

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD COLORADO RIVER BASIN REGION

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ORDER R7-2020-0016



Order Information

Discharger: Mitsubishi Cement Corporation
Facility: Cushenbury Plant Landfill
Address: 5808 State Highway 18, Lucerne Valley, California 92356
County: San Bernardino County
WDID: 7A360307011
GeoTracker ID: L10006378419
Prior Order(s): R7-2000-0009; 90-078; 76-018; 84-066

I, PAULA RASMUSSEN, Executive Officer, hereby certify that the following is a full, true, and correct copy of the order adopted by the California Regional Water Quality Control Board, Colorado River Basin Region, on October 8, 2020.

PAULA RASMUSSEN
Executive Officer

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CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION

ORDER R7-2020-0016

WASTE DISCHARGE REQUIREMENTS
FOR
MITSUBISHI CEMENT CORPORATION, OWNER/OPERATOR
CUSHENBURY PLANT LANDFILL
CLASS III LANDFILL
SAN BERNARDINO COUNTY

The California Regional Water Quality Control Board, Colorado River Basin Region (Regional Water Board) hereby makes the following Findings:

1. Mitsubishi Cement Corporation (Discharger) owns and operates the Cushenbury Plant Landfill (Facility), located at 5808 State Highway 18, Lucerne Valley, California 92356.
2. The Facility site contains a cement manufacturing plant and consists of cement processing equipment and associated structures, cement and rock storage areas, railroad and truck transfer facilities, office buildings, and the landfill. The landfill is an active, Class III inert waste management unit¹ that encompasses a total of 15 acres.
3. These Waste Discharge Requirements (WDRs) regulating the Facility are issued pursuant to state and federal laws and regulations, including but not limited to: California Code of Regulations, title 27, section 20005 et seq.; Water Code section 13000 et seq; 40 Code of Federal Regulations parts 257 and 258 (a.k.a., "Subtitle D"); State Water Resources Control Board (State Water Board) Resolution 93-62, *Policy for Regulation of Discharges of Municipal Solid Waste*.
4. The Facility was most recently regulated by WDRs Order R7-2000-0009, adopted on April 12, 2000. The Facility is assigned the California Integrated Water Quality System (CIWQS) waste discharge identification (WDID) number 7A360307011 and GeoTracker Global ID number L10006378419. The Facility also has a separate permit that regulates the onsite disposal of wastewater from the cement manufacturing plant to two evaporation/percolation ponds under WDRs Order R7-2019-0009.

¹ "Waste management unit" is as defined in California Code of Regulations, title 27, section 20164. Unless otherwise specified, all terms have the meaning specified in California Code of Regulations, title 27, division 2, subdivision 1, chapter 2, article 1.

5. On April 23, 2019, the Discharger submitted a Report of Disposal Site Information (RDSI) for the Facility and an updated RDSI in October 2019.
6. This Order updates the WDRs to incorporate current laws and regulations. This Order supersedes Order R7-2000-0009, except for enforcement purposes.

Overview of Facility and Waste Management Units

7. Henry J. Kaiser originally developed the Cushenbury limestone quarry to supply his steel making operations in Fontana, California during World War II. He built the cement manufacturing plant in 1957. The Facility was modernized in 1982, and the Discharger purchased the plant in 1988.
8. The plant uses limestone, mined from rock units located within the vicinity of the Facility, as raw materials. The raw feed material is calcined² in the preheater/precalciner tower and sintered³ in the kiln. The clinker⁴ is cooled and ground to final product in finish mills. The cement is stored in silos for shipment to market.
9. The Facility site encompasses a total of 792 acres and is in a remote area with access points along State Highway 18 within the County of San Bernardino. The Facility is approximately eight miles south of Lucerne Valley, and one and a half miles from Camp Rock Road, as depicted in **Attachment A**—Vicinity Map.
10. The Facility is located in the east ½, section 10, township 3 north, region 1 east of the San Bernardino Base and Meridian, it is located within a private, unincorporated jurisdiction control area. The property can also be described as Assessor Parcel Number (APN) 447-021-07. The site latitude and longitude are 34.34986 North and 116.84639 West. The Facility's location is shown in and **Attachment B**—Site Map.
11. The Facility property is privately-owned and the landfill waste management unit is solely for the disposal of solid, inert waste generated by the Discharger during the cement manufacturing process. The Facility is not open to the general public and no public roads are used for transporting any off-site waste to the landfill site. All waste handling traffic is conducted by using privately-owned internal access roads; there is no outside waste hauling traffic to the landfill.
12. The land use designated by San Bernardino County within a 1,000 feet radius of the Facility is Regional Industrial. The land within 1000 feet of the Facility to the

² To heat (as inorganic materials) to a high temperature but without fusing in order to drive off volatile matter or to effect changes.

³ To cause to become coherent mass by heating without melting.

⁴ Stony matter fused by fire.

east and to the north are natural desert and owned by the U.S. Bureau of Land Management (BLM). The BLM also owns land to the west of the Facility. Land to the south consists of mountain slopes under the jurisdiction of the U.S. Forest Service. The Facility site has been completely disturbed by past landfill and mining activities. No existing structures exist in the immediate vicinity of the Facility.

13. The Facility is located on the border of Airport Land Use Commission Review Safety Area 4, a fly-wet corridor for military aircraft. However, because the landfill is located recessed into the mountain foothills at the mouth of Cushenbury Canyon, it is removed from heavily-travelled flight paths. The Santa Fe-Atchison Topeka Railroad is located on the southern side of the landfill waste management unit.
14. The waste management units at the Facility and authorized by this Order is identified below:

Table 1. Waste Management Unit at the Facility

Unit	Area	Liner/LCRS ⁵ Components	Unit Classification
Landfill (LF-1)	15	Unlined and no LCRS. ⁶	Class III, active.

15. The Landfill (LF-1) waste management unit first became subject to WDRs from the Regional Water Board under Order 76-18, adopted on April 22, 1976. In April 1988, the previous owner sold the Facility to the Mitsubishi Cement Corporation, the current Discharger. The 1992 RDSI (Meinfelder) stated that operations would continue with no changes from the original 1978 RDSI and Facility's Solid Waste Facility Permit (SWFP), except for required accurate measuring and recording of waste disposal amounts to comply with state requirements. The Cushenbury Cement Plant has been weighing all refuse material entering the landfill on a certified scale prior to disposal at the landfill since 1979.
16. On April 23, 2019, the Discharger submitted a new RDSI for the Facility. On September 27, 2019, the Local Enforcement Agency (LEA) requested minor updates and revisions to the RDSI including the addition of 2019 site life calculations, site-grading plan, and evidence justifying the Discharger's request to reduce gas monitoring frequency to two years. On October 8, 2019, the Discharger submitted an updated RDSI, which was approved by the LEA on

⁵ LCRS – Leachate collection and removal system

⁶ Waste management unit constructed prior to November 27, 1984.

November 7, 2019 and concurred with by the Regional Water Board on November 26, 2019.

17. The operation of the Facility is in accordance with the surrounding mining/industrial land designation identified in the County's General Plan. LF-1 is also identified as a Waste Disposal Site on the County General Plan Infrastructure Facilities Map Series. The designation serves to prohibit future development of any incompatible land uses on the site.
18. The WDRs have been updated as follows:

Table 2. Overview of WDRs Orders

Regional Water Board Order	Date
76-18	April 22, 1976
84-66	May 16, 1984
90-078	November 28, 1990
R7-2000-0009	April 12, 2000

19. The Discharger submitted a Preliminary Closure and Post Closure Maintenance Plan (PCPCMP) for the Facility on March 29, 2006. The plan was updated on March 26, 2016, and again in July 2019. The most recent update was approved by the Department of Resources Recycling and Recovery (CalRecycle) on August 26, 2019. The updated PCPCMP was approved by the Local Enforcement Agency (LEA) on November 7, 2019 and the Regional Water Board on November 26, 2019.

Cushenbury Plant Landfill

20. The Cushenbury Plant Landfill consists of a single, existing Class III landfill waste management unit (LF-1) that currently occupies 10.5 acres out of the 15-acre footprint. Approximately 200 tons per year of solid wastes, at an average rate of 0.5 tons/day, are disposed of in the waste management unit. The total volumetric capacity of LF-1, including refuse and daily cover material, is approximately 520,400 cubic yards. The dimensions of the landfill are approximately 500 feet wide (north to south), and 1,000 feet long (east to west), and an airspace capacity of 60 feet above the surrounding grade.
21. The Facility's operational hours are 04:00 am to 09:00 pm, 365 days per year. The operating hours for conducting ancillary activities and maintenance and management are 24 hours per day, seven days per week, as necessary.
22. LF-1 receives the following Class III, nonhazardous, and inert solid wastes:

- a. Refuse consisting of wastepaper, wood pallets, tree trimmings, steel, rubber, miscellaneous trash from the Facility, and less than 1% of incidental miscellaneous materials including waste from employees' lunches;⁷
 - b. Alternate Daily Cover (ADC) material comprised of the following waste elements generated at the Facility: soil from on-site mines or cement processing by-products such as clinker, cement, soil, and rock; and
 - c. Final cover consisting of unusable limestone from the mining process.
23. LF-1 is unlined and has no Leachate Collection and Recovery System (LCRS). The formation of leachate at this site is not expected because only inert material is approved to be disposed of within the footprint. Furthermore, any generation of leachate or stormwater infiltration is limited by the arid climate, due to low amounts of precipitation producing limited water to percolate through the refuse to create leachate. The Discharger has instituted additional measures to further minimize the potential formation of leachate, including diversion of off-site drainage around LF-1, control of on-site flow via a surface drainage system, and placement of compacted daily cover within LF-1. These measures are implemented to divert any precipitation that does occur off-site and to prevent any water that is left on-site from percolating into the refuse, which causes leachate to form. The Discharger conducts quarterly visual site inspections for signs of leachate.
24. The operation cycle at the Facility includes loading, weighing, unloading, spreading, compacting, and covering of the waste. Approximately two to four days per month, refuse is initially collected at a central collection point within the plant known as the trash bunker. The bunker is located adjacent to the finish mill additive unloading area, which is several hundred feet away and to the southeast of the landfill. When the trash bunker is full, a wheel loader loads the refuse onto dump trucks. The dump trucks are weighed and then unloaded at the base of the active cell, at the toe or top of the working face. A bulldozer or wheel loader then spreads the refuse in a one to two-foot-thick lift. The waste is compacted by making multiple passes with the heavy machinery. The cell is typically 20 feet by 30 feet by four feet high and is sloped at approximately 3(H):1(V). Cover is then added by the end of the day, and the cell is graded to prevent ponding. The active cell is also protected by a perimeter berm.
25. The method of waste burial used at the site is the fill method. Disposal takes place by placing waste into the active cell and building up the cell vertically with little or no lateral expansion. The compacted refuse from one workday, together

⁷ The Discharger indicates that, currently, employee lunch and other municipal solid waste generated onsite is generally hauled offsite.

with soil and ADC material, constitutes a waste cell. Waste cells are successively placed in locations to fill up the entire final grading plan.

26. A minimum thickness of six inches and up to 12 inches of ADC is placed over the compacted refuse as soon as possible and in no event later than the end of the same day that the refuse has been disposed in the landfill. A layer of waste and cover soil is deposited on this area over a six-month period, and then another layer is started above the previous layer. In that manner, the relatively small amount of waste and cover material is covered again within 180 days. Therefore, no intermediate soil cover is required or used at LF-1.
27. Prior to 1978, the site reportedly only accepted wastes generated at the cement plant, consisting of 99% inert solids (office trash, wood, tree trimmings, clean rags, waste concrete products clinker, kiln dust, and construction debris) and 1% decomposable solids (employee lunch refuse). The landfill did not accept offsite refuse. In 1989, borings through the landfill by Leighton and Associates revealed "moderate foul odor" in drilling water, but "no hydrocarbon odor/stain." In several of the borings, erratic drilling indicated large voids between the landfilled material (1992 RMI).
28. The Discharger has established source reduction and recycling programs for hazardous and recyclable materials pursuant to the Resource Conservation and Recovery Act (RCRA). Separation of these materials occurs prior to landfilling. All hazardous waste generated at the Facility is temporarily stored in approved containers at a designated storage area located at the cement plant. The hazardous waste is disposed of within a maximum of 90 days at an approved off-site location by a licensed hazardous waste contractor. The hazardous waste generated at the cement plant consists mainly of waste oils (99 percent), rags contaminated with waste oils, and a small quantity (less than one percent) of other wastes (i.e., laboratory waste and antifreeze). The waste oils consist mainly of hydrocarbons. Handling of hazardous materials must comply with the requirements of the County Hazardous Materials Handler Permit, renewed annually with the San Bernardino County Fire Protection District, Hazardous Materials Division. The current permit has an effective date of November 1, 2019.
29. The Facility records show that during the period of January 2014 through December 2018, deposition of refuse generally took place on one to four days a month. The weight of refuse was between approximately four and 37 tons per month, with the average of 15 tons per month. A review of the Facility records shows the typical weight per truck load was 3-8 tons; there were several loads less than three tons and several loads of more than ten tons (to as high as 19 tons). The respective daily totals were well below the permitted 40 tons per day.

The average volume⁸ of refuse disposed was approximately 24 cubic yards per month and the average volume of refuse and cover soil was approximately 48 cubic yards per month.

30. As of December 31, 2018, an estimated volume of approximately 304,400 cubic yards had been filled with waste and cover soil. The remaining capacity was approximately 131,600 cubic yards of waste and cover soil, plus an estimated 84,400 cubic yards for the Final Cover System,⁹ based on a 2:1 ratio of waste to cover soil. The average disposal volume per day is 0.49 tons, therefore the remaining site life estimate is 230 years; however, the Facility's currently-approved plans only allow LF-1 to remain open until December 31, 2034.

Geologic Conditions

31. The Facility is located on the northern flank of the San Bernardino Mountains, at the mouth of Cushenbury Canyon, within the Lucerne Valley in the Morongo Groundwater Basin. The Lucerne Valley, a 150-square-mile alluvial basin, is also surrounded by the San Bernardino Mountains to the south, the Bullion Mountains to the east, and the Ord and Granite Mountains to the north.
32. The Facility is located on a mountain slope that faces north. The natural land surface within the boundaries of the site is predominantly sloping within scattered erosional channels that are in a northwesterly direction. The elevation at the north of the site is 4,174 feet above sea level. Maximum elevation is about 4,249 feet above sea level in the southeast corner of the Facility.
33. The Facility geology in the vicinity of LF-1 is a north facing alluvial fan that is a minimum of 400 feet thick. Surficial sediments beneath the Facility area consist of both old and young alluvium. The site is underlain by Quaternary alluvium consisting of 5 to 10 feet of unconsolidated alluvial material underlain, in turn, by partially consolidated saturated alluvium to depths up to 300 feet. The alluvium is composed of poorly sorted, unconsolidated sand, gravel, cobbles, silt, and clay. The younger alluvium is present only on the surface near active stream channels and is only a few feet thick. Local variations in depositional environments have concentrated coarser materials, slightly cemented sands, and created silts with lenses of clay mixed with gravel. The Unified Soil Classification System (USCS) classification for the soil is GC (clayey gravel) – CL (lean clay). The alluvium soils are excessively drained and have a moderate to high permeability.
34. There is Paleozoic Limestone which exists near the site in the San Bernardino Mountains. This is quarried as raw materials for the cement plant. The limestone

⁸ Using a weight conversion of 0.625 ton per cubic yard of refuse, and 1 cubic yard of cover soil weighs 1.3 tons.

⁹ Kleinfelder (1992c).

has a chalky texture, is relatively soft, and is a bright white that is highly visible from afar. The limestone is also known to contain calcareous marine fossils, predominately corals.

35. The Facility lies within the Lucerne Planning Area, specifically within the Lucerne Valley Hydrologic Unit. The regional aquifer in the Morongo Groundwater Basin consists of continental deposits of Quaternary and Tertiary age that extend to as much as 10,000 ft deep and is composed of unconsolidated older alluvium and fan deposits of Pleistocene to Tertiary age. In some places, the regional aquifer also consists of partly consolidated to consolidated sedimentary deposits of Tertiary age. The regional aquifer is as much as 1,000 ft thick. Other geologic units, such as bedrock and lake deposits, commonly contain groundwater, but they are not considered reliable sources of groundwater.
36. The Facility is located in a geologic hazard overlay district and lies adjacent and in close proximity to two identified Alquist-Priolo special studies overlay zones. The North Frontal thrust fault zone lies at the northern foot of the San Bernardino Mountains. The Quaternary Helendale strike-slip fault zone passes within 1,000 feet to the northeast of the landfill site. The two fault zones intersect near the mouth of Cushenbury Canyon. Both faults appear to serve as barriers to subsurface groundwater migration with an occasional resultant high-water table when groundwater flow from the south backs up against the Cushenbury fault and rises to the surface, resulting in occasional spring flow approximately 1600 feet northeast from the site.
37. Over 100 earthquakes were recorded within a ten mile radius of the Facility between the periods of 1932 to 1976, and the Maximum Probable Earthquake was determined to be a 6.5 magnitude from either the North Frontal or Helendale fault zone, which would result in a maximum ground acceleration of 0.4-0.7g's.
38. The San Andreas fault is approximately 11.5 miles to the south of the Facility. The site is identified as having a low risk of liquefaction and therefore not identified on the County of San Bernardino's General Plan Hazard Overlay Map Series. The location of LF-1 is identified as a low risk for ground shaking, as indicated on the Seismic Hazards Map.

Surface Water and Groundwater Conditions

39. The Facility site is not within a 100-year flood hazard area as designated by a Federal Emergency Management Agency (FEMA). The 100-year, 24-hour precipitation event for the site is 3.5 inches.
40. The Cushenbury Springs are located approximately 1600 feet north of LF-1. Cushenbury Canyon drainage course passes approximately 1000 feet to the east. A large dry wash, three feet deep and up to twenty-five feet wide, passes directly to the west of the Cushenbury plant. This drainage conveys surficial runoff mainly during storm events.

41. Surface water drainage from the watershed above the Facility is north to southwest into the Lucerne Valley. However, because the Facility is located on a north facing slope, all surface flows from the Facility drain towards the north into Lucerne Valley. Groundwater flow follows the general gradient of the land surface except in areas of heavy extraction and where subsurface flow may be affected by faults.
42. Mean annual precipitation ranges from 16 inches in the San Bernardino Mountains to less than three inches in the Bristol Lake (dry) area. The average annual rainfall over the entire planning area is five inches. Little of the rainwater percolates into the ground water table and most is lost by evaporation and by evapotranspiration.

Groundwater Monitoring

43. The Discharger reports that the information obtained from onsite and offsite wells, which provide water for industrial and domestic use at the plant, indicates that the depth to ground water is approximately 100-150 feet beneath the landfill. A sample taken from a production well in 1977 reports total dissolved solids (TDS) content of 387 mg/l. Samples collected from monitoring wells MW-1, MW-2, and MW-3 in 1989 indicate TDS concentrations ranging from 450 to 500 mg/L. Samples collected from monitoring wells M1, M2, and M3 in the fourth quarter of 2018 indicate TDS concentrations ranging from 360 to 1,000 mg/L.
44. In 1992, the Discharger had two monitoring wells installed (MW-1 and MW-2) using a mud rotary drill, and a third well installed (MW-3) using an air rotary drill.
45. The following chart is a summary of existing on-site groundwater monitoring wells:

Table 3. Groundwater Monitoring Wells

Well Number	Location	Groundwater Elevation (ft msl)	Date (mm/dd/yyyy)
MW-1	Upgradient	150	01/23/1991
MW-2	Downgradient	98	01/21/1991
MW-3	Downgradient	35	01/18/1991

46. The plant manufactures cement according to a “dry” process. Water usage at the Facility is limited to the machine cooling system, finish mills, dust suppression, cleaning activities at the maintenance shops, and domestic consumption. Water is provided to the plant through groundwater wells, which are owned and operated by the Discharger, located on the site in Lucerne Valley.

Soil-Pore Gas Monitoring

47. Initially, landfill gas (LFG) monitoring was not required at the Cushenbury Landfill given the small waste volumes deposited. In December 2005, CalRecycle (then the California Integrated Waste Management Board) determined that a single, static gas monitoring well was appropriate, as shown on **Attachment D**, initially with quarterly monitoring. Construction of the monitoring well was completed in November 2006 and approved by the LEA and CalRecycle in January 2007. After two years of insignificant LFG results, the agencies agreed in March 2009 to annual monitoring.
48. The LFG monitoring well (G-1) is a triple nested, static gas well with screen intervals at 10-15 feet (G-1C), 30-35 feet (G-1B), and 50-57 feet (G-1A). The well is not an extraction well and is for detection of landfill gases that could potentially migrate from the landfill. The well is built out of 1-inch diameter, schedule 80, flush thread poly vinyl chloride (PVC), with threaded PVC caps at the bottom of each screened interval, and coarse sand pack up to a minimum of one foot above the screen intervals. The well has a maximum depth of 60 feet below ground surface (bgs), which is 50 feet higher than the anticipated groundwater level, estimated to be 110 feet bgs at that location.¹⁰
49. Samples from the G-1 well are collected and tested for target parameters. The frequency of sample collection/reporting and a list of target parameters are stated in the Monitoring and Reporting Program (MRP).
50. The Discharger recently resubmitted a request for exemption from LFG monitoring, dated June 30, 1987. The request was originally from Kaiser Cement Corporation; however, the Discharger as the current owner has resubmitted the request to the local air pollution control district. The request cites Health and Safety Code section 41805.5, subdivision (c), which allows an exception for “a solid waste disposal site...that has accepted or now contains only inert and non-decomposable solids,” and the fact that the landfill is almost (99%) entirely inert material.
51. The Facility is classified as a Category II Landfill by the San Bernardino County Air Pollution Control District, and is therefore required to submit limited monitoring data for surface emission screening, internal gas stream characterization, ambient air monitoring, and subsurface gas migration monitoring.¹¹

¹⁰ Ron Barto, 2005.

¹¹ “Category II Air Quality Solid Waste Assessment Test Report for the Cushenbury Cement Plant Landfill,” dated December 1991, prepared by Kleinfelder, Inc. on behalf of the Discharger.

Basin Plan and Other Regulatory Considerations

52. The Water Quality Control Plan for the Colorado River Basin (Basin Plan), which was adopted on November 17, 1993 and amended on January 8, 2019, designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. Pursuant to Water Code section 13263, subdivision (a), WDRs must implement the Basin Plan and take into consideration the beneficial uses to be protected, the water quality objectives reasonably required for that purpose, other waste discharges, the need to prevent nuisance, and the provisions of Water Code section 13241.
53. The beneficial uses of groundwater in the Lucerne Hydrologic Unit are:
 - a. Municipal Supply (MUN),
 - b. Industrial Supply (IND), and
 - c. Agriculture Supply (AGR).
54. The beneficial uses of Cushenbury Creek, located within the Lucerne Hydrologic Unit, are those associated with miscellaneous, unlisted washes (ephemeral streams) in the West Colorado River Basin. Those beneficial uses are:
 - a. Freshwater Replenishment (FRSH)
 - b. Groundwater Recharge (GWR),
 - c. Recreation II (REC II),
 - d. Warm Water Habitat (WARM), and
 - e. Wildlife Habitat (WILD).
55. This Order establishes WDRs pursuant to division 7, chapter 41, article 4 of the Water Code for discharges that are not subject to regulation under Clean Water Act section 402 (33 U.S.C. § 1342).
56. These WDRs implement numeric and narrative water quality objectives for groundwater established by the Basin Plan. The numeric objectives for groundwater designated for municipal and domestic supply (MUN) include the Maximum Contaminant Levels (MCLs) and bacteriological limits specified in California Code of Regulations, title 22, section 64421 et seq. The Basin Plan states that groundwater for use as domestic or municipal water supply (MUN) must not contain taste- or odor-producing substances in concentrations that adversely affect beneficial uses as a result of human activity.

57. It is the policy of the State of California that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. This Order promotes that policy by requiring that any discharges to do not exceed background water quality levels.
58. These WDRs also implement state regulations applicable to the discharge of solid waste to land found in California Code of Regulations, title 27, division 2, subdivision 1, commencing with section 20005 (“Consolidated Regulations for Treatment, Storage, Processing or Disposal of Solid Waste”). These regulations contain classification criteria for wastes and for disposal sites, and prescribe minimum standards for the siting, design, construction, monitoring, and closure of waste management units.
59. This Order further implements the applicable federal regulations for discharges of solid waste to land. On October 9, 1991, USEPA promulgated federal municipal solid waste (MSW) regulations under the Resource Conservation and Recovery Act (RCRA), Subtitle D, codified in 40 Code of Federal Regulations parts 257 and 258. State Water Board Resolution 93-62 (as amended on July 21, 2005) requires that the regional water boards implement the applicable provisions of the federal MSW regulations in WDRs, particularly the provisions that are either more stringent than or that do not exist in title 27 of the California Code of Regulations.
60. The Regional Water Board has considered State Water Board Resolution 68-16, entitled *Statement of Policy with Respect to Maintaining High Quality Waters in California* (Resolution 68-16) in adopting this Order. Resolution 68-16 prohibits the Regional Water Board from authorizing discharges that will result in the degradation of high quality waters, unless it is demonstrated that any change in water quality will (a) be consistent with maximum benefit to the people of the state, (b) not unreasonably affect beneficial uses, and (c) not result in water quality less than that prescribed in state and regional policies (e.g., the violation of one or more water quality objectives). The discharger must also employ best practicable treatment or control (BPTC) to minimize the degradation of high quality waters. High quality waters are surface waters or areas of groundwater that have a baseline water quality better than required by water quality control plans and policies.
61. The Order complies with Resolution 68-16 by requiring the Discharger to design, construct, and maintain waste containment systems that prevent discharges of waste and waste constituents to waters of the state. The requirements reflect the Discharger’s best efforts to control such wastes, and also constitute BPTC for the prevention of surface water and groundwater degradation. Any releases that are detected from the landfill will be required to be remediated in accordance with a corrective action program.

62. Water Code section 13267 authorizes the Regional Water Board to require technical and monitoring reports. The monitoring and reporting requirements in MRP R7-2020-0016 are necessary to determine compliance with this Order. The State Water Board's electronic database, GeoTracker Information Systems, facilitates the submittal and review of monitoring and reporting documents. The burden, including costs, of the MRP bears a reasonable relationship to the need for that information and the benefits to be obtained from that information.
63. Pursuant to Water Code section 13263, subdivision (g), the discharge of waste is a privilege, not a right, and adoption of this Order does not create a vested right to continue the discharge.

Stormwater

64. Federal regulations for stormwater discharges were promulgated by the U.S. Environmental Protection Agency on November 16, 1990 (40 C.F.R. parts 122, 123, and 124) to implement the Clean Water Act's stormwater program set forth in Clean Water Act section 402(p) (33 U.S.C. §1342(p)). In relevant part, the regulations require specific categories of facilities that discharge stormwater associated with industrial activity to "waters of the United States" to obtain National Pollutant Discharge Elimination System (NPDES) permits and to require control of such pollutant discharges using Best Available Technology Economically Achievable (BAT) and Best Conventional Pollutant Control Technology (BCT) to prevent and reduce pollutants and any more stringent controls necessary to meet water quality standards.
65. The State Water Board adopted Water Quality Order 2014-0057-DWQ (NPDES No. CAS000001), *General Permit for Storm Water Discharges Associated with Industrial Activities* (Industrial General Permit), which became effective on July 1, 2015. The Industrial General Permit regulates discharges of stormwater associated with certain industrial activities, excluding construction activities, and requires submittal of a Notice of Intent (NOI) to be covered under the permit.
66. The Facility was previously enrolled under Industrial General Permit under Stormwater Multiple Application and Reporting Tracking System (SMARTS) database ID number 205557. The Discharger submitted a Notice of Non-Applicability (NONA), dated June 2015. The NONA stated that the Facility is not hydraulically connected to the waters of the United States and is also engineered and constructed to have contained the maximum historic precipitation event using the precipitation data collected from the National Oceanic and Atmospheric Agency's website. The Regional Water Board conducted a stormwater inspection on July 15, 2015. In a letter dated September 29, 2015, the Regional Water Board approved the Notice of Termination (NOT) of coverage under the Industrial General Permit.
67. Nonetheless, the Facility does incorporate various stormwater controls. The LF-1 operational areas are designed to enhance the lateral drainage of free liquids

and precipitation. The Facility has a minimum grade of 1 percent. Stormwater runoff at the site is managed with a system of two infiltration basins and an earthen berm around the entire landfill. The larger basin acts as the primary containment, and the smaller, secondary basin acts as the overflow for the primary. The two evaporation ponds are located approximately 600 feet north of LF-1. Stormwater discharge at the site only occurs if both the secondary and the primary pond fill. In 2014, the primary pond was expanded to decrease the likelihood of stormwater runoff. The capacity of the ponds is 38 acre-feet and 1.6 acre-feet for Pond 1 and 2, respectively. The area contributing to the runoff is about 178 acres, which includes the entire Facility, not just LF-1. In April 2015, a long-term infiltration test was conducted, and Pond 1 was measured to have an average infiltration rate of 0.7 foot/day.

68. The prior discharger submitted an engineering report dated June 18, 1976, containing calculations regarding adequacy of the dikes, berms, and pond systems to provide flood protection from a 100-year storm. If discharge from the on-site pond system occurred during an unprecedented wet period, it would flow to Cushenbury Creek, an ephemeral stream running along the northeast boundary of the Facility. It contains water only during rare, large magnitude rainfall events. As defined for Clean Water Act implementation, Cushenbury Creek is not a jurisdictional tributary, because it does not eventually flow to a water of the United States.

Financial Assurances

69. The State Water Board-promulgated provisions of title 27 of the California Code of Regulations require maintenance of appropriate financial assurance mechanisms to cover all expenses related to the following:
- a. Closure Activities (Cal. Code Regs., tit. 27, § 22207) – in at least the amount of the current closure cost estimate;
 - b. Post-closure Maintenance (Cal. Code Regs., tit. 27, § 22212) – in at least the amount of the current post-closure cost estimate; and
 - c. Corrective Action (Cal. Code Regs., tit. 27, § 22222) – for initiating and completing corrective action for all known or reasonably foreseeable corrective action.
70. The relevant costs listed in the PCPCMP dated July 2019 include activities such as revegetation and erosion control, monitoring and maintenance, drainage maintenance and repair, security, site inspections, and a 20% contingency factor. The estimated costs are as follows:
- a. Closure Cost Estimate - \$1,791,600;
 - b. 30-Years Post Closure Cost Estimate - \$1,737,000.

71. The Discharger maintains an Irrevocable Standby Letter of Credit fund pursuant to California Code of Regulations, title 27, section 22241, as financial assurances for Closure and Post Closure Maintenance activities at the Facility. The Letter of Credit is identified as No. A350332 (internal No. S000157). The Discharger established a pledge of revenue agreement pursuant to California Code of Regulations, title 27, section 22245, as financial assurances for post-closure maintenance of the Facility.
72. The Discharger submitted a Non-water Release Corrective Action Plan, dated July 22, 2019. The plan was reviewed and approved by CalRecycle on August 26, 2019, the LEA on November 7, 2019, and the Regional Water Board on November 26, 2019.
73. There is no separate financial assurance for Corrective Action for the Facility, because the Non-water Release Corrective Action Plan finds that there are no additional mitigation measures necessary beyond those identified in the PCPCMP to address impacts associated with reasonably foreseeable causal events.

CEQA and Public Participation

74. Pursuant to California Code of Regulations, title 14, section 15301, the issuance of these WDRs, which govern the operation of an existing facility involving negligible or no expansion of use beyond that previously existing, is exempt from the provisions of the California Environmental Quality Act (Public Resources Code, § 21000 et seq.).
75. The Regional Water Board has notified the Discharger and all known interested agencies and persons of its intent to update the WDRs for this discharge and has provided them with an opportunity for a public meeting and to submit comments.
76. The Regional Water Board, in a public meeting, heard and considered all comments pertaining to this discharge.

IT IS HEREBY ORDERED, pursuant to section 13263 and 13267 of the California Water Code, that Order R7-2000-0009 is rescinded, except for the purposes of enforcement, and in order to meet the provisions contained in division 7 of the Water Code and regulations adopted thereunder, the Discharger shall comply with the following:

A. Discharge Prohibitions

1. The discharge of “hazardous” waste, as defined in California Code of Regulations, title 27, section 20164, is prohibited.
2. The discharge of “designated” waste, as defined in Water Code section 13173 and California Code of Regulations, title 27, section 20164, is prohibited.

3. The disposal of incompatible wastes or wastes that, when mixed or commingled with other wastes, may create heat, pressure, fire, explosion, toxic by-products, or other chemical reactions that: (1) impair the integrity of the containment structures, or (2) generate products requiring a higher level of containment than provided by the waste management unit into which the wastes are placed, is prohibited.
4. The discharge of liquid or semi-solid waste (i.e., waste containing less than 50 percent solids) is prohibited.
5. The discharge of municipal solid waste (MSW), except lunch refuse or miscellaneous trash from the Facility, is prohibited.
6. The discharge of the following types of waste at LF-1 is prohibited:
 - a. Painted wood;
 - b. Hot, burning waste materials or ash;
 - c. Septic waste or grease trappings containing Total Petroleum Hydrocarbons (TPH); and
 - d. Polychlorinated Biphenyls (PCBs), creosote, arsenic, pentachlorophenol, and diesel or gasoline residues.
7. The discharge of waste to the unsaturated/vadose zone or to groundwater is prohibited.
8. The discharge of waste to surface water and surface water drainage courses is prohibited.
9. The discharge of waste to land not owned or controlled by the Discharger, or to areas outside waste management units (LF-1) is prohibited.
10. The storage, treatment, or disposal of wastes at the Facility shall not cause contamination, pollution, or nuisance as defined in Water Code section 13050, subdivisions (k), (l), and (m).

B. General Facility Specifications

1. The Discharger shall comply with all applicable provisions of title 27 (Cal. Code Regs., tit. 27, § 20005 et seq.) and the implementing regulations of RCRA Subtitle D (40 C.F.R. parts 257 and 258), even if not specifically referenced in this Order.
2. Wastes shall be discharged only into waste management units specifically designed for their containment and/or treatment, as described in this Order.

3. The Discharger is responsible for accurate characterization of wastes, including determinations of whether wastes will be compatible with containment features and other wastes at the waste management unit, and whether the wastes are required to be managed as a “hazardous” waste or “designated” waste.
4. The Discharger shall not cause the concentration of any Constituent of Concern (including Monitoring Parameters), as shown in the MRP and incorporated herein by reference, to exceed its representative concentration limit in any monitoring medium (i.e., exceed the Water Quality Protection Standard). The concentration limit for each constituent will be set in accordance with the MRP. Data analysis shall be performed in accordance with the MRP.
5. All waste management units shall be operated to ensure that wastes, including leachate, will be a minimum of 5 feet above the highest anticipated elevation of underlying groundwater, including the capillary fringe.
6. The Discharger shall promptly notify the Regional Water Board of any slope failure occurring at a waste management unit. The Discharger shall promptly correct any failure which threatens the integrity of containment features or the unit in accordance with the method approved by the Regional Water Board’s Executive Officer.
7. Water used for Facility maintenance shall be limited to the amount reasonably necessary for dust control, compaction, fire control, and the establishment and maintenance of vegetation.
8. The Discharger shall comply with an approved load checking program in compliance with California Code of Regulations, title 27, section 20870 and the SWFP issued by CalRecycle.
9. The Discharger shall maintain legible records on the volume and type of each waste discharged at each waste management unit at the Facility. These records shall be available for review by representatives of the Regional Water Board at any time during normal business hours. At the beginning of the post-closure maintenance period, copies of these records shall be sent to the Regional Water Board.
10. The Discharger shall maintain visible monuments identifying the boundary limits of the entire Facility. Public contact with MSW and/or leachate shall be prevented through fences, signs, and other appropriate alternatives.

C. Stormwater Specifications

1. The Facility shall be designed, operated, and maintained to prevent inundation, washout, or erosion of wastes or covering material, which could occur as a result of floods having a predicted frequency of once in 100 years.

2. Surface and subsurface drainage from outside of a waste management unit shall be diverted from the unit.
3. Surface drainage from tributary areas, and internal site drainage from surface or subsurface sources, shall not contact or percolate through the wastes discharged at the Facility.
4. The exterior surfaces of the disposal area, including the intermediate and final landfill covers, shall be graded and maintained to divert precipitation from the waste management unit, to prevent ponding of surface water over wastes, and to resist erosion as a result of precipitation.
5. Diversion and drainage facilities shall be designed, constructed, and maintained to:
 - a. Accommodate the anticipated volume of precipitation and peak flows from surface runoff and under the precipitation conditions for the waste management unit.
 - b. Effectively divert sheet flow runoff laterally, via the shortest distance, into the drainage and collection facilities.
 - c. Prevent surface erosion through the use of energy dissipators where required to decrease the velocity of runoff, slope protection, and other erosion control measures where needed to prevent erosion.
 - d. Control and intercept run-on, in order to isolate uncontaminated surface waters from water that might have come into contact with waste.
 - e. Take into account:
 - I. For closed waste management units and for closed portions of units, the expected final contours of the closed unit, including its planned drainage pattern.
 - II. For operating portions of waste management units other than surface impoundments, the unit's drainage pattern at any given time.
 - III. The possible effects of the waste management unit's drainage pattern on and by the regional watershed.
 - IV. The design capacity of drainage systems of downstream and adjacent properties by providing for the gradual release of retained water downstream in a manner which does not exceed the expected peak flow rate at the point of discharge if there were no waste management unit.
 - f. Preserve the system's function. The Discharger shall periodically remove accumulated sediment from the sedimentation or detention basins as needed to preserve the design capacity of the system.

6. Collection and holding facilities associated with precipitation and drainage control systems shall be emptied immediately following each storm or otherwise managed to maintain the design capacity of the system.

D. Landfill (LF-1) Specifications

1. Methane, carbon dioxide, and other landfill gases shall be adequately vented, removed from each waste management unit at the Facility, or otherwise controlled to prevent adverse health effects, explosions, underground fires, nuisance conditions, groundwater degradation, or impairment of the beneficial uses of surface or groundwater due to gas migration through the unsaturated/vadose zone.
2. The Discharger shall provide interim cover to the discharged waste as follows:
 - a. Daily cover – a minimum of six (6) inches of compacted soil, or alternative material, placed over the exposed waste at least once in every 24 hours. If able to be, the waste should be compacted into the working face of the Landfill as soon as practicable.
 - b. Intermediate cover – a minimum of 12 inches of compacted soil, or equivalent, placed over waste areas that are inactive for more than 180 days. Existing daily cover may be used as part of the intermediate cover.
3. The intermediate and daily covers for the waste management unit shall:
 - a. Control disease vectors pursuant to 40 C.F.R. section 258.22;
 - b. Minimize infiltration (i.e., percolation of liquids through the wastes) into the waste management unit;
 - c. Control erosion and convey run-off to the stormwater management system at manageable, non-scouring flow rates; and
 - d. Minimize the potential for windblown litter and particulates.
4. Any alternative materials used for daily or intermediate cover that have a different characteristic or thickness than the requirements of Sections D.2 and D.3 of this Order shall be approved by the Regional Water Board's Executive Officer prior to use. The Discharger shall demonstrate that the alternative material and thickness will not present a threat to the environment or water quality.
5. The Discharger shall not perform activities that would damage the landfill cover under existing conditions. For example, vehicles shall not be driven on the cover during muddy conditions, since this may create ruts or other depressions that collect and hold stormwater and violate post-closure maintenance requirements. The Discharger shall post signs visible to the vehicle drivers indicating driving is not allowed on the cover of the waste management unit.

6. To further minimize potential pollution to surface waters by windblown litter and particulates from the Facility, the Discharger shall implement a litter collection and disposal program to manage windblown litter discharged on-site and to adjacent off-site areas. This program shall include provisions to inspect and remove litter from site fencing following high wind events. A standard of “zero” escape of litter from the permitted Facility shall be established through the use of control systems, and collection of escaped litter from the working face.

E. Monitoring Specifications

1. The Discharger shall implement MRP R7-2020-0016 and any revisions thereto to detect at the earliest opportunity, unauthorized discharges of waste constituents from the Facility, or any impairment of beneficial uses that result from discharges of waste to the Facility. The Discharger shall report the results of all onsite monitoring in accordance with MRP R7-2020-0016 and revisions thereto.
2. The Discharger shall conduct a water quality monitoring and response program in accordance with MRP R7-2020-0016 and any future amendments thereto, including:
 - a. Detection Monitoring. The Discharger shall institute a detection monitoring program pursuant to California Code of Regulations, title 27, section 20420.
 - b. Evaluation Monitoring. The Discharger shall institute an evaluation monitoring program under California Code of Regulations, title 27, section 20425:
 - I. Whenever there is “measurably significant” (as defined in section 20164) evidence of a release from a waste management unit under the detection monitoring program; or
 - II. Whenever there is significant physical evidence of a release from the waste management unit. Significant physical evidence of a release includes unexplained volumetric changes in surface impoundments, unexplained stress in biological communities, unexplained changes in soil characteristics, visible signs of leachate migration, and unexplained water table mounding beneath or adjacent to the unit and any other change to the environment that could reasonably be expected to be the result of a release from the unit.
 - c. Corrective Action Monitoring. The Discharger shall institute a corrective action program under California Code of Regulations, title 27, 20430 when the Regional Water Board determines that the assessment of the nature and extent of the release and the design of a corrective action program have been satisfactorily completed.

3. **Sample Collection and Analysis Plan.** Within **90 days** of the adoption of these WDRs, the Discharger shall submit, for review and approval by the Regional Water Board's Executive Officer, a comprehensive Sample Collection and Analysis Plan (SCAP) that shall describe in detail the methods to be used to perform all monitoring activities for all onsite features, including:
 - a. Sample collection procedures describing purging techniques, sampling equipment, and decontamination of sampling equipment;
 - b. Sample preservation information and shipment procedures;
 - c. Sample analytical methods and procedures;
 - d. Sample quality assurance/quality control (QA/QC) procedures;
 - e. Chain of custody control; and
 - f. Sample analysis information including sample preparation techniques to avoid matrix interferences, method detection limits (MDLs), practical quantitation limits (PQLs) and reporting limits (RLs), and procedures for reporting trace results between the MDL and PQL.

Once the SCAP is approved, the Discharger may request changes to the approved SCAP, as needed, but shall use the procedures described in the approved SCAP until such changes are authorized by the Regional Water Board's Executive Officer.

F. Corrective Action Specifications

1. For all waste management units in a corrective action program to address a release from the unit, the Discharger shall implement all corrective measures necessary to remediate the release and to ensure that the Discharger achieves compliance with the Water Quality Protection Standard (as defined in the MRP) adopted for that unit. To show cleanup of all water-bearing media affected by the release, the Discharger shall complete the demonstration required under California Code of Regulations, title 27, section 20430(g).
2. The cessation of any corrective action measure (e.g. landfill gas, leachate, and groundwater extraction) is prohibited without written approval from the Regional Water Board's Executive Officer. If routine maintenance or a breakdown results in cessation of corrective action for greater than **24 hours**, the Discharger shall notify Regional Water Board staff.
3. Following an earthquake that generates significant ground shaking (Modified Mercalli Intensity Scale V or greater) at or near the Facility, the Discharger shall submit a detailed post-earthquake inspection and corrective action plan. The plan shall address damage to and corrective measures for: containment structures; leachate control and stormwater management systems; wells and equipment to monitor groundwater and landfill gas; and any other system/structure potentially impacted by static and seismic deformations of the

waste management unit. The Discharger shall notify the Regional Water Board Executive Officer immediately, but no later than **24 hours**, of damage to the Facility due to an earthquake, and provide a post-earthquake inspection report within **15 business days**.

G. Financial Assurances Specifications

1. The Discharger shall obtain and maintain adequate assurances of financial responsibility for closure, post-closure maintenance, and corrective action for all known and reasonably foreseeable releases from a waste management unit at the Facility in accordance with California Code of Regulations, title 27, sections 20380(b) and 20950 and subchapter 2 (“Financial Assurance Requirements”) of division 2, subdivision 1, chapter 6 of title 27.
2. **Yearly Financial Assurances Report.** The Discharger shall submit, by June 1st of each year, a report calculating the increase in the cost estimates for closure, post-closure maintenance, and corrective action due to the inflation factor (specified in Cal. Code Regs., tit. 27, § 22236) for the previous calendar year.
3. Documents supporting the amount and active status of the required financial assurance mechanisms shall be included in the Facility’s Joint Technical Document (JTD) and revisions. Annual cost estimates and inflation factors shall be submitted to the Regional Water Board as an addendum to the JTD.

H. Closure and Post-Closure Specifications

1. The Discharger shall notify the Regional Water Board in writing of the final closure or partial final closure of a waste management unit as follows:
 - a. Landfill Units. For landfill waste management units, notice shall be given either: (1) at the same time that CalRecycle is notified under California Code of Regulations, title 27, section 21110, or (2) **180 days** prior to beginning any final closure activities, whichever is sooner.
 - b. Affirmation. The notice shall include a statement that all closure activities will conform to the most recently-approved final or partial final closure plan and that the plan provides for site closure in compliance with all applicable federal and state regulations.
2. The Discharger shall carry out closure of a waste management unit or a portion of a unit only in accordance with a closure and post-closure maintenance plan approved by the Regional Water Board (Cal. Code Regs., tit. 27, §§ 20950(a)(1), 21769(d)) through the issuance of closure WDRs.

I. Standard Provisions

1. **Noncompliance.** The Discharger shall comply with all of the terms, requirements, and conditions of this Order and MRP R7-2020-0016. Noncompliance is a violation of the Porter-Cologne Water Quality Control Act (Water Code, § 13000 et seq.) and grounds for: (1) an enforcement action; (2) termination, revocation and reissuance, or modification of these WDRs; or (3) denial of an Order renewal application.
2. **Enforcement.** The Regional Water Board reserves the right to take any enforcement action authorized by law. Accordingly, failure to timely comply with any provisions of this Order may subject the Discharger to enforcement action. Such actions include, but are not limited to, the assessment of administrative civil liability pursuant to Water Code sections 13323, 13268, and 13350, a Time Schedule Order (TSO) issued pursuant to Water Code section 13308, or referral to the California Attorney General for recovery of judicial civil liability.
3. **Proper Operation and Maintenance.** The Discharger shall at all times properly operate and maintain all systems and components of collection, treatment, and control installed or used by the Discharger to achieve compliance with this Order. Proper operation and maintenance includes, but is not limited to, effective performance, adequate process controls, and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities/systems when necessary to achieve compliance with this Order. All systems in service or reserved shall be inspected and maintained on a regular basis. Records of inspections and maintenance shall be retained and made available to the Regional Water Board on request.
4. **Reporting of Noncompliance.** The Discharger shall report any noncompliance that may endanger human health or the environment. Information shall be provided orally to the Regional Water Board office and the Office of Emergency Services within 24 hours of when the Discharger becomes aware of the incident. If noncompliance occurs outside of business hours, the Discharger shall leave a message on the Regional Water Board's office voicemail. A written report shall also be provided within five (5) business days of the time the Discharger becomes aware of the incident. The written report shall contain a description of the noncompliance and its cause, the period of noncompliance, the anticipated time to achieve full compliance, and the steps taken or planned, to reduce, eliminate, and prevent recurrence of the noncompliance. All other forms of noncompliance shall be reported with the Discharger's next scheduled Self-Monitoring Reports (SMRs), or earlier if requested by the Regional Water Board's Executive Officer.
5. **Duty to Mitigate.** The Discharger shall take all reasonable steps to minimize or prevent any discharge in violation of this Order that has a reasonable likelihood of adversely affecting human health or the environment.

6. **Material Changes.** Before initiating a new discharge or making a material change in the character, location, or volume of an existing discharge, the Discharger shall report all pertinent information in writing to the Regional Water Board, and if required by the Regional Water Board, obtain revised requirements before any modifications are implemented. A material change includes, but is not limited to, the following:
 - a. An increase in area or depth to be used for solid waste disposal beyond that specified in waste discharge requirements;
 - b. A significant change in disposal method, location, or volume (e.g., change from land disposal to land treatment);
 - c. A change in the type of waste being accepted for disposal; or
 - d. A change to previously-approved liner systems or final cover systems that would eliminate components or reduce the engineering properties of components.
7. **Familiarity with Order.** The Discharger shall ensure that all site-operating personnel are familiar with the content of this Order and shall maintain a copy of this Order at the site.
8. **Inspection and Entry.** The Discharger shall allow the Regional Water Board, or an authorized representative, upon presentation of credentials and other documents as may be required by law, to:
 - a. Enter the premises regulated by this Order, or the place where records are kept under the conditions of this Order;
 - b. Have access to and copy, at reasonable times, records kept under the conditions of this Order;
 - c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order; and
 - d. Sample or monitor at reasonable times, for the purpose of assuring compliance with this Order or as otherwise authorized by the Water Code, any substances or parameters at this location.
9. **Change in Ownership.** This Order is not transferable to any person without written approval by the Regional Water Board's Executive Officer. Prior to any change in ownership of this operation, the Discharger shall notify the Regional Water Board's Executive Officer in writing at least 30 days in advance. The notice must include a written transfer agreement between the existing owner and the new owner. At a minimum, the transfer agreement must contain a specific date for transfer of responsibility for compliance with this Order and an acknowledgment that the new owner or operator is liable for compliance with this Order from the date of transfer. The Regional Water Board may require modification or revocation and reissuance of this Order to change the name of

the Discharger and incorporate other requirements as may be necessary under the Water Code.

10. **Monitoring Wells.** The Discharger shall comply with all notice and reporting requirements of the California Department of Water Resources and with any well permitting requirements imposed by a local agency regarding the construction, alteration, destruction, maintenance, or abandonment of any monitoring wells used for compliance with this Order and the accompanying MRP, as required under Water Code sections 13750 and 13755 and local agency requirements.
11. **Format of Technical Reports.** The Discharger shall furnish, under penalty of perjury, technical monitoring program reports, and such reports shall be submitted in accordance with California Code of Regulations, title 23, division 3, chapter 30, including groundwater raw data uploads into the State Water Board's GeoTracker database. Documents that are normally mailed by the Discharger, such as regulatory documents, narrative monitoring reports, materials, data, and correspondence, to the Regional Water Board shall also be uploaded into GeoTracker in the appropriate Microsoft Office software application, such as Word or Excel, or as a Portable Document Format (PDF) file. Large documents are to be split into manageable file sizes appropriately labelled and uploaded into GeoTracker.
12. **Qualified Professionals.** In accordance with Business and Professions Code sections 6735, 7835, and 7835.1, engineering and geologic evaluations and judgments shall be performed by or under the direction of California registered professionals (i.e., civil engineer, engineering geologist, geologist, etc.) competent and proficient in the fields pertinent to the required activities. All technical reports required under this Order that contain work plans, that describe the conduct of investigations and studies, or that contain technical conclusions and recommendations concerning engineering and geology shall be prepared by or under the direction of appropriately qualified professional(s), even if not explicitly stated. Each technical report submitted by the Discharger shall contain a statement of qualifications of the responsible licensed professional(s) as well as the professional's signature and/or stamp of the seal. Additionally, all field activities are to be conducted under the direct supervision of one or more of these professionals.
13. **Certification Under Penalty of Perjury.** All technical reports required in conjunction with this Order shall include a statement by the Discharger, or an authorized representative of the Discharger, certifying under penalty of perjury under the laws of the State of California, that the reports were prepared under his or her supervision in accordance with a system designed to ensure that qualified personnel properly gathered and evaluated the information submitted, and that based on his or her inquiry of the person or persons who manage the

system, the information submitted is, to the best of his or her knowledge and belief, true, complete, and accurate.

14. **Violation of Law.** This Order does not authorize violation of any federal, state, or local laws or regulations.
15. **Property Rights.** This Order does not convey property rights of any sort, or exclusive privileges, nor does it authorize injury to private property or invasion of personal rights.
16. **Modification, Revocation, Termination.** This Order may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger for an Order modification, rescission, or reissuance, or the Discharger's notification of planned changes or anticipated noncompliance, does not stay any Order condition. Causes for modification include, but are not limited to, the violation of any term or condition contained in this Order, a material change in the character, location, or volume of discharge, a change in land application plans or sludge use/disposal practices, or the adoption of new regulations by the State Water Board, Regional Water Board (including revisions to the Basin Plan), or federal government.
17. **Severability.** The provisions of this Order are severable. If any provision of this Order is found invalid, the remainder of these requirements shall not be affected.

Any person aggrieved by this Regional Water Board action may petition the State Water Board for review in accordance with Water Code section 13320 and California Code of Regulations, title 23, section 2050 et seq. The State Water Board must receive the petition by 5:00 p.m. on the 30th day after the date of this Order; if the 30th day falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the statutes and regulations applicable to filing petitions are available on the State Water Board's website and can be provided upon request.

Order Attachments

Attachment A—Vicinity Map

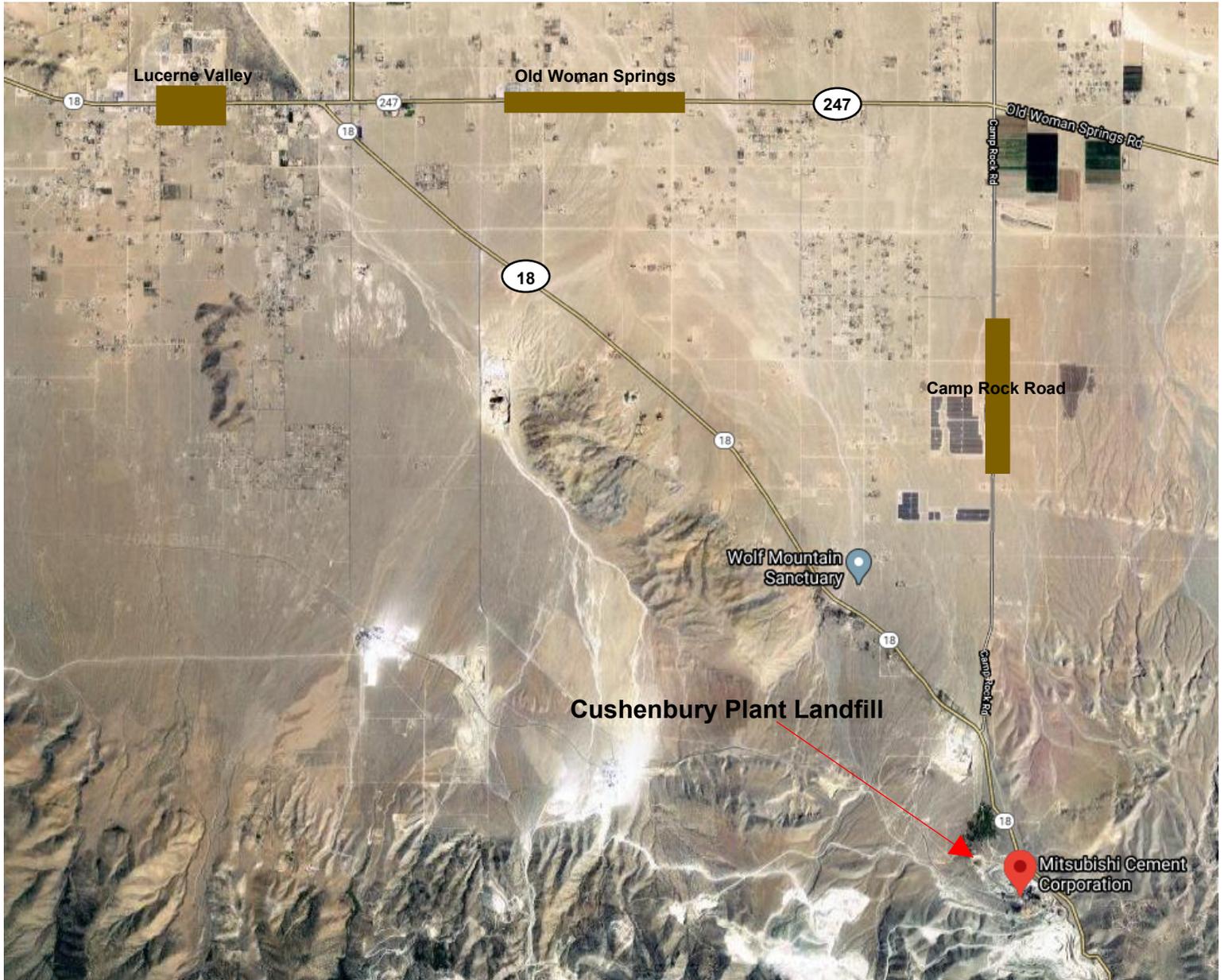
Attachment B—Site Map

Attachment C—Groundwater Monitoring Wells Locations

Attachment D—Gas Probes Locations

Monitoring and Reporting Program R7-2020-0016

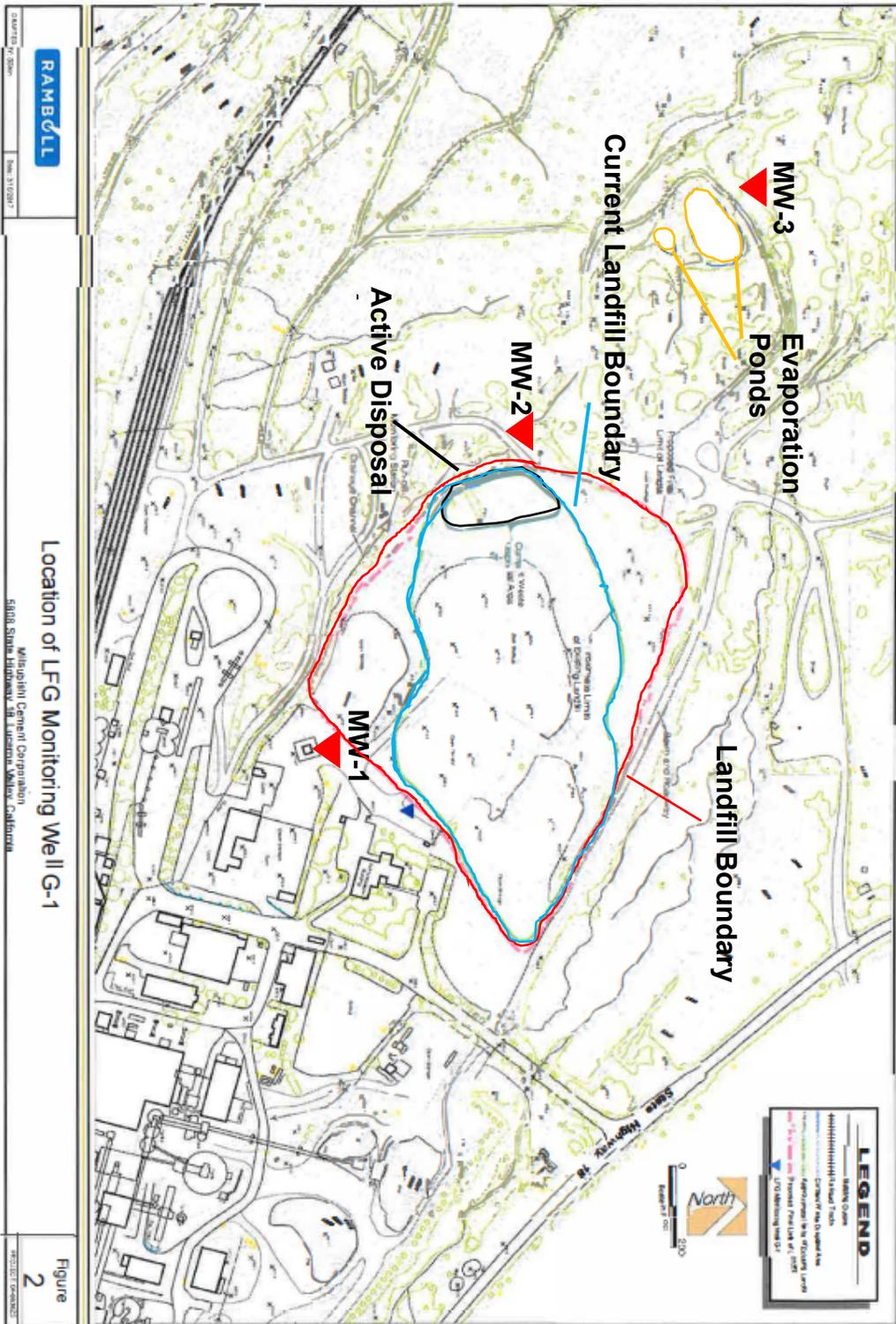
ATTACHMENT A—VICINITY MAP



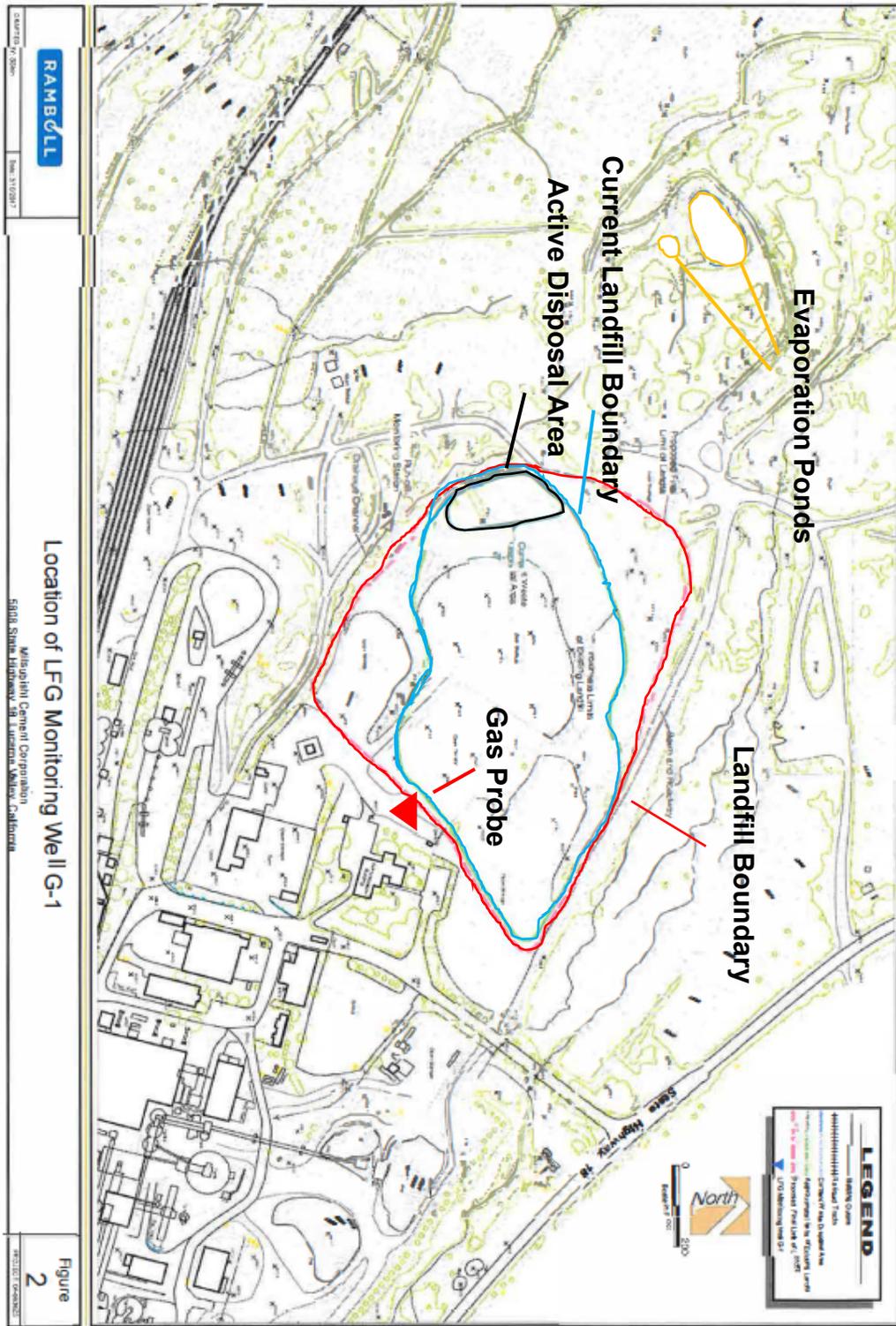
ATTACHMENT B—SITE MAP



ATTACHMENT C—GROUNDWATER MONITORING WELL LOCATIONS



ATTACHMENT D—GAS PROBE LOCATIONS



CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN

MONITORING AND REPORTING PROGRAM R7-2020-0016

FOR
MITSUBISHI CEMENT CORPORATION
CUSHENBURY PLANT LANDFILL
CLASS III INERT LANDFILL
SAN BERNARDINO COUNTY

This Monitoring and Reporting Program (MRP) is issued pursuant to Water Code section 13267 and incorporates requirements for groundwater, surface water, and unsaturated zone detection monitoring, special monitoring provisions relating to individual waste management units (WMUs). Monitoring requirements in this MRP are necessary to determine if the Cushenbury Plant Landfill (Facility) is in compliance with Waste Discharge Requirements (WDRs) Order R7-2020-0016 (Order) and to ensure early detection of any releases of waste constituents from the Facility. The Discharger shall not implement any changes to this MRP unless a revised MRP is issued by the California Regional Water Quality Control Board, Colorado River Basin Region (Regional Water Board) or its Executive Officer.

PART I: SAMPLING AND ANALYSIS GENERAL REQUIREMENTS

A. Sampling and Analysis General Requirements

1. As provided in Monitoring Specification E.3 of the Order, the Discharger shall submit a Sample Collection and Analysis Plan (SCAP) that incorporates the standard monitoring provisions below and describes the sampling and analysis protocols to be used for all monitoring activities, including for the groundwater and vadose zone detection programs at the Facility. The SCAP must be received by the Regional Water Board within 90 days of adoption of the Order and this MRP.
2. Once the SCAP is approved, the Discharger may request changes to the approved SCAP, as needed, but shall use the procedures described in the approved SCAP until such changes are authorized by the Regional Water Board's Executive Officer.

B. Standard Monitoring Provisions

1. **Analytical Methods.** Specific methods of analysis for monitored waste constituents shall be identified in the SCAP. If the Discharger proposes to use methods other than those in the latest edition of the U.S. Environmental Protection Agency's (USEPA) *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods Compendium (SW-846)* or *Guidelines Establishing Test Procedures for Analysis of Pollutants*, 40 Code of Federal Regulations part

136, the SCAP must explain the rationale for the change. The change must be approved by the Regional Water Board's Executive Officer prior to use.

2. **Monitoring Test Procedures.** The collection, preservation, and holding times of all samples shall be in accordance with protocols included in USEPA's SW-846 or 40 Code of Federal Regulations part 136, or as otherwise approved by the Regional Water Board. The Regional Water Board may, in its discretion, require methods more sensitive than those specified by USEPA.
3. **30-Day Sample Procurement Limitation.** For any given monitored medium, the samples collected from all monitoring points and background monitoring points to satisfy the data analysis requirements for a given reporting period shall all be collected within a span not to exceed 30 days, unless a longer time period is approved by the Regional Water Board's Executive Officer, and shall be collected in a manner that ensures sample independence to the greatest extent feasible. The 30-day limit does not apply to media that (1) are resampled to confirm the results of the initial round of samples, or (2) are resampled due to errors in the original sampling and analysis, but the Discharger shall conduct the resampling as expeditiously as practical.
4. **Laboratory Certification.** Unless otherwise approved by the Regional Water Board's Executive Officer, all analyses shall be conducted by a laboratory certified by the State Water Resources Control Board (State Water Board), Division of Drinking Water's Environmental Laboratory Accreditation Program (ELAP).
5. **Reporting Levels.** All analytical data shall be reported with method detection limits (MDLs) and with either the reporting level or limits of quantitation (LOQs) according to 40 Code of Federal Regulations part 136, Appendix B. The laboratory reporting limit for all reported monitoring data shall be no greater than the practical quantitation limit (PQL).
6. **QA/QC Data.** All quality control / quality assurance (QA/QC) data shall be reported, along with the sample results to which they apply, including the method, equipment, and analytical detection limits, the recovery rates, an explanation of any recovery rate that is less than 80%, the results of equipment and method blanks, the results of spiked and surrogate samples, the frequency of quality control analyses, and the name and qualifications of the person(s) performing the analyses. Sample results shall be reported unadjusted for blank results or spike recovery. In cases where contaminants are detected in QA/QC samples (i.e., field, trip, or lab blanks), the accompanying sample results shall be appropriately flagged, but the analytical results shall not be adjusted.
7. **Instrumentation and Calibration.** All monitoring instruments and devices used by the Discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated, as necessary, to ensure their continued accuracy. If continuous monitoring equipment is out of service for a period greater than 24

hours, the Discharger shall obtain representative grab samples each day the equipment is out of service. The Discharger shall correct the cause(s) of failure of the continuous monitoring equipment as soon as practicable. The Discharger shall report the period(s) during which the equipment was out of service and if the problem has not been corrected, shall identify the steps which the Discharger is taking or proposes to take to bring the equipment back into service and the schedule for these actions.

8. **Field Test Instruments.** Field test instruments (such as those used to test pH, dissolved oxygen, and electrical conductivity) may be used provided that:
 - a. The user is trained in proper use and maintenance of the instruments;
 - b. The instruments are field calibrated prior to monitoring events at the frequency recommended by the manufacturer;
 - c. Instruments are serviced and/or calibrated by the manufacturer at the recommended frequency; and
 - d. Field calibration reports are submitted.

9. **Records Retention.** The Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, for a minimum of five years from the date of the sampling or measurement. This period may be extended by request of the Regional Water Board's Executive Officer at any time. Records of monitoring information shall include:
 - a. The date, exact place, and time of sampling or measurement(s);
 - b. The individual(s) who performed the sampling or measurement(s);
 - c. The methods used for groundwater purging/sampling;
 - d. The date(s) analyses were performed;
 - e. The individual(s) who performed the analyses;
 - f. The analytical techniques or method used; and
 - g. All sampling and analytical results, including:
 - I. units of measurement used;
 - II. minimum reporting limit for the analyses;
 - III. results less than the reporting limit but above the method detection limit (MDL);
 - IV. data qualifiers and a description of the qualifiers;
 - V. quality control test results (and a written copy of the laboratory quality assurance plan);
 - VI. dilution factors, if used; and

VII. sample matrix type.

PART II: SITE-SPECIFIC MONITORING REQUIREMENTS

This part describes the site-specific monitoring program requirements to be implemented for the Facility and is organized by the type of monitoring to be performed. The methods used shall be as described in the approved SCAP.

The site-specific monitoring program of this MRP includes:

Table 1. Summary of Site-Specific Monitoring

Section	Monitoring Program
A	Groundwater Monitoring
B	Unsaturated Zone Monitoring
C	Surface Water Monitoring
D	Special WMU Monitoring – LF-1
F	Evaluation Monitoring
G	Corrective Action Monitoring

A. Groundwater Monitoring

The Discharger shall operate and maintain a groundwater monitoring system that complies with the applicable provisions of California Code of Regulations, title 27, sections 20415 and 20420. Monitoring shall be performed in accordance with the locations, frequencies, and parameters described below:

1. Monitoring Well Locations

Upgradient wells are considered background monitoring points. Downgradient wells where no releases have been detected are used for detection monitoring. Downgradient wells where releases have been detected are part of corrective action (Corr. Action) monitoring. The groundwater monitoring network shall consist of the following monitoring wells and any new monitoring wells added at the Facility (as approved by the Regional Water Board’s Executive Officer):

Table 2. Monitoring Wells Summary

Well	WMU	Monitored Status	Frequency
MW-1	LF-1	Background	Semi-Annually
MW-2	LF-1	Detection	Semi-Annually

Well	WMU	Monitored Status	Frequency
MW-3	LF-1	Detection	Semi-Annually

2. Parameters/Constituents Monitored

Groundwater samples shall be collected from the detection monitoring wells and corrective action monitoring wells, and any additional wells added as part of the approved groundwater monitoring system. The collected samples shall be analyzed for the Monitoring Parameters and Constituents of Concern specified below in accordance with the specified methods and frequencies.

“Monitoring Parameters” and “Constituents of Concern” shall have the meaning specified in California Code of Regulations, title 27, section 20164. “Monitoring Parameters” means the group of constituents specified below and includes physical parameters, waste constituents, reaction products, and hazardous constituents that provide a reliable indication of a release from a waste management unit. “Constituents of Concern” (COCs) include a larger group of waste constituents and mean any waste constituents, reaction products, and hazardous constituents reasonably expected to be in or derived from waste contained in a waste management unit.

Various Constituents of Concern are included as Monitoring Parameters, although the full list of Constituents of Concern are not included as Monitoring Parameters and need only be sampled for once every 5 years, as specified below.

a. Monitoring Parameters

“Monitoring Parameters” shall consist of the (1) Field Monitoring Parameters and (2) Laboratory Monitoring Parameters specified below:

- I. Field Monitoring Parameters – During each groundwater monitoring event,¹² the following field parameters shall be measured:

Table 3. Field Parameters Monitoring

Parameter	Unit
pH	pH units
Groundwater elevation ¹³	Feet above sea level (USGS Datum)

¹² Pursuant to Cal. Code Regs., tit. 27, § 20415(e)(13).

¹³ Semi-annual measurement of groundwater elevations is approved pursuant to title 27, section 20380(e), allowing engineered alternatives provided they achieve the goals of the monitoring program.

Parameter	Unit
Specific conductance	Micromhos/cm
Temperature	Degrees F
Turbidity	Nephelometric Turbidity Units (NTU)
Dissolved oxygen	Milligrams per liter (mg/L) and percent saturation
Oxidation-Reduction Potential (ORP)	Millivolts (mV)

- II. Laboratory Monitoring Parameters – Twice per year (semi-annually), groundwater samples shall be analyzed at a laboratory for the following constituents (at a minimum):

Table 4. Laboratory Monitoring Parameters Monitoring

Constituents	Units	Sample Type	Reporting Freq.
Total Dissolved Solids	mg/L	Grab	Semi-Annually
Aluminum	mg/L	Grab	Semi-Annually
Chromium	mg/L	Grab	Semi-Annually
Iron	mg/L	Grab	Semi-Annually
Lead	mg/L	Grab	Semi-Annually
Magnesium	mg/L	Grab	Semi-Annually
Sulfate	mg/L	Grab	Semi-Annually
Vanadium	mg/L	Grab	Semi-Annually
Total Petroleum Hydrocarbons	mg/L	Grab	Semi-Annually

- b. **Additional Constituents of Concern, Required Every Five Years (5-Year COCs)**

In addition to the Monitoring Parameters listed above, the groundwater shall be analyzed at a laboratory every five years, with the next monitoring event to be performed in the second half of 2024, and alternating between the two monitoring episodes for each five-year reporting period thereafter, for the following 5-Year COCs (and any additional COCs required by the Regional Water Board’s Executive Officer):

Table 5. List of 5-Year COCs

Constituent
1. Total Dissolved Solids
2. Total Alkalinity
3. Dissolved Oxygen
4. Total Phosphate
5. Total Hardness
6. Magnesium
7. Iron
8. Antimony, Total
9. Beryllium, Total
10. Cobalt, Total
11. Nickel
12. Thallium, Total
13. Zinc, Total
14. Appendix II Pesticides
15. Appendix II Semi-volatiles
16. pH
17. Nitrate (as N)
18. Cyanide
19. Bicarbonate (HCO_3)
20. Hydroxide
21. Phosphate
22. Total Cations
23. Boron
24. Potassium
25. Manganese
26. Arsenic, Total
27. Cadmium, Total
28. Lead, Total
29. Selenium, Total
30. Tin, Total
31. Chromium Hexavalent
32. Appendix II Herbicides
33. Total Organic Halogens
34. Specific Conductance
35. Total Organic Carbon
36. Carbonate (CaCO_3)
37. Fluoride
38. Chemical Oxygen Demand
39. Total Anions
40. Calcium
41. Sodium
42. Zinc

Constituent
43. Barium, Total
44. Chromium, Total
45. Mercury, Total
46. Silver, Total
47. Vanadium, Total
48. DBCP and EDB
49. Volatiles (EPA Method 8260)
50. Sulfide
51. Chloride
52. Phenols (EPA Method 8270)

The results of the 5-Year COC sampling shall be reported in the Annual Monitoring Report for the year in which the samples were collected.

Note that the broader term “COCs” includes both the Monitoring Parameters and 5-Year COCs.

B. Unsaturated Zone Monitoring

The Discharger shall operate and maintain an unsaturated/vadose zone detection monitoring system that complies with the applicable provisions of California Code of Regulations, title 27, sections 20415 and 20420.

Unsaturated zone monitoring at the Facility includes soil pore gas (soil-gas) monitoring from the Landfill (LF-1) area through 1 triple-level gas probe located between the landfill and the closest building, the administration building. No soil pore liquid or soil moisture monitoring is required at this time due to the low level of inert waste that is accepted at LF-1.

1. Soil Gas Monitoring

- a. The static vertical gas probe at the landfill (G-1) shall be monitored quarterly for the potential migration of gas from the landfill including:

Table 6. Soil-Gas Monitoring

Parameter
CH ₄
H ₂ S
CO ₂
CO
O ₂

Parameter
Balance Gases

- b. The results of this monitoring shall be included in the Semi-Annual Report for that reporting period.

C. Surface Water Monitoring

There is one perennial stream, Cushenbury Creek, that is located with 1600 feet of LF-1 at the northwestern corner of the Facility. However, no discharge to the creek should occur, because the Facility has enough storage capacity in the two stormwater ponds to contain the runoff from a 100-year, 24-hour storm event. Other than Cushenbury Creek, the occurrence of surface water should be limited to (1) immediately after significant storm events, and (2) if seeps develop along the perimeter of a waste management unit.

1. **Observed Surface Water Monitoring.** If surface water is observed at the Facility, the source of the surface water shall be identified, and observations of the following shall be included in the next Semi-Annual Monitoring Report:
 - a. Flow rate and source of water;
 - b. Floating and suspended materials of waste origin: Presence or absence, source, and size of affected area;
 - c. Discoloration and turbidity: Description of color, source, and size of affected area;
 - d. Evidence of odors: Presence or absence, characterization, source, and distance of travel from source; and
 - e. Weather conditions: Wind direction and estimated velocity, total precipitation during the previous five (5) days and on the day of observation.
2. **Stormwater Monitoring.** After each significant storm event, the remaining freeboard (in vertical feet) and storage capacity (in gallons and/or acre-feet) of each stormwater retention basin shall be identified. If the remaining storage capacity of a stormwater retention basin drops below the volume needed to retain a 100-year storm event, the Discharger shall take steps to remove water from the stormwater basin until the remaining capacity is at least enough to hold a 100-year storm event. Any stormwater-related actions shall be reported in the next Semi-Annual Monitoring Report.
3. **Seep Monitoring.** If a seep is identified in proximity to any of the waste management units:

- a. The location, flow rate, and other characteristics (such as color and odor) shall be orally reported to the Regional Water Board within **48 hours**, and a written report concerning the seep shall be submitted to the Regional Water Board **within seven (7) days**.
- b. Flow from the seep shall be contained to preclude the seep from adversely affecting surface waters.
- c. A sample of the seepage shall be collected and tested for the Field Monitoring Parameters described in Part II.A.2.a.i.
- d. If the Field Monitoring Parameters indicate the seepage is not groundwater, or if it is unlikely the source of the seep is groundwater, the sample shall be analyzed for the Monitoring Parameters and 5-Year COCs described in Part II.A.2.a and b.
- e. The results of all testing shall be reported to the Regional Water Board **within seven (7) days** of receipt of the written laboratory report.
- f. Seeps that continue to exist for more than one reporting period shall be monitored during each reporting period and the results shall be included in the Semi-Annual Monitoring Report.

D. Special WMU Monitoring – LF-1

1. Waste Monitoring

- a. Incoming loads of waste shall be monitored, and the following information included in each Semi-Annual Report:

Table 7. Landfill Waste Monitoring

Parameter	Unit	Reporting Freq.
Solid waste discharged to Landfill	Cubic yards	Semi-Annually
Type of materials discharged	--	Semi-Annually
Remaining capacity of Landfill	Cubic yards	Semi-Annually
Any discharge of wastes other than those allowed by Order R7-2020-0001	Type, volume, and location	Immediately upon becoming aware that the waste has been discharged together with action for immediate correction and prevention of recurrence.
Description of liquid leaving and/or entering the landfill	---	Semi-Annually

Parameter	Unit	Reporting Freq.
Brief description of evidence of odor: presence or absence	---	Semi-Annually
Brief description of observation on erosion and/or day lighted refuse	---	Semi-Annually
Brief description on observation of ponded water on the landfill	---	Semi-Annually
Hazardous waste load-checking and storage (not more than 90 days)	Cubic yards	Semi-Annually

2. **Landfill Gas Monitoring**

- a. The landfill gas well (G-1A, G-1B, and G-1C) shall be sampled annually for:

Table 8. Landfill Gas Monitoring

Parameter	Unit	Parameter	Unit
Hydrogen Sulfide	ppm	Benzene	ppm
Vinyl Chloride	ppm	Tetrachloroethene	ppm
1,1-Dichloroethene	ppm	Chlorobenzene	ppm
Methylene Chloride	ppm	Total Xylenes	ppm
1,1-Dichloroethane	ppm	Benzyl Chloride	ppm
Chloroform	ppm	1,3-Dichlorobenzene	ppm
1,2-Dichloroethane	ppm	1,4-Dichlorobenzene	ppm
1,1,1-Trichloroethane	ppm	1,2-Dichlorobenzene	ppm

E. Evaluation Monitoring

1. **Notification of a Release**

Should the Discharger discover a release from the Facility, the Discharger shall:

- a. Initial Notification. Notify the Regional Water Board by phone or e-mail **within 24 hours**, and by mail **within seven days**, when the Discharger determines from monitoring results that there is measurably significant evidence of a release. (Cal. Code Regs., tit. 27, § 20420(j)(1).)
- b. Retest. The Discharger may immediately initiate the verification procedure specified in Part III.B.3 to verify that there is “measurably significant” evidence of a release of particular constituent.¹⁴ (Cal. Code Regs., tit. 27, § 20420(j)(2).)
- c. Notice to Nearby Landowners. The Discharger shall, **within 14 days** of confirming measurably significant evidence of a release, notify all persons who own the land or reside on the land that directly overlies any portion of the plume of contamination, if sampling of detection monitoring wells indicates contaminants have migrated off-site. (40 C.F.R. § 258.55(g)(1)(iii).)

2. Evaluation of a Release

If the Discharger determines that a previously unknown release from the Facility has occurred, the following actions shall be taken:

- a. Non-Statistical COC Scan. If the detection was made based upon sampling and analysis for Monitoring Parameters, the Discharger shall immediately sample all monitoring points in the affected medium at that waste management unit and determine the concentration of all Monitoring Parameters and Constituents of Concern for comparison with established concentration limits. Because this scan does not involve statistical testing, the Discharger will only need to collect and analyze a single water sample from each monitoring point in the affected medium. (Cal. Code Regs., tit. 27, § 20420(k)(1).)
- b. Amended ROWD for Evaluation Monitoring Program (EMP). The Discharger shall, **within 90 days** of confirming a measurably significant evidence of a release, submit an amended Report of Waste Discharge (ROWD) proposing an evaluation monitoring program that meets the requirements of California Code of Regulations, title 27, sections 20420(k)(5) and 20425. The evaluation monitoring program shall be designed for the collection and analysis of all data necessary to assess the nature and extent of the release and to determine the spatial distribution and concentration of each constituent throughout the zone affected by the release. (Cal. Code Regs., tit. 27, §§ 20420(k)(5) and 20425(b).) For releases from MSW landfill units, the evaluation monitoring

¹⁴ Under California Code of Regulations, title 27, section 20420(k)(7), the Discharger may also demonstrate that a source other than the waste management unit caused the release.

program shall also include any additional proposals necessary to comply with 40 C.F.R. § 258.55, particularly the additional monitoring wells required by 40 C.F.R. § 258.55(g)(1)(ii). Additionally, the Discharger shall add any 5-Year COC for which there is a confirmed measurably significant release to the list of Monitoring Parameters.

- c. Preliminary Engineering Feasibility Study. The Discharger shall, **within 180 days** of confirming a measurably significant evidence of a release, submit to the Regional Water Board a preliminary engineering feasibility study report for a corrective action program that meets the requirements of California Code of Regulations, title 27, sections 20420(k)(6) and 20430. At a minimum, the feasibility study shall contain a detailed description of the corrective action measures that could be taken to achieve background concentrations for all COCs.
- d. Additional Evaluation Monitoring Program Required Actions. The Discharger shall, **within 90 days** of establishing an evaluation monitoring program (i.e., from the date of Regional Water Board approval of the program), complete and submit the following:
 - i. A report with the results and assessment/delineation of the release based on the approved evaluation monitoring program. (Cal. Code Regs, tit. 27 § 20425(b).)
 - ii. An updated engineering feasibility study for corrective action based on the data collected to delineate the release and data from the ongoing monitoring program required under title 27, section 20425(e). (Cal. Code Regs., tit. 27, § 20425(c).)
 - iii. An amended ROWD to establish a corrective action program meeting the requirements of title 27, section 20430 based on the data collected to delineate the release and based on the updated engineering feasibility study. (Cal. Code Regs., tit. 27, § 20425(d).)¹⁵

F. Corrective Action Monitoring – N/A

¹⁵ The Discharger shall (for releases from MSW landfill units) discuss the results of the updated engineering feasibility study, prior to the final selection of a remedy, in a public meeting with interested and affected parties. (40 C.F.R. § 258.56(d).)

PART III: EVALUATION OF MONITORING DATA

Part III of this MRP provides the requirements for the analysis of detection, evaluation, and corrective action monitoring data collected from monitoring wells associated with the Facility.

A. Water Quality Protection Standard

For each waste management unit, the Water Quality Protection Standard (Water Standard) consists of all COCs (under title 27, section 20395), the concentration limit for each COC (under title 27, section 20400), and the points of compliance for each monitored medium (under title 27, section 20405) for the duration of the compliance period (under title 27, section 20410).

1. Constituents of Concern (COCs)

- a. The COCs are as defined above in Part II.A.2 and include both Monitoring Parameters and 5-Year COCs.

2. Concentration Limits

- a. **Default Limits.** The following concentration limits shall apply, unless the Regional Water Board approves a Concentration Limit Greater than Background (CLGB), as provided in Part III.A.2.b below:
 - i. **Non-natural Constituents.** For COCs that are not naturally occurring, the concentration limit shall be the detection limit of the laboratory testing procedure.
 - ii. **Naturally-Occurring Constituents.** For naturally-occurring COCs, the concentration limit shall be the background concentration determined through either inter-well or intra-well comparisons.
- b. **CLGB.** Use of a CLGB may be proposed by the Discharger provided it is justified through a statistical analysis of relevant data (including the background dataset) and a demonstration that background concentrations would not be technologically or economically feasible for the COCs for a given monitoring well. (Cal. Code Regs., tit. 27, § 20400, subd. (c).) A concentration limit greater than background will only be considered for COCs present in monitoring wells associated with corrective action monitoring. (Cal. Code Regs., tit. 27, § 20400, subd. (h).)
- c. **Procedure for Approval of Concentration Limits.** The Discharger shall submit a report proposing applicable background concentrations for each COC under Part III.A.2.a in the next Annual Monitoring Report. The Regional Water Board will review proposed concentration limits from the Discharger and approve, modify, or disapprove each proposed limit. (Cal.

Code Regs., title 27, § 20400.) Following initial approval of the concentration limits, the Discharger shall reevaluate and propose any updates to the concentration limits **every five years** thereafter.

3. Compliance Period

- a. The compliance period for each waste management unit includes the active life of each waste management unit, the closure period, the post-closure maintenance period, and any compliance period under California Code of Regulations, title 27, section 20410.

4. Points of Compliance

- a. All monitoring wells established for the detection monitoring program shall constitute the points of compliance for the Water Standard.

B. Statistical and Non-Statistical Analysis of Data

1. General Requirements

- a. California Code of Regulations, title 27, section 20415(e) describes a range of statistical and non-statistical data analysis methods that can be used to evaluate data collected during monitoring. In addition, USEPA published *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance* (EPA 530/R-09-007) in 2009.
- b. The Discharger shall evaluate the data obtained during a monitoring period using either a statistical or non-statistical method described in title 27 or may propose another method for approval by the Regional Water Board's Executive Officer, as long as it achieves the goal of the monitoring program at least as well as the most appropriate method described in title 27, section 20415.
- c. The Discharger shall propose data analysis methods to be used in evaluating water quality monitoring data for each COC. (Cal. Code Regs., tit. 27, § 20415(e)(7).) The specifications for each data analysis method shall include a detailed description of the criteria to be used for determining "measurably significant" (as that term is defined in title 27, 20164) evidence of any release from the waste management unit and for determining compliance with the Water Standard.
- d. Monitoring reports shall describe the statistical or non-statistical method used for each COC at each monitoring point.

2. Background Values

- a. Pursuant to California Code of Regulations, title 27, section 20415(e)(10), the Discharger shall in a technical report justify the use of a procedure for determining the background value for each COC.
- b. Inter-well comparisons may be used where upgradient and downgradient wells intercept the same aquifer and are expected to have similar concentrations of naturally-occurring constituents. Intra-well comparisons shall be used where uncontaminated background wells are not present, or the chemical composition of upgradient and downgradient wells are significantly different.
- c. In establishing background values for COCs, the Discharger shall ensure that sampling methods used comply with California Code of Regulations, title 27, section 20415(e)(12), including that the number and kinds of samples collected must be appropriate for the form of data analysis employed and, in the case of statistical data analysis, follow generally accepted statistical principles. The sampling method (including the sampling frequency and the interval of time between successive samples) shall be appropriate for the medium from which samples are taken (e.g., groundwater, surface water, and soil-pore liquid). (See also Cal. Code Regs., tit. 27, § 20415(e)(6).) For groundwater, sampling shall be scheduled to include the times of expected highest and lowest elevations of the potentiometric surface.

3. Determination of Measurably Significant Evidence of a Release

- a. Initial Determination of Measurably Significant Evidence of a Release. The Discharger shall use a statistical or nonstatistical data analysis method that complies with California Code of Regulations, title 27, section 20415(e)(7)-(10) to compare the concentration of each COC with its respective background concentration to determine whether there has been measurably significant evidence of a release from the waste management unit. Whenever a COC is detected at a detection monitoring point at a concentration that exceeds the concentration limit from the Water Standard, the Discharger shall preliminarily conclude that there is measurably significant evidence of a release and follow the notification procedures in Part II.E.1. (Cal. Code Regs., tit. 27, § 20420(i).)
- b. Confirmation of a Measurably Significant Evidence of a Release. If there is a preliminary indication of a release, within **30 days** of such indication (Cal. Code Regs., tit. 27, § 20415(e)(8)(E)(3)), the Discharger may implement a

verification procedure/retest option in accordance with California Code of Regulations, title 27, section 20415(e)(8)(E).¹⁶

- i. **Retest Method.** The verification procedure shall include either: (1) a single “composite” retest (i.e., a statistical analysis that augments and reanalyzes the data from the monitoring point that indicated a release), or (2) at least two “discrete” retests (i.e., statistical analyses, each of which analyzes only newly-acquired data from the monitoring point that indicated a release). (Cal. Code Regs., tit. 27, § 20415(e)(8)(E).) The Discharger may use an alternate method with prior approval by the Regional Water Board that complies with the requirements of title 27, section 20415(e)(8)(E) in addition to the performance standards of title 27, section 20415(e)(9).
- ii. **Retest Samples.** The retest samples shall be collected from the monitoring point where the release is preliminarily indicated and shall be analyzed for the constituents that caused the need for the retest. (Cal. Code Regs., tit. 27, § 20415(e)(8)(E)(7).)
- iii. **Retest Reporting.** The Discharger shall report to the Regional Water Board the results of both the initial statistical test and the results of the verification procedure, as well as all concentration data collected for use in these tests, within **seven days** of the last laboratory analysis of the samples collected for the verification procedure. (Cal. Code Regs., tit. 27, § 20415(e)(8)(E)(6).)

If the retest results of one or more of the retest data suites confirm the original indication, the Discharger shall conclude that measurably significant evidence of a release has been confirmed. The Discharger shall then follow the procedures identified in Part II.E.2.

PART IV: REPORTS TO BE FILED WITH THE REGIONAL WATER BOARD

Part IV provides a description of the reports required to be submitted to the Regional Water Board for the Facility.

A. Required Reports

1. **Semi-Annual Monitoring Reports** – For each monitored medium, all monitoring results shall be reported semi-annually. Semi-Annual Monitoring Reports shall include, at a minimum, the following:

¹⁶ Under California Code of Regulations, title 27, section 20420(k)(7), the Discharger may also demonstrate that a source other than the waste management unit caused the release.

- a. **Topographic Map.** A topographic map (or copy of an aerial photograph), at an appropriate scale, identifying the maximum lateral extent of wastes in the Facility, the locations of observation stations, monitoring points, background monitoring points, the groundwater elevation contours with interpreted groundwater flow direction and gradient.
- b. **Groundwater Elevations.** The method and time of groundwater elevation measurements, a description of the method used to purge the well and collect groundwater samples, and quality assurance/quality control (QA/QC) procedures used.
- c. **Field Logs.** Field logs used during well purging and sampling. At a minimum, the field logs should include the following:
 - I. The well number;
 - II. The sampling date and time;
 - III. The method of monitoring Field Monitoring Parameters and calibration of equipment used to monitor Field Monitoring Parameters;
 - IV. The purge method (if a pump is used, include the depth of pump placement in each well and the pumping rate); and
 - V. The purge and sample collection information such as: date each well was purged; well recovery time; method of disposal of the purged water; an estimate of the volume of water purged from each well; the results of all field analyses; depth to groundwater prior to purging, at the conclusion of purging, and when the sample was collected; the method of measuring the water level; and field personnel names and signature.
- d. **Data Tables.** Cumulative tabulated monitoring data for all monitoring points and constituents (including the Monitoring Parameters and 5-Year COCs). Concentrations below the laboratory reporting limit shall not be reported as "ND," unless the reporting limit is also given in the table. Otherwise, they shall be reported "<" next to the reporting limit (e.g., <0.10). Upon request of Regional Water Board staff, data files shall be provided electronically in a file format approved by the Regional Water Board. Any electronic files submitted to the Regional Water Board in accordance with Order R7-2020-0016 and this MRP, shall not be password protected.
- e. **Graphical Display.** For monitoring wells in corrective action or evaluation monitoring, a graphical display of groundwater concentrations for all COCs for which there is measurably significant evidence of a release, including all historical data for those COCs from at least 5 years

prior to the detection of a release at that location. Each graph shall plot the concentration of one or more constituents at an appropriate scale that allows changes in concentrations to be discerned, including the use of a semi-log scale for concentrations that change by more than three orders of magnitude.

- f. **Summary of Groundwater Conditions.** A written summary of the monitoring results and any changes to the groundwater monitoring system since the previous report. The written summary shall include a discussion of the groundwater flow rate and direction,¹⁷ the appearance of trends or other information that may indicate a potential change in the hydrogeologic conditions beneath and adjacent to the Facility.
 - g. **Evaluation of Groundwater Data.** An evaluation of the groundwater monitoring data analyzed according to the methods described in Part III of this MRP, and whether the analysis indicates a release of waste constituents or waste degradation products from the Facility.
 - h. **Waste Volumes.** A summary of all required information concerning waste volumes for each applicable waste management unit.
 - i. **Evaluation of Corrective Actions.** A written summary that includes a discussion and evaluation of the effectiveness of corrective action measures implemented at the site to mitigate the release of waste constituents from the Facility.
 - j. **Site Inspections.** A written summary of inspections by the Discharger, Local Enforcement Agency (LEA), CalRecycle, and/or Regional Water Board and correspondence with the LEA and/or CalRecycle shall be included in an appropriate place in the Semi-Annual Monitoring Report. Copies of inspection reports shall be included in an appendix to the report.
2. **Annual Summary Report** – The Discharger shall submit an annual report covering the period from January 1 through December 31 to the Regional Water Board. If desired, the Annual Monitoring Report may be combined with the Semi-Annual Monitoring Report, but if so, shall clearly state that it is both a semi-annual and annual monitoring report in its title. The Annual Summary Report shall include, at a minimum, the following:
- a. **Topographic Map.** A topographic map (or copy of an aerial photograph), at an appropriate scale, identifying all monitoring points, and groundwater elevation contours with interpreted groundwater flow

¹⁷ The estimated quarterly groundwater flow rate and direction in the uppermost aquifer, in any zones of perched water, and in any additional zone of saturation monitored based upon water level elevations taken prior to the collection of the water quality data submitted in the report. (Cal. Code Regs., tit 27, § 20415(e)(15).)

direction and gradient. Maps must also be updated to show the maximum extent of any waste constituent or waste degradation product in groundwater.

- b. **Summary of Groundwater Monitoring Data.** A written summary of the groundwater monitoring results, indicating any changes made or observed since the previous Annual Summary Report. If a 5-year COC event was performed, then these parameters shall be presented in tabular format. All analytical data obtained during the previous year shall be presented in tabular form. Upon request of the Regional Water Board, the data shall be provided electronically in a file format and media acceptable to the Regional Water Board.
- c. **Graphical Display.** A graphical display for all data collected for each monitoring point and background monitoring point. Each graph shall plot the concentration of one or more constituents over time for a given monitoring point. For any given constituent, the scale for all plots should be the same to facilitate comparison and identification of trends. On the basis of any outliers noted in the plotted data, the Regional Water Board may direct the Discharger to carry out a preliminary investigation, in accordance with Part II.F of this MRP, to determine whether a release is indicated. Trend analyses shall include identification of current trends, a comparison to previously identified trends, and a discussion of any significant changes in the trends. This shall be prepared for groundwater and any unsaturated/vadose zone monitoring points (including subdrains, lysimeters, or landfill gas).
- d. **Background Concentration Limits Update.** Reevaluate background concentration limits (required every five years per Part III.A.2.c) and propose any appropriate changes.
- e. **Annual Waste Acceptance Summary.** An annual tonnage summary consisting of the monthly total volume of wastes (in cubic yards), and weight (in tons) accepted at the Facility. The summary shall contain a table that lists each category of waste (i.e., MSW, sludge, contaminated soils, biosolids, etc.) and the volume accepted at the Facility each month during the reporting period. Further, the annual summary shall identify the source of non-MSW waste streams (i.e., sludges, sediments, biosolids, grit, etc.) discharged at the Facility during the reporting period.
- f. **Landfill Gas Data Summary.** A landfill gas data summary consisting of all landfill gas data collected during the past year in accordance with the requirements set forth by CalRecycle, the LEA, and this Order. This summary shall also contain a brief discussion of the findings and observations made during the past year regarding landfill gas production, migration, and/or any issues with the landfill gas monitoring system noted during the previous year.

- g. **Site Conditions Summary.** A comprehensive discussion regarding the condition of the Facility, including, but not limited to, interim cover areas, the current operational area, maintenance roads, the erosion and drainage control measures implemented to control run-on and run-off during the rainy season, the condition of monitoring wells, piezometers, landfill gas probes, and any other monitoring device located at the Facility. The discussion should also highlight any areas of noncompliance observed and repaired during the previous year and should be documented with photographs and inspection reports.
- h. **Compliance Summary.** A comprehensive discussion of the compliance issues during the reporting period (the past year), and of any corrective actions taken or planned which may be needed to bring the Discharger into full compliance with the Order or this MRP.

B. Report Schedule

Semi-annual monitoring reports shall be submitted to the Regional Water Board in accordance with the following schedule:

Table 9. Semi-Annual Reporting Schedule

Monitoring Period	Report Due
January – June	July 31
July - December	February 15

Annual monitoring reports shall be submitted to the Regional Water Board by February 15 of the following year.

C. Standard Reporting Procedures

- 1. A transmittal letter explaining the essential points shall accompany each report. At a minimum, the transmittal letter shall identify any violations found since the last report was submitted, and if the violations were corrected. If no violations have occurred since the last submittal, this shall be stated in the transmittal letter. The transmittal letter shall also state that a discussion of any violations found since the last report was submitted, and a description of the actions taken or planned for correcting those violations, including any references to previously submitted time schedules, is contained in the accompanying report.
- 2. In reporting monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized in such a manner as to clearly illustrate whether the Facility is operating in compliance with the WDRs. Where appropriate, the Discharger shall include supporting calculations (e.g., for monthly averages).

3. The results of any analysis taken more frequently than required at the locations specified in this MRP shall be reported to the Regional Water Board.
4. As specified in Standard Provisions I.13, all monitoring reports shall be certified under penalty of perjury to be true and correct. Each report shall contain the following completed declaration:

“I certify under the penalty of law that this document, including all attachments and supplemental information, was prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gathered and evaluated the information submitted. I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment.

Executed on the _____ day of _____ at _____
_____(Signature)
_____(Title)”

5. The monitoring reports and any other information requested by the Regional Water Board shall be signed by a principal executive officer or ranking elected official. A duly authorized representative of the Discharger may sign the documents if:
 - a. The authorization is made in writing by the person described above;
 - b. The authorization specified an individual or person having responsibility for the overall operation of the regulated disposal system; and
 - c. The written authorization is submitted to the Regional Water Board’s Executive Officer.
6. As specified in Standard Provisions I.12, technical reports shall be prepared by or under the direction of appropriately qualified professional(s). Each technical report submitted shall contain a statement of qualifications of the responsible licensed professional(s) as well as the professional's signature and/or stamp of the seal.
7. As specified in Standard Provisions I.11, the Discharger shall comply with Electronic Submittal of Information (ESI) requirements by submitting all correspondence and reports required under this MRP and future revisions thereto, including groundwater monitoring data and discharge location data (latitude and longitude), correspondence, and monitoring reports to the State

Water Board's Geotracker database. Documents that are too large to be uploaded into Geotracker should be broken down into smaller electronic files and labelled properly prior to uploading into Geotracker.