CALIFORNIA
Water Boards

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ENVIRONMENTAL PROTECTION

Santa Ana Regional Water Quality Control Board

September 30, 2013

State Water Resources Control Board, Division of Clean Water Program – Leslie Graves (Leslie.Graves@waterboards.ca.gov)
State Water Resources Control Board, Office of Chief Counsel – David Rice (David.Rice@waterboards.ca.gov)
CalRecycle, Waste Permitting, Compliance, and Mitigation Division, Sacramento – Susan Markie (Susan.Markie@Calrecycle.ca.gov)
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Riverside County Department of Environmental Health Services, LEA – Greg Reyes (gjreyes@rivcocha.org)

ORDER NO. R8-2013-0003, RENEWAL OF WASTE DISCHARGE REQUIREMENTS FOR THE LAMB CANYON SANITARY LANDFILL, RIVERSIDE COUNTY WASTE MANAGEMENT DEPARTMENT

Ladies and Gentlemen:

Enclosed is a copy of tentative Order No. R8-2013-0003 for your review and comments. Order No. R8-2013-0003 renews the existing waste discharge requirements for the Lamb Canyon Landfill (LCL).

A copy of the tentative Order will also be posted on our website at: *http://www.waterboards.ca.gov/santaana/board_decisions/tentative_orders/index.shtml* on or after September 30, 2013.

This Order is scheduled for consideration by the Regional Board at the **November 1, 2013** regular Board meeting. The Board meeting will start at 9:00 a.m. and will be held

at the Irvine Ranch Water District, 15600 Sand Canyon Avenue, Irvine, CA 92618. Although all comments that are provided up to and during the public hearing on this matter will be considered, receipt of comments by **October 11, 2013**, would be appreciated so that they can be used in the formulation of the draft Order that will be transmitted to the Board two weeks prior to the hearing. The draft Order may contain changes resulting from comments received from you and others. To view and/or download a copy of the revised draft Order, please access our website at *http://www.waterboards.ca.gov/santaana/board_info/agendas/2013_agendas.shtml* on or after October 21, 2013.

If you have any questions, please contact Joanne Lee of my staff at (951) 782-3291, Joanne.Lee@waterboards.ca.gov, or you may contact me at (951) 782-3295, Cindy.Li@waterboards.ca.gov.

Sincerely,

Cindy Li, Chief
Land Disposal & DoD Program Section

Enclosures: Tentative Order No. R8-2013-0003 and Staff Report

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State of California
California Regional Water Quality Control Board
Santa Ana Region

Staff Report

November 1, 2013

ITEM:

SUBJECT: Renewal of Waste Discharge Requirements for the Lamb Canyon Sanitary Landfill, Riverside County Waste Management Department, Order No. R8-2013-0003

DISCUSSION:

The Riverside County Waste Management Department (RCWMD, hereinafter discharger), owns and operates the Lamb Canyon Sanitary Landfill (LCL), a Class III municipal solid waste (MSW) landfill located at 16411 Lamb Canyon Road, Beaumont, California.

The applicable regulations governing the discharge of non-hazardous MSW to land are contained in Division 2, Title 27, California Code of Regulations (Title 27) and the Code of Federal Regulations Subpart D of Part 258 of Title 40 (Subtitle D). Landfill operations at the LCSL are currently regulated under waste discharge requirements (WDRs) Order No. 81-127, and its amendments, Orders No. 98-99, 01-18, R8-2006-0054, and R8-2007-0044.

This Order consolidates and updates the existing WDRs for LCL, and prescribes discharge specifications and monitoring and reporting requirements for the disposal of non-hazardous municipal solid wastes at LCL. The existing WDRs are being revised to include requirements that are consistent with the current laws and regulations and to provide current operating conditions at the LCL. The revised requirements are consistent with Title 27, Subtitle D Regulations, the Basin Plan, and other state and federal laws and regulations, and are considered to be adequate for the protection of the beneficial uses of the waters of the region.

RECOMMENDATION:

Adopt Order No. R8-2013-0003 as presented.

Comments were solicited from the following agencies:

State Water Resources Control Board, Division of Clean Water Program – Leslie Graves (Leslie.Graves@waterboards.ca.gov)
State Water Resources Control Board, Office of Chief Counsel – David Rice (David.Rice@waterboards.ca.gov)
CalRecycle, Waste Permitting, Compliance, and Mitigation Division, Sacramento – Susan Markie (Susan.Markie@Calrecycle.ca.gov)
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Riverside County Waste Management Department - Todd Shibata (tshibata@co.riverside.ca.us)
Riverside County Department of Environmental Health Services, LEA – Greg Reyes (gjreyes@rivcocha.org)

STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SANTA ANA REGION

ORDER NO. R8-2013-0003

WASTE DISCHARGE REQUIREMENTS FOR RIVERSIDE COUNTY WASTE MANAGEMENT DEPARTMENT

LAMB CANYON LANDFILL
CLASS III SOLID WASTE DISPOSAL SITE
BEAUMONT, RIVERSIDE COUNTY

The California Regional Water Quality Control Board, Santa Ana Region (hereinafter Regional Board), finds that:

1. The Riverside County Waste Management Department (hereinafter Discharger) owns and operates the Lamb Canyon Landfill (LCL). LCL is a Class III, non-hazardous municipal solid wastes (MSW) landfill. The landfill site is located within the unincorporated area of the Riverside County, within a portion of Sections 20, 21, 28, 29, and 30, T3S, R1W, SBB&M, at latitude 33°52'12" and longitude 117°7'12". The location of the facility is shown on Attachment A. The site address is 16411 Lamb Canyon Road, Beaumont, CA 92223. All attachments and tables for this Order are hereby included as part of Monitoring and Reporting Program No. R8-2013-0003 (the MRP).

2. Landfilling operations at LCL began in 1970. The landfill property currently encompasses 1,189 acres, 580.5 acres of which are permitted for landfill operation, and 144.6 acres of which are currently used or being developed for waste disposal. Waste management units (WMUs), Phase I and Phase II (Stages 1 through 3), of the landfill site are shown on Attachment B.

3. The discharge of waste to land is regulated by California Code of Regulations, Title 27, Division 2, Subdivision 1 (Title 27)[1]. Definitions of terms and acronyms used in this Order are included in Attachments C-1 and C-2, respectively.

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[1] On July 18, 1997, the State Water Resources Control Board and the California Department of Resources Recycling and Recovery (CalRecycle) enacted the Solid Waste Requirements, Subdivision 1 of new Division 2, Title 27, California Code of Regulations (CCR). Title 27 replaced the non-hazardous waste portion of CCR, Title 23, Division 3, Chapter 15.

4. **Facility Waste Discharge Requirements** - LCL currently operates under Waste Discharge Requirements (WDRs) Order No. 81-127, as amended by the following orders (hereinafter collectively referred to as the WDRs):

Order No.	Reason for WDR amendment	Date adopted
93-57	To comply with new federal Subtitle D regulations for MSW landfills within the region.	September 10,1993
94-17	To prescribe uniform drainage and erosion control system requirements for MSW landfills per Chapter 15 of Title 23 within the region.	March 11, 1994
98-99	To require all MSW landfills within the region to comply with federal Subtitle D regulations and the new Title 27 precipitation drainage and erosion control requirements. Order No. 98-99 is a blanket order that replaces Orders No. 93-57 and 94-17.	November 20, 1998
01-18	To allow the use of engineered alternatives to the prescriptive standard design for the base and sideslope liner systems, and to require the discharger to comply with certain provisions and monitoring requirements for construction of the liner systems.	March 2, 2001
R8-2006-0054	To allow the acceptance of designated waste, including treated woodwaste, for disposal at composite-lined units of the landfill.	August 25, 2006
R8-2007-0044	To allow an engineered alternative design for the leachate collection and removal system (LCRS).	September 7, 2007

The WDRs contain discharge requirements, provisions, and monitoring and reporting requirements in accordance with Title 27, for landfill siting, design, construction, operations, drainage and erosion control, water quality monitoring, and groundwater remediation, when necessary. This Order consolidates requirements contained in the existing WDRs and updates the requirements to be consistent with the current laws and regulations.

5. **Waste sources, types, and quantities** - The LCL is currently permitted by CalRecycle to accept a maximum daily tonnage of 5,000 tons per day of MSW. The LCL receives a daily average of approximately 2,000 tons per day of MSW from the Cities of Beaumont, Banning, San Jacinto, Hemet, and the unincorporated communities of Pine Cove, Idyllwild, Cherry Valley, Cabazon, Homeland, Romoland, Winchester, Coachella Valley, and Edom Hill. This daily average also includes MSW received from the East Valley Transfer Station in San Bernardino County. Wastes accepted for disposal at LCL include municipal waste, agricultural waste, inert material, construction demolition/renovation waste, tires, dead animals, gypsum/drywall, appliances,

non-hazardous high moisture content wastes (HMCW)[2], and treated woodwaste (TWW).

6. **Waste containment system[3] (WCS) design -** Title 27, §20330, and 40 CFR Part 258, stipulate that, as of October 9, 1993, a WCS which includes a composite liner[4] of a prescriptive standard design (PSD) must be installed for lateral expansion beyond the existing footprint at MSW landfills. This PSD must include, at a minimum, an upper synthetic flexible membrane[5] liner (FML) that is at least 60-mil[6] thick (if a high density polyethylene FML is used), and a lower component of soil that is at least two feet thick with a hydraulic conductivity no more than (≤) $1x10^{-7}$ cm/s.

7. Title 27, §20080 and State Water Resources Control Board (State Board) Resolution No. 93-62 allow for engineered alternative designs (EADs) to the (PSD), provided the performance criteria contained in 40 CFR Part 258.40(a)(1) and (c), and Title 27 §20080(b), are satisfied. In compliance with the federal Subtitle D regulations and the site WDRs, the Discharger has equipped each WMU with a WCS for lateral landfill expansion since October 9, 1993. In accordance with the site WDRs and Title 27 §20080(b), the Regional Board has approved EADs to the PSD for the WCS at the LCL site. The approved EADs for the base and sideslope liner systems are described in Attachment D-1.

8. Currently, approximately 74 acres of the WMUs (Phase 1, which delineates the October 1993 waste footprint) is unlined, and approximately 50 acres of the WMUs (Phase 2, Stages 1 through 3), are lined. The construction of its next lateral expansion, approximately 20 acres in size, Phase 2, Stage 4, has commenced in March 2013, and is projected to complete in March 2014. All WMUs at LCL are shown in Attachment B. The liner systems installed for Phase 2, Stages 1 through 3 and proposed for Phase 2, Stage 4 are described in Attachment D-2.

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[2] Non-hazardous HMCW is defined as waste with moisture content greater than 50% or waste containing less than 50% solids, by weight. HMCW accepted at LCL include, but not limited to, beer, wine, milk, eggs, condiments, and wastes generated from storm drain cleaning, roadway grinding, drilling operations, filtering solids, and other similar activities. .

[3] The waste containment or liner system includes the landfill liners and leachate collection and recovery system (LCRS), which may also include subdrains, and a protective soil layer placed over the liner and LCRS system to protect the liners and minimize releases from the WMUs.

[4] A composite liner consists of a membrane of flexible artificial material directly overlying a layer of engineered natural material, which is installed beneath and on the sides of a WMU, and which acts as a barrier to both vertical and lateral fluid movement.

[5] A membrane or geomembrane is a thin, impermeable material used as a liquid or vapor barrier.

[6] A "mil" is a unit of length equal to 1/1000 inch (0.0254 millimeters), used in measuring the diameter of wire, fabrics, or geosynthetics. "Geosynthetic" is a general term for all synthetic materials used in geotechnical engineering applications such as geotextiles, geocomposites, geogrids, geonets, and geomembranes.

9. The Discharger has been required by the site WDRs and will continue to be required to implement a Construction Quality Assurance and Quality Control (CQA/QC) program for all liner system installation projects. This CQA/QC program is intended to identify and correct any problems associated with the liner system construction in conformance with the approved construction documents. The goal of the CQA/QC program is to prevent any potential damages, tears or other imperfections in the base and side-slope liner systems during installation.

10. **Regional and Site Geology** - LCL is located within the Peninsular Ranges Geomorphic Province and is part of the Perris Structural Block. The site is primarily underlain by the Pliocene-Pleistocene San Timoteo Formation. The San Timoteo Formation at the site consists of weakly to moderately indurated siltstones and sandstones with moderate amounts of gravels. Minor alluvial deposits are located within the canyon floor. The geologic structure of the San Timoteo Formation at the site is characterized by slightly tilted beds, generally dipping towards the west with dips ranging from 7° to 28°.

11. No known active faults have been mapped on or adjacent to the landfill property. Active faults are defined as Holocene epoch faults that have exhibited movement in the last 11,000 years. The closest active fault to the site is the San Jacinto Fault, which is about three mile to the southeast of the site. The most prominent active fault in the area, the San Andreas Fault, is about 12 miles to the northwest of the site.

12. **Seismic design** - Title 27, §20370 requires that Class II WMUs be designed to withstand a maximum credible earthquake (MCE) and Class III WMUs be designed to withstand a maximum probable earthquake (MPE) without damage to the foundation or to the structures which control leachate, surface drainage, erosion, or gas. This Regional Board requires that Class III landfills in the region to be designed to withstand an MCE event for permanent slopes or slopes at final configuration.

13. **Regional and Site Hydrogeology** – The subsurface at LCL has been divided into water bearing and non-water bearing formations. The deep sections of alluvium in the San Jacinto Valley floor comprise the water bearing formation whereas the San Timoteo Formation and the other surrounding hills and mountains comprise the non-water bearing formations. LCL overlies the San Timoteo Badlands, a non-water bearing zone. The groundwater beneath the LCL is generally unconfined. Groundwater flows southwesterly, approximating the local bedding dip and topographic descent of the site, with a hydraulic gradient of approximately 0.06 foot/foot and at a flow rate of approximately 0.8 foot/day. Depths to groundwater range from 80 to 240 feet beneath the site. No water bodies or seeps have been identified within one mile of the LCL. However, numerous springs and seeps have been located in

Laborde Canyon and Lamb Canyon where the San Timoteo Badlands and the San Jacinto Valley alluvium are juxtaposed.

14. This Order is in conformance with State Board Resolution No. 93-62 and it requires the implementation of all applicable Title 27 requirements and all additional federal requirements under 40 CFR Part 258.58 for the protection of water quality.

15. **Environmental Control Systems** - The environmental control systems at LCL consist of a landfill gas (LFG) collection and extraction system, a LFG condensate collection and removal system, a leachate collection and removal system (LCRS) over the lined WMUs, a vadose zone monitoring system, and a groundwater monitoring system.

16. Leachate collected from the lined WMUs is diverted to an above-ground 10,000-gallon storage tank, installed within a secondary containment structure. The LFG extraction and collection at LCL officially began in June 2002. The existing landfill gas collection and extraction system (LFGCES) consists of 14 horizontal collectors, four leachate clean-out collectors, five native gas wells, and 42 vertical wells located in each operating or closed WMUs. The LFG condensate is currently collected and conveyed through a series of collection pipes that drain by gravity to two 4,000-gallon and one 3,800-gallon, double-walled storage tanks and a 65-gallon, double-walled sump. A series of LFG monitoring probes are located around the perimeter of the existing landfill footprint and along the southern boundary of the property. Additional gas extraction wells and perimeter gas monitoring probes will be installed as the site expands. Leachate and gas condensate collected at the site is used for dust control over the lined WMUs.

17. **Water Quality Monitoring** – The Discharger has been conducting water quality monitoring since 1989. The current groundwater monitoring network for LCL consists of three background wells, LC-2, LC-6, and LC-7, and one compliance well, LC-9, as shown on Attachment E. Water quality monitoring, sampling, and analyses are currently conducted and reported on a semi-annual basis.

18. **Known Contamination** - At LCL, volatile organic compounds (VOCs) such as Trichloroethane, Chloroform, Methylene Chloride, and Tetrachloroethene had been detected in a number of groundwater monitoring wells. As required by the site WDRs, in September 1999, the Discharger initiated Evaluation Monitoring Program/Assessment Monitoring Program. In September 2003, the Discharger initiated a Corrective Action Program in accordance Title 27, §20415 and 40 CFR 258. The corrective action consists of operation of a landfill gas collection and extraction system (LFGCES) at the landfill site since June 2002.

19. In December 2011, as requested by RCWMD, Board staff evaluated the historical water quality data for LCL and determined that no volatile organic compounds (VOCs) have been detected in any of the existing monitoring wells above the method detection limits (MDLs) since August 2008, and no statistically measurable significant increases over the background or MDLs have been detected in Compliance Well LC-9 since its installation in August 2000. This Order will place LCL under a Detection Monitoring Program (DMP) in accordance with Title 27, §20420.

20. **Gas Condensate and Leachate Monitoring** - The Discharger has been monitoring gas condensate and leachate annually since 2001 and 2002, respectively, for constituents listed in Appendix II of 40 CFR part 258 (see Attachment F), and re-testing it for newly discovered ones, in order to create a constituents of concern (COC) list containing only those Appendix II constituents that could be released from the landfill site. This Order narrows the scope of the COC list to include, from Appendix II, only those constituents that have been detected and verified in leachate and gas condensate. By monitoring for detectable COCs, and any foreseeable breakdown products, the Discharger will be monitoring for all Appendix II constituents that could be released from the landfill site. This is the manner in which this Order meets the requirements of 40 CFR Part 258.55(b).

21. The volatile organic compounds (VOCs) in the Appendix I (see Attachment G) list of 40 CFR Part 258 are also a subset of the Appendix II constituents; the leachate and gas condensate sampling at the site also serves as a basis for narrowing the scope of VOCs which the Discharger is required to monitor to include only those Appendix I VOCs that have ever been detected in leachate and gas condensate and verified by a single retest. This is the manner in which this Order implements 40 CFR Part 258.54(a)(1).

22. Under this Order, any Appendix I VOCs detected in the annual October leachate and gas condensate analyses and confirmed in the April retest and any COCs detected and confirmed in a single retest in a compliance well during a five-year COC scan are grouped as Monitoring Parameters (MPars).

23. Under this Order, the Discharger is required to document and respond to the compliance status of each MPar individually at each compliance well separately (*i.e.* the Discharge will track the compliance status of each such "well/MPar pair" separately). At any given time, each well/MPar pair will be in one of two compliance status conditions, "Detection Mode" or "Tracking Mode". Prior to the MPar's exhibiting a measurably significant exceedance at a given well (that is believed to be associated with an unauthorized release), that well/MPar pair will be in "Detection Mode" and monitoring will involve

statistical or non-statistical data analysis designed to detect an increase at that well for that MPar. Once a well/MPar pair exhibits a "measurably significant increase" (that is believed to be associated with an unauthorized release) it will change to "Tracking Mode", which will then place the entire facility in Corrective Action Program, and monitoring will involve concentration-versus-time plotting to document changes in the release. Once in "Tracking Mode", a well/MPar pair can return to "Detection Mode" only upon completion of the proof period to demonstrate the successful completion of corrective action.

24. To eliminate the adverse effects of geographic variation of water quality at the site, this Order requires an intra-well comparison of monitoring for all well/MPar pairs for which this approach is feasible. Under this approach, each well's historic data is used as the reference against which new data is tested.

25. This Order minimizes the occurrence of false-positive indications in three ways:

    a. It includes a non-statistical data analysis method, meeting Title 27, §20415(e)(8) & (9), that collectively analyzes all MPars, at a given well, whose background data exceeds its respective Method Detection Limit (MDL) less than 10% of the time;

    b. All statistical and non-statistical data analysis methods used on well/MPars in Detection Mode data analyses include a single composite retest as described under Title 27, §20415(e)(8)(E); and

    c. It applies a sampling and analysis methodology that minimizes the number of constituents that are subject to statistical or non-statistical data analysis.

26. To assure compliance with the requirements and considerations under 40 CFR Part 258.55 through 258.57 and Title 27, §20425 in the simplest way possible, this Order:

    a. Requires statistical or non-statistical data analysis, at any given compliance well, only for those MPars that are in "Detection Mode" at that well;

    b. Requires concentration-versus-time plotting, at any given compliance well, for all MPars that are in "Tracking Mode" at that well;

c. Requires annual leachate sampling and retesting of Appendix II constituents that are not already on the COC list, to update the COC list to include any new Appendix II constituents detected, and to update the MPar list to include only those Appendix I VOCs that the landfill could release; and

d. Requires a periodic (five yearly) presence/absence screening of COCs, at all appropriate monitoring wells to update the MPar list to include all COCs that are detectable in groundwater.

27. Given that "Detection Mode" testing can be compromised by a COC arriving at any background well either as a result of the release (e.g., through advective flow, in the unsaturated zone, of gas-phase VOCs in LFG) or through the arrival of such a constituent from an upgradient source, this Order implements a simple means for identifying such anomalies, requires the Discharger to investigate their cause, and initiates appropriate adjustments to the monitoring program.

28. Title 27, §20240(c) stipulates that there shall be a five-foot separation zone between MSW and the highest anticipated elevation of underlying groundwater. The historic highest groundwater level observed at the LCL is about 120 feet below the bottom of the refuse.

29. The California Water Code (CWC) §13263(a) requires that waste discharge requirements implement relevant water quality control plans. The requirements contained herein are intended to assure compliance with the Water Quality Control Plan for the Santa Ana River Basin (the Basin Plan), including water quality objectives and beneficial uses.

30. The Regional Board adopted a revised Basin Plan that became effective on January 24, 1995. The Basin Plan specifies beneficial uses and water quality objectives for waters in the Santa Ana Region. The water quality objectives and the groundwater basin boundaries, now known as groundwater management zones, were updated in February 2008.

31. **Groundwater Management Zone and beneficial uses** - Groundwater from the fractured bedrock and alluvial deposits beneath the landfill property flows into the San Jacinto-Upper Pressure Groundwater Management Zone, the beneficial uses of which include:

    a. Municipal and domestic supply,
    b. Agricultural supply,
    c. Industrial service supply, and
    d. Industrial process supply.

32. **Surface drainage** from the site is tributary to the San Jacinto River, Reach 4, the intermittent beneficial uses of which include:

    a. Agricultural supply,
    b. Groundwater recharge,
    c. Water contact recreation,
    d. Non-contact water recreation,
    e. Warm Freshwater Habitat, and
    f. Wildlife habitat.

33. **Storm water discharges** from LCL are regulated by State Board's Water Quality Order No. 97-03-DWQ, NPDES General Permit No. CAS000001, for discharges of storm water associated with industrial activities (Industrial General Permit). Construction activities associated with landfill operations and site maintenance, improvement, or development projects (such as expansion) at the site are also covered under the Industrial General Permit.

34. **Precipitation -** The site is located in an arid to semi-arid environment. Average annual site precipitation is estimated to be approximately 17.76 inches based on precipitation data for the Beaumont Station from the Western Regional Climatic Center.

35. **Drainage and erosion control** – Surface drainage control facilities at the site are designed, constructed, and maintained to collect and divert runoff resulting from a 100-year, 24-hour frequency storm event. The site drainage control system is designed to divert run-on away from the WMUs and route onsite surface runoff away from the WMUs. Onsite drainage is controlled by lateral sheet flow and by intercepting berms and benches. Sheet flow erosion is minimized by reducing velocity and discharge using a shallow gradient on top deck areas and by limiting the size of runoff areas as much as possible. Benches intercept sheet flow runoff from side slopes to prevent excessive erosion. Runoff on benches is directed to downdrains and drainage channels that lead to the sedimentation basins. Hydroseeding and shredded greenwaste mulch have been applied onto sideslopes at the site to minimize erosion.

36. **Daily and intermediate cover materials** – LCL uses a minimum of six inches of compacted soil as daily cover material and/or approved alternative daily cover materials, such as geosynthetic blankets or tarps, at the end of each working day. A layer of at least twelve inches of compacted intermediate soil cover, followed by an erosion control layer utilizing greenwaste mulch, is placed on all landfill surfaces where no additional refuse will be deposited within 180 days.

37. **Post-closure land use** - The proposed post-closure land use has not been

determined at this time. However, any post-closure land use would have to be compatible with the protection of the closed facility and the environment from landfill releases. This will be addressed in the final site closure and post-closure maintenance plan, at which time the Discharger will conduct an environmental study to comply with the California Environmental Quality Act (CEQA). The LCL is currently estimated to close in 2023.

38. The Discharger has indicated in its Preliminary Closure & Post-closure Maintenance Plan (PC&PCMP) that after completion of site closure construction, it will file with the Recorder of the Riverside County that the future site use is restricted in accordance with its Post-closure Maintenance Plan (PCMP), including any other post-closure land use alternatives approved in writing by the responsible regulatory agencies. In addition, deed notation shall be added to property profile to include, in perpetuity, a notation advising any potential purchaser of the property that:

    a. The parcel has been used as a MSW landfill;
    b. Unless other post-closure land use alternative(s) are approved via JTD Addendum by CalRecycle and the Regional Board, the land use options for the parcel are restricted in accordance with the post-closure land uses set forth in the PCMP; and
    c. In the event that the Discharger defaults in carrying out either the PCMP or any corrective action needed to address a release, the responsibility for carrying out such work falls to the property owner, if other than the Discharger.

39. **CEQA compliance** - This project involves the adoption of waste discharge requirements for an existing facility for which waste discharge requirements need to be updated, and as such, is categorically exempt from the California Environmental Quality Act in accordance with Section 15301, Chapter 3, Title 14, California Code of Regulations. This Order requires that the Discharger submit a Joint Technical Document (JTD) addendum for any proposed changes to the facility not covered in the Order. The JTD addendum must include documentation showing that the project is in compliance with CEQA.

40. The Regional Board has notified the Discharger and interested agencies and persons of the Board's intent to update the existing waste discharge requirements for the discharger, and has provided them with an opportunity to submit their written views and recommendations.

41. The Regional Board, in a public meeting, heard and considered all comments pertaining to updating the existing waste discharge requirements for LCL.

IT IS HEREBY ORDERED that the Discharger, in order to meet the applicable provisions contained in the California Water Code (CWC), Title 27, and 40 CFR Part 258 Regulations, shall comply with the following:

A. DISCHARGE SPECIFICATIONS

1. **General** - The treatment or disposal of wastes at LCL shall not contribute to, cause, or threaten to cause a condition of contamination, pollution, or nuisance, as defined in the CWC, §13050.

2. All wastes shall be maintained on property owned or controlled by the Discharger.

3. **Groundwater -** The discharge of wastes at LCL shall not cause or contribute to the contamination or pollution of groundwater, as indicated by the most appropriate statistical or non-statistical data analysis and retest methods.

4. **Surface Water -** The discharge of wastes at LCL shall neither cause nor contribute to any surface water contamination, pollution, or nuisance, including, but not limited to:
   a. Floating, suspended, or deposited macroscopic particulate matter or foam;
   b. Increases in bottom deposits or aquatic growth;
   c. An adverse change in temperature, turbidity, or apparent color change beyond natural background levels and occurrences;
   d. The creation or contribution of visible, floating, suspended, or deposited oil or other products of petroleum origin; and
   e. The introduction or increase in concentration of toxic or other pollutants/ contaminants resulting in unreasonable impairment of beneficial uses of the waters of the State.

5. **Unsaturated (Vadose) Zone -** The discharge shall not cause any increase in the concentration of waste constituents in soil-pore gas, soil-pore liquid, soil, or other geologic materials beneath or outside of LCL if such waste constituents could migrate to the waters of the State and cause a condition of contamination, pollution, or nuisance.

6. **Liquid Usage**

a. The discharge of liquids, including groundwater, leachate or landfill gas condensate, or their use for dust control or irrigation, at LCL is prohibited, unless the following conditions are met:

   i. The liquids are being returned to, or used at, the landfill that produced it; **and**
   ii. The portion of the landfill to which these liquids are discharged is equipped with a waste containment system (WCS) meeting the requirements of Section C.4.e of the Order; **or**
   iii. The liquids generated at the site are disposed of in accordance with a disposal plan approved by Regional Board staff.

b. This section shall not apply to groundwater, leachate, and landfill gas condensate generated from the MSW landfill that is treated in accordance with an approved plan prior to being used for dust control or irrigation over the unlined portions of the site.

7. **Acceptable Waste** - Wastes disposed of at LCL shall be limited to non-hazardous municipal solid wastes, liquids or semi-solid waste, contaminated soils that are not hazardous, inert solid wastes, treated woodwaste, and designated wastes. Wastes meeting the following definitions shall be accepted for disposal at LCL:

   a. Non-hazardous solid waste, as defined under Title 27, §20220(a), means all putrescible and non-putrescible solid, semi-solid and liquid wastes, including garbage, trash, refuse, paper, rubbish, ashes, industrial wastes, demolition and construction wastes, abandoned vehicles and parts thereof, discarded home and industrial appliances, manure, vegetable or animal solid and semi-solid wastes, and other discarded wastes (whether of solid or semi-solid consistency), provided that such wastes do not contain wastes which must be managed as hazardous wastes.

   b. Liquids or semi-solid waste, including dewatered sewage sludge and water treatment sludge, that meets the following criteria [Title 27, §20200(d)(3) and §20220(c)]:

      i. The waste is not at hazardous levels as defined in Title 22, California Code of Regulations, §66261.3 et seq.;
      ii. The waste contains less than 50 percent (<50%) solids by weight; and
      iii. The Discharger has demonstrated to Regional Board staff that such waste will not exceed the moisture holding capacity of the landfill,

either initially or as a result of waste management operations, compaction, or settlement.

c. Inert waste, as defined in Title 27, §20230, means that subset of solid waste that does not contain hazardous waste or soluble pollutants at concentrations in excess of applicable water quality objectives, and does not contain significant quantities of decomposable waste.

d. Treated wood, as defined in California Health and Safety Code §§25143.1.5 and 25150.7, means wood that has been treated with a chemical preservative for the purposes of protecting wood against insects, microorganisms, fungi, and other environmental conditions that can lead to decay of the wood, and the chemical preservative is registered pursuant to the Federal Insecticide, Fungicide, and Rodenticide Act.

e. Designated wastes, as defined in CWC, §13173, that are approved by Regional Board Executive Officer.

B. DISCHARGE PROHIBITIONS

1. The discharges of wastes to any WMUs beyond the October 9, 1993 waste footprint of the site is prohibited unless the discharge is to a WMU equipped with a waste containment or liner system in compliance with Section C.4 of the Order.

2. The discharge of hazardous waste as defined under the state hazardous waste control laws (Title 22 of the California Code of Regulations §66261.3 et seq) at LCL is prohibited.

3. The discharge of TWW and designated wastes in unlined waste management units (WMUs) at the site is prohibited.

4. The discharge of any TWW that has been removed from electric, gas, or telephone service and is subject to regulation as a hazardous waste under the federal act is prohibited at LCL.

5. No radioactive waste, including low level radioactive waste, as defined by the agency with jurisdictional authority, shall be disposed of at LCL.

6. No infectious materials or medical or laboratory wastes, except those authorized for disposal to land by official agencies charged with control of plant, animal and human diseases, shall be disposed of at LCL.

7. The operation of the municipal solid waste landfill facility shall not cause a discharge of pollutants into waters of the United States, including wetlands, that violates any requirements of the Clean Water Act , including, but not limited to, the National Pollutant Discharge Elimination System (NPDES) requirements, pursuant to Title IV Section 402.

C. PROVISIONS

1. **General** - The Discharger shall implement Monitoring and Reporting Program No. R8-2013-0003 (the MRP) immediately upon its adoption.

2. The Discharger shall maintain a copy of this Order at the site and make it available at all times to site operating personnel.

3. The Discharger shall permit Regional Board staff:

   a. Entry upon premises where a discharge source is located;

   b. To copy any records required to be kept under terms and conditions of this Order;

   c. To photograph or videotape any structures, facilities, activities, or other phenomena that could result in adverse impacts to water quality and that are pertinent to compliance of the landfill with this Order; and

   d. To sample any discharge from the landfill.

4. **Waste Containment System (WCS) and Alternative Liner Design**

   a. **Containment system installed beyond the October 9, 1993 waste footprint -** All WMUs shall be equipped with a waste containment or liner system that is designed and constructed in accordance with the standard of the industry, and that meets the requirements of the State Board's Resolution No. 93-62, Section III [Containment] and the following, but not limited to, relevant sections of Title 27:

      i. §20310 [General Construction Criteria];
      ii. §20320 [General Criteria for Containment Structures];
      iii. §20323 [CQA Plan];
      iv. §20324 [CQA requirements];
      v. §20330 [Liners];
      vi. §20340 [Leachate Collection and Removal Systems (LCRS)];
      vii. §20360 [Subsurface Barriers];
      viii. §20365 [Precipitation and Drainage Controls];
      ix. §20370 [Seismic Design]; and
      x. §21750(f)(5) [Stability Analysis].

b. **Additional WCS design standards** – The following additional WCS design standards shall also be met for stability evaluation [Title 27, §217509f)(5)]:

   i. A static factor of safety of 1.5 or greater (≥1.5) shall be achieved for all slopes that have reached the final configuration, including but not limited to, cut slopes, engineered fill slopes, waste slopes, and final cover slopes at the landfill. For temporary[7] slopes, a minimum static factor of safety of 1.3 is acceptable, provided that the parameters used for stability analysis are conservative.

   ii. Landfill waste slopes shall be designed and constructed to withstand at least a Maximum Probable Earthquake for temporary slopes, and a Maximum Credible Earthquake for final slopes without damage to foundation, liner system, leachate collection and removal system (LCRS), gas control systems, liquid waste containment structures, and the drainage and erosion control systems. Critical (least stable) slopes shall be designed to achieve a factor of safety no less than 1.5 under dynamic conditions. If a Newmark-type seismic deformation analysis is used in lieu of achieving a factor of safety of no less than 1.5, the calculated permanent seismic deformation must not exceed six (6) inches for liner systems and must not exceed 36 inches for final cover system(s).

   iii. Final cut-and-fill slopes shall be designed and excavated/constructed to withstand a Maximum Credible Earthquake. Final cut-and-fill slopes shall have an overall slope gradient no steeper than 1.5H:1V (horizontal to vertical); final maximum waste slope gradient shall not be steeper than 3H:1V.

c. **An engineered alternative design** (EAD) satisfies the performance criteria contained in 40 CFR Part 258.40(a)(1) and (c), and in Title 27, §20080(b) shall be allowed where the performance of the alternative composite liner's components, in combination, equal or exceed the waste containment capability of the prescriptive system design (PSD).

d. **New EAD(s) proposed** - In accordance with Title 27, §21585(a)(4), an amended Report of Waste Discharge (ROWD), in the form of a numerically-sequential addendum to the Joint Technical Document

[7] Temporary slopes are slopes that exist for less than 12 months or slopes that will be buttressed by waste within 12 months after completion of grading.

(JTD), shall be submitted for any new EAD proposed for waste containment system (WSC) construction at a landfill. A JTD addendum for any new EAD(s) shall demonstrate compliance with the performance criteria specified under 40 CFR Part 258.40(a)(1) and (c), and Title 27, §20080(b). Upon review of the amended ROWD by Regional Board staff and approval of the newly proposed EAD(s) by the Regional Board, the Discharger shall be permitted to use the newly-approved EAD(s) for WCS construction at LCL. A JTD Addendum is not required for subsequent use of an approved EAD. Subsequent use of any approved EADs for WCS construction at LCL shall comply with Sections C.4.f through C.4.i. of the Order.

e. **WMU Expansion** – At least 90 days prior to the scheduled WCS construction for each WMU expansion at the site, RCWMD shall submit technical design plans and construction documents for the proposed WCS that demonstrate compliance with Sections C.4.a and C.4.b, above, for review and approval by Regional Board staff.

f. **WMU Design and Construction** – WMU shall be designed by, and construction shall be supervised and certified by, a registered civil engineer or a certified engineering geologist (Title 27, §20324). Newly constructed WMUs shall receive a final inspection and approval of the construction by Regional Board staff before use of the WMU commences [Title 27, §20310(e)].

g. **Construction progress reports** - The Discharger and its contractors shall submit progress reports on a weekly basis to the Regional Board during the construction of the WCS to evaluate compliance with construction specifications and the construction quality assurance/construction quality control (CQA/CQC) program. Daily field summary reports, including all construction activities and tests, shall be submitted electronically by 12:00 p.m. the following business day.

h. **Final construction reports** - Within 90 days of completion of the WCS construction, the Discharger shall submit a final as-built report including drawings, maps, and CQA/CQC certification of the construction.

i. If an approved EAD fails to perform as expected, the Regional Board reserves the right to require additional protective measures at LCL.

5. **Annual LCRS performance testing** - In accordance with Title 27, §20340(d), the Discharger shall perform an annual testing of all LCRS to

demonstrate their efficiency during the operational, closure, and post-closure maintenance periods of the landfill.

6. **Drainage and Erosion Control** - WMUs shall be designed, constructed, and maintained to prevent, to the greatest extent possible, ponding, infiltration, inundation, erosion, slope failure, and washout which could occur as a result of precipitation from a 100-year, 24-hour frequency storm. This shall be accomplished by, at a minimum, the following:

   a. Top deck surfaces shall be constructed to achieve a minimum of one percent (1%) slope, including structures which direct water to downdrains;

   b. Downdrains and other necessary drainage structures must be constructed for sideslopes as necessary; and

   c. Components which protect or convey drainage from the waste containment system shall be designed and constructed to withstand site-specific maximum intensity precipitation (peak flow) from a 100-year, 24-hour frequency storm.

7. The Discharger shall design, construct, and maintain:

   a. A run-on drainage control system to prevent flow from off-site sources onto the disposal areas of the landfill (active or inactive portions), and to collect and divert the peak flow calculated volume resulting from a 100-year, 24-hour storm from off-site sources;

   b. A runoff drainage control system to collect and divert the peak flow calculated volume resulting from a 100-year, 24-hour frequency storm away from the WMUs;

   c. Drainage control structures to divert natural seepage from native ground and to prevent such seepage from entering the WMUs; and

   d. Erosion control best management practices to reduce the discharge of pollutants to waters of the state.

8. All drainage and erosion control structures shall be periodically inspected and maintained to assess the conditions of these facilities, and to initiate corrective actions necessary to maintain compliance with the requirements of this Order.

9. The facility shall be surveyed either by aerial surveillance or by conventional ground survey by a licensed surveyor, a registered civil engineer, or under the directions of a registered civil engineer to assure compliance with the one percent (1%) slope requirements. The facility

survey and topographic map compiled from the survey data shall be submitted in accordance with Section D.6 and Table 5 of the MRP.

10. **Liquid Waste Containment System** - All liquid waste secondary containment structures shall be designed and constructed to provide a minimum containment capacity of 110 percent (110%) of the largest storage tank.

11. All liquid waste containment structures shall be inspected and maintained periodically to preserve structural integrity, and to ensure their effectiveness in preventing commingling of leachate and gas condensate with surface run-on and runoff.

12. **Disposal Site Operations** - The Discharger shall maintain an operating record for LCL in accordance with 40 CFR Part 258.29(a). All records of site operations, landfill construction, inspection, monitoring, remediation, and copies of design plans, construction quality assurance documents, monitoring reports, and technical reports that are submitted to regulatory agencies, shall be included in the operating record.

13. During the months when precipitation can be expected, disposal activities shall be confined to the smallest area possible based on the anticipated quantity of wastes that will be received and on operational procedures.

14. The Discharger shall promptly remove and properly dispose of any wastes that are placed at the site in violation of the requirements in this Order.

15. The Discharger shall establish and maintain monuments in California coordinates (or equivalent) to define the boundary of the footprint of the landfill. The control benchmarks shall be certified by a licensed surveyor or a professional civil engineer authorized to practice in California.

16. Water used during landfill operations shall be limited to the minimum amount reasonably necessary for dust control, fire suppression, construction, and maintenance. Water used for landfill operations shall not result in a discharge off the site.

17. During periods of precipitation, when the use of wastewater or non-stormwater for dust control, construction, or other landfill operations over the composite-lined WMUs is not necessary, all non-storm water collected at the site shall be stored or disposed of at a licensed facility offsite.

18. At the end of each operating day, as defined in LCL's Solid Waste Facility Permit, or if landfilling operations cease for more than a 12-hour period, a daily cover or an alternative daily cover approved by Regional Board staff must be placed over the active working face in a quantity and depth sufficient to prevent waste from daylighting, or as directed by Regional Board staff.

19. Treated wood waste (TWW) and designated wastes, as approved by the EO of the Regional Board, shall be disposed of at composite-lined WMUs.

20. If monitoring at the composite-lined portion of a landfill unit that has received TWW indicates a verified release, the disposal of TWW to that landfill unit shall immediately cease until corrective action, implementing the requirements of Title 27 §20385, results in cessation of the release.

21. The Discharger shall manage and dispose of TWW in accordance with the site's TWW Management and Disposal Plan and all requirements of California Health and Safety Code §§25143.1.5 and 25150.7.

22. Liquids or semi-solid waste accepted for disposal at the site must be segregated from public access and placed in composite-lined WMUs.

23. **Reporting and Required Reports/Notices** - The Discharger shall furnish, under penalty of perjury, technical or monitoring program reports, requested by the EO of the Regional Board, in accordance with CWC, §13267. Failure or refusal to furnish these reports or falsifying any information provided therein may render the Discharger guilty of a misdemeanor and subject to the penalties stated in CWC, §13268. Additionally, technical and monitoring reports shall be prepared and signed by a registered civil engineer or registered geologist.

24. The Discharger shall furnish, within a reasonable time, any information the Regional Board may request to determine whether cause exists for modifying, reissuing, or terminating this Order. The Discharger shall also furnish to the Regional Board, upon request, copies of records that this Order requires the Discharger to maintain.

25. **Joint Technical Document Addenda** - The Discharger shall file an amended Report of Waste Discharge (ROWD), in the form of a numerically-sequential addendum to the Joint Technical Document, in accordance with Title 27, §21585(a)(4), with the Regional Board at least 120 days prior to its implementation for:

    a. proposing a new EAD, not already approved by the Regional Board;

    b. proposing any lateral landfill expansion beyond the (580.5 acres) permitted landfill operation limits depicted in Attachment B; and

    c. making any material change or proposed change in the character, location, volume, treatment, or disposal methods of any discharge of waste.

26. Applications, reports or information submitted to the Regional Board shall be signed and certified by either a principal executive officer or ranking elected/appointed official of the Discharger.

27. **Plan/Report certification** - All design plans, construction plans, operation and maintenance plans, and technical reports, shall be prepared by, or prepared under the direct supervision of, a registered civil engineer or a certified engineering geologist.

28. **Planned facility changes** - The Discharger shall give advance notice to the Regional Board of any planned changes in the permitted facility or site activities that may result in noncompliance with this Order.

29. **Change in facility ownership** - In the event of any change in control or ownership of land or waste discharge facilities currently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter. A copy of this letter shall be signed by the new owner accepting responsibility for complying with this Order, and shall be forwarded to the EO of the Regional Board. The notification letter shall be given to the succeeding owner/operator prior to the effective date of the change and shall include a statement by the new discharger that construction, operation, closure, and post-closure maintenance will be in compliance with this Order and any revisions thereof.

30. The Discharger shall notify the Regional Board in writing of any proposed change in ownership or responsibility for construction, operation, closure, or post-closure maintenance of the landfill.

31. **Closure and post-closure maintenance plans (PCMP)** - In accordance with Title 27, §217880 (b)(3), final closure and PCMPs for solid waste landfills shall be submitted two years prior to the anticipated date of closure. Within five years of the anticipated date of closure, the operator may submit the final closure and PCMPs in lieu of submitting new or updated preliminary closure and PCMPs.

32. **Financial assurance plans** - The Discharger shall maintain and update assurances of financial responsibility for:

    a. Closure activities pursuant to Title 27, §22205;

    b. Post-closure maintenance activities pursuant to Title 27, §22210;

    c. Operating liability pursuant to Title 27, §22215; and

    d. Corrective action activities pursuant to Title 27, §22220.

33. Upon completing landfill closure at the site, the Discharger or the landfill property owner shall file a deed, and amend it thereof as needed, with the County Recorder. The deed must restrict any post-development of the

landfill and must include a notation advising any potential purchaser of the property that:

a. The parcel had been used as an MSW landfill;

b. The land 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, and;

c. In the event that the Discharger defaults on carrying out either the post-closure maintenance plan or any corrective action needed to address a release, then the responsibility for carrying out such work falls to the property owner.

34. This Order replaces Orders No. 81-127, 01-18, R8-2006-0054, and R8-2007-0044. This order also removes all portions of WDRs in Order No. 98-99 that are specific to LCL; therefore, Order No. 98-99 is no longer applicable to LCL.

I, Kurt V. Berchtold, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an order adopted by the California Regional Water Quality Control Board, Santa Ana Region, on November 1, 2013.

Kurt V. Berchtold
Executive Officer

STATE OF CALIFORNIA

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SANTA ANA REGION

MONITORING AND REPORTING PROGRAM NO. R8-2013-0003
FOR
RIVERSIDE COUNTY WASTE MANAGEMENT DEPARTMENT
LAMB CANYON LANDFILL
CLASS III SOLID WASTE DISPOSAL SITE
BEAUMONT, RIVERSIDE COUNTY

A. GENERAL

1. The Discharger shall implement this Monitoring and Reporting Program (the MRP), in order to detect, at the earliest opportunity, any release of waste constituents from Lamb Canyon Landfill (LCL), or any unreasonable impairment of beneficial uses caused by or associated with discharge of wastes to the landfill site.

2. At any time, the Discharger may file a written request, including appropriate supporting documents, with the Executive Officer (EO) of the Regional Board, proposing modifications to the MRP. The Discharger shall implement any changes in the revised MRP approved by the Regional Board's EO upon receipt of a signed copy of the revised MRP.

3. For any monitoring wells proposed for installation at LCL, the Discharger shall submit well design and construction documents for approval by Regional Board staff prior to installation. All monitoring wells shall be designed and constructed in accordance with California Well Standards, Bulletin 74-9, or the revised version thereafter. The well design and construction documents shall be submitted at least 60 days prior to the anticipated date of installation of the well(s), and shall include the following:

   a. Proposed locations of the monitoring well(s); and
   b. Proposed design and construction details of the monitoring well(s). These details shall include:
      i. well casing and borehole diameters;
      ii. well casing, annular, and filter materials;
      iii. well depth and well screen intervals;
      iv. the means by which the size and position of perforations shall be determined, or verified, if in the field;
      v. method of drilling and joining sections of casing;
      vi. filter and annular material placement methods;
      vii. depth and composition of soils; and
      viii. well development procedures.

A final well construction report shall be submitted within 60 days after completion of well installation.

4. The Discharger shall provide for proper handling and disposal of water purged from monitoring wells at the landfill site during sampling. Water purged from a monitoring well shall not be returned to that well or any other monitoring well. Purge water may be discharged to the ground, outside of the landfill footprints, in a manner so that it will percolate back into the aquifer in the same general area from which it came, provided that adequate measures are taken to contain purge water within the property controlled by the Discharger.

B. WATER QUALITY MONITORING

1. **Water Quality Protection Standards (WQPS)** [Title 27, §20390] – The WQPS shall consist of the list of Constituents of Concern (COCs) [Title 27, §20395] in Table 1; the Point of Compliance (POC) and the Monitoring Points [Title 27, §20405] in Table 2; and the Concentration Limits [Title 27, §20400] in Table 3. The WQPS shall apply during the active life of the landfill, the closure period, the post-closure maintenance period, and during any compliance period. Unless the Discharger proposes and the EO of the Regional Board approves an alternative WQPS, the Discharger shall perform the monitoring activities in compliance with the WQPS specified in the MRP.

   In accordance with Title 27, §20405, the Point of Compliance (POC) where the WQPS apply shall be a vertical surface located at the hydraulically downgradient limit of each WMU that extends through the uppermost aquifer underlying the WMU at the landfill site or an alternate location approved by the EO of the Regional Board. The POC for LCL is listed in Table 2 and is shown on Attachment E of the MRP.

2. **Constituents of Concern (COC) List:** As of the date of the MRP, the COCs for the Landfill consists of all those constituents listed in Table 1, which include the following:

   a. **Monitoring Parameters (MPars):** The MPars are parameters that include those Appendix I constituents that are detected (at or above laboratory reporting limits, RLs, or practical quantitation limits, PQLs) and confirmed in landfill leachate and gas condensate testing, and those Appendix II organic constituents detected (above method detection limits, MDLs) and confirmed at one or more monitoring points during a five-year COC groundwater analysis. The MPar list is updated annually. The Discharger shall apply the statistical analytical method described in Section B.6 or non-statistical analytical method in Section B.7 of the MRP to analyze the groundwater monitoring data collected for these parameters.

   b. **Uninvolved Parameters (UnPars):** These are Appendix II constituents that have been detected (at or above PQLs) and confirmed in leachate and gas condensate, but that are not MPars.

Annually, the COC list shall be updated to include any new Appendix II organic constituents that are detected in the landfill leachate and gas condensate and confirmed in retesting required by this MRP. The Discharger shall note and add any new addition to the existing COC list, and include an updated COC list in the annual summary report.

3. **Concentration Limits** - The concentration limits for any given constituents in a given monitored medium (e.g., the uppermost aquifer) are either the natural background levels or the laboratory RLs or PQLs for the constituents. These limits are set to be either at the statistically predicted values (based on a minimum of eight background data set), if the constituents naturally exist (e.g. TDS), or the laboratory RLs or PQLs, if the constituents do not naturally exist (e.g. a VOC) in the water. The concentration limits for monitoring parameters at compliance monitoring wells at LCL are listed in Table 3.

4. **Development and Updating of Concentration Limits** - The Discharger shall continue to develop and update concentration limits following the procedures provided in Section B.6.a of the MRP. The Discharger shall review the concentration limits biannually and provide a copy of updated concentration limits in the annual summary reports. Updated or new concentration limits shall be submitted for approval by Regional Board staff. For any well/MPar pair for which the intra-well comparison analysis is not applicable, the Discharger shall use the inter-well comparison analysis to determine whether concentration limits are exceeded or violated.

5. **Groundwater Quality Monitoring:** The Discharger shall conduct the following groundwater monitoring activities at the Landfill:

   a. **Semi-annual Monitoring** shall be conducted at all groundwater monitoring wells. Water samples from these monitoring points shall be analyzed for the MPars in Table 1 of the MRP on a semi-annual basis;

   b. **Five-Yearly COC Scan:** Every five years, starting in 2015, alternately in the Fall (by October 31) and Spring (by April 30), the Discharger shall collect and analyze a water sample from each ground water monitoring point for the presence (above MDLs) of those COCs that are not yet on the MPar list (i.e. UnPar COCs listed in Table 1 of the MRP). Alternatively, the Discharger may select to perform a full Appendix II (Attachment F) analysis, if desired. This constitutes the means by which the Discharger continues to meet the requirements of 40 CFR Part 258.55(b)-(d).

      i. During each such COC scanning event, the Discharger shall obtain and analyze a minimum of one sample from each monitoring well (sufficient to obtain a datum for each COC that is subject to the scan). Upon detecting (above MDLs) a COC that is not yet on the MPar list, the Discharger shall,

within 30 days, take a single resample from the indicating affected well(s) and reanalyze it only for the newly-detected constituent(s).

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

6. **Data Analysis Methodology**

a. Intra-well comparison methods shall be used for all monitoring points for all constituents that are detectable at concentrations above their respective Method Detection Limit (MDL) in 10% or more of the background data to date. Every two years, following the adoption of this MRP, as part of the annual monitoring summary report, the Discharger shall add the newer data to the background data set for each well/MPar pair after validating (via a method approved by the Executive Officer) that the new data does not indicate an increase over the existing background data. At that time, the Discharger may also retire the well/MPar's oldest two years of background data. The Discharger shall validate the proposed intra-well background data set as follows for each MPar at each well (initially) or, subsequently, at a new well or for a new MPar at an existing well. The Discharger shall report the validated or updated background data set, for each affected well/MPar pair, in the next scheduled monitoring report. Upon approval by Regional Board staff of the proposed additional background data, it becomes part of the intra-well concentration limit for that well/MPar pair. The Discharger may use an alternative statistical method or approach for development of intra-well concentration limits, if approved by Regional Board staff.

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

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

d. For any constituent that is detectable at concentrations above its respective MDL in 10% or less of the background data to date, the constituent's concentration limit shall be its RLs or PQLs. A measurable exceedance of this concentration limit shall be determined by application of the non-statistical analysis method described in Section B.7 of the MRP.

e. **Water Quality Monitoring Approach:** Except for COC scans, the monitoring approach used for each monitoring parameter at each compliance well

(well/MPar pair) shall be controlled by whether that monitoring parameter has exhibited a measurably significant increase at that well as verified by retesting. Therefore, the Discharger shall monitor each well/MPar pair in one of two modes, as follows, either:

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

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

f. **Detection Mode Data Analyses:** The following applies to all detection mode data analyses (i.e., this Section does not apply to the COC scans under Section B.5.b):

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

ii. **Monitoring Parameters Not Readily Detectable in Background:** For any monitoring point at which one or more monitoring parameters, in detection mode, exceed their respective MDL in less than 10% of the applicable background data set, the Discharger shall analyze the data for these monitoring parameters via the California Non-statistical Data Analysis Method (CNSDAM).

7. **California Non-statistical Data Analysis Method (CNSDAM)**

a. **Non-Statistical Method for Detection Mode for MPars Seldom Found in Background (i.e. non-natural occurring constituents):** For any given compliance (downgradient) well, regardless of the monitoring program (DMP, EMP, AMP, or CAP), the Discharger shall use this data analysis method, jointly, for all constituents on the "scope list" as follows (or, for each retest sample, the modified scope list under Section B.7.b.ii).

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

ii. **Two Triggers:** From the scope list made under Section B.7.a.i. above, for an initial test (or, for a retest, the modified scope list under Section B.7.b.ii. below), the Discharger shall identify each MPar in the current sample from that well that exceeds either its respective MDL or PQL. The Discharger shall conclude that these exceeding MPars provide a preliminary indication (or, for a retest, provide a measurably significant indication) of a change in the nature or extent of the release, at that well, if ***either***:

a. Three or more of the MPars on a monitoring well's scope list exceed their respective MDL; or

b. One or more of the MPars on a monitoring well's scope list equals or exceeds its respective PQL.

b. **Composite Retest** [Title 27, § 20415(e)(8)(E)]**:**

i. In the event that the Discharger concludes (pursuant to Section B.7.a.ii above) that a release has been tentatively indicated, then the Discharger shall collect a retest sample and analyze for the indicated MPar(s) at each indicating monitoring point. The retest sample shall be taken at mid-monitoring period to provide an independent sample for the parameter that was exceeded. Statistical evidence of a release is confirmed when the retest result indicates a measurable significant increase for that constituent. If the initial statistical evidence of a release is not confirmed by the retest sample, no additional sampling is required. The initial results and subsequent retest results shall be documented and reported under Section F.1.c.

ii. For any given compliance well, the Discharger shall analyze the retest samples only for those constituents indicated in that well's original test, under Section A.7.a.ii of the MRP, and these indicated constituents shall comprise the well's "modified scope (or tracking mode) list." As soon as the retest data are available, the Discharger shall apply the same test (under Section B.7.a.ii above, but using this modified scope list) to analyze the retest data at that compliance well.

iii. If the retest sample confirms the initial statistical indication of a release, then the Discharger shall conclude that there is a measurably significant increase at that well for the constituent(s) indicated in the validating retest sample, and there is statistical evidence that a release has occurred. If the Discharger determines that the statistical evidence of a release supports the conclusion that a release has occurred, thereafter, the Discharger shall monitor the indicated constituent(s) in tracking mode at that well, shall remove the constituent(s) from the scope list created for that well, notify Regional Board staff in writing, and highlight this conclusion and these changes in the next scheduled monitoring report and in the landfill's operating record.

8. **Response to an initial indication of a release** - Should the initial statistical or non-statistical comparison indicate that a release is tentatively identified, the Discharger shall do either of the following:

   a. **Composite retest**[1] - Carry out a composite retest in accordance with Section B.7.b of the MRP. If the retest sample(s) confirms the existence of a release or if the Discharger fails to perform the retest, the Discharger shall carry out the release discovery response requirements in Section B.10, below, or

   b. **Release(s) from other source(s)** - Make a determination, in accordance with Title 27, §20420(k)(7), that a source other than the waste management unit caused the release or that the evidence is an artifact caused by an error in sampling, analysis, or statistical evaluation or by natural variation in the groundwater, surface water, or the unsaturated zone.

9. **Physical Evidence of a Release** - If the Discharger determines that there is significant physical evidence of a release [Title 27, §20385(a)(3)], the Discharger shall conclude that a release has been discovered and shall:

   a. Within seven (7) days notify Regional Board staff of this fact by certified mail.

   b. Carry out the requirements of release discovery response in Section B.10, below, for all potentially affected monitored media.

   c. Carry out any additional investigations stipulated in writing by Regional Board staff for the purpose of identifying the cause of the indication.

10. **Release Discovery Response** - If the Discharger concludes that a release has been discovered, the following steps shall be carried out:

    a. The Discharger shall, within 90 days of discovering the release, submit an amended Report of Waste Discharge, in the form of a Joint Technical Document (JTD), to Regional Board staff proposing an assessment or evaluation monitoring program (EMP) that:

       i. Meets the requirements of Title 27, §20425 and 40 CFR Part 258.55 to assess the nature and extent of the release from the landfill in accordance with a schedule approved by the EO of the Regional Board and to design a corrective action program meeting the requirements of Title 27, §20430.

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[1] In case the retest is triggered by detections of common laboratory contaminants, such as acetone, toluene, methylene chloride, and carbon disulfide, the Discharger may postpone the retest until after the next monitoring event. Retest will not be required unless the same pollutants are also detected in the next monitoring event.

ii. Satisfies the requirements of 40 CFR Part 258.55(g)(1)(ii) by committing to install monitoring well(s), if necessary, at the facility boundary directly down gradient of the center of the release.

b. The Discharger shall, within 180 days of discovering the release, submit a preliminary engineering feasibility study (EFS) [Title 27, §20420(k)(6) and 40 CFR Part 258.56].

c. The Discharger shall immediately begin delineating the nature and extent of the release by installing and monitoring assessment wells. Upon completion of the EMP, the Discharger shall submit a delineation report, in accordance with the schedule approved by the EO of the Regional Board.

d. The Discharger shall submit an updated EFS within 90 days after the completion of the EMP [Title 27, §20425(c)].

e. The Discharger shall submit an amended ROWD, in the form of a JTD, to establish a corrective action program (CAP) [Title 27, §20425(d) and 40 CFR Part 258.58] within 90 days after the updated EFS is submitted.

11. **Release Beyond Facility Boundary** - Any time the Discharger concludes that a release from the landfill has proceeded beyond the facility boundary, the Discharger shall so notify all persons who either own or reside upon the land that directly overlies any part of the plume (Affected Persons) as follows:

a. Initial notification to Affected Persons shall be accomplished within 14 days of making this conclusion and shall include a description of the Discharger's current knowledge of the nature and extent of the release.

b. Subsequent to initial notification, the Discharger shall provide updates to all Affected Persons, including any persons newly affected by a change in the boundary of the release, within 14 days of concluding there has been any material change in the nature or extent of the release.

c. Each time the Discharger sends a notification to Affected Persons (under Section B.11.a or 11.b, above), it shall, within seven days of sending such notification, provide Regional Board staff with, and add into the Facility's operating record, both a copy of the notification and a current mailing list of Affected Persons.

12. **Groundwater Flow Direction**: the Discharger shall measure the water level in each well at least quarterly and determine the presence of horizontal and vertical gradients (if applicable) and groundwater flow rate and direction for the respective groundwater body.

13. **Leachate and Gas Condensate Monitoring**: The Discharger shall conduct leachate and gas condensate monitoring as follows:

a. **Annual non-COC Appendix II Constituent Analyses:** A leachate sample and gas condensate sample shall be collected at each monitoring point annually during the month of October. The samples collected shall be analyzed for non-COC Appendix II constituents or all Appendix II Constituents (see Attachment F of the MRP).

b. **Retest:** If any constituents, not on the COC list, are detected (at or above PQLs) in the leachate and/or gas condensate at any sampling point, the Discharger shall resample the leachate and/or condensate at that sampling point during the following April and analyze the sample for those detected constituents. If any such constituent is confirmed to be in the leachate and/or gas condensate, the Discharger shall add the constituent to the current COC list and report this to Regional Board staff within two (2) weeks of the confirmation. Any new Appendix I VOCs detected at or above PQLs and confirmed by a retest shall be added to the MPar list.

c. **Reporting:** Leachate and gas condensate analytical data shall be included in the semi-annual monitoring report that covers the period during which the monitoring is conducted.

14. **Vadose Zone Monitoring**

a. **Subdrain Monitoring:** As allowed under Title 27, §20415(d)(5), subdrain liquid monitoring shall be conducted for those WMUs that require the placement of subdrains to control seeps beneath the liner systems at the Landfill.

b. **Landfill Gas Monitoring:** The Discharger shall include in the semi-annual reports the gas perimeter probe monitoring results conducted in accordance with South Coast Air Quality Management District Rule 1150.1.

15. **Surface Water Monitoring**: Surface water monitoring at the site shall be conducted as required under the State NPDES General Industrial Stormwater Permit.

C. SAMPLING AND ANALYTICAL METHODS

Sample collection, storage, and analyses shall be conducted in accordance with the latest edition of "Test Methods for Evaluating Physical/Chemical Methods" (SW-846) promulgated by the United States Environmental Protection Agency (USEPA), and in accordance with a sampling and analysis plan acceptable to the EO of the Regional Board. A State of California approved laboratory shall perform water analysis. Specific methods of analysis must be identified. In addition, the Discharger is responsible for seeing that the laboratory analysis of samples from all monitoring points meets the following restrictions:

1. The methods of analysis and the detection limits used must be appropriate for the expected concentrations. For detection monitoring of any constituent or parameter

that is found in concentrations which produce more than 90% non-numerical determinations (i.e., Trace or ND determinations) in historical data for that medium, the SW-846 analytical method having the lowest Method Detection Limit (MDL) shall be selected.

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

3. MDL and PQL shall be derived by the laboratory for each analytical procedure, according to State of California laboratory accreditation procedures. Both limits shall reflect the detection and quantitation capabilities of the specific analytical procedure and equipment used by the laboratory. If the laboratory suspects that, due to a change in matrix or other effects, the true detection limit or quantitation limit for a particular analytical run differs significantly from the laboratory-derived values, the results shall be flagged accordingly, and an estimate of the limit actually achieved shall be included.

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

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

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

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

D. GENERAL SITE MONITORING

1. The Discharger shall conduct periodic inspection of the facility to identify any deficiencies or non-compliance items and to implement appropriate corrective measures to bring the site into compliance with this Order. All general site inspections shall be documented and submitted as part of the reports described in

Section E.1.d of this MRP. Any deficiencies or non-compliance items identified during facility inspections that could pose an immediate threat to water quality (such as an unauthorized release) shall be reported to Regional Board staff by phone or via electronic mail, or other approved method, within 24 hours (or within one business day) of discovery.

2. At a minimum, all liquid waste operating and containment systems, such as landfill gas condensate and leachate containment structures, subdrains, and sumps, shall be inspected and evaluated **weekly** for their effectiveness. All deficiencies identified, and the dates and types of corrective action taken, shall be recorded in a permanent log and kept at the site or at the Discharger's headquarter office. All deficiencies shall be photographed for the record. The volume of liquids collected in each containment structure shall be recorded **weekly**. Liquid waste samples, such as landfill leachate and gas condensate, shall be collected and analyzed in accordance with the monitoring requirements specified in Table 4.

3. At a minimum, the Discharger shall inspect all waste management units and the site drainage and erosion control systems **monthly**, and shall evaluate their effectiveness to comply with this Order. All areas of slope failure, differential settlement, fissuring, erosion, ponding, and leachate seeps and staining shall be identified, field-marked, documented, and mitigated. In the event a seep is discovered, the location of each seep shall be mapped and a mitigation plan submitted, as required under Section E.3 of the MRP, for the approval of Regional Board staff. All observations, investigations, and corrective measures implemented shall be documented for the record.

4. During the wet season (October 1 through April 30 of the following year), a post-storm inspection shall be conducted following each storm that produces stormwater runoff. For a qualifying storm event, which is a storm event that produces 0.5 inches or more of rain within a 24-hour period, a post-storm site inspection report, identifying the problem areas and mitigation measures, shall be prepared and transmitted to Regional Board staff via email.

5. During the dry season (May 1 through September 30), the facility shall be inspected for evidence of non-stormwater discharges and for conformance of the WMUs with its as-built drawings, and initiated any needed repair or maintenance. All deficiencies shall be identified, documented, and mitigated; all repair and maintenance activities shall be completed by **October 1**.

6. Annually, **by October 1**, an aerial or ground survey of the landfill site shall be performed as specified in Table 5. By **October 31** of each year, a winterization plan includes at least the following information shall be submitted:

   a. A site map showing new and existing components of the site drainage and erosion control system, including hardscape structures, other permanent and annual/seasonal erosion control, sediment control, and treatment control storm water best management practices. As part of the annual update to the Storm Water Pollution Prevention Plan for the site, the annual winterization plan shall be used to anticipate modifications to these systems inherent to an open

municipal solid waste landfill, and as a means to review the effectiveness of in-place drainage for the past 12 months;

b. Installation dates for all hardscape structures; and

c. Topographic contours of the latest aerial or ground survey results showing details such as landfill elevations, the flow direction of all surface drainage.

E. CONTINGENCY RESPONSES

1. **Spill** - The Discharger shall notify Regional Board staff by telephone or electronic mail within 24 hours (or one business day) of the discovery of any liquid waste spill in the WMU area. A written report shall be filed with Regional Board staff within seven (7) days, containing at least the following information:

   a. **Map** - a map showing the location(s) of the discharge.
   b. **Flow rate** - an estimate of the flow rate of the discharge.
   c. **Description** - a description of the nature and extent of the discharge (e.g., all pertinent observations and analysis).
   d. **Sampling** – a description of any sample(s) collected for laboratory analysis and a copy of the analytical results of the sample.
   e. **Corrective measures** – a description of the corrective measure(s) implemented, and any proposed mitigation measures for approval by Regional Board staff.

2. **Facility failure** - The Discharger shall notify Regional Board staff by telephone and/or email within 48 hours (or two business days) of any slope failure or failure of facilities necessary to maintain compliance with the requirements in this Order. Within seven (7) days, the notification shall be submitted in writing to Regional Board staff. Any failure that threatens the integrity of the waste containment features or the landfill shall be promptly corrected after a remediation workplan and schedule have been approved by Regional Board staff, unless it poses an immediate threat to the environment or landfill containment structures. Then it will be corrected as soon as possible.

3. **Leachate seep** – The discharger shall immediately, within 48 hours (or two business days) after discovery, notify Regional Board staff by telephone and/or email the discovery of any seepage from or soil staining at the site. If feasible, a sample of the leachate shall be collected for analysis. A written report shall be filed with Regional Board staff within seven (7) days, containing at least the following information:

   a. Map – A map showing the location(s) of seepage;
   b. Flow rate – An estimate of the flow rate or volume;
   c. Description – A description of the nature of the discharge (e.g., all pertinent observations and analyses); and
   d. Corrective measures - Measures proposed to address any seep(s) for approval by Regional Board staff.
   e. A copy of the laboratory analytical results of the seep sample shall be submitted to Regional Board staff within 60 days after filing the written report.

4. **VOC Detection in Background Monitoring Point**

   a. Any time the laboratory analysis of a sample from a background monitoring point shows either three or more VOCs above their respective MDLs, or one VOC above its respective PQL, the Discharger shall immediately obtain one new independent sample from the background monitoring point and send for laboratory analysis of only the VOCs that were initially detected above the concentration limits.

   b. If the laboratory analysis of the sample collected pursuant to Section E.4.a, above, validates the presence of a VOC(s) at the background monitoring point, the Discharger shall:

      i. Provide written notification to Regional Board staff via email within seven (7) days of validation.

      ii. Within 180 days of validation, submit a report, acceptable to the EO of the Regional Board, which examines the possibility that the detected VOC(s) originated from other than the landfill, and proposes appropriate changes to the monitoring and reporting program.

   c. If the EO of the Regional Board determines, after reviewing the report, that the VOC(s) detected originated from a source other than the landfill, the Discharger shall continue the existing monitoring and reporting program.

   d. If the EO of the Regional Board determines, after reviewing the report, the detected VOC(s) most likely originated from the landfill site, the Discharger shall assume that a release has been detected and shall immediately begin carrying out the appropriate release discovery response in Section B.10 of the MRP.

F. <u>REPORTING</u>

1. **Monitoring report contents** — All reports shall be submitted no later than thirty (30) days following the end of their respective monitoring period. All reports shall be submitted electronically in accordance with the Electronic Reporting Regulations (Chapter 30, Division 3 of Title 23 & Division 3 of Title 27). The reports shall comprise of at least the following, in addition to the specific contents listed for each type of report:

   a. **Transmittal letter** — A letter summarizing the essential points shall accompany each report. This letter shall include a discussion of any violations or deficiencies found since the last such report was submitted, and shall describe actions taken or planned for correcting those violations. If no violations have occurred since the last submittal, this shall be stated in the transmittal letter. The transmittal letter shall be signed by a principal officer at the level of vice president or above,

or by his/her duly authorized representative, if such a representative is responsible for the facility. The letter shall contain a statement by the official, under penalty of perjury, that to the best of the signers' knowledge, the report is true, complete, and correct. All technical and monitoring reports shall be signed and stamped by a registered civil engineer or a certified engineering geologist in accordance with Title 27, §21710(d).

b. **Summary of non-compliance** - The report shall contain a summary of non-compliance for the monitoring period that discusses the site compliance record and the corrective actions taken or planned that may be needed to bring the site into full compliance with WDRs. This section shall be located at the front of the report and shall clearly list all non-compliance with WDRs, as well as all exceedances of water quality protection standards.

c. **Water quality monitoring reporting** - At a minimum, the following information shall be included in the report:

   i. **Flow rate/direction** — For each monitoring point addressed by the report, a tabular summary and graphical presentation of all measured groundwater elevation data, and a groundwater elevation contour map, showing the direction of groundwater flow under/around d LCL based upon water level elevations taken for the monitoring period;

   ii. **Well information** — For each monitoring well addressed by the report, a description of the method and time of water level measurement, and a description of the method of purging used to remove stagnant water in the well before sampling, pursuant to Title 27, §20415(e)(12)(B);

   iii. **Sampling Information** — For each monitoring point addressed by the report, field sampling records showing the type of pump or other device used and its vertical placement for sampling, and a detailed description of the sampling procedures (number and description of the samples, field blanks, travel blanks, and duplicate samples taken, the type of containers and preservatives used, the date and time of sampling, the name(s) and qualifications of the person(s) taking the samples, and any other observations); and

   iv. **Analytical data** — A copy of the laboratory analytical results shall be included. The laboratory analytical data shall be summarized and presented in a tabular format. Statistical and non-statistical analyses of the analytical data shall be presented. An evaluation and interpretation of the data analyses shall be also be included.

   v. A discussion of any water sampling and monitoring activities that deviated from the sampling and quality assurance plans.

d. **General site monitoring reporting** - At a minimum, the following information shall be included in the report:

   i. **Landfill gas condensate and leachate containment systems, subdrain, and vadose zone monitoring system** — Monthly field inspection records and monitoring data for these systems and a statement as to the condition and performance of these systems;

ii. **Management of Liquids** - A summary of the total volumes, on a monthly basis, of landfill leachate and gas condensate collected at the site, and how these liquids are managed.

iii. **Drainage and erosion control systems** — The following information shall be submitted in for each reporting period:

(a) Field records of drainage and erosion control system inspection as required under Section D.3 of the MRP;

(b) A map showing the new and existing drainage and erosion control measures implemented, including the types and completion dates of maintenance activities performed, and the target completion dates of ongoing site maintenance activities. The winterization plan as required under Section D.6 of the MRP shall be submitted for the October reporting period each year; and

(c) A summary of the adequacy and effectiveness of the site drainage control system to collect and divert the calculated volume of precipitation and peak flows resulting from a 100-year, 24-hour frequency storm.

iv. **Waste type and placement** — The quantity and types of wastes discharged and a map indicating the locations in the landfill where waste has been placed since submittal of the last such report; and

v. **Daily cover** - If alternative daily cover (ADC) is used at the site that meets the requirements of Title 27, §20705(e), and has been approved by Regional Board staff, the type, amount (including, if applicable, average thickness), method of placement, and any problems or deficiencies encountered must be noted in the report.

e. **Maps** — Map(s) or aerial photograph(s) showing waste disposal and monitoring locations, WMUs, ground contour, and groundwater contour and flow direction to the greatest degree of accuracy possible.

f. **October leachate/gas condensate testing and April retest results** — Laboratory analytical results of the annual October leachate and gas condensate sampling results and any April retest sampling results as required under Section B.13 of the MRP.

g. **Annual summary report** — An annual summary report covering the previous monitoring year (April 1 of the previous year through March 31 of the following year). The annual summary reports are due on **April 30** (see Table 5 of the MRP). This report may be combined with the monitoring report period ending March 31, and shall include at least the following:

i. **Comprehensive Compliance Summary** - A comprehensive discussion of the compliance record; any significant monitoring system, drainage and erosion control system, and operational changes; a summary of corrective action results and milestones; and a review of construction projects completed or commenced in the past year or planned for the up-coming year.

ii. **Graphical Presentation of Analytical Data** - For each Monitoring Point, submit in graphical format the laboratory analytical data for all samples taken within at least the previous eight calendar years. Each such graph shall plot the concentration of one or more constituents over time for a given Monitoring Point, at a scale appropriate to show trends or variations in water quality. Maximum contaminant levels (MCL) shall be graphed along with constituent concentrations where applicable. Graphs shall plot each datum, rather than plotting mean values. For any given constituent or parameter, the scale for background plots shall be the same as that used to plot downgradient data.

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

iv. **Updated Table 1 (COC list)** – Annually, the Discharger shall update the COCs in Table 1 of the MRP through annual leachate and gas condensate testing and the five-year COC testing in accordance with Section B.2 of the MRP.

v. **Updated Table 3 (Concentration Limits)** – Bi-annually, the Discharger shall update the concentration limits in Table 3 of the MRP in accordance with Section B.4 of the MRP.

h. **Five-yearly COC (or UnPar COC) scans** – In conducting the five-yearly COC scan, under Section B.5.b of the MRP:

i. If a COC, which is not already on the MPar list, is detected and verified at a monitoring point, the Discharger shall add that COC to the MPar list, and update the MPar list in Table 1 of this MRP.

ii. The Discharger shall include a copy of the updated MPar list.

2. When necessary, abbreviated reports shall also be submitted for special occurrences described below:

a. In accordance with Section E of the MRP, the Discharger shall notify Regional Board staff by phone or electronic mail of the occurrence or discovery of any spill, slope failures, differential settlement, fissuring, leachate seepage, any deficiencies or failures of on-site systems such as landfill gas condensate and leachate containment structures, groundwater extraction and treatment systems, subdrains, and lysimeters necessary to maintain compliance with requirements in this Order. A brief synopsis, including the identified deficiencies, pertinent photographs, and the date and type of corrective action that has, or will be, taken to correct these deficiencies, shall be submitted in writing within seven (7) days after notification.

b. In accordance with Section D.4 of the MRP, during the rainy season, the Discharger shall submit a brief "storm report" within five (5) working days after a

major storm event (defined as any storm that results in the site receiving more than 0.5 inches of precipitation within a 24-hour period). This report shall include pertinent photographs, the identification of any deficiencies, and the date(s) and type(s) of corrective action that have been or will be taken to correct these deficiencies.

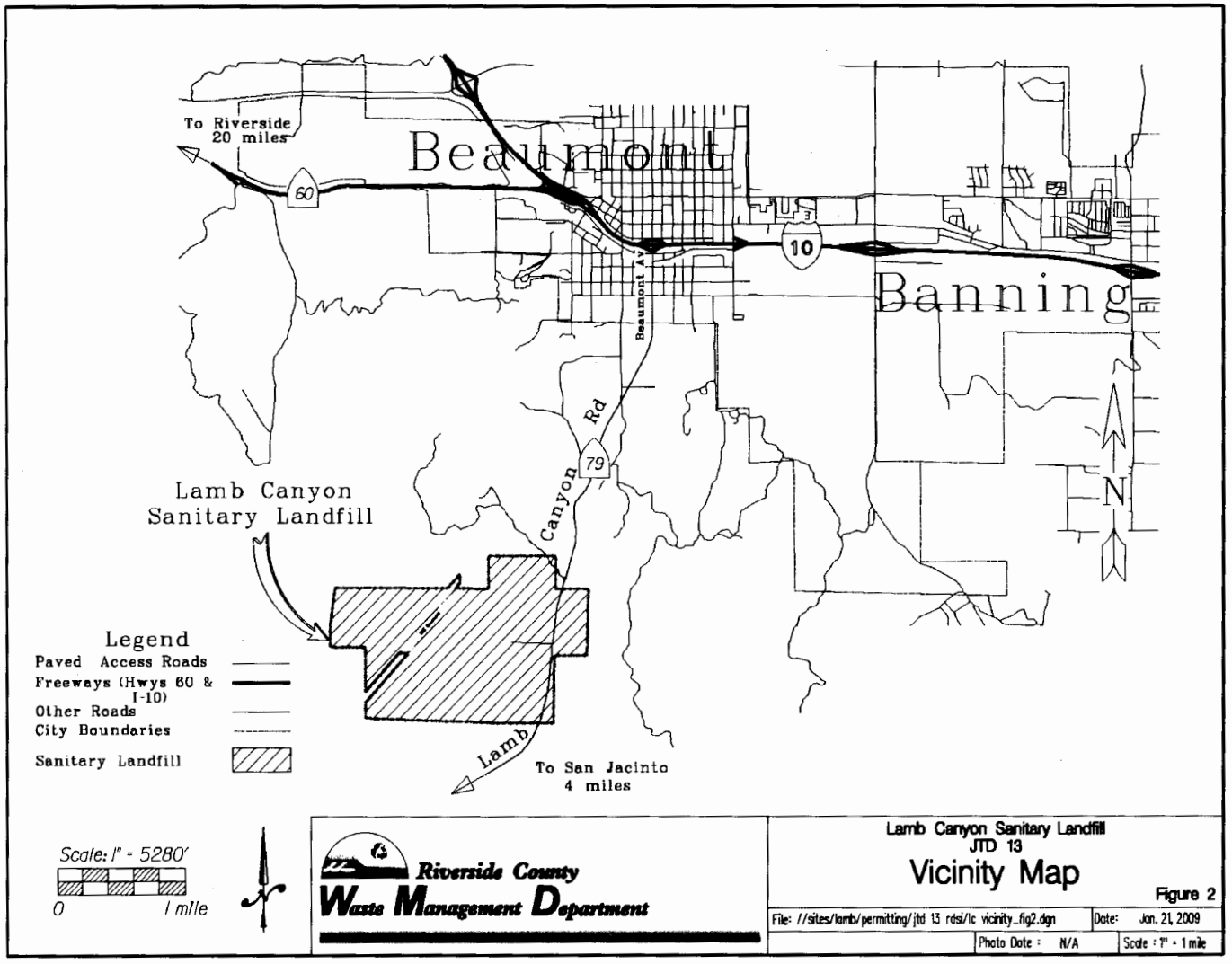
3. **Signature** - All reports shall be signed by a responsible officer or a duly authorized representative of the Discharger and shall be submitted under penalty of perjury.

4. **Electronic submittal of information (ESI)** - All reports shall be submitted in an electronic format, with text, tables, figures, laboratory analytical data (MS Excel Format), graphs, and appendices. In accordance with Electronic Reporting Regulations (Chapter 30, Division 3 of Title 23 & Division 3 of Title 27), all reports, well data, and lab data must be uploaded to the State Board's Geotracker database. In addition, a CDROM or DVDROM in word-searchable PDF format that contain all the electronic submittals shall be submitted to the Regional Board.

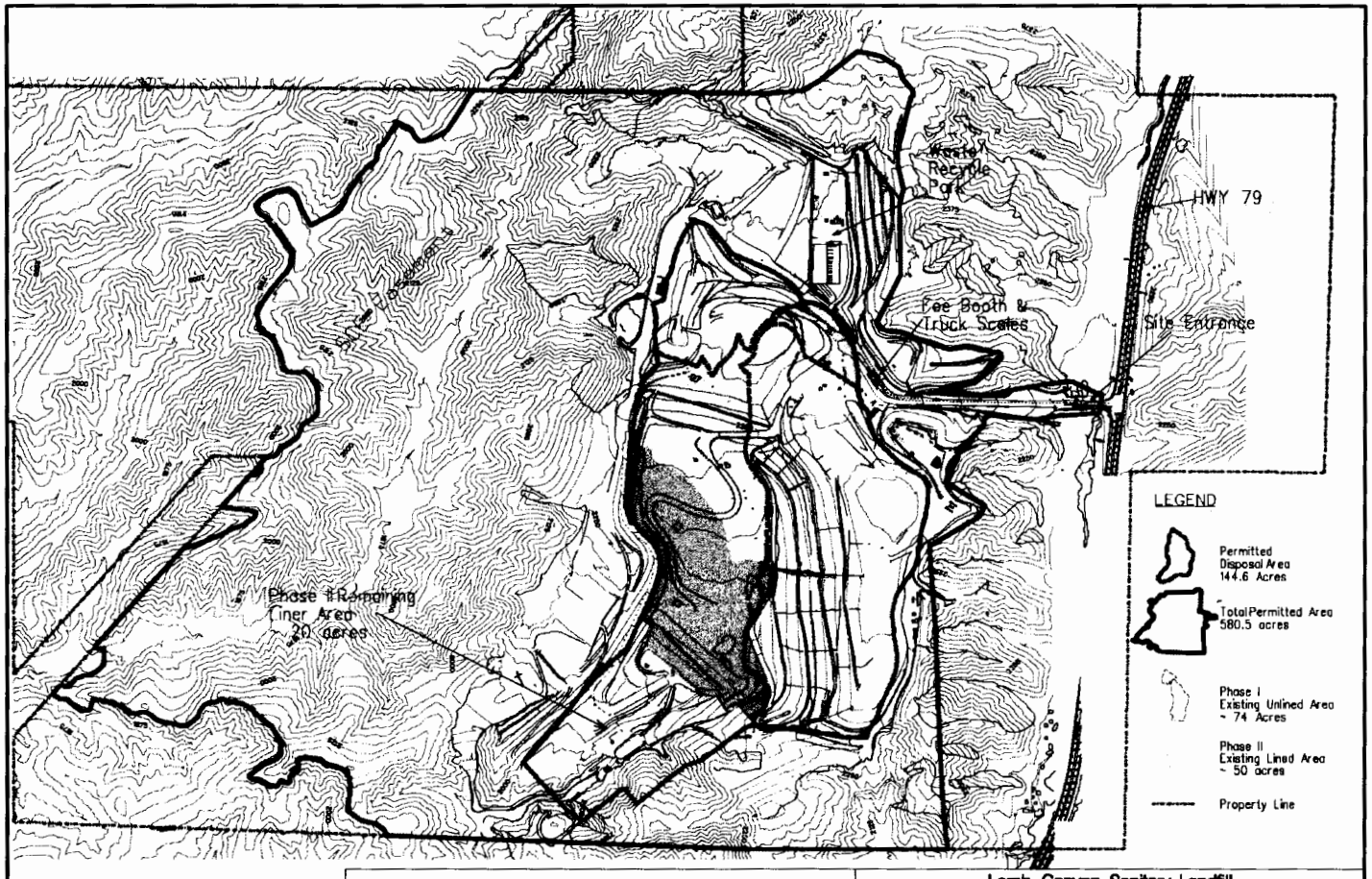
5. All reports required in this monitoring and reporting program are required pursuant to California Water Code (CWC) §13267. Any person affected by this action of the Regional Board may petition the State Water Resources Control Board (State Board) to review the action in accordance with CWC §13320,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

Kurt V. Berchtold
Executive Officer

November 1, 2013



Attachment A



Scale: 1" = 1000'
0 1000

Riverside County
Waste Management Department

Lamb Canyon Sanitary Landfill
JTD 13

Permitted Limits

Figure 1

File: //sites/lamb/permitting/JTD 13 RDSI/lc permit limi_fig1.dgn | Date: Jan. 21, 2008
Topo Date: 08/08/08 (aerial) 01/08/09 (ground) | Scale : 1" = 1000'

Attachment B

Attachment C-1
Definitions of Terms

"Title 27" means the State Water Resources Control Board's regulations, in Division 2 of Title 27 of the California Code of Regulations, applicable to the discharge to land of waste that is not hazardous waste.

"40 CFR §258" means the regulations under Part 258 of Title 40 of the Code of Federal Regulations that apply to municipal solid waste landfills.

"ACM" means the federal Assessment of Corrective Measures process, under 40 Code of Federal Regulations Part 258.56, which applies to any municipal solid waste landfill that has exhibited a measurably significant release over the applicable Water Quality Protection Standard at any well along the point of compliance for any Appendix II constituent. In California, this process is one in which the discharger determines the nature and extent of the release, implements interim corrective action measures, and develops a broad suite of possible measures, including a subset thereof which the discharger will propose for Regional Water Quality Control Board adoption under the Selection of Remedy process. Generally speaking, the federal Assessment of Corrective Measures and Selection of Remedy processes serve the same function, as the Evaluation Monitoring Program does under the State approach.

"Affected Medium" means any natural medium that consists of or contains waters of the state (e.g., ground water, surface water, or the unsaturated zone) that has been affected by a release from a waste management unit.

"Affected parties" means all people who own, or reside upon, land outside the facility boundary that is underlain by any portion of the release from the landfill. Under Title 40 of the Code of Federal Regulations section 258.55(g)(l)(iii), the discharger must keep an up-to-date list of all such people and must assure that they are invited to the discussion of proposed corrective action measures, pursuant to Title 40 of the code of Federal Regulations section 258.56(d).

"AMP" means a federal Assessment Monitoring Program, under Title 40 of the Code of Federal Regulations section 258.55, which applies to any municipal solid waste landfill that, under Title 40 of the Code of Federal Regulations section 258.54(c), has exhibited a measurably significant increase over the background value for any Monitoring Parameter. In California, given that a municipal solid waste landfill will have established background as the Concentration Limit for each Monitoring Parameter, the exceedance of the background value for a monitored constituent at any monitoring point also constitutes a violation of the Water Quality Protection Standard, thereby, in most instances, triggering the federal Assessment of Corrective Measures and Selection of Remedy studies. The term also describes the federal program that: 1) is ongoing during the Assessment of Corrective Measures and Selection of Remedy studies and under the Corrective Action Program; and 2) constitutes the federal monitoring program that continues after successful completion of the Corrective Action Program.

"Appendix I Constituents" means the suite of 47 volatile organic constituents and 17 metals used as the default monitoring parameter list in 40 CFR §258.

"Appendix II Constituents" means the suite of 213 hazardous constituents used as the default constituent of concern list in 40 CFR §258.

"Background" means the concentrations or measures of constituents or indicator parameters in water or soil that has not been affected by waste constituents or leachate from the waste management unit being monitored.

"Background Monitoring Point" means a well, device, or location specified in the waste discharge requirements at which monitoring for background water quality or background soil quality is conducted.

"Concentration Limit" is a part of the landfill's Water Standard and means the reference background data set, or reference concentration value, for a given constituent against which one compares current compliance well data to identify, in detection mode, the arrival of the release at a given well and to identify, in tracking mode, if the corrective action measures are bringing the landfill back into compliance with the Water Standard.

"Constituent of concern (COC)" is a part of the landfill's Water Quality Protection Standard and means the list of constituents that could be released from the landfill, including the foreseeable breakdown products of all such constituents. For the ground water medium at a municipal solid waste landfill, this list must include all Appendix II constituents except for those that the discharger can show are not being mobilized in the landfill's leachate and gas condensate. A constituent on this list becomes a Monitoring Parameter only after being detected (at trace level or above) and then verified by a well specific retest in a periodic scan of compliance wells affected by the release.

"Corrective action measure (CAM)" means an active or passive process (or installation) that the discharger implements or constructs to constrain a release, to eliminate its effects, or to prevent or minimize the release of additional waste from the landfill. The scope of the term includes "interim Corrective Action Measures," which is applied before the adoption of the Corrective Action Program, and includes "active Corrective Action Measures," which involves the induced movement of polluted water within the impacted aquifer (e.g., a pump-and-treat operation).

"Designated waste" means either of the following:

(a) Hazardous waste that has been granted a variance from hazardous waste management requirements pursuant to Section 25143 of the Health and Safety Code.
(b) Nonhazardous waste that consists of, or contains pollutants that, under ambient environmental conditions at a waste management unit, could be released in concentrations exceeding applicable water quality objectives or that could

reasonably be expected to affect beneficial uses of waters of the state as contained in the appropriate state water quality control plan.

"Detect" when applied to a scan of leachate or ground water, means that the constituent for which the scan is conducted shows up at trace level or higher. For Constituents of Concern and Monitoring Parameters that are rarely detected in background, the term means analyses done using a laboratory analytical method that complies with Title 27 of the California Code of Regulations section 20415(e)(7).

"Detection mode" for a given compliance well/Monitoring (well/MPar) pair, means a state in which one tests for a measurably significant increase, for that Monitoring Parameter at that well, using an appropriate statistical or non-statistical data analysis method. Once that well/MPar pair exhibits a measurably significant increase (including an initial indication verified by a discrete retest), it is monitored, thereafter, in "tracking mode" until the completion of the proof period, following successful completion of corrective action.

"Discrete retest" means a particular means of validating a preliminary indication of a release, for a given compliance well/MPar pair, whereby the discharger applies an approved data analysis method to two new samples for that well/MPar pair. The retest validates the preliminary indication if either or both of the retest samples triggers a measurably significant increase indication. The scope of the retest, at any given compliance well, is limited to only those Monitoring Parameters that gave a preliminary indication at that monitoring point.

"DMP" means a Detection Monitoring Program that implements the State Water Resources Control Board's requirements, under Title 27 of the California Code of Regulations §20420 and under State Water Resources Control Board Policy No. 93-62, which requires the Regional Water Quality Control Board to apply any federal municipal solid waste landfill requirements, under Title 40 of the Code of Federal Regulations section 258.54, that are additional to, or are broader in scope than, the Title 27 California Code of Regulations requirements.

"EMP" means an Evaluation Monitoring Program that implements the requirements under Title 27 of the California Code of Regulations §20425 and under State Water Resources Control Board Policy No. 93-62, which requires the Regional Water Quality Control Board to apply any applicable federal municipal solid waste landfill requirements, under Title 40 of the Code of Federal Regulations section 258.55 through section 258.57, that are additional to, or are broader in scope than, the Title 27 California Code of Regulations requirements. This state program constitutes a stepping stone to a Corrective Action Program, in response to the landfill's having exhibited a measurably significant increase of a release or to its having exhibited physical evidence of a release [see Title 27 of the California Code of Regulations section 20385(a)(2 and 3)].

"Existing Footprint" means the area of land, at a municipal solid waste landfill, that is covered by waste as of October 9, 1993, the date that the landfill became subject to

the federal regulations of Title 40 of the Code of Federal Regulations Part 258, pursuant to section 258.1 of that part.

"Geographic variation" means the random change in the mean, or median, concentration of a given Monitoring Parameter between different locations in a given ground water body, in the absence of a release.

"Indicator Parameters" in this Order means a suite of parameters that are considered capable of providing reliable indication of a release from a landfill.

"Inter-well comparison" means a type of statistical or non-statistical data analysis, applied to a given detection mode compliance well/MPar pair, in which one compares current concentration data, for that Monitoring Parameter and well, with a suite of background data from the appropriate upgradient well(s) to determine if that Monitoring Parameter has produced a measurably significant increase at that well. Generally speaking, the use of upgradient background data tends to produce higher false-positive and false-negative rates than the intra-well comparison approach, but is appropriate in those cases where it is not feasible to validate that a compliance well's own historical data reflects water quality in the absence of a release.

"Intra-well comparison" means a type of statistical or non-statistical data analysis, applied to a given detection mode compliance well/MPar pair, in which one compares current concentration data, for that Monitoring Parameter, with a suite of background data consisting of selected historical data from that same well to determine if that Monitoring Parameter has produced a measurably significant increase at that well. Typically, the use of a compliance well's own historical data, for a Monitoring Parameter, provides better statistical power (to identify a real release and to avoid producing false-positive indications) than does the inter-well comparison approach, but only in a case where it is reasonable to assume that the compliance well's own historical data does not reflect the presence of a release for that Monitoring Parameter.

"LCRS" means a functioning Leachate Collection and Removal System (i.e., one that produces leachate). "Leachate" means any liquid formed by the drainage of liquids from waste or by the percolation or flow of liquid through waste.

"LFG" means landfill gas, including any Volatile Organic Compounds.

"MRP" means the Monitoring and Reporting Program that is an attachment to the Waste Discharge Requirements (or other order) and that is incorporated by reference by the Waste Discharge Requirements.

"Matrix effect" means any increase in the Method Detection Limit or Practical Quantitation Limit for a given constituent as a result of the presence of other constituents, either of natural origin or introduced through a release, that are present in the sample of water or soil-pore gas being analyzed.

"Measurably significant increase" means a condition in which an appropriate data analysis method shows an initial indication of a release, for a given detection mode compliance well/MPar pair, that is verified by a discrete retest (for that well and Monitoring Parameter).

"Method Detection Limit (MDL)" means the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte's concentration is greater than zero, as defined in Title 40 of the Code of Federal Regulations Part 136, Appendix B.

"Monitored media" means those water and/or gas-bearing media (if applicable) that are monitored pursuant to a monitoring and reporting program. The monitored media may include:

a. groundwater in the uppermost aquifer or in any other portion of the zone of saturation [section 20164 of Title 27 of the California Code of Regulations], in which it would be reasonable to anticipate that waste constituents migrating from the landfill could be detected, and in any perched zones underlying the landfill,
b. any bodies of surface water that could be measurably affected by a release,
c. soil-pore liquid beneath and/or adjacent to the landfill, and
d. soil-pore gas beneath and/or adjacent to the landfill.

"Monitoring Parameter (MPar)" is a part of the landfill's Water Quality Protection Standard and means a list consisting of those Constituents of Concern that are present at a detectable level (trace level or above) in ground or surface water affected by the release. This is the subset of the Constituents of Concern that is subject to testing for a measurably significant increase, in detection mode, at all compliance wells. For ground water, at a landfill with a functioning Leachate Collection and Removal System, this suite includes all Appendix II constituents that have been detected (at trace level or above) and verified in leachate and, subsequently, have been detected (at trace level or above) and verified in a Constituents of Concern scan of ground water at compliance wells affected by the release. For ground water, at a landfill without a functioning Leachate Collection and Removal System, this suite includes all Appendix II constituents that have been detected (at trace level or above) and verified in a Constituents of Concern scan of ground water at any compliance well affected by the release.

"Monitoring Point" for any given monitored medium (surface water, ground water, or the unsaturated zone), means a location, including any installed access device (e.g., well or lysimeter), that is named in the Monitoring and Reporting Program as a place where the discharger monitors that medium: 1) to detect the arrival of the release front for each Monitoring Parameter that is in detection mode at that location; 2) to detect changes in the concentration of each Monitoring Parameter that is in tracking mode at that location; and 3) in case where the location that is in tracking mode for most Monitoring Parameters that are involved in the release, to detect the presence, at trace

level or above, of any Constituents of Concern that have not previously been detected in that medium (Constituents of Concern newly detected and verified in that medium become Monitoring Parameters for that medium).

"MSW landfill" means any landfill that is subject to any portion of the federal regulations under Title 40 of the Code of Federal Regulations Part 258 by virtue of having received municipal solid waste (household waste) at any time and having received any waste after October 9, 1991.

"Operating record" means the organized compendium of information about the landfill and facility that the discharger maintains and makes available to the public at a site approved by the Regional Water Quality Control Board and/or the Enforcement Agency and that contains a copy of each document submitted to, or received from, any State or local regulatory agency for purposes of obtaining or updating either the Facility Permit or the Waste Discharge Requirements, demonstrating -compliance with the California Environmental Quality Act, or complying (or demonstrating compliance) with any applicable requirement under Title 40 of the Code of Federal Regulations Part 258.

"Point of compliance (POC)" is, for the ground water medium, a part of the landfill's Water Quality Protection Standard and means a conceptual vertical surface that is located, in map view, along the hydraulically downgradient limit of waste placement at the landfill and that extends downward through the uppermost aquifer underlying the Unit. The federal municipal solid waste regulations require one or more ground water monitoring points along this vertical surface to monitor the quality of ground water passing it (see Title 40 of the Code of Federal Regulations section 258.51), whereas the Regional Water Quality Control Board will name other ground water monitoring points (not along this vertical surface) as needed to provide the earliest possible detection and measurement of a release [see Title 27 of the California Code of Regulations section 20415(b)(I)].

"Practical Quantitation Limit (PQL)" means the value established as a target value by the United States Environmental Protection Agency that is the lowest concentration of a substance that can be consistently determined within +/- 20% of the true concentration by 75% of the laboratories tested in a performance evaluation study. Alternatively, if performance data are not available, the Practical Quantitation Limit for carcinogens is the Method Detection Limit multiplied by 5, and for non-carcinogens is the Method Detection Limit multiplied by 10. These estimated PQLs are listed in Appendix II to Title 40 of the Code of Federal Regulations Part 258. Generally, these are target values that may not reflect the constraints of matrix effects; therefore, the Regional Water Quality Control Board requires the discharger to keep an up-to-date listing of the applicable laboratory-specific PQL and MDL estimates for each analyte on the Constituent of Concern list.

"Release" means the three-dimensional portion of the monitored medium (ground water, surface water, or the unsaturated zone) comprised of all locations therein that are affected by one or more Monitoring Parameters that have migrated from the

landfill to such an extent that a properly constructed monitoring point, at that location, would trigger a measurably significant increase over the applicable concentration limit, using an appropriate data analysis method meeting the requirements of Title 27 of the California Code of Regulations section 20415(e)(9) and a background data set sample size of 16 or more data points.

"Reporting period" means the duration separating the submittal of a given type of monitoring report from the time the next iteration of that report is scheduled for submittal.

"Retest" when applied to a scan to detect the presence of an appropriate list of analytes in leachate, landfill gas, or ground water (at an affected monitoring point), means taking a single additional sample from the indicating medium (or, for ground water, the indicating monitoring point) to determine whether the initial detection, for that analyte, is valid. When applied to the six-monthly monitoring effort for a given compliance well/MPar pair in detection mode, see "discrete retest."

"Sample size" for a given compliance well/MPar pair in detection mode, means the number of data points used to represent the variability of the background population or to represent the present compliance status of the Monitoring Parameter at that well, when applying an appropriate data analysis method.

"Scan" means a determination as to whether any of a given list of constituents are detectable (at the trace level or above) in the monitored medium (typically leachate, ground water, or landfill gas). The term includes both the initial measurement and, for a newly detected constituent, the results of the single retest sample. To identify a newly detected constituent, the constituent must be detected (at trace level or above) and then verified by being detected in the single sample retest. When applied to leachate or landfill gas, the term indicates a way of determining which Appendix II constituents should be included in the landfill's Constituents of Concern list (once detected and verified, a constituent is added permanently to the Constituents of Concern list). When applied to ground water, the term indicates a way of determining which Appendix II constituents should be included in the landfill's Monitoring Parameter list (once detected and verified at any given compliance well or background well, a constituent is added permanently to the Monitoring Parameter list).

"SOR" means a federal Selection of Remedy study, under Title 40 of the Code of Federal Regulations section 258.57, which applies to any municipal solid waste landfill that has exhibited a measurably significant release over the applicable Water Quality Protection Standard at any well along the Point Of Compliance for any Appendix II constituent. In California, this process is one in which the Regional Water Quality Control Board, in the presence of any affected persons and other interested parties, considers all relevant factors and adopts a suite of corrective action measures - developed during the Assessment of Corrective Measures study - which the discharger will apply during the Corrective Action Program to remediate the effects of the release. Generally speaking, the studies serve the same function, under the federal approach, as the Evaluation Monitoring Program does under the State approach.

"SW-846" means the laboratory analytical guidance document published by the United States Environmental Protection Agency.

"SWRCB" means the California State Water Resources Control Board.

"SWRCB Resolution No. 93-62" means the order the State Water Resources Control Board adopted in 1993 as State Policy For Water Quality Control (that has the legal force of regulation) that applies to all municipal solid waste landfills and requires a composite liner for all portions of the landfill outside of its Existing Footprint, with rare exceptions, and requires the Regional Water Quality Control Board to apply any requirement of Title 40 of the Code of Federal Regulations Part 258 that is missing from, or broader in scope than, the State Water Resources Control Boards' landfill requirements under Title 27 of the California Code of Regulations.

"Tracking mode" for a given compliance well/MPar pair, means a state in which there has already been a measurably significant increase (for that Monitoring Parameter at that well) such that the focus has changed from detecting the release to tracking it. In this mode, one keeps an up-to-date concentration versus time plot used in the six-monthly report validating the effectiveness of the Corrective Action Measures-required under Title 27 of the California Code of Regulations section 20430(h) - to demonstrate either that current Corrective Action Measures are effectively remediating the release or to identify the need for proposing additional changed Corrective Action Measures under Title 27 of the California Code of Regulations section 20430(i or j) and Title 40 of the Code of Federal Regulations section 258.58(b). A well/MPar pair in this mode remains in this mode until the inception of the proof period following successful completion of corrective action.

"Time-Versus-Concentration Plot" provides a graphical method to view changes in concentration levels at a particular monitoring location(s) over time. More than one monitoring location can be compared on the same plot to look for differences between monitoring locations. They can also be used to examine the data for indications of trends.

"VOC" means any of the Volatile Organic Compounds that can be identified in a water or leachate sample under United States Environmental Protection Agency Method 8260 (see SW-846). The United States Environmental Protection Agency lists a subset of 47 such constituents in its Appendix I default Monitoring Parameter list (see Appendix I to Title 40 of the Code of Federal Regulations Part 258).

"Water Quality Protection Standard (Water Standard)" means the multi-part system by which the discharger determines the compliance status of the landfill, with respect to the release of waste constituents. For each monitored medium, the term includes: the Constituent of Concern list and the Monitoring Parameter list (i.e., the subset of Constituents of Concern that are detectable in the that medium); the concentration limit for each Monitoring Parameter at each monitoring point; the monitoring points (for the ground water medium, these are the compliance wells); and, for the ground water medium, the point of compliance. A violation of this standard occurs whenever a Constituent of Concern that is detectable in that medium (i.e. a Monitoring Parameter)

produces a measurably significant increase over its applicable concentration limit at any monitoring point, as indicated by an appropriate statistical or non-statistical data analysis method meeting the requirements of Title 27 of the California Code of Regulations section 20415(e)(9). Such a violation triggers a change from detection mode to tracking mode for that well/MPar pair.

"Well/MPar pair" means a given Monitoring Parameter at a given well (typically a compliance well, unless a release is detected at a background well). The discharger tracks compliance with the Water Quality Protection Standard for each such pair; therefore, the minimum number of such pairs for the ground water medium is equal to the number of compliance wells times the number of Monitoring Parameters. At any given time, such a well and constituent combination will be either in detection mode or in tracking mode.

Attachment C-2
List of Acronyms

CalRecycle—California State Department of Resources Recycling and Recovery
CAP—Corrective Action Program
CCL – Compacted clay liner
CCR—California Code of Regulations
CEQA—California Environmental Quality Act
CFR—Code of Federal Regulations
COC—Constituent Of Concern
CQA—Construction Quality Assurance
CWC—California Water Code
DMP—Detection Monitoring Program
EAD—Engineered Alternative Design
EFS—Engineering Feasibility Study
FML—Flexible Membrane Liner
LCL—Lamb Canyon Landfill
LCRS—Leachate Collection and Removal System
LFG—Landfill Gas
LFGCES—Landfill Gas Collection and Extraction System
MCL—Maximum Contaminant Level
MDL—Method Detection Limit
MPars—Monitoring Parameters
MRP—Monitoring and Reporting Program
MSW—Municipal Solid Wastes
NPDES—National Pollutant Discharge Elimination System
PCMP—Post-closure Maintenance Plan
POC—Point of Compliance
PQL—Practical Quantitation Limit
PSD—Prescriptive Standard Design
QA—Quality Assurance
QC—Quality Control
RLs—Reporting Limits
ROWD—Report Of Waste Discharge
SBB&M—San Bernardino Baseline and Meridian
SWRCB—State Water Resources Control Board
TWW—Treated Wood Waste
UnPars—Uninvolved Parameters
USEPA—United States Environmental Protection Agency
VOCs—Volatile Organic Compounds
WCS—Waste Containment System
WDRs—Waste Discharge Requirements
WMUs—Waste Management Units
WQPS—Water Quality Protection Standards

Attachment D-1
Approved Engineered Alternative Liner Design

Bottom Liner Systems

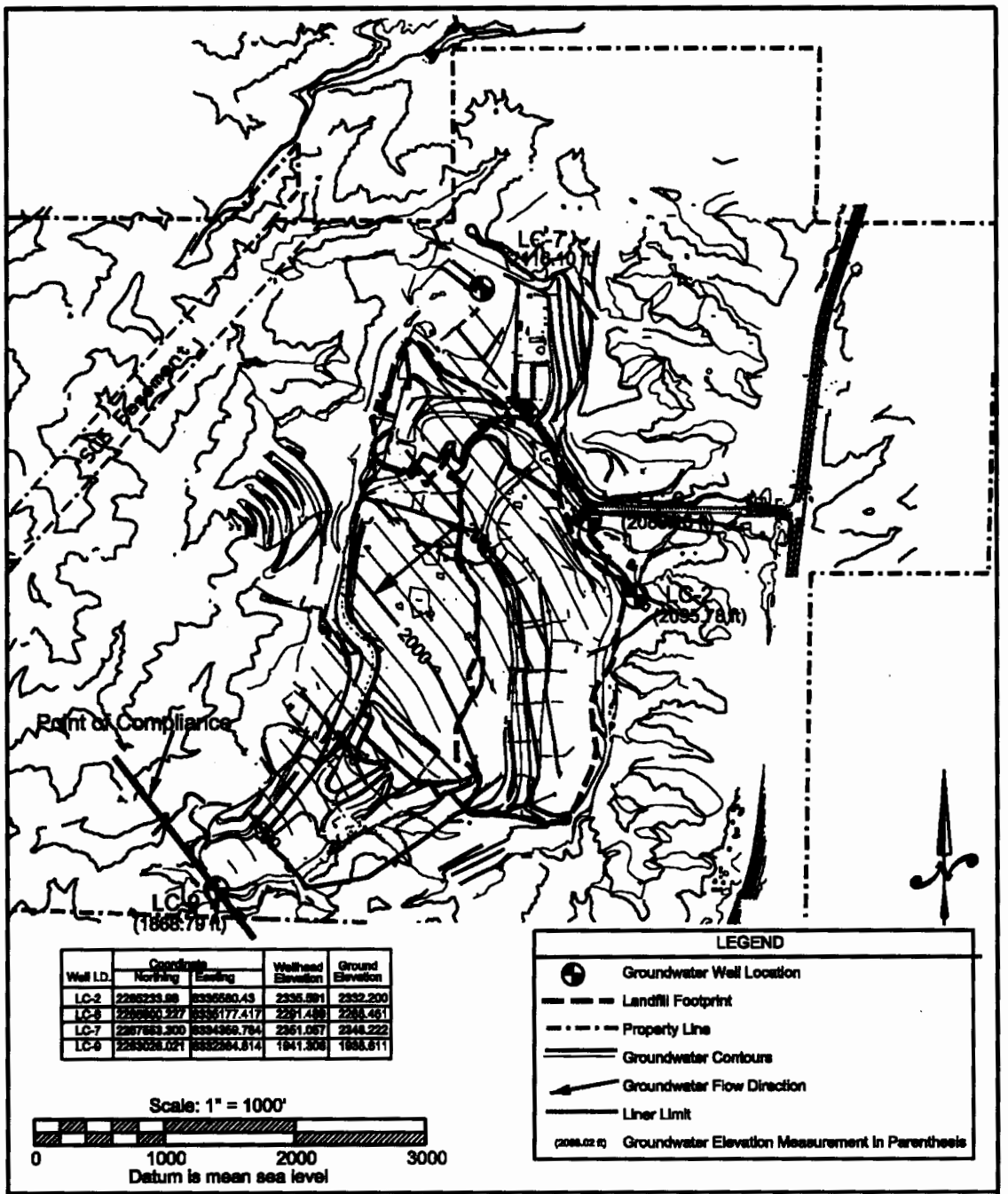
PSD	EAD-B1	EAD-B2
Prepared subgrade	Prepared subgrade	Prepared subgrade
24-inch ≤1x10^{-7} cm/s low permeability compacted clay liner (CCL)	24-inch ≤1x10^{-7} cm/s CCL	• 12-inch ≤1x10^{-6} cm/s CCL • Minimum 60-mil double-side textured HDPE moisture barrier • Geosynthetic Clay Liner (GCL)
Minimum 60-mil HDPE liner	Minimum 60-mil double-side textured HDPE	Minimum 60-mil double-side textured HDPE
12-inch ≥0.01 cm/s LCRS drainage layer	• 12-oz/sy cushion geotextile • 9-inch ≥0.1 cm/s LCRS gravel drainage layer **or**	• 12-oz/sy cushion geotextile • 9-inch ≥0.1 cm/s LCRS gravel drainage layer **or**
	12-inch ≥0.01 cm/s LCRS coarse sand drainage layer	12-inch ≥0.01 cm/s LCRS coarse sand drainage layer
8-oz. geotextile filter fabric	8-oz/sy filter fabric geotextile	8-oz/sy filter fabric geotextile
24-inch protective soil cover	24-inch protective soil cover	24-inch protective soil cover
Refuse	Refuse	Refuse

Sideslope Liner Systems

PSD	EAD-S1	EAD-S2
Prepared subgrade	Prepared subgrade	Prepared subgrade
24-inch ≤1x10^{-7} cm/s CCL	GCL	GCL
Minimum 60-mil HDPE liner	Minimum 80-mil double-side or single-side textured HDPE	Minimum 80-mil double-side or single-side textured HDPE
12-inch ≤1x10^{-2} cm/s drainage layer 8-oz. geotextile filter fabric	16-oz/sy filter fabric geotextile	Geocomposite drainage layer
24-inch protective soil cover	24-inch protective soil cover	24-inch protective soil cover
Refuse	Refuse	Refuse

Attachment D-2
(Liner system installed at LCL)

Stage	Date Completed	True Area (Acres)	Planar Area (Acres)	Liner Description (Top to Bottom)	
Stage 1 (P2S1)	1/29/2002	4.9	4.6	Bottom	24-in. Protective Soil Layer (3" Max. Particle Size) 8 oz/sy Geotextile 12-in. Drainage Layer (Coarse Sand) 80-mil double-side textured HDPE Bentomat-DN Geosynthetic Clay Liner (GCL) 40-mil double-side textured HDPE 12-in. Low Permeability Layer ($1x10^{-5}$ cm/sec)
				Sideslope	24-in. Protective Soil Layer (1" Max. Particle Size) 16 oz/sy Geotextile 80-mil single-side textured HDPE (smooth on top, textured on bottom) Bentomat-DN Geosynthetic Clay Liner (GCL)
Stage 2 (P2S2)	9/13/2005	21.4	20.1	Bottom	24-in. Protective Soil Layer (3" Max. Particle Size) 8 oz/sy Geotextile 12-in. Drainage Layer (Coarse Sand) 80-mil double-side textured HDPE Bentomat-DN Geosynthetic Clay Liner (GCL) 60-mil double-side textured HDPE 12-in. Low Permeability Layer ($1x10^{-5}$ cm/sec)
				Sideslope	24-in. Protective Soil Layer (1" Max. Particle Size) 16 oz/sy Geotextile 80-mil single-side textured HDPE (smooth on top, textured on bottom) Bentomat-DN Geosynthetic Clay Liner (GCL)
Stage 3 (P2S3)	5/20/2008	26.6	25.6	Bottom	24-in. Protective Soil Layer (3" Max. Particle Size) 8 oz/sy Geotextile 9-in. ≥ 0.1 cm/sec LCRS Gravel drainage layer 12 oz/sy Geotextile 80-mil double-side textured HDPE Bentomat-DN Geosynthetic Clay Liner (GCL) 60-mil double-side textured HDPE 12-in. Low Permeability Layer ($1x10^{-5}$ cm/sec)
				Sideslope	24-in. Protective Soil Layer (1" Max. Particle Size) 16 oz/sy Geotextile 80-mil single-side textured HDPE (smooth on top, textured on bottom) Bentomat-DN Geosynthetic Clay Liner (GCL)
Stage 4 (P2S4)	Proposed	21	20.3	Bottom	24-in. Protective Soil Layer (3" Max. Particle Size) 8 oz/sy Geotextile 9-in. ≥ 0.1 cm/sec LCRS Gravel drainage layer 12 oz/sy Geotextile 60-mil double-side textured HDPE GSE NWL 45 Geosynthetic Clay Liner (GCL) 60-mil double-side textured HDPE 12-in. Low Permeability Layer ($1x10^{-6}$ cm/sec)
				Sideslope	24-in. Protective Soil Layer (1" Max. Particle Size) 16 oz/sy Geotextile 80-mil single-side textured HDPE (smooth on top, textured on bottom) GSE NWL 35 Geosynthetic Clay Liner (GCL) Prepared subgrade



Well I.D.	Coordinate Northing	Coordinate Easting	Wellhead Elevation	Ground Elevation
LC-2	2286233.99	6336580.43	2335.591	2332.200
LC-9	2289800.227	6336177.417	2291.489	2288.461
LC-7	2287683.300	6334369.784	2361.067	2348.222
LC-9	2289028.021	6332364.614	1941.308	1868.611

Point of Compliance Map

Attachment E

Attachment F
Appendix II Constituents

Acenaphthene
Acenaphthylene
Acetone
Acetonitrile; Methyl cyanide
Acetophenone
2-Acetylaminofluorene; 2-AAF
Acrolein
Acrylonitrile
Aldrin
Allyl chloride
4-Aminobiphenyl
Anthracene
Antimony (total)
Arsenic (total)
Barium (total)
Benzene
Benzo[a]anthracene; Benzanthracene
Benzo[b] fluoranthene
Benzo[k] fluoranthene
Benzo[ghi] perylene
Benzo[a] pyrene
Benzyl alcohol
Beryllium (total)
alpha-BHC
beta-BHC
delta-BHC
gamma-BHC; Lindane
Bis(2-chloroethoxy) methane
Bis(2-chloroethyl) ether; Dichloroethyl ether
Bis(2-chloro-1-methylethyl) ether; 2,2-Dichlorodiisopropyl ether; DCIP
Bis(2-ethylhexyl) phthalate
Bromochloromethane; Chlorobromomethane
Bromodichloromethane; Dibromochloromethane
Bromoform; Tribromomethane
4-Bromophenyl phenyl ether
Butyl benzyl phthalate; Benzyl butyl phthalate
Cadmium (total)
Carbon disulfide
Carbon tetrachloride
Chlordane
p-Chloroaniline
Chlorobenzene
Chlorobenzilate
p-Chloro-m-cresol; 4-Chloro-3-methylphenol
Chloroethane; Ethyl chloride
Chloroform; Trichloromethane
2-Chloronaphthalene
2-Chlorophenol
4-Chlorophenyl phenyl ether
Chloroprene
Chromium (total)
Chrysene
Cobalt (total)
Copper (total)
m-Cresol; 3-methylphenol
o-Cresol; 2-methylphenol
p-Cresol; 4-methylphenol
Cyanide
2,4-D; 2,4-Dichlorophenoxyacetic acid
4,4-DDD
4,4-DDE
4,4-DDT
Diallate
Dibenz [a,h] anthracene
Dibenzofuran
Dibromochloromethane; Chlorodibromomethane
1,2-Dibromo-3-chloropropane; DBCP
1,2-Dibromoethane; Ethylene dibromide; EDB
Di-n-butyl phthalate
o-Dichlorobenzene; 1,2-Dichlorobenzene
m-Dichlorobenzene; 1,3-Dichlorobenzene
p-Dichlorobenzene; 1,4-Dichlorobenzene
3,3-Dichlorobenzidine
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
2,4-Dichlorophenol
2,6-Dichlorophenol
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
Dieldrin
Diethyl phthalate
0,0-Diethyl 0-2-pyrazinyl phosphorothioate; Thionazin
Dimethoate
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
Dinoseb; DNBP; 2-sec-Butyl-4,6-dinitrophenol
Di-n-octyl phthalate
Diphenylamine
Disulfoton
Endosulfan I
Endosulfan II
Endosulfan sulfate
Endrin
Endrin aldehyde
Ethylbenzene
Ethyl methacrylate
Ethyl methanesulfonate
Famphur
Fluoranthene
Fluorene
Heptachlor
Heptachlor epoxide
Hexachlorobenzene
Hexachlorobutadiene
Hexachlorocyclopentadiene
Hexachloroethane
Hexachloropropene
2-Hexanone; Methyl butyl ketone
Indeno (1,2,3-cd) pyrene
Isobutyl alcohol
Isodrin

Attachment F (continued)
Appendix II Constituents

Isophorone
Isosafrole
Kepone
Lead (total)
Mercury (total)
Methacrylonitrile
Methapyrilene
Methoxychlor
Methyl bromide; Bromomethane
Methyl chloride; Chloromethane
3-Methylcholanthrene
Methyl ethyl ketone; MEK; 2-Butanone
Methyl iodide; Iodomethane
Methyl methacrylate
Methyl methanesulfonate
2-Methylnaphthalene
Methyl parathion; Parathion methyl
4-Methyl-2-pentanone; Methyl isobutyl ketone
Methylene bromide; Dibromomethane
Methylene chloride; Dichloromethane
Naphthalene
1,4-Naphthoquinone
1-Napthylamine
2-Napthylamine
Nickel (total)
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
N-Nitrosodiethylamine
N-Nitrosodimethylamine
N-Nitrosodiphenylamine
N-Nitrosodipropylamine; N-Nitroso-N-dipropylamine;
Di-n-propylnitrosamine
N-Nitrosomethylethylamine N-Nitrosopiperidine
N-Nitrosopyrrolidine
5-Nitro-o-toluidine
Parathion
Pentachlorobenzene
Pentachloronitrobenzene
Pentachlorophenol
Phenacetin
Phenanthrene
Phenol
p-Phenylenediamine
Phorate
Polychlorinated biphenyls; PCBS; Aroclors
Pronamide
Propionitrile; Ethyl cyanide
Pyrene
Safrole
Selenium (total)
Silver (total)
Silvex; 2,4,5-TP
Styrene
Sulfide
2,4,5-T; 2,4,5-Trichlorophenoxyacetic acid
1,2,4,5-Tetrachlorobenzene
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
Tetrachloroethylene; Tetrachloroethene; Perchloroethylene
2,3,4,6-Tetrachlorophenol
Thallium (total)
Tin (total)
Toluene
o-Toluidine
Toxaphene
1,2,4-Trichlorobenzene
1,1,1-Trichloroethane; Methylchloroform
1,1,2-Trichloroethane
Trichloroethylene; Trichloroethene
Trichlorofluoromethane; CFC-1 1
2,4,5-Trichlorophenol
2,4,6-Trichlorophenol
1,2,3-Trichloropropane
0,0,0-Triethyl phosphorothioate
sym-Trinitrobenzene
Vanadium (total)
Vinyl acetate
Vinyl chloride; Chloroethene
Xylenes (total)
Zinc (total)

Attachment G

Appendix I Constituents

Inorganic Constituents	**Organic Constituents – continued**
Antimony	p-Dichlorobenzene; 1,4-Dichlorobenzene
Arsenic	trans-1,4-Dichloro-2-butene
Barium	1,1-Dichloroethane; Ethylidene chloride
Beryllium	1,2-Dichloroethane; Ethylene dichloride
Cadmium	1,1-Dichloroethylene; 1,1-Dichloroethane;
Chromium	cis-1,2-Dichloroethylene; cis-1,2-
Cobalt	trans-1,2-Dichloroethylene; trans-1,2-
Copper	1,2-Dichloropropane; Propylene dichloride
Lead	cis-1,3-Dichloro propene
Nickel	trans-1,2-Dichloropropene
Selenium	Ethylbenzene
Silver	2-Hexanone; Methyl butyl ketone
Thallium	Methyl bromide; Bromomethane
Vanadium	Methyl chloride; Chloromethane
Zinc	Methylene bromide; Dibromomethane
	Methylene chloride; Dichloromethane
Organic Constituents	Methyl ethyl ketone; MEK; 2-Butanone
Acetone	Methyl iodide; Iodomethane
Acrylonitrile	4-Methyl-2-pentanone; Methyl isobutyl ketone
Benzene	Styrene
Bromochloromethane	1,1,1,2-Tetrachloroethane
Bromodichloromethane	1,1,2,2-Tetrachloroethane
Bromoform; Tribromomethane	Tetrachloroethylene; Tetrachloroethene;
Carbon disulfide	Toluene
Carbon tetrachloride	1,1,1-Trichloroethane; Methylchloroform
Chlorobenzene	1,1,2-Trichloroethane
Chloroethane; Ethyl chloride	Trichloroethylene; Trichloroethene
Chloroform; Trichloromethane	Trichlorofluoromethane; CFC-11
Dibromochloromethane; Chlorodibromomethane	1,2,3-Trichloropropane
1,2-Dibromo-3-chloropropane; DBCP	Vinyl acetate
1,2-Dibromoethane; Ethylene dibromide; EDB	Vinyl chloride
o-Dichlorobenzene; 1,2-Dichlorobenzene	Xylenes

Table 1
Constituents of Concern (COCs)

Monitoring Parameters (MPars)	Uninvolved Parameters (UnPars)
Inorganic Parameters: Chloride Nitrate as nitrogen pH Potassium Sulfate Total Dissolved Solids **Appendix I VOCs:** Acetone Benzene Butanone, 2- (MEK) Carbon Disulfide Chlorobenzene Chloroethane Dichlorobenzene, 1,2- Dichlorobenzene, 1,4-A Dichloroethane, 1,1- Dichloroethane, 1,2- Dichloroethene, cis-1,2- Dichloroethene, trans-1,2- Dichlorodifluoromethane Ethylbenzene Hexanone, 2- Methyl isobutyl ketone (MIBK) Methylene Chloride Styrene Tetrachloroethene Toluene Trichloroethane, 1,1,1- Trichloroethene Vinyl Chloride Xylenes, total Xylenes, m,p- Xylene, o-	**Metals:** Antimony Arsenic Barium Cadmium Chromium, total Cobalt Copper Iron Lead Nickel Selenium Tin Thallium Vanadium Zinc **Appendix II Organics:** **Semi-VOCs** Acenaphthene Acetophenone Benzyl Alcohol Bis(2-ethylhexyl) Phthalate Chlorophenol, 2- Cresol, o- Cresol, p- Diethyl Phthalate Dimethyl Phthalate Phenol **Inorganics:** Chemical Oxygen Demand (COD) Cyanide, total Total Anions Total Cations Total Hardness

Table 2
Water Quality Monitoring Points

Media Monitored	Monitoring Point	Location
Groundwater	LC-2,LC-6, LC-7	Background
	LC-9	Downgradient
	LC-9	Point of Compliance
Leachate	The leachate sump, LS-1, at the lowest point of the LCRS for Phase II	--
Landfill Gas Condensate	North Tank (Tank #1), South Tank (Tank #2)	--
Unsaturated Zone	Landfill gas perimeter monitoring probes	--

Table 3
Well Monitoring Parameter Concentration Limits (in mg/L)

Parameters	Well LC-2	Well LC-6	Well LC-7	Well LC-9
Total Dissolved Solids	1,769	1,400	442.6	820
Chloride	90.55	100.6	26.58	73.33
Nitrate-N	18	0.13	12.25	0.095
Sulfate	908.2	824.4	140	360
Potassium	4.80	1.59	0.78	0.77
pH	8.18	8.06	9.12	9
Appendix II Organics	Laboratory Reporting Limits (RLs) or Practical Quantitation Limits (PQLs)			

Table 4
Water Quality Monitoring

Task Description	Constituents	Monitoring Frequency
Monitoring Parameter (MPar) Analysis	See Table 1, above	Semi-annually
Landfill gas condensate monitoring (for unlined WMUs)	Non-COC Appendix II constituents	Annually (in October and a confirmation retest sample in April the following year, if needed)
Leachate monitoring (for lined WMUs)	Non-COC Appendix II constituents	Annually (in October and a confirmation retest sample in April the following year, if needed)
Vadose zone monitoring (perimeter gas probes)	Methane (field), total gaseous non-methane organic hydrocarbons (TGNMO), and the VOCs specified by SCAQMD Rule 1150.1	Monthly in the field and quarterly in the laboratory (per SCAQMD Rule 1150.1)
Five-year COC analysis	UnPar COCs (see Table 1, above) or full Appendix II analysis, if desired	Once every five years

Table 5
Monitoring & Reporting Schedules

Task Description	Monitoring Period	Report Due Date
Quarterly groundwater level measurement	October 1 – December 31	April 30 of each year
	January 1 – March 31	
	April 1 – June 30	October 31 of each year
	July 1 – September 30	
Semi-annual water quality and general site monitoring	October 1 – March 31 the following year	April 30 of each year
	April 1 – September 30	October 31 of each year
Annual October landfill leachate and gas condensate analysis	October 1 – October 31	January 31 of the following year
April leachate and gas condensate retesting	April 1 - April 30	August 1 of each year
Drainage system maintenance Facility survey/topographic map Winterization Plan	By October 1 of each year	October 31 of each year
Annual summary	April 1 of previous year – March 31	April 30 of each year
Five-year UnPar COC analysis (or full Appendix II Constituent analysis)	July 1 – September 30, 2015	October 31, 2015 and every fifth year thereafter, alternately in the Fall (October 31) and Spring (April 30)
	January 1 – March 30, 2020	April 30, 2020