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[TENTATIVE] WASTE DISCHARGE REQUIREMENTS ORDER R5-2022-####



ORDER INFORMATION

Order Type(s):	Waste Discharge Requirements (WDRs)
Status:	TENTATIVE
Program:	Title 27 Discharges to Land
Region 5 Office:	Sacramento (Rancho Cordova)
Discharger(s):	Amador County
Facility:	Buena Vista Landfill
Address:	6500 Ione Buena Vista Road, Ione, California 95640
County:	Amador County
Parcel Nos.:	12-04-040 through 12-04-046
GeoTracker ID:	L10008365060
Prior Order(s):	R5-2018-0020; R5-2011-0062; R5-2003-0078; R5-2000-0169

CERTIFICATION

I, PATRICK PULUPA, 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, Central Valley Region, on _____ April 2022.

PATRICK PULUPA,
Executive Officer

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GLOSSARY

ADC	Alternative Daily Cover
ASTM	American Society for Testing and Materials
Antidegradation Policy	.....	Statement of Policy with Respect to Maintaining High Quality Waters in California, State Water Board Resolution 68-16
Basin Plan	.....	<i>Water Quality Control Plan for the Sacramento and San Joaquin River Basins</i>
bgs	.....	Below Ground Surface
BOD	.....	Biochemical Oxygen Demand
C&D	.....	Construction and Demolition Materials
CalRecycle	.....	California Department of Resources Recovery and Recycling
CAP	.....	Corrective Action Program
CAMP	.....	Corrective Action Monitoring Program
CEQA	.....	California Environmental Quality Act
CEQA Guidelines	.....	California Code of Regulations, Title 14, section 15000 et seq.
C.F.R.	.....	Code of Federal Regulations
COCs	.....	Constituents of Concern
CPMP	.....	Closure and Post-Closure Maintenance Plan
CQA	.....	Construction Quality Assurance
Designated Waste	(a) Hazardous Waste subject to variance from management requirements per Health and Safety Code section 25143; and (b) Nonhazardous Waste containing pollutants that, under ambient conditions, could be released in concentrations exceeding applicable WQOs, or that could reasonably be expected to affect beneficial uses of water. (Wat. Code, § 13173.)

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DMP	Detection Monitoring Program
DTSC	California Department of Toxic Substances Control
DWR	.....	California Department of Water Resources
EC	.....	Electrical Conductivity
EIR	.....	Environmental Impact Report
EMP	.....	Evaluation Monitoring Plan
FEMA	.....	Federal Emergency Management Agency
GCL	.....	Geosynthetic Clay Liner
Hazardous Waste	.....	Wastes which, pursuant to Title 22, section 66261.3 et seq., are required to be managed in accordance with Division 4.5 of Title 22. (Title 27, § 20164; Title 23, § 2521(a).)
HDPE	.....	High-Density Polyethylene
JTD	.....	Joint Technical Document
LLDPE	.....	Linear Low-Density Polyethylene
LCRS	.....	Leachate Collection and Removal System
LEA	.....	Local Enforcement Agency
Leachate	.....	Liquid formed by the drainage of liquids from waste or by the percolation or flow of liquid through waste. Leachate includes any constituents extracted from the waste and dissolved or suspended in the fluid. (Title 27, § 20164.)
LFG	.....	Landfill Gas
MCL	.....	Maximum Contaminant Level
MCE	.....	Maximum Credible Earthquake
MDB&M	Mount Diablo Base and Meridian
MDL	Method Detection Limit
µg/L	Micrograms per Liter

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mg/L	Milligrams per Liter
MPE	Maximum Probable Earthquake
msl	Mean Sea Level
MRP	Monitoring and Reporting Program
MSW	Municipal Solid Waste regulated under 40 C.F.R. part 258
MSWLF	Municipal Solid Waste Landfill
MW	Monitoring Well
NFC	Not For Construction
SPRRs	Standard Provisions and Reporting Requirements
Subtitle D	USEPA-promulgated MSW regulations under RCRA (see 40 C.F.R. part 258)
RCRA	Resource Conservation and Recovery Act
RL	Reporting Limit
ROWD	Report of Waste Discharge
TDS	Total Dissolved Solids
Title 22	California Code of Regulations, Title 22
Title 23	California Code of Regulations, Title 23
Title 27	California Code of Regulations, Title 27
USEPA	United States Environmental Protection Agency
VOCs	Volatile Organic Compounds
WDRs	Waste Discharge Requirements
WMU	Waste Management Unit
WQOs	Water Quality Objectives
WQPS	Water Quality Protection Standard

FINDINGS

The Central Valley Regional Water Quality Control Board (Central Valley Water Board) hereby finds as follows:

Introduction

1. Amador County (Discharger) owns and operates the Buena Vista Landfill (Facility), which is located approximately one half mile north of Buena Vista in Amador County, Section 7, Township 5 North, Range 10 East, Mount Diablo Base and Meridian (MDB&M). The Facility's location is depicted on the Site Location Map in **Attachment A**.
2. The Facility is situated on a 262-acre property comprised of Assessor's Parcel Numbers (APNs) 12-04-040 through 12-04-046. The address associated with the Facility is 6500 Lone-Buena Vista Road, Lone, California 95640.
3. As the Facility's owner and operator, the Discharger is responsible for compliance with this Order, which prescribes Waste Discharge Requirements (WDRs) regulating monitoring, operation, closure and post-closure maintenance of the Waste Management Units (WMUs) listed in **Table 1**.

**Table 1—Summary of Waste Management Units (WMUs)
Permitted under Order**

Unit	Type	Class	Size	Status
Phase I Landfill, WMU I	Landfill	Class III	11 acres	Closed
Phase II Landfill, WMU II	Landfill	Class II	6 acres	Closed
Phase III Landfill, WMU III	Landfill	Class II	7 acres	Closed
Surface Impoundment	Surface Impoundment	Class II	1.4 acres	Operating

See Glossary for definitions of terms and abbreviations in table.

Materials Accompanying Order

4. The following materials are attached to this Order, and incorporated herein:

ATTACHMENT A—SITE LOCATION MAP

ATTACHMENT B—AREA MUNICIPAL AND DOMESTIC WELLS

**ATTACHMENT C—SITE MONITORING NETWORK & STORM WATER
RETENTION POND**

**ATTACHMENT D—CLASS II SURFACE IMPOUNDMENT & LCRS (NOT
FOR CONSTRUCTION)**

**ATTACHMENT E—PROPOSED RECONSTRUCTED WMU I FINAL COVER
(NOT FOR CONSTRUCTION)**

**ATTACHMENT F—Monitoring AND Reporting Program R5-2022-XXXX
(separate document)**

5. This Order is also accompanied by the concurrently adopted **Monitoring & Reporting Program R5-20XX-XXXX (MRP)**, the provisions of which are incorporated as part of this Order. Each time the operative MRP is modified by the Central Valley Water Board or its Executive Officer, the revised version shall become the operative MRP (superseding the prior version) and be incorporated as part of this Order (i.e., in lieu of the prior version).
6. To the extent there are any material inconsistencies between the provisions of this Order, the operative MRP and the SPRRs, the provisions of this Order shall be controlling. However, to the extent a revised MRP contains new or different factual findings reflecting changed conditions or circumstances at the Facility, the revised MRP findings shall be controlling.
7. Additional information about the Facility is set forth in the **Information Sheet**, which is incorporated as part of these findings. (See Finding 4)

Facility

8. The Buena Vista Landfill is a closed landfill with four WMUs. The Phase I landfill unit is classified as a Class III WMU, and the Phase II and III landfill units and the surface impoundment are classified as Class II WMUs in accordance with Title 27.
9. The Facility includes the following onsite features, systems, and structures:
- a. **Unlined Class III landfill (WMU I):** Consisting of eight (8) individual cells filled from 1973 to 1991, the Discharger constructed WMU I prior to the adoption of groundwater separation regulations. The Facility accepted both solid and liquid wastes. Groundwater impacts from WMU I leachate were first discovered in 1987. VOCs and inorganic compounds were detected approximately 600-feet downgradient of the landfill. In 1992 the

Discharger installed a groundwater extraction trench downgradient of the northwestern portion of WMU I. In 2003, the Discharger installed a dual leachate and landfill gas (LFG) extraction system after determining that LFG was also contributing to the groundwater impacts. Beginning in the winter of 2010/2011 through 2017, the Discharger identified numerous leachate seeps in WMU I. WMU I leachate collection also consists of eleven (11) leachate seep collection trenches (LT-1 to LT-11) with LT-9, LT-10, and LT-11 having sumps on the southern portion of WMU I.

The Discharger conveys collected leachate and condensate from WMU I to the Class II surface impoundment or trucks offsite for treatment and disposal. Collected leachate and condensate from WMU I corresponds to approximately 70%-80% of inflows to the Class II surface impoundment.

The existing WMU I final cover (a.k.a. "1995 WMU I final cover") is an approved "engineering alternative" which includes the following elements: 2.0-foot soil foundation layer; 1.0 foot low-hydraulic-conductivity layer ($k < 1 \times 10^{-6}$ cm/sec); and 0.5 foot vegetative layer.

- b. **Lined Phase II and III Class II landfills (WMUs II/III):** The Discharger accepted wastes in WMUs II/III from 1990-2004. The WMU II/III base consists of a 2-feet thick layer of compacted clay, overlain by a 12-inch thick blanket type gravel leachate collection and removal system (LCRS), with inclusive perforated piping for leachate collection. The LCRSs for WMU II and WMU III share a common sump (L-2). The maximum depth in WMU II/III is 25-feet below the natural ground surface. The Discharger conveys collected leachate and condensate from WMU II/III to the Class II surface impoundment or trucks offsite for treatment and disposal.

The WMU II/III final cover consists of a minimum 2-feet thick foundation soil layer, 40-mil LLDPE geomembrane, geocomposite drainage layer (side slopes only) and a minimum 2-feet thick vegetative soil layer.

- c. **Lined Class II surface impoundment** with an LCRS and 1.3 million gallons of capacity at 30-inches of freeboard. Constructed in 1992, the base consists of a 2-feet thick layer of compacted clay, overlain by a geomembrane. The LCRS consists of a geocomposite drainage layer and gravel filled collection trench that discharges to a 1,000 gallon sump. A 45-mil Hypalon 3-Ply geomembrane overlies the LCRS. In 2012, the Discharger installed an evaporative spray field to improve the evaporation rate to help maintain the required freeboard. The Discharger implements

temporary leachate management measures including the use of three (3) baker tanks and off-hauling for emergency situations.

10. On-site facilities at the Facility also include: a household hazardous waste (HHW) facility, a used oil collection facility, active material recovery facility Western Amador Recycling Facility (WARF), a groundwater extraction trench, LFG control system, and a closed former septage treatment facility. The Amador County Sheriff Department uses the closed former septage treatment facility for vehicle storage. ACES Waste Services, Inc. operates the WARF under a separate Solid Waste Facility Permit (SWFP).

Waste Classification & Permitting

11. The Facility's landfills are subject to federal Municipal Solid Waste (MSW) regulations promulgated under the Resource Conservation Recovery Act (RCRA) (42 U.S.C. § 6901 et seq.). Typically referred to as "Subtitle D," these regulations are now codified as 40 C.F.R. part 258 and implemented in part through the provisions California Code of Regulations, Title 27 (Title 27) and in accordance with State Water Resources Control Board (State Water Board) Resolution 93-62.
12. On 15 August 2017, the Discharger submitted a ROWD/JTD to the Regional Board (2017 ROWD/JTD). The Discharger included a post-closure maintenance plan for the landfill in the 2017 ROWD/JTD. The post-closure maintenance plan includes inspection, maintenance, and monitoring of the landfill during the post-closure maintenance period and includes a post-closure maintenance cost estimate for the entire Facility. Inspection and maintenance includes the condition of the final cover, drainage features, LCRS, groundwater monitoring wells, unsaturated zone monitoring points, permanent surveying monument, access roads, LFG system, groundwater corrective action system, surface water monitoring system, Class II surface impoundment and site security. The Discharger is implementing the plan for a minimum period of 30 years or until the Regional Board determines the waste no longer poses a threat to environmental quality, whichever is greater.
13. On 6 April 2018, the Central Valley Water Board adopted Order No. R5-2018-0020, classifying the Facility's WMUs as either Class II or Class III units for the discharge of municipal solid waste and designated waste (as defined per Wat. Code, § 13173). This Order continues these classifications, which are set forth above in **Table 1**.
14. On 3 February 2021, the Discharger submitted an Amended Report of Waste Discharge (AROWD) as part of its Joint Technical Document (JTD) for the

Facility. The AROWD amends Section 3.2, *Class II Surface Impoundment*, of the 2017 ROWD/JTD. Information in the AROWD was used in the development of this Order.

15. On 11 January 2022, the Discharger submitted Revision 1 to the Amended Report of Waste Discharge (RAROWD) and its Joint Technical Document (JTD) for the Facility. The RAROWD provides updates, revised construction and design plans, additional information relating to proposed the Class II surface impoundment liner replacement and expansion, WMU I final cover replacement, project schedule, and other project components of this Order. The Discharger's AROWD and RAROWD make the following significant proposals:
 - a. Reconstruction of the final cover on WMU I; and
 - b. Expansion of the Class II surface impoundment, including increasing berm height by approximately 2.7 feet, adding a new 60-mil thick HDPE liner, adding a new geocomposite leak detection layer, and keeping the existing geomembrane liner and leachate collection and removal system (LCRS);
 - c. Conducting an electrical leak location survey (ELLS) of the new liner; and
 - d. Documentation responsive to WDRs Order No. R5-2018-0020 Provision H.4. which requires the Discharger to submit construction and design plans to the RWQCB for review and approval for work associated with the WMUs including, but not limited to final cover maintenance.
16. The Discharger proposes to continue discharging leachate and landfill gas condensate extracted from WMU I and WMU II/III to the class II surface impoundment, instead of returning such waste to the same unit from which it originated, as is ordinarily required. (See Title 27, § 20340.) The WMU proposed to receive the leachate and landfill gas condensate has a functioning LCRS, and already contains waste similar in classification and characteristics to the WMUs of origin. These discharges will not result in the WMUs exceeding their moisture-holding capacity. Further the receiving WMUs will continue to comply with Title 27, § 20200.

Site Conditions

17. The Facility is at the base of the Sierra Nevada Foothills along the eastern margin of the San Joaquin Valley with elevations ranging from 370 to 400 feet above mean sea level (MSL).
18. Site geology based on monitoring well boring logs conforms to the upper and lower units of the lone Formation and consists of claystone, siltstone, sandstone and small lignite beds exhibiting sulfides and high sulfur content. Due to the dominant lone Formation hard rock and semiconsolidated fine grained sediment

setting, the Buena Vista area is considered a marginal boundary area of the California Department of Water Resources designated alluvial basins to the west. The documented hydrogeologic conceptual model for this region indicates the region is dominated by the presence of the lone Formation that restricts flow laterally and vertically with limited hydraulic connection (slow percolation) and is considered a nonaquifer setting. Due to the lignite coal beds and clay content of the lone Formation, groundwater quality is dominated by low pH and low dissolved oxygen (DO) that results in geochemical effects on water quality. The measured hydraulic conductivity of the native soils underlying the landfill units ranges between 2×10^{-8} and 1.9×10^{-3} centimeters per second (cm/s).

19. Land uses within one mile of the Facility include firework manufacturing and testing, agriculture and open vegetated space to the east; open vegetated space and areas that have been mined for clay to the north and west; a mobile home park near the southwest corner of the Facility; and a small commercial establishment and agriculture, and vegetated open space to the south. In addition, there is a stone quarry southeast of the Facility.
20. The designated beneficial uses of these surface waters, as specified in the Basin Plan, are municipal and domestic supply (MUN), agricultural supply (AGR), industrial service supply (IND), industrial process supply (PROC), water contact recreation (REC-1), non-contact water recreation (REC-2), warm freshwater habitat (WARM), cold freshwater habitat (COLD), migration of aquatic organisms (MIGR); warm spawning (SPWN), wildlife habitat (WILD), and navigation (NAV).
21. Surface water drainage flows to two unnamed ephemeral streams to the west and south of the Facility. The Discharger diverts the majority of surface water drainage to an unlined runoff holding pond near the southern property boundary. This runoff holding pond has a total capacity of approximately nine acre-feet (2.93 million gallons). Overflow from the runoff holding pond drains to Jackson Creek. Jackson Creek is tributary to Dry Creek which enters Delta Waterways Boundary prior to discharge to the Mokelumne River, per Appendix 42 of Basin Plan. According to the Central Valley Water Board's *Water Quality Control Plan for the Sacramento and San Joaquin River Basins* (Basin Plan), the beneficial uses of Dry Creek include: municipal and domestic use (MUN); agricultural supply (AGR); water contact recreation (REC-1); non-water contact recreation (REC-2); warm freshwater habitat (WARM); cold freshwater habitat (COLD); wildlife habitat (WILD); migration of aquatic organisms (MIGR); and spawning, reproduction and/or early development (SPAWN).
22. Groundwater underneath the Facility is first encountered between approximately 7 and 52 feet below ground surface (bgs). Groundwater elevations range

between 379 and 385 feet MSL. The groundwater is semi-confined to confined within the lone Formation with local perched zone. Groundwater elevations fluctuate seasonally as much as 13 feet within the Facility groundwater monitoring wells.

23. Monitoring data indicate background groundwater quality for first encountered groundwater (as measured at MW-14) has electrical conductivity (EC) ranging between 59.2 and 76.1 micromhos/cm, with total dissolved solids (TDS) ranging between 48 and 120 mg/L.
24. The direction of groundwater flow is generally toward the west-southwest with a groundwater mound below the eastern edge of the Phase I landfill WMU. The groundwater extraction trench located along the northwestern edge of WMU I creating a groundwater cone of depression near the sump. The estimated average groundwater gradient is approximately 0.004 feet per foot. The estimated average groundwater velocity is 0.76 feet per year.
25. According to the Basin Plan, the designated beneficial uses of groundwater at the Facility are municipal and beneficial use (MUN), industrial service supply (IND), agricultural supply (AGR) and industrial process supply (PRO).
26. There are 9 municipal, domestic, industrial and agricultural supply wells within one mile of the Facility. The locations of these wells are mapped in **Attachment B**.
27. There are no known Holocene faults within 1,000 feet of the Facility. The closest fault is the Bear Mountains Fault Zone that is considered part of the Foothills Fault System.
28. Class III WMUs must be designed and constructed to withstand a maximum probable earthquake (MPE), whereas Class II WMUs must withstand a maximum credible earthquake (MCE). (Title 27, § 20370.) The Discharger's site-specific seismic analysis indicates that an earthquake, occurring along the Foothills Fault, at a closest rupture distance of 6 miles, would result in the events summarized in **Table 2**. The probability of recurrence rate or return period are not confidently known for most faults.

Table 2—Seismic Analysis

Earthquake	Magnitude	Peak Ground Acceleration
Max Credible (MCE)	6.5	0.434 g

See Glossary for definitions of terms and abbreviations in table.

29. Based on data from the nearest weather station (Camp Pardee, 041428), the Facility has an annual average precipitation of 21.5 inches. The California Department of Water Resources' California Irrigation Management Information System (CIMIS) indicates a mean pan evaporation of 57.0 inches per year for the Mid-Central Valley Zone (Zone 14), the Zone for the Facility.
30. WMUs must be constructed to accommodate stormwater runoff from 24-hour precipitation events with a return period of 100 years for Class III WMUs, and a return period of 1,000 years for Class II WMUs. (See Title 27, § 20320.) According to National Oceanic and Atmospheric Administration's (NOAA) Precipitation Frequency Atlas 14, Volume 6 (rev. 2014), the Facility's 100-year and 1,000-year, 24-hour rainfall events are estimated to result in 4.80 and 6.48 inches of precipitation, respectively. Source: [NOAA Precipitation Frequency Data Server](https://hdsc.nws.noaa.gov/hdsc/pfds) (https://hdsc.nws.noaa.gov/hdsc/pfds).
31. A stormwater sedimentation basin (hereafter runoff holding pond) is in the southern of the Facility, as depicted in **Attachment C**. Usually dry during summer months, the stormwater basin is designed to retain significant runoff from the Facility with overflow draining to Jackson Creek. The Facility is covered under the State Water Board's operative General Permit for Storm Water Discharges Associated with Industrial Activities, NPDES Permit No. CAS000001 (Industrial General Permit)(WDID 5S031005046).
32. According to the Federal Emergency Management Agency's (FEMA) [Flood Insurance Rate Map](https://msc.fema.gov/portal) (https://msc.fema.gov/portal), the Facility is not located within a 100-year floodplain.

Monitoring Networks

33. As of the date of this Order, the Facility's **groundwater** monitoring network consists of the existing and proposed monitoring wells listed in **Table 3**.

Table 3—Groundwater Monitoring Well Network

Well	Program	Monitored Unit(s)	Water-Bearing Zone	Status
Sump L-1	Corrective Action	WMU I	Shallow	Operational
MW-1	Detection	WMU I	Shallow	Operational
MW-3A	Corrective Action	WMU I	Shallow	Operational
MW-3B	Corrective Action	WMU I	Shallow	Operational
MW-4A	Detection	WMU II / III	Shallow	Operational
MW-5	Detection	WMU II / III	Shallow	Operational
MW-5S	Detection	WMU II / III	Shallow	Operational
MW-7	Corrective Action	WMU I	Shallow	Operational
MW-9	Background	All WMUs	Shallow	Operational
MW-10	Corrective Action	WMU I	Shallow	Operational
MW-11	Detection	WMU I	Shallow	Operational
MW-13	Detection	WMU I	Shallow	Operational
MW-14	Background	All WMUs	Shallow	Operational
MW-15	Detection	WMU II / III	Shallow	Operational
MW-16	Detection	WMU II / III	Shallow	Operational
MW-20	Other	WMU I	Perched	Operational
MW-21	Detection	Surface Impoundment	Shallow	Operational

See Glossary for definitions of terms and abbreviations in table.

34. As of the date of this Order, the Facility’s **unsaturated zone** monitoring network consists of the existing and proposed monitoring points listed in **Table 4**. Lysimeters VZ-2 and VZ-3 installed under WMU I were damaged or not accessible for unsaturated zone soil pore liquid monitoring. Since these lysimeters are no longer operational, the gas probes GP-6 and GP-10 are used to monitor the unsaturated zone in northern part of WMU I.

Table 4—Unsaturated Zone Monitoring Network

Monitoring Point	Device Type	Program	Monitored Unit(s)	Status
VZ-1	Suction Lysimeter	Detection	WMU II / III	Operational
VZ-4	Suction Lysimeter	Detection	WMU II / III	Operational
VZ-5	Suction Lysimeter	Detection	WMU II / III	Operational
VZ-9	Suction Lysimeter	Detection	WMU II / III	Operational
VZ-10	Suction Lysimeter	Detection	WMU II / III	Operational
VZ-12	Suction Lysimeter	Detection	WMU II / III	Operational
PZ-1	Suction Lysimeter	Detection	Surface Impoundment	Operational
PZ-2	Suction Lysimeter	Detection	Surface Impoundment	Operational

See Glossary for definitions of terms and abbreviations in table.

35. As of the date of this Order, the Facility’s **landfill gas** monitoring network consists of the existing and proposed gas probes listed in **Table 5**.

Table 5— Landfill Gas Monitoring Network

Well	Program	Monitored Unit(s)	Water-Bearing Zone	Status
GP-1	Gas Probe	Detection	WMU I	Operational
GP-2	Gas Probe	Detection	WMU I	Operational
GP-3	Gas Probe	Detection	WMU II / III	Operational
GP-4	Gas Probe	Detection	WMU II / III	Operational
GP-5	Gas Probe	Detection	WMU II / III	Operational
GP-6	Gas Probe	Detection	WMU I	Operational
GP-7	Gas Probe	Detection	WMU I	Operational
GP-8	Gas Probe	Corrective Action	WMU I	Operational
GP-9	Gas Probe	Corrective Action	WMU I	Operational
GP-10	Gas Probe	Corrective Action	WMU I	Operational
GP-11S	Gas Probe	Corrective Action	WMU I	Operational
GP-11D	Gas Probe	Corrective Action	WMU I	Operational

See Glossary for definitions of terms and abbreviations in table.

36. The Discharger installed four gas probes GP-8, GP-9, GP-10, GP-11S and GP-11D to monitor the effectiveness of the LFG extraction system in WMU I. During 2017, the LFG extraction system was adjusted to address elevated levels of methane observed in the interior gas probe GP-9 and the methane concentration ranged from 0 to 3.8 percent by volume from January to June 2017.
37. On 1 August 2003 the Discharger commenced use of eleven dual leachate/LFG extraction wells within the WMU I waste mass. Extracted LFG is discharged to a candle stick flare at the LFG control system for disposal. The leachate and gas condensate is discharged to the Class II surface impoundment. The LFG control system consists of gas pipes, two blowers, one candle stick flare and power distribution and control panel.
38. The height of the leachate column within the dual leachate and LFG extraction wells in the Phase I landfill WMU is recorded monthly. During the first semiannual 2017 monitoring event, the Discharger reported leachate depths in the WMU I ranging 1.25 feet to 14.22 feet. Whereas, during the second semiannual 2021 monitoring event, the Discharger reported leachate depths in the WMU I less than five feet of water column in most dual phase extraction wells.

39. As of the date of this Order, the Facility’s surface water monitoring network consists of the existing and proposed monitoring points listed in **Table 6**.

Table 6—Surface Water Monitoring Network

Monitoring Point	Location
S-1	Downstream of Phase I landfill WMU, and located west of Phase I at east side of the Buena Vista Road culvert
S-2	Downstream of Phase II and III landfill WMUs and located south of Phase III at the entrance to the runoff pond
S-3	Background sample located in the intermittent stream bed in the northeast part of the landfill property

See Glossary for definitions of terms and abbreviations in table.

40. For surface water detection monitoring, a sample shall be collected at each monitoring point location and analyzed for the monitoring parameters and constituents in accordance with the methods and frequency specified in Table IV. All surface water monitoring samples shall be collected and analyzed for the 5-year COCs specified in Table IV and Table VI every five years, beginning again in **2026**
41. As of the adoption of this Order, the above-described networks comply with the monitoring requirements of Title 27. (See Title 27, §§ 20415–20435.) Subsequent changes to these networks will be reflected in a Revised Monitoring & Reporting Program issued by the Executive Officer.

Water Quality Protection Standard

42. A Water Quality Protection Standard (WQPS) is the analytical framework through which WMUs are individually monitored for releases and impacts to water quality. (Title 27, § 20390, subd. (a).) Under Title 27, a WQPS is separately established for each WMU in WDRs (*Id.*).
43. The Discharger submitted a 15 August 2017 WQPS report proposing statistical data analysis methods to calculate concentration limits for each naturally occurring monitored constituent in accordance with Title 27. The WQPS report proposes to use intrawell data analysis to calculate concentration limits for the monitored constituents.
44. In its 2018 Annual Report, the Discharger used a different software package (Sanitas ©) to implement the same approach identified in the 15 August 2017 WQPS. Concentration limits for each monitoring parameter at each monitoring

point were updated in 2018. The Discharger used the Sanitas© statistical software to evaluate the historical monitoring data for each parameter at each well to identify data sets representative of background conditions. As part of that process, statistical outliers versus historical impacts to monitoring locations L-1, MW-3A, MW-5S, MW-5, MW11 and MW-15 were addressed so that more representative background conditions could be established. Outliers were not included in the concentration limit calculations.

45. In accordance with Title 27, this Order, by virtue of its incorporation of **Monitoring & Reporting Program R5-20XX-XXXX (MRP)** and subsequent revisions thereto, establishes a WQPS for each WMU at the Facility based upon and approved data evaluation methods in the Discharger's 15 August 2017 WQPS report and as updated in the 2018 Annual Report.

Corrective Action

46. The groundwater impacts from the WMU I leachate were first discovered in 1987. The VOCs and inorganic compounds were detected approximately 600-feet downgradient of the landfill. Currently the VOCs are not known to be present downgradient of monitoring well MW-7.
47. The Discharger's January 1995 Closure Plan recommended that an active LFG extraction system be installed in response to the release of volatile organic vapors documented in the March 1987 SWAT report. In the 5 March 2002 amended ROWD, the Discharger presented the design for a LFG extraction system as a corrective action measure associated with the detected release of volatile organic vapors in MW1, MW10, and MW11.
48. The Discharger utilizes the following four corrective action measures at the Facility to control and reduce the release of VOCs from WMU I to groundwater:
- a. Operation of a groundwater extraction trench downgradient from WMU I to collect VOC impacted groundwater. The Discharger installed the groundwater extraction trench downgradient of the northwestern portion of the WMU I in 1992;
 - b. Extraction of leachate and LFG from leachate and/or LFG extraction wells in WMU I to control the migration of leachate and LFG. In 2003, the Discharger installed eleven dual LFG and leachate collection extraction wells to remove LFG and/or leachate within waste, as a corrective action to control releases from WMU I. The RWQCB determined that LFG was contributing to the groundwater impacts in addition to leachate. The Discharger also installed thirteen LFG collection extraction wells to remove LFG within waste from the WMU II/IIIs, as part of the corrective action to WMU I.

- c. Maintenance of the landfill final cover to limit infiltration into the landfill. The Discharger maintains the cover system as part of normal landfill operations and as a corrective action measure to limit the infiltration into the WMU I landfill to assist controlling the existing leachate release; and
 - d. Operation and maintenance of leachate collection trenches in WMU I to remove leachate that seeps out of the final landfill cover.

49. Volatile Organic Compound (VOC) concentrations show increasing trends in MW-1 and MW-11, which are located to the north and the south of WMU I. Historically high VOC concentrations were detected during the first semiannual 2017 monitoring event for 1,4-dichlorobenzene, benzene, chlorobenzene, cis-1,2-Dichloroethylene, methylene chloride and vinyl chloride in MW-1; and methylene chloride, benzene, and vinyl chloride in MW-11.

50. In its Annual 2018 Report, the Discharger reported results of its evaluation of the groundwater monitoring data relating to the cause of the observed increasing VOCs and/or inorganic concentrations in WMU I groundwater. The Discharger addressed four potential sources for the low-level detections of VOCs and inorganic concentration limit exceedances. The Discharger reported similar information in its Second Semiannual 2021 Report. Two of the potential sources (primarily landfill gas and leachate migration from WMU I) account for the recurring VOC detections in groundwater, as well as current inorganic concentration anomalies in wells MW-1, MW-3A and L-1. The Discharger identified natural geochemical recharge effects as the cause of a third potential source, related to inorganic concentration anomalies in well MW-5. A fourth potential source, related to a chloride anomaly in well MW16, appears to be related to releases from the truck wash pad which allows for percolation of wash water through broken and degraded areas of the pad. Time Schedule J.1 requires the Discharger to submit a workplan for evaluation causes of the observed increasing VOCs and/or inorganic concentrations in groundwater, including consideration of landfill gas and leachate migration from WMU I, natural geochemical recharge effects, and potential releases from the truck wash pad near MW-16. Time Schedule J.1 requires the Discharger to propose mitigation efforts relating to the repair or replacement of the truck wash pad.

51. On February 17, 2017, the Discharger collected a sample from the Class II surface impoundment for the semiannual and 5-year COC parameters to determine if the water quality met requirements for offsite disposal purposes at the Sacramento Regional Wastewater Treatment Facility in Elk Grove. The Discharger reported the analytical results and data in the "*First Semiannual 2017 Monitoring and Corrective Action Update*," which is summarized in **Table 7**. The

table also includes the lowest applicable numeric water quality objective (WQO) for groundwater for protection of drinking water beneficial use for domestic and municipal supply wells.

Table 7—Surface Impoundment Liquids Characterization

Constituent	Units	Conc.	Numeric WQO	Lowest Applicable WQO
Bicarbonate	mg/L	210	--	WQPS
Calcium	mg/L	46	--	WQPS
Carbonate	mg/L	27	--	WQPS
Chloride	mg/L	1,600	250	California Secondary MCL
Magnesium	mg/L	81	--	WQPS
Nitrate as N	mg/L	0.29 <i>J</i>	10	California Primary MCL
Potassium	mg/L	960	--	WQPS
Sodium	mg/L	410	20	USEPA Health Advisory – Non-cancer Health Effects for Drinking Water
Sulfate	mg/L	810	250	California Secondary MCL
Total Alkalinity	mg/L	230	--	WQPS
TDS	mg/L	4,000	500	California Secondary MCL
Total Organic Carbon	mg/L	82	--	WQPS
Aluminum	mg/L	28 <i>J</i>	50	USEPA Secondary MCL – Drinking Water Standards
Arsenic	mg/L	17	0.02	USEPA One-in-a-Million Incremental Cancer Risk Estimates for Drinking Water
Barium	mg/L	44	700	USEPA Drinking Water for Non-cancer Health Effects

Constituent	Units	Conc.	Numeric WQO	Lowest Applicable WQO
Chromium	mg/L	32	50	California Primary MCL
Cobalt	mg/L	2.8	--	WQPS
Copper	mg/L	8.2	1,000	California Secondary MCL
Cyanide	mg/L	4 <i>J</i>	4.2	USEPA Non-cancer Health Effects for Drinking Water
Iron	mg/L	410	300	California Secondary MCL
Manganese	mg/L	240	50	California Secondary MCL
Nickel	mg/L	6.2	100	California Primary MCL
Vanadium	mg/L	19	63	USEPA Non-cancer Health Effects for Drinking Water
delta-BHC	mg/L	0.053	500	National Academy of Sciences Health Advisory - Drinking Water for Non-cancer Health Effects
gamma-BHC (Lindane)	mg/L	0.047	0.32	CalEPA One-in-a-Million Incremental Cancer Risk Estimates for Drinking Water
Diazinon	mg/L	0.099 <i>J</i>	1	USEPA Drinking Water for Non- cancer Health Effects
Di-n-butylphthlate	mg/L	2.3 <i>J</i>		WQPS

J indicates that result is an estimated value below the laboratory Practical Quantitation Limit (Reporting Limit – RL) and above the Method Detection Limit (MDL).
 See Glossary for definitions of terms and abbreviations in table.

52. The performance standard for class II surface impoundments requires full containment of liquid wastes (Title 27, §§ 20310(a), 20330(a)). Liquid wastes must also be compatible with containment features of the class II surface impoundment. (Title 27, §§ 20200(c), 20320 (e)). Unauthorized discharges from

the class II surface impoundment are neither anticipated nor allowed (Title 27, § 20375(d)). Notwithstanding, understanding of the characteristics of liquids stored in the class II surface impoundment in the event an unauthorized release occurs or liquid wastes are suspected of being incompatible with containment features of the class II surface impoundment, is appropriate. These WDRs require the Discharger to perform and report waste characterization of liquids stored in the class II surface impoundment once every five years.

53. During the 2021 second semiannual monitoring event, the Discharger detected VOCs in the groundwater extraction trench, groundwater monitoring wells, and unsaturated zone monitoring lysimeters. Specifically, VOCs were detected in the following monitoring points:
- a. Groundwater extraction trench Sump L-1
 - b. Groundwater well MW-3B downgradient of the Phase I landfill WMU Unit,
 - c. Groundwater wells MW-1, MW-11, and MW-13 located sidegradient to Phase I landfill WMU,
 - d. Groundwater well MW-15 located sidegradient to the Phase II and III landfill WMUs, a
 - e. Lysimeters VZ-4, VZ-5 and VZ-10 located below the Phase II and III landfill WMUs, and
 - f. Lysimeter PZ-1 beneath the surface impoundment.

Table 8 below summarizes examples of some VOC detections during the 2021 second semiannual monitoring event.

Table 8—VOC Detections

Constituent	Location	Conc.	Units
1,1-Dichloroethane (Ethylidene chloride)	Sump L-1	0.26 <i>J</i>	µg/L
1,1-Dichloroethane (Ethylidene chloride)	MW-1	0.77	µg/L
1,1-Dichloroethane (Ethylidene chloride)	MW-11	5.5	µg/L
1,1-Dichloroethane (Ethylidene chloride)	MW-13	1.11	µg/L
Benzene	Sump L-1	0.88	µg/L
Benzene	MW-1	3.2	µg/L
Benzene	MW-11	4.3	µg/L

Constituent	Location	Conc.	Units
Benzene	MW-13	0.44 <i>J</i>	µg/L
Chlorobenzene	Sump L-1	1.3	µg/L
Chlorobenzene	MW-1	7.5	µg/L
Chlorobenzene	MW-11	---	µg/L
Chlorobenzene	MW-13	0.54	µg/L
Methylene chloride (Dichloromethane)	Sump L-1	---	µg/L
Methylene chloride (Dichloromethane)	MW-1	0.76 <i>J</i>	µg/L
Methylene chloride (Dichloromethane)	MW-11	2.8	µg/L
Methylene chloride (Dichloromethane)	MW-13	1.1	µg/L

J indicates that result is an estimated value below the laboratory Practical Quantitation Limit (Reporting Limit – RL) and above the Method Detection Limit (MDL).

See Glossary for definitions of terms and abbreviations in table.

54. The leachate seep collection system on the southern portion of WMU I consists of eleven leachate seep collection trenches (LT-1 to LT-11) with at LT-9, LT-10, and LT-11 having sumps. Leachate typically drains into WMU I or is collected from LT-9, LT-10, and LT-11 and discharged to the Class II surface impoundment or trucked offsite to a disposal facility.
55. The first leachate seep was discovered in during the winter of 2010/2011. The Discharger installed groundwater/leachate extraction wells within WMU I and the solution was not effective in capturing the seep. In February 2012, three French drain type trenches were installed by digging through the confining layer so that perched liquid can drain back into the waste mass and be collected through the existing leachate collection and removal system. The trenches were dug to depth of 6 to 8-feet and 40-feet long, lined with filter fabric and backfilled with drain rock and capped with 2-feet of native clay materials. The buried waste material excavated from the landfill during excavation was disposed in compliance with the Local Enforcement Agency’s (LEA’s) recommendation.

56. The Discharger constructed six additional trenches between September 2012 and June 2017 to address additional seeps identified on the southern portion of WMU I. The Discharger constructed the trenches to sizes appropriate for each seep using similar construction methods as detailed in Finding 55. The Discharger also constructed the most recent seeps with sumps to remove leachate and discharge it to the Class II surface impoundment (LT-9, LT-10, and LT-11). These WDRs do not allow leachate to build up within the sumps more than 12 inches. MRP R5-2022-XXXX requires monitoring of sumps for leachate.
57. The formation of numerous leachate seeps on WMU I indicates that WMU I is not performing as designed to contain leachate within the WMU.
58. These WDRs require the Discharger to continue the corrective action program described herein to remove volatile organic compounds from the groundwater and to control leachate and landfill gas migration from WMU I.

Unit Construction

59. Liners for **new Class II WMUs** (landfills and surface impoundments) must be designed and constructed to contain fluids (e.g., leachate, waste and landfill gas condensate), to prevent the migration of waste to adjacent geologic materials, groundwater and surface water. (See Title 27, §§ 20310(a), 20330(a).)
60. Liners for **new Class III WMUs** (landfills) must be designed and constructed to contain fluids (e.g., leachate, waste and landfill gas condensate), so as to be capable of preventing degradation of groundwater and surface water, even with inadequate site characteristics. (See Title 27, §§ 20310(c), 20330(a).)
61. The Central Valley Water Board is authorized to approve an **engineered alternative** to Title 27 prescriptive standards (see, e.g., Title 27, § 20330, subd. (c)), provided that the discharger demonstrates that compliance with the prescriptive standard would be unreasonably and unnecessarily burdensome in comparison to the proposed alternative. (Title 27, § 20080, subds. (b), (c); State Water Board Resolution 93-62).
62. Central Valley Board staff are conducting engineering and geology technical review of the details of the proposed drawings, construction specifications, Construction Quality Assurance and Quality Control (CQA) (collectively "Proposed Construction Details") documents included in the Discharger's RAROWD. The nature of design and construction will result in as-built conditions similar to, but different than as described preliminary documents included in the Discharger's RAROWD. These WDRs include simple representations of the Proposed Construction Details, attached herein as **Attachment D** and **Attachment E** for informational purposes only. In conducting the technical

review, Central Valley Board staff are providing feedback to the Discharger regarding the technical review of the Proposed Construction Details in order to for the Discharger to prepare Final Construction Details. Unit Construction Specification D.1 of these WDRs requires written Central Valley Board Executive Officer authorization of Final Construction Details prior to the Discharger commencing construction related activities.

- 63. On 14 February 2022, the JTD (ROWD), AROWD, and RAROWD, were deemed provisionally complete pending Central Valley Board Executive Officer written authorization of final Construction Details.
- 64. New or reconstructed WMUs will incorporate a leachate collection and removal systems (LCRS) described in further detail in **Attachment D** for informational purposes only. The proposed LCRS comply with Title 27 prescriptive standards. (See Title 27, § 20340.)
- 65. The unsaturated zone monitoring system for future modules shall be implemented in accordance with the operative MRP.

Unit Closures

- 66. In January 1995 the Discharger submitted a Final Closure and Post-Closure Maintenance Plan (1995 Final CPMP) for WMU I. In May 2002 the Discharger submitted a Final Closure and Post-Closure Maintenance Plan for WMU II/III (2002 Final CPMP). The 2002 Final CPMPs indicate that the Facility’s active WMUs were scheduled to be closed on the dates specified in in **Table 9**.

Table 9—Unit Closure Schedule

Unit Module	End of Waste Acceptance	Regulatory Closure
WMU I	1995	7 May 1997
WMU II/III	2004	22 October 2009

- 67. The Discharger does not anticipate closure of the surface impoundment until the generation of leachate and landfill gas condensate ceases, discharges to the

surface impoundment become unnecessary, and both post-closure maintenance and corrective action are complete.

68. On 14 June 2011 the Discharger filed a "Notice of Closure of Landfill Site" for APNs 12-04-041 through 12-04-045 with the Amador County Recorder's Office pursuant to Title 27, § 21170. The Notice documents the following:
- a. The Facility "has been closed in accordance with the regulations of the California Department of Resources, Recycling and Recovery and the Central Valley Regional Water Quality Control Board."
 - b. The closure and post-closure plans for the Buena Vista Landfill are maintained and can be viewed at the Waste Management Department, Community Development Agency, 810 Court Street, Jackson, California 95642.
69. WMI I and WMU II/III are subject to post-closure maintenance requirements of Title 27, § 20950. Post-closure maintenance at the landfill includes leachate collection and removal from the closed WMI I and WMU II/III and collection of landfill gas condensate from the landfill gas collection system. In addition, the landfill is under corrective action for landfill impacts to groundwater. The approved corrective action program includes collection and removal of impacted groundwater in an interception trench, identified as the L-1. The L-1 trench intercepts impacted groundwater, which is pumped from a sump (the L-1 sump) at one end of the L-1 trench. Corrective action includes also collection of landfill gas from the closed WMI I and WMU II/III. The Discharger discharges these wastes to the Class II surface impoundment.
70. In the 2017 ROWD/JTD, the Discharger included a post-closure maintenance plan for the landfill. The plan includes inspection, maintenance, and monitoring of the landfill during the post-closure maintenance period and includes a post-closure maintenance cost estimate for the entire facility. Inspection and maintenance of the landfill includes the condition of the final cover, drainage features, LCRS, groundwater monitoring wells, unsaturated zone monitoring points, permanent surveying monument, access roads, LFG system, groundwater corrective action system, surface water monitoring system, Class II surface impoundment and site security. The Discharger is implementing the post-closure maintenance plan for a minimum period of 30 years or until the Regional Board determines the wastes no longer poses a threat to water quality, whichever is greater.

WMU I Final Cover

71. In July 1995, the Discharger commenced grading and subgrade preparation for construction of the WMU I final cover. Pursuant to the 1995 CPMP, borrow source evaluation, subgrade preparation, foundation layer placement, hydraulic

- barrier placement, vegetative layer placement, and related additional work efforts. On 30 August 1995, the Discharger completed construction of the existing WMU I final cover (a.k.a. “1995 WMU I final cover”).
72. On 25 September 2017 Central Valley Water Board staff observed cracks on the 1995 WMU I final cover. The Discharger reported in the “*First Semiannual 2017 Monitoring Report and Corrective Action Update*” report that it filled the observed cracks in the 1995 WMU I final cover. The discharger also filled in low areas and reestablished vegetation to minimize erosion and minimize infiltration into the landfill.
 73. In WDRs Order No. R5-2018-0020 Provision H.4.F the Regional Board directed the Discharger to evaluate the 1995 WMU I final cover to determine if the landfill cover performs in compliance with Title 27.
 74. On 1 November 2019, the Discharger submitted “*Phase I Waste Management Unit Cover Investigation Report*” detailing an evaluation of the 1995 WMU I final cover. The Discharger’s consultant wrote “... the development of vertical desiccation cracks that completely penetrate through the [1995 final] cover soil have compromised the ability of the final cover system to act as an effective seal for the purpose of minimizing infiltration of winter storm rain water from entering the underlying waste materials.” The Discharger’s consultant recommended temporary repairs to the observed desiccation cracks while seeking permanent resolution by constructing a new final cover consistent with the relevant prescriptive standards of Title 27.
 75. In its 2019 Annual Facility Inspection Report, the Discharger reported making significant efforts in the Fall of 2019 to repair the desiccation cracks observed on the 1995 WMU I final cover. The Discharger’s Fall 2019 efforts for each desiccation crack consisted of removing the existing vegetation to a minimum distance of approximately 2.5 feet from both sides of each identified crack, excavating the top 1 foot of the exposed soil (i.e., 0.5 foot vegetative layer and 0.5 of low hydraulic conductivity layer) and then moisture condition and recompacting the soil to achieve a minimum relative compaction of 90 percent of the ASTM D1557 maximum dry density. The Discharger also removed debris and residual soil from WMU I drainage control systems.
 76. In the Amended ROWD the Discharger states that the desiccation “ ... cracks would allow precipitation to infiltrate through the [1995] landfill final cover into landfilled wastes, creating leachate.”
 77. In its *2021 First Semiannual Monitoring Report*, the Discharger reported 302,891 gallons of WMU I dual phase extraction wastes pumped during the first 2021

semiannual period. The Discharger also reported 1,167,230 gallons pumped in 2019 and 643,000 gallons pumped in 2020, respectively. The Discharger concluded that “[t]he significant reduction in leachate generation clearly indicates that repair of the Phase 1 WMU [1995] final cover desiccation cracks was successful in reducing the generation of leachate during a near normal and low precipitation years (2019 and winter 2020/2021).”

78. The existing WMU I 1995 final cover has a history of significant desiccation cracks many of which penetrated the low-hydraulic-conductivity layer. The desiccation cracks indicate infiltration through the landfill cover could be contributing to continued seeps observed on the WMU I 1995 final cover and leachate observed at the dual leachate and LFG extraction wells.
79. The existing WMU I 1995 final cover constructed as an “engineered alternative” is not consistent with the performance goals of the prescriptive standard and will not afford at least equivalent water quality protections.
80. As described in **Attachment E** for informational purposes only, the Discharger proposes to reconstruct the existing WMU I 1995 final cover to meet the prescriptive requirements of Title 27 (Title 27, § 21090). The proposed reconstructed WMU I final cover includes the following elements:
 - a. 2.0 foot soil foundation layer
 - b. 1.0 foot low-hydraulic-conductivity layer ($k < 1 \times 10^{-6}$ cm/sec); and
 - c. 1.5 foot vegetative layer

Surface Impoundment Expansion

81. In 2002, the Discharger prepared a water balance model in the “*Class II Leachate Management Report*” showing that the Class II surface impoundment does not have enough capacity to contain a 100-year wet season storm volume or even the 25-year wet season storm volume. During the 2016-2017 wet season, the Class II surface impoundment reached capacity and the Discharger shutdown the groundwater extraction system and trucked water offsite for disposal. In WDRs Order No. R5-2018-0020, the Regional Board required the Discharger to prepare an updated water balance model which considers specific factors to determine when the Class II surface impoundment will reach capacity.
82. On 15 October 2018, the Discharger submitted the updated water balance model developed considering the specific factors identified by the Regional Board, including historical wastewater inflows into the Class II surface impoundment. The Discharger’s water balance estimated that the Class II surface impoundment “...is only estimated to maintain the 30-inch design freeboard for up to a 50- year

wet year, anything more extreme (i.e., 100-year wet year), will likely require off-site trucking and disposal of wastewater.”

83. On 23 March 2020, the Discharger submitted an amended water balance incorporating staff comments and direction. The amended water balance considered the 100-year water balance, with the addition of a 1,000-year 24-hour rain event occurring during the month (April) with the least amount of spare capacity remaining in the surface impoundment. The Discharger estimated 6.16 inches of precipitation for the month of April to account for the 1,000-year 24-hour rain event. The Discharger concluded containment of the max-year precipitation event requires an additional approximate 931,900 gallons (2.86 ac-ft) of storage capacity corresponding to a need to raise the perimeter berm elevation approximately 2.45 feet.
84. The Class II surface impoundment has insufficient capacity to accommodate inflows under certain circumstances during the max-year precipitation event, as required by Title 27 (Title 27 § 20320(e) Table 4.1).
85. In the January 2022 RAROWD, the Discharger proposed an expanded Class II surface impoundment with the following elements:
 - a. Retains the existing two-foot-thick low permeability soil layer (permeability $< 10^{-6}$ cm/sec)
 - b. Retains the existing LCRS consisting of a single-sided geocomposite drainage layer and a gravel-filled collection trench discharging into a 1,000 gallon sump (Secondary LCRS).
 - c. Retains the existing 45-mil, 3-ply Hypalon geomembrane liner (Secondary Liner);
 - d. Increases perimeter berm height by approximately 2.7 feet (i.e., 2.45 feet for volume plus height for new leak detection layer);
 - e. Adds a new geocomposite leak detection layer with a 6-inch-thick gravel filled sump covered by a minimum 6 ounce per square yard non-woven geotextile cushion layer (Primary LCRS); and
 - a. Adds a new 60-mil HDPE geomembrane liner textured on both sides (Primary Liner).

The Proposed Construction Details include provisions for installation of a wire grid beneath the new liner and above the existing liner (i.e., between the old and new liners) for use during Electrical Leak Location Surveys (ELLS) of the new 60-mil HDPE geomembrane liner. The Proposed Construction Details also include provisions to preserve and maintain PZ-1, PZ-2, and MW-21 throughout the duration of and following construction activities.

86. The Discharger is required to use a factor of safety for the critical slope of at least 1.5 under dynamic conditions (Title 27 § 21750(f)(5)(C)) except when the Discharger utilizes a more rigorous analytical method that provides a quantified estimate of the magnitude of movement. In this case, the report shall demonstrate that this amount of movement can be accommodated without jeopardizing the integrity of the Unit's foundation or the structures which control leachate, surface drainage, erosion, or gas (Title 27 § 21750(f)(5)(D)).
87. The Action Leakage Rate (ALR) is the maximum design flow rate through that the LCRS can remove without the fluid head on the bottom liner exceeding 1 foot and in consideration of certain design factors. The ALR is developed based on the recommendations in the 1992 USEPA guidance document *Action Leakage Rate for Leak Detection Systems*. In the event the LCRS average daily flow rates exceed the ALR, the Discharger is required to take actions to inspect and repair the primary liner system to prevent waste migration out of the waste management unit. In its October 2018 Operations Plan, the Discharger calculated an ALR of 800 gallons per day for the existing Class II surface impoundment.
88. For 2021, the Discharger reported the existing Class II surface impoundment LCRS generated 24,355 gallons corresponding to an average daily flow rate during the period of 66.7 gallons per day.
89. The Discharger's proposed design results in portions of the Class II surface impoundment which do not have a secondary LCRS (i.e., the areas of increased berm height). Therefore, the proposed new 60-mil double-sided (textured on both sides) HDPE liner (Primary Liner) is considered the "bottom liner" for the purposes of ALR calculation. Further the aggregate flow rate for the Primary LCRS and Secondary LCRS into the common 1,000-gallon sump is considered the "flow rate in the leak detection system" for the purposes of ALR calculation.
90. The Discharger has not performed a leak location survey on the existing Class II surface impoundment 45-mil, 3-ply Hypalon geomembrane liner (Secondary Liner). In WDRs Order No. R5-2018-0020 Provisions H.4.J and H.4.K, the Regional Board required the Discharger to perform an ELLS on the existing Class II surface impoundment's 45-mil, 3-ply Hypalon geomembrane liner. The Discharger did not complete this task. In its Amended ROWD, the Discharger represented that it wanted to "avoid the unnecessary cost of conducting an ELLS on a liner that [the County] intended to replace anyway..." and proposed to conduct the ELLS on the new 60-mil double-sided (textured on both sides) HDPE liner as part of the CQA program for the new liner installation. The Discharger based this request "[d]ue to the age of the liner and visual observation of defects

in the exposed (i.e., above the liquid level) portions of the liner...” The Discharger proposed in the RAROWD to conduct an ELLS as part of the CQA program for the newly installed HDPE geomembrane liner (Primary Liner).

91. This Order requires the Discharger to evaluate the leakage through the reconstructed Class II surface impoundment Primary Liner by estimating the ALR using the 1992 EPA guidance, conducting a leak location survey, and comparing the aggregate Primary LCRS and Secondary LCRS sump liquid volume to the estimated ALR. The results of the evaluation shall be submitted in a Class II Surface Impoundment Leak Location Test and Primary Liner Performance Evaluation Report as detailed in Time Schedule J.2.
92. The Discharger proposes to temporarily redirect liquid wastes which would otherwise be discharged to the Class II surface impoundment to temporary storage tanks for offsite disposal during construction activities. These WDRs require the Discharger to submit a plan for tracking and reporting the volume of liquid wastes temporarily stored and hauled off-site for disposal, Unit Construction Specification D.9.

Post-Closure Maintenance & Financial Assurances

93. Title 27 § 22100(b) requires owners and operators of disposal facilities that are required to be permitted as solid waste landfills to provide cost estimates for initiating and completing corrective action for known or reasonably foreseeable releases of waste.
94. Title 27 § 22101 requires submittal of a *Water Release Corrective Action Estimate* and a *Non-Water Release Corrective Action Cost Estimate*. The *Water Release Corrective Action Estimate* is for scenarios where there is statistically significant evidence of a release of waste to ground or surface water when comparing point-of-compliance analyte concentrations to background concentrations. The *Non-Water Release Corrective Action Cost Estimate* is for the complete replacement of the landfill final cover system, however a site-specific corrective action plan pursuant to Title 27 § 22101(b)(2) may be provided in lieu of the final cover replacement cost estimate.
95. Title 27, § 22221 requires a cost estimate for corrective action of all known or reasonably foreseeable releases in at least the amount of the greater of either the most recently approved or most recently submitted corrective action cost estimate prepared pursuant to §22101(a) (i.e., Water Release Corrective Action). The Discharger is also required to maintain the monetary amount of the required financial assurance mechanism(s) based upon a specific annual inflation factor (Title 27, § 22221). The inflation factor is derived from the annual Implicit Price Deflator for Gross National Product as published annually by the U.S.

Department of Commerce in its Survey of Current Business, which is incorporated by reference. The inflation factor is the result of dividing the latest annual published deflator by the deflator for the previous year (Title 27, § 22236).

96. The Discharger's 2017 ROWD/JTD included a 2017 cost estimate of \$618,627 for Water Release Corrective Action and a 2015 cost estimate of \$2.2 million for Non-Water Release Corrective Action. The Regional Board through WDRs Order No. R5-2018-0020 required the Discharger maintain financial assurance with the CalRecycle in at least the amount of \$2.2 million for the Non-Water Release Corrective Action cost estimate (greater of the two corrective action cost estimates) adjusted annually for inflation.
97. The Discharger's RAROWD and Amended ROWD/JTD state that post-closure maintenance financial assurance has "No Change From Previous ROWD" referring to the 2017 ROWD/JTD.
98. Title 27 § 22221(b) requires establishment of financial assurances in the amount of an approved *Water Release Corrective Action Estimate* or an approved *Non-Water Release Corrective Action Cost Estimate*, whichever is greater.
99. On 6 May 2016 CalRecycle approved the Discharger's Pledge of Revenue Agreement in support of Post-Closure Maintenance and Corrective Action pursuant to Title 27 § 22245. Title 27 § 22221(d) requires the Discharger to submit an Annual Inflation Report to CalRecycle to adjust estimated Corrective Action estimates for inflation. On 8 December 2020, the Discharger certified under penalty of perjury the 2020 post closure maintenance cost of \$5,669,240, utilizing the 2020 inflation factor of 1.018. The Discharger's cost estimate for the non-water corrective action plan utilizing the 2020 inflation factor of 1.018 is \$2,414,025.
100. On 1 April 2021, CalRecycle determined the inflation factor for 2020, the most recent year available, to be 1.012 (i.e., 1.2%). As of the date of this Order these estimates adjusted for inflation in accordance with Title 27, are specified in **Table 10**. These WDRs require the Discharger to maintain financial assurances with CalRecycle in at least the amount of the 2021 Corrective Action: Non-Water Release cost estimate specified in **Table 10** adjusted annually for inflation, in accordance with Title 27.

Table 10—Current Cost Estimates (Financial Assurances)

Requirement	2020 Estimated Cost	2020 Inflation Factor	2021 Estimated Cost
Corrective Action: Water Release	\$631,311	1.012	\$638,887
Post-Closure Maintenance	\$5,669,240	1.012	\$5,737,271
Corrective Action: Non-Water Release	\$2,414,025	1.012	\$2,442,993

101. The Discharger’s combined financial responsibility for Corrective Action and post-closure maintenance is \$8,180,264. This Order requires the Discharger to maintain \$8,180,264 of financial assurance with CalRecycle, adjusted annually for inflation.
102. The Discharger reports maintaining a Pledge of Revenue Agreement as the financial assurance mechanism for corrective action (Title 27, S§ 22245). These WDRs require the Discharger to submit a complete Pledge of Revenue Agreement package to the Regional Board, including copies of the items required in Title 27, S§ 22245, as detailed in Financial Assurances G.2.
103. Submission of a complete Pledge of Revenue Agreement package as required by Financial Assurances G.2 satisfies the requirement in Standard Provisions & Reporting Requirements H.1 for the Discharger to “establish an irrevocable fund for closure and post-closure maintenance to ensure closure and post-closure maintenance of each classified unit in accordance with an approved closure and post-closure maintenance plan [Title 27, § 20950(f) and § 22207(a)].”

California Environmental Quality Act

104. The issuance of this Order, which prescribes requirements and monitoring of waste discharges at an **existing facility**, with negligible or no expansion of its existing use, is exempt from the procedural requirements of the California Environmental Quality Act (CEQA), Public Resources Code § 21000 et seq., pursuant to California Code of Regulations, title 14, § 15301 (CEQA Guidelines). The discharges authorized under this Order are substantially within parameters established under prior WDRs, particularly with respect to character and volume of discharges.
105. To the extent that the construction of any new basins, ponds and/or surface impoundments are authorized under this Order, such features involve **minor**

alterations to land, which are exempt from CEQA procedural requirements pursuant to California Code of Regulations, title 14, § 15304 (CEQA Guidelines).

106. In accordance with the California Environmental Quality Act (CEQA), Public Resources Code § 21000 et seq., on 15 December 2020, the Amador County Board of Supervisors adopted a **Mitigated Negative Declaration** in connection with the proposed reconstruction of the WMU I final cover and expansion of the Class II surface impoundment. In the Mitigated Negative Declaration, the Amador County Board of Supervisors found that the “project,” which includes the following pertinent project elements, would not have a significant effect on the environment, provided that specified mitigation measures were implemented:
- a. WMU I final cover reconstruction;
 - b. Class II surface impoundment improvements and liner replacement; and
 - c. Miscellaneous project components.
107. This Order implements all applicable mitigation and monitoring measures specified in the Mitigated Negative Declaration.

Other Regulatory Matters

108. This Order is issued in part pursuant to Water Code § 13263, subdivision (a), which provides as follows:

The regional board, after any necessary hearing, shall prescribe requirements as to the nature of any proposed discharge, existing discharge, or material change in an existing discharge..., with relation to the conditions existing in the disposal area ... into which, the discharge is made or proposed. The requirements shall implement any relevant water quality control plans that have been adopted, and shall 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 §] 13241.

109. This Order implements the Central Valley Water Board’s Basin Plan, which designates beneficial uses for surface water and groundwater and establishes water quality objectives (WQOs) necessary to preserve such beneficial uses.¹ (Wat. Code, § 13241 et seq.)

¹ Designated beneficial uses surface water and groundwater are discussed in Finding 00 and Finding 25, respectively.

110. The State Water Board's *Statement of Policy with Respect to Maintaining High Quality Waters in California*, Resolution 68-16 (*Antidegradation Policy*) prohibits the Central Valley Water Board from authorizing degradation of "high quality waters" unless it is shown that such degradation: (1) will be consistent with the maximum benefit to the people of California; (2) will not unreasonably affect beneficial uses, or otherwise result in water quality less than as prescribed in applicable policies; and (3) is minimized through the discharger's best practicable treatment or control.
111. Consistent with Title 27, this Order requires the Discharger to maintain the Facility to contain waste within WMUs, thereby preventing degradation of water quality. To the extent that there are releases from Facility WMUs, will be required to address such releases through a Corrective Action Program. (See Title 27, §§ 20385, 20415, 20430.) Because this Order does not authorize any degradation in water quality, it complies with the *Antidegradation Policy*.
112. For the purposes of California Code of Regulations, title 23 (Title 23), § 2200, the Facility has a threat-complexity rating of **2-B**, where:
 - a. Threat Category "2" reflects waste discharges that can impair receiving water beneficial uses, cause short-term water quality objective violations, cause secondary drinking water standard violations, and cause nuisances; and
 - b. Complexity Category "B" reflects any discharger not included in Category A, with either (1) physical, chemical or biological treatment systems (except for septic systems with subsurface disposal), or (2) any Class II or Class III WMUs.

Reporting Requirements

113. This Order is also issued in part pursuant to Water Code § 13267, subdivision (b)(1), which provides that:

[T]he regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region ... shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with

regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.

114. The technical reports required under this Order, as well as those required under the separately issued MRP, are necessary to ensure compliance with prescribed WDRs and the provisions of Title 27, Subtitle D (40 C.F.R. part 258) and State Water Board Resolution 93-62. Additionally, the burdens associated with such reports are reasonable relative to the need for their submission.
115. Failure to comply with the reporting requirements under this Order and the MRP may result in enforcement action pursuant to Water Code § 13268.

Procedural Matters

116. All local agencies with regulatory jurisdiction over land-use, solid waste disposal, air pollution and public health protection have approved the use of the Facility's site for the discharge of waste to land as provided for herein.
117. The Discharger, interested agencies and interested persons were notified of the Central Valley Water Board's intent to prescribe the WDRs in this Order, and provided an opportunity to submit their written views and recommendations at a public hearing. (Wat. Code, § 13167.5; Title 27, § 21730.)
118. At a public meeting, the Central Valley Water Board heard and considered all comments pertaining to the discharges regulated under this Order.
119. The Central Valley Water Board will review and revise the WDRs in this Order as necessary.

REQUIREMENTS

IT IS HEREBY ORDERED, pursuant to Water Code §§ 13263 and 13267, that the Discharger and their agents, employees and successors shall comply with the following.

A. Discharge Prohibitions

Except as otherwise expressly directed below, the Discharger shall comply with all Standard Prohibitions (SPRRs, § C), which are incorporated herein, as well as the following.

1. **"Hazardous Waste,"** as defined per Title 23, § 2601, shall not be discharged at the Facility. The Department of Toxic Substances Control (DTSC) shall be immediately notified of any such discharges in violation of this Order.

2. Except as specifically authorized in **Section B.1** and **Table 11** and or **Unit Construction Specification D.3**, “Designated Waste,” as defined per Water Code § 13173, shall not be discharged at the Facility.
3. Except as expressly authorized in **Section B.1** and **Table 11** and or **Unit Construction Specification D.3**, leachate and landfill gas (LFG) condensate shall not be discharged at the Facility.
4. The cessation of any corrective action measure is prohibited without written Executive Officer approval. If routine maintenance or a breakdown results in cessation of corrective action for greater than 24 hours, the Discharger shall notify Central Valley Water Board staff in writing **within seven days**.

B. Discharge Specifications

Except as otherwise expressly directed below, the Discharger shall comply with all Standard Discharge Specifications (SPRRs, § D), which are incorporated herein, as well as the following.

1. The Discharger shall only discharge waste to Facility WMUs as specified in **Table 11**, subject to the table-specific definitions provided below.

Table 11—Authorized Waste Discharges at Facility

Waste Category	WMU I	WMU II/III	Surface Impoundment
Hazardous Waste Wastes which, pursuant to Title 22, section 66261.3 et seq., must be managed in accordance with Division 4.5 of Title 22. (Title 27, § 20164; Title 23, § 2521(a).)	No	No	No
Municipal Solid Waste (MSW) Wastes subject to 40 C.F.R. part 258. (Title 27, § 20164.)	No	No	No

Waste Category	WMU I	WMU II/III	Surface Impoundment
<p>Designated Waste</p> <p>(1) Hazardous Wastes subject to a variance from management requirements per Health and Safety Code § 25143; and (2) Nonhazardous Waste containing constituents that, under ambient conditions, could be released in concentrations exceeding WQOs, or could reasonably be expected to affect beneficial uses. (Wat. Code, § 13173.), including:</p> <p>a) Extracted groundwater from the groundwater extraction trench</p>	No	No	Yes
<p>Inert Wastes</p> <p>Wastes that contain neither (i) hazardous wastes or soluble pollutants at concentrations in excess of WQOs, nor (ii) significant quantities of decomposable material. (Title 27, §§ 20164, 20230(a).)</p>	No	No	No
<p>Landfill Gas Condensate</p> <p>Liquid removed from a gas control system at a landfill and which are produced by the condensation of landfill gas being conveyed by that system. (Title 27, § 20164.)</p> <p>a) LFG condensate from the WMU I, and WMU II and III landfills</p>	No	No	Yes

Waste Category	WMU I	WMU II/III	Surface Impoundment
<p>Leachate</p> <p>Liquid formed by the drainage of liquids from waste or by the percolation or flow of liquid through waste. Includes any constituents extracted from the waste and dissolved or suspended in the fluid. (Title 27, § 20164.), including:</p> <ul style="list-style-type: none"> a) Leachate from the WMU I landfill WMU seeps b) Leachate collected in the WMU II and III landfill LCRS c) Leachate from the Class II surface impoundment Primary LCRS d) Leachate from the Class II surface impoundment Secondary LCRS; and e) Leachate from the landfill dual gas/leachate extraction system from the WMU I landfill. 	No	No	Yes
<p>Asbestos-Containing Waste (>1%)</p> <p>Wastes containing at least 1 percent of non-friable asbestos particles.</p>	No	No	No
<p>Treated Wood Waste</p> <p>Wood treated with chemical preservatives that are: (i) administered for protection against insects, microorganisms, fungi, and other conditions leading to decay; and (ii) registered under the Federal Insecticide, Fungicide and Rodenticide Act. (Title 22, § 67386.4.)</p>	No	No	No

2. A discharge shall not cause a condition of pollution or nuisance as defined by the Water Code §13050.
3. The Discharger shall promptly remove and relocate all waste discharged at the Facility in violation of this Order, including all soils and materials impacted by operation and maintenance, failures, or other repairs. If unable to do so, they shall submit a report to the Central Valley Water Board: explaining how the violative discharge(s) occurred, and why the

waste(s) cannot be feasibly removed; and proposing waste acceptance program updates to prevent reoccurrences. If the infeasibility is economic, cost estimates shall be provided as part of the report.²

4. Notwithstanding **Section B.1** and **Table 11** or **Unit Construction Specification D.3**, Landfill Gas Condensate and Leachate from landfill WMUs shall not be discharged to other WMUs unless approved in writing by the Central Valley Water Board. (See Title 27, § 20340.)

C. Facility Specifications

1. The Discharger shall comply with all Standard Facility Specifications (SPRRs, § E) which are incorporated herein.
2. All wells within 500 feet of a WMU shall have sanitary seals or shall be properly abandoned. A record of the sealing and/or abandonment of such wells shall be sent to the Central Valley Water Board and to the State Department of Water Resources.
3. Annually, prior to the anticipated rainy season but no later than 31 October, any necessary construction, maintenance, or repairs of precipitation and drainage control facilities shall be completed and reported in compliance with MRP No. R5-2022-XXXX.
4. The Discharger shall not perform activities that would damage a 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 storm water and violate post closure maintenance requirements. The Discharger shall post signs visible to the vehicle drivers indicating driving is not allowed on a WMU cover.
5. In the event the Discharger utilizes an offsite disposal facility for soils, liquids, or materials relating to the operation and maintenance of the Facility, the Discharger shall record the nature, volume, and source of the items as well as the offsite disposal facility, and any other pertinent information. The Discharger shall provide a report of all off-site disposal activities to the Central Valley Regional Board in the Discharger's semi annual reports.

² Submission of this letter does not constitute approval for discharge. The Central Valley Water Board may direct the removal of waste not authorized under this Order.

D. Unit Construction Specifications

Except as otherwise expressly directed below, the Discharger shall comply with all Standard Construction Specifications and Standard Storm Water Provisions (SPRRs, §§ D, L), which are incorporated herein, as well as the following.

1. The Discharger shall not commence final cover reconstruction or surface impoundment related construction (other than preparatory earthmoving and grading) until the Central Valley Water Board Executive Officer has approved in writing all necessary final construction plans, specifications and construction quality assurance plans related to the reconstructed final cap or new liner(s) (Final Construction Details).
2. The Discharger shall apply a volume of seed, binder, and nutrients to the vegetative/erosion-resistant layer sufficient to establish the vegetation proposed in the final closure plan. The Discharger shall also install any necessary erosion and sedimentation controls to protect vegetation while vegetation is being established.
3. Prior to commencing authorized construction, the Discharger shall submit a workplan for Central Valley Water Board Executive Officer approval which details proposed method for containing, liquid wastes temporarily stored and hauled off-site for disposal which would otherwise be discharged to the Class II surface impoundment, but which cannot be discharged during construction activities. At a minimum, the workplan shall propose methods for tracking the volume of wastes, identify offsite proposed disposal facility(ies), and a method of reporting temporary storage and offsite disposal activities to the Central Valley Water Board.
4. The Discharger shall not implement material modifications to Central Valley Water Board Executive Officer approved Final Construction Details without Central Valley Water Board Executive Officer written approval. Any proposed modifications to approved Final Construction Details shall meet the following minimum criteria:
 - a. Previously approved components are not eliminated;
 - b. The engineering properties of previously approved components are not substantially reduced; and

- c. The proposed liner or final cover system will result in water quality equal to or greater than the design(s) prescribed per Title 27, § 20310 et seq., and this Order.³
5. All mitigation measures identified by the Amador County Board of Supervisors in the CEQA document for the “project.” Examples of mitigation measures may include surveys for sensitive species in the project area and associated mitigation plans if the surveys find such species, mitigation measures if historic or cultural resources, or human remains are discovered in the project area, and compliance with applicable local codes.

E. Closure & Post-Closure Maintenance Specifications

Except as otherwise directed below, the Discharger shall comply with all Standard Closure and Post-Closure Specifications (SPRRs, § G) and closure-related Standard Construction Specifications (SPRRs, § F), as well as the following with respect to closure of landfills at the Facility.

1. The Discharger shall submit a Final or Partial Final Closure and Post Closure Maintenance Plan (CPMP), in accordance with section G of the SPRRs, at least two years prior to the proposed closure of any portion of any landfill.
2. The Discharger shall close the WMU I landfill with the final cover components proposed in the operative Final or Partial Final Closure CPMP, as generally described in **Attachment E**.
3. The Discharger shall obtain revised WDRs prior to closure of any landfill unit with a final cover other than the one(s) approved herein.
4. During or after final cover installation, the Discharger may perform minor modifications to problematic areas of the final cover, provided that: (a) the barrier layer of the final cover (e.g., geomembrane, GCL and/or compacted clay layer) remains intact; and (b) the Central Valley Water Board Executive Officer approves of such modifications.
5. All geomembrane barrier edges of the WMU II/III final cover shall be sealed by connecting to the liner.

³ Proposed changes that do not meet these criteria are considered “material,” and will require the revision of this Order.

6. The Discharger shall maintain and operate the LCRS for the WMU II and WMU III.
7. Leachate generation by a WMU LCRS shall not exceed 85% of the design capacity of (a) the LCRS, or (b) the sump pump. If leachate generation exceeds this value and/or if the depth of the fluid in an LCRS exceeds the minimum needed for safe pump operation, then the Discharger shall immediately notify the Central Valley Water Board in writing within seven days. Notification shall include a timetable for a remedial action to repair the containment structures or other action necessary to reduce leachate production.
8. Leachate and LFG condensate collected from the Phase I, II and III landfill WMUs shall be discharged to the Class II surface impoundment or to an off-site disposal facility pursuant to **Facility Specification C.5**.

F. Class II Surface Impoundment

1. Only the nonhazardous liquid wastes including leachate, extracted groundwater, and LFG condensate described in Discharge Specification B.1 shall be discharged to the Class II surface impoundment.
2. During or after base liners, slope liners, and the Primary LCRS for the surface impoundment expansion installation, the Discharger may perform minor modifications to problematic areas of the surface impoundment, provided that: (a) the Secondary Liner and Secondary LCRS remains intact; and (b) the Central Valley Water Board Executive Officer approves of such modifications.
3. The Discharger shall maintain the liquid level in the Class II surface impoundment to contain 1,000 year 24-hr storm event (6.16 inch) plus no less than 24-inches of freeboard, total of no less than 30-inches freeboard. If freeboard is less than 30-inches, the Discharger shall **immediately** notify Central Valley Water Board staff by telephone and email. The notification shall include a description of the proposed contingency plan to reduce the water levels in the Class II surface impoundment and the plan for alternate disposal of the liquids generated on-site.
4. The Class II surface impoundment and related containment structures shall be maintained to prevent, to the greatest extent possible, inundation, erosion, slope failure, washout, and overtopping under 1,000-year, 24-hour precipitation conditions.
5. The Discharger shall maintain and use an automated rainfall gauge to track the magnitude of storm events, install a means to directly measure

the available freeboard in the expanded Class II surface impoundment at any time and record surface impoundment freeboard levels in accordance with the attached monitoring and reporting program.

6. Waste shall not be placed in the Class II surface impoundment that would affect the physical and chemical properties of the liners or the LCRSs to ensure containment of discharged wastes over the operating life, closure, and post-closure maintenance period of the Class II surface impoundments.
7. Waste shall not be placed in the Class II surface impoundment that would affect the physical and chemical properties of either the Primary or Secondary LCRS to ensure the required transmission of leachate over the life of the WMUs and the post-closure maintenance period.
8. LCRSs shall be maintained to collect twice the anticipated daily volume of leachate generated by the surface impoundment and to prevent the buildup of hydraulic head on the underlying liner at any time. The depth of the fluid in any LCRS sump shall be kept at the minimum depth needed for safe pump operation, to no greater than 12 inches of depth unless the Discharger demonstrates that it is not feasible to maintain less than 12 inches from bottom of the extraction wells.
9. Any direct-line discharge to a surface impoundment shall have fail-safe equipment or operating procedures to prevent overfilling.
10. The Class II surface impoundment shall be maintained to prevent scouring and/or erosion of the liners and other containment features at points of discharge to the surface impoundments and by wave action at the water line.
11. Leachate removed from either the Primary LCRS or Secondary LCRS of the surface impoundment shall be discharged to the impoundment from which it originated or as described in **Unit Construction Specification D.3**.
12. Leachate generation by the Class II surface impoundment to the Primary LCRS shall not exceed the ALR of 800 gallons per day or the ALR calculated by the Discharger and approved by the Central Valley Water Board Executive Officer pursuant to Time Schedule J.2, whichever is less. If leachate generation exceeds the ALR, the Discharger shall:
 - a. **Immediately** cease the discharge of waste, excluding the Class II surface impoundment LCRS leachate;
 - b. **Immediately** notify Central Valley Water Board staff by telephone and email that the leachate generation exceeded the approved leakage

- rate. Submit written notification to Central Valley Water Board staff within **seven days** that includes a time schedule to locate and repair leaks in the liner system;
- c. If repairs do not result in a leakage rate less than the approved leakage rate, the Discharger shall submit written notification within **seven days** that includes a time schedule for replacement of the upper liner of the surface impoundment or other action necessary to reduce leachate production; and
 - d. Complete repairs or liner replacement in accordance with the approved time schedule under “b” and/or “c”, above.
13. If liquid is detected in the suction lysimeter of the Class II surface impoundment indicating a leak in the containment structures, the Discharger shall:
- a. **Immediately** notify Central Valley Water Board staff by telephone and email that the containment structures have failed.
 - b. **Immediately** sample and test the liquid in accordance with the unsaturated zone monitoring requirements in MRP R5-2022-00XX.
 - c. Submit written notification of the release to Central Valley Water Board staff within **seven days** including a time schedule to repair the containment structures.
 - d. Complete repairs of the containment structures in accordance with the approved time schedule.
14. The Discharger shall update the water balance model if additional inflows are discharged to the Class II surface impoundment, such as additional leachate seep water from the Phase I landfill WMU, or the model assumptions no longer represent site conditions.
15. If the level in the Class II surface impoundment reaches the 30-inch freeboard level, the Discharger shall **immediately** notify Central Valley Water Board staff by telephone and email with the Class II surface impoundment water level and the proposed actions to prevent the Class II surface impoundment from reaching the 24-inch freeboard level.
16. Sediment or solids that accumulate in the Class II surface impoundment shall be removed when necessary to maintain the designed storage capacity. Sludge and solids removal shall be accomplished in a manner that ensures the continued integrity of the liner and leachate collection system in accordance with the Facility’s operations plan. Prior to disposal of these solids, sufficient samples shall be taken for their characterization and classification pursuant to Title 27. Central Valley Water Board staff shall be notified at least 30 days prior to removal of sediment and solids from the Class II surface impoundment.

17. Following sediment/solids removal from the Class II surface impoundment, the liner system shall be inspected for damage within 30 days and any damage shall be repaired within 60 days prior to the discharge of additional wastewater. A report shall be submitted to the Central Valley Water Board within 30 days of completion of the liner inspection or repair.
18. The Discharger shall operate the dual leachate and LFG extraction wells and leachate sumps to maintain the leachate height to no greater than 12 inches from bottom of the extraction wells, unless the Discharger demonstrates that it is not feasible to maintain less than 12 inches from bottom of the extraction wells.

G. Financial Assurances

Except as otherwise directed below, the Discharger shall comply with all Standard Financial Assurance Provisions (SPRRs, § H), as well as the following.

1. The Discharger shall maintain with CalRecycle assurances of financial responsibility for \$8,180,264 in 2021 dollars, adjusted annually for inflation.
2. **By 1 August 2022**, the Discharger shall prepare and submit a report regarding financial assurances and the financial assurance mechanism used to support corrective action. The Report shall include a complete Pledge of Revenue Agreement package describing types of revenue that the Discharger ensures will be available in a timely manner to pay for postclosure maintenance or corrective action and include copies of the items required in Title 27, § 22245. Thereafter, the Discharger shall submit to the Regional Board a copy of the financial assurances report submitted to CalRecycle annually, no later than **1 June**.
3. If CalRecycle determines that the submitted financial assurances for the Facility are inadequate, the Discharger shall, within 90 days of such determination:
 - a. Obtain a new financial assurance mechanism for the amount specified by CalRecycle; and
 - b. Submit a report documenting such financial assurances to CalRecycle and the Central Valley Water Board.
4. The operative Final CPMP shall include all components required per Title 27, § 21769, subdivision (c), and include a lump sum cost estimate for:
 - a. Completion of all actions required for closure of each WMU;
 - b. Preparation of detailed design specifications;

- c. Development of a Final CPMP; and
 - d. Undertaking at least 30 years of post-closure maintenance.
5. Whenever changed conditions increase the estimated costs of closure and post-closure maintenance, the Discharger shall promptly submit an updated CPMP to the Central Valley Water Board, CalRecycle, and the LEA.

H. Monitoring Requirements

Except as otherwise directed below, the Discharger shall comply with all applicable Standard Monitoring Specifications (SPRRs, § I) and Standard Response to Release Specifications (SPRRs, § J), as well as the following:

1. The Discharger shall comply with all provisions of the separately issued Monitoring MRP R5-2022-00XX and any subsequent revisions thereto (operative MRP).
2. The Discharger shall implement the Water Quality Protection Standard (WQPS) set forth in the operative MRP (see also Title 27, § 20390); and shall verify the compliance of each WMU with each subsequent monitoring event.
3. For all WMUs, the Discharger shall implement a groundwater, surface water and unsaturated zone detection monitoring program (DMP) in accordance with Title 27, §§ 20385, 20415 and 20420.
4. For each WMU subject to corrective action, the Discharger shall implement a corrective action monitoring program (CAMP) in accordance with Title 27, §§ 20385, 20415 and 20430, and Section I of the SPRRs.

I. Reporting Requirements

In addition to those Standard Provisions pertaining to notification and reporting obligations (see, e.g., §§ K.1-2, K.6, K.8-10), the Discharger shall comply with the following provisions.

1. The Discharger shall comply with all MRP provisions pertaining to the submittal and formatting of reports and data.
2. Reports and data required herein, including but not limited to, technical reports, Electronic Data Format (EDF) data, well data, boring log data, well survey_XY data, well survey_Z data, and site maps shall be submitted electronically via the State Water Board's [GeoTracker Database](https://geotracker.waterboards.ca.gov) (<https://geotracker.waterboards.ca.gov>). After uploading, the Discharger shall notify Central Valley Water Board staff via email at

CentralVallySacramento@WaterBoards.ca.gov. The following information shall be included in the body of the email:

Attention: Title 27 Compliance & Enforcement Unit
Report Title: [Report Title]
GeoTracker Upload ID: [Number]
Facility: Buena Vista Landfill
County: Amador County
CIWQS Place ID: 210700

3. All technical reports submitted under this Order shall be prepared by, or under the direct supervision of, a California-licensed civil engineer or engineering geologist. For the purposes of this section, a “technical report” is a report incorporating the application of scientific or engineering principles.

J. Time Schedule

The Discharger shall complete the following tasks in accordance with the specified deadlines:

1. By **1 September 2022**, the Discharger shall submit a workplan for evaluation causes of the observed increasing VOCs and/or inorganic concentrations in groundwater. At a minimum, the workplan shall include consideration of landfill gas and leachate migration from WMU I, natural geochemical recharge effects, and potential releases from the truck wash pad near MW-16. The workplan shall include proposed mitigation efforts relating to the repair or replacement of the truck wash pad.
2. **At least two weeks prior to any discharge of wastes to the Class II surface impoundment**, the Discharger shall perform a leak location test on the installed new 60-mil double-sided (textured on both sides) HDPE liner (i.e., “bottom liner”) to find any defects in the geomembrane due to ultraviolet degradation, normal wear and tear, construction and installation damage, or other activities. The Surface Impoundment Bottom Liner Performance Evaluation Report shall include the following elements:
 - a. Results from the bottom liner leak location test;
 - b. Proposed bottom liner repair plan, if required, including bottom liner repair specifications and Construction Quality Assurance Plan; and,
 - c. Evaluation of the leakage through the Class II surface impoundment primary and secondary liner by estimating the ALR using the 1992 EPA guidance document *Action Leakage Rate for Leak Detection Systems* and comparing the aggregate Primary and

Secondary LCRS sump liquid volume to the estimated ALR, for review and approval.

- d. Comparison of the liquid volume collected in the Class II surface impoundment LCRS sump to estimated ALR.
 - e. Corrective action recommendations, if required.
3. **Within ninety days of completion of approved construction**, the Discharger shall submit As-Built Drawings for the expanded Class II surface impoundment, in accordance with Title 27 § 21760(a)(1). The As-Built Drawings shall include details, specifications, and descriptions for all liners (under s20330) and other containment structures (e.g., final cover, under s21090), leachate collection and removal system components (under s20340), leak detection system components [under s20415(b-d)], precipitation and drainage control facilities (under s20365), and interim covers installed or to be installed or used (under s20705). In addition, the As-Built Drawings shall contain a description of, and location data for, ancillary facilities including roads, waste handling areas, buildings, and equipment cleaning facilities, only insofar as the location and operation of these ancillary facilities could have an effect upon water quality.
 4. **Within ninety days of completion of approved construction**, the Discharger shall submit As-Built Drawings for the WMU I final cover, in accordance with Title 27 § 21760(a)(1). The As-Built Drawings shall include details, specifications, and descriptions for all liners (under s20330) and other containment structures (e.g., final cover, under s21090), leachate collection and removal system components (under s20340), leak detection system components [under s20415(b-d)], precipitation and drainage control facilities (under s20365), and interim covers installed or to be installed or used (under s20705). In addition, the As-Built Drawings shall contain a description of, and location data for, ancillary facilities including roads, waste handling areas, buildings, and equipment cleaning facilities, only insofar as the location and operation of these ancillary facilities could have an effect upon water quality.
 5. **By 1 October 2022**, the Discharger shall submit an Amended Surface Impoundment Operations and Maintenance Plan for the proposed improvements to the Class II surface impoundment to the Central Valley Water Board. The Amended Surface Impoundment O&M Plan shall outline strategies and methods for evaporating leachate, minimizing vectors and odors, managing pond levels, conducting liner inspections, cleaning the ponds and other relevant information and detail how the changes will maintain compliance with this Order and Title 27. Additionally, a detailed description of the contingency plan to dispose of excess without stopping the corrective action systems shall be included in

the plan including the monitoring of forecasted precipitation events when the water levels in the surface impoundment near the freeboard elevation. The plan shall include calculations as to the aggregate amount of leachate expected to be generated in and pumped from the LCRSs back into the impoundment under normal operations in the absence of a liner failure. The plan shall identify the failure of the primary liner and include a response plan in the event of a primary liner failure. The plan shall also identify failure of the secondary liner and include a response in the event of a secondary liner failure.

K. Other Provisions

1. The Discharger shall maintain at the Facility copies of this Order (including all attachments), the operative Monitoring & Reporting Program (i.e., MRP R5-20XX-XXXX and any revisions thereto), and the SPRRs. These materials shall be made available to all operating personnel, who shall be familiar with the contents of such materials.
2. The Discharger shall comply with all applicable provisions of Title 27 (including those provisions not specifically referenced herein).

LIST OF ATTACHMENTS

ATTACHMENT A—SITE LOCATION MAP
ATTACHMENT B—AREA MUNICIPAL AND DOMESTIC WELLS
ATTACHMENT C—SITE MONITORING NETWORK & STORM WATER RETENTION POND
ATTACHMENT D—CLASS II SURFACE IMPOUNDMENT & LCRS (NOT FOR CONSTRUCTION)
ATTACHMENT E—PROPOSED RECONSTRUCTED WMU I FINAL COVER (NOT FOR CONSTRUCTION)
ATTACHMENT F—Monitoring and Reporting Program R5-2022-XXXX (separate document)

ENFORCEMENT

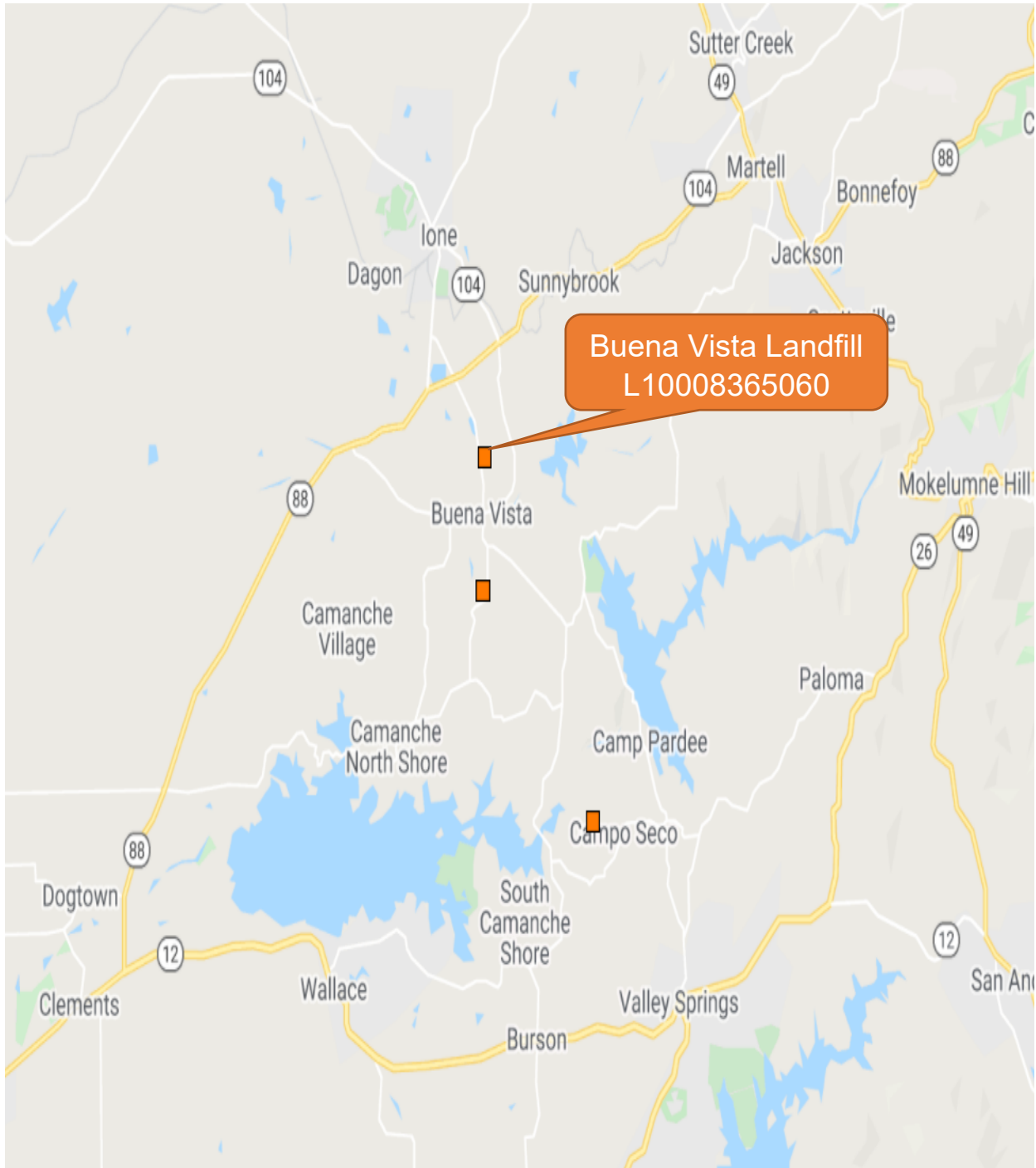
If, in the opinion of the Executive Officer, the Dischargers fail to comply with the provisions of this Order, the Executive Officer may refer this matter to the Attorney General for judicial enforcement, may issue a complaint for administrative civil liability, or may take other enforcement actions. Failure to comply with this Order may result in the assessment of Administrative Civil Liability of up to \$10,000 per violation, per day, depending on the violation, pursuant to the Water Code, including §§13268, 13350 and

13385. The Central Valley Water Board reserves its right to take any enforcement actions authorized by law.

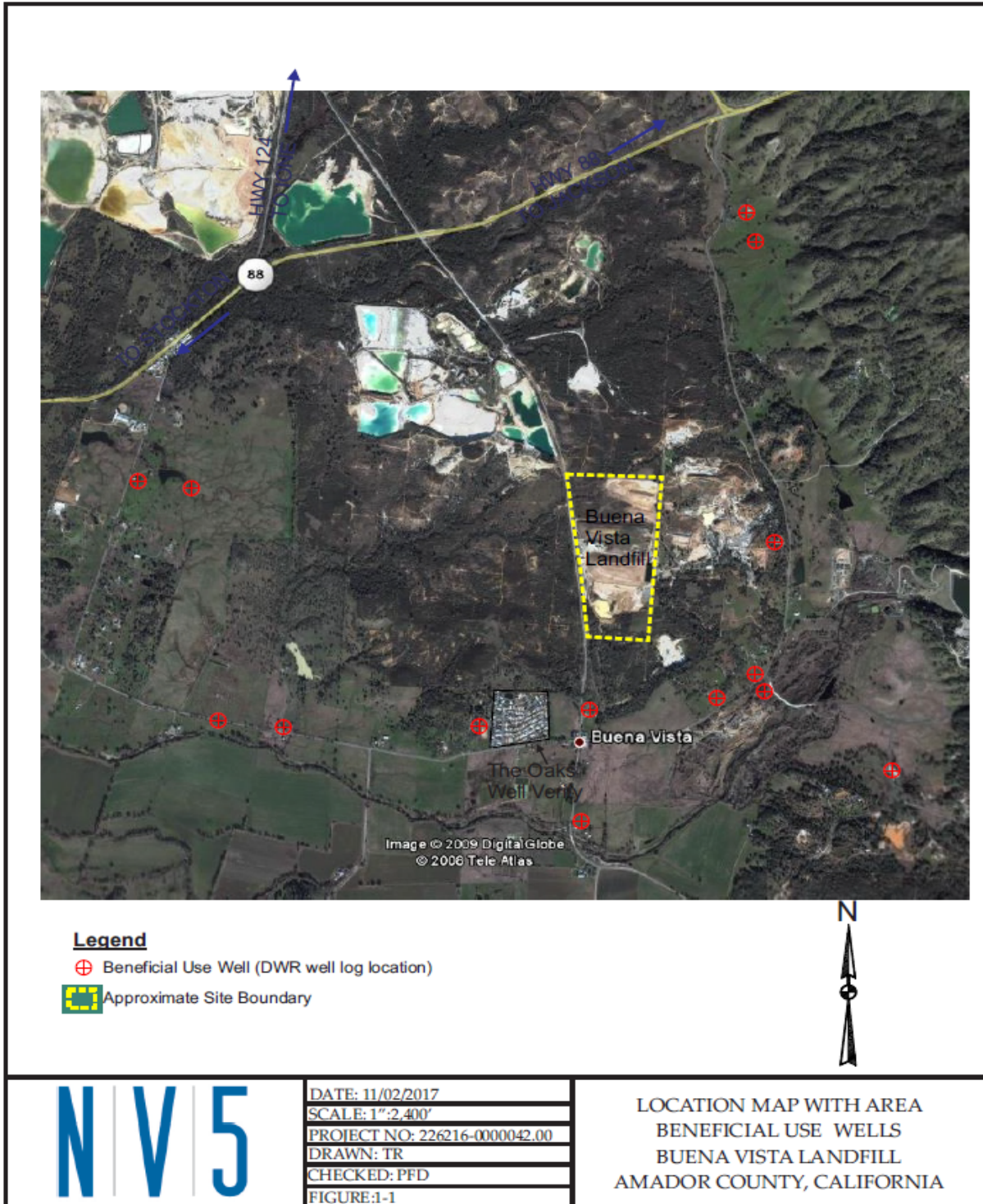
ADMINISTRATIVE REVIEW

Any person aggrieved by this Central Valley Water Board action may petition the State Water Board for review in accordance with Water Code § 13320 and California Code of Regulations, title 23, § 2050 et seq. To be timely, the petition must be received by the State Water Board by 5:00 pm 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 pm on the next business day. The law and regulations applicable to filing petitions are available on the [State Water Board website](http://www.waterboards.ca.gov/public_notices/petitions/water_quality) (http://www.waterboards.ca.gov/public_notices/petitions/water_quality). Copies will also be provided upon request.

ATTACHMENT A—SITE LOCATION MAP



ATTACHMENT B—AREA MUNICIPAL AND DOMESTIC WELLS



AMADOR COUNTY
BUENA VISTA LANDFILL
AMADOR COUNTY

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ATTACHMENT F—Monitoring and Reporting Program R5-[2022-XXXX](#) (separate document)

Refer to separate document.

STANDARD PROVISIONS & REPORTING REQUIREMENTS

Non-Hazardous Discharges of Waste Regulated under Subtitle D and/or Title 27, December 2015 Edition

A. Applicability

1. These Standard Provisions and Reporting Requirements (SPRRs) are applicable to nonhazardous solid waste disposal sites that are regulated by the Central Valley Regional Water Quality Control Board (hereafter, Central Valley Water Board or Regional Board) pursuant to the provisions of California Code of Regulations, Title 27 ("Title 27"), §20005 et seq., and municipal solid waste (MSW) landfills that are subject to the Federal Subtitle D regulations contained in 40 Code of Federal Regulations § 258 (hereafter, "Subtitle D" or "40 C.F.R. § 258.XX") in accordance with State Water Resources Control Board (State Water Board) Resolution 93-62. The Subtitle D regulations are only applicable to MSW landfills and therefore any requirements in these SPRRs that are referenced as coming from Subtitle D are not applicable to non-MSW waste management units such as Class II surface impoundments, Class II waste piles, and non-MSW landfill units. All Subtitle D requirements in these SPRRs are referenced with "[40 C.F.R. § 258.XX]" after the requirement.
2. "Order," as used throughout this document, means the Waste Discharge Requirements (WDRs) to which these SPRRs are incorporated.
3. The requirements prescribed herein do not authorize the commission of any act causing injury to the property of another, and do not protect the Discharger from liabilities under federal, state, or local laws. This Order does not convey any property rights or exclusive privileges.
4. The provisions of this Order are severable. If any provision of this Order is held invalid, the remainder of this Order shall not be affected.
5. If there is any conflicting or contradictory language between the WDRs, the Monitoring and Reporting Program (MRP), or the SPRRs, then language in the WDRs shall govern over either the MRP or the SPRRs, and language in the MRP shall govern over the SPRRs.
6. If there is a site-specific need to change a requirement in these SPRRs for a particular landfill facility, the altered requirement shall be placed in the appropriate section of the WDRs and will supersede the corresponding SPRRs requirement. These SPRRs are standard and cannot be changed as part of the permit writing process or in response to comments, but they will be periodically updated on an as-needed basis.

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7. Unless otherwise stated, all terms are as defined in Water Code § 13050 and in Title 27, § 20164.

B. Terms and Conditions

1. Failure to comply with any waste discharge requirement, monitoring and reporting requirement, or Standard Provisions and Reporting Requirement, or other order or prohibition issued, reissued, or amended by the Central Valley Water Board or the State Water Board, or intentionally or negligently discharging waste, or causing or permitting waste to be deposited where it is discharged into the waters of the state and creates a condition of pollution or nuisance, is a violation of this Order and the Water Code, which can result in the imposition of civil monetary liability [Wat. Code, § 13350(a)]
2. After notice and opportunity for a hearing, this Order may be terminated or modified for cause, including, but not limited to [Wat. Code, § 13381]:
 - a. Violation of any term or condition contained in this Order;
 - b. Obtaining this Order by misrepresentation, or failure to disclose fully all relevant facts;
 - c. A change in any condition that results in either a temporary or permanent need to reduce or eliminate the authorized discharge; or
 - d. A material change in the character, location, or volume of discharge.
3. Before initiating a new discharge or making a material change in the character, location, or volume of an existing discharge, the Discharger shall file a new report of waste discharge (ROWD), or other appropriate joint technical document (JTD), with the Central Valley Water Board [Wat. Code, § 13260(c) and § 13264(a)]. 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

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- d. A change to previously-approved liner systems or final cover systems that would eliminate components or reduce the engineering properties of components.
4. Representatives of the Central Valley Water Board may inspect the facilities to ascertain compliance with the waste discharge requirements. The inspection shall be made with the consent of the owner or possessor of the facilities or, if the consent is refused, with a duly issued warrant. However, in the event of an emergency affecting the public health or safety, an inspection may be made without consent or the issuance of a warrant [Wat. Code, §13267(c)].
5. The Central Valley Water Board will review this Order periodically and will revise these waste discharge requirements when necessary [Wat. Code, § 13263(e) and Title 27, § 21720(b)].
6. Except for material determined to be confidential in accordance with California law and regulations, all reports prepared in accordance with terms of this Order shall be available for public inspection at the offices of the Central Valley Water Board [Wat. Code, § 13267(b)]. Data on waste discharges, water quality, geology, and hydrogeology shall not be considered confidential.
7. A discharge of waste into the waters of the state is a privilege, not a right. No discharge of waste into waters of the state, whether or not the discharge is made pursuant to waste discharge requirements, shall create a vested right to continue the discharge [Wat. Code, § 13263(g)].
8. Technical and monitoring reports specified in this Order are requested pursuant to the Water Code [§13267(b)]. Failure to furnish the reports by the specified deadlines or falsifying information in the reports, are misdemeanors that may be liable civilly in accordance with §13268(b) of the Water Code [Wat. Code, §13268(a)].

C. Standard Prohibitions

1. The discharge of liquid or semi-solid waste (waste containing less than 50 percent solids) is prohibited, except for the following when proposed in the ROWD/JTD and approved by this Order:
 - a. Dewatered sewage or water treatment sludge as described in Title 27, § 20220(c) provided it is discharged above a composite liner with a leachate collection and removal system (LCRS) [Title 27, § 20200(d)(3)].

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- b. Leachate and/or landfill gas condensate that is returned to the composite-lined waste management unit (with an LCRS) from which it came [Title 27, § 20340(g) and 40 C.F.R. § 258.28].
 - 2. The discharge of wastes which have the potential to reduce or impair the integrity of containment structures or which, if commingled with other wastes in the waste management unit, could produce violent reaction, heat or pressure, fire or explosion, toxic by-products, or reaction products, which, in turn:
 - a. require a higher level of containment than provided by the unit; or
 - b. are 'restricted wastes'; or
 - c. impair the integrity of containment structures; is prohibited [Title 27, § 20200(b)].
 - 3. The discharge of wastes outside of a waste management unit or portions of a unit specifically designed for their containment is prohibited.
 - 4. The discharge of solid waste containing free liquid or which may contain liquid in excess of the moisture holding capacity as a result of waste management operations, compaction or settlement is prohibited.
 - 5. The discharge of waste to a closed landfill unit is prohibited.
 - 6. The discharge of waste constituents to the unsaturated zone or to groundwater is prohibited.
 - 7. The discharge of solid or liquid waste or leachate to surface waters, surface water drainage courses, or groundwater is prohibited.

D. Standard Discharge Specifications

- 1. The Discharger is responsible for accurate characterization of wastes, including a determination of whether or not wastes will be compatible with containment features and other wastes at the waste management unit and whether or not the wastes are required to be managed as a hazardous waste [Title 27, § 20200(c)] or designated waste [Title 27, § 20210].
- 2. Leachate and landfill gas condensate collected from a waste management unit shall be discharged to the unit from which it came, or discharged to an appropriate waste management unit in accordance with Title 27 and in a manner consistent with the waste classification of the liquid [Title 27, § 20200(d) and § 20340(g)].

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3. The discharge of leachate or landfill gas condensate is restricted to those portions of a waste management unit that has a composite liner system and LCRS meeting the Federal Subtitle D requirements [40 C.F.R. § 258.28].
4. Leachate and condensate returned to a composite-lined landfill unit (when approved by this Order) shall be discharged and managed such that it does not cause instability of the waste, does not cause leachate seeps, does not generate additional landfill gas that is not extracted from the landfill by an active landfill gas extraction system, does not cause contaminants to enter surface water runoff, and does not cause leachate volumes to exceed the maximum capacity of the LCRS.
5. Any discharge of waste outside the portion of the landfill that was already covered with waste as of the landfill unit's respective Federal Deadline constitutes a "lateral expansion" and requires the installation of an approved composite liner system and LCRS [40 C.F.R. § 258.40(b)].
6. Wastes shall be discharged only into waste management units specifically designed for their containment and/or treatment, as described in this Order.
7. The discharge shall remain within the designated disposal area at all times.
8. The discharge of waste shall not cause a nuisance condition [Wat. Code, § 13050(m)].

E. Standard Facility Specifications

1. All waste management units shall be designed, constructed, and operated to ensure that wastes, including leachate, will be a minimum of 5 feet above the highest anticipated elevation of underlying groundwater [Title 27, § 20240(c)], including the capillary fringe.
2. Surface and subsurface drainage from outside of a waste management unit shall be diverted from the unit [Title 27, § 20365(e)].
3. Interim cover is daily and intermediate cover [Title 27, § 20750(a)]. Interim cover over wastes discharged to a landfill shall be designed and constructed to minimize percolation of liquids through the wastes [Title 27, § 20705(b)].
4. Intermediate cover consisting of compacted earthen material of at least twelve (12) inches shall be placed on all surfaces of the fill where no

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additional solid waste will be deposited within **180 days** [Title 27, § 20700(a)].

5. During wet weather conditions, the facility shall be operated and graded to minimize leachate generation.
6. The Discharger shall immediately notify the Central Valley Water Board staff of any slope failure occurring at a waste management unit. Any failure which threatens the integrity of containment features or the waste management unit shall be promptly corrected in accordance with an approved method [Title 27, § 21710(c)(2)].
7. The Discharger shall **immediately** notify Central Valley Water Board staff of any flooding, unpermitted discharge of waste off-site or outside of waste management units, equipment failure, or other change in site conditions which could impair the integrity of waste or leachate containment facilities or precipitation and drainage control structures.
8. The Discharger shall limit water used for facility maintenance within landfill areas to the minimum amount necessary for dust control and construction.
9. The Discharger shall maintain in good working order any facility, control system, or monitoring device installed to achieve compliance with the waste discharge requirements.
10. The Discharger shall lock all groundwater monitoring wells with a lock on the well cap or monitoring well box. All monitoring devices shall be clearly labeled with their designation including all monitoring wells, LCRS risers, and lysimeter risers and shall be easily accessible for required monitoring by authorized personnel. Each monitoring device shall be clearly visible and be protected from damage by equipment or vehicles.
11. The Discharger shall ensure that methane and other landfill gases are adequately vented, removed from landfill units, or otherwise controlled to prevent the danger of adverse health effects, nuisance conditions, degradation, or the impairment of the beneficial uses of surface water or groundwater due to migration through the unsaturated zone.
12. The Discharger shall maintain the depth of the fluid in the sump of each landfill unit at the minimum needed for efficient pump operation (the depth at which the pump turns on given the pump intake height and maximum pump cycle frequency).
13. The depth of fluid on the landfill liner shall not exceed **30 centimeters** (cm) [40 C.F.R. § 258.40(a)(2)]. This regulation is interpreted by the

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Central Valley Water Board to exclude the leachate sump. The Discharger shall **immediately** notify the Central Valley Water Board staff by telephone, and follow up in writing within **seven** days if monitoring reveals that the depth of fluid on any portion of the liner (excluding the sump) exceeds 30 cm (approximately 12 inches). The written notification shall include a timetable for remedial or corrective action necessary to achieve compliance with the leachate depth limitation.

14. Each LCRS shall be tested at least annually to demonstrate proper operation. The results of the tests shall be compared with earlier tests made under comparable conditions [Title 27, § 20340(d)].
15. The Discharger shall maintain a *Storm Water Pollution Prevention Plan and Monitoring Program and Reporting Requirements* in accordance with State Water Board Order No. 2014-0057-DWQ (Industrial General Permit) or most recent general industrial storm water permit), or retain all storm water on-site.
16. Internal site drainage from surface or subsurface sources shall not contact or percolate through wastes.
17. New MSW landfill units or lateral expansions of existing units shall not be sited in a “wetland” [as defined in 40 C.F.R. § 232.29(r)] unless there is no practical alternative; steps have been taken to assure no net loss of wetland; the landfill unit will not degrade the wetland; the unit will not jeopardize threatened or endangered species or produce adverse modification of a critical habitat or violate any requirement of the Marine Protection, Research, and Sanctuaries Act of 1972 [40 C.F.R. § 258.12].

F. Standard Construction Specifications

1. The Discharger shall submit for review and approval at least 90 days prior to proposed construction, design plans and specifications for new landfill modules that include the following:
 - a. Detailed construction drawings showing all required liner system components, the LCRS, leachate sump, unsaturated zone monitoring system, any proposed landfill gas monitoring and extraction points, and access to the LCRS for required annual testing.
 - b. A Construction Quality Assurance (CQA) Plan prepared by a California-registered civil engineer or certified engineering geologist, and that meets the requirements of Title 27, § 20324.

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- c. A geotechnical evaluation of the area soils, evaluating their use as the base layer or reference to the location of this information in the ROWD/JTD [Title 27, § 21750(f)(4)].
 - d. Information about the seismic design of the proposed new module (or reference to the location of this information in the ROWD/JTD) in accordance with Title 27, § 20370.
 - e. A revised water quality monitoring plan for groundwater detection monitoring (or information showing the existing plan is adequate) in accordance with Title 27, § 20415.
 - f. An Operation Plan (or reference to the location of this information in the ROWD/JTD) meeting the requirements of Title 27, §21760(b).
2. All containment structures shall be designed by, and construction shall be supervised by, a California registered civil engineer or a certified engineering geologist, and shall be certified by that individual as meeting the prescriptive standards, or approved engineered alternative design, in accordance with this Order prior to waste discharge.
3. The Discharger shall not proceed with construction until the construction plans, specifications, and all applicable construction quality assurance plans have been approved. Waste management units shall receive a final inspection and approval of the construction by Central Valley Water Board staff before use of the unit commences [Title 27, § 20310(e)].
4. Any report, or any amendment or revision of a report, that proposes a design or design change that might affect a waste management unit's containment features or monitoring systems shall be approved by a California registered civil engineer or a certified engineering geologist [Title 27, § 21710(d)].
5. Materials used in containment structures shall have appropriate chemical and physical properties to ensure that such structures do not fail to contain waste because of pressure gradients, physical contact with waste or leachate, chemical reactions with soil or rock, climatic conditions, the stress of installation, or because of the stress of daily operations [Title 27, § 20320(a)].
6. Waste management units and their respective containment structures shall be designed and constructed to limit, to the greatest extent possible, ponding, infiltration, inundation, erosion, slope failure, washout, and overtopping [Title 27, § 20365(a)].

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7. The Discharger shall design storm water conveyance systems for Class III units for a 100-year, 24-hour storm event, and shall design storm water conveyance systems for Class II units for a 1,000-year, 24-hour storm event [Title 27, § 21750(e)(3)].
8. All Class III landfill units shall be designed to withstand the maximum probable earthquake and Class II waste management units shall be designed to withstand maximum credible earthquake without damage to the foundation or to the structures that control leachate, or surface drainage, or erosion, or gas [Title 27, § 20370(a)].
9. The Discharger shall perform stability analyses that include components to demonstrate the integrity of the landfill foundation, final slopes, and containment systems under both static and dynamic conditions throughout the landfill's life including the closure period and post-closure maintenance period [Title 27, § 21750(f)(5)].
10. New waste management units and expansions of existing units shall not be located on a known Holocene fault [Title 27, § 20260(d)].
11. Liners shall be designed and constructed to contain the fluid, including landfill gas, waste, and leachate [Title 27, § 20330(a)].
12. Hydraulic conductivities shall be determined primarily by appropriate field test methods in accordance with accepted civil engineering practice. The results of laboratory tests with both water and leachate, and field tests with water, shall be compared to evaluate how the field permeabilities will be affected by leachate. It is acceptable for the Discharger to use appropriate compaction tests in conjunction with laboratory hydraulic conductivity tests to determine field permeabilities as long as a reasonable number of field hydraulic conductivity tests are also conducted [Title 27, § 20320(c)].
13. Hydraulic conductivities specified for containment structures other than the final cover shall be relative to the fluids (leachate) to be contained. Hydraulic conductivities for the final cover shall be relative to water [Title 27, § 20320(b)].
14. A test pad for each barrier layer and final cover shall be constructed in a manner duplicating the field construction. Test pad construction methods, with the designated equipment, shall be used to determine if the specified density/moisture-content/hydraulic conductivity relationships determined in the laboratory can be achieved in the field with the compaction equipment to be used and at the specified lift thickness [Title 27, § 20324(g)(1)(A)].

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15. Performance requirements for geosynthetic membranes shall include, but are not limited to, a need to limit infiltration of water, to the greatest extent possible; a need to control landfill gas emissions; mechanical compatibility with stresses caused by equipment traffic, and for final covers the result of differential settlement over time and durability throughout the post-closure maintenance period [Title 27, § 20324(i)(1)].
16. The Discharger shall ensure proper preparation of the subgrade for any liner system that includes a GCL so as to provide a smooth surface that is free from rocks, sticks, or other debris that could damage or otherwise limit the performance of the GCL.
17. The Discharger shall propose an electronic leak location survey of the top liner for any new landfill module in the construction quality assurance plan unless the Discharger demonstrates that a leak location survey is not needed.
18. Leachate collection and removal systems are required for Class II landfills and surface impoundments, MSW landfills, and for Class III landfills which have a liner or which accept sewage or water treatment sludge [Title 27, § 20340(a)].
19. All new landfill units or lateral expansions of existing units that require a LCRS shall have a blanket-type LCRS that covers the bottom of the unit and extends as far up the sides as possible. The LCRS shall be of sufficient strength and thickness to prevent collapse under the pressures exerted by overlying wastes, waste cover materials, and by any equipment used at the unit [Title 27, § 20340(e)].
20. The LCRS shall be designed, constructed, maintained, and operated to collect and remove twice the maximum anticipated daily volume of leachate from the waste management unit [Title 27, § 20340(b)].
21. Leachate collection and removal systems shall be designed and operated to function without clogging through the scheduled closure of the landfill unit and during the post-closure maintenance period.
22. The LCRS shall be designed to maintain the depth of fluid over any portion of the LCRS of no greater than 30 cm [40 C.F.R. § 258.40(a)(2)], excluding the leachate sump. The leachate sump, leachate removal pump, and pump controls shall be designed and set to maintain a fluid depth no greater than the minimum needed for efficient pump operation [Title 27, § 20340(c)].

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23. All construction of liner systems and final cover systems shall be performed in accordance with a Construction Quality Assurance Plan certified by a registered civil engineer or a certified engineering geologist [Title 27, § 20323].
24. The Construction Quality Assurance program shall be supervised by a registered civil engineer or a certified engineering geologist who shall be designated the CQA officer [Title 27, § 20324(b)(2)].
25. The Discharger shall ensure that a third party independent of both the Discharger and the construction contractor performs all of the construction quality assurance monitoring and testing during the construction of a liner system.
26. The Discharger shall notify Central Valley Water Board staff at least **14 days** prior to commencing field construction activities including construction of a new lined cell or module, construction of a final cover, or any other construction that requires Central Valley Water Board staff approval under this Order.
27. The Discharger shall submit for review and approval at least **60 days** prior to proposed discharge, final documentation required in Title 27 § 20324(d)(1)(C) following the completion of construction of a new lined landfill module. The report shall be certified by a registered civil engineer or a certified engineering geologist and include a statement that the liner system was constructed in accordance with the approved design plans and specifications, the CQA Plan, the requirements of the WDRs, and that it meets the performance goals of Title 27. The report shall contain sufficient information and test results to verify that construction was in accordance with the design plans and specifications, the construction quality assurance plan, and the performance goals of Title 27.
28. The Discharger shall not discharge waste onto a newly constructed liner system until the final documentation report has been reviewed and an acceptance letter has been received.
29. Prior to placement of waste in a new landfill unit, the Discharger shall monitor any pan lysimeter for the unit that has received enough rainfall to flood the LCRS sump. If liquid is detected in the pan lysimeter, the Discharger shall verify that the liquid is not from a leak in the primary liner system before waste can be accepted to the new module.

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G. Standard Closure and Post-Closure Specifications

1. The Discharger shall submit a final or partial final closure and post-closure maintenance plan at least **two years** prior to the anticipated date of closure [Title 27, § 21780(d)(1)].
2. The Discharger shall notify the Central Valley Water Board in writing that a landfill unit or portion of a unit is to be closed either at the same time that the California Department of Resources Recycling and Recovery (CalRecycle) is notified or **180 days** prior to beginning any final closure activities, whichever is sooner [Title 27, § 21710(c)(5)(A)]. 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 [Title 27, § 21710(c)(5)(C)].
3. Initiation of closure activities shall begin within **30 days** of final waste receipt, or within one year of receipt of most recent waste if additional capacity remains [40 C.F.R. § 258.60(f)].
4. Closure activities shall be completed within **180 days** of the beginning of closure activities unless an extension is granted by the Executive Officer [40 C.F.R. § 258.60(g)].
5. The Discharger shall carry out both mandatory closure and normal closure of a waste management unit or a portion of a unit in accordance with a closure and post-closure maintenance plan approved by the Central Valley Water Board [Title 27, § 20950(a)(1)] through the issuance of closure waste discharge requirements.
6. The Discharger shall notify the Central Valley Water Board that a preliminary closure and post-closure maintenance plan has been prepared and placed in the operating record by the date of initial receipt of waste at any new MSW landfill unit or lateral expansion of any existing unit [40 C.F.R. § 258.60(d)]. This notification shall be included in the cover letter transmitting the preliminary closure and post-closure maintenance plan.
7. In addition to the applicable provisions of Title 27, the preliminary closure and/or the post-closure maintenance plans for MSW landfill units shall include the following:
 - a. A description of the steps necessary to close all MSW landfill units at any point during their active life in accordance with the cover design requirements [40 C.F.R. § 258.60(c)];

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- b. An estimate of the largest area of the landfill unit(s) ever requiring a final cover at any time during the active life of the unit(s) [40 C.F.R. § 258.60(c)(2)];
 - c. An estimate of the maximum inventory of wastes ever on-site over the active life of the waste management facility [40 C.F.R. § 258.60(c)(3)]; and
 - d. A schedule for completing all activities necessary to satisfy the closure criteria in 40 C.F.R. § 258.60 [40 C.F.R. § 258.60(c)(4)].
8. The final closure and post-closure maintenance plan for the waste management unit shall include at least the following: an itemized cost analysis, closure schedule, any proposed final treatment procedures, map, changes to the unit description presented in the most recent ROWD, federal requirements for a MSW facility, land use of the closed unit, and a construction quality assurance plan [Title 27, § 21769(c) & (d)].
9. Closure of each waste management unit shall be under the direct supervision of a registered civil engineer or certified engineering geologist [Title 27, § 20950(b)].
10. The final cover of closed landfills shall be designed, graded, and maintained to prevent ponding and soil erosion due to high run-off velocities [Title 27, § 21090(b)(1)(A)].
11. The final grading design shall be designed and approved by a registered civil engineer or certified engineering geologist [Title 27, § 21090(b)(1)(C)].
12. All final cover designs shall include a minimum 1-foot thick erosion resistant layer [Title 27, § 21090(a)(3)(A)].
13. The Discharger shall close the landfill with minimum 15-foot wide benches every 50 vertical feet [Title 27, § 21090(a)].
14. Final cover slopes shall not be steeper than a horizontal to vertical ratio of one and three quarters to one and designs having any slopes steeper than a horizontal to vertical ratio of three to one, or having a geosynthetic component, shall have these aspects of their design specifically supported in the slope stability report required in Title 27, § 21750(f)(5) [Title 27, § 21090(a)].
15. For any portions of the final cover installed after July 18, 1997, for which the Central Valley Water Board has not approved a slope and foundation

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stability report on or before that date, the Discharger shall meet the requirements of Title 27, § 21750(f)(5) [Title 27, § 21090(a)(6)].

16. Areas with slopes greater than ten percent, surface drainage courses, and areas subject to erosion by wind or water shall be designed and constructed to prevent such erosion [Title 27, § 21090(b)(2)].
17. The Discharger shall design storm water conveyance systems for closed Class III units for a 100-year, 24-hour storm event, and shall design storm water conveyance systems for closed Class II units for a 1,000-year, 24-hour storm event [Title 27, § 21750(e)(3)].
18. Closed landfill units shall be provided with at least two permanent surveying monuments, installed by a licensed land surveyor or by a registered civil engineer, from which the location and elevation of all wastes, containment structures, and monitoring facilities can be determined throughout the post-closure maintenance period [Title 27, § 20950(d)].
19. Following closure of any MSW landfill units, the Discharger shall notify the Executive Officer that the deed to the landfill facility property, or some other instrument that is normally examined during a title search, has been recorded and a copy placed in the operating record. The notation on the deed shall in perpetuity notify any potential purchaser of the property that the land has been used as a landfill facility and that use of the land is restricted to the planned use described in the post-closure maintenance plan [Title 27, § 20515(a)(4) and §21170, and 40 C.F.R. § 258.60(i)].
20. Construction or repair of the final cover system's low-hydraulic conductivity layer is to be carried out in accordance with an approved construction quality assurance plan [Title 27, § 21090(b)(1)(E)].
21. The Discharger shall incorporate into the closure and post-closure maintenance plan a cover-integrity monitoring and maintenance program which includes at least the following: a periodic leak search, periodic identification of other problem areas, prompt cover repair, and vegetation maintenance [Title 27, § 21090(a)(4)].
22. The Discharger shall complete a final cover survey upon completion of closure activities for that portion of the landfill. The final cover surveys shall include an initial survey and map [Title 27, § 21090(e)(1). **Every five years**, the Discharger shall conduct a survey of the closed landfill cover and submit an iso-settlement map accurately depicting the estimated total change in elevation of each portion of the final cover's low-hydraulic-conductivity layer [Title 27, § 21090(e)(2)].

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23. Within **30 days** of completion of all closure activities, the Discharger shall certify that all closure activities were performed in accordance with the most recently approved final closure plan and CQA Plan, and in accordance with all applicable regulations. The Discharger shall also certify that closed landfill units shall be maintained in accordance with and approved post-closure maintenance plan [Title 27, § 21710(c)(6)].
24. Within **180 days** of completion of closure construction activities, the Discharger shall submit final documentation of closure, including the Certification of Closure. The closure documents shall include a final construction quality assurance report and any other documents necessary to support the certification [Title 27, § 21880].
25. The post-closure maintenance period shall continue until the Central Valley Water Board determines that wastes remaining in the landfill unit(s) no longer pose a threat to water quality [Title 27, § 20950(a)(1)].
26. The Discharger shall conduct a periodic leak search to monitor of the integrity of the final cover in accordance with the schedule in the approved final post- closure maintenance plan [Title 27, § 21090(a)(4)(A)].
27. The Discharger shall periodically inspect and identify problems with the final cover including areas that require replanting, erosion, areas lacking free drainage, areas damaged by equipment operations, and localized areas identified in the required five-year iso-settlement survey [Title 27, § 21090(a)(4)(B)].
28. The Discharger shall repair the cover promptly in accordance with a cover repair plan to be included in the final post-closure maintenance plan [Title 27, § 21090(a)(4)(C)].
29. Throughout the post-closure maintenance period, the Discharger shall maintain the structural integrity and effectiveness of all containment structures, maintain the final cover as necessary to correct the effects of settlement and other adverse factors, continue to operate the LCRS as long as leachate is generated and detected, maintain the monitoring systems, prevent erosion and related damage of the final cover due to drainage, and protect and maintain surveyed monuments [Title 27, § 21090(c)].
30. Post-closure maintenance shall be conducted for a minimum period of 30 years or until the waste no longer poses a threat to environmental quality, whichever is greater [Title 27, § 21180(a) and Title 27, § 21900(a)].

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H. Standard Financial Assurance Provisions

1. The Discharger shall establish an irrevocable fund for closure and post-closure maintenance to ensure closure and post-closure maintenance of each classified unit in accordance with an approved closure and post-closure maintenance plan [Title 27, § 20950(f) and § 22207(a)].
2. The Discharger shall obtain and maintain assurances of financial responsibility for initiating and completing corrective action for all known and reasonably foreseeable releases from the waste management unit [Title 27, §20380(b), § 22221, and § 22222].

I. Standard Monitoring Specifications

1. The water quality monitoring program shall include appropriate and consistent sampling and analytical procedures and methods designed to ensure that monitoring results provide a reliable indication of water quality at all monitoring points and background monitoring points [Title 27, § 20415(e)(4) and 40 C.F.R. § 258.53(b)].
2. All monitoring systems shall be designed and certified by a registered geologist or a registered civil engineer [Title 27, § 20415(e)(1)].
3. All monitoring wells shall be cased and constructed in a manner that maintains the integrity of the monitoring well bore hole and prevents the bore hole from acting as a conduit for contaminant transport [Title 27, § 20415(b)(4)(A)].
4. All sample chemical analyses of any material shall be performed by a laboratory certified by the California Department of Health Services [Wat. Code, § 13176(a)].
5. A Detection Monitoring Program for a new landfill facility shall be installed, operational, and one year of monitoring data collected from background monitoring points prior to the discharge of wastes [Title 27, § 20415(e)(6)].
6. Background for water samples or soil-pore gas samples shall be represented by the data from all samples taken from applicable background monitoring points during that reporting period (at least one sample from each background monitoring point).
7. The Discharger shall submit for approval, establish, and maintain an approved Sample Collection and Analysis Plan. The Sample Collection and Analysis Plan shall at a minimum include:

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- 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.

If required by the Executive Officer, the Discharger shall modify the Sample Collection and Analysis Plan to conform with this Order.

8. For any given monitored medium, the samples taken from all monitoring points and background monitoring points to satisfy the data analysis requirements for a given reporting period shall all be taken **within a span not to exceed 30 days**, unless a longer time period is approved, and shall be taken in a manner that ensures sample independence to the greatest extent feasible. Specific methods of collection and analysis must be identified. Sample collection, storage, and analysis shall be performed according to the most recent version of USEPA Methods, such as the latest editions, as applicable, of: (1) Methods for the Analysis of Organics in Water and Wastewater (USEPA 600 Series), (2) Test Methods for Evaluating Solid Waste (SW-846, latest edition), and (3) Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020), and in accordance with the approved Sample Collection and Analysis Plan. Appropriate sample preparation techniques shall be used to minimize matrix interferences.
9. If methods other than USEPA-approved methods or Standard Methods are used, or there is a proposed alternant USEPA method than the one listed in the MRP, the proposed methodology shall be submitted for review and approval prior to use, including information showing its equivalence to the required method.
10. The **methods of analysis and the detection limits** used must be appropriate for the expected concentrations. For the monitoring of any constituent or parameter that is found in concentrations which produce

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more than 90% non-numerical determinations (i.e., “trace” or “ND”) in data from background monitoring points for that medium, the analytical method having the lowest MDL shall be selected from among those methods which would provide valid results in light of any matrix effects or interferences.

11. The laboratory reporting limit (RL) for all reported monitoring data shall be set no greater than the practical quantitation limit (PQL).
12. **“Trace” results** - results falling between the MDL and the PQL - shall be reported as such, and shall be accompanied both by the estimated MDL and PQL values for that analytical run.
13. Laboratory data shall not be altered or revised by the Discharger. If the Discharger observes potential lab errors, it shall identify the issue in the monitoring report and shall describe steps that will be taken to prevent similar errors in the future.
14. **MDLs and PQLs** shall be derived by the laboratory for each analytical procedure, according to State of California laboratory accreditation procedures. These MDLs and PQLs shall reflect the detection and quantitation capabilities of the specific analytical procedure and equipment used by the lab, rather than simply being quoted from USEPA analytical method manuals. In relatively interference-free water, laboratory-derived MDLs and PQLs are expected to closely agree with published USEPA MDLs and PQLs. MDLs and PQLs shall be reported.
15. If the laboratory suspects that, due to a change in matrix or other effects, the true detection limit or quantitation limit for a particular analytical run differs significantly from the laboratory-derived MDL/PQL values, the results shall be flagged in the laboratory report accordingly, along with estimates of the detection limit and quantitation limit actually achieved. **The MDL shall always be calculated such that it represents the lowest achievable concentration associated with a 99% reliability of a nonzero result.** The PQL shall always be calculated such that it represents the lowest constituent concentration at which a numerical value can be assigned with reasonable certainty that it represents the constituent’s actual concentration in the sample. Normally, PQLs should be set equal to the concentration of the lowest standard used to calibrate the analytical procedure.
16. All **QA/QC** data shall be reported, along with the sample results to which they apply, including the method, equipment, analytical detection and quantitation limits, the percent recovery, an explanation for any recovery that falls outside the QC limits, the results of equipment and method

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blanks, the results of spiked and surrogate samples, the frequency of quality control analysis, and the name and signature of a responsible person from the laboratory. **Sample results shall be reported unadjusted for blank results or spike recoveries.** In cases where contaminants are detected in QA/QC samples (i.e., field, trip, or lab blanks), the accompanying sample results shall be appropriately flagged, but the analytical results shall not be adjusted.

17. Unknown chromatographic peaks shall be reported, flagged, and tracked for potential comparison to subsequent unknown peaks that may be observed in future sampling events. Identification of unknown chromatographic peaks that recur in subsequent sampling events may be required.
18. The sampling interval of each monitoring well shall be appropriately screened and fitted with an appropriate filter pack to enable collection of representative groundwater samples [Title 27, § 20415(b)(4)(B)]. Groundwater samples shall not be field-filtered prior to laboratory analysis [40 C.F.R. § 258.53(b)]. Groundwater samples needing filtering (e.g., samples to be analyzed for dissolved metals) shall be filtered by the laboratory prior to analysis.
19. Groundwater elevations shall be measured in each well immediately prior to purging, each time groundwater is sampled. The owner or operator shall determine the rate and direction of groundwater flow each time groundwater is sampled. Groundwater elevations in wells which monitor the same waste management area shall be measured within a period of time short enough to avoid temporal variations in groundwater flow which could preclude accurate determination of groundwater flow rate and direction [40 C.F.R. § 258.53(d)].
20. Monitoring wells, piezometers, and other measurement, sampling, and analytical devices must be operated and maintained so that they perform to design specifications throughout the life of the monitoring program [40 C.F.R. § 258.51(c)(2)]. Monitoring devices that cannot be operated and maintained to perform to design specifications shall be replaced after review and approval of a report (i.e., work plan) for the proposed replacement devices.
21. All borings are to be logged during drilling under the direct supervision of a registered geologist or registered civil engineer with expertise in stratigraphic well logging [Title 27, § 20415(e)(2)].
22. Soils are to be described according to the Unified Soil Classification System [Title 27, § 20415(e)(2)(A)]. Rock is to be described in a manner

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appropriate for the purpose of the investigation [Title 27, § 20415(e)(2)(B)].

23. The Discharger shall submit a work plan for review and approval at least **60 days** prior to installation or abandonment of groundwater monitoring wells.
24. The Discharger shall provide Central Valley Water Board staff a minimum of **one-week** notification prior to commencing any field activities related to the installation or abandonment of monitoring devices.
25. The water quality protection standard shall consist of the constituents of concern (COC), concentration limits, and the point of compliance. The water quality protection standard shall apply during the active life of the waste management unit, closure period, post-closure maintenance period, and any compliance period under Title 27, § 20410 [Title 27, § 20390].
26. The point of compliance at which the water quality protection standard applies is a vertical surface located at the hydraulically downgradient limit of the waste management unit that extends through the uppermost aquifer underlying the unit [Title 27, § 20405].
27. The compliance period is the minimum period of time during which the Discharger shall conduct a water quality monitoring program and is the number of years equal to the active life of the waste management unit plus the closure period [Title 27, § 20410(a)].
28. The groundwater monitoring system shall include a sufficient number of monitoring points, installed at appropriate locations, to yield groundwater samples from the uppermost aquifer that represent the quality of groundwater that has not been affected by a release from the waste management unit [Title 27, § 20415(b)(1)(A)].
29. The Detection Monitoring Program shall include a sufficient number of monitoring points, installed at appropriate locations and depths to yield groundwater samples from the uppermost aquifer that represent the quality of groundwater passing the point of compliance to allow the detection of a release from the waste management unit [Title 27, § 20415(b)(1)(B)1.].
30. Additional monitoring points shall be added as necessary to provide the best assurance of the **earliest possible detection** of a release from the waste management unit [Title 27, § 20415(b)(1)(B)2.].

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31. The Detection Monitoring Program shall also include a sufficient number of monitoring points installed at appropriate depths and locations to yield groundwater samples from other aquifers or perched zones not already monitored to provide the earliest possible detection of a release from the waste management unit [Title 27, § 20415(b)(1)(B)3. and 4., and §20420(b)].
32. A surface water monitoring system shall be established to monitor each surface water body that could be affected by a release from the waste management unit [Title 27, § 20415(c)].
33. An unsaturated zone monitoring system shall be established for each waste management unit [Title 27, § 20415(d)].
34. The Discharger shall notify Central Valley Water Board staff within **seven days** if fluid is detected in a previously dry LCRS, unsaturated zone monitoring system, or if a progressive increase is detected in the volume of fluid in a LCRS [Title 27, § 21710(c)(3)].
35. Driller's logs for all monitoring wells shall to be submitted to the Central Valley Water Board and the Department of Water Resources [Wat. Code, § 13751 and Title 27, § 20415(b)(3)].
36. Groundwater elevation, temperature, electrical conductivity, turbidity, and pH are to be accurately measured at each well each time groundwater is sampled [Title 27, § 21415(e)(13)].
37. The groundwater flow rate and direction in the uppermost aquifer and in any zones of perched water and in any additional portions of the zone of saturation being monitored shall be determined at least quarterly [Title 27, § 20415(e)(15)].
38. The Discharger shall graph all analytical data from each monitoring point and background monitoring point and shall submit the graphs to the Central Valley Water Board annually [Title 27, § 20415(e)(14)].
39. For each waste management unit, the Discharger shall collect all data necessary for selecting appropriate data analysis methods for establishing background values for each constituent of concern and for each monitoring parameter [Title 27, § 20420(c)]. The Discharger shall propose a data analysis method that includes a detailed description of the criteria to be used for determining "measurably significant" (as defined in Title 27, § 20164) evidence of a release from the waste management unit and determining compliance with the water quality protection standard [Title 27, § 20415(e)(6) and (7)].

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40. For statistical analysis of data, the Discharger shall use one of the methods described in Title 27, § 20415(e)(8)(A)-(E). A non-statistical data analysis method can be used if the method can achieve the goal of the particular monitoring program at least as well as the most appropriate statistical method [Title 27, § 20415(e)(8)]. The Discharger shall use a statistical or nonstatistical data analysis method that complies with Title 27, § 20415(e)(7, 8, 9, and 10), to compare the concentration of each constituent of concern or monitoring parameter with its respective background concentration to determine whether there has been a measurably significant evidence of a release from the waste management unit. For any given monitoring point at which a given constituent has already exhibited a measurably significant indication of a release at that monitoring point, the Discharger may propose to monitor the constituent, at that well, using a concentration-versus-time plot.
41. The Discharger may propose an alternate statistical method [to the methods listed under Title 27, § 20415(e)(8)(A-D)] in accordance with Title 27, § 20415(e)(8)(E), for review and approval.
42. The statistical method shall account for data below the practical quantitation limit (PQL) with one or more statistical procedures that are protective of human health and the environment. Any PQL validated pursuant to Title 27, § 20415(e)(7) that is used in the statistical method shall be the **lowest concentration (or value) that can be reliably achieved** within limits of precision and accuracy specified in the WDRs or an approved Sample Collection and Analysis Plan for routine laboratory operating conditions that are available to the facility. The Discharger's technical report (Sample Collection and Analysis Plan and/or Water Quality Protection Standard Report), pursuant to Title 27, § 20415(e)(7), shall consider the PQLs listed in Appendix IX to Chapter 14 of Division 4.5 of Title 22, CCR, for guidance when specifying limits of precision and accuracy. For any given constituent monitored at a background or downgradient monitoring point, an indication that falls between the MDL and the PQL for that constituent (hereinafter called a "trace" detection) shall be identified and used in appropriate statistical or non-statistical tests. Nevertheless, for a statistical method that is compatible with the proportion of censored data (trace and ND indications) in the data set, the Discharger can use the laboratory's concentration estimates in the trace range (if available) for statistical analysis, in order to increase the statistical power by decreasing the number of "ties".
43. The water quality protection standard for organic compounds which are not naturally occurring and not detected in background groundwater

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samples shall be taken as the detection limit of the analytical method used (e.g., USEPA methods 8260 and 8270).

44. Alternate statistical procedures may be used for determining the significance of analytical results for common laboratory contaminants (i.e., methylene chloride, acetone, diethylhexyl phthalate, and di-n-octyl phthalate) if part of an approved water quality protection standard. Nevertheless, analytical results involving detection of these analytes in any background or downgradient sample shall be reported and flagged for easy reference by Central Valley Water Board staff.
45. **Confirmation of Measurably Significant Evidence of a Release.** Whenever a constituent is detected at a detection monitoring point at a concentration that exceeds the concentration limit from the water quality protection standard, the Discharger shall conduct verification sampling to confirm if the exceedance is due to a release or if it is a false-positive (unless previous monitoring has already confirmed a release for that constituent at that monitoring point). An exceedance of the concentration limit from the water quality protection standard is considered measurably significant evidence of a release that must be either confirmed or denied. There are two separate verification testing procedures:
 - a. Standard Monitoring Specification I.46 provides the procedure for analytes that are detected in less than 10% of the background samples such as non- naturally occurring constituents like volatile organic compounds; and
 - b. Standard Monitoring Specification I.47 provides the procedure for analytes that are detected in 10% or greater of the background samples such as naturally occurring constituents like chloride.
46. **Verification Procedure for Analytes Detected in Less than 10% of Background Samples.** The Discharger shall use the following non-statistical method for all analytes that are detected in less than 10% of the background samples. The non-statistical method shall be implemented as follows:
 - a. **Initial Determination of Measurably Significant Evidence of a Release.** Identify each analyte in the current detection monitoring point sample that exceeds either its respective MDL or PQL, and for which a release has not been previously confirmed. The Discharger shall conclude that the exceedance provides a preliminary indication of a release or a change in the nature or extent of the release, at that monitoring point, if **either**:

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- i. The data contains two or more analytes that equal or exceed their respective MDLs; or
 - ii. The data contains one or more analyte that equals or exceeds its PQL.
 - b. Discrete Retest** [Title 27, § 20415(e)(8)(E) and § 20420(j)(1-3)]:
 - i. In the event that the Discharger or Central Valley Water Board staff concludes (pursuant to paragraph I.46.a., above) that there is a preliminary indication of a release, then the Discharger shall immediately notify Central Valley Water Board staff by phone or e-mail and, within 30 days of such indication, shall collect two new (retest) samples from the monitoring point where the release is preliminarily indicated and analyze them for the constituents that caused the need for the retest.
 - ii. **Confirmation of a Release.** As soon as the retest data are available, the Discharger shall conclude that measurably significant evidence of a release is confirmed if (not including the original sample) two or more analytes equal or exceed their respective MDLs or if one or more analyte equals or exceeds its PQL. The Discharger shall then:
 - (A) Immediately** verbally notify the Central Valley Water Board whether or not the retest confirmed measurably significant evidence of a release for the analyte at the monitoring point, and follow up with written notification submitted by certified mail within seven days of the verbal notification; and
 - (B) Carry out** the requirements of Section J, **RESPONSE TO A RELEASE** if a release has been confirmed.
 - (C) Add** any five-year analyte that is confirmed per this method to the monitoring parameter list such that it is monitored during each regular monitoring event.
47. **Verification Procedure for Analytes Detected in 10% or Greater of the Background Samples.** The Discharger shall use either a statistical or non-statistical method pursuant to Title 27, § 20415(e)(8)(E) for all

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analytes that are detected in 10% or greater of the background samples. The Discharger shall use one of the statistical methods required in Title 27, § 20415(e)(8)(E) unless another method has been proposed by the Discharger in a Water Quality Protection Standard Report (or equivalent report) and approved by the Central Valley Water Board in a Monitoring and Reporting Program pursuant to Title 27, § 20415(e)(8)(A-D)] or §20415(e)(8)(E). The method shall be implemented as follows:

- a. **Initial Determination of Measurably Significant Evidence of a Release.** The Discharger shall compare the value reported by the laboratory for each analyte to the statistically-derived concentration limit from the most recent report (Annual Monitoring Report or Water Quality Protection Standard Report) that uses the approved statistical procedure. If the value exceeds the concentration limit for that constituent, the Discharger shall conclude that there is measurably significant evidence of a release [Title 27, § 20420(i)].
- b. **Retest Method** [Title 27, § 20415(e)(8)(E) and § 20420(j)(1-3)].
 - i. In the event that the Discharger or Central Valley Water Board staff concludes (pursuant to paragraph 1.47.a., above) that there is a preliminary indication of a release, then the Discharger shall immediately notify Central Valley Water Board staff by phone or e-mail and, within 30 days [Title 27, § 20415(e)(3)] of such indication, the Discharger shall implement a verification procedure/retest option, in accordance with Title 27, §§ 20415(e)(8)(E) and 20420(j)(2). The verification procedure shall include either a single “composite” retest (i.e., a statistical analysis that augments and reanalyzes the data from the monitoring point that indicated a release) or shall consist of 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) [Title 27, § 20415(e)(8)(E)]. The Discharger may use an alternate method previously approved by the Central Valley Water Board and included in the Monitoring and Reporting Program. The verification procedure shall comply with the requirements of Title 27, § 20415(e)(8)(E) in addition to the performance standards of Title 27, § 20415(e)(9). 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

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need for the retest. For any indicated monitoring parameter or constituent of concern, 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.

- ii. **Confirmation of a Release.** As soon as the retest data are available, the Discharger shall evaluate the results pursuant to paragraph I.47.b.1, above and shall:
 - (A) **Immediately** verbally notify the Central Valley Water Board whether or not the retest confirmed measurably significant evidence of a release for the analyte at the monitoring point, and follow up with written notification submitted by certified mail within seven days of the verbal notification; and
 - (B) Carry out the requirements of Section J, **RESPONSE TO A RELEASE** if a release has been confirmed.
 - (C) Add any five-year analyte that is confirmed per this method to the monitoring parameter list such that it is monitored during each regular monitoring event.

- 48. **Physical Evidence of a Release.** If the Discharger determines that there is a significant physical evidence of a release, the Discharger shall immediately verbally notify Central Valley Water Board staff and provide written notification by certified mail within 7 days of such determination, and within 90 days shall submit an amended report of waste discharge to establish an Evaluation Monitoring Program [Title 27, § 20385(a)(3) and § 20420(l)(1) & (2)].

J. Response to Release

- 1. **Measurably Significant Evidence of a Release Has Been Confirmed.** If the Discharger has confirmed that there is measurably significant evidence of a release from a waste management unit pursuant to Standard Monitoring Specification I.46 or I.47, then the Discharger shall:
 - a. **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 constituent of

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concern scan does not involve statistical testing, the Discharger will need to collect and analyze only a single water sample from each monitoring point in the affected medium [Title 27, § 20420(k)(1)].

- b. Within 14 days** of confirming measurably significant evidence of a release, the Discharger shall (for releases from MSW landfill units) notify all persons who own the land or reside on the land that directly overlies any portion of the plume of contamination if contaminants have migrated off-site if indicated by sampling of detection monitoring wells [40 C.F.R. § 258.55(g)(1)(iii)].
- c. Within 90 days** of confirming measurably significant evidence of a release, the Discharger shall submit an amended report of waste discharge to establish an Evaluation Monitoring Program meeting the requirements of Title 27, §§ 20420(k)(5)(A-D), including but not limited to the results of sampling pursuant to paragraph J.1.a, above. 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 [Title 27, § 20420(k)(5) and § 20425(b)]. For releases from MSW landfill units, the Evaluation Monitoring Program shall also include any additional proposals necessary to comply with 40 C.F.R. § 258.55, particularly the additional monitoring well required by 40 C.F.R. § 258.55(g)(1)(ii).
- d. Within 180 days** of confirming measurably significant evidence of a release, the Discharger shall submit to the Central Valley Water Board an initial engineering feasibility study for a Corrective Action Program necessary to meet the requirements of Title 27, § 20430. At a minimum, the initial engineering feasibility study shall contain a detailed description of the corrective action measures that could be taken to achieve background concentrations for all constituents of concern [Title 27, § 20420(k)(6)].
- e.** If the Discharger confirms that there is measurably significant evidence of a release from the waste management unit at any monitoring point, the Discharger may attempt to demonstrate that a source other than the waste management unit caused the evidence of a release or that the evidence is an artifact caused by an error in sampling, analysis, or statistical evaluation or by natural variation in groundwater, surface water, or the unsaturated zone. The Discharger may make a demonstration pursuant to Title 27, § 20420(k)(7) in addition to or in lieu of submitting both an amended

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report of waste discharge or an engineering feasibility study; however, the Discharger is not relieved of the requirements and due dates of Title 27, §§ 20420(k)(6) & (7) unless Central Valley Water Board staff agree that the demonstration successfully shows that a source other than the waste management unit caused the evidence of a release or that the evidence resulted from error in sampling, analysis, or statistical evaluation or from natural variation in groundwater, surface water, or the unsaturated zone. In order to make this demonstration, the Discharger shall notify the Central Valley Water Board by certified mail of the intent to make the demonstration **within seven days** of determining measurably significant evidence of a release, and shall submit a report **within 90 days** of determining measurably significant evidence of a release [Title 27, § 20420(k)(7)].

- f. **Within 90 days** of the date that the Evaluation Monitoring Program from paragraph J.1.c is approved (the date is it established), the Discharger shall complete and submit the following:
- i. **Results and Assessment for the Evaluation Monitoring Program.** A report with the results and assessment based on the approved Evaluation Monitoring Program [Title 27, § 20425(b)].
 - ii. **Updated Engineering Feasibility Study.** 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, § 20425(e) [Title 27, § 20425(c)].
 - iii. **Amended ROWD for a Corrective Action Program.** An amended report of waste discharge to establish a Corrective Action Program meeting the requirements of Title 27, § 20430 based on the data collected to delineate the release and based on the updated engineering feasibility study [Title 27, § 20425(d)].
- g. 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)].

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K. General Provisions

1. In the event the Discharger does not comply or will be unable to comply with any prohibition or limitation of this Order for any reason, the Discharger shall notify the appropriate Central Valley Water Board office by telephone as soon as it or its agents have knowledge of such noncompliance or potential for noncompliance, and shall confirm this notification in writing **within two weeks**. The written notification shall state the nature, time, and cause of noncompliance, and shall describe the measures being taken to prevent recurrences and shall include a timetable for corrective actions.
2. All reports and transmittal letters shall be signed by persons identified below:
 - a. For a corporation: by a principal executive officer of at least the level of senior vice-president.
 - b. For a partnership or sole proprietorship: by a general partner or the proprietor.
 - c. For a municipality, state, federal or other public agency: by either a principal executive officer or ranking elected or appointed official.
 - d. A duly authorized representative of a person designated in a, b or c above if:
 - i. The authorization is made in writing by a person described in a, b, or c of this provision;
 - ii. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a Unit, superintendent, or position of equivalent responsibility (a duly authorized representative may thus be either a named individual or any individual occupying a named position); and
 - iii. The written authorization is submitted to the Central Valley Water Board.
 - e. Any person signing a document under this Section shall make the following certification:

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I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

3. The Discharger shall take all reasonable steps to minimize any adverse impact to the waters of the State resulting from noncompliance with this Order. Such steps shall include accelerated or additional monitoring as necessary to determine the nature, extent, and impact of the noncompliance.
4. The owner of the waste management facility shall have the continuing responsibility to assure protection of waters of the state from discharged wastes and from gases and leachate generated by discharged waste during the active life, closure, and post-closure maintenance period of the waste management units and during subsequent use of the property for other purposes.
5. The fact that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with this Order shall not be regarded as a defense for the Discharger's violations of this Order.
6. The Discharger shall notify the Central Valley Water Board of a material change in; the types, quantity, or concentrations of wastes discharged; site operations and features; or proposed closure procedures, including changes in cost estimates. This notification shall be given a reasonable time before the changes are made or become effective. No changes shall be made without Central Valley Water Board approval following authorization for closure pursuant to the site Notification of Closure [Title 27, § 21710(a)(4)].
7. The Discharger shall maintain legible records of the volume and type of each waste discharged at each waste management unit or portion of a unit, and the manner and location of discharge. Such records shall be maintained by the Discharger until the beginning of the post-closure maintenance period. These records shall be on forms approved by the State Water Board or Central Valley Water Board and shall be maintained at the waste management facility until the beginning of the post-closure maintenance period. These records shall be available for review by

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representatives of the State Water Board or Central Valley 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 Central Valley Water Board [Title 27, § 21720(f)].

8. In the event of any change in landowner or the operator of the waste management facility, the Discharger shall notify the succeeding owner or operator in writing of the existence of this Order. A copy of that notification shall be sent to the Central Valley Water Board.
9. In the event of any change of ownership or responsibility for construction, operation, closure, or post-closure maintenance of the waste discharge facilities described in this Order, the Discharger shall notify the Central Valley Water Board prior to the effective date of the change and shall include a statement by the new Discharger that construction, operation, closure, or post-closure maintenance will be in compliance with this Order and any revisions thereof [Title 27, § 21710(c)(1)].
10. To assume ownership or operation under this Order, the succeeding owner or operator must apply in writing to the Central Valley Water Board requesting transfer of the Order within **14 days** of assuming ownership or operation of this facility. The request must contain the requesting entity's full legal name, the State of incorporation if a corporation, the name and address and telephone number of the persons responsible for contact with the Central Valley Water Board, and a statement. The statement shall comply with the signatory requirements contained in General Provision K.2 and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the Water Code. Transfer of this Order shall be approved or disapproved by the Central Valley Water Board.

L. Storm Water Provisions

1. New and existing Class III landfills shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return period [Title 27, § 20260(c)].
2. New and existing Class II landfills shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return period [Title 27, § 20250(c)].
3. The Discharger shall design storm water conveyance systems for Class III units for a 100-year, 24-hour storm event, and shall design storm water

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conveyance systems for Class II units for a 1,000-year, 24-hour storm event [Title 27, § 21750(e)(3)].

4. MSW landfills located in a 100-year floodplain shall demonstrate that the landfill unit will not restrict the flow of the 100-year flood, reduce the temporary water storage capacity of the floodplain, or result in washout of solid waste so as to pose a hazard to human health or the environment [40 C.F.R. § 258.11(a)].
5. Waste management units and their respective containment structures shall be designed and constructed to limit, to the greatest extent possible, ponding, infiltration, inundation, erosion, slope failure, washout, and overtopping under the precipitation conditions for the unit [Title 27, § 20365(a)].
6. Precipitation on landfills or waste piles which is not diverted by covers or drainage control systems shall be collected and managed through the LCRS, which shall be designed and constructed to accommodate the precipitation conditions for each class unit [Title 27, § 20365(b)].
7. Diversion and drainage facilities shall be designed, constructed, and maintained to [Title 27, § 20365(c)]:
 - 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;
 - 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;

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- 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 facility; and
 - 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.
- 8. 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 [Title 27, § 20365(d)].
- 9. Surface and subsurface drainage from outside of a waste management unit shall be diverted from the unit [Title 27, § 20365(e)].
- 10. Cover materials shall be graded 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 [Title 27, § 20365(f)].

Any drainage layer in the final cover shall be designed and constructed to intersect with the final drainage system for the waste management unit in a manner promoting free drainage from all portions of the drainage layer [Title 27, §20365(f)]. [paste SPRRs here]

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

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FOR
AMADOR COUNTY
BUENA VISTA LANDFILL
Amador County

INFORMATION SHEET

The Buena Vista Landfill (Facility) is a closed municipal solid waste landfill owned and operated by Amador County (Discharger). The Facility is subject to Corrective Action. The proposed WDRs, in part, would authorize 1.) reconstruction of a final cover; and 2.) expansion of a surface impoundment, both consistent with the performance goals of the Title 27 prescriptive standards and in support of Corrective Action.

The Facility is situated on a 262-acres of which 25.4 acres relate to four waste management units (WMUs). The Phase I landfill unit (WMU I) is unlined and classified as a Class III WMU in accordance with Title 27. The Phase II and III landfill units and the surface impoundment are classified as Class II WMUs in accordance with Title 27. Other on-site facilities include: a groundwater extraction trench, LFG control system, a household hazardous waste (HHW) facility, a used oil collection facility, active material recovery facility Western Amador Recycling Facility (WARF), and a closed former septage treatment facility. The Amador County Sheriff Department uses the closed former septage treatment facility for vehicle storage. ACES Waste Services, Inc. operates the WARF and HHW facility under a separate Solid Waste Facility Permit (SWFP).

Site geology conforms to the upper and lower units of the Lone Formation and consists of claystone, siltstone, sandstone and small lignite beds exhibiting sulfides and high sulfur content. Due to the dominant Lone Formation hard rock and semiconsolidated fine grained sediment setting, the Buena Vista area is considered a marginal boundary area of the California Department of Water Resources designated alluvial basins to the west. The documented hydrogeologic conceptual model for this region is dominated by the presence of the Lone Formation that restricts flow laterally and vertically with limited hydraulic connection (slow percolation) and is considered a nonaquifer setting. The measured hydraulic conductivity of the native soils underlying the landfill units ranges between 2×10^{-8} and 1.9×10^{-3} centimeters per second (cm/s). No changes are proposed to the groundwater, unsaturated zone, or landfill gas monitoring networks.

The Facility accepted municipal solid wastes from 1973 to 2009. Groundwater impacts from WMU I leachate were first discovered in 1987. Volatile Organic Compounds (VOCs) and inorganic compounds were detected approximately 600-feet downgradient of the landfill. The Discharger utilizes four corrective action measures at the Facility to control and reduce the release of VOCs from WMU I to groundwater: 1.) In 1992 the Discharger installed a groundwater extraction trench downgradient of the northwestern portion of WMU I; 2.) In 2003, the Discharger installed a dual leachate and landfill gas

(LFG) extraction system after determining that LFG was also contributing to the groundwater impacts; 3.) Operation and maintenance of leachate collection trenches in WMU I to remove leachate; and 4.) Maintenance of the WMU I final cover to limit infiltration into the landfill. The tentative WDRs requires the Discharger to continue utilization of these corrective action measures at the Facility.

The Discharger conveys liquids collected via the WMU I corrective action measures (i.e., leachate and condensate) to the Class II surface impoundment. The Discharger also conveys fluids collected in the WMU II/III leachate collection and removal system to the Class II surface impoundment. The Discharger does not anticipate closure of the surface impoundment until the generation of leachate and landfill gas condensate ceases, discharges to the surface impoundment become unnecessary, and both post-closure maintenance and corrective action are complete.

The Discharger seeks to solicit bids for final cover reconstruction and surface impoundment expansion in the Spring of 2022 with the goal of commencing construction in Summer 2022.

WMU I Final Cover Replacement

In 1995 the Discharger constructed the existing WMU I final cover as an approved “engineering alternative” to the prescriptive standards of Title 27 (1995 final cover). The existing 1995 final cover has a history of significant desiccation cracks many of which penetrated the low-hydraulic-conductivity layer. The desiccation cracks indicate infiltration through the existing 1995 final cover could be contributing to continued seeps observed on the existing WMU I 1995 final cover and leachate observed at the dual leachate and LFG extraction wells. The existing engineered alternative WMU I final cover is not consistent with the performance goals of the prescriptive standard and will not afford at least equivalent water quality protections. As such, the Discharger proposes to reconstruct the WMU I final cover to meet the performance standards of Title 27.

Class II Surface Impoundment Expansion

During the 2016-2017 wet season, the Class II surface impoundment reached capacity and the Discharger shutdown the groundwater extraction system and trucked water offsite for disposal. In WDRs Order No. R5-2018-0020, the Regional Board required the Discharger to prepare an updated water balance model which considers specific factors to determine when the Class II surface impoundment will reach capacity. The Discharger’s water balance considered the factors and the 1,000-year, 24-hour design storm and concluded containment of the max-year precipitation event requires an

additional approximate 931,900 million gallons (2.86 ac-ft) of storage capacity. The additional storage capacity corresponds to a need to raise the Class II surface impoundment perimeter berm elevation approximately 2.7 feet.

The Discharger proposes increasing the Class II surface impoundment berm height by at least 2.7 feet and adding a new 60-mil HDPE geomembrane liner and LCRS to augment the existing liner and LCRS. The anticipated capacity of the reconstructed surface impoundment is approximately 2.6 million gallons (8.11 acre-feet). The Discharger's proposed design, technical specifications, and CQA Plan include provisions for installation of a wire grid beneath the new liner and above the existing liner (i.e., between the old and new liners) for use during Electrical Leak Location Surveys of the new 60-mil HDPE geomembrane liner. These tentative WDRs would authorize the Discharger's proposed class II surface impoundment expansion design, construction specifications, and construction quality assurance and quality control plan.

Requirements For Authorization of Final Construction Details

Central Valley Board staff are conducting engineering and geology technical review of the details of the Discharger's proposed drawings, construction specifications, Construction Quality Assurance and Quality Control (CQA) (collectively "Proposed Construction Details") documents included in the tentative WDRS as **Attachment D** and **Attachment E** for informational purposes only. In conducting the technical review of the Proposed Construction Details, Central Valley Board staff are providing feedback to the Discharger regarding the technical review in order for the Discharger to prepare Final Construction Details. The Tentative WDRs would require written Central Valley Board Executive Officer authorization of Final Construction Details prior to the Discharger commencing construction related activities.

The Tentative WDRS also require the Discharger to submit a workplan for Central Valley Water Board Executive Officer approval which details proposed method for containing, liquid wastes temporarily stored and hauled off-site for disposal which would otherwise be discharged to the Class II surface impoundment, but which cannot be discharged during construction activities.