REVISED MONITORING AND REPORTING PROGRAM NO. R3-2004-0151
Waste Discharger Identification No. 3 420306001
For
VANDENBERG AIR FORCE BASE CLASS III LANDFILL
SANTA BARBARA COUNTY

MONITORING AND OBSERVATION SCHEDULE

A. SITE INSPECTIONS

The Discharger shall inspect the Landfill, according to the following schedule, recording, at a minimum, the following Standard Observations.

1. Site Inspection Schedule:

   a. At least monthly during the wet season **(October through April)**, and following each storm event producing a minimum of 1" of rain within a 24-hour period.

   b. During the calendar year, a minimum one inspection during each six-month period: **January through June**, and **July through December**. (**Note:** Ideally, the first inspection is completed prior to the rainy season and the second is completed after the rainy season).

2. Standard Observations:

   a. **For Receiving Waters:**
      i. Floating and suspended materials of waste origin; presence or absence, source, and size of affected area.
      ii. Discoloration and turbidity - description of color, source, and size of affected area.
      iii. Evidence of odors - presence or absence, characterization, source, and distance of travel from source.
      iv. Evidence of beneficial use - presence of water-associated wildlife.
      v. Estimated flow rate to the receiving water.
      vi. Weather conditions: Wind direction and estimated velocity, total precipitation during the previous five days and on the day of observation.

   b. **Along the perimeter of the Landfill Property:**
      i. Evidence of liquid leaving or entering the Landfill, estimated size of affected area, and estimated flow rate (show affected area on map).
      ii. Evidence of odors; presence or absence, characterization, source, and distance of travel from source.
      iii. Evidence of erosion and/or of exposed refuse.
      iv. Inspection of all storm water discharge locations for evidence of non-storm water discharges during dry seasons, and integrity during wet seasons.

   c. **For the Landfill Property:**
      i. Evidence of ponded water at any point on the Landfill site (show affected area on map).
      ii. Evidence of odors; presence or absence, characterization, source, and distance of travel from source.
      iii. Evidence of erosion and/or of day lighted refuse.
      iv. Compliance with Storm Water Pollution Prevention Plan, insuring that the terms of the general permit is properly complied with.

B. INTAKE MONITORING

The Discharger shall maintain a daily record of the waste stream. The record shall include the following information:

1. Weight of waste received.

2. Running totals of weight received, remaining capacity for waste placement, and Landfill life expectancy.

3. Current fill area.

4. Log of random load checking program. Site personnel shall advise waste haulers of the types of wastes prohibited at the site and shall make periodic detailed compliance checks of wastes discharged by all site users. These detailed periodic checks shall be of variable frequency, but average once per working week. The log shall contain a record of refused loads, including the type of waste refused, date, name, address, and phone number of the party attempting to dispose of the waste.

C. DRAINAGE SYSTEMS INSPECTIONS

The Discharger shall inspect drainage control systems following each storm event that results in rainfall runoff and at least monthly, and record the following information:

1. Condition of facilities, whether storm storage basins and drainage ditches contain liquids.

2. Any apparent seepage from storage basins or the Landfill site.

3. Steps taken to correct any problems found during inspection and date(s) when taken.

D. RAINFALL DATA

The Discharger shall record the following information:

1. Total precipitation during the Monitoring Period.

2. Number of Storms (≥1" in 24-hours) received during the Monitoring Period.

3. Return interval of most intense 24-hour storm (e.g. 25 year, 100 year, and so on).

E. POLLUTION CONTROL SYSTEM(S)

The Discharger shall inspect all pollution control systems (e.g. GWES and GWRCS) and record the following information as appropriate:

1. **Ground Water/Leachate Management System**

   a. Routine operational checks.
      - Monthly - inspect system for containment and collection system integrity. Include monthly inspection check-off sheet with monitoring reports.
      - Perform routine preventive maintenance focused on keeping the system at design operation. All scheduled and un-scheduled maintenance shall be summarized and reported.

   b. Data collection.
      - Daily - Record water/leachate level in the collection trench (distance above trench bottom).

- Weekly - Record volume of liquid extracted. Report monthly volume and running sub-total. Report disposal method utilized. When more than one disposal method is used, be volume specific for each method.
- Analyze trench water/leachate from leachate monitoring point **LCS-1**for Monitoring Parameters in **Table 1** quarterly and **Table 4** (Constituents of Concern) once every five years. Trench water/leachate samples shall be representative of water potentially passing through the trench.
- Using contaminant concentration data and collection volume, compute contaminant mass removed on a semiannual basis. The semiannual report shall include monthly, semi-annual and annual running totals.

F. LANDFILL MONITORING

1. **Groundwater Monitoring:** Unless otherwise authorized by the Executive Officer, all new groundwater-monitoring wells shall be incorporated into this monitoring and reporting program, and shall be sampled on a quarterly basis for a minimum of four consecutive quarters. Any changes to the monitoring frequency, Monitoring Parameters or Constituents of Concern may be made upon receiving prior approval from the Executive Officer. The Groundwater Monitoring Points shall include those shown on **Figure 4**, and as follows:

   a. **For the groundwater in the Alluvial Sediments:** This aquifer underlies the bottom of the landfilled material at 5 to 30 feet below ground surface. Groundwater conditions in the alluvial canyon are monitored by Wells 3-MW-5, 3-MW-11, 3-MW-6, LF-MW-1, LT-MW-3, PC-MW-1, and PC-MW-2. Two upgradient monitoring points (**Wells 3-MW-5** and **3-MW-11)** monitor the quality of groundwater entering the Landfill from upgradient IRP sites. Well **LF-MW-1** is located within the Subtitle D Footprint and was drilled through 50 feet of refuse. This well monitors groundwater conditions directly beneath the Landfill waste disposal areas. Two downgradient monitoring points (**Wells 3-MW-6 and LT-MW-3)** monitor groundwater conditions at the Landfill's downgradient edge. Well LT-MW-3 is located directly north of the groundwater extraction system (GWES) and well 3-MW-6 is located at the toe of the Landfill. Well 3-MW-6 is designated as the "**Point of Compliance**" monitoring point. The designated "**Background**" groundwater monitoring points for the Alluvial Sediments are wells **PC-MW-1 and PC-MW-2**. These wells are located in Pine Canyon.

   b. **For the groundwater in the Monterey Formation:** The groundwater aquifer in the upper Monterey Formation underlies the Landfill at approximately 60 feet bgs. Groundwater conditions in the upper Monterey Formation are monitored by Wells DSW-MW-1, LT-MW-2 and MFB-MW-1. **Well DSW-MW-1** is located at the toe of the Landfill and is the designated "**Point of Compliance"** monitoring point. **Well LT-MW-2 is located north of the slurry wall and well MFB-MW-1** is located northwest of the Landfill. An appropriate "**Background**" monitoring point will be located using information from planned groundwater modeling.

2. **Surface Water Monitoring:** The surface water monitoring points shall include monitoring points BG-SW-1, BG-SW-2, and PC-SW-1, as depicted on **Figure 4**. The surface water monitoring points shall be used to monitor surface water quality in the Oak Canyon watershed. Two of the monitoring points (**BG-SW-1 and BG-SW-2**) are located along drainage routes originating from areas upgradient and outside of the Landfill, along the northern and western boundaries of the Landfill. The remaining Point of Compliance monitoring point (**PC-SW-1**) is located at the southern boundary drainage area of the Landfill, immediately south of the culvert that directs surface water into Oak Canyon Creek. Additionally, the surface water discharge to Oak Canyon shall be monitored twice a year in compliance with the Statewide General Permit for industrial activities and the industrial facility Storm Water Pollution Prevention Program.

3. **Gas Monitoring:** The gas monitoring point is soil gas monitoring point **SG-1**, as depicted on Figure 3. This monitoring point is used to monitor soil gas in a zone immediately down gradient of the "Subtitle D Footprint". It is located between the Landfill toe and the groundwater collection pond at approximately 5 feet bgs. The Discharger shall monitor all active landfill gas probes in accordance with the requirements specified in Title 27 CCR Section 20919.5, and as directed by the Local Enforcement Agency. Further, all Landfill structures located on site and at the Landfill facility boundary shall be monitored for methane.

4. **Monitoring Frequency:** Monitoring of each monitored medium and monitoring of all Monitoring Points shall be carried out at least once during each specified Monitoring Period. **Quarterly** monitoring shall be performed during **winter** (Jan. 1 to March 31), **spring** (April 1 to June 30), **summer** (July 1 to Sept. 30), and **fall** (Oct. 1 to Dec. 31). **Semiannual** monitoring shall be performed during the **2nd** and **4th** calendar quarters. The due date for any given report will be 30 days after the end of its Monitoring Period, unless otherwise stated.

G. ANALYTICAL MONITORING

1. **Groundwater Monitoring Parameters:** Unless required more frequently due to an indication of a release, all water samples from all groundwater monitoring points shall be analyzed **Semiannually** for the Monitoring Parameters listed in **Table 1**, below:

TABLE 1
MONITORING PARAMETERS(1)

Constituent/Parameter	USEPA Method	Units (3)
Water Elevation(4)	-------	Feet
Electrical Conductivity	2510B	µmhos/cm
PH	Field	pH Units
Temperature	Field	°F/C
Turbidity	Field	NTU
Dissolved Oxygen	Field	Varies
Chloride	9252	mg/l
Arsenic	7060	mg/l
Manganese (dissolved)	6010	mg/l
Total Dissolved Solids (TDS)	160.1	mg/l
Sulfate	9038	mg/l
Nitrate (Nitrogen)	9200	mg/l
VOCs (2) (including Oxygenates‡ and 1,4 Dioxane).	8260	µg/l

(1) Any constituents/parameter not detected above the Method Detection Limit for three consecutive quarters can be deleted from the list of Monitoring Parameters with prior approval of the Executive Officer.

(2) The VOCs include all Volatile Organic Compounds (VOCs) detectable using USEPA Method 8260(b) including at least all 47 VOCs listed in Appendix I to 40 CFR 258, and all unidentified peaks. Oxygenates include MtBE, TAME, DIPE, and EDB.

(3) mg/l – milligrams per liter, °F/C – degrees Fahrenheit and Celsius, NTU – natural turbidity units, µmhos/cm – micro-mhos per centimeter, and µg/l – micrograms per liter.

(4) Water elevation shall be recorded from all monitoring wells in which measurements are readily accessible

2. **Surface Water Monitoring Parameters:** Unless required more frequently due to an indication of a release or as required pursuant to the General Storm Water Pollution Prevention Program**,** all water

samples from all surface water monitoring points shall be analyzed **quarterly** (when sufficient water is available for sampling) for the Monitoring Parameters listed in **Table 2**, below:

TABLE 2
SURFACE AND STORM WATER PARAMETERS

Parameter	Method*	Units
pH, EC, DO, Temperature, Turbidity	Field	Varies
Nitrate (as nitrogen)	9200	mg/l
Oil and Grease	9070	mg/l
Total Suspended Solids	160.2	mg/l
Total Organic Carbon	450.1	mg/l
Iron	6010B	mg/l
Pesticides (COMP-1 only)		

***** Or most recently approved EPA method that provides the lowest practicable detection limits. After first storm event or first flush, surface water samples are to be collected from BG-SW-1, BG-SW-2, and PC-SW-1.

3. **Gas Monitoring Parameters:** Unless required more frequently due to an indication of a release, landfill gas monitoring point, SG-1, shall be analyzed **quarterly** for the Monitoring Parameters listed in **Table 3**, below:

TABLE 3
GAS PROBE MONITORING PARAMETERS

Parameter	Method*	Units
Volatile Organic Compounds (including MtBE)	Field and or TO-14	ppm
Methane	Field	ppm
H_2S	Field	ppm

***** Or most recently approved EPA method that provides the lowest practicable detection limits.

4. **Constituents Of Concern:** The Constituent of Concern (COC) includes constituents listed in **Table 4**, below. Monitoring for COC shall encompass only those COCs that do not also serve as Monitoring

Parameters. Analysis of COCs shall be carried out by **July 31, 2005 and every five years thereafter**, at each of the site's groundwater monitoring points, unless required more frequently due to an indication of a release.

TABLE 4
CONSTITUENTS OF CONCERN

CONSTITUENTS	METHOD[1]	UNITS
Antimony	6010	mg/l
Arsenic	7060	mg/l
Barium	6010	mg/l
Beryllium	6010	mg/l
Cadmium	6010	mg/l
Chromium	6010	mg/l
Cobalt	6010	mg/l
Copper	6010	mg/l
Cyanide	9010	mg/l
Lead	7421	mg/l
Mercury	7470	mg/l
Nickel	6010	mg/l
Selenium	7740	mg/l
Silver	6010	mg/l
Sulfide	9030	mg/l
Thallium	7841	mg/l
Tin	6010	mg/l
Vanadium	6010	mg/l
Zinc	6010	mg/l
Chloride	9252	mg/l
Manganese (dissolved)	6010	mg/l
Iron (dissolved)	6010	mg/l
Total Organic Carbon (TOC)	415.1	mg/l
Chlorophenoxy Herbicides	8150	µg/l
Organochlorine Pesticides	8081	µg/l
PCBs	8082	µg/l
Organophosphorus Pesticides	8141	µg/l
Semi-Volatile Organic Compounds	8270	µg/l
Volatile Organic Compounds, Appendix II*	8260	µg/l

(1) The Discharger shall analyze for all constituents using the USEPA analytical methods indicated above or the most recently approved SW-846 USEPA method or other equivalent USEPA method.
(*) Includes MTBE.

5. **Groundwater Flow Rate and Direction:** For **each** monitored groundwater body, the water level in each well shall be measured, at least **quarterly**, including the times of expected highest and lowest elevations of the water level. Horizontal and vertical gradients, groundwater flow rate, and direction for

the respective groundwater body shall also be determined. Groundwater elevations for all wells in a given groundwater body shall be measured within a period of time short enough to avoid temporal variations in groundwater flow which could preclude accurate determination of groundwater flow rate and direction. The observed groundwater characteristics shall be compared with those of previous determinations, noting the appearance of any trends, and of any indications that a change in the hydrogeologic conditions beneath the site has occurred. This information shall be reported in the Semiannual Monitoring Reports.

6. **Sample Procurement Limitation:** For any given monitored medium, the samples taken from Monitoring Points to satisfy the data analysis requirements for a given Monitoring Period shall be taken within a span not exceeding 30 days, and shall be taken in a manner that ensures sample independence to the greatest extent feasible [CCR Title 27, Section 20415(e)(12)(B)]. Sampling for successive monitoring periods shall occur at least 30 days apart.

SAMPLE COLLECTION AND ANALYSIS

A. SAMPLING AND ANALYTICAL METHODS

Sample collection, storage, and analysis specified in this monitoring and reporting program shall be performed according to the most recent version of Standard USEPA Methods (USEPA publication "SW-846"), and in accordance with an Executive Officer approved Sampling and Analysis Plan (SAP). By **January 30, 2005**, the Discharger must submit an updated version of the SAP for Executive Officer-approval. All future changes to the SAP must be submitted for Executive Officer approval prior to implementation. A laboratory certified for these analyses by the State Department of Health Services shall perform analysis. Specific methods of analysis must be identified. If methods other than USEPA-approved methods or Standard Methods are used, the exact methodology must be submitted for review and must be approved by the Executive Officer prior to use. The director of the laboratory whose name appears on the certification shall supervise all analytical work in his/her laboratory and shall sign all reports of such work submitted to the Regional Board. All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurements. Calibration and maintenance records shall be kept and made available upon request by the Regional Board. Sampling shall occur at a date that allows timely submittal of monitoring reports according to the schedule required by this monitoring and reporting program. In addition, the Discharger is responsible for seeing that the laboratory analysis of all samples from all Monitoring Points meet the following restrictions:

1. **Method Selection:** 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 from among those methods which would provide valid results in light of any Matrix Effects involved.

2. **Trace Results:** Results falling between the MDL and the Practical Quantitation Limit (PQL) shall be reported as "trace", and shall be accompanied by both the (nominal or estimated) MDL and PQL values for that analytical run.

3. **Nominal or Estimated MDL and PQL:** The nominal 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 lab. If the lab suspects that, due to a change in matrix or other effects, the true detection limit or quantitation limit for a particular analytical run differs significantly from the laboratory-derived MDL/PQL values, the results shall be flagged accordingly and an estimate of the detection limit and/or quantitation limit actually achieved shall be included.

4. **Quality Assurance/Quality Control (QA/QC) Data:** All 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 the following information:

    a. Method, equipment, and analytical detection limits.
    b. Recovery rates and an explanation for any recovery rate that is outside the USEPA-specified recovery rate.
    c. Results of equipment and method blanks.
    d. Results of spiked and surrogate samples.
    e. Frequency of quality control analysis.
    f. Chain of custody logs.
    g. Name and qualifications of the person(s) performing the analysis.

5. **Common Laboratory Contaminant:** Upon receiving written approval from the Executive Officer, a statistical or non-statistical procedure can be used for determining the significance of analytical results for a constituent that is a common laboratory contaminant (i.e., methylene chloride, acetone, 2-Butanone, diethylhexyl phthalate, and di-n-octyl phthalate) during any given Monitoring 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 down-gradient sample shall be reported and flagged for easy reference by Regional Board staff.

6. **Unknowns:** Unknown chromatographic peaks shall be identified, quantified, and reported to a reasonable extent. When unknown peaks are encountered, second column or second method confirmation procedures shall be performed to attempt to identify and more accurately quantify the unknown analyte.

7. In cases where contaminants are detected in QA/QC samples (i.e., field, trip, or lab blanks), the accompanying sample results shall be appropriately flagged for easy reference.

B. CONCENTRATION LIMITS

1. The concentration limit for Monitoring Parameters and Constituents of Concern shall be determined as follows:

    a. In cases where the constituent's Method Detection Limit is exceeded in less than ten percent of the historical samples, the MDL is the Concentration Limit.

    b. In cases where the constituent’s MDL is exceeded in ten percent or more of the historical sample, a statistically based concentration limit must be defined and regularly updated as follows:
        i. Statistically analyze existing monitoring data, and propose, to the Executive Officer, statistically derived Concentration Limits for each Constituent of Concern and each Monitoring Parameter at each Monitoring Point for which sufficient data exists.
        ii. In cases where sufficient data for statistically determining Concentration Limits does not exist the Discharger shall collect samples and analyze for Constituent(s) of Concern and Monitoring Parameter(s) which require additional data. Once sufficient data is obtained, the Discharger shall submit proposed Concentration Limit(s) to the Executive Officer for approval. This procedure shall take no longer than two calendar years.
        iii. Sample and analyze new Detection Monitoring Points, including any added by this monitoring and reporting program, until sufficient data is available to establish a proposed Concentration Limit for all COC and Monitoring Parameters. Once sufficient data is obtained the Discharger shall submit the proposed Concentration Limit(s) to the Executive Officer for approval. This procedure shall take no longer than two calendar years.

2. The Discharger shall review Concentration Limits annually. The past years data will be reviewed for application to revision of Concentration Limits. When appropriate, new Concentration Limits shall be proposed.

C. RECORDS TO BE MAINTAINED

Water quality records shall be maintained by the Discharger, and retained for no less than a 30-year period. The period of retention shall be extended during the course of any unresolved litigation or when requested by the Executive Officer. Such records shall show the following for each sample:

1. Identity of sample and of 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 analysis were started and completed, and the name of the personnel performing each analysis.

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

5. Chromatographs and calculation of results.

6. A complete chain of custody logs.

7. Results of analysis, and the Method Detection Limit and Practical Quantitation Limit for each analysis.

D. STATISTICAL ANALYSIS

1. **For Detection Monitoring**: The Discharger shall use statistical methods to analyze COC and Monitoring Parameters that exhibit concentrations that equal or exceed their respective MDL in at least ten percent of applicable historical samples. The Discharger may propose and use any statistical method that meets the requirements of California Code of Regulations, Title 27, §20414 (e)(7). All statistical methods and programs proposed by the Discharger are subject to prior Executive Officer approval.

2. **For wells in Corrective Action**: The Discharger shall use the Mann Kendall trend analysis to evaluate changes in inorganic water-quality data or another method acceptable to the Executive Officer.

E. NON-STATISTICAL METHOD

The Discharger shall use the following non-statistical method for analyzing constituents, which are detected in less than 10% of applicable historical samples. This method involves a two-step process:

1. From constituents to whom the method applies, compile a specific list of those constituents, which exceed their respective MDL. The list shall be compiled based on either data from the single sample or in cases of multiple independent samples, from the sample, which contains the largest number of constituents.

2. Evaluate whether the listed constituents meet either of two possible triggering conditions. Either the list from a single well contains two or more constituents, or contains one constituent, which equals or exceeds its PQL. If either condition is met, the Discharger shall conclude that a release is tentatively indicated and shall immediately implement the appropriate re-test procedure.

F. RE-TEST PROCEDURE

1. In the event the Discharger concludes that a release has been tentatively indicated, the Discharger shall carry out the appropriate reporting requirements and, within 30 days of receipt of analytical results, collect two new suites of samples for the indicated COC or Monitoring Parameter(s) at each indicating Monitoring Point, collecting at least as many samples per Monitoring Point as were used for the initial test.

2. Analyze each of the two suites of re-test analytical results using the same statistical method (or non-statistical comparison) that provided the tentative indication of a release. If the test results of either (or both) of the re-tested data suites confirm the original indication, the Discharger shall conclude that a release has been discovered and shall carry out the appropriate requirements.

3. Re-tests shall be carried out only for the Monitoring Point(s) for which a release is tentatively indicated, and only for the COC or Monitoring Parameter(s) which triggered the indication. When a VOC analyte is re-tested the results of the entire VOC test method analyzed shall be reported.

REPORTING

A. MONITORING AND REPORTING SCHEDULE

Unless otherwise indicated, all required monitoring and observations/inspections shall be reported in a **Semiannual Monitoring Report**. The Semiannual Monitoring Report shall be written and submitted in accordance with the time frames provided in **Table 5**, below.

TABLE 5
REPORTING FREQUENCY

QUARTERLY MONITORING PERIOD	SEMI-ANNUAL MONITORING PERIOD	REPORT DUE DATE*
Winter (1st Quarter) (Jan. 1 to March 31)	Spring (April 1- June 30)	July 31
Spring (2nd Quarter) (April 1 to June 30)		
Summer (3rd Quarter) (July 1 to Sept. 30)	Fall (Oct. 1 to Dec. 31)	January 31
Fall (4th Quarter) (Oct. 1 to Dec. 31)		

(**Note: *** If a report's due date falls on a weekend or holiday, the report is due on the next working day)

The Monitoring Report shall include the results of all Monitoring Parameters analyzed as required by this monitoring and reporting program. Additionally, every five years, the Discharger shall submit a report concerning the direct analysis of all Constituents of Concern. Monitoring Reports will be submitted in an electronic format, with text, tables, figures, laboratory analytical data (MS Excel Format), Graphs, and appendices placed on a CDROM in PDF or JPEG format. Accompanying the electronic version of the report will be a hard copy transmittal letter, with signatures of preparers and submitters, (in accordance with requirements stated in Waste Discharge Requirements Order No. R3-2004-0151)**,** along with an executive summary of the report text. The Monitoring Report shall address all facets of Landfill monitoring. All monitoring reports shall be comprised, as appropriate, of at least the following information:

1. **Letter Of Transmittal**: A letter summarizing the groundwater monitoring results shall accompany each report. Such letter shall include a discussion of any violations found since the last report was submitted, and

shall describe actions taken or planned for correcting those violations. If a detailed time schedule has been previously submitted for correcting violations, a reference to the schedule will be satisfactory. If no violations have occurred since the last submittal, this shall be stated in the letter of transmittal. The discussion shall also include a summary of the groundwater analysis indicating any changes made since the previous report. Include a summary of corrective action results and milestones, and a review of construction projects with water quality significance completed or commenced in the past year or planned for the upcoming Monitoring Period. All Monitoring reports and the letter transmitting the monitoring reports shall be signed by a principal executive officer at the level of vice president or above, or by his/her duly authorized representative, if such a representative is responsible for the overall operation of the facility. The letter shall contain a statement by the official, under penalty of perjury, that to the best of the signers' knowledge the report is true, complete, and correct.

2. **Compliance Evaluation Summary**: The summary shall contain the following information:

   a. **Determination Of The Velocity And Direction Of Groundwater Flow Within Each Water-Bearing Zone:** For each monitored groundwater body, a description and graphical presentation of the velocity and direction of groundwater flow under/around the facility, based upon water level elevations taken during the collection of the water quality data submitted in the Monitoring Report (i.e., groundwater elevation contour map for each water-bearing zone, beneath and adjacent to the facility). The analysis shall include a discussion of how observed groundwater flow rate, and direction compare with those from previous determinations, the appearance of any trends, and any other items which may indicate a potential change in the hydrogeological conditions beneath and adjacent to the facility.
   b. **Pre-Sampling Purge:** For each monitoring point addressed by the report, a description of the method and time of water level measurement, the type of pump used for purging and the placement of the pump in the well, and the method of purging (the pumping rate, the equipment and methods used to monitor field pH, temperature, and conductivity during purging, the calibration of the field equipment, results of the pH, temperature, conductivity, dissolved oxygen, and turbidity testing, the well recovery time, and the method of disposing of the purge water).
   c. **Sampling:** For each Monitoring Point addressed by the report, a description of the type of pump, or other device used, its placement for sampling, and a description of the sampling procedure (number of samples, field blanks, travel blanks, and duplicate samples taken; the type of containers and preservatives used; the date and time of sampling; the name and qualifications of the person actually taking the samples; and a description of any anomalies).

3. **Corrective Action Summary:** Discuss significant aspects of any corrective action measures performed during the Monitoring Period. Calculate load removed from the sites' impacted media (groundwater) by mass removal system(s), as applicable. Mass removal calculations shall be based on actual analytical data. Present discussions and indications relating mass removal data to the violation the corrective action is addressing.

4. **Graphical Presentation Of Analytical Data:** For each Monitoring Point in each medium, submit, in graphical format, the laboratory analytical data for all samples taken within at least the previous five calendar years. Graphs shall effectively illustrate trends and/or variations in the laboratory analytical data. Each graph shall plot a single constituent concentration over time at one (for intra-well comparison) or more (for inter-well comparisons) monitoring points in a single medium. Concentration Limits shall be graphed along with constituent concentrations. When multiple samples are taken, 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 down-gradient data.

5. **MAP(s):** All monitoring reports shall include the following maps.

    a. A map or aerial photograph clearly showing the locations of all monitoring locations and relative physical features.
    b. A map showing the area, if any, in which filling has taken place and has been completed during the previous calendar year. Indicate areas, if any, in which filling has been completed or intermediate cover has been placed.
    c. For each groundwater body monitored, a map depicting groundwater contours to the greatest degree of accuracy possible.
    d. A separate plume map shall be provided for each formation (groundwater bearing zone) showing the extent of known contamination, defining monitoring points, and groundwater flow direction.

6. **Laboratory Results:** Laboratory statements, concerning the results of all analysis, demonstrating compliance with the most recent Executive Officer-approved sampling and analysis plan. Additionally, results of all sampling and analysis performed at the Landfill, outside the requirements of this monitoring and reporting program, shall be summarized and reported. The following information must also be presented.

    a. All monitoring analytical data obtained during the previous year, presented in tabular form as well as on CDROM, in MS-EXCEL format or in another file format acceptable to the Executive Officer. Additionally, complete data histories of each well shall be submitted on CDROM. Original laboratory analytical reports shall be maintained and made available upon request.
    b. The evaluation and interpretation of all available data.
    c. Groundwater elevation contour map for each water-bearing zone.
    d. Copy of sampling log (record) for each well.

7. An evaluation of the effectiveness of the run-off/run-on control facilities.

8. A summary and certification of completion of all Standard Observations for the Landfill, for the perimeter of the Landfill, and for the Receiving Waters.

9. The quantity and types of wastes discharged and the locations in the Landfill where waste has been placed since submittal of the last such report.

B. NOTIFICATION REQUIREMENTS

1. The Discharger shall notify the Executive Officer within 24 hours by telephone and within seven (7) days in writing, of:
    a. Any noncompliance potentially or actually endangering health or the environment.
    b. Any flooding, equipment failure, or other change in site conditions which could impair the integrity of the site or any portion thereof, or of precipitation and drainage control structures.

2. The Discharger or persons employed by the Discharger shall comply with all notice and reporting requirements of the State Department of Water Resource and with concurrence of the Executive Officer regarding the construction, alteration, destruction, or abandonment of all monitoring wells used for compliance with this monitoring program, as required by §13750.5 through §13755 and §13267 of the California Water Code.

3. **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, notify their designated Regional Board staff contact verbally as to the Monitoring Point(s) and constituents) or parameter(s) involved;
    b. Provide written, notification by certified mail within seven days of such determination; and

c. Either of the following:
   i. Shall carry out a Re-Test Procedure. If the re-test confirms the existence of a release or the Discharger fails to perform the re-test, the Discharger shall perform the appropriate Release Discovery Response. In any case, the Discharger shall inform the Regional 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.
   ii. Make a determination, in accordance with Title 27, §20420(k)(7), that a source other than the Landfill site 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.

C. CONTINGENCY RESPONSE/REPORTING

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

   b. **Map** - a map showing the location(s) of seepage.
   c. **Flow rate** - an estimate of the flow rate.
   d. **Description** - a description of the nature of the discharge (e.g., all pertinent observations and analysis).
   e. **Location** – Location of sample(s) collected for laboratory analysis, as appropriate.
   f. **Corrective measures** - approved (or proposed for consideration) by the Regional Water Board Executive Officer.

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

   a. Within seven days notify the Regional Board of this fact by certified mail (or acknowledge the Regional Water Board's determination).
   b. Carry out the appropriate Release Discovery Response for all potentially-affected monitored media.
   c. Carry out any additional investigations stipulated in writing by the Regional Board Executive Officer for the purpose of identifying the cause of the indication.

3. **Release Discovery Response:** If the Discharger concludes that a release has been discovered the following steps shall be carried out:
   a. If this conclusion is <u>not</u> based upon monitoring for all COC, the Discharger shall, within 30-days, sample for all COC at all Monitoring Points in the affected medium and submit them for analysis. Within seven days of receiving the laboratory analytical results, the Discharger shall notify the Executive Officer, by certified mail, of the concentration of all COC 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 Title 27, §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 meeting the requirements of Title 27, Section 20430.
   d. The Discharger shall immediately begin delineating the nature and extent of the release by installing and monitoring assessment wells as necessary to assure that the Discharger can meet the

requirements of Title 27, Section 20425 to submit a delineation report within 90 days of when the Executive Officer directs the Discharger to begin the Evaluation Monitoring and Reporting Program.

4. **Release Beyond Facility Boundary:** Any time the Discharger concludes (or the Regional Board Executive Officer directs the Discharger to conclude) that a liquid- or gaseous-phase release from the Landfill site has proceeded beyond the facility boundary, the Discharger shall notify all persons who either own or reside upon land that overlies any part of the plume (**Affected Persons**).

    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), the Discharger shall, within seven days of sending such notification, provide the Regional Board with both a copy of the notification and a current mailing list of Affected Persons.
    d. All notifications to all Affected Persons shall include (at a minimum) the following information:
        i A summary of the release and corrective action information.
        ii Contact information (i.e., Vandenberg AFB, Regional Water Quality Control Board, Santa Barbara County Environmental Health Department).
        iii The results of the most recent monitoring data and its availability.

D. RESPONSE TO VOC DETECTION IN BACKGROUND

1. Except as indicated in D.2. below, any time the laboratory analysis of a sample from a **new** 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 Regional Board by phone that possible Background Monitoring Point contamination has occurred.
    b. Follow up with written notification by certified mail within seven days.
    c. Shall immediately, obtain two new independent VOC samples from that Background Monitoring Point and send them for laboratory analysis of all detectable VOCs.

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

    a. Within 24 hours, notify the Regional Board about the VOC(s) verified to be present at that Background Monitoring Point.
    b. Provide written notification 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 the Monitoring and Reporting Program.

3. If the Executive Officer determines, after reviewing the report submitted, that the VOC(s) detected originated from a source other than the Landfill, the Executive Officer will make appropriate changes to the Monitoring and Reporting Program.

4. If the Executive Officer determines, after reviewing the report submitted, 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 appropriate Release Discovery Response of this monitoring and reporting program.

DEFINITION OF TERMS

A. AFFECTED PERSONS

All individuals who either own or reside upon land that overlies any part of a gas- or liquid-phase release that originates from this facility.

B. CONSTITUENTS OF CONCERN (COC)

A broad list of constituents which are likely to be in the waste in the Landfill site or which are likely to be derived from waste constituents, in the event of a release. The Constituent of Concern parameter includes all constituents listed in Code of Federal Regulations, Title 40, Part 258, Appendix II. The Constituents of Concern for this Landfill site are listed in Table 2 of this monitoring and reporting program.

C. METHOD DETECTION LIMIT (MDL)

The lowest concentration at which a given laboratory, using a given analytical method, to detect a given constituent, (in spite of any Matrix Effect) can regularly differentiate, with 99% reliability, between a sample which contains the constituent and one which does not. In relatively interference-free water, laboratory-derived MDLs are expected to closely agree with published USEPA MDLs.

D. PRACTICAL QANTITATION LIMIT (PQL)

The lowest acceptable calibration standard (acceptable as defined for a linear response or by actual curve fitting) times the sample extract dilution factor times any additional factors to account for Matrix Effect. The PQL shall reflect the quantitation capabilities of the specific analytical procedure and equipment used by the laboratory. PQLs reported by the laboratory shall not simply be re-stated from USEPA analytical method manuals. Laboratory derived PQLs are expected to closely agree with published USEPA-estimated quantitation limits (EQL).

E. MATRIX EFFECT

Any increase in the Method Detection Limit or Practical Quantitation Limit for a given constituent as a result of the presence of other constituents, either of natural origin or introduced through a release, that are present in the sample being analyzed.

F. MONITORED MEDIUM

Water- or gas-bearing media that are monitored pursuant to this Monitoring and Reporting Program. The Monitored Media may include: (1) groundwater in the uppermost aquifer, in any other portion of the zone of saturation in which it would be reasonable to anticipate that waste constituents migrating from the Landfill site could be detected, and in any perched zones underlying the Landfill; (2) any bodies of surface water that could be measurably affected by a release; and (3) soil pore liquid beneath and/or adjacent to the facility.

G. MONITORING PARAMETERS

A short list of constituents and parameters used for the majority of monitoring activity. Monitoring Parameters for this Landfill site are listed in Table 1 of this Monitoring and Reporting Program.

H. MONITORING PERIOD

The database duration separating the submittal of a monitoring report and the time of the next report submittal. The Monitoring Period for analysis of all Constituents of Concern is five years; the Monitoring Period for the Monitoring Parameters is Semiannually. Monitoring of static water level elevations, in all monitoring wells will be performed quarterly. Report submittal dates are semi-annually (July 31 and January 31). The due date for any given report will be 30 days after the end of its Monitoring Period, unless stated otherwise.

I. POINT OF COMPLIANCE (POC)

The Point of Compliance is as defined in CCR Title 27. For the purposes of this Landfill, the POC follows the edge of the Landfill's "Subtitle D Footprint", except near the Landfill's toe where the Point of Compliance extends out and across the "Slurry Wall" and extends vertically down through the uppermost aquifer.

J. RECEIVING WATERS

Any surface water, which actually or potentially receives surface or groundwater, which pass over, through, or under waste materials or contaminated soils. For the purposes of this Landfill, "Receiving Waters" is defined as Oak Canyon Creek.

All reports required in this monitoring and reporting program are required pursuant to California Water Code Section 13267. Any person affected by this action of the Regional Board may petition the State Water Resources Control Board (State Board) to review the action in accordance with section 13320 of the California Water Code and Title 23, California Code of Regulations, Section 2050. The petition must be received by the State Water Resources Control Board within 30 days of the date of this Order. Copies of the law and regulations applicable to filing petitions will be provided upon request.

ORDERED BY: _____
Executive Officer

DATE: _____