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**TENTATIVE MONITORING AND REPORTING PROGRAM
R5-2021-XXXX**



ORDER INFORMATION

Order Type(s):	Monitoring and Reporting Program (MRP)
Status:	TENTATIVE
Program:	Title 27 Discharges to Land
Region 5 Office:	Sacramento (Rancho Cordova)
Discharger(s):	Stanislaus County, Dept. of Environmental Resources
Facility:	Fink Road Landfill
Address:	4000 Fink Road, Crows Landing, California 95313
County:	Stanislaus County
Parcel No.:	027-017-040-000
CIWQS ID:	224472
Prior Order(s):	73-108, 88-038, 90-269, 94-257, 98-184, 5-01-207, R5-2004-0158, & R5-2008-0144

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 XX August 2021.

PATRICK PULUPA,
Executive Officer

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TABLE OF CONTENTS

Table Index	iv
Glossary.....	V
Preface	1
Monitoring and Reporting Program.....	2
A. General Provisions	2
1. Incorporation of Standard Provisions	2
2. Monitoring Provisions in WDRs Order.....	2
3. Compliance with Title 27	2
4. Sampling and Analysis Plan (SAP).....	2
B. Monitoring Requirements	3
1. Groundwater Detection Monitoring.....	3
a. Landfill Monitoring Points.....	3
b. Surface Impoundment Monitoring Points.....	4
c. Groundwater Detection Monitoring Schedule	5
2. Groundwater Corrective Action Monitoring.....	7
a. Groundwater Corrective Action Monitoring Points	7
b. Groundwater Corrective Action Monitoring Schedule	8
3. Unsaturated Zone Monitoring.....	8
a. Soil Pore Gas.....	8
b. Soil Pore Liquid.....	10
4. Leachate Monitoring.....	11
a. Leachate Seeps.....	11

b. LCRS Sumps	11
5. Surface Water Monitoring.....	13
6. Solid Waste Monitoring	14
7. Facility Monitoring	15
a. Regular Visual Inspections	15
b. Annual Facility Inspections	16
c. Major Storm Events	16
d. Five-Year Iso-Settlement Surveys for Closed Landfills.....	16
8. Additional Corrective Action Monitoring	16
a. LFG Extraction System (Excluding Flare)	17
b. Landfill Gas Flare Station.....	18
C. Reporting Requirements.....	19
1. Semiannual Self-Monitoring Reports (Semiannual SMRs).....	20
2. Annual Monitoring Reports (AMRs).....	22
3. Seep Reporting	23
4. Annual Facility Inspection Reports	23
5. Major Storm Event Reports	24
6. Survey and Iso-Settlement Map (closed & partially closed landfills)	24
7. Financial Assurance Report	24
D. Water Quality Protection Standard	24
1. WQPS Report	24
2. Concentration Limits	25
a. Detection Monitoring	26

b. Corrective Action Monitoring.....	27
c. Updated WQPS Report.....	28
3. Retesting Procedures to Confirm Release	28
4. Point of Compliance (POC).....	28
5. Monitoring Points	28
a. Groundwater	29
b. Unsaturated Zone	29
c. Surface Water.....	29
6. Compliance Period.....	29
Attachment MRP-A—Detect & Corrective Action Monitoring Parameters.....	31
Attachment MRP-B—Five-Year Constituents of Concern (COCs).....	35
Attachment MRP-C—Landfill Concentration Limits.....	42

TABLE INDEX

Table 1—Groundwater Detection Monitoring Points – Landfill Units	4
Table 2—Groundwater Detection Monitoring Points – Surface Impoundments	4
Table 3—Groundwater Detection Monitoring Schedule – Monitoring Parameters	5
Table 4—Groundwater Detection Monitoring Schedule –COCs.....	6
Table 5—Groundwater Corrective Action Monitoring Points	7
Table 6—Soil Pore Gas Monitoring Points	9
Table 7—Soil Pore Gas Monitoring Schedule	9
Table 8—Soil Pore Water Monitoring Points – Landfill Units.....	10
Table 9—Soil Pore Water Monitoring Points – Surface Impoundments	10
Table 10—Leachate Monitoring Schedule	12
Table 11—Surface Water Monitoring Points	13
Table 12—Surface Water Monitoring Schedule	13
Table 13—Solid Waste Monitoring	14
Table 14—Regular Visual Inspections	15
Table 15—Regular Visual Inspection Schedule	15
Table 16—Landfill Gas Extraction Monitoring Schedule	17
Table 17—Landfill Gas Flare Monitoring Schedule	18
Table 18—Summary of Required Reporting	19

GLOSSARY

AMR	Annual Monitoring Report
CalRecycle	California Department of Resources Recycling and Recovery
CAMP	Corrective Action Monitoring Program
CAO	Cleanup and Abatement Order
C.F.R.	Code of Federal Regulations
CIWQS	California Integrated Water Quality System Project
COCs	Constituents of Concern
DMP	Detection Monitoring Program
DWR	California Department of Water Resources
EC	Electrical Conductivity
ELAP	State Water Board's Environmental Laboratory Accreditation Program (formerly administered by California Department of Public Health)
EMP	Evaluation Monitoring Program
EW	Extraction Well
Five-Year COCs	Five-Year Constituents of Concern
GeoTracker	State Water Board's Data Management System for Sites with Potential Groundwater Impact
GP	Gas Probe
LCRS	Leachate Collection and Removal System
LF	Landfill
LFG	Landfill Gas

MDL	Method Detection Limit
Method TO-15 VOCs	Volatile Organic Compounds associated with USEPA Method TO-15
MRP	Monitoring and Reporting Program
MSW	Municipal Solid Waste
MSWLF	Municipal Solid Waste Landfill
N/A	Not Applicable
PID	Photo Ionization Detector
POC	Point of Compliance for Water Quality Protection Standard
QA/QC	Quality Assurance/Quality Control
Qualified Professional	Professional Civil Engineer, Certified Engineering Geologist, or Professional Geologist licensed by the State of California
RCRA	Resource Conservation and Recovery Act, 42 U.S.C. § 6901 et seq.
RL	Reporting Limit
ROWD / JTD	Report of Waste Discharge / Joint Technical Document
SAP	Sampling and Analysis Plan
SPG	Soil Pore Gas
SPL	Soil Pore Liquid
SI	Surface Impoundment
SMR	Self Monitoring Report

SPRRs / Standard Provisions ... *Standard Provisions and Reporting Requirements for Nonhazardous Solid Waste Discharges Regulated by Subtitle D and/or Title 27 Municipal Solid Waste Facilities, December 2015 Edition*

TDS Total Dissolved Solids

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

WQPS Water Quality Protection Standard

UNITS

ft³ / min Cubic Feet per Minute

°F Degrees Fahrenheit

Gallons/Day Gallons per Day

mg/L Milligrams per Liter

ng/L Nanograms per Liter

µg/L Micrograms per Liter

µmhos/cm Microsiemens per Centimeter

µg/cm³ Micrograms per Cubic Centimeter

NTUs Nephelometric Turbidity Units

% Vol. Percent by Volume

Inches Hg Inches of Mercury (Barometric Pressure)

MM Hg Vacuum Millimeters of Mercury (Barometric Pressure)

PREFACE

Adopted by the California Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board) pursuant to Water Code section 13267, subdivision (b)(1), this Order establishes a Monitoring and Reporting Program (MRP) for Stanislaus County Department of Environmental Resources (Discharger) which owns and operates the Fink Road Landfill (Facility) in Stanislaus County. Additional information regarding the Facility is set forth in the enumerated findings of Waste Discharge Requirements Order R5-2021-XXXX (WDRs Order). Except as otherwise provided in the following MRP, these findings are incorporated herein.

The MRP also contains supplemental findings related to monitoring and reporting activities, and/or Facility conditions. For the purposes of California Code of Regulations, title 27 (Title 27) (e.g., §§ 21720, 20380-20435), the findings and provisions of this Order are conversely incorporated as part of the WDRs Order as well.

Although adopted with the WDRs Order, this is a separate order subject to subsequent revision by the Executive Officer in accordance with delegated authority per Water Code section 13223. For the purposes of Title 27, such revisions shall be automatically incorporated as part of the WDRs Order.

MONITORING AND REPORTING PROGRAM

IT IS HEREBY ORDERED, pursuant to Water Code section 13267: that all previously issued Monitoring and Reporting Program(s) for the discharge of solid waste at the Facility are rescinded (except for enforcement purposes); and that the Discharger, their agents, employees and successors shall comply with the following Monitoring and Reporting Program (MRP). The Discharger shall not implement any changes until a revised MRP is issued by the Central Valley Water Board or its Executive Officer.

A. General Provisions

1. **Incorporation of Standard Provisions**—For landfill Units the Discharger shall comply with all relevant provisions of the *Standard Provisions and Reporting Requirements for Nonhazardous Solid Waste Discharges Regulated by Subtitle D and/or Title 27 Municipal Solid Waste Facilities, December 2015 Edition* (2015 SPRRs or 2015 Standard Provisions), which are incorporated herein. See, e.g., SPRRs section I (*Standard Monitoring Specifications*) and section J (*Response to Release*). For surface impoundment Units the Discharger shall comply with all relevant provisions of the *Standard Provisions and Reporting Requirements for Industrial Facilities Regulated by Title 27 April 2016 Edition* (2016 SPRRs or 2016 Standard Provisions), which are incorporated herein. See, e.g., SPRRs section I (*Standard Monitoring Specifications*) and section J (*Response to Release*).
2. **Monitoring Provisions in WDRs Order**—The Discharger shall comply with all “Monitoring Provisions” in the Facility’s operative Title 27 WDRs Order, which are also incorporated herein.
3. **Compliance with Title 27**—The Discharger shall comply with all of Title 27 provisions as they pertain to activities described in this MRP (including SPRRs).
4. **Sampling and Analysis Plan (SAP)**—All samples shall be collected, preserved and transported in accordance with the approved Sampling and Analysis Plan (SAP) and the Quality Assurance/Quality Control (QA/QC) standards specified therein. The Discharger may use alternative analytical test methods (including new USEPA-approved methods), provided that the alternative methods have method detection limits and practical quantitation levels (MDLs) equal to or lower than the analytical methods specified in this MRP and are identified in the approved SAP. The SAP shall include provisions to ensure groundwater monitoring points and/or monitoring devices are Per- and polyfluoroalkyl substances (PFAS) free to the maximum extent possible. Installation of any new monitoring point and/or monitoring device shall be Per- and polyfluoroalkyl substances

(PFAS) free unless the Discharger submits documentation as to why it is unable to install a PFAS free monitoring point or device and receives a waiver of the requirement in writing from Central Valley Water Board staff.

R5-2021-XXXX, this MRP Order is separately enforceable, and may be separately revised by the Executive Officer under authority delegated pursuant to Water Code section 13223. Except as otherwise provided below in this MRP Order, each of the Findings set forth in the WDRs Order are incorporated herein.

B. Monitoring Requirements

The Discharger shall comply with the detection monitoring program (DMP) and corrective action monitoring program (CMP) provisions of Title 27, as applicable, for groundwater, surface water, and the unsaturated zone, as specified herein, in accordance with the Monitoring Specifications in Section G of the WDRs and Standard Monitoring Specifications in Section I of both the Landfill SPRRs and Industrial SPRRs. All detection and corrective action monitoring systems, including background monitoring, shall be designed and constructed consistent with the monitoring specifications of this Order and certified by a California-licensed professional civil engineer or geologist (Qualified Professional) as meeting the requirements of Title 27.

- 1. Groundwater Detection Monitoring**—The Discharger shall implement and maintain a groundwater DMP at all units for which a release to groundwater has not been confirmed, as described in WDR Finding 52-56 (i.e., LF-2, LF-3, SI-1 and SI-2). Groundwater DMP monitoring points shall be located and maintained along the Point of Compliance and in other water bearing zones and locations necessary to meet Title 27 performance standards for detection monitoring (i.e., provide the earliest possible detection of a release from the unit).

The Discharger shall also install and maintain a sufficient number of piezometers and/or groundwater water monitoring wells to provide the groundwater elevation monitoring data necessary to accurately plot the groundwater elevation contours and adequately define the direction(s) of groundwater flow and corresponding flow gradient(s) in the shallow and deep zones beneath the Facility. See Standard Monitoring Specification I.19, Landfill SPRRs.

- a. Landfill Monitoring Points**—The groundwater detection monitoring points for the landfill units at the site shall (at a minimum) include those listed in Table 1 below.

Table 1—Groundwater Detection Monitoring Points – Landfill Units

Landfill Unit	Program	Wells	Direction	Location
LF-1	Background	MW-12	Upgradient	West of LF-1
LF-2	Background	---	Upgradient	West of LF-2, Cell 7
LF-1 & LF-2 (contiguous)	Background	BG-1, BG-2	Upgradient	Western perimeter of LF-1
LF-2	Detection	MWs-13, 14, 25, 26, 27S, 27D & 29	Downgradient	NE Perimeter of LF-2
LF-3	Detection	MW-23, 23P & MW-30	Downgradient	Western perimeter of LF-3
LF-3	Background	BG-3, BG-4	Upgradient	Offsite to west
LF-3	Detection	MW-24, MW-31, MW-32	Downgradient	South of LF-3
LF-3	Detection	---	Downgradient	Eastern perimeter of LF-3

Table 1 Notes: Additional monitoring well required at specified location where “---” entry in Wells column per WDRs Monitoring Specification G.9.

- b. Surface Impoundment Monitoring Points—**The groundwater detection monitoring points for the surface impoundment units at the site shall (at a minimum) include those listed in 2 below.

Table 2—Groundwater Detection Monitoring Points – Surface Impoundments

WMU	Program	Wells	Direction	Location
SI-1	Background	MW-22	Upgradient	Between LF-1 & LF-2
SI-1	Detection	MW-19	Downgradient	SE site perimeter
SI-2	Background	---	Upgradient	Between LF-2 & SI-2
SI-2	Detection	MW-18	Side gradient	Eastern site perimeter

WMU	Program	Wells	Direction	Location
SI-2	Detection	---	Downgradient	North of SI-1

Table 2 Notes: Additional monitoring well required at specified location where “---” entry in Wells column. See WDRs Monitoring Specification G.9.

Any monitoring wells or piezometers installed after the adoption of this Order shall become groundwater detection monitoring points subject to monitoring under this section, unless otherwise approved by Water Board staff. Any existing or future monitoring wells (or piezometers) properly abandoned or replaced as approved by Water Board staff may be removed as groundwater monitoring points subject to monitoring under this section. See Standard Monitoring Specification I.23, SPRR.

- c. **Groundwater Detection Monitoring Schedule**—Ground water samples shall be collected from each well in Table 1 and Table 2 above and analyzed for the Field Parameters and Monitoring Parameters listed in Table 3 and the Five-Year COCs referenced in Table 4 and listed in Attachment MRP-B of this MRP. Sampling shall be conducted in accordance with the frequencies listed in Table 3 for each parameter/constituent group.

Table 3—Groundwater Detection Monitoring Schedule – Monitoring Parameters

Parameter (See Attachment I)	Units	Sampling Frequency
Field Parameters—Groundwater Elevation	Feet & 100ths, M.S.L.	Quarterly
Field Parameters—Other	See Attachment III	Semiannually
General Parameters	mg/L	Semiannually
General Minerals—Major Anions	mg/L	Annually
General Minerals—Major Cations	mg/L	Annually

Parameter (See Attachment I)	Units	Sampling Frequency
VOCs, Short List	µg/L	Semiannually
Dissolved Metals, Short List	µg/L	Semiannually

Table 4—Groundwater Detection Monitoring Schedule –COCs

COC Group (see Attachment II)	Units	Sampling Frequency
Dissolved Inorganics, Extended List	µg/L	Every 5 Years
VOCs, Extended List	µg/L	Every 5 Years
Semi-Volatile Organic Compounds	µg/L	Every 5 Years
Chlorophenoxy Herbicides	µg/L	Every 5 Years
Organophosphorus Compounds	µg/L	Every 5 Years

Piezometer monitoring may be limited to groundwater elevation (unconfined zones) or hydraulic head (confined/semi-confined zones), as applicable at a given monitoring point.

Detection Monitoring Data Analysis - Using groundwater elevation data from monitoring, the Discharger shall determine (calculate or estimate) the ground water flow rate and direction in the uppermost aquifer and, to the extent feasible, in any zones of perched water or other saturated zones monitored pursuant to Title 27, section 20415, subdivision (b)(1). Detection monitoring data collected above shall be analyzed in accordance with the detection monitoring data analysis methods described in the currently approved Monitoring Data Analysis Methods Report or Water Quality Protection Standard Report.

- 2. Groundwater Corrective Action Monitoring**—The Discharger shall implement and maintain a groundwater corrective action monitoring program (CMP) at all units for which a release to groundwater has been confirmed under the DMP, as described in WDR Finding 52 (i.e., LF-1) or as otherwise determined under this MRP. Groundwater CMP monitoring points shall be located and maintained along the Point of Compliance and in other water bearing zones and locations necessary to meet Title 27 performance standards for corrective action monitoring (i.e., define the nature and extent of the release and monitor the effectiveness of corrective action measures).
- a. **Groundwater Corrective Action Monitoring Points**—The groundwater corrective action monitoring points for the landfill units at the site shall (at a minimum) include those listed in Table 5 below.

Table 5—Groundwater Corrective Action Monitoring Points

Landfill Unit	Program	Wells	Location	Notes
LF-1	Background	BG-2	Upgradient	Western perimeter of LF-1
LF-1	Corrective Action	MWs-9B, -12, -30 & --- ¹	Downgradient	Between LF-1 & LF-2
LF-1 & LF-2 (contiguous)	Corrective Action	MWs-13, -14, -25, -26, -27S & -29	Downgradient	NE Perimeter of LF-2
LF-2 & LF-3	Corrective Action	MWs -18, -19, -22	Downgradient	East of LF-2 and North of LF-3
LF-3	Corrective Action	MWs-16,-16A,-17,-20,-21	Downgradient	South Perimeter of LF-3

Table 5 Notes: Additional monitoring well required at specified location where “---” entry in Wells column per WDRs Monitoring Specification G.9.

Any monitoring wells installed upgradient, side-gradient or down gradient of LF-1, or downgradient of LF-2, after the adoption of this Order shall become groundwater corrective action monitoring points for LF-1 subject to monitoring under this section, unless otherwise approved by Water Board staff. Any existing or future monitoring wells (or piezometers) properly abandoned or replaced as approved by Water Board staff may be

removed as groundwater monitoring points subject to monitoring under this section. See Standard Monitoring Specification I.23, SPRR.

- b. Groundwater Corrective Action Monitoring Schedule**—The groundwater corrective action monitoring schedule shall be the same as for groundwater detection monitoring. See **Table 3** and **Table 4**.

Data analysis methods for corrective action monitoring shall include applicable detection and evaluation monitoring protocols, such as verification testing and notification of any new or previously unconfirmed constituents of the release to meet corrective action objectives.¹ (See SPRRs, §§ I.45-I.47.)

Groundwater chemistry shall be evaluated **annually** for cation/anion balance, and the results graphically presented using an appropriate method (e.g., Stiff diagram, Piper diagram, and/or Schoeller plot).

- 3. Unsaturated Zone Monitoring**—The Discharger shall monitor soil pore gas and soil pore liquid at the lined and unlined units at the site consistent with Title 27 performance standards, as indicated below.

- a. Soil Pore Gas**

i. **Monitoring Points**—The Discharger shall conduct soil pore gas monitoring to monitor gas migration in the unsaturated zone, the effectiveness of LFG extraction as a corrective action measure at LF-1, and to detect a release of LFG from LF-2 and LF-3 in the event it occurs. The soil pore gas detection and corrective action monitoring points shall be the gas probes listed in Table 6 and shown in WDRs Attachment D.

1

Incorporation of detection and evaluation monitoring protocols into the CMP may alternatively be viewed as running concurrent detection, evaluation, and correction action monitoring on a constituent-by-constituent basis. A DMP may also be run independent of the CMP at any wells that have successfully completed a Title 27 proof period per WDR Monitoring Specification G.11.

Table 6—Soil Pore Gas Monitoring Points

Nearest WMU	Gas Wells	Completion Type	Screened Intervals	Location Relative to Unit
LF-1	GPs 2 & 4	Triple	S, M, D	West of LF-1
LF-1	GP-1R	Dual	S, M	North of LF-1
LF-1	GP-3	Triple	S, M, D	South of LF-1
LF-2	GP-11	Triple	S, M, D	East of Cell 2
LF-2	GP-12	Triple	S, M, D	East of Cells 3 & 4
LF-2	GP-14	Single	S	North of Cell 6
LF-2	GP-15	Dual	S, D	SW of Cells 2 & 3
LF-3	GPs 7 & 8	Triple	S, M, D	South of Cells 4 & 1
LF-3	GP-9	Triple	S, M, D	East of Cells 1 & 2
LF-3	GP-10	Triple	S, M, D	North of Cells 1 & 2
LF-3	GPs 16 & 17	Dual	S, D	SW of Cell 5
Offsite	GPs 5 & 6	Triple	S, M, D	SW & South of WTE Plant

ii. **Soil Pore Gas Monitoring Schedule**—Soil pore gas shall be monitored for LFG parameters in per Table 7.

Table 7—Soil Pore Gas Monitoring Schedule

Parameters	Units	Monitoring Frequency
Atmospheric Pressure	Inches Hg	Semiannually
Atmospheric Temperature	°F	Semiannually
Gas Temperature	°F	Semiannually
Gas Pressure	Inches H ₂ O	Semiannually
Field Gases (methane, oxygen, CO ₂ , and miscellaneous gas)	%	Semiannually
Organic Vapors	ppmv	Semiannually
VOCs	µg/cm ³	Semiannually

Table 7 Notes: All gas monitoring shall be conducted using appropriate field meter(s). VOC sampling shall be required in all probes in which methane detected above 1% by

volume and/or total organic vapors detected above 1 ppmv during monitoring event. VOC analysis shall be conducted using USEPA Method TO-15.

b. Soil Pore Liquid—The Discharger shall conduct soil pore liquid monitoring at the lined landfill units and at the surface impoundments to detect a release from the units at the earliest opportunity, as indicated below.

i. **Monitoring Points**—The soil pore liquid monitoring points for the lined landfill units and the surface impoundments shall be as listed in Table 8 and Table 9 (below).

Table 8—Soil Pore Water Monitoring Points – Landfill Units

WMU	Cell(s)	Program	Lysimeter
LF-1	---	---	---
LF-2	1	Detection	DLs-20A, 21A & 22A
LF-2	2	Detection	DLs-26 & 27
LF-2	1 & 2	Detection	N/A – see notes
LF-2	3 - 6	Background	BL-1
LF-2	3 - 6	Detection	PLs 3 to 6
LF-2	7 (future)	Detection	PL-7 (future)
LF-3	1 & 2	Detection	DLs 1 to 13
LF-3	1 & 2	Detection	DL-28 to 30
LF-3	3 & 4	Detection	PLs 3 & 4
LF-3	5 (future)	Detection	PL-5 (future)

Table 8 Notes: LF-2 Cells 1 & 2 not installed with pan lysimeters given the units were not constructed with LCRS sumps (leachate from cells drains by pipe directly to SI-2). See WDRs Attachment F- Surface Impoundment, Unsaturated Zone (Soil Pore Water), & Leachate Monitoring.

Table 9—Soil Pore Water Monitoring Points – Surface Impoundments

WMU	Program	Lysimeter
SI-1	Background	BL-5
SI-1	Detection	Subdrain

WMU	Program	Lysimeter
SI-2	Background	BL-2
SI-2	Detection	DLs-23 to 25

ii. **Soil Pore Liquid Monitoring Schedule**—The soil pore liquid monitoring schedule shall be the same as that for leachate monitoring in **Table 10**. Monitoring results for the unsaturated zone shall be included in monitoring reports and shall include an evaluation of potential impacts of the Facility on the unsaturated zone and compliance with the Water Quality Protection Standard.

4. **Leachate Monitoring**—Leachate monitoring shall be conducted to detect physical evidence of a release from the landfill units (i.e., seeps) per Standard Monitoring Specification I.48, SPRR, the concentrations and volumes/rates of landfill leachate produced, and any leakage from the primary containment system of a surface impoundment.

a. **Leachate Seeps**

i. **Monitoring Points**—The monitoring points for leachate seep monitoring shall include the landfill cover deck, slopes and perimeter.

ii. **Monitoring Schedule**—Leachate seep monitoring shall be conducted according to the schedule set forth in **Table 10**.

Detection of Leachate—If leachate is observed emanating from the landfill, the Discharger shall: (i) within seven days, verbally notify Central Valley Water Board staff; and (ii) immediately, sample and test leachate in accordance with the Field Parameters and Monitoring Parameters specified in **Table 10**.

i. **Monitoring Points**—All landfill and surface impoundment LCRS sumps. See WDRs Attachment F and Table 8 notes.

ii. **Monitoring Schedule**— All Unit landfill LCRS sumps/vaults and surface impoundment leak detection sumps shall be inspected monthly for the presence of leachate. Upon detection of leachate in a previously dry sump or vault, leachate shall be sampled immediately and analyzed for the constituents listed in **Table 10** below. Annual sampling per Table 10 shall also be conducted at each sump/vault containing leachate.

Table 10—Leachate Monitoring Schedule

Parameter	Units	GeoTracker Code	Sampling Freq.
Leachate Depth	Feet & inches		Each Occurrence & Monthly
Leachate Elevation	Feet & tenths MSL	ELEV	Each Occurrence & Monthly
Total Flow (estimate or meter reading)	Gallons		Each Occurrence/ Continuous
Flow Rate (estimate)	Gallons/Day	FLOW	Each Occurrence & Quarterly
Specific Conductance	µmhos/cm	SC	Each Occurrence & Quarterly
pH	pH units	PH	Each Occurrence & Quarterly
Monitoring Parameters	See Table 3	---	Each Occurrence & Semi-annually
Five-Year COCs	See Table 4	---	Each Occurrence & Annually

The Discharger shall also monitor leachate flows and totals to the Class II surface impoundments (SI-1 and SI-2) on a daily or continuous basis (i.e., by meter). LCRS Sump and leak detection sampling shall be conducted in accordance with the currently approved Sample Collection and Analysis Plan. Leachate monitoring shall be incorporated into all future expansions at the landfill.

iii. LCRS Testing—All LCRSs shall be tested annually to demonstrate operation in conformance with waste discharge requirements. The results of these tests shall be reported to the Board and shall include comparison with earlier tests made under comparable conditions. All visible portions of synthetic liners shall be inspected on a quarterly basis and their condition reported in the Annual Report.

- 5. Surface Water Monitoring**—Surface water monitoring shall be conducted to detect evidence of a release from the landfill units, evidence of landfill cover and WMU side slope erosion, and to monitor the effectiveness of precipitation and drainage controls at the site. Runoff from the units at the Facility shall be collected from each monitoring point listed in **Table 11** below when there is sufficient liquid at each monitoring point to collect a representative sample of the liquid at that point. Each sample shall be analyzed in accordance with the methods and frequency specified in **Table 12**.

Table 11—Surface Water Monitoring Points

WMUs	Monitoring Program	Direction	Monitoring Point(s)	Location
All	Background	Upstream of units	---	Representative point upstream of all units
LF-1	Detection	Downstream of toe	S-1 & ---	Perimeter drain
LF-2	Detection	Downstream of commonly drained cells	S-2 & ---	Representative monitoring point
LF-3	Detection	Downstream of commonly drained cells	---	Representative monitoring point
SI-1 & SI-2	Detection	Downstream	---	Sedimentation Basin

Table 11 Notes: Additional monitoring points required at appropriate location where “---” entry in “Monitoring Points” column per WDRs Monitoring Specification G.12.

Table 12—Surface Water Monitoring Schedule

Parameter (See Attachment A)	GeoTracker Code	Units	Sampling Frequency
Specific Conductance	SC	µmhos/cm	Semiannually
pH	PH	pH units	Semiannually
Turbidity	TURB	NTU	Semiannually

Parameter (See Attachment A)	GeoTracker Code	Units	Sampling Frequency
General Parameters	(various)	mg/L	Semiannually
General Minerals - Major Anions - Major Cations	(various)	mg/L	Annually
VOCs, Short List	(various)	µg/L	Annually
Dissolved Inorganics, Short List	(various)	µg/L	Annually
Five-Year COCs (See Attachment B)	(various)	(various)	Every Five Years (Due in 2022)

6. **Solid Waste Monitoring**—The Discharger shall monitor all wastes discharged to the Class II and III landfill units as follows and report to the Board:

Table 13—Solid Waste Monitoring

Parameter	Units	Monitoring Frequency
Quantity discharged	Cubic yards	Monthly
Type of material discharged	—	Monthly
Source of material	—	Monthly
Minimum elevation of discharge	Feet (MSL)	Monthly
Remaining Capacity of Cell	%	Quarterly

Table 13 Notes: The above information shall be calculated and the results reported in the semiannual monitoring reports required under MRP Section C.2.i.

The Discharger provide PDF copies of the waste profiling of material placed into the landfill (LF-2) or the Ash Monofill (LF-3), if requested by the Regional Board staff.

7. Facility Monitoring—The Discharger shall monitor all wastes discharged to the Class II and III landfill units on a monthly basis and report to the Board as follows:

a. Regular Visual Inspections—The Discharger shall perform regular visual inspections listed in Table 14 in accordance with the schedule specified in Table 15. Results of these regular visual inspections shall be included in Semiannual Self-Monitoring Reports (Semiannual SMRs) per Section D.1 of this MRP Order.

Table 14—Regular Visual Inspections

Category	Observations
Within Unit	<ul style="list-style-type: none"> Evidence of ponded water at any point on unit outside of any contact storm water/leachate diversions structures on the active face of unit (record affected areas on map). Evidence of erosion and/or of day-lighted refuse.
Unit Perimeter	<ul style="list-style-type: none"> Evidence of leachate seep, estimated size of affected area and flow rate (record affected areas on map). Evidence of erosion and/or of day-lighted refuse.
Receiving Waters ²	<ul style="list-style-type: none"> Floating and suspended materials of waste origin—presence or absence, source and size of affected areas. Discoloration and turbidity—description of color, source and size of affected areas.

Table 15—Regular Visual Inspection Schedule

Category	Wet Season (1 Oct. to 30 April)	Dry Season (1 May to 30 Sept.)

² Surface waters from the northern quarter of the Facility drains to the South Fork of the Little Salado Creek, a tributary of the San Joaquin River and is monitored at surface water monitoring point S-1. The remaining three-quarters of the Facility drains to a sedimentation basin which when full overflows to Crow Creek, a tributary of the San Joaquin River and is monitored at surface water monitoring point S-2.

Category	Wet Season (1 Oct. to 30 April)	Dry Season (1 May to 30 Sept.)
Inactive or Closed Units	Monthly	Quarterly
Active Units	Weekly	Monthly

- b. Annual Facility Inspections**—Prior to **30 September** of each year, the Discharger shall inspect the Facility to assess repair and maintenance needs for drainage control systems, cover systems and groundwater monitoring wells; and preparedness for winter conditions (e.g., erosion and sedimentation control). If repairs are made as result of the annual inspection, problem areas shall be photographed before and after repairs. Any necessary construction, maintenance, or repairs shall be completed by 31 October.

Annual facility inspection reporting shall be submitted as required in Section C.4 of this MRP.

- c. Major Storm Events**—Within seven days of any storm event capable of causing damage or significant erosion (Major Storm Event), the Discharger shall inspect the Facility for damage to any precipitation, diversion and drainage facilities, and all landfill side slopes. Necessary repairs shall be completed within 30 days of the inspection. The Discharger shall take photos of any problem areas before and after repairs. Notification and reporting requirements for major storm events shall be conducted as required in Section C.5 of this MRP.

- d. Five-Year Iso-Settlement Surveys for Closed Landfills**—The Discharger shall conduct a five-year iso-settlement survey of each closed and partially-closed landfill unit and produce an iso-settlement map accurately depicting the estimated total change in elevation of each portion of the final cover’s low)-hydraulic-conductivity layer. For each portion of the landfill, this map shall show the total lowering of the surface elevation of the final cover, relative to the baseline topographic map. (Title 27, § 21090, subs. (e)(1)-(2).) The most recent five-year iso-settlement survey was conducted in 2017 and the next is due to be conducted in 2022. See Section C.6 for iso-settlement survey reporting requirements.

- 8. Additional Corrective Action Monitoring**—In addition to groundwater corrective action monitoring conducted in Section B.1 above, the Discharger shall monitor the LFG extraction system at LF-1 and LF-2 to

demonstrate the effectiveness of LFG extraction as a corrective action measure at LF-1 and as an LFG (i.e., operational) control measure at LF-2 in accordance with Title 27, section 20430 and this MRP.

a. LFG Extraction System (Excluding Flare)—The Discharger shall operate and maintain the landfill gas (LFG) extraction system for each unit (or for the units combined as the system is currently configured), to remove LFG from the landfill units and prevent, to the extent possible, migration into the unsaturated zone beneath the landfill units.

i. **Monitoring Points**—LFG extraction and monitoring shall be conducted at the LFG extraction wells shown in WDRs Attachment D.2. Additionally, LFG monitoring shall also be conducted at any new or replacement LFG extraction wells installed after adoption of this Order; a representative sampling port along LF-1 header; the connection between LF-1 and LF-2 header pipes; and a representative sampling port along LF-2 header.

ii. **Monitoring Schedule**—LFG monitoring shall be conducted in accordance with **Table 16**. Field monitoring shall be conducted with appropriate measuring devices for each parameter.

Table 16—Landfill Gas Extraction Monitoring Schedule

Parameter	Units	Sampling Frequency
LFG Well Status	Open and Operating or Shutoff and Closed	Monthly
Flow rate	cu ft/min	Monthly
Vacuum	Inches of H ₂ O	Monthly
LFG Temperature	°F	Monthly
Field Gases	%	Monthly
VOCs (USEPA Method TO-15)	µg/cm ³	Semiannually

Table 16 Notes: Flow rate monitoring required only if well flow control valve is metered. See Table 7 for list of field gases. All gas monitoring shall be conducted using appropriate field meter(s). VOC sampling shall be required in all monitoring points in which methane detected above 1% by volume and/or total organic vapors detected above 1 ppmv during monitoring event. VOC analysis shall be conducted using USEPA Method TO-15.

b. Landfill Gas Flare Station

i. Monitoring Points—The inlet to the Landfill Gas Flare Station shall be monitored in accordance with Table 17.

Table 17—Landfill Gas Flare Monitoring Schedule

Parameter	Units	Sampling Frequency
Flare Operational Up-Time	% Time per Month Flare is Operational	Continuous
Atmospheric Temperature	°F	Monthly
Atmospheric Pressure	PSIG	Monthly
Temperature into LFG Plant	°F	Monthly
Pressure into the LFG plant	Inches of H ₂ O vacuum	Monthly
Totalized flow	Cubic feet	Monthly
Flow rate	CFM	Monthly
Total VOCs	µg/cm ³	Monthly
Field Gases	% by volume	Monthly
VOCs USEPA Method TO-15)	µg/cm ³	Semiannually

See Table 7 for list of field gases.

In the event of a shutdown of the landfill gas extraction system and/or flare for one week or longer, the Discharger shall notify Central Valley Water Board staff via e-mail, fax, or telephone within 24 hours of knowledge and shall provide weekly status updates. This requirement excludes shutdown events where the landfill gas system restarts itself or whether the system is restarted manually within 24 hours. All shutdowns, regardless of the type of restart, shall be summarized in the semiannual reports. See WDRs Facility Specification C.7,

Evaluation of the effectiveness of the LFG extraction system shall include whether separate LFG controls, including blower and flare station, are needed for each unit to achieve corrective action goals per Title 27, section 20430. See WDRs Facility Specification C.5.a.

The Discharger shall report all recorded data and conduct a comprehensive evaluation of the effectiveness of the CAP in the Annual Monitoring Report required in Section C.2 of this MRP.

All gas monitoring shall be conducted using appropriate field meter(s). VOC sampling shall be required in all monitoring points in which methane detected above 1% by volume and/or total organic vapors detected above 1 ppmv during monitoring event. VOC analysis shall be conducted using USEPA Method TO-15.

- C. Reporting Requirements**—The results of monitoring required at least semiannually (i.e., semiannually or more frequently) under this Order shall be reported semiannually, while the reporting frequency for monitoring required less frequently than semiannually (e.g., annually or every five years) shall be the same as the monitoring frequency. The following monitoring reports containing the results of monitoring required under this Order shall be submitted by the specified due dates.

Table 18—Summary of Required Reporting

Report	End of Reporting Period	Due Date
First Semiannual Monitoring Report	30 June	1 Aug.
Second Semiannual Monitoring Report	31 Dec.	1 Feb.
Annual Monitoring Report	31 Dec.	1 Feb.
Seep Reporting	(continuous)	Immediate Notification (Written Notice within 7 Days)
Annual Facility Inspection Report	31 Oct.	15 Nov.
Major Storm Event Report	(continuous)	7 Days after Discovery of Damage and 14 days after completion of repairs
Iso-Settlement Survey and Mapping Report	Every 5 Years	31 October 2022 and every 5 years thereafter

1. **Semiannual Self-Monitoring Reports (Semiannual SMRs)**—By 1 August and 1 February of each year, the Discharger shall submit a Semiannual SMR in accordance with the provisions below.
 - a. For each groundwater monitoring point addressed by the report, a description of:
 - i. The time of water level measurement;
 - ii. The type of pump (or other device) used for purging and the elevation of the pump intake relative to the elevation of the screened interval;
 - iii. The method of purging used to stabilize water in the well bore before the sample is taken including the pumping rate; the equipment and methods used to monitor field pH, temperature, and conductivity during purging; results of pH, temperature, conductivity, and turbidity testing; and the method of disposing of the purge water;
 - iv. The type of pump (or other device) used for sampling, if different than the pump or device used for purging; and
 - v. A statement that the sampling procedure was conducted in accordance with the approved Sample Collection and Analysis Plan.
 - b. A map or aerial photograph showing the locations of observation stations, monitoring points, and background monitoring points.
 - c. An estimated quarterly groundwater flow rate and direction in: (1) the uppermost aquifer; (2) any zones of perched water; and (3) any additional zone of saturation monitored based upon water level elevations taken prior to the collection of the water quality data submitted in the report. (See Title 27, § 20415, subd. (e)(15).)
 - d. Times of expected highest and lowest elevations of the water levels in the wells. (See Title 27, § 20415, subd. (e)(15).)
 - e. Estimated minimum groundwater separation at LF-1, LF-2, and LF-3 based on groundwater elevation monitoring data and the maximum depth of waste at each unit, including LCRS sump, as applicable.

- f. Cumulative tabulated monitoring data for all monitoring points and constituents for groundwater, unsaturated zone, leachate, and surface water.
 - i. Concentrations below the laboratory reporting limit shall not be reported as “ND” unless the reporting limit is also given in the table. Otherwise they shall be reported “<” the reporting limit (e.g., <0.10).
 - ii. Units shall be as required in the appropriate Tables in Section B unless specific justification is given to report in other units. Refer to the SPRRs Section I “Standard Monitoring Specifications” for requirements regarding MDLs and PQLs.
- g. Laboratory statements of results of all analyses evaluating compliance with requirements.
- h. An evaluation of the concentration of each monitoring parameter (or 5-year COC when five-year COC sampling is conducted) as compared to the current concentration limits, and the results of any required verification testing for constituents exceeding a concentration limit. Report any actions taken under Section J: Response to a Release for verified exceedances of a concentration limit for wells/constituents not already in corrective action monitoring.
- i. The results of solid waste monitoring required under Section B.6 above.
- j. An evaluation of the effectiveness of the leachate monitoring and control facilities, and of the landfill precipitation and drainage control facilities. The evaluation shall include the results of monitoring required in Section B.4 above.
- k. A summary of all Facility Monitoring for the reporting period required in Section B.7 of this MRP.
- l. A summary of inspection, leak search, and repair of final covers on any closed landfill units in accordance with an approved final post-closure maintenance plan as required by Standard Closure and post-Closure Maintenance Specifications G.26 through G.29 of the SPRRs.

- m. A comprehensive discussion of the Corrective Action Monitoring Program required by this MRP under Sections B.2 and B.8.

2. Annual Monitoring Reports (AMRs)—On 1 February of each year, the Discharger shall submit Annual Monitoring Reports (AMRs) containing each of the following components.

- a. Graphs showing historical trends for monitoring parameters at each background and compliance monitoring point for each monitoring program i.e., groundwater, unsaturated zone, and surface water monitoring programs.
 - i. All monitoring parameters shall be graphed to show historical trends at each monitoring point and background monitoring point, for all samples taken within at least the previous five calendar years.
 - ii. If a 5-year COC event was performed during any monitoring period of the subject year of the Annual Report, then these parameters shall also be graphically presented.
 - iii. Each such graph shall plot the concentration of one or more constituents for the period of record for a given monitoring point or background monitoring point, at a scale appropriate to show trends or variations in water quality.
 - iv. The graphs shall plot each datum, rather than plotting mean values.
 - v. Graphical analysis of monitoring data may be used to provide significant evidence of a release.
- b. An evaluation of the monitoring parameters with regards to the cation/anion balance, and a graphical presentation using a Stiff diagram, a Piper graph, or a Schoeller plot.
- c. All historical monitoring data for which there are detectable results, including data for the previous year, shall be submitted in tabular form in a digital file format such as a computer disk. The Central Valley Water Board regards the submittal of data in hard copy and in digital format as "...the form necessary for..." statistical analysis [Title 27, section 20420(h)], that facilitates periodic review by the Central Valley Water Board.
- d. Hydrographs of each well showing the elevation of groundwater with respect to the elevations of the top and bottom of the screened

interval and the elevation of the pump intake. Hydrographs of each well shall be prepared quarterly and submitted annually.

- e. A comprehensive discussion of the compliance record, and the result of any corrective actions taken or planned which may be needed to bring the Discharger into full compliance with the waste discharge requirements.
 - f. A written summary of the monitoring results, indicating any changes made or observed since the previous Annual Monitoring Report.
 - g. Updated concentration limits for each monitoring parameter at each monitoring well based on the new data set.
 - h. The results of the annual LCRS testing required in Section B.4.b.iii. The Discharger shall quantify the amount of LCRS clogging that has occurred over time since the LCRS was first tested and shall estimate the effects of the clogging as it relates to increased leachate head buildup on the underlying geomembrane liner.
3. **Seep Reporting**—Upon discovery of seepage from any disposal area within the Facility, the Discharger shall immediately report such seepage to the Central Valley Water Board via telephone or email; and within seven days, submit a written report with the following information:
- a. Map(s) depicting the location(s) of seepage;
 - b. Estimated flow rate(s);
 - c. A description of the nature (e.g., all pertinent observations and analyses), and extent of the discharge including whether the leachate left the boundaries of the waste unit and how far the seep travelled;
 - d. Verification that samples have been submitted for analyses of the Field Parameters and Monitoring Parameters listed in Table III of this MRP, and an estimated date that the results will be submitted to the Central Valley Water Board; and
 - e. Corrective measures underway or proposed, and corresponding time schedule.
4. **Annual Facility Inspection Reports**—By 15 November of each year, the Discharger shall submit a report describing the results of the inspection and the repair measures implemented, preparations for winter, and

include photographs of any problem areas and the repairs. Refer to Section B.7.b of this MRP, above.

5. **Major Storm Event Reports**—Following major storm events capable of causing damage or significant erosion, the Discharger shall immediately notify Central Valley Water Board staff of any damage or significant erosion upon discovery and submit a preliminary written report within 7 days after discovery describing the extent of the damage and the proposed repairs that will be made to remedy the damage. The Discharger shall submit a final report of subsequent repairs within 14 days of completion of the repairs, including photographs of the problem and the repairs. See Section B.7.c.
 6. **Survey and Iso-Settlement Map (closed & partially closed landfills)**—The Discharger shall submit all iso-settlement maps prepared in accordance with Section B.7.d of this MRP. (See Title 27, § 21090, subd. (e).) The next five-year iso-settlement survey report for the landfill is due by **31 October 2022** and every five years thereafter..
 7. **Financial Assurance Report**—By **1 June** of each year, the Discharger shall submit a copy of the annual financial assurances report due to CalRecycle that updates the financial assurances for closure, post-closure maintenance, and corrective action. See Financial Assurance Specifications F.2 and F.7 of the WDRs. The Discharger shall report the financial assurances documents associated with the Facility's two Class II surface impoundments separately.
- D. Water Quality Protection Standard**—For each waste management unit, the WQPS shall consist of all COCs, the concentration limit for each COC, the verification retesting procedure to confirm measurably significant evidence of a release, the point of compliance, and all water quality monitoring points for each monitored medium.
1. **WQPS Report**—The WQPS for each WMU at the Facility shall be described in a WQPS Report approved by the Central Valley Water Board. Any proposed changes to the WQPS, other than annual update of the concentration limits, shall be submitted in a revised WQPS Report for review and approval. The WQPS report shall:
 - a. Identify all distinct bodies of surface water and groundwater that could be affected in the event of a release from a waste management unit or portion of a unit. This list shall include at least the uppermost aquifer and any permanent or ephemeral zones of perched groundwater underlying the Facility.

- b. Include a map showing the monitoring points and background monitoring points for the surface water monitoring program, groundwater monitoring program, and the unsaturated zone monitoring program. The map shall include the point of compliance in accordance with Title 27, section 20405.
- c. Evaluate the perennial direction(s) of groundwater movement within the uppermost groundwater zone(s).
- d. Include a proposed statistical method for calculating concentration limits for monitoring parameters and constituents of concern that are detected in 10% or greater of the background data (naturally-occurring constituents) using a statistical procedure from Title 27, section 20415(e)(8)(A-D)] or section 20415(e)(8)(E).
- e. Include a retesting procedure to confirm or deny measurably significant evidence of a release (See Title 27, §§ 20415, subd. (e)(8)(E), 20420, subds. (j)(1)-(3).
- f. Be updated annually for each monitoring well using new and historical monitoring data.
- g. Be certified by a California-registered civil engineer or geologist as meeting the requirements of Title 27.

If subsequent sampling of the background monitoring point(s) indicates significant water quality changes due to either seasonal fluctuations or other reasons unrelated to waste management activities at the site, the Discharger may request modification of the WQPS.

The monitoring parameters are listed in Table 3 (groundwater), Table 7 (unsaturated zone) and Table 12 (surface water).

The surface and groundwater COCs for both landfill units at the Facility are listed in Attachment B. The Discharger shall monitor all COCs **every five years**, or more frequently as required in accordance with a Corrective Action Program. The last 5-year COC event was conducted in the Third Quarter 2015. The five-year COCs are therefore due to be monitored again in the Second Semester 2020.

2. **Concentration Limits**—Proposed concentration limits for all monitored water bearing media (i.e., surface water and groundwater) shall be included in the revised/updated WQPS Report required under WDR Monitoring Specification G.7. For a naturally occurring constituent of concern, the concentration limit for each constituent of concern shall be

determined by calculation in accordance with a statistical method pursuant to Title 27, section 20415(e)(8); or by an alternate statistical method meeting the requirements of Title 27, section 20415(e)(8)(E).

a. Detection Monitoring

- i. Non-Naturally Occurring COCs—The concentration limits for non-naturally occurring constituents of concern, including organic compounds (e.g., VOCs and dissolved metals not detectable in background), shall be the laboratory detection limit.
- ii. Naturally Occurring COCs—The Discharger shall use interwell statistics for naturally occurring constituents. Each unit shall be separately monitored absent an approved demonstration per WDR Monitoring Specification G.5. The data analysis method for calculating concentration limits for naturally occurring COCs under this Order shall be the interwell Tolerance Limit Method at 95% confidence and 95% coverage based on background data or as otherwise proposed in the currently approved WQPS Report or separate technical report reference therein. Concentration limits for naturally occurring COCs shall be updated annually and included in the Annual Monitoring Report submitted under this MRP.

The landfill concentration limits for detection monitoring listed in MRP Attachment C are temporarily approved pending submission of the next updated WQPS Report per Section D.2.c below.

- b. Corrective Action Monitoring**—For wells in the corrective action program, the concentration limits represent cleanup levels to achieve background concentrations. The concentration limits for corrective action monitoring shall be the same as those for detection monitoring absent approval of a proposal for concentration limits greater than background (CLGBs) under Title 27 Section 20400(c) and revision of the WDRs. Time series plots and/or an intrawell statistical procedure (e.g., Mann-Kendall test) shall be used for trend analysis to monitor corrective action progress.

As noted in WDR Finding 51, the JTD included an August 2019 revised WQPS Report describing data analysis methods used for groundwater monitoring, including calculation of concentration limits using the Interwell Tolerance Method referenced above. Interwell inorganic concentration limits would then be calculated and annually updated for each group using the Interwell Tolerance Method (using the mean parameter value plus three standard deviations for normally distributed parameters and using non-parametric tolerance limits for non-normally distributed parameters). According to the Discharger, this method produced the least amount of false-positive results, while at the same time identifying inorganic exceedances in site wells with recorded VOCs detections.

The concentration limits listed in MRP Attachment C are also temporarily approved for corrective action monitoring pending submission of the next updated WQPS Report per Section D.2.c below.

conducted and at which the water quality protection standard applies. The monitoring points for each monitored medium are listed in Section B of this MRP.

- a. **Groundwater**—The groundwater monitoring points for the landfill units shall be as listed in Table 1 and for the surface impoundments as listed in Table 2 herein.
 - b. **Unsaturated Zone**—The unsaturated zone monitoring points for the landfill and surface impoundment units shall be their lysimeters.
 - c. **Surface Water**—See Table 11 and Table 12.
6. **Compliance Period**—The compliance period for each WMU shall be the number of years equal to the active life of the unit plus the closure period. The compliance period is the minimum period during which the Discharger shall conduct a water quality monitoring program subsequent to a release from the WMU. The compliance period shall restart each time the Discharger initiates an evaluation monitoring program. (See Title 27, § 20410.)

ENFORCEMENT

If, in the opinion of the Executive Officer, the Discharger fails 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 sections 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 section 13320 and California Code of Regulations, title 23, section 2050 et seq. The State Water Board must receive the petition by 5:00 p.m. on the 30th day after the date of this Order; if the 30th day falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the [law and regulations](http://www.waterboards.ca.gov/public_notices/petitions/water_quality) (http://www.waterboards.ca.gov/public_notices/petitions/water_quality) applicable to filing petitions are available on the Internet (at the address below) and will be provided upon request.

ATTACHMENTS

Attachment MRP-A—Detect & Corrective Action Monitoring Parameters
Attachment MRP-B—Five-Year Constituents of Concern (COCs)
Attachment MRP-C—Landfill Concentration Limits

Attachment MRP-A—Detect & Corrective Action Monitoring Parameters

Field Parameters

Parameter	GeoTracker Code
Dissolved Oxygen	DO
Flow to Waters of U.S.	FLOW
Groundwater Elevation.....	GWELEV
Oxidation-Reduction Potential.....	REDOX
pH.....	PH
Specific Conductance.....	SC
Temperature.....	TEMP
Turbidity	TURB

General Parameters

Parameter / Analytical Method	GeoTracker Code
Chemical Oxygen Demand Method E410.4	COD
Total Alkalinity Method SW2320B	ALKH
Total Dissolved Solids Method SM2540C	TDS
Total Hardness Method E130.2	HARD
Total Organic Carbon Method SM5310B	TOC

General Minerals—Major Anions

Constituent / Analytical Method	GeoTracker Code
Bicarbonate Alkalinity Method E310.1	BICACO3
Chloride Method E300.0	CL
Nitrate – Nitrogen Method E300.0	NO3
Sulfate Method E300.0	SO4

General Minerals—Major Cations

Constituent / Analytical Method	GeoTracker Code
Calcium Method E200.7	CA
Magnesium Method E200.7	MG
Potassium Method E200.7	K
Sodium Method E200.7	NA

Dissolved Inorganics—Short List

Constituent / Analytical Method	GeoTracker Code
Arsenic Method E200.8	AS
Barium Method SW6010B	BA
Iron Method SW6010B	FE
Manganese Method SW6010B	MN

Volatile Organic Compounds—USEPA Method 8260B, Short List

Constituent	GeoTracker Code
Acetone	ACE
Acrylonitrile.....	ACRAMD
Benzene	BZ
Bromochloromethane	BRCLME
Bromodichloromethane	BDCME
Bromoform (Tribromomethane)	TBME
Carbon disulfide	CDS
Carbon tetrachloride.....	CTCL
Chlorobenzene	CLBZ
Chloroethane (Ethyl chloride).....	CLEA
Chloroform (Trichloromethane)	TCLME
Dibromochloromethane (Chlorodibromomethane)	DBCME
1,2-Dibromo-3-chloropropane (DBCP)	DBCP
1,2-Dibromoethane (Ethylene dibromide; EDB)	EDB
o-Dichlorobenzene (1,2-Dichlorobenzene).....	DCBZ12
m-Dichlorobenzene (1,3-Dichlorobenzene).....	DCBZ13
p-Dichlorobenzene (1,4-Dichlorobenzene).....	DCBZ14
trans-1,4-Dichloro-2-butene.....	DCBE14T
Dichlorodifluoromethane (CFC-12).....	FC12
1,1-Dichloroethane (Ethylidene chloride)	DCA11
1,2-Dichloroethane (Ethylene dichloride)	DCA12
1,1 -Dichloroethylene (1,1 -Dichloroethene; Vinylidene chloride).....	DCE11
cis- 1,2-Dichloroethylene (cis- 1,2-Dichloroethene).....	DCE12C
trans-1,2-Dichloroethylene (trans-1,2-Dichloroethene).....	DCE12T
1,2-Dichloropropane (Propylene dichloride)	DCPA12
cis- 1,3-Dichloropropene	DCP13C
trans- 1,3-Dichloropropene.....	DCP13T
Di-isopropylether (DIPE)	DIPE

Ethanol	ETHANOL
Ethyltertiary butyl ether.....	ETBE
Ethylbenzene	EBZ
2-Hexanone (Methyl butyl ketone)	HXO2
Hexachlorobutadiene	HCBU
Methyl bromide (Bromomethene).....	BRME
Methyl chloride (Chloromethane)	CLME
Methylene bromide (Dibromomethane)	DBMA
Methylene chloride (Dichloromethane).....	DCMA
Methyl ethyl ketone (MEK: 2-Butanone).....	MEK
Methyl iodide (Iodomethane).....	IME
Methyl t-butyl ether.....	MTBE
4-Methyl-2-pentanone (Methyl isobutylketone)	MIBK
Naphthalene	NAPH
Styrene.....	STY
Tertiary amyl methyl ether.....	TAME
Tertiary butyl alcohol	TBA
1,1,1,2-Tetrachloroethane	TC1112
1,1,2,2-Tetrachloroethane	PCA
Tetrachloroethylene (Tetrachloroethene; Perchloroethylene)	PCE
Toluene	BZME
1,2,4-Trichlorobenzene	TCB124
1,1,1-Trichloroethane (Methylchloroform)	TCA111
1,1,2-Trichloroethane	TCA112
Trichloroethylene (Trichloroethene)	TCE
Trichlorofluoromethane (CFC- 11)	FC11
1,2,3-Trichloropropane	TCPR123
Vinyl acetate.....	VA
Vinyl chloride.....	VC
Xylenes	XYLENES

Attachment MRP-B—Five-Year Constituents of Concern (COCs)

Dissolved Inorganics/Metals

Parameter / Analytical Method	GeoTracker Code
Aluminum (Method 6010)	AL
Antimony (Method 7041)	SB
Arsenic (Method E200.8).....	AS
Barium (Method 6010).....	BA
Beryllium (Method 6010)	BE
Cadmium (Method 7131A)	CD
Chromium, Hexavalent (Method 218.6).....	CR6
Chromium, Total (Method 6010)	CR
Cobalt (Method 6010).....	CO
Copper (Method 6010)	CU
Cyanide (Method 9010C)	CN
Iron (Method 6010).....	FE
Lead (Method 7421).....	PB
Manganese (Method 6010)	MN
Mercury (Method 7470A).....	HG
Nickel (Method 7521)	NI
Selenium (Method 7742)	SE
Silver (Method 6010)	AG
Sulfide (Method 9030B).....	S
Thallium (Method 7841)	TL
Tin (Method 6010)	SN
Vanadium (Method 6010).....	V
Zinc (Method 6010)	ZN

Volatile Organic Compounds—USEPA Method 8260, Extended List

Constituent	GeoTracker Code
Acetone	ACE
Acetonitrile (Methyl cyanide)	ACCN
Acrolein	ACRL
Acrylonitrile.....	ACRAMD
Allyl chloride (3-Chloropropene).....	CLPE3
Benzene.....	BZ
Bromochloromethane (Chlorobromomethane).....	BRCLME
Bromodichloromethane (Dibromochloromethane).....	DBCME
Bromoform (Tribromomethane).....	TBME
Carbon disulfide	CDS
Carbon tetrachloride.....	CTCL
Chlorobenzene.....	CLBZ
Chloroethane (Ethyl chloride).....	CLEA
Chloroform (Trichloromethane)	TCLME
Chloroprene	CHLOROPRENE
Dibromochloromethane (Chlorodibromomethane)	DBCME
1,2-Dibromo-3-chloropropane (DBCP)	DBCP
1,2-Dibromoethane (Ethylene dibromide; EDB)	EDB
o-Dichlorobenzene (1,2-Dichlorobenzene).....	DCBZ12
m-Dichlorobenzene(1,3-Dichlorobenzene).....	DCBZ13
p-Dichlorobenzene (1,4-Dichlorobenzene).....	DCBZ14
trans- 1,4-Dichloro-2-butene	DCBE14T
Dichlorodifluoromethane (CFC 12).....	FC12
1,1 -Dichloroethane (Ethylidene chloride)	DCA11
1,2-Dichloroethane (Ethylene dichloride)	DCA12
1,1 -Dichloroethylene (1, I-Dichloroethene; Vinylidene chloride).....	DCE11
cis- 1,2-Dichloroethylene (cis- 1,2-Dichloroethene).....	DCE12C
trans- 1,2-Dichloroethylene (trans- 1,2-Dichloroethene).....	DCE12T
1,2-Dichloropropane (Propylene dichloride)	DCPA12
1,3-Dichloropropane (Trimethylene dichloride)	DCPA13
2,2-Dichloropropane (Isopropylidene chloride).....	DCPA22
1,1 -Dichloropropene.....	DCP11
cis- 1,3-Dichloropropene	DCP13C
trans- 1,3-Dichloropropene.....	DCP13T
Di-isopropylether (DIPE)	DIPE
Ethanol.....	ETHANOL
Ethyltertiary butyl ether.....	ETBE
Ethylbenzene	EBZ
Ethyl methacrylate.....	EMETHACRY
Hexachlorobutadiene	HCBU

2-Hexanone (Methyl butyl ketone)	HXO2
Isobutyl alcohol	ISOBTOH
Methacrylonitrile	METHACRN
Methyl bromide (Bromomethane)	BRME
Methyl chloride (Chloromethane)	CLME
Methyl ethyl ketone (MEK; 2-Butanone)	MEK
Methyl iodide (Iodomethane)	IME
Methyl t-butyl ether	MTBE
Methyl methacrylate	MMTHACRY
4-Methyl-2-pentanone (Methyl isobutyl ketone)	MIBK
Methylene bromide (Dibromomethane)	DBMA
Methylene chloride (Dichloromethane)	DCMA
Naphthalene	NAPH
Propionitrile (Ethyl cyanide)	PACN
Styrene	STY
Tertiary amyl methyl ether	TAME
Tertiary butyl alcohol	TBA
1,1,1,2-Tetrachloroethane	TC1112
1,1,2,2-Tetrachloroethane	PCA
Tetrachloroethylene (Tetrachloroethene; Perchloroethylene; PCE)	PCE
Toluene	BZME
1,2,4-Trichlorobenzene	TCB124
1,1,1 -Trichloroethane (Methylchloroform)	TCA111
1,1,2-Trichloroethane	TCA112
Trichloroethylene (Trichloroethene; TCE)	TCE
Trichlorofluoromethane (CFC-11)	FC11
1,2,3-Trichloropropane	TCPR123
Vinyl acetate	VA
Vinyl chloride (Chloroethene)	VC
Xylene (total)	XYLENES

**Semi-Volatile Organic Compounds—USEPA Methods 8270C or 8270D
 (Base, Neutral & Acid Extractables)**

Constituent	GeoTracker Code
Acenaphthene	ACNP
Acenaphthylene	ACNPY
Acetophenone	ACPHN
2 Acetylaminofluorene (2 AAF)	ACAMFL2
Aldrin	ALDRIN
4 Aminobiphenyl	AMINOBP4
Anthracene	ANTH

Benzo[a]anthracene (Benanthracene).....	BZAA
Benzo[b]fluoranthene	BZBF
Benzo[k]fluoranthene	BZKF
Benzo[g,h,i]perylene.....	BZGHIP
Benzo[a]pyrene	BZAP
Benzyl alcohol	BZLAL
Bis(2 ethylhexyl) phthalate	BIS2EHP
alpha BHC	BHCALPHA
beta BHC.....	BHCBETA
delta BHC	BHCDELTA
gamma BHC (Lindane).....	BHCGAMMA
Bis(2 chloroethoxy) methane.....	BECEM
Bis(2 chloroethyl) ether (Dichloroethyl ether)	BIS2CEE
Bis(2 chloro 1 methylethyl) ether (Bis(2 chloroisopropyl) ether)	BIS2CIE
4 Bromophenyl phenyl ether	BPPE4
Butyl benzyl phthalate (Benzyl butyl phthalate).....	BBP
Chlordane.....	CHLORDANE
p Chloroaniline	CLANIL4
Chlorobenzilate	CLBZLATE
p Chloro m cresol (4 Chloro 3 methylphenol)	C4M3PH
2 Chloronaphthalene	CNPH2
2 Chlorophenol.....	CLPH2
4 Chlorophenyl phenyl ether	CPPE4
Chrysene.....	CHRYSENE
o Cresol (2 methylphenol)	MEPH2
m Cresol (3 methylphenol)	MEPH3
p Cresol (4 methylphenol)	MEPH4
4,4' DDD.....	DDD44
4,4' DDE.....	DDE44
4,4' DDT	DDT44
Diallate	DIALLATE
Dibenz[a,h]anthracene	DBAHA
Dibenzofuran.....	DBF
Di n butyl phthalate	DNBP
3,3' Dichlorobenzidine	DBZD33
2,4 Dichlorophenol	DCP24
2,6 Dichlorophenol	DCP26
Dieldrin	DIELDRIN
Diethyl phthalate	DEPH
p (Dimethylamino) azobenzene.....	PDMAABZ
7,12 Dimethylbenz[a]anthracene.....	DMBZA712
3,3' Dimethylbenzidine	DMBZD33
2,4 Dimehtylphenol (m Xylenol)	DMP24

Dimethyl phthalate	DMPH
m Dinitrobenzene	DNB13
4,6 Dinitro o cresol (4,6 Dinitro 2 methylphenol)	DN46M
2,4 Dinitrophenol	DNP24
2,4 Dinitrotoluene	DNT24
2,6 Dinitrotoluene	DNT26
Di n octyl phthalate.....	DNOP
Diphenylamine	DPA
Endosulfan I	ENDOSULFANA
Endosulfan II	ENDOSULFANB
Endosulfan sulfate.....	ENDOSULFANS
Endrin	ENDRIN
Endrin aldehyde	ENDRINALD
Ethyl methanesulfonate.....	EMSULFN
Famphur.....	FAMPHUR
Fluoranthene	FLA
Fluorene	FL
Heptachlor	HEPTACHLOR
Heptachlor epoxide	HEPT-EPOX
Hexachlorobenzene	HCLBZ
Hexachlorocyclopentadiene	HCCP
Hexachloroethane	HCLEA
Hexachloropropene	HCPR
Indeno(1,2,3 c,d) pyrene	INP123
Isodrin	ISODRIN
Isophorone	ISOP
Isosafrole.....	ISOSAFR
Kepone.....	KEP
Methapyrilene.....	MTPYRLN
Methoxychlor.....	MTXYCL
3 Methylcholanthrene	MECHLAN3
Methyl methanesulfonate	MMSULFN
2 Methylnaphthalene	MTNPH2
1,4 Naphthoquinone	NAPHQ14
1 Naphthylamine	AMINONAPH1
2 Naphthylamine	AMINONAPH2
o Nitroaniline (2 Nitroaniline)	NO2ANIL2
m Nitroaniline (3 Nitroaniline)	NO2ANIL3
p Nitroaniline (4 Nitroaniline)	NO2ANIL4
Nitrobenzene	NO2BZ
o Nitrophenol (2 Nitrophenol)	NTPH2
p Nitrophenol (4 Nitrophenol)	NTPH4
N Nitrosodi n butylamine (Di n butyl nitrosamine)	NNSBU

N Nitrosodiethylamine (Diethylnitrosamine)	NNSE
N Nitrosodimethylamine (Dimethylnitrosamine)	NNSM
N Nitrosodiphenylamine (Diphenylnitrosamine)	NNSPH
N Nitrosodipropylamine (N Nitroso N dipropylamine; Di n propylnitrosamine)	NNSPR
N Nitrosomethylethylamine (Methylethylnitrosamine).....	NNSME
N Nitrosopiperidine.....	NNSPPRD
N Nitrosospyrrolidine	NNSPYRL
5 Nitro o toluidine	TLDNONT5
Pentachlorobenzene	PECLBZ
Pentachloronitrobenzene (PCNB)	PECLNO2BZ
Pentachlorophenol	PCP
Phenacetin	PHNACTN
Phenanthrene.....	PHAN
Phenol	PHENOL
p Phenylenediamine.....	ANLNAM4
Polychlorinated biphenyls (PCBs; Aroclors)	PCBS
Pronamide.....	PRONAMD
Pyrene.....	PYR
Safrole.....	SAFROLE
1,2,4,5 Tetrachlorobenzene	C4BZ1245
2,3,4,6 Tetrachlorophenol	TCP2346
o Toluidine.....	TLDNO
Toxaphene	TOXAP
2,4,5 Trichlorophenol.....	TCP245
0,0,0 Triethyl phosphorothioate.....	TEPTH
sym Trinitrobenzene.....	TNB135

Chlorophenoxy Herbicides, USEPA Method 8151A

Constituent	GeoTracker Code
2,4 D (2,4 Dichlorophenoxyacetic acid).....	24D
Dinoseb (DNBP; 2 sec Butyl 4,6 dinitrophenol).....	DINOSEB
Silvex (2,4,5 Trichlorophenoxypropionic acid; 2,4,5 TP)	SILVEX
2,4,5 T (2,4,5 Trichlorophenoxyacetic acid)	245T

Organophosphorus Compounds, USEPA Method 8141B

Constituent	GeoTracker Code
Atrazine	ATRAZINE
Chlorpyrifos	CLPYRIFOS
0,0 Diethyl 0 2 pyrazinyl phosphorothioate (Thionazin).....	ZINOPHOS
Diazinon	DIAZ
Dimethoate.....	DIMETHAT
Disulfoton	DISUL
Methyl parathion (Parathion methyl).....	PARAM
Parathion.....	PARAE
Phorate.....	PHORATE
Simazine	SIMAZIN

Attachment MRP-C—Landfill Concentration Limits

Constituent Group	Constituent	Units	Landfill WMU		
			LF-1, LF-1 & 2	LF-2	LF-3
Field Parameters	Dissolved Oxygen		--	--	--
	Flow to Waters of U.S.	Yes or No	n/a	n/a	n/a
	Groundwater Elevation	Ft. & 100ths, M.S.L.	n/a	n/a	n/a
	Oxidation-Reduction Potential (ORP)	mV	--	--	--
	pH	pH Units	[6.57-8.18]	--	[6.55-8.47]
	Specific Conductance (SC)	µmhos/cm	2634	--	2016
	Temperature	°F	n/a	n/a	n/a
	Turbidity	Turbidity Units	--	--	--
General Parameters	Alkalinity, Total	mg/L	--	--	--
	Carbonate	mg/L	5.3	--	5.1
	Total Dissolved Solids (TDS)	mg/L	1100	--	920
	Total Organic Carbon (TOC)	mg/L	2.1	--	1.1
General Minerals- Major Anions	Bicarbonate	mg/L	410	--	390
	Chloride	mg/L	170	--	190
	Nitrate - Nitrogen	mg/L	--	--	--
	Sulfate	mg/L	190	--	71
General Minerals- Major Cations	Calcium	mg/L	57/43	--	57/43
	Magnesium	mg/L	38/37	--	38/37
	Potassium	mg/L	17/21	--	17/21
	Sodium	mg/L	220/260	--	220/260

Constituent Group	Constituent	Units	Landfill WMU		
			LF-1, LF-1 & 2	LF-2	LF-3
Dissolved Inorganics/ Metals	Aluminum	µg/L	PQL (50)	PQL (50)	PQL (50)
	Antimony	µg/L	PQL (2.0)	PQL (2.0)	PQL (2.0)
	Arsenic	µg/L	7.9	--	9
	Barium	µg/L	150	--	420
	Beryllium	µg/L	PQL (10)	PQL (10)	PQL (10)
	Cadmium	µg/L	PQL (1.0)	PQL (1.0)	PQL (1.0)
	Chromium	µg/L	PQL (10)	PQL (10)	PQL (10)
	Chromium VI+	µg/L	--	--	--
	Cobalt	µg/L	PQL (50)	PQL (50)	PQL (50)
	Copper	µg/L	PQL (10)	PQL (10)	PQL (10)
	Iron	µg/L	120	--	66
	Lead	µg/L	PQL (1.0)	PQL (1.0)	PQL (1.0)
	Manganese	µg/L	PQL (10)	PQL (10)	PQL (10)
	Mercury	µg/L	PQL (0.2)	PQL (0.2)	PQL (0.2)
	Nickel	µg/L	PQL (2.0)	PQL (2.0)	3.7
	Selenium	µg/L	4.9	--	8.6
	Silver	µg/L	PQL (10)	PQL (10)	PQL (10)
	Sulfide	µg/L	PQL (0.1)	PQL (0.1)	PQL (0.1)
	Thallium	µg/L	PQL (1.0)	PQL (1.0)	PQL (1.0)
Tin	µg/L	PQL (50)	PQL (50)	PQL (50)	

Attachment C Notes:

1. The CLs separate monitoring of LF-1 and contiguous monitoring of LF-1 and LF-2. 1 and LF-2 should be the same.
2. Separate CLs required for LF-2 absent approved demonstration of infeasibility per WDR Monitoring Specification G.5. CLs for contiguous monitoring of LF-1 & LF-2 required before and after this demonstration.
3. CLs required for entries shown as "---".
4. CLs not required for entries shown as "n/a" (not applicable).
5. CLs also required for both Class II surface impoundments.