

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
COLORADO RIVER BASIN REGION**

ORDER NO. R7-2015-0036

WASTE DISCHARGE REQUIREMENTS AND CLOSURE/POST-CLOSURE MAINTENANCE

FOR

COUNTY OF SAN BERNARDINO, OWNER/OPERATOR  
LUCERNE VALLEY WASTE MANAGEMENT FACILITY  
CLASS III SANITARY LANDFILL

Northeast of Lucerne Valley- San Bernardino County

The California Regional Water Quality Control Board, Colorado River Basin Region, (Colorado River Basin Water Board), finds that:

1. The County of San Bernardino Solid Waste Management Division, formerly known as the County of San Bernardino Solid Waste Management Department (hereinafter referred to as the Discharger), 222 West Hospitality Lane, Second Floor, San Bernardino, California 92415-0017, owns and operates the Lucerne Valley Waste Management Facility (WMF) as a Class III landfill (hereinafter referred to as the Landfill) for the disposal of municipal solid waste.
2. The Landfill is located in the Northwest quarter of Section 24, Township 5 North, Range 1 East, San Bernardino Base and Meridian, about eight (8) miles northeast of Lucerne Valley, southeast of Camp Rock Road, along Stella Road as shown on Attachment A, which is incorporated herein and made part of this Board Order. The facility is identified in the California Integrated Water Quality System (CIWQS) database with Waste Discharger Identification (WDID) No. 7A360304141 and in the GeoTracker database by the Global Identification L10006289548. The Discharger reports the facility address is 27805 Squaw Bush Road, Lucerne Valley, CA 92356.
3. The Landfill was closed in 2005, and is currently not accepting any waste and has not accepted waste for approximately 10 years.
4. The Landfill is subject to Waste Discharge Requirements (WDRs) Order No. R7-2005-0097. The WDRs are being updated to address changes in the monitoring program from semi-annual to annual as requested by the Discharger via letter of July 2, 2014, and a Report of Waste Discharge (ROWD) submitted March 9, 2015. They are also being updated to incorporate applicable requirements of the California Code of Regulations, (CCR), Title 27 and requirements of the Federal Resources Conservation and Recovery Act (RCRA) Subtitle D, which are set forth in Title 40 Code of Federal Regulations (CFR), Subpart F, commencing with Section 258.0. . The WDRs have been updated as follows:

**Year:**  
1983

**Board Order Numbers:**  
83-068

**Year:**

1989  
1993  
2002  
2003  
2005

**Board Order Numbers:**

89-010  
93-071  
R7-2002-0125  
R7-2003-0029  
R7-2005-0097

5. The Discharger operates Camp Rock Transfer Station, a collection and transfer station on a 7.09 acre parcel adjacent to the Landfill. The transfer station began operation in 1993 and is regulated under Solid Waste Facility Permit No. 36-AA-0317 issued by CalRecycle and the County of San Bernardino Local Enforcement Agency (LEA). The transfer station is permitted to accept 14 tons per day of municipal solid waste including agricultural, construction and demolition, ash, dead animals, industrial mixed/municipal solid waste, tires, and metallic waste. The facility operates Wednesday through Monday, collecting waste in 40 cubic yard bins for transport offsite.
6. On September 15, 1993, the WDRs were amended when WDRs Order 93-071, incorporating RCRA, Subtitle D (hereinafter referred to as RCRA Subtitle D), was adopted by the Colorado River Basin Water Board.
7. The Discharger submitted a Solid Waste Assessment Test (SWAT) report on June 30, 1988. Historical records indicate groundwater was polluted with VOCs.
8. The Discharger operated the WMF as a landfill utilizing the area method of disposal. The site received residential refuse, commercial refuse, demolition wastes and agricultural wastes.
9. The WMF area is a total of 9 acres, 3.4 acres of which comprise the landfill.
10. The WMF is underlain by Quaternary alluvial sediments composed mostly of coarse-grained material. Fractured crystalline bedrock composed of quartz monzonite underlies the alluvium. The fractured bedrock occurs at a depths ranging from 20 feet to more than 116 feet below the ground surface in the vicinity of the site. Water quality data indicates that the bedrock is hydraulically interconnected. The site geology is shown on Attachment B, which is appended hereto and made part of this Board Order by reference.
11. Ground water in the vicinity of the site occurs in unconfined conditions. Ground water depths measured in December 2004 in site monitoring wells ranged from 185 feet to 200 feet below ground surface.
12. Groundwater potentiometric contours, monitoring well locations, and soil-pore-gas monitoring probe locations are shown on Attachment C.
13. Definitions of terms used in this Board Order:
  - a. Waste Management Facility (WMF) - The entire parcel of property at which waste discharge operations are conducted. The WMF is also referred to as the Landfill in this Order.

- b. Waste Management Unit (WMU) - An area of land, or a portion of a waste management facility, at which waste is discharged. The term includes containment features and ancillary features for precipitation and drainage control and monitoring. It does not include surface impoundments, waste piles, land treatment or soil amendments. .
14. Faulting is present within the area, however there are no documented faults within one mile of this site.
15. The Colorado River Basin Water Board's Executive Officer issued Cleanup and Abatement Order (CAO) No. 95-075 to the Discharger for the Landfill on August 8, 1995 in response to a Detection Monitoring Program, which indicated that the site was contributing to the degradation of groundwater. Concentrations of VOCs such as Dichlorodifluoromethane and Tetrachloroethene were detected at 8.5ug/L and 3.2ug/L, respectively. The Discharger completed an Evaluation Monitoring Program and submitted a Corrective Action Program. CAO 97-078 updated the 1995 CAO to implement changes in the task schedule. By 1998 the VOC levels had decreased by 50%, and remain stable or decreasing. CAO 97-078 was rescinded by the Colorado River Basin Water Board in correspondence dated November 18, 1998.
16. Analyses of ground water samples collected from 1988 through August 2015 from all groundwater monitoring wells indicate polluted groundwater. Concentrations of constituents of concern (COC) are stable to decreasing however and support reducing sampling frequency. COC concentrations are as shown in the following table:

COC	Unit	Maximum Value	2004-2014 average	2010-2015 average
Chloride	mg/L	2500	1150	1150
Nitrate-N	mg/L	52	7.5	7.5
pH		9.25	7.5	7.5
Sulfate	mg/L	700	300	275
TDS	mg/L	9500	2070	2070
Ca	mg/L	454	80	80
Na	mg/L	266	850	850
VOCs LV-1	ug/L	3.5	0.6	0.4
VOCs LV-2	ug/L	2.2	0.3	0.25
VOCs LV-3	ug/L	5	0.5	0.3
VOCs LV-4	ug/L	3.9	0.3	0.25
VOCs LV-5	ug/L	5.1	0.4	1.0

17. The Landfill is unlined and does not have a leachate collection system.
18. In 2002, CAO R7-2002-0206 was issued to all Class III and unclassified waste management units prohibiting acceptance of decommissioned low level radioactive waste at these Landfills, pursuant to Water Code Section 13304 and Executive Order D-62-02. There are no records indicating that low level radioactive waste was disposed of at the Landfill.

19. The Water Quality Control Plan for the Colorado River Basin Region of California was adopted by the Colorado River Basin Water Board on November 17, 1993, and amended on November 17, 2012. It designates the beneficial uses of the surface and groundwater in the area.
20. The beneficial uses of ground water of the Lucerne Hydrologic Subunit are:
  - a. Municipal supply
  - b. Industrial supply
  - c. Agricultural supply
21. In accordance with Section 15301, Chapter 3, Division 6, Title 14 of the California Code of Regulations, the issuance of these WDRs, which governs the operation of an existing facility involving negligible or no expansion of use beyond that previously existing, is exempt from the provisions of the California Environmental Quality Act (Public Resources Code, Section 21000 et. Seq).
22. Federal regulations for storm water discharges were promulgated by the United States Environmental Protection Agency (USEPA) on November 16, 1990 (40 CFR Parts 122, 123, and 124). The regulations require specific categories of facilities which discharge storm water associated with industrial activity to obtain National Pollutant Discharge Elimination System (NPDES) permits and to implement Best Conventional Pollutant Control Technology (BCT) to reduce or eliminate storm water pollution.
23. The State Water Resources Control Board (State Water Board) adopted Industrial General Permit Order 97-03-DWQ and its replacement Order 2014-0057-DWQ (NPDES No. CAS000001) specifying WDRs for discharges of storm water associated with industrial activities, including operational landfills. The Facility is operated as an active transfer station and may need regulatory coverage under the Industrial General Permit. The Discharger needs to review and where necessary comply with applicable industrial storm water requirements of the SWRCB and may find the following link helpful [http://www.waterboards.ca.gov/water\\_issues/programs/stormwater/](http://www.waterboards.ca.gov/water_issues/programs/stormwater/).
24. Construction actions, such as road improvements at closed landfills, may be subject to the Construction General Permit Order 2009-0009-DWQ that includes amending Orders 2010-0014-DWQ and 2012-0006-DWQ (NPDES No. CAS000002). When planning such activities, the Discharger needs to review and where necessary comply with applicable construction storm water requirements of the State Water Board.
25. The Discharger has submitted, to the Colorado River Basin Water Board, and to CalRecycle evidence of Financial Assurance for Closure and Post-Closure, pursuant to Section 22207 and 22212 of Title 27.
26. On October 14, 2004, the Discharger submitted a revised Final Closure/Post Closure Maintenance Plan (FCPCMP). The revised report was approved by Colorado River Basin Water Board staff in April, 2005. The Colorado River Basin Water Board adopted WDR R7-2005-0097 implementing the approved closure. This Order updates R7-2005-0097.

## I. CLOSURE HISTORY

- A. Final Cover- the Discharger has installed an alternative cover in accordance with Title 27. The final cover consists of, in ascending order:
  - 1. Foundation Layer - A minimum one (1) foot thick foundation layer composed of random soil materials determined to be in place by the existing cover evaluation.
  - 2. Monolithic Layer - A two (2) foot thick infiltration control layer of random soil material that comprises the monolithic vegetative cover layer.
- B. Analysis has shown that the three (3) foot thick final cover meets or exceeds the performance criteria of the prescribed standard as detailed in Title 27. Factors that were taken into consideration in establishing the final cover design were: geometry of the existing landfill, local climate conditions (i.e. arid environment, low rainfall, and high evaporation), potential landfill settlement, final cover performance, erosion protection, vegetative growth, and end use at closure.
- C. Title 27, Section 20080(b) states that approval for an alternative cover system is allowed in cases where the Discharger demonstrates that a) the construction of a prescriptive standard is not feasible as provided in subsection (c) of Section 20080 and, b) there is a specified engineered alternative that is consistent with the performance goal addressed by the particular construction or prescriptive standard, and it affords protection against water quality impairment.
- D. As stipulated in Title 27, Section 20080(c), to establish that the prescriptive standard is not feasible the Discharger must demonstrate that the prescriptive standard either a) is unreasonable and unnecessarily burdensome and will cost substantially more than alternative which meet the criteria in Section 20080(b), or b) is impractical and will not promote attainment of applicable performance standards.
- E. The Discharger states that analyses done using site specific information concluded that the climatological and soil conditions support the use of the proposed alternative final cover design utilizing a monolithic random soil. This design meets or exceeds the prescribed performance criteria and is economical for site closure.
- F. Ongoing erosion of the final cover will be prevented by three (3) erosion control features:
  - 1. Fill area grading;
  - 2. Re-vegetation; and
  - 3. Natural armoring of the outer surface
- G. The decks are designed for sheet flow run-off with a minimum slope of approximately three percent (3%). In addition, the landfill surface is planted with native grass and shrub materials which established into a vegetative cover typical of the local desert vegetation. Areas between the intermittent plants are expected to develop natural gravel armoring typical of the high desert area of California.
- H. The Discharger reports that during the 30 year post closure maintenance period, the average soil loss over the entire site will be 0.31 inches. Any significant soil loss will be refilled to its design status.

- I. Precipitation falling on the landfill deck is channeled by various drainage ditches and berms designed to collect and divert surface water run-off from the site to a common point at the south-east corner of the landfill.
- J. The groundwater monitoring system at the site consists of six (6) wells: LV-1, LV-2, LV-3, LV-4, LV-5, and LV-6. The location of the monitoring wells is shown on Attachment C. The wells are monitored on an annual basis. Summary water quality data is provided in Finding No. 16.
- K. Landfill gas migration within the vadose zone is monitored by three (3) dual depth soil-pore gas probes: LVSG-1, LVSG-2, and LVSG-3. The location of the probes is shown on attachment C. The probes are monitored on an annual basis.
- L. Land use -The closed landfill is designated as non-irrigated open space.
- M. The Discharger has installed two (2) permanent settlement monuments on the landfill after placement of the final cover to assess settlement. Aerial photography survey of the entire site was taken upon completion of closure activities and will be taken every five (5) years thereafter during the post closure period.

## II. **POST CLOSURE MAINTENANCE**

- A. Inspection - Routine and periodic inspections are conducted by the Discharger. Immediately after special events such as earthquakes, storms, and fires, a thorough and comprehensive inspection will be conducted. Additionally, the Discharger will inspect the landfill for the following:

### Inspection Period

1. Landfill gas migration system monitoring and maintenance	Monthly
2. Groundwater system monitoring and maintenance	Monthly
3. Storm water monitoring	Monthly
4. Final cover inspection and maintenance	Monthly
5. Settlement monitoring and maintenance	Monthly
6. Vegetative cover inspection and maintenance	Monthly
7. Access road inspection and maintenance	Monthly
8. Drainage control system inspection and maintenance	Monthly
9. Site security inspection and maintenance	Monthly

Deficiencies, damages to, and failure of the final cover and final grades will be repaired and restored within 30 days to design conditions and in accordance with construction standards.

- B. Settlement measurements are done every five (5) years throughout the post closure maintenance period. Any settlement of the cover system will be appropriately mitigated in a manner acceptable to the Colorado River Basin Water Board's Executive Officer.
- C. Drainage System – Drainage inlets and down drains are periodically cleared of sediment, trash, brush, and other refuse. Drainage channels and outlets will be maintained to permit free flow and sealed or repaired to maintain structural integrity of

the system. Any damage will be repaired within 30 days.

- D. Groundwater Monitoring System - All groundwater monitoring wells are inspected for signs of failure or deterioration during each sampling event. If damage is discovered, the nature and extent of the problem will be recorded. A decision will be made to replace or repair the well. If a well needs to be replaced, it will be properly decommissioned. Damaged wells will be scheduled for repair prior to the next monitoring event.
- 27. The Board has notified the Discharger and all known interested agencies and persons of its intent to update WDRs for this discharge and has provided them with an opportunity for a public meeting and an opportunity to submit comments.
- 28. The Board, in a public meeting, heard and considered all comments pertaining to this discharge.

IT IS HEREBY ORDERED, that Board Order No. R7-2005-0097 is rescinded, except for enforcement purposes, and in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, the Discharger shall comply with the following:

A. Specifications

- 1. The treatment or disposal of wastes at this facility shall not cause pollution or nuisance as defined in Section 13050 of Division 7 of the California Water Code.
- 2. Waste material shall be confined to the existing footprint of the WMF, as defined in Finding No. 13 a. and described on the attached site maps.
- 3. The Discharger shall not cause degradation of any water supply.
- 4. Surface drainage from tributary areas, and internal site drainage from surface or subsurface sources, shall not contact or percolate through the wastes discharged at the site.
- 5. The exterior surfaces of the disposal area, including the intermediate and final Landfill covers, shall be graded and maintained to promote lateral runoff of precipitation and to prevent ponding.
- 6. The Discharger shall use the constituents listed in Monitoring and Reporting Program No. R7-2015-0036 and revisions thereto, as "monitoring parameters". These monitoring parameters are subject to the most appropriate statistical or non-statistical test under Monitoring and Reporting Program No. R7-2015-0036, Part III, and any revised Monitoring and Reporting Program approved by the Colorado River Basin Water Board's Executive Officer.
- 7. The Discharger shall implement the attached Monitoring and Reporting Program No. R7-2015-0036 in order to detect, at the earliest opportunity, any unauthorized discharge of waste constituents from the WMF, or any unreasonable impairment of beneficial uses

associated with (caused by) discharges of waste to the WMF.

8. The Discharger shall not cause the concentration of any Constituent of Concern or Monitoring Parameter to exceed its respective background value in any monitored medium at any Monitoring Point assigned to Detection Monitoring pursuant to Part II.A.4 of the attached Monitoring and Reporting Program No. R7-2015-0036.
9. The Discharger shall follow the Water Quality Protection Standards (WQPS) for detection monitoring established by the Colorado River Basin Water Board. The following are five (5) parts of the WQPS as established by the Colorado River Basin Water Board (the terms of art used in this Board Order regarding monitoring are defined in Part I of the attached Monitoring and Reporting Program No. R7-2015-0036, and revisions thereto, which is hereby incorporated by reference):
  - a. The Discharger shall test for the monitoring parameters and the Constituents of Concern (COC) listed in Monitoring and Reporting Program (M&RP) No. R7-2015-0036 and revisions thereto, at the frequencies listed in the M&RP.
  - b. Concentration Limit - The concentration limits for each monitoring parameter and COC, for each monitoring point (as stated in detection Monitoring Program Part II), shall be its background value as obtained during that reporting period.
  - c. Monitoring points and background monitoring points for detection monitoring shall be those listed in Part II.A. of the attached Monitoring and Reporting Program No. R7-2015-0036, and any revised Monitoring and Reporting Program approved by the Colorado River Basin Water Board's Executive Officer.
  - d. Points of Compliance - (Section 20405, Title 27) shall be those Monitoring Points listed in Part II.A of attached Monitoring and Reporting Program No. R7-2015-0036 and shown on Attachment C. A compliance review and evaluation shall be submitted as part of each annual report (see MRP),
  - e. Compliance Period - The estimated duration of the compliance period for this WMF is six (6) years. Each time the Standard is not met (i.e., releases discovered), the Landfill begins a compliance period on the date the Colorado River Basin Water Board directs the Dischargers to begin an Evaluation Monitoring Program. If the Dischargers' Corrective Action Program (CAP) has not achieved compliance with the standard by the scheduled end of the compliance period, the compliance period is automatically extended until the WMF has been in continuous compliance for at least three (3) consecutive years.
10. The Discharger shall maintain an alternative final cover of the following, in ascending order:
  - a. A minimum one (1) foot thick foundation layer composed of random soil materials determined to be in place by the existing cover evaluation.
  - b. A two (2) foot thick infiltration control layer of random soil material that will comprise the monolithic vegetative cover layer.

11. The Discharger shall remove and relocate any wastes that are discharged at this site in violation of these requirements.
12. Water used for site maintenance shall be limited to the amount necessary for dust control.
13. The Landfill shall be designed to prevent any washout or erosion of wastes or covering material, and from any inundation which could occur as a result of floods having a predicted frequency of once in 100 years.
14. The Discharger shall not cause the release of pollutants, or waste constituents in a manner which could cause a condition of contamination, or pollution to occur, as indicated by the most appropriate statistical (or non-statistical) data analysis method and retest method listed in Part III of the attached Monitoring and Reporting Program No. R7-2015-0036.
15. The Discharger shall follow the proposed Closure/Post-Closure Maintenance Plan, which is hereby incorporated into this Order.
16. Thorough and comprehensive inspections shall be conducted at regular intervals.
17. The Discharger shall, within 30 days, repair and restore to design conditions, and in accordance with construction specifications, any deficiencies, damages to, or failure of the final cover, final grade, side slopes, drainage system, settlement, and monitoring systems.
18. The Discharger shall maintain, at a minimum, two (2) settlement monuments on the landfill for monitoring refuse settlement at the site. The entire landfill shall be aerially photographed at the end of the closure activities and every five (5) years throughout the post-closure period.

B. Prohibitions

1. The discharge or deposit of solid waste at this site is prohibited.
2. The discharge of low level radioactive waste is prohibited.
3. The discharge or deposit of designated waste as defined in Title 27 at this site is prohibited.
4. The co-disposal of incompatible wastes is prohibited.
5. The direct discharge of any waste to any surface waters or surface drainage courses is prohibited.
6. The discharge of waste to land not owned or controlled by the Discharger is prohibited.
7. The discharge of liquid or semi-solid waste (i.e., waste containing less than 50 percent solids) to the Landfill is prohibited unless approved by the Colorado River Basin Water Board's Executive Officer.

C. Provisions

1. The Discharger shall comply with Monitoring and Reporting Program No. R7-2015-0036 and future revisions thereto, as specified by the Colorado River Basin Water Board's Executive Officer.
2. Prior to any change in ownership or management of this operation, the Discharger shall transmit a copy of this Board Order to the succeeding owner/operator, and forward a copy of the transmittal letter to the Colorado River Basin Water Board.
3. The Discharger shall ensure that all site-operating personnel are familiar with the content of this Board Order, and shall maintain a copy of this Board Order at the site.
4. This Board Order does not authorize violation of any federal, state, or local laws or regulations.
5. Consistent with CWC Section 13267(c), the Discharger shall allow the Colorado River Basin Water Board, or an authorized representative, upon presentation of credentials and other documents as may be required by law, to:
  - a. Enter upon the premises regulated by this Board Order, or the place where records must be kept under the conditions of this Board Order;
  - b. Have access to and copy, at reasonable times, any records that shall be kept under the conditions of this Board Order;
  - c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Board Order; Board Order or as otherwise authorized by the California Water Code, any substances or parameters at this location.
6. The Discharger shall neither cause nor contribute to the contamination or pollution of ground water via the release of waste constituents in either liquid or gaseous phase.
7. This Board Order does not convey any property rights of any sort or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations.
8. Unless otherwise approved by the Colorado River Basin Water Board's Executive Officer, all analyses shall be conducted at a laboratory certified for such analyses by the California Environmental Laboratory Accreditation Program (ELAP) within the State Water Resources Control Board Division of Drinking Water. All analyses shall be conducted in accordance with the latest edition of "Guidelines Establishing Test Procedures for Analysis of Pollutants", promulgated by the United States Environmental Protection Agency (USEPA).
9. All regulated disposal systems shall be readily accessible for sampling and inspection.
10. Adequate measures, including the implementation of storm water best management practices, shall be taken to assure that flood or surface drainage waters do not erode or otherwise render portions of the discharge facilities inoperable.

11. The Discharger is the responsible party for the Waste Discharge Requirements (WDRs) and the Monitoring and Reporting Program for the facility. The Discharger shall comply with all conditions of these WDRs. Violations may result in enforcement actions, including Colorado River Basin Water Board Orders or court orders, requiring corrective action or imposing civil monetary liability, or in modification or revocation of these WDRs by the Colorado River Basin Water Board.
12. The Discharger shall furnish, under penalty of perjury, technical monitoring program reports, and such reports shall be submitted in accordance with the specifications prepared by the Colorado River Basin Water Board's Executive Officer. Such specifications are subject to periodic revisions as may be warranted.
13. All containment structures and erosion and drainage control systems shall be designed and constructed under direct supervision of a California Registered Civil Engineer or Certified Engineering Geologist, and shall be certified by the individual as meeting the prescriptive standards and performance goals of Title 27.
14. The Colorado River Basin Water Board considers the property owner to have a continuing responsibility for correcting any problems which may arise in the future as a result of this waste discharge.
15. The Discharger shall, within 10 working days of a significant earthquake event, submit to the Colorado River Basin Water Board a detailed post-earthquake report describing any physical damages to the- containment features and/or groundwater/soil-pore gas monitoring facilities and a corrective action plan to be implemented at the Landfill.
16. The Discharger shall immediately notify the Colorado River Basin Water Board of any flooding, slope failure or other change in site conditions which could impair the integrity of waste containment facilities or of precipitation and drainage control structures.
17. The Discharger shall maintain assurances for financial responsibility for Post-Closure maintenance activities, pursuant to Title 27, CCR, section 22212, and for Corrective action activities pursuant to Title 27, CCR, section 22222.
18. The Discharger shall submit all documents including information requested by the Executive Officer, correspondence and self-monitoring and other reports electronically over the Internet into the State Water Resource Control Board's GeoTracker database. Groundwater monitoring raw data must be uploaded into GeoTracker in the correct data format and assigned to each monitoring well correlated by the monitoring well's geospatially surveyed location. Electronic submission of reports containing soil, vapor or groundwater data are required for subsurface investigation and remediation at sites in the leaking Underground Storage Tank; Spills, Leaks, Investigation and Cleanup; Department of Defense; and Land Disposal Programs, according to Chapter 30, Division 3, Title 23 of the California Code of Regulations. The GeoTracker facility identification number for the Lucerne Valley Landfill is L10006289548 and the California Integrated Water Quality Systems (CIWQS) waste discharger identification number (WDID) is 7A360304141
- 19 This Board Order is subject to Colorado River Basin Water Board review and updating, as necessary, to comply with changing state or federal laws, regulations, policies, or

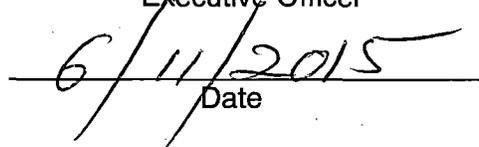
guidelines, or changes in the discharge characteristics.

I, Robert Perdue, Executive Officer, do hereby certify the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, Colorado River Basin Region, on June 11, 2015.

Ordered By:



ROBERT PERDUE  
Executive Officer



Date

**COLORADO RIVER BASIN REGION**

MONITORING AND REPORTING PROGRAM NO. R7-2015-0036

AND CLOSURE/POST-CLOSURE MAINTENANCE  
FOR

COUNTY OF SAN BERNARDINO, OWNER/OPERATOR  
LUCERNE VALLEY WASTE MANAGEMENT FACILITY CLASS III SANITARY LANDFILL

Northeast of Lucerne Valley- San Bernardino County

CONSISTS OF

PART I, PART II AND PART III

## **PART I**

### **A. GENERAL**

A Discharger who owns or operates a Waste Management Facility is required to comply with the provisions of Chapter 3, Subchapter 3, Article 1, Title 27, California Code of Regulations for the purpose of detecting, characterizing, and responding to releases to the ground water from the Waste Management Facility (WMF). California Water Code Section 13267 gives the Colorado River Basin Water Board authority to require monitoring program reports for discharges that could affect the quality of waters within its region. State Water Resources Control Board Resolution No. 93-062 requires the Colorado River Basin Water Board to implement federal Municipal Solid Waste Regulations (Title 40 Code of Federal Regulations, Parts 257 and 258). Responsibilities of San Bernardino County (Discharger) are specified in Section 13225(a), 13267(b) and 13387(b) of the California Water Code, and the State Water Resources Control Board's Resolution No. 93-062

This self-monitoring program is issued pursuant to Provision No. 1 of Colorado River Basin Water Board Order No. R7-2015-0036. The principal purposes of a self-monitoring program by a waste Discharger are:

1. To document compliance with WDRs and prohibitions established by the Colorado River Basin Water Board;
2. To facilitate self-policing by the waste Discharger in the prevention and abatement of pollution arising from waste discharge;
3. To prepare water quality analyses;
4. To prepare vadose zone (unsaturated zone) gas, if applicable, and liquid quality analyses.

### **B. DEFINITION OF TERMS**

1. The "Monitored Media" are those water- or gas-bearing media that are monitored pursuant to this Monitoring and Reporting Program. The Monitored Media may include: (1) ground water in the uppermost aquifer, in any other portion of the zone of saturation (Title 27, Section 20164) in which it would be reasonable to anticipate that waste constituents migrating from the Unit could be detected, and in any perched zones underlying the Unit, (2) any bodies of surface water that could be measurably affected by a release, (3) soil-pore liquid beneath and/or adjacent to the Unit, and (4) soil-pore gas beneath and/or adjacent to the Unit.
2. The "Constituents of Concern (COC)" are those constituents which are likely to be in the waste in the landfill or which are likely to be derived from waste constituents, in the event of a release.
3. The "Monitoring Parameters" consists of a short list of constituents and parameters used for the majority of monitoring activity.
4. The "Volatile Organics Composite Monitoring Parameter for Water (VOCwater)" and the "Volatile Organics Composite Monitoring Parameter for Soil-Pore Gas (VOCspg)" are

composite Monitoring Parameters addressing all volatile organic constituents detectable in a sample of water or soil-pore gas, respectively. (See Part III.A.2. of this Program for additional discussion of these Monitoring Parameters).

5. "Standard Observations" refers to:
  - a. For Receiving Waters:
    1. Floating and suspended materials of waste origin: presence or absence, source, and size of affected area;
    2. Discoloration and turbidity: description of color, source, and size of affected area;
    3. Evidence of odors: presence or absence, characterization, source, and distance of travel from source;
    4. Evidence of beneficial use: presence of water-associated wildlife;
    5. Flow Rate; and
    6. Weather conditions: wind direction and estimated velocity, total precipitation during the previous five (5) days and on the day of observation.
  - b. Along the perimeter of the Landfill:
    1. Evidence of liquid leaving or entering the Unit, estimated size of affected area, and flow rate (show affected area on map);
    2. Evidence of odors: presence or absence, characterization, source, and distance of travel from source; and
    3. Evidence of erosion and/or of exposed refuse.
  - c. For the Landfill:
    1. Evidence of ponded water at any point on the Landfill (show affected area on map);
    2. Evidence of odors: presence or absence, characterization, source, and distance of travel from source;
    3. Evidence of erosion and/or of day lighted refuse; and
    4. "Standard Analysis and Measurements", which refers to:
      - a. Turbidity (only for water samples) in NTU;
      - b. Water elevation to the nearest 1/100th foot above mean sea level (only for ground water monitoring); and
      - c. Sampling and statistical/non-statistical analysis of the Monitoring Parameters.

6. "Matrix Effect" refers to any increase in the Method Detection Limit or Practical Quantitation Limit for a given constituent as a result of the presence of other constituents - either of natural origin or introduced through a release - that are present in the sample of water or soil-pore gas being analyzed.
7. "Facility-Specific Method Detection Limit (MDL)", for a given analytical laboratory using a given analytical method to detect a given constituent (in spite of any Matrix Effect) means the lowest concentration at which the laboratory can regularly differentiate - with 99% reliability - between a sample which contains the constituent and one (1) which does not.
8. "Facility-Specific Practical Quantitation Limit (POL)", for a given analytical laboratory using a given analytical method to determine the concentration of a given constituent (in spite of any Matrix Effect) means the lowest constituent concentration the laboratory can regularly quantify within specified limits of precision that are acceptable to the Colorado River Basin Water Board's Executive Officer.
9. "Reporting period" means the duration separating the submittal of a given type of monitoring report from the time the next iteration of that report is scheduled for submittal. Therefore, the reporting period for monitoring parameters is annually, and the reporting period for Constituents of Concern is every five (5) years. An annual report, which is a summary of all the monitoring during the previous years, shall also be submitted to the Colorado River Basin Water Board. The submittal dates for each reporting period shall be as follows:
  - a. Annual Summary Report  
January 1 through December 31 -report due by February 15
  - b. Five (5) Year Report  
Testing shall take place every five years. Testing began in the Spring of 1995 and was also completed in the Fall of 2000. The next Five year testing was completed by the Spring of 2005 (June 2005), with testing o continuing every five years thereafter, alternating between Spring and Fall, as long as the WMF is in operation and through the closure/post-closure period, with reports due by February 15 of the following year.

### **C. SAMPLING AND ANALYTICAL METHODS**

Sampling collection, storage, and analysis shall be performed according to the most recent version of Standard USEPA methods, and in accordance with an approved sampling and analysis plan. Water and waste analysis shall be performed by a laboratory approved for these analyses by the California Environmental Laboratory Accreditation Program (ELAP) within the State Water Resources Control Board Division of Drinking Water. Specific methods of analysis must be identified. If methods other than USEPA-approved methods or Standard Methods are used, the exact methodology must be submitted for review and must be approved by the Colorado River Basin Water Board's Executive Officer prior to use. The director of the laboratory whose name appears on the certification shall supervise all analytical work in his/her laboratory and shall sign all reports of such work submitted to the Colorado River Basin Water Board. All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurements. In addition, the Discharger is responsible for seeing that the laboratory analysis of all samples from Monitoring Points and Background Monitoring Points meets the following restrictions:

- a. The methods and analysis and the detection limits used must be appropriate for the expected concentrations. For detection monitoring of any constituent or parameter that is found in concentrations which produce more than 90% non-numerical determinations (i.e. "trace" or "NO") in data from Background Monitoring Points for that medium, the analytical methods having the lowest "facility-specific method detection limit (MDL)", defined in Part I.B.7., shall be selected from among those methods which would provide valid results in light of any "Matrix Effects" (defined in Part 1.B.6.) involved.
- b. "Trace" results; results falling between the MDL and the facility-specific practical quantitation limit (PQL), shall be reported as such, and shall be accompanied both by the estimated MDL and PQL values for that analytical run and by an estimate of the constituents concentration.
- c. MDLs and PQLs shall be derived by the laboratory for each analytical procedure, according to State of California laboratory accreditation procedures. These MDLs and PQLs shall reflect the detection and quantitation capabilities of the specific analytical procedure and equipment used by the lab, rather than simply being quoted from USEPA analytical method manuals. If the lab suspects that, due to a change in matrix or other effects, the true detection limit or quantitation limit for a particular analytical run differs significantly from the laboratory-derived MDL/PQL values, the results shall be flagged accordingly, along with an estimate of the detection limit and quantitation limit actually achieved.
- d. All QA/QC data shall be reported, along with the sample results to which it applies, including the method, equipment, and analytical detection limits, the recovery rates, an explanation of any recovery rate that is less than 80%, the results of equipment and method blanks, the results of spiked and surrogate samples, the frequency of quality control analysis, and the name and qualifications of the person(s) performing the analyses. Sample results shall be reported unadjusted for blank results or spike recovery.
- e. Upon receiving written approval from the Colorado River Basin Water Board's Executive Officer, an alternative statistical or non-statistical procedure can be used for determining the significance of analytical results for a constituent that is a common laboratory contaminant (i.e., methylene chloride, acetone, diethylhexyl phthalate, and di-n-octyl phthalate) during any given Reporting Period in which QA/QC samples show evidence of laboratory contamination for that constituent. Nevertheless, analytical results involving detection of these analytes in any background or downgradient sample shall be reported and flagged for easy reference by Colorado River Basin Water Board staff.
- f. Unknown chromatographic peaks shall be reported, along with an estimate of the concentration of the unknown analyte. When unknown peaks are encountered, second column or second method confirmation procedures shall be performed to attempt to identify and more accurately quantify the unknown analyte.
- g. In cases where contaminants are detected in QA/QC samples (i.e. field, trip, or lab blanks), the accompanying sample results shall be appropriately flagged.
- h. The MDL shall always be calculated such that it represents a concentration associated

with a 99% reliability of a non-zero result.

#### **D. RECORDS TO BE MAINTAINED**

Written reports shall be maintained by the Discharger or laboratory, and shall be retained for a minimum of five (5) years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge or when requested by the Colorado River Basin Water Board. Such records shall show the following for each sample:

1. Identity of sample and of the Monitoring Point or Background Monitoring Point from which it was taken, along with the identity of the individual who obtained the sample;
2. Date and time of sampling;
3. Date and time that analyses were started and completed, and the name of the personnel performing each analysis;
4. Complete procedure used, including method of preserving the sample, and the identify and volumes of reagents used;
5. Calculations of results; and
6. Results of analyses, and the MDL and PQL for each analysis.

#### **E. REPORTS TO BE FILED WITH THE BOARD**

1. A written "Detection Monitoring Report" shall be submitted annually (Part II.A.2.), in addition to an "Annual Summary Report" (Part I.E.3.). Every five (5) years, the Discharger shall submit a report concerning the direct analysis of all Constituents of Concern as indicated in Part II.A.3. ("COC Report"). The reports shall be comprised of at least the following:

- a. Letter of Transmittal

A letter transmitting the essential points in each report shall accompany each report. Such a letter shall include a discussion of any requirement violations found since the last such report was submitted, and shall describe actions taken or planned for correcting those violations. If the Discharger has previously submitted a detailed time schedule for correcting said requirement violations, a reference to the correspondence transmitting such schedule will be satisfactory. If no violations have occurred since the last submittal, this shall be stated in the letter of transmittal. Monitoring reports and the letter transmitting the monitoring reports shall be signed by a principal executive officer at the level of vice-president or above, or by his/her duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge originates. The letter shall contain a statement by the official, under penalty of perjury, that to the best of the signer's knowledge the report is true, complete, and correct;

- b. Each Detection Monitoring Report and each COC Report shall include a compliance

evaluation summary. The summary shall contain at least:

1. For each monitored ground water body, a description and graphical presentation of the velocity and direction of the ground water flow under/around the Unit, based upon water level elevations taken during the collection of the water quality data submitted in the report;
2. Pre-Sampling Purge for Samples Obtained From Wells: For each monitoring well addressed by the report, a description of the method and time of water level measurement, of the type of pump used for purging and the placement of the pump in the well, and of the method of purging (the pumping rate, the equipment and methods used to monitor field pH, temperature, and conductivity during purging, the calibration of the field equipment, results of the pH, temperature, conductivity, and turbidity testing, the well recovery time, and the method of disposing of the purge water);
3. Sampling: For each Monitoring Point and Background Monitoring Point addressed by the report, a description of the type of pump - or other device - used and its placement for sampling, and a detailed description of the sampling procedure (number and description of the samples, field blanks, travel blanks, and duplicate samples taken, the type of containers and preservatives used, the date and time of sampling, the name and qualifications of the person actually taking the samples, and any other observations);
  - c. A map or aerial photograph showing the locations of observation stations, Monitoring Points, and Background Monitoring Points;
  - d. For each Detection Monitoring Report and each COC Report, include laboratory statements of results of all analyses demonstrating compliance with Part I.C.;
  - e. An evaluation of the effectiveness of the run off/run on control facilities; and
  - f. A summary and certification of completion of all Standard Observations (Part 1.8.5.) for the Unit, for the perimeter of the Landfill, and for the Receiving Waters.

## 2. CONTINGENCY REPORTING

- a. The Discharger shall report by telephone concerning any seepage from the disposal area immediately after it is discovered. A written report shall be filed with the Colorado River Basin Water Board within seven (7) days, containing at least the following information:
  1. A map showing the location(s) of seepage;
  2. An estimate of the flow rate;
  3. A description of the nature of the discharge {e.g., all pertinent observations and analyses}; and

4. Corrective measures underway or proposed.
  - b. Should the initial statistical comparison (Part III.A.1.) or non-statistical comparison {Part III.A.2.) indicate, for any Constituent or Concern of Monitoring Parameter, that a release is tentatively identified, the Discharger shall immediately notify the Colorado River Basin Water Board verbally as to the Monitoring Point(s) and constituents(s) or parameter(s) involved, shall provide written notification by certified mail within seven {7} days of such determination {Section 20420Q)(I) of Title 27), and shall carry out a discrete retest in accordance with Parts II.A.1., and III.A.3. If the retest confirms the existence of a release, the Discharger shall carry out the requirements of Part I.E.2.d. In any case, the Discharger shall inform the Colorado River Basin Water Board of the outcome of the retest as soon as the results are available, following up with written results submitted by certified mail within seven {7} days of completing the retest.
  - c. If either the Discharger or the Colorado River Basin Water Board determines that there is significant physical evidence of a release (Section 20385(3) of Title 27), the Discharger shall immediately notify the Colorado River Basin Water Board of this fact by certified mail {or acknowledge the Colorado River Basin Water Board's determination) and shall carry out the requirements of Part I.E.2.d. for all potentially-affected monitored media.
  - d. If the Discharger concludes that a release has been discovered:
    - i. If this conclusion is not based upon "direct monitoring" of the Constituents of Concern, pursuant to Part II.A.3., then the Discharger shall, within 30 days, sample for all Constituents of Concern at all Monitoring Points and submit them for laboratory analysis. Within seven (7) days of receiving the laboratory analytical results, the Discharger shall notify the Colorado River Basin Water Board, by certified mail, of the concentration of all Constituents of Concern at each Monitoring Point. Because this scan is not to be tested against background, only a single datum is required for each Constituent of Concern at each Monitoring Point (Section 20420(k)(l) of Title 27);
    - ii. The Discharger shall, within 90 days of discovering the release, submit a Revised Report of Waste Discharge proposing an Evaluation Monitoring Program meeting the requirements of Section 20420{k}(5) of Title 27 and Section 20425 of Title 27; and
    - iii. The Discharger shall, within 180 days of discovering the release, submit a preliminary engineering feasibility study meeting the requirements of Section 20420(k)(6) of Title 27.
  - e. Any time the Discharger concludes - or the Colorado River Basin Water Board Executive Officer directs the Discharger to conclude - that a liquid- or gaseous-phase release from the Unit has proceeded beyond the facility boundary, the Discharger shall so notify all persons who either own or reside

upon the land that directly overlies any part of the plume (Affected Persons).

- i. Initial notification to Affected Persons shall be accomplished within 14 days of making this conclusion and shall include a description of the Discharger's current knowledge of the nature and extent of the release; and
- ii. Subsequent to initial notification, the Discharger shall provide updates to all Affected Persons - including any newly Affected Persons - within 14 days of concluding there has been any material change in the nature or extent of the release.

### 3. ANNUAL SUMMARY REPORT

The Discharger shall submit an annual report on February 15 of the following year to the Colorado River Basin Water Board covering the previous monitoring year. This report shall contain:

- a. A Graphical Presentation of Analytical Data (Section 20415(e)(14) of Title 27). For each Monitoring Point and Background Monitoring Point, submit in graphical format the laboratory analytical data for all samples taken within at least the previous five (5) calendar years. Each such graph shall plot the concentration of one {1} or more constituents over time for a given Monitoring Point and 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. For any given constituent or parameter, the scale for background plots shall be the same as that used to plot downgradient data. On the basis of any aberrations noted in the plotted data, the Colorado River Basin Water Board's Executive Officer may direct the Discharger to carry out a preliminary investigation {Section 20080(d)(2) of Title 27}, the results of which will determine whether or not a release is indicated;
- b. All monitoring analytical data obtained during the previous annual Monitoring and Reporting Periods, presented in tabular form as a PDF or excel file, as well as digitally in Electronic Data Format (EDF) into the Geo Tracker database. The Colorado River Basin Water Board regards the submittal of data in EDF as "...the form necessary for..." statistical analysis (Title 27, Section 20420(h)), in that this facilitates periodic review by the Colorado River Basin Water Board's statistical consultant.
- c. A comprehensive discussion of the compliance record, and the result of any correction actions taken or planned which may be needed to bring the Discharger into full compliance with the WDRs;
- d. A written summary of the ground water and soil-pore gas analyses, including field screening or laboratory results as appropriate, indicating any changes made since the previous annual report; and

## PART II: MONITORING AND OBSERVATION SCHEDULE

### A. WATER AND SOIL-PORE GAS SAMPLING/ANALYSIS FOR DETECTION MONITORING

1. Thirty-Day Sample Procurement Limitation. For any given monitored medium, the samples taken from all Monitoring Points and Background Monitoring Points to satisfy the data analysis requirements for a given reporting period shall all be taken within a span not exceeding 30 days, and shall be taken in a manner that insures sample independence to the greatest extent feasible (Section 20415(e)(12){B} of Title 27). Ground water sampling shall also include an accurate determination of the ground water surface elevation and field parameters (temperature, electrical conductivity, turbidity) for that Monitoring Point or Background Monitoring Point (Section 20415(e)(13) of Title 27); ground water elevations taken prior to purging the well and sampling for Monitoring Parameters shall be used to fulfill the annual ground water flow rate/direction analyses required under Part II.A.6. Statistical or non-statistical analysis shall be carried out as soon as the data is available, in accordance with Part III of this program.
2. "Indirect Monitoring" for Monitoring Parameters Done Annually. For each monitoring medium, all Monitoring Points assigned to detection monitoring and all background Monitoring Points (Part II A.4) shall be monitored annually in accordance to the following schedule and for parameters listed in the Summary of Self-Monitoring and Reporting Program No. R7-2015-0036:

Annual Periods: January 1 through December 31

Monitoring for monitoring parameters shall be carried out in accordance with part II.A.1 and part III of this program.

3. "Direct Monitoring" of all Constituents of Concern Every Five (5) Years. In the absence of a release being indicated (1) pursuant to Parts II.A.2. and III.A.3. for a Monitoring Parameter, (2) based upon physical evidence, pursuant to Part I.E.2.c., or (3) by a study required by the Colorado River Basin Board's Executive Officer based upon anomalies noted during visual inspection of graphically-depicted analytical data (Part I.E.3.a.), then the Discharger shall sample all monitoring Points and Background Monitoring Points of water-bearing media, not including soil-pore gas, for all Constituents of Concern (COC) every fifth year. COC testing began in the Spring of 1995, and was also completed in the Fall of 2000. Therefore, the next testing was completed by the Spring of 2005, with successive direct monitoring efforts being carried out alternately in the first monitoring period of one 5-year sampling event (monitoring period ends June 30) and the second monitoring period (monitoring period ends December 31) of the next 5-year sampling event, and every fifth year, thereafter. Direct monitoring for Constituents of Concern shall be carried out in accordance with Parts II.A.3. and III of this program, and shall encompass only those Constituents of Concern listed in the Summary of Self-Monitoring and Reporting Program.
4. "Monitoring Points and Background Monitoring Points for Each Monitored Medium: The Discharger shall sample the following Monitoring Points and Background Monitoring Points in accordance with the sampling schedule given under Parts II.A.2. and I.B.3 (immediately foregoing), taking enough samples to qualify for the most appropriate test under Part III.

Groundwater:

- a. Background Monitoring Point: LV-3
- b. Monitoring Points (Points of Compliance): LV-1, LV-2, LV-4, LV-5 and LV-6

Soil Pore Gas:

- a. Monitoring points: Probes LVSG-1, LVSG-2, and LVSG-3

5. Initial Background Determination: For the purpose of establishing an initial pool of background data for each Constituent of Concern at each Background Monitoring Point in each monitored medium (Section 25415 (e)(6) of Title 27 (Section 2550.7 (e)(6) of Chapter 15):
  - a. Whenever a new Constituent of Concern is added to the Water Quality Protection Standard, including any added by the adoption of this Board Order, the Discharger shall collect at least one (1) sample quarterly for at least one (1) year from each Background Monitoring Point in each monitored medium and analyze for the newly-added constituent(s); and
  - b. Whenever a new Background Monitoring Point is added, including any added by this Board Order, the Discharger shall sample it at least quarterly for at least one (1) year, analyzing for all Constituents of Concern and Monitoring Parameters.
6. Annual Determination of Ground Water Flow Rate/Direction (Section 20415 of Title 27 (Section 2550.7 (e)(6) of Chapter 15)): The Discharger shall measure the water level in each well and determine ground water flow rate and direction in each ground water body described in Part II.A.4. at least annually, including the times of expected highest and lowest elevations of the water level for the respective ground water body. This information shall be included in the annual monitoring reports required under Part II.A.2.

**PART III: STATISTICAL AND NON-STATISTICAL ANALYSES OF SAMPLE DATA  
DURING A DETECTION MONITORING PROGRAM**

- A. The Discharger shall use the following methods to compare the downgradient concentration of each monitored constituent or parameter with its respective background concentration to determine if there has been a release from the Unit. For any given data set, proceed sequentially down the list of statistical analysis methods listed in Part III.A.1., followed by the non-statistical method in Part III.A.2., using the first method for which the data qualifies. If that analysis tentatively indicates the detection of a release, implement the retest procedure under Part III.A.3.
1. Statistical Methods. The Discharger shall use one (1) of the following statistical methods to analyze Constituents of Concern or Monitoring Parameters which exhibit concentrations exceeding their respective MDL in at least 10 percent of the background samples taken during that Reporting Period. Each of these statistical methods is more fully described in the Statistical Methods Discussion, which is attached to this Program and is hereby incorporated by reference. Except for pH, which uses a two (2)-tailed approach, the statistical analysis for all constituents and parameters shall be one (1)-tailed (testing only for statistically significant increase relative to background):
    - a. One (1)-Way Parametric Analysis of Variance ANOVA followed by multiple comparisons (Section 20415(e)(8)(A) of Title 27). This method requires at least four (4) independent samples from each Monitoring Point and Background Monitoring Point during each sampling episode. It shall be used when the background data from the parameter of constituent, obtained during a given sampling period, has not more than 15% of the data below POL. Prior to analysis, replace all 'trace' determinations with a value halfway between the POL and the MDL values reported for that sample run, and replace all "non-detect" determinations with a value equal to half the MDL value reported for that sample run. The ANOVA shall be carried out at the 95% confidence level. Following the ANOVA, the data from each downgradient Monitoring Point shall be tested at a 99% confidence level against the pooled background data. If these multiple comparisons cause the Null Hypothesis (i.e., that there is no release) to be rejected at any Monitoring Point, the Discharger shall conclude that a release is tentatively indicated from that parameter or constituent;
    - b. One (1)-Way Non-Parametric ANOVA (Kruskai-Wallis Test), followed by multiple comparisons. This method requires at least nine (9) independent samples from each Monitoring Point and Background Monitoring Point, therefore, the Discharger shall anticipate the need for taking more than four (4) samples per Monitoring Point, based upon past monitoring results. This method shall be used when the pooled background data for the parameter or constituent, obtained within a given sampling period, has not more than 50% of the data below the POL. The ANOVA shall be carried out 95% confidence level. Following the ANOVA, the data from each downgradient Monitoring Point shall be tested at 99% confidence level against the pooled background data. If these multiple comparisons cause the Null Hypothesis (i.e., that there is no release) to be rejected at any Monitoring Point, the Discharger shall conclude that a release is tentatively indicated for that parameter or constituent;  
or

- c. Method of Proportions. This method shall be used if the "combined data set", the data from a given Monitoring Point in combination with the data from the Background Monitoring Points, has between 50% and 90% of the data below the MDL for the constituent or parameter in question. This method (1) requires at least nine (9) downgradient data points per Monitoring Point per Reporting Period, (2) requires at least 30 data points in the combined data set, and (3) requires that  $N * P > 5$  (where N is the number of data points in the combined data set and P is the proportion of the combined set that exceeds the MDL); therefore, the Discharger shall anticipate the number of samples required, based upon past monitoring results. The test shall be carried out at the 99% confidence level. If the analysis results in rejection of the Null Hypothesis (i.e., that there is no release), the Discharger shall conclude that a release is tentatively indicated for that constituent or parameter; or
  - d. Other Statistical Methods. These include methods pursuant to Section 20415(e){8}(c-e) of Title 27.
2. Non-Statistical Method. The Discharger shall use the following non-statistical method for the VOCwater and VOCspg Composite Monitoring Parameters and for all Constituents of Concern which are not amenable to the statistical tests under Part III.A.1.; each of these groupings of constituents utilizes a separate variant of the test, as listed below. Regardless of the variant used, the method involves a two (2)-step process: (1) from all constituents to which the variant applies, compile a list of those constituents which exceed their respective MDL in the downgradient sample, yet do so in less than 10 percent of the applicable background samples; and (2) (where several independent samples have been analyzed for that constituent at a given Monitoring Point) from the sample which contains the largest number of constituents. Background shall be represented by the data from all samples taken from the appropriate Background Monitoring Points during that Reporting Period (at least one (1) sample from each Background Monitoring Point). The method shall be implemented as follows:
- a. For the Volatile Organics Composite Monitoring Parameter for Water Samples (VOCwater): For any given Monitoring Point, the VOCwater Monitoring Parameter is a composite parameter addressing all VOCs detectable using USEPA Method 8260B (NOTE: See Discussion and insert most appropriate method), including at least all 47 VOCs listed in Appendix I to 40 CFR 258, and all unidentified peaks. Compile a list of each VOC which (1) exceeds its MDL in the Monitoring Point sample (an unidentified peak is compared to its presumed (MDL), and also (2) exceeds its MDL in less than 10 percent of the samples taken during that Reporting Period from that medium's Background Monitoring Points. The Discharger shall conclude that a release is tentatively indicated for the VOCwater Composite Monitoring Parameter if the list either (1) contains two (2) or more constituents or (2) contains one (1) constituent that exceeds its PQL;
  - b. For Constituents of Concern: Compile a list of constituents that exceed their respective MDL at the Monitoring Point yet do so in less than 10 percent of the background samples taken during that Reporting Period. The Discharger shall conclude that a release is tentatively indicated if the list either (1) contains two (2) or more constituents, or (2) contains one (1) constituent which exceeds its POL.

3. Discrete Retest (Section 20415(e)(8)(E) of Title 27. In the event that the Discharger concludes that a release has been tentatively indicated (under Parts III.A.1. or III.A.2.), the Discharger shall, within 30 days of this indication, collect two (2) new suites of samples for the indicated Constituent(s) of Concern or Monitoring Parameter(s) at each indicating Monitoring Point, collecting at least as many samples per suite as were used for the initial test. Re-sampling of the Background Monitoring Points is optional. As soon as the data is available, the Discharger shall rerun the statistical method (or non-statistical comparison) separately upon each suite of retest data. For any indicated Monitoring Parameter or Constituent of Concern at an affected Monitoring Point, if the test results of either (or both) of the retest data suites confirms the original indication, the Discharger shall conclude that a release has been discovered. All retests shall be carried out only for the Monitoring Point(s) for which a release is tentatively indicated, and only for the Constituent of Concern or Monitoring Parameter which triggered the indication there, as follows:
  - a. If an ANOVA method was used, the retest shall involve only a repeat of the multiple comparison procedure, carried out separately on each of the two (2) new suites of samples taken from the indicating Monitoring Point;
  - b. If the Method of Proportions statistical test was used, the retest shall consist of a full repeat of the statistical test for the indicated constituent or parameter, using the new sample suites from the indicating Monitoring Point;
  - c. If the non-statistical method was used:
    1. Because the VOC Composite Monitoring parameters (VOCwater or VOCspg) each address, as a single parameter, an entire family of constituents which are likely to be present in any landfill release, the scope of the laboratory analysis for each retest sample shall include all VOCs detectable in that retest sample. Therefore, a confirming retest for either parameter shall have validated the original indication even if the suite of constituents in the confirming retest sample(s) differs from that in the sample which initiated the retest;
    2. Because all Constituents of Concern that are jointly addressed in the non-statistical testing under Part III.A.2.c. remain as individual Constituents of Concern, the scope of the laboratory analysis for the non-statistical retest samples shall be narrowed to involve only those constituents detected in the sample which initiated the retest.

## B. RESPONSES TO VOC DETECTION IN BACKGROUND

1. Except as indicated in Part III.B.2., any time the laboratory analysis of a sample from a Background Monitoring Point, sampled for VOCs under Part III.A., shows either (1) two (2) or more VOCs above their respective MDL, or (2) one (1) VOC above its respective PQL, then the Discharger shall immediately notify the Colorado River Basin Water Board by phone that possible background contamination has occurred, shall follow up with written notification by certified mail within seven (7) days, and shall obtain two (2) new independent VOC samples from that Background Monitoring Point and send them for laboratory analysis of all detectable VOCs within 30 days. If either or both the new

samples validates the presence of VOC(s) at that Background Monitoring Point, using the above procedure, the Discharger shall:

- a. Immediately notify the Colorado River Basin Water Board about the VOC(s) verified to be present at that Background Monitoring Point, and follow up with written notification submitted by certified mail within seven (7) days of validation; and
  - b. Within 180 days of validation, submit a report, acceptable to the Colorado River Basin Water Board's Executive Officer, which examines the possibility that the detected VOC(s) originated from the Unit and proposing appropriate changes to the Monitoring Program.
2. If the Colorado River Basin Water Board's Executive Officer determines, after reviewing the report submitted under Part III.B.1.b., that the detected VOC(s) most likely originated from the Unit, the Discharger shall assume that a release has been detected and shall immediately begin carrying out the requirements of Part I.E.2.d.

**SUMMARY OF SELF-MONITORING AND REPORTING PROGRAMS**

**A. GROUND WATER MONITORING**

- I. The ground water monitoring wells shall be sampled annually for the following parameters:

<b><u>Parameter &amp; Constituents</u></b>	<b><u>Unit</u></b>	<b><u>Sampling Frequency</u></b>	<b><u>Reporting Frequency</u></b>
1. pH	Number	Annually	Annually
2. Total Dissolved	mg/L	Annually	Annually
3. Specific Conductance	Micromhos/cm	Annually	Annually
4. Temperature	F	Annually	Annually
5. Ground water elevations	Feet	Measurement	Annually
6. Calcium	mg/L	Annually	Annually
7. Magnesium	mg/L	Annually	Annually
8. Sulfate	mg/L	Annually	Annually
9. Nitrate as Nitrogen	mg/L	Annually	Annually
10. Ground water Elevation	feet (USGS Datum)	Annually	Annually
11. Sodium	mg/L	Annually	Annually
12. VOCs (U.S. EPA Method 8260)	Ug/L	Annually	Annually
13. Dissolved Oxygen	mg/L	Annually	Annually
14. Turbidity	NTU	Annually	Annually

- II. The ground water shall be monitored every five (5) years for the following constituents pursuant to 40CFR Part 258 Appendix II:

**Constituents of Concern**

1. Total Dissolved Solids
2. Bicarbonate (HC03)
3. Carbonate(CaC03)
4. Total Alkalinity

**Constituents of Concern (cont'd)**

5. Hydroxide
6. Fluoride
7. Dissolved Oxygen
8. Phosphate
9. Total Phosphate
10. Chemical Oxygen Demand
11. Total Hardness
12. Boron
13. Calcium
14. Magnesium
15. Potassium
16. Sodium
17. Iron
18. Manganese
19. Zinc
20. Antimony, Total
21. Arsenic, Total
22. Barium, Total
23. Beryllium, Total
24. Cadmium, Total
25. Chromium, Total
26. Cobalt, Total
27. Lead, Total
28. Mercury, Total
29. Nickel
30. Selenium, Total
31. Silver, Total
32. Thallium, Total
33. Tin, Total
34. Vanadium, Total
35. Zinc, Total
36. Chromium, hexavalent
37. DBCP and EDB
38. App II Pesticides
39. App II Herbicides
40. Volatiles (8260)
41. App II Semivolatiles
42. Total Organic Halogens
43. Sulfide
44. pH
45. Specific Conductance
46. Chloride
47. Nitrate (as N)
48. Total Organic Carbon

- 49. Phenols (8270)
- 50. Cyanide
- 51. Total Cations
- 52. Total Anions

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<sup>1</sup> mg/L - milligrams per Liter

<sup>2</sup> ug/L - micrograms per Liter

**B. SOIL PORE GAS MONITORING**

1. The soil pore gas monitoring points shall be sampled on an annual basis. The Discharger shall utilize a field screening methodology where major gases are measured with a field instrument. If methane is measured at a concentration that exceeds 5 percent (5%) by volume, a sample will be collected and submitted for VOC analysis using method T0-14. The field samples shall be analyzed for:

<u>Parameters Constituents</u>	<u>Units</u>	<u>Type of Sample</u>
Methane	%by volume	
Carbon Dioxide	%by volume	Grab
Nitrogen	%by volume	Grab
Oxygen	%by volume	Grab

The collection, preservation and holding times of all samples shall be in accordance with United States Environmental Protection Agency (USEPA) approved procedures. All analyses shall be conducted by a laboratory certified by the California Environmental Accreditation Program (ELAP) within the State Water Resources Control Board Division of Drinking Water to perform the required analyses.

**REPORTING**

1. The Discharger shall arrange the data in tabular form so that the specified information is readily discernible. The data shall be summarized in such a manner as to clearly illustrate whether the facility is operating in compliance with Waste Discharge Requirements (WDRs).
2. Records of monitoring information shall include:
  - a. The date, exact place, and time of sampling or measurement(s);
  - b. The individual(s) who performed the sampling or measurement(s);
  - c. The date(s) analyses were performed;
  - d. The individual(s) who performed the analyses;
  - e. The analytical techniques or method used; and
  - f. The results of such analyses.
3. Each report shall contain the following statement:

I declare under the penalty of law that I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those

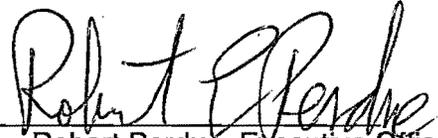
individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment for knowing violations."

4. A duly authorized representative of the Discharger may sign the documents if:
  - a. The authorization is made in writing by the person described above;
  - b. The authorization specified an individual or person having responsibility for the overall operation of the regulated disposal system; and
  - c. The written authorization is submitted to the Colorado River Basin Water Board's Executive Officer.
5. Report immediately any failure in the waste disposal system to the Colorado River Basin Water Board's Executive Officer and the Director of the County Environmental Health Department by telephone with follow-up letter.
6. Monitoring reports shall be certified under penalty of perjury to be true and correct, and shall contain the required information at the frequency designated in this monitoring report.
7. Monitoring reports shall be submitted to the Colorado River Basin Water Board annually according to the following schedule:
8. Annual Monitoring Reports:

Annual monitoring reports shall be submitted to the Colorado River Basin Water Board by February 15 of the next year.
9. Five (5) Year Reports:

Five-year reports shall be submitted to the Colorado River Basin Water Board commencing in the year 2000, January of the first year through December of the fifth year and every five (5) years thereafter through the closure/ post closure period. Report due by February 15 of the sixth year.
10. Submit Monitoring Reports according to Chapter 30, Division 3, Title 27 of the CCR, as raw data uploads electronically over the internet into the State Water Board's GeoTracker <https://geotracker.waterboards.ca.gov/> database. Documents that are normally mailed by the Discharger, such as regulatory documents, submissions, materials, data, and correspondence should also be uploaded into the GeoTracker database. Documents that are normally mailed by the Discharger, such as regulatory documents, narrative technical monitoring program reports, and such reports submissions, materials, data, and correspondence, to the Colorado River Basin Water Board shall also be uploaded into GeoTracker in the appropriate Microsoft software application, such as word, excel, or an Adobe Portable Document Format (PDF) file. Groundwater monitoring raw data must be uploaded into GeoTracker in the correct

data format and assigned to each monitoring well correlated by the monitoring well's geospatially surveyed location. Documents that are too large to email to RB7-wdrs\_paperless@waterboards.ca.gov must be transferred onto a disk in files no larger than 100 mega bites each and mailed to the Colorado River Basin Water Board office 73720 Fred Waring Drive, Suite 100, Palm Desert, CA 92260. Note that the Facility is identified in GeoTracker by the Global ID L10006289548 and in the California Integrated Water Quality Systems (CIWQS) database by WDID No. 7A360304141. The date the electronic file is available and accessible to Colorado River Basin Water Board staff is the official date the report is received.



Robert Perdue, Executive Officer



Date