STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

MONITORING AND REPORTING PROGRAM (No. CI-5643) FOR WASTE MANAGEMENT OF CALIFORNIA, INC. SIMI VALLEY LANDFILL AND RECYCLING CENTER (LANDFILL)

Waste Management of California, Inc. (Discharger) shall begin implementing this revised Monitoring and Reporting Program (M&RP•) 30 days after its adoption by this Regional Board, (Board).

I. REQUIRED REPORTS AND CONTINGENCY RESPONSE

The Discharger shall submit the following reports to this Board in accordance with the schedules specified. Semi-annual and Annual Monitoring Reports shall be submitted in an electronic format, with text, tables, figures, and appendices (in PDF or JPEG format) and laboratory analytical data (in MS Excel or Access format) in an electronic format acceptable to the Board. Accompanying the electronic version of the report shall be a hard copy of a transmittal letter, with perjury statement and signatures of the preparers and submitters, and a hard copy of the report without the appendices.

A. SEMI-ANNUAL DETECTION MONITORING REPORT

A written detection monitoring report for the detection monitoring program shall be submitted semi-annually by April 30 (for the period from October 1 to March 31) and October 31 (for the period from April 1 to September 30) of each year. Any reporting or tabulation requirements less than semi-annual in length (i.e., monthly or quarterly) shall be submitted in the Semi-annual Reports. Semi-annual Reports shall include, but should not be limited to, the following items and sequence:

1. **Transmittal Letter**: A letter transmitting the essential points shall accompany each report. The letter shall include a discussion of any violations found during the current reporting period, and shall describe actions taken or planned for correcting those violations. If the Discharger has previously submitted a detailed time schedule for correcting said violations, a reference to the correspondence transmitting such schedule will be satisfactory. If no violations have occurred, this shall be stated in the transmittal letter. Monitoring reports and the letter transmitting the monitoring reports shall be signed by a principal executive officer at the level of vice president or above, or by his/her duly authorized

• Terms and acronyms used in this Program are defined in Attachment A of Board Order R4-2003-0152 as well as §2014 of 27 CCR.

representative, if such a representative is responsible for the overall operation of the facility from which the discharge originates. The letter shall contain a statement by the official, under penalty of perjury, that to the best of the signer's knowledge the report is true, complete, and correct.

2. **A Table of Contents**: The table of contents shall identify explicitly all sections and referenced components or data (summaries, tables, figures, drawings, lab data, lab summary, appendices, and any other formats) by section and/or page number.

3. **Different Program Reports** - may be combined. Each program report, and its sections, shall be identified in the table of contents. Each different program report must include its scope, evaluation, proposal, conclusions, and any other components separately. Only the laboratory data need not be redundantly reproduced for each program report; however, the lab data must be explicitly identified.

4. **Summary of Non-Compliance**: The report shall contain a summary of non-compliance that discusses the compliance record and the corrective actions taken or planned that may be needed to bring the discharge into full compliance with waste discharge requirements. Significant aspects of any on-going corrective action measures conducted during the monitoring period shall also be summarized. This section shall be located at the front of the report and shall clearly list all non-compliance with discharge requirements, as well as all exceedances of water quality protection standards.

5. **Site Conditions** - General discussion of site conditions (geology, climate, 100 year 24 hour storm, and watershed specifics, etc.) relative to water quality monitoring.

6. **Narrative Description** – A narrative discussion of the Landfill's various monitoring activities and results. Each requirement of Part II of this M&RP shall be specifically discussed.

7. **Laboratory Results**: Laboratory results and statements demonstrating compliance with Part II of this Monitoring and Reporting Program. Results of additional water sampling and analyses performed at the Landfill, outside of the requirements of this M&RP, shall be summarized and reported. If the results of such additional sampling and analyses have or will be reported under separate cover, a statement to that effect shall be included in the monitoring report.

8. **Standard Observations:** A summary and certification of completion of all Standard Observations for the Landfill property in accordance with NPDES monitoring and reporting requirements. The records of observation are to be included with the semi-annual reports.

9. **All Groundwater Monitoring Wells** - shall be sounded each September to determine total depth. This information shall be included in the semiannual detection monitoring report due October 31 of each monitoring year. Wells affected by pumping shall be measured prior to pumping insofar as possible.

10. **Extracted Groundwater and Leachate:** A summary of the total volume, on a monthly basis, of groundwater extracted from all locations at the Landfill, and how this water is handled, as well as Landfill leachate and gas condensate that has been extracted. Use, re-injection and disposal methods of these liquids shall also be reported.

11. **Waste Disposal Reporting:** Waste disposal activities at the site, including:

    a. A tabular list of the estimated average monthly quantities (in cubic yards and tons) deposited each month.

    b. An estimate of the remaining capacity (in cubic yards and tons) and the remaining life of the site in years and months.

    c. A certification that all wastes deposited were deposited in compliance with the Board requirements, and that no wastes were deposited outside of the boundaries of the waste management area as specified in the Board requirements.

    d. A description of the location and an estimate of the seepage rate of flow of all known seeps and springs at the site.

    e. The Discharger shall report all unacceptable wastes inadvertently received at this site and their disposition. The following details shall be included:

        i. The source (if known), including the hauler, of the unacceptable wastes and date received and/or discovered.
        ii. Identification of waste (if known) and the amount of waste.
        iii. The name and address of the hauler who removed the waste from this site.
        iv. The ultimate point of disposal for the waste.
        v. The Discharger' s actions to prevent recurrence of the attempted depositing of unacceptable wastes by this source or individual.

        If no unacceptable wastes were received (or discovered) during the month, the report shall so state.

12. **Dewatered Sludge Sampling and Reporting -** In addition to recording the quantity of dewatered sludge per each generator deposited each month, quarterly samples of incoming sludge shall be obtained and analyzed as follows:

a. A representative sample shall be weight-proportioned as a composite and mixed as completely as possible (preferably in the absence of oxygen) into a single sample. The total percent solids of the sample shall be reported.

b. An extraction solution of the sludge shall be prepared for analyses using the Waste Extraction Test (WET) method as outlined in the California Department of Health Services' California Assessment Manual; for Hazardous Wastes (CAM) except as follows:

   i. All testing shall be done on the 48-hour extracts only.

   ii. The extracts shall be analyzed for Soluble Threshold Limit Concentration (STLC), if warranted based on analysis of Total Threshold Limit Concentrations (TTLC), for the following metals: Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Mercury, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, and Zinc.

   iii. The digested sludge shall also be analyzed semiannually for the following parameters: polychlorinated biphenyls (PCBs), trichloroethylene (TCE), perchloroethylene (PCE), carbon tetrachloride, DDT, DDE, DDD, Endrin, Lindane, Methoxychlor, Toxaphene, 2,4-D and 2,4,5-TP (Silvex).

c. These results shall be reported in the corresponding semi-annual report, as separate sections along with the pertinent laboratory data.

13. **Treated Auto Shredder Waste Monitoring and Reporting-** In addition to recording the quantity of treated auto shredder waste (TASW) deposited each month, samples shall be sampled and analyzed according to the Waste Extraction Test procedure described in title 22, California Code of Regulations, Section 66268.106 (a)(1), for the following constituents:

Constituent	Unit	Frequency
By STLC*:		
Cadmium and/or cadmium compounds	mg/l**	Monthly
Chromium and/or chromium compounds	mg/l	Monthly
Copper and/or copper compounds	mg/l	Monthly
Lead and/or lead compounds	mg/l	Monthly
Mercury and/or mercury compounds	mg/l	Monthly
Nickel and/or nickel compounds	mg/l	Monthly
Zinc and/or zinc compounds	mg/l	Monthly
By TTLC*:**		
Polychlorinated biphenyls (PCBs)	mg/l	Monthly

* soluble threshold limit concentration (STLC)
** mg/l = milligrams per liter
*** total threshold limit concentration (TTLC)

a. Shredder waste samples from each source shall also be analyzed once per month for volatile organic compounds using EPA method 8260. A grab sample shall be randomly obtained from the sampler for this analysis and immediately sealed in an appropriate container.

b. Composite samples of the waste stream from each shredder source shall be collected daily according to the following procedure: The waste stream will be cut every half-hour and an approximate one pound sample obtained. The combined samples for one week will be mixed, coned and quartered prior to submission to the laboratory. One weekly composite shall be subjected to the monthly testing. The shredder waste producers may present an alternate procedure for compositing samples for the Board Executive Officer (Executive Officer) approval.

c. The Discharger shall tabulate and report the quantity of TASW deposited each calendar month and the number of loads deposited from each generator. The Discharger shall also submit copies of all analytical results of wastes deposited with each report.

d. These results shall be reported in the corresponding semi-annual report, as separate sections along with the pertinent laboratory data.

14. **Records of Operational Problems** - mechanical breakdowns, and diversions to emergency storage or disposal associated with any violations, or potential violations of Order No. R4-2003-0152.

15. **Map(s):** Map(s) or aerial photograph(s) showing waste disposal and monitoring locations, relative physical features, and groundwater contours to the greatest degree of accuracy possible.

B. ANNUAL SUMMARY REPORT

The Discharger shall submit an annual summary report to the Board covering the previous monitoring year. The annual monitoring period ends March 31. This report may be combined with the second semi-annual report of the year and shall be submitted no later than April 30 of each year. The annual summary report shall include at least the following:

1. **Discussion**: Include a comprehensive discussion of the compliance record, any significant monitoring system and operational changes, a summary of any other monitoring programs (evaluation or corrective action), and a review of construction projects, with water quality significance, completed or commenced in the past year or planned for the up-coming year.

2. **Graphical Presentation** of Analytical Data [27 CCR, section 20415(e)(14)]: For each Monitoring Point, submit in graphical format the laboratory analytical data for all samples taken within at least the previous eight calendar years. Each such graph shall plot the concentration of one or more constituents over time for a given Monitoring Point, at a scale appropriate to show trends or variations in water quality. Maximum contaminant levels (MCL) shall be graphed along with constituent concentrations where applicable. 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.

3. **Analytical Data**: All monitoring analytical data obtained during the previous year, presented in tabular form. Additionally, complete data histories of each well shall be submitted in an electronic format acceptable to the Board.

4. **Map(s)**: Map(s) showing the areas where any significant events have taken place during the previous calendar year.

C. CONTINGENCY RESPONSE

1. **Leachate Seep**: The Discharger shall, within 24 hours of discovery, report to the Board by telephone any previously unreported seepage from the Landfill. A written report shall be filed with the Board within seven days of discovery, containing at least the following information:

   a. Map - A map showing the location(s) of seepage.

   b. Flow rate - An estimate of the flow rate.

   c. Description - A description of the nature of the discharge (e.g., all pertinent observations and analyses).

   d. Location - Location of sample(s) collected for laboratory analysis, as appropriate.

   e. Corrective measures - approved (or proposed for consideration) by the Executive Officer.

2. **Response to an Initial Indication of a Release**: Should the initial statistical or non-statistical comparison indicate that a release is tentatively identified, the Discharger shall:

   a. Within 24 hours, verbally notify the designated Board staff contact as to the Monitoring Point(s) and constituent(s) or parameter(s) involved;

b. Provide written notification by certified mail within seven days of such determination; and

c. Do either of the following:

i. Carry out a discrete re-test in accordance with Section II.C.9.b. of this M&RP. If the re-test confirms the existence of a release or the Discharger fails to perform the re-test, the Discharger shall carry out the release discovery response requirements in Section I.C.4. In any case, the Discharger shall inform the Board of the re-test outcome within 24 hours of results becoming available, following up with written results submitted by certified mail within seven days, or

ii. Make a demonstration that in accordance with 27 CCR section 20420(k)(7), that a source other than the waste management unit caused the release or that the evidence is an artifact caused by an error in sampling, analysis, or statistical evaluation or by natural variation in the groundwater, surface water, or the unsaturated zone.

3. **Physical Evidence of a Release**: If either the Discharger or the Executive Officer determines that there is significant physical evidence of a release (27 CCR § 20385(a)(3)), the Discharger shall conclude that a release has been discovered and shall:

a. Within seven days notify the Board of this fact by certified mail (or acknowledge the Board' s determination).

b. Carry out the requirements of Section I.C.4. for all potentially affected monitored media.

c. Carry out any additional investigations described in writing by the Executive Officer for the purpose of identifying the cause of the indication.

4. **Release Discovery Response**: If either the Discharger or the Executive Officer concludes that a release has been discovered, the following steps shall be carried out:

a. If this conclusion is not based upon monitoring for all constituents of concern (COCs), the Discharger shall sample for all COCs at all Monitoring Points in the affected medium. Within seven days of receiving the laboratory analytical results, the Discharger shall notify the Executive Officer, by certified mail, of the concentration of all COCs at each Monitoring Point. This notification shall include a synopsis showing, for each Monitoring Point, those constituents that exhibit an unusually high concentration.

b. The Discharger shall, within 90 days of discovering the release, submit an Amended Report of Waste Discharge proposing an Evaluation Monitoring and Reporting Program that:

i. Meets the requirements of 27 CCR sections 20420 and 20425.

ii. Satisfies the requirements of 40 CFR 258.55(g)(I)(ii) by committing to install at least one monitoring well at the facility boundary directly down-gradient of the center of the release.

c. The Discharger shall, within 180 days of discovering the release, submit a preliminary engineering feasibility study (27 CCR § 20420(k)(6)) meeting the requirements of 27 CCR section 20430.

d. The Discharger shall immediately begin delineating the nature and extent of the release. The Discharger shall install and monitor assessment wells as necessary to assure that it can meet the requirements of 27 CCR section 20425 in order to submit a delineation report within 90 days as directed by the Executive Officer to begin the Evaluation Monitoring and Reporting Program.

5. **Release Beyond Facility Boundary**: Any time the Discharger concludes (or the Executive Officer directs the Discharger to conclude) that a release from the Landfill 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) as follows:

a. 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.

b. 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.

c. Each time the Discharger sends a notification to Affected Persons (under a. or b., above), it shall, within seven days of sending such notification, provide the Board with both a copy of the notification and a current mailing list of Affected Persons.

D. RESPONSE TO VOC DETECTION IN BACKGROUND WELLS

1. Except as indicated in Section I.D.2. below, any time the laboratory analysis of a sample from a Background Monitoring Point shows either (1) two or more VOCs above their respective Method Detection Limit, or (2) one VOC above its respective Practical Quantitation Limit, the Discharger shall:

a. Within 24 hours, notify the Board by phone that possible Background Monitoring Point contamination has occurred.

b. Follow up with written notification by certified mail within seven days.

c. Immediately obtain two new independent VOC samples from that Background Monitoring Point and send them for laboratory analysis of all detected VOCs.

2. If either or both of the new samples validate the presence of VOC(s) at the Background Monitoring Point, the Discharger shall:

a. Within 24 hours, notify the Board about the VOC(s) verified to be present at that Background Monitoring Point.

b. Provide written notification to the Board by certified mail within seven days of validation.

c. Within 180 days of validation, submit a report, acceptable to the Executive Officer, which examines the possibility that the detected VOC(s) originated from other than the Landfill, and proposes appropriate changes to this M&RP.

3. If the Executive Officer determines, after reviewing the report submitted under Section I.D.2. above, that the VOC(s) detected originated from a source other than the Landfill, the Executive Officer will make appropriate changes to this M&RP.

4. If the Executive Officer determines, after reviewing the report submitted under Section I.D.2. above, that the detected VOC(s) most likely originated from the Landfill, the Discharger shall assume that a release has been detected and shall immediately begin carrying out the requirements of Sections I.C.4 and I.C.5. of this M&RP.

E. SUBMITTING OF REPORTS

1. Each monitoring 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."

2. A duly authorized representative of the Discharger may sign the documents if:

a. The authorization is made in writing by the person described above;

b. The authorization specified an individual or person having responsibility for the overall operation of the regulated disposal system; and

c. The written authorization is submitted to the Executive Officer.

3. All reports required in this M&RP shall be addressed to:

California Regional Water Quality Control Board
Los Angeles Region
320 W. 4th Street, Suite 200
Los Angeles, California 90013
ATTN: Information Technology Unit

II. REQUIRED MONITORING AND INSPECTIONS

The Discharger shall continue implementing a Detection Monitoring Program (DMP) at the Landfill. Unless otherwise indicated, all monitoring data and inspection results shall be reported to the Board as outlined in Section I of this M&RP.

A. ENVIRONMENTAL MONITORING NETWORKS

The Discharger shall conduct analytical monitoring on groundwater, surface water, leachate, and the vadose (unsaturated) zone at the Landfill. The current environmental Monitoring Points for the Landfill are summarized in Table T-1 and their locations are displayed on Figure T-1.

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TABLE T-1: Monitoring Points at the Landfill

MONITORING PROGRAM	FREQUENCY	MONITORING POINTS	MONITORED PARAMETERS
A. EXISTING UNIT B & UP-CANYON			
1. Groundwater			
POC* Well (landfill toe)	**Semiannual** (in January and July)	**1 Well:** M-01ARD	Detection[1] Supplemental[2] Field[3]
POC Wells (landfill perimeter)	**Biennial** (every 2 years, beginning January 2005)	**9 Wells:** WM-09, E-22, E-29, E-28RD4, WM-02RD, S-07, S-01RD, E-25, E-15	Detection[1] Supplemental[2] Field[3]
All POC Wells	**Every 4 years** (next event January 2005) (performed in conjunction w/ semiannual event)	**10 Wells:** M-01ARD, WM-09, E-22, E-29 E-28RD4, WM-02RD, S-07, S-01RD, E-25, E-15	COCs[4]
All POC Wells + Piezometers	**Semiannual** (in January and July)	**10 Wells, 7 Piezometers:** Wells: M-01ARD, WM-09, E-22, E-29 E-28RD4, WM-02RD, S-07, S-01RD, E-25, E-15 Piezometers: WM-07, WM-08, E-14, WM-05, E-12, E-20, W-09	Groundwater Elevation
2. Leachate	**Annually[5]**	**4 Sumps:** Sump A, Sump B, Sump 1, Toe Barrier	Detection[1] Supplemental[2] Field[3] All Appendix II Parameters
3. Soil-Pore Liquid	**Quarterly[7]**	**3 Lysimeters:** Sludge Bed Lysimeter (N), Sludge Bed Lysimeter (S), Cell B-3 Lysimeter	Appendix I VOCs[8]
4. Soil-Pore Gas	**Monthly**	Gas Probes 1-6 and 8-12	Methane
	Monthly	Gas Probe w/ highest methane	TO-15 NMOC Fixed Gases Balance Gases
B. PROPOSED CELL D			
1. Groundwater POC Wells Only	**Quarterly** (for 8 quarters after installation, to establish background)	**3 Wells (all to be installed):** WM-10, WM-04RD, E-17RD	Baseline COCs[9] Detection[1] Supplemental[2] Field[3]
	Thereafter: **Semiannual** (in January and July)		Detection[1] Supplemental[2] Field[3]
C. SURFACE WATER	**Annually**	**3 Monitoring Points:** Stormwater Discharge Point 1 and 3	Stormwater [10]

* Point of Compliance (POC)
1 Detection Monitoring Paramters: VOCs by 8260B (47 compounds on Subtitle D Appendix I List); Bicarbonate Alkalinity as CaCO3; Chemical Oxygen Demand; Total Dissolved Solids, Chloride, Sulfate, Sodium (dissolved), Nitrate-Nitrogen
2 Supplemental Monitoring Parameters: Total Alkalinity as CaCO3, Total Organic Carbon, Biochemical Oxygen Demand, Iron (dissolved), Calcium (dissolved), Magnesium (dissolved), Potassium (dissolved), Total Kjeldahl Nitrogen, Ammonia-Nitrogen
3 Field Parameters: Electrical Conductivity, pH, Temperature, Turbidity
4 Constituents of Concern: Subtitle D Appendix II analyte list
5 If liquid is present; see section I.C.2. of this M&RP
6 Appendix II metals are: Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Hg, Ni, Se, Ag, Tl, Sn, V, Zn
7 If liquid is present; see section I.C.2. of this M&RP
8 Appendix I VOCs are the 47 compounds on Subtitle D Appendix I List
9 Baseline COCs are Subtitle D Appendix II analyte list for FIRST quarterly monitoring event; Appendix II metals only for Quarters 2 through 8 (see section No. I.C.2 of this M&RP)
10 Chemical Oxygen Demand (COD), Cyanide, Nitrate, Total Kjeldahl Nitrogen (TKN), Oil and Grease, Total Suspended Solids (TSS), pH, Specific Conductance, Cadmium, Lead, Magnesium, Mercury, Selenium and Silver.

B. LANDFILL GAS MONITORING

1. The monitoring system for soil gas consists of the following eleven gas monitoring probe locations: 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, and 12. Each probe is a multi-stage probe containing up to three individual monitoring probes (deep, intermediate, shallow) which are installed near the site boundary and are monitored monthly for potential subsurface off-site gas migration.

2. Certain conditions pertaining to the soil-pore gas monitoring program can affect the specific wells subject to groundwater compliance monitoring.

3. Detection of landfill-related gases above threshold values in a probe will trigger additional perimeter monitoring well sampling and analysis, as described in section II.B.5. of this M&RP. Gas probes (or applicable stage of multi-stage probes) where non-landfill related methane (determined by laboratory test methods that compare carbon isotopes) is detected will be excluded from the gas probe monitoring requirements.

4. The Discharger shall monitor the perimeter gas monitoring systems monthly and report the findings to the Board semiannually in the detection monitoring reports. Each probe (or stage of a probe) shall be monitored for methane gas monthly. The probe exhibiting the highest methane concentration during the monthly monitoring event will also be analyzed for the following constituents:

Soil Gas Monitoring Parameters*	Units
Methane & NMOC by EPA 25C	Vol%
VOCs by EPA TO-14 or TO-15	ppbv**

Fixed gases	Vol%
Balance gases	Vol%

* applies only to probe exhibiting highest methane concentration during monitoring event
** parts per billion (by) volume

5. In the event that any gas probe exhibits methane gas concentrations in excess of 5% by volume, the Discharger shall implement the following program:

   a. Perform an evaluation to determine the source of the methane (i.e., thermogenic due to local natural petroleum deposits or landfill-related). If the methane is determined to be thermogenic, then the Discharger may petition to have the gas probe (or stage of the gas probe) removed from the soil-pore gas compliance monitoring program and no action related to the groundwater program will be necessary.

   b. If, however, the evaluation of methane source indicates that it is landfill-related, the Discharger shall sample the nearest POC perimeter groundwater monitoring well for a minimum of two consecutive semiannual monitoring events:

      i. The first event will include analysis of Detection Monitoring Parameters, Supplemental Parameters, and Field Parameters (as listed in Table T-2 as well as the 17 metals listed in Appendix II of Subtitle D as follows: Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Hg, Ni, Se, Ag, Tl, Sn, V, Zn);

      ii. The second event will include analysis of Detection Monitoring Parameters, Supplemental Parameters, and Field Parameters (as listed in Table T-2 of this M&RP).

   c. Continued semiannual groundwater monitoring of the nearest POC perimeter groundwater monitoring well will continue as long as the gas probe that caused initiation of the monitoring continues to display landfill-related methane concentrations in excess of 5% by volume. Continued monitoring will include Detection Monitoring Parameters, Supplemental Parameters, Field Parameters, and Other COCs (excluding the metals listed in II.B.5.b.i above unless the metal(s) detected fall beyond the statistical prediction limits) as listed in Table T-1 and T-2 of this M&RP. Monitoring can be discontinued once the perimeter probe no longer exceeds the methane threshold but not before the minimum two consecutive events described in B.5.b. above are completed.

C. ANALYTICAL MONITORING

1. **Initial Full Appendix II Scan** – The most recent full Appendix II constituents scan at the Landfill was performed at the Landfill in December 2000. The next Appendix II scan shall be performed in January 2005, for constituents that are not yet on the landfill's Monitoring Parameter (MPar) list. Such initial complete Appendix II sampling shall also be performed at any new groundwater monitoring well within 30 days of its installation. For any Appendix II constituent detected in the scan that is not yet on the landfill's MPar list, the Discharger shall resample for that constituent, within thirty days, at all Monitoring Points where the constituent(s) was detected. Any Appendix II constituent that is detected and confirmed at one or more ground water Monitoring Points becomes a new constituent of concern (COC) for the Landfill and shall also be added to the Landfill's MPar list, pursuant to 40CFR 258.55(b-d).

2. **COC List** — As of the date of the adoption of this M&RP, the COC list for the Landfill consists of the monitoring parameters listed below, the Discharger shall sample all point of compliance (POC) Monitoring Points listed in Table T-1 of this M&RP for COCs every 4 years. COCs shall be those constituents listed in Appendix II of Subtitle D and incorporated by reference into 27 CCR Section 20395(b). Only constituents listed in Appendix II of Subtitle D that are not already analyzed as Detection Monitoring Parameters or Supplemental Monitoring Parameters need be analyzed for any COC monitoring event. The 4-year COC monitoring events are carried out in the Winter/Spring monitoring events. The next COC event will occur during the January 2005 monitoring period with results reported in the semiannual detection monitoring report due April 30, 2005). More frequent testing of COCs may be necessary in the event of verified measurably significant evidence of a release, or detection of landfill related gas in gas monitoring probes along the perimeter of the facility (as described in Table T-1 and II.B. of this M&RP).

3. **Monitoring Parameters (MPars)**: Current Groundwater MPars at the Landfill are listed in Table T-2:

TABLE T- 2 Current Constituents of Concern at Landfill

Monitoring Parameters			
Indicator Parameters	**Supplemental Parameters**	**Field Parameters**	**Other COCs**
Inorganic Indicator Parameters: Bicarbonate (as $CaCO_3$) Chemical oxygen demand (COD) Chloride Nitrate-nitrogen Sodium (dissolved) Sulfate Total dissolved solids (TDS) **Organic Indicators:** **Volatile Organic Compounds (VOCs):** All 47 Appendix I VOCs from 40 CFR 258	Alkalinity, total (as $CaCO_3$) Ammonia-N Biochemical Oxygen Demand (BOD) Boron Calcium, dissolved Iron, dissolved Magnesium, dissolved Potassium, dissolved Total organic carbon (TOC) Total Kjeldahl Nitrogen (TKN)	Electrical Conductivity pH Temperature Turbidity	**Metals:** Antimony (Sb) Arsenic (As) Barium (Ba) Beryllium (Be) Cadmium (Cd) Chromium, total (Cr) Cobalt (Co) Copper (Cu) Lead (Pb) Nickel (Ni) Mercury (Hg) Selenium (Se) Silver (Ag) Thallium (Tl) Tin (Sn) Vanadium (V) Zinc (Zn)

a. **Indicator Parameters** are the Inorganic Indicator Parameters and Appendix I VOCs which are constituents that are considered capable of providing reliable indication of a release from the Landfill. The Discharger shall apply the statistical analyses described in Section II.C.8. or nonstatistical analysis in Section II.C.9. of this M&RP to analyze all groundwater monitoring data obtained under this program

b. **Supplemental Parameters** are inorganic constituents that provide important information regarding groundwater geochemistry but are not expected to show significant variation in groundwater in the event of a landfill release. Monitoring data for the Supplemental Parameters will generally be used for informational purposes only and will not be subjected to routine statistical analysis.

c. **Field Parameters** are collected for information purposes to document groundwater conditions at time of sampling. Field parameters are not subject to the Statistical and Non-Statistical evaluation procedures described in section II.C.8. and 9. of this M&RP.

d. Any other **COCs** that have been detected and confirmed to exist at any groundwater Monitoring Points at the site.

4. **Water Quality Protection Standard (WQPS)** - In accordance with 27 CCR section 20390, WQPS for the Landfill is established as the natural background groundwater quality at the site. WQPS is set either to the statistically predicted value (if the constituent naturally exists) or the laboratory detection limit (if the constituent does not naturally exist in the water). For any WQPS monitoring parameter detected, that is not naturally occurring, or is beyond its statistically predicted value, the Discharger shall verbally notify Board staff as to the monitoring point(s) involved, and shall provide written notification to the Board by certified mail within seven days of such determination [27 CCR section 20420(j)(1)].

5. **Development and Updating of Concentration Limits** – the Discharger shall continue to develop and update Concentration Limits following the procedures provided in Section II.C.8.a. of this M&RP. The first annual report following the adoption of this M&RP shall include an updated list of Concentration Limits for all COCs at all Monitoring Points for which sufficient data exists. Subsequently, the Discharger shall review Concentration Limits biannually in its annual reports submitted to the Board. When appropriate, new Concentration Limits shall be proposed. For any well/Mpar pair for which the Intra-Well Comparison analysis is not applicable, the Discharger shall use the Inter-Well comparison analysis to determine whether water quality protection standards are violated.

6. **Groundwater Quality Monitoring** – the Discharger shall conduct groundwater monitoring activities as listed in Table T-1.

   a. **Low Groundwater Elevation**: If the elevation of groundwater in any perimeter POC monitoring well falls below the base of the canyon, then the affected well(s) shall be sampled for the Detection Monitoring Parameters, Supplemental Parameters, and Field Parameters listed in Table T-2 of this M&RP during the next scheduled semiannual monitoring event.

   b. **Semi-Annual Monitoring**: shall be conducted at groundwater Monitoring Points[1] on a semi-annual basis and water samples shall be analyzed for all Monitoring Parameters; and

   c. **Four-Yearly COC Scan** — Every four years, starting in 2005, the Discharger shall analyze a sample from each ground water Monitoring Points for the detectable presence (including trace determinations) of all COCs that are not

[1] A Detection Monitoring well may be changed to Evaluation Monitoring well as required or approved by the Executive Officer.

yet on the Monitoring Parameter list. This constitutes the means by which the Discharger continues to meet the requirements of 40CFR 258.55(b)-(d).

i. During each such COC scanning event, the Discharger shall obtain and analyze a minimum of one sample from each monitoring well (sufficient to obtain a datum for each COC that is subject to the scan). Upon detecting (including trace value) a COC that is not yet on the MPar list, the Discharger shall, within 30 days, take a single resample from the indicating affected well(s) and reanalyze it only for the newly-detected constituent(s).

ii. Any COC detected in samples collected from a groundwater monitoring well, and verified by a retest, automatically becomes part of the MPar list for the facility. This constitutes the means by which the Discharger shall meet the requirements of 40 CFR 258.55(d)(2).

d. **Future Cell D Expansion Area** -Cell D construction is scheduled for late 2004. Wells WM-10 (to-be-installed), WM-04RD (to be installed), and E-17RD (to be installed) will serve as POC monitoring wells for the proposed Cell D expansion. These wells will be monitored as described in sections I.A. and II.C.8 of this M&RP. The hydrogeologic model for the existing Cell B and up-canyon landfill area does not apply to the Cell D expansion area, because it is in a different watershed. Therefore, bed-specific monitoring will be applied to Cell D, using the to-be-installed wells listed above.

7. **Statistical Data Analysis Methodology**

a. Intra-well comparison methods shall be used for all compliance wells for all constituents that are detectable at concentrations above their respective Method Detection Limit (MDL) in 10% or more of the background data to date. Initially, for each given MPar at a given downgradient monitoring well (well/MPar pair), the proposed background data set shall consist of all validated historical data from that compliance well and parameter, from the period 1995 through 2002. Every two years, following the adoption of this M&RP, as part of the annual monitoring summary report, the Discharger shall add the newer data to the background data set for each well/MPar pair after validating (via a method approved by the Executive Officer) that the new data does not indicate an increase over the existing background data. At that time, the Discharger shall also retire the well/MPar's oldest two years of background data, thereby producing a data set covering the then-previous eight years. The Discharger shall validate the proposed intra-well background data set as follows for each MPar at each well (initially) or, subsequently, at a new well or for a new MPar at an existing well. The Discharger shall report the validated or updated background data set, for each affected well/MPar pair, in the next scheduled monitoring report.

b. Per 27 CCR section 20415(e)(9)(C), if a control chart approach is used to evaluate water quality monitoring data, the specific type of control chart and its associated statistical parameter values (e.g., the upper control limit) shall be included in the supporting documentation as required by 27 CCR section 20415(e)(7). The Discharger shall use the procedure only if this supporting documentation shows the procedure to be protective of human health and the environment. Any control charting procedure must have a false positive rate of no less than 1 percent for each Monitoring Point charted. As an example, upper control limits on X-bar or R-Charts used only once every six months (where no composite retest is used) must be set at no more than 2.327 standard deviations of the statistic plotted for a one-sided statistical comparison, or at no more than 2.576 standard deviations of the statistic plotted for a two-sided statistical comparison.

c. In the event that an approved data analysis method provides a preliminary indication that a given monitoring parameter has a measurably significant increase at a given well, the Discharger shall conduct a verification procedure (retest) in accordance with 27 CCR section 20415(e)(8)(E).

d. The verification procedure shall be performed only for the constituent(s) or parameter(s) that has shown "measurably significant" (see 27 CCR § 20164) evidence of a release, and shall be performed only for those Monitoring Points at which a release is indicated.

e. For any COC or monitoring parameter that is detectable at concentrations above its respective MDL in 10% or less of the background data to date, the constituent' s concentration limit shall be its MDL. A measurable exceedance of this concentration limit shall be determined by application of the non-statistical analysis method described in Section II.C.9.a. of this M&RP.

f. **Water Quality Monitoring Approach** — Except for COC scans, the monitoring approach used for each monitoring parameter at each compliance well (well/MPar pair) shall be controlled by whether that monitoring parameter has exhibited a measurably significant increase at that well. Therefore, the Discharger shall monitor each well/MPar pair in one of two modes, as follows, either:

   i. **Detection Mode** - For an MPar that has not produced a measurably significant increase at that well, the purpose of monitoring, for that well/MPar pair, is to watch for the MPar' s arrival at that well at a concentration strong enough to trigger a measurably significant indication using an appropriate statistical or nonstatistical data analysis method; or

   ii. **Tracking Mode –** For an MPar that has produced a measurably significant increase at a given well, the purpose of the monitoring, for that well/MPar pair, is to verify the suitability and effectiveness of the existing or proposed corrective measures by tracking changes in the MPar' s

concentration at that location via an evolving concentration-versus time plot.

g. **Detection Mode Data Analyses** — The following applies to all detection mode data analyses (i.e., this Section does not apply to the scans under Sections II.C.1 or II.C.7.):

i. **Monitoring Parameters Readily Detectable in Background** — At any given Monitoring Point, the Discharger shall apply an appropriate statistical analysis for each detection mode monitoring parameter that exceeds its respective MDL in at least 10% of the applicable background data set;

ii. **Monitoring Parameters Not Readily Detectable in Background -** For any Monitoring Point at which one or more monitoring parameters, in detection mode, exceed their respective MDL in less than 10% of the applicable background data set, the Discharger shall analyze the data for these monitoring parameters via the California Nonstatistical Data Analysis Method (CNSDAM) test described in Section II.C.9 of this M&RP.

8. **California Nonstatistical Data Analysis Method (CNSDAM)**

a. **Non-Statistical Method for Detection Mode for MPars Seldom Found in Background** - For any given compliance (downgradient) well, regardless of the monitoring program (DMP, EMP, AMP, or CAP), the Discharger shall use this data analysis method, jointly, for all constituents on the "scope list" in Section II.C.9.a.i. of this M&RP (or, for each retest sample, the modified scope list of Section II.C.9.b.i.

i. **Scope List** – Within 30 days of the effective date of this Order, the Discharger shall create a current "scope list" showing each detection mode MPar, at that well, that exceeds its MDL in less than 10% of its background data.

ii. **Two Triggers** - From the scope list made under Section II.C.9.a.i. above, for an initial test (or, for a retest, the modified scope list under Section II.C.9.b.i. below), the Discharger shall identify each MPar in the current sample from that well that exceeds either its respective MDL or PQL. The Discharger shall conclude that these exceeding MPars provide a preliminary indication (or, for a retest, provide a measurably significant indication) of a change in the nature or extent of the release, at that well, if either:

(a) Two or more of the MPars on a monitoring well's scope list exceed their respective MDL; or

(b) At least one of the MPars on a monitoring well's scope list equals or exceeds its respective PQL.

b. **Discrete Retest** [27 CCR § 20415(e)(8)(E)]:

In the event that the Discharger concludes (pursuant to Section II.C.9.a.ii above) that there is a preliminary indication, then the Discharger shall immediately notify Board staff by phone, fax, or e-mail and, within 30 days of such indication, shall collect two new (retest) samples from the indicating compliance well.

i. For any given compliance well, the Discharger shall analyze the retest samples only for those constituents indicated in that well's original test, under Section II.C.9.a.ii of this M&RP, and these indicated constituents shall comprise the well's "modified scope list." As soon as the retest data are available, the Discharger shall apply the same test (under Section II.C.9.a.ii above, but using this modified scope list) to separately analyze each of the two suites of retest data at that compliance well.

ii. If either (or both) of the retest samples trips either (or both) of the triggers under Section II.C.9.a.ii, 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(s). Thereafter, the Discharger shall monitor the indicated constituent(s) in tracking mode at that well and shall:

(a) Remove the constituent(s) from the scope list created for that well;
(b) Notify the Board in writing; and
(c) Highlight this conclusion and these changes in the next scheduled monitoring report and in the Landfill's operating record.

Groundwater Flow Direction – Semiannually, the Discharger shall determine Groundwater flow direction by water level readings as listed in Table T-1 monitoring wells and piezometers along the east and west perimeters of the Landfill. The Discharger shall measure the water level in each well to the nearest 0.01 foot and determine groundwater flow rate and direction in each groundwater body semiannually. Measurements shall also be made at times of the expected highest and lowest elevations of water levels, in order to determine the horizontal and vertical gradients of groundwater flow rate and direction for the respective groundwater body.

9. **Leachate Monitoring** – the Discharger shall conduct leachate monitoring at four sumps as listed in Table T-1 and any leachate collection system that will be constructed at the Landfill as follows:

a. **Annual Constituent Scan** - Leachate samples shall be taken at each Monitoring Point each year during the month of January. The samples shall be analyzed for all constituents listed in Subtitle D, Appendix II.

b. **Retest** - If any constituents that are not in the COC list are detected in the leachate sampling event at any sampling point, the Discharger shall resample the leachate at that point during the next semiannual sampling event and analyze the sample for those detected constituents. If any such constituent is confirmed to be in the leachate, the Discharger shall add the constituent to the COC list and report this to the Board within two weeks of the confirmation.

c. **Quantities of Liquid** - pumped from each leachate monitoring sump and/or extraction well shall be reported, including dates of removal, and the ultimate disposition. If no liquid was detected or pumped from any sump or well during the reporting period, a statement to that effect shall be submitted.

d. **Quantities of Leachate and Gas Condensate** - returned to the waste management unit(s) during each month shall be reported. Information shall include the quantity of leachate and/or condensate returned to each lined cell, and the method used (subsurface introduction, direct application to waste prior to covering, or other method approved by the Board).

e. **Reporting** - Leachate monitoring results shall be included in the semi-annual and annual reports that cover the period during which the monitoring is conducted.

10. **Vadose Zone Monitoring** – Vadose zone monitoring at the Landfill shall include:

a. **Subdrain Monitoring** - Subdrain liquid monitoring will be conducted for those cells that require the placement of subdrains to control groundwater seepage beneath the liner system at the Landfill. Subdrains shall be monitored in the same manner as Semiannual Monitoring points.

b. **Lysimeter Monitoring** – The vadose zone monitoring system for liquid consists of two lysimeters beneath the sludge drying bed (North Lysimeter and South Lysimeter) and one pan lysimeter under the Cell B-3 leachate sump. Lysimeters shall be inspected weekly for presence of liquid and, if sufficient liquid is present, sampled and analyzed monthly for the Soil-Pore Liquid Detection Monitoring Parameters listed below and in Table T-1 and reported in the next semiannual monitoring report.

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Soil-Pore Liquid Detection Monitoring Parameters	Units
EPA 8260B VOCs	ug/L
47 Appendix I VOCs from 40 CFR 258 (applies only to probe exhibiting highest methane concentration during monitoring event).	ug/L

11. **Surface Water Monitoring** – the Discharger shall carry out surface water monitoring at all surface monitoring stations listed in Table T-1, or additional monitoring stations as they are added, on a semi-annual basis. In addition, the Discharger shall carry out the monitoring requirements under the General Industrial Stormwater NPDES Permit. All surface water monitoring results shall be included in appropriate semi-annual or annual reports submitted to the Board.

12. **Water Used on Site for Irrigation and Dust Control**: the Discharger shall record the amount of water used on site for the purposes of irrigation and dust control from each source on a monthly basis. Any other water source not currently monitored in this M&RP, other than potable water, shall be sampled semiannually and analyzed for pH, heavy metals, nitrate, and VOCs.

D. SITE INSPECTIONS

1. The Discharger shall inspect the Landfill in accordance with the following schedule, and record at a minimum, Standard Observations.

2. During the wet season (October through April), following each storm that produces storm water runoff, or on a monthly basis if no storm produces runoff during the month.

3. During the dry season, a minimum of one inspection shall be performed every three months.

4. Standard Observations during a site inspection shall include at least the following:

    a. Evidence of any surface water leaving or entering the Unit, estimated size of affected area, and estimated flow rate (show affected area on map).

    b. Evidence of odors; presence or absence, characterization, source, and distance of travel from source.

    c. Evidence of erosion and/or exposed refuse.

d. Inspection of all storm water discharge locations for evidence of non-storm water discharges during dry seasons, and integrity during wet seasons.

e. Evidence of ponded water at any point on the waste management facility (show affected area on map).

f. Compliance with the Storm Water Pollution Prevention Plan, insuring that the terms of the General NPDES Stormwater Permit are properly implemented.

g. Integrity of all drainage systems.

III: SAMPLING AND ANALYTICAL PROCEDURES

A. SAMPLING AND ANALYTICAL METHODS

Sample collection, storage, and analysis shall be performed according to the most recent version of Standard USEPA Methods (USEPA publication 'SW-846'), and in accordance with a sampling and analysis plan acceptable to the Executive Officer. Sampling shall be taken in a manner that insures sample independence to the greatest extent feasible [27 CCR, section 20415(e)(12)(B)]. A State of California approved laboratory shall perform water analysis. Specific methods of analysis must be identified. The director of the laboratory whose name appears on the certification shall supervise all analytical work in his/her laboratory and shall sign reports of such work submitted to the Board. In addition, the Discharger is responsible for seeing that the laboratory analysis of samples from all Monitoring Points meets the following restrictions:

1. Pre-Sampling Purge for Samples Obtained from Wells:

   a. For each Monitoring Point addressed by the report, a description of the method and time of water level measurement, of the type of pump used for purging and the placement of the pump in the well, and of the method of purging (the pumping rate, the equipment and methods used to monitor field pH, temperature, electrical conductivity and turbidity during purging, the calibration of the field equipment, results of the pH, temperature, electrical conductivity, and turbidity testing, the well recovery time, and the method of disposing of the purge water);

   b. Sampling:

      i. For each Monitoring Points addressed by the report:

      (a) The Discharger shall make a description of the type of pump, or other device, used and its placement for sampling;
      (b) 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); and

(c) The name and qualifications of the person taking the samples, and any other observations.

2. The methods of 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) in historical data for that medium, the SW-846 analytical method having the lowest Method Detection Limit (MDL) shall be selected.

3. Trace results (results falling between the MDL and the Practical Quantitation Limit (PQL)) for organic compounds shall be reported as such.

4. MDL and PQL shall be derived by the laboratory for each analytical procedure, according to State of California laboratory accreditation procedures. Both limits shall reflect the detection and quantitation capabilities of the specific analytical procedure and equipment used by the laboratory. If the laboratory 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 values, the results shall be flagged accordingly, and an estimate of the limit actually achieved shall be included.

5. For each MPar addressed during a given reporting period, the Discharger shall include in the monitoring report a listing of the prevailing MDL and PQL for that MPar, together with an indication as to whether the MDL, PQL, or both have changed since the prior reporting period. The Discharger shall require the analytical laboratory to report censored data (trace level and non-detect determinations). In the event that an MPar's MDL and/or PQL change, the Discharger shall highlight that change in the report's summary and the report shall include an explanation for the change that is written and signed by the owner/director of the analytical laboratory.

6. Quality assurance and quality control (QA/QC) data shall be reported along with the sample results to which it applies. Sample results shall be reported unadjusted for blank results or spike recovery. The QA/QC data submittal shall include:

   a. The method, equipment, and analytical detection limits.
   b. The recovery rates, including an explanation for any recovery rate that is outside the USEPA-specified recovery rate.
   c. The results of equipment and method blanks.
   d. The results of spiked and surrogate samples.
   e. The frequency of quality control analysis.
   f. The name and qualifications of the person(s) performing the analyses.

7. QA/QC analytical results involving detection of common laboratory contaminants in any sample shall be reported and flagged for easy reference.

8. Non-targeted chromatographic peaks shall be identified, quantified, and reported to a reasonable extent. When significant unknown peaks are encountered, second column or second method confirmation procedures shall be performed in an attempt to identify and more accurately quantify the unknown analyte(s).

B. RECORDS TO BE MAINTAINED

Analytical records shall be maintained by the Discharger or laboratory, and shall be retained for a minimum of five years. The period of retention shall be extended during the course of any unresolved litigation or when directed by the Executive Officer. Such records shall show the following for each sample:

1. Identity of sample and the actual Monitoring Point designation 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 personnel performing each analysis.

4. Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used.

5. Results of analyses, and Method Detection Limit and Practical Quantitation Limit for each analysis.

ORDERED BY: _____ DATE: December 4, 2003
Dennis A. Dickerson
Executive Officer