

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

ORDER R5-2015-0106

WASTE DISCHARGE REQUIREMENTS  
FOR  
RECOLOGY YUBA-SUTTER AND FEATHER RIVER ORGANICS  
RECOLOGY YUBA-SUTTER LANDFILL  
CLASS III LANDFILL AND COMPOSTING FACILITY  
OPERATION, POST-CLOSURE MAINTENANCE, AND CORRECTIVE ACTION  
YUBA COUNTY

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

1. These Waste Discharge Requirements (WDRs) are issued jointly to Recology Yuba-Sutter (RYS) and Feather River Organics (FRO) for the Class III landfill facility and composting facility. RYS is the operator of the closed municipal solid waste Class III landfill, a material recycling facility (MRF), an administration office, and an equipment maintenance area. FRO is the operator of the composting facility which is being conducted on top of the closure cover of RYS unlined landfill waste management unit Landfill 1 (LF -1).
2. The following documents are attached to this Order and hereby incorporated into and made a part of this Order by reference:
  - a. Attachment A – Site Location Map
  - b. Attachment B – Site Plan
  - c. Attachment C – Landfill Monitoring Points
  - d. Attachment D – Storm Water Flow Direction
  - e. Attachment E – Compost Area Monitoring Points
  - f. Attachment F – Compost Area Wastewater Collection
  - g. Attachment G – Requirements for Monitoring Well Installation Workplans and Installation Reports
3. Recology Yuba-Sutter is the landowner of the facility upon which past and current operations occur. The facility is a 160-acre property on Assessor's Parcel Numbers (APN) 018-120-021, 018-130-001, 018-130-015, 018-130-016, and 018-120-018. The Recology Yuba-Sutter Landfill (landfill facility) and the Feather River Organics composting facility (composting facility) hereafter referred to jointly as "facility" are located at 3001 North Levee Road about 2 miles northeast of the City of Marysville, in Sections 4, 5, and 8, T15N, R4E, MDB&M, as shown in Attachment A, Site Location Map. RYS and FRO are hereinafter referred to jointly as the "Discharger" as defined in California Code of Regulations, Title 27 ("Title 27"), section 20164 and are jointly responsible for compliance with these WDRs.

4. The Recology Yuba-Sutter landfill ceased the acceptance of waste in November 1996. Prior to closure, the average waste disposal rate at the facility was 500 tons/day. The site was permitted to receive a maximum of 160 tons/day of sewage sludge. Refuse was compacted in two-foot thick layers, and refuse slopes did not exceed 3:1 (horizontal: vertical). Waste was covered with at least six inches of daily cover.
5. The landfill facility is a municipal solid waste (MSW) landfill regulated under authority given in Water Code section 13000 et seq.; Title 27 section 20005 et seq.; and 40 Code of Federal Regulations section 258 (aka Subtitle D) in accordance with State Water Resources Control Board (State Water Board) Resolution 93-62. Water Code section 13263 provides the Central Valley Water Board with regulatory authority over the composting facility since it discharges and/or has the potential to discharge nonhazardous solid waste in the form of compostable materials as defined in Title 27 section 20220 to a closure cover on an unlined Class III landfill waste management unit (WMU). The existing facility is shown in Attachment B, Site Plan.
6. The landfill facility is currently regulated under Central Valley Water Board waste discharge requirements (WDRs) Order R5-2003-0093 issued on 6 June 2003 in which the landfill WMUs at the facility were classified as Class III WMUs for the discharge of non-hazardous solid waste and "inert waste". This Order continues to classify the landfill units as Class III units in accordance with Title 27. Further information on waste classification can be found in the Waste Classification and Unit Classification Section.
7. The facility is also regulated under Cleanup and Abatement Order (CAO) R5-2013-0704-01 which addresses a confirmed release to the unsaturated zone and groundwater, the failure to maintain the cover of LF-1, and the composting operations. In addition, Monitoring and Reporting Program (MRP) R5-2014-0830 was issued on 5 December 2014 to monitor the discharges of waste from the compost area. These revised WDRs rescind the CAO and MRP through incorporation of their regulatory requirements.
8. The composting facility was regulated under Resolution No. 96-031 *Conditional Waiver of Waste Discharge Requirements for Composting Operations* (hereafter "Waiver"). However, in 1999, passage of Senate Bill 390 modified Water Code Sections 13269 and 13350 to sunset all existing waivers of WDRs as of 1 January 2003. Consequently, after 1 January 2003 the Discharger operated the compost facility under the expired Waiver. Due to concerns regarding the water quality impacts of the composting facility, Central Valley Water Board staff in a letter dated 4 May 2012 requested the Discharger to submit an amended Report of Waste Discharge (ROWD) that included information regarding the composting facility operations. The information provided in the amended ROWD would be used to revise current WDRs to include the composting facility operations occurring over an unlined Class III WMU.
9. On 29 June 2012 the Discharger submitted an amended ROWD for the landfill and composting facility. The information in the ROWD and pertinent supporting reports and documents submitted under the CAO were used in revising these WDRs. The ROWD

and subsequent reports and documents contain information related to amongst other things the following major revisions of the current WDRs:

- a. Inclusion of waste discharge requirements and monitoring and reporting requirements for operation of a composting facility above a closed unlined waste management unit.
- b. Update of waste discharge requirements and monitoring and reporting requirements for operations above a closed unlined waste management unit.
- c. Corrective action for landfill leachate and gas releases to underlying groundwater.
- d. Corrective action for groundwater detection monitoring system that currently does not comply with Title 27 regulations.
- e. Update of operations and maintenance requirements for the closure covers over the waste management units during the postclosure period such that the goal as stated in Title 27 section 20950(a)(2)(A)(1) for closure covers is satisfied. The goal of the closure cover is to serve as the principal waste containment feature for the minimization of infiltration of water into the underlying waste, "*thereby minimizing the production of leachate and gas.*"
- f. Rescission of CAO R5-2013-0704-01 and MRP R5-2014-0830 through incorporation of the regulatory requirements of the CAO and MRP into these WDRs.

### **COMPOSTING FACILITY**

10. WDRs Order R5-2003-0093 did not include provisions for operation of a composting facility at the landfill facility and after 1 January 2003 when the conditional waiver for composting facilities expired, the Discharger began operating the compost facility under the expired Waiver.
11. The Discharger prepared a *Report of Composting Site Information* in January 2008 detailing the FRO compost facility and operations for the acceptance of green material.
12. On 18 April 2012, the City of Marysville forwarded a request from the Discharger that included an Initial Study/Mitigated Negative Declaration (IS/MND) to the City of Marysville Department of City Services, Planning Division requesting a modification to the existing Use Permit UP07-06 to allow the acceptance of food material as a permanent feedstock to the FRO compost facility. In a letter dated 4 May 2012, Central Valley Water Board staff provided comments to the IS/MND indicating that revised WDRs are required for composting operations and the addition of food material should not be initiated until the revised WDRs are adopted.
13. As presented above, Central Valley Water Board staff requested an updated ROWD on 17 May 2012 to revise the WDRs to accurately reflect current operations at the site. The letter requested the Discharger provide detailed information on the composting facility

and its potential impacts to surface water and groundwater. The Discharger submitted an amended ROWD on 29 June 2012.

14. In a letter dated 10 September 2012, the Yuba County Local Enforcement Agency submitted a request to CalRecycle to revise the existing FRO composting facility Solid Waste Facility Permit to include food material as a permitted feedstock. On 22 October 2012, CalRecycle approved the revised FRO composting facility Solid Waste Facility Permit to include food waste as a feed stock.
15. In a letter dated 26 September 2012, Central Valley Water Board staff requested additional information to what the Discharger provided in its amended ROWD to further describe the composting operation. Central Valley Water Board staff requested the Discharger to address the composting operation and the use of Best Practicable Treatment or Control (BPTC) that will meet the requirements of Title 27, Sections 20950 and 21090, and State Water Board Resolution No. 68-16.
16. In preparation of revising the WDRs, Central Valley Water Board staff conducted an inspection of the facility on 30 November 2012. During this inspection, multiple water quality issues were identified as a result of ongoing operations on top of the final cover of WMU LF-1, including the composting operation. Central Valley Water Board staff observed ponding of storm water on the earthen cover of LF-1, ponding of storm water on paved surfaces in the vicinity of the MRF, sediment laden runoff from the composting area discharging to the Big Pond, tire marks and ruts in the compost on the compost pad, and leachate formation in the compost area. Central Valley Water Board staff collected samples of storm water which had contacted compost material (hereafter also referred to as "process wastewater", "contaminated non-process wastewater", "leachate" or "compost wastewater") discharging from the composting operation and determined through laboratory analysis that these discharges could affect beneficial uses of surface water and groundwater.

The following table presents a summary of analytical results for a compost pile leachate sample collected on 30 November 2012.

Analyte	Sample (Compost Pile Leachate) Result	Receiving Water Quality Objective (WQO) <sup>3</sup>	
Electrical Conductivity (Field Measured)	<b>2540 uS/cm</b>	700 uS/cm	Ag WQG
Aluminum, Total Recoverable	<b>16.1 mg/L</b>	0.087 mg/L	NRWQC-Fresh-Aquatic
Copper, Total Recoverable <sup>1</sup>	<b>0.136 mg/L</b>	0.0048 mg/L	CTR-Fresh-Aquatic
Iron, Total Recoverable	<b>20.1 mg/L</b>	0.3 mg/L	DHS-(2nd MCL)
Lead, Total Recoverable <sup>1</sup>	<b>0.044 mg/L</b>	0.015 mg/L	DHS-(1st MCL)
Zinc, Total Recoverable <sup>1</sup>	<b>0.379 mg/L</b>	0.046 mg/L	CTR-Fresh-Aquatic
Ammonia <sup>2</sup>	<b>22.8 mg/L</b>	10 mg/L	DHS-(1st MCL)
Biochemical Oxygen Demand (BOD)	<b>570 mg/L</b>	30/45 mg/L	USEPA TBEL (30/7 day)
Chemical Oxygen Demand (COD)	<b>1360 mg/L</b>	120 mg/L	NPDES Industrial Storm Water Benchmark
Specific Conductance (SC)	<b>1340 uS/cm</b>	700 uS/cm	Ag WQG
Phosphate, Total as P	<b>14 mg/L</b>	0.1 mg/L	USEPA Gold Book, 1986
Phosphorus	<b>32.5 mg/L</b>	2.0 mg/L	NPDES Industrial Storm Water Benchmark
Total Kjeldahl Nitrogen (TKN)	124 mg/L	-	-
Total Organic Carbon (TOC)	<b>734 mg/L</b>	2.5 mg/L	CDPH draft Groundwater Recharge Reuse Regulation
Total Suspended Solids (TSS)	<b>1980 mg/L</b>	30/45 mg/l	USEPA TBEL (30/7 day)

<sup>1</sup> Using total hardness of 32 (mg/L as CaCO<sub>3</sub>)

<sup>2</sup> Assuming all ammonia converted to nitrates for groundwater protection

<sup>3</sup> USEPA: US Environmental Protection Agency; NRWQC: USEPA National Recommended Water Quality Criteria; CTR Fresh-Aquatic: California Toxics Rule freshwater aquatic life protection; DHS: Department of Health Services; MCL: Maximum Contaminant Level; TBEL: Technologically Based Effluent Limit; NPDES: National Pollutant Discharge Elimination System; Ag WQG: United Nations Food and Agriculture Water Quality Goal; CDPH: California Department of Public Health;

17. The Assistant Executive Officer of the Central Valley Water Board issued Cleanup and Abatement Order (CAO) R5-2013-0704 on 29 August 2013 to address the post closure maintenance deficiencies that led to storm water benchmark exceedances, landfill gas (LFG) generation, migration of LFG into the groundwater, and groundwater impacts. Among other items the CAO required a series of reports associated with the FRO compost facility including:

- a. Order #5 - Compost Area Work Plan describing how the green waste (chip/grind) and composting activities will be modified and/or designed, constructed, operated,

and maintained to protect the cover of LF-1. The Work Plan was due by 1 October 2013, and construction was to be completed by 1 October 2014. On 7 May 2014 Central Valley Water Board staff approved the Compost Area Work Plan.

- b. Order #9 - Compost Area Leachate Collection Work Plan describing how contact storm water (leachate or compost wastewater) generated at the compost (chip/grind) and green waste areas will be managed and the design for a leachate collection system that would hold leachate generated by storms up to and including a 1,000-year 24-hour storm event. On 13 January 2015 the Assistant Executive Officer issued CAO R5-2013-0704-01 to amend CAO R5-2013-0704 Order # 9. The amendment specified that the Compost Area Leachate Collection Work Plan shall include the type of leachate containment system to contain all leachate generated during rainfall events up to and including the 25-year, 24-hour design storm event. Under both the original and amended CAO, construction was to be completed by 1 October 2014.
  - c. Order # 13 - Compost Area Improvement Report describing the work completed per the Compost Area and Compost Area Leachate Collection Work Plans. The report was due by 1 December 2014.
18. On 30 October 2013, the Discharger submitted a Compost Area Work Plan as required by CAO R5-2013-0704 Order # 5. The Work Plan detailed the improvements to the Compost Pads that included amongst other things adding low-permeability aggregate material to the existing pad to increase the thickness to a minimum of 6 inches and a hydraulic conductivity of less than  $1 \times 10^{-6}$  cm/sec. The Central Valley Water Board staff approved the Compost Area Work Plan on 17 May 2014.
  19. On 31 January 2014, the Discharger submitted a Compost Area Leachate Collection Work Plan as required by CAO R5-2013-0704 Order # 9. Central Valley Water Board staff provided comments to the Compost Area Leachate Collection Work Plan on 7 May 2014 and a Notice of Violation on 14 May 2014 listing deficiencies of the Compost Area Leachate Collection Work Plan. On 30 July 2014, the Discharger submitted an amended Compost Area Leachate Collection Work Plan to address the comments and Notice of Violation. Central Valley Water Board staff continued to express concerns about the water balance and never formally approved it.
  20. On 1 December 2014, the Discharger submitted a Compost Area Improvement Report as required by CAO R5-2013-0704 Order # 13. This report described the improvements to the compost pad that included placing a low-permeability aggregate material comparable to Caltrans Class 2 or Class 3 aggregate base with a minimum of 15% fines on the existing compost pad at 90% percent relative compaction (ASTM D1557) with the additional pad thickness to be a minimum of 6-inches at all times and graded to a minimum of 3% to promote drainage. Additionally, improvements to the leachate collection system included installing storage tanks, a suction lysimeter below each group of storage tanks, and additional pumps and piping.

21. Central Valley Water Board staff issued a Notice of Violation (NOV) on 18 December 2014 and again on 5 January 2015 for the illegal discharge of compost leachate that occurred during the 3 December 2014 and 11 December 2014 storm events, respectively. Central Valley Water Board staff also issued a California Water Code 13267 Order to submit technical reports on 9 December 2014 requiring the Discharger to provide an explanation for the 3 December 2014 illegal discharge, an updated water balance model for the leachate collection system, a discharge plan that accounts for consecutive days<sup>1</sup> of a 25-year, 24-hour precipitation event, and additional site historical data related to the leachate collection system.
22. The Discharger submitted technical reports on 16 December 2014 and 18 December 2014 providing the information required by the California Water Code 13267 Order to submit technical reports. The Central Valley Water Board staff issued a NOV on 22 December 2014 for incomplete technical reports. The Discharger updated the compost area water balance model on 15 January 2015 to include leachate containment for consecutive days of a 25-year 24-hour precipitation event. The updated compost area water balance was based on a firm oral agreement with the City of Marysville and the Discharger for disposal of 200,000 gallons of compost wastewater per day to the City's sewer treatment plant with a maximum disposal of 750,000 gallons per week. On 27 January 2015, the Discharger received a permit from the City of Marysville which memorialized the firm oral agreement to discharge compost leachate to the city's collection system, subject to certain conditions. A copy of the permit from the City of Marysville was provided to Central Valley Water Board staff which indicated that the permit expires on 31 December 2015.
23. On 16 April 2015, Central Valley Water Board adopted Administrative Civil Liability (ACL) Order R5-2015-0019 in the amount of \$440,440 for failing to comply with the CAO R5-2013-0704-01 which required a compost leachate collection system designed to collect compost wastewater from all storms up to and including a 25-year 24-hour storm event to be installed by 1 October 2014. These WDRs in Provisions H.7 require the Discharger to submit a Compost Wastewater Management Plan that prevents the discharge of compost wastewater under specified storm events and wet season parameters.
24. The revision of these WDRs incorporates corrective action measures completed by the Discharger to address deficiencies in operation and maintenance of the composting facility over a closed unlined Class III landfill as well as requires the Discharger to continue corrective action measures specified in CAO R5-2013-0704-01 as part of these WDRs that have not been completed or have not been effective in mitigating deficiencies associated with operation and/or maintenance of the composting facility above WMU LF-1.

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<sup>1</sup> "Consecutive days" later determined to mean "up to and including"

## OPERATIONS ABOVE WASTE MANAGEMENT UNIT LF-1

25. The Discharger currently operates a Material Recycling Facility (MRF), a vehicle maintenance facility, administrative offices, and composting over closed unlined WMU LF-1. The Discharger stated in a *Monitoring System Evaluation and Corrective Action Effectiveness Report* (Effectiveness Report) dated 29 July 2011 that rainfall percolating through the cover of WMU LF-1 could be affecting groundwater quality and suggested that cover improvements on WMU LF-1 should be considered.
26. In response to the Effectiveness Report, on 6 December 2011, Central Valley Water Board staff requested an updated *Engineering Feasibility Study* (EFS) and amended ROWD that provides detailed corrective action measures that could be taken to achieve background concentrations in groundwater monitoring wells for all constituents of concern. These corrective actions included evaluating additional cover improvements in the MRF area over LF-1.
27. The Discharger submitted an *Engineering Feasibility Study and Amended Report of Waste Discharge, South Area Landfill LF-1* dated 29 June 2012 (EFS 2012 Report) in which the Discharger reported methane concentrations of 47% and 19.7% at sample locations 3 and 4, respectively, within the MRF compound. The Discharger also reported methane gas levels in perimeter gas probe GP-14 at 15.7% in its shallow probe and 10.0% in its deep probe, both exceeding the CalRecycle limit of 5% by volume in air at the facility property boundary (Title 27 section 20921(a)(2)). The EFS 2012 Report concluded as recommended corrective actions the following:
  - a. Expand the active landfill gas extraction network into the southeastern side of LF-1 between the MRF and perimeter gas monitoring probe GP-14;
  - b. Evaluate the integrity of subsurface pipelines in LF-1
  - c. Evaluate the integrity of paved surfaces constructed on LF-1
  - d. Implement repairs based on proposed evaluations to provide the greatest potential to reduce infiltration into LF-1.
28. In addition to other items, CAO Order#3 required the Discharger to submit a report by 31 October 2013 documenting the completion of work that the Discharger recommended in the EFS 2012 Report as corrective actions. The Discharger submitted a letter dated 30 October 2013 stating that they completed installation of five landfill gas extraction wells on the western side of GP-14 along the south side of LF-1, performed repairs to subsurface storm water and sewer pipes and proposed a schedule for routine inspections and maintenance of the subsurface pipelines and storm water drains within WMU LF-1. Since installation and operation of the five landfill gas extraction wells targeting exceedances of methane in GP-14, methane has not been detected in GP-14 since November 2013.



29. The CAO Order#6 required the Discharger to submit a Southern Area Work Plan providing a defined schedule of operations and maintenance (O&M) to protect the cover of the Southern Area of LF-1. The Discharger submitted the Southern Area Work Plan on 31 January 2014 and Central Valley Water Board staff approved it on 29 April 2014. These WDRs require the Discharger to implement the Southern Area O&M Plan associated with the Southern Area Work Plan.
30. These revised WDRs in Section C "*WMU-1 Specifications*" incorporate the corrective actions proposed by the Discharger in response to the NOVs and CAO and require the Discharger to annually evaluate the operations conducted over LF-1 and make repairs/corrections to minimize infiltration of liquids into LF-1.
31. On 17 March 2015, Central Valley Water Board staff conducted a facility inspection and found several deficiencies related to potential discharges of liquids to underlying waste in WMU LF-1 such as (a) subsurface piping installed in the LF-1 closure cover to convey storm water from building rooftops that could potentially leak if not inspected and maintained routinely (b) a pressurized water supply system installed in the LF-1 closure cover that could potentially leak if not inspected and maintained routinely (c) building leveling systems installed in the LF-1 closure cover to compensate for LF-1 settling that could provide preferential pathways to underlying waste if not inspected and maintained routinely, and (d) Use of air conditioners and swamp coolers over the LF-1 closure cover that produce liquid condensate that if allowed to continually contact the LF-1 closure cover could infiltrate into underlying waste. These revised WDRs and MRP R5-2015-0106 require the Discharger to manage these potential sources of liquid over LF-1 that if not routinely inspected and maintained could infiltrate into underlying waste and produce leachate within a closed WMU inconsistent with the performance standard of WMU closure.

### **CORRECTIVE ACTION FOR LEACHATE AND GAS RELEASE**

32. Volatile Organic Compounds (VOCs) and elevated inorganic water quality parameters have been found in monitoring wells at the facility since monitoring began in 1987. The presence of VOCs which do not occur naturally in groundwater and the elevated inorganic water quality parameters indicate a release of waste to groundwater.
33. The Discharger conducted evaluation monitoring in response to the detection of VOCs and elevated concentrations of general water quality parameters in four of the landfill facility's groundwater monitoring wells (MW-1, MW-2, MW-3, and MW-10) in 1993. On 31 August 1993, the Discharger proposed a *Corrective Action Plan* consisting of a proposal to implement source control by closing LF-2 with a soil cover consisting of a two foot foundation layer, a one foot barrier layer of  $1 \times 10^{-6}$  cm/sec compacted clay, and a one foot vegetative layer. The cover was installed to provide a reduction in the percolation of precipitation and reduce the rate at which leachate is generated. Since LF-1 was closed prior to 1984, it did not receive a clay barrier layer. However, LF-1 is covered by asphalt, concrete, buildings, or aggregate and is graded to drain runoff. These WDRs require that the Discharger adequately maintain the closure cover over

WMU LF-1 to prevent infiltration of precipitation and the creation of landfill gas. Also, to address LFG detected in perimeter probes adjacent to unit LF-1, 22 LFG extraction wells were installed in 1998 along the northern boundary of the unit. The Discharger has indicated that due to installation of the 22 LFG extraction wells along the northern boundary of LF-1 landfill gas is no longer detected in the perimeter landfill gas monitoring probes on the northern side of LF-1.

34. The Discharger submitted an *Amendment to the Report of Waste Discharge and Establishment of Evaluation Monitoring Program* on 5 April 2002 in response to the detection of one VOC above the practical quantitation limit and bicarbonate alkalinity above the concentration limit in well MW-8, adjacent to LF-3. The VOC, 1,1-dichloroethane, was detected at 1.1 micrograms per liter ( $\mu\text{g/L}$ ). Bicarbonate alkalinity was detected at 300 milligrams per liter ( $\text{mg/L}$ ), above the concentration limit of 190  $\text{mg/L}$ . The presence of 1,1-dichloroethane and the levels of bicarbonate alkalinity were confirmed in later re-tests. As part of evaluation monitoring, three new groundwater monitoring wells (MW-11, MW-12, and MW-13) were installed and sampled for inorganic parameters and VOCs during the investigation. One piezometer (PZ-14) was also installed to aid in more accurately defining the groundwater flow gradient.
35. The 2 September 2002 *Engineering Feasibility Study* presented the results of the evaluation monitoring and included corrective action alternatives. The report concluded that the low-level VOC impacts to groundwater were limited to the area of well MW-8. The most likely source of impact was determined to be LFG migrating from LF-3. Some elevated inorganic results potentially indicative of LFG influence were also detected in groundwater samples from well MW-11. The primary corrective action recommended in the report targeted source control of LFG in LF-3 by constructing a passive, shallow horizontal interceptor trench, below the cover system and above the base liner system, along the northeast perimeter of LF-3. There have been no detections of VOCs in LF-3 monitoring wells since December 2011.
36. Since 2002, the Discharger has conducted various actions to address the VOC detections, including constructing final closure covers on LF-2 and LF-3, installing LFG extraction wells in LF-2 and LF-3, and conducting normal maintenance and upgrades to those operations conducted on LF-1. As shown in Finding 100, the number of VOCs detected in LF-2 and LF-3 has decreased, and laboratory data indicates that most of the VOC detections are at estimated trace concentrations below the laboratory reporting limit. However, the Discharger has established as part of its water quality protection standard concentration limits for VOCs as "non-detect" at compliance monitoring points. Therefore, although the Discharger has performed corrective action measures to impede the generation of LFG and groundwater impacts, VOCs continue to exceed concentration limits.
37. On 14 April 2011, Central Valley Water Board staff issued a NOV for continued detections of VOCs in corrective action wells MW-1, MW-2, MW-3, MW-4, and MW-10. In addition to the VOCs, bicarbonate alkalinity, total dissolved solids, and chloride were also detected above their concentration limits. Based on these detections, it was

determined that a release from WMU LF-1 had occurred and was affecting the underlying unsaturated and saturated zones.

38. In response to the April 2011 NOV, the Discharger submitted a *Corrective Action Effectiveness Report* which indicated that landfill gas from LF-1 was a likely source of groundwater impacts. The report stated that “*the data indicate that infiltration into the landfill during wetter years could be the cause of increased leachate or increased landfill gas influence on groundwater.*” The report indicated that cover improvements should be considered.
39. On 12 August 2011, Central Valley Water Board staff issued a NOV for violation of WDR Facility Specification B.12, which states: “*Closed landfill units shall be maintained to promote runoff and to prevent ponding.*” During a June 2011 site inspection, staff observed severe ponding and poor drainage conditions LF-1, including settlement of the landfill cover. Central Valley Water Board staff requested a work plan to correct the drainage issues. The Discharger submitted the work plan dated 14 September 2011.
40. On 22 November 2011, Central Valley Water Board staff conducted a follow up inspection to the June 2011 inspection. During this visit, Central Valley Water Board staff verified that the Discharger had conducted grading of the southern portion of LF-1 and installed storm water controls over portions of LF-1. Concrete rubble and debris boxes had been moved. However, this was a dry weather site inspection and performance of the storm water controls could not be determined at the time of the inspection.
41. In a letter dated 30 November 2011, the Local Enforcement Agency (LEA) requested the Discharger prepare a work plan to install additional landfill gas probes to monitor LFG migrating adjacent to the eastern and southern boundaries of WMU LF-1 and LF-2.
42. In a letter dated 6 December 2011, Central Valley Water Board staff concluded that the current corrective action program was not sufficient to comply with requirements of Title 27, Section 20430, and therefore required that the Discharger submit an updated *Engineering Feasibility Study* (EFS) to address deficiencies in the corrective action program. In addition, Central Valley Water Board staff requested a work plan be submitted to install one additional groundwater monitoring well to enhance the detection/corrective action monitoring programs. This work plan was submitted in December 2011 and the well MW-15 was installed April 2012.
43. In a letter dated 29 December 2011, the Discharger submitted a work plan to install four additional perimeter LFG probes (GP-12 through GP-15) which are adjacent to LF-1 and LF-2. In a letter dated 26 January 2012, Board staff responded to the work plan. Central Valley Water Board staff recommended the gas probes be installed deeper as required by Title 27, Section 20921(a). This request was based on the fact that LFG released from WMU LF-1 was affecting groundwater as evidenced by continued VOC detections in groundwater samples. The Discharger concurred with staff’s

recommendation to install the gas probes deeper in a revised work plan dated 8 March 2012. The Discharger installed LFG probes in May 2012.

44. On 28 March 2012, Central Valley Water Board staff issued a NOV for continued detections of VOCs in groundwater monitoring wells MW-1 through MW-4, and MW-10. In addition to VOCs, other the concentrations of other analytes including specific conductance, TDS, chloride, and several metals exceeded their concentration limits. Central Valley Water Board staff recommended the EFS Report provide an evaluation of the LFG extraction system and expansion of the system into the southern portion of WMU LF-1.
45. The Discharger submitted the required EFS and Amended Report of Waste Discharge Report dated 29 June 2012. Central Valley Water Board staff reviewed the reports and responded in a letter dated 27 August 2012. The EFS described LFG as the likely source of the unsaturated zone and saturated zone impacts identified during previous investigations and ongoing monitoring. LFG was also identified in the newly installed perimeter gas probe GP-14. As part of the EFS, the Discharger voluntarily installed nine shallow temporary probes to further delineate the extent of LFG within LF-1. Methane was detected in five of the probes, indicating LFG is being generated within LF-1 and is migrating uncontrolled toward the sites southern edge of unit LF-1. Because the Discharger believes that LFG is the likely source of impacts to groundwater, the Discharger evaluated multiple corrective action measures and proposed to expand the LFG system into LF-1. In addition to expansion of the LFG system, the Discharger proposed to evaluate subsurface storm water and sewer pipelines for leaks. Central Valley Water Board staff approved these corrective action measures and requested a Corrective Action Work Plan.
46. The Local Enforcement Agency (LEA) conducted a site inspection on 27 September 2012 and noted gas monitoring and control violations. The LEA observed damage to offsite perimeter gas probe GP-14 as a result of construction work performed for storm water drainage. The LEA was unable to monitor the probe on the day of inspection. The LEA returned on 16 October 2012 to monitor the probe and found the probe had not been repaired. The Discharger was required to submit a report of repairs and functionality of the probe by 9 November 2012. Gas probe GP-14 was repaired on 7 November 2012. The LEA was able to monitor the probe on 31 December 2012 and found that GP-14 contained methane up to 20% by volume in the shallow probe and 11.5% in the deep probe.
47. On 31 October 2012, the Discharger submitted a work plan to remediate LFG migrating outside the boundaries of the landfill. The work plan focused on collecting LFG in the vicinity of GP-14. The Discharger proposed to mitigate the migration of LFG using either a solar vent flare or an induced draft utility flare. In a meeting on 18 October 2012 between Central Valley Water Board staff and the Discharger it was discussed that LFG was detected in multiple locations across LF-1 and not just at GP-14. In a letter dated 3 December 2012 Central Valley Water Board staff requested that corrective action

address LFG throughout LF-1 and for the Discharger to prepare an addendum to the work plan by 31 January 2013.

48. In a letter report dated 15 November 2012, the Discharger submitted a first phase *Evaluation of the Integrity of the Subsurface Pipelines and Paved Surfaces* at LF-1. The intent of the survey was to identify any broken or leaking pipes that could allow water to infiltrate into the waste mass of LF-1. The evaluation of the pipelines and paved surfaces was conducted over two phases and was completed by the Discharger on 29 January 2013. The pipeline survey indicated that multiple storm water pipes and sewers lines installed within the cover of LF-1 were broken or leaking, and susceptible to settlement of the underlying waste mass. The report also identified numerous areas of the LF-1 cover that had settled, allowing for water to pond and infiltrate into the waste mass. Based on these findings, the 15 November 2012 report included several recommendations, including completing the pipeline video survey, repairing damaged pipes, periodically inspecting the pipelines, filling low area where ponding can occur, repaving damaged pavement, constructing drainage swales, and inspecting the landfill surface and making repairs. In response to Central Valley Water Board staff's request, the Discharger submitted monthly status reports which indicated that repairs to the storm water and sewer pipelines along with areas of settlement within the cover of LF-1 would be conducted during the 2013 construction season.
49. Central Valley Water Board staff conducted an inspection of the facility on 30 November 2012 as mentioned earlier in Finding 16. During this inspection multiple water quality issues were identified as a result of ongoing operations on top of the final cover of WMU LF-1. Central Valley Water Board staff observed ponding of storm water on the earthen cover of LF-1, ponding of storm water on paved surfaces in the vicinity of the MRF, sediment laden runoff from the composting area discharging to the Big Pond, tire marks and ruts in the compost on the compost pad, and leachate formation in the compost area. Central Valley Water Board staff collected samples of storm water discharging from the composting operation and determined through laboratory analysis that these discharges could affect beneficial uses of surface water and groundwater.
50. In a letter report dated 31 January 2013, the Discharger submitted the Addendum to the Work Plan requested by Central Valley Water Board staff in Finding 43 above. The addendum proposed to expand the LFG system into LF-1 with five LFG extraction wells. The wells would be installed approximately 100 feet inside the eastern site boundary of LF-1 and are being located to address LFG in the vicinity of GP-14 and the site boundary. The installation and operation of the system would be completed by 30 September 2013. Central Valley Water Board staff approved the proposed scope of work and requested design details in a letter dated 12 February 2013. Since installation and operation of the five landfill gas extraction wells targeting exceedances of methane in GP-14, methane has not been detected in GP-14 since November 2013.
51. On 29 August 2013 Central Valley Water Board staff issued a Cleanup and Abatement Order (CAO) R5-2013-0704 ("CAO") requiring the Discharger to address landfill gas and leachate releases from WMU LF-1.

52. Title 27 section 20425(d)(3) states that where the release likely involves landfill gas the Regional Water Board “*shall coordinate, as appropriate, with the EA and (as appropriate) the CIWMB in developing those aspects of the corrective action program involving the design, installation, and operation of the landfill-gas control and monitoring systems at the Unit, such that the resulting gas control program satisfies the needs of all agencies concerned.*” Since the Discharger contends that landfill gas being generated in LF-1 is the source of groundwater contamination the Central Valley Regional Water Board has the regulatory authority to require the discharger to manage landfill gas within LF-1 to correct the identified source of groundwater contamination. Therefore, as described in this section above, the Discharger must take additional steps to remove landfill gas from within unit LF-1 to prevent groundwater impacts. To date, the Discharger has verified the presence of landfill gas within portions of LF-1 using temporary vapor probes, which only allow for a one-time sampling of the landfill gas within the unit. However, they are not designed for long-term monitoring. The CAO required the Discharger to (a) install a new gas monitoring network for LF-1, (b) after installation of the five LFG extraction wells described in this section above, evaluate whether or not the existing LFG extraction system removes sufficient gas to prevent further groundwater degradation, and (c) if not, propose either an expansion of the LFG extraction system or active groundwater remediation.
53. On 30 December 2014, the Discharger submitted a Landfill Gas Extraction Report as required by CAO Order #14 in which the Discharger concluded that the current LFG extraction system is effectively capturing LFG throughout LF-1 and that “*no expansion of the LFG extraction system or active groundwater remediation is proposed or warranted.*” Although the report clearly showed that the five extraction wells were effective in reducing LFG concentrations below the 5% limit required by CalRecycle at the perimeter of a landfill property boundary, the ground water monitoring data continues to show that VOCs and bicarbonate alkalinity concentrations exceed the concentration limits set forth by the Discharger's Water Quality Protection Standard indicating that gas and leachate related groundwater impacts continue at the facility. Furthermore, in the Landfill Gas Extraction Report the Discharger reports oxygen levels in many of its LFG extraction wells at over 1%. Based on the age of the WMUs and the typical four phases exhibited in the life of a WMU once a final closure cover is placed on the Unit LFG concentrations of oxygen in a WMU in phases III or IV should not consistently exhibit more than 1% oxygen levels under anaerobic conditions<sup>2</sup>. The Discharger's report indicates that the Discharger has not been operating their LFG extraction system effectively in removing LFG especially within LF-1.
54. On 13 May 2015, as a corrective action measure for releases of landfill gas at LF-1 as previously mentioned, the Discharger in a meeting with Central Valley Water Board staff verbally agreed to expand its LFG extraction system in lieu of installing additional gas monitoring probes within the interior area of WMU LF-1. This Order in Provisions H.7 requires that an installation report for the additional LFG extraction wells be submitted. As part of the installation report, this Order requires the Discharger to determine the

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<sup>2</sup> Source: EPA Guidance for Evaluating Landfill Gas Emissions from Closed or Abandoned Facilities (EPA-600/R-05/123a)

current unsaturated zone monitoring system's ability to evaluate the effectiveness of the proposed expanded LFG extraction system within the interior area of LF-1 to correlate improvements in groundwater quality due to the proposed LFG extraction system expansion as required per Title 27 section 20415(d)(2)(D). This Order in Provisions H.7 also requires an effectiveness evaluation report of the LFG extraction system to be submitted after the expanded LFG extraction system has operated for a year.

### **GROUNDWATER DETECTION MONITORING SYSTEM**

55. At the time this Order was adopted, the Discharger's detection monitoring program for groundwater at the landfill **did not** satisfy the requirements contained in Title 27. Title 27 section 20415(b)(1)(B)(1) requires a detection monitoring program to have "*a sufficient number of Monitoring Points (as defined in §20164) installed at appropriate locations and depths to yield ground water samples from the uppermost aquifer that represent the quality of ground water passing the Point of Compliance and to allow for the detection of a release from the Unit.*" Title 27 section 20405 defines a Point of Compliance as "*a vertical surface located at the hydraulically downgradient limit of the Unit that extends through the uppermost aquifer underlying the Unit.*"
56. The Discharger in its historical groundwater elevation contour maps but most recently in its 2014 second semiannual MRP Report provided a *Groundwater Elevation Contour Map* dated December 2014 which shows points of compliance at groundwater monitoring wells MW-2, -2R, -3, -4, -8, -11, and -12 in the detection monitoring program as not being "hydraulically downgradient" to the WMUs. The *Groundwater Elevation Contour Map* shows these points of compliance as hydraulically side gradient to the WMUs. These WDRs in Provisions H.7 require the Discharger to provide a Workplan that describes how the Discharger will comply with Title 27 requirements by establishing a sufficient number of Points of Compliance within the DMP that are hydraulically downgradient of the WMUs.

### **UPDATES TO OPERATIONS AND MAINTENANCE PLANS**

57. The Discharger in response to several NOV's issued since 2011 and the CAO has submitted post-closure operations and maintenance (O&M) plans for maintaining the integrity of the closure cover over LF-1 while continuing current operations over the closed WMU. These revised WDRS incorporate the provisions of the submitted postclosure O&M plans so long as the approved postclosure O&M plans are effective in providing correction action. These WDRs in Provisions H.7 require the Discharger to consolidate all previously submitted approved O&M plans in response to a NOV or CAO into a Consolidated Post Closure O&M Plan where the O&M for the entire facility is addressed to ensure that the entire Facility is operated and maintained throughout the entire post closure period.

## **IMPLEMENTATION OF REGULATIONS THROUGH ISSUANCE OF WDRs**

58. 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.
59. 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 (SPRRs) dated January 2012 which is part of this Order. Monitoring and reporting requirements are included in the Monitoring and Reporting Program (MRP) R5-2015-0106 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.
60. 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**

61. California Code of Regulations, Title 27, sections 20200 through 20230 establishes a waste classification system. Wastes covered under California Code of Regulations, Title 27 are classified as either inert, nonhazardous solid, or designated. Inert wastes pose minimal risk to water quality, nonhazardous solid wastes present a greater risk than inert wastes, and designated wastes pose the greatest risk to water quality. Allowable compostable materials per this Order meet the definition of nonhazardous solid waste under California Code of Regulations, Title 27, section 20220, subdivision (a).
62. California Code of Regulations, Title 27, section 20200, subdivision (a)(1) allows a finding to be made that, "...a particular waste constituent or combination of constituents presents a lower risk of water quality degradation than indicated by classification



according to this article." Therefore, to the extent that a particular compostable material could be characterized as designated waste, such material shall be regulated as a nonhazardous solid waste pursuant to California Code of Regulations, Title 27, section 20200, subdivision (a)(1) because the compostable material presents a lower risk to water quality than typical designated wastes when managed as required by this Order.

63. The Discharger proposes to continue composting operations above closed unlined Class III landfill unit LF-1. The composting operation discharges nonhazardous solid waste in the form of compost leachate, originating from composting feedstock material limited to green material, food material, and agricultural material as further described in the Facility Specifications and Prohibitions of these WDRs. These classified wastes may be discharged only in accordance with Title 27, Resolution 93-62, and Subtitle D as required by this Order.
64. Active unlined landfill units are "existing units" under Title 27 that were permitted before 27 November 1984 and may continue to accept waste in the "Existing Footprint" until ready for closure unless waste receipts do not meet the timeframes and amounts in Title 27, section 21110, or they are required to close sooner to address environmental impacts or other regulatory concerns. The "Existing Footprint" as defined in Title 27, section 20164 is the area that was covered by waste as of the date that the landfill unit became subject to Subtitle D. There are no active unlined units at the RYS Landfill facility. The existing footprint for the closed unlined WMU LF-1 of the landfill facility is shown on Attachment B.
65. The landfills, into which municipal solid wastes and agricultural wastes were placed by area fill method, are described as follows:
  - a. **LF-1 (South Area)** - This landfill covers about 42 acres in the south and west central area of the facility. Wastes were placed in this unlined area from 1967 through 1984, after which it was closed in accordance with regulations that existed at the time. The Discharger's EFS 2012 Report approximated the base of waste in LF-1 at 65-feet MSL. Therefore, no engineered final closure cover was placed over LF-1. The LF-1 cover consists of a soil layer. However, much of this soil layer cover has since been covered by building structures and paved parking, and is graded to drain toward an on-site storm water collection and removal system. In support of ongoing operations above LF-1, the Discharger has installed a sewer and storm water collection system, and water supply system within the soil layer. Furthermore, the Discharger has installed a levelling system on structure(s) within LF-1 to compensate for settling due to waste decomposition and consolidation. The remaining area is used for composting operations and as described in previous findings. This area has been covered with an engineered low permeability aggregate base layer with a minimum thickness of six inches, a maximum permeability or  $1 \times 10^{-6}$  cm/sec, and a minimum 3% positive slope to drain. There is no leachate collection and removal system (LCRS) in LF-1.

- b. **LF-2 (Peach Orchard)** - This landfill covers about 25 acres in the central area of the facility. This unit was constructed with a clay liner and a small portion of the total area has a gravel blanket LCRS that drains towards an interior sump. Wastes were accepted in this area from 1984 through 1988. A final cover system, consisting of two feet of foundation soil, a one foot thick low-permeable soil layer with permeability of  $1 \times 10^{-6}$  cm/sec or less, and a one foot thick vegetative layer was constructed in 1995.
- c. **LF-3 (North Area)** - This landfill covers about 38 acres in the north and east central area of the facility. This area accepted waste between 1988 and 1996. The Discharger's EFS 2012 Report approximated the base of waste in LF-3 at 70-foot MSL. Phases I and II were constructed in 1989 and are lined with a single 60-mil high density polyethylene (HDPE) geomembrane on a prepared subgrade. Title 27 CCR Section 20240(c) requires five feet of separation between wastes and the highest groundwater level. Water is first encountered about three feet below the waste under LF-3. Therefore, on 3 April 1989, the Discharger requested approval of an engineered alternative. The engineered alternative, which allows a three-foot separation between wastes and groundwater consisting of a HDPE liner was approved by the Regional Board in Order No. 89-091, adopted 26 May 1989. Therefore, phase III was constructed with a composite liner system consisting of a one foot thick low-permeability soil layer with  $1 \times 10^{-6}$  cm/sec permeability or less overlain by a 60-mil HDPE flexible membrane liner and LCRS, followed by a one foot operations layer. Phase IV was constructed with a composite liner system consisting of a two foot thick low-permeability soil layer with a permeability of  $1 \times 10^{-7}$  cm/sec or less overlain by a 60-mil HDPE flexible membrane liner and LCRS, followed by a one foot operations layer. Leachate is extracted via submersible pumps and disposed of via a sewer line to the City of Marysville Wastewater Treatment Plant.

An engineered alternative for closure of the top deck, as described in the *Final Report* dated 24 November 1997 for LF-3's closure cap, consists of the following (from bottom to top): compacted soil subgrade; arterial gas collection piping system with 1-½ inch drain gravel; 6-inch gas collection sand layer; geosynthetic clay liner (GCL) with 40-mil HDPE textured geomembrane backing; 7 ounces per square yard (oz/sy) geotextile cushion fabric; and 1 foot vegetative soil cover. The side slope sections consists of the following: compacted soil subgrade; 6-inch gas collection sand layer; 40-mil textured HDPE geomembrane; 7 oz/sy geotextile cushion fabric along the toe of the slope; 1 ½ inch drain gravel placed at the toe of the slope; geocomposite drain net; and 1 foot thick vegetative soil cover. The Regional Board approved this engineered alternative in WDRs Order No. 97-250.

66. A summary of the existing closed landfill units regulated by this Order are described as follows:

<u>Unit</u>	<u>Area</u>	<u>Liner/LCRS<sup>1</sup> Components</u>	<u>Unit Classification &amp; Status</u>
LF-1	42 acres	Unlined	Pre-1984 regulations, Class III, closed. Operated from 1967 through 1984
LF-2	25 acres	Predominantly clay liner with small portion having gravel blanket LCRS sloped towards an interior sump.	Pre-Subtitle D, Class III, closed. Operated from 1984 through 1988
LF-3	38 acres	Phases I and II lined with single 60-mil high density polyethylene (HDPE) geomembrane on prepared subgrade. Phase III liner consists of one-foot maximum $1 \times 10^{-6}$ cm/sec low permeability barrier soil overlain with 60-mil HDPE geomembrane, LCRS, and one-foot operations layer. Phase IV liner consists of two-foot maximum $1 \times 10^{-7}$ cm/sec low permeability barrier soil overlain with 60-mil HDPE geomembrane, LCRS, and one-foot operations layer.	Pre-Subtitle D (Phases I and II). Post-Subtitle D (Phases III and IV). Class III, closed. Operated from 1988 through 1996.

<sup>1</sup> LCRS – Leachate collection and removal system

67. Leachate collected in the LCRS of WMUs LF-2 and LF-3 is stored in above ground storage tanks and periodically transferred to tanker trucks where it is disposed into the sanitary sewer manhole on site, or at the City of Marysville Wastewater Treatment Plant. The Discharger reported through its annual MRP the following leachate volumes removed in gallons from WMUs LF-2 and LF-3:

WMU	2006	2007	2008	2009	2010	2011	2012	2013	2014
LF-2	NR <sup>1</sup>	NR	NR	NR	NR	NR	NR	NR	4,800
LF-3	201,000	276,000	206,200	220,800	202,300	385,500	257,700	385,300	154,800

<sup>1</sup> Not Reported

The Discharger's MRP from 2005 through 2014 characterizing the landfill leachate collected in LCRS sumps S-1 through S-5 as follows:

Leachate sumps S-1 through S-5 (Composite Results)						
Leachate Parameter	Units	# Samples	# ND/Trace	Mean	Range	Std. Dev
pH	Std. Units	79	0	6.81	4.94-7.98	0.40
Specific Conductance	umhos/cm	79	0	6918	2430-12400	1603
Calcium, dissolved	mg/l	76	0	170	23-320	82
Magnesium, dissolved	mg/l	76	0	224	20-360	85
Sodium, dissolved	mg/l	76	0	632	92-1000	188
Potassium, dissolved	mg/l	76	0	249	50-690	157
Alkalinity, bicarbonate	mg/l	76	0	1824	0-4300	786
Alkalinity, carbonate	mg/l	17	0	1986	870-4300	811
Chloride	mg/l	76	0	1297	87-1800	378
Nitrate/Nitrite as N	mg/l	76	24	8	0-150	27
Sulfate	mg/l	76	18	63	0-510	129
TDS	mg/l	76	5	3761	100-8200	1491
Benzene	µg/l	76	8	2.16	0-7.7	1.43
Chlorobenzene	µg/l	76	27	0.63	0-11	1.30
Chloroethane	µg/l	76	24	0.46	0-6.3	0.94
1,2-Dichlorobenzene	µg/l	76	48	0.10	0-0.29	0.09
1,4-Dichlorobenzene	µg/l	76	3	5.60	0-17	3.42
1,1-Dichloroethane	µg/l	76	36	0.47	0-2.2	0.54
1,2-Dichloroethane	µg/l	76	22	0.14	0-1.3	0.28
cis-1,2-Dichloroethene	µg/l	76	32	0.19	0-1.6	0.34
Ethylbenzene	µg/l	76	37	0.62	0-7.5	1.41
Styrene	µg/l	76	10	0.01	0-0.22	0.04
Toluene	µg/l	76	30	3.34	0-140	16.65
Vinyl chloride	µg/l	76	24	0.37	0-1.9	0.44
Total Xylenes	µg/l	4	0	1.46	0.64-2.3	0.71
Acetone	µg/l	76	7	788	0-16,000	2978
2-Hexanone	µg/l	76	3	20.05	0-530	80.62
2-Butanone	µg/l	76	13	421.5	0-12,000	1609

68. The laboratory results indicate leachate removed from the WMUs poses a threat to surface and ground water beneficial uses. Central Valley Water Board finds that consistent with Title 27 section 20950(a)(2)(A)(1), final closure covers on WMUs LF-1, LF-2, and LF-3 constitutes the WMU's principle waste containment facility. These revised WDRs require the Discharger to control all postclosure uses above the closure covers and operate and maintain the closure covers such that the production of leachate and gas within the WMUs is minimized.

## GENERAL SITE DESCRIPTION

69. On-site facilities at the Recology Yuba-Sutter landfill include: three closed Class III WMUs, a composting facility, a material recycling facility (MRF), an administration office, an equipment maintenance area, an active landfill gas extraction system, a landfill gas flare, and an open space area known as the Hog Farm area.
70. The Hog Farm area is located between WMU units LF-2 and LF-3. The Discharger has never used this area for discharge of municipal solid waste. Storm water that drains to the Hog Farm area is discharged through a discharge culvert with a manually-operated gate valve to the Yuba River 100-year floodplain. The Hog Farm area is protected from a flood with a 100-year return period by a flood control levee permitted by the Central Valley Flood Control Board and closure of the gate. The Discharger has proposed installation of above ground storage tank(s) for containment of compost wastewater in the Hog Farm area. These WDRs permit the construction and operation of above ground storage tank(s) in this area so long as the above ground storage tank(s) meet the exemption requirements of Title 27 section 20090(i), the above ground storage tank(s) are protected from a 100-year return period flood, and the Discharger complies with all permitting requirements from other agencies with which approval must be granted.
71. Land within 1,000 feet of the site is primarily agricultural and residential. There is an abandoned landfill adjacent to the south/southwest edge of the facility that was once separately owned, but currently non-operational.
72. There is one water supply well located at the facility as shown on Attachment C. The ROWD submitted by the Discharger did not include any additional information regarding municipal, domestic, industrial, or agricultural groundwater supply wells within one mile of the facility as required by Title 27 section 21750(h)(1). These WDRs in Provisions H.7 require the Discharger to provide additional information regarding wells surrounding the facility.
73. The site is underlain by the Victor Formation consisting of about 500 feet of consolidated and unconsolidated sand, clay, silt and gravel. These sediments generally have moderate permeabilities with locally high permeabilities in the sand and gravel lenses.
74. Based on a site-specific seismic analysis, the controlling maximum probable earthquake (MPE) for the site is a moment of magnitude 5.7 event along the Sierran Foothills fault system at a closest rupture distance of 29 kilometers (18 miles) from the site. It is estimated that a MPE event would produce a peak ground acceleration of 0.20g at the site.
75. The site receives an average of 21 inches of precipitation per year (Western Regional Climate Center, 1897 - 2007). The mean evaporation for this facility is 55.63 inches per year (State of California, Department of Water Resources, recorded at the Marysville Station, 1949 - 1953).

76. The 100-year, 24-hour precipitation (duration) event for the site is 5.82 inches (National Oceanic and Atmospheric Administration (NOAA) Atlas 14, Volume 6, Version 2). The 25-year 24-hour duration rainfall event is 3.16 inches and the 25-year return period annual rainfall is 32.48 inches (Department of Water Resources, Marysville Station).
77. The waste management facility is within a 100-year flood plain based on the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map, Community-Panel Number 06115C0345D (February 2011). The FEMA flood map estimates flow of a 100-year flood to reach 82-84 feet MSL elevation at the facility. The Discharger reports that the approximate base of waste in the WMUs to range from 65-70 feet MSL. Subtitle D (40 C.F.R. section 258.11) requires the Discharger to demonstrate that any new or existing MSW landfill located in 100-year floodplain does not (1) restrict the flow of a 100-year flood, (2) reduce the temporary water storage capacity of the floodplain, or (3) result in washout of solid waste so as to pose a hazard to human health and the environment. Finding 13 of WDRs Order 89-091 found that *"levees and berms constructed to elevations above the 100-year flood level will prevent inundation or washout of waste management units due to floods with a 100-year return period. Berm construction will be done as filling proceeds from module to module and will be documented to the Board as construction proceeds."* WDRs Order 94-305 required the Discharger to submit a report by 1 April 1995 specifying that the landfill meets the Subtitle D restrictions applicable to floodplains. The Discharger certified in an engineering report dated 27 January 1995 that the facility is protected from flows from a 100-year flood by a perimeter flood control levee. Central Valley Regional Board staff approved the submittal on 9 February 1995. Title 27 section 21750(d)(2) alludes to the Discharger having to operate and maintain the flood protection structures if such structures are relied upon to comply with flood protection requirements. These WDRs in Provisions H.7 require the Discharger to provide a postclosure maintenance plan and annual cost estimate including financial assurances that demonstrates that the flood protection structures are maintained such that waste placed in the closed WMUs continues to not pose a hazard to human health and the environment due to inundation or washout.
78. The facility is also regulated under the State Water Resources Control Board's Water Quality Order 2014-0057-DWQ, the Statewide Industrial Storm Water General Permit (General Permit). General Permit requirements are based, in part, on the Standard Industrial Classification (SIC) Code for the industrial activity. In response to the CAO R5-2013-0704 Order #1 the Discharger has determined the current activities conducted at the facility that are subject to the General Permit include SIC Codes 2875-fertilizers, 4953-refuse, 5093-scrap metal, and 4212-trucking. However, the Discharger has indicated prior to adoption of these WDRs that the types of operations at the Facility may change over time and that the SIC codes identified above may be removed or replaced with other types of operations.
79. Storm water sedimentation basins are located south of the landfill as shown on Attachment B. The basins detain storm water for sedimentation control during the rainy

season and are normally dry during the summer months. The sedimentation basins discharge to Yuba River.

### **COMPOST OPERATIONS SITE DESCRIPTION**

80. The compost operation located on the eastern portion of closed landfill unit LF-1 covers approximately 16 acres. The compost operation is permitted by the County to accept a maximum of 400 tons per day of green material and food material for processing with a 40,000 ton capacity of materials on-site at any one time. The 11.6 acre compost pad consists of a minimum 6-inch thick, low-permeability aggregate graded to a minimum of three percent to promote positive drainage. The pad is protected from run-on and run-off by berms on the north and west edges and a portion of the south and east edges of the site.
81. Surface water and storm water that comes into contact with compost is managed as leachate (compost wastewater). Currently, the northern portion of the compost pad is graded to drain north and is bounded by a berm that directs compost wastewater north through a series of 6-inch diameter PVC culverts to an 18-inch HDPE corrugated plastic conveyance pipe that discharges the compost wastewater east into two vaults. Compost wastewater within the vaults is pumped to storage tanks for reuse as compost make-up water or pumped to an on-site sanitary sewer manhole where it flows by gravity to the City of Marysville WWTP. The southern portion of the compost pad is graded to drain to the southwest and is bounded by a berm that directs leachate to two sumps. Compost collected within the sumps is pumped to storage tanks for reuse as compost make-up water or, as stated above, it is pumped to an on-site sanitary sewer manhole where it flows by gravity to the City of Marysville WWTP. Due to two compost wastewater overflow events in December 2014, this Order in Provisions H.7 requires the Discharger to comprehensively evaluate its Compost Wastewater Management Plan to ensure that its compost wastewater collection, distribution, storage, and disposal system is capable of containing the waste under all conditions that can be reasonably predicted for the specified design parameters in Finding 82.
82. As presented above, the annual average precipitation for the RYS landfill facility is 21 inches. The estimated maximum annual precipitation for a wet season (15 October through 15 May) with a 25-year return period is 32.48 inches. The 25-year 24-hour duration storm event is estimated to be 3.16 inches. This Order requires that for the 2015-2016 wet season, the compost wastewater management system must be designed, constructed, operated, and maintained to contain waste from the compost area for all storm events with duration up to and including a 25-year, 24-hour duration storm event. As of 1 October 2016, this Order requires that the compost wastewater management system be designed, constructed, operated, and maintained to contain all compost wastewater as described in Title 27 section 20375(a) and 20375(b) according to an approved Operation Plan.

## **SURFACE WATER AND GROUNDWATER CONDITIONS**

83. 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.
84. Surface water drainage from the site is to the Yuba River, which is tributary to the Feather River, which is tributary to the Sacramento River, which flows into the Sacramento-San Joaquin Delta.
85. The designated beneficial uses of the Yuba River, as specified in the Basin Plan, are municipal and domestic supply, agricultural irrigation supply, stock watering, hydroelectric power generation, recreation, freshwater habitat, fish migration and spawning, wildlife habitats, groundwater recharge, fresh water replenishment, preservation of rare and endangered species, and aesthetic enjoyment.
86. The depth to groundwater measured in groundwater monitoring wells ranges from about 12 feet to 43 feet below the top of well casings. Groundwater elevations have ranged historically (1996 through 2014) from about 49 feet MSL to 67 feet MSL.
87. Monitoring data between 2005 through 2014 indicate background groundwater quality for first encountered groundwater has electrical conductivity (EC) ranging between 312 and 544 micromhos/cm, with total dissolved solids (TDS) ranging between 180 and 430 milligrams per liter (mg/L).
88. The Discharger reports the direction of groundwater flow as generally toward the south-southwest. The estimated average groundwater gradient is approximately 0.002 feet per foot in the area of LF-1 and LF-2 and 0.001 feet per foot in the area of LF-3. The estimated average groundwater velocity is 58 feet per year in the area of LF-1 and LF-2 and 24 feet/year in the area of LF-3.
89. 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**

90. The existing groundwater monitoring network for the landfill units consists of background monitoring wells MW-5, -6, and -7, and detection monitoring wells MW-1,-1R, -2, -2R, -3, -4, -8, -9, -10, -11, -12, -13, and -15. The detection monitoring wells that are in corrective action due to water quality impacts from a measurable release are MW-1R, -2R, -3, -4, -8, -10, -11, -12, and -15. Detection monitoring wells MW-1 and MW-2 have been replaced by MW-1R and MW-2R. Once the Discharger destroys MW-1 and MW-2, these wells will no longer be considered part of the Discharger's groundwater monitoring system. These WDRs in Provisions H.7 require the Discharger to provide a report to document the destruction of detection monitoring wells MW-1 and MW-2 in accordance with local enforcement agency requirements and California Well Standards published by



Department of Water Resources (DWR) in Bulletin 74-81 and supplemented by Bulletin 74-90 Part III.

91. Background groundwater quality reported by the Discharger between 2005 through 2014 is summarized in the table below:

Composite Results of Background Monitoring Wells MW-5 through MW-7						
Monitoring Parameter	Units	# Samples	# ND/Trace	Mean	Range	Std. Dev
pH	Std. Units	60	0	7.1	6.4-7.55	0.26
Specific Conductance	umhos/cm	60	0	433	312-544	72
Calcium, dissolved	mg/l	57	0	36	22-51	9
Magnesium, dissolved	mg/l	57	0	26	14-36	7
Sodium, dissolved	mg/l	57	0	17	12-25	4
Potassium, dissolved	mg/l	57	0	1	0-2	0.5
Alkalinity, bicarbonate	mg/l	57	0	162	120-190	22
Alkalinity, carbonate	mg/l	18	0	162	120-190	22
Chloride	mg/l	57	0	13	6-19	3
Nitrate/Nitrite as N	mg/l	56	0	1	0-3.1	0.5
Sulfate	mg/l	57	0	43	7-77	16
TDS	mg/l	57	9	317	180-430	55
Volatile Organic Compounds	µg/l	Not detected since 2 <sup>nd</sup> quarter 2008				

92. Based on water quality characteristics in background groundwater monitoring wells, Central Valley Water Board finds that groundwater at the facility is high quality water as defined by State Water Resources Control Board Resolution No. 68-16 *Statement of Policy With Respect to Maintaining High Quality Of Waters In California* (Antidegradation Policy) and must be protected accordingly. No further degradation is allowed, and operation of the facility in accordance with the WDRs will improve groundwater quality.
93. At the time this Order was adopted, the Discharger’s detection monitoring program for groundwater at the landfill **did not** satisfy the requirements contained in Title 27. Title 27 section 20415(b)(1)(B)(1) requires a detection monitoring program to have “a sufficient number of Monitoring Points (as defined in §20164) installed at appropriate locations and depths to yield ground water samples from the uppermost aquifer that represent the quality of ground water passing the Point of Compliance and to allow for the detection of a release from the Unit.” Title 27 section 20405 defines a Point of Compliance as “a vertical surface located at the hydraulically downgradient limit of the Unit that extends through the uppermost aquifer underlying the Unit.” The Discharger in its historical groundwater elevation contour maps but most recently in its 2014 second semiannual MRP Report provided a *Groundwater Elevation Contour Map* dated December 2014 which shows points of compliance at groundwater monitoring wells MW-2, -2R, -3, -4, -8, -11, and -12 in the detection monitoring program as not being “hydraulically

downgradient” to the WMUs. The *Groundwater Elevation Contour Map* shows these points of compliance as hydraulically side gradient to the WMUs. These WDRs in Provisions H.7 require the Discharger to provide a Workplan that describes how the Discharger will comply with Title 27 requirements by establishing a sufficient number of Points of Compliance within the DMP that are hydraulically downgradient of the WMU.

94. Some of the groundwater monitoring wells are over 30 years old and no longer meet the performance standards outlined in Title 27, section 20415(b)(4)(B) which states: “*The sampling interval of each monitoring well shall be appropriately screened and fitted with an appropriate filter pack to enable collection of representative samples*”. A review of the well construction logs for MW-1 and MW-2 finds that these wells were constructed with hand cut screens and that the screen interval does not intersect the water table. The CAO required the Discharger to install new wells adjacent to MW-1 and MW-2, with factory uniform screen slot size and installed at an elevation that continuously intersects the water table. The Discharger installed MW-1R and MW-2R in response to the 2013 CAO. Central Valley Water Board staff performed a complete review of well screen locations in groundwater monitoring wells based on the Discharger’s 2014 Second Semiannual and Annual Monitoring Report and found that wells screens at groundwater monitoring wells MW-4, MW-5, MW-6, MW-7, MW-8, MW-9, MW-10, and MW-13 are completely submerged and do not intersect the water table. The Discharger has stated in the past that it is inappropriate to place well screens that span the water table since the static water elevation is higher due to confined aquifer conditions. However, a review of the well borehole logs for the wells listed above shows that in all the wells except MW-4 the first encountered water level in these wells was always higher than the static water level. This is an indication of an unconfined aquifer condition. Also, the well completion logs show that in all instances, the Discharger installed the well screens below the static water level. Thirdly, the hydrographs for each well indicates that if the Discharger had installed the wells screens at the static water table the Discharger would have spanned the water table including changes in groundwater elevation due to seasonal fluctuations. Finally, review of Table 4 of the Discharger’s 2014 Second Semiannual MRP Report indicates that concentrations of VOCs such as chlorobenzene and 1,4-dichlorobenzene is attenuated in MW-1 and MW-2 due to submerged screens. The wells screens in MW-1R and MW-2R were installed to intersect the water table and provide a more representative sample of groundwater quality. In those monitoring wells chlorobenzene and 1,4-dichlorobenzene were reported above the Reporting Limit (RL). In MW-1 and MW-2 these constituents were reported lower or at trace levels (above the method detection level). Therefore, these WDRs in Provisions H.7 require the Discharger to determine if submerged well screens will provide representative samples in upgradient wells MW-5, MW-6, and MW-7 as well as best assurance of the earliest possible detection of a release and representative samples in monitoring wells MW-4, MW-8, MW-9, MW-10, and MW-13 as required by Title 27 section 20415(b)(1)(B)(3).
95. 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) 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.

96. 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.
97. 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) [aka 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.
98. For a naturally occurring constituent of concern, 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).
99. The Discharger submitted a Water Quality Protection Standard (WQPS) report at the time of adoption of WDR Order R5-2003-0093 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 tolerance limits for the monitored constituents. The WQPS and approved data evaluation methods are included in MRP R5-2015-0106. The WQPS is over 10 years old and needs to be revised to include additional monitoring points and/or revisions that have occurred since the last WQPS was submitted. These WDRs in Provisions H.7

require the Discharger to submit a revised WQPS which includes an updated Sampling and Analysis Plan including all additional monitoring points and/or changes to the Water Quality Monitoring Program.

### GROUNDWATER DEGRADATION AND CORRECTIVE ACTION

100. Previous findings provide information regarding groundwater degradation and ongoing corrective action activities. The table below summarizes the number of VOC detections that have occurred in detection/corrective action wells since 2005:

		# VOC Detects by monitoring well per year <sup>1</sup>									
WMU	Monitoring Well	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
LF-1	MW-1	14	8	12	6	7	9	14	12	12	7
LF-1	MW-2	26	25	25	12	16	20	20	24	18	12
LF-1	MW-10	12	10	4	2	3	4	4	5	4	4
LF-1	MW-15	-	-	-	-	-	-	-	5	6	7
LF-1	MW-1R	-	-	-	-	-	-	-	-	-	8
LF-1	MW-2R	-	-	-	-	-	-	-	-	-	9
<b>LF-1 Annual Totals</b>		<b>52</b>	<b>43</b>	<b>41</b>	<b>20</b>	<b>26</b>	<b>33</b>	<b>38</b>	<b>46</b>	<b>40</b>	<b>47</b>
LF-2	MW-3	18	11	6	3	3	3	13	8	4	3
LF-2	MW-4	6	2	1	0	1	1	0	0	1	0
<b>LF-2 Annual Totals</b>		<b>24</b>	<b>13</b>	<b>7</b>	<b>3</b>	<b>4</b>	<b>4</b>	<b>13</b>	<b>8</b>	<b>5</b>	<b>3</b>
LF-3	MW-8	8	4	2	0	0	0	0	0	0	0
LF-3	MW-9	6	0	1	0	0	0	0	0	0	0
LF-3	MW-11	6	2	0	0	0	0	0	0	0	0
LF-3	MW-12	7	6	0	0	1	0	1	0	0	0
LF-3	MW-13	5	0	2	0	0	0	0	0	0	0
<b>LF-3 Annual Totals</b>		<b>32</b>	<b>12</b>	<b>5</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>

<sup>1</sup>Source: Discharger's laboratory results submitted to Geotracker database

The groundwater monitoring results show water quality impacts to monitoring wells MW-1, MW-2, MW-10, MW-15, MW-1R and MW-2R at WMU LF-1 where the WMU is a closed unlined Unit with an earthen closure cover and postclosure operations such as a MRF, a vehicle maintenance facility, administrative offices, and composting are occurring. Groundwater monitoring results also show water quality impacts at monitoring well MW-3 associated with WMU LF-2. These WDRs require the Discharger to enhance leachate and landfill gas control systems through corrective action at LF-1 and LF-2 to address VOC impacts to groundwater.

101. Previous findings provide information regarding groundwater degradation and ongoing corrective action activities. The table below summarizes mean values of data from 2010

through 2014 for monitoring parameters as compared to concentration limits established from background water quality. Monitoring results where the mean value of the monitoring parameter exceeds the concentration limit are highlighted in bold and underlined:

Monitoring Parameter	WMU LF-1				WMU LF-2		WMU LF-3				2014 Concentration Limits
	MW-1	MW-2	MW-10	MW-15	MW-3	MW-4	MW-8	MW-11	MW-12	MW-13	
pH (Units)	6.70	6.59	6.63	6.84	6.56	6.81	6.92	6.73	6.91	6.84	<b>6.37 to 7.99</b>
EC (umhos/cm)	<b>662</b>	<b>1021</b>	341	<b>625</b>	325	238	<b>754</b>	507	485	335	<b>520</b>
TDS (mg/L)	<b>430</b>	<b>611</b>	207	<b>403</b>	219	137	<b>494</b>	<b>390</b>	338	258	<b>380</b>
Chloride (mg/L)	<b>30</b>	<b>88</b>	8	<b>24</b>	<u>22</u> <sup>3</sup>	3	8	7	6	5	<b>19</b>
Nitrate as N (mg/L)	0.1	1.3	0.7	0.1	0.2	0.2	1.2	0.4	1.4	<b>2.1</b>	<b>1.8</b>
Sulfate (mg/L)	16	2	11	18	10	0	21	13	40	27	<b>63</b>
Bicarbonate Alkalinity as CaCO3	<b>304</b>	<b>401</b>	124	<b>288</b>	106	97	<b>406</b>	<b>269</b>	190	127	<b>200</b>

The mean value of monitoring parameters exceeds the concentration limits established from background monitoring wells for those monitoring parameters in groundwater monitoring wells MW-1, MW-2, MW-15, MW-3, MW-8, MW-11, and MW-13 indicating that a release has occurred. Exceedances of bicarbonate alkalinity is typically indicative of groundwater water quality impacts due release of landfill gas from the WMU. Title 27 section 20425(d)(3) states that where the release likely involves landfill gas the Regional Water Board “shall coordinate, as appropriate, with the EA and (as appropriate) the CIWMB in developing those aspects of the corrective action program involving the design, installation, and operation of the landfill-gas control and monitoring systems at the Unit, such that the resulting gas control program satisfies the needs of all agencies concerned.” As stated in Finding 54, on 13 May 2015, as a corrective action measure for releases of landfill gas at LF-1 the Discharger in a meeting with Central Valley Water Board staff verbally agreed to expand its LFG extraction system in lieu of installing additional gas monitoring probes within the interior area of WMU LF-1. These WDRs in Provisions H.7. require the Discharger to implement a corrective action program for controlling and monitoring landfill gas within all WMUs where bicarbonate alkalinity exceed the 2014 concentration limits. Exceedances of chloride and TDS are typically indicative of water quality impacts due to leachate releases from the WMU. These WDRs also require the Discharger implement corrective action for leachate impacts to groundwater quality where chloride and TDS exceeds the concentration limits specified in the WQPS.

## CONSTRUCTION AND ENGINEERED ALTERNATIVE

102. On 17 June 1993, the State Water Board adopted Resolution 93-62 implementing a State Policy for the construction, monitoring, and operation of municipal solid waste landfills that is consistent with the federal municipal solid waste regulations promulgated

<sup>3</sup> Although the mean value of chloride during the time period of interest exceeds the 2014 concentration limits the data shows a downward trend where the last five monitoring events were below the concentration limit.

under 40 Code of Federal Regulations section 258 (aka Subtitle D). Resolution 93-62 requires the construction of a specified composite liner system at new municipal solid waste landfills, or expansion areas of existing municipal solid waste 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.

103. 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 would be impractical and would not promote attainment of applicable performance standards. The Discharger must also demonstrate that the proposed engineered alternative 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).
104. 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.
105. Title 27 CCR Section 20240(c) requires five feet of separation between wastes and the highest groundwater level. Water is first encountered about three feet below the waste under LF-3. Therefore, on 3 April 1989, the Discharger requested approval of an engineered alternative. The engineered alternative allows a three-foot separation between wastes and groundwater which was approved by the Regional Board in Order No. 89-091, adopted 26 May 1989.

### **LANDFILL CLOSURE**

106. Title 27, section 21090 provides the minimum prescriptive final cover components for landfills consisting of, in ascending order, the following layers:
  - a. Two-foot soil foundation layer.
  - b. One-foot soil low flow-hydraulic conductivity layer, less than  $1 \times 10^{-6}$  cm/s or equal to the hydraulic conductivity of any bottom liner system.
  - c. Geomembrane layer (this layer is required for composite-lined landfills for equivalency to bottom liner).
  - d. One-foot soil erosion resistant/vegetative layer.
107. The Discharger reported in its June 2012 amended ROWD that WMU LF-1 was closed after it ceased receiving waste in 1984 in accordance with regulations that existed at the time which as stated in a *2001 Results of Field and Engineering Study Proposed YSDI Compost Area* consisted of minimum 2-foot thick soil final closure cover. Above the soil

closure cover additional cover material consists of building structures and paved parking and roadways where the MRF, administrative offices, and vehicle maintenance operations are occurring. In the area where compost operations are occurring, the Discharger has installed a composting pad consisting of a minimum 0.5 foot thick low-permeability aggregate base with hydraulic conductivity of  $1.0 \times 10^{-6}$  cm/s or less with a minimum 3% grade to drain slope.

108. The Discharger reported in its June 2012 amended ROWD that a final closure cover was placed on WMU LF-2 in 1995 consisting of two feet of foundation soil, one foot thick low-permeable soil layer with permeability of  $1.0 \times 10^{-6}$  cm/s or less, and a one foot thick vegetative layer.
109. Title 27 section 20950(a)(1) states that "*If a portion of a Unit was completely closed in accordance with an approved closure plan by November 27, 1984, the cover over the closed portion does not need to be modified to conform to the SWRCB's additional closure requirements in these regulations, unless monitoring data indicate impairment of beneficial uses of groundwater.*" Monitoring data in monitoring well MW-2 associated with WMU LF-1 has indicated impairment of groundwater drinking water beneficial uses due to elevated concentrations of total dissolved solids (currently above secondary Maximum Contaminant Level (MCL) and VOCs detections.
110. Title 27 allows engineered alternative final covers provided the alternative design will provide a correspondingly low flow-through rate throughout the post-closure maintenance period.
111. An engineered alternative for closure of the top deck, as described in the Final Report dated 24 November 1997 for LF-3's closure cap, consisted of the following (from bottom to top): compacted soil subgrade; arterial gas collection piping system with 1 ½ inch drain gravel; 6-inch gas collection sand layer; geosynthetic clay liner (GCL) with 40-mil HDPE textured geomembrane backing; 7 oz/sy geotextile cushion fabric; and 1 foot vegetative soil cover. The side slope sections consists of the following: compacted soil subgrade; 6-inch gas collection sand layer; 40-mil textured HDPE geomembrane; 7 oz/sy geotextile cushion fabric along the toe of the slope; 1 ½ inch drain gravel placed at the toe of the slope; geocomposite drain net; and 1 foot thick vegetative soil cover. The Regional Board approved this engineered alternative in WDRs Order No. 97-250.

### **LANDFILL POST-CLOSURE MAINTENANCE**

112. As required by the CAO the Discharger submitted an updated Post-closure Maintenance (PCM) Plan dated May 2014 for post-closure maintenance of all closed WMUs. The plan includes inspection, maintenance, and monitoring of the landfill during the post-closure maintenance period, and includes a post-closure maintenance cost estimate only associated with the landfill facility. Inspection and maintenance includes amongst other things the condition of the final cover, drainage features, LCRS, groundwater monitoring wells, unsaturated zone monitoring points, access roads, landfill gas system, groundwater corrective action system, and site security. The plan will be implemented

for a minimum period of 15 years or until the waste no longer poses a threat to water quality, whichever is greater. On 8 October 2014, Central Valley Water Board staff approved the 30 May 2014 PCM Plan.

113. Landfill post closure operation and maintenance over LF-1 will be performed under the Southern Area Work Plan as specified in Closure and Post Closure Maintenance section E.4 with any future revisions as approved by Central Valley Water Board staff on 29 April 2014. Post closure operation and maintenance over LF-1, Compost Area, will be performed under the Compost Area Work Plan as specified in Closure and Post Closure Maintenance section E.5 with any future revisions initially approved by Central Valley Water Board staff on 7 May 2014.
114. Once every five years during the post-closure maintenance period, aerial photographic maps of the closed landfill area will be made to identify and evaluate landfill settlement. 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), this Order requires iso-settlement maps to be prepared and submitted every five years beginning in May 2017.
115. The final closure covers will be periodically tested for damage or defects by monitoring surface emissions pursuant to California Code of Regulations, Title 17, section 95471(c) and Title 27, section 21090(a)(4)(A). Defects will be repaired and tested for adequacy based on the closure CQA Plan. The current Postclosure Maintenance Plan does not include periodic inspection of the closure covers for damage or defects via surface emissions or other means approved by Title 27 regulations. These revised WDRs require the Discharger in Provisions H.7 to perform the periodic evaluation of the final covers for damage or defects.

### **FINANCIAL ASSURANCES**

116. Title 27 sections 21820 and 22206 require a cost estimate for landfill closure. All WMUs at the facility are currently closed. Therefore, the Discharger has satisfied the requirement to provide funding for closure of the WMUs and these WDRs omit such future requirement.
117. Title 27 sections 21840 and 22211 require a cost estimate for landfill post-closure maintenance. The Discharger's *May 2014 Updated Post Closure Maintenance Plan (May 2014 Plan)* includes a cost estimate for landfill post-closure maintenance. The current amount of the cost estimate for post-closure maintenance in 2014 dollars is \$4.7 million for 15 years of post-closure maintenance of WMUs LF-1, LF-2, and LF-3. The Discharger has indicated prior to adoption of these WDRs that the May 2014 Plan contained numerous errors and is currently in the process of submitting a revised Post Closure Maintenance Plan for review by all approving agencies. These WDRs in Provisions H.7 allows the Discharger to maintain financial assurances other than \$4.7 million dollars so long as the Discharger's revised Post Closure Maintenance Plan's



revised cost estimates and financial assurances are approved by the appropriate regulatory agencies by the time schedule specified in Provisions H.7.

118. 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.
119. The Discharger submitted a 2014 cost estimate of \$210,291 for corrective action of all known or reasonably foreseeable releases due to a *Non-Water Release Corrective Action Cost Estimate* which was greater than their *Water Release Corrective Action Estimate* of \$155,870. 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 and requires the Discharger to update their financial assurance for corrective action of all known or reasonably foreseeable releases if CalRecycle determines that another value is more appropriate.

### **CEQA AND OTHER CONSIDERATIONS**

120. The action to revise waste discharge requirements for this landfill facility is exempt from 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.
121. A Notice of Determination was filed on 22 October 2012 in accordance with the California Environmental Quality Act (Public Resources Code Section 21000 et seq.) and CEQA guidelines (Title 14, section 15000 et seq.), wherein the City of Marysville certified the final mitigated negative declaration for the compost facility's project to add food material as a permanent feedstock to its composting operation. The Central Valley Water Board considered the Negative Declaration and incorporated mitigation measures from the Negative Declaration into these waste discharge requirements designed to prevent potentially significant impacts to water quality.

122. 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.
- 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.

123. Based on the threat and complexity of the discharge, the facility is determined to be classified 2-B as defined below:

- a. Category 2 threat to water quality, defined as, "Those discharges of waste that could impair the designated beneficial uses of the receiving water, cause short-term violations of water quality objectives, cause secondary drinking water standards to be violated, or cause a nuisance."
- 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."

124. Water Code section 13267(b) provides that: "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 discharge 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.

125. The technical reports required by this Order and the attached Monitoring and Reporting Program R5-2015-0106 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**

126. 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.

127. 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.
128. The Central Valley Water Board, in a public meeting, heard and considered all comments pertaining to the discharge.
129. 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](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 WDR Order R5-2003-0093, Cleanup and Abatement Order R5-2013-0704-01, and MRP Order R5-2014-0830 are rescinded except for purposes of enforcement, and that Recology Yuba-Sutter and Feather River Organics, their 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**

### **GENERAL PROHIBITIONS**

1. The Discharger shall comply with all Standard Prohibitions listed in Section C of the Standard Provisions and Reporting Requirements (SPRRs) dated January 2012 which are attached hereto and made part of this Order by reference.
2. The discharge of solid or liquid waste or leachate (e.g., compost wastewater) other than to a publicly owned treatment works (POTW), either via the on-site POTW connection or by truck transport or, outside of an approved waste containment system at this facility is prohibited.
3. The discharge of solid or liquid waste or leachate (e.g. compost wastewater) to groundwater is prohibited.

4. Discharge of solid or liquid wastes to surface waters is prohibited, except as authorized by an NPDES permit.
5. The discharge shall not cause the release of pollutants or waste constituents in a manner which could cause a condition of nuisance, degradation, contamination, or pollution of groundwater to occur, as indicated by the most appropriate statistical or non-statistical data analysis method and retest method listed in this Order, the Monitoring and Reporting Program, or the Standard Provisions and Reporting Requirements.
6. The discharge shall not cause any increase in the concentration of waste constituents in soil pore gas, soil pore liquid, soil, or other geologic materials outside of the Unit if such waste constituents could migrate to waters of the State — in either the liquid or the gaseous phase — and cause a condition of nuisance, degradation, contamination, or pollution.

#### **PROHIBITIONS APPLYING TO LANDFILL OPERATIONS**

7. 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.
8. The return of landfill leachate recovered from a closed WMU or introduction of liquids into a closed landfill WMU is prohibited.
9. The conductance of operations other than those permitted by these WDRs on closed WMUs that introduce liquids into a closed landfill WMU beyond that which would occur due to natural rainfall conditions on an undisturbed final closure cover is prohibited.
10. The Discharge of liquids from air conditioning units or swamp coolers to a closure cover is prohibited.

#### **PROHIBITIONS APPLYING TO COMPOSTING OPERATIONS**

11. The construction of an in-ground compost wastewater detention pond over a closed WMU is prohibited. The construction of any future in-ground compost wastewater detention pond is prohibited unless an amended ROWD is submitted and these WDRs are revised.
12. The Discharger is prohibited from introducing feedstock or additives for composting operations other than composting feedstock permitted by the Local Enforcement Agency (LEA). Currently, the solid waste facility permit (Facility Number 58-AA-0015) describes the composting feedstock consisting of source-separated green material, food material, yard trimmings, and similar materials as defined in Title 14 section 17852(a). The Discharger if permitted by the LEA may use manure as a feedstock so long as the manure is limited to 10% by weight of all compostable material on site.

13. Any feedstock, additive, amendment, or compost (active, curing, or final product) stored, processed, or composted outside of the designated composting operation areas is prohibited.
14. Any volume of any feedstock, additive, amendment, or compost (active, curing, or final product) exceeding those specified in this WDR is prohibited.
15. Discharge of any of the following wastes, including importation and storage thereof, at the composting operation is prohibited:
  - a. Animal carcasses;
  - b. Liquid wastes other than those of food origin;
  - c. Medical wastes as defined in the Health and Safety Code, section 117690;
  - d. Radioactive wastes;
  - e. Septage;
  - f. Sludges, including but not limited to sewage sludge, water treatment sludge, and industrial sludge;
  - g. Wastes classified as “designated” as defined in Water Code section 13173;
  - h. Wastes classified as “hazardous” as defined in the California Code of Regulations, Title 22, section 66261.3;
  - i. Wood containing lead-based paint or wood preservatives, or ash from such wood;
  - j. Any feedstock, additive, or amendment other than those specifically described in this Order;
  - k. The use of biosolids as an additive or amendment is prohibited; or
  - l. Discharges of feedstocks, additives, amendments, or wastes to lands not owned, leased, or otherwise controlled by the Discharger for the purposes of composting is prohibited.

## **B. GENERAL 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, 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.

3. The Discharger shall comply with all Standard Discharge Specifications listed in Section D of the SPRRs dated January 2012 which are attached hereto and made part of this Order by reference.
4. The Discharger shall comply with all Standard Facility Specifications listed in Section E of the SPRRs dated January 2012 that are part of this Order.
5. The Discharger shall immediately notify the Regional Board of any flooding, unpermitted discharge of waste off-site, equipment failure, slope failure, or other change in site conditions that could impair the integrity of waste or leachate containment facilities or precipitation and drainage control structures.
6. The Discharger shall maintain in good working order any facility, control system, or monitoring device installed to achieve compliance with the waste discharge requirements.
7. Methane and other landfill gases shall be adequately vented, removed from the Unit, or otherwise controlled to prevent the danger of adverse health effects, nuisance conditions, or the impairment of the beneficial uses of surface water or groundwater due to migration through the unsaturated zone.
8. All wells within 500 feet of a waste management unit shall be sealed or abandoned to the satisfaction of the Yuba County Department of Environmental Health prior to the discharge of waste to the unit. A record of the sealing and/or abandonment of such wells shall be sent to the Regional Board and to the State Department of Water Resources.
9. Leachate generation by a landfill unit shall not exceed 85 percent of the design capacity of the sump pump in the LCRS. If leachate generation exceeds this value or if the depth of fluid in an LCRS exceeds the minimum needed for safe pump operation, then the Discharger shall notify the Regional Board in writing within seven days. Notification shall include a timetable for remedial or corrective action necessary to reduce leachate production.
10. All precipitation and drainage control systems including conveyance systems (except compost wastewater containment tanks) shall be designed, constructed, operated, and maintained to accommodate the anticipated volume of precipitation and peak flows from surface runoff up to and including a 100-year, 24-hour precipitation duration event conditions.
11. Surface drainage from storm water shall be contained in conveyance structures, sumps, and detention ponds or be discharged in accordance with applicable storm

water regulations such that infiltration from such structures and ponds does not enter the WMUs nor dilute constituents of concern in downgradient groundwater monitoring wells such that monitoring of groundwater quality in aforementioned wells is no longer representative of actual groundwater conditions at the point of compliance.

12. The Discharger shall maintain a Storm Water Pollution Prevention Plan and Monitoring Program and Reporting Requirements in accordance with State Water Resources Control Board Order No. 2014-0057-DWQ or retain all storm water on-site.
13. Repair of existing closure covers must, at a minimum, comply with the existing approved construction plans or any additional requirements associated with corrective action to prevent liquids from entering the closed WMUs and/or the production of landfill gas within the closed WMUs.
14. Vegetation shall be planted and maintained over each closed landfill unit where postclosure reuse operations do not occur. Vegetation shall be selected to require a minimum of irrigation and maintenance and shall have a rooting depth not in excess of the vegetative layer thickness.
15. Closed landfill units shall be maintained to promote runoff and to prevent ponding.
16. The facility shall have a fully functional weather station capable of measuring rainfall totals and rainfall intensity in hundredths/inch.

#### **GENERAL CLOSURE AND POST-CLOSURE MAINTENANCE SPECIFICATIONS**

17. All WMU's at the landfill facility are closed and shall be maintained under the Discharger's post-closure maintenance plan dated May 2014 and any approved updates/amendments thereafter.
18. The Discharger shall install and maintain an active landfill gas extraction system for the closed landfill units during landfill closure, and landfill gas shall be extracted from closed landfill units until such time that the landfill gas is no longer a threat to water quality as documented by the Discharger and approved by the Executive Officer.
19. The Discharger shall ensure that the vegetative/erosion resistant layer receives necessary seed, binder, and nutrients to establish the vegetation proposed in the final closure plan. The Discharger shall install necessary erosion and sedimentation controls to prevent erosion and sediment in runoff from the closed landfill during the period the vegetation is being established.
20. The Discharger shall comply with all Standard Closure and Post-Closure Specifications listed in Section G and all Standard Construction Specifications that are applicable to closure in Section F of the SPRRs dated January 2012 which are attached hereto and made part of this Order by reference.

## C. WMU LF-1 SPECIFICATIONS

### DISCHARGE SPECIFICATIONS

1. Landfill operations are closed at the facility. WMU LF-1 no longer accepts waste as a closure cover has been installed and the WMU is currently in the postclosure maintenance period. These WDRs prohibit the discharge of liquids, waste, or waste constituents into the closed WMUs.

### COMPOSTING SPECIFICATIONS

2. The compost operation is currently permitted by the County to accept a maximum of 400 tons per day of green material and food material for processing with a 40,000 ton capacity of materials on-site at any one time. Any proposed increases to the volume, character, or location of discharge of composting material at the facility must be submitted to the Central Valley Water Board as an amended ROWD per CWC section 13260(a)(3)(c).
3. Feedstocks and compost (active, curing, or final product) must not cause, threaten to cause, or contribute to conditions of pollution, contamination, or nuisance. These discharges must comply with the applicable Basin Plan requirements.
4. Feedstocks and compost (active, curing, or final product) from a composting operation that are exposed to precipitation or run-on having the potential to either produce contaminated non-process wastewater or leachate (compost wastewater) must be located on containment structures (compost pad) constructed as required by this WDR.
5. The Discharger shall manage its compost wastewater in accordance with specification C.25 and an approved *Compost Wastewater Management Plan* that describes how compost wastewater will be managed to prevent discharge. These WDRs in Provisions H.7 require the Discharger to submit a *Compost Wastewater Management Plan* for Central Valley Water Board staff approval.
6. The Discharger shall treat only compostable waste at the Compost Facility. When treatment is complete, finished compost shall be removed from the Compost Facility to meet the requirements of Specification C.2.
7. Composting operations shall be setback at least 100 feet from the nearest surface water body and/or the nearest water supply well.
8. Areas used for receiving, processing, or storing feedstocks, additives, amendments, or compost (active, curing, or final product) must be designed to limit water quality degradation. Working surfaces and containment structures must be designed, constructed, operated and maintained to: 1) Facilitate drainage and minimize ponding by sloping or crowning pads to reduce infiltration of liquids; 2) Reliably transmit free liquid present during storage, treatment, and processing of materials to a containment



structure to minimize the potential for waste constituents to enter groundwater or surface water; and 3) Prevent conditions that could contribute to, cause, or threaten to cause a condition of contamination, pollution, or nuisance.

9. Working surfaces must be capable of resisting damage from the movement of equipment and weight of piles.
10. The existing compost pad shall consist of a minimum six inch thick low-permeability aggregate base as described in specification C.24. The compost pad shall contain permanent compost pad thickness markers that clearly indicate when the compost pad thickness falls below six inches. Within 30 days of knowledge that the thickness is less than six inches, the Discharger shall rebuild the compost pad with the appropriate low permeability material.
11. Working surfaces must be constructed to allow year round equipment access to feedstocks, additives, amendments, and compost (active, curing, or final product) without damage to the working surfaces and containment structures.
12. To prevent potential impacts to waters of the state, the Discharger must minimize the potential for piles of feedstocks, additives, amendments, or compost (active, curing, or final product) to become over-saturated and generate leachate.
13. Areas used for receiving, processing, or storing feedstocks, additives, amendments, or compost (active, curing, or final product) must be designed, constructed, and maintained to control and manage all run-on, runoff, and precipitation which falls onto or within the compost area boundary.
14. Areas used for receiving, processing, or storing feedstocks, additives, amendments, or compost (active, curing, or final product) must be protected from inundation by surface flows.
15. Between adoption of this Order and 30 September 2016, the Discharger must install, operate, and maintain a compost wastewater containment system in accordance with an approved Compost Wastewater Management Plan that is designed to collect, store, and dispose of all compost leachate (compost wastewater or leachate) from all storm durations up to and including a 25-year 24-hour storm event of 3.16 inches. The Discharger has determined based on site specific conditions that wastewater flows from a 25-year 10-minute duration storm event produces maximum peak flow into the Discharger's compost wastewater collection and distribution system and will satisfy the requirement to collect, store, and dispose of all compost wastewater up to and including a 25-year 24-hour storm event of 3.16 inches. Effective 1 October 2016, the Discharger shall install and operate a compost wastewater containment system designed, constructed, operated, and maintained to contain all compost wastewater as described in Title 27 section 20375(a) and 20375(b) according to an approved Operation Plan. A 2-foot minimum freeboard shall be maintained at all times for open-ended containment systems to prevent overtopping from wave action. Open-ended

containment systems shall provide additional operational storage capacity for precipitation which falls into the open-ended containment system.

16. Solids that accumulate in the compost wastewater containment system, if any, shall be periodically removed and appropriately disposed of in order to maintain minimum freeboard or operational storage requirements.
17. Above ground tanks, if used, must be designed, operated, maintained and monitored in accordance with applicable laws and regulations including specific monitoring requirements specified in MRP R5-2015-0106. If an open-ended above ground tank is used for containment of compost wastewater, the Discharger must maintain a minimum dissolved oxygen concentration in the upper zone ( at least one foot depth) of 1.0 mg/L at all times.
18. Berms must be designed, constructed, and maintained to prevent run-on and run-off from all storms up to and including a 100-year, 24-hour duration storm event at a minimum. Berms must be adequately protected from erosion, and must not cause, threaten to cause, or contribute to conditions resulting in contamination, pollution, or nuisance.
19. Ditches must be properly sloped to prevent ponding and kept free and clear of debris to allow for continuous flow of liquid. Ditches must be adequately protected from erosion, and must not cause, threaten to cause, or contribute to conditions resulting in contamination, pollution, or nuisance. Ditches must be inspected and cleaned out prior to the wet season (15 October through 15 May) every year and maintained during the wet season to ensure that water is conveyed in the ditches as quickly as possible.
20. Drainage ditches used as part of the compost wastewater drainage conveyance system must be designed, constructed, and maintained to convey all precipitation and runoff from all storms up to and including a 100-year, 24-hour duration storm event at a minimum and have a hydraulic conductivity of  $1.0 \times 10^{-5}$  cm/s or less for ditches not over a WMU and  $1.0 \times 10^{-6}$  cm/s or less for ditches directly over a WMU, and be lined with one of the following: 1) Compacted soils, with a minimum thickness of one foot; 2) Asphaltic concrete or Portland cement concrete; or 3) An equivalent engineered alternative approved by the Water Board Executive Officer.
21. Staging or storage of food processing residuals on the ground in any area not equipped with means to prevent leachate infiltration is prohibited.
22. If an in-ground compost leachate detention pond is proposed, the Discharger must submit an amended report of waste discharge by 1 February 2016.

#### **CLOSURE AND POST-CLOSURE MAINTENANCE SPECIFICATIONS**

23. Post closure operation and maintenance over LF-1, Southern Area, shall be performed as described by the Southern Area Work Plan approved by Central Valley Water

Board staff on 29 April 2014 or any approved revisions hereafter. Current post closure maintenance requirements for the Southern Area of LF-1 are:

- a. Existing unpaved areas must have positive drainage (i.e. no sustained ponding of water) off of LF-1 to the appropriate drain inlets.
- b. Existing paved areas must have positive drainage.
- c. Existing gravel areas must have positive drainage and maintain material thickness to prevent wear of the landfill cover.
- d. Drainage features must have positive drainage off of LF-1 and be kept free of debris.
- e. Poorly draining areas must have standing water removed promptly and must be repaired in a timely manner.
- f. Asphaltic-concrete (AC) pavement cannot contain cracks greater than 3/8-inch wide. Cracks greater than 3/8-inch wide must be repaired immediately using bitumous sealant or equivalent according to section 37 of the Caltrans Standard Specifications. Loose materials and debris shall be removed from the cracks prior to sealing.
- g. Reinforced concrete pavement cannot contain cracks greater than 3/8-inch wide. Cracks greater than 3/8-inch wide must be repaired immediately using bitumous sealant or cement grout sealant or equivalent low permeability Caltrans approved sealant according to sections 40 and 41 of the Caltrans Standard Specifications. Loose materials and debris shall be removed from the cracks prior to sealing.
- h. For areas where existing AC pavement is structurally sound but contain low areas where water ponding may occur or positive drainage is not readily evident shall be repaired in accordance with sections 39 of Caltrans Standard Specifications with the following modifications to ensure that the repaired AC pavement exhibits low permeability properties:
  1. Repair AC material shall have maximum of 4% by volume air voids;
  2. Repair AC material shall have minimum 6% by weight asphalt cement content;
  3. Repair AC material fines content (fraction less than 0.074 mm) shall be between 8 to 15% by mass; and
  4. The final repaired AC pavement shall be graded to provide positive drainage off of WMU LF-1.
- i. For areas where existing AC pavement must be replaced, the replacement shall be conducted in accordance with section 39 of Caltrans Standard Specifications with

the following modifications to ensure that the repaired AC pavement exhibits low permeability properties:

1. The failed AC pavement must be completely excavated;
  2. The integrity of the subgrade must be verified by proof-rolling the repair area;
  3. Any loose subgrade must be excavated and replaced with new  $\frac{3}{4}$  minus class III aggregate base material placed in accordance with section 26 of the Caltrans Standard specifications;
  4. Replacement AC material shall meet the specification C.23.h above; and
  5. The repair shall be conducted such that the interface between unrepaired areas and repaired areas do not create a preferential pathway of liquids to migrate towards the underlying WMU LF-1 final closure cover.
- j. Areas where existing reinforced concrete must be replaced it shall be conducted in accordance with section 40 of Caltrans Standard Specifications with the following modifications to ensure that the repaired reinforced concrete exhibits low permeability properties:
1. The failed reinforced concrete must be completely excavated;
  2. The integrity of the subgrade must be verified by proof-rolling the repair area;
  3. Any loose subgrade must be excavated and replaced with new  $\frac{3}{4}$  minus class III aggregate base material placed in accordance with section 26 of the Caltrans Standard specifications;
  4. The approved sub-base shall be capped with reinforced concrete pavement in accordance with section 40 of Caltrans Standard Specifications. Alternatively, the Discharger may repair the area using AC pavement per specifications C.23.i above;
  5. The repair shall be conducted such that the interface between unrepaired areas and repaired areas do not create a preferential pathway of liquids to migrate towards the underlying WMU LF-1 final closure cover; and
  6. The final repaired reinforced concrete shall be graded to provide positive drainage off of WMU LF-1.
- k. Unpaved areas over WMU LF-1 that create low spots where ponding may occur or where positive drainage is not readily evident shall be repaired using the following criteria:

1. The compacted fill, if soil is used, will consist of fines content equal to or greater than the underlying WMU LF-1 soil and shall be compacted to a density equal to or greater than the underlying WMU LF-1 soil. The compacted fill soil used shall meet or exceed Specifications 24.a.3.i-iii in order to assure that hydraulic conductivity does not exceed  $1 \times 10^{-6}$  cm/sec in unpaved areas over WMU LF-1; and
  2. Aggregate base if used as infill material shall exhibit fines content equal to or greater than the underlying aggregate base material and shall meet or exceed Specifications 24.a.3.i-iii in order to assure that hydraulic conductivity does not exceed  $1 \times 10^{-6}$  cm/sec in unpaved areas over WMU LF-1.
- I. Subsurface drainage pipes in WMU LF-1, in or below the WMU LF-1 closure cover, shall be repaired as follows:
    1. Broken pipes shall be excavated and either repaired or replaced;
    2. Back-graded pipes shall be repaired to provide positive drainage off of WMU LF-1. Infill material used to backfill repaired area shall not create a preferential pathway below the surface for liquids to enter underlying waste in WMU LF-1 by having a higher hydraulic conductivity than surrounding undisturbed soil; and
    3. Clogged pipes shall be unclogged using in-situ remedies such as but not limited to water jet cleaning. If a clog cannot be satisfactorily cleared using in-situ methods the pipe shall be excavated and cleaned out or replaced as appropriate.
  - m. All catch basins shall be designed, operated, and maintained (e.g. cleaned out and repaired as necessary) to prevent ponding of liquid at the catch basin from all storms up to and including a 100-year, 24-hour duration storm event at a minimum. Catch basins shall not provide a preferential pathway below the surface for liquids to enter underlying waste in WMU LF-1.
  - n. All unpaved areas, paved areas, subsurface pipelines, and catch basins in WMU LF-1 shall be inspected for deficiencies and reported in accordance with MRP R5-2015-0106 with any future revisions as approved by Central Valley Water Board Executive Officer.
  - o. All drainage from air conditioning unit condensate and swamp coolers shall be properly captured and managed such that it does not infiltrate into the closure cover of WMU LF-1 and contact underlying waste.
24. Maintenance of the LF-1 Compost Area pad will be performed as described by the Compost Area Work Plan as approved by Central Valley Water Board staff on 7 May 2014 or any approved revisions hereafter. Current compost area maintenance requirements for the Compost Area of LF-1 are the following:

- a. All composting operations shall be conducted on a low-permeability compost pad meeting the following specifications:
    1. The low-permeability compost pad shall at all times be sloped with a minimum three percent grade where compost wastewater is directed off of WMU LF-1;
    2. No ponding of compost wastewater on the compost pad area due to operations, wear, or settling is allowed at any time;
    3. The low-permeability compost pad shall:
      - i. consist of an aggregate comparable to a Caltrans  $\frac{3}{4}$  minus Class 2 or Class 3 aggregate base with a minimum of 15 percent by weight fines e.g. percent by weight passing through a No. 200 (0.075 mm) sieve wherein the fines have a significant clay content classified as "SC", or "CL", or "CH" under ASTM Designation A2487-11;
      - ii. be compacted to and maintain a compaction of minimum density of 90 percent relative compaction per ASTM D1557;
      - iii. at all times meet the performance standard of having a hydraulic conductivity not greater than  $1 \times 10^{-6}$  cm/sec;
      - iv. at all times have a minimum thickness of six inches;
      - v. have additional thickness to serve as a working/wear area above the six inch minimum thickness requirement;
      - vi. have visual thickness markers installed in the compost pad that clearly indicate when six inch minimum thickness of the compost pad remains whereupon repairs must be conducted within 30 days to reestablish a working/wear area;
      - vii. have fully functional moisture probes installed to determine moisture content at the interface of compost pad and WMU LF-1 soil cover, at one-foot depth below the compost pad-soil cover interface, and at two-foot depth below the compost pad-soil cover interface; and
      - viii. have fully functional lysimeters installed in the compost pad area where the monitoring point is above the waste.
25. The compost wastewater containment system shall be constructed and maintained in accordance with an approved Compost Wastewater Management Plan which shall contain at a minimum:

- a. A water balance analysis of compost wastewater containment system certified by a registered engineer competent to perform such analysis wherein the water balance analysis shall quantify and include as a minimum:
  - i. A compost wastewater containment system that is designed, constructed, operated, and maintained as of 1 October 2015 to store, and dispose of all compost wastewater from all storms up to and including a 25-year 24-hour duration storm event (design storm) of 3.16 inches. Compost wastewater storage requirements for the design storm shall be available throughout the wet season (15 October through 15 May);
  - ii. A compost wastewater containment system that is designed, constructed, operated, and maintained as of 1 October 2016 to contain all compost wastewater as described in Title 27 section 20375(a) and 20375(b) according to an approved Operation Plan. Required compost wastewater storage for the design year shall be available for use at the beginning of the wet season (15 October);
  - iii. A compost wastewater conveyance system is designed, constructed, operated, and maintained to collect and convey all compost wastewater from all storms up to and including a 100-year 24-hour duration storm event (design storm) of 5.82 inches.
  - iv. The transient compost wastewater peak flows into the compost wastewater containment system due to persistent and peak precipitation runoff from the compost pad;
  - v. The transient and steady state water balance between compost wastewater runoff from the compost pad and conveyance system to the storage tanks which includes analysis of wastewater flows and storage at each junction point i.e. berms, pipes, sumps/vaults, pumps, hoses, storage tanks;
  - vi. The detailed calculations supporting the sizing of the conveyance system and storage system based on a total dynamic head at the pumps fully accounting for frictional losses in conveyance lines and diminishing pump efficiencies;
  - vii. The detailed calculations supporting the appropriate sizing of sumps and vaults to provide necessary flow equalization capacity during peak surge influent periods where pumping capacity is temporarily unable to discharge at influent flow rates;
  - viii. Evidence of a binding contract agreement with parties who agree to take compost wastewater as part of the Discharger's water balance analysis e.g. if the Discharger includes off-property exportation of compost wastewater as part of its water balance. The contracts or other binding agreements at a

minimum shall have a term that spans the upcoming wet season (15 October to 15 May). If the water balance includes off-property exportation, then it is a violation of these WDRs for the Discharger to not secure and provide evidence to Central Valley Water Board staff of a binding contract agreement by 30 September preceding the upcoming wet season;

- ix. Appropriate factors of safety incorporated in the design for each component in the compost wastewater containment system to account for assumptions and uncertainties in the proposed design;
  - x. Detailed design of backup or redundant systems in place to accommodate failures in key components e.g. electrical power supply, failed pump, clogged hoses, etc.; and
  - xi. Contingency plan for containing compost wastewater that must be implemented if the compost wastewater containment system is likely to discharge due to failure or breakdown of waste handling facilities or containment systems.
- b. The compost wastewater conveyance system including but not limited to sumps, pipes, hoses, pumps, vaults and associated appurtenances shall be designed and constructed based on accepted professional engineering practices associated with managing the system's total dynamic head such that a discharge of compost wastewater shall not occur; and
- c. The compost wastewater conveyance system including sumps and vaults shall be designed, constructed, and maintained such that leakage from such enclosures does not infiltrate into WMU LF-1.

26. Upon ceasing composting operations at the Facility the Discharger shall clean close the composting operation per Title 27 sections 21400-21410.

#### **D. WMUs LF-2 AND LF-3 SPECIFICATIONS**

##### **DISCHARGE SPECIFICATIONS**

1. Landfill operations are closed at the facility. WMUs LF-1, LF-2, and LF-3 no longer accept waste as closure covers have been installed and the WMUs are currently in the postclosure maintenance period. These WDRs prohibit the discharge of liquids, waste, or waste constituents into the closed WMUs.

##### **FACILITY SPECIFICATIONS**

2. The performance standard per Title 27 section 20950(a)(2)(A)(1) for closure of WMUs is "*to minimize the infiltration of water into the waste, thereby minimizing the production of leachate and gas. For such Units, after closure, the final cover constitutes the Unit's principal waste containment feature.*" The goal of post-closure



maintenance at closed WMUs “*is to assure that the Unit continues to comply with the performance standard of section (a)(2)(A)1 until such time as the waste in the Unit no longer constitutes a potential threat to water quality.*” The Discharger shall perform post-closure maintenance on closed WMUs LF-1, LF-2, and LF-3 such that the WMUs no longer constitute a potential threat to water quality.

3. Post closure facility specifications at the landfill facility WMUs LF-2 and LF-3 includes:
  - a. Routine inspection, maintenance, and repair of closure covers to prevent infiltration of water into the waste;
  - b. Routine inspection, maintenance, and repair of drainage slopes on closure covers to ensure liquids do not collect on closure covers;
  - c. Routine inspection, maintenance, and repair of any erosion or damage to any vegetative cover above the closure cover;
  - d. Routine inspection, maintenance, and repair of drainage conveyance and control mechanisms including ensuring that such conveyance and control mechanisms are capable of handling the facility’s design storm event;
  - e. Routine inspection, maintenance, and repair of drainage conveyance and control mechanisms such that they do not provide a source where infiltration of water into the waste contained in the WMUs;
  - f. Timely extraction of any leachate that may collect in the LCRS of the closed WMUs that poses a potential threat to water quality; and
  - g. Timely extraction of any landfill gas that may collect in the closed WMUs that poses a potential threat to water quality.

## **E. CONSTRUCTION SPECIFICATIONS**

1. The Discharger shall comply with all Standard Construction Specifications listed in Section F of the SPRRs dated January 2012 which are attached hereto and made part of this Order by reference.
2. The Discharger shall comply with all Storm Water Provisions listed in Section L of the SPRRs dated January 2012 which are attached hereto and made part of this Order by reference.

## **F. FINANCIAL ASSURANCE SPECIFICATIONS**

1. The Discharger shall maintain assurances of financial responsibility with CalRecycle for post-closure maintenance for the landfill in at least the amounts of \$4.7 million or an approved amount by 4 January 2016 (see Finding 117), and adjusted for inflation annually. A report regarding financial assurances for 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 post-closure maintenance plan (PCMP) any time there is a change that will increase the amount of the closure and/or post-closure maintenance cost estimate. The updated PCMP shall be submitted to the Central Valley Water Board, the Local Enforcement Agency, and CalRecycle. The PCMP 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. On 28 March 2013, CalRecycle limited the remaining post-closure maintenance period to fifteen years. However, per Title 27 section 20950(a)(1) "*the post closure maintenance period shall extend as long as wastes pose a threat to water quality.*" Reports regarding financial assurance required in F.1 above shall reflect the updated cost estimate for fifteen years of post-closure maintenance.
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 of \$210,291. 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 dated January 2012 which are attached hereto and made part of this Order by reference.

## G. MONITORING SPECIFICATIONS

1. The Discharger shall comply with the detection monitoring program provisions of Title 27 for groundwater, surface water, and the unsaturated zone, and in accordance with Monitoring and Reporting Program (MRP) R5-2015-0106, and the Standard Monitoring Specifications listed in Section I of the SPRRs dated January 2012 which are attached hereto and made part of this Order by reference.
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 R5-2015-0106, and the Standard Monitoring Specifications listed in Section I of SPRRs

dated January 2012 which are attached hereto and made part of this Order by reference.

3. The Discharger shall comply with the Water Quality Protection Standard as specified in this Order, MRP R5-2015-0106, and the SPRRs dated January 2012 which are attached hereto and made part of this Order by reference.
4. 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 R5-2015-0106.
5. 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 R5-2015-0106 and the Standard Monitoring Specifications in Section I of the SPRRs dated January 2012 which are attached hereto and made part of this Order by reference.
6. As specified in MRP R5-2015-0106, 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.
7. The Discharger shall submit the required reports specified in MRP R5-2015-0106 by the report's due date.
8. The Discharger shall evaluate as part of its Corrective Action Monitoring Program the effectiveness of its corrective action program and provide as part of its reporting requirements an estimate as to when the Discharger will achieve full compliance.
9. The Discharger shall comply with all Standard Monitoring Specifications and Response to a Release specifications listed in Sections I and J of the SPRRs dated January 2012 which are attached hereto and made part of this Order by reference.

## **H. PROVISIONS**

1. The Discharger shall maintain a copy of this Order at the facility, including the MRP R5-2015-0106 and the SPRRs dated January 2012 which are part of this Order, 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 R5-2015-0106, which is 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 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, and shall be prepared under the direction of, and certified by a registered professional competent to take responsible charge over the required report.
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>
<p><b>A. Submit and implement a Compost Wastewater Management Plan for 2015-2016 wet season (15 October through 15 May):</b></p> <ol style="list-style-type: none"> <li>1. Submit a Compost Wastewater Management Plan (CWMP) in accordance with WMU LF-1 Specifications C.25 for the wet season of 2015-2016. The Plan must describe the design, operations, and maintenance of the systems, including but not limited to: (a) water balance calculations including any contractual agreements established for the proposed duration of the composting operations (upcoming wet season) with parties that receive compost wastewater as part of the water balance, (b) pump and conveyance sizing and requirements based on engineering calculations associated with total dynamic head, and (c) detail all assumptions.</li> <li>2. Implement the CWMP for the 2015-2016 wet season.</li> </ol>	<p style="text-align: center;"><b>1 September 2015</b></p> <p style="text-align: center;"><b>15 October 2015</b></p>

<p><b>B. Submit and implement a Compost Wastewater Management Plan for all wet seasons including and after the 2016-2017 wet season (15 October through 15 May):</b></p> <ol style="list-style-type: none"> <li>1. Submit a Compost Wastewater Management Plan (CWMP) in accordance with WMU LF-1 Specifications C.25 for the wet seasons including and after the 2016-2017 wet season. The Plan must describe the design, operations, and maintenance of the system, including but not limited to: (a) water balance calculations including any contractual agreements established for the proposed duration of the composting operations (for each upcoming wet season) with parties that receive compost wastewater as part of the water balance, (b) pump and conveyance sizing and requirements based on engineering calculations associated with total dynamic head, and (c) detail all assumptions.</li> <li>2. Implement the CWMP for all wet seasons including and after the 2016-2017 wet season.</li> </ol>	<p><b>1 February 2016</b></p> <p><b>15 October 2016</b></p>
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<p><b>C. Submit and implement a work plan that revises the Detection Monitoring Program (DMP):</b></p> <p>1. Submit a work plan that describes how the Discharger will comply with Title 27 requirements for establishing a sufficient number of Points of Compliance within the DMP that are hydraulically downgradient of the WMUs. The work plan shall also describe how replacement detection monitoring wells shall be designed and screened to provide representative water quality samples and the best assurance of the earliest possible detection of a release from the Unit. Currently, groundwater monitoring wells MW-4 through MW-10 and MW-13 are not screened appropriately to provide representative water quality samples and the best assurance of the earliest possible detection of a release from the Unit. The work plan shall also evaluate whether upgradient background wells should be screened at the water table in order to detect any constituents of concern that may exist at the water table from upgradient sources. The Discharger at a minimum shall install two groundwater monitoring wells along the western edge of LF-1 and LF-2 to provide appropriate control points that support the Discharger's groundwater elevation contour map. Upon confirmation of the Discharger's groundwater contour map the Discharger shall propose and install additional groundwater detection monitoring wells that are hydraulically downgradient to LF-1, LF-2, and LF-3. The groundwater detection monitoring wells shall be installed using continuous core sample recovery to depth in accordance with Attachment G.</p> <p>2. Implement the work plan and provide documentation (i.e., well completion logs, etc.) supporting the completion of tasks identified in the work plan. The documentation will provide evidence that all groundwater monitoring points are surveyed to the same datum and all future groundwater elevation monitoring will be reported using the same datum.</p>	<p><b>1 December 2015</b></p> <p><b>1 August 2016</b></p>
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<p><b>D. Implement a Corrective Action Program Plan for Landfill Gas exceedances of the Concentration Limits established in the Discharger's WQPS for WMU LF-1:</b></p> <ol style="list-style-type: none"><li>1. Submit a report describing the upgrades made to the landfill gas extraction system for LF-1. Any additional LFG extraction wells shall be installed and reported along with a sampling and analysis plan in accordance with Attachment G.</li> <li>2. The Discharger shall submit a <i>Landfill Gas Extraction Evaluation Report</i> that evaluates the effectiveness of the LFG extraction system throughout LF-1 and in the underlying vadose zone in regard to removing sufficient LFG to prevent further groundwater degradation. If the current LFG extraction system is not clearly capturing the landfill gas throughout LF-1, or if the concentration of groundwater contaminants (i.e., VOCs and inorganics) are increasing in the groundwater monitoring wells, then the Report shall either propose an expansion of the LFG extraction system or active groundwater remediation.</li></ol>	<p><b>1 October 2015</b></p>           <p><b>1 October 2017</b></p>
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<p><b>G. Submit a Consolidated Post Closure Operations and Maintenance (O&amp;M) Plan (Title 27 section 21760(b) and section 21769 et seq).:</b> The Consolidated Post Closure O&amp;M Plan shall include operational and maintenance requirements all operations above LF-1 (vehicle maintenance, administration, composting, industrial storm water monitoring, etc.) as well as the O&amp;M requirements for the entire facility e.g. O&amp;M requirements for all WMUs that are necessary to minimize the infiltration of liquids through closure covers over all WMUs. The revised Consolidated Post-Closure Operations Plan shall consolidate all approved O&amp;M Plans previously submitted in response to an NOV or CAO and shall adequately describe what areas those approved plans pertain to and reference them appropriately when describing how the entire facility will be operated and maintained. The previously submitted approved O&amp;M plans shall be included as appendices to the Consolidated Post Closure O&amp;M Plan.</p>	<p><b>1 December 2015</b></p>
<p><b>H. Submit a work plan to conduct periodic leak tests of WMU LF-2 and LF-3 final covers per Title 27, section 21090(a)(4)(A):</b> The work plan shall provide the means and methods along with a schedule by which the Discharger shall satisfy the Title 27 requirement. The initial leak test shall be performed by 1 November 2015.</p>	<p><b>1 September 2015</b></p>
<p><b>I. Submit a Supply Well Survey Report per Title 27 section 21750(h)(1):</b> The supply well survey report shall identify all water supply wells within 1 mile radius of the facility.</p>	<p><b>1 September 2015</b></p>
<p><b>J. Submit an addendum to the Facility's Post-Closure Maintenance Plan including Cost Estimates and Financial Assurances for Flood Protection:</b> The addendum to Post-Closure Maintenance Plan shall describe inspection, maintenance and annual cost estimate including financial assurances that demonstrates that the flood protection structures are maintained such that waste placed in the closed WMUs continues to not pose a hazard to human health and the environment due to inundation or washout from a flood event with a 100-year return period.</p>	<p><b>1 September 2015</b></p>

<p><b>K. Submit an approved revised Post-Closure Maintenance Plan with revised cost estimates and financial assurances:</b> The Discharger shall submit a revised Post-Closure Maintenance Plan for all closed WMUs and post-closure operations with cost estimates and financial assurances that are approved by the appropriate regulatory agencies.</p>	<p><b>4 January 2016</b></p>
<p><b>L. Submit a Monitoring Well Destruction Report:</b> The Discharger shall submit a report that documents the destruction of detection monitoring wells MW-1 and MW-2 in accordance with local enforcement agency requirements and California Well Standards published by Department of Water Resources (DWR) in Bulletin 74-81 and supplemented by Bulletin 74-90 Part III.</p>	<p><b>1 November 2015</b></p>

8. The Discharger shall take all reasonable steps to minimize any adverse impact to the waters of the State resulting from noncompliance with this Order. Such steps shall include accelerated or additional monitoring as necessary to determine the nature, extent, and impact of the noncompliance.
9. The post-closure maintenance period shall continue until the Regional Board determines that remaining wastes in the landfill will not threaten water quality.
10. The Regional Board will review this Order periodically and may revise requirements when necessary.
11. The Discharger shall comply with all General Provisions listed in Section K of the SPRRs dated January 2012 which are part of this Order.

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 31 July 2015.

*Original signed by*

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 PAMELA C. CREEDON, Executive Officer

Vkj/wmh

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM R5-2015-0106  
FOR  
RECOLOGY YUBA-SUTTER, AND FEATHER RIVER ORGANICS  
RECOLOGY YUBA-SUTTER LANDFILL  
CLASS III LANDFILL AND COMPOSTING FACILITY  
OPERATION, POST-CLOSURE MAINTENANCE, AND CORRECTIVE ACTION  
YUBA COUNTY

This Monitoring and Reporting Program (MRP) are issued jointly to Recology Yuba-Sutter (RYS) and Feather River Organics (FRO) for the Class III landfill facility and composting facility. Recology Yuba Sutter is the owner/operator of the closed municipal solid waste Class III landfill. RYS is the operator of the closed municipal solid waste Class III landfill, a material recycling facility (MRF), an administration office, and an equipment maintenance area. FRO is the operator of the composting facility and green waste processing area on the cover of RYS unlined landfill waste management unit (WMU) LF -1. RYS and FRO are hereinafter referred to jointly as the “Discharger” as defined in California Code of Regulations, title 27 (Title 27), section 20164 and are jointly responsible for compliance with this MRP.

This MRP is issued pursuant to California Water Code section 13267 and incorporates requirements for groundwater, surface water, and unsaturated zone monitoring and reporting; facility monitoring, maintenance, and reporting; and financial assurances reporting contained in California Code of Regulations, title 27, section 20005, et seq. (hereafter Title 27), Waste Discharge Requirements (WDRs) Order R5-2015-0106, and the Standard Provisions and Reporting Requirements (SPRRs) dated January 2012. Compliance with this MRP is ordered by the WDRs and the Discharger shall not implement any changes to this MRP unless a revised MRP is issued by the Central Valley Water Board or the Executive Officer.

#### **A. MONITORING**

The Discharger shall comply with the monitoring program provisions of Title 27 for groundwater, surface water, and the unsaturated zone in accordance with Standard Monitoring Specifications in Section I of the SPRRs and the Monitoring Specifications in Section G of the WDRs. All monitoring shall be conducted in accordance with the most current approved *Sample Collection and Analysis Plan (SAP)*, which includes quality assurance/quality control standards. The most current SAP was submitted in November 2013. WDRs Order R5-2015-0106 in Provisions H.7 requires the Discharger to submit a revised SAP.

All compliance monitoring wells established for the monitoring program shall constitute the monitoring points for the groundwater Water Quality Protection Standard. All monitoring program groundwater monitoring wells, unsaturated zone monitoring devices, leachate, and surface water monitoring points shall be sampled and analyzed for monitoring parameters and constituents of concern (COCs) as indicated and listed in Tables I through XI.

The Discharger may use alternative analytical test methods, including new or updated USEPA approved methods, provided the methods have method detection limits equal to or lower than the analytical methods specified in this Monitoring and Reporting Program, and are identified in the approved Sample Collection and Analysis Plan.

The monitoring program of this MRP includes:

<u>Section</u>	<u>Monitoring Program</u>
A.1	Groundwater Monitoring
A.2	Unsaturated Zone Monitoring
A.3	Leachate Monitoring, Seep Monitoring, and LCRS Testing
A.4	Surface Water Monitoring
A.5	Facility Monitoring
A.6	Compost Operations Monitoring
A.7	Corrective Action Monitoring

### 1. Groundwater Monitoring

The Discharger shall operate and maintain a groundwater monitoring system that complies with the applicable provisions of Title 27, Subchapter 3 “Water Monitoring”. The monitoring system shall be certified by a California-licensed professional civil engineer or geologist as meeting the requirements of Title 27. The current groundwater monitoring system **does not meet** the applicable requirements of Title 27 regarding providing sufficient number of monitoring points and background monitoring points installed at appropriate locations and depths to provide the best assurance of the earliest possible detection of a release from a WMU. These deficiencies are being addressed in Provisions Section H of WDRs R5-2015-0106.

The current groundwater monitoring network shall consist of the following:

<u>Well</u>	<u>Status</u>	<u>Units Being Monitored</u>
MW-1R	Corrective Action	LF-1
MW-2R	Corrective Action	LF-1
MW-3	Corrective Action	LF-2
MW-4	Corrective Action	LF-2
MW-5	Background	LF-1, LF-2, LF-3
MW-6	Background	LF-1, LF-2, LF-3
MW-7	Background	LF-1, LF-2, LF-3
MW-8	Corrective Action	LF-3
MW-9	Detection	LF-3
MW-10	Corrective Action	LF-1
MW-11	Corrective Action	LF-3
MW-12	Corrective Action	LF-3
MW-13	Detection	LF-3

<u>Well</u>	<u>Status</u>	<u>Units Being Monitored</u>
PZ-14	Piezometer	Groundwater elevation
MW-15	Corrective Action	LF-1

Groundwater samples shall be collected from the background wells, detection monitoring wells, corrective action monitoring wells, and any additional wells added as part of the approved groundwater monitoring system. The collected samples shall be analyzed for the parameters and constituents listed in Table I in accordance with the specified methods and frequencies. The Discharger shall collect, preserve, and transport groundwater samples in accordance with the approved Sample Collection and Analysis Plan.

**Four times per year**, the Discharger shall measure the groundwater elevation in each well, determine groundwater flow direction, and estimate groundwater flow rates in the uppermost aquifer and in any zones of perched water and in any additional portions of the zone of saturation monitored. The results shall be reported semiannually, including the times of expected highest and lowest elevations of the water levels in the wells, pursuant to Title 27, section 20415(e)(15). All groundwater monitoring points shall be used in determining groundwater flow direction. All groundwater elevations shall be reported using only one common datum e.g. NGVD29 or NAVD88 for the entire network.

Samples collected for the COC monitoring specified in Table I shall be collected and analyzed in accordance with the methods listed in Table VI every five years. Five-year COCs were last monitored in December 2011 and shall be monitored again in **May 2016**. The results shall be reported in the Annual Monitoring Report for the year in which the samples were collected.

## 2. Unsaturated Zone Monitoring

The Discharger shall operate and maintain an unsaturated zone monitoring system that complies with the applicable provisions of Title 27, Subchapter 3 “Water Monitoring”. The current unsaturated zone monitoring system **does not meet** the applicable requirements of Title 27. As described in the findings in WDRs R5-2015-0106 the Discharger does not currently monitor the unsaturated zone below LF-1, LF-2, and LF-3 for releases of leachate or landfill gas. The Discharger operates perimeter LFG probes adjacent to the WMUs as required by CalRecycle which currently act as a proxy for the unsaturated zone detection system.

The perimeter LFG probes currently operating as an unsaturated zone monitoring network consists of:

<u>Mon Pt.</u>	<u>Status</u>	<u>Units Being Monitored</u>
GP-1	Detection, Soil-Pore Gas	LF-3
GP-2	Detection, Soil-Pore Gas	LF-3
GP-3	Detection, Soil-Pore Gas	LF-3
GP-4	Detection, Soil-Pore Gas	LF-3

<u>Mon Pt.</u>	<u>Status</u>	<u>Units Being Monitored</u>
GP-5	Detection, Soil-Pore Gas	Not Applicable
GP-6	Corrective Action, Soil-Pore Gas	LF-1
GP-7	Corrective Action, Soil-Pore Gas	LF-1
GP-8	Corrective Action, Soil-Pore Gas	LF-1
GP-9	Detection, Soil-Pore Gas	Not Applicable
GP-10	Detection, Soil-Pore Gas	LF-3
GP-11	Detection, Soil-Pore Gas	LF-3
GP-12	Detection, Soil-Pore Gas	LF-2
GP-13	Corrective Action, Soil-Pore Gas	LF-2
GP-14	Corrective Action, Soil-Pore Gas	LF-1
GP-15	Corrective Action, Soil-Pore Gas	LF-1

Unsaturated zone samples shall be collected from the monitoring network listed above and shall be analyzed for the parameters and constituents listed in Table II in accordance with the specified methods and frequencies.

The Discharger shall collect, preserve, and transport samples in accordance with the quality assurance/quality control standards contained in the most current approved Sample Collection and Analysis Plan.

Monitoring results for the unsaturated zone shall be included in monitoring reports and shall include an evaluation of potential impacts of the facility on the unsaturated zone and compliance with the Water Quality Protection Standard.

### 3. Leachate Monitoring, Seep Monitoring, and Annual LCRS Testing

**Leachate Monitoring:** The Discharger shall operate and maintain leachate collection and removal system (LCRS) sumps, conduct monitoring of any detected leachate seeps, and conduct annual testing of each LCRS in accordance with Title 27 and this monitoring program.

The current LCRS leachate sump monitoring points are:

<u>Mon Pt.</u>	<u>Unit Where Sump is Located</u>
S-1	LF-2
S-2	LF-3
S-3	LF-3
S-4	LF-3
S-5	LF-3

All LCRS sumps shall be inspected monthly for the presence of leachate, and flow shall be recorded in accordance with Table III. If leachate is detected in a previously dry sump, the Discharger shall verbally notify Central Valley Water Board staff within **seven days** and shall immediately sample and test the leachate for Field and Monitoring Parameters listed in Table III. Leachate in the LCRS sump shall then be sampled for all parameters and constituents in accordance with the frequencies listed in Table III whenever liquid are present. All LCRS sump samples shall be analyzed for the 5-year COCs specified in Table III every five years, beginning again in **May 2016**.

**Seep Monitoring:** Leachate that seeps to the surface from a landfill unit shall be sampled and analyzed for the Field and Monitoring Parameters listed in Table III upon detection. The quantity of leachate shall be estimated and reported as Leachate Flow Rate (in gallons/day). Reporting for leachate seeps shall be conducted as required in Section B.3 of this MRP, below.

**Annual LCRS Testing:** All LCRSs (e.g. LCRS in LF-2 and LF-3) shall be tested annually pursuant to Title 27, section 20340(d) to demonstrate proper operation. The results of these tests shall be reported to the Central Valley Water Board in the Annual Monitoring Report and shall include comparisons with earlier tests made under comparable conditions.

#### 4. Surface Water Monitoring

The Discharger shall operate a surface water detection monitoring system for any landfill facility where runoff from landfill areas flows or could flow to waters of the United States. The monitoring system shall comply with the applicable provisions of Title 27, Subchapter 3 "Water Monitoring". At the Recology Yuba-Sutter Landfill, runoff from landfill areas flows to a drainage course that discharges to the Yuba River. The current surface water detection monitoring system **meets** the applicable requirements of Title 27.

The current surface water monitoring points for the landfill are:

<u>Mon Pt.</u>	<u>Status</u>
SW-5	Background or Upstream
SW-4	Downstream of LF-3
SW-3	Downstream of LF-2 and LF-3 before entering storm water detention ponds
SW-2	Downstream of LF-1, LF-2, and LF-3

For surface water detection monitoring, a sample shall be collected at each monitoring point location and analyzed for the monitoring parameters and constituents in accordance with the methods and frequency specified in Table IV. All surface water monitoring samples shall be collected and analyzed for the 5-year COCs specified in Table IV every five years, beginning again in **2016**. The Discharger shall report the Global Positioning System (GPS) location where each surface water monitoring point

was sampled for each sampling event in the semiannual monitoring report section B.1. The location of surface water sampling during each sampling event shall be in close proximity to the previous sampling event.

## 5. Facility Monitoring

### a. Annual Facility Inspection

Annually, prior to the anticipated rainy season, but no later than **30 September**, the Discharger shall conduct an inspection of the facility. The inspection shall assess repair and maintenance needed for drainage control systems, cover systems, and groundwater monitoring wells; and shall assess preparedness for winter conditions (including but not limited to erosion and sedimentation control). All drainage facilities located beneath the ground surface of LF-1 shall be inspected with a video survey. The Discharger shall take photos of any problems areas before and after repairs. Any necessary construction, maintenance, or repairs shall be completed by **15 October**. The Discharger shall perform Operations and Maintenance of the Southern Area of WMU LF-1 in accordance with the most recent approved Southern Area O&M Plan currently dated January 2014. Annual facility inspection reporting shall be submitted as required in Section B.4 of this MRP.

### b. Major Storm Events

The Discharger shall inspect all precipitation, diversion, and drainage facilities and all landfill side slopes for damage **within 7 days** following major storm events capable of causing damage or significant erosion. The Discharger shall take photos of any problems areas before and after repairs. Necessary repairs shall be completed **within 30 days** of the inspection. If it is not feasible for the Discharger to complete final repairs within 30 days, the Discharger shall complete temporary repairs to control the damage and limit additional damage and erosion until the final repairs are completed. Additionally, the Discharger shall submit a report documenting the temporary repairs and providing a schedule for completion of the final repairs **within 30 days** of the inspection. The Discharger shall report any damage and subsequent repairs **within 45 days** of completion of the repairs, including photographs of the problem and the repairs. Notification and reporting requirements for major storm events shall be conducted as required in Section B.5 of this MRP.

### c. Five-Year Iso-Settlement Survey for Closed Units

For all closed landfill units, the Discharger shall conduct a five-year iso-settlement survey and produce an iso-settlement map accurately depicting the estimated total change in elevation of each portion of the final cover's low-hydraulic-conductivity layer. For each portion of the landfill, this map shall show the total lowering of the surface elevation of the final cover, relative to the baseline topographic map [Title



27, section 21090(e)(1 & 2)]. Reporting shall be in accordance with Section B.6 of this MRP. The next iso-settlement survey shall be conducted in **May 2017**.

**d. Biennial Leak Test of Closure Covers**

For closed landfill units, the Discharger shall conduct a survey and submit a leak test for each closed area of the landfill every 2-years pursuant to Title 27, section 21090(a)(4)(A). For each portion of the landfill, the Discharger shall provide a map showing the result of the leak test e.g. where any leaks were discovered, the extent to the leak, and the corrective action with a time schedule when the repair will be completed. Reporting shall be in accordance with Section B.7 of this MRP. The next leak test shall be conducted in **May 2016**.

**e. Standard Observations**

The Discharger shall conduct Standard observations at the landfill in accordance with this section of the MRP. Standard observations shall be conducted in accordance with the following schedule:

<u>Landfill Unit Type</u>	<u>Frequency</u>	<u>Season</u>
Inactive/Closed	Monthly	Wet: 15 October to 15 May
Inactive/Closed	Quarterly	Dry: 16 May to 14 October

The Standard Observations shall include:

- 1) For the landfill units:
  - a) Evidence of ponded water at any point on the landfill outside of any contact storm water diversions structures on the active face (show affected area on map); and
  - b) Evidence of erosion and/or of day-lighted refuse.
- 2) Along the perimeter of the landfill units:
  - a) Evidence of leachate seeps, estimated size of affected area, and flow rate (show affected area on map); and
- 3) Evidence of erosion and/or of day-lighted refuse.
- 4) For Southern Area of LF-1:
  - a) Paved and Unpaved Areas shall be inspected quarterly in accordance with the Southern Area of LF-1 O&M Plan currently dated January 2014 and repaired by 1 October according to the approved Southern Area of LF-1 O&M Plan currently dated January 2014; and
  - b) Subsurface pipelines video survey shall be inspected annually in accordance with the Southern Area of LF-1 O&M Plan currently dated January 2014 and repaired by 1 October according to the approved

Southern Area of LF-1 O&M Plan currently dated January 2014. The subsurface pipeline video survey shall also include all subsurface pipelines that convey storm water from building rooftops;

- c) Catch Basins shall be inspected monthly between 15 October and 15 May and during inclement (rainy) weather as well as once by 31 July in accordance with the Southern Area of LF-1 O&M Plan currently dated January 2014 and cleaned/repared immediately during the first available dry weather period according to the approved Southern Area of LF-1 O&M Plan currently dated January 2014;
  - d) All pressurized water supply lines installed within the cover over LF-1 shall be inspected and maintained annually to ensure no leakage of liquids is occurring; and
  - e) All air conditioning units and swamp cooler's discharges of condensate shall be inspected monthly to determine if the discharge is contacting the closure cover. The discharge from air conditioning units and swamp coolers to the closure cover of LF-1 is prohibited.
- 5) For receiving waters:
- a) Floating and suspended materials of waste origin - presence or absence, source, and size of affected area; and
  - b) Discoloration and turbidity - description of color, source, and size of affected area.

Results of Standard Observations shall be submitted in the semiannual monitoring reports required in Section B.1 of this MRP.

## 6. Compost Operations Monitoring

The compost operations monitoring of this MRP includes:

<u>Section</u>	<u>Monitoring Program</u>
a.	Compost Pad Thickness and Drainage Controls Monitoring
b.	Compost Tank and Sump Monitoring
c.	Compost Wastewater Discharge Monitoring
d.	Compost Facilities Monitoring
e.	Compost Wastewater Characterization Monitoring
f.	Response to a Release

Compost wastewater is liquids such as storm water or liquids used in the composting process that that comes in contact with the compost material to produce a leachate.

### a. Compost Pad Thickness and Drainage Controls

The Discharger shall include in the Compost Facility Annual Monitoring and Maintenance Report as required in Section B.8 of this MRP a description of any exposed compost pad thickness control monuments or drainage control failures and repairs required to make the drainage controls functional. The Discharger shall report the volume of material placed back onto the pad to restore grade and prepare an isopach map showing the thickness of remaining material as well as areas that need repair. The Discharger shall complete repairs within 30 days of discovery of any exposed compost pad thickness monuments.

The Discharger shall monitor the compost pad thickness at each control monument according to the schedule in **Table VII**. Currently there are 24 monuments located on the compost pad as shown on Attachment E.

#### **b. Storage Tank and Sump Monitoring**

The storage tanks and sumps shall be monitored monthly during dry weather conditions and daily during rainfall events. The Discharger shall monitor the remaining capacity of the storage tanks and compost wastewater sumps (measured in **percent remaining**), and monitor for freeboard (measured in **0.5 feet**) in open-ended containment systems.

The Discharger shall inspect the facility on a daily basis during rain events to determine whether pumps are operational and appropriately sized, discharge lines are properly connected and not leaking, and that excess sediment has been removed from sumps. The results of each inspection shall be submitted with the Compost Facility Annual Monitoring and Maintenance Report as required in Section B.8 of this MRP. Storage tanks and sumps shall be placed on a Facility Site Map and properly numbered for reference. Tank and sump monitoring shall be conducted monthly during dry weather conditions and daily during rainfall events, and reported semiannually, in accordance with **Table VIII**.

#### **c. Compost Wastewater Discharge Monitoring**

The Discharger must monitor flows throughout the system. The Discharger shall install and monitor flow meters on the effluent discharge lines of the storage tanks including the discharge pipe upstream of the on-site POTW discharge point. Other discharge points requiring flow monitoring, include the two J-Stands located north and south of the compost area. If compost wastewater is trucked off-site, then the trucks must be filled from the J-Stands. All flow meters shall be calibrated annually, properly numbered, and referenced on the Facility Site Map.

Monitoring shall be conducted monthly during dry weather conditions and daily during rainfall events, and reported semiannually, in accordance with **Table IX**. The monitoring results shall be submitted with the Compost Facility Annual Monitoring and Maintenance Report as required in Section B.8 of this MRP.

#### **d. Compost Facilities Monitoring**

##### **1) Quarterly Compost Operations Inspection**

Perform quarterly inspections of the working surfaces, berms, ditches, facility perimeter, erosion controls, and any other operational surfaces identified in this Order. The Discharger shall include the following observations in the Compost Facility Annual Monitoring and Maintenance Report as required in Section B.8 of this MRP:

- a) Date and time of inspections, along with the name of the inspector;
- b) Evidence of areas of deficiency such as cracking or subsidence in the working surfaces;
- c) Evidence of ponding over the working surfaces and within ditches (show affected area on a map);
- d) Effectiveness of erosion controls;
- e) Maintenance activities associated with, but not limited to, the working surfaces, berms, ditches, and erosion controls;
- f) Evidence of any compost wastewater leaving the compost facility, estimated size of affected area, and estimated flow rate (show affected area on a map);
- g) Integrity of drainage systems during the wet season (15 October through 15 May); and
- h) Photographs of observed and corrected deficiencies.

##### **2) Quarterly Compost Wastewater Management System Inspection**

Perform quarterly inspections of the compost wastewater management system and submit the following observations and records in the Compost Facility Annual Monitoring and Maintenance Report as required in Section B.8 of this MRP:

- a) Date and time of inspections along with name of inspector;
- b) The overall condition of the compost wastewater management system (i.e. sumps, wastewater conveyance pipes/hoses, storage tank construction, municipal wastewater connection points);

- c) The available capacity within storage systems and the current volume of compost wastewater (gallons) or solids (cubic yards) contained;
- d) Presence of odors from the compost wastewater management system – characterization, source, and distance from source;
- e) Volume of compost wastewater reused on-site; and
- f) Volume of compost wastewater disposed at an off-site treatment system and name and location of the wastewater treatment facility.

### 3) Annual Compost Facility Inspection

Perform annual inspection of the facility to confirm that all containment structures are prepared for the pending wet season. The Discharger shall conduct an annual inspection prior to the anticipated wet season, but no later than 15 August and complete any necessary construction, maintenance, or repairs by **30 September**. The Discharger shall include the following in the Compost Facility Annual Monitoring and Maintenance Report as required in Section B.8 of this MRP:

- a) The observation date and time of the inspection, along with the name of the inspector
- b) The type of deficiency/non-compliance observed;
- c) The cause for the deficiency/noncompliance;
- d) Map showing the area of deficiency/noncompliance;
- e) The corrective actions undertaken, or planned to resolve the deficiency/non-compliance, including the date and time of repairs;
- f) The measures undertaken by the Discharger to prevent the recurrence of the observed deficiency/noncompliance; and
- g) Photographs of the observed deficiencies/noncompliance with corresponding location on the map

### 4) Annual Compost Pad Inspection

Annually, prior to the anticipated rainy season, but no later than **15 August**, the Discharger shall conduct an inspection of the compost pad for the following items: verify that operations are conducted within the compost pad, verify the thickness of the compost pad is a minimum of six inches as determined by the monuments, verify the compost pad is free of significant cracks and has a 3% slope to maintain positive drainage, verify all perimeter low permeable berms are intact and no breaches have developed, verify inlets to drainage pipes and header pipes are clear and free of obstructions, and that discharge pumps, float switches, and discharge lines are operational. The inspection shall assess capacity of storage tanks and

sumps and identify any maintenance needed for the compost pad including the underlying final cover of LF-1. The Discharger shall take photos of any problems areas before and after repairs. Any necessary construction, maintenance, or repairs shall be completed by **30 September**. Annual facility inspection reporting shall be submitted as required in the Compost Facility Annual Monitoring and Maintenance Report as required in Section B.8 of this MRP.

**5) Soil Moisture Monitoring**

The Discharger shall monitor soil moisture conditions beneath the low permeable compost pad to determine if liquids from the compost pad are percolating through the cover of LF-1. The Discharger shall collect soil moisture measurements using soil moisture probes installed to comply with this MRP. Each soil moisture instrument cluster shall be properly identified on the Facility Site Map. Currently there are 5 soil moisture probes (SM-1 through SM-5) installed around the perimeter of the compost pad as shown on Attachment E.

Readings from the instrument clusters shall be collected monthly. Data collected shall be presented in a graph with volumetric water content as a percent on the Y-axis and date on the X-axis. Precipitation in inches or other hydrologic factors which may be interpreted as an influence to percolation rates shall be assessed and graphed against volumetric water content. These graphs shall be submitted with the Compost Facility Annual Monitoring and Maintenance Report as required in Section B.8 of this MRP.

**6) Rainfall Monitoring**

The Discharger shall monitor an onsite weather station, located within the boundary of LF-1, for the following values shown below. The location of the weather station shall be shown on the Facility Site Map. The rainfall monitoring results shall be submitted with the Compost Facility Annual Monitoring and Maintenance Report as required in Section B.8 of this MRP.

<b>Parameter</b>	<b>Units</b>	<b>Monitoring Frequency</b>	<b>Reporting Frequency</b>
Rainfall Intensity	Inches/hour	Daily	Monthly
Rainfall Total in 24 hour period (12:00 am to 11:59 pm)	Inches/24 hour interval	Daily	Monthly

**7) Site Photo logs**

During the first week of each month, the Discharger shall take photographs of all flow meters (showing the volume reading), berms, above ground tank connections, conveyance lines, pipe joints, pipe aprons, sumps, perimeter ditches, compost pad, and any other compost wastewater) controls. Photo documentation of the above controls shall be included as part of the Compost Facility Annual Monitoring and Maintenance Report as required in Section B.8 of this MRP.

## **8) Calibration Logs**

On an annual basis, or more frequently if recommended by the manufacturer, the Discharger shall maintain and calibrate all flow meters. Routine maintenance and calibration shall be recorded on the compost pad field inspection form included with the Operations and Maintenance Manual dated 28 October 2013. Calibration logs shall be included as part of the Compost Facility Annual Monitoring and Maintenance Report as required in Section B.8 of this MRP.

### **e. Compost Wastewater Characterization Monitoring**

The Discharger shall conduct monitoring of the compost wastewater characteristics through collection of an undiluted representative sample at the single outflow point at the site's POTW connection when there is sufficient water and analyze the sample for the parameters listed Table X. The current compost wastewater collection and storage system consists of a series of pipes, 2 sumps, 2 vaults, and 39 tanks as shown on Attachment F. The results shall be reported in the Annual Monitoring Report for the year in which the samples were collected.

The leak detection monitoring device (i.e. pan or suction lysimeter) shall be checked monthly during the wet season for liquid. The existing lysimeters include L-A and L-B one located below each set of storage tanks as shown on Attachment E. Upon detection of liquid in a previously dry monitoring device Discharger shall notify the Board within **48 hours**; collect a sample and analyze the liquid for the constituents listed in Table X; remove the liquid from the device; and continue to monitor weekly. If liquid reappears, another sample must be collected and analyzed for the constituents in Table X. If the liquid is confirmed to be compost wastewater, the Discharger must submit a Response Action Plan within 30 days for review and approval by the Board.

### **f. Response to a Release**

The Discharger shall report by telephone any discharge of compost wastewater outside the compost wastewater management system other than that discharged for exportation immediately after it is discovered. A

written report shall be filed with the Central Valley Water Board within seven days, containing at least the following information:

- a. A map showing the location(s) of the discharge;
- b. An estimate of the flow rate;
- c. A description of the nature of the discharge (e.g., all pertinent observations and analyses);
- d. Verification that samples have been submitted for analyses of the Field Parameters and Monitoring Parameters listed in Table X of this MRP, and an estimated date that the results will be submitted to the Central Valley Water Board; and
- e. Corrective measures underway or proposed, and corresponding time schedule.

## **7. Corrective Action Monitoring**

The Discharger shall conduct corrective action monitoring to demonstrate the effectiveness of corrective action in accordance with Title 27, section 20430 and this MRP.

The corrective action monitoring of this MRP includes:

<u>Section</u>	<u>Monitoring Program</u>
a.	Groundwater Corrective Action Monitoring
b.	Unsaturated Zone Corrective Action Monitoring
c.	Compost Facility Corrective Action Monitoring

### **a. Groundwater Corrective Action Monitoring**

Groundwater monitoring wells and unsaturated zone monitoring points that are in a corrective action monitoring program shall be monitored and reported in accordance with the groundwater and unsaturated zone monitoring requirements in parts A.1 and A.2 of this MRP, except as modified in this part of the MRP for any additional constituents or modified monitored frequencies.



The Discharger shall monitor the following corrective action monitoring wells as required in part A.1 and Table I of this MRP, with the following increased sampling frequency for all Field and Monitoring Parameters listed in Table I:

<u>Well</u>	<u>Sampling Frequency</u>
MW-1R	Quarterly
MW-2R	Quarterly
MW-3	Quarterly
MW-4	Quarterly
MW-8	Quarterly
MW-10	Quarterly
MW-11	Quarterly
MW-12	Quarterly
MW-15	Quarterly
Any added well	Quarterly unless otherwise specified

**b. Unsaturated Zone Corrective Action Monitoring**

In addition to monitoring the unsaturated zone monitoring points as required in part A.2 and Table II of this MRP, as part of the Unsaturated Zone Corrective Action Monitoring requirements, the Discharger shall also monitor additional Corrective Action monitoring points, constituents, and frequency as required in Table XIV.

The Discharger shall record the hours of operation for any corrective action system and report them in the Annual Monitoring Report required in Section B.2 of this MRP. The Discharger shall estimate the following annually for each WMU in corrective action due to LFG related exceedances at WMU compliance points to assess the progress of groundwater corrective action and reported in the Annual Monitoring Report (including method of calculations) in the format below:

<u>WMU</u>	<b>Mass of Total VOCs (lbs.)</b>	
	Amount Removed <u>D</u> uring Year	Cumulative Amount <u>Remov</u> ed
LF-1		
LF-2		

**c. Compost Facility Corrective Action Monitoring**

Compost facility monitoring required as corrective action shall be monitored in accordance with the compost operations monitoring requirements in parts A.6 of the MRP, except as modified in this part of the MRP for any additional constituents or modified frequencies.

**1) Compost Pad Thickness and Drainage Controls**

The Discharger shall include in the **monthly** report a description of any exposed compost pad thickness control monuments or drainage control failures and repairs required to make the drainage controls functional. **Monthly**, the Discharger shall report volume of material placed back onto the pad to restore grade and prepare an isopach map showing the thickness of remaining material as well as areas that need repair. The Discharger shall complete repairs within 30 days of discovery of any exposed compost pad thickness monuments.

The Discharger shall monitor the compost pad thickness at each control monument according to the schedule in **Table XI**.

## 2) Storage Tank and Sump Monitoring

The storage tanks and sumps shall be monitored daily between 15 October and 15 May of each year, and **hourly** during rainfall events. The Discharger shall monitor the remaining capacity of the storage tanks and compost wastewater sumps (in **percent remaining**), and monitor for freeboard (measured in **tenths of feet**) in open-ended containment systems.

Between 15 October and 15 May, the Discharger shall inspect the facility on a daily basis during rain events to determine whether pumps are operational and appropriately sized, discharge lines are properly connected and not leaking, and that excess sediment has been removed from sumps. The results of each inspection shall be submitted with the monthly report. Storage tanks and sumps shall be placed on a Facility Site Map and properly numbered for reference. Tank and sump monitoring shall be conducted at the frequency outlined in **Table XII**.

## 3) Compost Wastewater Discharge Monitoring

The Discharger must monitor flows throughout the system. The Discharger shall install and monitor flow meters on the effluent discharge lines of the storage tanks including the discharge pipe upstream of the on-site POTW discharge point. Other discharge points requiring flow monitoring, include the two J-Stands located north and south of the compost area. If compost wastewater is trucked off-site, then the trucks must be filled from the J-Stands. All flow meters shall be calibrated annually, properly numbered, and referenced on the Facility Site Map.

Monitoring shall be conducted daily between 15 October and 15 May of each year, and daily during rainfall events for the remainder of the year, in accordance with **Table XIII**.

#### 4) Site Photo logs

During the first week of each month, the Discharger shall take photographs of all flow meters (showing the volume reading), berms, above ground tank connections, conveyance lines, pipe joints, pipe aprons, sumps, perimeter ditches, compost pad, and any other leachate controls. Monthly reports shall include photo documentation of the above controls.

### B. REPORTING

The Discharger shall submit the following reports in accordance with the required schedule:

#### Reporting Schedule

<u>Section</u>	<u>Report</u>	<u>End of Reporting Period</u>	<u>Due Date</u>
B.1	Semiannual Monitoring Report	30 June, 31 December	<b>1 August, 1 February</b>
B.2	Annual Monitoring Report	31 December	<b>1 February</b>
B.3	Seep Reporting	Continuous	<b>Immediately &amp; 7 Days</b>
B.4	Annual Facility Inspection Report	15 August	<b>31 October</b>
B.5	Major Storm Event Reporting	Continuous	<b>7 days from damage discovery</b>
B.6	Survey and Iso-Settlement Map for Closed Landfills	Every Five Years	<b>At Closure Completion and Every Five Years</b>
B.7	Final Closure Covers Leak Test Report	Every Two Years	<b>1 February</b>
B.8	Compost Facility Annual Monitoring and Maintenance Report	31 December	<b>1 February</b>
B.9	Financial Assurances Report	31 December	<b>1 June</b>
B.10	Corrective Action Reporting	See Section B.10	<b>See Section B.10</b>

#### Reporting Requirements

The Discharger shall submit monitoring reports **semiannually** with the data and information as required in this Monitoring and Reporting Program and as required in WDRs Order R5-2015-0106 and the Standard Provisions and Reporting Requirements

(particularly Section I: "Standard Monitoring Specifications" and Section J: "Response to a Release"). In reporting the monitoring data required by this program, the Discharger shall arrange the data in tabular form so that the date, the constituents, the concentrations, and the units are readily discernible. The data shall be summarized in such a manner so as to illustrate clearly the compliance with waste discharge requirements or the lack thereof. Data shall also be submitted in a digital format, such as a computer disk.

Field and laboratory tests shall be reported in each monitoring report. Semiannual and annual monitoring reports shall be submitted to the Central Valley Water Board in accordance with the above schedule for the calendar period in which samples were taken or observations made. In addition, the Discharger shall enter all monitoring data and monitoring reports (all field measurements and water quality monitoring parameters) into the online Geotracker database as required by Division 3 of Title 27 and Chapter 30, Division 3 of Title 23. The Discharger shall use the Geotracker codes shown in Tables I through IX for the field and laboratory results when entering monitoring data into the Geotracker database. The Discharger shall notify Central Valley Water Board staff immediately of any monitoring data results for which Geotracker codes are not shown in the MRP or for which a Geotracker code does not currently exist.

The results of **all monitoring** conducted at the site shall be reported to the Central Valley Water Board in accordance with the reporting schedule above for the calendar period in which samples were taken or observations made.

The Discharger shall retain records of all monitoring information, including all calibration and maintenance records, all original strip chart recordings of continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order. Records shall be maintained throughout the life of the facility including the post-closure period. Such records shall be legible and shall show the following for each sample:

- a. Sample identification and the monitoring point or background monitoring point from which it was taken, along with the identity of the individual who obtained the sample;
- b. Training logs and records;
- c. Date, time, and manner of sampling;
- d. Date and time that analyses were started and completed, and the name of the personnel and laboratory performing each analysis;
- e. Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used;
- f. Calculation of results;
- g. Results of analyses, and the MDL and PQL for each analysis. All peaks shall be reported;

- h. Laboratory quality assurance results (e.g., percent recovery, response factor, etc.); and
- i. Chain of Custody forms.

### Required Reports

1. **Semiannual Monitoring Report:** Monitoring reports shall be submitted semiannually and are due on **1 August** and **1 February**. Each semiannual monitoring report shall contain at least the following:
  - a. For each groundwater monitoring point addressed by the report, a description of:
    - 1) The time of water level measurement;
    - 2) The type of pump - or other device - used for purging and the elevation of the pump intake relative to the elevation of the screened interval;
    - 3) The method of purging used to stabilize water in the well bore before the sample is taken including the pumping rate; the equipment and methods used to monitor field pH, temperature, and conductivity during purging; results of pH, temperature, conductivity, and turbidity testing; and the method of disposing of the purge water;
    - 4) The type of pump - or other device - used for sampling, if different than the pump or device used for purging; and
    - 5) A statement that the sampling procedure was conducted in accordance with the approved Sample Collection and Analysis Plan.
  - b. A map or aerial photograph showing the locations of observation stations, monitoring points, and background monitoring points.
  - c. The estimated quarterly downgradient direction of groundwater in the uppermost aquifer, in any zones of perched water, and in any additional zone of saturation which have been monitored based upon water level elevations taken prior to the collection of the water quality data submitted in the report [Title 27, section 20415(e)(15)]. All groundwater monitoring points shall be used to plot hydraulic gradients.
  - d. Cumulative tabulated monitoring data for all monitoring points and constituents for groundwater, unsaturated zone, leachate, and surface water. The tabulated surface water monitoring data shall include the GPS location for each surface water monitoring point where the sample was taken. Concentrations below the reporting limit shall not be reported as non-detect "ND" unless the concentration is below the method detection limit (MDL) and the method detection limit is also given in the table. Laboratory results indicating trace values of COCs between the MDL and PQL (Reporting Limit or RL) shall be reported as estimated values (flagged and estimated value reported). Laboratory results of COCs at or above the PQL shall be reported and indicated clearly as exceeding the PQL relative to laboratory

results reported below the PQL. Laboratory results shall clearly distinguish on time series graphs data that is reported as non-detect versus data that was reported at or above MDL (trace) levels. Units shall be monitored as required in Tables I through XI unless specific justification is given to report in other units. Refer to the SPRRs Section I “Standard Monitoring Specifications” for requirements regarding MDLs and PQLs.

- e. Laboratory statements of results of all analyses evaluating compliance with requirements.
  - f. An evaluation of the concentration of each monitoring parameter (or 5-year COC when five year COC sampling is conducted) as compared to the current concentration limits, and the results of any required verification testing for constituents exceeding a concentration limit. Report any actions taken under Section J: Response to a Release for verified exceedances of a concentration limit for wells/constituents not already in corrective action monitoring.
  - g. An evaluation of the effectiveness of the leachate monitoring and control facilities, and of the run-off/run-on control facilities. Include a summary of any instances where leachate depth on an MSW landfill liner system exceeded 30 cm (excluding the leachate sump), and information about the required notification and corrective action in Standard Facility Specification E.13 of the SPRRs.
  - h. A summary of all Standard Observations for the reporting period required in Section A.5.e of this MRP.
  - i. A summary of inspection, leak search, and repair of final covers on any closed landfill units in accordance with an approved final post-closure maintenance plan as required by Standard Closure and Post-Closure Maintenance Specifications G.26 through G.29 of the SPRRs.
  - j. A summary of any discharges from the compost wastewater management system as described in section A.6.f.
- 2. Annual Monitoring Report:** The Discharger shall submit an Annual Monitoring Report to the Central Valley Water Board by **1 February** covering the reporting period of the previous monitoring year. If desired, the Annual Monitoring Report may be combined with the second semiannual report, but if so, shall clearly state that it is both a semi-annual and annual monitoring report in its title. Each Annual Monitoring Report shall contain the following information:
- a. All monitoring parameters shall be graphed to show historical trends at each monitoring point and background monitoring point, for all samples taken within at least the previous five calendar years. If a 5-year COC event was performed, than these parameters shall also be graphically presented. Each such graph shall plot the concentration of one or more constituents for the period of record for a given monitoring point or background monitoring point, at a scale appropriate to show trends or variations in water quality. The graphs shall plot each datum, rather than

plotting mean values. Graphical analysis of monitoring data may be used to provide significant evidence of a release.

- b. An evaluation of the monitoring parameters with regards to the cation/anion balance, and a graphical presentation using a Stiff diagram, a Piper graph, or a Schoeller plot.
  - c. All historical monitoring data for which there are detectable results, including data for the previous year, shall be submitted in tabular form in a digital file format such as a computer disk. The Central Valley Water Board regards the submittal of data in hard copy and in digital format as "...the form necessary for..." statistical analysis [Title 27, section 20420(h)], that facilitates periodic review by the Central Valley Water Board.
  - d. Hydrographs of each well showing the elevation of groundwater with respect to the elevations of the top and bottom of the screened interval and the elevation of the pump intake. Hydrographs of each well shall be prepared quarterly and submitted annually.
  - e. A comprehensive discussion of the compliance record, and the result of any corrective actions taken or planned which may be needed to bring the Discharger into full compliance with the waste discharge requirements.
  - f. A map showing the area and elevations in comparison to final closure design contours.
  - g. A written summary of the monitoring results, indicating any changes made or observed since the previous Annual Monitoring Report.
  - h. The results of the annual testing of leachate collection and removal systems required under Standard Facility Specification E.14 of the SPRRs.
  - i. Updated concentration limits for each monitoring parameter at each monitoring well based on the new data set.
  - j. A comprehensive discussion of any Corrective Action Program required by this MRP under Section A.7.
- 3. Seep Reporting:** The Discharger shall report by telephone any seepage from the former disposal area **immediately** after it is discovered. A written report shall be filed with the Central Valley Water Board **within seven days**, containing at least the following information:
- a. A map showing the location(s) of seepage;
  - b. An estimate of the flow rate;
  - c. A description of the nature of the discharge (e.g., all pertinent observations and analyses);

- d. Verification that samples have been submitted for analyses of the Field Parameters and Monitoring Parameters listed in Table III of this MRP, and an estimated date that the results will be submitted to the Central Valley Water Board; and
  - e. Corrective measures underway or proposed, and corresponding time schedule.
- 4. Annual Facility Inspection Reporting:** By **31 October** of each year, the Discharger shall submit a report describing the results of the inspection and the repair measures implemented, preparations for winter, and include photographs of any problem areas and the repairs. Refer to Section A.5.a. of this MRP, above.
  - 5. Major Storm Event Reporting:** Following major storm events capable of causing damage or significant erosion, the Discharger **immediately** shall notify Central Valley Water Board staff of any damage or significant erosion upon discovery and report subsequent repairs within **14 days** of completion of the repairs, including photographs of the problem and the repairs. Refer to Section A.5.b of this MRP, above.
  - 6. Survey and Iso-Settlement Map for Closed Landfills:** The Discharger shall conduct a survey and submit an iso-settlement map for each closed area of the landfill every five years pursuant to Title 27, section 21090(e). Refer to Section A.5.c of this MRP, above. The next report is due by **1 August 2017**.
  - 7. Final Closure Covers Leak Test Report (Title 27 section 21090(a)(4)(A)):** The Discharger shall conduct a survey and submit a report for each closed area of the landfill every 2-years pursuant to Title 27, section 21090(a)(4)(A). Refer to Section A.5.d of this MRP, above. The next report is due by **1 August 2016**.
  - 8. Compost Facility Annual Monitoring and Maintenance Report:** By **1 February** of each year, the Discharger shall submit a report describing and containing the results of the compost operations monitoring required by Section A.6 of this MRP and summarizing all monitoring and maintenance activities performed and adverse conditions noted since the prior reporting period with respect to all berms, ditches, working surfaces, sumps, and monitoring systems. As part of the Annual Monitoring and Maintenance Report, the Discharger must certify that the composting operation complies with the requirements of WDRs Order R5-2015-0106 and this MRP. The report must also include the following:
    - a. A map or aerial photograph showing the locations of observation stations and monitoring points;
    - b. Tabular and graphical summaries of all water quality data collected during the year, including storm water monitoring if applicable; and
    - c. All historical monitoring data collected during the previous 5 years, and for which there are detectable results, including data for the previous year, shall be submitted in tabular form and in a digital file format.



d. Monitoring information must include at a minimum:

- 1) The date, identity of sample, monitoring point from which the sample was collected, and time of sampling or measurement;
- 2) The name of the individual(s) who performed the sampling or measurements;
- 3) Date and time that analyses were started and completed;
- 4) The analytical techniques or method used, including method of preserving the sample and the identity and volume of reagents used; and
- 5) Field instrument calibration logs.

e. Copy of the complete laboratory analytical report(s), signed by the laboratory director or project manager, and at a minimum contain:

- 1) Complete sample analytical reports;
- 2) Complete laboratory QA/QC reports;
- 3) A discussion of the sample and QA/QC data;
- 4) A properly completed "chain of custody" from the analyzed samples; and a transmittal letter stating whether or not all of the analytical work was supervised by the director of the laboratory, and contain the following statement:  
*"All analyses were conducted at a laboratory certified for such analyses by the State Water Board's Environmental Laboratory Accreditation Program in accordance with current USEPA procedures."*

f. Results and discussion from the annual compost facility inspection;

g. A summary and certification of completion of inspections and maintenance of the working surfaces, berms, ditches, erosion controls or other containment structures;

h. An evaluation and certification of completion of inspections and maintenance on the effectiveness of the wastewater handling facilities including results of the annual testing of wastewater, capacity issues, nuisance conditions, and system problems;

i. A comprehensive discussion of the compliance record, and the result of any corrective actions taken or planned which may be needed to bring the Discharger into full compliance with WDRs Order R5-2015-0106; and

j. A discussion of any data gaps and potential deficiencies/redundancies in the monitoring system or reporting program.

**9. Financial Assurances Report:** By **1 June** of each year, the Discharger shall submit a copy of the annual financial assurances report due to CalRecycle that updates the

financial assurances for closure, post-closure maintenance, and corrective action. Refer to Financial Assurances Specifications F.1 through F.3 of the WDRs.

## **10. Corrective Action Reporting:**

### **a. Groundwater Corrective Action Monitoring Report**

The groundwater monitoring report for groundwater monitoring wells in corrective action shall be monitored in accordance with section A.7.a. The Corrective Action Report shall be submitted semiannually in accordance with Section B.1 and annually in accordance with Section B.2 of this MRP and shall include an assessment whether the corrective action proposed by the Discharger is effective and whether additional corrective action measures are necessary to bring the monitoring well into compliance.

### **b. Unsaturated Zone Corrective Action Monitoring Report**

The unsaturated zone monitoring report for LFG extraction wells, the flare, and perimeter gas probes shall be monitored in accordance with section A.7.b. The Corrective Action Monitoring Report shall be submitted semiannually in accordance with Section B.1 and annually in accordance with Section B.2 of this MRP and shall include an assessment whether the corrective action proposed by the Discharger is effective and whether additional corrective action measures are necessary to prevent exceedances of the concentration limits for VOCs and bicarbonate alkalinity.

### **c. Compost Facility Monthly Monitoring Reports**

Monthly monitoring reports shall be submitted the 15<sup>th</sup> day of the following month in which sampling occurred and include all data collected from hourly, daily, and weekly measurements, photographs of the compost area and drainage controls, and an estimate (in percent) of area covered with compost in accordance with section A.7.c. The monthly report shall include a description of any drainage control failures and repairs required to make the drainage controls functional. These items include diversion berms, drainage flow paths, drain inlets free, ponding on pad, piping, and freeboard of storage tanks and sumps.

## **C. WATER QUALITY PROTECTION STANDARD AND COMPLIANCE PERIOD**

### **1. Water Quality Protection Standard Report**

For each waste management unit, the Water Quality Protection Standard shall consist of all monitoring parameters, COCs, the concentration limit for each applicable monitoring parameter, constituent of concern, the verification retesting procedure to determine measurably significant evidence of a release, the point of compliance, and all water quality monitoring points for each monitored medium.

The Water Quality Protection Standard for naturally occurring waste constituents consists of the COCs, the concentration limits, and the point of compliance and all monitoring points. Any proposed changes to the Water Quality Protection Standard

other than annual update of the concentration limits shall be submitted in a report for review and approval.

The report shall:

- a. Identify all distinct bodies of surface and ground water that could be affected in the event of a release from a waste management unit or portion of a unit. This list shall include at least the uppermost aquifer and any permanent or ephemeral zones of perched groundwater underlying the facility.
- b. Include a map showing the monitoring points and background monitoring points for the surface water monitoring program, groundwater monitoring program, and the unsaturated zone monitoring program. The map shall include the point of compliance in accordance with Title 27, section 20405.
- c. Evaluate the perennial direction(s) of groundwater movement within the uppermost groundwater zone(s).
- d. Include a proposed statistical method for calculating concentration limits for monitoring parameters and constituents of concern that are detected in 10% or greater of the background data (naturally-occurring constituents) using a statistical procedure from Title 27, section 20415(e)(8)(A-D)] or section 20415(e)(8)(E).
- e. Include a retesting procedure to confirm or deny measurably significant evidence of a release pursuant to Title 27, section 20415(e)(8)(E) and section 20420(j)(1-3).

The Water Quality Protection Standard shall be certified by a California-registered civil engineer or geologist as meeting the requirements of Title 27. If subsequent sampling of the background monitoring point(s) indicates significant water quality changes due to either seasonal fluctuations or other reasons unrelated to waste management activities at the site, the Discharger may request modification of the Water Quality Protection Standard.

The Discharger proposed the methods for calculating concentration limits in the approved *Water Quality Protection Standard Report*. The limits are calculated using Interwell tolerance limits at 95% confidence and 95% coverage based on background data from background monitoring wells MW-5, MW-6, and MW-7.

The Water Quality Protection Standard shall be reviewed annually for each monitoring well using new and historical monitoring data. Any proposed changes to the Water Quality Protection Standard must receive approval by the Central Valley Water Board Executive Officer prior to implementation of the new Water Quality Protection Standard.

## 2. Monitoring Parameters

Monitoring parameters are a select group of constituents that are monitored during each monitoring event that are the waste constituents, reaction products, hazardous constituents, and physical parameters that provide a reliable indication of a release from a waste management unit. The monitoring parameters for all waste management units are those listed in Tables I through XIII for the specified monitored medium.

## 3. Constituents of Concern (COCs)

The COCs include a larger group of waste constituents, their reaction products, and hazardous constituents that are reasonably expected to be in or derived from waste contained in the waste management unit, and are required to be monitored every five years [Title 27, sections 20395 and 20420(g)]. The COCs for all waste management units at the facility are those listed in Tables I through XIII for the specified monitored medium. The Discharger shall monitor all COCs every five years, or more frequently as required in accordance with a Corrective Action Program. The last 5-year COC report was submitted to the Central Valley Water Board in the 2011 *Annual Monitoring Report*, and 5-year COCs are due to be monitored again in **May 2016**.

## 4. Concentration Limits

For a naturally occurring constituent of concern, the concentration limit for each constituent of concern shall 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).

The methods for calculating concentration limits were included in the *Water Quality Protection Standard Report*. The approved method uses Interwell tolerance limits at 95% confidence and 95% coverage based on pooled background data from background monitoring wells MW-5, MW-6, and MW-7.

The Water Quality Protection Standards shall not be calculated using data identified as outliers using the EPA 1989 Outlier Test or an equivalent approved outlier test. The most recent concentration limits calculated using the outlier and upward trend exclusion criteria stated above for select parameters are as follows:

<b>Naturally Occurring COCs</b>	<b>Concentration Limits<sup>4</sup></b>
pH (Units)	<b>6.37 to 7.99</b>
EC <sup>1</sup> (umhos/cm)	<b>520</b>
TDS <sup>2</sup> (mg/L)	<b>380</b>
Chloride (mg/L) <sup>3</sup>	<b>19</b>
Nitrate as N (mg/L)	<b>1.8</b>
Nitrite as N (mg/L)	<b>1.0</b>
Sulfate (mg/L)	<b>63</b>
Carbonate Alkalinity as CaCO <sub>3</sub>	<b>TBD</b>
Bicarbonate Alkalinity as CaCO <sub>3</sub>	<b>200</b>
<b>Non-Naturally Occurring COCs</b>	<b>Concentration Limits</b>
VOCs	Non Detect
Chlorophenoxy Herbicides	Non Detect
Organophosphorus Compounds	Non Detect

<sup>1</sup>Electrical Conductivity

<sup>2</sup>Total Dissolved Solids

<sup>3</sup>Milligrams per liter

<sup>4</sup>Concentration limits provided by the Discharger in the 2014 Second Semiannual and Annual Monitoring Report.

## 5. Retesting Procedures for Confirming Evidence of a Release

If monitoring results indicate measurably significant evidence of a release, as described in Standard Monitoring Specification I.45 of the SPRRs, then:

- a. For analytes that are detected in less than 10% of the background samples (such as non-naturally occurring constituents), the Discharger shall use the non-statistical retesting procedure required in Standard Monitoring Specification I.46 of the SPRRs.
- b. For analytes that are detected in 10% or greater of the background samples (naturally occurring constituents), the Discharger shall use one of the statistical retesting procedure as required in Standard Monitoring Specification I.47 of the SPRRs.

## 6. Point of Compliance

The point of compliance for the water standard at each waste management unit is a vertical surface located at the hydraulically downgradient limit of the Unit that extends through the uppermost aquifer underlying the unit. The following are monitoring locations at the point of compliance:

<u>Cell or Module</u>	<u>Point of Compliance Monitoring Wells</u>
LF-1	MW-1R, MW-2R, MW-10, MW-15
LF-2	MW-3, MW-4
LF-3	MW-8, MW-11, MW-12, MW-13

## 7. Compliance Period

The compliance period for each waste management unit shall be the number of years equal to the active life of the unit plus the closure period. The compliance period is the minimum period during which the Discharger shall conduct a water quality monitoring program subsequent to a release from the waste management unit. The compliance period shall begin anew each time the Discharger initiates an evaluation monitoring program [Title 27, section 20410].

## 8. Monitoring Points

A monitoring point is a well, device, or location specified in the waste discharge requirements, which monitoring is conducted and at which the water quality protection standard applies. The monitoring points for each monitored medium are listed in Section A of this MRP.

## D. TRANSMITTAL LETTER FOR ALL REPORTS

A transmittal letter explaining the essential points shall accompany each report. At a minimum, the transmittal letter shall identify any violations found since the last report was submitted, and if the violations were corrected. If no violations have occurred since the last submittal, this shall be stated in the transmittal letter. The transmittal letter shall also state that a discussion of any violations found since the last report was submitted, and a description of the actions taken or planned for correcting those violations, including any references to previously submitted time schedules, is contained in the accompanying report. The transmittal letter shall contain a statement by the Discharger that it has performed data analysis and whether in accordance with Title 27 section 20420(i) it has determined whether there is "measurably significant" evidence of a release from any WMU. The transmittal letter shall contain a statement by the discharger, or the discharger's authorized agent, under penalty of perjury, that to the best of the signer's knowledge the report is true, accurate, and complete.

The Discharger shall implement the above monitoring program on the effective date of this Program.

Ordered by: \_\_\_\_\_ *Original signed by* \_\_\_\_\_  
PAMELA C. CREEDON, Executive Officer

31 July 2015

\_\_\_\_\_  
(Date)

**TABLE I**  
**GROUNDWATER DETECTION MONITORING PROGRAM**

**Field Parameters**

<b>Parameter</b>	<b>Geotracker Code</b>	<b>Units</b>	<b>Sampling Frequency</b>	<b>Reporting Frequency</b>
Groundwater Elevation	GWELEV	Ft. & 100ths, M.S.L.	Quarterly <sup>1</sup>	Semiannual
Temperature	TEMP	°C	Semiannual	Semiannual
Specific Conductance	SC	umhos/cm	Semiannual	Semiannual
pH	PH	pH units	Semiannual	Semiannual
Turbidity	TURB	NTU Turbidity units	Semiannual	Semiannual

**Monitoring Parameters**

<b>Parameter</b>	<b>Geotracker Code</b>	<b>Units</b>	<b>Sampling Frequency</b>	<b>Reporting Frequency</b>
Total Dissolved Solids	TDS	mg/L <sup>2</sup>	Semiannual	Semiannual
Chloride	CL	mg/L	Semiannual	Semiannual
Carbonate as CaCO <sub>3</sub>	CaCO <sub>3</sub>	mg/L	Semiannual	Semiannual
Bicarbonate as CaCO <sub>3</sub>	BICACO <sub>3</sub>	mg/L	Semiannual	Semiannual
Nitrogen, Kjeldahl, Total	KN	mg/L	Semiannual	Semiannual
Nitrogen, Nitrate (as N)	NO <sub>3</sub> N	mg/L	Semiannual	Semiannual
Nitrogen, Nitrite (as N)	NO <sub>2</sub> N	mg/L	Semiannual	Semiannual
Sulfate	SO <sub>4</sub>	mg/L	Semiannual	Semiannual
Calcium	CA	mg/L	Semiannual	Semiannual
Magnesium	MG	mg/L	Semiannual	Semiannual
Potassium	K	mg/L	Semiannual	Semiannual
Sodium	NA	mg/L	Semiannual	Semiannual
Volatile Organic Compounds (See Table V)	(See Table V)	ug/L <sup>3</sup>	Semiannual	Semiannual

**5-Year Constituents of Concern (see Table VI)**

<b>Parameter</b>	<b>Geotracker Code</b>	<b>Units</b>	<b>Sampling Frequency</b>	<b>Reporting Frequency</b>
Total Organic Carbon (TOC)	TOC	mg/L	5 years	May 2016
Inorganics (dissolved)	See Table VI	ug/L	5 years	and every
Volatile Organic Compounds	See Table VI	ug/L	5 years	5 years
Semi-Volatile Organic Compounds	See Table VI	ug/L	5 years	thereafter
Chlorophenoxy Herbicides	See Table VI	ug/L	5 years	
Organophosphorus Compounds	See Table VI	ug/L	5 years	

<sup>1</sup> The Discharger shall monitor groundwater elevation quarterly at appropriate times representative of seasonal maximum and minimum groundwater elevation. Groundwater elevation for all groundwater monitoring points shall be reported using a common datum e.g. NGVD29 or NAVD88.

<sup>2</sup> Milligrams per liter

<sup>3</sup> Micrograms per liter

**TABLE II**  
**UNSATURATED ZONE DETECTION MONITORING PROGRAM**

**SOIL-PORE GAS**  
**Monitoring Parameters**

<b>Parameter</b>	<b>Geotracker Code</b>	<b>Units</b>	<b>Sampling Frequency</b>	<b>Reporting Frequency</b>
Volatile Organic Compounds <sup>1</sup> <sup>2</sup> (Use USEPA Method TO-15)	(See Table V)	ug/cm <sup>3</sup>	Annual	Annual
Methane	CH <sub>4</sub>	%	Semiannual	Annual
Carbon Dioxide	CO <sub>2</sub>	%	Semiannual	Annual
Oxygen	OXYGEN	%	Semiannual	Annual

<sup>1</sup> Particularly those VOCs historically detected in LCRS sumps S-1 through S-5 and in groundwater monitoring wells

<sup>2</sup> The Discharger may prescreen the gas sample to determine if the sample is required to be laboratory analyzed using Method TO-15 by using an approved gas analyzer to establish methane concentrations and an approved Photo Ionization Detector (PID) to establish total VOCs concentrations at the sampling point. If while using an approved sampling and analysis plan procedure the Discharger detects methane concentrations exceeding 1.0 percent by volume OR organic vapors (total VOCs) are detected with a PID at a concentration greater than 1.0 ppm then a gas sample shall be obtained and laboratory analyzed for specific VOCs using EPA Method TO-15. Both the screening results and laboratory analysis results shall be reported. Otherwise, the Discharger shall report the methane and total VOC screening results and no further laboratory analysis is required.



**TABLE III**  
**LEACHATE MONITORING <sup>1</sup>, SEEP MONITORING <sup>2</sup>, AND LCRS TESTING <sup>3</sup>**

**Field Parameters**

Parameter	Geotracker Code	Units	Sampling Frequency	Reporting Frequency
Total Volume/Month		Gallons	Monthly	Semiannual
Flow Rate	FLOW	Gallons/Month	Monthly	Semiannual
Specific Conductance	SC	umhos/cm	Monthly	Semiannual
pH	PH	pH units	Monthly	Semiannual

**Monitoring Parameters**

Parameter	Geotracker Code	Units	Sampling Frequency	Reporting Frequency
Total Dissolved Solids	TDS	mg/L <sup>1</sup>	Semiannual	Semiannual
Chloride	CL	mg/L	Semiannual	Semiannual
Carbonate as CaCO <sub>3</sub>	CaCO <sub>3</sub>	mg/L	Semiannual	Semiannual
Bicarbonate as CaCO <sub>3</sub>	BiCaCO <sub>3</sub>	mg/L	Semiannual	Semiannual
Nitrogen, Nitrate (as N)	NO <sub>3</sub> N	mg/L	Semiannual	Semiannual
Sulfate	SO <sub>4</sub>	mg/L	Semiannual	Semiannual
Calcium	CA	mg/L	Semiannual	Semiannual
Magnesium	MG	mg/L	Semiannual	Semiannual
Potassium	K	mg/L	Semiannual	Semiannual
Sodium	NA	mg/L	Semiannual	Semiannual
Volatile Organic Compounds (See Table V)	(See Table V)	ug/L <sup>2</sup>	Semiannual	Semiannual

**5-Year Constituents of Concern (see Table VI)**

Parameter	Geotracker Code	Units	Sampling Frequency	Reporting Frequency
Total Organic Carbon (TOC)	TOC	mg/L	5 years	May 2016
Inorganics (dissolved)	See Table VI	ug/L	5 years	and every
Volatile Organic Compounds	See Table VI	ug/L	5 years	5 years
Semi-Volatile Organic Compounds	See Table VI	ug/L	5 years	thereafter
Chlorophenoxy Herbicides	See Table VI	ug/L	5 years	
Organophosphorus Compounds	See Table VI	ug/L	5 years	

**LCRS Testing <sup>3</sup>**

---	Annually	Annually
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<sup>1</sup> If leachate is detected in a previously dry sump, the Discharger shall verbally notify Central Valley Water Board staff within **seven days** and shall immediately sample and test the leachate for Field and Monitoring Parameters listed in Table III. Leachate in the LCRS sump shall then be sampled for all parameters and constituents in accordance with the frequencies listed in Table III whenever liquid is present.

<sup>2</sup> Leachate seeps shall be sampled and analyzed for the Field and Monitoring Parameters in this table upon detection and/or reappearance. The quantity of leachate shall be estimated and reported in gallons/day. Also, refer to Section B.3

<sup>3</sup> The Discharger shall test each LCRS annually pursuant to Title 27, section 20340(d) to demonstrate proper operation. The results of the tests shall be compared with earlier tests made under comparable conditions.

**TABLE IV  
 SURFACE WATER DETECTION MONITORING PROGRAM**

**Field Parameters**

Parameter	Geotracker Code	Units	Sampling Frequency <sup>1</sup>	Reporting Frequency
Specific Conductance	SC	umhos/cm	Semiannual	Semiannual
pH	PH	pH units	Semiannual	Semiannual
Dissolved Oxygen	DOSAT	% Saturation	Semiannual	Semiannual
Turbidity	TURB	Turbidity units	Semiannual	Semiannual
Temperature	TEMP	°C	Semiannual	Semiannual
Flow to Waters of U.S.		Yes or No	Semiannual	Semiannual

**Monitoring Parameters**

Parameter	Geotracker Code	Units	Sampling Frequency	Reporting Frequency
Biologic Oxygen Demand	BOD	mg/L	Semiannual	Semiannual
Total Dissolved Solids	TDS	mg/L	Semiannual	Semiannual
Chloride	CL	mg/L	Semiannual	Semiannual
Carbonate as CaCO <sub>3</sub>	CaCO <sub>3</sub>	mg/L	Semiannual	Semiannual
Bicarbonate as CaCO <sub>3</sub>	BICaCO <sub>3</sub>	mg/L	Semiannual	Semiannual
Ammonia (un-ionized)	NH <sub>3</sub>	mg/L	Semiannual	Semiannual
Nitrogen, Nitrate (as N)	NO <sub>3</sub> N	mg/L	Semiannual	Semiannual
Sulfate	SO <sub>4</sub>	mg/L	Semiannual	Semiannual
Calcium	CA	mg/L	Semiannual	Semiannual
Magnesium	MG	mg/L	Semiannual	Semiannual
Potassium	K	mg/L	Semiannual	Semiannual
Sodium	NA	mg/L	Semiannual	Semiannual
Total Organic Carbon (TOC)	TOC	mg/L	Semiannual	Semiannual
Total Suspended Solids	TSS	mg/L	Semiannual	Semiannual
Volatile Organic Compounds (See Table V)	(See Table V)	ug/L	Semiannual	Semiannual

**5-Year Constituents of Concern (see Table VI)**

Parameter	Geotracker Code	Units	Sampling Frequency	Reporting Frequency
Chemical Oxygen Demand	COD	mg/L	5 years	May 2016 and every
Inorganics (dissolved)	See Table VI	ug/L	5 years	5 years
Volatile Organic Compounds	See Table VI	ug/L	5 years	thereafter
Semi-Volatile Organic Compounds	See Table VI	ug/L	5 years	
Chlorophenoxy Herbicides	See Table VI	ug/L	5 years	
Organophosphorus Compounds	See Table VI	ug/L	5 years	

<sup>1</sup> Semiannual surface water monitoring is required twice per year when there is water present at all the designated surface water monitoring points at the beginning and the end of the wet season (15 October through 15 May). Reporting shall include whether there was flow from the facility to waters of the U.S. when the samples were collected.

**TABLE V**

**MONITORING PARAMETERS FOR DETECTION MONITORING**

**Surrogates for Metallic Constituents:**

<b><u>Analyte Description</u></b>	<b><u>Geotracker Code</u></b>
pH	PH
Total Dissolved Solids	TDS
Specific Conductance	SC
Chloride	CL
Sulfate	SO4
Nitrogen, Nitrate (as N)	NO3N

**Volatile Organic Compounds, short list (USEPA Method 8260B):**

<b><u>Analyte Description</u></b>	<b><u>Geotracker Code</u></b>
Acetone	ACE
Acrylonitrile	ACRAMD
Benzene	BZ
Bromochloromethane	BRCLME
Bromodichloromethane	BDCME
Bromoform	TBME
Carbon disulfide	CDS
Carbon tetrachloride	CTCL
Chlorobenzene	CLBZ
Chloroethane	CLEA
Chloroform	TCLME
Dibromochloromethane	DBCME
1,2-Dibromo-3-chloropropane	DBCP
1,2-Dibromoethane	EDB
1,2-Dichlorobenzene	DCBZ12
1,3-Dichlorobenzene	DCBZ13
1,4-Dichlorobenzene	DCBZ14
trans-1,4-Dichloro-2-butene	DCBE14T
Dichlorodifluoromethane	FC12
1,1-Dichloroethane	DCA11
1,2-Dichloroethane	DCA12
1,1-Dichloroethene	DCE11
cis-1,2-Dichloroethene	DCE12C
trans-1,2-Dichloroethene	DCE12T
1,2-Dichloropropane	DCPA12
cis-1,3-Dichloropropene	DCP13C
trans-1,3-Dichloropropene	DCP13T
Di-isopropyl ether (DIPE)	DIPE
Ethanol (EtOH)	ETHANOL
Ethyl tert-butyl ether (ETBE)	ETBE
Ethylbenzene	EBZ
2-Hexanone	HXO2

**TABLE V (Continued)**

**Volatile Organic Compounds, short list (continued)**

<b><u>Analyte Description</u></b>	<b><u>Geotracker Code</u></b>
Hexachlorobutadiene	HCBU
Bromomethane	BRME
Chloromethane	CLME
Dibromomethane	DBMA
Dichloromethane	DCMA
2-Butanone	MEK
Methyl iodide	IME
Methyl-tert-butyl ether (MTBE)	MTBE
4-Methyl-2-pentanone	MIBK
Naphthalene	NAPH
Styrene	STY
tert-Amyl methyl ether (TAME)	TAME
tert-Butyl alcohol (TBA)	TBA
1,1,1,2-Tetrachloroethane	TC1112
1,1,2,2-Tetrachloroethane	PCA
Tetrachloroethene (PCE)	PCE
Toluene	BZME
1,2,4-Trichlorobenzene	TCB124
1,1,1-Trichloroethane	TCA111
1,1,2-Trichloroethane	TCA112
Trichloroethene (TCE)	TCE
Trichlorofluoromethane	FC11
1,2,3-Trichloropropane	TCPR123
Vinyl acetate	VA
Vinyl chloride	VC
Xylenes	XYLENES

**TABLE VI**  
**5-YEAR COCs & APPROVED USEPA ANALYTICAL METHODS**

<b><u>Inorganics (dissolved):</u></b>	<b><u>USEPA Method</u></b>	<b><u>Geotracker Code</u></b>
Aluminum	6010	AL
Antimony	7041	SB
Barium	6010	BA
Beryllium	7131A	BE
Cadmium	6010	CD
Chromium	6010	CR
Cobalt	6010	CO
Copper	6010	CU
Silver	6010	AG
Tin	6010	SN
Vanadium	6010	V
Zinc	6010	ZN
Iron	6010	FE
Manganese	7062	MN
Arsenic	7421	AS
Lead	7470A	PB
Mercury	7521	HG
Nickel	7742	NI
Selenium	7841	SE
Thallium	9010C	TL
Cyanide, Total	9030B	CN
Sulfide	6010	S

**Volatile Organic Compounds, extended list (USEPA Method 8260B):**

<b><u>COC Description</u></b>	<b><u>Geotracker Code</u></b>
Acetone	ACE
Acetonitrile	ACCN
Acrolein	ACRL
Acrylonitrile	ACRAMD
Allyl chloride	CLPE3
Benzene	BZ
Bromochloromethane	BRCLME
Dibromochloromethane	DBCME
Bromoform	TBME
Carbon disulfide	CDS
Carbon tetrachloride	CTCL
Chlorobenzene	CLBZ
Chloroethane	CLEA
Chloroform	TCLME
2-Chloro-1,3-butadiene (Chloroprene)	CHLOROPRENE
Dibromochloromethane	DBCME
1,2-Dibromo-3-chloropropane	DBCP
1,2-Dibromoethane	EDB

**TABLE VI (Continued)**

**Volatile Organic Compounds, extended list (continued)**

<b><u>COC Description</u></b>	<b><u>Geotracker Code</u></b>
1,2-Dichlorobenzene	DCBZ12
1,3-Dichlorobenzene	DCBZ13
1,4-Dichlorobenzene	DCBZ14
trans-1,4-Dichloro-2-butene	DCBE14T
Dichlorodifluoromethane	FC12
1,1-Dichloroethane	DCA11
1,2-Dichloroethane	DCA12
1,1-Dichloroethene	DCE11
cis-1,2-Dichloroethene	DCE12C
trans-1,2-Dichloroethene	DCE12T
1,2-Dichloropropane	DCPA12
1,3-Dichloropropane	DCPA13
2,2-Dichloropropane	DCPA22
1,1-Dichloropropene	DCP11
cis-1,3-Dichloropropene	DCP13C
trans-1,3-Dichloropropene	DCP13T
Di-isopropyl ether (DIPE)	DIPE
Ethanol (EtOH)	ETHANOL
Ethyl tert-butyl ether (ETBE)	ETBE
Ethylbenzene	EBZ
Ethyl methacrylate	EMETHACRY
Hexachlorobutadiene	HCBU
2-Hexanone	HXO2
Isobutanol	ISOBTOH
Methacrylonitrile	METHACRN
Bromomethane	BRME
Chloromethane	CLME
2-Butanone	MEK
Methyl iodide	IME
Methyl-tert-butyl ether (MTBE)	MTBE
Methylmethacrylate	MMETHACRY
4-Methyl-2-pentanone	MIBK
Dibromomethane	DBMA
Dichloromethane	DCMA
Naphthalene	NAPH
Propionitrile	PACN
Styrene	STY
tert-Amyl methyl ether (TAME)	TAME
tert-Butyl alcohol (TBA)	TBA
1,1,1,2-Tetrachloroethane	TC1112
1,1,2,2-Tetrachloroethane	PCA

**TABLE VI (Continued)**

**Volatile Organic Compounds, extended list (continued)**

<b><u>COC Description</u></b>	<b><u>Geotracker Code</u></b>
Tetrachloroethene (PCE)	PCE
Toluene	BZME
1,2,4-Trichlorobenzene	TCB124
1,1,1-Trichloroethane	TCA111
1,1,2-Trichloroethane	TCA112
Trichloroethene (TCE)	TCE
Trichlorofluoromethane	FC11
1,2,3-Trichloropropane	TCPR123
Vinyl acetate	VA
Vinyl chloride	VC
Xylenes	XYLENES

**Semi-Volatile Organic Compounds (USEPA Method 8270C or D - base, neutral, & acid extractables):**

<b><u>COC Description</u></b>	<b><u>Geotracker Code</u></b>
Acenaphthene	ACNP
Acenaphthylene	ACNPY
Acetophenone	ACPHN
2-Acetylaminofluorene	ACAMFL2
Aldrin	ALDRIN
4-Aminobiphenyl	AMINOBP4
Anthracene	ANTH
Benzo(a)anthracene	BZAA
Benzo(b)fluoranthene	BZBF
Benzo(k)fluoranthene	BZKF
Benzo(g,h,i)perylene	BZGHIP
Benzo(a)pyrene	BZAP
Benzyl alcohol	BZLAL
Bis-(2-ethylhexyl)phthalate	BIS2EHP
alpha-BHC	BHCALPHA
beta-BHC	BHCBETA
delta-BHC	BHCDELTA
gamma-BHC (Lindane)	BHCGAMMA
Bis-(2-chloroethoxy)methane	BECEM
Bis-(2-chloroethyl)ether	BIS2CEE
Bis(2-chloroisopropyl)ether	BIS2CIE
4-Bromophenyl phenyl ether	BPPE4
Benzyl butyl phthalate	BBP
Chlordane	CHLORDANE
4-Chloroaniline	CLANIL4
Chlorobenzilate	CLBZLATE

**TABLE VI (Continued)**

**Semi-Volatile Organic Compounds (continued)**

<b><u>COC Description</u></b>	<b><u>Geotracker Code</u></b>
4-Chloro-3-methylphenol	C4M3PH
2-Chloronaphthalene	CNPH2
2-Chlorophenol	CLPH2
4-Chlorophenyl phenyl ether	CPPE4
Chrysene	CHRYSENE
2-Methylphenol (o-Cresol)	MEPH2
3-methylphenol	MEPH3
4-Methylphenol (p-Cresol)	MEPH4
4,4'-DDD	DDD44
4,4'-DDE	DDE44
4,4'-DDT	DDT44
Diallate (cis- or trans-)	DIALLATE
Dibenzo(a,h)anthracene	DBAHA
Dibenzofuran	DBF
Di-n-butyl phthalate	DNBP
3,3'-Dichlorobenzidine	DBZD33
2,4-Dichlorophenol	DCP24
2,6-Dichlorophenol	DCP26
Dieldrin	DIELDRIN
Diethyl phthalate	DEPH
azobenzene	AZOBENZENE
7,12-Dimethylbenz(a)anthracene	DMBZA712
3,3'-Dimethylbenzidine	DMBZD33
2,4-Dimethylphenol	DMP24
Dimethyl phthalate	DMPH
1,3-Dinitrobenzene	DNB13
2-Methyl-4,6-dinitrophenol	DN46M
2,4-Dinitrophenol	DNP24
2,4-Dinitrotoluene	DNT24
2,6-Dinitrotoluene	DNT26
Di-n-octyl phthalate	DNOP
Diphenylamine	DPA
Endosulfan I	ENDOSULFANA
Endosulfan II	ENDOSULFANB
Endosulfan sulfate	ENDOSULFANS
Endrin	ENDRIN
Endrin aldehyde	ENDRINALD
Ethyl methanesulfonate	EMSULFN
Famphur	FAMPHUR
Fluoranthene	FLA
Fluorene	FL



**TABLE VI (Continued)**

**Semi-Volatile Organic Compounds (continued)**

<b><u>COC Description</u></b>	<b><u>Geotracker Code</u></b>
Heptachlor	HEPTACHLOR
Heptachlor epoxide	HEPT-EPOX
Hexachlorobenzene	HCLBZ
Hexachlorocyclopentadiene	HCCP
Hexachloroethane	HCLEA
Hexachloropropene	HCPR
Indeno(1,2,3-cd)pyrene	INP123
Isodrin	ISODRIN
Isophorone	ISOP
Isosafrole	ISOSAFR
Kepone	KEP
Methapyrilene	MTPYRLN
Methoxychlor	MTXYCL
3-Methylcholanthrene	MECHLAN3
Methyl methanesulfonate	MMSULFN
2-Methylnaphthalene	MTNPH2
1,4-Naphthoquinone	NAPHQ14
1-Naphthylamine	AMINONAPH1
2-Naphthylamine	AMINONAPH2
2-Nitroaniline	NO2ANIL2
3-Nitroaniline	NO2ANIL3
4-Nitroaniline	NO2ANIL4
Nitrobenzene	NO2BZ
2-Nitrophenol	NTPH2
4-Nitrophenol	NTPH4
n-Nitroso-di-n-butylamine	NNSBU
N-Nitrosodiethylamine	NNSE
N-Nitrosodimethylamine	NNSM
N-Nitrosodiphenylamine	NNSPH
n-Nitrosodi-n-propylamine	NNSPR
N-Nitrosomethylethylamine	NNSME
N-Nitrosopiperidine	NNSPPRD
N-Nitrosopyrrolidine	NNSPYRL
5-Nitro-o-toluidine	TLDNONT5
Pentachlorobenzene	PECLBZ
Pentachloronitrobenzene	PECLNO2BZ
Pentachlorophenol	PCP
Phenacetin	PHNACTN
Phenanthrene	PHAN
Phenol	PHENOL
1,4-Phenylenediamine	ANLNAM4
Polychlorinated biphenyls (PCBs)	PCBS

**TABLE VI (Continued)**

**Semi-Volatile Organic Compounds (continued)**

<b><u>COC Description</u></b>	<b><u>Geotracker Code</u></b>
Pronamide	PRONAMD
Pyrene	PYR
Safrole	SAFROLE
1,2,4,5-Tetrachlorobenzene	C4BZ1245
2,3,4,6-Tetrachlorophenol	TCP2346
o-Toluidine	TLDNO
Toxaphene	TOXAP
2,4,5-Trichlorophenol	TCP245
o,o,o-Triethyl phosphorothioate	TEPTH
1,3,5-Trinitrobenzene	TNB135

**Chlorophenoxy Herbicides (USEPA Method 8151A):**

<b><u>COC Description</u></b>	<b><u>Geotracker Code</u></b>
2,4-D	24D
Dinoseb	DINOSEB
2,4,5-TP (Silvex)	SILVEX
2,4,5-T	245T

**Organophosphorus Compounds (USEPA Method 8141B):**

<b><u>COC Description</u></b>	<b><u>Geotracker Code</u></b>
Atrazine	ATRAZINE
Chlorpyrifos	CLPYRIFOS
Thionazine	ZINOPHOS
Diazinon	DIAZ
Dimethoate	DIMETHAT
Disulfoton	DISUL
Parathion methyl	PARAM
Parathion ethyl	PARAE
Phorate	PHORATE
Simazine	SIMAZINE

**TABLE VII**  
**COMPOST PAD THICKNESS AND DRAINAGE CONTROLS**

<b>Inspection Type</b>	<b>Monitoring Frequency</b>	<b>Reporting Frequency</b>
Operations Containment (verify compost operations are conducted within compost pad, perimeter berms intact) <sup>1</sup>	Weekly	Annually
Compost Pad Thickness Field Verification (each monument exposed must be reported and plotted on map)	Monthly	Annually
Compost Pad Grading and corresponding isopach map (volume of material needed to restore grade)	As required by Compost Pad Thickness Field Verification	Annually
Compost Pad Topographic Survey (maintain 3% grade) <sup>2</sup>	Annually	Annually
Compost Pad Drainage Controls <sup>3</sup>	Monthly/Daily	Annually

1. Inspections must include photographs as described in Compost Facilities Monitoring, A.6(d)(4)
2. Prepare map of survey results and report in the Annual Monitoring Report.
3. During rain events Discharger is required to inspect drainage controls on a daily basis.

**TABLE VIII**  
**COMPOST OPERATIONS STORAGE TANK AND SUMP MONITORING**

<b>Inspection Type</b>	<b>Parameter, units</b>	<b>Inspection Frequency<sup>1</sup></b>	<b>Reporting Frequency</b>
Each storage tank	Freeboard <sup>3</sup> (0.5 feet)	Monthly/ Daily	Semiannual
Each sump	Freeboard <sup>3</sup> (0.5 feet)	Monthly/ Daily	Semiannual
Each storage tank	Remaining capacity at end of each day (%)	Monthly/ Daily	Semiannual
Each sump	Remaining capacity at end of each day (%)	Monthly/ Daily	Semiannual
Overflow from tanks and sumps <sup>2</sup>	Yes/No	Monthly/ Daily	Semiannual

1. During rain events Discharger is required to inspect compost operations storage tanks, sump, and associated facilities on a daily basis.
2. Inspect and document whether or not there has been any overflow from the storage tanks or sumps. If tanks or sumps overflow, Discharger shall immediately contact Board staff by phone or email.
3. Measuring and reporting freeboard only required for open-ended containment systems where potential overtopping could occur due to wind conditions.

**TABLE IX**

**COMPOST OPERATIONS COMPOST WASTEWATER DISCHARGE MONITORING**

<b>Metered Location</b>	<b>Parameter</b>	<b>Units</b>	<b>Monitoring Frequency<sup>1</sup></b>	<b>Reporting Frequency</b>
Each Sump	Volume pumped/sump	Gallons	Monthly/ Daily	Semiannual
Volume hauled off-site <sup>2</sup>	Volume hauled	Gallons	Monthly/ Daily	Semiannual
Tanks to POTW	Volume pumped to POTW/day	Gallons	Monthly/ Daily	Semiannual
Each J-Stand	Volume pumped and applied to compost piles	Gallons	Monthly/ Daily	Semiannual

1. During rain events Discharger is required to inspect compost operations compost wastewater discharge facilities on a daily basis.
2. The Discharger shall report the volume hauled and location hauled to, and shall include hauling receipts with the annual reports.

**TABLE X**  
**COMPOST WASTEWATER CHARACTERIZATION MONITORING PROGRAM**

**Field Parameters**

<b>Parameter</b>	<b>Geotracker Code</b>	<b>Units</b>	<b>Sampling Frequency</b>	<b>Reporting Frequency</b>
Specific Conductance	SC	umhos/cm	Quarterly	Annually
Dissolved Oxygen	DO	mg/L <sup>1</sup>	Quarterly	Annually
pH	PH	pH units	Quarterly	Annually

**Monitoring Parameters**

<b>Parameter</b>	<b>Geotracker Code</b>	<b>Units</b>	<b>Sampling Frequency</b>	<b>Reporting Frequency</b>
Total Dissolved Solids	TDS	mg/L	Quarterly	Annually
Fixed Dissolved Solids	TFS	mg/L	Quarterly	Annually
Total Nitrogen	TOTN	mg/L	Quarterly	Annually
Biologic Oxygen Demand	BOD	mg/L	Quarterly	Annually
Phosphorus, Total as P	P	mg/L	Quarterly	Annually
Aluminum	AL	mg/L	Quarterly	Annually
Iron	FE	mg/L	Quarterly	Annually
Total Organic Carbon	TOC	mg/L	Quarterly	Annually
Ammonia, (un-ionized)	NH3	mg/L	Quarterly	Annually
Nitrogen, Nitrate-Nitrite	NO3NO2N	Mg/L	Quarterly	Annually
Specific Conductance	SC	umhos/cm	Quarterly	Annually
Total Coliform	COLIFORM	MPN/100mL	Quarterly	Annually
Fecal Coliform	FCOLIFORM	MPN/100mL	Quarterly	Annually

<sup>1</sup> Milligrams per liter

**TABLE XI**  
**COMPOST PAD THICKNESS AND DRAINAGE CONTROLS**  
**FOR CORRECTIVE ACTION**

<b>Inspection Type</b>	<b>Monitoring Frequency</b>	<b>Reporting Frequency</b>
Operations Containment (verify compost operations are conducted within compost pad, perimeter berms intact) <sup>1</sup>	Weekly	Monthly
Compost Pad Thickness Field Verification (each monument exposed must be reported and plotted on map)	Monthly	Monthly
Compost Pad Grading and corresponding isopach map (volume of material needed to restore grade)	As required by Compost Pad Thickness Field Verification	Monthly
Compost Pad Topographic Survey (maintain 3% grade) <sup>2</sup>	Monthly	Monthly
Compost Pad Drainage Controls	Daily between 15 October and 15 May, and daily during rainfall events for the remainder of the year	Monthly

1. Inspections must include photographs as described in Compost Facilities Monitoring, A.6 (d)(4)
2. Prepare map of survey results and report monthly in the Corrective Action Monthly Report B.10.c.

**TABLE XII**  
**COMPOST OPERATIONS STORAGE TANK AND SUMP MONITORING**  
**FOR CORRECTIVE ACTION**

<b>Inspection Type</b>	<b>Parameter, units</b>	<b>Inspection Frequency<sup>1</sup></b>	<b>Reporting Frequency</b>
Each storage tank	Freeboard <sup>3</sup> (0.1 feet)	Daily	Monthly
Each sump	Freeboard <sup>3</sup> (0.1 feet)	Daily	Monthly
Each storage tank	Remaining capacity at end of each day (%)	Daily	Monthly
Each sump	Remaining capacity at end of each day (%)	Daily	Monthly
Overflow from tanks and sumps <sup>2</sup>	Yes/No	Daily	Monthly

1. During rain events Discharger is required to inspect all facilities on an **hourly** basis as inspector safety permits.
2. Inspect and document whether or not there has been any overflow from the storage tanks or sumps. If tanks or sumps overflow, Discharger shall immediately contact Board staff by phone and follow-up with an email within 24 hours.
3. Measuring and reporting freeboard is only required for open-ended containment systems where potential overtopping could occur due to wind conditions.



**TABLE XIII**  
**COMPOST OPERATIONS COMPOST WASTEWATER DISCHARGE MONITORING**  
**FOR CORRECTIVE ACTION**

<b>Metered Location</b>	<b>Parameter</b>	<b>Units</b>	<b>Monitoring Frequency</b>	<b>Reporting Frequency</b>
Each Sump	Volume pumped/sump	Gallons	Daily	Monthly
Volume hauled off-site <sup>1</sup>	Volume hauled	Gallons	Daily	Monthly
Tanks to POTW	Volume pumped to POTW/day	Gallons	Daily	Monthly
Each J-Stand	Volume pumped and applied to compost piles	Gallons	Daily	Monthly

1. The Discharger shall report the volume hauled and location hauled to, and shall include hauling receipts in with the monthly reports.

**TABLE XIV  
 LANDFILL GAS (LFG) CORRECTIVE ACTION MONITORING PROGRAM**

<b>Parameter</b>	<b>Units</b>	<b>Sampling Frequency</b>	<b>Reporting Frequency</b>
<b>LFG Extraction Well Field</b> (Only extraction well fields for WMUs in corrective action due to LFG related exceedances at WMU compliance points are required to be monitored)			
Gas concentrations at each well			
Methane	% by volume	Monthly	Semiannually
Carbon Dioxide	% by volume	Monthly	Semiannually
Oxygen	% by volume	Monthly	Semiannually
Remainder gas	% by volume	Monthly	Semiannually
Gas Temperature at each well	°F	Monthly	Semiannually
Gas Flow rate	CFM	Monthly	Semiannually
Gas Pressure at each well			
Initial static pressure in wellhead	inches H <sub>2</sub> O	Monthly	Semiannually
Adjusted static pressure in wellhead	inches H <sub>2</sub> O	Monthly	Semiannually
<b>Flare Station</b>			
Pressure into the LFG Flare	inches H <sub>2</sub> O	Monthly	Semiannually
LFG Flow rate into the Flare	CFM	Monthly	Semiannually
VOCs <sup>3</sup> by USEPA Method TO-15	µg/cm <sup>3</sup>	Semiannually	Semiannually
Operating Hours	Hours	Continuous	Semiannually
<b>Perimeter LFG Migration Monitoring Probes GP-1 through GP-15,</b>			
Gas Concentration			
Methane	% by volume	Quarterly	Semiannually
Carbon Dioxide	% by volume	Quarterly	Semiannually
Oxygen	% by volume	Quarterly	Semiannually
Remainder gas	% by volume	Quarterly	Semiannually
Probe Pressure/Vacuum	inches H <sub>2</sub> O	Quarterly	Semiannually
<b>All Landfill Gas Corrective Action Monitoring Points in LF-1, LF-2, and LF-3:</b>			
Gas Concentration			
Methane	% by volume	Monthly	Semiannually
Carbon Dioxide	% by volume	Monthly	Semiannually
Oxygen	% by volume	Monthly	Semiannually
Remainder gas	% by volume	Monthly	Semiannually
Probe Pressure/Vacuum	inches H <sub>2</sub> O	Monthly	Semiannually
VOCs <sup>2</sup> by USEPA Method TO-15	µg/cm <sup>3</sup>	Semiannually	Semiannually

<sup>3</sup> Particularly those VOCs historically detected in LCRS sumps S-1 through S-5 and/or in groundwater monitoring wells.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

STANDARD PROVISIONS AND REPORTING REQUIREMENTS  
FOR  
WASTE DISCHARGE REQUIREMENTS  
FOR  
NONHAZARDOUS SOLID WASTE DISCHARGES  
REGULATED BY SUBTITLE D AND/OR TITLE 27  
(40 C.F.R. section 258 and Title 27, § 20005 et seq.)

JANUARY 2012

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## **A. APPLICABILITY**

1. These Standard Provisions and Reporting Requirements (SPRRs) are applicable to nonhazardous solid waste disposal sites that are regulated by the Central Valley Regional Water Quality Control Board (hereafter, Central Valley Water Board) pursuant to the provisions of California Code of Regulations, title 27 ("Title 27"), section 20005 et seq., and municipal solid waste (MSW) landfills that are subject to the Federal Subtitle D regulations contained in 40 Code of Federal Regulations section 258 (hereafter, "Subtitle D" or "40 C.F.R. § 258.XX") in accordance with State Water Resources Control Board (State Water Board) Resolution 93-62. The Subtitle D regulations are only applicable to MSW landfills and therefore any requirements in these SPRRs that are referenced as coming from Subtitle D are not applicable to non-MSW waste management units such as Class II surface impoundments, Class II waste piles, and non-MSW landfill units. All Subtitle D requirements in these SPRRs are referenced with "[40 C.F.R. § 258.XX]" after the requirement.
2. "Order," as used throughout this document, means the Waste Discharge Requirements (WDRs) to which these SPRRs are incorporated.
3. The requirements prescribed herein do not authorize the commission of any act causing injury to the property of another, and do not protect the Discharger from liabilities under federal, state, or local laws. This Order does not convey any property rights or exclusive privileges.
4. The provisions of this Order are severable. If any provision of this Order is held invalid, the remainder of this Order shall not be affected.
5. If there is any conflicting or contradictory language between the WDRs, the Monitoring and Reporting Program (MRP), or the SPRRs, then language in the WDRs shall govern over either the MRP or the SPRRs, and language in the MRP shall govern over the SPRRs.
6. If there is a site-specific need to change a requirement in these SPRRs for a particular landfill facility, the altered requirement shall be placed in the appropriate section of the WDRs and will supersede the corresponding SPRRs requirement. These SPRRs are standard and cannot be changed as part of the permit writing process or in response to comments, but they will be periodically updated on an as-needed basis.
7. Unless otherwise stated, all terms are as defined in Water Code section 13050 and in Title 27, section 20164.

## **B. TERMS AND CONDITIONS**

1. Failure to comply with any waste discharge requirement, monitoring and reporting requirement, or Standard Provisions and Reporting Requirement, or

- other order or prohibition issued, reissued, or amended by the Central Valley Water Board or the State Water Board, or intentionally or negligently discharging waste, or causing or permitting waste to be deposited where it is discharged into the waters of the state and creates a condition of pollution or nuisance, is a violation of this Order and the Water Code, which can result in the imposition of civil monetary liability [Wat. Code, § 13350(a)]
2. After notice and opportunity for a hearing, this Order may be terminated or modified for cause, including, but not limited to [Wat. Code, § 13381]:
    - a. Violation of any term or condition contained in this Order;
    - b. Obtaining this Order by misrepresentation, or failure to disclose fully all relevant facts;
    - c. A change in any condition that results in either a temporary or permanent need to reduce or eliminate the authorized discharge; or
    - d. A material change in the character, location, or volume of discharge.
  3. Before initiating a new discharge or making a material change in the character, location, or volume of an existing discharge, the Discharger shall file a new report of waste discharge (ROWD), or other appropriate joint technical document (JTD), with the Central Valley Water Board [Wat. Code, § 13260(c) and § 13264(a)]. A material change includes, but is not limited to, the following:
    - a. An increase in area or depth to be used for solid waste disposal beyond that specified in waste discharge requirements;
    - b. A significant change in disposal method, location, or volume (e.g., change from land disposal to land treatment);
    - c. A change in the type of waste being accepted for disposal; or
    - d. A change to previously-approved liner systems or final cover systems that would eliminate components or reduce the engineering properties of components.
  4. Representatives of the Central Valley Water Board may inspect the facilities to ascertain compliance with the waste discharge requirements. The inspection shall be made with the consent of the owner or possessor of the facilities or, if the consent is refused, with a duly issued warrant. However, in the event of an emergency affecting the public health or safety, an inspection may be made without consent or the issuance of a warrant [Wat. Code, §13267(c)].

5. The Central Valley Water Board will review this Order periodically and will revise these waste discharge requirements when necessary [Wat. Code, § 13263(e) and Title 27, § 21720(b)].
6. Except for material determined to be confidential in accordance with California law and regulations, all reports prepared in accordance with terms of this Order shall be available for public inspection at the offices of the Central Valley Water Board [Wat. Code, § 13267(b)]. Data on waste discharges, water quality, geology, and hydrogeology shall not be considered confidential.
7. A discharge of waste into the waters of the state is a privilege, not a right. No discharge of waste into waters of the state, whether or not the discharge is made pursuant to waste discharge requirements, shall create a vested right to continue the discharge [Wat. Code, § 13263(g)].
8. Technical and monitoring reports specified in this Order are requested pursuant to the Water Code [§13267(b)]. Failure to furnish the reports by the specified deadlines or falsifying information in the reports, are misdemeanors that may be liable civilly in accordance with §13268(b) of the Water Code [Wat. Code, §13268(a)].

### **C. STANDARD PROHIBITIONS**

1. The discharge of liquid or semi-solid waste (waste containing less than 50 percent solids) is prohibited, except for the following when proposed in the ROWD/JTD and approved by this Order:
  - a. Dewatered sewage or water treatment sludge as described in Title 27, section 20220(c) provided it is discharged above a composite liner with a leachate collection and removal system (LCRS) [Title 27, § 20200(d)(3)].
  - b. Leachate and/or landfill gas condensate that is returned to the composite-lined waste management unit (with an LCRS) from which it came [Title 27, § 20340(g) and 40 C.F.R. § 258.28].
2. The discharge of wastes which have the potential to reduce or impair the integrity of containment structures or which, if commingled with other wastes in the waste management unit, could produce violent reaction, heat or pressure, fire or explosion, toxic by-products, or reaction products, which, in turn:
  - a. require a higher level of containment than provided by the unit; or
  - b. are 'restricted wastes'; or
  - c. impair the integrity of containment structures;is prohibited [Title 27, § 20200(b)].

3. The discharge of wastes outside of a waste management unit or portions of a unit specifically designed for their containment is prohibited.
4. The discharge of solid waste containing free liquid or which may contain liquid in excess of the moisture holding capacity as a result of waste management operations, compaction or settlement is prohibited.
5. The discharge of waste to a closed landfill unit is prohibited.
6. The discharge of waste constituents to the unsaturated zone or to groundwater is prohibited.
7. The discharge of solid or liquid waste or leachate to surface waters, surface water drainage courses, or groundwater is prohibited.

#### **D. STANDARD DISCHARGE SPECIFICATIONS**

1. The Discharger is responsible for accurate characterization of wastes, including a determination of whether or not wastes will be compatible with containment features and other wastes at the waste management unit and whether or not the wastes are required to be managed as a hazardous waste [Title 27, § 20200(c)] or designated waste [Title 27, § 20210].
2. Leachate and landfill gas condensate collected from a waste management unit shall be discharged to the unit from which it came, or discharged to an appropriate waste management unit in accordance with Title 27 and in a manner consistent with the waste classification of the liquid [Title 27, § 20200(d) and § 20340(g)].
3. The discharge of leachate or landfill gas condensate is restricted to those portions of a waste management unit that has a composite liner system and LCRS meeting the Federal Subtitle D requirements [40 C.F.R. § 258.28].
4. Leachate and condensate returned to a composite-lined landfill unit (when approved by this Order) shall be discharged and managed such that it does not cause instability of the waste, does not cause leachate seeps, does not generate additional landfill gas that is not extracted from the landfill by an active landfill gas extraction system, does not cause contaminants to enter surface water runoff, and does not cause leachate volumes to exceed the maximum capacity of the LCRS.
5. Any discharge of waste outside the portion of the landfill that was already covered with waste as of the landfill unit's respective Federal Deadline constitutes a "lateral expansion" and requires the installation of an approved composite liner system and LCRS [40 C.F.R. § 258.40(b)].

6. Wastes shall be discharged only into waste management units specifically designed for their containment and/or treatment, as described in this Order.
7. The discharge shall remain within the designated disposal area at all times.
8. The discharge of waste shall not cause a nuisance condition [Wat. Code, § 13050(m)].

#### **E. STANDARD FACILITY SPECIFICATIONS**

1. All waste management units shall be designed, constructed, and operated to ensure that wastes, including leachate, will be a minimum of 5 feet above the highest anticipated elevation of underlying groundwater [Title 27, § 20240(c)], including the capillary fringe.
2. Surface and subsurface drainage from outside of a waste management unit shall be diverted from the unit [Title 27, § 20365(e)].
3. Interim cover is daily and intermediate cover [Title 27, § 20750(a)]. Interim cover over wastes discharged to a landfill shall be designed and constructed to minimize percolation of liquids through the wastes [Title 27, § 20705(b)].
4. Intermediate cover consisting of compacted earthen material of at least twelve (12) inches shall be placed on all surfaces of the fill where no additional solid waste will be deposited within **180 days** [Title 27, § 20700(a)].
5. During wet weather conditions, the facility shall be operated and graded to minimize leachate generation.
6. The Discharger shall **immediately** notify the Central Valley Water Board staff of any slope failure occurring at a waste management unit. Any failure which threatens the integrity of containment features or the waste management unit shall be promptly corrected in accordance with an approved method [Title 27, § 21710(c)(2)].
7. The Discharger shall **immediately** notify Central Valley Water Board staff of any flooding, unpermitted discharge of waste off-site or outside of waste management units, equipment failure, or other change in site conditions which could impair the integrity of waste or leachate containment facilities or precipitation and drainage control structures.
8. The Discharger shall limit water used for facility maintenance within landfill areas to the minimum amount necessary for dust control and construction.
9. The Discharger shall maintain in good working order any facility, control system, or monitoring device installed to achieve compliance with the waste discharge requirements.



10. The Discharger shall lock all groundwater monitoring wells with a lock on the well cap or monitoring well box. All monitoring devices shall be clearly labeled with their designation including all monitoring wells, LCRS risers, and lysimeter risers and shall be easily accessible for required monitoring by authorized personnel. Each monitoring device shall be clearly visible and be protected from damage by equipment or vehicles.
11. The Discharger shall ensure that methane and other landfill gases are adequately vented, removed from landfill units, or otherwise controlled to prevent the danger of adverse health effects, nuisance conditions, degradation, or the impairment of the beneficial uses of surface water or groundwater due to migration through the unsaturated zone.
12. The Discharger shall maintain the depth of the fluid in the sump of each landfill unit at the minimum needed for efficient pump operation (the depth at which the pump turns on given the pump intake height and maximum pump cycle frequency).
13. The depth of fluid on the landfill liner shall not exceed **30 centimeters** (cm) [40 C.F.R. § 258.40(a)(2)]. This regulation is interpreted by the Central Valley Water Board to exclude the leachate sump. The Discharger shall **immediately** notify the Central Valley Water Board staff by telephone, and follow up in writing within **seven** days if monitoring reveals that the depth of fluid on any portion of the liner (excluding the sump) exceeds 30 cm (approximately 12 inches). The written notification shall include a timetable for remedial or corrective action necessary to achieve compliance with the leachate depth limitation.
14. Each LCRS shall be tested at least annually to demonstrate proper operation. The results of the tests shall be compared with earlier tests made under comparable conditions [Title 27, § 20340(d)].
15. The Discharger shall maintain a *Storm Water Pollution Prevention Plan and Monitoring Program and Reporting Requirements* in accordance with State Water Board Order No. 97-03-DWQ (or most recent general industrial storm water permit), or retain all storm water on-site.
16. Internal site drainage from surface or subsurface sources shall not contact or percolate through wastes.
17. New MSW landfill units or lateral expansions of existing units shall not be sited in a "wetland" [as defined in 40 C.F.R. § 232.29(r)] unless there is no practical alternative; steps have been taken to assure no net loss of wetland; the landfill unit will not degrade the wetland; the unit will not jeopardize threatened or endangered species or produce adverse modification of a critical habitat or violate any requirement of the Marine Protection, Research, and Sanctuaries Act of 1972 [40 C.F.R. § 258.12].

## F. STANDARD CONSTRUCTION SPECIFICATIONS

1. The Discharger shall submit for review and approval at least **90 days** prior to proposed construction, design plans and specifications for new landfill modules that include the following:
  - a. Detailed construction drawings showing all required liner system components, the LCRS, leachate sump, unsaturated zone monitoring system, any proposed landfill gas monitoring and extraction points, and access to the LCRS for required annual testing.
  - b. A Construction Quality Assurance (CQA) Plan prepared by a California-registered civil engineer or certified engineering geologist, and that meets the requirements of Title 27, section 20324.
  - c. A geotechnical evaluation of the area soils, evaluating their use as the base layer or reference to the location of this information in the ROWD/JTD [Title 27, § 21750(f)(4)].
  - d. Information about the seismic design of the proposed new module (or reference to the location of this information in the ROWD/JTD) in accordance with Title 27, section 20370.
  - e. A revised water quality monitoring plan for groundwater detection monitoring (or information showing the existing plan is adequate) in accordance with Title 27, section 20415.
  - f. An Operation Plan (or reference to the location of this information in the ROWD/JTD) meeting the requirements of Title 27, section 21760(b).
2. All containment structures shall be designed by, and construction shall be supervised by, a California registered civil engineer or a certified engineering geologist, and shall be certified by that individual as meeting the prescriptive standards, or approved engineered alternative design, in accordance with this Order prior to waste discharge.
3. The Discharger shall not proceed with construction until the construction plans, specifications, and all applicable construction quality assurance plans have been approved. Waste management units shall receive a final inspection and approval of the construction by Central Valley Water Board staff before use of the unit commences [Title 27, § 20310(e)].
4. Any report, or any amendment or revision of a report, that proposes a design or design change that might affect a waste management unit's containment features or monitoring systems shall be approved by a California registered civil engineer or a certified engineering geologist [Title 27, § 21710(d)].

5. Materials used in containment structures shall have appropriate chemical and physical properties to ensure that such structures do not fail to contain waste because of pressure gradients, physical contact with waste or leachate, chemical reactions with soil or rock, climatic conditions, the stress of installation, or because of the stress of daily operations [Title 27, § 20320(a)].
6. Waste management units and their respective containment structures shall be designed and constructed to limit, to the greatest extent possible, ponding, infiltration, inundation, erosion, slope failure, washout, and overtopping [Title 27, § 20365(a)].
7. The Discharger shall design storm water conveyance systems for Class III units for a 100-year, 24-hour storm event, and shall design storm water conveyance systems for Class II units for a 1,000-year, 24-hour storm event [Title 27, § 21750(e)(3)].
8. All Class III landfill units shall be designed to withstand the maximum probable earthquake and Class II waste management units shall be designed to withstand maximum credible earthquake without damage to the foundation or to the structures that control leachate, or surface drainage, or erosion, or gas [Title 27, § 20370(a)].
9. The Discharger shall perform stability analyses that include components to demonstrate the integrity of the landfill foundation, final slopes, and containment systems under both static and dynamic conditions throughout the landfill's life including the closure period and post-closure maintenance period [Title 27, § 21750(f)(5)].
10. New waste management units and expansions of existing units shall not be located on a known Holocene fault [Title 27, § 20260(d)].
11. Liners shall be designed and constructed to contain the fluid, including landfill gas, waste, and leachate [Title 27, § 20330(a)].
12. Hydraulic conductivities shall be determined primarily by appropriate field test methods in accordance with accepted civil engineering practice. The results of laboratory tests with both water and leachate, and field tests with water, shall be compared to evaluate how the field permeabilities will be affected by leachate. It is acceptable for the Discharger to use appropriate compaction tests in conjunction with laboratory hydraulic conductivity tests to determine field permeabilities as long as a reasonable number of field hydraulic conductivity tests are also conducted [Title 27, § 20320(c)].
13. Hydraulic conductivities specified for containment structures other than the final cover shall be relative to the fluids (leachate) to be contained. Hydraulic conductivities for the final cover shall be relative to water [Title 27, § 20320(b)].

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

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

#### **G. STANDARD CLOSURE AND POST-CLOSURE SPECIFICATIONS**

1. The Discharger shall submit a final or partial final closure and post-closure maintenance plan at least **two years** prior to the anticipated date of closure [Title 27, § 21780(d)(1)].

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

8. The final closure and post-closure maintenance plan for the waste management unit shall include at least the following: an itemized cost analysis, closure schedule, any proposed final treatment procedures, map, changes to the unit description presented in the most recent ROWD, federal requirements for a MSW facility, land use of the closed unit, and a construction quality assurance plan [Title 27, § 21769(c) & (d)].
9. Closure of each waste management unit shall be under the direct supervision of a registered civil engineer or certified engineering geologist [Title 27, § 20950(b)].
10. The final cover of closed landfills shall be designed, graded, and maintained to prevent ponding and soil erosion due to high run-off velocities [Title 27, § 21090(b)(1)(A)].
11. The final grading design shall be designed and approved by a registered civil engineer or certified engineering geologist [Title 27, § 21090(b)(1)(C)].
12. All final cover designs shall include a minimum 1-foot thick erosion resistant layer [Title 27, § 21090(a)(3)(A)].
13. The Discharger shall close the landfill with minimum 15-foot wide benches every 50 vertical feet [Title 27, § 21090(a)].
14. Final cover slopes shall not be steeper than a horizontal to vertical ratio of one and three quarters to one and designs having any slopes steeper than a horizontal to vertical ratio of three to one, or having a geosynthetic component, shall have these aspects of their design specifically supported in the slope stability report required in Title 27, section 21750(f)(5) [Title 27, § 21090(a)].
15. For any portions of the final cover installed after July 18, 1997, for which the Central Valley Water Board has not approved a slope and foundation stability report on or before that date, the Discharger shall meet the requirements of Title 27, section 21750(f)(5) [Title 27, § 21090(a)(6)].
16. Areas with slopes greater than ten percent, surface drainage courses, and areas subject to erosion by wind or water shall be designed and constructed to prevent such erosion [Title 27, § 21090(b)(2)].
17. The Discharger shall design storm water conveyance systems for closed Class III units for a 100-year, 24-hour storm event, and shall design storm water conveyance systems for closed Class II units for a 1,000-year, 24-hour storm event [Title 27, § 21750(e)(3)].
18. Closed landfill units shall be provided with at least two permanent surveying monuments, installed by a licensed land surveyor or by a registered civil engineer, from which the location and elevation of all wastes, containment

structures, and monitoring facilities can be determined throughout the post-closure maintenance period [Title 27, § 20950(d)].

19. Following closure of any MSW landfill units, the Discharger shall notify the Executive Officer that the deed to the landfill facility property, or some other instrument that is normally examined during a title search, has been recorded and a copy placed in the operating record. The notation on the deed shall in perpetuity notify any potential purchaser of the property that the land has been used as a landfill facility and that use of the land is restricted to the planned use described in the post-closure maintenance plan [Title 27, § 20515(a)(4) and §21170, and 40 C.F.R. § 258.60(i)].
20. Construction or repair of the final cover system's low-hydraulic conductivity layer is to be carried out in accordance with an approved construction quality assurance plan [Title 27, § 21090(b)(1)(E)].
21. The Discharger shall incorporate into the closure and post-closure maintenance plan a cover-integrity monitoring and maintenance program which includes at least the following: a periodic leak search, periodic identification of other problem areas, prompt cover repair, and vegetation maintenance [Title 27, § 21090(a)(4)].
22. The Discharger shall complete a final cover survey upon completion of closure activities for that portion of the landfill. The final cover surveys shall include an initial survey and map [Title 27, § 21090(e)(1). Every **five years**, the Discharger shall conduct a survey of the closed landfill cover and submit an iso-settlement map accurately depicting the estimated total change in elevation of each portion of the final cover's low-hydraulic-conductivity layer [Title 27, § 21090(e)(2)].
23. Within **30 days** of completion of all closure activities, the Discharger shall certify that all closure activities were performed in accordance with the most recently approved final closure plan and CQA Plan, and in accordance with all applicable regulations. The Discharger shall also certify that closed landfill units shall be maintained in accordance with and approved post-closure maintenance plan [Title 27, § 21710(c)(6)].
24. Within **180 days** of completion of closure construction activities, the Discharger shall submit final documentation of closure, including the Certification of Closure. The closure documents shall include a final construction quality assurance report and any other documents necessary to support the certification [Title 27, § 21880].
25. The post-closure maintenance period shall continue until the Central Valley Water Board determines that wastes remaining in the landfill unit(s) no longer pose a threat to water quality [Title 27, § 20950(a)(1)].



26. The Discharger shall conduct a periodic leak search to monitor of the integrity of the final cover in accordance with the schedule in the approved final post-closure maintenance plan [Title 27, § 21090(a)(4)(A)].
27. The Discharger shall periodically inspect and identify problems with the final cover including areas that require replanting, erosion, areas lacking free drainage, areas damaged by equipment operations, and localized areas identified in the required five-year iso-settlement survey [Title 27, § 21090(a)(4)(B)].
28. The Discharger shall repair the cover promptly in accordance with a cover repair plan to be included in the final post-closure maintenance plan [Title 27, § 21090(a)(4)(C)].
29. Throughout the post-closure maintenance period, the Discharger shall maintain the structural integrity and effectiveness of all containment structures, maintain the final cover as necessary to correct the effects of settlement and other adverse factors, continue to operate the LCRS as long as leachate is generated and detected, maintain the monitoring systems, prevent erosion and related damage of the final cover due to drainage, and protect and maintain surveyed monuments [Title 27, § 21090(c)].
30. Post-closure maintenance shall be conducted for a minimum period of **30 years** or until the waste no longer poses a threat to environmental quality, whichever is greater [Title 27, § 21180(a) and Title 27, § 21900(a)].

#### **H. STANDARD FINANCIAL ASSURANCE PROVISIONS**

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

#### **I. STANDARD MONITORING SPECIFICATIONS**

1. The water quality monitoring program shall include appropriate and consistent sampling and analytical procedures and methods designed to ensure that monitoring results provide a reliable indication of water quality at all monitoring points and background monitoring points [Title 27, § 20415(e)(4) and 40 C.F.R. § 258.53(b)].

2. All monitoring systems shall be designed and certified by a registered geologist or a registered civil engineer [Title 27, § 20415(e)(1)].
3. All monitoring wells shall be cased and constructed in a manner that maintains the integrity of the monitoring well bore hole and prevents the bore hole from acting as a conduit for contaminant transport [Title 27, § 20415(b)(4)(A)].
4. All sample chemical analyses of any material shall be performed by a laboratory certified by the California Department of Health Services [Wat. Code, § 13176(a)].
5. A Detection Monitoring Program for a new landfill facility shall be installed, operational, and one year of monitoring data collected from background monitoring points prior to the discharge of wastes [Title 27, § 20415(e)(6)].
6. Background for water samples or soil-pore gas samples shall be represented by the data from all samples taken from applicable background monitoring points during that reporting period (at least one sample from each background monitoring point).
7. The Discharger shall submit for approval, establish, and maintain an approved Sample Collection and Analysis Plan. The Sample Collection and Analysis Plan shall at a minimum include:
  - a. Sample collection procedures describing purging techniques, sampling equipment, and decontamination of sampling equipment;
  - b. Sample preservation information and shipment procedures;
  - c. Sample analytical methods and procedures;
  - d. Sample quality assurance/quality control (QA/QC) procedures;
  - e. Chain of Custody control; and
  - f. Sample analysis information including sample preparation techniques to avoid matrix interferences, method detection limits (MDLs), practical quantitation limits (PQLs) and reporting limits (RLs), and procedures for reporting trace results between the MDL and PQL.

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

8. For any given monitored medium, the samples taken from all monitoring points and background monitoring points to satisfy the data analysis requirements for a given reporting period shall all be taken **within a span not to exceed 30 days**, unless a longer time period is approved, and shall be taken in a manner that

ensures sample independence to the greatest extent feasible. Specific methods of collection and analysis must be identified. Sample collection, storage, and analysis shall be performed according to the most recent version of USEPA Methods, such as the latest editions, as applicable, of: (1) Methods for the Analysis of Organics in Water and Wastewater (USEPA 600 Series), (2) Test Methods for Evaluating Solid Waste (SW-846, latest edition), and (3) Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020), and in accordance with the approved Sample Collection and Analysis Plan. Appropriate sample preparation techniques shall be used to minimize matrix interferences.

9. If methods other than USEPA-approved methods or Standard Methods are used, or there is a proposed alternant USEPA method than the one listed in the MRP, the proposed methodology shall be submitted for review and approval prior to use, including information showing its equivalence to the required method.
10. The **methods of analysis and the detection limits** used must be appropriate for the expected concentrations. For the monitoring of any constituent or parameter that is found in concentrations which produce more than 90% non-numerical determinations (i.e., “trace” or “ND”) in data from background monitoring points for that medium, the analytical method having the lowest MDL shall be selected from among those methods which would provide valid results in light of any matrix effects or interferences.
11. The laboratory reporting limit (RL) for all reported monitoring data shall be set no greater than the practical quantitation limit (PQL).
12. **“Trace” results** - results falling between the MDL and the PQL - shall be reported as such, and shall be accompanied both by the estimated MDL and PQL values for that analytical run.
13. Laboratory data shall not be altered or revised by the Discharger. If the Discharger observes potential lab errors, it shall identify the issue in the monitoring report and shall describe steps that will be taken to prevent similar errors in the future.
14. **MDLs and PQLs** shall be derived by the laboratory for each analytical procedure, according to State of California laboratory accreditation procedures. These MDLs and PQLs shall reflect the detection and quantitation capabilities of the specific analytical procedure and equipment used by the lab, rather than simply being quoted from USEPA analytical method manuals. In relatively interference-free water, laboratory-derived MDLs and PQLs are expected to closely agree with published USEPA MDLs and PQLs. MDLs and PQLs shall be reported.

15. If the laboratory suspects that, due to a change in matrix or other effects, the true detection limit or quantitation limit for a particular analytical run differs significantly from the laboratory-derived MDL/PQL values, the results shall be flagged in the laboratory report accordingly, along with estimates of the detection limit and quantitation limit actually achieved. The **MDL shall always be calculated such that it represents the lowest achievable concentration associated with a 99% reliability of a nonzero result.** The PQL shall always be calculated such that it represents the lowest constituent concentration at which a numerical value can be assigned with reasonable certainty that it represents the constituent's actual concentration in the sample. Normally, PQLs should be set equal to the concentration of the lowest standard used to calibrate the analytical procedure.
16. All **QA/QC data** shall be reported, along with the sample results to which they apply, including the method, equipment, analytical detection and quantitation limits, the percent recovery, an explanation for any recovery that falls outside the QC limits, the results of equipment and method blanks, the results of spiked and surrogate samples, the frequency of quality control analysis, and the name and signature of a responsible person from the laboratory. **Sample results shall be reported unadjusted for blank results or spike recoveries.** In cases where contaminants are detected in QA/QC samples (i.e., field, trip, or lab blanks), the accompanying sample results shall be appropriately flagged, but the analytical results shall not be adjusted.
17. Unknown chromatographic peaks shall be reported, flagged, and tracked for potential comparison to subsequent unknown peaks that may be observed in future sampling events. Identification of unknown chromatographic peaks that recur in subsequent sampling events may be required.
18. The sampling interval of each monitoring well shall be appropriately screened and fitted with an appropriate filter pack to enable collection of representative groundwater samples [Title 27, § 20415(b)(4)(B)]. Groundwater samples shall not be field-filtered prior to laboratory analysis [40 C.F.R. § 258.53(b)]. Groundwater samples needing filtering (e.g., samples to be analyzed for dissolved metals) shall be filtered by the laboratory prior to analysis.
19. Groundwater elevations shall be measured in each well immediately prior to purging, each time groundwater is sampled. The owner or operator shall determine the rate and direction of groundwater flow each time groundwater is sampled. Groundwater elevations in wells which monitor the same waste management area shall be measured within a period of time short enough to avoid temporal variations in groundwater flow which could preclude accurate determination of groundwater flow rate and direction [40 C.F.R. § 258.53(d)].
20. Monitoring wells, piezometers, and other measurement, sampling, and analytical devices must be operated and maintained so that they perform to design

specifications throughout the life of the monitoring program [40 C.F.R. § 258.51(c)(2)]. Monitoring devices that cannot be operated and maintained to perform to design specifications shall be replaced after review and approval of a report (i.e., work plan) for the proposed replacement devices.

21. All borings are to be logged during drilling under the direct supervision of a registered geologist or registered civil engineer with expertise in stratigraphic well logging [Title 27, § 20415(e)(2)].
22. Soils are to be described according to the Unified Soil Classification System [Title 27, § 20415(e)(2)(A)]. Rock is to be described in a manner appropriate for the purpose of the investigation [Title 27, § 20415(e)(2)(B)].
23. The Discharger shall submit a work plan for review and approval at least **60 days** prior to installation or abandonment of groundwater monitoring wells.
24. The Discharger shall provide Central Valley Water Board staff a minimum of **one week** notification prior to commencing any field activities related to the installation or abandonment of monitoring devices.
25. The water quality protection standard shall consist of the constituents of concern (COC), concentration limits, and the point of compliance. The water quality protection standard shall apply during the active life of the waste management unit, closure period, post-closure maintenance period, and any compliance period under Title 27, section 20410 [Title 27, § 20390].
26. The point of compliance at which the water quality protection standard applies is a vertical surface located at the hydraulically downgradient limit of the waste management unit that extends through the uppermost aquifer underlying the unit [Title 27, § 20405].
27. The compliance period is the minimum period of time during which the Discharger shall conduct a water quality monitoring program and is the number of years equal to the active life of the waste management unit plus the closure period [Title 27, § 20410(a)].
28. The groundwater monitoring system shall include a sufficient number of monitoring points, installed at appropriate locations, to yield groundwater samples from the uppermost aquifer that represent the quality of groundwater that has not been affected by a release from the waste management unit [Title 27, § 20415(b)(1)(A)].
29. The Detection Monitoring Program shall include a sufficient number of monitoring points, installed at appropriate locations and depths to yield groundwater samples from the uppermost aquifer that represent the quality of

groundwater passing the point of compliance to allow the detection of a release from the waste management unit [Title 27, § 20415(b)(1)(B)1.].

30. Additional monitoring points shall be added as necessary to provide the best assurance of the **earliest possible detection** of a release from the waste management unit [Title 27, § 20415(b)(1)(B)2.].
31. The Detection Monitoring Program shall also include a sufficient number of monitoring points installed at appropriate depths and locations to yield groundwater samples from other aquifers or perched zones not already monitored to provide the **earliest possible detection** of a release from the waste management unit [Title 27, § 20415(b)(1)(B)3. and 4., and §20420(b)].
32. A surface water monitoring system shall be established to monitor each surface water body that could be affected by a release from the waste management unit [Title 27, § 20415(c)].
33. An unsaturated zone monitoring system shall be established for each waste management unit [Title 27, § 20415(d)].
34. The Discharger shall notify Central Valley Water Board staff within **seven days** if fluid is detected in a previously dry LCRS, unsaturated zone monitoring system, or if a progressive increase is detected in the volume of fluid in a LCRS [Title 27, § 21710(c)(3)].
35. Driller's logs for all monitoring wells shall to be submitted to the Central Valley Water Board and the Department of Water Resources [Wat. Code, § 13751 and Title 27, § 20415(b)(3)].
36. Groundwater elevation, temperature, electrical conductivity, turbidity, and pH are to be accurately measured at each well each time groundwater is sampled [Title 27, § 21415(e)(13)].
37. The groundwater flow rate and direction in the uppermost aquifer and in any zones of perched water and in any additional portions of the zone of saturation being monitored shall be determined at least quarterly [Title 27, § 20415(e)(15)].
38. The Discharger shall graph all analytical data from each monitoring point and background monitoring point and shall submit the graphs to the Central Valley Water Board annually [Title 27, § 20415(e)(14)].
39. For each waste management unit, the Discharger shall collect all data necessary for selecting appropriate data analysis methods for establishing background values for each constituent of concern and for each monitoring parameter [Title 27, § 20420(c)]. The Discharger shall propose a data analysis method that includes a detailed description of the criteria to be used for

determining “measurably significant” (as defined in Title 27, section 20164) evidence of a release from the waste management unit and determining compliance with the water quality protection standard [Title 27, § 20415(e)(6) and (7)].

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

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

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



b. **Discrete Retest** [Title 27, § 20415(e)(8)(E) and § 20420(j)(1-3)]:

- 1) In the event that the Discharger or Central Valley Water Board staff concludes (pursuant to paragraph I.46.a., above) that there is a preliminary indication of a release, then the Discharger shall **immediately** notify Central Valley Water Board staff by phone or e-mail and, within **30 days** of such indication, shall collect two new (retest) samples from the monitoring point where the release is preliminarily indicated and analyze them for the constituents that caused the need for the retest.
- 2) **Confirmation of a Release.** As soon as the retest data are available, the Discharger shall conclude that measurably significant evidence of a release is confirmed if (not including the original sample) two or more analytes equal or exceed their respective MDLs or if one or more analyte equals or exceeds its PQL. The Discharger shall then:
  - a) **Immediately** verbally notify the Central Valley Water Board whether or not the retest confirmed measurably significant evidence of a release for the analyte at the monitoring point, and follow up with written notification submitted by certified mail **within seven days** of the verbal notification; and
  - b) Carry out the requirements of Section J, **RESPONSE TO A RELEASE** if a release has been confirmed.
  - c) Add any five-year analyte that is confirmed per this method to the monitoring parameter list such that it is monitored during each regular monitoring event.

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

- a. **Initial Determination of Measurably Significant Evidence of a Release.** The Discharger shall compare the value reported by the laboratory for each analyte to the statistically-derived concentration limit from the most recent report (Annual Monitoring Report or Water Quality Protection Standard Report) that uses the approved statistical procedure. If the value exceeds the concentration limit for that constituent, the Discharger shall conclude that there is measurably significant evidence of a release [Title 27, § 20420(i)].

b. **Retest Method** [Title 27, § 20415(e)(8)(E) and § 20420(j)(1-3)].

- 1) In the event that the Discharger or Central Valley Water Board staff concludes (pursuant to paragraph I.47.a., above) that there is a preliminary indication of a release, then the Discharger shall **immediately** notify Central Valley Water Board staff by phone or e-mail and, within **30 days** [Title 27, § 20415(e)(3)] of such indication, the Discharger shall implement a verification procedure/retest option, in accordance with Title 27, sections 20415(e)(8)(E) and 20420(j)(2). The verification procedure shall include either a single “composite” retest (i.e., a statistical analysis that augments and reanalyzes the data from the monitoring point that indicated a release) or shall consist of at least two “discrete” retests (i.e., statistical analyses each of which analyzes only newly-acquired data from the monitoring point that indicated a release) [Title 27, § 20415(e)(8)(E)]. The Discharger may use an alternate method previously approved by the Central Valley Water Board and included in the Monitoring and Reporting Program. The verification procedure shall comply with the requirements of Title 27, section 20415(e)(8)(E) in addition to the performance standards of Title 27, section 20415(e)(9). The retest samples shall be collected from the monitoring point where the release is preliminarily indicated and shall be analyzed for the constituents that caused the need for the retest. For any indicated monitoring parameter or constituent of concern, if the retest results of one or more of the retest data suites confirm the original indication, the Discharger shall conclude that measurably significant evidence of a release has been confirmed.
- 2) **Confirmation of a Release.** As soon as the retest data are available, the Discharger shall evaluate the results pursuant to paragraph I.47.b.1, above and shall:
  - a) **Immediately** verbally notify the Central Valley Water Board whether or not the retest confirmed measurably significant evidence of a release for the analyte at the monitoring point, and follow up with written notification submitted by certified mail **within seven days** of the verbal notification; and
  - b) Carry out the requirements of Section J, **RESPONSE TO A RELEASE** if a release has been confirmed.
  - c) Add any five-year analyte that is confirmed per this method to the monitoring parameter list such that it is monitored during each regular monitoring event.

48. **Physical Evidence of a Release.** If the Discharger determines that there is a significant **physical** evidence of a release, the Discharger shall immediately

verbally notify Central Valley Water Board staff and provide written notification **by certified mail within 7 days** of such determination, and within **90 days** shall submit an amended report of waste discharge to establish an Evaluation Monitoring Program [Title 27, § 20385(a)(3) and § 20420(l)(1) & (2)].

## J. RESPONSE TO A RELEASE

1. **Measurably Significant Evidence of a Release Has Been Confirmed.** If the Discharger has confirmed that there is measurably significant evidence of a release from a waste management unit pursuant to Standard Monitoring Specification I.46 or I.47, then the Discharger shall:
  - a. **Immediately** sample all monitoring points in the affected medium at that waste management unit and determine the concentration of all monitoring parameters and constituents of concern for comparison with established concentration limits. Because this constituent of concern scan does not involve statistical testing, the Discharger will need to collect and analyze only a single water sample from each monitoring point in the affected medium [Title 27, § 20420(k)(1)].
  - b. **Within 14 days** of confirming measurably significant evidence of a release, the Discharger shall (for releases from MSW landfill units) notify all persons who own the land or reside on the land that directly overlies any portion of the plume of contamination if contaminants have migrated off-site if indicated by sampling of detection monitoring wells [40 C.F.R. § 258.55(g)(1)(iii)].
  - c. **Within 90 days** of confirming measurably significant evidence of a release, the Discharger shall submit an amended report of waste discharge to establish an Evaluation Monitoring Program meeting the requirements of Title 27, sections 20420(k)(5)(A-D), including but not limited to the results of sampling pursuant to paragraph J.1.a, above. The Evaluation Monitoring Program shall be designed for the collection and analysis of all data necessary to assess the nature and extent of the release and to determine the spatial distribution and concentration of each constituent throughout the zone affected by the release [Title 27, § 20420(k)(5) and § 20425(b)]. For releases from MSW landfill units, the Evaluation Monitoring Program shall also include any additional proposals necessary to comply with 40 C.F.R. § 258.55, particularly the additional monitoring well required by 40 C.F.R. § 258.55(g)(1)(ii).
  - d. **Within 180 days** of confirming measurably significant evidence of a release, the Discharger shall submit to the Central Valley Water Board an initial engineering feasibility study for a Corrective Action Program necessary to meet the requirements of Title 27, section 20430. At a minimum, the initial engineering feasibility study shall contain a detailed

description of the corrective action measures that could be taken to achieve background concentrations for all constituents of concern [Title 27, § 20420(k)(6)].

- e. If the Discharger confirms that there is measurably significant evidence of a release from the waste management unit at any monitoring point, the Discharger may attempt to demonstrate that a source other than the waste management unit caused the evidence of a release or that the evidence is an artifact caused by an error in sampling, analysis, or statistical evaluation or by natural variation in groundwater, surface water, or the unsaturated zone. The Discharger may make a demonstration pursuant to Title 27, section 20420(k)(7) in addition to or in lieu of submitting both an amended report of waste discharge or an engineering feasibility study; however, the Discharger is not relieved of the requirements and due dates of Title 27, sections 20420(k)(6) & (7) unless Central Valley Water Board staff agree that the demonstration successfully shows that a source other than the waste management unit caused the evidence of a release or that the evidence resulted from error in sampling, analysis, or statistical evaluation or from natural variation in groundwater, surface water, or the unsaturated zone. In order to make this demonstration, the Discharger shall notify the Central Valley Water Board by certified mail of the intent to make the demonstration **within seven days** of determining measurably significant evidence of a release, and shall submit a report **within 90 days** of determining measurably significant evidence of a release [Title 27, § 20420(k)(7)].
- f. **Within 90 days** of the date that the Evaluation Monitoring Program from paragraph J.1.c is approved (the date is it established), the Discharger shall complete and submit the following:
  - i) **Results and Assessment for the Evaluation Monitoring Program.** A report with the results and assessment based on the approved Evaluation Monitoring Program [Title 27, § 20425(b)].
  - ii) **Updated Engineering Feasibility Study.** An updated engineering feasibility study for corrective action based on the data collected to delineate the release and data from the ongoing monitoring program required under Title 27, section 20425(e) [Title 27, § 20425(c)].
  - iii) **Amended ROWD for a Corrective Action Program.** An amended report of waste discharge to establish a Corrective Action Program meeting the requirements of Title 27, section 20430 based on the data collected to delineate the release and based on the updated engineering feasibility study [Title 27, § 20425(d)].

- g. The Discharger shall (for releases from MSW landfill units) discuss the results of the updated engineering feasibility study, prior to the final selection of a remedy, in a public meeting with interested and affected parties [40 C.F.R. § 258.56(d)].

## K. GENERAL PROVISIONS

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

- e. Any person signing a document under this Section shall make the following certification:

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

3. The Discharger shall take all reasonable steps to minimize any adverse impact to the waters of the State resulting from noncompliance with this Order. Such steps shall include accelerated or additional monitoring as necessary to determine the nature, extent, and impact of the noncompliance.
4. The owner of the waste management facility shall have the continuing responsibility to assure protection of waters of the state from discharged wastes and from gases and leachate generated by discharged waste during the active life, closure, and post-closure maintenance period of the waste management units and during subsequent use of the property for other purposes.
5. The fact that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with this Order shall not be regarded as a defense for the Discharger’s violations of this Order.
6. The Discharger shall notify the Central Valley Water Board of a material change in; the types, quantity, or concentrations of wastes discharged; site operations and features; or proposed closure procedures, including changes in cost estimates. This notification shall be given a reasonable time before the changes are made or become effective. No changes shall be made without Central Valley Water Board approval following authorization for closure pursuant to the site Notification of Closure [Title 27, § 21710(a)(4)].
7. The Discharger shall maintain legible records of the volume and type of each waste discharged at each waste management unit or portion of a unit, and the manner and location of discharge. Such records shall be maintained by the Discharger until the beginning of the post-closure maintenance period. These records shall be on forms approved by the State Water Board or Central Valley Water Board and shall be maintained at the waste management facility until the beginning of the post-closure maintenance period. These records shall be available for review by representatives of the State Water Board or Central Valley Water Board at any time during normal business hours. At the beginning of the post-closure maintenance period, copies of these records shall be sent to the Central Valley Water Board [Title 27, § 21720(f)].
8. In the event of any change in landowner or the operator of the waste management facility, the Discharger shall notify the succeeding owner or

operator in writing of the existence of this Order. A copy of that notification shall be sent to the Central Valley Water Board.

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

#### **L. STORM WATER PROVISIONS**

1. New and existing Class III landfills shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return period [Title 27, § 20260(c)].
2. New and existing Class II landfills shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return period [Title 27, § 20250(c)].
3. The Discharger shall design storm water conveyance systems for Class III units for a 100-year, 24-hour storm event, and shall design storm water conveyance systems for Class II units for a 1,000-year, 24-hour storm event [Title 27, § 21750(e)(3)].
4. MSW landfills located in a 100-year floodplain shall demonstrate that the landfill unit will not restrict the flow of the 100-year flood, reduce the temporary water storage capacity of the floodplain, or result in washout of solid waste so as to pose a hazard to human health or the environment [40 C.F.R. § 258.11(a)].
5. Waste management units and their respective containment structures shall be designed and constructed to limit, to the greatest extent possible, ponding,

infiltration, inundation, erosion, slope failure, washout, and overtopping under the precipitation conditions for the unit [Title 27, § 20365(a)].

6. Precipitation on landfills or waste piles which is not diverted by covers or drainage control systems shall be collected and managed through the LCRS, which shall be designed and constructed to accommodate the precipitation conditions for each class unit [Title 27, § 20365(b)].
7. Diversion and drainage facilities shall be designed, constructed, and maintained to [Title 27, § 20365(c)]:
  - a. accommodate the anticipated volume of precipitation and peak flows from surface runoff and under the precipitation conditions for the waste management unit:
  - b. effectively divert sheet flow runoff laterally, via the shortest distance, into the drainage and collection facilities;
  - c. prevent surface erosion;
  - d. control and intercept run-on, in order to isolate uncontaminated surface waters from water that might have come into contact with waste;
  - e. take into account:
    - i) for closed waste management units and for closed portions of units, the expected final contours of the closed unit, including its planned drainage pattern;
    - ii) for operating portions of waste management units other than surface impoundments, the unit's drainage pattern at any given time;
    - iii) the possible effects of the waste management unit's drainage pattern on and by the regional watershed;
    - iv) the design capacity of drainage systems of downstream and adjacent properties by providing for the gradual release of retained water downstream in a manner which does not exceed the expected peak flow rate at the point of discharge if there were no waste management facility; and
  - f. preserve the system's function. The Discharger shall periodically remove accumulated sediment from the sedimentation or detention basins as needed to preserve the design capacity of the system.
8. Collection and holding facilities associated with precipitation and drainage control systems shall be emptied immediately following each storm or otherwise managed to maintain the design capacity of the system [Title 27, § 20365(d)].



9. Surface and subsurface drainage from outside of a waste management unit shall be diverted from the unit [Title 27, § 20365(e)].
10. Cover materials shall be graded to divert precipitation from the waste management unit, to prevent ponding of surface water over wastes, and to resist erosion as a result of precipitation [Title 27, § 20365(f)].
11. Any drainage layer in the final cover shall be designed and constructed to intersect with the final drainage system for the waste management unit in a manner promoting free drainage from all portions of the drainage layer [Title 27, §20365(f)].

## INFORMATION SHEET

ORDER R5-2015-0106  
RECOLOGY YUBA SUTTER AND FEATHER RIVER ORGANICS  
RECOLOGY YUBA SUTTER LANDFILL  
CLASS III LANDFILL AND COMPOSTING FACILITY  
OPERATION, POST-CLOSURE MAINTENANCE, AND CORRECTIVE ACTION

### **RECOLOGY YUBA SUTTER AND FEATHER RIVER ORGANICS; RECOLOGY YUBA-SUTTER LANDFILL AND COMPOSTING FACILITY; YUBA COUNTY**

The closed landfill facility is a municipal solid waste (MSW) landfill regulated under authority given in Water Code section 13000 et seq.; Title 27 section 20005 et seq.; and 40 Code of Federal Regulations section 258 (aka Subtitle D) in accordance with State Water Resources Control Board (State Water Board) Resolution 93-62.

The closed landfill facility consists of three waste management units (WMUs) LF-1, LF-2, and LF-3. Since 1987 elevated concentrations of Volatile Organic Compounds (VOC) have been reported in groundwater monitoring wells. Central Valley Water Board staff has been working with the Discharger to eliminate the discharge of landfill gas and leachate from the WMUs through implementation of improvements to the closure covers and expansion of the active landfill gas extraction system. Numerous Notice of Violations (NOV) have been issued culminating in a 2013 Cleanup and Abatement Order (CAO) R5-2013-0704.

Post closure activities at the facility over WMU LF-1 include a material recycling facility (MRF), an administration office, an equipment maintenance area, and a composting facility. These activities complicate maintenance of the closure cover over LF-1. The composting facility was regulated under Resolution No. 96-031 Conditional Waiver of Waste Discharge Requirements for Composting Operations (hereafter "Waiver"). However, in 1999, passage of Senate Bill 390 modified Water Code Sections 13269 and 13350 to sunset all existing waivers of WDRs as of 1 January 2003. Consequently, after 1 January 2003 the Discharger operated the compost facility under the expired Waiver. In 2012 Central Valley Water Board staff requested the Discharger submit a Report of Waste Discharge (ROWD) describe the composting facility such that revised WDRs may be issued.

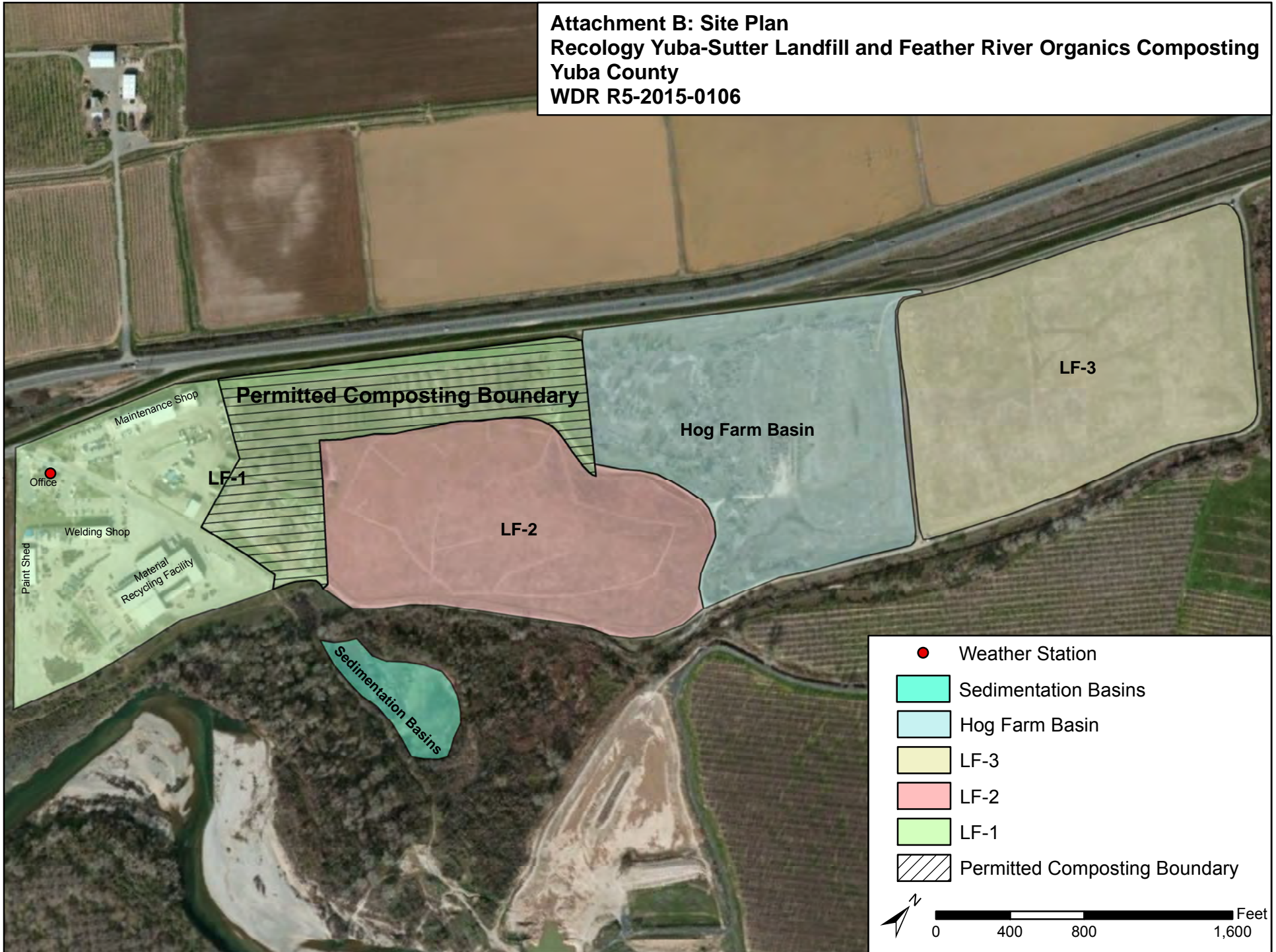
Information submitted by the Discharger including its response to the CAO has been used to make the following major revisions to WDRs No. R5-2003-0093:

- a. Inclusion of waste discharge requirements and monitoring and reporting requirements for operation of a composting facility above closed unlined waste management unit LF-1.
- b. Update of waste discharge requirements and monitoring and reporting requirements for operation of a Material Recycling Facility above closed unlined waste management unit LF-1.
- c. Corrective action for landfill leachate and gas releases to underlying groundwater.
- d. Corrective action for groundwater and unsaturated zone monitoring system that currently does not comply with Title 27 regulations.
- e. Update of operations and maintenance requirements for the closure covers over the waste management units during the post closure period such that the goal of Title 27 for closure covers is satisfied in serving as the principal waste containment feature for the minimization of infiltration of water into the underlying waste, "*thereby minimizing the production of leachate and gas.*"

**Attachment A: Site Vicinity Map**  
**Recology Yuba-Sutter Landfill and Feather River Organics Composting**  
**Yuba County**  
**WDR R5-2015-0106**



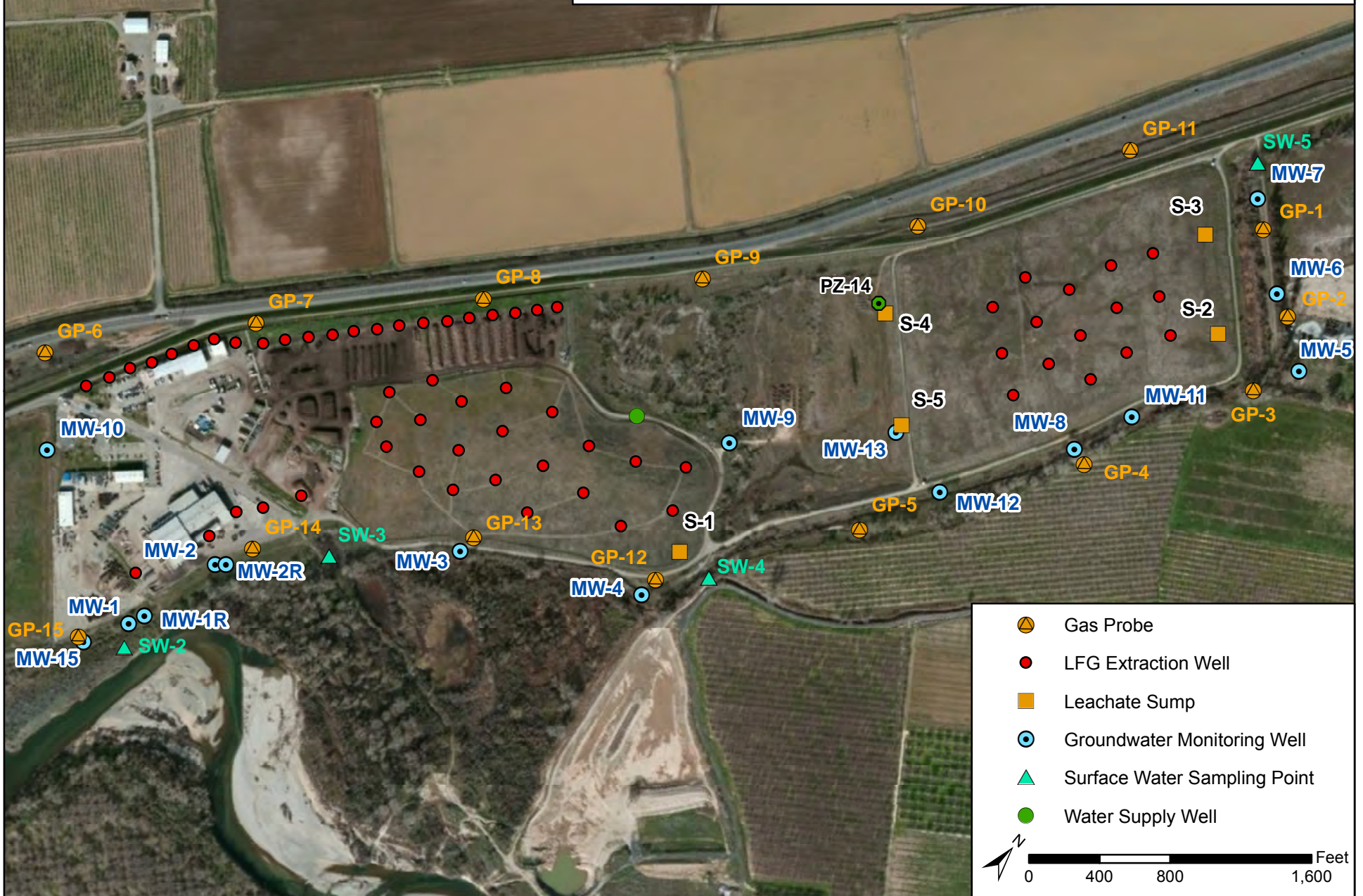
**Attachment B: Site Plan**  
**Recology Yuba-Sutter Landfill and Feather River Organics Composting**  
**Yuba County**  
**WDR R5-2015-0106**



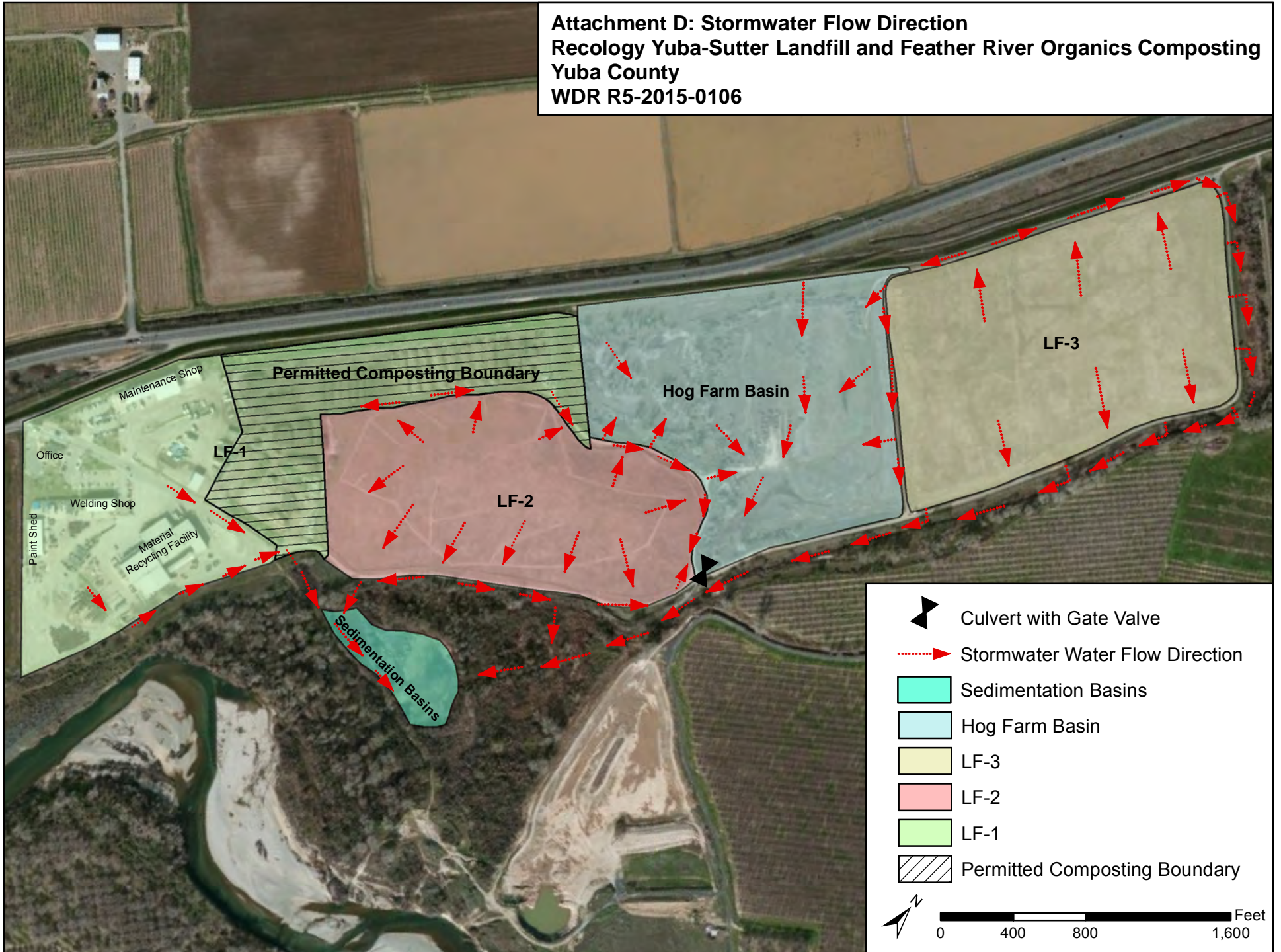
- Weather Station
- Sedimentation Basins
- Hog Farm Basin
- LF-3
- LF-2
- LF-1
- Permitted Composting Boundary

Feet  
0      400      800      1,600

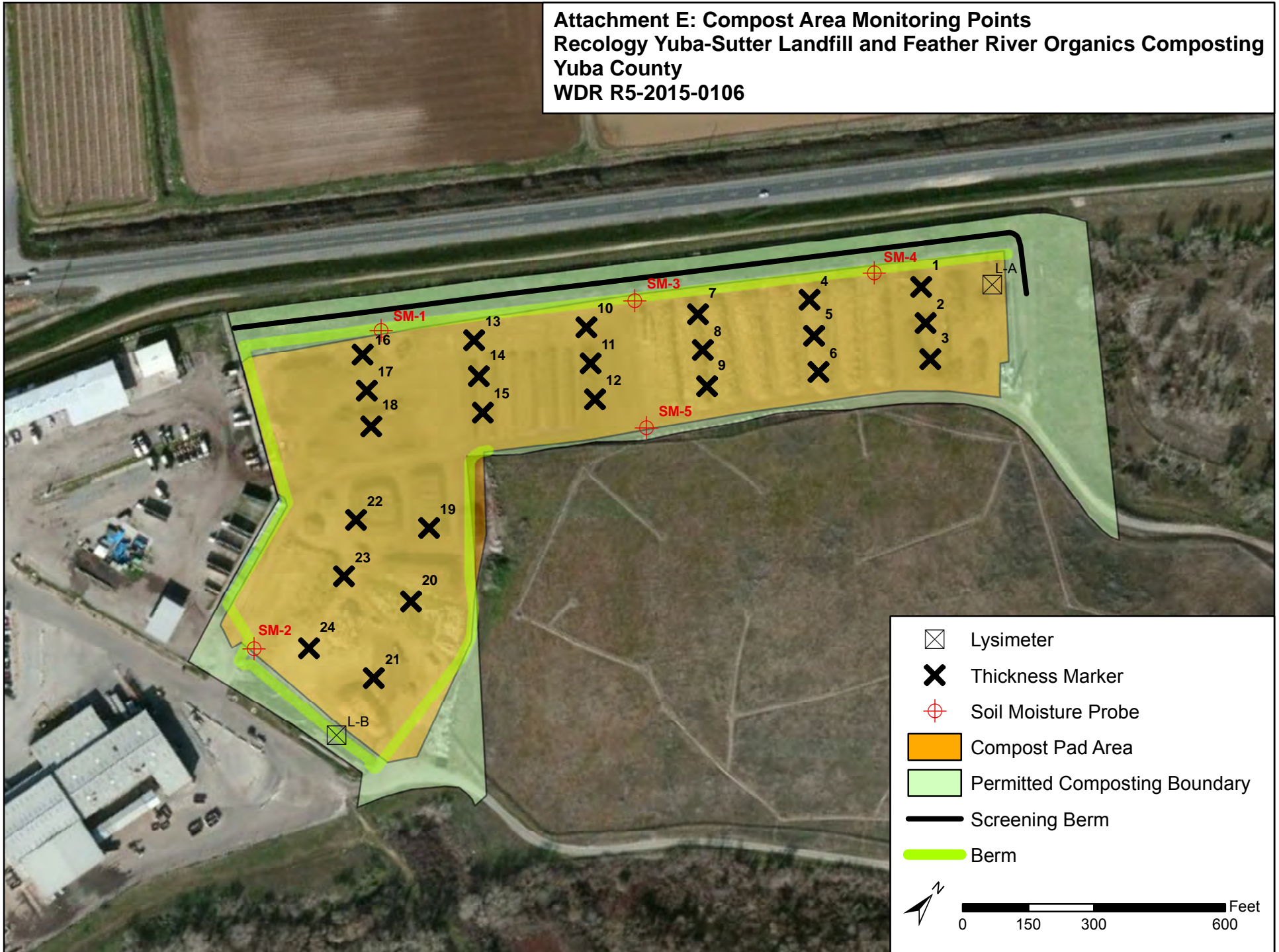
**Attachment C: Landfill Monitoring Points**  
**Recology Yuba-Sutter Landfill and Feather River Organics Composting**  
**Yuba County**  
**WDR R5-2015-0106**



**Attachment D: Stormwater Flow Direction**  
**Recology Yuba-Sutter Landfill and Feather River Organics Composting**  
**Yuba County**  
**WDR R5-2015-0106**



**Attachment E: Compost Area Monitoring Points**  
**Recology Yuba-Sutter Landfill and Feather River Organics Composting**  
**Yuba County**  
**WDR R5-2015-0106**



**Attachment F: Compost Area Wastewater Collection**  
**Recology Yuba-Sutter Landfill and Feather River Organics Composting**  
**Yuba County**  
**WDR R5-2015-0106**



- Sump
  - Vault
  - Area Drainage
  - - - - - Series of 3, 4, 6-Inch Diameter Pipe and Hose
  - - - - - 6-Inch Diameter Pipe
  - ■ ■ ■ ■ 18-Inch Diameter Pipe
  - ▭ Water Storage Tank
  - ▬ Berm
  - ▭ Compost Pad Area
  - ▭ Permitted Composting Boundary
- 0 200 400 800 Feet



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Central Valley Regional Water Quality Control Board

**ATTACHMENT G  
REQUIREMENTS FOR MONITORING WELL AND LANDFILL GAS INSTALLATION  
WORKPLAN AND  
MONITORING WELL INSTALLATION REPORTS**

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**1. Monitoring Well and Landfill Gas Well Installation Work Plan and  
Groundwater Sampling and Analysis Plan**

The monitoring well installation work plan shall contain the following minimum information:

**A. General Information:**

Purpose of the well installation project  
Brief description of local geologic and hydrogeologic conditions  
Proposed monitoring well locations and rationale for well locations  
Topographic map showing facility location, roads, and surface water bodies  
Large scaled site map showing all existing on-site wells, proposed wells, surface drainage courses, surface water bodies, buildings, waste handling facilities, utilities, and major physical and man-made features

**B. Drilling Details:**

On-site supervision of drilling and well installation activities  
Description of drilling equipment and techniques  
Equipment decontamination procedures  
Soil sampling intervals (if appropriate) and logging methods

**C. Monitoring Well Design (in narrative and/or graphic form):**

Diagram of proposed well construction details

- Borehole diameter
- Casing and screen material, diameter, and centralizer spacing (if needed)
- Type of well caps (bottom cap either screw on or secured with stainless steel screws)
- Anticipated depth of well, length of well casing, and length and position of perforated interval
- Thickness, position and composition of surface seal, sanitary seal, and sand pack
- Anticipated screen slot size and filter pack

**D. Well Development (not to be performed until at least 48 hours after sanitary seal placement):**

Method of development to be used (i.e., surge, bail, pump, etc.)

Parameters to be monitored during development and record keeping technique

Method of determining when development is complete

Disposal of development water

**E. Well Survey (precision of vertical survey data shall be at least 0.01 foot):**

Identify the Licensed Land Surveyor or Civil Engineer that will perform the survey

Datum for survey measurements

List well features to be surveyed (i.e. top of casing, horizontal and vertical coordinates, etc.)

**F. Schedule for Completion of Work**

**G. Appendix: Groundwater Sampling and Analysis Plan (SAP)**

The Groundwater SAP shall be included as an appendix to the work plan, and shall be utilized as a guidance document that is referred to by individuals responsible for conducting groundwater monitoring and sampling activities.

Provide a detailed written description of standard operating procedures for the following:

- Equipment to be used during sampling
- Equipment decontamination procedures
- Water level measurement procedures
- Well purging (include a discussion of procedures to follow if three casing volumes cannot be purged)
- Monitoring and record keeping during water level measurement and well purging (include copies of record keeping logs to be used)
- Purge water disposal
- Analytical methods and required reporting limits
- Sample containers and preservatives
- Sampling
  - General sampling techniques
  - Record keeping during sampling (include copies of record keeping logs to be used)
  - QA/QC samples
- Chain of Custody
- Sample handling and transport

## **2. Monitoring Well and Landfill Gas Well Installation Completion Report**

The monitoring well installation report must provide the information listed below. In addition, the report must also clearly identify, describe, and justify any deviations from the approved work plan.

### **A. General Information:**

Purpose of the well installation project  
Brief description of local geologic and hydrogeologic conditions encountered during installation of the wells  
Number of monitoring wells installed and copies of County Well Construction Permits  
Topographic map showing facility location, roads, surface water bodies  
Scaled site map showing all previously existing wells, newly installed wells, surface water bodies, buildings, waste handling facilities, utilities, and other major physical and man-made features.

### **B. Drilling Details (in narrative and/or graphic form):**

On-site supervision of drilling and well installation activities  
Drilling contractor and driller's name  
Description of drilling equipment and techniques  
Equipment decontamination procedures  
Soil sampling intervals and logging methods  
Well boring log

- Well boring number and date drilled
- Borehole diameter and total depth
- Total depth of open hole (same as total depth drilled if no caving or back-grouting occurs)
- Depth to first encountered groundwater and stabilized groundwater depth
- Detailed description of soils encountered, using the Unified Soil Classification System

### **C. Well Construction Details (in narrative and/or graphic form):**

Well construction diagram, including:

- Monitoring well number and date constructed
- Casing and screen material, diameter, and centralizer spacing (if needed)
- Length of well casing, and length and position of perforated interval
- Thickness, position and composition of surface seal, sanitary seal, and sand pack
- Type of well caps (bottom cap either screw on or secured with stainless steel screws)

**D. Well Development:**

Date(s) and method of development

How well development completion was determined

Volume of water purged from well and method of development water disposal

Field notes from well development should be included in report

**E. Well Survey (survey the top rim of the well casing with the cap removed):**

Identify the coordinate system and datum for survey measurements

Describe the measuring points (i.e. ground surface, top of casing, etc.)

Present the well survey report data in a table

Include the Registered Engineer or Licensed Surveyor's report and field notes in appendix