Discharger previously disposed of municipal solid waste, which is defined in §20164 of Title 27.

#### **SITE DESCRIPTION**

10. The facility is in a topographically flat region of the Tulare Lake Hydrologic Basin of the San Joaquin Valley.
11. Land uses within one mile of the facility include an abandoned pesticide facility (Puregro), an unused feedlot, agricultural land, the Sweet Canal, and a few residences.
12. There are over 23 municipal, domestic, industrial, or agricultural groundwater supply wells within one mile of the facility.
13. The soils underlying the facility were deposited as alluvial fan and lacustrine sediments, which consist of interbedded sands, silts, and clays.

14. The measured hydraulic conductivity of the native soils underlying the landfill units ranges between  $1.6 \times 10^{-6}$  and  $3.0 \times 10^{-3}$  centimeters per second (cm/s).
15. The facility receives an average of 7.11 inches of precipitation per year as measured at the Corcoran Irrigation District Station. The mean pan evaporation is 80.60 inches per year as measured at the Corcoran El Rico Station.
16. The 100-year, 24-hour precipitation event for the facility is estimated to be 2.6 inches, based on the National Oceanic and Atmospheric Administration Atlas 2, Volume XI.
17. The waste management facility is not within a 100-year flood plain based on the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map, Community-Panel Number 06031C0375C.
18. Storm water sedimentation basins are located north of the landfill as shown on Attachment B. The basins retain storm water during the rainy season and are normally dry during the summer months.

### **SURFACE WATER AND GROUNDWATER CONDITIONS**

19. The *Water Quality Control Plan for the Tulare Lake Basin, Second Edition* (hereafter Basin Plan), designates beneficial uses, establishes water quality objectives, and contains implementation plans and policies for all waters of the Basin.
20. Surface water drainage from the site is to the southwest in the Kaweah Delta Hydrologic Area (558.10) of the Tulare Lake Hydrologic Basin. There are no perennial streams near the landfill. However, the unlined Sweet Canal borders the facility to the north and along the east.
21. The designated beneficial uses of surface water in the Kaweah Delta Hydrologic Area (below Lake Kaweah) as specified in the Basin Plan, are municipal and domestic supply; agricultural supply; industrial service supply; industrial process supply; water contact and non-contact recreation; warm fresh water habitat; wildlife habitat; and groundwater recharge.
22. Based on the Second Semiannual 2013 Detection Monitoring Report, the first encountered groundwater ranges from about 32 feet to 48 feet below the native ground surface. Groundwater elevations range from about 151 feet MSL to 162 feet MSL.
23. Based on the Second Semiannual 2013 Detection Monitoring Report, monitoring data indicate background groundwater quality for first encountered groundwater has electrical conductivity (EC) ranging between 1290 and 1360 micromhos/cm, with total dissolved solids (TDS) ranging between 940 and 1000 milligrams per liter (mg/L).
24. The direction of groundwater flow is generally toward the southeast. The estimated average groundwater gradient is approximately 0.006 feet per foot. Based on the Second

Semiannual 2013 Detection Monitoring Report, the groundwater flow velocity is approximately 120 feet per year.

25. The designated beneficial uses of the groundwater, as specified in the Basin Plan, are domestic and municipal water supply, agricultural supply, industrial service supply, and industrial process supply.

### **GROUNDWATER AND UNSATURATED ZONE MONITORING**

26. The existing groundwater monitoring network for the landfill units consists of background monitoring wells MW-4 and 90-1, and detection monitoring wells MW-1, MW-2, and MW-3. Other site monitoring wells are not sampled as they are typically dry and include the following: GMMW-1 through 4 (replaced by MW-1 through 4), MW-5 through 7, VW-1 and VW-2. Monitoring well VW-2 is considered too close to the unlined Sweet Canal to serve as a detection monitoring well.
27. At the time this Order was adopted, the Discharger's detection monitoring program for groundwater at the landfill satisfied the requirements contained in Title 27.
28. The existing unsaturated zone monitoring system for the landfill consists of landfill gas monitoring wells LFG-1, LFG-2, LFG-3, and LFG-4. Landfill gas monitoring wells LFG-1, LFG-2, and LFG-3 monitor methane and volatile organic compounds (VOCs) in soil vapor along the perimeter of the facility. One landfill gas monitoring well (LFG-4) is strictly used for field monitoring of methane between the facility and the adjacent residence. These wells are shown in Attachment B.
29. Volatile organic compounds are often detected in a release from a MSW landfill and are often associated with releases of landfill gas rather than leachate. Since volatile organic compounds are not naturally occurring and thus have no background value, they are not amenable to the statistical analysis procedures contained in Title 27 for the determination of a release of wastes from a landfill unit. Title 27, sections 20415(e)(8) and (9) allows the use of a non-statistical evaluation of monitoring data that will provide the best assurance of the earliest possible detection of a release from a landfill unit in accordance with Title 27, sections 20415(b)(1)(B)2.-4. However, Title 27 does not specify a specific method for non-statistical evaluation of monitoring data.
30. The Central Valley Water Board may specify a non-statistical data analysis method pursuant to Title 27, section 20080(a)(1). Water Code section 13360(a)(1) allows the Central Valley Water Board to specify requirements to protect groundwater or surface waters from leakage from a solid waste site, which includes a method to provide the best assurance of determining the earliest possible detection of a release.
31. In order to provide the best assurance of the earliest possible detection of a release of non-naturally occurring waste constituents from a landfill unit, the SPRRs specify a non-statistical method for the evaluation of monitoring data for non-naturally occurring

compounds. The specified non-statistical method for evaluation of monitoring data provides two criteria (or triggers) for making the determination that there has been a release of non-naturally occurring waste constituents from a landfill unit. The presence of two non-naturally occurring waste constituents above their respective method detection limit (MDL), or one non-naturally occurring waste constituent detected above its practical quantitation limit (PQL) [a.k.a, laboratory reporting limit (RL)], indicates that a release of waste from a Unit has occurred. Following an indication of a release, verification testing must be conducted to determine whether there has been a release from the landfill unit or the detection was a false detection. The detection of two non-naturally occurring waste constituents above the MDL as a trigger is appropriate due to the higher risk of false-positive analytical results and the corresponding increase in sampling and analytical expenses from the use of one non-naturally occurring waste constituent above its MDL as a trigger.

32. For a naturally occurring constituent of concern, Title 27 requires concentration limits for each constituent of concern be determined as follows:

- a. By calculation in accordance with a statistical method pursuant to Title 27, section 20415(e)(8); or
- b. By an alternate statistical method meeting the requirements of Title 27, section 20415(e)(8)(E).

33. The Discharger submitted a Water Quality Protection Standard (WQPS) report proposing statistical data analysis methods to calculate concentration limits for each monitored constituent in accordance with Title 27. The WQPS report proposed to use Interwell data analysis to calculate tolerance limits for the monitored constituents. The WQPS and approved data evaluation methods are included in MRP No. R5-2014-0164.

### **GROUNDWATER DEGRADATION AND CORRECTIVE ACTION**

34. The waste management unit has released VOCs into groundwater. The latest self-monitoring report (Second Semiannual 2013 Detection Monitoring Report) detected the following VOCs at trace levels: dichlorofluoromethane; cis-1,2,-dichlorethene; trichloroethene; xylenes; and toluene.

35. The waste management unit has released inorganic waste constituents into groundwater. The latest self-monitoring report (Second Semiannual 2013 Detection Monitoring Report) detected the following inorganic constituents at concentrations statistically exceeding their respective background concentrations: calcium, chloride, magnesium, and total dissolved solids.

36. Based on the latest self-monitoring report (Second Semiannual 2013 Detection Monitoring Report), the following VOCs were detected at varying concentrations in vapor samples collected from the unsaturated zone: dichlorofluoromethane; ethylbenzene;

1,2-dichloro-1,1,2,2-tetrafluoroethane; 1,2,4-trimethylbenzene; tetrachloroethene; xylenes; and toluene.

37. Cleanup & Abatement Order No. 97-714, adopted on 18 September 1997, directed the Discharger, in part, to complete an Evaluation Monitoring Program (EMP), submit an Engineering Feasibility Study (EFS) for a Corrective Action Program (CAP), and implement a CAP.
38. An EMP report and a subsequent addendum addressing the VOCs were submitted in October and December 2001. Central Valley Water Board staff considered the EMP addressing the VOCs to be complete in a 25 January 2002 letter. A revised EFS was submitted in December 2003. On 9 April 2004, Central Valley Water Board staff approved a CAP that consisted of monitored natural attenuation (MNA), conditioned on the total cumulative VOC concentration remaining below an action level of 5 micrograms per liter ( $\mu\text{g/L}$ ). If the action level is exceeded in any two consecutive monitoring periods, the Discharger is required to install a groundwater pump and treat system. The total cumulative VOC concentration during the most recent monitoring period (Second semiannual 2013) was 2.15  $\mu\text{g/L}$ .
39. An EMP report addressing the inorganic waste constituents was submitted on 8 May 2006. In a 24 July 2006 letter, Central Valley Water Board staff considered the inorganic EMP to be complete and, based upon the results, did not require the Discharger to submit an EFS or implement a CAP for the release of inorganic constituents.

### **LANDFILL CLOSURE**

40. A prescriptive standard Title 27 final cover system was completed in 1997. The cover system consists of, in ascending order: a two-foot thick foundation layer; a one-foot thick low-permeability layer; and a one-foot thick vegetative layer.

### **LANDFILL POST-CLOSURE MAINTENANCE**

41. The Discharger submitted a *Postclosure Maintenance Plan*. The plan includes inspection, maintenance, and monitoring of the landfill during the post-closure maintenance period, and includes a post-closure maintenance cost estimate for the entire facility. Inspection and maintenance will include the condition of the final cover, drainage features, groundwater monitoring wells, unsaturated zone monitoring points, access roads, and site security. The plan will be implemented for a minimum period of 30 years or until the waste no longer poses a threat to environmental quality, whichever is greater.
42. Once every five years during the post-closure maintenance period, aerial photographic maps of the closed landfill area will be made to identify and evaluate landfill settlement. Iso-settlement maps will be prepared to determine the amount of differential settlement occurring over the previous five years. Pursuant to Title 27, section 21090(e)(2), this Order requires iso-settlement maps to be prepared and submitted every five years.

43. The completed final cover will be periodically tested for damage or defects by visual inspection pursuant to California Code of Regulations, Title 27, section 21090(a)(4)(A). Defects will be repaired and tested for adequacy based on the closure Construction Quality Assurance Plan.

### **FINANCIAL ASSURANCES**

44. Title 27, sections 21840 and 22211 requires a cost estimate for landfill post-closure maintenance. The amount of the cost estimate for post-closure maintenance in 2013 dollars is \$1.99 million. This Order requires that the Discharger maintain financial assurance with CalRecycle in at least the amount of the post-closure maintenance cost estimate adjusted annually for inflation. The Discharger maintains a Pledge of Revenue agreement with CalRecycle to cover these costs.
45. Title 27, section 22221 requires a cost estimate for corrective action of all known or reasonably foreseeable releases. The amount of the cost estimate for corrective action in 2013 dollars is \$0.16 million. This Order requires that the Discharger maintain financial assurance with the CalRecycle in at least the amount of the cost estimate adjusted annually for inflation. The Discharger maintains a Pledge of Revenue agreement with CalRecycle to cover these costs.
46. Title 27 section 22100(b) requires owners and operators of disposal facilities that are required to be permitted as solid waste landfills to provide cost estimates for initiating and completing corrective action for known or reasonably foreseeable releases of waste. Title 27 section 22101 requires submittal of a *Water Release Corrective Action Estimate* and a *Non-Water Release Corrective Action Cost Estimate*. The *Water Release Corrective Action Estimate* is for scenarios where there is statistically significant evidence of a release of waste to ground or surface water when comparing point-of-compliance analyte concentrations to background concentrations. The *Non-Water Release Corrective Action Cost Estimate* is for complete replacement of the landfill final cover system, however a site-specific corrective action plan pursuant to Title 27 section 22101(b)(2) may be provided in lieu of the final cover replacement cost estimate. Title 27 section 22221 requires establishment of financial assurances in the amount of an approved *Water Release Corrective Action Estimate* or an approved *Non-Water Release Corrective Action Cost Estimate*, whichever is greater.

### **CEQA AND OTHER CONSIDERATIONS**

47. The action to revise waste discharge requirements for this existing facility is exempt from the provisions of the California Environmental Quality Act (CEQA), Public Resource Code section 21000, et seq., and the CEQA guidelines, in accordance with Title 14, section 15301.

48. This order implements:

- a. *The Water Quality Control Plan for the Tulare Lake Basin, Second Edition*;
- b. The prescriptive standards and performance goals of California Code of Regulations, title 27, section 20005 et seq., effective 18 July 1997, and subsequent revisions;
- c. State Water Board Resolution 93-62, *Policy for Regulation of Discharges of Municipal Solid Waste*, adopted 17 June 1993, and revised on 21 July 2005.
- d. The applicable provisions of Title 40 C.F.R. section 258 "Subtitle D" federal regulations as required by State Water Board Resolution 93-62.

49. Based on the threat and complexity of the discharge, the facility is determined to be classified 1-B as defined below:

- a. Category 1 threat to water quality, defined as, "Those discharges of waste that could cause the long-term loss of a designated beneficial use of the receiving water. Examples of long-term loss of a beneficial use include the loss of drinking water supply, the closure of an area used for water contact recreation, or the posting of an area used for spawning or growth of aquatic resources, including shellfish and migratory fish."
- b. Category B complexity, defined as, "Any discharger not included in Category A that has physical, chemical, or biological treatment systems (except for septic systems with subsurface disposal), or any Class 2 or Class 3 waste management units."

50. Water Code section 13267(b) provides that: "In conducting an investigation specified in subdivision (a), the Regional Board may require that any person who has discharged, discharges, or is suspected of having discharge or discharging, or who proposes to discharge waste within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste outside of its region that could affect the quality of the waters of the state within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the board requires. The burden, including costs of these reports, shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports. "

51. The technical reports required by this Order and the attached "Monitoring and Reporting Program No. R5-2014-0164" are necessary to assure compliance with these waste discharge requirements. The Discharger own the facility that discharged the waste subject to this order.

## **PROCEDURAL REQUIREMENTS**

52. All local agencies with jurisdiction to regulate land use, solid waste disposal, air pollution, and to protect public health have approved the use of this site for the discharges of waste to land stated herein.
53. The Central Valley Water Board notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for this discharge, and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
54. The Central Valley Water Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, pursuant to California Water Code sections 13263 and 13267, that Order No. 5-00-159 is rescinded except for purposes of enforcement of violations occurring prior to the effective date of this Order, and that the Kings Waste and Recycling Authority, its agents, successors, and assigns, in order to meet the provisions of Division 7 of the California Water Code and the regulations adopted thereunder, shall comply with the following:

### **A. PROHIBITIONS**

1. The discharge of any waste is prohibited.
2. The Discharger shall comply with all Standard Prohibitions listed in Section C of the Standard Provisions and Reporting Requirements for Waste Discharge Requirements for Nonhazardous Solid Waste Discharges Regulated by Subtitle D and/or Title 27 (SPRRs), dated January 2012, which are attached hereto and made part of this Order by reference.

### **B. DISCHARGE SPECIFICATIONS**

1. The Discharger shall, in a timely manner, remove and relocate any wastes discharged at this facility in violation of this Order. If the waste is a hazardous waste, the Discharger shall immediately notify the Department of Toxic Substances Control.
2. The Discharger shall comply with all Standard Discharge Specifications listed in Section D of the SPRRs.

### **C. FACILITY SPECIFICATIONS**

1. The Discharger shall comply with all Standard Facility Specifications listed in Section E of the SPRRs.

#### **D. POST-CLOSURE MAINTENANCE SPECIFICATIONS**

1. Every five years, the Discharger shall submit, pursuant to Title 27, Section 21090(e)(2), an iso-settlement map accurately depicting the estimated total change in elevation of each portion of the final cover's low-hydraulic conductivity layer. This map shall show the total lowering of the surface elevation of the final cover relative to the baseline topographic map and shall indicate all areas where visually noticeable differential settlement may have been obscured by grading operations. The map shall be drawn to the same scale and contour interval as the baseline topographic map. The most recent iso-settlement map was submitted in 2014.
2. The Discharger shall comply with all Standard Closure and Post-Closure Specifications listed in Section G of the SPRRs.

#### **E. FINANCIAL ASSURANCE SPECIFICATIONS**

1. The Discharger shall obtain and maintain assurances of financial responsibility with CalRecycle for post-closure maintenance for the landfill in at least the amounts described in Finding 44 adjusted for inflation annually. A report regarding financial assurances for closure and post-closure maintenance shall be submitted to the Central Valley Water Board by **1 October of each year**. This may be the same report that is submitted to CalRecycle for this purpose. If CalRecycle determines that either the amount of coverage or the mechanism is inadequate, then within 90 days of notification, the Discharger shall submit an acceptable mechanism to CalRecycle and the Central Valley Water Board for at least the amount of the approved cost estimate.
2. The Discharger shall obtain and maintain assurances of financial responsibility with CalRecycle for initiating and completing corrective action for all known or reasonably foreseeable releases from the landfill in at least the amount of the annual inflation-adjusted cost estimate described in Finding 45. A report regarding financial assurances for corrective action shall be submitted to the Central Valley Water Board by **1 October of each year**. This may be the same report that is submitted to CalRecycle for this purpose. If CalRecycle determines that either the amount of coverage or the mechanism is inadequate, then within 90 days of notification, the Discharger shall submit an acceptable mechanism to CalRecycle and the Central Valley Water Board for at least the amount of the approved cost estimate.
3. The Discharger shall comply with all Standard Financial Assurance Specifications listed in Section H of the SPRRs.

#### **F. MONITORING SPECIFICATIONS**

1. The Discharger shall comply with the detection monitoring program provisions of Title 27 for groundwater and the unsaturated zone, in accordance with Monitoring and

Reporting Program (MRP) No. R5-2014-0164, and the Standard Monitoring Specifications listed in Section I of the SPRRs.

2. The Discharger shall, for any landfill unit in a corrective action monitoring program, comply with the corrective action monitoring program provisions of Title 27, MRP No. R5-2014-0164, and the Standard Monitoring Specifications listed in Section I of SPRRs.
3. The Discharger shall comply with the Water Quality Protection Standard as specified in this Order, MRP No. R5-2014-0164, and the SPRRs.
4. The concentrations of the constituents of concern in waters passing the Point of Compliance (defined pursuant to Title 27, section 20164 as a vertical surface located at the hydraulically downgradient limit of the landfill unit that extends through the uppermost aquifer underlying the unit) shall not exceed the concentration limits established pursuant to MRP No. R5-2014-0164.
5. For each monitoring event, the Discharger shall determine whether the landfill is in compliance with the Water Quality Protection Standard using procedures specified in MRP No. R5-2014-0164 and the Standard Monitoring Specifications in Section I of the SPRRs.
6. As specified in MRP No. R5-2014-0164, the Discharger shall enter all monitoring data and monitoring reports into the online Geotracker database as required by Division 3 of Title 27 and Chapter 30, Division 3 of Title 23.
7. The Discharger shall comply with all Standard Monitoring Specifications and Response to a Release specifications listed in Sections I and J of the SPRRs.

## **G. PROVISIONS**

1. The Discharger shall maintain a copy of this Order at its office, including the MRP No. R5-2014-0164 and the SPRRs and make it available at all times to facility personnel, who shall be familiar with its contents, and to regulatory agency personnel.
2. The Discharger shall comply with all applicable provisions of Title 27 and Subtitle D that are not specifically referred to in this Order.
3. The Discharger shall comply with MRP No. R5-2014-0164, which is incorporated into and made part of this Order by reference.
4. The Discharger shall comply with the applicable portions of the SPRRs.
5. If there is any conflicting or contradictory language between the WDRs, the MRP, or the SPRRs, then language in the WDRs shall supersede either the MRP or the SPRRs, and language in the MRP shall supersede the SPRRs.

6. All reports required by this Order shall be submitted pursuant to Water Code section 13267.
7. The Discharger shall complete the tasks contained in these waste discharge requirements in accordance with the following time schedule:

<u>Task</u>	<u>Compliance Date</u>
<b>A. Financial Assurance Review</b>	
1. Annual Review of Financial Assurance for Post-closure maintenance. (see Financial Assurance Specification E.1).	<b>1 October of each year</b>
2. Annual Review of Financial Assurance for initiating and completing corrective action. (see Financial Assurance Specification E.2).	<b>1 October of each year</b>

8. The Discharger shall comply with all General Provisions listed in Section K of the SPRRs.

If, in the opinion of the Executive Officer, the Discharger fails to comply with the provisions of this Order, the Executive Officer may refer this matter to the Attorney General for judicial enforcement, may issue a complaint for administrative civil liability, or may take other enforcement actions. Failure to comply with this Order may result in the assessment of Administrative Civil Liability of up to \$10,000 per violation, per day, depending on the violation, pursuant to the Water Code, including sections 13268, 13350 and 13385. The Central Valley Water Board reserves its right to take any enforcement actions authorized by law.

Any person aggrieved by this action of the Central Valley Water Board may petition the State Water Board to review the action in accordance with Water Code section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., 30 days after the date 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. Copies of the law and regulations applicable to filing petitions may be found on the Internet at:

[http://www.waterboards.ca.gov/public\\_notices/petitions/water\\_quality](http://www.waterboards.ca.gov/public_notices/petitions/water_quality)

or will be provided upon request.

I, PAMELA C. CREEDON, Executive Officer, do hereby certify that 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 5 December 2014.

*Original signed by:*

---

PAMELA C. CREEDON, Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2014-0164  
FOR  
KINGS WASTE AND RECYCLING AUTHORITY  
CORCORAN LANDFILL  
CLASS III LANDFILL  
POST-CLOSURE MAINTENANCE AND CORRECTIVE ACTION  
KINGS COUNTY

This monitoring and reporting program (MRP) is issued pursuant to California Water Code section 13267 and incorporates requirements for groundwater, surface water, and unsaturated zone monitoring and reporting; facility monitoring, maintenance, and reporting; and financial assurances reporting contained in California Code of Regulations, title 27, section 20005, et seq. (hereafter Title 27), Waste Discharge Requirements (WDRs) Order No. R5-2014-0164, and the Standard Provisions and Reporting Requirements (SPRRs) dated January 2012. Compliance with this MRP is ordered by the WDRs and the Discharger shall not implement any changes to this MRP unless a revised MRP is issued by the Central Valley Water Board or the Executive Officer.

**A. MONITORING**

The Discharger shall comply with the detection monitoring program provisions of Title 27 for groundwater and the unsaturated zone in accordance with Standard Monitoring Specifications in Section I of the SPRRs and the Monitoring Specifications in Section F of the WDRs. All monitoring shall be conducted in accordance with the approved *Sample Collection and Analysis Plan*, which includes quality assurance/quality control standards.

All compliance monitoring wells established for the detection monitoring program shall constitute the monitoring points for the groundwater Water Quality Protection Standard. All detection monitoring program groundwater monitoring wells and unsaturated zone monitoring devices shall be sampled and analyzed for monitoring parameters and constituents of concern (COCs) as indicated and listed in Tables I, II, IV, and V.

The Discharger may use alternative analytical test methods, including new USEPA approved methods, provided the methods have method detection limits equal to or lower than the analytical methods specified in this Monitoring and Reporting Program, and are identified in the approved *Sample Collection and Analysis Plan*.

The monitoring program of this MRP includes:

<u>Section</u>	<u>Monitoring Program</u>
A.1	Groundwater Monitoring
A.2	Unsaturated Zone Monitoring
A.3	Leachate Seep Monitoring
A.4	Facility Monitoring
A.5	Corrective Action Monitoring

## 1. Groundwater Monitoring

The Discharger shall operate and maintain a groundwater detection monitoring system that complies with the applicable provisions of Title 27, sections 20415 and 20420. The detection monitoring system shall be certified by a California-licensed professional civil engineer or geologist as meeting the requirements of Title 27. The current groundwater detection monitoring system meets the applicable requirements of Title 27.

The current groundwater monitoring network shall consist of the following:

<u>Well</u>	<u>Status</u>
MW-1	Detection/Corrective Action
MW-2	Detection/Corrective Action
MW-3	Detection/Corrective Action
MW-4	Background
90-1	Background

Groundwater samples shall be collected from the background wells, detection monitoring wells, corrective action wells and any additional wells added as part of the approved groundwater monitoring system. The collected samples shall be analyzed for the parameters and constituents listed in Table I in accordance with the specified methods and frequencies. The Discharger shall collect, preserve, and transport groundwater samples in accordance with the approved Sample Collection and Analysis Plan.

**Once per quarter**, the Discharger shall measure the groundwater elevation in each well, determine groundwater flow direction, and estimate groundwater flow rates in the uppermost aquifer and in any zones of perched water and in any additional portions of the zone of saturation monitored. The results shall be reported semiannually, including the times of expected highest and lowest elevations of the water levels in the wells, pursuant to Title 27, section 20415(e)(15).

Samples collected for the COC monitoring specified in Table I shall be collected and analyzed in accordance with the methods listed in Table V every five years. Five-year COCs were last monitored in 2010 and shall be monitored again in **2015**. The results shall be reported in the Annual Monitoring Report for the year in which the samples were collected.

## 2. Unsaturated Zone Monitoring

The Discharger shall operate and maintain an unsaturated zone detection monitoring system that complies with the applicable provisions of Title 27, sections 20415 and 20420. The current unsaturated zone detection monitoring system meets the applicable requirements of Title 27.

The current unsaturated zone monitoring network shall consist of:

<u>Mon Pt.</u>	<u>Status</u>
LFG-1	Soil-Pore Gas
LFG-2	Soil-Pore Gas
LFG-3	Soil-Pore Gas
LFG-4	Other

Unsaturated zone samples shall be collected from the Soil-Pore Gas monitoring network listed above and shall be analyzed for the parameters and constituents listed in Table II in accordance with the specified methods and frequencies.

The Discharger shall collect, preserve, and transport samples in accordance with the quality assurance/quality control standards contained in the approved Sample Collection and Analysis Plan.

Monitoring results for the unsaturated zone shall be included in monitoring reports and shall include an evaluation of potential impacts of the facility on the unsaturated zone and compliance with the Water Quality Protection Standard.

## 3. Leachate Seep Monitoring

Leachate that seeps to the surface from a landfill unit shall be sampled and analyzed for the Field and Monitoring Parameters listed in Table III upon detection. The quantity of leachate shall be estimated and reported as Leachate Flow Rate (in gallons/day). Reporting for leachate seeps shall be conducted as required in Section B.3 of this MRP, below.

## 4. Facility Monitoring

### a. Annual Facility Inspection

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 drainage control systems, cover systems, and groundwater monitoring wells; and shall assess preparedness for winter conditions (including but not limited to erosion and sedimentation control). The Discharger shall take photos of any problems areas before and after repairs. Any necessary

construction, maintenance, or repairs shall be completed by **31 October**. Annual facility inspection reporting shall be submitted as required in Section B.4 of this MRP.

b. **Major Storm Events**

The Discharger shall inspect all precipitation, diversion, and drainage facilities and all landfill side slopes for damage **within 7 days** following major storm events capable of causing 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. Notification and reporting requirements for major storm events shall be conducted as required in Section B.5 of this MRP.

c. **Five-Year Iso-Settlement Survey for Closed Units**

For closed landfill units, the Discharger shall conduct a five-year iso-settlement survey and produce an iso-settlement map accurately depicting the estimated total change in elevation of each portion of the final cover's low-hydraulic-conductivity layer. For each portion of the landfill, this map shall show the total lowering of the surface elevation of the final cover, relative to the baseline topographic map [Title 27, section 21090(e)(1 & 2)]. Reporting shall be in accordance with Section B.6 of this MRP. The next iso-settlement survey shall be conducted in 2019.

d. **Standard Observations**

The Discharger shall conduct Standard Observations at the landfill in accordance with this section of the MRP. Standard observations shall be conducted in accordance with the following schedule:

<u>Frequency</u>	<u>Season</u>
Monthly	Wet: 1 October to 30 April
Quarterly	Dry: 1 May to 30 September

The Standard Observations shall include:

1) For the landfill units:

- a) Evidence of ponded water at any point on the landfill outside of any contact storm water/leachate diversions structures on the active face (show affected area on map); and
- b) Evidence of erosion and/or of day-lighted refuse.

2) Along the perimeter of the landfill units:

- a) Evidence of leachate seeps, estimated size of affected area, and flow rate (show affected area on map); and

b) Evidence of erosion and/or of day-lighted refuse.

Results of Standard Observations shall be submitted in the semiannual monitoring reports required in Section B.1 of this MRP.

**5. Corrective Action Monitoring**

The Discharger shall conduct corrective action monitoring to demonstrate the effectiveness of corrective action in accordance with Title 27, section 20430 and this MRP. Groundwater monitoring wells shall be monitored in accordance with the groundwater monitoring requirements in part A.1 of this MRP.

**B. REPORTING**

The Discharger shall submit the following reports in accordance with the required schedule:

**Reporting Schedule**

<u>Section</u>	<u>Report</u>	<u>End of Reporting Period</u>	<u>Due Date</u>
B.1	Semiannual Monitoring Report	30 June, 31 December	<b>31 August, 28 February</b>
B.2	Annual Monitoring Report	31 December	<b>28 February</b>
B.3	Leachate Seep Reporting	Continuous	<b>Immediately &amp; 7 Days</b>
B.4	Annual Facility Inspection Report	31 October	<b>15 November</b>
B.5	Major Storm Event Reporting	Continuous	<b>7 days from damage discovery</b>
B.6	Survey and Iso-Settlement Map	Every Five Years	<b>2019 and Every Five Years</b>
B.7	Financial Assurances Report	31 December	<b>1 October</b>

**Reporting Requirements**

The Discharger shall submit monitoring reports **semiannually** with the data and information as required in this Monitoring and Reporting Program and as required in WDRs Order No. R5-2014-0164 and the Standard Provisions and Reporting Requirements (particularly Section I: "Standard Monitoring Specifications" and Section J: "Response to a Release"). In reporting the monitoring data required by this

program, the Discharger shall arrange the data in tabular form 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 the lack thereof. Data shall also be submitted in a digital format, such as a computer disk.

Field and laboratory tests shall be reported in each monitoring report. Semiannual and annual monitoring reports shall be submitted to the Central Valley Water Board in accordance with the above schedule for the calendar period in which samples were taken or observations made. In addition, the Discharger shall enter all monitoring data and monitoring reports into the online Geotracker database as required by Division 3 of Title 27 and Chapter 30, Division 3 of Title 23.

The results of **all monitoring** conducted at the site shall be reported to the Central Valley Water Board in accordance with the reporting schedule above for the calendar period in which samples were taken or observations made.

The Discharger shall retain records of all monitoring information, including all calibration and maintenance records, all original strip chart recordings of continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order. Records shall be maintained throughout the life of the facility including the post-closure period. Such records shall be legible and shall show the following for each sample:

- a) Sample identification and the monitoring point or background monitoring point from which it was taken, along with the identity of the individual who obtained the sample;
- b) Date, time, and manner of sampling;
- c) Date and time that analyses were started and completed, and the name of the personnel and laboratory performing each analysis;
- d) Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used;
- e) Calculation of results; and
- f) Results of analyses, and the MDL and PQL for each analysis. All peaks shall be reported.

## Required Reports

1. **Semiannual Monitoring Report:** Monitoring reports shall be submitted semiannually and are due on **31 August** and **28 February**. Each semiannual monitoring report shall contain at least the following:
  - a) For each groundwater monitoring point addressed by the report, a description of:
    - 1) The time of water level measurement;
    - 2) The type of pump - or other device - used for purging and the elevation of the pump intake relative to the elevation of the screened interval;
    - 3) The method of purging used to stabilize water in the well bore before the sample is taken including the pumping rate; the equipment and methods used to monitor field pH, temperature, and conductivity during purging; results of pH, temperature, conductivity, and turbidity testing; and the method of disposing of the purge water;
    - 4) The type of pump - or other device - used for sampling, if different than the pump or device used for purging; and
    - 5) A statement that the sampling procedure was conducted in accordance with the approved Sample Collection and Analysis Plan.
  - b) A map or aerial photograph showing the locations of observation stations, monitoring points, and background monitoring points.
  - c) The estimated quarterly groundwater flow rate and direction in the uppermost aquifer, in any zones of perched water, and in any additional zone of saturation monitored based upon water level elevations taken prior to the collection of the water quality data submitted in the report [Title 27, section 20415(e)(15)].
  - d) Cumulative tabulated monitoring data for all monitoring points and constituents for groundwater, unsaturated zone, and leachate. Concentrations below the laboratory reporting limit shall not be reported as "ND" unless the reporting limit is also given in the table. Otherwise they shall be reported "<" the reporting limit (e.g., <0.10). Units shall be as required in Tables I, II, and III unless specific justification is given to report in other units. Refer to the SPRRs Section I "Standard Monitoring Specifications" for requirements regarding MDLs and PQLs.
  - e) Laboratory statements of results of all analyses evaluating compliance with requirements.
  - f) An evaluation of the concentration of each monitoring parameter (or 5-year COC when five year COC sampling is conducted) as compared to the current concentration limits, and the results of any required verification testing for constituents exceeding a concentration limit . Report any actions taken under

Section J: Response to a Release for verified exceedances of a concentration limit for wells/constituents not already in corrective action monitoring.

- g) A summary of all Standard Observations for the reporting period required in Section A.4.d of this MRP.
- h) A summary of inspection, leak search, and repair of final covers on any closed landfill units in accordance with an approved final post-closure maintenance plan as required by Standard Closure and Post-Closure Maintenance Specifications G.26 through G.29 of the SPRRs.

**2. Annual Monitoring Report:** The Discharger shall submit an Annual Monitoring Report to the Central Valley Water Board by **28 February** covering the reporting period of the previous monitoring year. If desired, the Annual Monitoring Report may be combined with the second semiannual report, but if so, shall clearly state that it is both a semi-annual and annual monitoring report in its title. Each Annual Monitoring Report shall contain the following information:

- a) All monitoring parameters shall be graphed to show historical trends at each monitoring point and background monitoring point, for all samples taken within at least the previous five calendar years. If a 5-year COC event was performed, then these parameters shall also be graphically presented. Each such graph shall plot the concentration of one or more constituents for the period of record for a given monitoring point or background monitoring point, at a scale appropriate to show trends or variations in water quality. The graphs shall plot each datum, rather than plotting mean values. Graphical analysis of monitoring data may be used to provide significant evidence of a release.
- b) An evaluation of the monitoring parameters with regards to the cation/anion balance, and a graphical presentation using a Stiff diagram, a Piper graph, or a Schoeller plot.
- c) All historical monitoring data for which there are detectable results, including data for the previous year, shall be submitted in tabular form in a digital file format such as a computer disk. The Central Valley Water Board regards the submittal of data in hard copy and in digital format as "...the form necessary for..." statistical analysis [Title 27, section 20420(h)], that facilitates periodic review by the Central Valley Water Board.
- d) Hydrographs of each well showing the elevation of groundwater with respect to the elevations of the top and bottom of the screened interval and the elevation of the pump intake. Hydrographs of each well shall be prepared quarterly and submitted annually.
- e) A comprehensive discussion of the compliance record, and the result of any corrective actions taken or planned which may be needed to bring the Discharger into full compliance with the waste discharge requirements.

- f) A written summary of the monitoring results, indicating any changes made or observed since the previous Annual Monitoring Report.
  - g) Updated concentration limits for each monitoring parameter at each monitoring well based on the new data set.
  - h) A comprehensive discussion of any Corrective Action Program required by this MRP under Section A.5.
- 3. Leachate Seep Reporting:** The Discharger shall report by telephone any leachate seepage from the disposal area **immediately** after it is discovered. A written report shall be filed with the Central Valley Water Board **within seven days**, containing at least the following information:
- a) A map showing the location(s) of leachate seepage;
  - b) An estimate of the flow rate;
  - c) A description of the nature of the discharge (e.g., all pertinent observations and analyses);
  - d) Verification that samples have been submitted for analyses of the Field Parameters and Monitoring Parameters listed in Table III of this MRP, and an estimated date that the results will be submitted to the Central Valley Water Board; and
  - e) Corrective measures underway or proposed, and corresponding time schedule.
- 4. Annual Facility Inspection Reporting:** By **15 November** of each year, the Discharger shall submit a report describing the results of the inspection and the repair measures implemented, preparations for winter, and include photographs of any problem areas and the repairs. Refer to Section A.4.a of this MRP, above.
- 5. Major Storm Event Reporting:** Following major storm events capable of causing damage or significant erosion, the Discharger **immediately** shall notify Central Valley Water Board staff of any damage or significant erosion upon discovery and report subsequent repairs within **14 days** of completion of the repairs, including photographs of the problem and the repairs. Refer to Section A.4.b of this MRP, above.
- 6. Survey and Iso-Settlement Map for Closed Landfills:** The Discharger shall conduct a survey and submit an iso-settlement map for each closed area of the landfill every five years pursuant to Title 27, section 21090(e). Refer to Section A.4.c of this MRP, above. The next report is due in 2019.
- 7. Financial Assurances Report:** By **1 October** of each year, the Discharger shall submit a copy of the annual financial assurances report due to CalRecycle that updates the financial assurances for closure, post-closure maintenance, and

corrective action. Refer to Financial Assurances Specifications E.1 through E.3 of the WDRs.

## **C. WATER QUALITY PROTECTION STANDARD AND COMPLIANCE PERIOD**

### **1. Water Quality Protection Standard Report**

For each waste management unit, the Water Quality Protection Standard shall consist of all COCs, the concentration limit for each constituent of concern, the verification retesting procedure to confirm measurably significant evidence of a release, the point of compliance, and all water quality monitoring points for each monitored medium.

The Water Quality Protection Standard for naturally occurring waste constituents consists of the COCs, the concentration limits, and the point of compliance and all monitoring points. Any proposed changes to the Water Quality Protection Standard other than annual update of the concentration limits shall be submitted in a report for review and approval.

The report shall:

- a. Identify **all distinct bodies of surface and ground water** that could be affected in the event of a release from a waste management unit or portion of a unit. This list shall include at least the uppermost aquifer and any permanent or ephemeral zones of perched groundwater underlying the facility.
- b. Include a map showing the monitoring points and background monitoring points for the surface water monitoring program, groundwater monitoring program, and the unsaturated zone monitoring program. The map shall include the point of compliance in accordance with Title 27, section 20405.
- c. Evaluate the perennial direction(s) of groundwater movement within the uppermost groundwater zone(s).
- d. Include a proposed statistical method for calculating concentration limits for monitoring parameters and constituents of concern that are detected in 10% or greater of the background data (naturally-occurring constituents) using a statistical procedure from Title 27, section 20415(e)(8)(A-D)] or section 20415(e)(8)(E).
- e. Include a retesting procedure to confirm or deny measurably significant evidence of a release pursuant to Title 27, section 20415(e)(8)(E) and section 20420(j)(1-3).

The Water Quality Protection Standard shall be certified by a California-registered civil engineer or geologist as meeting the requirements of Title 27. If subsequent sampling of the background monitoring point(s) indicates significant water quality changes due to either seasonal fluctuations or other reasons unrelated to waste management activities at the site, the Discharger may request modification of the Water Quality Protection Standard.

The Discharger proposed the methods for calculating concentration limits in the *Water Quality Protection Standard Report*. Pursuant to Title 27 CCR Section 20415(e)(10)(B), for each naturally occurring inorganic COC, the concentration limit (applicable suite of background data) for that constituent shall be redetermined each semiannual monitoring period according to the following “moving window” formula. For each reporting period subsequent to the initial reporting period, the Discharger shall create the new concentration limit, for that constituent, by taking the prior reporting period’s background data, adding the newest datum, for that constituent, from background monitoring wells and removing the oldest datum.

The Water Quality Protection Standard shall be updated annually for each monitoring well using new and historical monitoring data.

The concentration limits for each constituent of concern are as follows:

- a. For anthropogenic (not naturally occurring) constituents, which have no natural, and therefore, no background values, the concentration limit (water quality protection standard) shall be the detection limit of the analytical method(s) used.
- b. For each naturally occurring inorganic waste constituent of concern, the concentration limit (applicable suite of background data) for that constituent shall be determined utilizing the inter-well tolerance limit method and groundwater statistical analysis computer program by Sanitas™. The upper tolerance limit shall be calculated from inorganic monitoring data obtained from background monitoring wells and the concentrations of inorganic constituents from downgradient compliance wells compared to the upper tolerance levels. The analytical data from each sampling event shall be used to update the tolerance limits.

## **2. Monitoring Parameters**

Monitoring parameters are a select group of constituents that are monitored during each monitoring event that are the waste constituents, reaction products, hazardous constituents, and physical parameters that provide a reliable indication of a release from a waste management unit. The monitoring parameters for all waste management units are those listed in Tables I and IV for the specified monitored medium.

## **3. Constituents of Concern (COCs)**

The COCs include a larger group of waste constituents, their reaction products, and hazardous constituents that are reasonably expected to be in or derived from waste contained in the waste management unit, and are required to be monitored every five years [Title 27, sections 20395 and 20420(g)]. The COCs for all waste management units at the facility are those listed in Tables I and II for the specified monitored medium , and Table V.

The Discharger shall monitor all COCs every five years, or more frequently as required in accordance with a Corrective Action Program. The last 5-year COC report was submitted to the Central Valley Water Board in the 2010 *Annual Monitoring Report*, and 5-year COCs are due to be monitored again in **2015**.

## **4. Concentration Limits**

For a naturally occurring constituent of concern, the concentration limit for each constituent of concern shall be determined as follows:

- a. By calculation in accordance with a statistical method pursuant to Title 27, section 20415(e)(8); or
- b. By an alternate statistical method meeting the requirements of Title 27, section 20415(e)(8)(E).

The Discharger submitted a Water Quality Protection Standard (WQPS) report proposing statistical data analysis methods to calculate concentration limits for each monitored constituent in accordance with Title 27. The WQPS report proposed to use Interwell data analysis to calculate tolerance limits for the monitored constituents.

## **5. Retesting Procedures for Confirming Evidence of a Release**

If monitoring results indicate measurably significant evidence of a release, as described in Standard Monitoring Specification I.45 of the SPRRs, then:

- a. For analytes that are detected in less than 10% of the background samples (such as non-naturally occurring constituents), the Discharger shall use the non-statistical retesting procedure required in Standard Monitoring Specification I.46 of the SPRRs.
- b. For analytes that are detected in 10% or greater of the background samples (naturally occurring constituents), the Discharger shall use one of the statistical retesting procedure as required in Standard Monitoring Specification I.47 of the SPRRs.

## **6. Point of Compliance**

The point of compliance for the water standard at each waste management unit is a vertical surface located at the hydraulically downgradient limit of the Unit that extends through the uppermost aquifer underlying the unit. The following are monitoring locations at the point of compliance:

### Point of Compliance Monitoring Wells

MW-1

MW-2

MW-3

## **7. Compliance Period**

The compliance period for each waste management unit shall be the number of years equal to the active life of the unit plus the closure period. The compliance period is the minimum period during which the Discharger shall conduct a water quality monitoring program subsequent to a release from the waste management unit. The compliance period shall begin anew each time the Discharger initiates an evaluation monitoring program [Title 27, section 20410].

## **8. Monitoring Points**

A monitoring point is a well, device, or location specified in the waste discharge requirements, which monitoring is conducted and at which the water quality protection standard applies. The monitoring points for each monitored medium are listed in Section A of this MRP.

## **D. TRANSMITTAL LETTER FOR ALL REPORTS**

A transmittal letter explaining the essential points shall accompany each report. At a minimum, the transmittal letter shall identify any violations found since the last report was submitted, and if the violations were corrected. If no violations have occurred since the last submittal, this shall be stated in the transmittal letter. The transmittal letter shall also state that a discussion of any violations found since the last report was submitted, and a description of the actions taken or planned for correcting those

violations, including any references to previously submitted time schedules, is contained in the accompanying report. The transmittal letter shall contain a statement by the discharger, or the discharger's authorized agent, under penalty of perjury, that to the best of the signer's knowledge the report is true, accurate, and complete.

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

*Original signed by:*

Ordered by: \_\_\_\_\_  
PAMELA C. CREEDON, Executive Officer

\_\_\_\_\_ 5 December 2014  
(Date)

**TABLE I**  
**GROUNDWATER DETECTION MONITORING PROGRAM**

<u>Parameter</u>	<u>Units</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
<b>Field Parameters</b>			
Groundwater Elevation	Ft. & 100ths, M.S.L.	Quarterly	Semiannual
Temperature	°F	Semiannual	Semiannual
Electrical Conductivity	umhos/cm	Semiannual	Semiannual
pH	pH units	Semiannual	Semiannual
Turbidity	Turbidity units	Semiannual	Semiannual
<b>Monitoring Parameters</b>			
Total Dissolved Solids (TDS)	mg/L <sup>1</sup>	Semiannual	Semiannual
Chloride	mg/L	Semiannual	Semiannual
Carbonate	mg/L	Semiannual	Semiannual
Bicarbonate	mg/L	Semiannual	Semiannual
Nitrate - Nitrogen	mg/L	Semiannual	Semiannual
Sulfate	mg/L	Semiannual	Semiannual
Calcium	mg/L	Semiannual	Semiannual
Magnesium	mg/L	Semiannual	Semiannual
Potassium	mg/L	Semiannual	Semiannual
Sodium	mg/L	Semiannual	Semiannual
Volatile Organic Compounds (USEPA Method 8260B, short list, see Table IV)	ug/L <sup>2</sup>	Semiannual	Semiannual
<b>5-Year Constituents of Concern (see Table V)</b>			
Total Organic Carbon	mg/L	5 years	2015
Inorganics (dissolved)	ug/L	5 years	and every 5 years
Volatile Organic Compounds (USEPA Method 8260B, extended list)	ug/L	5 years	thereafter
Semi-Volatile Organic Compounds (USEPA Method 8270C or D)	ug/L	5 years	" "
Chlorophenoxy Herbicides (USEPA Method 8151A)	ug/L	5 years	" "
Organophosphorus Compounds (USEPA Method 8141B)	ug/L	5 years	" "

<sup>1</sup> Milligrams per liter

<sup>2</sup> Micrograms per liter

**TABLE II**  
**UNSATURATED ZONE DETECTION MONITORING PROGRAM**

**SOIL-PORE GAS**

<u>Parameter</u>	<u>Units</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
<b>Monitoring Parameters</b>			
Volatile Organic Compounds (USEPA Method TO-14)	ug/cm <sup>3</sup>	Annual	Annual
Methane	%	Semiannual	Semiannual

**TABLE III**  
**LEACHATE SEEP MONITORING <sup>1</sup>**

<u>Parameter</u>	<u>Units</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
<b>Field Parameters</b>			
Total Flow	Gallons	Monthly	Semiannual
Flow Rate	Gallons/Day	Monthly	Semiannual
Electrical Conductivity	umhos/cm	Quarterly	Semiannual
pH	pH units	Quarterly	Semiannual
<b>Monitoring Parameters</b>			
Total Dissolved Solids (TDS)	mg/L	Annually	Annually
Chloride	mg/L	Annually	Annually
Carbonate	mg/L	Annually	Annually
Bicarbonate	mg/L	Annually	Annually
Nitrate - Nitrogen	mg/L	Annually	Annually
Sulfate	mg/L	Annually	Annually
Calcium	mg/L	Annually	Annually
Magnesium	mg/L	Annually	Annually
Potassium	mg/L	Annually	Annually
Sodium	mg/L	Annually	Annually
Volatile Organic Compounds (USEPA Method 8260B, short list, see Table V)	ug/L	Annually	Annually

<sup>1</sup> Leachate seeps shall be sampled and analyzed for the Field and Monitoring Parameters in this table upon detection. The quantity of leachate shall be estimated and reported in gallons/day. Also, refer to Section B.3

## TABLE IV

### MONITORING PARAMETERS FOR DETECTION MONITORING

#### Surrogates for Metallic Constituents:

pH  
Total Dissolved Solids  
Electrical Conductivity  
Chloride  
Sulfate  
Nitrate nitrogen

#### Volatile Organic Compounds, short list:

##### **USEPA Method 8260B**

Acetone  
Acrylonitrile  
Benzene  
Bromochloromethane  
Bromodichloromethane  
Bromoform (Tribromomethane)  
Carbon disulfide  
Carbon tetrachloride  
Chlorobenzene  
Chloroethane (Ethyl chloride)  
Chloroform (Trichloromethane)  
Dibromochloromethane (Chlorodibromomethane)  
1,2-Dibromo-3-chloropropane (DBCP)  
1,2-Dibromoethane (Ethylene dibromide; EDB)  
o-Dichlorobenzene (1,2-Dichlorobenzene)  
m-Dichlorobenzene (1,3-Dichlorobenzene)  
p-Dichlorobenzene (1,4-Dichlorobenzene)  
trans-1,4-Dichloro-2-butene  
Dichlorodifluoromethane (CFC-12)  
1,1-Dichloroethane (Ethylidene chloride)  
1,2-Dichloroethane (Ethylene dichloride)  
1,1 -Dichloroethylene (1,1 -Dichloroethene; Vinylidene chloride)  
cis-1,2-Dichloroethylene (cis-1,2-Dichloroethene)  
trans-1,2-Dichloroethylene (trans-1,2-Dichloroethene)  
1,2-Dichloropropane (Propylene dichloride)  
cis-1,3-Dichloropropene  
trans-1,3-Dichloropropene  
Di-isopropylether (DIPE)  
Ethanol  
Ethyltertiary butyl ether  
Ethylbenzene  
2-Hexanone (Methyl butyl ketone)  
Hexachlorobutadiene  
Methyl bromide (Bromomethane)  
Methyl chloride (Chloromethane)

**TABLE IV**  
**MONITORING PARAMETERS FOR DETECTION MONITORING**

**Continued**

Methylene bromide (Dibromomethane)  
Methylene chloride (Dichloromethane)  
Methyl ethyl ketone (MEK: 2-Butanone)  
Methyl iodide (Iodomethane)  
Methyl t-butyl ether  
4-Methyl-2-pentanone (Methyl isobutylketone)  
Naphthalene  
Styrene  
Tertiary amyl methyl ether  
Tertiary butyl alcohol  
1,1,1,2-Tetrachloroethane  
1,1,2,2-Tetrachloroethane  
Tetrachloroethylene (Tetrachloroethene; Perchloroethylene)  
Toluene  
1,2,4-Trichlorobenzene  
1,1,1-Trichloroethane (Methylchloroform)  
1,1,2-Trichloroethane  
Trichloroethylene (Trichloroethene)  
Trichlorofluoromethane (CFC- 11)  
1,2,3-Trichloropropane  
Vinyl acetate  
Vinyl chloride  
Xylenes

**TABLE V**  
**5-YEAR COCs & APPROVED USEPA ANALYTICAL METHODS**

<b><u>Inorganics (dissolved):</u></b>	<b><u>USEPA Method</u></b>
Aluminum	6010
Antimony	7041
Barium	6010
Beryllium	6010
Cadmium	7131A
Chromium	6010
Cobalt	6010
Copper	6010
Silver	6010
Tin	6010
Vanadium	6010
Zinc	6010
Iron	6010
Manganese	6010
Arsenic	7062
Lead	7421
Mercury	7470A
Nickel	7521
Selenium	7742
Thallium	7841
Cyanide	9010C
Sulfide	9030B

**Volatile Organic Compounds, extended list:**

**USEPA Method 8260B**

Acetone  
Acetonitrile (Methyl cyanide)  
Acrolein  
Acrylonitrile  
Allyl chloride (3-Chloropropene)  
Benzene  
Bromochloromethane (Chlorobromomethane)  
Bromodichloromethane (Dibromochloromethane)  
Bromoform (Tribromomethane)  
Carbon disulfide  
Carbon tetrachloride  
Chlorobenzene  
Chloroethane (Ethyl chloride)  
Chloroform (Trichloromethane)  
Chloroprene  
Dibromochloromethane (Chlorodibromomethane)  
1,2-Dibromo-3-chloropropane (DBCP)  
1,2-Dibromoethane (Ethylene dibromide; EDB)  
o-Dichlorobenzene (1,2-Dichlorobenzene)

## TABLE V

### 5-YEAR COCs & APPROVED USEPA ANALYTICAL METHODS

#### Continued

m-Dichlorobenzene (1,3-Dichlorobenzene)  
p-Dichlorobenzene (1,4-Dichlorobenzene)  
trans- 1,4-Dichloro-2-butene  
Dichlorodifluoromethane (CFC 12)  
1,1 -Dichloroethane (Ethylidene chloride)  
1,2-Dichloroethane (Ethylene dichloride)  
1,1 -Dichloroethylene (1, 1-Dichloroethene; Vinylidene chloride)  
cis- 1,2-Dichloroethylene (cis- 1,2-Dichloroethene)  
trans- 1,2-Dichloroethylene (trans- 1,2-Dichloroethene)  
1,2-Dichloropropane (Propylene dichloride)  
1,3-Dichloropropane (Trimethylene dichloride)  
2,2-Dichloropropane (Isopropylidene chloride)  
1,1 -Dichloropropene  
cis- 1,3-Dichloropropene  
trans- 1,3-Dichloropropene  
Di-isopropylether (DIPE)  
Ethanol  
Ethyltertiary butyl ether  
Ethylbenzene  
Ethyl methacrylate  
Hexachlorobutadiene  
2-Hexanone (Methyl butyl ketone)  
Isobutyl alcohol  
Methacrylonitrile  
Methyl bromide (Bromomethane)  
Methyl chloride (Chloromethane)  
Methyl ethyl ketone (MEK; 2-Butanone)  
Methyl iodide (Iodomethane)  
Methyl t-butyl ether  
Methyl methacrylate  
4-Methyl-2-pentanone (Methyl isobutyl ketone)  
Methylene bromide (Dibromomethane)  
Methylene chloride (Dichloromethane)  
Naphthalene  
Propionitrile (Ethyl cyanide)  
Styrene  
Tertiary amyl methyl ether  
Tertiary butyl alcohol  
1,1,1,2-Tetrachloroethane  
1,1,2,2-Tetrachloroethane  
Tetrachloroethylene (Tetrachloroethene; Perchloroethylene; PCE)  
Toluene  
1,2,4-Trichlorobenzene

**TABLE V**

**5-YEAR COCs & APPROVED USEPA ANALYTICAL METHODS**

**Continued**

1,1,1 -Trichloroethane (Methylchloroform)  
1,1,2-Trichloroethane  
Trichloroethylene (Trichloroethene; TCE)  
Trichlorofluoromethane (CFC- 11)  
1,2,3-Trichloropropane  
Vinyl acetate  
Vinyl chloride (Chloroethene)  
Xylene (total)

**Semi-Volatile Organic Compounds:**

**USEPA Method 8270C or D - base, neutral, & acid extractables**

Acenaphthene  
Acenaphthylene  
Acetophenone  
2-Acetylaminofluorene (2-AAF)  
Aldrin  
4-Aminobiphenyl  
Anthracene  
Benzo[a]anthracene (Benzanthracene)  
Benzo[b]fluoranthene  
Benzo[k]fluoranthene  
Benzo[g,h,i]perylene  
Benzo[a]pyrene  
Benzyl alcohol  
Bis(2-ethylhexyl) phthalate  
alpha-BHC  
beta-BHC  
delta-BHC  
gamma-BHC (Lindane)  
Bis(2-chloroethoxy)methane  
Bis(2-chloroethyl) ether (Dichloroethyl ether)  
Bis(2-chloro-1-methylethyl) ether (Bis(2-chloroisopropyl) ether; DCIP)  
4-Bromophenyl phenyl ether  
Butyl benzyl phthalate (Benzyl butyl phthalate)  
Chlordane  
p-Chloroaniline  
Chlorobenzilate  
p-Chloro-m-cresol (4-Chloro-3-methylphenol)  
2-Chloronaphthalene  
2-Chlorophenol  
4-Chlorophenyl phenyl ether  
Chrysene  
o-Cresol (2-methylphenol)  
m-Cresol (3-methylphenol)  
p-Cresol (4-methylphenol)

**TABLE V**

**5-YEAR COCs & APPROVED USEPA ANALYTICAL METHODS**

**Continued**

4,4'-DDD  
4,4'-DDE  
4,4'-DDT  
Diallate  
Dibenz[a,h]anthracene  
Dibenzofuran  
Di-n-butyl phthalate  
3,3'-Dichlorobenzidine  
2,4-Dichlorophenol  
2,6-Dichlorophenol  
Dieldrin  
Diethyl phthalate  
p-(Dimethylamino)azobenzene  
7,12-Dimethylbenz[a]anthracene  
3,3'-Dimethylbenzidine  
2,4-Dimethylphenol (m-Xylenol)  
Dimethyl phthalate  
m-Dinitrobenzene  
4,6-Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)  
2,4-Dinitrophenol  
2,4-Dinitrotoluene  
2,6-Dinitrotoluene  
Di-n-octyl phthalate  
Diphenylamine  
Endosulfan I  
Endosulfan II  
Endosulfan sulfate  
Endrin  
Endrin aldehyde  
Ethyl methanesulfonate  
Famphur  
Fluoranthene  
Fluorene  
Heptachlor  
Heptachlor epoxide  
Hexachlorobenzene  
Hexachlorocyclopentadiene  
Hexachloroethane  
Hexachloropropene  
Indeno(1,2,3-c,d)pyrene  
Isodrin  
Isophorone  
Isosafrole  
Kepone  
Methapyrilene  
Methoxychlor  
3-Methylcholanthrene

**TABLE V**

**5-YEAR COCs & APPROVED USEPA ANALYTICAL METHODS**

**Continued**

Methyl methanesulfonate  
2-Methylnaphthalene  
1,4-Naphthoquinone  
1-Naphthylamine  
2-Naphthylamine  
o-Nitroaniline (2-Nitroaniline)  
m-Nitroaniline (3-Nitroaniline)  
p-Nitroaniline (4-Nitroaniline)  
Nitrobenzene  
o-Nitrophenol (2-Nitrophenol)  
p-Nitrophenol (4-Nitrophenol)  
N-Nitrosodi-n-butylamine (Di-n-butylnitrosamine)  
N-Nitrosodiethylamine (Diethylnitrosamine)  
N-Nitrosodimethylamine (Dimethylnitrosamine)  
N-Nitrosodiphenylamine (Diphenylnitrosamine)  
N-Nitrosodipropylamine (N-Nitroso-N-dipropylamine; Di-n-propylnitrosamine)  
N-Nitrosomethylethylamine (Methylethylnitrosamine)  
N-Nitrosopiperidine  
N-Nitrosopyrrolidine  
5-Nitro-o-toluidine  
Pentachlorobenzene  
Pentachloronitrobenzene (PCNB)  
Pentachlorophenol  
Phenacetin  
Phenanthrene  
Phenol  
p-Phenylenediamine  
Polychlorinated biphenyls (PCBs; Aroclors)  
Pronamide  
Pyrene  
Safrole  
1,2,4,5-Tetrachlorobenzene  
2,3,4,6-Tetrachlorophenol  
o-Toluidine  
Toxaphene  
2,4,5-Trichlorophenol  
0,0,0-Triethyl phosphorothioate  
sym-Trinitrobenzene

**TABLE V**

**5-YEAR COCs & APPROVED USEPA ANALYTICAL METHODS**

**Continued**

**Chlorophenoxy Herbicides:**

**USEPA Method 8151A**

2,4-D (2,4-Dichlorophenoxyacetic acid)

Dinoseb (DNBP; 2-sec-Butyl-4,6-dinitrophenol)

Silvex (2,4,5-Trichlorophenoxypropionic acid; 2,4,5-TP)

2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)

**Organophosphorus Compounds:**

**USEPA Method 8141B**

Atrazine

Chlorpyrifos

0,0-Diethyl 0-2-pyrazinyl phosphorothioate (Thionazin)

Diazinon

Dimethoate

Disulfoton

Methyl parathion (Parathion methyl)

Parathion

Phorate

Simazine

## INFORMATION SHEET

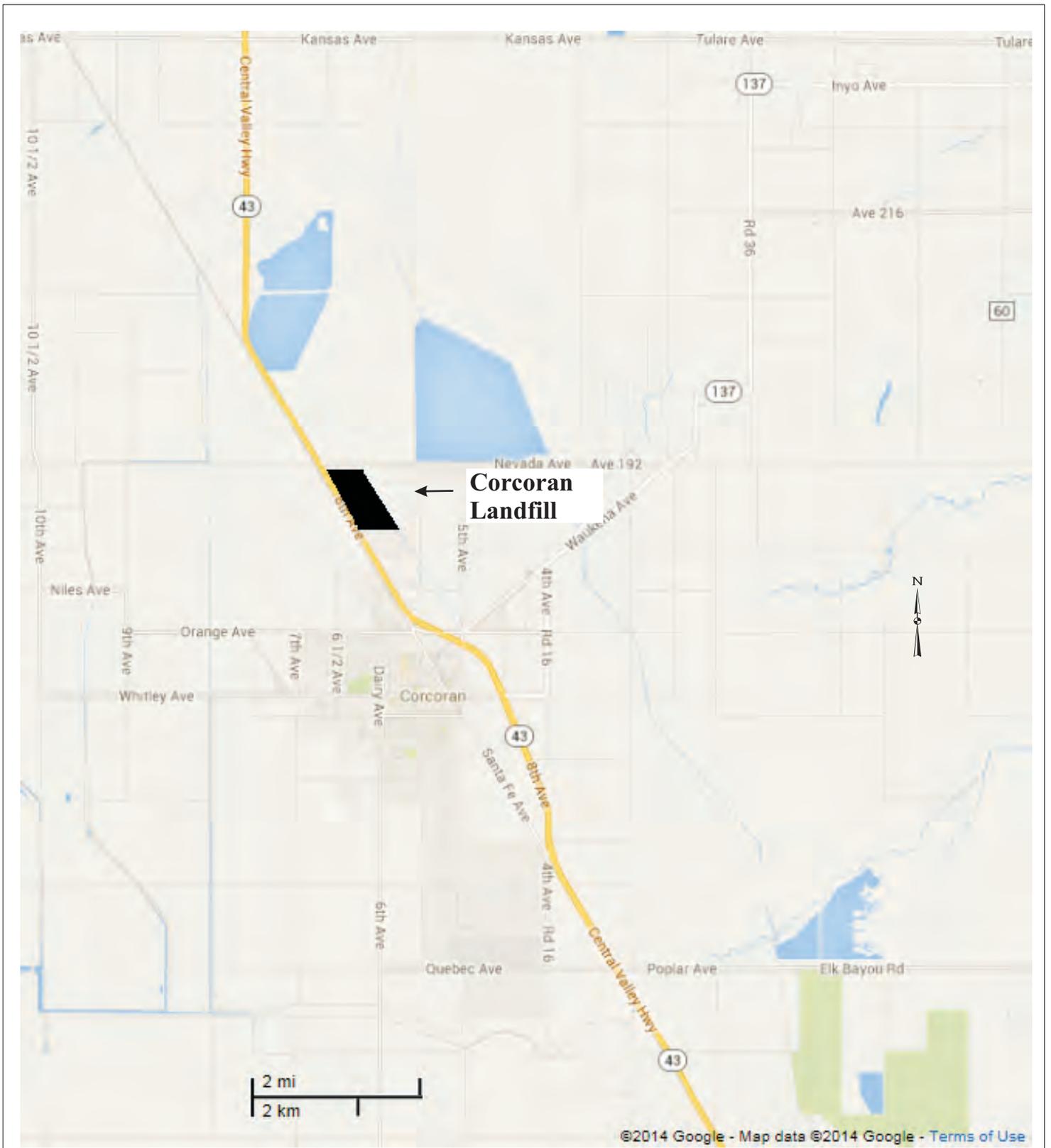
ORDER R5-2014-0164  
KINGS WASTE AND RECYCLING AUTHORITY  
POSTCLOSURE MAINTENANCE AND CORRECTIVE ACTION  
CORCORAN LANDFILL  
KINGS COUNTY

The Kings Waste and Recycling Authority (hereafter Discharger) owns and maintains Corcoran Landfill (facility), located approximately one mile north of the City of Corcoran in Kings County. The California Regional Water Quality Control Board (Central Valley Water Board) adopted Waste Discharge Requirements (WDRs) Order No. 5-00-159 on 16 June 2000, which classified the facility as a Class III landfill as defined in Title 27, California Code of Regulations, section 20005 et seq. (hereafter Title 27). The proposed revised Order provides for continuing post-closure maintenance and incorporates corrective action requirements.

The 60-acre facility consists of one unlined waste management unit covering approximately 20 acres. The facility accepted waste from 1973 through 30 June 1990. The final cover was completed in 1997. The facility is located within the southern portion of the San Joaquin and is underlain by alluvial fan and lacustrine sediments, which consist of interbedded sands, silts, and clays. The first encountered groundwater beneath the facility ranges between 32 and 48 feet below ground surface. Groundwater elevations range between 151 and 162 feet above mean seas level (MSL) depending on location at the facility. The first encountered groundwater is unconfined.

Volatile organic compounds (VOCs) have been detected in the unsaturated zone and in groundwater. The latest self-monitoring report (Second Semiannual 2013 Detection Monitoring Report) reported the following VOC detections at trace levels in groundwater: dichlorofluoromethane, cis-1,2,-dichlorethene, trichloroethene, xylenes, and toluene. Inorganic waste constituents, reported in the most recent self-monitoring report, detected at concentrations statistically exceeding their respective background concentrations include: total dissolved solids (TDS); calcium; magnesium; and chloride.

Cleanup & Abatement Order No. 97-714 (Order 97-714), adopted on 18 September 1997, directed the Discharger, in part, to complete an Evaluation Monitoring Program (EMP), submit an Engineering Feasibility Study (EFS) for a Corrective Action Program (CAP), and implement a CAP. An EMP report and a subsequent addendum addressing the VOCs were submitted in October and December 2001. Central Valley Water Board staff considered the EMP addressing the VOCs to be complete in a 25 January 2002 letter. An EFS was submitted in accordance with Order 97-714. Subsequent revisions were made and, on 9 April 2004, Central Valley Water Board staff approved the EFS and selected CAP. The CAP consists of monitored natural attenuation (MNA), conditioned on the total cumulative VOC concentration remaining below an action level of 5 micrograms per liter ( $\mu\text{g/L}$ ). If the action level is exceeded in any two consecutive monitoring periods, the Discharger is required to install a groundwater pump and treat system. The total cumulative VOC concentration during the most recent monitoring period (Second semiannual 2013) was 2.15  $\mu\text{g/L}$ . An EMP report addressing the inorganic waste constituents was submitted on 8 May 2006. In a 24 July 2006 letter, Central Valley Water Board staff considered the inorganic EMP to be complete and, based upon the results, did not require the Discharger to submit an EFS or implement a CAP for the release of inorganic waste constituents.



## ATTACHMENT A

WASTE DISCHARGE REQUIREMENTS

ORDER NO. R5-2014-0164

KINGS WASTE & RECYCLING AUTHORITY

FOR

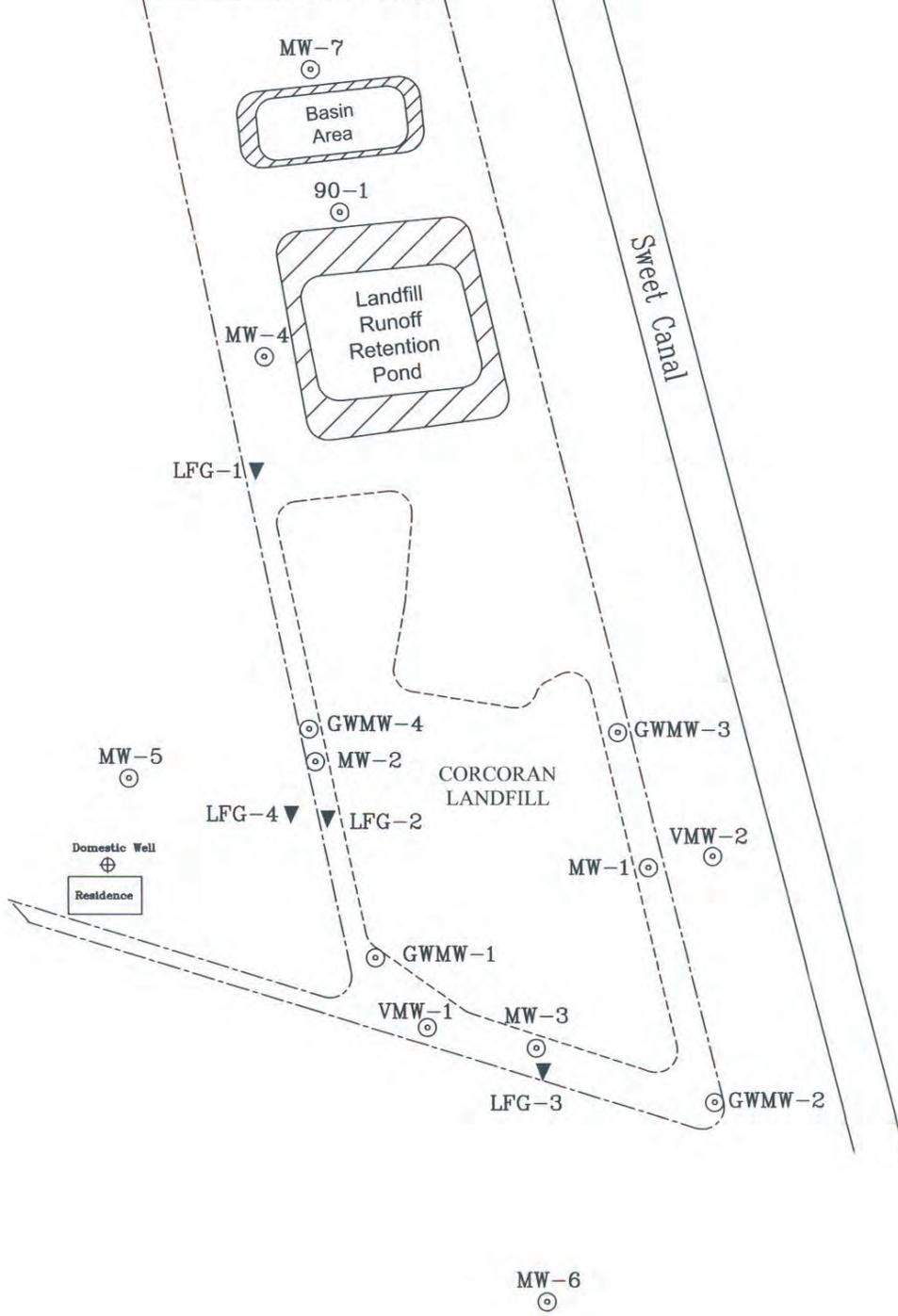
POST-CLOSURE MAINTENANCE & CORRECTIVE ACTION

CORCORAN LANDFILL

KINGS COUNTY

Sweet Canal

Landfill Property Line



**LEGEND**

- ⊙ Groundwater Monitoring Well
- ▼ Landfill Gas Monitoring Well

0 250 500 feet



APPROXIMATE SCALE

**ATTACHMENT B**

WASTE DISCHARGE REQUIREMENTS

ORDER NO. R5-2014-0164

KINGS WASTE & RECYCLING AUTHORITY

FOR

POST-CLOSURE MAINTENANCE & CORRECTIVE ACTION

CORCORAN LANDFILL

KINGS COUNTY