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[TENTATIVE] WASTE DISCHARGE REQUIREMENTS ORDER R5-2024-XXXX

ORDER INFORMATION

Order Type(s):	Waste Discharge Requirements (WDRs)
Status:	TENTATIVE
Program:	Title 27 Discharges to Land
Region 5 Office:	Sacramento
Discharger(s):	Ma-Ru Holding Company, Inc. and Bonzi Sanitation Landfill, General Partnership
Facility:	Bonzi Sanitation Landfill
Address:	2650 West Hatch Road, Modesto
County:	Stanislaus County
Parcel Nos.:	017-041-036, 017-041-042
GeoTracker ID:	L10009514929
Prior Order(s):	R5-2007-0148, 98-093, 92-155, 89-043, 78-180

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 2024.

PATRICK PULUPA,
Executive Officer

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GLOSSARY

ADC	Alternative Daily Cover
Antidegradation Policy	Statement of Policy with Respect to Maintaining High Quality Waters in California, State Water Board Resolution 68-16
Basin Plan	*Water Quality Control Plan for the Sacramento and San Joaquin River Basins*
bgs	Below Ground Surface
BOD	Biological Oxygen Demand
C&D	Construction and Demolition
CalRecycle	California Department of Resources Recycling and Recovery
CAP	Corrective Action Program
CAMP	Corrective Action Monitoring Program
Central Valley Water Board	Central Valley Regional Water Quality Control Board
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.)

GLOSSARY

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

GAC. .....Granular Activated Carbon

GCL.....Geosynthetic Clay Liner

GTS.....Groundwater Treatment System

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

LAA.....Land Application Area

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

MCE .....Maximum Credible Earthquake

MDB&M .....Mount Diablo Base and Meridian

MDL .....Method Detection Limit

GLOSSARY

µg/L.....Micrograms per Liter

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

NOAA.....National Oceanic and Atmospheric Administration

PMP .....Post-Closure Maintenance Plan

PQL.....Practical Quantitation Limit

SMR .....Self Monitoring Report

SPRRs .....Standard Provisions and Reporting Requirements

State Water Board .....State Water Resources Control Board

Subtitle D .....USEPA-promulgated MSW regulations under RCRA (see 40 C.F.R. part 258)

RCRA.....Resource Conservation and Recovery Act

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

TSRB .....Treatment System Retention Basin

USEPA.....United States Environmental Protection Agency

VOCs .....Volatile Organic Compounds

WDID.....Waste Discharger Identification

GLOSSARY

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. Ma-Ru Holding Company, Inc., is the landowner of parcel 017-041-36 and the Estate of Rudy Bonzi and the Mary Bonzi 2007 Novation Trust dated 27 January 2007 owns parcel 017-041-042. Bonzi Sanitation Landfill, a California general partnership between Rudy Bonzi and Mary Bonzi is the operator. All three parties, hereafter the landowners and operator collectively referred to as "Discharger", are jointly responsible for the Bonzi Sanitation Landfill (Facility), which is located approximately three miles southwest of Modesto in Stanislaus County, Section 12, Township 4 South, Range 4 East, Mount Diablo Base and Meridian (MDB&M). The Facility's location is depicted on the Site Location Map in **Attachment A**.

2. Rudy Bonzi died in 1991. His estate, including his interests in Ma-Ru Holding Company, Inc. and Bonzi Sanitation Landfill, is administered by James Bonzi in his capacity as Executor. Mary Bonzi died in 2008. Her estate, including her interests in Ma-Ru Holding Company, Inc. and Bonzi Sanitation Landfill, is administered by Thad Bettencourt in his capacity as Executor. Neither James Bonzi nor Thad Bettencourt are personally liable for compliance with this Order or the associated Monitoring and Reporting Order.

3. The Facility is situated on an approximately 156-acre property comprised of Assessor's Parcel Numbers (APNs) 017-041-036 and 017-041-042. The address associated with the Facility is 2650 West Hatch Road, Modesto, California 95358. Four Waste Management Units (WMUs) comprise approximately 85.9 permitted acres of the 156-acre site. The remaining acres contain the groundwater treatment system (GTS), a landfill gas (LFG) extraction system including a LFG flare, treatment system retention basin (TSRB) in the southwest corner of the property, the former scale house area near the site entrance on the north, perimeter roads, and a former soil borrow area (currently stormwater sedimentation basin SB-1) in the northeastern portion of the site and a stormwater sedimentation basin (SB-2) in the southern portion of the Facility. Also included in the remaining 70.1 acres is an approximately 21-acre land application area (LAA) in the southernmost portion used by Facility's groundwater treatment system and/or tree crops. The Facility is three miles southwest of Modesto near the Tuolumne River.

4. As the Facility's owner and operator, the Discharger is responsible for compliance with this Order, which prescribes waste discharge requirements (WDRs) regulating monitoring, post-closure maintenance, and corrective action of the WMUs listed in **Table 1**. Additional Findings regarding the WMUs permitted in this Order are listed in the attached Information Sheet.

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

Unit	Type	Class	Size (Acres)	Status
WMU I	Landfill	Class III	36.4	Closed
WMU II	Landfill	Class III	17.7	Closed
WMU III-A,III-B, III-C	Landfill	Class III	10.9	Closed
WMU III-D, III-E, III-F	Landfill	Unclassified	8.9	Closed
WMU IV	Landfill	Unclassified	12	Closed

See Glossary for definitions of terms and abbreviations in table.

Materials Accompanying Order

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

ATTACHMENT A—LOCATION MAP
ATTACHMENT B—FACILITY MAP
ATTACHMENT C—GROUNDWATER MONITORING AND EXTRACTION NETWORK
ATTACHMENT D—LANDFILL GAS MONITORING AND EXTRACTION NETWORK
ATTACHMENT E—SURFACE WATER DRAINAGE MAP AND SURFACE WATER MONITORING POINTS

Standard Provisions & Reporting Requirements for Non-Hazardous Discharges of Waste Regulated under Subtitle D and/or Title 27, December 2015 Edition (SPRRs or Standard Provisions)

Information Sheet for [TENTATIVE] Waste Discharge Requirements Order (Information Sheet)

6. This Order is also accompanied by the concurrently adopted **Monitoring & Reporting Program R5-2024-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).

7. 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.

8. Additional information about the Facility is set forth in the **Information Sheet**, which is incorporated as part of these findings.

Facility

9. The Facility began operating in the 1960s, and in 1999, a PVC final cover was installed atop WMU I. The Facility ceased accepting waste in November 2009.

10. Final cover construction was substantially completed on 4 February 2022, and all closure project work, including fence installation, was completed on 28 April 2022.

11. The Facility includes the following onsite features, systems, and structures as shown in **Attachment B**:

    a. Four closed unlined WMUs (WMU I through WMU IV).

    b. The Treatment System Retention Basin (TSRB), with a ten million gallon capacity is located in the southwest corner of the Landfill property encompasses an area of approximately 4.4 acres which is lined with a 60-mil High-Density Polyethylene (HDPE) geomembrane liner. The TSRB receives treated water from a groundwater treatment system and storm water from areas adjacent to the pond. Because the pond does not receive designated waste, it is not required to have an LCRS or a secondary liner system.

    c. Two stormwater retention basins (SB-1 and SB-2) that collect non-contact stormwater runoff from the facility. SB-1 is unlined while SB-2 is lined to prevent stormwater infiltration. The location of the stormwater retention basins is shown on **Attachment B**.

d. Stormwater conveyance ditches that convey stormwater runoff from the facility to the two stormwater basins.

e. Groundwater monitoring wells used to monitor groundwater quality.

f. Groundwater extraction wells and groundwater treatment system used as corrective action to mitigate groundwater degradation caused by the landfill.

g. Landfill gas monitoring and landfill gas extraction wells used to minimize degradation of groundwater caused by landfill gas. This system includes a landfill gas flare system to properly dispose of landfill gas generated by decomposing waste within the WMUs.

h. An LAA, currently consisting of poplar trees, used to beneficially reuse treated groundwater from its groundwater treatment system.

i. Various structures, such as a single family residence and carport, administrative building, storage building, vehicle canopy, 10,000 gallon above ground water tank, construction staging area, and a soil borrow pit.

Waste Classification & Permitting

12. The Facility's landfills are not subject to federal Municipal Solid Waste (MSW) regulations promulgated under the Resource Conservation Recovery Act (RCRA) (42 U.S.C. sec. 6901 et seq.). Typically referred to as "Subtitle D," these regulations are now codified as Code of Federal Regulations title 40, 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.

13. On 26 October 2007, the Central Valley Water Board adopted WDRs Order R5-2007-0148, classifying the Facility's WMUs as either unclassified or Class III units for the discharge of non-hazardous solid waste and municipal solid waste. This Order continues such classifications, which are set forth above in **Table 1**.

14. The landfills in **Table 2** are categorized as **Existing Units** under Title 27 (see Title 27, sec. 20080(d)). Additional WMUs at the site are discussed in the Information Sheet.

Table 2—Landfills as "Existing Units" under Title 27

Unit	Type of Construction
WMU I	Unlined
WMU II	Unlined

See Glossary for definitions of terms and abbreviations in table.

Site Conditions

15. The Facility is situated about 2,000 feet south of the Tuolumne River, with Vivian Road to the west, Whitmore Road to the south and Carpenter Road to the east. Low topographic relief characterizes the landfill and surrounding area.

16. The Facility is located within the Great Valley Physiographic Province of California. Dames and Moore (1990) have described the geology of the site. The upper several hundred feet of geologic formations in the landfill area consist primarily of Pleistocene to recent unconsolidated alluvium with a heterogeneous complex of clay, silts, sands and gravel. The E-clay or Corcoran Clay, a continuous blue to grey silt/clay layer, is characteristic of the local formations and occurs at a depth of approximately 120 feet below the ground surface (bgs). The surficial site geology consists of interbedded layers of silty sands and sandy silts extending to approximately 25 to 50 feet bgs and are underlain by a relatively homogeneous layer of sand. These deposits are presumably underlain by the E-clay.

17. The 13 October 2006 Groundwater Monitoring System Upgrade Report states that the first encountered groundwater is between 10 and 20 feet below the native ground surface (bgs). The water-bearing zone beneath the Facility consists of interbedded alluvial deposits of sands, silty sands and sandy silts overlying the Corcoran Clay. The unconfined aquifer in the Facility vicinity is estimated to average approximately 70 to 85 feet in thickness. Groundwater surface elevations at the Facility are influenced by river- aquifer interactions. The hydraulic conductivity of the shallow waterbearing formations underlying the Facility is estimated to range from approximately 7.9×10^{-3} to 2.5×10^{-2} centimeters per second. Detailed descriptions of the Facility hydrogeology are presented in the Site Investigation Report (1987) and Hydrogeologic Summary Report (1989) prepared by Dames & Moore.

18. The water-bearing zone beneath the Facility consists of interbedded alluvial deposits of sands, silty sands, and sandy silts overlying the E-Clay. The

unconfined aquifer in the vicinity of the site is estimated to average approximately 70 to 85 feet in thickness. Groundwater surface elevations are influenced by Tuolumne River-aquifer interactions. The hydraulic conductivity of the shallow water bearing formations underlying the Facility is estimated to range from approximately 7.9×10^{-3} to 2.5×10^{-2} centimeters per second.

19. Land uses within one mile of the Facility are as follow:

    a. The Riverdale Park Tract subdivision is approximately 100 feet north of the Landfill boundary. Also, to the north-northwest is a closed transfer station/materials recovery facility (TS/MRF) owned by Waste Management, Inc. Included on their property is an old burn dump formerly operated by Modesto Disposal Service, Inc. A Veterans of Foreign Wars (VFW) facility is located west and adjacent to the TS/MRF property (i.e., northwest of the Facility). The Tuolumne River is approximately 1,000 to 1,200 feet north of the Facility, and is directly north of the Riverdale Park Tract, TS/MRF, and VFW facility.

    b. Land use west of the Facility is mixed agricultural, commercial, and residential. An auto wrecking yard and residence are adjacent to the northern part of the western Facility boundary.

    c. Land use south of the Facility is agriculture.

    d. Land use east of the Facility is primarily agriculture. A small food market and house, which is situated on a 0.65-acre parcel that is bound to the west, south, and east by Facility property, is located near the northeast corner of the Facility. A trucking company borders a portion of the Facility near the southeast property corner.

20. Surface water from the Facility drains away from the site north toward the Tuolumne River, a tributary from the New Don Pedro Dam to the San Joaquin River, which is in the Turlock Hydrologic Area (535.50) of the San Joaquin Valley Floor Basin. 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 the Tuolumne River include: potential municipal and domestic use (MUN); agricultural supply (AGR); water contact recreation (REC1); non-water contact recreation (REC2); warm freshwater habitat (WARM); cold freshwater habitat (COLD); wildlife habitat (WILD); migration of aquatic organisms (MIGR); and spawning, reproduction and/or early development (SPAWN).

21. The predominant groundwater flow direction in the Facility vicinity is presently toward the north-northwest. The local groundwater gradient is strongly influenced by the Tuolumne River. Groundwater gradients vary in direction and magnitude as influenced by changing river stages. During high river stages groundwater flow and direction is more westerly parallel to the river. The direction of regional groundwater flow does not appear to be influenced by any cone of depression which may be formed by pumping of the municipal supply well located in the Riverdale Park Tract, approximately 500 feet north of the Facility. Groundwater surface elevations have historically ranged from approximately 35 to 50 feet MSL.

22. Groundwater flow gradients based on First Semester 2022 Self-Monitoring Report (SMR) measurements is generally interpreted to flow to the west and north-northwest, toward the Tuolumne River at a hydraulic gradient ranging from 0.0005 to 0.0027 ft/ft. Based on a hydraulic conductivity of 70.87 ft/day, an effective porosity of 33 percent (AMEC, 2010), and a hydraulic gradient of 0.0005 ft/ft to 0.0027 ft/ft, the groundwater flow velocity beneath the Facility is calculated to be 0.11 ft/day to 0.58 ft/day.

23. According to the Basin Plan, the designated beneficial uses of groundwater at the Facility are municipal and domestic supply (MUN), agricultural supply (AGR), industrial service supply (IND) and industrial process supply (PRO).

24. There are at least ten known domestic, irrigation, and municipal wells that are downgradient of the Facility, which are or may be affected by the plume of groundwater pollution emanating from the Facility. The locations of these wells are mapped in **Attachment C** and are described below in **Table 3**.

Table 3—Well Locations

Address	Use
Riverdale Park Community Well	Municipal
Ace Well – 2736 W Hatch Road	Domestic
VFW Well – 2801 W Hatch Roa	Domestic
Helmer Well – 2954 W Hatch Road	Domestic
Alumari Well – 2432 W Hatch Road	Domestic
Graham Well – 1642 Vivian Road	Domestic
Guerrero Well – 1712 Vivian Road	Domestic
Nevitts Well – 1842 Vivian Road	Domestic
George Well – 1918 Vivian Road	Domestic
Waste Management Inc. - 2769 W Hatch Road	Domestic and Industrial

25. The Riverdale Park Community municipal well is approximately 500-feet from the northern boundary of the landfill and directly downgradient of WMU I. This 14-inch diameter, 200- feet deep open bottom well provides drinking water for the adjacent Riverdale Park Community.

26. The Ortigalita fault zone is located approximately 27 miles southwest of the Facility, while the Greenville fault zone is located approximately 28 miles west of the Facility. Both of these faults have been designated as Alquist-Priolo Special Studies Zones. Portions of these faults and fault zones are of considerable length and have been characterized by the California Division of Mines and Geology as major Late Quaternary fault zones. Class III WMUs must be designed and constructed to withstand a maximum probable earthquake (MPE). (Title 27, sec. 20370.)

27. The Discharger's site -specific seismic analysis indicates that an earthquake, occurring along segment 7 of the Great Valley Fault, at a closest rupture distance of 16 miles, would result in the events summarized in **Table 4**.

Table 4—Seismic Analysis

Earthquake	Magnitude	Peak Ground Acceleration
Max Probable (MPE)	5.8	0.12 g[1]

Note:
1. Unit “g” is the acceleration due to gravity.

28. Based on data from the nearest weather station (Modesto Station, California Department of Water Resources (DWR) station number BOO 5738-00), the Facility has an annual average precipitation of 12 inches, and a mean pan evaporation of 71.04 inches per year recorded at the Westley Station. The nearest weather station is reflective of conditions at the Facility.

29. Class III WMUs must be constructed to accommodate stormwater runoff from 24hour precipitation events with a return period of 100 years. (See Title 27, sec. 20320.) According to National Oceanic and Atmospheric Administration’s (NOAA) Precipitation Frequency Atlas 14, Volume 6 (rev. 2014), the Facility’s 100-year, 24-hour rainfall events are estimated to result in 3.21 inches of precipitation. Source: NOAA Precipitation Frequency Data Server (https://hdsc.nws.noaa.gov/hdsc/pfds).

30. Stormwater sedimentation basins SB-1 and SB-2 are situated in the at the Facility, as depicted in **Attachment B**. Usually dry during summer months, these

stormwater basins may discharge to unnamed agricultural and stormwater drainage canals which can eventually drain to the Tuolumne River. The Facility is currently **NOT** 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). The Discharger terminated its Industrial General Permit (WDID# 5S50I005745) on 17 January 2012 prior to installation of final closure covers over WMUs II through IV. Installation of the final closure covers over approximately 58 acres is expected to increase stormwater runoff at the Facility, which, without coverage under the Industrial General Permit, would have to be contained onsite at all times without any off-property discharge. Section I, Time Schedule, of this Order requires the Discharger to either seek coverage under the Industrial General Permit or demonstrate that the Facility has adequate storage capacity to contain all non-contact stormwater within the facility boundary.

31. According to the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map (https://msc.fema.gov/portal), a portion of the WMUs along the northern portion of the site is located within a 100-year floodplain. In 1997, the Tuolumne River overflowed its banks and flooded the adjacent Riverdale community and portions of the Facility. The FEMA Flood Insurance Rate Map for this area of Stanislaus County shows the Facility within "Zone AE" and "Zone X". Zone AE is defined as a 100-year flood plain, while Zone X is defined as the area of a 100-year flood with average depths of less than 1-foot. In 1997, the site experienced flooding when the Tuolumne River overtopped its banks. To prevent future inundation or washout of the final cover due to a 100-year flood event, the side slopes of WMU II-IV within Zone AE and Zone X were armored with geocell up to elevation 68 ft msl (2 additional feet were added to the height for capacity and durability purposes). Therefore, the Discharger has demonstrated that its affected WMUs will not: (a) restrict the flow of a 100-year flood; (b) reduce the floodplain's temporary water storage capacity; or (c) result in a washout that poses a hazard to human health and/or the environment. (See 40 C.F.R. sec. 258.11(a); State Water Board Resolution No. 93-62, p. 6.)

Monitoring Networks

32. As of the date of this Order, the Facility's **groundwater** monitoring network consists of the existing and proposed monitoring wells listed in **Table 5**.

Table 5—Groundwater Monitoring Well Network

Well	Program	Monitored Unit	Water-Bearing Zone	Status
06-10	Background	N/A	Shallow	Operational
86-9	Background	N/A	Shallow	Operational
07-01	Background	N/A	Shallow	Operational
P-1	Detection	IV	Shallow	Operational
85-4	Detection	I	Shallow	Operational
85-4A	Detection	I	Shallow	Operational
85-10	Detection	III	Shallow	Operational
86-1	Detection	I	Shallow	Operational
06-03	Detection	I	Shallow	Operational
06-09	Detection	III	Shallow	Operational
84-13R	Detection	III	Shallow	Operational
06-04	Detection	IV	Shallow	Operational
06-06	Detection	I	Shallow	Operational
06-07	Detection	TSRB	Shallow	Operational
MW-6R	Detection	I	Shallow	Operational
90-1	Detection	II	Shallow	Operational
90-2	Detection	II	Shallow	Operational
06-05	Detection	II	Shallow	Operational
06-08	Detection	II	Shallow	Operational
84-24	Corrective Action	I	Shallow	Operational

Well	Program	Monitored Unit	Water-Bearing Zone	Status
85-7	Corrective Action	I	Shallow	Operational
85-25	Corrective Action	I	Shallow	Operational
86-3	Corrective Action	I	Shallow	Operational
86-4	Corrective Action	I	Shallow	Operational
86-5A	Corrective Action	I	Shallow	Operational
86-5B	Corrective Action	I	Shallow	Operational
86-6A	Corrective Action	I	Shallow	Operational
86-6B	Corrective Action	I	Shallow	Operational
88-1	Corrective Action	I	Shallow	Operational
06-1A	Corrective Action	I	Shallow	Operational
06-1B	Corrective Action	I	Shallow	Operational
06-02	Corrective Action	IV	Shallow	Operational
86-7A	Corrective Action	I	Shallow	Operational
86-7B	Corrective Action	I	Shallow	Operational

Well	Program	Monitored Unit	Water-Bearing Zone	Status
86-8	Corrective Action	I	Shallow	Operational
ACE	Corrective Action	I	Shallow	Operational
Riverdale	Corrective Action	I	Shallow	Operational
VFW	Corrective Action	I	Shallow	Operational
Helmer	Corrective Action	I	Shallow	Operational
WM Inc.	Corrective Action	N/A	Shallow	Operational
EW-1	Corrective Action	I	Shallow	Operational
EW-2	Corrective Action	I	Shallow	Operational
EW-3	Corrective Action	I	Shallow	Operational
92-C1L	Corrective Action	I	Shallow	Operational
92-A1L	Corrective Action	I	Shallow	Operational
92-AIL	Corrective Action	I	Shallow	Operational
84-22	Inactive	Background	Shallow	Inactive
85-11	Inactive	Background	Shallow	Inactive

33. As of the date of this Order, the Facility's **unsaturated zone** monitoring network consists of the existing monitoring points listed in **Table 6**.

Table 6—Unsaturated Zone Monitoring Network

Monitoring Point[1]	Device Type	Program	Monitored Unit	Status
1W(a),(b)	Gas Probe	Detection	Landfill Perimeter	Operational
2W(a),(b)	Gas Probe	Detection	Landfill Perimeter	Operational
3W(a),(b)	Gas Probe	Detection	Landfill Perimeter	Operational
4W(a),(b)	Gas Probe	Detection	Landfill Perimeter	Operational
5W(a)	Gas Probe	Detection	Landfill Perimeter	Operational
6W(a)	Gas Probe	Detection	Landfill Perimeter	Operational
7W(a)	Gas Probe	Detection	Landfill Perimeter	Operational
9W(a)	Gas Probe	Detection	Landfill Perimeter	Operational
10W(a)	Gas Probe	Detection	Landfill Perimeter	Operational
46W(a),(b),(c)	Gas Probe	Detection	Landfill Perimeter	Operational
47W(a),(b),(c)	Gas Probe	Detection	Landfill Perimeter	Operational
48S(a),(b),(c)	Gas Probe	Detection	Landfill Perimeter	Operational
49S(a),(b),(c)	Gas Probe	Detection	Landfill Perimeter	Operational

Monitoring Point[1]	Device Type	Program	Monitored Unit	Status
50S(a),(b),(c)	Gas Probe	Detection	Landfill Perimeter	Operational
20S(a),(b),(c)	Gas Probe	Detection	Landfill Perimeter	Operational
21S(a),(b),(c)	Gas Probe	Detection	Landfill Perimeter	Operational
22S(a),(b)	Gas Probe	Detection	Landfill Perimeter	Operational
23E(a),(b),(c)	Gas Probe	Detection	Landfill Perimeter	Operational
24E(a),(b)	Gas Probe	Detection	Landfill Perimeter	Operational
25E(a),(b)	Gas Probe	Detection	Landfill Perimeter	Operational
27E(a),(b),(c)	Gas Probe	Detection	Landfill Perimeter	Operational
29N(a),(b)	Gas Probe	Detection	Landfill Perimeter	Operational
30N(a),(b)	Gas Probe	Detection	Landfill Perimeter	Operational
31N(a),(b)	Gas Probe	Detection	Landfill Perimeter	Operational
32N(a),(b)	Gas Probe	Detection	Landfill Perimeter	Operational
33N(a),(b)	Gas Probe	Detection	Landfill Perimeter	Operational
35N(a),(b)	Gas Probe	Detection	Landfill Perimeter	Operational

Monitoring Point[1]	Device Type	Program	Monitored Unit	Status
36N(a),(b)	Gas Probe	Detection	Landfill Perimeter	Operational
37N(a),(b)	Gas Probe	Detection	Landfill Perimeter	Operational
38N(a),(b)	Gas Probe	Detection	Landfill Perimeter	Operational
39N(a)	Gas Probe	Detection	Landfill Perimeter	Operational
40N(a)	Gas Probe	Detection	Landfill Perimeter	Operational
41N(a)	Gas Probe	Detection	Landfill Perimeter	Operational
42N(a)	Gas Probe	Detection	Landfill Perimeter	Operational
43N(a)	Gas Probe	Detection	Landfill Perimeter	Operational
44N(a)	Gas Probe	Detection	Landfill Perimeter	Operational
45N(a)	Gas Probe	Detection	Landfill Perimeter	Operational

Note:

1. Monitoring well designation (a) represents shallow depth, (b) represents intermediate depth, and (c) represents deep depth.

34. 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 7**.

Table 7—Surface Water Monitoring Network

Monitoring Point	Location	Monitored Unit	Status
SW-1	TSRB Effluent Discharge to LAA	TSRB	Operational

See Glossary for definitions of terms and abbreviations in table.

35. As of the adoption of this Order, the above-described networks comply with the monitoring requirements of Title 27. (See Title 27, secs. 20415–20435.) Subsequent changes to these networks will be reflected in a Revised Monitoring & Reporting Program Order issued by the Executive Officer.

Water Quality Protection Standard

36. 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, sec. 20390, subd. (a).) Under Title 27, a WQPS is separately established for each WMU in WDRs. (*Id*.)

37. In accordance with Title 27, this Order, by virtue of its incorporation of **Monitoring & Reporting Program R5-2024-XXXX (MRP)** and subsequent revisions thereto, establishes a WQPS for each WMU at the Facility.

Corrective Action

38. Corrective action at the Facility consists of the following activities:

    a. Postclosure maintenance of the final closure covers over WMUs I through IV. In accordance with Title 27 section 20950, subdivision (a)(2)(A)(2), the goal of postclosure maintenance of the final closure cover is to minimize the infiltration of water into the waste, thereby minimizing the production of leachate and gas such that the WMUs no longer constitute a potential threat to water quality. The Facility is no longer open and all WMUs are closed with a final closure cover as a corrective action measure.

    b. Continued operation and maintenance of a groundwater extraction and treatment system to prevent contaminated groundwater from leaving the Facility boundary. The Facility currently operates three groundwater extraction wells (EW-1 through EW-3) and treats contaminated groundwater using a granulated activated carbon (GAC) treatment system;

c. Continued operation and maintenance of an active landfill gas extraction system to minimize a release of gas related constituents of concern to underlying groundwater resources.; and

d. Continued periodic monitoring of offsite water supply wells to ensure that the release of waste from the Facility to groundwater has not impacted the beneficial uses of groundwater nor cause a health concern for users in the surrounding area who rely on beneficial uses of groundwater.

39. Please see Information Sheet for historical information related to corrective action and previous enforcement.

Unit Construction

40. The Central Valley Water Board is authorized to approve an **engineered alternative** to Title 27 prescriptive standards (see, e.g., Title 27, sec. 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, sec. 20080, subds. (b), (c); State Water Board Res. 93-62.)

Unit Closures

41. The Facility's WMUs have been closed on the dates specified in in **Table 8**.

Table 8—Unit Closure Dates

Unit Module	Closure Date
WMU I	1999
WMU II	2022
WMU III	2022
WMU IV	2022

42. The engineered alternative proposed for the final closure cover system over WMUs II, III and IV consisted of the following, in ascending order:

a. A 2-ft thick compacted foundation layer;

b. A low permeability layer consisting of 40-mil linear low density polyethylene (LLDPE);

c. A double-sided geocomposite drainage layer on top of the LLDPE where slopes are steeper than 10 percent; and

d. 1.5-feet thick soil layer, which is capable of supporting vegetation throughout the postclosure maintenance period.

43. The Discharger demonstrated that the proposed engineered alternatives described above are consistent with the performance goals of the prescriptive standard, as described above, and will afford at least equivalent water quality protections.

44. Stability analyses were performed to support the design of the proposed final cover system and preparation of the Final Closure Plan. Static stability analyses were based on the infinite slope limit equilibrium procedure summarized in Koerner and Soong (1998). The results of the analyses indicate static safety factors greater than 1.5 for all potential failure surfaces under the assumption that the final cover does not become saturated. Seepage analyses suggest that sliding of the vegetative soil layer could occur on the steeper portions of the cover if this layer becomes fully saturated. However, this is a common final cover stability analysis result that does not necessarily indicate an unstable condition because the geocomposite drainage layer is intended to prevent saturation. Additionally, full vegetative soil layer saturation, should it occur, would be a transient condition. Pseudostatic stability analyses were on a seismic coefficient of 0.15g. For cases where the pseudostatic safety factor was less than 1.5, deformation analyses would typically be performed using the generally accepted procedure described by Makdisi and Seed (1978). As summarized in the Discharger's Closure Plan, all pseudostatic safety factors were greater than 1.5, and therefore a deformation analysis was not necessary.

45. The final cover slopes on the WMUs are within Title 27 limits (i.e., 1¾ horizontal feet for every 1 foot of vertical gain) and supported by a static and dynamic slope stability analysis demonstrating that side slopes will remain stable, both under stable and dynamic conditions, throughout the life of the unit. (See Title 27, sec. 21750, subd. (f)(5).) The final cover shall include a 15-foot wide bench at minimum for every 50 feet of vertical gain where necessary. (See Title 27, sec. 21090, subd. (a).)

46. CalRecycle approved the Discharger's proposed final cover over WMUs II-IV as described in **Finding 42**.

Land Application Area

47. The Discharger operates the TSRB and discharges TSRB's effluent into a 21-acre Land Application Area (LAA) at the Facility, which is south of the detention basin (see Attachment B).

48. TSRB receives treated water from a groundwater treatment system and storm water from areas adjacent to the pond. The following acronyms are used in Table 9 and throughout the Order.

a. EC = electrical conductivity

b. TDS = Total Dissolved Solids

c. N = Nitrogen

d. As = Arsenic

e. Mn = Manganese

f. Cr = Chromium

g. Cl = Chloride

h. SO4 = Sulfate

i. mg/L = milligrams per liter

j. µg/L = micrograms per liter

k. µmhos/cm = micromhos per centimeter

Potential Water Objectives (WQOs) are based on the following:

Potential WQOs for EC and TDS = Secondary Contaminant Level and Upper Containment Level

Nitrate as N, As, and Cr = Primary MCL

SO4, Cl, and Mn = Secondary Maximum Contaminant Levels (MCLs) (see Cal. Code of Regs., tit. 22, sec. 64449.)

49. Effluent samples were collected from TSRB prior to discharging to the LAA from 2011 to 2023. A summary of the effluent concentrations is presented below along with a trend analysis. For non-results, half of the analytical method detection limits were used for averaging purposes.

Table 9—Effluent Quality

Constituent	Units	Trend (Data From Years 2011 - 2023)	Average
EC	µmhos/cm	Increasing	805
TDS	mg/L	Increasing	523
Nitrate as Nitrogen	mg/L	Decreasing	1.5
Chloride	mg/L	Stable	67
Sulfate	mg/L	Decreasing	32.4
Manganese	µg/L	NA	NA

Constituent	Units	Trend (Data From Years 2011 - 2023)	Average
Arsenic	µg/L	Increasing	2.8
Chromium	µg/L	Stable	1.3

NA = Not available.

50. Crops shall be grown on the LAA. The Discharger has selected to grow poplar trees, based on their nutrient uptake capacity, tolerance of anticipated soil conditions, water needs, and evapotranspiration rates. The Central Valley Water Board shall be notified prior to harvesting the trees. If other crops are selected for the property, they should have similar agronomic uptake values and Central Valley Water Board staff should be notified prior to planting.

51. Groundwater degradation and pollution with nitrogen species such as ammonia and nitrate can be prevented by minimizing percolation below the root zone of crops and ensuring that the total nitrogen load does not exceed crop needs over the course of a typical year. Where there is sufficient unsaturated soil in the vadose zone, excess nitrogen can be mineralized and denitrified by soil microorganisms.

52. Excess Biochemical Oxygen Demand (BOD) is developed by excessive organic waste application that depletes oxygen in the vadose zone creating anoxic conditions. At the surface, this can result in nuisance odors and fly-breeding. When insufficient oxygen is present below the ground surface, anaerobic decay of organic matter can create reducing conditions that convert naturally occurring metals from insoluble to a more soluble reduced form. This condition can be exacerbated by acidic soils and excess moisture. If reducing conditions do not reverse as the percolate moves down through the vadose zone, the dissolved metals (such as manganese, iron, arsenic, and chromium) can degrade shallow groundwater quality. Many aquifers contain enough dissolved oxygen to reverse the process.

53. Under these current WDRs, the following shallow groundwater monitoring wells will be used to detect levels of waste constituents: 06-10, 07-01, 06-06, 06-07, and 86-4. Wells 06-10 and 07-01 are considered upgradient wells and are located to the south of the LAA. Wells 06-06, 06-07, and 86-4 are considered downgradient wells and located northwest of the LAA. Well construction details are shown below (see **Table 10**). Groundwater elevations are from the 30 January 2023 *Second Semi-Annual 2023 and Annual Groundwater Monitoring Report*.

Table 10—Well Construction Details

Monitoring Well	Well Depth (feet bgs)	Screen Interval (feet bgs)	Well Casing Elevation (ft MSL)	GW Elevation (feet)
06-10	34.7	NA	73.64	42.82
07-01	37.57	NA	77.15	42.13
06-06	46.39	NA	76.25	39.55
06-07	40.05	NA	75.21	40.11
86-4	29.25	15-25	62.08	36.9

NA = Not applicable.

54. Site and groundwater conditions for the Facility are discussed in Findings 0 to 0.

55. A summary of the annual average groundwater concentration of selected constituents in the upgradient wells, which include 06-10 and 07-01, are detailed in **Table 11** and **Table 12** below. Available data collected from these wells range between 2010 and 2023. The potential WQOs described in the tables are used for comparison purposes only.

Table 11— Well 06-10 Groundwater Quality (Upgradient Well)

Year	EC (µmhos/cm)	TDS (mg/L)	Nitrate as N (mg/L)	Cl (mg/L)	SO4 (mg/L)	Mn (ug/L)	As (ug/L)	Cr (mg/L)
2010	228	140	2.8	6.2	6	1.2	1.3	2.5
2011	639	420	20	26	27	0.51	0.79	2.4
2012	1,432	900	75	77	89	0.58	1.3	6.1
2013	1,185	865	61.5	54	68	1.3	1.3	4.6
2014	--	--	--	--	--	--	--	--
2015	--	--	--	--	--	--	--	--
2016	--	--	--	--	--	--	--	--
2017	334	220	3.7	5.8	5.6	5.7	1.5	4.7
2018	--	--	--	--	--	--	--	--
2019	356	250	3.25	5.1	5	69	1.4	5.2
2020	499	340	6.9	8.8	7.3	1.7	1.3	5.4
2021	--	--	--	--	--	--	--	--
2022	--	--	--	--	--	--	--	--
2023	292	200	5.6	3.1	3.5	5	1.9	23

Year	EC (µmhos/cm)	TDS (mg/L)	Nitrate as N (mg/L)	Cl (mg/L)	SO4 (mg/L)	Mn (ug/L)	As (ug/L)	Cr (mg/L)
Potential WQO	**1,600 (sMCL upper)**	**1,000 (sMCL upper)**	**10 (MCL)**	**250 (sMCL)**	**250 (sMCL)**	**50 (sMCL)**	**10 (MCL)**	**50 (MCL)**

Table 12— Well 07-01 Groundwater Quality (Upgradient Well)

Year	EC (µmhos/cm)	TDS (mg/L)	Nitrate as N (mg/L)	Cl (mg/L)	SO4 (mg/L)	Mn (ug/L)	As (ug/L)	Cr (mg/L)
2010	724	350	7.9	15	18	0.85	3.9	5.6
2011	613	420	9.8	14	17	0.33	1.8	3.1
2012	561	360	7.4	13	14	0.4	1.8	4.6
2013	552	385	8	15	15	0.34	1.8	3.5
2014	615	390	8.5	23	21	0.36	1.6	3.4
2015	--	--	--	--	--	--	--	--
2016	741	440	8.5	26	23	0.3	2	4.8
2017	694	460	10	32	25	22	1.9	5
2018	--	--	--	--	--	--	--	--
2019	657	450	11	29	24	0.3	1.7	5
2020	724	400	12	36	27	4.2	1.4	5.9
2021	770	520	13	45	33	170	1.9	13
2022	--	--	--	--	--	--	--	--
2023	750	470	12	40	29	0.45	< 1.9	5
Potential WQO	**1,600 (sMCL upper)**	**1,000 (sMCL upper)**	**10 (MCL)**	**250 (sMCL)**	**250 (sMCL)**	**50 (sMCL)**	**10 (MCL)**	**50 (MCL)**

56. A summary of the annual average groundwater concentration of selected constituents in the downgradient wells, which include 06-06, 06-07, and 86-4, are detailed in **Table 13**, **Table 14**, and **Table 15** below. Available data collected from these wells range between 2010 and 2023. The potential WQOs described in the tables are used for comparison purposes only.

Table 13— Well 06-06 Groundwater Quality (Downgradient Well)

Year	EC (µmhos/cm)	TDS (mg/L)	Nitrate as N (mg/L)	Cl (mg/L)	SO4 (mg/L)	Mn (ug/L)	As (ug/L)	Cr (mg/L)
2010	1,990	1,000	42	78	220	1.1	2	0.58
2011	1,518	940	20	91	105	5.7	2.4	0.52
2012	1,314	865	11	63	97	5.5	3	1.8
2013	1,309	900	7.9	102	73	41	2.4	2.2
2014	1,027	665	5.7	65	63	50	3.6	2.1
2015	1,133	735	6.5	100	59	215	3	3.9
2016	1,221	755	6.9	94	61	135	2.5	5.3
2017	1,255	815	14.6	68	93	4.6	2.3	0.4
2018	1,089	725	18	26	114	1.5	1.7	2.3
2019	1,110	715	16.5	29	105	16	2	2.1
2020	1,147	740	17	33	105	15.7	1.9	8.3
2021	1,128	705	16.5	36	100	18	1	2.8
2022	595	650	15	24	90	20.7	1.8	5.5
2023	897	640	12.5	11	90	3.9	3.4	3.2
Potential WQO	**1,600 (sMCL upper)**	**1,000 (sMCL upper)**	**10 (MCL)**	**250 (sMCL)**	**250 (sMCL)**	**50 (sMCL)**	**10 (MCL)**	**50 (MCL)**

Table 14— Well 06-07 Groundwater Quality (Downgradient Well)

Year	EC (µmhos/cm)	TDS (mg/L)	Nitrate as N (mg/L)	Cl (mg/L)	SO4 (mg/L)	Mn (ug/L)	As (ug/L)	Cr (mg/L)
2010	1,155	770	13	79	130	0.58	1.8	3
2011	1,094	700	9.4	83	98	0.45	2.3	1.6
2012	1,171	775	9.6	85	115	230.2	3.8	1.6
2013	1,103	740	2.3	85	135	670	11.5	1.1
2014	1,109	715	0.6	82	130	1125	8.7	0.15
2015	1,099	720	1.1	82	155	560	6.7	0.3
2016	1,110	705	5.5	80	150	128.5	2.1	3.2
2017	982	660	7.9	72	99	2.4	2.4	2
2018	799	495	4.9	60	55	5.6	3	3
2019	777	510	4.9	58	50	5.6	2.6	2.5
2020	794	510	4.3	58	48	17.4	3.2	3.5
2021	786	530	3.7	58	49	46	3	2.3

Year	EC (µmhos/cm)	TDS (mg/L)	Nitrate as N (mg/L)	Cl (mg/L)	SO4 (mg/L)	Mn (ug/L)	As (ug/L)	Cr (mg/L)
2022	812	500	3.2	56	49	100	3.5	1.2
2023	850	570	4.8	60	64	5.5	3.4	4.1
Potential WQO	**1,600 (sMCL upper)**	**1,000 (sMCL upper)**	**10 (MCL)**	**250 (sMCL)**	**250 (sMCL)**	**50 (sMCL)**	**10 (MCL)**	**50 (MCL)**

Table 15— Well 86-4 Groundwater Quality (Downgradient Well)

Year	EC (µmhos/cm)	TDS (mg/L)	Nitrate as N (mg/L)	Cl (mg/L)	SO4 (mg/L)	Mn (ug/L)	As (ug/L)	Cr (mg/L)
2011	481	280	15	25	9.9	32.8	2.8	6.7
2012	345	227	8.4	3.2	11.8	0.4	3.4	8.1
2013	294	238	9.8	3	7.6	1.4	3.3	8.5
2014	--	--	--	--	--	--	--	--
2015	--	--	--	--	--	--	--	--
2016	353	220	4.1	2.2	6.4	2.2	4	6.7
2017	288	240	10.6	1.9	9	2.9	2.5	10.6
2018	299	240	10.6	2.7	6.7	1	1.7	10.8
2019	284	265	9.4	2.1	7.4	5.9	1.6	12
2020	362	258	3.9	1.6	3.7	12	2.4	13.8
2021	388	298	11.5	4.9	5.8	11.9	2.3	9.3
2022	450	297	9.8	2.2	4.9	1.6	2.5	10
2023	445	303	5.1	1.6	5.2	7.4	3	10.9
Potential WQO	**1,600 (sMCL upper)**	**1,000 (sMCL upper)**	**10 (MCL)**	**250 (sMCL)**	**250 (sMCL)**	**50 (sMCL)**	**10 (MCL)**	**50 (MCL)**

Salt and Nitrate Control Program Reopener

57. On 31 May 2018, the Central Valley Water Board adopted Basin Plan amendments incorporating the Salt Control Program (SCP) and Nitrate Control Program (NCP). The State Water Board conditionally approved the amendments on 16 October 2019 (State Water Board Resolution 2019-0057). The effective date of the Basin Plan amendments was 17 January 2020, the Notice of Decision filing date following approval by the Office of Administrative Law (OAL) (OAL Matter No. 2019-1203-03). For those components subject to United States

Environmental Protection Agency (USEPA) approval, the effective date was 2 November 2020. On 10 December 2020, the Central Valley Water Board adopted revisions to the Basin Plan amendments (Resolution R5-2020-0057). The State Water Board conditionally approved these revisions on 1 June 2021 (State Water Board Resolution 2021-0019). The effective date of the revisions to the Basin Plan amendments was 10 November 2021, the Notice of Decision filing date following OAL approval (OAL Matter No. 2021-0929-05S). The overarching goals and priorities of these programs are to (1) ensure safe drinking water supply; (2) reduce salt and nitrate loading so that ongoing discharges neither threaten to degrade high quality waters absent findings by the Central Valley Water Board nor cause or contribute to exceedances of Water Quality Objectives (WQOs); and (3) implement long-term, managed restoration of impaired water bodies.

58. For the SCP, the Central Valley Water Board will issue a Notice to Comply (CVSALTS ID: 3666) requiring the Discharger to submit a Notice of Intent specifying whether the Discharger intends to participate in the Conservative Salinity Permitting Approach or the Alternative Salinity Permitting Approach (i.e., Prioritization & Optimization (P&O) Study). In the interim, this Order requires the Discharger to maintain existing salt discharge levels and prohibits the Discharger from causing or contributing to a condition of pollution and/or nuisance, as those terms are defined in Water Code section 13050. After receiving the Discharger's Notice of Intent to participate in the SCP, the Central Valley Water Board may revise the WDRs to reflect the requirements of the Discharger's chosen regulatory pathway.

59. For the NCP, the Facility falls within the Turlock Management Zone, a Priority 1 Basin. The Central Valley Water Board will issue a Notice to Comply and include a compliance time schedule. After receiving the Discharger's Notice of Intent to comply with the NCP, the Central Valley Water Board may revise the WDRs to reflect the requirements of the Discharger's chosen regulatory pathway. The Discharger is required to comply with the groundwater limitations of this Order during the NCP process.

60. As these strategies are implemented, the Central Valley Water Board may find it necessary to modify the requirements of these WDRs to ensure the goals of the SCP and NCP are met. This Order may be amended or modified to incorporate any newly applicable requirements. More information regarding this regulatory planning process can be found on the Central Valley Water Board's CV-SALTS website. (https://www.waterboards.ca.gov/centralvalley/water_issues/salinity).

Compliance with the Antidegradation Policy

61. State Water Board Resolution 68-16, Policy with Respect to Maintaining High Quality Waters of the State (Antidegradation Policy), prohibits degradation of high-quality groundwater unless it has been demonstrated that such degradation:

    a. Will be consistent with the maximum benefit to the people of the State of California;

    b. Will not unreasonably affect present and anticipated future beneficial uses of such water; and

    c. Will not result in water quality less than that prescribed in State Water Board and Central Valley Water Board policies (i.e., violation of one or more WQOs).

    Discharges to high quality groundwater must be subject to WDRs that will result in the best practicable treatment or control (BPTC) of the discharge necessary to assure that pollution or nuisance will not occur and the highest water quality consistent with the maximum benefit of the people of the State will be maintained.

62. The Discharger has monitored groundwater quality at the Facility since 2010. Compliance with the Antidegradation Policy is therefore based on any available groundwater data collected since 2010. Determination of compliance with Resolution 68-16 is based on comparison to background water quality.

63. For the purposes of this Order, constituents/parameters in effluent with the potential to degrade groundwater and/or affect beneficial uses include:

    a. EC

    b. TDS

    c. Nitrate as nitrogen

    d. Arsenic

    e. Chromium

    f. Chloride

    g. Sulfate

    h. Manganese; and

    i. Iron.

64. A summary of effluent quality compared to upgradient downgradient groundwater quality is presented below (see **Table 16**). Annual averages for groundwater were calculated using data collected between 2010 through 2023. For non-detect concentrations, half of the reporting limit was used for averaging purposes. For samples that were detected, but less than the reporting limit, the reporting limit value was used.

a. **Salinity (Electrical Conductivity).** Electrical conductivity is a measure of the capacity of water to conduct electrical current and is an indicator of salinity. EC average concentration in effluent is 805 µmhos/cm, which is lower than the potential WQOs 1,600 µmhos/cm (sMCL upper). Based on effluent data, EC concentrations show an increasing trend and has an EC concentration range of 542 to 1,328 µmhos/cm.

Concentration trends for EC in upgradient groundwater monitoring wells show no statistically significant trends. Upgradient wells 06-10 and 07-01 have an EC concentration range of 228 to 1,432 µmhos/cm. The average EC upgradient concentration is 657 µmhos/cm. Concentration trends for EC in downgradient groundwater monitoring wells 06-06 and 06-07 show a decreasing trend, with the exception of EC concentrations in well 86-4, which shows no statistically significant trends. Wells 06-06 and 06-07 have an EC concentration range of 595 to 1,990 µmhos/cm. Wells 86-4 had an EC concentration range of 284 to 481 µmhos/cm. The average EC downgradient concentration is 783 µmhos/cm.

Effluent discharge with respect to EC does not appear to be degrading groundwater beyond existing conditions at this time and will not unreasonably affect beneficial uses of groundwater.

b. **Salinity (TDS).** For the purposes of this evaluation, TDS is representative of overall salinity. The best measure for total salinity in groundwater is TDS.

Between 2011 and 2023, TDS effluent concentrations ranged from 345 mg/L to 841 mg/L. TDS effluent concentrations show an increasing trend and with an average of 523 mg/L. While the TDS concentrations are below the upper sMCL of 1,000 mg/L.

The average TDS concentration in upgradient wells 06-10 and 07-01 ranges from 140 to 900 mg/L. Well 06-10 shows no statistically significant trends, whereas well 07-01 shows an increasing trend in TDS concentration. Downgradient wells 06-06 and 06-07 shows a decreasing trend in TDS concentration since 2010 and ranges from 495 to 1,000 mg/L. Downgradient well 86-4 shows an increasing trend in TDS

concentration; however, the concentration range is from 220 to 303 mg/L, which is lower than the other downgradient wells. The average concentration of TDS is 520 mg/L in the upgradient wells and 519 mg/L in the downgradient wells. Therefore, effluent discharge with respect to TDS does not appear to be degrading groundwater beyond existing conditions at this time and will not unreasonably affect beneficial uses of groundwater.

Treated groundwater discharged to the TSRB has a monthly average effluent limit of 980 mg/L for TDS (see **Table 20**). The effluent TDS concentration from 2011 to 2023 is consistently below this effluent limit.

c. **Nitrate as N.** For nutrients such as nitrate, the potential for groundwater degradation depends on wastewater quality and the ability of the vadose zone below the LAAs to support denitrification to convert nitrogen to nitrate or nitrogen gas (ammonia) before it reaches the water table.

Nitrate concentration levels in the effluent range from 0.2 to 3.5 mg/L and are showing a decreasing trend overall. For comparison, the upgradient wells show a concentration range of 2.8 to 75 mg/L. Well 06-10 shows no statistically significant trends whereas well 07-01 shows an increasing trend. All the downgradient wells show no statistically significant trends with ranges of concentrations of 0.6 to 42 mg/L. On average the upgradient well is 14.2 mg/L and downgradient well is 9.5 mg/L. Therefore, the upgradient wells are not high-quality water. The downgradient value is below the 10 mg/L MCL. Therefore, effluent discharge with respect to nitrate as N does not appear to be degrading groundwater beyond existing conditions at this time and will not unreasonably affect beneficial uses of groundwater.

d. **Chloride.** Chloride concentrations in the effluent has the potential to degrade groundwater quality. The chloride concentration in the effluent ranges from 52 to 150 mg/L and shows no statistically significant trends. On average, the chloride concentration in the effluent is 67 mg/L.

Upgradient well 06-10 shows no statistically significant trends, whereas 07-01 shows an increasing trend. Well 06-10 has a chloride concentration range of 3.1 to 77 mg/L. Well 07-01 has a chloride concentration range of 13 to 45 mg/L. The average concentration for chloride in the upgradient wells is 25 mg/L.

Downgradient wells 06-06, 06-07, and 86-4 all show a decreasing trend in chloride concentration. Wells 06-06, 06-07, and 86-4 have a chloride concentration range of 1.6 to 102 mg/L. The overall average of chloride

concentration in the downgradient wells is 40 mg/L. Comparatively, the chloride concentration is higher in the downgradient than the upgradient, but the effluent discharge does not appear to be causing an exceedance of the potential WQO of 250 mg/L sMCL for chloride in groundwater.

e. **Sulfate.** Sulfate concentrations in the effluent has the potential to degrade groundwater quality. The sulfate concentration in the effluent ranges from 23 to 37 mg/L and shows a decreasing trend in concentration. On average, the sulfate concentration in the effluent is 32 mg/L.

Upgradient well 06-10 shows no statistically significant trends, whereas 07-01 shows an increasing trend. Well 06-10 has a sulfate concentration range of 3.5 to 89 mg/L. Well 07-01 has a sulfate concentration range of 14 to 33 mg/L. The average concentration for sulfate in the upgradient well is 25 mg/L.

Downgradient wells 06-07 and 86-4 show a decreasing trend in sulfate concentration. Wells 06-07 and 86-4 have a sulfate concentration range of 3.7 to 155 mg/L. Downgradient well 06-06 shows no statistically significant trends and has a sulfate concentration range of 59 to 220 mg/L. The overall average of sulfate concentration in the downgradient wells is 58 mg/L. Comparatively, the sulfate concentration is higher in the downgradient than the upgradient, but the effluent discharge does not appear to be causing an exceedance of the potential WQO of 250 mg/L sMCL for sulfate in groundwater.

f. **Arsenic and Chromium.** Dissolved metals concentrations are used to determine compliance with water quality objectives for the protection of drinking water sources.

For arsenic concentrations in the effluent, the data ranges from 1.5 to 5.9 µg/L. The concentration shows an increasing trend of arsenic in the effluent with an average of 2.8 µg/L. The upgradient wells 06-10 and 07-01 show no statistically significant trends and the concentration ranges from 0.79 to 3.9 µg/L. On average, the arsenic concentration in the upgradient wells is 2 µg/L. The downgradient wells 06-06, 06-07, and 86-4 show no statistically significant trends and the concentration ranges from 1 to 11.5 µg/L. On average, the arsenic concentration in the downgradient wells is 3 µg/L. Comparatively, the arsenic concentration is higher in the downgradient than the upgradient, but the effluent discharge does not appear to be causing an exceedance of the potential WQO of 10 mg/L MCL for arsenic in groundwater. Treated groundwater discharged to the TSRB has a monthly average effluent limit of 3 µg/L for arsenic (see **Table 20**). The effluent chromium concentration exceeds this limit at an

estimated 25% of the reported data from 2011 to 2023, however the average chromium concentrations in the effluent, upgradient wells and downgradient wells are still below the potential WQO.

For chromium concentrations in the effluent, the data ranges from 0.3 to 4.7 µg/L. The concentration no statistically significant trends of chromium in the effluent with an average of 1.3 µg/L. The upgradient wells 06-10 and 07-01 show no statistically significant trends and the concentration ranges from 2.4 to 23 µg/L. On average, the arsenic concentration in the upgradient wells is 4.8 µg/L. The downgradient wells 06-07 and 86-4 show an increasing trend and a concentration range from 0.15 to 13.8 µg/L. Downgradient well 06-06 shows no statistically significant trends and has a range concentration of 0.4 to 8.3 µg/L. On average, the chromium concentration in the downgradient wells is 5.6 µg/L. Comparatively, the chromium concentration is higher in the downgradient than the upgradient, but the effluent discharge does not appear to be causing an exceedance of the potential WQO of 50 mg/L MCL for chromium in groundwater. Treated groundwater discharged to the TSRB has a monthly average effluent limit of 1 µg/L for chromium (see **Table 20**). The effluent chromium concentration exceeds this limit at an estimated 33% of the reported data from 2011 to 2023, however the average chromium concentrations in the effluent, upgradient wells and downgradient wells are still below the potential WQO.

g. **Manganese.** Manganese can be present in groundwater as a result of excessive BOD loading rates, which can deplete oxygen, resulting in anoxic conditions. An anoxic environment can solubilize naturally occurring metals in the soil, including manganese. No manganese concentration data has been collected from the effluent.

The upgradient wells 06-10 and 07-01 show no statistically significant trends and the concentration ranges from 0.3 to 170 µg/L. On average, the manganese concentration in the upgradient wells is 17 µg/L. The downgradient wells 06-06 and 06-07 show no statistically significant trends and a concentration range of 0.45 to 1,125 µg/L. Downgradient well 86-4 shows an increasing trend and has a range concentration of 0.4 to 32.8 µg/L. On average, the manganese concentration in the downgradient wells is 80 µg/L. Comparatively, the manganese concentration is higher in the downgradient than the upgradient. The average manganese concentration in the downgradient wells also exceeds the potential WQO of 50 µg/L sMCL. Without manganese data collected from the effluent, there is no supportive evidence that the increase in manganese is the result of discharged effluent to the LAA.

This order requires that manganese be monitored in the effluent and groundwater, as well as continued BPTC implementation. New sampling requirements for the LAA are effective at the adoption of this Order.

h. **Iron.** Iron, while naturally occurring, can be present in groundwater at excess concentrations as a result of excessive BOD loading rates, which can deplete oxygen, resulting in anoxic conditions. An anoxic environment can solubilize naturally occurring metals in the soil, including iron. No iron concentration data has been collected from the effluent or from the specified groundwater wells. This order requires that iron be monitored in the effluent and groundwater, as well as continued BPTC implementation.

Table 16— Data Comparison

Constituent	Units	Effluent	Upgradient GW	Downgradient GW	Potential WQO Reference	WDR Limit
EC	µmhos/cm	805	657	783	**1,600 (sMCL upper)**	--
TDS	mg/L	523	520	519	**1,000 mg/L (sMCL upper)**	**980 mg/L**
Nitrate as N	mg/L	1.5	14.2	9.5	**10 mg/L (MCL)**	--
Cl	mg/L	67	25	40	**250 (sMCL)**	--
SO4	mg/L	32	25	58	**250 (sMCL)**	--
Mn	µg/L	NA	17	80	**50 (sMCL)**	--
As	µg/L	2.8	2	3	**10 (MCL)**	**3 µg/L**
Cr	µg/L	1.3	4.8	5.6	**50 (MCL)**	**1 µg/L**

65. The Discharger is required to provide treatment and control of the discharge that incorporates the following measures, which constitute BPTC for the COCs discussed above:

a. Inspect the land application area at least once daily prior to and during irrigation events.

b. Continue use of irrigation system to ensure even application of TSRB's effluent over the LAA and prevent ponding water.

c. Provide complete tailwater control.

d. Tailwater ditches shall be maintained free of emergent, marginal, and floating vegetation.

e. TSRB effluent shall not be initiated when the ground is saturated.

f. Prevent standing water in any portion of the LAA for more than 24 hours.

g. Comply with the requirements of the Salt and Nitrate Control program under CV SALTS.

66. Consistent with Title 27, this Order requires the Discharger to maintain the Facility to contain all waste, within the WMUs, thereby preventing degradation of water quality by discharges to WMUs. To the extent that there are releases from Facility WMUs, the Discharger will be required to address such releases through a Corrective Action Program. (See Title 27 secs. 20385, 20415, 20430).

67. Based on the foregoing, the adoption of this Order is consistent with the State Water Board's Antidegradation Policy.

Post-Closure Maintenance & Financial Assurances

68. The Discharger's Final Closure and Post-Closure Maintenance Plan dated June 2022 (CPMP) is the operative document providing for post-closure maintenance of WMUs I through IV for the entire post-closure maintenance period of at least 30 years, and until it is demonstrated that the Facility no longer poses a threat to the public health and safety and the environment. (See Title 27, secs. 20950(a)(1), 21180(a).)

69. The Discharger's CPMP includes cost estimates for post-closure maintenance (Title 27, secs. 22210–22212) and foreseeable corrective action for releases (Title 27, secs. 22220–22222). As of the date of this Order, these estimates, calculated in accordance with Title 27, are specified in **Table 17.**

Table 17—Current Cost Estimates (Financial Assurances)

Requirement	Estimated Cost
Post-Closure Maintenance	$11,039,412
Corrective Action	$4,954,526

70. This Order requires the Discharger to maintain financial assurances with CalRecycle in at least the Estimated Cost amounts specified in **Table 17**, in accordance with Title 27.

71. As of the date of this Order, the post-closure maintenance fund and corrective action fund balances are specified in **Table 18.**

Table 18—Current Fund Balances (Financial Assurances)

Requirement	Current Balance
Post-Closure Maintenance and Corrective Action Bonzi Landfill Trust Account	$4,563,969

72. Based on the difference between the cost estimates in **Table 17** and the Discharger's current fund balance in **Table 18**, the Discharger is underfunded.

California Environmental Quality Act

73. 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 section 21000 et seq., pursuant to California Code of Regulations title 14 (CEQA Guidelines), section 15301. The discharges authorized under this Order are substantially within parameters established under prior WDRs, particularly with respect to character and volume of discharges.

74. In accordance with CEQA, on 23 January 1992, the Stanislaus County Department of Environmental Resources adopted a **Negative Declaration** in connection with its intent to close Bonzi Sanitation Landfill. In the Negative Declaration, the Stanislaus Department of Environmental Resources found that the "project" would not have a significant effect on the environment. On 30 August 2021 CalRecycle, as a Responsible Agency, filed a Notice of Determination (NOD) in compliance with Public Resource Code section 21108, subdivison (a) and California Code of Regulations title 14, section 15096, subdivision (i), which found that construction of a final closure cover over WMUs II through IV composed of a soil layer, plastic liner, and vegetative layer, related storm drain and landfill gas system improvements, repairs to site fencing, and demolition of abandoned buildings would not have a significant effect on the environment. Mitigation measures were made as a condition of the approval of the project including a mitigation reporting and monitoring plan which was adopted for the project.

Other Regulatory Matters

75. This Order is issued in part pursuant to Water Code section 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] Section 13241.

76. 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, sec. 13241 et seq.)

77. The State Water Board's *Statement of Policy with Respect to Maintaining High Quality Waters in California*, Resolution 6816 (*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.

78. 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, the Discharger will be required to address such releases through a Corrective Action Program. (See Title 27, secs. 20385, 20415, 20430.) Because this Order does not authorize any degradation in water quality, it complies with the *Antidegradation Policy*.

79. For the purposes of California Code of Regulations, title 23 (Title 23), section 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

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[1] Designated beneficial uses surface water and groundwater are discussed in Finding 0 and Finding 0, respectively.

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

80. This Order is also issued in part pursuant to Water Code section 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.

81. 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.

82. Failure to comply with the reporting requirements under this Order and the MRP may result in enforcement action pursuant to Water Code section 13268.

Procedural Matters

83. 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.

84. 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, sec. 13167.5; Title 27, sec. 21730.)

85. At a public meeting, the Central Valley Water Board heard and considered all comments pertaining to the discharges regulated under this Order.

86. 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 sections 13263 and 13267, that the Discharger and their agents, employees and successors shall comply with the following.

A. Discharge Prohibitions

1. The Facility is a closed facility. Discharge of waste generated at the facility is prohibited. As reflected in **Table 19,** below, leachate and landfill gas (LFG) condensate shall not be discharged into Facility WMUs but must be containerized in leak-free containers and discharged offsite at a facility authorized to receive such waste.

2. Retention Pond (TSRB) and Land Application Area (LAA).

    a. The discharge of solid or liquid waste, leachate, treated groundwater, or tailwater from the TSRB or the LAA to surface waters, surface water drainage courses is prohibited.

    b. The application of water from the groundwater treatment system in a manner or location other than that shown in **Attachment B** is prohibited.

    c. The discharge of liquid waste into the TSRB, other than water from the groundwater treatment system, is prohibited.

    d. Land application of treated groundwater to areas other than those described in this Order is prohibited unless new LAAs are approved in writing by the Central Valley Water Board. Currently, the LAA shall be limited to land owned by the Discharger as shown on **Attachment B**.

    e. Land application of treated groundwater to the LAA that does not have a fully functional tailwater return and runoff control system is prohibited.

    f. The bypass of extracted groundwater around the groundwater treatment system (GAC system and TSRB), or any other treatment system installed after adoption of this Order, is prohibited.

    g. The discharge of volatile organic compounds into the TSRB is prohibited.

    h. Discharge of irrigation tailwater from the LAA to any off-site area or drainage course is prohibited.

i. If the Discharger proposes any changes to the species of tree or other agricultural crop in the LAA, the Discharger must demonstrate that the proposed change to a replacement tree species or crop is able to perform at or better than the existing LAA configuration for utilizing TSRB irrigation water.

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 19**, subject to the table-specific definitions provided below.

Table 19—Waste Discharges at Facility

Waste Category	WMU I	WMU II	WMU III	WMU IV	TSRB
Landfill Gas Condensate Liquids removed from a gas control system at a WMU and which are produced by the condensation of landfill gas being conveyed by that system. (Title 27, sec. 20164.)	No	No	No	No	No
Leachate 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, sec. 20164.)	No	No	No	No	No
Treated Groundwater Liquids discharged from the Groundwater Treatment System	No	No	No	No	Yes

2. Treatment System Retention Pond (TSRB) and Land Application Area (LAA).

a. The maximum flow of treated groundwater entering the TSRB shall not exceed a flow that would cause the pond to violate the 2-foot freeboard limit established in this Order.

b. Objectionable odors originating from the TSRB or LAAs shall not be perceivable beyond the Discharger's property limits.

c. As a means of discerning compliance with Discharge Specification 2.b, the dissolved oxygen (DO) content in the upper one foot of the TSRB shall not be less than 1.0 mg/L for three consecutive sampling events. If DO concentrations are less than 1.0 mg/L for three consecutive sampling events and objectionable odors are perceivable beyond the property limits, the Discharger shall report the findings to the Regional Water Board in writing within 10 days and shall include a specific plan to resolve the odors within 30 days.

d. The Discharger shall operate all systems and equipment to maximize treatment of groundwater and optimize the quality of the discharge.

e. LAAs shall be managed to prevent breeding of mosquitoes and other vectors. Specifically:

    i. All treated groundwater applied to land must infiltrate completely or drain back to the TSRB as tailwater within 24 hours.

    ii. Low-pressure pipelines, unpressurized pipelines, and ditches that are accessible to mosquitoes shall not be used to store treated groundwater.

    iii. Tailwater ditches shall be maintained free of emergent, marginal, and floating vegetation.

f. All water storage ponds shall also be managed to prevent breeding of mosquitoes. Specifically:

    i. Erosion control measures shall be implemented to minimize small coves and irregularities around the perimeter of the water surface.

ii. Weeds and/or vegetative growth within and around the perimeter of the pond shall be minimized through control of water depth, harvesting, or herbicides.

iii. Dead algae, vegetation, and debris shall not accumulate on the water surface.

g. Treatment, storage, and disposal facilities shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.

h. No waste constituent shall be released or discharged, or placed where it will be released or discharged, in a concentration or mass that causes or may cause violation of applicable WQOs.

i. The facility shall have sufficient treatment, storage, and disposal capacity to accommodate allowable treated groundwater flow and design seasonal precipitation during the winter months. Design seasonal precipitation shall be based on total annual precipitation using a return period of 100 years, distributed monthly in accordance with historical rainfall patterns.

j. Freeboard in any pond shall never be less than two feet as measured from the water surface to the lowest point of overflow.

k. On or about 15 October of each year, available pond storage capacity shall at least equal the volume necessary to comply with Discharge Specifications 2.i and 2.j.

l. Neither the treatment nor the discharge of waste shall cause a condition of nuisance or pollution as defined by Water Code, section 13050.

m. The Discharger shall operate and maintain the TSRB to prevent (a) growth of vegetation within the pond, (b) animal burrows, (c) the entrapment of landfill gas under the liner, and (d) any other condition that may compromise the liner.

n. Treated groundwater stored in the TSRB shall be applied to an LAA of sufficient acreage as to meet compliance with all aspects of this Order.

C. Facility Specifications

The Discharger shall comply with all Standard Facility Specifications (SPRRs, § E) which are incorporated herein.

1. The Discharger shall, in a timely manner, remove and relocate any wastes discharged at the Facility in violation of this Order.

2. The Discharger shall immediately notify the Central Valley Water Board of any flooding, unpermitted discharge of waste off-site, equipment failure, slope failure, or other change in site conditions that could impair the integrity of waste- or leachate-containment facilities or precipitation and drainage control structures.

3. Water used for facility maintenance shall be limited to the minimum amount necessary for dust control, construction, and for maintenance of the vegetative cover over the closed WMUs.

4. The Discharger shall maintain in good working order any facility, control system, or monitoring device installed to achieve compliance with this Order.

5. Once any required operations and maintenance manual has been approved, the Discharger shall fully implement and document the maintenance of the groundwater extraction and landfill gas extraction systems.

6. Methane and other landfill gases shall be adequately vented, removed from the Facility or otherwise controlled to prevent the danger of adverse health effects, nuisance conditions, degradation of high quality water, or the impairment of the beneficial uses of surface water or groundwater due to migration through the unsaturated zone.

7. The Discharger shall maintain a Storm Water Pollution Prevention Plan and Monitoring Program and Reporting Requirements in accordance with State Water Board's operative Industrial General Permit, NPDES Permit No. CAS000001, or retain all storm water on-site.

8. The Discharger shall maintain the final covers on the closed WMUs I through IV to meet the performance standards in Title 27 sections 20950, subdivision (a)(2)(A), and 21090.

9. Treated Groundwater Effluent Limitations - Treated groundwater discharged to the TSRB shall not exceed the following monthly average effluent limits (see **Table 20**) to ensure compliance with the Groundwater Limitations:

Table 20—Treated Groundwater Concentration Limit

Constituent[1]	Concentration Limit
Volatile Organic Compound	Non-detect, < 0.5 ug/l
Arsenic	3 ug/l[2]
Chromium	1 ug/l[2]
Total Dissolved Solids	980 mg/l[2]

Notes:
1. Using USEPA Method 8260B
2. The effluent limit is based on background concentrations plus 20%. If the background groundwater concentration changes, then the new background concentration plus 20% becomes the effluent limit if the Discharger demonstrates that the higher concentration is due to changes in water quality not caused from a release from an upgradient source.

10. Groundwater Limitations for Land Application Area(s) - The discharge from the TSRB, in combination with other sources, shall not cause the groundwater underlying the LAAs to contain waste constituents in concentrations statistically greater than the WQPSs for the Facility (background) water quality.

a. Land Application Area Specifications - Crops shall be grown on the LAAs. The Discharger has selected to grow poplar trees, based on their nutrient uptake capacity, tolerance of anticipated soil conditions, water needs, and evapotranspiration rates. The Central Valley Water Board shall be notified prior to harvesting the trees. If other crops are selected for the property, they should have similar agronomic uptake values and Central Valley Water Board staff should be notified prior to planting.

i. The drip irrigation system shall be designed and managed to ensure even application of treated groundwater over each irrigation field.

ii. Discharge to the land application area should not be initiated when the ground is saturated.

iii. There shall be no standing water in any portion of the irrigated fields more than 24 hours after application of treated groundwater ceases.

iv. The Discharger shall provide and maintain the following setbacks for all LAAs receiving treated groundwater:

Table 21—LAA Setbacks

Setback Definition	Surface Irrigation Setback (feet)[2]
Edge of irrigated area[1] to public property (e.g., street)	10
Edge of irrigated area to other agricultural property not owned by the Discharger	10
Edge of irrigated area disposal area to occupied residence	50
Edge of irrigated area to a domestic well	50

Notes:
1. As defined by the wetted area produced during irrigation.
2. Irrigation or impoundment of treated groundwater shall not occur within 50 feet of any domestic well unless it is demonstrated to the satisfaction of the Central Valley Water Board that a shorter distance is justified.

v. Application of treated groundwater shall only occur where checks are graded to provide uniform water distribution, minimize ponding, and provide complete tailwater control.

vi. Check runs shall be no longer, and slopes shall be no greater, than that which permits uniform infiltration and maximum practical irrigation efficiency.

vii. Tailwater ponds and ditches shall be maintained essentially free of emergent, marginal, and floating vegetation.

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. In the event the Discharger must repair a base or side slope liner system installed in any WMU, the Discharger must repair the base or side slope liner system with a liner system equal to or better than the existing liner

system which will result in water quality protection equal to or greater than the design(s) prescribed per Title 27, section 20310 et seq., and this Order.[2]

2. The Discharger shall submit for review and concurrence prior to construction, design plans and specifications for expansions of existing Units, including a Construction Quality Assurance Plan meeting the requirements of Title 27 section 20324.

3. Construction shall proceed only after all applicable Construction Quality Assurance Plans have received Central Valley Water Board concurrence.

4. Following the completion of construction of a Unit or portion of a Unit, the final documentation, as required under Title 27 section 20324, subdivision (d)(1)(C), shall be submitted **within 60 days**. The report shall be certified by a registered civil engineer or a certified engineering geologist. It shall contain sufficient information and test results to verify that construction was in accordance with the design plans and specifications, and with the prescriptive standards and performance goals of Title 27.

5. A third party independent of both the Discharger and the construction contractor shall perform all of the construction quality assurance monitoring and testing during the construction of the cover system.

6. The cover system for WMU I shall consist of, in ascending order:

    a. A two-foot thick foundation layer;

    b. A 30-mil PVC flexible membrane; and

    c. A 1.5-foot thick soil layer which is capable of supporting vegetation throughout the postclosure maintenance period.

7. The cover system for WMUs II, III and IV shall consist of, in ascending order:

    a. A two-foot thick compacted foundation layer;

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

b. A low permeability layer consisting of 40-mil linear low density polyethylene (LLDPE);

c. A double-sided geocomposite drainage layer on top of the LLDPE where slopes are steeper than 10 percent; and

d. A 1.5-foot thick soil layer which is capable of supporting vegetation throughout the postclosure maintenance period.

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 WMUs at the Facility.

1. The Discharger shall submit **prior to** construction, design plans and specifications for any on-site construction or major repairs to WMU structures demonstrating compliance with Title 27.

2. 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 approves of such modifications.

3. If the final cover incorporates a geomembrane barrier, all edges of the final cover shall be sealed by connecting to the base and side slope liner system if the base and side slope liner system uses a geomembrane barrier.

4. 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 it is being established.

5. The Discharger shall perform periodic monitoring of site security systems, final soil cover, drainage system, vegetative cover, final grading, groundwater monitoring system, groundwater treatment system, TSRB, and LAA(s), and landfill soil-pore gas monitoring system.

6. The Discharger shall perform periodic monitoring to identify and address cover problems including, at least:

   a. Areas of the vegetative cover requiring replanting;

b. Eroded portions of the erosion-resistant layer requiring regrading, repair, or increased erosion resistance;

c. Eroded portions of the low-hydraulic conductivity layer needing repair or replacement;

d. Areas lacking free drainage;

e. Areas damaged by equipment operation; and

f. Localized areas identified in the iso-settlement survey as having sustained repeated or severe differential settlement.

7. The Discharger shall repair forthwith any breach or other cover problem discovered by periodic monitoring.

8. Annually, prior to 1 October, any necessary erosion control measures shall be implemented, and any necessary construction, maintenance, or repairs of precipitation and drainage control facilities shall be completed to prevent erosion or flooding and to prevent surface drainage from contacting or percolating through wastes.

9. The Discharger shall maintain the vegetative cover, including fertilization, elimination of species that violate the rooting depth limit i.e., the depth to the final closure cover geosynthetic geomembrane barrier layer, and replanting.

10. At least every five years after completing closure of the individual WMUs (WMUs I, II, III, and IV) the Discharger shall produce and submit to the Central Valley Water Board an iso-settlement map accurately depicting the estimated total change in elevation of each portion of the final cover.

11. Prior to conducting any periodic grading operations on any of the closed WMUs, the Discharger shall note on a map of the landfill the approximate location and outline of any areas where differential settlement is visually obvious.

12. Construction shall proceed only after all applicable Construction Quality Assurance Plans have been submitted to the Central Valley Water Board staff and has received concurrence.

13. Following the completion of any landfill construction, the final documentation required under Title 27 section 20324, subdivision (d)(1)(C) shall be submitted to the Central Valley Water Board. The report shall be certified by a registered civil engineer or a certified engineering

geologist. It shall contain sufficient information and test results to verify that construction was in accordance with the design plans and specifications, and with the prescriptive standards and performance goals of Title 27.

14. A third party independent of both the Discharger and the construction contractor shall oversee the performance of all of the construction quality assurance monitoring and testing.

15. All waste management units that are closed shall be maintained in compliance with the approved Closure and PostClosure Maintenance Plan and Title 27.

F. 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 the amounts specified for each category in **Table 17**, adjusted annually for inflation.

2. A report regarding financial assurances, or a copy of the financial assurances report submitted to CalRecycle, shall be submitted to the Central Valley Water Board 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. 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.

G. 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 MRP Order R5-2024-XXXX and any subsequent revisions thereto (operative MRP).

2. The Discharger shall implement the WQPSs 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 sections 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, sections 20385, 20415 and 20430, and Section I of the SPRRs.

5. The Discharger shall submit an annual report certifying that all monitoring points identified in the operative MRP meet the performance standards in Title 27 section 20415, subdivision (b)(4).

6. 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, repair, or abandonment of monitoring devices, and a minimum 48-hour notification prior to the collection of samples associated with a DMP, EMP, or CAP.

7. The concentrations of the constituents of concern in waters passing the Point of Compliance shall not exceed the concentration limits established in the operative MRP.

8. For each monitoring event, the Discharger shall determine whether the landfill is in compliance with the WQPS using procedures specified in the operative MRP and Title 27 section 20415, subdivision (e).

9. For any given monitored medium, the samples taken from all 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 in writing by the Central Valley Water Board, 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.

H. 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 shall be submitted electronically via the State Water Board's GeoTracker Database (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:	[Enter Report Title]
GeoTracker Upload ID:	[Number]
Facility:	Bonzi Sanitation Landfill
County:	Stanislaus County
CIWQS Place ID:	210037

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.

I. Time Schedule

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

Table 22—Time Schedule

Item No.	Category	Task	Deadline
1.	Construction	Submit construction and design plan(s) for review and approval in accordance with Section D of this Order, and Section F of the SPRRs.	90 Days Prior to Proposed Construction
2.	Construction	Submit construction report(s) for review and approval upon completion demonstrating construction was in accordance with approved construction plans and Section F.27 of the SPRRs.	60 Days following completion of construction.
3.	Demonstration	The Discharger must obtain coverage under the Industrial General Permit (NPDES Permit No. CAS000001) for off-property stormwater discharges or demonstrate that the Facility has adequate storage capacity to contain all non-contact stormwater within the facility boundary.	1 March 2025

J. 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 R5-2024-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—LOCATION MAP
Attachment B—FACILITY MAP
Attachment C—GROUNDWATER MONITORING AND EXTRACTION NETWORK
Attachment D—LANDFILL GAS MONITORING AND EXTRACTION NETWORK
Attachment E—SURFACE WATER DRAINAGE MAP AND SURFACE WATER MONITORING POINTS

Standard Provisions and Reporting Requirements for Non-Hazardous Discharges of Waste Regulated under Subtitle D and/or Title 27, December 2015 Edition (SPRRs or Standard Provisions)

Information Sheet

Monitoring and Reporting Program R5-2024-XXXX (separate document)

ENFORCEMENT

If, in the opinion of the Central Valley Water Board, the parties named in this Order fail to comply with the provisions of this Order, the Board 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. 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). Copies will also be provided upon request.

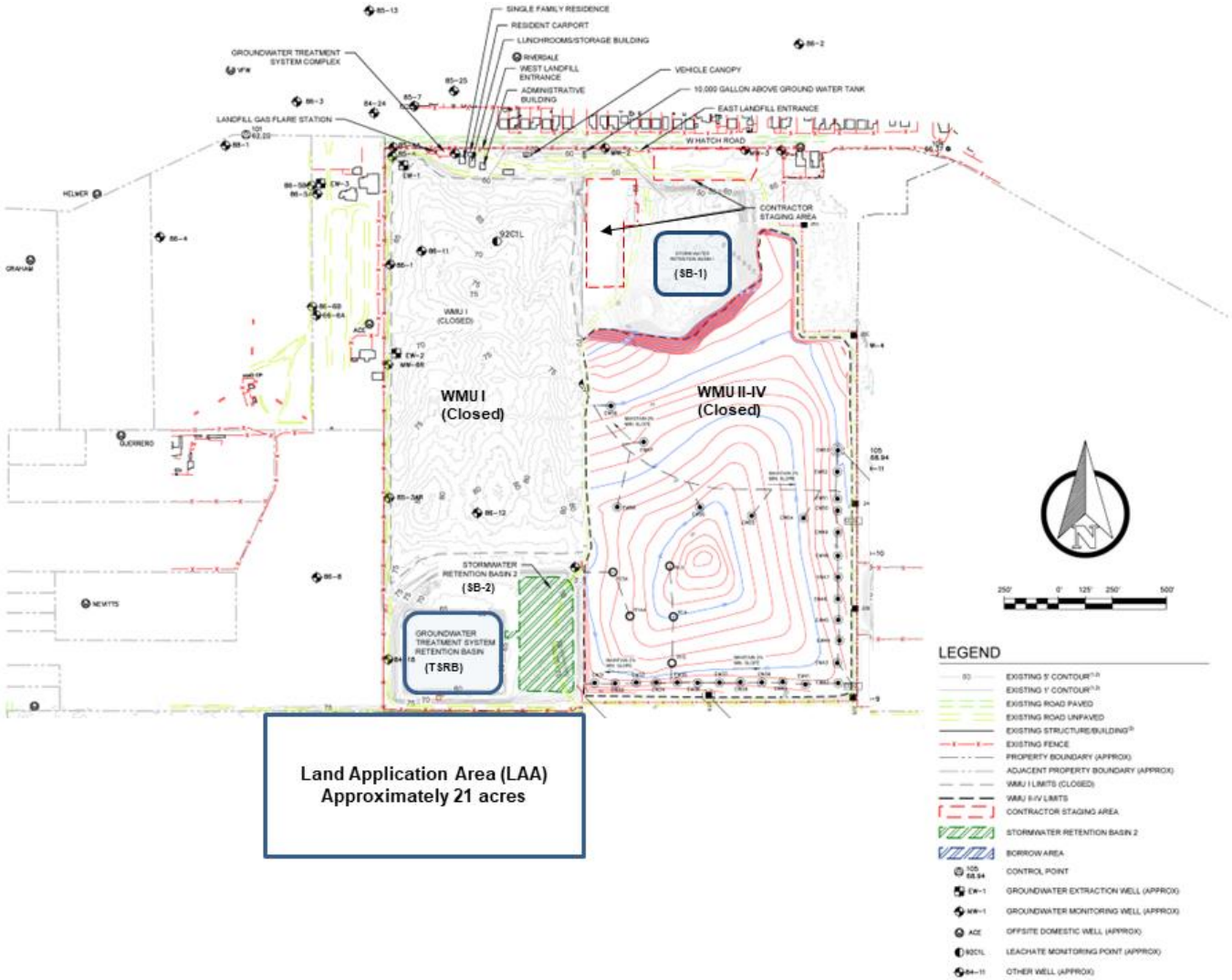
ATTACHMENT A—LOCATION MAP

CALIFORNIA COUNTIES

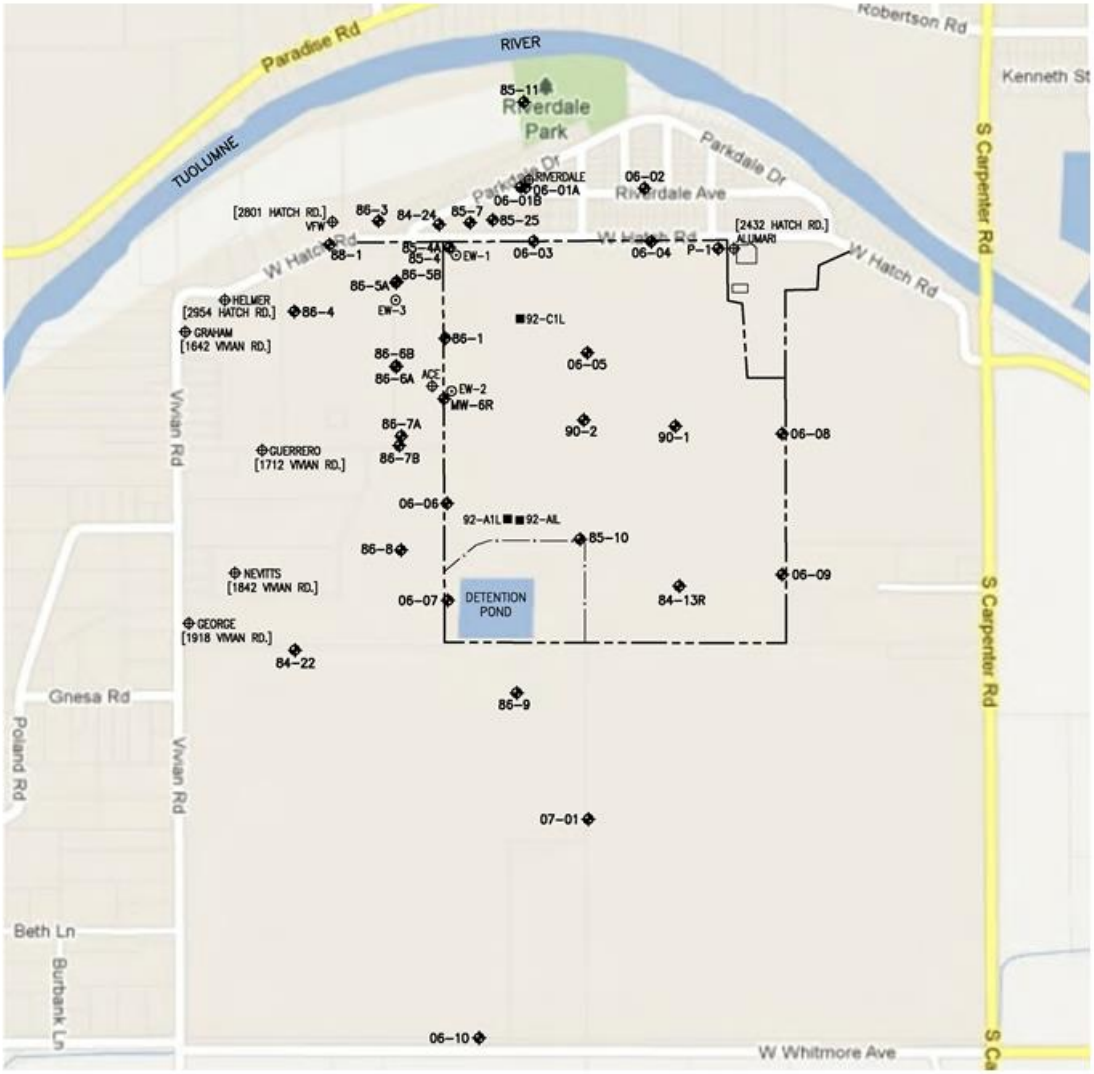
REGIONAL MAP

VICINITY MAP

ATTACHMENT B—FACILITY MAP



ATTACHMENT C—GROUNDWATER MONITORING AND EXTRACTION NETWORK

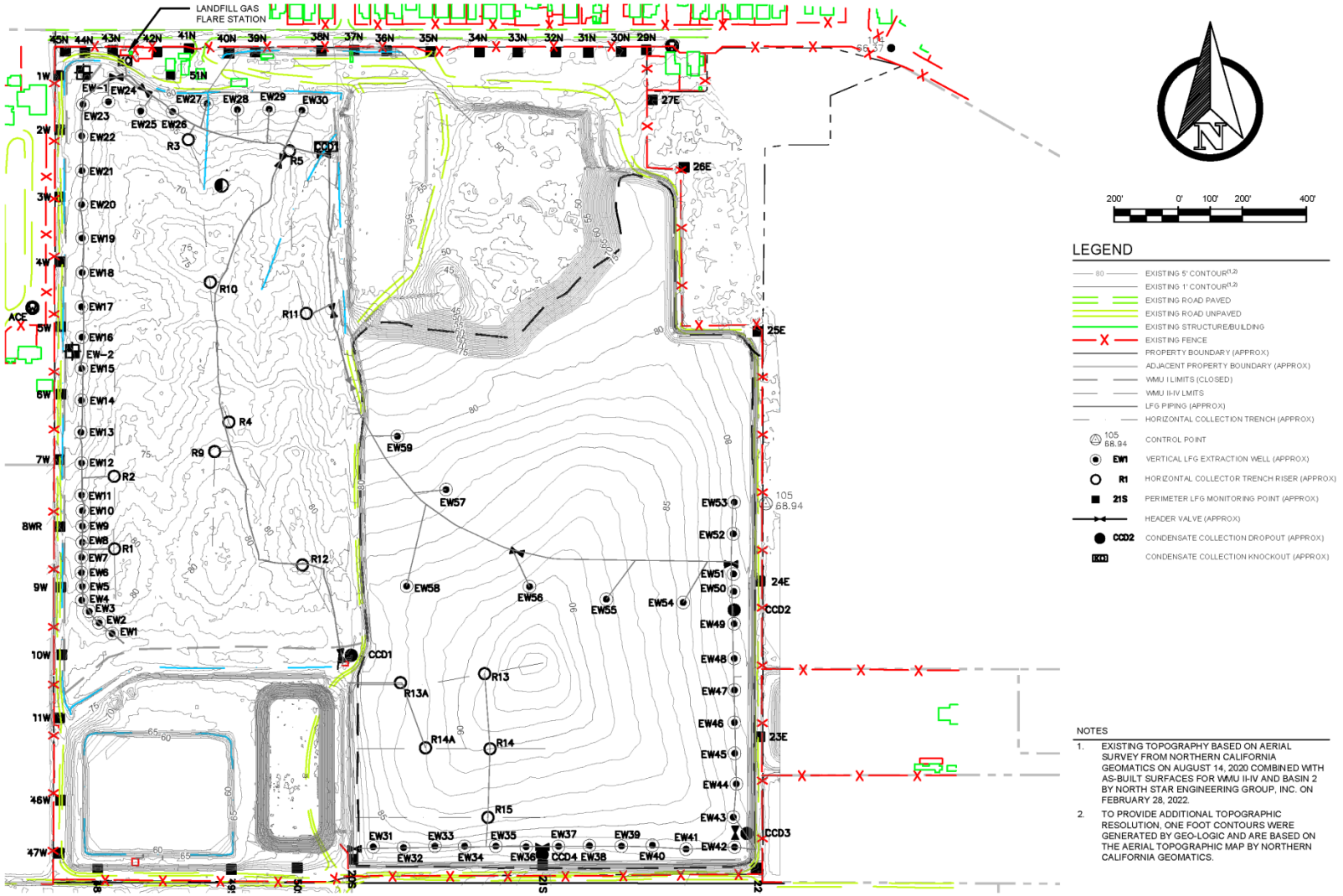


EXPLANATION:

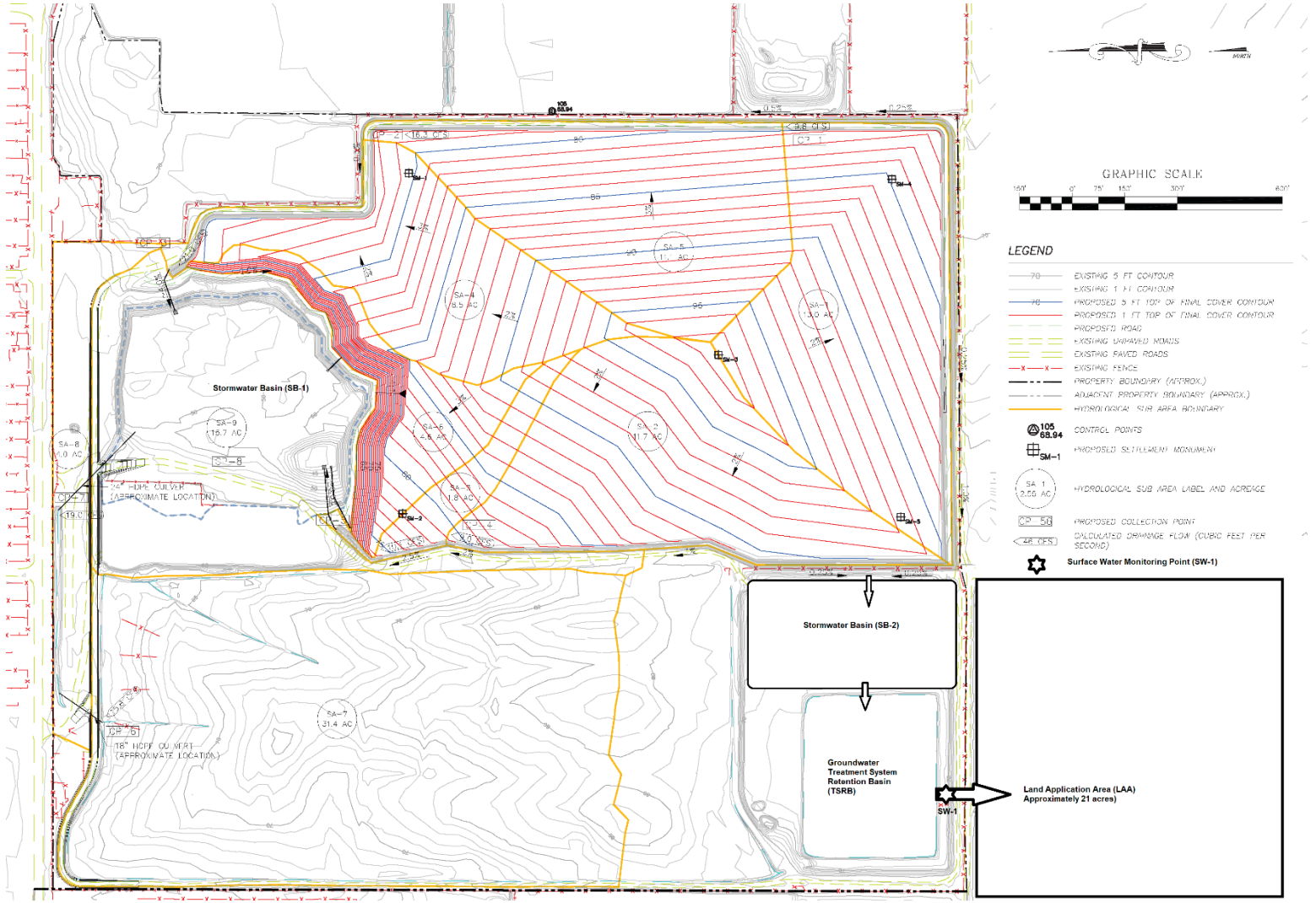
06-10 ◆	APPROXIMATE MONITORING WELL LOCATION
EW-3 ⊙	APPROXIMATE EXTRACTION WELL LOCATION
92-C1L ■	APPROXIMATE LANDFILL LEACHATE WELL LOCATION
NAME [ADDRESS] ⊕	APPROXIMATE PRIVATE WELL LOCATION
— — — —	APPROXIMATE PROPERTY BOUNDARY

GRAPHIC SCALE
100 0 50 100 200
(in feet)
N

ATTACHMENT D—LANDFILL GAS MONITORING AND EXTRACTION NETWORK



ATTACHMENT E—SURFACE WATER DRAINAGE MAP AND SURFACE WATER MONITORING POINTS



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) pursuant to the provisions of California Code of Regulations, Title 27 ("Title 27"), section 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 section 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.

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

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, section 20220(c) provided it is discharged above a composite liner with a leachate collection and removal system (LCRS) [Title 27, § 20200(d)(3)].

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)].

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 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 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, section 20324.

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, section 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, section 20415.

f. An Operation Plan (or reference to the location of this information in the ROWD/JTD) meeting the requirements of Title 27, section 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)].

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)].

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)].

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 Section 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.

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)];

   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. section 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, section 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 stability report on or before that date, the Discharger shall meet the requirements of Title 27, section 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)].

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)].

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:

   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 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 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 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, section 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.].

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, section 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)].

40. For statistical analysis of data, the Discharger shall use one of the methods described in Title 27, section 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, section 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, section 20415(e)(8)(A-D)] in accordance with Title 27, section 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, section 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, section 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 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***:

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, section 20415(e)(8)(E) for all 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, section 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, section 20415(e)(8)(A-D)] or section 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 in 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 I.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, sections 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, section 20415(e)(8)(E) in addition to the performance standards of Title 27, section 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 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 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, sections 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, section 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, section 20420(k)(7) in addition to or in lieu of submitting both an amended report of waste discharge or an engineering feasibility study; however, the Discharger is not relieved of the requirements and due dates of Title 27, sections 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, section 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, section 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)].

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:

> 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 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 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;

      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)].

11. 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)].

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

[TENTATIVE] WASTE DISCHARGE REQUIREMENTS ORDER R5-2024-XXXX
FOR
MA-RU HOLDING COMPANY, INC. AND BONZI SANITATION LANDFILL, GENERAL PARTNERSHIP
BONZI SANITATION LANDFILL
STANISLAUS COUNTY

INFORMATION SHEET

Description of Waste Management Units

The majority of the landfill is not constructed to today's standards, and portions of the wastes are in contact with the shallow groundwater. None of the four closed waste management units (WMUs) were constructed with a bottom liner or a leachate collection and recovery system, as is required of modern landfills. The landfill has created a plume of groundwater pollution, which must be contained through postclosure maintenance of the final closure covers installed over the WMUs, which serve as the primary means of containment, operation, and maintenance of an active landfill gas extraction system, and operation and maintenance of an active groundwater treatment system involving groundwater extraction and treatment prior to reuse of the treated groundwater.

The facility's four WMUs as described below:

WMU I is a 36.1-acre Class III landfill closed pursuant to Title 27. In 1999, WMU I was capped with a two-foot thick foundation layer, a 30-mil PVC flexible membrane, and an 18-inch vegetative layer. Approximately two million cubic yards of municipal refuse, agricultural wastes, industrial wastes, and construction debris were landfilled from 1967 to 1978. WMU I was constructed without a bottom liner or a leachate collection and removal system (LCRS). The WDRs at the time required that the Discharger maintain the integrity of the cap. On 16 October 2003, the Discharge was sent a Notice of Violation for inadequate post closure maintenance for WMU I. These violations caused the cover system to no longer comply with the performance standard in Title 27. These violations included: the runoff/run-on ditches were choked with vegetation, the cover was not maintained to prevent ponding, and the surveyed monuments could not be located.

WMU II is a Class III WMU that covers 17.7 acres in the central eastern area of the facility. Wastes were accepted from 1978 to 1984. Approximately 750,000 cubic yards of municipal refuse, agricultural wastes, industrial wastes, and construction wastes were landfilled. There is no bottom liner or LCRS. WMU II received a final closure cover in 2022 consisting of minimum two feet of compacted soil foundation, a 40-millimeter thick double-sided textured low-density polyethylene (LLDPE) geomembrane liner, a double-sided geo-composite drainage layer installed top of the LLDPE along the northern side slope, a minimum of 1.5 feet of vegetative/protective cover soil, and a combined mixture of hydroseed, fertilizer, mulch, and binder. On 21 June 2022, in accordance with Title 27

section 20310, subdivision (e), Central Valley Water Board staff approved the Discharger's final construction quality assurance report for the final closure cover.

WMU III-A, III-B, and III-C are Class III WMUs covering about 11 acres in the central southern portion of the facility. Approximately 250,000 cubic yards of agricultural waste, industrial waste, and construction wastes were accepted from 1984 to March 1992. There is no bottom liner or LCRS. WMU III-A, III-B, and III-C received a final closure cover in 2022 consisting of minimum two feet of compacted soil foundation, a 40-millimeter thick double-sided textured LLDPE geomembrane liner, a double-sided geo-composite drainage layer installed top of the LLDPE along the northern side slope, a minimum of 1.5 feet of vegetative/protective cover soil, and a combined mixture of hydroseed, fertilizer, mulch, and binder. On 21 June 2022 in accordance with Title 27 section 20310, subdivision (e), Central Valley Regional Water Quality Control Board (Central Valley Water Board) staff approved the Discharger's final construction quality assurance report for the final closure cover.

WMU III-D, WMU III-E, and WMU III-F are three "unclassified" WMUs. Wastes were discharged to these units between the years of 1992 and 1999. The existing WDRs at the time only allowed inert wastes, as defined in Title 27 section 20230, to be discharged to these units. There is no bottom liner or LCRS. WMU III-D, III-E, and III-F received a final closure cover in 2022 consisting of minimum two feet of compacted soil foundation, a 40-millimeter thick double-sided textured LLDPE geomembrane liner, a double-sided geo-composite drainage layer installed top of the LLDPE along the northern side slope, a minimum of 1.5 feet of vegetative/protective cover soil, and a combined mixture of hydroseed, fertilizer, mulch, and binder. On 21 June 2022 in accordance with Title 27 section 20310, subdivision (e), Central Valley Water Board staff approved the Discharger's final construction quality assurance report for the final closure cover.

WMU IV is an inert WMU covering 12 acres in the northeastern portion of the facility and resides in a soil borrow pit that was created during construction of the other units. The Discharger began using this unit in 1999 and continued to receive inert materials until 2009. The existing WDRs at the time only allowed inert waste (as defined in Title 27 section 20230) to be discharged to this unit. The unit has no bottom liner or LCRS. WMU IV received a final closure cover in 2022 consisting of minimum two feet of compacted soil foundation, a 40-millimeter thick double-sided textured LLDPE geomembrane liner, a double-sided geo-composite drainage layer installed top of the LLDPE along the northern side slope, a minimum of 1.5 feet of vegetative/protective cover soil, and a combined mixture of hydroseed, fertilizer, mulch, and binder. On 21 June 2022 in accordance with Title 27 section 20310, subdivision (e) Central Valley

Water Board staff approved the Discharger's final construction quality assurance report for the final closure cover.

Previous Enforcement

In 1984, the Discharger reported that a release of volatile organic compounds to groundwater had occurred. Consequently, Cease and Desist Order (CDO) No. 84-153 directed the Discharger to evaluate the extent of the contaminant plume. The Discharger did not comply in a timely manner and was therefore issued a $3,500 Administrative Civil Liability (ACL) Order. CDO No. 84-153 was rescinded on 22 September 1989.

As a result of CDO No. 84-153, and the subsequent data evaluation, the Board adopted Cleanup and Abatement Order (CAO) No. 89-185 to implement the necessary groundwater remediation. CAO No. 89-185 required the installation and operation of a groundwater remediation system. While the Discharger installed a groundwater extraction and treatment system, the Discharger failed to operate it for at least one year, from March 2004 through March 2005. In addition, the system was not adequate to contain the contaminant plume or lower the groundwater table enough to prevent groundwater from contacting the waste at the bottom of the landfill. As evidenced by 17 Notice of Violations issued since January 2001, the Discharger had a long history of failing to address noncompliance issues, failing to operate its groundwater extraction system, and failing to submit adequate reports.

Following adoption of CAO No. 89-185, the Discharger failed to comply with the CAO requiring installation and operation of a required groundwater treatment system. On 23 March 1990, the Executive Officer signed ACL Complaint No. 90-093 in the amount of $50,000. As a result, the Discharger installed the groundwater treatment system in the summer of 1991 and began pumping on 1 November 1991.

The Discharger has complied with CAO No. 89-185, which was rescinded upon adoption of Waste Discharge Requirements (WDRs) Order R5-2007-0148.

Prior to discharging the treated groundwater to the adjacent vineyard, the Central Valley Water Board adopted WDRs Order No. 90-215 to regulate the land application. Order No. 90-215 was rescinded when its requirements were incorporated into WDRs Order R5-2007-0148.

In April 2005, following a facility inspection and review of the case file, the Central Valley Water Board adopted CDO No. R5-2005-0073 to address a number of issues. The Order included requirements to address poor maintenance of closed WMU I; the acceptance of unauthorized waste; the closure of WMUs II and III; the lack of operation

of the groundwater treatment system; the update of the financial assurance; and required an evaluation of the groundwater monitoring system.

Following the adoption of CDO No. R5-2005-0073, the Discharger began submitting reports to comply with the CDO. However, upon review, staff found that these submittals were incomplete and did not address the requirements of the CDO.

Due to the continuing pattern of non-compliance, in 2005, the Central Valley Water Board and the Stanislaus County District Attorney's Office filed suit against the Discharger in Stanislaus County Superior Court (Case no. 376882) to enforce compliance with the Central Valley Water Board's Orders. In December 2005, the Central Valley Water Board and Stanislaus County District Attorney's Office entered into a stipulated judgement with the Discharger, which required:

- Payment of $450,000 to the Stanislaus County District Attorney's Office and the State of California over a two-year period;
- Payment of $100,000 if the Discharger submitted fraudulent reports at any time in the next three years; and
- Payment of $1.5 million in penalties, stayed contingent upon Discharger's satisfactory completion of 21 studies and improvements to the landfill.

Eight days after the stipulated judgment was signed, the Discharger violated a term of the stipulated judgment. Consequently, on 26 January 2006, the Central Valley Water Board adopted Resolution No. R5-2006-0002, requiring the Discharger to remit $50,000 to the Central Valley Water Board for failure to comply with the stipulated judgment. Following an appeal to the State Water Resources Control Board (State Water Board), the Discharger paid the $50,000 fine.

The Discharger continued to fail to comply with the stipulated judgment. Therefore, on 5 May 2006, the Central Valley Water Board adopted Resolution No.R5-2006-0036, requiring the Discharger to remit $50,000 to the Central Valley Water Board for failure to complete 5-year sampling event in accordance with the stipulated judgment. The Discharger subsequently conducted the required groundwater monitoring and paid the $50,000 fine.

On 2 August 2006, the Central Valley Water Board adopted CAO No. R5-2006-0172 requiring the Discharger to evaluate the vertical and lateral extent of groundwater pollution. Based on that evaluation, the Discharger was also required to (a) submit a feasibility study with alternatives to cleanup groundwater in compliance with Title 27, (b) implement source control, (c) restore the water quality of the polluted aquifer, and (d) conduct a human health risk assessment for the Riverdale Community. As a result, the

Information Sheet

Discharger submitted a Joint Technical Document to update the facilities operations, Closure and Post Closure Plans for WMUs II, III, and IV, a groundwater monitoring system upgrade report, and the 5-year groundwater sampling event data.

Based on information in the Joint Technical document, the Central Valley Water Board adopted WDRs Order R5-2007-0148 on 26 October 2007, which included an update of the general site conditions, as well as requirements for the groundwater Corrective Action Program, the groundwater-monitoring program, the post closure maintenance of WMU I, and the closure design of WMUs II and III.

On July 24, 2009, the Central Valley Water Board filed suit against the Discharger in Stanislaus County Superior Count (Case No. 643740) for violation of administrative orders as well as the Stipulated Judgment entered into on December 23, 2005 in Case No. 376882. The California Department of Resources Recycling and Recovery (CalRecycle, and together with the Central Valley Water Board, the Agencies) later intervened and joined the lawsuit.

In March 2010, the Discharger notified the Agencies that it was financially unable to close remaining WMUs II, III, or IV, or even continue site operations and maintenance. At the time, the estimated landfill costs for closure, post-closure maintenance, and corrective actions were $6.161 million, $10 million, and $4.8 million, respectively. The Discharger was unable to fund all three of these costs for the landfill. The Discharger had assets in the Closure and Post Closure Fund that could only support approximately $5.2 million in site-related costs. Consequently, the Discharger and the Agencies entered into a Stipulated Agreement to access funds from the Discharger's Closure and Post Closure Maintenance Fund to continue funding critical landfill operations and maintenance. In 2012, an interim soil cover was placed atop WMU II, III, and IV; however, due to the Discharger's failure to deposit sufficient funds in the Closure and Post Closure Maintenance Fund, formal closure of WMU II, III, and IV was postponed.

On March 20, 2014, the Agencies obtained a default judgment in Case No. 643740, which required the Discharger to comply with a number of the administrative orders and the 2005 Stipulated Judgement. In July 2014, the State Agencies filed suit against certain of the Dischargers in Stanislaus County Superior Court (Case No. 2010364) seeking to enforce a separate Remediation Order to fund the Discharger's financial assurances obligations. The parties entered into a Stipulated Judgment on March 29, 2016 under which the Bonzi Parties agreed to sell certain properties to fund the Closure and Post Closure Maintenance Fund.

Final cover construction was substantially complete on 4 February 2022, and all closure project work, including fence installation, was complete on 28 April 2022.

Historical Groundwater Monitoring

To comply with Item No. 3 of the December 2005 Stipulated Judgment, the Discharger implemented a program to upgrade the deficient groundwater monitoring system. In August 2006, the Discharger completed the following tasks:

- Abandonment of 27 monitoring wells which were found to be redundant, damaged, not listed in MRP Order No. 98-093 or improperly constructed;
- Installation of ten monitoring wells to replace certain wells abandoned during this work and to fill data gaps in the groundwater monitoring system;
- Installation of two new monitoring wells in the vicinity of the Riverdale Community supply well for effective down-gradient off-Site monitoring;
- Re-development of two existing Site monitoring wells to remedy high turbidity conditions; and
- Completion of a new survey of all new and existing groundwater-monitoring wells at the Site to the California state coordinate plane.

The following new groundwater monitoring wells were installed to update the monitoring system:

- 06-01A and 06-01B – These wells were placed downgradient of the Site, but upgradient of the Riverdale well. Well 06-01A was installed within the shallow (upper 30-feet bgs) groundwater zone to monitor groundwater quality at the groundwater table, and was constructed to accommodate fluctuations in water levels of approximately five-feet. Well 06-01B was installed at a deeper groundwater zone (80.5-ft bgs to 90.5 ft bgs) in order to sample from the same depth as the center of the Riverdale well screen. Wells 06-01A and 06-01B were installed approximately 30-feet north of Riverdale Avenue, approximately 100-ft west of the Riverdale Avenue and Rosemore Avenue intersection.
- Monitoring well 06-02 replaced former monitoring well 86-2 that was abandoned due to improper construction. Well 06-02 monitors the groundwater quality approximately 400-ft downgradient of the Site, and is approximately 500-ft west of former well 86-2 within the northern road shoulder of Riverdale Avenue.
- Monitoring well 06-03 replaced former monitoring well MW-1 that was abandoned due to improper construction. Well 06-03 monitors the groundwater quality at the

northwestern portion of the Site, and is approximately 250-ft east of former well MW-1.

- Monitoring well 06-04 replaced former monitoring well MW-2 that was abandoned due to improper construction. Well 06-04 monitors the groundwater quality at the northern extent of the Site, and is approximately 300-ft east of former well MW-2.
- Monitoring well 06-05 replaced former monitoring well 84-6 that was abandoned due to improper construction. Well 06-05 monitors the groundwater quality at the central portion of the Site, and is approximately 10-ft south of former well 84-6.
- Monitoring well 06-06 replaced former monitoring well 85-3AR that was abandoned due to improper construction. Well 06-06 monitors the groundwater quality at the western extent of the Site, and is approximately 5-ft south of former well 85-3AR.
- Monitoring well 06-07 replaced former monitoring well 84-18 that was abandoned due to improper construction. Well 06-06 monitors the groundwater quality at the western extent of the Site, and is approximately 125-ft north of former well 84-18.
- Monitoring well 06-08 replaced former monitoring well 84-10 which was abandoned due to questionable well construction and is at a location identified as a data gap in the Site groundwater monitoring system. Well 06-08 monitors groundwater quality at the eastern extent of the Site and is approximately 750-ft north of former well 84-10.
- Similar to well 06-08, monitoring well 06-09 replaced former monitoring well 84-10, which was abandoned due to questionable well construction and is at a location identified as a data gap in the Site groundwater monitoring system. Well 06-09 monitors the groundwater quality at the eastern portion of the Site (south of well 06-08) and is approximately 250-ft south of former well 84-10.
- Monitoring well 06-10 replaced former monitoring well 84-20 that was abandoned due to improper construction. Well 06-10 monitors the groundwater quality south and upgradient of the Site, and is approximately 300-ft east of former well 84-20.

Table 1 provides the geographical coordinates for the Discharger’s current groundwater system monitoring wells.

Table 1 - Groundwater Monitoring Well Coordinates

Well ID	Northing (x)	Easting (y)	Top of Casing, Elev. (msl)
06-10	2039660.58	6404718.02	73.64
86-9	2041901.43	6404961.66	79.35
92-A1L	2043028.73	6404908.70	81.18
92-C1L	2044329.64	6404980.84	72.77
90-2	2043673.17	6405399.28	75.62
P-1	2044788.00	6406270.18	65.59
06-08	2043583.71	6406684.03	70.35
06-09	2042668.10	6406684.73	71.21
84-13R	2042590.35	6406017.42	80.64
90-1	2043633.16	6405988.83	78.87
06-07	2042502.24	6404513.91	75.21
06-06	2043129.68	6404505.50	76.25
MW-6R	2043807.12	6404490.50	70.93
EW-2	2043858.31	6404540.10	70.89
86-1	2044205.96	6404496.53	67.94
EW-1	2044742.00	6404566.39	68.01
85-4	2044788.70	6404520.19	63.37
85-4A	2044794.65	6404523.59	63.27
86-5A	2044560.74	6404178.75	61.03
86-5B	2044570.91	6404179.58	61.46
EW-3	2044450.60	6404176.70	59.24
86-6A	2044017.24	6404177.98	61.44
86-6b	2044027.18	6404178.98	61.07
86-3	2045041.45	6404126.06	63.91
88-1	2044811.40	6403749.14	60.78
86-4	2044377.51	6403521.47	62.08

Well ID	Northing (x)	Easting (y)	Top of Casing, Elev. (msl)
84-24	2044942.23	6404457.60	62.66
85-7	2044953.12	6404657.72	62.96
06-02	2045178.99	6405790.66	61.29
06-04	2044833.54	6405835.28	61.07
06-03	2044830.29	6405073.52	60.65
85-10	2042894.43	6405372.72	79.50
06-05	2044111.73	6405419.62	60.51
06-01A	2045178.98	6405016.04	60.93
06-01B	2045181.04	6404985.93	61.36
85-25	2044968.80	6404804.55	62.82

Notes:

1. The horizontal coordinates (x, y) were referenced to the California Coordinate System Zone 3 (NAVD88)

2. The vertical control (z) elevation was related to NVGD 29 as referenced to the City of Modesto Bench Marks and published by the City of Modesto Public Works.

3. msl = mean sea level.

Five monitoring wells (84-13, 84-14 and 86-10, 85-11 and 86-8) were not abandoned during the monitoring system upgrade. These wells could not be located. The Discharger was required to locate these wells and abandoned them in accordance with Stanislaus County's well regulations.

Groundwater Degradation- Historical Release to Groundwater

WMUs I through IV were all filled without an underlying protective liner system. Any leachate generated within these WMUs freely drains to the underlying groundwater. In addition, the Discharger has also reported that groundwater itself rises into the waste. During the 2006 second quarter monitoring event, groundwater was measured to have inundated the bottom seven feet of WMU I. Consequently, the condition of these WMUs promotes landfill gas generation, uncontrolled leachate drainage, and groundwater pollution.

Information Sheet

Bonzi Sanitation Landfill has and continues to have releases to groundwater. A groundwater monitoring system has been installed, as well as a groundwater extraction and treatment system. Based on data provided by the Discharger, the groundwater extraction system likely is not capturing the entire present plume. Downgradient domestic wells have been polluted, and the Riverdale Community well is threatened by the Bonzi plume. However, these releases are expected to diminish over time since final closure covers have been placed on all the WMUs and the Discharger is expected to achieve adequate separation between landfill waste and underlying groundwater.

Since 2002, the Discharger's groundwater monitoring program has found detectable levels of volatile organic compounds (VOCs) in 31 of 49 historical and current off-site and onsite wells monitoring wells. The detected VOCs include: 1,1 dichloroethene (DCE), 1,1 dichloroethane (1,1-DCA), 1,1,1 trichloroethane, 1,2 dichlorobenzene, 1,2 dichloroethane, 1,2 dichloropropane, 1,4 dichlorobenzene, benzene, bromomethane, chlorobenzene, chloroethane, chloroform, chloromethane, cis-1,2-dichloroethene (cis-1,2-DCE), dibromochloromethane, dichlorodifluoromethane, ethylbenzene, tetrachloroethene (PCE), toluene, trans-1,2-dichloroethene, trichloroethylene (TCE), trichlorofluoromethane, vinyl chloride, and total xylenes.

The 2005 Annual Groundwater Monitoring Report shows that elevated levels of chloride and total dissolved solids (TDS) are present in wells downgradient of the facility. During the fourth quarter 2005 sampling event, background well 84-20 contained chloride and TDS at 11.2 milligrams per liter (mg/l) and 370 mg/l, respectively. During the same monitoring event, monitoring well 85-7, which is directly downgradient of WMU I and extraction well EW1, contained chloride and TDS at 127 mg/l and 746 mg/l, respectively.

During the third quarter 2006 sampling event, TDS was measured in the background well 06-10 at 380 mg/l. During the same period, directly in the center of WMU I, TDS was measured in the leachate sump at 7,400 mg/l. Monitoring wells 06-01A and 06-01B are downgradient of the facility and directly upgradient of the Riverdale Community well. These wells had TDS measured at 440 mg/l and 300 mg/l, respectively.

As required by the 2005 stipulated judgment, the Discharger upgraded the detection monitoring system. The monitoring results following the monitoring system upgrade were as follows:

- TDS concentrations reported for monitoring wells 06-09, 86-1, and 86-9 are 1,100 mg/l, 1,200 mg/l, and 1,000 mg/l, respectively. These concentrations exceed water quality protection standard of 980 mg/l.

- Nitrate (as N) concentrations ranged from <1.0 mg/l to 160 mg/l with elevated concentrations in the central and eastern portions of the Landfill. There were seven monitoring wells samples with nitrate results above the WQPS limit of 34.4 mg/l.
- The VOC analytical results show that only three of the 11 newly installed wells (06- 01B, 06-08, and 06-09) had reported concentration of VOCs above the detection limit.

Monitoring well 06-01B (see Attachment D) was installed approximately 30 feet south of the Riverdale Community supply well and sampled at a depth equivalent to the center of the supply well screen interval. Well 06-01B has reportable concentrations of bromodichloromethane, carbon disulfide, chloroform, and dibromochloromethane above the reporting limit. There is not enough data to identify the source of these contaminates. Monitoring well 06- 01B also had a reported detection of carbon disulfide at 0.75 micrograms per liter (µg/l). No other wells this quarter had a reported detection of this compound. The California Public Health Goal for carbon disulfide in drinking water is 4 µg/l and the Maximum Contaminant Level (MCL) is 5 µg/l.

Monitoring well 06-08, located along the central eastern boundary of the Landfill (See Attachment D), has concentrations of 1,4-dichlorobenzene, benzene, cis-1,2-DCE at 1.4 µg/l, 0.66 µg/l, and 0.83 µg/l, respectively. In addition, monitoring well 06-08 has estimated concentrations, above the MDL, but below the practical quantitation limit (PQL) for chlorobenzene and methyl tert-butyl ether (MTBE) at 0.37 µg/l and 0.43 µg/l, respectively.

Monitoring well 06-09, located along the southeastern upgradient boundary of the landfill (See Attachment D), has concentrations of 1,1,1-trichloroethane, 1,1-DCA, cis-1,2-DCE, dichlorodifluoromethane, MTBE, PCE, TCE, and trichlorofluoromethane at 0.89 µg/l, 38 µg/l, 0.92 µg/l, 0.87 µg/l, 1.2 µg/l, 1.1 µg/l, 0.90 µg/l and 2.5 µg/l, respectively. In addition, Well 06-09 had a detection of DCE between the MDL and PQL at 0.43 µg/l. The constituents and concentrations present in well 06-09 are consistent with previous historical data from monitoring well 84-10 (abandoned in August 2006) that was located approximately 200 ft to the north.

In 2006, the Riverdale well was sampled for the 40 Code of Federal Regulations Part 258, Appendix I and II analytes. The following analyte groups had no detectable concentrations: polychlorinated biphenyls, chlorinated herbicides, semi volatile organic compounds, VOCs, organophosphorus pesticides, mercury, or total cyanide. The Riverdale well had nitrogen as N at 7.9 mg/l, and TDS was reported at 380 mg/l. The detected concentrations of dissolved metals were: 6.71 ug/l arsenic, 56.5 ug/l barium,

0.2 ug/l cobalt, 2.41 ug/l, chromium, 1.94 ug/l copper, 1.59 ug/l molybdenum, 1.12 ug/l nickel, 9.6 ug/l lead, 37 ug/l vanadium, and 13.3 ug/l zinc.

During the 5-year required sampling event, the Discharger sampled all of the detection and monitoring wells at the facility using EPA method 6020. The results identified that the following analytes exceeded their water quality protection standard: arsenic, barium, chromium, cobalt, copper, lead, manganese, mercury, vanadium, tin, selenium, and molybdenum. These metals are identified as a constituent of concern and will be required to be monitored on a semi-annual basis.

Groundwater Corrective Action Program

On 1 October 1984, the Discharger submitted a report titled *Groundwater Study, Bonzi Landfill*. This report disclosed that in the winters of 1981- 1982 and 1982-1983 the groundwater rose and percolated through the landfilled refuse, and that VOCs, elevated levels of metals, and TDS have been detected in the downgradient monitoring wells. Following the confirmed release, Cease and Desist Order No 84-153 adopted on 28 November 1984 directed the discharger to evaluate the extent of the contaminant plume. As a result of the Order the Discharger prepared the following reports:

- Site Investigation Report, Bonzi Sanitary Landfill, dated 8 May 1987;
- Design Reports/Operation and Closure Plans, dated 16 April 1987;
- Feasibility Study, Bonzi Sanitary Landfill, dated 1 July 1987; and
- Soil Gas Tube Investigation, dated June 1989.

The data in the above reports document that as of 1989, ten groundwater monitoring wells and three leachate monitoring wells were contaminated by VOCs. The Central Valley Water Board subsequently adopted CAO No. 89-185 to implement the necessary groundwater remediation including providing drinking water for downgradient municipal water well users. Since the adoption of CAO No. 89-185, the Discharger has installed the required remediation system. The remediation system included a groundwater treatment system which consisted of five components: three, six-inch groundwater extraction wells (EW1, EW2, and EW3), an air stripper, a lined Treatment System Retention Pond (TSRB) to contain the effluent, a land application area, and a landfill gas collection system.

The groundwater remediation system was brought on-line on 1 November 1991. Following extraction from the underlying aquifer, groundwater is sent through a single tower air stripper treatment system, which removes the VOCs. Then the treated groundwater is piped to the TSRB lined with 60-mil solar resistant High-Density

Polyethylene (HDPE) geomembrane. The Discharger estimated that the treatment system discharges approximately 125 gallons/minute of effluent into the TSRB. However, subsequent monitoring data had consistently shown that the system was not functioning as planned. At the time, VOCs continued to be reported by the Discharger downgradient from the WMU I point of compliance, and in off-site wells. The continued pollution of groundwater may be attributed to the non-operation of the groundwater remediation system. The discharger informed Central Valley Water Board staff during an April 2005 inspection that the system had not been operational for over a year.

On 2 August 2006, the Central Valley Water Board adopted CAO No. R5-2006-0721. The CAO required the Discharger to upgrade its groundwater extraction system such that it can capture all groundwater contaminates from the Bonzi Landfill at the point of compliance.

In April 2006, the Discharger hired a new firm to oversee the operation of the groundwater treatment system. From July 2006 through December 2006, the groundwater treatment system pumped 19,473,430 gallons of groundwater. That equates to an average operational discharge of 79 gallons/minute into the TSRB. No VOCs were detected at the air stripping system or in the TSRB. During this period, there was one detection of 0.27 ug/l of 1,1-DCA in extraction well EW2. No other VOCs were reported from the extraction well samples. Concentrations of TDS were reported at 486 mg/l in the air stripper and at 530 mg/l in the EW2 samples.

The 10-million gallon TSRB located in the southwest corner of the Facility property, encompasses an area of approximately 4.4 acres. It is lined with a 60-mil HDPE geomembrane liner. The maximum depth is 10 ft. The Discharger has placed sand on the liner to prevent it from floating. The pond has no LCRS or a secondary liner system because the effluent discharged to it is not considered a designated waste and therefore is not subject to Title 27 regulations. In January 2006, to comply with the December 2005 stipulated judgment, the Discharger repaired the numerous holes in the pond’s HDPE liner and then certified its integrity.

During the third quarter 2006 monitoring event, no VOCs were detected in the effluent discharge from the groundwater treatment system. However, during the same sampling event, arsenic and chromium were reported at 3.54 µg/l and 4.24 µg/l, respectively. The background well in the first quarter of 2007 had arsenic and chromium concentrations at 2.54 ug/l and 0.8 ug/l, respectively. For comparison, the USEPA IRIS Reference Dose as a drinking water level for arsenic is 2.1 µg/l while the Primary MCL for chromium is 50 µg/l. To comply with State Water Board Resolution No. 68-16, WDRs Order R5-2007-0148 contained effluent limitations for VOCs, arsenic, and chromium at background levels.

Information Sheet

The Discharger proposed to land apply the effluent in the retention pond to an adjacent 21-acre land application area. The Discharger planted poplar trees in the land application area to promote evapotranspiration.

Staff's review of the Discharger's 3 August 2007 retention pond water balance found that the Discharger proposed to reduce pumping of the groundwater extraction system during the winter. However, the groundwater extraction system did not capture the entire groundwater plume, so a winter-time reduced pumping rate did not comply with the 2005 stipulated judgment. CAO No. R5-2006-0721 required submittal of a proposal to upgrade the groundwater extraction system such that the entire plume is captured and remediated.

WDRs Order R5-2007-0148, adopted on 26 October 2007, required the Discharger to maintain a corrective action monitoring system, in compliance with Title 27 section 20415, subdivision (b)(1)(D) to evaluate the continuous operational performance of their corrective action remediation systems. The performance standards for their corrective action system are listed in CAO No. R5-2006-0721, and included the following:

- Capture all groundwater contaminates from Bonzi Landfill at the point of compliance. After the Discharger has made a reasonable attempt to capture all groundwater contaminates and if the Discharger believes it is technically or economically infeasible to achieve this criteria, then the Discharger must provide a report to Central Valley Water Board demonstrating their conclusion. If the Central Valley Water Board does not concur with the report's conclusion, the Discharger must make further attempts to comply with the criteria.
- Prevent groundwater from inundating the bottom of the four WMUs. After the Discharger has made a reasonable attempt to prevent groundwater from inundating the bottom of the WMUs and if the Discharger believes it is technically or economically infeasible to achieve this criteria, then the Discharger must provide a report to Central Valley Water Board demonstrating their conclusion. If the Central Valley Water Board does not concur with the report's conclusion, the Discharger must make further attempts to comply with the criteria.
- Clean-up groundwater to background or a concentration limit greater than background (CLGBC) in compliance with Title 27 section 20400, subdivision (c). This includes the entire groundwater plume as described in Title 27 section 20430, subdivision (c).
- Be able to monitor the groundwater and leachate levels from three locations within the footprint of each landfill unit.
- Remove any leachate generated from within the unit.

- Continuous treatment system (24 hours a day, 365-days a year) operation until the groundwater plume is remediated to background or a concentration limit greater than background (CLGBC) in compliance with Title 27, section 20400, subdivision (c).
- Corrective action monitoring program that meets the requirements in Title 27, section 20430, subdivision (d).

Land Application Area Corrective Action Program

In an effort to better manage the treated groundwater generated from the groundwater extraction system, the Discharger proposed to discharge treated groundwater to a land application area. The 21-acre land application area is in the southwestern portion of the property. The Discharger has planted Poplar trees in the land application area for the evapotranspiration of the applied treated groundwater. The Discharger may choose to irrigate other agricultural or tree crops in the land application area if such crops are have similar agronomic uptake values.