

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. _____

FOR
OROVILLE LANDFILL PROPERTIES, OROVILLE LANDFILL PROPERTIES LLC,
JACK M. STEEBLES LLC, CAROL ANN SEIDENGLANZ LLC,
AND STEVEN CONN SEIDENGLANZ LLC

FOR
CLEAN-CLOSURE OF
OROVILLE LANDFILL PROPERTIES CLASS III WOOD WASTE LANDFILL
BUTTE COUNTY

Compliance with this Monitoring and Reporting Program, with Title 27, California Code of Regulations, Section 20005, et seq. (hereafter Title 27), and with the *Standard Provisions and Reporting Requirements for Chapter 15 (23 CCR 2510, et seq) and Part 258 (40 CFR 258)* dated September 1993, is ordered by Waste Discharge Requirements Order No. _____.

A. REQUIRED MONITORING REPORTS

<u>REPORT</u>	<u>FREQUENCY</u>
1. Groundwater Monitoring (see D.1 below)	See Table 1
2. Annual Monitoring Summary Report (see E.6. below)	Annually by 31 January
3. Leachate Monitoring (see D.2 below)	See Table II
4. Surface Water Monitoring (see D.3 below)	See Table III
5. Facility Clean-Closure Monitoring Report (see D.4 below)	Quarterly
6. Winterization Plan	Annually by 1 October
7. Response to a Release (Standard Provisions and Reporting Requirements)	As necessary

B. REPORTING

The Discharger shall report monitoring data and information as required in this Monitoring and Reporting Program and as required in Order No. _____ and the Standard Provisions and Reporting Requirements. Reports that do not comply with the required format will be **REJECTED** and the Discharger shall be deemed to be in noncompliance with the waste discharge requirements. In reporting the monitoring data required by this program, the Discharger shall arrange the data in tabular form so that the date, the constituents, the concentrations, and the units are readily discernible. The data shall be summarized in such a manner so as to illustrate clearly compliance with the waste discharge requirements or the lack thereof. Data shall also be submitted in a digital format acceptable to the Executive Officer. Each monitoring report shall include a compliance evaluation summary as specified in

Reporting Requirements E.4 below.

Field and laboratory tests shall be reported in each monitoring report. Quarterly, semiannual, and annual monitoring reports shall be submitted to the Regional Board in accordance with the following schedule for the calendar period in which samples were taken or observations made.

<u>Sampling Frequency</u>	<u>Reporting Frequency</u>	<u>Reporting Periods End</u>	<u>Report Date Due</u>
Quarterly	Quarterly	31 March	30 April
		30 June	31 July
		30 September	31 October
		31 December	31 January
Semiannually	Semiannually	30 June	31 July
		31 December	31 January
Annually	Annually	31 December	31 January

The results of **all monitoring** conducted at the site shall be reported to the Regional Board in accordance with the reporting schedule above for the calendar period in which samples were taken or observations made.

The Discharger shall also submit an **Annual Monitoring Summary Report** to the Regional Board covering the previous monitoring year. The annual report shall contain the information specified in Reporting Requirements E.6 below, and a discussion of compliance with the Waste Discharge Requirements and the Water Quality Protection Standard.

C. WATER QUALITY PROTECTION STANDARD AND COMPLIANCE PERIOD

The Discharger shall submit a Water Quality Protection Standard Report in accordance with Detection Monitoring Specification D.4 of Order No. _____. For each waste management unit (Unit), the Water Quality Protection Standard shall consist of all monitoring parameters and constituents of concern, the point of compliance, and all water quality monitoring points for each monitored medium. The Water Quality Protection Standard, or any modification thereto, shall be submitted in a report for Executive Officer review and approval.

1. Water Quality Protection Standard Report

The report shall:

- a. Identify **all distinct bodies of surface (ie: storm water detention ponds) and ground water** that could be affected in the event of a release from a Unit or portion of a Unit. This list shall include at least each surface water detention pond, the uppermost aquifer, and any permanent or ephemeral zones of perched groundwater underlying the facility.
- b. Include a map showing the monitoring points and background monitoring points

for the surface water monitoring program and the groundwater monitoring program. The map shall include the point of compliance in accordance with §20405 of Title 27.

- c. Evaluate the perennial direction(s) of groundwater movement within the uppermost groundwater zone(s).

The Water Quality Protection Standard shall be certified by a California-registered Professional Civil Engineer or Professional Geologist as meeting the requirements of Title 27. If subsequent sampling of the background monitoring point(s) indicates significant water quality changes due to either seasonal fluctuations or other reasons unrelated to waste management activities at the site, the Discharger may request modification of the Water Quality Protection Standard.

2. Constituents of Concern

The constituents of concern include all the waste constituents, their reaction products, and hazardous constituents that are reasonably expected to be in or derived from waste contained in the Unit. The Discharger shall monitor all constituents of concern in accordance with the frequencies and methods listed in Tables 1 through IV.

a. Monitoring Parameters

Monitoring parameters are constituents of concern that are the waste constituents, reaction products, hazardous constituents, and physical parameters that provide a reliable indication of a release from a Unit. The monitoring parameters for all Units are those listed in Tables I through IV for the specified monitored medium.

3. Concentration Limits

For a naturally occurring constituents of concern, the concentration limit shall be determined as follows:

- a. By calculation in accordance with a statistical method pursuant to §20415 of Title 27; or
- b. By an alternate statistical method acceptable to the Executive Officer in accordance with §20415 of Title 27.

4. Point of Compliance

The point of compliance for the water standard at each Unit is a vertical surface located at the hydraulically downgradient limit of the Unit that extends through the uppermost

aquifer underlying the Unit.

5. Compliance Period

The compliance period for each Unit shall be the number of years equal to the active life of the Unit plus the post-clean-closure maintenance period. The compliance period is the minimum period during which the Discharger shall conduct a water quality monitoring program subsequent to a release from the Unit. The compliance period shall begin anew each time the Discharger initiates an Evaluation Monitoring Program.

D. MONITORING

The Discharger shall comply with the detection monitoring program provisions of Title 27 for groundwater and surface water in accordance with Detection Monitoring Specifications D.1 and D.2 of Waste Discharge Requirements, Order No. _____. All monitoring shall be conducted in accordance with a Sample Collection and Analysis Plan, which includes quality assurance/quality control standards, that shall be submitted for review and approval by the Executive Officer.

All point of compliance monitoring wells established for the detection monitoring program shall constitute the monitoring points for the groundwater Water Quality Protection Standard. All detection monitoring program groundwater monitoring wells, leachate monitoring points, and surface water monitoring points shall be sampled and analyzed for monitoring parameters and constituents of concern as indicated and listed in Tables I through IV.

Method detection limits and practical quantitation limits shall be reported. All peaks shall be reported, including those that cannot be quantified and/or specifically identified. Metals shall be analyzed in accordance with the methods listed in this Order and Table IV.

The Discharger may, with the approval of the Executive Officer, use alternative analytical test methods, including new USEPA approved methods, provided the methods have method detection limits equal to or lower than the analytical methods specified in this Monitoring and Reporting Program.

1. Groundwater

The Discharger shall operate and maintain a groundwater detection monitoring system that complies with the applicable provisions of §20415 and §20420 of Title 27 in accordance with a Detection Monitoring Program approved by the Executive Officer. The Discharger shall collect, preserve, and transport groundwater samples in accordance with an approved Sample Collection and Analysis Plan. The current groundwater monitoring system at Oroville Landfill Properties Class III

Wood Waste Landfill includes four monitoring wells, LF-1A, LF-2, LF-4, and LF-5. Basic construction details for the wells are described below:

Well ID	Year Installed	Total Depth in Feet	Screen Interval	Well Type
LF-1A	2000	138 ft. bgs	115 to 135 ft.bgs	Background
LF-2	1987	162 ft. bgs	138 to 158 ft. bgs	Compliance
LF-4	1987	160 ft. bgs	129 to 159 ft. bgs	Compliance
LF-5	1987	169 ft. bgs	138 to 168 ft. bgs	Compliance

bgs – Below ground surface

During each calendar quarter, the Discharger shall determine the groundwater flow rate and direction in the uppermost aquifer and in any zones of perched water and in any additional zone of saturation monitored pursuant to this Monitoring and Reporting Program, and report the results semiannually, including the times of highest and lowest elevations of the water levels in the wells.

Hydrographs of each well shall be submitted showing the elevation of groundwater with respect to the elevations of the top and bottom of the screened interval and the elevation of the pump intake. Hydrographs of each well shall be prepared and submitted with each Semiannual Groundwater, Surface Water, and Leachate Monitoring Report.

Groundwater samples shall be collected semiannually from the point-of-compliance wells, background wells, and any additional wells added as part of the approved groundwater monitoring system. Samples shall be collected and analyzed for the monitoring parameters and constituents of concern in accordance with the frequencies specified in Tables I. All monitoring parameters and constituents of concern shall be graphed so as to show historical trends at each sample location. The monitoring parameters shall also be evaluated each reporting period with regards to the cation/anion balance, and the results shall be graphically presented using a Stiff diagram, a Piper graph, or a Schoeller plot.

Groundwater monitoring results shall be reported semiannually.

2. Leachate Monitoring

All three Units at the Oroville Landfill Properties Class III Wood Waste Landfill are unlined and no leachate collection and removal system exists at the site. However, leachate seeps have previously been observed along the ground surface at the northwestern portion of Unit 1. Additionally, the Discharger encountered at least one area of perched accumulated leachate within Unit 1 during the clean-closure pilot study.

In response to the leachate seeps, the Discharger installed a leachate seep control

system in September 2004. The leachate seep control system consists of a plastic lined interceptor trench with a perforated collection pipe placed in the bottom. Blank collection pipe extends down the hillside from the seep area toward a 500 gallon plastic holding tank.

The leachate seep control system shall be inspected weekly from 1 October through 31 May annually, and monthly from 1 June through 30 September annually. Additionally, the system shall be inspected within 24 hours after any storm event of 1 inch or greater rainfall. Upon detection of leachate in the holding tank, the Discharger shall sample the liquid and analyze for the constituents listed in Table II. **Inspection dates, observations, and sample results shall be reported with the corresponding Semiannual Groundwater, Surface Water, and Leachate Monitoring Report for the period when samples were collected or observations.** The quantity of leachate shall be *estimated* and reported as Leachate Flow Rate (in gallons/day).

In addition, any leachate that may be encountered during clean-closure activities of the Units shall be collected and stored on-site until characterization and off-site disposal is arranged. **The volume and disposition of any leachate that is encountered during clean-closure activities shall be reported in the corresponding Quarterly Facility Clean-Closure Monitoring Report and the Semiannual Groundwater, Surface Water, and Leachate Monitoring Report, for the period when the observations were made and/or samples collected.** Documentation of proper disposal of collected leachate shall be reported in the appropriate Quarterly Facility Clean-Closure Monitoring Report and the Semiannual Groundwater, Surface Water, and Leachate Monitoring Report for the time period when leachate disposal occurred.

3. Surface Water Monitoring

Three unlined storm water detention basins exist at the site. Pond 1 is located at the northwest corner of Unit 1, Pond 5 is located at the western edge of Unit 2, and Pond 7 is located at the southeast corner of the facility beyond the eucalyptus grove and sawdust application area. Surface drainage from the site and Units drains towards these three ponds.

Site drainage patterns may change as clean-closure of each Unit proceeds. The Discharger is responsible for ensuring that wastes do not impact surface water drainage courses and that all storm water discharges are in compliance with applicable regulations, the Basin Plan, and State Water Resources Control Board Order No 97-03-DWQ and subsequent replacement Orders.

The Discharger shall monitor the three detention basins weekly between 1 October and 31 May annually, and monthly between 1 June and 30 September annually to ensure that two feet or more of freeboard exists. Liquid in the detention

basins shall be sampled for the constituents and at the frequencies listed in Table III. All monitoring parameters shall be graphed so as to show historical trends at each sample location. **Results of the surface water monitoring program shall be reported in each Semiannual Groundwater, Surface Water, and Leachate Monitoring Report.**

4. Facility Clean-Closure Monitoring

Clean-closure of Units 1, 2, and 4 involves excavating wood wastes and wood ash and hauling them off-site to locations or facilities approved by the Executive Officer. Units 1 and 2 contain wood wastes, while Unit 4 contains wood ash. Clean-closure monitoring is broken down by Unit and the type of materials to be characterized (ie: wood waste, wood ash, separated soil/rock/waste mix {spoils pile}, and confirmation sampling of the native soil subgrade at the bottom of each Unit) as follows:

a. Units 1 and 2 – Wood Waste

The Discharger proposes excavating wood wastes from Units 1 and 2 and hauling them to a facility approved by the Executive Officer for re-use or disposal. If the Discharger wishes to haul wood waste to another facility or location, then the Discharger must first receive approval from the Executive Officer prior to modifying clean-closure operations.

The following information shall be reported with each Quarterly Facility Clean-Closure Monitoring Report:

- 1) Daily number of trucks transporting wood waste off-site.
- 2) Daily volume (cubic yards) and tonnage of wood waste hauled.
- 3) Copies of manifests or shipping papers from the approved end-use facility showing date of receipt and volume/tonnage of wood waste for each load.

b. Unit 4 – Wood Ash

The Discharger proposes excavating wood ash from Unit 4 and hauling recovered materials to agricultural lands for use as a soil amendment. In order to ensure that recovered materials from Unit 4 do not pose a threat to public health or the environment, the Discharger is required to characterize recovered materials prior to hauling them off-site.

One sample for every 500 cubic yards of wood ash (including the soil/rock/waste/mixture referred to as a spoils pile) excavated from Unit 4 shall be analyzed for the following constituents:

- pH
- Polycyclic Aromatic Hydrocarbons – Method 8310
- Total and Dissolved Metal Concentrations – (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium, Chromium VI, Cobalt, Copper, Lead, Mercury, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, and Zinc) – Method 6010/7000 for all metals except Chromium VI, which is Method 7199. Dissolved analyses may use deionized water as the extractant.

Ash sample results shall be reviewed to determine proper classification of the material prior to hauling off-site. Only material classified as inert or non-hazardous solid waste may be hauled off-site for use as an agricultural soil amendment.

The following information shall be reported with each Quarterly Facility Clean-Closure Monitoring Report:

- 1) Provide the physical address or location where ash will be applied.
- 2) Provide property owner contact information including phone number and mailing address for location(s) where ash will be applied.
- 3) Report the tonnage and/or volume and date of ash application to each agricultural land location.
- 4) Provide laboratory analytical data for ash samples collected during the reporting period.
- 5) If rock is recovered from ash and cover soil, report the volume/tonnage that is collected and indicate locations of any stockpiles or final placement areas on a site map.

c. All Units - Soil/Rock/Waste Mix (Spoils Piles)

It is anticipated that layers of soil covering wastes in each Unit will be encountered during clean-closure activities. The Discharger plans on separating and collecting rock from the cover soil, at least in Units 1 and 2, for re-use on-site. Other residual materials (spoils) may also be collected and stored on-site.

It is anticipated that the spoils pile generated from Unit 4 will be hauled off in the same manner as the recovered wood ash. Additional laboratory characterization may be required for any Unit 4 spoils pile left on-site.

Spoils piles (except for rock) from Units 1 and 2 that remain on-site shall be

tested for the same constituents as the confirmation sampling required for the native soil subgrade at the bottom of each Unit, which is listed below. One sample for every 200 cubic yards of spoils is required.

The following information shall be reported with each Quarterly Facility Clean-Closure Monitoring Report:

- 1) The Unit of origin and volume/tonnage of the any spoils piles left on-site.
- 2) For rock that is separated and recovered during processing operations, report the volume/tonnage that is collected and indicate locations of any stockpiles or final placement areas on a site map
- 3) All laboratory sample results for each spoils pile left on-site.
- 4) A map showing the final disposal location for each spoils pile. Note that spoils piles from Units 1 or 2 may not be disposed in Unit 4, and vice versa.

d. Solid Waste Disposal

It is anticipated that the Discharger will encounter non-hazardous solid wastes other than wood wastes and wood ash while clean-closing Units 1, 2, and 4. Other wastes that may be encountered include hazardous wastes, metal pieces, sanding belts, plastic debris, etc.

All wastes, other than wood wastes from units 1 and 2 and wood ash from Unit 4, shall be collected for appropriate off-site disposal at a permitted facility.

Hazardous wastes shall be properly labeled and transported to an appropriate disposal facility by a licensed hauler.

The following information shall be reported with each Quarterly Facility Clean-Closure Monitoring Report:

- 1) The Unit of origin and a description of the wastes collected for off-site disposal.
- 2) The volume and tonnage of wastes collected for off-site disposal.
- 3) Name of disposal facility and date of off-site disposal.
- 4) The disposal receipts, shipping papers, manifests, etc. documenting proper disposal.

e. Unit Confirmation Sampling

The goal of clean-closure is to physically remove all waste and contaminated materials from the Unit and from its underlying and surrounding environs, such that the waste in the Unit no longer poses a threat to water quality. A confirmation sampling program will be used at each Unit and each sediment detention basin to demonstrate that residual wastes no longer pose a threat to water quality. Clean-Closure Specification C.15 of Order No. _____ requires the Discharger to submit a Confirmation Sampling Plan that is acceptable to the Executive Officer.

Units and sediment detention basins shall be visually inspected to ensure the majority of waste has been physically removed. After the visual inspection confirms that no significant waste material remains, then the Discharger shall implement an approved confirmation sampling program. Sampling frequency shall be in accordance with the approved confirmation sampling program. The required analyses are based on the Unit or area being evaluated and the wastes that were contained within the Unit.

Analyses Required for Units 1 and 2 and Each Sediment Detention Basin

- Formaldehyde – Method 8315A
- Pentachlorophenol – Canadian Pulp Method
- 2,3,4,6 - Tetrachlorophenol – Canadian Pulp Method
- Polycyclic Aromatic Hydrocarbons – Method 8310
- Total and Dissolved Metal Concentrations – (Arsenic, Chromium, Chromium VI, Copper, Iron, Manganese, Vanadium, Zinc – Method 6010/7000 for all metals except Chromium VI, which is Method 7199. Dissolved analyses may use deionized water as the extractant.
- Volatile Organic Compounds – Method 8260B
- Semivolatile Organic Compounds (Acid Phenolics only) – Method 8270.

Analyses Required for Unit 4

- pH
- Polycyclic Aromatic Hydrocarbons – Method 8310
- Total and Dissolved Metal Concentrations – (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium, Chromium VI, Cobalt, Copper, Lead, Mercury, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, and Zinc) – Method 6010/7000 for all metals except Chromium VI, which is Method 7199. Dissolved analyses may use deionized water as the extractant.
- Soluble Chloride (DI WET)
- Soluble Sodium (DI WET)
- Conductivity – Method 120.1 (DI Extract)

f. Storm Event Monitoring

Annually, prior to the anticipated rainy season, but no later than **30 September**, the Discharger shall conduct an inspection of the facility to determine whether the site is prepared for winter weather. The inspection shall assess damage to the drainage control system, groundwater monitoring equipment (including wells, etc.), and shall include the Standard Observations contained in Section E.4.f of Reporting Requirements below. Any necessary construction, maintenance, or repairs shall be completed **within 30 days of the inspection**.

Additionally, the Discharger shall inspect all precipitation, diversion, and drainage facilities for damage **within 7 days** following *major storm events*. Major storm events are defined as 1 inch or more of rainfall within a 24 hour period. The facility inspection shall include the Standard Observations contained in Section E.4.f of Reporting Requirements below. Necessary repairs shall be completed **within 30 days of the inspection**. The Discharger shall report the dates and results of these facility inspections in the corresponding Semiannual Groundwater, Surface Water, and Leachate Monitoring Report covering the period when observations were made.

E. REPORTING REQUIREMENTS

1. In the event the Discharger does not comply or will be unable to comply with any prohibition or limitation of this Order for any reason, the Discharger shall notify the appropriate Regional Board office by telephone **as soon as** it or its agents have knowledge of such noncompliance or potential for noncompliance, and shall confirm this notification in writing **within two weeks**. The written notification shall state the nature, time, and cause of noncompliance, and shall describe the measures being taken to prevent recurrences and shall include a timetable for corrective actions.
2. The Discharger shall retain records of all monitoring information, including all calibration and maintenance records, all original strip chart recordings of continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order. Records shall be maintained throughout the life of the facility including the post-clean-closure period.

Such legible records shall show the following for each sample:

- a. Sample identification and the monitoring point or background monitoring point from which it was taken, along with the identity of the individual who obtained the sample;
- b. Date, time, and manner of sampling;

- c. Date and time that analyses were started and completed, and the name of the personnel and laboratory performing each analysis;
 - d. Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used;
 - e. Calculation of results; and
 - f. Results of analyses, and the MDL and PQL for each analysis.
3. A transmittal letter explaining the essential points shall accompany each quarterly Facility Clean-Closure Monitoring Report. At a minimum, the transmittal letter shall identify any violations found since the last report was submitted, and if the violations were corrected. If no violations have occurred since the last submittal, this shall be stated in the transmittal letter. The transmittal letter shall also state that a discussion of any violations found since the last report was submitted, and a description of the actions taken or planned for correcting those violations, including any references to previously submitted time schedules, is contained in the accompanying report.
 4. Each Quarterly Facility Clean-Closure Monitoring Report and Semiannual Groundwater, Surface Water, and Leachate Monitoring Report shall include a **compliance evaluation summary**. The compliance evaluation summary shall include a discussion of progress with the clean-closure project. The summary shall contain at least:
 - a. For each monitoring point and background monitoring point addressed by the report, a description of:
 - 1) The time of water level measurement;
 - 2) The type of pump - or other device - used for purging and the elevation of the pump intake relative to the elevation of the screened interval;
 - 3) The method of purging (the pumping rate; the equipment and methods used to monitor field pH, temperature, and conductivity during purging; the calibration of the field equipment; results of the pH, temperature, conductivity, and turbidity testing; and the method of disposing of the purge water) to remove all portions of the water that was in the well bore while the sample was being taken;
 - 4) The type of pump - or other device - used for sampling, if different than the pump or device used for purging; and
 - 5) A statement that the sampling procedure was conducted in accordance with the approved Sample Collection and Analysis Plan.
 - b. A map or aerial photograph showing the locations of observation stations, monitoring points, and background monitoring points.

- c. For each groundwater body, a description and graphical presentation of the gradient and direction of groundwater flow under/around the Unit, and the groundwater flow rate, based upon water level elevations taken prior to the collection of the water quality data submitted in the report.
- d. Laboratory statements of results of all analyses evaluating compliance with requirements.
- e. An evaluation of the effectiveness of the leachate monitoring and control facilities, and of the run-off/run-on control facilities.
- f. A summary and certification of completion of all **Standard Observations** for the Unit(s), for the perimeter of the Unit, and for the receiving waters. **The Standard Observations shall be performed at least weekly during the life of the clean-closure project.** The Standard Observations shall include:
 - 1) For the Unit:
 - a) Evidence of ponded water at any point on the facility (show affected area on map);
 - b) Evidence of odors - presence or absence, characterization, source, and distance of travel from source; and
 - c) Evidence of erosion and/or of day-lighted refuse.
 - 2) Along the perimeter of the Unit:
 - a) Evidence of liquid leaving or entering the Unit, estimated size of affected area, and flow rate (show affected area on map);
 - b) Evidence of odors - presence or absence, characterization, source, and distance of travel from source; and
 - c) Evidence of erosion and/or of day-lighted refuse.
 - 3) For receiving waters:
 - a) Floating and suspended materials of waste origin - presence or absence, source, and size of affected area;
 - b) Discoloration and turbidity - description of color, source, and size of affected area;
 - c) Evidence of odors - presence or absence, characterization, source, and distance of travel from source;

- d) Evidence of water uses - presence of water-associated wildlife;
 - e) Flow rate; and
 - f) Weather conditions - wind direction and estimated velocity, total precipitation during recent days and on the day of observation.
5. The Discharger shall report by telephone any seepage from the disposal area **immediately** after it is discovered. A written report shall be filed with the Regional Board **within seven days**, containing at least the following information:
- a. A map showing the location(s) of seepage;
 - b. An estimate of the flow rate;
 - c. A description of the nature of the discharge (e.g., all pertinent observations and analyses);
 - d. Verification that samples have been submitted for analyses of the Constituents of Concern and Monitoring Parameters, and an estimated date that the results will be submitted to the Regional Board; and
 - e. Corrective measures underway or proposed, and corresponding time schedule.
6. The Discharger shall submit an **Annual Monitoring Summary Report** to the Regional Board covering the reporting period of the previous monitoring year. This report shall contain:
- a. All monitoring parameters and constituents of concern shall be graphed so as to show historical trends at each monitoring point and background monitoring point, for all samples taken within at least the previous five calendar years. Each such graph shall plot the concentration of one or more constituents for the period of record for a given monitoring point or background monitoring point, at a scale appropriate to show trends or variations in water quality. The graphs shall plot each datum, rather than plotting mean values. For any given constituent or parameter, the scale for background plots shall be the same as that used to plot downgradient data. Graphical analysis of monitoring data may be used to provide significant evidence of a release.
 - b. Unless otherwise exempted by the Executive Officer, all monitoring analytical data obtained during the previous five calendar years shall be submitted in tabular form as well as in a digital file format acceptable to the Executive Officer. The Regional Board regards the submittal of data in hard copy and in digital format as "...the form necessary for..." statistical analysis [Title 27 CCR Section 20420(h)], in that this facilitates periodic review by the Regional Board.

- c. A comprehensive discussion of the compliance record, and the result of any corrective actions taken or planned which may be needed to bring the Discharger into full compliance with the waste discharge requirements.
- d. A map showing the areas where clean-closure activities occurred during the reporting period.
- e. A written summary describing the progress of the clean-closure project during the reporting period.
- f. An evaluation of the effectiveness of the leachate monitoring/control facilities.

The Discharger shall implement the above monitoring program on the effective date of this Program.

Ordered by

PAMELA C. CREEDON, Executive Officer

(Date)

DPS: sae

TABLE I
GROUNDWATER DETECTION MONITORING PROGRAM

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>
Field Parameters		
Groundwater Elevation	Ft. & hundredths, M.S.L.	Semiannually
Temperature	°C	Semiannually
Electrical Conductivity	µmhos/cm	Semiannually
pH	pH units	Semiannually
Turbidity	Turbidity units	Semiannually
Monitoring Parameters		
Total Dissolved Solids (TDS)	mg/L	Semiannually
Chloride	mg/L	Semiannually
Carbonate	mg/L	Semiannually
Bicarbonate	mg/L	Semiannually
Nitrate - Nitrogen	mg/L	Semiannually
Sulfate	mg/L	Semiannually
Calcium	mg/L	Semiannually
Magnesium	mg/L	Semiannually
Potassium	mg/L	Semiannually
Sodium	mg/L	Semiannually
Tannins and Lignins	mg/L	Semiannually
Formaldehyde (USEPA Method 8315)	µg/L	Semiannually
Pentachlorophenol (Canadian Pulp Method)	µg/L	Semiannually
2,3,4,6-Tetrachlorophenol (Canadian Pulp Method)	µg/L	Semiannually
Volatile Organic Compounds (USEPA Method 8260, see Table IV)	µg/L	Semiannually
Constituents of Concern (see Table IV)		
Total Organic Carbon	mg/L	* Annually
Inorganics (dissolved)	mg/L or µg/L	* Annually
Semi-Volatile Organic Compounds (USEPA Method 8270C)	µg/L	**5 years

* Annual samples shall be collected during the 4th calendar quarter of each year.

** The 5-year samples shall be collected during 4th quarter of 2007, and during the 4th calendar quarter every 5 years thereafter.

TABLE II
LEACHATE DETECTION MONITORING PROGRAM

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>
Field Parameters		
Total Flow	Gallons	Monthly
Flow Rate	Gallons/Day	Monthly
Electrical Conductivity	µmhos/cm	Monthly
pH	pH units	Monthly
Monitoring Parameters		
Total Dissolved Solids (TDS)	mg/L	* Annually
Chloride	mg/L	* Annually
Carbonate	mg/L	* Annually
Bicarbonate	mg/L	* Annually
Nitrate - Nitrogen	mg/L	* Annually
Sulfate	mg/L	* Annually
Calcium	mg/L	* Annually
Magnesium	mg/L	* Annually
Potassium	mg/L	* Annually
Sodium	mg/L	* Annually
Tannins and Lignins	mg/L	* Annually
Formaldehyde (USEPA Method 8315)	µg/L	* Annually
Pentachlorophenol (Canadian Pulp Method)	µg/L	* Annually
2,3,4,6-Tetrachlorophenol (Canadian Pulp Method)	µg/L	* Annually
Volatile Organic Compounds (USEPA Method 8260, see Table IV)	µg/L	* Annually
Constituents of Concern (see Table IV)		
Total Organic Carbon	mg/L	* Annually
Inorganics (dissolved)	mg/L or µg/L	* Annually
Semi-Volatile Organic Compounds (USEPA Method 8270C)	µg/L	* Annually

* Annual samples shall be collected during the 4th calendar quarter of each year. If there is an insufficient volume of leachate available during the 4th quarter, then samples shall be collected at the earliest possible date when sufficient volumes exist for sampling purposes.

TABLE III
SURFACE WATER DETECTION MONITORING PROGRAM

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>
Field Parameters		
Freeboard	Feet/Inches	Weekly or Monthly
Temperature	°C	Monthly
Electrical Conductivity	µmhos/cm	Monthly
pH	pH units	Monthly
Total Suspended Solids	mg/L	Monthly
Total Settleable Solids	ml/L	Monthly
Turbidity	Turbidity units	Monthly
Discharge Flow Rate	Gallons/Day	Monthly
Monitoring Parameters		
Total Dissolved Solids (TDS)	mg/L	*Semiannually
Total Organic Carbon	mg/L	*Semiannually
Tannins and Lignins	mg/L	*Semiannually
Formaldehyde (USEPA Method 8315)	µg/L	*Semiannually
Pentachlorophenol (Canadian Pulp Method)	µg/L	*Semiannually
2,3,4,6-Tetrachlorophenol (Canadian Pulp Method)	µg/L	*Semiannually
Volatile Organic Compounds (USEPA Method 8260, see Table IV)	µg/L	*Semiannually
Constituents of Concern (see Table IV)		
Inorganics (dissolved)	mg/L or µg/L	** Annually
Semi-Volatile Organic Compounds (USEPA Method 8270C)	µg/L	*** 5 years

- * Semiannual samples shall be collected during the 2nd and 4th calendar quarters of each year.
- ** Annual samples shall be collected during the 4th calendar quarter of each year. If the detention basins contain no liquids during the 4th calendar quarter, then samples shall be collected at the earliest possible date when sufficient volumes exist for sampling purposes.
- *** The 5-year samples shall be collected during 4th quarter of 2007, and during the 4th calendar quarter every 5 years thereafter.

TABLE IV
CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS

<u>Inorganics (dissolved):</u>	<u>USEPA Method</u>
Cadmium	7131A
Total Chromium	6010
Chromium VI	3500
Copper	6010
Zinc	6010
Iron	6010
Manganese	6010
Arsenic	7062
Lead	7421
Mercury	7470A
Nickel	7521
Cyanide	9010B
Sulfide	9030B

Volatile Organic Compounds:

USEPA Method 8260

Acetone
Acetonitrile (Methyl cyanide)
Acrolein
Acrylonitrile
Allyl chloride (3-Chloropropene)
Benzene
Bromochloromethane (Chlorobromomethane)
Bromodichloromethane (Dibromochloromethane)
Bromoform (Tribromomethane)
Carbon disulfide
Carbon tetrachloride
Chlorobenzene
Chloroethane (Ethyl chloride)
Chloroform (Trichloromethane)
Chloroprene
Dibromochloromethane (Chlorodibromomethane)
1,2-Dibromo-3-chloropropane (DBCP)
1,2-Dibromoethane (Ethylene dibromide; EDB)
o-Dichlorobenzene (1,2-Dichlorobenzene)
m-Dichlorobenzene (1,3-Dichlorobenzene)
p-Dichlorobenzene (1,4-Dichlorobenzene)
trans- 1,4-Dichloro-2-butene
Dichlorodifluoromethane (CFC 12)
1,1 -Dichloroethane (Ethylidene chloride)

TABLE IV

CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS

Continued

1,2-Dichloroethane (Ethylene dichloride)
1,1 -Dichloroethylene (1, 1-Dichloroethene; Vinylidene chloride)
cis- 1,2-Dichloroethylene (cis- 1,2-Dichloroethene)
trans- 1,2-Dichloroethylene (trans- 1,2-Dichloroethene)
1,2-Dichloropropane (Propylene dichloride)
1,3-Dichloropropane (Trimethylene dichloride)
2,2-Dichloropropane (Isopropylidene chloride)
1,1 -Dichloropropene
cis- 1,3-Dichloropropene
trans- 1,3-Dichloropropene
Di-isopropylether (DIPE)
Ethanol
Ethyltertiary butyl ether
Ethylbenzene
Ethyl methacrylate
Hexachlorobutadiene
Hexachloroethane
2-Hexanone (Methyl butyl ketone)
Isobutyl alcohol
Methacrylonitrile
Methyl bromide (Bromomethane)
Methyl chloride (Chloromethane)
Methyl ethyl ketone (MEK; 2-Butanone)
Methyl iodide (Iodomethane)
Methyl t-butyl ether
Methyl methacrylate
4-Methyl-2-pentanone (Methyl isobutyl ketone)
Methylene bromide (Dibromomethane)
Methylene chloride (Dichloromethane)
Naphthalene
Propionitrile (Ethyl cyanide)
Styrene
Tertiary amyl methyl ether
Tertiary butyl alcohol
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
Tetrachloroethylene (Tetrachloroethene; Perchloroethylene; PCE)
Toluene
1,2,4-Trichlorobenzene
1,1,1 -Trichloroethane, Methylchloroform
1,1,2-Trichloroethane
Trichloroethylene (Trichloroethene; TCE)
Trichlorofluoromethane (CFC- 11)
1,2,3-Trichloropropane
Vinyl acetate

TABLE IV
CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS

Continued

Vinyl chloride (Chloroethene)
Xylene (total)

Semi-Volatile Organic Compounds:

USEPA Method 8270 - base, neutral, & acid extractables

Acenaphthene
Acenaphthylene
Acetophenone
2-Acetylaminofluorene (2-AAF)
Aldrin
4-Aminobiphenyl
Anthracene
Benzo[a]anthracene (Benzanthracene)
Benzo[b]fluoranthene
Benzo[k]fluoranthene
Benzo[g,h,i]perylene
Benzo[a]pyrene
Benzyl alcohol
Bis(2-ethylhexyl) phthalate
alpha-BHC
beta-BHC
delta-BHC
gamma-BHC (Lindane)
Bis(2-chloroethoxy)methane
Bis(2-chloroethyl) ether (Dichloroethyl ether)
Bis(2-chloro-1-methylethyl) ether (Bis(2-chloroisopropyl) ether; DCIP)
4-Bromophenyl phenyl ether
Butyl benzyl phthalate (Benzyl butyl phthalate)
Chlordane
p-Chloroaniline
Chlorobenzilate
p-Chloro-m-cresol (4-Chloro-3-methylphenol)
2-Chloronaphthalene
2-Chlorophenol
4-Chlorophenyl phenyl ether
Chrysene
o-Cresol (2-methylphenol)
m-Cresol (3-methylphenol)
p-Cresol (4-methylphenol)
4,4'-DDD
4,4'-DDE
4,4'-DDT
Diallate
Dibenz[a,h]anthracene

TABLE IV

CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS

Continued

Dibenzofuran
Di-n-butyl phthalate
3,3'-Dichlorobenzidine
2,4-Dichlorophenol
2,6-Dichlorophenol
Dieldrin
Diethyl phthalate
p-(Dimethylamino)azobenzene
7,12-Dimethylbenz[a]anthracene
3,3'-Dimethylbenzidine
2,4-Dimethylphenol (m-Xylenol)
Dimethyl phthalate
m-Dinitrobenzene
4,6-Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)
2,4-Dinitrophenol
2,4-Dinitrotoluene
2,6-Dinitrotoluene
Di-n-octyl phthalate
Diphenylamine
Endosulfan I
Endosulfan II
Endosulfan sulfate
Endrin
Endrin aldehyde
Ethyl methanesulfonate
Famphur
Fluoranthene
Fluorene
Heptachlor
Heptachlor epoxide
Hexachlorobenzene
Hexachlorocyclopentadiene
Hexachloropropene
Indeno(1,2,3-c,d)pyrene
Isodrin
Isophorone
Isosafrole
Kepone
Methapyrilene
Methoxychlor
3-Methylcholanthrene
Methyl methanesulfonate
2-Methylnaphthalene
1,4-Naphthoquinone

TABLE IV

CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS

Continued

1-Naphthylamine
2-Naphthylamine
o-Nitroaniline (2-Nitroaniline)
m-Nitroaniline (3-Nitroaniline)
p-Nitroaniline (4-Nitroaniline)
Nitrobenzene
o-Nitrophenol (2-Nitrophenol)
p-Nitrophenol (4-Nitrophenol)
N-Nitrosodi-n-butylamine (Di-n-butyl nitrosamine)
N-Nitrosodiethylamine (Diethyl nitrosamine)
N-Nitrosodimethylamine (Dimethyl nitrosamine)
N-Nitrosodiphenylamine (Diphenyl nitrosamine)
N-Nitrosodipropylamine (N-Nitroso-N-dipropylamine; Di-n-propyl nitrosamine)
N-Nitrosomethylethylamine (Methylethyl nitrosamine)
N-Nitrosopiperidine
N-Nitrosopyrrolidine
5-Nitro-o-toluidine
Pentachlorobenzene
Pentachloronitrobenzene (PCNB)
Pentachlorophenol
Phenacetin
Phenanthrene
Phenol
p-Phenylenediamine
Polychlorinated biphenyls (PCBs; Aroclors)
Pronamide
Pyrene
Safrole
1,2,4,5-Tetrachlorobenzene
2,3,4,6-Tetrachlorophenol
o-Toluidine
Toxaphene
2,4,5-Trichlorophenol
0,0,0-Triethyl phosphorothioate
sym-Trinitrobenzene