

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION
ORDER NO. R5-2007-0084

WASTE DISCHARGE REQUIREMENTS
FOR
COVE CONTRACTORS, INC. AND EL DORADO PROPERTY MANAGEMENT
FOR
POST-CLOSURE MAINTENANCE AND MONITORING OF
COVE CONTRACTORS LANDFILL
SAN JOAQUIN COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Regional Water Board) finds that:

1. Cove Contractors, Inc. and El Dorado Property Management (hereafter jointly referred to as Discharger) are owners of a former landfill, referred to as the Cove Contractors Landfill, that is in the City of Stockton, at Section 23, T1N, R6E, MDB&M. The landfill location is shown in Attachment A, which is incorporated herein and made part of this Order by reference. The Discharger consists of two legally separate and unrelated companies, each of whom own a portion of the land that makes-up the Cove Contractors Landfill.
2. The Cove Contractors Landfill was an unlined landfill that accepted construction debris and auto shredder waste. The landfill area is approximately 11.2 acres and is situated on Assessor's Parcel Numbers 177-02-029 and 177-02-028, as shown in Attachment B, which is incorporated herein and made part of this Order by reference. The street address is 3200 and 3242 South El Dorado Street, Stockton.
3. On 27 April 2006, the Regional Water Board issued Cleanup and Abatement Order (CAO) No. R5-2006-0707, in which the Discharger was required to close the landfill. A landfill cover for closure was started in October 2006 and is not yet completed, in violation of the CAO. The Discharger has stated that the cover will be completed by 29 June 2007. Installation of the closure cover is part of a corrective action program for the landfill.
4. The Discharger is closing the landfill in accordance with the California Code of Regulations (CCR) Title 27 (hereafter Title 27) using a Title 27 prescriptive cover. This Order provides the requirements for post closure maintenance and monitoring, while Cleanup and Abatement Order No. R5-2006-0707 provides the requirements for soil gas and groundwater corrective action.

SITE DESCRIPTION

5. Surface geology of the site is interfan or flood plain sediments deposited by local creeks and rivers. Sediment beneath the site consists of relatively horizontal bedded clay, silt, and sand.
6. The hydraulic conductivity of the native soils underlying the landfill has not been measured. The Discharger estimated a hydraulic conductivity range of 10^{-1} to 10^{-4} cm/sec, based on site lithology and existing literature.
7. There are no mapped Holocene faults in the site vicinity, according to the "*San Joaquin County Council of Governments Seismic Safety Element*", May 1973. The nearest potentially active fault is the buried Tracy-Stockton fault, which passes approximately one mile to the north of the site and trends west-southwest to east-northeast. No appreciable movement has occurred on the Tracy-Stockton fault since Mid-Pliocene time, more than five million years ago.
8. Land uses within 1,000-feet of the facility are light industrial, commercial, residential, and agricultural.
9. The facility receives an average of 13.9 inches of precipitation per year as measured at the Department of Water Resources Stockton Airport Station for a 56-year period of record (1949–2004). The mean pan evaporation is 97.41 inches per year as reported by the Western Regional Climate Center–California Climate Data Archives and as measured at the Tracy Pumping Plant Station from 1955 through 2002.
10. The 100-year, 24-hour precipitation event is estimated at 2.93 inches, based on data from the Stockton Airport as compiled by Department of Water Resources in their Rainfall Depth-Duration-Frequency data for California. The Stockton Airport is less than five miles from the facility.
11. The Federal Emergency Management Agency flood insurance map (panel number 060302 0035E dated 2 April 2002) shows that the landfill is located within Zone X, which includes areas within the 500 year flood zone; areas of the 100-year flood zone with average depths of less than 1-foot or with drainage areas less than one square mile; and areas protected by levees from 100-year floods.
12. There are approximately 35 municipal, domestic, industrial, or agricultural groundwater supply wells within one mile of the facility, based on Water Well Drillers Reports furnished by the California Department of Water Resources to the Discharger. No surface springs or other sources of groundwater supply have been observed.

WASTE CLASSIFICATION AND UNIT CLASSIFICATION

13. The landfill was permitted by the California Integrated Waste Management Board (CIWMB), under solid waste identification number 39-AA-0010.

14. Sometime after 1955, the Discharger began filling an abandoned clay pit with dirt, debris, and concrete received from construction contractors. Beginning in 1973, auto shredder waste and other materials were deposited in the eastern portion of the facility. Laboratory analysis of landfill gas and groundwater collected from the interior of the landfill footprint indicates that non-inert waste was placed into the facility. Waste acceptance and disposal operations ceased in 1988, according to the CIWMB.
15. The Discharger does not propose to accept wastes in the future and these WDRs do not allow the discharge of additional waste.

SURFACE AND GROUNDWATER CONDITIONS

16. The *Water Quality Control Plan for Sacramento and San Joaquin River Basins, Fourth Edition* (hereafter Basin Plan), designates beneficial uses, establishes water quality objectives, and contains implementation plans and policies for all waters of the Basin.
17. Surface drainage is generally to the west and locally toward Duck Creek, a tributary to the San Joaquin Delta Hydrologic Area (544.00) of the San Joaquin River Basin, San Joaquin Hydrologic Basin Planning Area Map, Regional Water Board, Central Valley (1986).
18. The landfill is on the floor of the southern San Joaquin Valley near the San Joaquin River Delta. The designated beneficial uses of San Joaquin Delta, as specified in the Basin Plan, are municipal and domestic supply; agricultural supply; industrial service, process, and power supply; water contact and non-contact recreation; warm freshwater habitat; preservation of rare, threatened and endangered species; and groundwater recharge.
19. Saturated conditions occur at 25-, 35-, and 50-feet below ground surface.
20. The shallowest zone, at 25-feet below ground surface, has been encountered only directly adjacent to Duck Creek and may be due to infiltration of surface water from this creek.
21. Saturated conditions at 35-feet below ground surface have been encountered only within the footprint of the landfill. Borings obtained within the deepest portions of the landfill indicate that the refuse is wet. The depth of refuse at the deepest part of the footprint is approximately 45 feet below ground surface, as documented in the boring logs from MW-9, MW-10, MW-2, and MW-3.
22. The saturated zone, at approximately 50-feet below ground surface, is semi-confined.
23. The depth to groundwater fluctuates seasonally by up to 0.5-feet.
24. Groundwater flows in the direction of Stockton's pumping stations, located to the north and east. The average groundwater gradient is approximately 0.0025 feet per foot. The average groundwater velocity has not been measured for this site. Beneficial uses of the underlying groundwater are municipal and domestic water supply, agricultural supply,

industrial service supply, and industrial process supply. **GROUNDWATER AND SOIL
GAS MONITORING**

26. Monitoring data indicates background groundwater quality (MW-5) has an electrical conductivity (EC) range of 570 to 814 micromhos/cm and total dissolved solids (TDS) range of 180 and 578 mg/l, as reported in the Discharger's January 2006 revised closure plan and the July 2006 groundwater monitoring report. The Discharger has performed two quarterly groundwater sampling events in 2006, one in 1989, and one in 1988. Because MW-5 is close to Duck Creek and because the groundwater flow direction is influenced by the City of Stockton's pumping stations, there is some debate whether this monitoring well represents background water quality. Water from Duck Creek may be intruding into MW-5, and thus may be altering the water quality parameters at this point.
27. The groundwater detection monitoring points include the following wells: MW-2A, MW-3A, MW-5, MW-6, MW-7, MW-8, and MW-9A. Groundwater monitoring well MW-5 serves as the background monitoring well at this time. Monitoring wells MW-6 and MW-8 are single-completion wells, with MW-5 and MW-7 performing as the companion wells in the shallower water bearing zone in each area. MW-2A, MW-3A, MW-8, and MW-9A are screened in the deeper water bearing zone.
28. Organic waste constituents detected in the groundwater monitoring system include total petroleum hydrocarbons (TPH), volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), and pesticides. As reported in the Discharger's monitoring reports from 1988 (one quarter), 1989 (one quarter) and 2006 (two quarters), the highest concentrations were as follows: TPH-gas (270 ug/L); TPH-diesel (3,700 ug/L); benzene (32 ug/L); ethylbenzene (4.6 ug/L); naphthalene (0.65 ug/L); toluene (30 ug/L); xylenes (0.88 ug/L); phthalates (17 ug/L); PCBs (1.2 ug/L); aldrin (0.18 ug/L); and DDT (0.029 ug/L).
29. Inorganic waste constituents detected above water quality objectives in downgradient wells include TDS (2,900 mg/L); Nitrate-Nitrogen (17 mg/L); sulfates (290 mg/L); specific conductance (3,570 umhos/cm); arsenic (0.6 mg/L); barium (4.7 mg/L); cadmium (0.11 mg/L); total chromium (0.22 mg/L); lead (0.32 mg/L); nickel (0.53 mg/L); and vanadium (0.34 mg/L).
30. Once the final cover is completed and post-closure sampling begins, an increase of VOCs, calcium, magnesium, carbonate, and bicarbonate concentrations may occur. Therefore, additional corrective actions, such as collection of soil gas and groundwater treatment, may become necessary to prevent further contamination of groundwater. Specifications for an investigation, feasibility study, and determination of corrective action of soil gas and groundwater are requirements of Cleanup and Abatement Order No. R5-2006-0707.
31. The monitoring points for soil gas include TGP-1, TGP-2, and TGP-3. Perimeter monitoring points PGP-1 and PGP-6 will be installed upon completion of the cover.

32. Under the monitoring and reporting program of this Order, the detection, corrective action, and the evaluation groundwater monitoring program will satisfy the requirements contained in Title 27.
33. Volatile organic compounds (VOCs) are often detected in a release from a landfill, and are the primary waste constituents detected in groundwater beneath a landfill. Since volatile organic compounds are not naturally occurring and thus have no background value, they are not amenable to the statistical analysis procedures contained in Title 27 for the determination of a release of wastes from a Unit.
34. Title 27 CCR §20415(e)(8) and (9) provide for the non-statistical evaluation of monitoring data that will provide the best assurance of the earliest possible detection of a release from a Unit in accordance with Title 27 CCR §20415(b)(1)(B)2-4. However, Title 27 CCR does not specify a specific method for non-statistical evaluation of monitoring data.
35. The Regional Water Board may specify a non-statistical data analysis method pursuant to Title 27 CCR §20080(a)(1). Section 13360(a)(1) of the California Water Code allows the Regional Water Board to specify requirements to protect underground or surface waters from leakage from a solid waste site, which includes a method to provide the best assurance of determining the earliest possible detection of a release.
36. In order to provide the best assurance of the earliest possible detection of a release of non-naturally occurring waste constituents from a Unit, this Order specifies a non-statistical method for the evaluation of monitoring data.
37. The specified non-statistical method for evaluation of monitoring data provides two criteria (or triggers) for making the determination that there has been a release of non-naturally occurring waste constituents from a Unit. The presence of two non-naturally occurring waste constituents above their respective method detection limit (MDL), or one non-naturally occurring waste constituent detected above its practical quantitation limit (PQL), indicates that a release of waste from a Unit has occurred. Following an indication of a release, verification testing will be conducted to determine whether there has been a release from the Unit, or there is a source of the detected constituents other than the landfill, or the detection was a false detection. Although the detection of one non-naturally occurring waste constituent above its MDL is sufficient to provide for the earliest possible detection of a release, the detection of two non-naturally occurring waste constituents above the MDL as a trigger is appropriate due to the higher risk of false-positive analytical results and the corresponding increase in sampling and analytical expenses from the use of one non-naturally occurring waste constituent above its MDL as a trigger.

CLOSURE CONSTRUCTION

38. The landfill is being closed with the installation of a final landfill cover. The cover consists of the following (from bottom to top): minimum of 2-foot compacted soil foundation layer; 1-foot low hydraulic conductivity cover consisting of a compacted clay layer (with a

maximum hydraulic conductivity of 1×10^{-6} centimeters per second), and 1-foot erosion resistant layer consisting of compacted soil and vegetative cover of native plants with shallow roots. Slopes are no steeper than a horizontal to vertical grade of 3 to 1. Eight settlement monuments will be installed (immediately upon completion of the cover) to track settlement over time. The final cover complies with the cover requirements in Title 27.

39. This is an existing and unlined landfill without a pan lysimeter. Therefore, vadose zone monitoring is not practical. Instead, six soil gas wells (installed to a depth of 35-feet and at a 650-foot separation) will be installed for monitoring. The maximum depth of the waste is at 35 feet below ground surface, and therefore each gas monitoring well will be triple-completed with probes placed at 10-, 20-, and 35-feet below ground surface.

POST-CLOSURE MAINTENANCE AND FINANCIAL ASSURANCE

40. The Discharger submitted a preliminary post-closure maintenance plan (PCMP) for the landfill. The PCMP includes information required by Title 27 CCR §21769(b). A lump sum estimate of the cost of carrying out all actions necessary to close the landfill, to develop the final post-closure maintenance plan, and to carry out the first thirty years of post-closure maintenance was received from the Discharger under separate cover. The total amount of the post-closure maintenance cost estimate is \$905,000. This Order requires that the Discharger maintain financial assurance with the Regional Water Board in at least the amount of this cost estimate.

CEQA AND OTHER CONSIDERATIONS

41. The action to adopt waste discharge requirements for this facility is exempt from the provisions of the California Environmental Quality Act (Public Resources Code §2100, et seq.), in accordance with §15301 of Title 14 CCR.
42. This Order implements:
- a. The Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition;
 - b. The prescriptive standards and performance goals of Chapters 1 through 7, Subdivision 1, Division 2, Title 27 CCR, effective 18 July 1997, and subsequent revisions;
 - c. The prescriptive standards and performance criteria of RCRA Subtitle D, Part 258; and
 - d. State Water Resources Control Board Resolution No. 93-62, Policy for Regulation of Discharges of Municipal Solid Waste, adopted 17 June 1993.
43. Section 13267(b) of California Water Code provides that: *"In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of discharging, or who proposed to discharge*

within its region, or any citizen or domiciliary, or political agency or entity of this state who had discharged, discharges, or is suspected of discharging, or who proposed to discharge waste outside of its region that could affect the quality of the waters of the state within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs of these reports, shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports."

44. The technical reports and the monitoring and reporting program required by this Order are necessary to assure compliance with these waste discharge requirements. The Discharger owns this facility and is responsible for the post-closure maintenance and monitoring.

PROCEDURAL REQUIREMENTS

45. The Regional Water Board notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for this discharge, and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
46. The Regional Water Board, in a public meeting, heard and considered all comments pertaining to the discharge.
47. Any person affected by this action of the Regional Water Board may petition the State Water Resources Control Board to review the action in accordance with §2050 through §2068 of Title 23 CCR. The petition must be received by the State Water Resources Control Board, Office of Chief Counsel, P.O. Box 100, Sacramento, California 95812, within 30 days of the date of issuance of this Order. Copies of the laws and regulations applicable to the filing of a petition are available on the Internet at http://www.waterboards.ca.gov/water_laws/index.html and will be provided on request.

IT IS HEREBY ORDERED, pursuant to Sections 13263 and 13267 of the California Water Code, that Cove Contractors, Inc. and El Dorado Property Management, the Discharger, and, their agents, successors, and assigns, in order to meet the provisions of Division 7 of the California Water Code and the regulations adopted thereunder, shall comply with the following:

A. PROHIBITIONS

1. The Cove Contractors Landfill is closed; the discharge of any additional waste to the area presently identified as Assessor's Parcel Numbers 177-02-029 and 177-02-028 is prohibited.
2. Future activities at the Cove Contractors Landfill shall not cause the release of pollutants or waste constituents in a manner that could cause a condition of nuisance, degradation, contamination, or pollution of groundwater to occur, as indicated by the

most appropriate statistical or non-statistical data analysis method and retest method listed in this Order, the Monitoring and Reporting Program, or the Standard Provisions and Reporting Requirements.

3. The discharge of solid or liquid waste or leachate to surface waters, surface water, drainage courses, or groundwater is prohibited.
4. Future activities shall not cause any increase in the concentration of waste constituents in soil-pore liquid, soil, or other geologic materials outside the Unit if such waste constituents could migrate to waters of the State—in either the liquid or gaseous phase—and cause a condition of nuisance, degradation, contamination, or pollution.

B. FACILITY SPECIFICATIONS

1. The Discharger shall, in a timely manner, remove and relocate any wastes discharged at this facility in violation of this Order.
2. The Discharger shall immediately notify the Regional Water Board of any flooding, unpermitted discharge of waste off-site, equipment failure, slope failure, or other change in site conditions that could impair the integrity of waste containment facilities or precipitation and drainage control structures.
3. The Discharger shall limit water usage to the minimum amount necessary for facility maintenance, dust control, construction, and vegetation maintenance.
4. The Discharger shall maintain in good working order any facility, control system, or monitoring device installed to achieve compliance with the waste discharge requirements.
5. The Discharger shall adequately vent, remove, and otherwise control methane and landfill gases from the Unit to prevent the danger of adverse health effects, nuisance conditions, degradation, or the impairment of the beneficial uses of surface water or groundwater due to migration through the unsaturated zone.
6. The Discharger shall monitor soil gases quarterly starting with the third quarter of 2007. Significant soil gas detections are defined as concentrations of any VOCs in soil gas such that the Henry's Law predicted fractionation in water exceeds the detection limit, as measured by USEPA's Method TO-15 for VOCs in gas.
7. The Discharger shall maintain surface drainage of the waste management facility in order to discharge surface water in accordance with applicable storm water regulations.
8. The Discharger shall maintain a *Storm Water Pollution Prevention Plan and Monitoring Program and Reporting Requirements* in accordance with State Water Resources Control Board Order No. 97-03-DWQ, or retain all storm water on-site.

C. POST-CLOSURE MAINTENANCE SPECIFICATIONS

1. By **31 August 2007**, the Discharger shall conduct the Final Cover Survey and submit the survey and map, including an aerial photographic survey (or Alternative Surveying Technique) of the closed Unit and of its immediate surrounding area, including at least the surveying monuments, as required by Title 27 §21090. This map shall act as the baseline against which the Discharger will measure total settlement through time.
2. Prior to any construction, the Discharger shall submit the design plans and specifications for any on-site construction or major repairs to the landfill structure.
3. The Discharger shall perform periodic monitoring of site security systems, final soil cover, drainage systems, vegetative cover, final grading, groundwater monitoring system, and landfill soil-pore gas monitoring.
4. The Discharger shall repair forthwith any breach or other cover problem discovered by periodic monitoring.
5. Annually, **prior to 1 October**, the Discharger shall inspect all erosion control measures and shall schedule and implement repairs. Annually and prior to **1 October** of each year, the Discharger shall complete any necessary construction, maintenance, or repairs of precipitation and drainage control facilities to prevent erosion, flooding, and surface drainage from contacting or percolating through wastes.
6. The Discharger shall maintain the vegetative cover, provide fertilization as needed, eliminate species that violate the 12-inch rooting depth limit, and replant areas that exhibit sparse or inadequate growth.
7. At least every five years after completing closure of the landfill (beginning in **2012**) the Discharger shall produce and submit to the Regional Water Board an iso-settlement map that accurately depicts the estimated total change in elevation of each portion of the final cover.
8. Prior to conducting any periodic grading operations on the closed landfill, the Discharger shall note on a map of the landfill the approximate location and outline of any areas where differential settlement is visually obvious.
9. Prior to the initiation of any maintenance construction work, the Discharger shall prepare and receive concurrence from the Regional Water Board on all applicable construction quality assurance plans required for such work.
10. A third party independent of both the Discharger and the construction contractor shall oversee the performance of all of the maintenance construction, quality assurance, monitoring, and testing.

D. EVALUATION, DETECTION, AND CORRECTIVE ACTION MONITORING SPECIFICATIONS

1. The evaluation, detection, and corrective action monitoring system shall include the following monitoring points:

a. Detection Monitoring

Surface Water: SW-1 (upstream), SW-2 (mid-landfill), SW-3 (downstream)

Groundwater: MW-4

b. Corrective Action Monitoring

Groundwater: MW-2A, MW-3A, MW-5, MW-6, MW-7, MW-8, and MW-9A

Soil gas: TGP-1, TGP-2, and TGP-3

If new or additional wells, devices, or locations are installed or established, then those new wells, devices, and locations will become part of the detection monitoring or corrective action program systems, as appropriate. Placement and location of any new wells shall receive concurrence from Regional Water Board staff prior to installation. Monitoring well MW-5 serves as the background monitoring point for groundwater, subject to the evaluation required by Specification D-10.

2. The Discharger shall comply with the detection and corrective monitoring program provisions of Title 27 CCR for groundwater, surface water, the unsaturated zone, and in accordance with Monitoring and Reporting Program No. R5-2007-0084.
3. The Discharger shall provide Regional Water Board staff a minimum of **one week** notification prior to commencing any field activities related to the installation, repair, or abandonment of monitoring devices, and a minimum **48-hour notification** prior to the collection of samples associated with a detection monitoring program, evaluation monitoring program, or corrective action program.
4. By **31 January 2009**, the Discharger shall submit a Water Quality Protection Standards Report. This report shall include all the information specified in Section C of Monitoring and Reporting Program No. R5-2007-0084.
5. The Discharger shall comply with the Water Quality Protection Standard as specified in Monitoring and Reporting Program No. R5-2007-0084, and the Standard Provisions and Reporting Requirements, dated April 2000.
6. The Water Quality Protection Standard for organic compounds that are not naturally occurring and not detected in background groundwater samples shall be taken as the detection limit of the analytical method used (i.e., US-EPA methods 8015, 8141, 8151,

8260, 8270, 8081, 8082, 9060, and/or similar tests). Evidence of a release from the Unit is the repeated detection of one or more non-naturally occurring organic or inorganic compounds in samples above the Water Quality Protection Standard obtained from the detection monitoring wells.

7. The concentrations of the constituents of concern in waters passing the Point of Compliance shall not exceed the concentration limits established pursuant to Monitoring and Reporting Program No. R5-2007-0084.
8. For each monitoring event, the Discharger shall determine whether the landfill complies with the Water Quality Protection Standard using procedures specified in Monitoring and Reporting Program No. R5-2007-0084 and Title 27 CCR §20415(e).
9. By **31 July 2007**, the Discharger shall submit a Sample Collection and Analysis Plan, which shall contain, at a minimum the following:
 - a. The sample collection procedures describing purging techniques, sampling equipment, and decontamination of sampling equipment;
 - b. A sample location map and cross-referenced table with sample locations, sampling frequencies, and analytical methods;
 - c. Sample preservation information, holding times, temperature requirements, and shipment procedures;
 - d. Sample analytical methods, method detection limits, practical quantitation limits and procedures;
 - e. Sample quality assurance/quality control (QA/QC) procedures; and
 - f. Chain of custody control.
10. By **31 January 2008**, the Discharger shall submit a technical report evaluating five quarters of analytical data (including all the 2007 data) on the organic and inorganic concentrations of the background monitoring well. The Discharger shall evaluate the data and determine if MW-5 shall continue to function as the background (upgradient) well or not. The technical report shall be reviewed by the Regional Water Board for concurrence. If MW-5 is not suitable to serve as a background monitoring well, then within 45-days of this determination, the Discharger shall submit a monitoring well work plan for installation of a new upgradient background monitoring well, followed by a monitoring well installation report after the new well has been installed. If determined that a new background well is warranted, then the Discharger shall install a new background monitoring well that shall be completed by the **third quarter of 2008**, followed by the well installation report to be submitted **within 30 days** of installation of the new well. The well installation workplan shall contain the information listed in Section A of Attachment C, while the well installation report shall contain the information listed in Section B of Attachment C.

11. For any given monitored medium, the samples taken from all monitoring points and background monitoring points to satisfy the data analysis requirements for a given reporting period shall all be taken by the Discharger **within a span not to exceed 30 days**, unless a longer time period is approved, and shall be taken in a manner that ensures sample independence to the greatest extent feasible. Specific methods of collection and analysis must be identified. The Discharger shall perform sample collection, storage, and analysis according to the most recent version of USEPA Methods, such as the latest editions, as applicable, of: (1) Methods for the Analysis of Organics in Water and Wastewater (USEPA 600 Series), (2) Test Methods for Evaluating Solid Waste (SW-846, latest edition), and (3) Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020), and in accordance with the approved Sample Collection and Analysis Plan.
12. If methods other than USEPA-approved methods or Standard Methods are used, the Discharger shall submit the exact methodology for review and approval prior to use.
13. The Discharger must use **methods of analysis and the detection limits** that are appropriate for the expected concentrations. For the monitoring of any constituent or parameter that is found in concentrations which produce more than 90% non-numerical determinations (i.e., "trace" or "ND") in data from background monitoring points for that medium, the analytical method having the lowest method detection limit (MDL) shall be selected by the Discharger from among those methods which would provide valid results in light of any matrix effects or interferences.
14. The laboratory shall report "**trace**" results, that is results falling between the MDL and the practical quantitation limit (PQL), as such and the reports shall be accompanied both by the estimated MDL and PQL values for that analytical run.
15. **MDLs and PQLs** shall be derived by the laboratory for each analytical procedure, according to State of California laboratory accreditation procedures. These MDLs and PQLs shall reflect the detection and quantitation capabilities of the specific analytical procedure and equipment used by the lab, rather than simply being quoted from USEPA analytical method manuals. In relatively interference-free water, laboratory-derived MDLs and PQLs are expected to closely agree with published USEPA MDLs and PQLs.
16. 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 MDL/PQL values, then the laboratory shall flag these results accordingly, along with estimates of the detection limit and quantitation limit actually achieved. The **MDL shall always be calculated such that it represents the lowest achievable concentration associated with a 99% reliability of a nonzero result**. The laboratory shall always calculate the PQL such that it represents the lowest constituent concentration at which a numerical value can be assigned with reasonable certainty that it represents the constituent's actual concentration in the sample.

Normally, PQLs should be set equal to the concentration of the lowest standard used to calibrate the analytical procedure.

17. The laboratory shall report all **QA/QC data**, along with the sample results to which they apply, including the method, equipment, analytical detection and quantitation limits, the percent recovery, an explanation for any recovery that falls outside the QC limits, the results of equipment and method blanks, the results of spiked and surrogate samples, the frequency of quality control analysis, and the name and qualifications of the person(s) performing the analyses. Sample results shall be reported unadjusted for blank results or spike recoveries. 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.
18. Unknown chromatographic peaks shall be reported, flagged, and tracked for potential comparison to subsequent unknown peaks that may be observed in future sampling events. Identification of unknown chromatographic peaks that recur in subsequent sampling events may be required.
19. The statistical method shall account for data below the practical quantitation limit (PQL) with one or more statistical procedures that are protective of human health and the environment. Any PQL validated pursuant to Title 27 CCR §20415(e)(7) that is used in the statistical method shall be **the lowest concentration (or value) that can be reliably achieved** within limits of precision and accuracy specified in the waste discharge requirements (WDRs) for routine laboratory operating conditions that are available to the facility. The Discharger's technical report, pursuant to Title 27 CCR §20415(e)(7), shall consider the PQLs listed in Appendix IX to Chapter 14 of Division 4.5 of Title 22 CCR, for guidance when specifying limits of precision and accuracy. For any given constituent monitored at a background or downgradient monitoring point, an indication that falls between the MDL and the PQL for that constituent (hereinafter called a "trace" detection) shall be identified and used in appropriate statistical or nonstatistical tests. Nevertheless, for a statistical method that is compatible with the proportion of censored data (trace and ND indications) in the data set, the Discharger can use the laboratory's concentration estimates in the trace range (if available) for statistical analysis, in order to increase the statistical power by decreasing the number of "ties".
20. Background for water samples or soil-pore gas samples shall be represented by the data from all samples taken from applicable background monitoring points during that reporting period (at least one sample from each background monitoring point). The Discharger may propose an alternate statistical method [to the methods listed under Title 27 CCR §20415(e)(8)(A-D)] in accordance with Title 27 CCR §20415(e)(8)(E), for review and approval.
21. The Discharger may propose an alternate statistical method [to the methods listed under Title 27 CCR §20415(e)(8)(A-D)] in accordance with Title 27 CCR

§20415(e)(8)(E) for review and approval. Upon receiving written approval, alternate statistical procedures may be used for determining the significance of analytical results for common laboratory contaminants (i.e., methylene chloride, acetone, diethylhexyl phthalate, and di-n-octyl phthalate). Nevertheless, analytical results involving detection of these analytes in any background or downgradient sample shall be reported and flagged for easy reference by Regional Water Board staff.

22. The Discharger shall use the following non-statistical method for all analytes that are detected in less than 10% of the background samples. The non-statistical method shall be implemented as follows:

- a. From the constituent of concern or monitoring parameter list, identify each analyte in the **current** sample that exceeds either its respective MDL or PQL. The Discharger shall conclude that the exceedance provides a preliminary indication of a release or a change in the nature or extent of the release, at that monitoring point, if **either**:
 - 1) The data contains two or more analytes that are detected in less than 10% of background samples that equal or exceed their respective MDLs; or
 - 2) The data contains one or more analyte that equals or exceeds its PQL.
- b. **Discrete Retest** [Title 27 CCR §20415(e)(8)(E)]:
 - 1) In the event that the Discharger concludes (pursuant to paragraph 20.a., above) that there is a preliminary indication of a release, then the Discharger shall immediately notify Regional Water Board staff by phone or e-mail and, within 30 days of such indication, shall collect two new (retest) samples from the monitoring point where the release is preliminarily indicated.
 - 2) For any given retest sample, the Discharger shall include, in the retest analysis, **only the laboratory analytical results for those analytes detected in the original sample**. As soon as the retest data are available, the Discharger shall conclude that there is measurably significant evidence of a release if two or more analytes equal or exceed their respective MDLs or if one or more analyte equals or exceeds its PQL and shall:
 - a) The Discharger shall **immediately** notify the Regional Water Board about any constituent or constituents verified to be present at the monitoring point, and follow up with written notification submitted by certified mail **within seven days** of validation; and
 - b) The Discharger shall comply with ¶23, below if any constituent or constituents were verified to be present.
 - 3) For any analyte that is confirmed per this method, the Discharger shall add the analyte to the monitoring parameter list such that it is monitored during each regular monitoring event.

23. If the Discharger determines that there is measurably significant evidence of a release from the Unit at any monitoring point, then the Discharger shall

immediately implement the requirements of **XI. Response To A Release, C. Release Has Been Verified**, contained in the Standard Provisions and Reporting Requirements.

E. PROVISIONS

1. The Discharger shall comply with all applicable provisions of Title 27 and 40 Code of Federal Regulations Part 258 (Subtitle D) that are not specifically referred to in this Order.
2. The Discharger shall comply with Monitoring and Reporting Program No. R5-2007-0084, which is incorporated into and made part of this Order.
3. The Discharger shall comply with the applicable portions of the Standard Provisions and Reporting Requirements for Waste Discharge Requirements for Nonhazardous Solid Waste Discharges Regulated by Title 27 and/or Subtitle D (Title 27 CCR §20005 et seq. and 40 CFR 258 et seq.), dated April 2000, which are hereby incorporated into this Order.
4. 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 Water 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.
5. The Discharger shall ensure that all reports and transmittal letters include the certifications and signatures of persons identified below:
 - a. For a corporation: by a principal executive officer of at least the level of senior vice-president.
 - b. For a partnership or sole proprietorship: by a general partner or the proprietor.
 - c. For a municipality, state, federal or other public agency: by either a principal executive officer or ranking elected or appointed official.
 - d. A duly authorized representative of a person designated in a, b or c above if;
 - 1) The authorization is made in writing by a person described in a, b, or c of this provision;
 - 2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a Unit, superintendent, or position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and

- 3) The written authorization is submitted to the Regional Water Board.
- 4) Any person signing a document under this section shall make the following certification:

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments 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 fine and imprisonment."

6. The Discharger shall take all reasonable steps to minimize any adverse impact to the waters of the State resulting from noncompliance with this Order. Such steps shall include accelerated or additional monitoring as necessary to determine the nature, extent, and impact of the noncompliance.
7. The owner of the waste management facility shall have the continuing responsibility to assure protection of waters of the state from discharged wastes and from gases and leachate generated by discharged waste during the pos-closure maintenance period of the Unit and during subsequent use of the property for other purposes.
8. The fact that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with this Order shall not be regarded as a defense for the Discharger's violations of the Order.
9. To assume ownership or operation under this Order, the succeeding owner or operator must apply in writing to the Regional Water Board requesting transfer of the Order within 14 days of assuming ownership or operation of this facility. The request must contain the requesting entity's full legal name, the State of incorporation if a corporation, the name and address and telephone number of the persons responsible for contact with the Regional Water Board, and a statement. The statement shall comply with the signatory requirements contained in Provision E.5 of this Order and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code. Transfer of this Order shall be approved or disapproved by the Regional Water Board.
10. By **30 April** each year, the Discharger shall establish cost estimates for initiating and completing corrective action for all known or reasonably foreseeable releases from the landfill, and submit these estimates for review and approval to the Regional Water Board. In addition, the Discharger shall obtain and maintain assurances of financial responsibility for initiating and completing such corrective action for all known or reasonably foreseeable releases from the landfill in the amount approved by the Regional Water Board, as submitted in the Discharger's cost estimates. If the Regional Water Board determines that either the amount of coverage or the mechanism is inadequate, then within 90-days of notification, the Discharger shall

submit an acceptable mechanism for at least the amount of the approved cost estimate.

11. The Discharger is required to maintain financial assurance mechanisms for post-closure maintenance cost as specified in Chapter 6 of Title 27. The Discharger is required to submit the financial assurance mechanism for post-closure maintenance to the Regional Water Board. If the Regional Water Board determines that either the amount of coverage or the mechanism is inadequate, then within 90 days of notification, the Discharger shall submit an acceptable mechanism for at least the amount of the approved cost estimate.
12. By **31 July 2007**, the Discharger shall provide proof to the Board that the deed to the landfill facility property, or some other instrument that is normally examined during a title search, has been modified or recorded to include, in perpetuity, a notation to any potential purchaser of the property stating that:
 - a. The parcel has been used as a landfill;
 - b. Non-hazardous waste, construction debris, and auto shredder waste have been discharged at this site;
 - c. Use options for the parcel are restricted in accordance with the post-closure land uses set forth in the post-closure plan and in WDRs for the landfill;
 - d. In the event that the Discharger defaults on carrying out either the post-closure maintenance plan or any corrective action program needed to address a release, then the responsibility for carrying out such work shall fall to the property owner; and
 - e. The notation must be approved by the Regional Water Board.
13. The Discharger shall update the final Post-Closure Maintenance Plan any time there is a change that will increase the amount of the post-closure maintenance cost estimate. The updated final Post-Closure Maintenance Plan shall be submitted to the Regional Water Board and the Local Enforcement Agency. The updated final PCMP shall meet the requirements of Title 27 CCR §21769(b), and include an estimate of the cost of carrying out all actions necessary to carry out the first thirty years of post-closure maintenance.
14. The Discharger shall complete the tasks and technical reports contained in these waste discharge requirements in accordance with the following time schedule:

Task	Compliance Date
Final Cover Survey (See Section C.1)	31 August 2007
Sampling Collection and Analysis Plan (See Section D.9)	31 July 2007

Task	Compliance Date
Deed Notification (See Section E.12)	31 July 2007
Evaluation Report of Background Well MW-5 (See Section D.10)	31 January 2008
Water Quality Protection Standards Report (See Section D.4)	31 January 2009

I, PAMELA C. CREEDON, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Board, Central Valley Region, on 22 June 2007.

PAMELA C. CREEDON, Executive Officer

MLB: 06/22/2007

Attachments: A, B, and C

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2007-0084
FOR
COVE CONTRACTORS, INC. AND EL DORADO PROPERTY MANAGEMENT
FOR
POST-CLOSURE MAINTENANCE AND MONITORING
COVE CONTRACTORS LANDFILL
SAN JOAQUIN COUNTY

The Discharger shall comply with this Monitoring and Reporting Program, with Title 27, California Code of Regulations, §20005, et seq. (hereafter Title 27), and with the *Standard Provisions and Reporting Requirements for Waste Discharge Requirements for Nonhazardous Solid Waste Discharges Regulated by Title 27 and/or Subtitle D (27 CCR §20005 et seq. and 40 CFR 258)*, dated April 2000, as ordered by Waste Discharge Requirements Order No. R5-2007-0084.

A. REQUIRED MONITORING REPORTS

<u>Report</u>	<u>Due</u>
1. Groundwater Monitoring (Section D.1–D.2)	Quarterly
2. Soil Gas Monitoring (See Section D.3)	Quarterly
3. Seep–Leachate Monitoring (Section D.4)	As necessary
4. Surface Water Monitoring (Section D.5)	Quarterly
5. Facility Monitoring (Section D.6)	Annually
6. Response to a Release (Section E.4) (Standard Provisions and Reporting Requirements, April 2000)	As necessary
7. Annual Monitoring Report (Section E.5)	Annually
8. Constituents of Concern	5 Years

B. REPORTING

The Discharger shall report monitoring data and information as required in this Monitoring and Reporting Program and as required in Waste Discharge Requirements Order No. R5-2007-0084 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.

1. 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 to illustrate clearly the compliance with waste discharge requirements or the lack thereof. Reports shall be submitted in hard copy and digital format acceptable to the Regional Water Board.
2. The Discharger shall include a compliance evaluation summary with each monitoring report, as specified in Section E Reporting Requirements, below.
3. The Discharger shall report field and laboratory tests in each monitoring report. Quarterly, semiannual, annual, 5-year, and other reports shall be submitted to the Regional Water Board in accordance with the following Reporting Schedule for the calendar period in which samples were taken or observations made.

Reporting Schedule			
<u>Sampling Frequency</u>	<u>Reporting Frequency</u>	<u>Report Period Ends</u>	<u>Report Due</u>
Monthly	Quarterly	Last Day of Month	30 April 31 July 31 October 31 January
Quarterly	Quarterly	31 March 30 June 30 September 31 December	30 April 31 July 31 October 31 January
Semiannually	Semiannually	30 June 31 December	31 July 31 January
Annually	Annually	31 December	31 January

4. The Discharger shall monitor the constituents of concern in accordance with the frequencies listed in Tables I through IV, and with the analytical methods and analyte list specified in Table V.
5. The Discharger shall submit an **Annual Monitoring Summary Report** to the Regional Water Board covering the previous monitoring year. The annual report shall contain the information specified in Section E, Reporting Requirements, below, and a discussion of compliance with the waste discharge requirements and the Water Quality Protection Standard.
6. The Discharger shall report all results of **all monitoring** conducted at the site to the

Regional Water Board in accordance with the Reporting Schedule, above, for the calendar period in which samples were taken or observations made.

C. WATER QUALITY PROTECTION STANDARD AND COMPLIANCE PERIOD

1. Water Quality Protection Standards Report

The Water Quality Protection Standards shall consist of all constituents of concern, the concentration limit for each constituent of concern, the point of compliance, and all water quality monitoring points for each monitored medium.

The Water Quality Protection Standard for naturally occurring waste constituents consists of the constituents of concern, the concentration limits, and the point of compliance and all monitoring points. The Water Quality Protection Standards, or any modification thereto, shall be submitted in a report for review and approval.

The Water Quality Protection Standards Report shall:

- a. Identify all distinct bodies of surface 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 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, groundwater monitoring program, and the soil gas 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).
- d. Be certified by a California-registered civil engineer or 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 Standards.

2. Constituents of Concern

The Discharger shall monitor constituents of concern every five years beginning with the quarter ending **31 December 2007**. Subsequent monitoring efforts for constituents of concern will be carried out every fifth year thereafter alternately in the Summer reporting period (ending 30 June) and Winter reporting period (ending 31 December). 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 constituents of concern are those listed in Tables I through IV for the specified monitored medium, and Table V for the analyte list and methods. The Discharger shall monitor all constituents of concern every five years, or more frequently as required in accordance with a Corrective Action Program.

a. Monitoring Parameters for Constituents of Concern

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

3. Concentration Limits

For a naturally occurring constituent of concern, the Discharger shall determine the concentration limit for each constituent of concern as follows:

- a. By calculation in accordance with a statistical method pursuant to §20415 of Title 27(e)(8); or
- b. By an alternate statistical method meeting the requirements of §20415(e)(8)(E) of Title 27.

The concentration limits for naturally occurring constituents of concern are listed below. The concentration limits are based on data from the background monitoring well, MW-5.

<u>Constituent</u>	<u>Concentration Limit</u>
Total dissolved solids	578 mg/L
Electrical conductivity	814 umhos/cm
Sulfate	16 mg/L
Nitrate	6.1 mg/L
pH	6.5–7.8 pH Units
Calcium	88.2 mg/L
Magnesium	50 mg/L
Sodium	62.5 mg/L
Potassium	4.7 mg/L
Manganese	0.93 mg/L
Bicarbonate	351 mg/L
Carbonate	< 5 mg/L

4. Monitoring Points

The monitoring points for this facility consist of the following:

Surface Water: SW-1, SW-2, SW-3

Groundwater: MW-2A, MW-3A, MW-4, MW-5, MW-6, MW-7, MW-8, MW-9A, and MW-10

Soil Gas: TGP-1, TGP-2, and TGP-3

The Discharger is scheduled to install soil gas monitoring probes upon completion of the cover. Placement and location of any new monitoring point shall receive concurrence from Regional Water Board staff prior to installation. Whenever new or additional wells, devices, or locations are installed or established, then those new wells, devices, and locations will become part of the monitoring point system.

5. Point of Compliance

For this facility, the points of compliance wells are as follows: MW-2A, MW-3A, MW-4, MW-5, MW-6, MW-7, MW-8, MW-9A, and MW-10. Title 27 §20164 defines the Point of Compliance for the water standard as a vertical surface located at the hydraulically downgradient limit of the Unit that extends through the uppermost aquifer underlying the Unit.

6. Background Monitoring Point

The background (upgradient) groundwater monitoring point for the facility is MW-5. Title 27 §20164 defines the Background Monitoring Point as a well, device, or location specified in the waste discharge requirements at which monitoring for background water quality or background soil quality is conducted.

7. Compliance Period

The compliance period for the Unit shall be the number of years equal to the active life of the Unit plus the closure 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 evaluation, detection, and corrective action monitoring program provisions of Title 27 for groundwater and surface water in accordance with Evaluation, Detection, and Corrective Action Monitoring Specification D.1–D.22 of Waste Discharge Requirements, Order No. R5-2007-0084. The Discharger shall conduct all monitoring in accordance with a Sample Collection and Analysis Plan

that shall include the quality assurance and quality control standards that shall be submitted for review and approval by the Regional Water Board.

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 and surface water monitoring points shall be sampled and analyzed for monitoring parameters and constituents of concern as indicated and listed in Table I through Table 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 analytical methods listed in Table V.

The Discharger may use alternative analytical test methods, including new USEPA approved analytical 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 an approved Detection Monitoring Program. The Discharger shall collect, preserve, and transport groundwater samples in accordance with the approved Sample Collection and Analysis Plan. The detection monitoring system shall be certified by a California-licensed professional civil engineer or geologist as meeting the requirements of Title 27.

- a. 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.
- b. 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 quarterly and submitted annually.
- c. Groundwater samples shall be collected 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 in accordance with the methods and frequency specified in Table I. Samples for the constituents of concern specified in Table I shall be collected and analyzed in accordance with the methods listed in Table V every five years.

- d. 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 Schueller plot each reporting period.

TABLE I

GROUNDWATER DETECTION AND CORRECTIVE ACTION MONITORING PROGRAM

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>
Field Parameters		
Groundwater Elevation	Ft. & 1/100s, MSL	Quarterly
Temperature	°C	Quarterly
Electrical Conductivity	µmhos/cm	Quarterly
pH	pH units	Quarterly
Turbidity	Turbidity units	Quarterly
Monitoring Parameters (see Table V for test methods and analyte lists)		
Total Dissolved Solids	mg/L	Quarterly
Chloride	mg/L	Quarterly
Carbonate	mg/L	Quarterly
Bicarbonate	mg/L	Quarterly
Nitrate - Nitrogen	mg/L	Quarterly
Sulfate	mg/L	Quarterly
Calcium	mg/L	Quarterly
Magnesium	mg/L	Quarterly
Potassium	mg/L	Quarterly
Sodium	mg/L	Quarterly
Barium	mg/L	Quarterly
Total petroleum hydrocarbons	mg/L	Quarterly
Volatile Organic Compounds (USEPA Method 8260)	µg/L	Quarterly
Constituents of Concern (see methods and analyte list in Table V)		
Total Organic Carbon	mg/L	5 years
Inorganics (dissolved)	mg/L	5 years
Volatile Organic Compounds (USEPA Method 8260B)	µg/L	5 years
Semi-Volatile Organic Compounds (USEPA Method 8270C)	µg/L	5 years
Chlorophenoxy Herbicides (USEPA Method 8151A)	µg/L	5 years
Organophosphorus Compounds (USEPA Method 8141A)	µg/L	5 years

The groundwater monitoring system network shall consist of the following:

<u>Location Identifier</u>	<u>Status</u>
MW-2A	Corrective Action/Detection Well
MW-3A	Corrective Action/Detection Well
MW-4	Detection Well
MW-5	Background Well
MW-6	Corrective action/Detection Well
MW-7	Corrective action/Detection Well
MW-8	Corrective action/Detection Well
MW-9A	Corrective action/Detection Well

Any new or additional wells installed at the Discharger's facility will also be included in the groundwater monitoring system network. Such wells will be designated as evaluation, detection, and/or corrective action and will be included in the required monitoring program(s).

2. Corrective Action Monitoring

The Discharger shall collect and analyze all data necessary to assess the success of corrective action, i.e. source control by installation of the final cover. Corrective action monitoring shall be performed at the groundwater wells listed above as "Corrective Action" wells, and at the soil gas wells listed in Section D.3. Corrective action monitoring shall be used to evaluate the effectiveness of the final cover as a source control measure.

In the quarterly monitoring reports, the Discharger shall report their assessment of the effectiveness of the corrective action as compared to the analytical data from monitoring. This shall include a determination and presentation of the spatial distribution and concentration of each monitoring parameter throughout the affected saturated zones. In conjunction with the assessment, the Discharger shall monitor groundwater, surface water, and the unsaturated zone to evaluate changes in water quality resulting from the corrective action. Based on the data, assessment, and evaluation, the corrective action may be expanded or revised.

3. Soil Gas Monitoring

The Discharger shall operate and maintain a soil gas detection monitoring system that complies with the applicable provisions of Title 27 in accordance with an approved Detection Monitoring Program. The Discharger shall collect, preserve, and transport samples in accordance with the quality assurance/quality control standards contained

in the approved Sample Collection and Analysis Plan. Soil gas samples shall be collected from the monitoring devices and background monitoring devices of the approved soil gas monitoring system, and any additional gas monitoring devices installed as part of this Monitoring and Reporting Program No. R5-2007-0084. The collected samples shall be analyzed for the listed constituents in accordance with the methods and frequency specified in Table II. All monitoring parameters shall be graphed to show historical trends at each monitoring point.

Laboratory tests for volatile organic compounds, total petroleum compounds, methane, and carbon dioxide shall be performed quarterly, beginning in June 2007.

Laboratory results for methane and carbon dioxide values shall be crosschecked with field test results. Field instruments shall be calibrated prior to each use.

TABLE II

SOIL-GAS DETECTION AND CORRECTIVE ACTION MONITORING PROGRAM

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>
Field Parameters		
Methane	%	Quarterly
Carbon Dioxide	%	Quarterly
Pressures (barometric and gas)	inches Hg	Quarterly
Temperatures (ambient and gas)	°C	Quarterly
Instrument calibration	not applicable	each use
Monitoring Parameters		
Volatile Organic Compounds (USEPA Method TO-15)	ug/cm ³	Quarterly
Total petroleum hydrocarbons (USEPA Method TO-3)	ug/cm ³	Quarterly
Methane / carbon dioxide (ASTM Method 1946)	%	Quarterly

4. Leachate And Seepage Monitoring

Leachate that seeps to the surface from the Unit shall be sampled and analyzed for the Monitoring Parameters listed in Table III upon detection. If seepage continues, sampling shall continue on a monthly basis. The volume of leachate shall be *estimated* and reported as Leachate Flow Rate (in gallons per day). Also, refer to Section E.4, Seepage, below.

TABLE III
LEACHATE AND SEEPAGE MONITORING PROGRAM

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>
Field Parameters		
Flow rate	gallons per day	On detection / monthly
Temperature	°C	On detection / monthly
Electrical Conductivity	umhos/cm	On detection / monthly
pH	pH units	On detection / monthly
Turbidity	Turbidity units	On detection / monthly
Monitoring Parameters (see Table V for the analyte list and method)		
Total Dissolved Solids (TDS)	mg/L	On detection / monthly
Chloride	mg/L	On detection / monthly
Carbonate	mg/L	On detection / monthly
Bicarbonate	mg/L	On detection / monthly
Nitrate - Nitrogen	mg/L	On detection / monthly
Sulfate	mg/L	On detection / monthly
Calcium	mg/L	On detection / monthly
Magnesium	mg/L	On detection / monthly
Potassium	mg/L	On detection / monthly
Sodium	mg/L	On detection / monthly
Barium	mg/L	On detection / monthly
Total petroleum hydrocarbons (USEPA Method 8015M)	mg/L	On detection
Volatile Organic Compounds (USEPA Method 8260)	µg/L	On detection
Semi-Volatile Organic Compounds (USEPA Method 8270C)	µg/L	On detection
Chlorophenoxy Herbicides (USEPA Method 8151A)	µg/L	On detection
Organophosphorus Compounds (USEPA Method 8141A)	µg/L	On detection

5. Surface Water Monitoring

The Discharger shall install and operate a surface water detection monitoring system at Duck Creek (upgradient, mid-landfill, and downgradient) that complies with the applicable provisions of §20415 and §20420 of Title 27 in accordance with an approved Detection Monitoring Program. The Discharger shall sample and monitor the parameters listed in Table IV, below for the monitoring points.

TABLE IV
SURFACE WATER DETECTION MONITORING PROGRAM

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>
Field Parameters		
Water depth	feet and 1/10s	Semiannual
Temperature	°C	Semiannual
Electrical Conductivity	µmhos/cm	Semiannual
pH	pH units	Semiannual
Turbidity	Turbidity units	Semiannual
Dissolved oxygen	mg/L	Semiannual
Monitoring Parameters (see Table V for the test methods and analyte list)		
Total Dissolved Solids (TDS)	mg/L	Semiannual
Carbonate	mg/L	Semiannual
Bicarbonate	mg/L	Semiannual
Chloride	mg/L	Semiannual
Nitrate - Nitrogen	mg/L	Semiannual
Sulfate	mg/L	Semiannual
Calcium	mg/L	Semiannual
Manganese	mg/L	Semiannual
Magnesium	mg/L	Semiannual
Potassium	mg/L	Semiannual
Sodium	mg/L	Semiannual
Barium	mg/L	Semiannual
Volatile Organic Compounds (USEPA Method 8260B)	µg/L	Semiannual
Constituents of Concern (see methods and analyte list in Table V)		
Total Organic Carbon	mg/L	5 years
Inorganics (dissolved)	mg/L	5 years
Volatile Organic Compounds (USEPA Method 8260B)	µg/L	5 years
Semi-Volatile Organic Compounds (USEPA Method 8270C)	µg/L	5 years
Chlorophenoxy Herbicides (USEPA Method 8151A)	µg/L	5 years
Organophosphorus Compounds (USEPA Method 8141A)	µg/L	5 years

The Discharger shall establish three monitoring points for surface water detection monitoring. Background and detection monitoring points shall be established as follows: SW-1 (background / upgradient at Duck Creek), SW-2 (mid-landfill at Duck Creek), SW-3 (downgradient of Landfill at Duck Creek). The upgradient location (SW-1) shall be equipped with a device for recording the depth of water in the creek (i.e., staff gauge). For all monitoring and background monitoring points assigned to surface water detection monitoring, samples shall be collected and analyzed for the monitoring

parameters in accordance with the methods and frequency specified in Table IV. Every five years, all surface water monitoring samples shall be collected and analyzed for the constituents of concern specified in Table IV. All monitoring parameters shall be graphed to show historical trends at each sample location, including the water depth in Duck Creek.

6. Facility Monitoring

Facility monitoring shall include annual inspections and storm event inspections.

a. Facility Inspection—Annual

Annually, prior to the anticipated rainy season, but no later than **30 September**, the Discharger shall conduct an inspection of the facility. The inspection shall assess damage to the drainage control system, groundwater monitoring equipment (including wells, etc.), soil gas monitoring system, and shall include the Standard Observations contained in this Order and in **the Standard Provisions**. Any necessary construction, maintenance, or repairs shall be completed by **31 October**. In the Annual Monitoring Report, due **31 January** of each year, the Discharger shall submit a Facility Monitoring Report describing the results of the inspection and the repair measures implemented, including photographs of the problem and the repairs.

b. Storm Events—Inspections

The Discharger shall inspect all precipitation, diversion, and drainage facilities for damage **within 7 days** following *major storm events*. The Discharger shall complete necessary repairs **within 30 days** of the inspection. The Discharger shall report any damage and subsequent repairs within 45 days of completion of the repairs, including photographs of the problem and the repairs.

E. REPORTING REQUIREMENTS

1. Records

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-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.

2. Transmittal Letter

The Discharger shall provide, and accompany with each report, a transmittal letter that explains the essential points of the 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, the Discharger shall state that information in the transmittal letter. The transmittal letter shall also provide 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, and references to previously submitted time schedules as contained in the accompanying report.

3. Compliance Evaluation Summary

Each monitoring report shall include a compliance evaluation summary. The evaluation 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 Sampling 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 run-off/run-on control facilities.
- f. A summary and certification of completion of all Standard Observations for the Unit, for the perimeter of the Unit, and for the receiving waters. Standard observations for INACTIVE or CLOSED landfill units shall be conducted monthly during the wet season (1 October to 30 April) and quarterly during the dry season (1 May to 30 September). 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.

4. Seepage

The Discharger shall report by telephone any seepage from the disposal area **immediately** after it is discovered. The Discharger shall file a written report with the Regional Water 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 in gallons per day;

- 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 Monitoring Parameters listed in Table III of this Monitoring and Reporting Program No. R5-2007-0084 and an estimated date that the results will be submitted to the Regional Water Board; and
- e. Corrective measures underway or proposed, and corresponding time schedule.

5. Annual Monitoring Summary Report

The Discharger shall submit an **Annual Monitoring Summary Report** to the Regional Water Board covering the reporting period of the previous monitoring year. This report shall contain the following information:

- 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. All historical monitoring data, including data for the previous year, shall be submitted in tabular form as well as in an excel file format. The Regional Water Board regards the submittal of data in hard copy and in digital format as "...the form necessary for..." statistical analysis [Title 27 CCR §20420(h)], in that this facilitates periodic review by the Regional Water 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 area and elevations in which repairs to settlement areas have been completed during the previous calendar year and a comparison to final closure design contours.
- e. A written summary of the monitoring results, indicating any changes made or observed since the previous annual report
- f. An evaluation of the effectiveness of the surface water control facilities. A description of any/all control facilities' failures and repairs shall be included along with the evaluation.

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

Ordered by: _____
PAMELA C. CREEDON, Executive Officer

_____ 22 June 2007
(Date)

MLB: 06/22/07

TABLE V

CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS

<u>Inorganics (dissolved)</u>	<u>USEPA Method</u>
Aluminum	6010
Antimony	7041
Barium	6010
Beryllium	6010
Cadmium	7131A
Chromium	6010
Cobalt	6010
Copper	6010
Silver	6010
Tin	6010
Vanadium	6010
Zinc	6010
Iron	6010
Manganese	6010
Arsenic	7062
Lead	7421
Mercury	7470A
Nickel	7521
Selenium	7742
Thallium	7841
Cyanide	9010B
Sulfide	9030B
<u>General Chemistry</u>	<u>USEPA Method</u>
Total Dissolved Solids	160.1
Carbonate	300 Series
Bicarbonate	300 Series
Chloride	300 Series
Nitrate - Nitrogen	300.00
Sulfate	300 Series
Calcium	6010
Magnesium	6010
Potassium	6010
Sodium	6010
Conductivity	120.1
<u>Organic Compounds</u>	<u>USEPA Method</u>
Total organic carbon	9060
Total petroleum hydrocarbons (gas and diesel)	8015M

TABLE V

CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS

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)
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

TABLE V

CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS

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
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

TABLE V

CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS

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
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

TABLE V

CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS

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
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-butylNitrosamine)
N-Nitrosodiethylamine (DiethylNitrosamine)
N-Nitrosodimethylamine (DimethylNitrosamine)
N-Nitrosodiphenylamine (DiphenylNitrosamine)
N-Nitrosodipropylamine (N-Nitroso-N-dipropylamine; Di-n-propylNitrosamine)
N-Nitrosomethylethylamine (MethylethylNitrosamine)
N-Nitrosopiperidine
N-Nitrosopyrrolidine
5-Nitro-o-toluidine
Pentachlorobenzene
Pentachloronitrobenzene (PCNB)
Pentachlorophenol
Phenacetin
Phenanthrene
Phenol
p-Phenylenediamine
Polychlorinated biphenyls (PCBs; Aroclors)
Pronamide

TABLE V

CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS

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

Chlorophenoxy Herbicides

USEPA Method 8151A

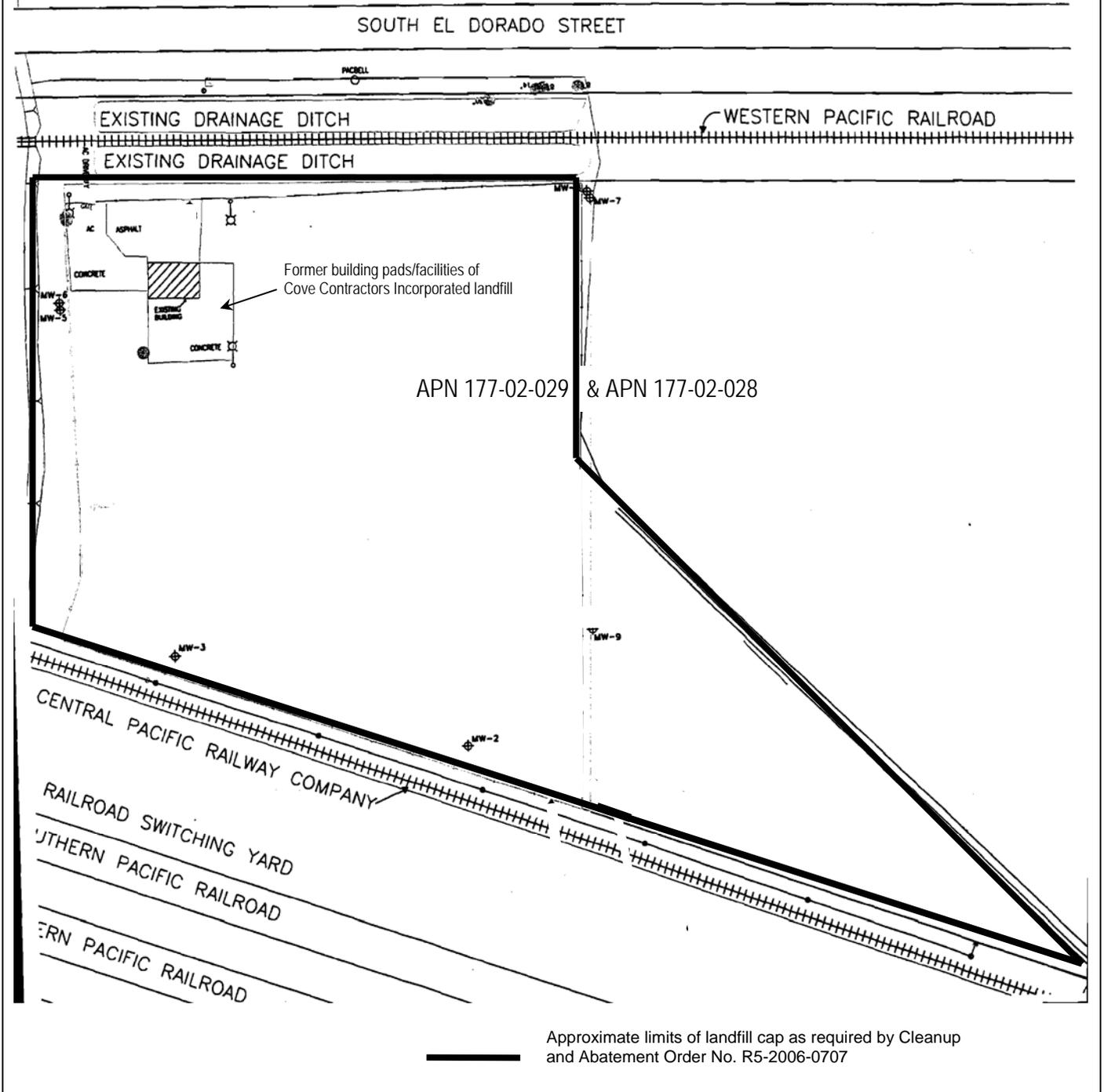
2,4-D (2,4-Dichlorophenoxyacetic acid)
Dinoseb (DNBP; 2-sec-Butyl-4,6-dinitrophenol)
Silvex (2,4,5-Trichlorophenoxypropionic acid; 2,4,5-TP)
2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)

Organophosphorus Compounds

USEPA Method 8141A

Atrazine
Chlorpyrifos
0,0-Diethyl 0-2-pyrazinyl phosphorothioate (Thionazin)
Diazinon
Dimethoate
Disulfoton
Ethion
Methyl parathion (Parathion methyl)
Parathion
Phorate
Simazine

Waste Discharge Requirements Order No. R5-2007-0084
Cove Contractors Landfill
San Joaquin County



Drawing Reference:
Clayton Group Services

Site Map
Cove Contractors, Inc. Landfill
3200 & 3242 South El Dorado Street
Stockton, San Joaquin County, California



MONITORING WELL WORKPLAN AND REPORT REQUIREMENTS

Prior to installation of any monitoring well, the Discharger shall submit a workplan containing, at a minimum, the information listed in Section 1, below. Wells may be installed after staff approves the workplan. Upon installation of the monitoring wells, the Discharger shall submit a well installation and analytical report, which shall include the information contained in Section 2, below. All workplans and reports must be prepared under the direction of, and signed by, a registered geologist or civil engineer licensed by the State of California.

SECTION 1 - Monitoring Well Installation Workplan

A. General Information:

- Purpose of well installation project
- Copies of County Well Construction Permits (to be submitted after workplan review)
- Monitoring well locations and rationale
- Survey details
- Equipment decontamination procedures
- Health and safety plan
- Topographic map showing any existing wells, proposed wells, waste handling facilities, utilities, and other major physical and man-made features.

B. Drilling Details:

- Describe drilling technique
- Sampling intervals and logging methods

C. Monitoring Well Design:

- Casing diameter and centralizer spacing (if needed)
- Borehole diameter
- Depth of surface seal
- Well construction materials
- Diagram of proposed well construction details
- Type of well cap, bottom cap either screw on or secured with stainless steel screws
- Size of perforations and rationale
- Grain size of sand pack and rationale
- Thickness and position of bentonite seal and sand pack
- Depth of well, length and position of perforated interval

D. Well Development:

- Method of development to be used
- Method of determining when development is complete
- Parameters to be monitored during development
- Method of development water storage and disposal

E. Well Survey:

- Identify the Licensed Land Surveyor or Civil Engineer that will perform the survey
- Describe the well features to be surveyed (i.e. top of casing, vertical coordinates, etc.)
- Vertical accuracy shall be to at least 0.01 foot

F. Well Sampling:

- Map showing each sample location and sample identification number
- Minimum time after development before sampling (48 hours)
- Well purging method and amount of purge water
- Table with sample containers, collection method, and preservation method
- Table with sample volumes, sample containers, preservation agents, and hold times
- Tables with each analyte, analytical method, and practical quantitation limit
- Table with analysis to be performed at each sample location
- QA/QC procedures (field and laboratory)

G. Water Level Measurement:

- The elevation reference point at each monitoring well shall be within 0.01 foot. Ground surface elevation at each monitoring well shall be within 0.01 foot.
- Method and time of water level measurement shall be specified.

H. Proposed time schedule for work.

SECTION 2 - Monitoring Well Installation and Analytical Report

A. Well Construction:

- Number and depth of wells drilled
- Date(s) wells drilled and completed
- Description of drilling and construction
- Scaled map of facility site features including monitoring wells, buildings, storage ponds, waste piles, etc.
- A well construction diagram for each well must be included in the report, and must contain the following details:
 - Total depth drilled
 - Drilling Contractor and driller name
 - Depth of open hole (same as total depth drilled if no caving occurs)
 - Method and materials of grouting excess borehole
 - Footage of hole collapsed
 - Length of slotted casing installed
 - Depth of bottom of casing
 - Depth to top of sand pack
 - Thickness of sand pack
 - Depth to top of bentonite seal
 - Thickness of bentonite seal

- Thickness of concrete grout
- Boring diameter
- Casing diameter
- Casing material
- Size of perforations
- Well elevation at top of casing
- Stabilized depth to groundwater
- Date of water level measurement
- Monitoring well number
- Date drilled
- Location

B. Well Development:

- Date(s) of development of each well
- Method of development
- Volume of water purged from well
- How well development completion was determined
- Method of effluent disposal
- Field notes from well development shall be included in report.

C. Well Survey:

- Tabulated data with the coordinate system, bench marks, and horizontal control points
- Tabulated data with monitoring location and horizontal and vertical coordinates
- Registered Engineer or Licensed Surveyor's report and field notes in appendix
- Describe the measuring points (i.e. ground surface, top of casing, etc.)

D. Well Sampling and Analytical Reports:

All analytical reports prepared for the Discharger's facility shall contain, at a minimum, the information listed below

- Tabulated field and analytical data with sample location identification numbers, water quality goals, field/analytical results, and highlighted data that is outside water quality goals
- Appendix with laboratory reports, COCs, and laboratory signatures on reports.
- Laboratory reports showing results, reporting units, MDLs, PQLs, "trace" results, flagged results, matrix effects, and QA/QC results.
- Site map(s) showing iso-concentration lines for Constituents of Concern
- Piper Diagrams and Stiff Plots comparing upgradient and downgradient water quality parameters.
- Discussion of results including, but not limited to, discussion of violations, exceedances, if all field and monitoring parameters were sampled and analyzed, description of groundwater flow direction, comparison of analysis and field sampling results to background and water quality goals, list of potential

- constituents of concern at each sampling location, and other relevant discussions.
- Certification statement signed by an authorized representative.
 - Report stamped by California Licensed engineer or geologist.

INFORMATION SHEET

WASTE DISCHARGER REQUIREMENTS ORDER NO. _____, R5-2007-0084
POST-CLOSURE MAINTENANCE AND MONITORING
COVE CONTRACTORS LANDFILL
SAN JOAQUIN COUNTY

Cove Contractors, Inc. and El Dorado Property Management, Inc. (Discharger) own the Cove Contractors, Incorporated landfill. The landfill is an unlined and unclassified landfill that was developed in a 21-acre abandoned clay pit. The southeastern 10-acres was mined from 1910 to 1955 and the clay was used in brick making operations. The brick manufacturing ceased in 1955; however, the quarrying for clay continued until 1967. After 1955, the Discharger began backfilling the clay quarry pit with dirt and broken concrete from construction contractors. Later on, the landfill started accepting auto shredder waste. This waste is in a 9-acre portion of the landfill. Discharge to the facility ceased in 1988. The facility is located at 3200 and 3242 South El Dorado Street, in Stockton, San Joaquin County.

The Discharger submitted Revised Landfill Closure and Post-Closure Maintenance Plans for the facility in January 2006 under Cleanup and Abatement Order No. R5-2006-0707. Regional Water Board staff approved the revised plans on 26 February 2006. The final cover is scheduled for completion in July 2007, in accordance with the approved closure plans. Closure includes a cover comprised of a two-foot thick foundation layer, a one-foot thick clay barrier layer, and a one-foot thick vegetative layer.

These Waste Discharge Requirements address post-closure maintenance and monitoring of the landfill.

There are seven groundwater monitoring wells in detection and corrective action monitoring (MW-2A, MW-3A, MW-5, MW-6, MW-7, MW-8, and MW-9A) due to historical inorganics exceeding water quality goals (metals, TDS, minerals, and conductivity), and organic detections (total petroleum hydrocarbon, polychlorinated biphenyls, and VOCs) in groundwater.

Site drainage is to Duck Creek, a tributary to Walker Slough, which flows into San Joaquin River Delta.

MLB: 5/25/2007