CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

MONITORING AND REPORTING PROGRAM NO. R9-2012-0002 FOR THE MAINTENANCE AND MONITORING OF CLOSED, ABANDONED, FOR INACTIVE NONHAZARDOUS SOLID WASTE MANAGEMENT UNITS WITHIN THE SAN DIEGO REGION

The California Regional Water Quality Control Board, San Diego Region (hereinafter **San Diego Water Board**) finds that:

1. **LEGAL AUTHORITY**. This Monitoring and Reporting Program (**M&RP**) No. R9-2012-0002 is issued pursuant to the Water Code commencing with section 13000, and implements the: (1) regulations and policies adopted by the State Water Resources Control Board (**State Water Board**) in State Water Board Resolution No. 68-16 – *Statement of Policy with Respect to Maintaining High Quality Waters in California* and all applicable portions of California Code of Regulations (**CCR**) Title 27; (2) all applicable provisions of the statewide Water Quality Control Plan adopted by the State Water Board and the Water Quality Control Plan, San Diego Basin (**Basin Plan**) adopted by the San Diego Water Board, including beneficial uses, water quality objectives, and implementation plans; (3) applicable provisions of the California Health and Safety Code, Division 20, Chapter 6.5 (Hazardous Waste Control); and (4) applicable State and federal regulations.

2. **PURPOSE**. This M&RP is necessary to determine compliance with Order No. R9-2012-0001 – *General Waste Discharge Requirements for the Maintenance and Monitoring of Closed, Abandoned, or Inactive Nonhazardous Solid Waste Management Units within the San Diego Region* (Order No. R9-2012-0001). This M&RP also prescribes performance standards for a detection monitoring program in accordance with CCR Title 27, sections 20415 et seq. and 20420, to evaluate the protection of water quality and beneficial uses of groundwater and surface waters within the San Diego Region.

3. **DISCHARGER.** Dischargers enrolled under Order No. R9-2012-0001 are subject to this M&RP, unless a Discharger has been issued separate monitoring and reporting requirements for site-specific conditions, pursuant to Water Code section 13267.

4. **BASIS FOR GROUNDWATER DETECTION MONITORING.** CAI Units enrolled under Order No. R9-2012-0001 and this M&RP are unlined, non-hazardous solid waste landfills. A release of waste, waste constituents, or waste degradation products derived from these sites may create a condition of pollution or nuisance as defined in Water Code section 13050. Pursuant to CCR Title 27, section 20080(g), CAI Units may be required to develop and implement a

detection monitoring program. The requirements of this M&RP constitute the minimum detection monitoring program standards required for CAI Units located within the San Diego Region.

5. **BASIS FOR REQUIRING TECHNICAL AND MONITORING REPORTS.** Water Code section 13267 provides that the San Diego Water Board may require the Discharger, past Dischargers, or suspected Dischargers, to furnish technical and monitoring reports provided that the burden, including costs, of these reports bears a reasonable relationship to the need for, and the benefits to be obtained from, the reports. In requiring those reports, the San Diego Water Board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring the person to provide the reports.

   The technical and monitoring reports required by this M&RP are needed to ensure that Dischargers enrolled under Order No. R9-2012-0001 implement an effective monitoring and maintenance program to ensure long-term integrity of waste containment systems for the protection of water quality. This M&RP requires Dischargers to comply with the applicable requirements as prescribed by CCR Title 27, Division 2. The burden of providing the required reports bears a reasonable relationship to the need for the reports and the benefits to be obtained from the reports.

6. **BASIS FOR SITE MAINTENANCE.** Inadequate maintenance at CAI Units may create conditions whereby waste constituents or solid wastes may be discharged in a manner that creates a condition of pollution or nuisance, adversely affecting the quality of waters of the State. Regular monitoring and reporting of conditions at CAI Units is essential for Dischargers and the San Diego Water Board to intervene early to correct problems where releases of wastes or waste constituents threaten to create a condition of pollution or nuisance.

7. **APPLICABILITY.** This M&RP supersedes M&RP No. 97-11. All Dischargers and CAI Units previously regulated under M&RP No. 97-11 are automatically enrolled under M&RP No. R9-2012-0002, unless an individual M&RP has been issued for the CAI Unit.

8. **CALIFORNIA ENVIRONMENTAL QUALITY ACT.** CAI Units are existing facilities and as such, regulatory actions related to CAI Units are exempt from the provisions of the California Environmental Quality Act (CEQA) in accordance with CCR Title 14, section 15301 et seq.

IT IS HEREBY ORDERED that, pursuant to Water Code section 13267, Dischargers responsible for CAI Units enrolled in Order No. R9-2012-0001 must comply with the following monitoring and reporting program requirements:

PART I. COMPLIANCE REPORTING

A. **ANNUAL REPORTS.** Any annual report required by either this M&RP or Order No. R9-2012-0001 may be submitted under one cover in accordance with the Reporting Schedule outlined in **Part I.C** of this M&RP.

1. **Groundwater Monitoring Report.** The *Annual Groundwater Monitoring Report* shall contain, at a minimum, the following information:

   a. A list of monitoring parameters (**MPars**) for each groundwater monitoring well.

   b. Detection limits of laboratory testing and monitoring equipment.

   c. The concentrations of MPars of samples collected during the current reporting period.

   d. A topographic map (or copy of an aerial photograph), at an appropriate scale, identifying the CAI Unit footprint (i.e. the maximum lateral extent of wastes), the locations of observation stations, monitoring points, background monitoring points, the groundwater elevation encountered at each monitoring well, and groundwater elevation contours, with interpreted groundwater flow direction and gradient. Maps must also be updated to show the maximum extent of any waste constituent in groundwater.

   e. The method and time of groundwater elevation measurements, a description of the method used to purge the well and collect groundwater samples, and quality assurance/quality control (**QA/QC**) procedures used.

   f. Field logs used during well purging and sampling. At a minimum, the field log should include the following:

      i. The well number;

      ii. Sampling date and time;

      iii. The method of monitoring field parameters and calibration of equipment used to monitor field parameters;

      iv. Purge method (if a pump is used, include pump placement and pumping rate); and

v. Purging and sampling information such as: date each well was purged; well recovery time; method of disposal of the purged water; an estimate of volume of water purged from each well; the results of all field analyses; depth to groundwater prior to purging, at the conclusion of purging, and when the sample was collected; the method of measuring the water level; and field personnel names and signatures.

g. For each monitoring point and background monitoring point, the Discharger shall submit a graphical display for all data collected [CCR Title 27, section 20415(e)(14)] within at least the ***previous five calendar years***. Each graph shall plot the concentration of one or more constituents on a semi-log scale. Based on visual inspection of trends, the San Diego Water Board may direct the Discharger to carry out a preliminary investigation to determine whether or not a release is indicated.

h. Documentation of statistical and non-statistical data analysis at each monitoring well, for those MPars that have not previously been identified in a release at the well (Detection Mode, see **Part III.A.1.a**).

i. Updates to the background data set or statistical analysis method as required in **PART III.A.2** of this M&RP.

j. A written summary of the monitoring results and monitoring system(s) indicating any changes made or observed since the previous *Annual Groundwater Summary Report*. The written summary shall include a discussion of the groundwater flow rate and direction, the appearance of trends or other information that may indicate a potential change in the hydrogeologic conditions beneath and adjacent to the CAI Unit.

k. All analytical data obtained during the current, and previous two reporting periods (***2 years total***) shall be presented in tabular form. The data shall be provided electronically on compact disks (CD) or other media, and in a file format approved by the San Diego Water Board.

l. A comprehensive discussion of the compliance record and of all maintenance activities taken or planned that may be needed to bring the CAI Unit into full compliance with the requirements of Order No. R9-2012-0001 and this M&RP. The discussion of the compliance records shall identify any conditions that have failed to

comply with any requirements of Order No. R9-2012-0001 or this M&RP during the annual reporting period. For each condition identified, the actions taken to correct the condition over the annual reporting period shall be documented. Activities planned for the next annual reporting period shall also be documented, and presented with a schedule for completion.

m. A copy of any amendments made to the *Storm Water Pollution Prevention Plan* (**SWPPP**) or *Site Conditions Certification Report* as required by Order No. R9-2012-0001 **Maintenance Specification C.4**. If no amendments were made during the reporting period, the Discharger shall provide a statement to that effect.

n. A copy of any landfill gas (LFG) data collect (as applicable), during the past year, included as an appendix to the annual summary report.

2. **Site Conditions Certification Report.** The Discharger shall submit a *Site Conditions Certification Report* in accordance with ***CAI Unit Maintenance Specification C.4*** of Order No. R9-2012-0001. The *Site Conditions Specification Report* shall be submitted annually in accordance with the reporting schedule specified in ***Part I.C*** of this M&RP.

B. OTHER REPORTS TO BE FILED WITH THE SAN DIEGO WATER BOARD

1. **Violations Reports**. If the Discharger determines there has been a violation of any requirement in Order No. R9-2012-0001 or this M&RP, then the Discharger must notify the San Diego Water Board office by telephone as soon as practicable once the Discharger has knowledge of the violation. The San Diego Water Board may, depending on the severity of the violation, require the Discharger to submit a separate technical report regarding the violation within ***five working days*** of the request of the San Diego Water Board.

2. **Site Conditions Certification Report.** Annually, the Discharger shall provide a report certifying under penalty of perjury, that the CAI Unit cover is protective of water quality and beneficial uses. The report shall include information regarding the cover thickness, the approximate permeability of cover materials, the source of cover materials (if this information is available through Discharger records), and the engineering properties and characteristics of cover materials. The report shall also include a demonstration that the integrity of the cover is intact, and that it adequately contains waste and prevents infiltration of storm water into the waste and groundwater. This report may be submitted as an appendix to the *Annual Groundwater Monitoring Report*. The first *Site Conditions*

Certification Report shall be received by the San Diego Water Board no later than 5:00 pm on ***October 30, 2012.***

3. **Significant Maintenance Activity Workplan**. The Discharger shall submit a workplan prior to any significant maintenance activities that could alter the existing surface drainage patterns or change existing slope configurations. These activities include, but are not limited to, significant grading activities, , the installation of soil borings, groundwater monitoring wells, and other devices for site investigation purposes. Unless otherwise directed by the San Diego Water Board, the Discharger may initiate the activities proposed in the workplan after expiration of ***30 days*** of receipt of the report by the San Diego Water Board.

C. REPORTING SCHEDULE. Reports shall be received by the San Diego Water Board no later than 5:00 pm on or before the due date, in accordance with the following schedule:

Table 1: Reporting Schedule

Report Type	Report Frequency	Report Period	Report Due Date
Groundwater Monitoring Report	Annual	October 1 – September 30	October 30
Site Conditions Certification Report	Annual	October 1 – September 30	October 30[1]

[1]The Initial Site Conditions Certification Report is due by October 30, 2012.

D. STANDARD REPORTING REQUIREMENTS.

1. **Submission Procedures.** The Dischargers must submit all reports required under this M&RP in a searchable, electronic, Portable Document Format (PDF) to:

California Regional Water Quality Control Board, San Diego Region
9174 Sky Park Court, Suite 100
San Diego, CA 92123-4340
Attn: Land Disposal Program Supervisor

Larger documents shall be divided into separate files at logical places in the report to keep the file sizes under 150 megabytes. The Discharger shall continue to provide a paper transmittal letter, a paper copy of all figures larger than 8.5 inches by 14 inches (legal size), and an electronic copy (on a CD or other appropriate media) of all reports to the San Diego Water Board. All correspondence and documents submitted to the San

Diego Water Board shall include the reference code "<staff name>" in the header or subject line, where "<staff name>" is the first initial and last name of the San Diego Water Board case manager.

2. **Use of Licensed Professionals.** Pursuant to CCR Title 27, section 21710(d), any report submitted in compliance with CCR Title 27 and this Order, which proposes a design or design change (or which notes occurrences) that might affect the CAI Unit's containment features or monitoring systems shall be approved by a civil engineer or a certified engineering geologist appropriately licensed by the State of California. The Discharger shall provide documentation that plans and reports required under this M&RP are prepared by or under the direction of, appropriately qualified professionals. CCR Title 27, sections 20324(b) and 21090(b)(1)(C); and the California Business and Professions Code sections 6735, 7835, and 7835.1 require that engineering and geologic evaluations and judgments be performed by or under the direction of licensed professionals. A statement of qualifications and license numbers of the responsible lead professionals shall be included in all plans and reports submitted by the Discharger. The lead professional shall sign and affix their license stamp to the report, plan or document.

3. **Electronic Data Submittals.** The State's Electronic Reporting Regulations (CCR Title 23,Chapter 30, Division 3, section 3890 et seq.) mandate the electronic submission of any report or data required by a regulatory agency for any discharge of waste to land subject to CCR Title 27. All information submitted to the San Diego Water Board in compliance with this M&RP is also required to be submitted electronically via the internet into the Geotracker database at http://geotracker.waterboards.ca.gov/. The electronic data must be uploaded on or prior to the regulatory due dates set forth in the M&RP or addenda thereto. To comply with these requirements [CCR Title 23, section 3893(b)], the Discharger must upload to the Geotracker database the following information:

   a. **Laboratory Analytical Data.** Analytical data (including geochemical data) for all soil, vapor, and water samples in Electronic Data File (EDF) format. Water, soil, and vapor data include analytical results of samples collected from monitoring wells, boreholes, LFG probes, LFG extraction wells, soil vapor wells, piezometers, surface water, stockpiles, and drinking water wells, if applicable.

   b. **Location Data.** The latitude and longitude of any permanent monitoring well for which data is reported in EDF format, accurate to within one meter and referenced to a minimum of two reference

points from the California Spatial Reference System (CSRS-H), if available.

c. **Monitoring Well Elevation Data.** The surveyed elevation relative to a geodetic datum of any permanent monitoring well. Elevation measurements shall be made at the top of groundwater well casings for all groundwater monitoring wells.

d. **Depth-to-Water Data.** The depth-to-water in monitoring wells even if groundwater samples are not actually collected during the sampling event.

e. **Monitoring Well Screen Intervals.** The depth to the top of the screened interval and the length of screened interval for any permanent monitoring well.

f. **CAI Unit Map.** A map or maps which display discharge locations, streets bordering the CAI Unit, and sampling locations for all soil, water, and vapor samples. The sample map is a stand-alone document that may be submitted in various electronic formats. An updated map may be submitted at any time.

g. **Boring Logs.** Boring logs (as searchable PDF documents) prepared by an appropriately licensed professional.

h. **Electronic Report.** A complete copy (as a searchable PDF document) of all workplans, assessment and monitoring reports, including the signed transmittal letter, professional certifications, and all data presented in the reports.

4. **Transmittal Letter.** A letter summarizing the significant findings must be submitted with each report. The transmittal letter shall also include the following minimum information:

a. A summary of any areas of non-compliance with this M&RP or Order No. R9-2012-0001, incurred during the reporting period. The summary may include verbal and written notices of violations from State and local regulatory agencies regarding monitoring and/or maintenance deficiencies or violations noted by the Discharger, such as the exceedence of Water Quality Protection Standards, failure to conduct monitoring as required by this M&RP, failure to implement adequate BMPs, or any other violations of Order No. R9-2012-0001 or this M&RP.

b. A discussion of any condition identified since the last report was submitted, that does not comply with Order No. R9-2012-0001 or this M&RP, and a description of all actions taken or planned to achieve compliance. If areas of non-compliance have not occurred since the previous submittal, this shall be stated in the transmittal letter.

c. The person signing the transmittal letter must make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitted false information, including the possibility of fine and imprisonment for knowing violations."

d. All documents submitted to the San Diego Water Board shall be signed by either a principal executive officer or ranking elected official, or by a duly authorized representative of the Discharger. As individual is a duly authorized representative only if:

i. The authorization is made in writing by an authorized representative of the Discharger;

ii. The authorization specified either an individual or a position having responsibility for the overall operation of the regulated CAI Unit or activity; and

iii. The authorization is submitted to the Executive Officer prior to the submission of the document.

PART II. SAMPLING AND ANALYSIS

A. STANDARD MONITORING PROVISIONS

1. The Discharger shall ensure that site-specific monitoring systems comply with the Detection Monitoring requirements and performance standards included in CCR Title 27, sections 20385 et seq. through 20420 et seq.

2. Unless otherwise approved by the San Diego Water Board, all analyses shall be conducted at a laboratory accredited for such analyses by the California Department of Public Health.

3. Any report presenting new analytical data is required to include the complete Laboratory Analytical Report(s). The Laboratory Analytical Report(s) shall contain:

   a. A complete sample analytical report.

   b. A complete laboratory QA/QC report.

   c. A discussion of the sample and QA/QC data.

   d. A properly completed Chain of Custody form for the analyzed samples.

   e. A transmittal letter stating whether or not all the analytical work was supervised by the director of the laboratory, and contain the following statement:

      "All analyses were conducted at a laboratory certified for such analyses by the California Department of Health Services in accordance with current United States Environmental Protection Agency (USEPA) procedures."

   f. If requested by the San Diego Water Board, the Laboratory Analytical Report shall be signed by the laboratory director.

4. Specific methods of analysis shall be identified in monitoring program reports. If the Discharger proposes to use methods or test procedures other than those included in the most current version of *"Test Methods for Evaluations of Solid Waste, Physical/Chemical Methods, SW-846"* (USEPA) or 40 CFR, Part 136, *"Guidelines Establishing Test Procedures for the Analysis of Pollutants; Procedures for Detection and Quantification,"* a Sampling and Analysis Plan must be submitted, with the rationale for the change, to the San Diego Water Board for review and approval prior to implementing the requested change.

5. If the Discharger monitors any sampling point or MPar more frequently than required by this M&RP, the results shall be included in the monitoring reports. The Discharger shall also report the increased frequency of monitoring and specific monitoring locations to the San Diego Water Board.

6. Sample collection, storage, and analysis shall be performed in accordance with protocols included in the USEPA's *"Test Methods for Evaluations of Solid waste, Physical/Chemical Methods, SW-846"* (available online at http://www/epa.gov/epawaste/hazard/testmethods/index.htm) and in accordance with a written sampling and analysis plan, approved by the San Diego Water Board.

7. All monitoring instruments and equipment shall be properly calibrated and maintained as necessary to ensure accuracy of measurements.

8. The Discharger shall retain records of all monitoring information, including all calibration and maintenance records, and copies of all reports required by this M&RP. Records shall be maintained for a minimum of five years from the date of sample, measurements, report, or application of enrollment. This period may be extended during the course of any unresolved litigation regarding this discharge or when requested by the San Diego Water Board.

9. Records of monitoring information shall include:

    a, The date, identity of sample, monitoring point from which the same was collected, and time of sampling or measurement;

    b. The name of the individual(s) who performed the sampling or measurements;

    c. Date and time that analyses were started and completed;

    d. The analytical techniques or method used, including method of preserving the sample and any other details requested by the San Diego Water Board such as the identity and volumes of reagents used;

    e. Calculation of results;

    f. Results of analyses and the method detection limit (**MDL**) for each parameter;

    g. Laboratory quality assurance results (e.g., percent recovery, response factor, etc.); and

    h. Chain of Custody forms.

10. The Discharger shall comply with the following:

a. The methods of analysis shall be appropriate for the expected concentrations;

b. Analytical results falling between the MDL and the practical quantitation limit (**PQL**) shall be reported as "trace" and shall be accompanied by documents reporting both the MDL and PQL values for that analytical run;

c. MDLs and PQLs shall be derived by the laboratory for each analytical procedure, according to State of California laboratory accreditation procedures. In a relatively interference-free laboratory derived MDLs and PQLs are expected to closely agree with published USEPA MDLs and PQLs;

d. If the laboratory suspects that, due to a change in matrix or other effects, the MDL or PQL for a particular analytical run differs significantly from historic MDL or PQL values, the results shall be flagged and reported in the QA/QC report;

e. The MDL shall always be calculated such that it represents a concentration associated with a 99 percent reliability of non-zero results;

f. The PQL shall represent the lowest concentration at which a numerical value can be assigned with reasonable certainty;

g. All QA/QC data shall be reported, along with the sample results to which it applies. The QA/QC information shall include the method, equipment, and analytical detection and quantitation limits, the recovery rates, an explanation for any recovery rate that is less than 80 percent, the results of equipment and method blanks, the results of spiked and surrogate samples, and the frequency of quality control analysis. Sample results shall be reported unadjusted for blank results or spike recovery. In cases where contaminants are detected in QA/QC samples (i.e., field, trip, or laboratory blanks), the accompanying sample results shall be appropriately flagged.

h. Upon receiving written approval from the San Diego Water Board, a proposed alternative statistical or non-statistical procedure may be used for determining the significance of analytical results for a constituent that is a common laboratory contaminant (e.g., methylene chloride, acetone, diethylhexyl phthalate, and di-n-ocryl 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 the San Diego Water Board.

i. Once every five years as a Five-Yearly COC Scan, any unknown chromatograph 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. If an analyte is detected that is not yet on the MPar list, the Discharger shall, within 30 days, resample the well and reanalyze the sample for the newly detected constituent(s). All newly detected constituents verified by a retest become part of the MPar list for the CAI Unit.

B. GROUNDWATER MONITORING. The specific requirements for the applicable Detection Monitoring programs are defined by performance standards found in CCR Title 27, sections 20415 et seq. and 20420 et seq.

1. The monitoring program shall include:

a. A sufficient number of monitoring points installed at additional locations and depths to yield groundwater samples from the uppermost aquifer to provide the best assurance of the earliest possible detection of a release from the CAI Unit [CCR Title 27, section 20415(b)(1)(B)2];

b. A sufficient number of monitoring points and background monitoring points installed at appropriate locations and depths to yield groundwater samples from portions of the zone of saturation, including other aquifers not monitored pursuant to CCR Title 27, sections 20415(b)(1)(B)(1) and 20415(b)(1)(B)(2), to provide the best assurance of the earliest possible detection of a release from the CAI Unit [CCR Title 27, section 20415(b)(1)(B)3];

c. A sufficient number of monitoring points and background monitoring points installed at appropriate locations and depths to yield groundwater samples from zones of perched water to provide the best assurance of the earliest possible detection of a release from the CAI Unit [CCR Title 27, section 20415(b)(1)(B)(4)]; and

d. Monitoring point locations and depths that include the zone(s) of highest hydraulic conductivity in each groundwater body monitored pursuant to CCR Title 27, section 20415(b)(1)(B)(5).

2. The Discharger shall implement a groundwater monitoring program that at a minimum, includes the following:

   a. The Discharger shall use and maintain groundwater monitoring wells to conduct the groundwater monitoring programs.

   b. Groundwater samples shall be collected, analyzed, and reported for the MPars shown in **Table 2 of Part II.B** and any additional parameters included in the approved Sampling and Analysis Plan.

   c. Prior to pumping monitoring wells for sampling, the static water elevation shall be measured to the nearest 0.01 foot in each well.

   d. For any given monitored medium, samples shall be collected:

      i. For all monitoring points and background monitoring points to satisfy the data analysis requirements for a given Reporting Period;

      ii. In a manner that ensures sample integrity to the greatest extent feasible; and

      iii. On a consistent schedule, with sampling events evenly spaced approximately 6 months apart.

   e. Prior to purging and sampling monitoring wells, the Discharger shall assess the well for the presence of a floating immiscible layer. If an immiscible layer is found, the Discharger shall notify the San Diego Water Board within ***24-hours*** of the discovery.

   f. Groundwater elevations shall be monitored at least quarterly, including the times of expected highest and lowest elevations of the water level for the respective groundwater body pursuant to CCR Title 27, section 20415(e)(15). Groundwater elevations shall be measured within a period of time short enough to avoid temporal variations in groundwater elevations.

   g. Groundwater sampling shall also include an accurate determination of field parameters – temperature, electrical conductivity, turbidity, and pH – pursuant to CCR Title 27, section 20415(e)(13).

Table 2 – Groundwater Monitoring

MONITORING PARAMETERS	UNITS	SAMPLING FREQUENCY[1]
pH[2]	pH	Semi-annual
Field Conductivity[1]	µS/cm	Semi-annual
Turbidity[1]	NTU	Semi-annual
Total Dissolved Solids	mg/L	Semi-annual
Chloride	mg/L	Semi-annual
Sulfate	mg/L	Semi-annual
Nitrate as Nitrogen	mg/L	Semi-annual
Volatile Organic Compounds	µg/l	Semi-annual

[1] The Executive Officer may increase or decrease the monitoring frequency of a CAI Unit, on a case-by-case basis.
[2] These monitoring parameters are field parameters measured during sampling activities.
Note: mg/l = milligrams/liter; µg/l = micrograms/liter; NTU = Nephelometric turbidity units; µS/cm = microsiemens/centimeter

C. **LANDFILL GAS (LFG) MONITORING**. In the event that a LFG monitoring program is mandated by the Local Enforcement Agency (LEA), the Discharger shall comply with the requirements prescribed by the LEA. Upon request, the Discharger shall also provide the San Diego Water Board with a copy of all LFG monitoring data and reports provided to the LEA. This information shall be submitted as an appendix to the *Annual Groundwater Summary Report* (**Part I.A**)

PART III. STATISTICAL ANALYSIS[1]

A. STATISTICAL DATA ANALYSIS METHODOLOGY

1. **Water Quality Monitoring Objective.** The objective of the detection monitoring program is to determine whether any MPar has exhibited a measurably significant increase at any well. Therefore, the Discharger shall monitor each well/MPar pair in one of the two following modes:

   a. **Detection Mode.** The purpose of the Detection Mode monitoring, for any well/MPar pair is to detect the arrival of an MPar at that well in a concentration high enough to trigger a measurably significant

[1] The requirements for the statistical analysis of groundwater monitoring data are found in CCR Title 27, section 20415(e) et seq.

indication using an appropriate statistical or non-statistical data analysis method.

b. **Tracking Mode.** For an MPar that has produced a measurably significant increase at any well, the purpose of tracking mode is to monitor changes in the MPar's concentration at that location and provide regular updates to concentration-versus-time plots.

2. **Background Data Set.** Every two years the Discharger shall update the background data set with the new data from that well, providing that the new data do not indicate an increase over the previous background dataset. The Discharger may retire the well/MPar's oldest two years of background data. The new background dataset shall be presented and discussed in the appropriate annual report. If the new data indicate an increase over the previous background data set, an evaluation should be conducted to determine if the increase is associated with the landfill (see **Part III.C and D** for organic constituents).

The Discharger shall validate the proposed intra-well background dataset for each MPar at each existing well, and for each new well. The Discharger shall report the validated background dataset, for each affected well/MPar pair, in the next scheduled monitoring report. Initial background data validation shall be as follows:

a. **Accelerated Background Data Procurement.** If there are ***less than ten sampling events*** for a given MPar at any well, the Discharger shall implement the accelerated data procedure described in **Part III.A.2.c** of this M&RP prior to initiating the intra-well background data set validation procedure described below.

b. **Validate Upgradient Data for Organic Appendix II MPars.** For any Appendix II organic compound that is an MPar, the initial intra-well data validation shall only utilize data from background wells that do not exceed the constituent's MDL for 90 percent of the analyses. Such organic constituents should not be detectable at background wells except in error (around 1 percent of the time) or because the constituent comes either from the CAI Unit or from another source. If organic constituents are detected in more than 10 percent of analyses in background wells, the MPar shall be rejected. If the Discharger cannot adequately explain the reason for the constituent's presence, the Discharger shall conduct an investigation under **Part III.C** of this M&RP.

c. **Intra-Well Background Validation for New Well/MPar Pairs.** For new wells, or a new MPar at an existing well, the Discharger shall

establish the background concentration for each MPar by collecting and analyzing samples quarterly from each well with insufficient background data until each well has at least 10 data points. If quarterly sampling would not provide representative data, the Discharger shall submit an alternate sampling plan to the San Diego Water Board for approval. Once ten data points are available, the following intra-well comparison background dataset methods shall be used:

i. **Commonly Quantified Constituents.** For any MPar that, absent the CAI Unit's existence, would usually be detected in groundwater at concentrations exceeding the constituent's PQL, the Discharger shall validate the proposed intra-well background data at each compliance well by comparing it to a pooled box-and-whiskers (pooled data) plot from all "background" (upgradient or cross-gradient) wells completed in the same groundwater aquifer. A compliance well's data cannot be used for an intra-well comparison if the constituent's median concentration exceeds the 75th percentile of the pooled data. Inter-well comparisons shall be used for these wells. Data sets from a well/MPar pair whose existing data's median is less than the pooled background plot's 75th percentile shall be used as the initial background dataset for intra-well comparisons for that well/MPar pair.

ii. **Rarely Quantified Constituents.** For an MPar that, absent the CAI Unit's existence, would seldom be detected in groundwater (e.g., synthetic constituents), the Discharger shall identify the highest value from the pooled dataset from all background wells that have passed validation under **Part III.A.2.b & c** of this M&RP or, in a case where all applicable upgradient well data is non-detect, the MDL. The Discharger shall use this value as a basis of comparison to validate the data points in the proposed intra-well background dataset. The initial intra-well background dataset for that downgradient well shall consist of all data points in the proposed intra-well background dataset that are less than this value.

3. **Performance Standards.** All data analysis methods (statistical or non-statistical) shall meet the requirements of CCR Title 27, section 20415(e)(9).

4. **Retest is Part of the Method.** For well/MPar pairs in detection mode, the Discharger shall conduct up to two re-tests whenever test results indicate an increased concentration to verify the initial data, pursuant to CCR Title 27, section 20415(e)(8)(E)(2). If the first retest validates the preliminary indication, a second retest shall be conducted. A measurably significant increase exists if both the retest samples validate the preliminary indication.

5. **Limited Retest Scope.** For any given groundwater monitoring point, the Discharger may perform the verification procedure only for those MPars that have shown a preliminary indication of a release at that well for that reporting period.

6. **Detection Mode Data Analyses.** The Discharger shall comply with the following when conducting detection mode sampling:

   a. **MPars Readily Detectable in Background.** To determine if a new release has occurred, the Discharger shall use intra-well prediction limits. The Discharger shall recalculate these limits every two years as described in the following sections. For any new MPar or monitoring well, the Discharger shall propose and substantiate an appropriate statistical method for that well/MPar pair. The Discharger may propose to the San Diego Water Board for approval an alternate, substantiated statistical method for any well/MPar pair. Upon approval by the San Diego Water Board, the discharger may implement the alternative approach.

   b. **MPars Not Readily Detectable in Background.** The Discharger shall use the California Non-Statistical Data Analysis Method test described in **Part III.B** of this M&RP for any monitoring point in which one or more MPars exceed their respective MDL in less than 10 percent of the applicable background dataset.

B. CALIFORNIA NON-STATISTICAL DATA ANALYSIS METHOD.

1. **Non-Statistical Method for Detection Mode MPars Seldom Found in Background.** The Discharger shall use this data analysis jointly for each constituent that exceeds its MDL in less than 10 percent of its background dataset. A measurably significant indication of a release occurs in a given sample when:

   a. Two or more of the Detection Mode MPars exceed their respective MDLs; or

   b. One or more of the MPars equals or exceeds its respective PQL.

2. **Discrete Retest**

   a. In the event that the Discharger concludes, pursuant to **Part III.B.1** of this M&RP, that there is a tentative indication of a release, then the Discharger shall immediately notify the San Diego Water Board by phone or e-mail and, within ***60 days*** of the original sampling event, shall collect a new independent retest sample from the indicating compliance well.

   b. For the retest sample, the Discharger shall include, only the laboratory analytical results for those constituents indicated in that well's original test. As soon as the retest data are available, the Discharger shall apply the same test, pursuant to **Part III.B.1** of this M&RP, for only those MPars with a tentative indication of a release, to separately analyze each of the two suites of retest data at that compliance well.

   c. If the retest sample trips either or both of the triggers under **Part III.B.1** of this M&RP, then the Discharger shall conclude that there is a measurably significant increase at that well for the constituent(s) indicated in the validating retest sample. Furthermore, thereafter, the Discharger shall monitor the indicated constituent(s) in tracking mode instead of detection mode (see **Part III.A.1.b** of this M&RP) at that well, and shall highlight this conclusion and these changes in the next scheduled monitoring event.

C. **FREQUENT DETECTIONS OF AN ORGANIC CONSTITUENT IN A BACKGROUND WELL.** An "excessive proportion" of an MPar or a COC exist when 10 percent or more of the MPar data collected from a given background well are reported to have concentrations equal to or greater than the MDL. An "excessive frequency" exists when either an MPar or COC are reported to have concentrations equal to or greater than the MDL for two consecutive sampling events. The Discharger shall notify the San Diego Water Board within ***30 days*** of the determination that either an "excessive proportion" or "excessive frequency" exists. Furthermore, within ***180 days*** of the determination, the Discharger shall submit a report to the San Diego Water Board that evaluates whether the MPar is from the site, and proposes appropriate changes to the monitoring program. Based on the evaluation, the San Diego Water Board may:

1. Conclude that the organic constituent originated from a source other than the CAI Unit and require the Discharger to make appropriate changes to the monitoring program, such as using an appropriate statistical inter-well

comparison procedure with a suite of background data that reflects the expected concentration for that constituent; or

2. Conclude that the organic compound originated from the CAI Unit and require the Discharger to:

   a. List the constituent as an MPar in the next scheduled monitoring report if it is not already listed, and note this change in the Transmittal Letter;

   b. Include this background well as part of the release for that MPar and consider this well as a compliance well as part of the Evaluation Monitoring Program; and

   c. Within ***120 days***, install a new upgradient or cross-gradient background well in a portion of the aquifer that will provide data representative of background conditions for the CAI Unit's compliance wells.

D. ONGOING BACKGROUND WELL TESTING. The Discharger shall continue to monitor background wells, for each MPar and COC, each time that MPar or COC is monitored at downgradient wells (excluding retests). New background well data shall be included in the annual monitoring report [CCR Title 27, section 20415(e)(14)] as a time-versus-concentration plot for that "background" well and constituent. Any time such a plot for a given well and constituent shows two successive data points in excess of the MDL for any organic constituent that has not already been investigated at that well, as required in **Part III.C** of this M&RP, the Discharger shall notify the San Diego Water Board within ***30 days*** of the sampling event by phone or e-mail, and shall initiate an investigation within ***180 days*** of noting this condition.

PART IV. CONTINGENCY REPORTING

A. NOTIFICATION OF A RELEASE

1. The Discharger shall notify the San Diego Water Board by telephone or e-mail within ***24-hours***, and by mail within ***seven days*** when the Discharger determines that there is significant physical evidence of a release.

2. The Discharger shall notify the San Diego Water Board by telephone or e-mail within ***30 days*** of a sampling event when they determine that there is preliminary indication of a release. The Discharger shall provide written notification by certified mail within ***seven days*** of the initial notification, and conduct a retest per **Part III.A.4** (statistical method) or **Part III.B.2** (non-statistical method) of this M&RP.

B. EVALUATION OF A RELEASE. If the Discharger determines that a release has occurred:

1. The Discharger shall, within ***90 days*** of determining there is measurably significant evidence of a release, submit an Amended ROWD proposing an Evaluation Monitoring Program that meets the requirements of CCR Title 27, sections 20420(k)(5) and 20425 et seq.

2. The Discharger shall, within ***180 days*** of discovering the release, submit to the San Diego Water Board a preliminary engineering feasibility study report that meets the requirements of CCR Title 27, section 20420(k)(6).

C. RELEASE BEYOND THE FACILITY BOUNDARY. If the Discharger determines that a release has been discovered to extend beyond the facility boundary:

1. The Discharger shall develop a Public Participation Plan and submit it for review and comment by the San Diego Water Board within ***90 days*** of determining that a release extends beyond the facility boundary.

2. The Discharger shall notify all affected persons (i.e., individuals and private and public entities who either own or occupy property that overlies the release). The initial notification shall include a description of the Discharger's current knowledge of the nature and extent of the release.

3. The Discharger shall provide updates to all affected persons.

4. The Discharger shall provide the San Diego Water Board a copy of the current mailing list of affected persons and copies of the notification and updates within ***seven days*** of sending such notifications.

PART V. PROVISIONS

A. ENFORCEMENT DISCRETION. The San Diego Water Board reserves its right to take any enforcement action authorized by law for violations of the terms and conditions of this M&RP.

B. REQUESTING ADMINISTRATIVE REVIEW BY THE STATE WATER BOARD. Any person affected by this action of the San Diego Water Board may petition the State Water Board to review the action in accordance with Water Code section 13320, and CCR Title 23, section 2050. The petition must be received by the State Water Board (Office of Chief Counsel, P.O. Box 100, Sacramento, CA 95812) within ***30 days*** of the date of adoption of this M&RP. Copies of the law and regulations applicable to filing petitions will be provided upon request.

C. DELEGATION OF AUTHORITY. The San Diego Water Board has delegated to the Executive Officer by resolution, all the powers and authority that may be

delegated pursuant to Water Code section 13223. The San Diego Water Board intends for the Executive Officer to make modifications or revisions in appropriate cases, to this M&RP. The Board further directed the Executive Officer to exercise discretion in determining whether proposed modifications and revisions should be considered for approval by the Board.

D. APPLICABILITY. This M&RP supersedes M&RP No. 97-11, and shall be implemented by all Dischargers subject to waste discharger requirements Order No. R9-2012-0001, unless an individual M&RP has been issued for the site.

Ordered by: _____
David W. Gibson
Executive Officer