

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

Staff Report

May 8, 2020

ITEM: 9

SUBJECT: Revision of Waste Discharge Requirements for the Badlands Sanitary Landfill, Riverside County Department of Waste Resources, Order No. R8-2020-0003

DISCUSSION:

The Riverside County Department of Waste Resources (RCDWR), hereinafter Discharger), owns and operates the Badlands Sanitary Landfill (BSL), a Class III non-hazardous municipal solid waste (MSW) landfill located at 31125 Ironwood Avenue, Moreno Valley, California.

The discharge of waste at BSL is currently regulated under waste discharge requirements (WDRs) Order No. 91-105, and its amendments, Orders No. 98-99, R8-2002-0085, R8-2006-0053, and R8-2010-0051, and R8-2016-0052 (collectively referred to as the existing WDRs).

The existing WDRs are being revised to include requirements that are consistent with the current federal and State laws and regulations applicable to MSW landfill operations and to reflect current operating conditions at BSL. This Order consolidates and updates the existing WDRs for BSL and prescribes discharge specifications, waste acceptance criteria, and monitoring and reporting requirements for the disposal of MSW and beneficial reuse of waste and waste-derived materials at BSL.

APPLICABLE LAWS AND REGULATIONS

The applicable regulations governing the discharge of MSW to land are contained in California Code of Regulations, Title 27, Division 2, Subdivision 1, *"Consolidated Regulations for Treatment, Storage, Processing or Disposal of Solid Waste"* (Title 27). Title 27 implements the federal regulations, Code of Federal Regulations Subpart D of Part 258 of Title 40 (Subtitle D), for MSW landfills.

The State and Regional Water Boards are authorized to regulate discharges of waste to land under Title 27. Title 27 generally deals with non-hazardous wastes, and it provides regulatory authority to the Regional Water Boards and California Department of Resources Recycling and Recovery (CalRecycle); it also clearly defines the responsibilities assigned to each agency. The regulations governing the disposal of

waste to land include authority for the Regional Water Boards to adopt waste discharge requirements and to establish site-specific requirements for regulatory compliance, waste containment system design, closure design, and post-closure monitoring. The primary purposes of the regulations are to: 1) assure the protection of human health and the environment; 2) ensure waste is properly contained or cleaned up as appropriate; and 3) assure that surface and groundwater are protected from the discharge of waste to land. Title 27, §20415 requires the Discharger to implement a water quality monitoring program to detect, evaluate, and remediate releases from BSL to ensure that the Discharger achieves compliance with the Water Quality Protection Standards adopted under §20390 for BSL.

The Water Quality Control Plan for the Santa Ana River Basin (Basin Plan) lists the beneficial uses and water quality objectives for surface and groundwater bodies in the Region.

This Order contains waste discharge requirements that are consistent with Title 27 and Subtitle D Regulations, the Basin Plan, and other pertinent federal and State laws and regulations for MSW management and disposal, and are considered to be adequate for the protection of the beneficial uses of the waters of the region.

RECOMMENDATION:

Adopt Order No. R8-2020-0003 as presented.

Comments were solicited from the following agencies:

U. S. Environmental Protection Agency, Region 9 - Steve Wall (wall.steve@epa.gov)

State Water Resources Control Board, Division of Clean Water Program – Brianna St.Pierre (Brianna.StPierre@waterboards.ca.gov)

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State Department of Fish and Game - Ed Pert (epert@dfg.ca.gov)

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STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
SANTA ANA REGION

ORDER NO. R8-2020-0003

WASTE DISCHARGE REQUIREMENTS
FOR
RIVERSIDE COUNTY DEPARTMENT OF WASTE RESOURCES
BADLANDS SANITARY LANDFILL
CLASS III SOLID WASTE DISPOSAL SITE
MORENO VALLEY, RIVERSIDE COUNTY

Discharger	Riverside County Department of Waste Resources 14310 Frederick Street Moreno Valley, CA 92553
Facility	BADLANDS SANITARY LANDFILL 31125 Ironwood Avenue Moreno Valley, California 92555

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

1. The Riverside County Department of Waste Resources (RCDWR, hereinafter Discharger) owns and operates the Badlands Sanitary Landfill (BSL). BSL is a Class III, non-hazardous municipal solid waste (MSW) landfill, located at 31125 Ironwood Avenue, Moreno Valley, in the unincorporated area of western Riverside County. BSL is located in Section 32, portions of Section 31 and 33, Township 2 South, Range 2 West, and within portions of Sections 4 and 5, Township 3 South, Range 2 West, San Bernardino Base and Meridian. The location of BSL is shown on **Attachment A**.
2. Landfill operations at BSL began in 1966. BSL consists of 1,168 acres, 150 acres of which are permitted for waste disposal, and 278 acres of which are permitted for non-disposal, landfill ancillary activities. Of the 150-acre permitted waste disposal area (Canyons 1 through 4), approximately 38 acres are unlined, and 101 acres are lined. Existing and proposed Waste Management Units (WMUs) are shown on **Attachment B-1**; proposed expansion areas (Canyons 5 and 6) beyond the current 150-acre permitted waste disposal area are shown on **Attachment B-2**.
3. The discharge of non-hazardous MSW to land is regulated by California Code of Regulations, Title 27, Division 2, Subdivision 1, *Consolidated Regulations for Treatment, Storage, Processing, or Disposal of Solid Waste* (Title 27). Definitions of terms and acronyms used in this Order are included in **Attachments C-1 and C-2**,

respectively. The terms used in this Order are contained in Title 27, Chapter 2, §20150, §20163, §20164, and §20415.

4. **Facility Waste Discharge Requirements** – BSL is currently regulated under Waste Discharge Requirements (WDRs) Santa Ana Regional Water Quality Control Board (Regional Water Board) Order No. 91-105, as amended by pre-existing orders (hereinafter collectively referred to as the existing WDRs). The existing 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. The existing WDRs are listed in the following table.

Order No.	Reason for WDR amendment	Date adopted
98-99	A blanket order that replaces Orders No. 93-57 and 94-17 to amend existing waste discharge requirements for MSW landfills in the region, and to require MSW landfills to comply with the federal (Subtitle D) and state (Title 27) regulations.	November 20, 1998
R8-2002-0085	To allow the use of engineered alternative Design (EAD) to the prescriptive standard design (PSD) 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.	October 25, 2002
R8-2006-0053	To allow the acceptance of designated waste, including treated wood waste (TWW), for disposal at composite-lined units of the landfill.	July 14, 2006
R8-2010-0051	To allow the use of an EAD to the PSD for the leachate removal and collection system drainage gravel layer of the base liner system at the landfill.	December 9, 2010
R8-2016-0052	A blanket order that replaces Order No. R8-2014-0006 to update acceptance criteria for the disposal of nonhazardous contaminated soils, CRT panel glass, and designated waste, and establish acceptance requirements for the beneficial reuse of contaminated soils and certain waste-derived materials at active MSW landfills in the region.	October 28, 2016

5. This Order consolidates requirements contained in the existing WDRs and updates these requirements to be consistent with the current federal and State laws and regulations for MSW disposal.
6. **Waste Classification** - Pursuant to Title 27, §20200(a), wastes are classified based on their risk of impairment to groundwater:

- a. Nonhazardous MSW are classified as Class III wastes and are disposed of at Class III landfills.
 - b. Designated wastes are classified as Class II wastes, and may be disposed of at a Class I, II, or III landfill. Classes II and III landfills are regulated by the Regional Water Boards and California Department of Resources Recycling and Recovery (CalRecycle).
 - c. Hazardous wastes are classified as Class I wastes, which are regulated under CCR, Title 22, Division 4.5 by the California Department of Toxic Substances Control (DTSC).
7. **Waste Sources, Types, and Quantities** – BSL is currently permitted by CalRecycle to accept a maximum daily tonnage of 4,500 tons per day of MSW. BSL receives a daily average of approximately 2,900 tons per day of MSW from the Cities of Riverside, Moreno Valley, Temecula, Perris, Lake Elsinore, Murrieta, and unincorporated areas of Western Riverside County. BSL also provides services to Los Angeles, Orange, San Bernardino, and San Diego Counties. Wastes accepted for disposal at BSL include municipal waste, agricultural waste, inert materials, construction/demolition/renovation waste, tires, dead animals, gypsum/drywall, appliances, disaster-related debris, non-hazardous high moisture content wastes (HMCW), non-hazardous contaminated soils, treated woodwaste (TWW), Cathode Ray Tube (CRT) panel glass, and designated wastes authorized by the Executive Officer (EO) of the Regional Water Board.
8. The Discharger is proposing several changes to existing operations at BSL in the upcoming years. The Discharger will submit an amended Report of Waste Discharge (ROWD), in the form of a Joint Technical Document (JTD) Addendum for these proposed changes. This Order may be amended, if necessary, to include supplemental discharge requirements for the proposed changes. The proposed changes are:
- a. Increase the existing maximum allowable daily MSW disposal tonnage from 4,500 tons per day to 5,000 tons per day.
 - b. Increase the permitted non-disposal, landfill ancillary activity area from 278 acres to 811 acres and the permitted site disposal area from 150 acres to 396 acres. The proposed increase in waste disposal area would allow site expansion into Canyons 5 and 6, as shown in **Attachment B-2**, beyond the currently permitted waste disposal area (Canyons 1 through 4). Expansion in Canyons 5 and 6 will occur in approximately 17 stages over many years and are expected to extend BSL's operational life expectancy from 2025 to 2073.
 - c. Add a greenwaste composting facility to site operations.

9. **Contaminated Soils** - Soils contaminated with moderate concentrations of total petroleum hydrocarbons (TPH), volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), organochlorine pesticides, polychlorinated biphenyls (PCBs), and California Administrative Manual (CAM) metals, are “wastes” as defined in California Water Code (CWC), §13050 and are required to be regulated under waste discharge requirements pursuant to CWC, §13263(a). The discharge of such wastes to land for disposal or reuse could affect the quality of the waters of the State if not properly managed. However, land disposal or reuse of contaminated soils at properly engineered and managed MSW landfills is an efficient and economical means of minimizing the impacts to water quality from such discharge of waste.
10. On August 6, 2015, the EO of the Regional Water Board approved the waste acceptance program (WAP) for disposal and reuse of contaminated soils (Soil WAP) at BSL in accordance with waste acceptance criteria prescribed in Order No. R8-2014-0006. Order No. R8-2016-0052 subsequently replaces Order No R8-2014-0006 to update or prescribe new acceptance criteria for the disposal of nonhazardous contaminated soils, CRT panel glass, and designated waste, and for the beneficial reuse of contaminated soils and certain waste-derived materials. To comply with Order No. R8-2016-0052, the Soil WAP was updated in May 2017, May 2018, and May 2019. This Order requires the Discharger to update the Soil WAP as needed to incorporate updated regulatory soil screening criteria.
11. **Designated Waste** – Pursuant to CWC, §13173, a designated waste is defined as:
 - a. Hazardous waste that has been granted a variance from hazardous waste management requirements pursuant to Section 25143 of the Health and Safety Code, or
 - 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 the waters of the state as contained in the appropriate state water quality control plan.
12. A designated waste that has been granted a variance by the DTSC from hazardous waste management, and that could reasonably be expected not to release pollutants in concentrations exceeding applicable water quality objectives can be authorized by the EO of the Regional Water Board for disposal at a composite-lined unit of a Class III landfill. Because there are no Class II landfills in the Region, it is practical to allow for the disposal of designated waste in a composite-lined unit of an active Class III landfill, provided that it can be demonstrated that acceptance of the designated wastes will not cause exceedance of water quality objectives and impairment of the beneficial uses of the receiving waterbodies. This Order allows the disposal of designated waste, approved by the EO of the Regional Water Board in a composite-lined unit at BSL.

13. **Treated Woodwaste (TWW)** - On January 1, 2005, Assembly Bill 1353 (AB1353), a State law that governs the disposal of treated wood waste (TWW), became effective. "Treated wood," as defined in California Health and Safety Code (CHSC) §25150.7, means wood that has been treated with a chemical preservative registered pursuant to the Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C. Sec. 136 and following), that is used for the purposes of protecting wood against insects, microorganisms, fungi, and other environmental conditions that can lead to decay of the wood. The chemicals used to treat wood may include, but are not limited to, chromated copper arsenate, ammoniacal copper zinc arsenate, or chromated zinc chloride.
14. AB 1353 negated all existing hazardous waste variances for TWW formerly granted by the California Department of Toxic Substance Control (DTSC), established interim TWW management and disposal standards, and required DTSC to adopt alternative management standards for TWW. On July 14, 2006, the Regional Water Board adopted WDR amendments, Order No. R8-2006-0053, and approved the TWW management and disposal plan, in compliance with the interim management standards [CHSC, §25150.7(d)(2)], for accepting TWW for disposal at composite-lined WMUs of BSL.
15. In July 2007, DTSC adopted final regulations (CCR, Title 22, §67386.1 et seq), specifying alternative management standards for TWW. CCR, Title 22, §67386.11 allows TWW disposal in a composite-lined unit of a Class III landfill, provided certain requirements are met. This Order continues to allow BSL in accepting TWW, provided that it is managed and disposed of in compliance with BSL's TWW management and disposal plan and CCR, Title 22, §67386.11, and the disposal practice does not cause a release to groundwater.
16. **Cathode Ray Tube (CRT) Panel Glass** – In October 2018, the California Department of Toxic Substances Control (DTSC) adopted final regulations allowing the disposal of CRT panel glass at approved landfills, regulated by Regional Water Boards. These final regulations replace the emergency regulations previously adopted in 2014 and 2016. As stated in CCR, Title 22, §66261.4(h), CRT panel glass that meets the disposal criteria specified in §66273.81 is not a hazardous waste, and may be disposed of at a composite-lined unit of a Class III landfill, provided that it is managed in accordance with the standards specified in CCR, Title 22, §66273.73 and §66273.75.
17. In October 2015, Regional Water Board staff approved the WAP to allow CRT panel glass disposal (CRT WAP) at BSL. This Order continues to allow BSL in accepting CRT panel glass waste for disposal in accordance with BSL's CRT WAP and its updates.

18. The Discharger has developed the Waste Acceptance Policy Guide and internal operating procedures to screen, accept, and manage the allowable waste types for disposal at BSL and other MSW landfills it operates.
19. **Waste-derived materials** are waste materials that have been treated, processed, or otherwise re-conditioned so that the material may be beneficially reused for structural, engineering, or other alternative purposes. Some of these waste-derived materials include, but are not limited to, tire-derived aggregate, compost and other green materials, construction and demolition debris fines, and contaminated soils. Waste-derived materials can be beneficially used as alternative daily cover (ADC), alternative intermediate cover, final cover foundation layer, liner system operations layer, landfill gas collection trench fill, construction fill, road base, wet weather operation pads and access roads, and soil amendments for erosion control and landscaping.
20. In the past 30 years, many solid waste diversion and recycling laws in California, such as Assembly Bill AB 939, AB 1826, AB 341, Senate Bill SB 1383, have been signed to reduce greenhouse gas emission. With emerging waste diversion and recycling laws and regulations and landfill owners'/operators' quest to preserve landfill space and be cost-efficient, it is anticipated that requests for reuse, rather than disposal, will continue to rise – more specifically, for use of the contaminated soils and waste-derived materials as ADC and alternative intermediate cover.
21. Title 27, §20690(b) lists certain waste or waste-derived materials that are allowed by CalRecycle for ADC use where site-specific demonstration projects are not required if they are used as specified. This Order requires that the beneficial reuse of new waste materials or waste-derived materials, including those prescribed under Title 27, §20690(b), be evaluated and approved by the EO of the Regional Water Board, on a case-by-case basis for water quality protection.
22. **Regional and Site Geology** – BSL is located on the south-central flank of a range of low hills named “The Badlands” in the northeastern portion of the Peninsular Ranges. BSL is located approximately 1.2 miles northeast of the San Jacinto fault zone. Deformation associated with movement along the San Jacinto fault zone has uplifted and tilted sedimentary strata to form “The Badlands.” Erosion of the uplifted strata has resulted in deeply incised terrain of narrow canyons and ridges with steep-sided hills. BSL is underlain primarily by sedimentary bedrock of the San Timoteo Formation (Pliocene and Pleistocene Age). Relatively thin deposits of Holocene age alluvium occur as infilling along the canyon bottoms, and colluvial deposits occur generally along the sides of the canyons. The thickness of alluvium in the area of the BSL is variable, generally ranging from 2 feet to 20 feet. Landslide deposits occur locally in some canyons.
23. **Local Faulting** – Faulting in the BSL footprint and surrounding vicinity was identified as Faults 1, 2, 3, and 4 in a 1991 investigation performed by Gary S. Rasmussen &

Associates (Rasmussen). The investigation concluded that the primary or secondary ground rupture may occur along Fault 1 near the southwestern corner of BSL during the lifetime of Canyons 1-4 waste disposal areas. The Discharger is restricted from developing the landfill within the southwest corner of BSL. Faults 2 and 3 are not considered active faults. Additional geologic evaluation of faulting and investigation was conducted by Rasmussen in 2001, primarily to evaluate the presence and state of activity of Fault 4. The investigation concluded that Fault 4 is not considered an active fault.

24. **Regional and Site Hydrogeology** – The San Timoteo Badlands, in which the BSL is located, is not situated within a delineated groundwater basin. The Badlands are bounded principally by four groundwater basins: San Timoteo and Bunker Hill II to the north, and San Jacinto-Lower Pressure and Perris North to the South. The San Timoteo groundwater basin is part of the Upper Santa Ana Watershed and the San Jacinto-Lower Pressure groundwater basin is part of the San Jacinto Watershed. Fault 3 affects groundwater flow in the northern portion of the BSL. Fault 3 functions as a groundwater barrier, where groundwater elevations decrease up to 140 feet across the fault. The fault also functions as a groundwater divide, where groundwater flows to the northeast and the south on opposite sides of the fault. North of Fault 3, groundwater flows north, with a hydraulic gradient of approximately 0.02 foot/foot and at a flow rate of approximately 0.054 foot/day. South of Fault 3, groundwater flows south/southwest, with a hydraulic gradient of approximately 0.04 foot/foot and at a flow rate of approximately 0.11 foot/day.
25. **Five-foot Separation Zone** - Title 27, §20240(c) stipulates that there shall be a five-foot separation zone between MSW and the highest anticipated elevation of underlying groundwater.
26. **Depth to groundwater** varies in the groundwater basins north and south of the BSL. Groundwater can be found very close to the surface in San Timoteo Canyon; in fact, groundwater discharges to the surface have occurred in the past. In the broad alluvial valleys north and south of the BSL, depth to groundwater ranges on the order of 100 or more feet below ground surface (bgs). In the Badlands, particularly along the ridge crests, depth to groundwater can exceed 400 feet bgs. Within the canyons, depth to groundwater has been measured as shallow as 17 feet bgs.
27. This Order is in conformance with State Water Resources Control Board (State Water Board) Resolution No. 93-62, which requires the implementation of all applicable Title 27 requirements and additional federal requirements under Title 40, Code of Federal Regulations, Part 258 (40 CFR Part 258) or Subtitle D regulations for landfill siting, design, construction, operations, drainage and erosion control, water quality monitoring, and groundwater remediation, when necessary.
28. **Waste containment system (WCS) design** - Title 27, §20330, and 40 CFR Part 258, stipulate that, as of October 9, 1993, a WCS which includes a composite liner

of a prescriptive standard design (PSD) must be installed for lateral expansion beyond the 1993 waste footprint at MSW landfills. This PSD must include, at a minimum, an upper synthetic geomembrane liner that is at least 40-mil (or 60-mil thick if a high density polyethylene geomembrane liner is used), and a lower component of soil that is at least 2 feet thick with a hydraulic conductivity of no more than (\leq) 1×10^{-7} cm/s.

29. **Engineered Alternatives** - Title 27 §20080 allows 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 federal Subtitle D regulations and the existing WDRs, the Discharger has equipped each WMU with a WCS for lateral landfill expansion since October 9, 1993. In accordance with BSL's WDRs and Title 27 §20080(b), the Regional Water Board has approved EADs to the PSD for the WCS at BSL. The approved EADs for the base and sideslope liner systems are described in **Attachment D-1**.
30. Currently, approximately 38 acres of the WMUs at BSL (which delineates the October 1993 waste footprint) are unlined, and approximately 101 acres of the WMUs are lined. The liner systems installed for WMUs at BSL are summarized in **Attachment D-2**. The construction of its next lateral expansion, Canyon 2 Phase 5 and Canyon 3 Phase 2, which is approximately 7 acres in size, is scheduled for Summer 2020.
31. The Discharger has been required by the existing 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 damage, tears or other imperfections in the base and side-slope liner systems during installation.
32. **Environmental Control Systems** - Existing environmental control systems at BSL include a leachate collection and removal system over the composite-lined WMUs, a landfill gas collection and extraction system, a landfill gas condensate collection and removal system, leachate and condensate containment system, and a groundwater monitoring system.
33. **Leachate Collection and Removal System (LCRS)** - The LCRS at BSL consists of a network of high-density perforated and non-perforated polyethylene collection pipes installed within the leachate drainage gravel beds, draining by gravity from Canyon 1 Phase 1 Unit and terminating at the lowest elevation point at Canyon 4 Phase 3 Unit. The lowest point is designed as a leachate sump, where the leachate is temporarily collected, pumped, and stored in one of the three, 10,000-gallon aboveground storage tanks, equipped with a secondary containment system.
34. **Landfill Gas (LFG) Extraction and Collection System** - The LFG extraction and collection at BSL officially began in January 2001. The collection system consists of

vertical collection wells in the unlined WMU and a combination of vertical and horizontal collection wells in the lined WMUs. The current collection system consists of 49 active vertical wells, 23 active horizontal wells, and 7 horizontal inactive wells that are connected to the gas collection system. Additional gas extraction wells and perimeter gas monitoring probes will be installed as BSL expands.

35. **Leachate and Condensate Containment System** - Leachate and gas condensate collected and removed are diverted to three above-ground 10,000-gallon storage tanks, installed within a secondary containment structure at BSL. Leachate and gas condensate collected at BSL are used for dust control over the lined WMUs.
36. **Water Quality Monitoring** - The Discharger has been conducting water quality monitoring since 1989. The following wells are currently sampled semi-annually to obtain groundwater levels as part of the Detection Monitoring Program (DMP) at BSL: BL-03, BD-04, BH-11, BH-21, BH-22, BH-23, BH-24, and BH-25. Two additional wells, BH-20 and BH-CP, are monitored quarterly to obtain groundwater level measurements only. These monitoring wells are shown in **Attachment E**.
37. **Absence of Known Contamination** - At BSL, volatile organic compounds (VOCs) such as acetone, 2-butanone (MEK), chloroform, and tetrachloroethene (PCE) had been detected in several groundwater monitoring wells in 1995, 2001, 2003, and 2004. Further analyses of the data showed that these indications of release were attributable to well installation/development or laboratory contamination. Since it was concluded that the detections of VOCs at BSL were not attributable to the landfill operations, BSL remains in detection monitoring in accordance with Title 27, §20420.
38. **Leachate and Gas Condensate Monitoring** - The Discharger has been monitoring leachate and gas condensate since 1993 and 1995, 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 BSL.
39. The 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 BSL also serves as a basis for narrowing the scope of VOCs that the Discharger is required to regularly monitor to include only those Appendix I VOCs that have ever been detected in leachate and gas condensate and verified by a single retest. With these monitoring and reporting requirements, this Order implements 40 CFR Part 258.54(a)(1).
40. 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 5-year COC scan are grouped as Monitoring Parameters (MPars). This Order specifies semi-annual

monitoring of the MPars at the compliance wells to provide the best assurance of the earliest possible detection of a release from BSL.

41. To eliminate the adverse statistical influence from geographic variation of groundwater quality at BSL and the surrounding vicinity, 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.
42. This Order minimizes the occurrence of false-positive indications of a release from BSL 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 include a single discrete 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.
43. To assure compliance with the requirements and considerations under 40 CFR Parts 258.55 through 258.57 and Title 27, §20425 through §20430 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 detected in groundwater.
44. **Storm Water Discharges** from BSL are regulated by State Water Board's Water Quality Order No. 2014-0057-DWQ, NPDES General Permit No. CAS000001, for discharges of storm water associated with industrial activities (Industrial General

Permit). Construction activities associated with landfill operations, maintenance, improvement, or development projects (such as expansion) at BSL are also covered under the Industrial General Permit.

45. **Precipitation** – BSL is in an arid to semi-arid environment. Average annual precipitation in the area is estimated to be approximately 13.11 inches as measured by Riverside County Flood Control and Water Conservation District's Moreno East Gage, located on Theodore Street, between Ironwood Avenue and Highway 60 (approximately one mile from BSL).
46. **Drainage and Erosion Control** – Surface drainage control facilities at the BSL are designed, constructed, and maintained to collect and divert runoff, not deemed wastewater, resulting from a 100-year, 24-hour frequency storm event. BSL's 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, drainage channels, and culverts that lead to the sedimentation basins. Hydroseeding and shredded greenwaste mulch are examples of erosion control devices applied on sideslopes at BSL.
47. **Daily and Intermediate Cover Materials** – BSL utilizes a minimum of 6 inches of compacted soil as daily cover material and/or approved alternative daily cover (ADC) materials, such as geosynthetic blankets or high tensile strength polyester tarps coated with high density polyethylene (HDPE), at the end of each working day. A layer of at least 12 inches of compacted intermediate soil cover is placed on all landfill surfaces where no additional refuse will be deposited within 180 days.
48. **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). BSL is currently estimated to close in December 2025.
49. 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 use of BSL 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 parcels have been used as an MSW landfill;
 - b. Unless other post-closure land use alternative(s) are approved via a JTD Addendum by CalRecycle and the Regional Water 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. If 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.
50. **Water Quality Control Plan (Basin Plan)** - 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.
51. The Regional Water 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 2016.
52. **Receiving Water Bodies and Beneficial Uses** – Groundwater flow beneath the BSL property is divided by Fault 3. North of Fault 3, groundwater flows north into the San Timoteo 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.
53. South of Fault 3, groundwater flows south/southwest into the San Jacinto- Lower Pressure Groundwater Management Zone, the beneficial uses of which include:
- a. Municipal and Domestic Supply,
 - b. Agricultural Supply, and
 - c. Industrial Service Supply.
54. **Surface Drainage** from BSL is tributary to the San Jacinto River, Reach 4, the beneficial uses of which include:
- a. Municipal and Domestic Supply,
 - b. Agricultural Supply,

- c. Groundwater Recharge,
- d. Water Contact Recreation,
- e. Non-Contact Water Recreation,
- f. Warm Freshwater Habitat,
- g. Wildlife Habitat, and
- h. Rare, Threatened, or Endangered Species.

55. **Delegation of Authority** - This Order delegates authority to the EO of the Regional Water Board to:

- a. Require the Discharger to revise the existing waste acceptance and management plans, or develop new plans and/or the methods and procedures for accepting, monitoring, managing, reusing and/or disposing, and reporting of MSW such as contaminated soils, CRT panel glass, high moisture content waste, wastewater, and new waste materials or waste-derived materials at BSL in response to newly discovered or developed information and/or regulatory or industrial standards and guidelines.
- b. Require the Discharger to submit technical information under CWC, § 13267.
- c. Require additional liner design beyond the minimum design approved to protect water quality based on new information and/or technology available and best industrial practices.
- d. Approve new designated waste for disposal at BSL.
- e. Approve new waste materials or waste-derived materials for beneficial reuse or disposal at BSL.
- f. Revise the attached MRP to incorporate modifications to the monitoring and reporting requirements for BSL.

56. **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 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.

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

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

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

A. DISCHARGE SPECIFICATIONS

1. **General** – The treatment or disposal of wastes at BSL 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 BSL 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 BSL 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 BSL if such waste constituents could migrate to the waters of the State and cause a condition of contamination, pollution, or nuisance.

6. **Acceptable Waste** - Wastes disposed of at BSL shall be limited to non-hazardous municipal solid wastes, liquids or semi-solid waste, non-hazardous contaminated soils, incinerator ash, inert solid wastes, treated woodwaste, CRT panel glass, and designated wastes. Wastes meeting the following conditions shall be accepted for disposal at BSL:
- a. Non-hazardous municipal solid wastes, 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 (or high moisture content waste), including sewage treatment plant grit and screening residues, dewatered sewage sludge, water treatment sludge, that meets the following criteria [Title 27, §20200(d)(3)]:
 - i. The WMU is equipped with a leachate collection and removal system (LCRS), adequately designed to collect and remove leachate to ensure no buildup of hydraulic head on the liner [Title 27, §20340];
 - ii. The waste is not hazardous as defined in Title 22, California Code of Regulations, §66261.3 et seq.;
 - iii. The waste contains less than 50 percent (<50%) solids by weight;
 - iv. The actual solids-to-liquid ratio (by weight) for disposal shall be approved by the EO of the Regional Water Board to ensure that the co-disposal will not exceed the moisture-holding capacity (or field capacity) of the nonhazardous solid waste, either initially or as a result of waste management operations, compaction, or settlement; and
 - v. A site-specific liquid waste management, disposal, and monitoring plan must be approved and updated as deemed necessary by Regional Water Board staff.
 - c. Non-hazardous contaminated soils meeting waste acceptance criteria in the approved WAP may be accepted for disposal or reuse at BSL.
 - d. **Incinerator ash** may be accepted unless DTSC determines that the waste must be managed as hazardous waste. Incinerator ash shall be managed to prevent the discharge of any soluble pollutants at concentrations in excess of applicable water quality objectives.

- e. **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.
- f. **Treated Wood Waste** shall be managed and disposed of in accordance with BSL's TWW Management and Disposal Plan, approved by the EO of the Regional Water Board and in compliance with CCR, Title 22, §67386.11. If monitoring at the composite-lined WMU that has received TWW indicates a release, the disposal of TWW to that WMU shall immediately cease until corrective action, implementing the requirements of Title 27, §20385, results in cessation of the release.
- g. **Designated Waste** – Acceptance of designated wastes for disposal at BSL shall be evaluated and approved by the EO of the Regional Water Board on a case-by-case basis. A designated waste that meets the following criteria, as defined in CWC, §13173, that are approved by the EO of the Regional Water Board may be authorized for disposal at a composite-lined unit at BSL:
 - i. The waste has been granted a variance by the DTSC for disposal at a composite-lined unit of the Landfill, and the Discharger has developed procedures for acceptance, management, and disposal of the waste. To satisfy this requirement, the Discharger shall provide satisfactory documentation that establishes necessary acceptance, management and disposal procedures for disposal of the proposed designated waste; or
 - ii. The waste shall not release soluble pollutants in concentrations exceeding applicable water quality objectives in groundwater. To satisfy this requirement, the Discharger shall provide satisfactory documentation demonstrating compliance with Title 27, §20200(a)(1).
- 7. **Waste Acceptance Programs and Management Plans** – The Discharger shall accept, manage, and dispose of contaminated soils, CRT panel glass, and any other waste materials at BSL in accordance with waste acceptance programs or waste management plans approved by the EO of the Regional Water Board. These programs and plans shall be updated, when deemed necessary by the EO of the Regional Water Board, to address new information, regulations, and guidance documents for best management practices in waste acceptance, management, disposal, and monitoring in achieving compliance with requirements in this Order.
- 8. **Waste-Derived Materials** – All non-hazardous waste-derived material accepted at BSL for onsite reuse shall meet the following requirements:

- a. The beneficial reuse of waste materials or waste-derived materials at BSL, excluding contaminated soils, shall be evaluated and approved by the EO of the Regional Water Board on a case-by-case basis.
- b. **Interim Cover** - For use as interim cover (alternative daily cover and intermediate cover), waste-derived materials shall be designed, managed, and constructed to minimize percolation of liquids through waste as required under Title 27, §20705(b).
- c. **Limitations for Use as Cover Materials** – Waste-derived materials used for interim or alternative daily cover shall meet the requirements stated in Title 27, §20705(e) and shall consist of only those materials that comply with the following:
 - i. **Match Unit Classification** – Waste-derived materials shall meet the classification criteria for wastes that can be discharged to BSL. Therefore, a material that would be classified as a designated waste cannot be utilized for daily or intermediate cover, or other re-use at BSL unless that material is approved for discharge (as a waste) to that landfill pursuant to Title 27, §20200(a)(1) or is authorized by these WDRs, and
 - ii. **Composition** – Waste-derived materials shall only consist of materials whose constituents (other than water) and foreseeable breakdown byproducts, under the chemical, biochemical, and temperature conditions which they are likely to encounter within BSL, either:
 - a) For non-composite lined portions of BSL, are mobilizable only at concentrations which would not adversely affect beneficial uses of waters of the State, in the event of release, or
 - b) For composite-lined portions of BSL, are included in the group of constituents that are regularly monitored and analyzed as part of the MRP for BSL.
- d. To satisfy the requirements of 8.c.i and 8.c.ii, above, the Discharger shall complete either of the following:
 - i. Perform a demonstration with the proposed materials for use as an alternative cover and submit a performance evaluation report for approval by the EO; or
 - ii. Provide satisfactory documentation and justification supporting use of the proposed materials as an alternative cover for review and approval by the EO.

B. DISCHARGE PROHIBITIONS

1. The discharge of waste to any area of BSL beyond the existing waste footprint is prohibited unless such discharge is to an area equipped with a waste containment system in compliance with Section C.4 of this Order.
2. The discharge of hazardous waste as defined under the state hazardous waste regulations (CCR, Title 22, §66261.3 et seq) at BSL is prohibited.
3. The discharge of TWW, CRT panel glass, and any other designated wastes in unlined WMUs at BSL is prohibited.
4. The discharge of any TWW or CRT panel glass not meeting the DTSC's disposal criteria [CCR, Title 22, §67386.11 and §66273.81] for these wastes at BSL is prohibited.
5. **Liquid Usage and Disposal** – The discharge of liquids, including extracted groundwater, leachate, landfill gas condensate, and wastewater, or their use for dust control or irrigation at BSL is prohibited, unless the following conditions are met:
 - a. The liquids that are being returned to, or reused at, BSL originated at BSL;
 - b. The portion of BSL to which these liquids are discharged is equipped with a composite liner and leachate collection and removal systems or approved equivalent;
 - c. The liquids are reused and/or disposed of in accordance with a disposal and management plan approved by Regional Water Board staff.
 - d. Restrictions under this section shall not apply to extracted groundwater, leachate, landfill gas condensate, or wastewater generated from landfill operations or other industrial activities at BSL that is regulated or waived under a separate order or treated in accordance with a plan approved by the EO of the Regional Water Board prior to being used for dust control, recharge, irrigation, or any other beneficial uses over areas beyond the landfill waste footprint at BSL.
6. No radioactive waste, including low level radioactive waste, as defined by the agency with jurisdictional authority, shall be disposed of at BSL.
7. 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 BSL.

C. PROVISIONS

1. **General** - The Discharger shall comply with all discharge specifications, discharge prohibitions, provisions, and Monitoring and Reporting Program No. R8-2020-0003 (MRP) of this Order upon its adoption.
2. The Discharger shall maintain a copy of this Order at BSL and make it available at all times to site operating personnel.
3. The Discharger shall permit Regional Water 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 create video recordings of 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) beyond the October 9, 1993 waste footprint**
- All WMUs shall be equipped with a waste containment or liner system that is designed, constructed, and managed in accordance with the standard of the industry, and that meets the requirements of the State Water Board's Resolution No. 93-62, Section III [Containment] and the following, but not limited to, relevant sections of Title 27 and subsequent revisions to these sections thereof:
 - a. §20310 [General Construction Criteria];
 - b. §20320 [General Criteria for Containment Structures];
 - c. §20323 [CQA Plan];
 - d. §20324 [CQA requirements];
 - e. §20330 [Liners];
 - f. §20340 [Leachate Collection and Removal Systems (LCRS)];
 - g. §20360 [Subsurface Barriers];
 - h. §20365 [Precipitation and Drainage Controls];
 - i. §20370 [Seismic Design]; and
 - j. §21750(f)(5) [Stability Analysis].
5. **Engineered Alternative Liner Design (EAD)** – An EAD that 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). The Discharger has proposed, and the Regional Water Board has approved the EADs for the base and sideslope

liner systems are described in **Attachment D-1**. These approved EADs are minimum design requirements; the EO of the Regional Water Board may require additional liner design components beyond the minimum approved as new information, technology, or industrial best standard practices are discovered and/or new regulatory standards and guidelines are developed for effective waste containment.

6. **Approved EADs** – For each phase of liner system construction using approved EADs, the following shall apply:
 - a. At least 90 days prior to the scheduled WCS construction for each WMU expansion at BSL, the Discharger shall submit technical design plans and construction documents for the proposed WCS that demonstrate compliance with Section C.4, above, for review and approval by Regional Water Board staff.
 - b. Each phase of construction at BSL shall be completed in accordance with the approved design and construction documents. Any liner system design or construction variance from the approved documents must be approved by Regional Water Board staff prior to implementation;
 - c. All mitigation measures proposed by the Discharger and approved by Regional Water Board staff shall be implemented to protect water quality;
 - d. The Discharger and its contractors shall submit progress reports daily to Regional Water Board staff during construction so that compliance with Item 6.b., above, can be evaluated. Daily reports, including relevant construction activities and conformance testing data, shall be submitted by 12:00 PM the following business day;
 - e. Within 90 days of completing liner installation and construction, the Discharger shall submit a final as-built report including, at a minimum: as-built drawings; maps; CQA/CQC field reports and testing data; a discussion on deviations from approved plans, and certification; and
 - f. If an approved EAD fails to perform as expected, the EO of the Regional Water Board has the authority to require additional protective measures.
7. **New EAD proposed** – In accordance with Title 27, §21585(a)(4), the Discharger shall submit an amended ROWD, in the form of a numerically-sequential addendum to the JTD, for any new EAD proposed for WCS at BSL. 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 Water Board staff and approval of the newly proposed EAD(s) by the Regional Water Board, the Discharger shall be permitted to use the newly approved EAD(s) for WCS construction at BSL

8. **LCRS Performance Testing** - In accordance with Title 27, §20340(d), the Discharger shall perform periodic testing of the LCRS to demonstrate their efficiency during the operational, closure, and post-closure maintenance periods of the landfill.
9. **Disposal Site Operations** - The operation at BSL 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.
10. The Discharger shall maintain an operating record for BSL in accordance with 40 CFR Part 258.29(a). All records of site operations, landfill construction, inspection, monitoring, remediation, and copies of design plans, CQA/QC documents, monitoring reports, and technical reports that are submitted to regulatory agencies, shall be included in the operating record.
11. During the months when precipitation can be expected, disposal activities shall be confined to the smallest area possible based on operational procedures and the anticipated quantity of wastes that will be received.
12. The Discharger shall remove and properly dispose of any wastes that are placed at BSL in violation of the requirements in this Order.
13. The Discharger shall establish and maintain permanent monuments in California coordinates (or equivalent) to define the boundary of the footprint of the landfill WMUs. The benchmarks shall be certified by a licensed surveyor or a professional civil engineer authorized to practice in California.
14. Water used during landfill operations shall be limited to the minimum amount reasonably necessary for dust control, fire suppression, construction, and maintenance.
15. 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 wastewater collected at BSL shall be stored or disposed of offsite at a licensed facility.
16. Prior to the initiation of waste discharge in the approved expansion area phases, the Discharger shall install an approved, expanded groundwater monitoring network as necessary.
17. Adequate cover shall be placed over all lifts in each WMU at all times, except for the active face of the landfill, which receives daily cover or an approved ADC) at the end of each operating day.

18. At the end of each operating day or if landfilling operations cease for more than a 12-hour period, a daily cover or an approved ADC must be placed over the active face in a quantity and depth sufficient to prevent any waste from daylighting or as directed by Regional Water Board staff.
19. The Discharger shall install any additional groundwater, soil pore liquid, soil pore gas, or leachate monitoring devices determined by the EO of the Regional Water Board to be necessary to comply with this Order.
20. The Discharger shall expand the existing landfill gas collection and recovery system as landfill operations progress to prevent the migration of landfill gas to groundwater and to the environment.
21. ADC may be used consistent with Title 27, §20690 and the provisions and specifications of this Order.
22. **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.
23. All liquid waste containment structures shall be inspected and maintained periodically to assess their conditions and to initiate correction actions necessary to ensure their effectiveness in preventing commingling of leachate and gas condensate with surface run-on and runoff.
24. **Facility Survey** - 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 in Section D.1, below.
25. The EO is hereby authorized to:
 - a. Require, based upon newly discovered or newly developed information and/or regulatory guidelines, that the Discharger revise the existing waste acceptance or management plans or develop new plans and/or methods and procedures for accepting, managing, reusing, disposing, monitoring, and reporting of the materials listed below at BSL:
 - i. Contaminated soils;
 - ii. Treated woodwaste;
 - iii. CRT panel glass;
 - iv. Designated wastes;
 - v. Incinerator ash;
 - vi. Liquid or semi-liquid wastes;

- vii. Waste-derived materials; and
- viii. Onsite wastewater

- b. Approve revised or new waste acceptance and management plans;
- c. Require site investigation and technical reports needed to protect water quality;
- d. Require additional liner design beyond the minimum design approved to protect water quality based on new information and/or technology available and best industrial practices;
- e. Approve new designated waste for disposal at BSL; and
- f. Revise and approve changes to the attached MRP.

D. DRAINAGE AND EROSION CONTROL SPECIFICATIONS

1. WMUs shall be designed, constructed, and maintained to limit, 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. WMUs shall be designed, constructed, and maintained to achieve compliance with Title 27, §20365.
 - b. Top deck surfaces shall be constructed and maintained to achieve a minimum of one percent (1%) slope and to direct flows to downdrains or other drainage control structures;
 - c. Downdrains or any other necessary drainage diversion structures must be constructed for all sideslopes as necessary; and
 - d. All components of the facility drainage system must be designed, constructed, and maintained to withstand site-specific maximum intensity precipitation (peak flow) from a 100-year, 24-hour storm.

2. 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 BSL (active or inactive portions), and to collect and divert the peak flow calculated volume resulting from a 100-year, 24-hour frequency 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 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.
3. All drainage and erosion control structures shall be periodically inspected and maintained to assess their conditions, to initiate corrective actions necessary to maintain compliance with the requirements of this Order, and to prepare BSL in advance of each rainy season.
 4. The Discharger shall submit as-built drawings within 90 days of completing construction of any new elements of the drainage control system at BSL.
 5. All design plans, construction plans, and operation and maintenance plans shall be prepared by, or prepared under the direct supervision of, a registered civil engineer or a certified engineering geologist.

E. CONTINGENCY RESPONSES

1. **Liquid Waste Spill and Seep** – The Discharger shall notify Regional Water Board staff by telephone or email within 24 hours (or one business day) upon discovery of any liquid waste spill or seep in the WMU area. A written report shall be filed with Regional Water Board staff within 7 days, containing at least the following information:
 - a. Map – A map showing the location(s) of the discharge(s).
 - b. Flow Rate – An estimate of the flow rate of the discharge(s).
 - c. Description – A description of the nature and extent of the discharge(s) (e.g., all pertinent observations and analysis).
 - d. Waste characterization – A sample of the spilled liquid waste or seep shall be collected, if possible, and analyzed for Appendix II constituents (**Attachment F**).
 - e. Corrective Measures – A description of the corrective measure(s) implemented, and any proposed mitigation measures for approval by Regional Water Board staff.
2. **Facility Failure** – The Discharger shall notify Regional Water Board staff by telephone and/or email within 48 hours (or 2 business days) of any slope failure or failure of facilities necessary to maintain compliance with the requirements in this Order. Within 7 days, the notification shall be submitted in writing to Regional Water Board staff. Any failure that threatens the integrity of the waste containment features

of the landfill shall be promptly corrected after a remediation workplan and schedule have been approved by Regional Water Board staff. However, if a slope failure poses an immediate threat to the environment or to any containment structures at BSL, it shall be corrected without delay.

3. **Measurably Significant Evidence of a Release** – If previously undetected measurably significant evidence of a release, as described in the attached MRP, has tentatively been identified in groundwater at BSL, the Discharger shall immediately notify the site's designated Regional Water Board staff by phone and/or email. The Discharger shall also provide written notification within seven days of such determination [(Title 27, §20420(j)(1)] and shall carry out a single discrete retest in accordance with Title 27, §20415(e)(8)(E). The Discharger shall inform Regional Water Board staff of the outcome of the retest as soon as the results are available and submit written results within seven days of receipt of the final retest laboratory report.
4. **Optional Demonstration** – If measurably significant evidence of a release is verified per Section E.3, above, but is believed to be derived from off-site sources or due to natural changes in water chemistry, the Discharger may propose to demonstrate that BSL is not the cause of the release in accordance with Title 27, §20420(k)(7).
5. **Response to Verified Evidence of a Release** – If measurably significant evidence of a release is verified per Section E.3, above, and it is determined that BSL is the cause of the release, then the Discharger shall:
 - a. Implement those response actions described in Title 27, §20420(k);
 - b. Implement an Evaluation Monitoring Program (EMP) pursuant to Title 27, §20425;
 - c. Implement a Corrective Action Program (CAP) – If Regional Water Board staff determines that the Discharger has satisfactorily implemented and completed the EMP release response actions described above, the Discharger shall implement a CAP pursuant to Title 27, §20430, based upon results of the EMP and other monitoring activities; and
 - d. Conduct any additional investigations stipulated in writing by Regional Water Board staff for the purpose of identifying the cause of the release.
6. **Release Beyond Facility Boundary** – Any time the Discharger or Regional Water Board staff concludes that a release from BSL has proceeded beyond the BSL 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).

- a. **Initial Notice** - Initial notifications 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. **Updated Notice** - 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. **Submittal** - Each time the Discharger sends a notification to Affected Persons, the Discharger shall, within 7 days of sending such notification, provide Regional Water Board staff with both a copy of the notification and a current mailing list of all Affected Persons.

F. MONITORING, SAMPLING, AND ANALYSIS SPECIFICATIONS

1. **Monitoring and Sampling** – All water quality monitoring, sampling, and analysis for the monitored media shall be performed in accordance with Title 27, §20415 and the attached MRP.
2. **Latter Third/Thirty Days** – For any given monitored medium, samples shall be taken from all monitoring points to satisfy the data analysis requirements. All samples shall be taken during the latter third of the Reporting Period and shall be taken in a manner that ensures sample independence to the greatest extent feasible, in accordance with Title 27, §20415(e)(12)(B).
3. **Groundwater Surface Elevation** – In accordance with Title 27, §20415(e)(13), the groundwater monitoring program shall include an accurate determination of the groundwater surface elevation at each well every time groundwater is sampled. Groundwater elevations taken prior to purging the well and sampling for monitoring constituents shall be used to fulfill groundwater monitoring requirements specified in the attached MRP.
4. **Groundwater Flow Rate and Direction** – Groundwater flow rate and direction shall be monitored and reported in accordance with the attached MRP.
5. **Concentration Limits** - The concentration limit for any given Monitoring Constituent in a given monitored medium at BSL shall be in accordance with Title 27, §20400. These limits are specified in the attached MRP.
6. **Data Analysis** – Data analysis shall be carried out as soon as the monitoring data are available, in accordance with Title 27, §20415(e) and the attached MRP.

G. REPORTING REQUIREMENTS

1. **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 Water 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.
2. The Discharger shall furnish, within a reasonable time, any information the Regional Water Board may request to determine whether cause exists for modifying, reissuing, or terminating this Order. The Discharger shall also furnish to the Regional Water Board, upon request, copies of records that this Order requires the Discharger to maintain.
3. **JTD Addenda** – The Discharger shall file an amended ROWD, in the form of a numerically-sequential addendum to the JTD, in accordance with Title 27, §21585(a)(4), with the Regional Water Board at least 120 days prior to its implementation for:
 - a. proposing a new EAD, not already approved by the Regional Water Board;
 - b. proposing any expansion at BSL beyond the existing waste disposal limits (150 acres) depicted in **Attachment B-1**;
 - c. responding to a release from the landfill;
 - d. making any material change or proposed change in the character, location, volume, treatment, or disposal methods of any discharge of waste; and
 - e. Any change in control or ownership of land or waste discharge facilities.
4. Applications, reports or information submitted to the Regional Water Board shall be signed and certified by either a principal executive officer or ranking elected/appointed official of the Discharger.
5. **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.
6. **Planned Facility Changes** – The Discharger shall give advance notice to Regional Water Board staff of any planned changes in permitted activities at BSL that may result in noncompliance with this Order.

7. **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 Water 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 follow this Order and any revisions thereof.
8. The Discharger shall notify the Regional Water Board in writing of any proposed change in ownership or responsibility for construction, operation, closure, or post-closure maintenance of BSL.
9. **Closure and Post-Closure Maintenance Plans (PCMP)** – In accordance with Title 27, §21780 (c)(3), final closure and PCMPs for solid waste landfills shall be submitted 2 years prior to the anticipated date of closure. Within 5 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.
10. **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.
11. Upon completing closure at BSL, the Discharger or the 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. If 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.

This Order supersedes and replaces Orders No. 91-105, R8-2002-0085, and R8-2006-0053, and R8-2010-0051. This Order also terminates BSL's coverage under Order Nos. 98-99 and R8-2016-0052; therefore, these orders are no longer applicable to BSL.

I, Hope A. Smythe, 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 May 8, 2020.

Hope A. Smythe
Executive Officer

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

**MONITORING AND REPORTING PROGRAM NO. R8-2020-0003
FOR
RIVERSIDE COUNTY DEPARTMENT OF WASTE RESOURCES
BADLANDS SANITARY LANDFILL
CLASS III SOLID WASTE DISPOSAL SITE
MORENO VALLEY, RIVERSIDE COUNTY**

Discharger	Riverside County Department of Waste Resources 14310 Frederick Street Moreno Valley, CA 92553
Facility	BADLANDS SANITARY LANDFILL 31125 Ironwood Avenue Moreno Valley, California 92555

A. GENERAL

1. The Discharger shall implement this Monitoring and Reporting Program, No. R8-2020-0003 (MRP), in order to detect, at the earliest opportunity, any release of waste constituents from the Badlands Sanitary Landfill (BSL), or any unreasonable impairment of beneficial uses caused by or associated with discharge of wastes to the waste management units (WMUs) at BSL.
2. At any time, the Discharger may file a written request, including appropriate supporting documents, with the Executive Officer (EO) of the Regional Water Board, proposing modifications to this MRP. The Discharger shall implement any changes to the MRP upon receipt of a signed copy.
3. This MRP may be revised and approved by the EO of the Regional Water Board as necessary to reflect changes in the required water quality programs.
4. For any monitoring wells proposed for installation at BSL, the Discharger shall submit well design and construction documents for approval by Regional Water Board staff prior to installation. All monitoring wells shall be designed and constructed in accordance with California Well Standards, California Department of Water Resources 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.

5. The Discharger shall provide for proper handling and disposal of water purged from monitoring wells at BSL 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 waste footprint, 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):** In accordance with California Code of Regulations, Title 27, Division 2, Subdivision 1 (Title 27), §20390 - §20405, the WQPS for BSL shall consist of:
 - a. Constituents of Concern (COCs) in **Table 1** (attached);
 - b. Point of Compliance (POC) and the Monitoring Points in **Table 2** (attached); and
 - c. Concentration Limits in Section B.4, below.

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 Water Board approves an alternative WQPS, the Discharger shall perform the monitoring activities in compliance with the WQPS specified in the MRP of this Order.

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

- a. **Monitoring Parameters (MPars):** The MPars include metal surrogates, the Appendix I organic 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 constituents from Appendix II of 40 CFR Part 258 (Appendix II) detected (above method detection limits, MDLs) and confirmed at one or more monitoring points during a 5-year COC scan. The Appendix II table is included as **Attachment F** to this MRP. The Discharger shall apply the statistical or the non-statistical analytical method described in Section B.7, below, to analyze the groundwater monitoring data collected for these parameters.
- b. **Uninvolved Parameters (UnPars):** The UnPars are Appendix II constituents that have been detected 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 constituents that are detected in the landfill leachate and gas condensate and confirmed in retesting required by the MRP of this Order. 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. **Point of Compliance (POC):** 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 Water Board. The POC for BSL is listed in **Table 2** and is shown on **Attachment E**.
4. **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 at 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 BSL shall be updated bi-annually as specified in Section B.7, below.
5. **Development and Updating of Concentration Limits:** The Discharger shall continue to develop and update concentration limits following the procedures provided in Section B.7.a, below. The Discharger shall review the concentration limits biannually and provide a copy of updated concentration limits in the annual summary reports. 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.
6. **Groundwater Quality Monitoring:** The Discharger shall conduct the following groundwater monitoring activities at BSL:

- a. **Semi-annual Monitoring** shall be conducted at all groundwater monitoring wells. Water samples from these monitoring points shall be analyzed for the MPar in **Table 1** on a semi-annual basis;
- b. **5-Yearly COC Scan:** Every 5 years, starting in 2020, 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**). Alternatively, the Discharger may select to perform a full Appendix II (**Attachment F**) analysis. 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 retest 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 shall be added to 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).

7. Data Analysis Methodology:

- a. The Discharger shall use only statistical data analysis methods, approved by the EO of the Regional Water Board, that:
 - i. Meet Title 27, §20415(e)(6-12);
 - ii. Use a pass-1-of-2 retesting approach that involves taking the first sample at the very start of the reporting period and the retest sample at mid-reporting period, if needed; and
 - iii. Meet USEPA's Unified Guidance (2009), including validation of the method's statistical power by comparison to that agency's relevant Reference Power Curve, as therein described.
- b. 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 2 years, following the adoption of this Order, as part of the annual summary report, the Discharger shall review and update the statistically-derived concentration limits. Recent data that have been statistically analyzed in accordance with Section B.7.f.iii, below, and is determined to be statistically similar to existing background data set, shall be made a part of the updated background set. The updated background data set shall be used to statistically-derive the revised concentration limits. These revised concentration limits shall become effective the first reporting period following approval by Regional Water Board staff.

- c. In the event that an approved data analysis method provides a preliminary indication that a given monitoring parameter has a measurably significant increase at a given well, the Discharger shall conduct a verification procedure or retest [Title 27, §20415(e)(8)(E)]. The retest shall be performed only for the constituent(s) or parameter(s) that has shown “measurably significant” 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.g, below.
- e. **Water Quality Monitoring Approach:** The Discharger shall monitor each well/MPar pair in one of following two modes:
 - 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 scan under Section B.6.b):
 - i. **MPars Readily Detectable in Background:** At any given monitoring point, the Discharger shall apply appropriate statistical analysis methods, approved by the EO of the Regional Water Board, for each detection mode monitoring parameter that exceeds its respective MDL in at least 10% of the applicable background data set;
 - ii. **MPars 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.
 - iii. **Background sampling for new MPars:** For each newly detected Appendix II constituent that is added to the existing MPar list, the Discharger shall establish a reference background value. This reference background value shall be established based on a minimum of 8 background data points through quarterly sampling over a 2-year period. Once this reference set of background data is established, for a given new Well/MPar pair, the

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Discharger shall include the background data set for that pair, as a separately identified item in the monitoring report for that reporting period. This item shall include, for each new Well/MPar pair, a data analysis method to be used in detecting a release. Existing background data for the newly identified Appendix II constituents may be substituted for additional background sampling with the approval of the EO of the Regional Water Board.

- g. **California Non-statistical Data Analysis Method: Non-Statistical Method for Detection Mode for MParS Seldom Found in Background (i.e. non-natural occurring constituents):** For any given compliance well, regardless of the monitoring program (DMP, EMP, AMP, or CAP), the Discharger shall use this data analysis method, jointly, for all constituents in “detection mode” as follows:
- i. **“Detection Mode” List:** Within 30 days of the effective date of this Order, the Discharger shall create a current “detection mode” list showing each detection mode MPar, at each well, that exceeds its MDL in less than 10% of its background data.
- ii. **Two Triggers:** From the “detection mode” list (in Section B.7.f.i, above), 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 “detection mode” list exceed their respective MDLs; or
- b) One or more of the MParS on a monitoring well’s “detection mode” list equals or exceeds its respective PQL.

8. Responses to an Initial Indication of a Release:

- a. **Retest** [Title 27, § 20415(e)(8)(E)]: In the event that the Discharger concludes (pursuant to Sections B.7.c, above) that a release has been tentatively indicated, 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 in accordance with Section F.1.c, below.
- b. For constituents where the non-statistical data analysis method applies, the Discharger shall apply the “two triggers” test (under Section B.7.g.ii, above) to analyze the retest data at that compliance well.
- c. 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

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the statistical evidence of a release supports the conclusion that a release has occurred, thereafter, the Discharger shall remove the constituent(s) from the "detection mode" list created for that well, monitor the indicated constituent(s) in "tracking mode" at that well, notify Regional Water Board staff in writing, and highlight this conclusion and these changes in the next scheduled monitoring report and in the site operating record.

9. **Responses to Release Discovery:** If the Discharger determines that there is significant physical evidence of a release [Title 27, §20385(a)(2)], the Discharger shall conclude that a release has been discovered and shall:
- a. Within seven (7) days notify Regional Water Board staff of this fact by certified mail.
 - b. Carry out the following responses for all potentially affected monitored media:
 - i. The Discharger shall, within 90 days of discovering the release, submit an amended ROWD, in the form of a JTD Addendum, to Regional Water Board staff proposing an EMP that:
 - a) 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 Water Board and to design a corrective action program meeting the requirements of Title 27, §20430.
 - b) 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.
 - ii. 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].
 - iii. 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 Water Board.
 - iv. The Discharger shall submit an updated EFS within 90 days after the completion of the EMP [Title 27, §20425(c)].
 - v. The Discharger shall submit an amended ROWD, in the form of a JTD Addendum, to establish a CAP [Title 27, §20425(d) and 40 CFR Part 258.58] within 90 days after the updated EFS is submitted.
 - c. Carry out any additional investigations stipulated in writing by Regional Water Board staff for the purpose of identifying the cause of the release.
10. **Optional Demonstration:** In lieu of carrying out Section B.9.b, above, the Discharger may submit an optional demonstration report, in accordance with Title 27, §20420(k)(7), and propose to demonstrate that a source other than the landfill

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site caused the release or that the evidence is an artifact caused by an error in sampling, analysis, or statistical evaluation or by natural variation in the groundwater, surface water, or the unsaturated zone.

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

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 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 (in Section B.11.a or 11.b, above), it shall, within 7 days of sending such notification, provide Regional Water 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 Surface Elevation and 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. **Vadose Zone Monitoring:**
 - a. **Subdrain Monitoring:** Subdrain liquid monitoring shall be conducted for those WMUs that require the placement of subdrains to control seeps beneath the liner systems at BSL.
 - b. **Landfill Gas Probe Monitoring:** As allowed under Title 27, §20415(d)(5), 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. The Discharger shall use the gas probe monitoring data to detect, at the earliest opportunity, a VOC release in unsaturated zone.
14. **Leachate and Gas Condensate Monitoring:** The Discharger shall conduct leachate and gas condensate monitoring as follows:
 - a. **Annual Analyses:** A sample each of leachate and gas condensate shall be collected at each monitoring point annually during the month of October. Samples collected shall be analyzed for non-COC Appendix II constituents or all Appendix II Constituents in **Attachment F**.

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- b. **Retest:** If any constituents, not on the COC list, are detected (at or above PQLs) in the leachate or gas condensate at any sampling point, the Discharger shall resample the leachate or condensate at that sampling point during the following April and analyze the sample for those detected constituents. If any such constituent is confirmed in the leachate or gas condensate, the Discharger shall add the constituent to the current COC list and report this to Regional Water Board staff within 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.
15. The Discharger shall perform water quality monitoring in accordance with the monitoring frequency and schedules in **Tables 3 and 4** (attached) to detect, at the earliest opportunity, any release of waste constituents from WMUs at BSL.
 16. **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 Water Board. A State of California accredited laboratory must be used to perform water quality analyses. 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 non-detect (ND) determinations] in historical data for that medium, the SW-846 analytical method having the lowest MDL shall be selected.
2. Trace results (results falling between the MDL and the 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

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laboratory to report censored data (trace level and non-detect determinations). If 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 inspect the facility in accordance with the monitoring frequency in **Table 3** 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 F.1.d, below. 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 Water Board staff by phone or via electronic mail, or other approved method, within 24 hours (or within one business day) of discovery.
2. **Liquid waste Containment System Inspection:** 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.
3. **Drainage and Erosion Control System Inspection:** At a minimum, the Discharger shall inspect all WMUs and the site drainage and erosion control systems **monthly** and shall evaluate their condition and effectiveness in achieving compliance 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.

4. **Post-storm Inspection:** During the wet season (October 1 through April 30 of the following year), a post-storm inspection shall be conducted following a qualifying 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 implemented or proposed mitigation measures shall be prepared and transmitted to Regional Water Board staff via email within 2 business days after a post-storm inspection.
5. **Site Maintenance:** During the dry season (May 1 through September 30), the facility shall be inspected 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. **Facility Survey:** Annually, by **October 1**, an aerial or ground survey of the landfill site shall be performed.
7. **Site Winterization:** 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.
8. **Leachate Collection and Removal System (LCRS) Performance Testing:** Every five years, the Discharger shall perform the LCRS Performance Test. The LCRS performance testing and reporting schedules are specified in **Table 4**.
9. **Liquid Waste and Wastewater Disposal Monitoring:** The Discharger shall monitor liquid waste and wastewater disposal operations in accordance with the plans approved by Regional Water Board staff to identify and document any signs of waste saturation, instability, and liquid buildups to initiate appropriate corrective measures.

E. CONTINGENCY RESPONSES

1. **Spill:** The Discharger shall notify Regional Water 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 Water Board staff within 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 discharge flow rate.

- 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 Water Board staff.
2. **Facility failure:** The Discharger shall notify Regional Water Board staff by telephone and/or email within 48 hours (or two business days) of any signs of site instability, 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 Water 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 Water Board staff.
3. **Leachate seep:** The Discharger shall immediately, within 48 hours (or 2 business days) after discovery, notify Regional Water 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 and analyzed for Appendix II constituents. A written report shall be filed with Regional Water Board staff within 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 Water Board staff.
 - e. A copy of the laboratory analytical results of the seep sample shall be submitted to Regional Water Board staff within 60 days after filing the written report.

F. REPORTING

1. **Monitoring report contents:** All reports shall be submitted in accordance with the reporting schedules in **Table 4**. Individual monitoring reports may be combined for submittal. 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

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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 data 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 BSL 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, 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), and the disposal method of purged water;
 - 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 each of the laboratory analytical results and Chain of Custody 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 data 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:** The following information shall be submitted each reporting period:
 - a) A tabular summary of monthly total volumes of landfill leachate and gas condensate collected, and how they are managed;
 - b) A tabular summary of monthly total volume of high moisture content waste accepted;
 - c) A tabular summary of monthly total volume of onsite wastewater percolated and accumulative wastewater percolated at each percolation basin, and how the wastewater is managed;
 - d) A copy of the monthly field liquid waste monitoring data collected in accordance with Section D.9, above, and any corrective measures implemented.
- iii. **Drainage and erosion control systems:** The following information shall be submitted for each reporting period:
 - a) Field records of drainage and erosion control system inspection as required in Drainage and Erosion Control Specifications D.3 of this Order;
 - 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; 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 disposed and a map indicating the locations in the landfill where waste has been placed since submittal of the last such report. A summary of the total quantity of contaminated soil, treated woodwaste, CRT panel glass, and liquid waste accepted for the monitoring period shall be reported; 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 Water 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. **Winterization Plan:** The winterization plan, required in Section D.7, above, shall be submitted under a separate cover or may be included in the October monitoring report.
- g. **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 in Section B.14, above.
- h. **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**. 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, including at least the following facilities and programs:
 - a) Waste acceptance programs for contaminated soil, CRT panel glass, treated woodwaste, and high moisture content waste in compliance with the approved plans and Discharge Specifications A.7 of this Order.
 - b) Waste and waste-derived materials beneficial reuse/recycling activities in compliance with Discharge Specifications A.8 of this Order.
 - c) Liquids and wastewater management and monitoring activities in compliance with the approved plans and Discharge Specifications A.6.b of this Order.
 - d) Leachate collection and removal system performance in compliance with Provisions C.8 of this Order.
 - e) Daily and intermediate cover use in compliance with Discharge Specifications A.8.c of this Order.
 - f) Drainage and erosion control systems in compliance with Drainage and Erosion Control Specifications of this Order.
 - g) Water quality monitoring program in compliance with Section B of the MRP of this Order.
 - h) Any non-compliance items or violations occurred, and corrective measures implemented.
 - ii. **Summary of Changes:** A summary of site operational changes occurred; a summary of construction and improvement projects and corrective action implemented; and any proposed site changes and projects for the following year.
 - iii. **Graphical Presentation:** A graphical presentation of monthly precipitation data, monthly total leachate quantity (in gallons) generated, monthly total

- volume of wastewater percolated through waste, and monthly total volume of liquids added to waste.
- iv. **Map(s):** Map(s) showing the areas where any significant events have taken place.
 - v. **Updated Table 1 (COC list):** Annually, the Discharger shall update the COCs in **Table 1** through annual leachate and gas condensate testing in Section B.2 and the 5-year COC testing in Section B.6.b, above.
 - vi. **Updated Concentration Limits:** Bi-annually, the Discharger shall update the concentration limits, required in Section B.4, above.
- i. **5-year COC Scan Report:** The report shall include, at least, the following information:
 - i. A list of 5-year COC analytes;
 - ii. Water quality monitoring information in Section F.1.c, above;
 - iii. A discussion of any new COC, not already on the MPar list, detected; and
 - iv. An updated MPar list.
2. **Reporting of Special Occurrences:** When necessary, abbreviated reports shall also be submitted for special occurrences described below:
- a. In accordance with Section E of the MRP of this Order, the Discharger shall notify Regional Water 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 monitoring devices 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 7 days after notification.
 - b. In accordance with Section D.4 of the MRP of this Order, during the rainy season, the Discharger shall submit a brief “storm report” within 2 business days after a post-storm inspection. 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.

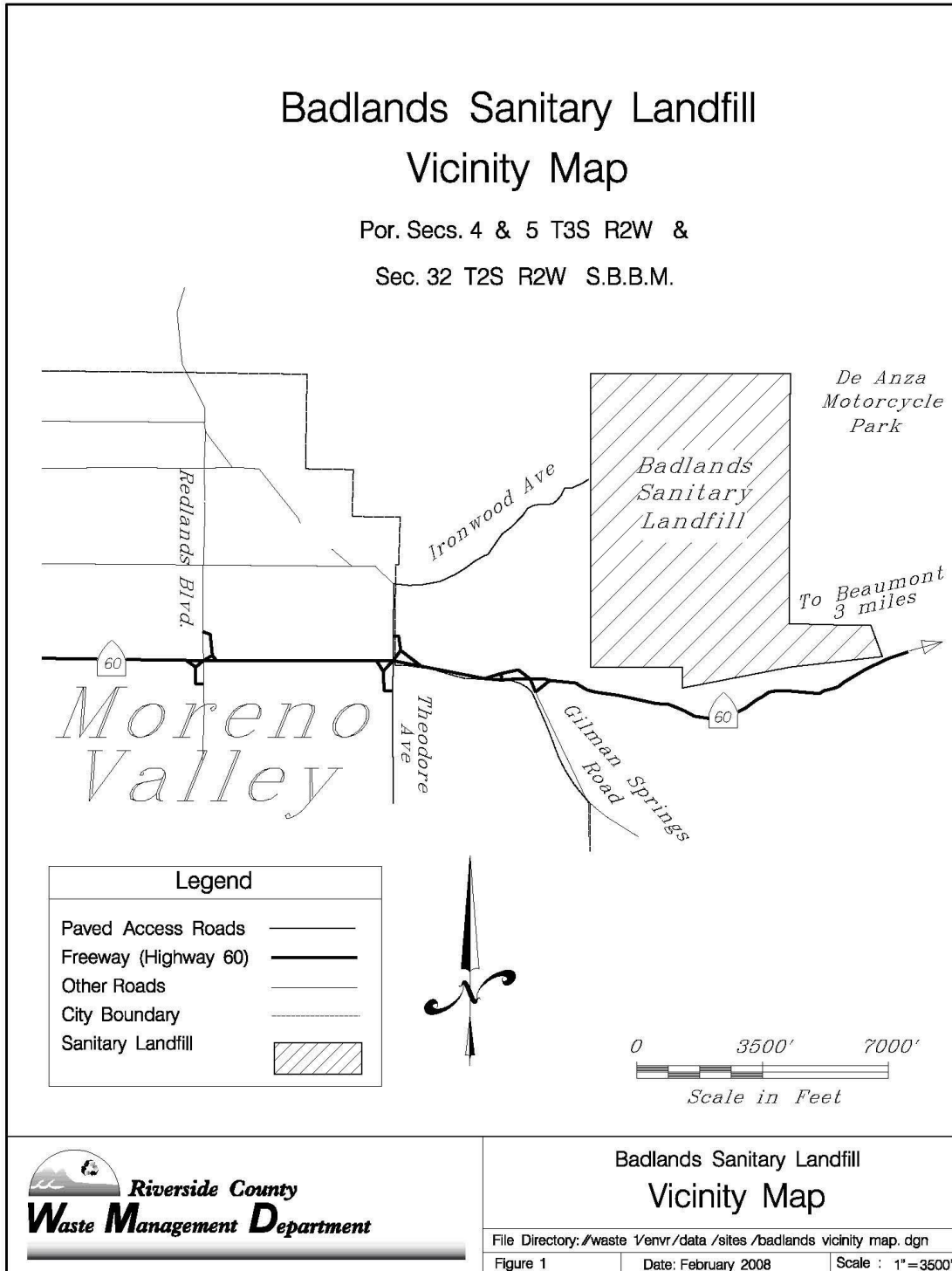
4. **Electronic Submittal of Information (ESI):** In accordance with Electronic Reporting Regulations (Chapter 30, Division 3 of Title 23 & Division 3 of Title 27), all reports, well data, and lab data must be submitted by uploading them to the State Water Resources Control Board's (State Water Board) GeoTracker database. All reports shall be submitted in an electronic format [i.e. Portable Document Format (PDF)], with text, tables, figures, laboratory analytical data (in Electronic Deliverable Format), graphs, and appendices.

5. All reports in this monitoring and reporting program are required pursuant to California Water Code (CWC) §13267. Any person affected by this action of the Regional Water Board may petition the State Water Board to review the action in accordance with CWC §13320, and California Code of Regulations, Title 23, §2050. The petition must be received by the State Water 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.

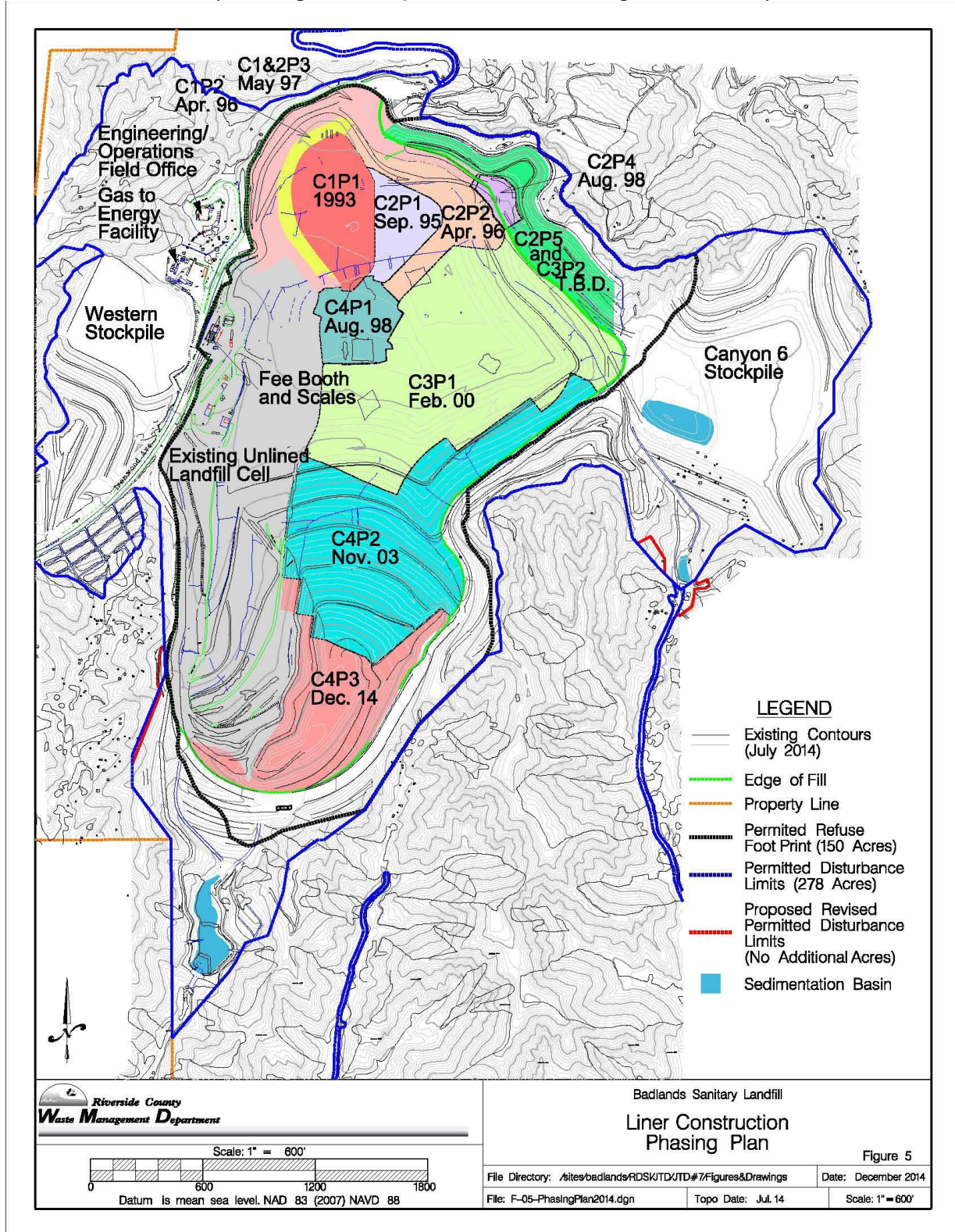
Hope A Smythe
Executive Officer

May 8, 2020

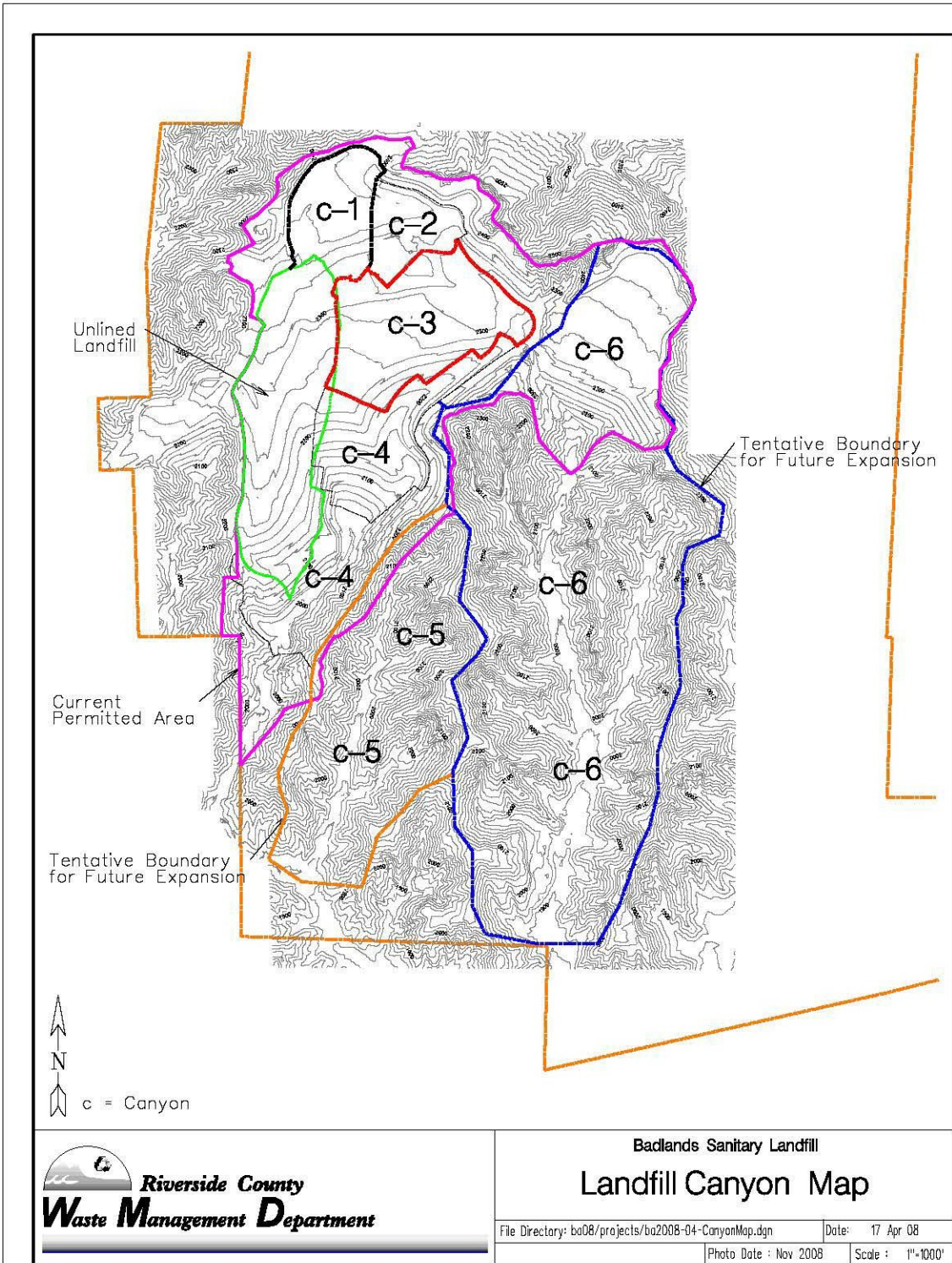
Attachment A



Attachment B-1
 (Existing and Proposed Waste Management Units)



Attachment B-2
(Current Permitted Waste Disposal Area and Future Expansion Area)



Attachment C-1
Definitions of Terms

"Title 27" means the State Water Resources Control Board's (State Water Board) regulations, in Division 2 of Title 27 of the California Code of Regulations (CCR), applicable to the discharge to land of waste that is not hazardous waste. On July 18, 1997, the State Water Board and CalRecycle enacted the Solid Waste Requirements, Subdivision 1 of new Division 2, Title 27, CCR. Title 27 replaces the non-hazardous waste portion of CCR, Title 23, Division 3, Chapter 15 and implements federal Subtitle D regulations, Title 40, Code of Federal Regulations, Part 258 (40 CFR Part 258) for non-hazardous MSW landfills.

"40 CFR Part 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. 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 Persons or 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.

"Alternative Daily Cover" (ADC) means a cover, consisting of material other than at least six (6) inches of clean earthen material, of alternative thickness used at a landfill on all surfaces of the

fill where solid waste will be deposited within 180 days to control vector, fire, odor, blowing litter, and scavenging without presenting a threat to human health and the environment [Title 27, §20690].

"Alternative Intermediate Cover" means a cover, consisting of material other than at least twelve (12) inches of compacted, clean earthen material, placed on all fill surfaces where additional waste cells are not to be constructed for 180 days or more to control vectors, fires, odors, blowing litter, scavenging, and drainage without presenting a threat to human health and the environment [Title 27, §20700(a)].

"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.

"CRT Panel Glass" means any glass separated from CRT funnel glass in electronic devices that is derived from the treatment of a CRT and that consists only of the face plate of a CRT containing a phosphor viewing surface. CRT panel glass does not include the frit.

"Composite Liner" - 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 Waste Management Unit, and which acts as a barrier to both vertical and lateral fluid movement.

"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:

1. Hazardous waste that has been granted a variance from hazardous waste management requirements pursuant to Section 25143 of the Health and Safety Code.
2. 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 Parameters (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.

Double Quantification (DQ) rule is a quasi-statistical rule, defined in the 2009 USEPA Unified Guidance for *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities*, to address infrequently detected constituents (i.e. constituents detected above the reporting limit in 10% or less of the background data), whereby a confirmed exceedance is registered if a Well/MPar pair in the infrequently detected constituent group exhibits quantified measurements (i.e. at or above the reporting limit) in two consecutive sample events (i.e. the initial sample event and the subsequent resample event).

"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 groundwater body, in the absence of a release.

"Geomembrane" - A geomembrane is a thin, impermeable geosynthetic material used as a liquid or vapor barrier.

"High Moisture Content Waste" (HMCW) is defined as waste containing less than 50% solids by weight, including liquid waste. HMCW accepted at BSL include, but not limited to, out-of-specification beverages and personal care products such as beer, wine, milk, eggs, condiments, shampoo, lotion, and wastes generated from storm drain cleaning, roadway grinding, drilling operations, filtering solids, and other similar activities.

"Indicator Parameters" 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.

"Joint Technical Document" (JTD) means the ROWD application that was submitted on May 17, 1991 for expansion in Canyons 1 through 4 at BSL. After July 18, 1997, the date Title 27 was enacted, an application made to the Regional Water Board or CalRecycle must be submitted in the form of numerically-sequential addendum to the JTD [Title 27, 21585(a)(4)].

"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

“Liquids” mean liquid waste that is determined to contain “free liquids” as defined by Method 9095B (Paint Filter Liquids Test), included in “Test Methods for Evaluating Solid Waste, Physical/Chemical Methods” (EPA Publication SW-846) which is incorporated by reference.

“MRP” means the Monitoring and Reporting Program that is an attachment to the Waste Discharge Requirements 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.

“mil” – 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.

“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:

1. 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,
2. any bodies of surface water that could be measurably affected by a release,
3. soil-pore liquid beneath and/or adjacent to the landfill, and
4. 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 likely to be present or present at a detectable level in ground or surface water. 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 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.

"Pass-1-of-2 retesting" is an approach whereby the retest sample result, for a given constituent at a well, that does not exceed its concentration limit (or retest-triggering concentration), as indicated in the initial sample. Therefore, passing the 1-of-2 retest plan.

"Peak flow" is the maximum expected flow of run-on and runoff resulting from precipitation both on and off-site for a given recurrence interval.

"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)(l)].

"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 (groundwater, 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.

"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. 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 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.

"USEPA's Unified Guidance (2009)" means "*USEPA, MARCH 2009, STATISTICAL ANALYSIS OF GROUNDWATER MONITORING DATA AT RCRA FACILITIES UNIFIED GUIDANCE*" (USEPA 530/R-09-007)

"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).

"Waste Containment System" is a liner system designed and installed to contain waste and its degradation by-products and to prevent waste contaminants from migrating and polluting the groundwater. A waste containment system includes the landfill liners, leachate collection and recovery system (LCRS), which may also include subdrains, and a protective soil layer or an operations layer to protect the liners from buried waste and to minimize releases.

"Wastewater" means all wastewater associated with, or produced by, landfilling activities, except for sanitary wastewater and non-contaminated stormwater. Landfill wastewater includes, but is not limited to, leachate, gas collection condensate, contaminated stormwater (i.e. stormwater that comes in direct contact with landfill wastes, wastewater, or waste handling

and treatment areas). Non-contaminated stormwater means stormwater which does not come in direct contact with landfill wastes or wastewater. Non-contaminated stormwater includes stormwater flows off the cap, cover, intermediate cover, daily cover, and/or final cover of the landfill.

"Water Quality Protection 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

ADC - Alternative Daily Cover

AMP - Assessment Monitoring Program

BSL - Badlands Sanitary Landfill

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

CNSDAM – California Non-statistical Data Analysis Method

COC - Constituent of Concern

CQA/QC - Construction Quality Assurance and Quality Control

CRT – Cathode Ray Tube

CWC - California Water Code

DMP - Detection Monitoring Program

DTSC - State Department of Toxic Substances Control

EAD - Engineered Alternative Design

EDF – Electronic Deliverable Format

EFS - Engineering Feasibility Study

EMP – Evaluation Monitoring Program

EO – Executive Officer

ESI – Electronic Submittal of Information

FML - Flexible Membrane Liner

JTD – Joint Technical Document

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

ND – Non-detect

NPDES - National Pollutant Discharge Elimination System

PCMP - Post-closure Maintenance Plan

PDF – Portable Document Format

POC - Point of Compliance

PQL - Practical Quantitation Limit

PSD - Prescriptive Standard Design

QA/QC - Quality Assurance/Quality Control

RL - Reporting Limit

ROWD - Report of Waste Discharge

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 Designs for the base and sideslope liner systems

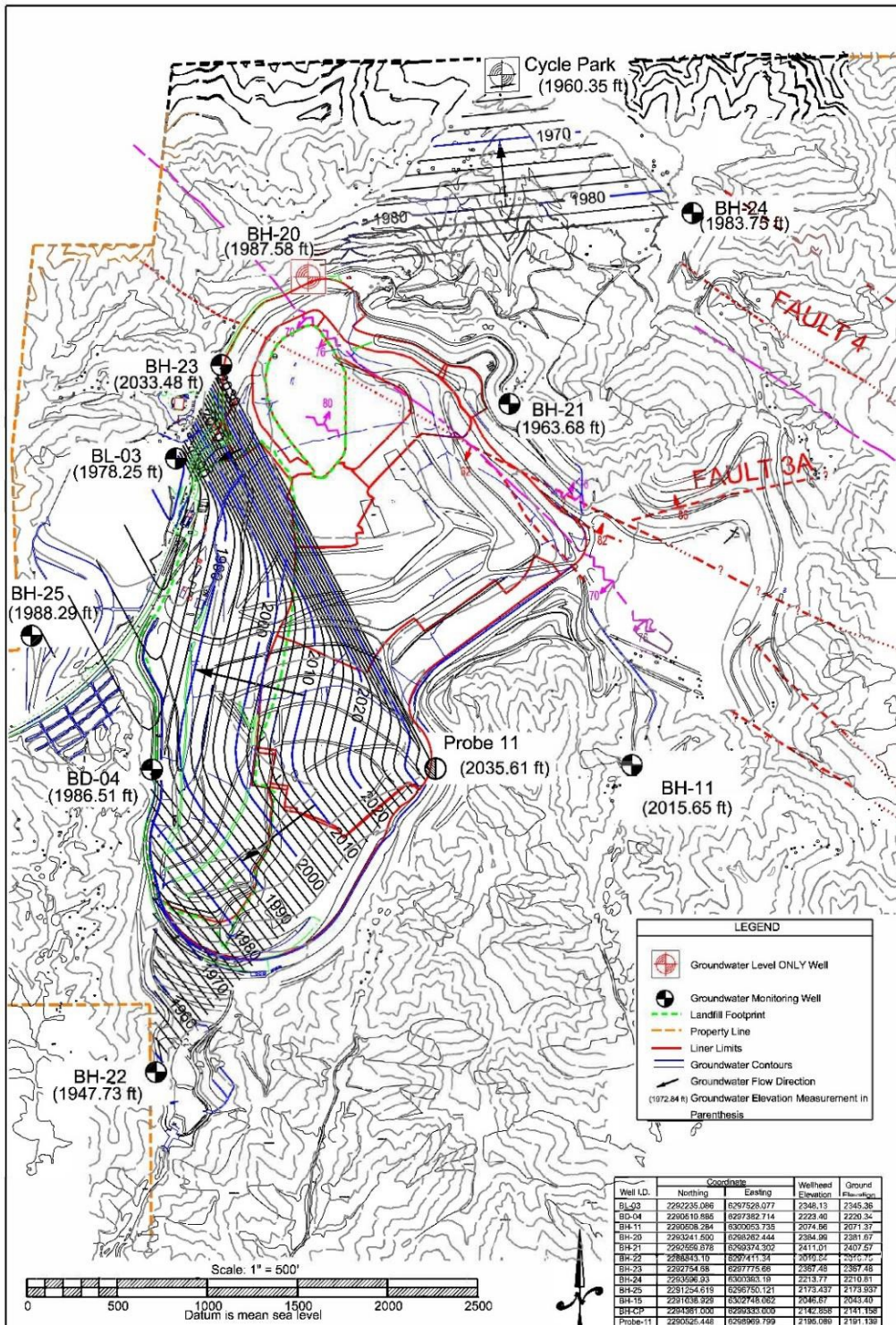
Prescriptive Standard Design	Engineered Alternative Design B1	Engineered Alternative Design B2	Engineered Alternative Design B3	Engineered Alternative Design SS1
Prepared subgrade	Prepared subgrade	Prepared subgrade	Prepared subgrade	Prepared subgrade
Minimum 24-in.; low permeability layer ($\leq 10^{-7}$ cm/s)	Minimum 12-in.; low permeability layer ($\leq 10^{-6}$ cm/s); Minimum 40-mil high density polyethylene liner (moisture barrier); and GCL	Minimum 24-in. low permeability layer ($\leq 10^{-7}$ cm/s)	Minimum 12-in. low permeability layer ($\leq 10^{-6}$ cm/s); Minimum 60-mil high density polyethylene liner (moisture barrier); and GCL	GCL
Minimum 60-mil high density polyethylene liner	Minimum 60-mil high density polyethylene liner	Minimum 60-mil high density polyethylene liner	Minimum 60-mil high density polyethylene liner	Minimum 60-mil high density polyethylene liner
Cushion geotextile	Minimum 12-oz./ft ² (non-woven needle-punched) cushion geotextile	Minimum 12-oz./ft ² (non-woven needle-punched) cushion geotextile	Minimum 12-oz./ft ² (non-woven needle-punched) cushion geotextile	Minimum 16-oz./ft ² cushion and drainage geotextile
Minimum 12-in. leachate collection and removal system drainage layer	Minimum 12-in. leachate collection and removal system drainage layer with hydraulic conductivity ≥ 0.01 cm/s (1-in. minus clean gravels with less than 2% fines and no angular or subangular particles > 3/8-in. size)	Minimum 9-in. leachate collection and removal system drainage layer with hydraulic conductivity ≥ 1 cm/s	Minimum 9-in. leachate collection and removal system drainage layer with hydraulic conductivity ≥ 1 cm/s	NA
Geotextile filter fabric	Minimum 8-oz./ft ² geotextile filter fabric	Minimum 8-oz./ft ² geotextile filter fabric	Minimum 8-oz./ft ² geotextile filter fabric	NA
Minimum 24-in. operations layer	Minimum 24-in. operations layer (3-in. minus for the lower 12 inches and 6-in. minus for the upper 12 inches)	Minimum 24-in. operations layer (3-in. minus for the lower 12 inches and 6-in. minus for the upper 12 inches)	Minimum 24-in. operations layer (3-in. minus for the lower 12 inches and 6-in. minus for the upper 12 inches)	Minimum 24-in. operations layer (1-in. minus material)
Refuse	Refuse	Refuse	Refuse	Refuse

Attachment D-2
Liner system installed at Badlands Sanitary Landfill

Phase	Date Completed	True Area (Acres)	Planar Area (Acres)	Liner Description (Bottom to Top)
Canyon 1 Phase 1 (bottom)	1993	6.21	6.06	1.5-ft thick clay liner ($k=1 \times 10^{-7}$ cm/s); Geotextile; Drainage gravel; Geotextile; and Protective soil layer
Canyon 1 Phase 1 (sideslope)	1993	6.21	6.06	6.7-ft thick clay liner ($k=3 \times 10^{-7}$ cm/s); and Protective soil layer
Canyon 2 Phase 1 (bottom)	September 1995	3.45	3.31	2-ft thick clay liner ($k=1 \times 10^{-7}$ cm/s); 80-mil thick HDPE geomembrane (textured both sides); Drainage gravel; 8-oz non-woven filter geotextile; and Protective soil layer
Canyon 2 Phase 1 (sideslope)	September 1995	3.45	3.31	Geosynthetic Clay Liner (GCL); 80-mil thick HDPE geomembrane; 16-oz non-woven geotextile; and Protective soil layer
Canyon 1 Phase 2 (sideslope)	April 1996	2.08	1.80	6.7-ft thick clay liner ($k=3 \times 10^{-7}$ cm/s); 80-mil thick HDPE geomembrane; 16-oz non-woven geotextile; and Protective soil layer
Canyon 2 Phase 2 (flat bench)	April 1996	5.66	5.07	2-ft thick clay liner ($k=1 \times 10^{-7}$ cm/s); 80-mil thick HDPE geomembrane (smooth on top, textured on bottom); Drainage Mat (Geonet); and Protective soil layer
Canyon 2 Phase 2 (sideslope)	April 1996	5.66	5.07	Geosynthetic Clay Liner (GCL); 80-mil thick HDPE geomembrane; 16-oz non-woven geotextile; and Protective soil layer
Canyon 1 & 2 Phase 3 (sideslope)	May 1997	8.13	6.99	Geosynthetic Clay Liner (GCL); 80-mil thick HDPE geomembrane; 16-oz non-woven geotextile; and Protective soil layer
Canyon 2 Phase 4 (sideslope)	August 1998	1.04	0.96	Geosynthetic Clay liner (GCL); 80-mil thick HDPE geomembrane; 16-oz non-woven geotextile; and Protective soil layer
Canyon 4 Phase 1 (bottom)	August 1998	4.08	3.75	2-ft thick clay liner ($k=1 \times 10^{-7}$ cm/s); 80-mil thick HDPE geomembrane (textured both sides); Drainage gravel; 8-oz non-woven filter geotextile; and Protective soil layer
Canyon 4 Phase 1 (sideslope)	August 1998	4.08	3.75	Geosynthetic Clay Liner (GCL); 80-mil thick HDPE geomembrane; 16-oz non-woven geotextile; and Protective soil layer

Phase	Data Completed	True Area (Acres)	Planar Area (Acres)	Liner Description (Bottom to Top)
Canyon 3 Phase 1 (bottom)	February 2000	29.88	26.97	2-ft thick clay liner ($k=1 \times 10^{-7}$ cm/s); 80-mil thick HDPE geomembrane (textured both sides); Drainage gravel; 8-oz non-woven filter geotextile; and Protective soil layer
Canyon 3 Phase 1 (sideslope)	February 2000	29.88	26.97	Geosynthetic Clay Liner (GCL); 80-mil thick HDPE geomembrane single textured except on the 1st westerly & easterly slopes (double textured); 16-oz non-woven geotextile; and Protective soil layer
Canyon 4 Phase 2 (bottom)	November 2003	24.50	21.00	1-ft thick Low Permeability Layer ($k=$ 1×10^{-6} cm/s); 40-mil thick HDPE geomembrane (textured both sides); Geosynthetic Clay Liner (GCL); 60-mil thick HDPE geomembrane (textured both sides); Drainage gravel; 8-oz non-woven filter geotextile; and Protective soil layer
Canyon 4 Phase 2 (sideslope)	November 2003	24.50	21.00	Geosynthetic Clay Liner (GCL); 80-mil thick HDPE geomembrane single textured; and Protective soil layer
Canyon 4 Phase 2 (steep eastern sideslopes (1:1))	November 2003	24.50	21.00	Shotcrete; 32-oz Geotextile; Geosynthetic Clay Liner (GCL); 80-mil thick HDPE geomembrane single textured; and Protective soil layer
Canyon 4 Phase 3 (bottom)	November 2014	15.40	13.70	2-ft thick Low Permeability Layer ($k=$ 1×10^{-6} cm/s); 60-mil thick HDPE geomembrane (textured both sides); 12-oz Geotextile; 9" thick drainage layer (1/2" to 1" max. particle size); 8-oz Geotextile; and 24" protective soil layer (3" particle max)
Canyon 4 Phase 3 (western slope (non- encapsulated))	November 2014	15.40	13.70	Geosynthetic Clay Liner (GCL); 60-mil thick HDPE geomembrane single textured; 16-oz Geotextile; and 24" protective soil layer (1" particle max)
Canyon 4 Phase 3 (eastern slope (encapsulated))	November 2014	15.40	13.70	60-mil thick HDPE geomembrane (textured both sides); Geosynthetic Clay Liner (GCL); 60-mil thick HDPE geomembrane (textured both sides); 16-oz Geotextile; and 24" protective soil layer (1" particle max)

Attachment E



LEGEND

- Groundwater Level ONLY Well
- Groundwater Monitoring Well
- Landfill Footprint
- Property Line
- Liner Limits
- Groundwater Contours
- Groundwater Flow Direction
- Groundwater Elevation Measurement in Parenthesis (1072.84 ft)

Well I.D.	Coordinate		Wellhead Elevation	Ground Elevation
	Northing	Easting		
BL-03	2292235.086	6297528.077	2348.13	2345.36
BD-04	2290510.868	6297382.714	2228.40	2230.34
BH-11	2290608.284	6300053.738	2074.96	2071.37
BH-20	2293241.600	6298262.444	2384.96	2381.67
BH-21	2292850.878	6298374.302	2411.01	2407.57
BH-22	2291643.119	6299445.354	2019.82	2019.76
BH-23	2292754.98	6297775.66	2387.48	2387.48
BH-24	2293696.93	6300383.18	2213.77	2210.81
BH-25	2291254.619	6298750.121	2172.437	2173.837
BH-15	2291018.928	6302748.020	2048.87	2053.40
BH-CP	2294391.000	6298333.000	2142.858	2141.158
Probe-11	2290626.448	6298909.759	2198.080	2191.138



Badlands Sanitary Landfill - Third Quarter 2019
Groundwater Monitoring Well Locations
and Groundwater Contour Map

File Directory: \\waste_1\env\iron\sites\badlands\water\wrpts\ba1907\wrpt
Groundwater Elevations: July 2019 Photo Date: April 2014 Scale: Bar Scale Date: September 25, 2019

Attachment F
Appendix II Constituents

Acenaphthene	Chlordane
Acenaphthylene	p-Chloroaniline
Acetone	Chlorobenzene
Acetonitrile; Methyl cyanide	Chlorobenzilate
Acetophenone	p-Chloro-m-cresol; 4-Chloro-3-methylphenol
2-Acetylaminofluorene; 2-AAF	Chloroethane; Ethyl chloride
Acrolein	Chloroform; Trichloromethane
Acrylonitrile	2-Chloronaphthalene
Aldrin	2-Chlorophenol
Allyl chloride	4-Chlorophenyl phenyl ether
4-Aminobiphenyl	Chloroprene
Anthracene	Chromium (total)
Antimony (total)	Chrysene
Arsenic (total)	Cobalt (total)
Barium (total)	Copper (total)
Benzene	m-Cresol; 3-methylphenol
Benzo[a] anthracene; Benzanthracene	o-Cresol; 2-methylphenol
Benzo[b] fluoranthene	p-Cresol; 4-methylphenol
Benzo[k] fluoranthene	Cyanide
Benzo[ghi] perylene	2,4-D; 2,4-Dichlorophenoxyacetic acid
Benzo[a] pyrene	4,4-DDD
Benzyl alcohol	4,4-DDE
Beryllium (total)	4,4-DDT
alpha-BHC	Diallate
beta-BHC	Dibenz [a,h] anthracene
delta-BHC	Dibenzofuran
gamma-BHC; Lindane	Dibromochloromethane; Chlorodibromomethane
Bis(2-chloroethoxy) methane	1,2-Dibromo-3-chloropropane; DBCP
Bis(2-chloroethyl) ether; Dichloroethyl ether	1,2-Dibromoethane; Ethylene dibromide; EDB
Bis(2-chloro-1-methylethyl) ether; 2,2-Dichlorodiisopropyl ether; DCIP	Di-n-butyl phthalate
	o-Dichlorobenzene; 1,2-Dichlorobenzene
Bis(2-ethylhexyl) phthalate	m-Dichlorobenzene; 1,3-Dichlorobenzene
Bromochloromethane; Chlorobromomethane Bromodichloromethane; Dibromochloromethane	p-Dichlorobenzene; 1,4-Dichlorobenzene
	3,3-Dichlorobenzidine
Bromoform; Tribromomethane	trans-1,4-Dichloro-2-butene
4-Bromophenyl phenyl ether	Dichlorodifluoromethane; CFC-12
Butyl benzyl phthalate; Benzyl butyl phthalate	1,1-Dichloroethane; Ethylidene chloride
Cadmium (total)	1,2-Dichloroethane; Ethylene dichloride
Carbon disulfide	1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride
Carbon tetrachloride	cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene

Attachment F (cont.)
Appendix II Constituents

trans-1,2-Dichloroethylene; trans-1,2-Dichloroethene	Hexachlorobenzene
2,4-Dichlorophenol	Hexachlorobutadiene
2,6-Dichlorophenol	Hexachlorocyclopentadiene
1,2-Dichloropropane; Propylene dichloride	Hexachloroethane
1,3-Dichloropropane; Trimethylene dichloride	Hexachloropropene
2,2-Dichloropropane; Isopropylidene chloride	2-Hexanone; Methyl butyl ketone
1,1-Dichloropropene	Indeno (1,2,3-cd) pyrene
cis-1,3-Dichloropropene	Isobutyl alcohol
trans-1,3-Dichloropropene	Isodrin
Dieldrin	Isophorone
Diethyl phthalate	Isosafrole
0,0-Diethyl 0-2-pyrazinyl phosphorothioate; Thionazin Dimethoate	Kepone
p-(Dimethylamino)azobenzene	Lead (total)
7,12-Dimethylbenz(a)anthracene	Mercury (total)
3,3-Dimethylbenzidine	Methacrylonitrile
2,4-Dimethylphenol; m-Xylenol	Methapyrilene
Dimethyl phthalate	Methoxychlor
m-Dinitrobenzene	Methyl bromide; Bromomethane
4,6-Dinitro-o-cresol; 4,6-Dinitro-2-methylphenol	Methyl chloride; Chloromethane
2,4-Dinitrophenol	3-Methylcholanthrene
2,4-Dinitrotoluene	Methyl ethyl ketone; MEK; 2-Butanone
2,6-Dinitrotoluene	Methyl iodide; Iodomethane
Dinoseb; DNBP; 2-sec-Butyl-4,6-dinitrophenol	Methyl methacrylate
Di-n-octyl phthalate	Methyl methanesulfonate
Diphenylamine	2-Methylnaphthalene
Disulfoton	Methyl parathion; Parathion methyl
Endosulfan I	4-Methyl-2-pentanone; Methyl isobutyl ketone
Endosulfan II	Methylene bromide; Dibromomethane
Endosulfan sulfate	Methylene chloride; Dichloromethane
Endrin	Naphthalene
Endrin aldehyde	1,4-Naphthoquinone
Ethylbenzene	1-Naphthylamine
Ethyl methacrylate	2-Naphthylamine
Ethyl methanesulfonate	Nickel (total)
Famphur	o-Nitroaniline; 2-Nitroaniline
Fluoranthene	m-Nitroaniline; 3-Nitroaniline
Fluorene	p-Nitroaniline; 4-Nitroaniline
Heptachlor	Nitrobenzene
Heptachlor epoxide	o-Nitrophenol; 2-Nitrophenol

Attachment F (cont.)
Appendix II Constituents

p-Nitrophenol; 4-Nitrophenol	Sulfide
N-Nitrosodi-n-butylamine	2,4,5-T; 2,4,5-Trichlorophenoxyacetic acid
N-Nitrosodiethylamine	1,2,4,5-Tetrachlorobenzene
N-Nitrosodimethylamine	1,1,1,2-Tetrachloroethane
N-Nitrosodipethylamine	1,1,2,2-Tetrachloroethane
N-Nitrosodipropylamine; N-Nitroso-N-dipropylamine; Di-n-propylnitrosamine	Tetrachloroethylene; Tetrachloroethene; Perchloroethylene 2,3,4,6-Tetrachlorophenol
N-Nitrosomethylethylamine	Thallium (total)
N-Nitrosopiperidine	Tin (total)
N-Nitrosopyrrolidine	Toluene
5-Nitro-o-toluidine	o-Toluidine
Parathion	Toxaphene
Pentachlorobenzene	1,2,4-Trichlorobenzene
Pentachloronitrobenzene	1,1,1-Trichloroethane; Methylchloroform
Pentachlorophenol	1,1,2-Trichloroethane
Phenacetin	Trichloroethylene; Trichloroethene
Phenanthrene	Trichlorofluoromethane; CFC-11
Phenol	2,4,5-Trichlorophenol
p-Phenylenediamine	2,4,6-Trichlorophenol
Phorate	1,2,3-Trichloropropane
Polychlorinated biphenyls; PCBs; Aroclors	0,0,0-Triethyl phosphorothioate
Pronamide	sym-Trinitrobenzene
Propionitrile; Ethyl cyanide	Vanadium (total)
Pyrene	Vinyl acetate
Safrole	Vinyl chloride; Chloroethene
Selenium (total)	Xylenes (total)
Silver (total) Silvex; 2,4,5-TP	Zinc (total)
Styrene	

Attachment G
Appendix I Constituents

Inorganic Constituents	
Antimony	Lead
Arsenic	Nickel
Barium	Selenium
Beryllium	Silver
Cadmium	Thallium
Chromium	Vanadium
Cobalt	Zinc
Copper	

Organic Constituents	
Acetone	trans-1,2-Dichloropropene
Acrylonitrile	Ethylbenzene
Benzene	2-Hexanone; Methyl butyl ketone
Bromochloromethane	Methyl bromide; Bromomethane
Bromodichloromethane	Methyl chloride; Chloromethane
Bromoform; Tribromomethane	Methylene bromide; Dibromomethane
Carbon disulfide	Methylene chloride; Dichloromethane
Carbon tetrachloride	Methyl ethyl ketone; MEK; 2-Butanone
Chlorobenzene	Methyl iodide; Iodomethane
Chloroethane; Ethyl chloride	4-Methyl-2-pentanone; Methyl isobutyl ketone
Chloroform; Trichloromethane	Styrene
Dibromochloromethane; Chlorodibromomethane	1,1,1,2-Tetrachloroethane
1,2-Dibromo-3-chloropropane; DBCP	1,1,2,2-Tetrachloroethane
1,2-Dibromoethane; Ethylene dibromide; EDB	Tetrachloroethylene; Tetrachloroethene; Perchloroethylene
o-Dichlorobenzene; 1,2-Dichlorobenzene	Toluene
p-Dichlorobenzene; 1,4-Dichlorobenzene	1,1,1-Trichloroethane; Methylchloroform
trans-1,4-Dichloro-2-butene	1,1,2-Trichloroethane
1,1-Dichloroethane; Ethylidene dichloride	Trichloroethylene; Trichloroethene
1,2-Dichloroethane; Ethylene dichloride	Trichlorofluoromethane; CFC-11
1,1-Dichloroethylene; 1,1-Dichloroethane; Vinylidene chloride	1,2,3-Trichloropropane
cis-1,2-Dichloroethylene; cis-1,2- Dichloroethene	Vinyl acetate
trans-1,2-Dichloroethylene; trans-1,2- Dichloroethene	Vinyl chloride
1,2-Dichloropropane; Propylene dichloride	Xylenes
cis-1,3-Dichloro propene	

Table 1
Constituents of Concern (COCs)

Monitoring Parameters (MPars): Inorganic Parameters	
Chloride	Total Dissolved Solids
Nitrate as nitrogen	Total Chromium
Potassium	Total Lead
Sulfate	Total Manganese

Monitoring Parameters (MPars): Appendix I VOCs	
Acetone	Ethylbenzene
Acetonitrile	Ethylene dibromide
Benzene	Hexanone, 2-
Butanone, 2- (MEK)	Isobutyl Alcohol
Chloroethane	Methyl isobutyl ketone (MIBK)
Chloroform	Methylene Chloride
Chloromethane	Naphthalene
Dibromochloropropane	Phenol
Dichlorobenzene, 1,4-	Styrene
Dichlorodifluoromethane	Tetrachloroethene
Dichloroethane, 1,1-	Toluene
Dichloroethane, 1,2-	Trichloroethane, 1,1,1-
Dichloroethene, 1,1-	Trichloroethene
Dichloroethene, cis-1,2-	Vinyl Chloride
Dichloroethene, trans-1,2-	Xylenes, total
Dichlorofluoromethane	Xylenes, m,p-
Dichloropropane, 1,2-	Xylene, o-

Uninvolved Parameters (UnPars): Appendix II Organics, VOCs	
Acetophenone	Bis(2-ethylhexyl) Phthalate
Benzyl Alcohol	

Table 2
Water Quality Monitoring Points

Media Monitored	Monitoring Point
Groundwater: background wells	BH-11, BH-23
Groundwater: downgradient wells	BL-03, BD-04, BH-21, BH-22, BH-24, BH-25
Groundwater: point of compliance wells	BL-03, BD-04, BH-21, BH-22, BH-25
Leachate	Leachate Tank (on Bench P)
Landfill Gas Condensate	Condensate Tank (on Bench P)
Unsaturated Zone	Landfill gas perimeter monitoring probes

Table 3
Water Quality Monitoring Requirements

Task Description	Constituents	Monitoring Frequency
Liquid waste containment system inspection	NA	Weekly
Drainage control system inspection	NA	Monthly
Post-storm inspection	NA	After each qualifying storm event that produces 0.5 inches or more of rain within a 24-hour period
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)
MPar Analysis	See Table 1	Semi-annually
Leachate and Landfill gas condensate monitoring	Non-COC or full Appendix II constituents	Annually (in October and a confirmation retest sample in April the following year, if needed)
5-year COC analysis	UnPar COCs in Table 1 or full Appendix II analysis	Once every five years

Table 4
Monitoring and Reporting Schedules

Task Description	Monitoring Period	Report Due Date
Post-storm inspection	After each qualifying storm event that produces 0.5 inches or more of rain within a 24-hour period	Within 2 business days after inspection
Quarterly groundwater level measurement: first quarter	October 1 – December 31	April 30 of each year
Quarterly groundwater level measurement: second quarter	January 1 – March 31	April 30 of each year
Quarterly groundwater level measurement: third quarter	April 1 – June 30	October 31 of each year
Quarterly groundwater level measurement: fourth quarter	July 1 – September 30	October 31 of each year
Semi-annual water quality and general site monitoring: first half of year	October 1 – March 31 the following year	April 30 of each year
Semi-annual water quality and general site monitoring: second half of year	April 1 – September 30	October 31 of each year
Annual October landfill leachate and gas condensate analysis	October 1 – October 31	April 30 of the following year
April leachate and gas condensate retesting	April 1 - April 30	October 31 of each year
Drainage and erosion control system inspection and maintenance	By October 1 of each year	October 31 of each year
Facility survey/topographic map	By October 1 of each year	October 31 of each year
Site 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
Leachate Collection and Removal System (LCRS) Performance Testing	January 1 – March 30, 2020	April 30, 2020 and every fifth year thereafter
5-year COC analysis	January 1 – March 30, 2020	April 30, 2020 and every fifth year thereafter, alternately in the Fall (October 31) and Spring (April 30)
5-year COC analysis	July 1 – September 30, 2025	October 31, 2025