

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

MONITORING AND REPORTING PROGRAM R7-2017-0012  
AND POST-CLOSURE MAINTENANCE  
FOR  
RIVERSIDE COUNTY DEPARTMENT OF WASTE RESOURCES,  
OWNER/OPERATOR  
COACHELLA CLASS III SANITARY LANDFILL

North of Coachella - Riverside County

CONSISTS OF:

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**PART I**  
**GENERAL REQUIREMENTS**

**A. GENERAL**

1. 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. Section 13267, California Water Code gives the Regional 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 93-062 requires the Regional Board to implement federal Municipal Solid Waste Regulations that are contained in Title 40, Code of Federal Regulations, Parts 257 and 258.
2. The Discharger shall enter all required information, monitoring data, correspondence and reports into the State Water Board's online GeoTracker database, <https://geotracker.waterboards.ca.gov/> database as required by Division 3 of Title 27. 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. Large documents are to be split into manageable file sizes appropriately labelled and uploaded into GeoTracker. The Coachella WMF is assigned the California Integrated Water Quality System (CIWQS) WDID 7A330305061 and Geotracker Global ID number L10003659217.
3. This Monitoring and Reporting Program (MRP) is issued pursuant to Provision 1 of Colorado River Basin Regional Water Quality Control Board (Colorado River Basin Water Board) Order R7-2017-0012. The principal purposes of a self-monitoring program by a waste discharger are:
  - a. To document compliance with discharge requirements and prohibitions established by the Colorado River Basin Water Board;
  - b. To facilitate self-policing by the waste discharger in the prevention and abatement of pollution arising from waste discharge;
  - c. To prepare water quality analyses; and
  - d. To prepare vadose zone (unsaturated zone) gas, if applicable, and liquid quality analysis.

## **B. DEFINITION OF TERMS**

1. Affected Persons – all persons who either own or occupy land outside the boundaries of the parcel upon which the Facility is located that has been or may be affected by the release of leachate or waste constituents (in gas or liquid phase) from Facility.
2. Background Monitoring Point – a device (e.g. well) or location (e.g. a specific point along a stream channel) that is upgradient or side gradient from the Facility, assigned by this MRP, where water quality samples are taken that are not affected by any release from the landfill and that are used as a basis of comparison against samples taken from downgradient Monitoring Points.
3. Constituents of Concern (COCs) – those constituents which are likely to be in the waste in the WMF or which are likely to be derived from waste constituents in the event of a release. The COCs for this facility are listed in the Summary of Self-Monitoring and Reporting Requirements.
4. Electronic submittal of information (ESI) - In accordance with Electronic Reporting Regulations (Chapter 30, Division 3 of Title 23 & Division 3 of Title 27), all reports, well data, and lab data must be uploaded to the State Board's Geotracker database. In addition, a CD-ROM or DVD-ROM in word-searchable PDF format that contain all the electronic submittals shall be submitted to the Regional Water Board.
5. Matrix Effect – refers to any change in the Method Detection Limit (MDL) or Practical Quantitation Limit (PQL) for a given constituent as a result of the presence of other constituents - either of natural origin or introduced through a spill or release - that are present in the sample being analyzed.
6. Method Detection Limit (MDL) – the lowest constituent concentration that can support a non-zero analytical result with 99 percent reliability. The MDL is laboratory specific and should reflect the detection capabilities of specific procedures and equipment used by the laboratory.
7. Monitored Media – those water and/or gas-bearing media that are monitored pursuant to this Monitoring and Reporting Program. The Monitored Media may include: (1) groundwater in the uppermost aquifer, in any other portion of the zone of saturation (as defined in Title 27, Section 20164) in which it would be reasonable to anticipate that waste constituents migrating from the WMF could be detected, and in any perched zones underlying the WMF, (2) any bodies of surface water that could be measurably affected by a release, (3) soil-pore liquid beneath and/or adjacent to the WMF, and (4) soil-pore gas beneath and/or adjacent to the WMF.
8. Monitoring Parameters – the short list of constituents and parameters used for the majority of monitoring activity. Monitoring for the short list of Monitoring Parameters constitutes “indirect monitoring” in that the results are used to indicate indirectly whether the longer list of COCs are being adequately contained.

9. Monitoring Point – a device (e.g. well) or location (e.g. a specific point along a lakeshore) that is downgradient from the landfill, assigned by this MRP, at which samples are collected for the purpose of detecting a release by comparison with samples collected at Background Monitoring Points.
10. Practical Quantification Limit (PQL) – the lowest constituent concentration at which a numerical concentration can be assigned with a 99 percent certainty that its value is within  $\pm 10$  percent of the actual concentration in the sample. The PQL is laboratory specific and should reflect the detection capabilities of specific procedures and equipment used by the laboratory.
11. 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 years. Submittal dates for each reporting period shall be done in accordance with the protocol described in the Summary of Self-Monitoring and Reporting Programs.
12. Sample Size –
  - a. For Monitoring Points – the number of data points obtained from a given Monitoring Point during a given Reporting Period – used for carrying out the statistical or non-statistical analysis of a given analyte during a given Reporting Period.
  - b. For Background Monitoring Points – the number of new and existing data points from all applicable Background Monitoring Points in a given Monitored Medium – used to collectively represent the background concentration and variability of a given analyte in carrying out a statistical or non-statistical analysis of that analyte during a given Reporting Period.
13. Standard Observations –
  - a. For Receiving Waters
    - i. Floating and suspended materials of waste origin: presence or absence, source, and size of affected area;
    - ii. Discoloration and turbidity: description of color, source, and size of affected area;
    - iii. Evidence of odors: presence or absence, characterization, source, and distance of travel from source;
    - iv. Evidence of beneficial use: presence of water-associated wildlife;
    - v. Flow rate; and
    - vi. 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 Facility:

- i. Evidence of liquid leaving or entering the Facility, estimated size of affected area, and flow rate (show affected area on map);
  - ii. Evidence of odors: presence or absence, characterization, source, and distance of travel from source; and
  - iii. Evidence of erosion and/or of exposed refuse.
- c. For the Landfill:
- i. Evidence of ponded water at any point on the waste management facility (show affected area on map);
  - ii. Evidence of odors: presence or absence, characterization, source, and distance of travel from source;
  - iii. Evidence of erosion and/or of day-lighted refuse; and
  - iv. Standard Analysis and Measurements, which refers to:
    - 1. Turbidity (only for water samples) in NTU;
    - 2. Water elevation to the nearest 1/100th foot above mean sea level (only for groundwater monitoring); and
    - 3. Sampling and statistical/non-statistical analysis of the Monitoring Parameters.

14. Uppermost Aquifer – the geologic formation nearest the natural ground surface that is an aquifer, as well as, lower aquifers that are hydraulically interconnected with this aquifer within the facility’s property boundary.

15. Volatile Organic Constituents (VOCs) – the suite of organic constituents having a high vapor pressure. The term includes at least the 47 organic constituents listed in Appendix I to 40 CFR Part 258.

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

Sample collection, storage, and analysis shall be performed according to the most recent version of Standard United States Environmental Protection Agency (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 State of California. 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 approval by the Colorado River Basin Regional Water Quality Control Board 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:

1. 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 "ND") 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.5., shall be selected from among those methods which would provide valid results in light of any "Matrix Effects" (defined in Part I.B.4.) involved.
2. Analytical results falling between the MDL and the (PQL) shall be reported as "trace", and shall be accompanied both by the estimated MDL and PQL values for that analytical run and by an estimate of the constituent's concentration.
3. 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.
4. 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.
5. Upon receiving written approval from the Colorado River Basin Regional Water Quality Control Board 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.
6. 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.

7. 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.
8. The MDL shall always be calculated such that it represents a concentration associated with a 99% reliability of a non-zero result.

#### **D. REPORTS TO BE FILED WITH THE COLORADO RIVER BASIN WATER BOARD**

1. Detection Monitoring Report – For each Monitored Medium, all Monitoring Points and Background Monitoring Points that are assigned to detection monitoring under Part II.A.7 of this MRP shall be monitored semi-annually for the Indirect Monitoring Parameters (Part II.A.3), and every fifth year, alternating between First and Third Quarter, for the direct analysis of all COCs (Part II.A.5). A “Detection Monitoring Report” and a “Constituents of Concern Monitoring Report” shall be submitted to the Colorado River Basin Regional Water Quality Control Board in accordance with the schedule contained in the Summary of Self-Monitoring and Reporting Requirements and shall include the following:
  - a. A Letter of Transmittal summarizing the essential points in each report. The letter of transmittal 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 of transmittal shall include:
    - i. A discussion of any violations noted since the previous report submittal and a description of the actions taken or planned for correcting those violations. If no violations have occurred since the last submittal, that should be so stated;
    - ii. If the Discharger has previously submitted a detailed time schedule or plan for correcting any violations, a progress report on the time schedule and status of the corrective actions being taken; and
    - iii. 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. A graphical presentation of analytical data for each Monitoring Point and Background Monitoring Point (Title 27, Section 20415(e)(14)). The Discharger shall submit, in graphical format, the laboratory analytical data for all samples taken within at least the previous five calendar years. Each such graph shall plot the concentration of one 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 Executive Officer may direct the Discharger to carry out a preliminary investigation (Title 27, Section 20080(d)(2)), the results of which will determine whether or not a release is indicated.

- c. A tabular presentation of all monitoring analytical data obtained during the previous two Monitoring and Reporting Periods.
  - d. A Monitoring Evaluation Summary shall be included in each Detection Monitoring Report and each five year Direct Monitoring of COCs Report. The monitoring evaluation summary shall contain at least:
    - i. The velocity and direction of groundwater flow for each monitored groundwater body under and around the WMF based upon the water level elevations taken during the collection of the water quality data. A description and graphical presentation (e.g., arrow on a map) shall be submitted;
    - ii. The methods used for water level measurement and pre-sampling purging of each monitoring well including:
      - The method, time, and equipment used for water level measurement;
      - The type of pump used for purging, the placement of the pump in the well, the pumping rate, and the well recovery rate;
      - The methods and results of field testing for pH, temperature, electrical conductivity, and turbidity;
      - Equipment calibration methods; and
      - The method of disposing of purge water
    - iii. The methods used for sampling each Monitoring Point and Background Monitoring Point addressed by the report including:
      - A description of the type of pump - or other device - used, and its placement for sampling;
      - 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);
  - e. A map or aerial photograph showing the locations of observation stations, Monitoring Points, and Background Monitoring Points.
  - f. A statement that the laboratory analyses were completed in compliance with Part I.C.
2. Compliance Report – The Discharger shall submit a Compliance Report covering the period from January 1 through December 31 to the Colorado River Basin Water Board in accordance with the schedule set forth in the Summary of Self-Monitoring and Reporting Requirements. The Compliance Report shall include the following:
- a. Physical inspection records of all monitoring wells.



- b. A written summary of the groundwater monitoring system operation, indicating any changes made since the previous compliance report.
- c. A comprehensive discussion of the compliance record and of any corrective actions taken or planned needed to bring the Discharger into full compliance with waste discharge requirements.
- d. An evaluation of the physical status of all drainage features including surrounding embankments, roadway, and drainage channels.
- e. An evaluation of the effectiveness of the run on/run-off control facilities, pursuant to Title 27, Section 20365.
- f. An evaluation of the physical integrity of the final cover and all graded surfaces within the WMF, including any cracks, irregularities, and settlement.
- g. A summary and certification of completion of all Standard Observations (as defined in Part I.B.12.) for the WMF, for the perimeter of the WMF, and for any receiving waters.
- h. A written summary of the landfill gas collection system operation, indicating any changes made since the previous compliance report. In addition, perimeter gas probe monitoring data shall be included in the report.
- i. An evaluation of the condition, performance and effectiveness of the gas condensate collection system. In addition, gas condensate sampling data and field inspection records shall be included in the report. A summary of the monthly total volume of gas condensate collected at the WMF and how the gas condensate liquid was managed shall also be included.

### 3. Contingency Report

- a. The Discharger shall report by email any seepage observed from the disposal area immediately after it is discovered. A written report shall be submitted, in accordance with ESI regulations, with the Colorado River Basin Water Board within seven days, containing at least the following information:
  - i. A map showing the location(s) of seepage;
  - ii. An estimate of the flow rate;
  - iii. A description of the nature of the discharge (e.g., all pertinent observations and analyses);
  - iv. A description of any sample(s) collected for laboratory analysis and a copy of the analytical results of the sample; and
  - v. A description of the corrective measure(s) implemented and any proposed mitigation measures for approval by Colorado River Basin Water Board staff.
- b. Should the statistical comparison (Part III.A.1.) or non-statistical comparison (Part III.A.2.) indicate, for any Constituent of Concern or Monitoring Parameter,

that a change in background concentration is confirmed, the discharger shall immediately perform a retest on the well/consistent pairs. Upon statistical or non-statistical analysis of the retest laboratory results, if the retests confirm that a change in background has occurred and additional lines of evidence support the possibility of a new release from the landfill, the Discharger shall immediately notify the Colorado River Basin Water Board verbally as to the Monitoring Point(s) and constituent(s) or parameter(s) involved, shall provide electronic notification within seven days of such determination (Section 20420(j)(1) of Title 27), and shall carry out the requirements of Part I.D.3.d. If the retest results do not confirm that a change in background has occurred, then the summary of the retest results will be included in the next submittal of the Annual Summary Report.

- c. If either the Discharger or the Colorado River Basin Water Board determines that there is significant physical evidence of a release (Title 27, Section 20385(a)(3)), the Discharger shall immediately notify the Colorado River Basin Water Board by electronic notification (or acknowledge the Colorado River Basin Regional Water Quality Control Board's determination) and shall carry out the requirements of Part I.D.3.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.5., then the Discharger shall, within thirty days, sample for all Constituents of Concern at all Monitoring Points and submit them for laboratory analysis. Within seven days of receiving the laboratory analytical results, the Discharger shall notify the Colorado River Basin Regional Water Quality Control Board, by electronic notification, 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 (Title 27 Section 20420(k)(1)).
  - ii. The Discharger shall, within 90 days of discovering the release (Title 27, Section 20420(k)(5)), submit a Revised Report of Waste Discharge proposing an Evaluation Monitoring Program meeting the requirements of Title 27, Section 20425.
  - iii. The Discharger shall, within 180 days of discovering the release (Title 27, Section 20420(k)(6)), submit a preliminary engineering feasibility study meeting the requirements of Title 27, Section 20430.
- 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 WMF 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.
- ii. Subsequent to initial notification, the Discharger shall provide updates to all Affected Persons, including any persons newly affected by a change in the boundary of the release, within 14 days of concluding there has been any material change in the nature or extent of the release.

#### 4. Responses to VOCs Detected in Monitoring Point or Background Monitoring Point

Except for VOCs validated as not having come from the WMF as determined under Part I.D.4.b, any time the laboratory analysis of a sample from a monitoring point or background monitoring point shows either two or more VOCs above their respective Method Detection Limit (MDL), or one VOC above its respective Practical Quantitation Limit (PQL), the Discharger shall immediately obtain one new independent VOC sample (retest) from the monitoring point or background monitoring point and send for laboratory analysis of only the VOC(s) that were initially detected above the MDL or PQL.

If the same exceedance condition is duplicated in the retest sample analyses (e.g. the same VOC that exceeded the PQL in the initial test also exceeded the VOC in the retest), then the presence of a VOC(s) is confirmed, the Discharger shall immediately notify the Colorado River Basin Water Board verbally as to the Monitoring Point(s)/Background Monitoring Point(s) and constituent(s) or parameter(s) involved and shall provide electronic notification within seven days of such determination (Section 20420(j)(1) of Title 27). The Executive Officer of the Colorado River Basin Water Board shall determine one of the following,

- a. If the Executive Officer determines, after reviewing the report, that the VOC(s) detected originated from a source other than the landfill, the Discharger shall continue the existing monitoring and reporting program:
- b. If the Executive Officer determines, after reviewing the report, the detected VOC(s) most likely originated from the landfill site, the Discharger shall assume that a release has been detected and shall immediately begin carrying out the appropriate release discovery response in Part I.D.3.d.

#### **E. RECORDS TO BE MAINTAINED**

Written reports shall be maintained by the Discharger or laboratory, and shall be retained for a minimum of five 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/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 identity and volumes of reagents used;
5. Calculations of results; and
6. Results of analyses, and the MDL and PQL for each analysis.

## PART II MONITORING REQUIREMENTS

### F. WATER AND GAS CONDENSATE 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 (Title 27, Section 20415(e)(12)(B)).
2. Groundwater Surface Elevation and Field Parameters – Groundwater sampling shall include an accurate determination of the groundwater surface elevation and field parameters (temperature, electrical conductivity, turbidity) for that Monitoring Point or Background Monitoring Point (Title 27, Section 20415(e)(13)). Groundwater elevations shall be taken prior to purging the well and sampling to fulfill the semi-annual groundwater flow rate/direction analyses required under Part I.D.1.b.i.
3. Indirect Monitoring Parameters - All Monitoring Points and Background Monitoring Points assigned to Detection Monitoring (Part II.A.7 below) shall be sampled quarterly. Quarterly monitoring shall be done according to the following schedule:
  - First Quarter: January 1 through March 31
  - Second Quarter: April 1 through June 30
  - Third Quarter: July 1 through September 30
  - Fourth Quarter: October 1 through December 31

Monitoring for shall be completed out in accordance with Part II and III of this program. Results of the Indirect Monitoring shall be reported in the Annual Detection Monitoring.

4. Data Analysis – Statistical or non-statistical analysis shall be completed as soon as the data is available, in accordance with Part III of this monitoring program.
5. Direct Monitoring of COCs Every Five Years – In the absence of a release being indicated as a result of (a) Monitoring Parameters (Parts II.A.3. and III.A.), (b), physical evidence (Part I.D.3.c.), or (c), a study required by the Colorado River Basin Water Board Executive Officer based upon anomalies noted during visual inspection of graphically-depicted analytical data (Part I.D.2.a.); starting in Third Quarter 2021 the Discharger shall collect and analyze a water sample from each Monitoring Point and Background Monitoring Point for all Constituents of Concern every fifth year with successive direct monitoring of COCs being carried out alternately between First Quarter year one (Reporting Period ends March 31), and Third Quarter of the fifth

year thereafter (Reporting Period ends September 30). Results of the Direct Monitoring of COCs shall be reported in the COC Monitoring Report submitted every five years.

6. Landfill Gas Monitoring - shall be done in accordance with the field sampling protocol described in the Summary of Self-Monitoring and Reporting Programs. The perimeter probe landfill gas monitoring network is composed of 12 multi-level monitoring probes.
7. Gas Condensate Monitoring – shall be done in accordance with the field sampling protocol described in the Summary of Self-Monitoring and Reporting Programs.
8. Monitoring Points and Background Monitoring Points – The Discharger shall sample the following Monitoring Points and Background Monitoring Points in accordance with the sampling schedule given under Parts II.A.3 and II.A.5., taking enough samples to qualify for the most appropriate test under Part III. Groundwater in the upper most aquifer shall be monitoring in the following monitoring wells:
  - a. Background Monitoring Points: MW-2, MW-5 and MW-7
  - b. Monitoring Points (Point of Compliance): MW-1, MW-3, MW-4 and MW-6
9. Initial Background Determination: For the purpose of establishing an initial pool of background data for each Constituent of Concern at each Monitoring Point and Background Monitoring Point in each monitored medium (Title 27, Section 20415(e)(6)):
  - 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 sample quarterly for at least one year from each Monitoring Point and 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 year, analyzing for all Constituents of Concern and Monitoring Parameters.
10. Semi-Annual Determination of Groundwater Flow Rate/Direction (Title 27, Section 20415(e)(15): The Discharger shall measure the water level in each Monitoring Point/Background Monitoring Point and determine groundwater flow rate and direction in each groundwater body described in Part II.A.2. at least semi-annually. This information shall be included in the Annual Monitoring Report required under Part I.D.1.

### PART III

#### STATISTICAL AND NON-STATISTICAL ANALYSES

##### A.

The Discharger shall propose appropriate data analysis method(s) for the approval of the Colorado River Basin Water Board's Executive Officer for comparing down-gradient concentrations of each monitored constituent or parameter with its respective background concentration to determine if there is data analysis evidence that indicates a release from the WMF. Unless or until the discharger proposes an alternative data analysis method(s) acceptable to the Colorado River Basin Water Board's Executive Officer, the discharger shall perform data analysis as specified herein. This Program substitutes advanced retesting and time-between-samples approaches that the USEPA has established in its 2009 Statistical Analysis of Groundwater Monitoring Data At RCRA Facilities, Unified Guidance (Unified Guidance), in place of less effective prescriptive approaches to be found in the California Code of Regulations, Title 27, Division 2, subdivision 1, Consolidated Regulations for Treatment, Storage, Processing, or Disposal of Solid Waste (Title 27), as allowed by Section 20080(a)(1) of those regulations.

1. Statistical Methods. The discharger shall use a statistical method to analyze Constituents of Concern or Monitoring Parameters (that are in Detection Status) which exhibit concentrations exceeding their respective MDL in at least ten percent of the background samples. The Discharger shall use only statistical data analysis methods approved by the Executive Officer, which meet Title 27, §20415(e)(6-12), use a pass-1-of-2 retesting approach that involves taking the first sample at the very start of the reporting period with mid-period retest sample, if needed, and that are developed to meet the USEPA Unified Guidance (2009), including validation of the method's statistical power by comparison to the relevant Reference Power Curve, as therein described.
2. Non-Statistical Method. The discharger shall use the following non-statistical method for the Constituents of Concern or Monitoring Parameters 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.
  - a. VOCs and any other organic constituents that have not been detected in historical data, except by accident, or that are detected less than 10 percent of the time in the historical data, use the California Non-statistical Data Analysis Method described in Attachment E to this M&RP;
  - b. All Monitoring Parameters in Tracking Status (verified release indication) shall use the Concentration-Versus-Time-Plotting non-statistical data analysis method described in Attachment E to this M&RP; and

- c. All Constituents of Concern that are monitored every five years, shall use the Upper 85th Percentile Non-statistical Data Analysis Method provided for that purpose in Attachment E to this M&RP.
3. Retest (Section 20415(e)(8)(E) of Title 27). In the event that the discharger concludes that a change in background concentration has been tentatively indicated (under Parts III.A.1. or III.A.2.), the discharger shall, within 30 days of this indication, collect a sample for the indicated Constituent(s) of Concern or Monitoring Parameter(s) at each indicating Monitoring Point/Background Monitoring Point. As soon as the data is available, the discharger shall rerun the statistical method (or non-statistical comparison). For any indicated Monitoring Parameter or Constituent of Concern at an affected Monitoring Point, if the test result confirms the original indication, the discharger shall conclude that a change in background concentration has been discovered. All retests shall be carried out only for the Monitoring Point(s)/Background Monitoring Point for which a release is tentatively indicated, and only for the Constituent of Concern or Monitoring Parameter which triggered the indication there.
4. Background Data. The background data set for each well/MPar pair shall be regularly updated with more recent background data for intrawell statistical analysis. More recent background data shall be screened to confirm that it is of the statistical population as the existing background data. Older background data may be removed from the background data set when new background data is added. The total number of background data points used for intrawell statistical analysis shall not be less than the number required to have “adequate” statistical power.

The Discharger shall describe, in detail, the procedure used to update the background data set for each well/MPar pair, as part of the annual monitoring summary report.



**PART IV**

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

**B. GROUNDWATER MONITORING**

1. Upon issuance of this MRP, the Monitoring Points and Background Monitoring Points shall be sampled quarterly according to the following schedule:. The samples shall be analyzed for the following detection monitoring parameters (Mpars).

<b>Mpars</b>	<b>Units</b>	<b>Sample Type</b>	<b>Reporting Frequency</b>
1. pH	pH units	Field Measurement	Quarterly
2. Specific Conductance	Microhms/cm	Field Measurement	Quarterly
3. Dissolved Oxygen	mg/l	Field Measurement	Quarterly
4. Temperature	oF	Field Measurement	Quarterly
5. Turbidity	NTU	Field Measurement	Quarterly
6. Total Dissolved Solids	mg/l	Grab	Quarterly
7. Chloride	mg/l	Grab	Quarterly
8. Sulfate	mg/l	Grab	Quarterly
9. Nitrate (as N)	mg/l	Grab	Quarterly
10. EPA 8260 Volatile Organics	µg/l	Grab	Quarterly
11. Groundwater Elevation	feet	Field Measurement	Quarterly

2. The Monitoring Points and Background Monitoring Points shall be sampled every five years, with the next monitoring event to be performed in Third Quarter 2021 and alternating between First and Third Quarter of each five year reporting period thereafter, for the following constituents of concern (COCs):

- |                                    |                     |
|------------------------------------|---------------------|
| 1. Total Dissolved Solids          | 18. Manganese       |
| 2. Bicarbonate (HCO <sub>3</sub> ) | 19. Zinc            |
| 3. Carbonate (CaCO <sub>3</sub> )  | 20. Antimony        |
| 4. Total Alkalinity                | 21. Arsenic         |
| 5. Hydroxide                       | 22. Barium          |
| 6. Fluoride                        | 23. Beryllium       |
| 7. Dissolved Oxygen                | 24. Cadmium         |
| 8. Phosphate                       | 25. Chromium, Total |
| 9. Total Phosphate                 | 26. Cobalt          |
| 10. Chemical Oxygen Demand         | 27. Lead            |
| 11. Total Hardness                 | 28. Mercury         |
| 12. Boron                          | 29. Nickel          |
| 13. Calcium                        | 30. Selenium        |
| 14. Magnesium                      | 31. Silver          |
| 15. Potassium                      | 32. Thallium        |
| 16. Sodium                         | 33. Tin             |
| 17. Iron                           | 34. Vanadium        |

35. Chromium, hexavalent  
36. Sulfide  
37. pH  
38. Specific Conductance  
39. Chloride  
40. Nitrate (as Nitrogen)  
41. Phenols (EPA Method 8270)

42. Cyanide  
43. 40 CFR, Appendix II Pesticides  
44. 40 CFR, Appendix II Herbicides  
45. 40 CFR, Appendix II Semi-Volatiles  
46. EPA 8260 Volatiles Compounds

3. The collection, preservation, and holding times of all samples shall be in accordance with the U.S. Environmental Protection Agency approved procedures. All analyses shall be conducted by a laboratory certified by the State Water Resources Control Board to perform the required analysis.

### **C. LANDFILL GAS MONITORING**

The Discharger shall monitor the vadose zone perimeter monitoring system (perimeter gas probes) quarterly. A calibrated field instrument, such as a Landtec GEM-2000 or equivalent, shall be used to measure total organic compounds as methane at each of the monitoring probes. The monitoring protocol shall be completed in general accordance with the requirements of the South Coast Air Quality Management District.

### **D. GAS CONDENSATE MONITORING**

The Discharger shall sample the gas condensate annually. The gas condensate shall be analyzed for all COCs. The collection, preservation, and holding times of all samples shall be in accordance with the U.S. Environmental Protection Agency approved procedures. All analyses shall be conducted by a laboratory certified by the State Water Resources Control Board to perform the required analysis.

### **E. 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.
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 analysis.

3. 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.
4. 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."
5. All reports shall be signed by a responsible officer.
6. A duly authorized representative of the Discharger may sign the report if:
  - a. The authorization is made in writing by a responsible officer; 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 Executive Officer.
7. Report immediately any failure in the waste disposal system to the Colorado River Basin Water Board Executive Officer and the Director of the County Environmental Health Department by telephone and with a follow-up letter, in accordance with ESI regulations.
8. Annual Reports shall include the Detection Monitoring Report, Part I.D.1., and Compliance Report, Part I.D.2.
9. Annual Reports shall be submitted to the Colorado River Basin Water Board by February 15th. The reports shall document compliance and monitoring activities for the calendar year prior to the year of report submittal.
10. When applicable, Annual Reports shall include five year COC monitoring data from the prior calendar year.
11. Submit Monitoring Reports to the online GeoTracker database as required by Division 3 of Title 27, and as detailed in Part I.A.2., above.

Ordered by: \_\_\_\_\_ *Original Signed By:* \_\_\_\_\_  
 JOSE L. ANGEL, P.E.  
 Executive Officer  
  
 \_\_\_\_\_  
 6/30/17  
 Date

## ATTACHMENT E: NON-STATISTICAL TEST METHODS

### Definitions of Terms

**“Constituents of Concern (COCs)”** means those waste constituents that could be released from the landfill. For any given medium, each such constituent is either: a Monitoring Parameter (MonPar) subject to compliance testing each Reporting Period, due to being a good indicator or, in the event of a release, due to having been detected and verified in groundwater as having exceeded its respective background data set’s upper 85th percentile concentration; an UnPar (includes all constituents of concern that are not MonPars for that medium);

**“Standard Status”** means that the given Monitoring Parameter, at a given Monitoring Point (i.e., a MonPt/MonPar pair, for tracking/administrative purposes) has not shown as verified indication of a release yet, so, its purpose, in the monitoring program, is to detect the arrival of the release. This includes MonPt/MonPar pairs, during an evaluation monitoring or corrective action program, that have not yet shown a verified release indication. This also includes MonPars that had historical verified detections but are not currently classified in Tracking Status;

**“DMP, EMP, AMP, CAP”** mean the detection monitoring program, evaluation monitoring program, assessment monitoring program, and corrective action program;

**“InterPoint”** means that the Concentration Limit (background data set against which each new datum is tested) comes from the background (upgradient or sidegradient) Monitoring Point;

**“IntraPoint”** means that the Concentration Limit consists of historical data from the Monitoring Point being tested. This background data must be validated (before use) not to include any indication of a release for any constituent to which the nonstatistical data analysis method is applied;

**“Measurably significant increase”** has the same meaning as the federal term, “statistically significant increase,” but includes indications by any approved nonstatistical test;

**“MonPar” or “MonPar COCs”** means one the landfill’s set of Constituents of Concern that functions as a Monitoring Parameter, for any given monitored medium (i.e., that subset of the Constituents of Concern that are subject to compliance data analysis every Reporting Period at each MonPt in that medium). Each monitored medium will have its own MonPars;

**“Tracking Status”** means that the given Monitoring Parameter, at a given Monitoring Point (i.e., a MonPt/MonPar pair, for tracking/administrative purposes) has shown a recent verified indication of a release; therefore its purpose, in the monitoring program, is to track the released constituent’s concentration there via a concentration-versus-time plot upon which the Water Standard concentration limit (i.e. background value, laboratory practical quantitation limit or health risk based

value serves as the cleanup goal). This plotting serves as that MonPt/MonPar pair's nonstatistical data analysis method. The discharger notifies Regional Board staff as soon as the plot has been at-or-below this plotted horizontal cleanup goal line for two reporting periods in a row and the MonPar shall return to Standard Status. For a landfill in corrective action, the discharger includes these plots of Tracking Status MonPt/MonPar pairs in each Corrective Action Measures Effectiveness Report (CAMs Report);

**“UnPar” or “UnPar COC”** means one of the landfill's set of Constituents of Concern that functions as an Uninvolved Parameter for any given monitored medium. For any given monitored medium (groundwater, surface, water, or the unsaturated zone), they are that subset of the Constituents of Concern that are not Monitoring Parameters (MonPars). Each monitored medium will have its own UnPars.

## **CONCENTRATION-VERSUS-TIME PLOTTING METHOD**

(See definition for “Tracking Status.”)

## **CALIFORNIA NON-STATISTICAL DATA ANALYSIS METHODS (CNSDAM)**

- **Non-Statistical Method for Standard Status COCs Seldom Found in Background**

For any given Monitoring Point (MonPt) subject to compliance testing during each Reporting Period, regardless of the monitoring program (DMP, AMP/EMP, or CAP), the Discharger shall use this data analysis method, jointly, for all Standard Status Monitoring Parameters (MonPars) on that MonPt's “scope list” (see §A.1. for the initial test scope list and §B.1 for the modified scope list use during the single retest).

1. **Scope List** — For the initial test (on the sample taken from that compliance-testing MonPt at the start of that Reporting Period), create a current “scope list” that includes all of that MonPt's Standard Status MonPars that exceed their “reference MDL” (i.e., the highest MDL associated with that constituent's background data set) in less than 10% of the MonPar's background data set at that MonPt. For each such qualifying constituent, in addition to its reference MDL, note its “reference PQL” as the highest PQL value associated with the constituent's background data set at that MonPt.
2. **Two Triggers** — From the scope list made under A.1., above, for an initial test [or, for a retest, using the modified scope list created under B.2, below], identify each scope list MonPar in the current sample from that MonPt that exceeds either its respective MDL or its respective PQL. The Discharger shall conclude that these exceeding constituents provide a preliminary indication [or, for a retest, provide a measurably significant indication] of a release indication, at that MonPt, if either:
  - two or more of the Standard Status MonPars on the MonPt's scope list exceed their reference MDL; or

- at least one of the Standard Status MonPars on the MonPt's scope list equals or exceeds its reference PQL.

**Single Discrete Retest (A “Pass-1-of-2” Plan):**

1. Notification and Retest Sample Acquisition — In the event that the Discharger concludes (pursuant to A.2., above) that the initial sample, taken at the very start of the reporting period, indicates that there is a preliminary indication for one-or-more MonPars on the scope list for that MonPt, then the discharger shall collect a new independent retest sample from the indicating MonPt.
2. Apply Test To Modified Scope List — For the MonPt retest sample, the Discharger shall include, from the laboratory retest analysis results, only the determinations for those constituents indicated in that MonPt's original test, under A.2., and these indicated constituents shall comprise the MonPt's “modified scope list,” for use in the retest. As soon as the retest data are available, the discharger shall apply the same test [under A.2., above, but using this modified scope list] to analyze the retest sample's data at that compliance MonPt.
3. Conclusions — If the retest sample trips neither one of the triggers under §A(2), then the Discharger shall conclude that the original determination was in error and shall report this in the Monitoring Report for that Reporting Period.

If, instead, the retest sample trips either (or both) of the triggers under A.2., then the Discharger shall conclude that there is a measurably significant increase at that MonPt for the constituent(s) indicated in the validating retest sample, shall report this to the Regional Board immediately (by phone or e-mail), and shall include this information in the Monitoring Report for that reporting period. Furthermore, given a confirming retest, beginning with the very next Reporting Period, the Discharger shall monitor the indicated-and-verified constituent(s) in Tracking Status (instead of Detection Status) at that MonPt and shall no longer include those constituent(s) in the scope list created (under §A.1.) for that MonPt.

**UPPER 85th PERCENTILE NON-STATISTICAL METHOD FOR UNPAR TESTING**

Concentration Limit (retest-triggering concentration) — The UnPars, or UnPar COCs, are those Constituents of Concern (COCs) that are not Monitoring Parameters. Under this Order, they are tested every five years. For any given UnPar at a given Monitoring Point (i.e., for any given MonPt/UnPar pair), its retest-triggering concentration shall be the upper 85th percentile value of its background data set. Nevertheless, for a constituent whose upper 85th percentile value lies below its then-current Practical Quantitation Limit (PQL), its retest-triggering concentration is the highest PQL associated with that pair's background data set.

Test & Pass-1-of-2 Retest — If, during the five-yearly UnPar testing, an UnPar exceeds its respective retest-triggering concentration in its initial sample (taken at the start of the reporting period), the Discharger shall take one retest sample (for the indicating MonPt/UnPar pair) at mid-period ( about90 days later).

If that single retest sample's concentration does not exceed that UnPar's retest-triggering concentration, then the test is concluded without the UnPar's changing to a MonPar and the Discharger includes the test information and conclusion in the Monitoring Report for that reporting period.

If, instead, the single retest sample's concentration for that UnPar exceeds that MonPt/UnPar pair's retest-triggering concentration (like the initial sample did), then that constituent becomes a MonPar COC at all MonPts in that monitored medium (groundwater, surface water, or the unsaturated zone), beginning with the next Reporting Period, and the Discharger shall report this change to Colorado River Basin Water Board staff immediately, declare it clearly in the monitoring report (including its summary page) for that Reporting Period.

This approach is imposed as an improvement over the Title 27 prescriptive standards of §20415(e)(8)(E)3., §20420(g) and §20425(e)(4), pursuant to §20080(a)(1) and the leading paragraphs of §20415(e)(8 & 9).