

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER R5-2013-XXXX

WASTE DISCHARGE REQUIREMENTS
FOR
COUNTY OF TULARE
FOR
POSTCLOSURE MAINTENANCE AND CORRECTIVE ACTION
BALANCE ROCK MUNICIPAL SOLID WASTE LANDFILL
TULARE COUNTY

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

1. The County of Tulare (hereinafter Discharger) owns and maintains the closed Balance Rock Municipal Solid Waste Landfill (facility), on Tulare County Road M-9 (Sugarloaf Road), about 0.5 miles north of the community of Balance Rock, in Section 29, T24S, R31E, 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 the California Water Code, Section 13000 et seq.; California Code of Regulations, Title 27 ("Title 27"), Section 20005 et seq.; and Title 40, Code of Federal Regulations (40 CFR) Section 258 (a.k.a, "Subtitle D") in accordance with State Water Resources Control Board (State Water Board) Resolution 93-62.
2. The 18.16-acre facility contains one closed unlined 1.67-acre waste management unit (Unit) as shown in Attachment B, which is incorporated herein and made part of this Order by reference. The facility is a portion of Assessor's Parcel Numbers (APN) 345-300-014 and 345-310-058.
3. On 14 June 2001, the Central Valley Water Board adopted Waste Discharge Requirements Order R5-01-164 in which the Unit was classified as a Class III Unit for the discharge of municipal solid waste. This Order continues to classify the Unit as a Class III Unit in accordance with Title 27.
4. 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 waste discharge requirements (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.

5. 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 G of these WDRs below, and in the Standard Provisions and Reporting Requirements dated January 2012 (SPRRs), which are attached hereto and made part of this Order by reference. Monitoring and reporting requirements are included in Monitoring and Reporting Program R5-2013-XXXX (MRP) 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 G) of these WDRs, and the requirement in the WDRs supersedes the requirement in the SPRRs.
6. 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.

SITE DESCRIPTION

7. The facility is located near the top of a divide between two watersheds on the western flank of the Sierra Nevada Mountain Range approximately 16 miles southeast of the City of Porterville. The facility is underlain by 10 to 30 feet of alluvial deposits, which are underlain by decomposed granite and fractured granite.
8. The facility is not within a fault hazard zone. The closest Holocene fault is approximately 6 miles to the east. Recorded magnitude of a seismic event along this fault ranges between 4.5 – 4.9 on the Richter scale. The maximum credible acceleration for the site is 0.14 g.
9. Land uses within one mile of the facility are mountain residences and agriculture.
10. There are approximately 40 domestic wells within one mile of the site. An unnamed intermittent tributary runs from the facility southward to Poso Creek. No surface springs or other sources of groundwater supply have been observed.
11. The measured mean hydraulic conductivity of the decomposed granite underlying the facility (first encountered groundwater zone), is approximately 2.3×10^{-4} centimeters/second (cm/sec).

12. The facility receives an average of 32 inches of precipitation per year based on the Tulare County Flood Control District map entitled *Flood Control Master Plan*, dated April 1971. The mean pan evaporation is 84 inches per year as measured at the Isabella Dam Station.
13. The 100-year, 24-hour precipitation event for the facility is estimated to be 7.5 inches, based on the U.S. Department of Commerce's map entitled *100-Year, 24-Hour Precipitation*, dated December 1972.
14. The facility is not within a 100-year flood plain based on the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map, Tulare County, California, Community-Panel Number 065066 0050 A.
15. A storm water percolation/evaporation basin is located immediately south of the Unit as shown on Attachment B. The storm water percolation/evaporation basin captures runoff from the facility and retains it on-site.

WASTE AND UNIT CLASSIFICATION

16. The Discharger previously disposed of MSW, which is defined in §20164 of Title 27. The Unit was closed in 2003.
17. The site characteristics where the Unit is located (see Finding No. 11) do not meet the siting criteria for a new Class III landfill contained in §20260(a) and (b)(1) of Title 27. As such, the site is not suitable for operating new Units or lateral expansions of existing Units for the discharge and containment of wastes as described in Finding No. 16, without the construction of additional waste containment features in accordance with §20260(b)(2) of Title 27 and State Water Resources Control Board Resolution 93-62.

SURFACE WATER AND GROUNDWATER CONDITIONS

18. The *Water Quality Control Plan for the Tulare Lake Basin, Second Edition* (hereafter Basin Plan), designates beneficial uses, establishes water quality objectives, and contains implementation plans and policies for all waters of the Basin.
19. Surface drainage is southward toward Poso Creek, which is in the Poso Creek Hydrologic Area (555.50) of the Southern Sierra Hydrologic Unit of the Tulare Lake Basin.
20. The designated beneficial uses of Poso Creek, as specified in the Basin Plan, are agricultural supply, water contact and non-contact water recreation, warm and cold fresh water habitat, wildlife habitat, groundwater recharge, and fresh water replenishment.
21. The first encountered groundwater occurs within the decomposed granite at depths currently ranging between 6 and 65 feet below ground surface (bgs) depending on location at the facility. Based on groundwater elevation measurements provided by the Discharger, historical groundwater elevations have ranged between 4,969 and 4,939 feet

mean sea level (MSL) at background groundwater monitoring well M-3 and between 4,852 and 4,858 feet MSL at corrective action groundwater monitoring well M-8. The groundwater is unconfined. The depth to groundwater fluctuates seasonally as much as 25 feet.

22. Monitoring data indicate background groundwater quality for first encountered groundwater has an electrical conductivity (EC) ranging between 270 and 370 micromhos/cm, with total dissolved solids (TDS) ranging between 190 and 260 milligrams per liter (mg/L).
23. The direction of groundwater flow is generally toward the southwest, but flow directions can be locally influenced by fractures in the underlying granite. The average groundwater gradient ranges between approximately 0.042 and 0.065 feet per foot with an estimated groundwater flow velocity ranging from approximately 145 to 200 feet per year.
24. The facility is not within a Detailed Analysis Unit, but the designated beneficial uses of the groundwater, as specified in the Basin Plan are municipal and domestic water supply, agricultural supply, industrial service supply, and industrial process supply.

GROUNDWATER AND UNSATURATED ZONE MONITORING

25. The existing groundwater monitoring network for the facility consists of background monitoring wells M-3 and M-5; detection monitoring wells M-1A, M-1B, M-2A, M-2B, M-2C, M-6A, and M-6B; and corrective action monitoring wells M-4, M-7, M-8, and M-9 as shown on Attachment B.
26. Unsaturated zone detection monitoring for leachate is not being conducted at the facility. Installing an unsaturated zone monitoring system for leachate (i.e., lysimeters) beneath the Unit at this time would not be practical based on the fact the existing Unit is small (1.67 acres), closed, and has already leaked waste constituents to groundwater. The Discharger is conducting semiannual landfill gas (LFG) monitoring around the perimeter of the facility. The LFG wells are G-1, G-2, G-3R, G-4R, G-5, and G-6, which are shown on Attachment B. Samples from the wells are analyzed for methane and Volatile Organic Compounds (VOCs).
27. The Discharger's detection monitoring program for groundwater at the facility satisfies the requirements contained in Title 27.
28. Volatile organic compounds are often detected in a release from a MSW landfill and are often associated with releases of LFG 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) allows 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.

29. 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.
30. 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 landfill 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.
31. For a naturally occurring constituent of concern (COC), 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).
32. The Discharger submitted a Water Quality Protection Standard (WQPS) plan in November 2000. The WQPS report proposed statistical data analysis methods to calculate concentration limits for each monitored constituent in accordance with Title 27. After several revisions to the Discharger's WQPS plan, Central Valley Water Board staff approved the WQPS plan in November 2002. The WQPS and approved data evaluation methods are included in MRP R5-2013-XXXX.

GROUNDWATER DEGRADATION AND CORRECTIVE ACTION

33. Volatile organic compounds that are not naturally occurring have been detected in groundwater along the Point of Compliance. The VOCs detected in groundwater are benzene; chlorobenzene; tetrachloroethylene (PCE); trichloroethylene (TCE), 1,1-dichloroethylene (1,1-DCE), 1,1,1-trichloroethane (1,1,1-TCA); 1,1-dichloroethane (1,1-DCA); cis-1,2-dichloroethene (cis-1,2-DCE); and 1,4-dichlorobenzene (1,4-DCB). Vinyl chloride has been detected at trace levels. The latest semiannual monitoring report (First Semiannual Monitoring Report, 2012) stated that only chlorobenzene; 1,1-DCA; and cis-1,2-DCE were detected in Point of Compliance groundwater monitoring wells, indicating a downward trend in VOC concentrations.
34. Inorganic waste constituents detected in Point of Compliance groundwater monitoring wells at concentrations statistically exceeding their respective background concentrations include mercury, arsenic, barium, sodium, selenium, TDS, EC, nitrate, manganese, and magnesium. The latest self-monitoring report (First Semiannual Monitoring Report, 2012) detected several inorganic waste constituents (e.g., arsenic, barium, manganese, iron, and mercury) that statistically exceeded their respective background concentrations. Iron and manganese exceeded their respective Secondary Maximum Contaminant Levels. No inorganic waste constituent exceedences of background concentrations occurred at evaluation/corrective action groundwater monitoring wells.
35. Waste Discharge Requirements Order 5-01-164, directed the Discharger to complete an evaluation monitoring program (EMP) and establish a corrective action program (CAP) in accordance with a time schedule. The Discharger adequately determined the nature and lateral and vertical extent of the inorganic waste constituent and VOC release. The EMP was deemed complete on 20 October 2006. The nature of the release was demonstrated to be VOCs, originating from landfill gas, and inorganic waste constituents (see Finding Nos. 33 and 34). The lateral extent of the comingled VOC and inorganic waste constituent plumes is immediately adjacent to the Unit's western and southern boundaries. The vertical extent is approximately 137 feet below ground surface. The comingled VOC and inorganic waste constituent plumes appear stable and are not migrating hydraulically downgradient from the Point of Compliance.
36. The Discharger submitted an initial updated engineering feasibility study (EFS) for a CAP on 30 August 2006 in accordance with Section 20425(c) of Title 27. The first of several updated feasibility studies was submitted on 28 September 2006. A final EFS for a CAP proposal, which also functioned as a revised report of waste discharge (RWD), was submitted on 27 March 2009. Central Valley Water Board staff on 6 July 2009, concurred with the Discharger's EFS for a CAP proposal. The EFS for a CAP concluded that the most technically and economically feasible corrective action alternative for VOCs is monitored natural attenuation. The EFS for a CAP concluded that the most technically and economically feasible corrective action alternative for inorganic waste constituents is the injection of calcium polysulfide (CaS_x) at three temporary injection points to remediate

inorganic waste constituents (soluble mercury and other soluble metals) by converting them into insoluble and immobile solids, and potentially the injection of an oxidizing reagent and/or phosphate binder to stabilize mercury and other metals in groundwater if it is determined that CaSx is unsuccessful in remediation.

37. The Discharger proposes to monitor each groundwater monitoring well for mercury, other metals, and CaSx by-products (metal compounds and odor) on a semiannual basis for up to four years to allow sufficient time for CaSx to remediate groundwater in the vicinity of Point of Compliance groundwater monitoring wells. Additionally, the Discharger proposes to continue monitoring VOCs and inorganic waste constituents at each groundwater monitoring well on a semiannual basis.
38. The Discharger proposes to conduct trend analyses of inorganic waste constituents in groundwater utilizing at least eight data points from each groundwater monitoring well, acquired prior to the CaSx injection, in order to statistically evaluate decreases or increases in inorganic waste constituent concentrations, including CaSx by-products, in groundwater following CaSx injections.
39. The Discharger proposes to submit a preliminary assessment report one year after the initial injection of CaSx that evaluates CaSx by-product impacts to groundwater in addition to the efficacy of CaSx in remediating mercury and other metals in groundwater.
40. The Discharger proposes to submit a technical report with an evaluation of statistical analyses of groundwater monitoring data and the results of mercury and other metals remediation by CaSx, four years following the initial injection of CaSx to groundwater.
41. The Discharger proposes to submit a detailed work plan as part of an amended RWD to revise the EFS for a CAP for the use of an oxidizing reagent and/or phosphate binder to stabilize mercury and other metals in groundwater if it determines that CaSx is unsuccessful for in situ remediation. Additionally, the Discharger states that a discussion of potential impacts by oxidizing reagent and/or phosphate binder by-products will be included in an amended RWD.

LANDFILL CLOSURE

42. The Discharger completed construction of an engineered alternative composite final cover system in October 2003. The final cover system consists of the following: a two-foot thick soil foundation layer; a geosynthetic clay liner (GCL), a geosynthetic drainage layer, and a two-foot thick vegetated soil layer.

LANDFILL POSTCLOSURE MAINTENANCE

43. The *Final Closure and Postclosure Maintenance Plan* includes inspection, maintenance, and monitoring of the landfill during the postclosure maintenance period, and includes a postclosure maintenance cost estimate for the entire facility. Inspection and maintenance will include the condition of the final cover, drainage features, groundwater monitoring

wells, access roads, landfill gas monitoring system, groundwater corrective action system, and site security. The plan will be implemented for a minimum period of 30 years or until the waste no longer poses a threat to water quality, whichever is greater.

44. Once every five years during the postclosure maintenance period, iso-settlement maps will be prepared to determine the amount of differential settlement occurring over the previous five years, pursuant to Title 27, Section 21090(e)(2). The most recent iso-settlement map for the facility was submitted in October 2008.
45. The completed final cover will be monitored for performance and for damage or defects by visual inspection and by moisture sensor monitoring pursuant to California Code of Regulations, Title 27, Section 21090(a)(4)(A). Defects will be repaired and tested for adequacy based on the closure Construction Quality Assurance Plan.

FINANCIAL ASSURANCES

46. Title 27, Sections 21840 and 22211 requires a cost estimate for landfill postclosure maintenance. The *Final Closure and Postclosure Maintenance Plan* includes a cost estimate for landfill postclosure maintenance. In an 8 November 2012 letter and inspection report, the Discharger was notified that a financial assurance review for postclosure maintenance was due by 1 October 2012 in accordance with Provision H.11 of Waste Discharge Requirements Order R5-01-164. On 3 December 2012, the Discharger submitted a financial assurance review for postclosure maintenance for 2012 stating that the postclosure maintenance fund balance for all of its landfills, including the Balance Rock Landfill, is \$16,862,808.
47. Title 27, Section 22221 requires a cost estimate for corrective action of all known or reasonably foreseeable releases. In an 8 November 2012 letter and inspection report, the Discharger was notified that a financial assurance review for corrective action was due by 1 October 2012 in accordance with Provisions H.10 of Waste Discharge Requirements Order R5-01-164. On 3 December 2012, the Discharger submitted a financial assurance review for corrective action for 2012 stating that the corrective action fund balance for all of its landfills, including the Balance Rock Landfill, is \$5,149,446.

CEQA AND OTHER CONSIDERATIONS

48. The action to revise waste discharge requirements for this existing facility is not subject to the provisions of the California Environmental Quality Act (CEQA), Public Resource Code Section 21000, et seq., and the CEQA guidelines, in accordance with Title 14, Section 15301.

49. This order implements:

- a. *The Water Quality Control Plan for the Tulare Lake Basin, Second 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 Title 40 C.F.R. Section 258 "Subtitle D" federal regulations as required by State Water Board Resolution 93-62.

50. Based on the threat and complexity of the discharge, the facility is classified 3B as defined below:

- a. Category 3 threat to water quality, defined as, "Those discharges of waste that could degrade water quality without violating water quality objectives, or could cause a minor impairment of designated beneficial uses as compared with Category 1 and Category 2."
- b. 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."

51. Water Code Section 13267(b) provides that: "In conducting an investigation specified in subdivision (a), the Central Valley Water Board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposed to discharge within its region, or any citizen or domiciliary, or political agency or entity of this state who had discharged, discharges, or is suspected of having discharged or discharging, or who proposed 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."

52. The technical reports required by this Order and the attached MRP R5-2013-XXXX are necessary to assure compliance with these waste discharge requirements. The Discharger owns and operates the facility that discharges the waste subject to this Order.

PROCEDURAL REQUIREMENTS

53. 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.
54. The Central Valley Water Board notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for this discharge, and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
55. The Central Valley Water Board, in a public meeting, heard and considered all comments pertaining to the discharge.
56. 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.

IT IS HEREBY ORDERED, pursuant to California Water Code Sections 13263 and 13267, that Order 5-01-164 is rescinded except for purposes of enforcement, and that the County of Tulare 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 any additional waste at this facility is prohibited.
2. The Discharger shall comply with all applicable Standard Prohibitions listed in Section C of the SPRRs.

B. DISCHARGE SPECIFICATIONS

1. 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. FINANCIAL ASSURANCE SPECIFICATIONS

1. The Discharger shall obtain and maintain assurances of financial responsibility with CalRecycle for postclosure maintenance for the landfill, adjusted for inflation annually. A report regarding financial assurances for postclosure maintenance specifically for this facility shall be submitted to the Central Valley Water Board by **1 October 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 obtain and maintain assurances of financial responsibility with CalRecycle for initiating and completing corrective action for all known or reasonably foreseeable releases from the facility in at least the amount of the annual inflation-adjusted cost estimate. A report regarding financial assurances for corrective action specifically for this facility shall be submitted to the Central Valley Water Board by **1 October 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.
3. The Discharger shall comply with all Standard Financial Assurance Specifications listed in Section H of the SPRRs.

E. MONITORING SPECIFICATIONS

1. The Discharger shall comply with the provisions of Title 27, in accordance with MRP R5-2013-XXXX and the Standard Monitoring Specifications, listed in Section I of the SPRRs, for the groundwater detection monitoring program and for groundwater corrective action monitoring.
2. The Discharger shall comply with the WQPS as specified in this Order, MRP R5-2013-XXXX, and the SPRRs.
3. 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 R5-2013-XXXX.

4. For each monitoring event, the Discharger shall determine whether the landfill is in compliance with the WQPS using procedures specified in MRP R5-2013-XXXX and the Standard Monitoring Specifications in Section I of the SPRRs.
5. The Discharger shall comply with all Standard Monitoring Specifications and Response to a Release specifications listed in Sections I and J of the SPRRs.

F. CORRECTIVE ACTION SPECIFICATIONS

1. **By 30 November 2013**, the Discharger shall implement a CAP pursuant to Section 20430 of Title 27, to remediate the release of waste constituents from the Unit and to ensure compliance with the WQPS.
2. **By 28 February 2014**, the Discharger shall submit a report for Executive Officer approval that identifies CaSx by-products, proposes the monitoring of CaSx by-products in conjunction with MRP R5-2013-XXXX, proposes analyses for the CaSx by-products, and the frequency of monitoring of the CaSx by-products.
3. **By 14 November 2014**, the Discharger shall submit a preliminary assessment report that evaluates CaSx by-product impacts to groundwater in addition to the efficacy of CaSx in remediating mercury and other metals in groundwater, and an evaluation of natural attenuation in remediating VOCs in groundwater.
4. **By 30 November 2017**, the Discharger shall submit a technical report with statistical analyses of groundwater monitoring data that: 1) summarizes the results of mercury and other metal remediation by CaSx and determines whether CaSx corrective action methods should cease, continue, or an alternative corrective action method needs to be implemented to remediate mercury and other metals in groundwater; and 2) evaluates the results of VOC remediation by natural attenuation and whether monitored natural attenuation of VOCs should cease, continue, or an alternative corrective action method be implemented.
5. **By 30 June 2018**, 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 an oxidizing reagent and/or phosphate binder in remediation of mercury and other metals, and/or other alternative correction action methods to remediate mercury and other metals, and VOCs, if it is determined in the technical report (see Corrective Action Specification F.4.) that CaSx and natural attenuation corrective action methods are unsuccessful.
6. The Discharger shall operate and maintain a groundwater corrective action monitoring system for the purpose of monitoring the nature and extent of the release (mercury and other metals, and VOCs), CaSx by-products, and the progress of corrective action. Sample collection and analysis shall coincide with Groundwater Detection Monitoring A.1 of MRP R5-2013-XXXX.

7. Corrective action measures may be terminated when the Discharger demonstrates to the satisfaction of the Executive Officer that the concentrations of all COCs (mercury and other metals, and VOCs) are reduced to levels below their respective concentration limits throughout the entire zone affected by the release.
8. After suspending the corrective action measures, the Discharger shall demonstrate that the concentration of each COC (mercury and other metals, and 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.
9. 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.
10. If at any time, either the Discharger or the Executive Officer determines that the CAP utilizing CaSx is unsuccessful in remediating mercury and other metals in groundwater, is exacerbating groundwater degradation by the generation of by-products resulting from CaSx injections, or that natural attenuation of VOCs is unsuccessful in remediating VOCs (i.e. does not satisfy the provisions of Section 20430 of Title 27), 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 an oxidizing reagent and/or phosphate binder in remediating mercury and other metals, and/or other alternative correction action methods to remediate mercury and other metals, and/or VOCs.

At a minimum, a determination that the CAP is unsuccessful in remediating waste constituents (mercury and other metals, and/or 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 corrective action groundwater monitoring wells M-4, M-7, M-8, or M-9, which are located outside of the original plume boundary; or

- d) Waste constituent concentrations are not decreasing at a sufficient rate to meet the remediation objectives; or
- e) CaSx by-products exacerbate groundwater degradation.

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. A discussion of the potential impacts to groundwater that may occur as a result of by-products generated from an oxidizing reagent and/or phosphate binder, or another in-situ remediation method.
 - e. Proposed alternative corrective action measures, as necessary, for:
 - 1) Source control,
 - 2) Groundwater cleanup, and/or
 - 3) Landfill gas control.
 - f. A plan to monitor the progress of corrective action measures consistent with MRP R5-2013-XXXX.
 - g. Cost estimates for implementing additional corrective action, including monitoring.
11. **Within one year** of the determination that CaSx is unsuccessful in remediating mercury and other metals in groundwater and/or that natural attenuation is unsuccessful in remediating VOCs in groundwater the Discharger needs to implement oxidizing reagent and/or phosphate binder remediation methods, or another alternative corrective action method to remediate mercury and other metals, and/or implement an alternative corrective action method to natural attenuation to remediate VOCs.

G. PROVISIONS

- 1. The Discharger shall maintain a copy of this Order at the offices of the Tulare County Resource Management Agency, including the MRP R5-2013-XXXX and the SPRRs, and make it available at all times to facility maintenance 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 R5-2013-XXXX.
4. The Discharger shall comply with the applicable portions of the SPRRs.
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 waste discharge requirements in accordance with the following time schedule:

| <u>Task</u> | <u>Compliance Date</u> |
|--|----------------------------|
| A. Corrective Action | |
| 1. Implement corrective action (see Corrective Action Specification F.1) | By 30 November 2013 |
| 2. Submit a report for Executive Officer approval that identifies CaSx by-products, proposes CaSx by-products monitoring within MRP R5-2013-XXXX, proposes analyses for the CaSx by-products, and the frequency of monitoring CaSx by-products. (see Corrective Action Specification F.2) | By 28 February 2014 |
| 3. Submit a preliminary assessment report that identifies and evaluates CaSx by-products and evaluates the efficacy of CaSx in remediating mercury and other metals in groundwater. (see Corrective Action Specification F.3) | By 14 November 2014 |
| 4. Submit a technical report that summarizes the results of mercury and other metal remediation by CaSx and evaluates the results of VOC remediation by natural attenuation. (see Corrective Action Specification F.4) | By 30 November 2017 |

5. 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 mercury and other metals, and/or VOCs, if it is determined in the technical report (see report Corrective Action Specification F.4.), that CaSx and/or natural attenuation corrective action methods are unsuccessful.
(see Corrective Action Specification F.5)

By 30 June 2018

6. 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 mercury and other metals, and/or VOCs, if it is determined by either the Discharger or the Executive Officer, that CaSx and/or natural attenuation corrective action methods are unsuccessful.
(see Corrective Action Specification F.10)

Within 90 days of making a determination or of receiving written notification from the Executive Officer of such a determination

7. Implement phosphate oxidizing reagent and/or binder remediation or an alternative correction method action to remediate mercury and other metals in groundwater, and/or implement an alternative corrective action method to remediate VOCs.
(see Corrective Action Specification F.11)

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

B. Financial Assurance Review

1. Annual Review of Financial Assurance for postclosure maintenance
(see Financial Assurance Specification D.1).
2. Annual Review of Financial Assurance for initiating and completing corrective action
(see Financial Assurance Specification D.2).

1 October of each year

1 October of each year

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

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 XX My 2013.

PAMELA C. CREEDON, Executive Officer