

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-201X-XXXX

WASTE DISCHARGE REQUIREMENTS
FOR
COUNTY OF MADERA
FAIRMEAD MUNICIPAL SOLID WASTE LANDFILL
CLASS III LANDFILL
CONSTRUCTION, OPERATION, AND CORRECTIVE ACTION
MADERA COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Central Valley Water Board) finds that:

1. The County of Madera (hereinafter Discharger) owns and contracts for operation of the Fairmead Municipal Solid Waste Landfill (Facility), which is located about 5 miles southeast of the City of Chowchilla, in Section 14, T10S, R16E, MDB&M, as shown in Attachment A, which is incorporated herein and made part of this Order by reference. The Facility is a municipal solid waste (MSW) landfill regulated under authority given in Water Code section 13000 et seq.; California Code of Regulations, title 27 ("Title 27"), section 20005 et seq.; and 40 Code of Federal Regulations section 258 (a.k.a, "Subtitle D") in accordance with State Water Resources Control Board (State Water Board) Resolution 93-62.
2. The Facility is located at 21739 Road 19, Chowchilla. The existing and future landfill area is approximately 121 acres of which 97 acres have been constructed. The existing landfill consists of one unlined waste management unit (WMU) covering 45 acres and two lined WMUs covering 52 acres. The existing and future permitted landfill area is shown in Attachment B, which is incorporated herein and made part of this Order by reference. The Facility is situated on Assessor's Parcel Number (APN) 027-192-031.
3. On 22 May 2003, Central Valley Water Board staff approved a Corrective Action Program (CAP) to remediate a release of volatile organic compounds (VOCs) from the Facility. The Discharger has since implemented the CAP. Additionally, on 13 November 2014, the Discharger submitted an amended Report of Waste Discharge (RWD) as part of the Joint Technical Document (JTD) for the landfill. The information in the approved CAP and in the RWD/JTD, which includes an October 2014 *Waste Acceptance Plan*, has been used in revising these waste discharge requirements (WDRs). The RWD contains the applicable information required in Title 27.
4. On 15 October 2004, the Central Valley Water Board adopted Order No. R5-2004-0161 in which the landfill WMUs at the Facility were classified as Class III units for the discharge of municipal solid waste and non-hazardous solid waste. This Order continues to classify the landfill units as Class III units in accordance with Title 27.

5. The existing and future landfill units authorized by this Order are described as follows:

<u>Unit</u>	<u>Area</u>	<u>Liner/LCRS¹ Components²</u>	<u>Unit Classification & Status</u>
WMU 1	45 acres	Unlined	Class III, active
WMU 2	26 acres	Cells 1 and 2- Non-Subtitle D liner	Class III, active
		Cells 3 and 4 - Subtitle D liner (LCRS, 40-mil HDPE ³ , GCL ⁴ , geocomposite drainage layer)	Class III, active
WMU 3	27 acres	Cells 1A, 1B, 2A, 2B, 2C Subtitle D liner (LCRS, 40-mil HDPE ³ , GCL ⁴ , geocomposite drainage layer)	Class III, active
		Cells 3A, 3B	Class III, future cells

¹ LCRS – Leachate collection and removal system

² All liner systems are composite liner systems unless otherwise noted

³ High-density polyethylene geomembrane

⁴ Geosynthetic clay layer

6. On-site facilities at the Facility include an active landfill gas extraction system, a soil vapor extraction system, a landfill gas flare, and a materials recovery facility (MRF).

7. On 9 October 1991, the United States Environmental Protection Agency (USEPA) promulgated federal MSW regulations under the Resource Conservation and Recovery Act (RCRA), Subtitle D. These regulations are under 40 Code of Federal Regulations section 258, and are hereafter referred to as either “Subtitle D” in reference to the RCRA federal law that required the regulations or “40 C.F.R. section 258.XX”. These regulations apply to all California Class II and Class III landfills that accept MSW. State Water Board Resolution 93-62 requires the Central Valley Water Board to implement in WDRs for MSW landfills the applicable provisions of the federal MSW regulations that are necessary to protect water quality, and in particular the containment provisions and the provisions that are either more stringent or that do not exist in Title 27.

8. This Order implements the applicable regulations for discharges of solid waste to land through Prohibitions, Specifications, Provisions, and monitoring and reporting requirements. Prohibitions, Specifications, and Provisions are listed in Sections A through H of these WDRs below, and in the Standard Provisions and Reporting Requirements for Waste Discharge Requirements for Nonhazardous Solid Waste Discharges Regulated by Subtitle D and/or Title 27, dated January 2012, which are attached hereto and made part of this Order by this reference. Monitoring and reporting requirements are included in the Monitoring and Reporting Program (MRP) No. R5-201X-XXXX and in the SPRRs. In general, requirements that are either in regulation or otherwise apply to all MSW landfills are considered to be “standard” and are therefore in the SPRRs. Any site-specific changes to a requirement in the SPRRs are included in the applicable section (A through

H) of these WDRs, and the requirement in the WDRs supersedes the requirement in the SPRRs.

9. Title 27 contains regulatory standards for discharges of solid waste promulgated by the State Water Board and the California Department of Resources Recovery and Recycling (CalRecycle). In certain instances, this Order cites CalRecycle regulatory sections. Title 27, section 20012 allows the Central Valley Water Board to cite CalRecycle regulations from Title 27 where necessary to protect water quality, provided it does not duplicate or conflict with actions taken by the Local Enforcement Agency in charge of implementing CalRecycle's regulations.

WASTE CLASSIFICATION AND UNIT CLASSIFICATION

10. The Discharger proposes to continue to discharge nonhazardous solid waste, including "municipal solid waste," as defined in Title 27, section 20164.
11. Additionally, the Discharger proposes to discharge the following nonhazardous and non-designated solid waste, as outlined in the *Waste Acceptance Plan*: putrescible and non-putrescible municipal solid waste, inert waste and construction debris, dead animals, treated wood waste, dewatered sewage and industrial sludge, treated biosolids, treated auto shredder waste, ash and cement kiln dust (non-hazardous, non-designated), and contaminated soils (non-hazardous, non-designated) into Subtitle D lined cells (WMU 2 – Cells 3 and 4, WMU 3). These classified wastes may be discharged only in accordance with Title 27, Resolution 93-62, Subtitle D as required by this Order, and with approval from CalRecycle.
12. The Discharger proposes to discharge treated wood waste in the composite-lined units at the landfill. Title 22 defines "treated wood" to mean wood that has been treated with a chemical preservative for purposes of protecting the wood against attacks from insects, microorganisms, fungi, and other environmental conditions that can lead to decay of the wood, and the chemical preservative is registered pursuant to the Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C. Sec. 136 and following). This may include but is not limited to, waste wood that has been treated with chromated copper arsenate (CCA), pentachlorophenol, creosote, acid copper chromate (ACC), ammoniacal copper arsenate (ACA), ammoniacal copper zinc arsenate (ACZA), or chromated zinc chloride (CZC).
13. Title 22, section 67386.11 allows treated wood waste to be discharged to a composite-lined portion of a MSW landfill that is regulated by WDRs issued pursuant to the Water Code, provided that the landfill owner/operator:
 - a. Complies with the prohibitions in Title 22, section 67386.3, which are:
 - i. Treated wood waste shall not be burned, scavenged, commingled with other waste prior to disposal, stored in contact with the ground, recycled without

treatment (except as in iii, below), treated except in compliance with Title 22, section 67386.10, or disposed to land except in compliance with Title 22, section 67386.11.

- ii. Any label or mark that identifies the wood and treated wood waste shall not be removed, defaced, or destroyed.
- iii. Treated wood waste may be recycled only by reuse when all of the following apply:
 - (1) Reuse is on-site.
 - (2) Reuse is consistent with FIFRA approved use of the preservative.
 - (3) Prior to reuse, treated wood waste is handled in compliance with Title 22, division 4.5, chapter 34.
- b. Ensures treated wood waste is managed at the landfill according to Title 22, division 4.5, chapter 34 prior to disposal.
- c. Monitors the landfill for a release and, if a verified release is detected from the unit where treated wood is discharged, the disposal of treated wood will be terminated at the unit with the verified release until corrective action ceases the release. .
- d. Handles treated wood waste in a manner consistent with the applicable sections of the California Occupational Safety and Health Act of 1973.

14. Title 27, section 20200(d)(3) prohibits the discharge of semi-solid wastes (wastes containing free liquids or less than 50 percent solids by weight) other than dewatered sewage or water treatment sludges. However, Title 27, section 20200(d)(3) allows exceptions to be made if a discharger can demonstrate that such discharges will not exceed the moisture-holding capacity of the landfill. Accordingly, the Discharger proposes that the disposal of other sludge be allowed based on preparation of a Sludge Management Plan that demonstrates and provides a procedure to mix or dry high moisture content wastes on site to achieve an acceptable moisture content that will minimize the production of free liquids and excessive leachate during and after waste disposal.

15. The Discharger proposes to include acceptance of treated auto shredder waste (TASW). Acceptance is dependent upon its categorization by the State Department of Toxic Substances Control (DTSC) as a non-hazardous material. In September 2008, DTSC indicated that it was repealing an earlier determination that TASW was non-hazardous. The 2008 DTSC guidance indicated that TASW was considered to be potentially hazardous and could no longer be disposed or used as alternative daily cover (ADC) in Class III landfills. In September 2009, however, DTSC postponed the effective date of the TASW determination, meaning that TASW from certain shredding facilities can be used as

ADC at this time. The status of TASW acceptance is still being evaluated within the California Environmental Protection Agency and is subject to change.

16. The Discharger proposes to accept non-hazardous and non-designated ash and cement kiln dust (CKD). Depending upon the source and makeup of the coal being burned, the components of fly ash vary considerably, but all fly ash includes substantial amounts of silicon dioxide (SiO₂) and calcium oxide (CaO). Trace constituents found in ash can include arsenic, beryllium, boron, cadmium, chromium, hexavalent chromium, cobalt, lead, manganese, mercury, molybdenum, selenium, strontium, thallium, vanadium, dioxins, and PAH compounds. CKD is categorized by EPA as a "special waste" and has been temporarily exempted from federal hazardous waste regulations under Subtitle C of the Resource Conservation and Recovery Act (RCRA). EPA is in the process of developing standards for the management of CKD and has published a set of proposed Subtitle D (i.e., non-hazardous, solid waste) regulations to govern CKD management.
17. The Discharger proposes to accept contaminated soils provided the contaminant concentrations do not exceed the hazardous waste thresholds or the designated waste thresholds described in the *Waste Acceptance Plan*, dated October 2014
18. Title 27, section 20690 allows the use of ADC at MSW landfills upon approval by the Local Enforcement Agency (LEA) and concurrence from CalRecycle. Title 27, section 20705 provides the Water Board's regulations for all daily and intermediate cover including that it shall minimize the percolation of liquids through waste and that the cover shall consist of materials that meet the landfill unit classification (Class II or Class III). The regulations also require that for non-composite lined portions of the landfill, that any contaminants in the daily or intermediate cover are mobilized only at concentrations that would not adversely affect beneficial uses of waters of the state in the event of a release. For composite-lined portions of the landfill, the regulations require that constituents and breakdown products in the cover material are listed in the water quality protection standard.
19. Proposed uses of ADC materials potentially require site specific demonstration projects approved by the LEA with concurrence by CalRecycle to establish suitability as daily cover. However, site specific demonstration projects are not required for the following materials used as specified and in accordance with Title 27, section 20690(a): Non-hazardous, non-designated contaminated sediment (or soils), dredge spoils, foundry sands, energy resource exploration and production wastes; geosynthetic fabric or panel products (blankets); foam products; processed green material; sludge and sludge-derived materials; ash and cement kiln dust materials; treated auto shredder waste; compost materials; processed construction and demolition wastes and materials; shredded tires; and spray applied cementitious products.
20. The Discharger uses the following materials for ADC: processed green material, tarps, street sweepings, "clean demo" material, and other LEA approved ADC materials.

21. Landfills propose new ADC materials regularly in order to preserve landfill air space and to beneficially reuse waste materials. Title 27, section 20686 includes regulations for beneficial reuse, including use of ADC. Approval of ADC is primarily handled by the LEA and CalRecycle under Title 27, section 20690. This Order allows any ADC proposed for use at the Facility after the adoption of this Order to be approved by Central Valley Water Board staff provided the Discharger has demonstrated it meets the requirements in Title 27, section 20705. The approved ADC materials should then be listed in the Facility's WDRs during the next regular update or revision with information about the Discharger's demonstration. This Order also includes a requirement that ADC only be used in internal areas of the landfill unless the Discharger demonstrates that runoff from the particular ADC is not a threat to surface water quality. The demonstration can take sedimentation basins into account.
22. The Discharger proposes to return leachate and landfill gas condensate to the composite-lined landfill units from which they came. Title 27, section 20340(g) requires that leachate be returned to the unit from which it came or be discharged in a manner approved by the regional board. This section of Title 27 also references State Water Board Resolution 93-62 regarding liquids restrictions in 40 C.F.R. section 258.28 for MSW landfills. 40 C.F.R. section 258.28 states that liquid waste may not be placed in MSW landfill units unless the waste is leachate or gas condensate derived from the landfill unit and it is designed with a composite liner and an LCRS. Therefore, leachate and landfill gas condensate from composite lined units with an LCRS may be returned to the unit from which they came. This Order includes requirements for returning leachate and landfill gas condensate back to composite-lined units such that the liquid waste is not exposed to surface water runoff, will not cause instability of the landfill, and will not seep from the edges of the units.
23. Landfill gas (LFG) condensate is generated within the LFG collection system and flows through lateral and header pipes to LFG condensate sumps. Each sump is equipped with a submersible pump which discharges to an above ground storage tank. Once condensate is removed from the tank, it is either transported to the City of Madera wastewater treatment plant or injected into the LFG flare for destructive combustion or is used for dust control over the composite-lined landfill unit from which it came.
24. Leachate generated at the Facility is currently stored in tanks and applied to lined portions of the landfill for dust control. Per 40 CFR 258.28 and State Board Resolution 93-62, leachate may only be applied to the waste management unit from which it came.

SITE DESCRIPTION

25. The topography in the area of the Facility is relatively flat. In areas of the site that have not been disturbed, the land slopes to the northwest.
26. Land uses within one mile of the Facility include agricultural, open space, and residential.

27. There are more than 84 municipal, domestic, industrial, or agricultural groundwater supply wells within one mile of the Facility.
28. The Facility is underlain by the Chowchilla River System. The Quaternary age alluvium (Riverbank Formation) is typically vertically and horizontally anisotropic and consists of interbedded thin beds and lenses of gravel, sand, silty-sand, clayey-sand, silt, sandy-silt, clay, and sandy-clay. Beds and lenses of coarser-grained materials, channel and point bar deposits, are located about 200 to 300 feet below ground surface (bgs), and are localized and not continuous to the point of forming a single recognizable aquifer. Underlying the unconsolidated alluvium are Quaternary and Tertiary continental deposits of interbedded siltstone, sandstone, and claystone which comprise the principal bedrock within the region. The contact beneath the unconsolidated alluvium and the underlying Quaternary and Tertiary deposits is about 400 feet bgs.
29. The measured hydraulic conductivity of the native soils underlying the landfill units ranges between 1×10^{-2} and 8×10^{-8} centimeters per second (cm/s).
30. Based on a site-specific seismic analysis, the controlling maximum probable earthquake (MPE) for the site is a moment of magnitude 5.2 event along the Foothills fault system at a closest rupture distance of 35 miles from the site. It is estimated that a MPE event would produce a peak ground acceleration of 0.07 g at the site.
31. The Facility receives an average of 10.99 inches of precipitation per year as measured at the Madera Station. The mean pan evaporation is 66.00 inches per year as measured at the Fresno State University Station.
32. The 100-year, 24-hour precipitation event for the Facility is estimated to be 3.28 inches, based on the *NOAA Atlas 14 Point Precipitation Frequency Estimates*.
33. The Facility is within a 100-year flood plain based on the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map, Community-Panel Number 06039C0900E. The 100-year floodplain is designated as Zone A, which identifies an approximately studied area for which no flood elevations have been provided. According to the JTD, a flood protection ditch extends along the western border of Unit 1 and the northern border of the Facility. WMU 1 is further protected by a 10-foot berm along its northern and western borders. The southern border of the Facility is bounded by Madera Irrigation District's irrigation canal. A flood protection channel does not exist along the eastern border of the Facility since the Discharger does not have control over the adjacent privately-owned land. The Discharger is currently undertaking a FEMA study to determine if the Facility is actually in a floodplain and intends to submit a Letter of Map Revision to FEMA to remove the Facility from the FEMA 100-year floodplain.
34. Storm water retention basins are located southeast and southwest of the landfill as shown on Attachment B. The basins retain storm water during the rainy season and are normally dry during the summer months. Stormwater is retained onsite.

SURFACE WATER AND GROUNDWATER CONDITIONS

35. The *Water Quality Control Plan for Sacramento and San Joaquin River Basins, Fourth Edition* (hereafter Basin Plan), designates beneficial uses, establishes water quality objectives, and contains implementation plans and policies for all waters of the Basin.
36. Surface water drainage from the site is to the southwest towards a tributary of the Fresno River. The designated beneficial uses of the Fresno River, as specified in the Basin Plan, are municipal and domestic supply; agricultural supply; water contact recreation; non-contact water recreation; commercial and sport fishing; warm fresh water habitat; and wildlife habitat.
37. Groundwater exists in three zones: a perched groundwater zone, a shallow groundwater zone, and a regional groundwater zone. Depending on location, the perched groundwater zone, shallow groundwater zone, or regional groundwater zone may represent the first encountered groundwater. The perched, shallow, and regional groundwater zones are unconfined. The regional groundwater zone is in direct hydraulic communication with the shallow groundwater zone. As a result, the groundwater elevations in the shallow groundwater zone decline as the zone is slowly dewatered due to water withdrawals from the regional groundwater zone. Due to heavy pumping in the summer months, the depth to groundwater in the regional groundwater zone may fluctuate seasonally as much as 20 feet. However, due to the fine-grained nature of the geologic materials in the shallow groundwater zone, seasonal fluctuations in that groundwater zone are considerably lower than that of the regional groundwater zone.
38. According to the 1st Semiannual 2014 self-monitoring report, perched zone groundwater ranges from about 109 feet to 115 feet below native ground surface (bgs). Perched zone groundwater elevations range from about 134 feet MSL to 129 feet MSL. Shallow zone groundwater ranges from about 122 feet to 140 feet bgs. Shallow zone groundwater elevations range from about 102 feet MSL to 122 feet MSL. Monitoring wells installed within the regional groundwater zone were dry
39. Monitoring data included in the 1st Semiannual 2014 self-monitoring report indicate background groundwater quality for the perched zone has electrical conductivity (EC) ranging between 530 and 650 micromhos/cm, with total dissolved solids (TDS) ranging between 360 and 410 milligrams per liter (mg/L). Background groundwater quality for the shallow zone has EC ranging between 340 and 980 micromhos/cm, with TDS ranging between 120 and 670 mg/L. Monitoring wells installed within the regional groundwater zone were dry so no samples were collected.
40. The flow direction of perched groundwater has not been defined since there are only two monitoring wells currently screened in this groundwater zone. The perched groundwater zones appear to be very localized within the northeast, extending approximately 100 feet to the north of monitoring well TW-4N-115. The limits of the perched groundwater zone in the southwest have not been defined, but this groundwater zone is under the influence of

surface water infiltration from the irrigation canal along the southern boundary of the Facility. The shallow groundwater zone appears to be controlled by clay lenses and is laterally discontinuous. The direction of groundwater flow in the shallow zone is generally vertically downward toward the regional zone. According to the 1st Semiannual 2014 self-monitoring report, "the average vertical gradient in the shallow zone is approximately 30 times greater than the maximum horizontal gradient." The direction of groundwater flow in the regional groundwater zone is generally toward the northeast and is influenced by the heavy pumping of nearby agricultural wells. The average groundwater gradient for the regional groundwater zone is approximately 0.016 feet per foot.

41. The designated beneficial uses of the groundwater, as specified in the Basin Plan, are domestic and municipal water supply, agricultural supply, industrial service supply, and industrial process supply.

GROUNDWATER AND UNSATURATED ZONE MONITORING

42. The existing groundwater monitoring network for the landfill units is described in MRP R5-201X-XXXX.
43. At the time Order R5-2004-0161 was adopted, the Discharger's detection monitoring program (DMP) for groundwater at the landfill satisfied the requirements contained in Title 27. However, due to declining groundwater levels and drought conditions, monitoring wells within the DMP have gone dry. This Order requires the Discharger submit an evaluation of its DMP. If the DMP is determined to be inadequate, the Discharger shall include proposed changes and a time schedule to bring its DMP into compliance.
44. The vadose zone (unsaturated zone) monitoring for WMU 2 and WMU 3 is performed by inspecting the two pan lysimeters that underlie the composite liner systems in each respective unit.
45. Volatile organic compounds (VOCs) are often detected in a release from a MSW landfill and are often associated with releases of landfill gas rather than leachate. Since volatile organic compounds are not naturally occurring and thus have no background value, they are not amenable to the statistical analysis procedures contained in Title 27 for the determination of a release of wastes from a landfill unit. Title 27, sections 20415(e)(8) and (9) allow the use of a non-statistical evaluation of monitoring data that will provide the best assurance of the earliest possible detection of a release from a landfill unit in accordance with Title 27, sections 20415(b)(1)(B)2.-4. However, Title 27 does not specify a specific method for non-statistical evaluation of monitoring data.
46. The Central Valley Water Board may specify a non-statistical data analysis method pursuant to Title 27, section 20080(a)(1). Water Code section 13360(a)(1) allows the Central Valley Water Board to specify requirements to protect groundwater or surface waters from leakage from a solid waste site, which includes a method to provide the best assurance of determining the earliest possible detection of a release.

47. In order to provide the best assurance of the earliest possible detection of a release of non-naturally occurring waste constituents from a landfill unit, the SPRRs specify a non-statistical method for the evaluation of monitoring data for non-naturally occurring compounds. The specified non-statistical method for evaluation of monitoring data provides two criteria (or triggers) for making the determination that there has been a release of non-naturally occurring waste constituents from a landfill unit. The presence of two non-naturally occurring waste constituents above their respective method detection limit (MDL), or one non-naturally occurring waste constituent detected above its practical quantitation limit (PQL) [a.k.a, laboratory reporting limit (RL)], indicates that a release of waste from a Unit has occurred. Following an indication of a release, verification testing must be conducted to determine whether there has been a release from the landfill unit or the detection was a false detection. The detection of two non-naturally occurring waste constituents above the MDL as a trigger is appropriate due to the higher risk of false-positive analytical results and the corresponding increase in sampling and analytical expenses from the use of one non-naturally occurring waste constituent above its MDL as a trigger.
48. For a naturally occurring constituent of concern, the Title 27 requires concentration limits for each constituent of concern be determined as follows:
- a. By calculation in accordance with a statistical method pursuant to Title 27, section 20415(e)(8); or
 - b. By an alternate statistical method meeting the requirements of Title 27, section 20415(e)(8)(E).
49. The Discharger submitted a Water Quality Protection Standard (WQPS) report proposing statistical data analysis methods to calculate concentration limits for each monitored constituent in accordance with Title 27. The WQPS report proposed to use Interwell data analysis to calculate concentration limits for the monitored constituents. The WQPS and approved data evaluation methods are included in MRP No. R5-201X-XXXX.

GROUNDWATER DEGRADATION AND CORRECTIVE ACTION

50. WMU 1 has released VOCs into groundwater. The latest self-monitoring report (1st Semiannual 2014) reported the following detected VOCs in groundwater: 1,1-dichloroethane, cis-1,2-dichloroethylene, dichlorodifluoromethane, methyl-tert-butyl ether, p-dichlorobenzene, tetrachloroethylene, trichloroethylene, and trichlorofluoromethane.
51. WMU 1 has released inorganic waste constituents into groundwater. The latest self-monitoring report (1st Semiannual 2014) reported the following inorganic constituents at concentrations statistically exceeding their respective background concentrations: bicarbonate, calcium, magnesium, potassium, sodium and total dissolved solids.

52. Cleanup & Abatement Order No. 96-161, adopted on 21 June 1996, directed the Discharger, in part, to complete an Evaluation Monitoring Program (EMP), submit an Engineering Feasibility Study (EFS) for a Corrective Action Program (CAP), and implement a CAP.
53. An EMP addressing the release was completed in November 2000 and attributed the release to landfill gas migration. An EFS was submitted in October 2001 and a subsequent addendum was submitted in March 2003. On 22 May 2003, Central Valley Water Board staff approved a CAP that consisted of monitored natural attenuation (MNA) and enhanced landfill gas control, which included the installation of soil vapor extraction wells. The soil vapor extraction wells (VEW-1, VEW-2, and VEW-3) are designed to remove landfill gas at and immediately above the saturated zone. The Discharger implemented and maintains the CAP.

LINER PERFORMANCE DEMONSTRATION

54. On 15 September 2000 the Central Valley Water Board adopted Resolution No. 5-00-213 *Request For The State Water Resources Control Board To Review The Adequacy Of The Prescriptive Design Requirements For Landfill Waste Containment Systems To Meet The Performance Standards Of Title 27*. The State Water Board responded, in part, that “a single composite liner system continues to be an adequate minimum standard” however, the Central Valley Water Board “should require a more stringent design in a case where it determines that the minimum design will not provide adequate protection to a given body of groundwater.”
55. In a letter dated 17 April 2001, the Executive Officer notified Owners and Operators of Solid Waste Landfills that “the Board will require a demonstration that any proposed landfill liner system to be constructed after 1 January 2002 will comply with Title 27 performance standards. A thorough evaluation of site-specific factors and cost/benefit analysis of single, double, and triple composite liners will likely be necessary.”
56. In accordance with the Executive Officer’s letter of 17 April 2001, the Discharger submitted a landfill liner system design performance report to demonstrate that the proposed liner system design would meet the performance standard contained in Title 27, section 20310(c) for a Class III landfill. The demonstration utilized a computer model to predict the performance of the proposed liner system design and the fate and transport of a hypothetical release from the lined WMUs.

CONSTRUCTION AND ENGINEERED ALTERNATIVE LINER SYSTEM

57. On 17 June 1993, the State Water Board adopted Resolution 93-62 implementing a State Policy for the construction, monitoring, and operation of MSW landfills that is consistent with the federal MSW regulations promulgated under 40 Code of Federal Regulations section 258 (a.k.a, Subtitle D). Resolution 93-62 requires the construction of a specified composite liner system at new MSW landfills, or expansion areas of existing MSW

landfills, that receive wastes after 9 October 1993. Resolution 93-62 also allows the Central Valley Water Board to consider the approval of engineered alternatives to the prescriptive standard. Section III.A.b. of Resolution 93-62 requires that the engineered alternative liner systems be of a composite design similar to the prescriptive standard.

58. Title 27, section 20080(b) allows the Central Valley Water Board to consider the approval of an engineered alternative to the prescriptive standard. In order to approve an engineered alternative in accordance with Title 27, sections 20080(c)(1) or (2), the Discharger must demonstrate that the prescriptive design is unreasonably and unnecessarily burdensome and will cost substantially more than an alternative which will meet the criteria contained in Title 27, section 20080(b), or that the prescriptive design would be impractical and would not promote attainment of applicable performance standards. The Discharger must also demonstrate that the proposed engineered alternative liner system is consistent with the performance goal addressed by the particular prescriptive standard and provides protection against water quality impairment equivalent to the prescriptive standard in accordance with Title 27, section 20080(b)(2).
59. Water Code section 13360(a)(1) allows the Central Valley Water Board to specify the design, type of construction, and/or particular manner in which compliance must be met in waste discharge requirements or orders for the discharge of waste at solid waste disposal facilities.
60. The Discharger proposes a liner system which will be designed, constructed, and operated in accordance with the criteria set forth in Title 27, and the provisions in State Water Board Resolution 93-62 for municipal solid wastes.
61. The Discharger proposed an engineered alternative liner system which will be designed, constructed, and operated to prevent migration of wastes from the lined WMUs to adjacent natural geologic materials, groundwater, or surface water during disposal operations, closure, and the postclosure maintenance period in accordance with the criteria set forth in Title 27 for a Class III landfill, and the provisions in State Water Resources Control Board Resolution No. 93-62 for municipal solid wastes.
62. The Discharger submitted a 29 October 2003 report entitled: *Demonstration Project Report, Proposed Liner System, Fairmead Landfill Unit 3, Cell 3A, Madera County*, requesting approval of an engineered alternative to liner requirements.
63. The Discharger proposes to construct an engineered alternative liner system. The proposed liner system (in ascending order) consists of: 1) a six-inch subgrade re-compacted to at least 90% of maximum dry density; 2) a 40-mil thick high-density polyethylene (HDPE) geomembrane; 3) a geosynthetic clay liner with a 60-mil thick HDPE geomembrane backing, with the geomembrane backing facing up; 4) a geocomposite drainage layer (not included on side slopes) consisting of a geonet drainage net bonded to a nonwoven geotextile; and 5) a 24-inch operations layer.

64. Side slope liner systems are proposed to be constructed of the same materials and in the same sequence and manner as the bottom liner system, with the exception of the re-compacted subgrade and the geocomposite drainage layer. The side slope liner systems will be prepared in an appropriate manner using accepted engineering and construction methods so as to provide a surface that is smooth and free from rocks, sticks, and other debris that could damage or otherwise limit the performance of the geosynthetic clay layer and/or geomembrane, and certified in accordance with this Order and a Construction Quality Assurance Plan.
65. Previously, the Discharger adequately demonstrated that construction of a Subtitle D prescriptive standard liner system would be unreasonable and unnecessarily burdensome when compared to the proposed engineered alternative design. There is no clay source on site or nearby and the cost of importing clay from off-site or mixing on-site soils with bentonite would cost substantially more than the alternative design. In addition, the Discharger demonstrated that the proposed engineered alternative is consistent with the performance goals of the prescriptive standard and affords at least equivalent protection against water quality impairment.
66. A leachate collection and removal system (LCRS) will be installed in each new waste cell consisting of a geocomposite drainage layer installed directly above the primary HDPE geomembrane in the base liner system. The LCRS will drain leachate to a double composite lined leachate collection sump filled with drain rock. The leachate collection sump will contain cleanout pipes and a riser pipe.
67. A pan lysimeter will be installed beneath the LCRS sump and a portion of the LCRS piping for each new landfill cell/module for the purpose of unsaturated zone monitoring.
68. The RWD includes a stability analysis for WMUs 1, 2, and 3 pursuant to Title 27, section 21750(f)(5). The Discharger's stability analysis includes 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. The stability analysis demonstrates that the structural components of the WMUs will withstand the forces of the Maximum Probable Earthquake (MPE) without failure of the containment systems or environmental controls
69. This Order approves the Discharger's proposed liner system for future modules as described in Finding 5 and requires that the Discharger submit design plans and construction quality assurance (CQA) plans for each new module or modules for review and approval at least 180 days prior to construction.

LANDFILL CLOSURE

70. The Discharger submitted a 2010 *Preliminary Closure and Postclosure Maintenance Plan* for closure and post-closure maintenance of the unlined and lined WMUs at the Facility.

LANDFILL POST-CLOSURE MAINTENANCE

71. The Discharger submitted a 2010 *Preliminary Closure and Postclosure Maintenance Plan* for closure and post-closure maintenance of the unlined unit. The plan includes inspection, maintenance, and monitoring of the landfill during the post-closure maintenance period, and includes a post-closure maintenance cost estimate for the entire Facility.

FINANCIAL ASSURANCES

72. Title 27, sections 21820 and 22206 require a cost estimate for landfill closure. The cost estimate must be equal to the cost of closing the landfill at the point in its active life when the extent and manner of operation would make closure the most expensive. When closing units in phases, the estimate may account for closing only the maximum area or unit of a landfill open at any time. The Discharger's February 2010 *Preliminary Closure and Post Closure Maintenance Plan* includes a cost estimate for landfill closure. The lump sum estimate is for the cost to close largest future area needing closure at any one time. The total amount of the closure cost estimate in 2014 dollars is \$9.3 million. This Order requires that the Discharger maintain financial assurance with the California Department of Resources Recycling and Recovery (CalRecycle) in at least the amount of the closure cost estimate.

73. Title 27, sections 21840 and 22211 require a cost estimate for landfill post-closure maintenance. The Discharger's February 2010 *Preliminary Closure and Post Closure Maintenance Plan* includes a cost estimate for landfill post-closure maintenance. The amount of the cost estimate for post-closure maintenance in 2014 dollars is \$7.5 million. This Order requires that the Discharger maintain financial assurance with CalRecycle in at least the amount of the post-closure maintenance cost estimate, adjusted annually for inflation.

74. Title 27, section 22221 requires a cost estimate for corrective action of all known or reasonably foreseeable releases. The total amount of the corrective action of all known or reasonably foreseeable releases cost estimate in 2014 dollars is \$0.43 million. This Order requires that the Discharger maintain financial assurance with the CalRecycle in at least the amount of the cost estimate, adjusted annually for inflation.

75. Title 27 section 22100(b) requires owners and operators of disposal facilities that are required to be permitted as solid waste landfills to provide cost estimates for initiating and completing corrective action for known or reasonably foreseeable releases of waste. Title 27 section 22101 requires submittal of a *Water Release Corrective Action Estimate* and a *Non-Water Release Corrective Action Cost Estimate*. The *Water Release Corrective Action Estimate* is for scenarios where there is statistically significant evidence of a release of waste to ground or surface water when comparing point-of-compliance analyte concentrations to background concentrations. The *Non-Water Release Corrective Action Cost Estimate* is for complete replacement of the landfill final cover system,

however a site-specific corrective action plan pursuant to Title 27 section 22101(b)(2) may be provided in lieu of the final cover replacement cost estimate. Title 27, section 22221 requires establishment of financial assurances in the amount of an approved *Water Release Corrective Action Estimate* or an approved *Non-Water Release Corrective Action Cost Estimate*, whichever is greater.

CEQA AND OTHER CONSIDERATIONS

76. On 6 July 2004, the Madera County Board of Supervisors certified the final environmental impact report (EIR) for the Facility. A Notice of Determination was filed on 12 August 2004 in accordance with the California Environmental Quality Act (Public Resources Code section 21000 et seq.) and CEQA Guidelines (Title 14, section 15000 et seq.). The Central Valley Water Board considered the EIR and incorporated mitigation measures from the EIR into these WDRs designed to prevent potentially significant impacts to design facilities and to water quality. This order implements:
- a. *The Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition*;
 - b. The prescriptive standards and performance goals of California Code of Regulations, title 27, section 20005 et seq., effective 18 July 1997, and subsequent revisions;
 - c. State Water Board Resolution 93-62, *Policy for Regulation of Discharges of Municipal Solid Waste*, adopted 17 June 1993, and revised on 21 July 2005; and
 - d. The applicable provisions of 40 C.F.R. section 258 "Subtitle D" federal regulations as required by State Water Board Resolution 93-62.
77. Based on the threat and complexity of the discharge, the Facility is determined to be classified 1-B as defined below:
- a. Category 1 threat to water quality, defined as, "Those discharges of waste that could cause the long-term loss of a designated beneficial use of the receiving water. Examples of long-term loss of a beneficial use include the loss of drinking water supply, the closure of an area used for water contact recreation, or the posting of an area used for spawning or growth of aquatic resources, including shellfish and migratory fish."
- Category B complexity, defined as, "Any discharger not included in Category A that has physical, chemical, or biological treatment systems (except for septic systems with subsurface disposal), or any Class 2 or Class 3 waste management units."
78. Water Code section 13267(b) provides, in pertinent part: "In conducting an investigation specified in subdivision (a), the 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, or any citizen or domiciliary, or political

agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste outside of its region that could affect the quality of the waters of the state within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the board requires. The burden, including costs of these reports, shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports.”

79. The technical reports required by this Order and the attached "Monitoring and Reporting Program No. R5-201X-XXXX" are necessary to assure compliance with these WDRs. The Discharger owns and operates the Facility that discharges the waste subject to this Order.

PROCEDURAL REQUIREMENTS

80. All local agencies with jurisdiction to regulate land use, solid waste disposal, air pollution, and to protect public health have approved the use of this site for the discharges of waste to land stated herein.
81. The Central Valley Water Board notified the Discharger and interested agencies and persons of its intent to prescribe WDRs for this discharge, and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
82. The Central Valley Water Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, pursuant to California Water Code sections 13263 and 13267, that Order No. R5-2004-0161 is rescinded except for purposes of enforcement of violations occurring prior to the effective date of this Order, and that County of Madera, its agents, successors, and assigns, in order to meet the provisions of Division 7 of the California Water Code and the regulations adopted thereunder, shall comply with the following:

A. PROHIBITIONS

1. The discharge of ‘hazardous waste’ or ‘designated waste’ is prohibited. For the purposes of this Order, the term ‘hazardous waste’ is as defined in California Code of Regulations, Title 23, section 2510 et seq., and ‘designated waste’ is as defined in Title 27.
2. The Discharger shall comply with all Standard Prohibitions listed in Section C of the Standard Provisions and Reporting Requirements for Waste Discharge Requirements for Nonhazardous Solid Waste Discharges Regulated by Subtitle D and/or Title 27, dated January 2012 (SPRRs), which are attached hereto and made part of this Order by this reference.

B. DISCHARGE SPECIFICATIONS

1. The Discharger shall only discharge the wastes listed or allowed under the Waste Classification and Unit Classification section in the Findings of this Order.
2. The Discharger shall discharge treated wood wastes only to landfill units equipped with a composite liner system and a LCRS (See Finding 5 of this Order). If a verified release is detected from the WMU where treated wood is disposed, the disposal of treated wood shall be terminated at the unit with the verified release until corrective action ceases the release.
3. The Discharger shall manage treated wood waste in accordance with California Health and Safety Code sections 25143.1.5 and 250150.7 and shall comply with all prohibitions listed in Title 22, section 67386.3.
4. The Discharger may dispose of dewatered sewage or water treatment sludge as described in Title 27, section 20220(c) provided it is discharged above a composite liner with a LCRS [Title 27, § 20200(d)(3)].
5. The Discharger may utilize a dewatered sewage or water treatment sludge/soil mixture as ADC or interim cover provided that the mixture meets the requirements of Title 27, section 20690 et seq.
6. In accordance with Title 27, section 20200(d)(3), the Discharger may discharge dewatered sludge (non-designated, non-hazardous), other than dewatered sewage or water treatment sludge, after approval of a Sludge Management Plan (see Finding 14 of this Order) by Central Valley Water Board staff and CalRecycle.
7. The Discharger may dispose of other non-hazardous, non-designated waste as described in the *Waste Acceptance Plan*, including inert waste and construction debris; dead animals; treated biosolids; treated auto shredder waste; ash and cement kiln dust; and contaminated soils after approval of the *Waste Acceptance Plan* by CalRecycle. The Discharger may propose modifications to the *Waste Acceptance Plan* in the event regulations are revised, site conditions change, other waste types potentially applicable for disposal are identified, or other changes that may affect waste disposal are identified. Changes to the *Waste Acceptance Plan* will require Central Valley Board staff and CalRecycle approval.
8. These classified wastes may be discharged only in accordance with Title 27, Resolution 93-62, and Subtitle D, as required by this Order.
9. The Discharger may not use any material as ADC that is not listed as approved ADC in the Findings of these WDRs unless and until the Discharger has demonstrates it meets the requirements in Title 27, section 20705, and the Discharger has received approval that it may begin using the material as ADC.

10. The Discharger shall use approved ADC only in internal areas of the landfill that do not drain outside of the limits of the contiguous landfill units unless the Discharger demonstrates that runoff from the particular ADC is not a threat to surface water quality and the demonstration has been approved by the Executive Officer. This demonstration may take removal of sediment or suspended solids into account for landfills where surface water drains to a sedimentation basin.
11. The Discharger shall, in a timely manner, remove and relocate any wastes discharged at this Facility in violation of this Order. If the Discharger is unable to remove and relocate the waste, the Discharger shall submit a report to the Central Valley Water Board explaining how the discharge occurred, why the waste cannot be removed, and any updates to the waste acceptance program necessary to prevent re-occurrence. If the waste is a hazardous waste, the Discharger shall immediately notify the Department of Toxic Substances Control.
12. Leachate and/or landfill gas condensate may be returned only to WMU 2 – Cells 3 and 4, WMU 3, and future composite lined modules in accordance with Standard Discharge Specifications D.2 through D.4 of the SPRRs.
13. The Discharger shall comply with all Standard Discharge Specifications listed in Section D of the SPRRs.

C. FACILITY SPECIFICATIONS

1. The Discharger shall comply with all Standard Facility Specifications listed in Section E of the SPRRs.

D. CONSTRUCTION SPECIFICATIONS

1. The Discharger shall construct the base liner and side slope liner of new Class III landfill units as described in Finding 5 of this Order in accordance with the following approved engineered alternative liner design:
 - a. An engineered alternative composite bottom liner system that is comprised, in ascending order, of the following:
 - 1) A minimum six-inch thick engineered soil foundation layer that shall be constructed of select soil materials, in accordance with the approved Construction Quality Assurance Plan that meets the following criteria:
 - a) A maximum size of ½-inch, subrounded or rounded clasts;
 - b) A gradation series (e.g., well-graded) that is amenable to compaction;
 - c) Re-compacted and rolled smooth to at least 90 percent of maximum dry density and within two percent of optimum moisture content.

- 2) A 40-mil thick HDPE geomembrane;
 - 3) A GCL with a 60-mil thick HDPE geomembrane backing, with the geomembrane backing facing up. The GCL shall exhibit appropriate strength characteristics (hydrated) to accommodate stresses associated with specific landfill design parameters, with particular attention to interface, long-term creep shear, and bearing capacity.
 - 4) A geocomposite drainage layer (primary leachate collection and removal system) over the base liner system; and
 - 5) A two-foot thick operations layer over the primary leachate collection and removal system of the bottom liner system.
- b. An engineered alternative composite side slope liner system that is comprised, in ascending order, of the following:
- 1) A prepared subgrade that shall be prepared in an appropriate manner using accepted engineering and construction methods 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 of the 40-mil thick HDPE geomembrane;
 - 2) A 40-mil thick HDPE geomembrane;
 - 3) A GCL with a 60-mil thick HDPE geomembrane backing, with the geomembrane backing facing up. The GCL shall exhibit appropriate strength characteristics (hydrated) to accommodate stresses associated with specific landfill design parameters, with particular attention to interface, long-term creep shear, and bearing capacity; and
 - 4) A two-foot thick operations layer over the primary leachate collection and removal system of the bottom liner system.
2. In lieu of Construction Specifications 1(a)(2), 1(a)(3), 1(b)(2), and 1(b)(3), The Discharger's engineered alternative liner system may include the following, in ascending order:
- a. A 40-mil thick HDPE geomembrane;
 - b. A GCL that exhibits appropriate strength characteristics (hydrated) to accommodate stresses associated with specific landfill design parameters, with particular attention to interface, long-term creep shear, and bearing capacity; and
 - c. A 60-mil thick HDPE geomembrane.

3. The Discharger shall not proceed with liner construction (other than earth moving and grading in preparation for liner construction) until the construction plans, specifications, and all applicable construction quality assurance plans have been approved by the Executive Officer.
4. The Discharger may propose changes to the liner system design prior to construction, provided that approved components are not eliminated, the engineering properties of the components are not substantially reduced, and the proposed liner system results in the protection of water quality equal to or greater than the design prescribed by Title 27 and this Order. The proposed changes may be made following approval by the Executive Officer. Substantive changes to the design require reevaluation as an engineered alternative and approval by the Central Valley Water Board in revised WDRs.
5. The Discharger shall comply with all Standard Construction Specifications listed in Section F of the SPRRs.
6. The Discharger shall comply with all Storm Water Provisions listed in Section L of the SPRRs.

E. FINANCIAL ASSURANCE SPECIFICATIONS

1. The Discharger shall obtain and maintain assurances of financial responsibility with CalRecycle for closure and post-closure maintenance for the landfill in at least the amounts described in Findings 72 and 73, adjusted for inflation annually. A report regarding financial assurances for closure and post-closure maintenance shall be submitted to the Central Valley Water Board by **1 June of each year**. This may be the same report that is submitted to CalRecycle for this purpose. If CalRecycle determines that either the amount of coverage or the mechanism is inadequate, then within 90 days of notification, the Discharger shall submit an acceptable mechanism to CalRecycle and the Central Valley Water Board for at least the amount of the approved cost estimate.
2. The Discharger shall update the preliminary closure and post-closure maintenance plan (PCPCMP) any time there is a change that will increase the amount of the closure and/or post-closure maintenance cost estimate. The updated PCPCMP shall be submitted to the Central Valley Water Board, the Local Enforcement Agency, and CalRecycle. The PCPCMP shall meet the requirements of Title 27, section 21769(b), and include a lump sum estimate of the cost of carrying out all actions necessary to close each Unit, to prepare detailed design specifications, to develop the final closure and post-closure maintenance plan, and to carry out the first thirty years of post-closure maintenance. Reports regarding financial assurance required in E.1 above shall reflect the updated cost estimate.
3. The Discharger shall obtain and maintain assurances of financial responsibility with CalRecycle for initiating and completing corrective action for all known or reasonably foreseeable releases from the landfill in at least the amount of the annual inflation-

adjusted cost estimate described in Finding 74. A report regarding financial assurances for corrective action shall be submitted to the Central Valley Water Board by **1 June of each year**. This may be the same report that is submitted to CalRecycle for this purpose. If CalRecycle determines that either the amount of coverage or the mechanism is inadequate, then within 90 days of notification, the Discharger shall submit an acceptable mechanism to CalRecycle and the Central Valley Water Board for at least the amount of the approved cost estimate.

4. The Discharger shall comply with all Standard Financial Assurance Specifications listed in Section H of the SPRRs.

F. MONITORING SPECIFICATIONS

1. The Discharger shall comply with the detection monitoring program (DMP) provisions of Title 27 for groundwater, surface water, and the unsaturated zone, and in accordance with Monitoring and Reporting Program (MRP) No. R5-201X-XXXX, and the Standard Monitoring Specifications listed in Section I of the SPRRs.
2. The Discharger shall, for any landfill unit in a corrective action monitoring program, comply with the corrective action monitoring program provisions of Title 27, MRP No. R5-201X-XXXX, and the Standard Monitoring Specifications listed in Section I of SPRRs.
3. The Discharger shall comply with the Water Quality Protection Standard as specified in this Order, MRP No. R5-201X-XXXX, and the SPRRs.
4. At the time Order R5-2004-0161 was adopted, the Discharger's detection monitoring program (DMP) for groundwater at the landfill satisfied the requirements contained in Title 27. However, due to declining groundwater levels and drought conditions, monitoring wells within the DMP have gone dry. **By 31 December 2015**, the Discharger shall submit an evaluation of its DMP. If the DMP is determined to be inadequate, the Discharger shall include proposed changes and a time schedule to bring its DMP into compliance.
5. The concentrations of the constituents of concern in waters passing the Point of Compliance (defined pursuant to Title 27, section 20164 as a vertical surface located at the hydraulically downgradient limit of the landfill unit that extends through the uppermost aquifer underlying the unit) shall not exceed the concentration limits established pursuant to MRP No. R5-201X-XXXX.
6. For each monitoring event, the Discharger shall determine whether the landfill is in compliance with the Water Quality Protection Standard using procedures specified in MRP No. R5-201X-XXXX and the Standard Monitoring Specifications in Section I of the SPRRs.

7. As specified in MRP No. R5-201X-XXXX, the Discharger shall enter all monitoring data and monitoring reports into the online Geotracker database as required by Division 3 of Title 27 and Chapter 30, Division 3 of Title 23.
8. The Discharger shall comply with all Standard Monitoring Specifications and Response to a Release specifications listed in Sections I and J of the SPRRs.

G. CORRECTIVE ACTION SPECIFICATIONS

1. **By 15 June 2016**, the Discharger shall submit a CAP evaluation report that determines whether monitored natural attenuation and enhanced landfill gas control is effective in reducing VOC concentrations in groundwater and if it should continue, or whether alternative/additional corrective action methods should be utilized.
2. **By 15 September 2016**, if the CAP evaluation report determines that natural attenuation is unsuccessful in remediating VOCs in groundwater (see Corrective Action Specification H.1), the Discharger shall submit an amended RWD for Executive Officer approval to make appropriate changes to the EFS for a CAP that includes a detailed work plan for the use of alternative/additional corrective action methods.
3. The Discharger shall sample the wells listed in the EFS on a semiannual basis for VOCs. The semiannual sampling results shall be reported and discussed in semi-annual monitoring reports. Sample collection and analysis shall coincide with Groundwater Detection Monitoring A.1 of MRP R5-201X-XXXX.
4. Corrective action measures may be terminated when the Discharger demonstrates to the satisfaction of the Executive Officer that the concentrations of VOCs are reduced to levels below their respective concentration limits throughout the entire zone affected by the release.
5. After suspending the corrective action measures, the Discharger shall demonstrate that the concentration of each VOCs in each sample from each monitoring point remained at or below its concentration limit for at least three consecutive years, beginning immediately after the suspension of corrective action measures.
6. Upon completion of corrective action, the Discharger shall certify, in writing, that corrective action has been completed in compliance with Title 27 and the WDRs. The certification shall be signed by a California Registered Civil Engineer or Professional Geologist.
7. If at any time, either the Discharger or the Executive Officer determines that natural attenuation is unsuccessful in remediating VOCs in groundwater, the Discharger shall, **within 90 days of making the determination, or of receiving written notification from the Executive Officer of such determination**, submit an amended RWD for Executive Officer approval, to make appropriate changes to the EFS for a CAP that

includes a detailed work plan for the use of other alternative/additional correction action methods to remediate VOCs.

At a minimum, a determination that the CAP is unsuccessful in remediating VOCs may result if one of the following conditions is met:

- a. Waste constituent concentrations in Point of Compliance groundwater monitoring wells exhibit an increasing trend not originally predicted after implementation of corrective action; or
- b. Point of Compliance groundwater monitoring wells exhibit significant waste constituent concentration increases indicative of a new or renewed release; or
- c. Significant waste constituent concentrations are identified in the monitored off-site wells; or
- d. Waste constituent concentrations are not decreasing at a sufficient rate to meet the remediation objectives.

The amended RWD shall include the following:

- a. A discussion as to why existing corrective action measures have been ineffective or insufficient.
 - b. A revised evaluation monitoring plan if necessary to further assess the nature and extent of the release.
 - c. A discussion of corrective action needs and alternatives.
 - d. Proposed alternative corrective action measures, as necessary, for:
 - 1) Source control, and/or
 - 2) Groundwater cleanup.
 - e. A plan to monitor the progress of corrective action measures consistent with MRP R5-201X-XXXX.
8. **Within one year** of Executive Officer approval of the amended RWD to make appropriate modifications to the EFS for the CAP or propose an alternate CAP, the Discharger shall implement the modified CAP or the proposed CAP to remediate VOCs.

H. PROVISIONS

1. The Discharger shall maintain a copy of this Order at the Facility, including the MRP No. R5-201X-XXXX and the SPRRs, and make it available at all times to Facility operating personnel, who shall be familiar with its contents, and to regulatory agency personnel.
2. The Discharger shall comply with all applicable provisions of Title 27 and Subtitle D that are not specifically referred to in this Order.
3. The Discharger shall comply with MRP No. R5-201X-XXXX, which is hereby incorporated into and made part of this Order by reference.
4. The Discharger shall comply with the applicable portions of the Standard Provisions and Reporting Requirements for Waste Discharge Requirements for Nonhazardous Solid Waste Discharges Regulated by Subtitle D and/or Title 27, dated January 2012, which are attached hereto and hereby made part of this Order by reference.
5. If there is any conflicting or contradictory language between the WDRs, the MRP, or the SPRRs, then language in the WDRs shall supersede either the MRP or the SPRRs, and language in the MRP shall supersede the SPRRs.
6. All reports required by this Order shall be submitted pursuant to Water Code section 13267.
7. The Discharger shall complete the tasks contained in these WDRs in accordance with the following time schedule:

<u>Task</u>	<u>Compliance Date</u>
A. Construction Plans	
Submit construction and design plans for review and approval. (see all Construction Specifications in Section D, above and Section F of the SPRRs.)	90 days prior to proposed construction
B. Construction Report	
Submit a construction report for review and approval upon completion demonstrating construction was in accordance with approved construction plans (see Standard Construction Specification F.27 in the SPRRs).	60 days prior to proposed discharge

C. Financial Assurance Review

Annual Review of Financial Assurance for Post-closure maintenance.
(see Financial Assurance Specification E.1).

1 June of each year

Annual Review of Financial Assurance for initiating and completing corrective action.
(see Financial Assurance Specification E.3).

1 June of each year

D. Monitoring

Submit an evaluation of the detection monitoring program (DMP). If DMP is determined to be inadequate, include proposed changes and a time schedule to bring DMP into compliance.
(See Monitoring Specification F.4)

By 31 December 2015

E. Corrective Action

Submit a CAP evaluation report that determines whether monitored natural attenuation is effective in reducing VOC concentrations in both the off-site wells and the point of compliance wells and should continue, or whether corrective action methods should be utilized. (see Corrective Action Specification G.1)

By 15 June 2016

If the CAP evaluation report determines that natural attenuation is unsuccessful in remediating VOCs in groundwater (see Corrective Action Specification G.1), the Discharger shall submit an amended RWD for Executive Officer approval to make appropriate changes to the EFS for a CAP that includes a detailed work plan for the use of other corrective action methods. (see Corrective Action Specification G.2)

By 15 September 2016

Submit an amended RWD for Executive Officer approval, to make appropriate changes to the EFS for a CAP and/or propose alternative correction action methods to remediate VOCs, if it is determined by either the Discharger or the Executive Officer, that natural attenuation

Within 90 days of making a determination or of receiving written notification of such a determination

corrective action methods are unsuccessful.
(see Corrective Action Specification G.7)

Implement the modified CAP or alternative CAP to
remediate VOCs.
(see Corrective Action Specification G.8)

**Within one year of
Executive Officer approval
of the amended RWD to
make appropriate changes
to the EFS for a CAP**

8. The Discharger shall comply with all General Provisions listed in Section K of the SPRRs.

If, in the opinion of the Executive Officer, the Discharger fails to comply with the provisions of this Order, the Executive Officer may refer this matter to the Attorney General for judicial enforcement, may issue a complaint for administrative civil liability, or may take other enforcement actions. Failure to comply with this Order or with the WDRs may result in the assessment of administrative civil liability 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.

Any person aggrieved by this action of the Central Valley Water Board may petition the State Water Board to review the action in accordance with Water Code section 13320 and California Code of Regulations, Title 23, sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., 30 days after the date that this Order becomes final, except that if the thirtieth day following the date that this Order becomes final falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day.

Copies of the law and regulations applicable to filing petitions may be found on the Internet at:

http://www.waterboards.ca.gov/public_notices/petitions/water_quality

or will be provided upon request.

I, PAMELA C. CREEDON, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on _____.

PAMELA C. CREEDON, Executive Officer