CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2015-0083

WASTE DISCHARGE REQUIREMENTS FOR CITY OF PORTOLA PORTOLA CLASS III MUNICIPAL SOLID WASTE LANDFILL POST-CLOSURE MAINTENANCE AND CORRECTIVE ACTION PLUMAS COUNTY

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

1. The City of Portola (hereinafter Discharger) owns and operates the Portola Class III Municipal Solid Waste Landfill (facility) about 1.5 miles northeast of the City of Portola and north of Highway 70 in the northeaster quadrant of Section, T23N, R14E, MDB&M, as shown in Attachment A, which is incorporated herein and made part of this Order by reference. The facility is a municipal solid waste (MSW) landfill regulated under authority given in Water Code section 13000 et seq.; California Code of Regulations, title 27 ("Title 27"), section 20005 et seq.; and 40 Code of Federal Regulations section 258 (a.k.a, "Subtitle D") in accordance with State Water Resources Control Board (State Water Board) Resolution 93-62.

2. The 48 acre facility consists of one existing unlined waste management unit (Unit) covering approximately eight acres of the site, as shown in Attachment B, which is incorporated herein and made part of this Order. A scrap metal storage area, and green waste storage area are located along the eastern portion of the facility. The Discharger proposes to continue operation of these recycling facilities after closure of the Unit. The facility is comprised of Assessor's Parcel Numbers (APN) 025-10-023 and 025-10-026. Solid waste operations have been conducted wholly within the 22.46-acre APN 025-10-026.

3. In May 2014, the Discharger submitted a Final Closure and Post-Closure Maintenance Plan (FCPCMP) for the landfill, which serves as an amendment to the report of waste discharge. The information in the FCPCMP has been used in revising these waste discharge requirements. The FCPCMP contains the applicable information required in Title 27. The FCPCMP and supporting documents contain information related to this revision of the WDRs.

4. On 17 March 2005, the Central Valley Water Board issued Order No. R5-2005-0048 in which the landfill waste management unit at the facility was classified as a Class III units for the discharge of municipal solid waste. This Order continues to classify, the landfill unit as a Class III unit in accordance with Title 27.

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

Unit	Area	Liner/LCRS[1] Components[2]	Unit Classification & Status
Unit I	8 acres	unlined	Class III, closed

[1] LCRS – Leachate collection and removal system

[2] All liner systems are composite liner systems unless otherwise noted

6. On-site facilities at the Portola Class III Municipal Solid Waste Landfill include: a passive landfill gas venting system, a scrap metal storage area, and green waste storage area. The Discharger proposes to continue operation of these recycling facilities after closure of the Unit.

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

8. This Order implements the applicable regulations for discharges of solid waste to land through Prohibitions, Specifications, Provisions, and monitoring and reporting requirements. Prohibitions, Specifications, and Provisions are listed in Sections A through H of these WDRs below, and in the Standard Provisions and Reporting Requirements (SPRRs) dated January 2012 which are part of this Order. Monitoring and reporting requirements are included in the Monitoring and Reporting Program (MRP) No. R5-2015-0083 and in the SPRRs. In general, requirements that are either in regulation or otherwise apply to all MSW landfills are considered to be "standard" and are therefore in the SPRRs. Any site-specific changes to a requirement in the SPRRs are included in the applicable section (A through H) of these WDRs, and the requirement in the WDRs supersedes the requirement in the SPRRs.

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

SITE DESCRIPTION

10. The Portola Class III Municipal Solid Waste Landfill is approximately 1.5 miles northeast of the City of Portola, one quarter-mile north of Highway 70 and one half-mile north of the Feather River.

11. The landfill is located within the Basin and Range physiographic province, an area characterized by uplifted and tilted mountain ranges separated by broad elongated basins. Bedrock in the vicinity of the landfill has been mapped as predominantly Mesozoic age quartz diorite. This quartz diorite is the predominant geologic unit beneath the site. The quartz diorite is generally very deeply weathered at the surface and grades to a silty sand. Where exposed, the quartz diorite is highly fractured. A large majority of the joints, especially at depth, are filled with clay.

12. The average hydraulic conductivity of native soils beneath the facility as measured in monitoring wells MW-2 and MW-3 during the 1990 SWAT investigation is approximately 2.1 x 10-4 cm/sec.

13. Review of Fault Activity Maps and publications prepared by the California Department of Conservation, Division of Mines and Geology, finds that there are no active faults in Plumas County. The nearest active fault to the site is the Honey Lake Fault, located approximately 23 miles northeast of the landfill. The maximum moment magnitude earthquake on the Honey Lake Fault is 6.9. The Mohawk Valley Fault, located approximately 10 miles southwest of the site, is designated as a potentially active fault. According to modeling by Cao, et. al. (2003), the maximum moment magnitude for northeastern California (from earthquakes that cannot be assigned to a particular fault) is 7.3. According to the U.S. Geological Survey Earthquake Hazards Program, the probabilistic ground motion value for the site vicinity is 0.24 g.

14. Property that surrounds the landfill is zoned “AP”, Agriculture Preserve, and is designated as Agricultural Preserve in the Plumas County General Plan. A rural residential neighborhood, some of which utilize individual domestic water supplies, exists within 1,500 feet south and southwest of the landfill.

15. The facility receives an average of 23.90 inches of precipitation per year on a 10-year return period as measured at the Portola Station. The mean pan evaporation is approximately 45 inches per year.

16. The 100-year, 24-hour precipitation event is estimated to be 4.32 inches, based on Department of Water Resources’ Bulletin 195 entitled Rainfall Analysis for Drainage Design Volume II, dated October 1976.

17. The waste management facility is not within a 100-year flood plain.

18. The Discharger has identified 15 domestic groundwater supply wells within 2,000 feet of the landfill. The properties where these wells are located are generally south and southwest of the facility.

19. Two storm water sedimentation basins are located south and west of the landfill as shown on Attachment B. The basin detains storm water for sedimentation control during the rainy season and is normally dry during the summer months. The sedimentation basin discharges to an unnamed drainage which eventually drains to the Feather River. The southern sedimentation basin has never been observed to discharge.

SURFACE WATER AND GROUNDWATER CONDITIONS

20. 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.

21. Surface water drainage from the site is to an unnamed drainage, a tributary of the Feather River.

22. The designated beneficial uses of the Feather River, as specified in the Basin Plan, are municipal and domestic water supply, agricultural irrigation and stock watering, power generation, contact and non-contact water recreation, warm and cold freshwater habitat, cold water spawning habitat, and wildlife habitat.

23. Shallow groundwater flow beneath and surrounding the landfill occurs in the highly weathered quartz diorite. Groundwater flow in the shallow zone is likely to be controlled by primary porosity due to the granular nature of the weathered rock. It is believed that although flow characteristics are controlled by primary porosity, flow may be enhanced in areas of highly faulted, fractured, or jointed rock due to a higher degree of weathering along these features. Flow direction in the shallow zone is largely controlled by topography, and generally parallels the slope of the landscape with a flow direction of northeast to southwest. However, localized groundwater flow in the shallow zone will also be controlled by irregularities in the surface of the unweathered bedrock. Because topography is greatly influenced by structural features such as faults, fractures, and joints, these features are also likely to play a role in groundwater flow direction in the shallow zone. The average groundwater gradient is approximately 0.375 feet per foot upgradient of the Unit, 0.08 feet per foot directly below the refuse, and 0.176 feet per foot downgradient of the landfill as determined using historical monitoring data.

24. At depth, the weathered bedrock grades into competent (fresh) bedrock. Groundwater flow characteristics in the competent bedrock appear to be controlled by the predominance of faults and their associated secondary fracture and fault patterns. Groundwater occurrence in the deeper bedrock is likely controlled by fracture pervasiveness, interconnectedness, and orientation. Recharge to the deeper water-

bearing zone probably occurs primarily higher up in the watershed, although some recharge from the shallow weathered water-bearing zone may also occur.

25. An intermittent surface spring has been identified near a fault structure at the landfill northeast of the waste footprint. Additional intermittent surface springs may be located south and topographically down gradient of the landfill and along Meadow Way below the landfill.

26. First encountered groundwater is generally about 13 to 38 feet below the native ground surface. Groundwater elevations appear to range from 5,012 feet MSL to 5,184 feet MSL.

27. Monitoring data indicates background groundwater quality has an electrical conductivity (EC) ranging between 70 and 100 micromhos/cm, with total dissolved solids (TDS) ranging between 78 and 120 mg/l.

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

GROUNDWATER AND UNSATURATED ZONE MONITORING

29. Nine groundwater wells have been installed at the facility for detection monitoring and to assess the vertical and horizontal extent of groundwater impacts. Wells MW-1, MW-2, and MW-3 were installed in late 1987. Well MW-4 was installed in May 1995. Wells MW-5, MW-6, MW-7, MW-8S (shallow), and MW-8D (deep) were installed in July 2001. Well MW-1 is located approximately 450 feet east of the upper portion of the Unit and provides background water quality data. MW-1 is installed 50.5 feet below ground surface (bgs) and is screened between 30.5 and 50.5 feet bgs. Point of compliance wells MW-2 and MW-3 are located just south and topographically downgradient of the Unit. MW-2 is installed 57.5 feet bgs and MW-3 is installed 48 feet bgs. MW-2 is screened between 38 and 57.5 feet bgs and MW-3 is screened between 14 and 48 feet bgs. Well MW-4 is situated near the southwestern edge of the Unit and is considered a point of compliance well. MW-4 is installed 47 feet bgs with a screen interval of 27 to 47 feet bgs. Well MW-5 is located just west of the landfill unit and is somewhat topographically crossgradient of the Unit. MW-5 is installed 37 feet bgs with a screen interval of 17 to 37 feet bgs. Well MW-6 is the furthest downgradient well and is located approximately 400 feet south of the landfill unit. MW-6 is installed 24.5 feet bgs with a screen interval between 14.5 and 24.5 feet bgs. Well MW-7 is located along the south property line southeast and crossgradient of the Unit. MW-7 is installed 45 feet bgs with a screen interval between 25 and 45 feet bgs. Point of compliance wells MW-8S and MW-8D are clustered near well MW-3, the most impacted well, along the southern landfill property boundary. MW-8S is installed 25 feet bgs with a screen interval between 15 and 25 feet bgs and MW-8D is installed 49 feet bgs with a screen interval between 44 and 49 feet bgs. This cluster of wells was installed to evaluate vertical gradients and the magnitude of groundwater impacts downgradient of the Unit.

30. The Unit is unlined; therefore, no vadose zone monitoring occurs. Any springs subsequently identified topographically downgradient of the Unit will be incorporated into the evaluation monitoring program for the site.

31. The Discharger has completed a corrective action program due to groundwater impacts associated with a release of waste from the facility. Closure was the preferred remedial alternative chosen by the Discharger. In October 2014, the Discharger completed construction of the final cover for the landfill in accordance with the May 2014 *Revised Final Closure Plan and Post Closure Maintenance Plan*. The existing monitoring network meets the requirements contained in Title 27 for a corrective action and evaluation monitoring program. Additional wells may be installed to assess vertical and horizontal groundwater impacts and to evaluate the efficacy of the corrective action program. Any additional wells installed to assess groundwater impacts will be incorporated into the corrective action and evaluation monitoring program.

32. 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.

33. 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.

34. In order to provide the best assurance of the earliest possible detection of a release of non-naturally occurring waste constituents from a landfill unit, the SPRRs specify a non-statistical method for the evaluation of monitoring data for non-naturally occurring compounds. The specified non-statistical method for evaluation of monitoring data provides two criteria (or triggers) for making the determination that there has been a release of non-naturally occurring waste constituents from a landfill unit. The presence of two non-naturally occurring waste constituents above their respective method detection limit (MDL), or one non-naturally occurring waste constituent detected above its practical quantitation limit (PQL) [a.k.a, laboratory reporting limit (RL)], indicates that a release of waste from a Unit has occurred. Following an indication of a release, verification testing must be conducted to determine whether there has been a release from the landfill unit or the detection was a false detection. The detection of two non-naturally occurring waste constituents above the MDL as a trigger is appropriate due to the higher risk of false-positive analytical results and the corresponding increase in sampling and analytical

expenses from the use of one non-naturally occurring waste constituent above its MDL as a trigger.

35. For a naturally occurring constituent of concern, the Title 27 requires concentration limits for each constituent of concern be determined as follows:

    a. By calculation in accordance with a statistical method pursuant to Title 27, section 20415(e)(8); or

    b. By an alternate statistical method meeting the requirements of Title 27, section 20415(e)(8)(E).

36. The Discharger submitted a 14 March 2006 Water Quality Protection Standard (WQPS) report proposing statistical data analysis methods to calculate concentration limits for each monitored constituent in accordance with Title 27. The WQPS report proposed to use interwell data analysis to calculate tolerance limits for the monitored constituents. The WQPS and approved data evaluation methods are included in MRP No. R5-2015-0083.

GROUNDWATER DEGRADATION AND CORRECTIVE ACTION

37. Groundwater quality beneath and downgradient of the facility has been impacted by landfill operations. Specifically, elevated levels of alkalinity, chloride, sulfate, and total dissolved solids have been detected in down and cross gradient wells MW-2, MW-3, MW-4, MW-6, and MW-8 (shallow and deep).

38. Volatile organic compounds (VOC) have been detected at or above method detection limits in site monitoring wells MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8s and MW-8d. Constituents detected include Benzene, Chlorobenzene, Chloroethane, p-Isopropyltoluene, Chloromethane, 1,4-Dichlorobenzene, 1,1-Dichloroethane, cis-1,2-Dichloroethene, Dichlorodifluoromethane, Methyl-tert-Butyl Ether (MtBE), and Methylene Chloride. Groundwater monitoring results for VOCs detected in site monitoring wells may be summarized as follows:

VOC	Average Concentration, ug/L		
	Pre-2005[1]	2010[2]	2014[2]
Benzene	0.51	<0.5[3]	<0.5[3]
Chlorobenzene	0.43	<0.5[3]	<0.5[3]
Chloroethane	1.6	<0.5[3]	<0.5[3]
p-Isopropyltoluene	<0.5[3]	3.05	1.68
Chloromethane	0.81	<0.5[3]	<0.5[3]
1,4-Dichlorobenzene	0.92	0.52	<0.5[3]
1,1-Dichloroethane	0.82	<0.5[3]	<0.5[3]
Cis-1,2-Dichloroethene	3.54	1.28	0.37[4]
Dichlorodifluoromethane	1.10	<0.5[3]	<0.5[3]
Methyl-Tert-Butyl Ether	3.58	0.49[4]	<0.5[3]
Methylene Chloride	<0.5[3]	0.27	<0.5[3]
Toluene	<0.5[3]	0.89	0.14[4]

1. Composite annual average for all wells with detections.
2. Four-quarter average using non-detects at PQL.
3. Constituent not detected.
4. Constituent detected at concentration less than PQL but greater than MDL.

39. Groundwater impacts were evaluated and confirmed in the September 2001 Groundwater Investigation Report, City of Portola Sanitary Landfill. In October 2001, the City of Portola submitted *Engineering Alternatives for Corrective Action - Portola Sanitary Landfill*, which recommended landfill closure as the preferred corrective action. The landfill halted disposal of municipal solid waste at the landfill on 1 November 2002. In 2005 the Discharger completed partial-final closure of the landfill by installing a temporary 30 mil HDPE cover over the landfill unit. In October 2014 the Discharger completed final closure of the landfill by installing an approved permanent LLDPE cover over the landfill unit.

40. Historical monitoring data for the site generally indicates declining concentrations of VOCs coincident with halting disposal in 2002, installation of the temporary cover in 2005 and completion of the final cover in 2014. Since 2012, the only VOCs detected in groundwater at the site are cis-1,2-dichloroethane, isopropyltoluene, toluene and methyl-tert-butyl ether, at trace to non-detect concentrations.

41. Three individual domestic water supply wells, on properties located within 1,500 feet southwest of the landfill, are monitored in accordance with Order No. R5-2005-0048. These wells, owned by Mack (APN 125-080-018), Prinvale (APN 125-080-024), and Ostreich (APN 125-80-019) have, or have had, regular detections of volatile organic compounds. The Mack well has contained MtBE at a maximum concentration of 3.9 ug/L, the Prinvale well has contained chloroform, cis-1,2-Dichloroethene and Dichlorodifluoromethane at maximum concentration of 0.65, 0.37 and 0.25 ug/L,

respectively, and the Ostreich well has contained Dichlorodifluoromethane at a maximum concentration of 0.33 ug/L.

42. None of the VOC detections in the Mack, Prinvale and Ostreich wells have exceeded Primary or Secondary Maximum Contaminant Levels for drinking water quality. In addition, monitoring data for the off-site domestic wells generally indicates declining concentrations of VOCs coincident with halting disposal in 2002, installation of the temporary cover in 2005 and completion of the final cover in 2014.

LANDFILL CLOSURE

43. 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 $1x10^{-6}$ 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.

44. 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.

45. The Discharger submitted a 15 May 2014 *Revised Final Closure and Postclosure Maintenance Plan* for closure and post-closure maintenance of the landfill unit at the facility. In October 2014 construction of the final cover was completed. The engineered alternative final cover system consists of the following, in ascending order: a two-foot thick soil foundation layer, a 50 mil structured, linear low-density polyethylene geomembrane installed spiked side down, a drainage layer consisting of the studded (upward) side of the structured geomembrane, and a geosynthetic erosion-resistant layer consisting of a woven geotextile and UV resistant blades of artificial turf ballasted with sand infill.

46. The Discharger's 15 May 2014 *Revised Final Closure and Postclosure Maintenance Plan* includes an analysis of the proposed engineered alternative final cover.

47. The Discharger has demonstrated that the engineered alternative final cover meets the performance goals of Title 27 and that it is equivalent to the prescriptive standard.

48. Side slopes for the closed landfill are sloped at 3H:1V as required by Title 27.

49. The Discharger performed a slope stability analysis for the proposed final cover. The Discharger's static and dynamic stability analysis demonstrates that the side slopes of the final cover will be stable in accordance with the requirements of Title 27.

50. Pursuant to Title 27, section 21090(e)(1), this Order requires a survey of the final cover following closure activities for later comparison with iso-settlement surveys required to be conducted every five years.

LANDFILL POST-CLOSURE MAINTENANCE

51. The Discharger submitted a 15 May 2014 *Revised Final Closure and Postclosure Maintenance Plan* for closure and post-closure maintenance of the Unit. The plan includes inspection, maintenance, and monitoring of the landfill during the post-closure maintenance period, and includes a post-closure maintenance cost estimate for the entire facility. Inspection and maintenance will include the condition of the final cover, drainage features, groundwater monitoring wells, access roads, landfill gas system, and site security. The plan will be implemented for a minimum period of 30 years or until the waste no longer poses a threat to environmental quality, whichever is greater.

52. 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.

53. The completed final cover 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.

FINANCIAL ASSURANCES

54. Title 27, sections 21840 and 22211 requires a cost estimate for landfill post-closure maintenance. The Discharger's 15 May 2014 *Revised Final Closure and Post Closure Maintenance Plan* includes a cost estimate for landfill post-closure maintenance. The amount of the cost estimate for post-closure maintenance in 2014 dollars is $1.20 million. This Order requires that the Discharger maintain financial assurance with CalRecycle in at least the amount of the post-closure maintenance cost estimate adjusted annually for inflation. On October 22, 2003, the city of Portal adopted Resolution No. 1791, which established a Pledge of Revenue financial mechanism for post-closure maintenance and monitoring of Portola Landfill.

55. 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.

56. The Discharger submitted a 23 February 2015 *Non-Water Release Corrective Action Cost Estimate*, in 2014 dollars, for the amount of $1.52 million dollars for corrective action of all known or reasonably foreseeable releases. This corrective action cost estimate is also considered to be the Water Release Corrective Action estimate, as the Corrective Action Plan currently being implemented by the Discharger consisted of installation of a final cover system with monitored natural attenuation of groundwater pollution. This Order requires that the Discharger maintain financial assurance with CalRecycle in at least the amount of the cost estimate adjusted annually for inflation. On October 22, 2003, the city of Portal adopted Resolution No. 1791, which established a Pledge of Revenue financial mechanism for corrective action costs at Portola Landfill.

CEQA AND OTHER CONSIDERATIONS

57. The action to revise waste discharge requirements for this existing 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.

58. 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.

59. 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."

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

61. The technical reports required by this Order and the attached "Monitoring and Reporting Program No. R5-2015-0083" 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

62. 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.

63. 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.

64. The Central Valley Water Board, in a public meeting, heard and considered all comments pertaining to the discharge.

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

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

or will be provided upon request.

IT IS HEREBY ORDERED, pursuant to California Water Code sections 13263 and 13267, that Order No. R5-2005-0048 is rescinded except for purposes of enforcement, and that the City of Portola, its agents, successors, and assigns, in order to meet the provisions of Division 7 of the California Water Code and the regulations adopted thereunder, shall comply with the following:

A. PROHIBITIONS

1. The discharge of any additional waste to the Unit is prohibited.

2. 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.

B. DISCHARGE SPECIFICATIONS

1. 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.

C. FACILITY SPECIFICATIONS

1. The Discharger shall comply with all Standard Facility Specifications listed in Section E of the SPRRs dated January 2012 which are part of this Order.

D. CLOSURE AND POST-CLOSURE MAINTENANCE SPECIFICATIONS

1. 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.

E. FINANCIAL ASSURANCE SPECIFICATIONS

1. The Discharger shall obtain and maintain assurances of financial responsibility with CalRecycle for closure and post-closure maintenance for the landfill in at least the amount described in Finding 54, 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 obtain and maintain assurances of financial responsibility with CalRecycle for initiating and completing corrective action for all known or reasonably foreseeable releases from the landfill in at least the amount of the annual inflation-adjusted cost estimate described in Finding 55. 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.

3. 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.

F. 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) No. R5-2015-0083, 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 No. R5-2015-0083, 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 No. R5-2015-0083, 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 No. R5-2015-0083.

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 No. R5-2015-0083 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. 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.

G. CORRECTIVE ACTION SPECIFICATIONS

1. **By 15 June 2017**, the Discharger shall submit a corrective action plan (CAP) evaluation report that determines whether monitored natural attenuation is effective in reducing VOC concentrations in both the off-site domestic wells and the point of compliance wells and should continue, or whether additional corrective action methods should be utilized. To determine whether monitored natural attenuation is effective, the CAP evaluation report shall, at a minimum, demonstrate that VOC concentrations exhibit statistically significant decreasing trends, and shall contain an evaluation of terminal electron acceptor processes.

2. **By 15 September 2017,** if the CAP evaluation report determines that natural attenuation is unsuccessful in remediating VOCs in groundwater (see Corrective Action Specification G.1), the Discharger shall submit an amended Report of Waste Discharge for Executive Officer approval to make appropriate changes to the engineered feasibility study (EFS) for a Corrective Action Plan that includes a detailed work plan for the use of other corrective action methods.

3. The Discharger shall sample the three off-site domestic wells described in Finding 41, on a quarterly basis for VOCs. The quarterly sampling results shall be reported and discussed in the semi-annual groundwater monitoring reports. Sampling frequency can be re-evaluated in the 2017 CAP evaluation report. Sample collection and analysis shall coincide with Groundwater Detection Monitoring A.1 of MRP R5-2015-0083.

   If at any time, either the Discharger or the Executive Officer determines that natural attenuation is unsuccessful in remediating VOCs in groundwater, the Discharger shall, within 90 days of making the determination, or of receiving written notification from the Executive Officer of such determination, submit an amended RWD for Executive Officer approval, to make appropriate changes to the EFS for a CAP that includes a detailed work plan for the use of other alternative corrective action methods to remediate VOCs.

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

a) Waste constituent concentrations in Point of Compliance groundwater monitoring wells exhibit an increasing trend not originally predicted after implementation of corrective action; or

b) Point of Compliance groundwater monitoring wells exhibit significant waste constituent concentration increases indicative of a new or renewed release; or

c) Significant waste constituent concentrations are identified in the monitored off-site domestic wells; or

d) Waste constituent concentrations are not decreasing at a sufficient rate to meet the remediation objectives.

The amended RWD shall include the following:

a) A discussion as to why existing corrective action measures have been ineffective or insufficient.

b) A revised evaluation monitoring plan if necessary to further assess the nature and extent of the release.

c) A discussion of corrective action needs and alternatives.

d) Proposed alternative corrective action measures, as necessary, for:

1. Source control, and/or

2. Groundwater cleanup.

e) A plan to monitor the progress of corrective action measures consistent with MRP R5-2015-0083.

4. Within one year of Executive Officer approval of the amended RWD to make appropriate modification to the EFS for the CAP, the Discharger shall implement the modified CAP to remediate VOCs.

H. PROVISIONS

1. The Discharger shall maintain a copy of this Order at the Portola City Hall, including the MRP No. R5-2015-0083 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 No. R5-2015-0083, 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.

7. The Discharger shall complete the tasks contained in these waste discharge requirements in accordance with the following time schedule:

A. Corrective Action

	Task	Compliance Date
1.	Submit a CAP evaluation report that determines whether monitored natural attenuation is effective in reducing VOC concentration in both the off-site domestic wells and the point of compliance wells and should continue, or whether alternative or additional corrective action methods should be utilized. (see Corrective Action Specification G.1)	**By 15 June 2017**
2.	If the CAP evaluation report determines that natural attenuation is unsuccessful in remediating VOCs in groundwater (see Corrective Action Specification G.1), the Discharger shall submit an amended RWD for Executive Officer approval to make appropriate changes to the EFS for a CAP that includes a detailed work plan for the use of other corrective action methods. (see Corrective Action Specification G.2)	**By 15 September 2017, if necessary**

3. Implement the modified CAP or alternative CAP to remediate VOCs. (see Corrective Action Specification G. 4)	**Within one year of Executive Officer approval of the amended RWD to make appropriate changes to the EFS for a CAP**

B. Financial Assurance Review

Task	Compliance Date
1. Annual Review of Financial Assurance for postclosure maintenance. (see Financial Assurance Specification E.1)	**1 June of each year**
2. Annual Review of Financial Assuance for initiating and completing corrective action. (see Financial Assurance Specification E.2)	**1 June of each year**

8. 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 5 June 2015.

Original signed by

PAMELA C. CREEDON, Executive Officer

GCS

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2015-0083
FOR
CITY OF PORTOLA
PORTOLA CLASS III MUNICIPAL SOLID WASTE LANDFILL
POST-CLOSURE MAINTENANCE, AND CORRECTIVE ACTION
PLUMAS COUNTY

This monitoring and reporting program (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 No. R5-201X-0083, 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 detection 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 E of the WDRs. All monitoring shall be conducted in accordance with the approved 14 March 2006 *Sample Collection and Analysis Plan*, which includes quality assurance/quality control standards.

All compliance monitoring wells established for the detection monitoring program shall constitute the monitoring points for the groundwater Water Quality Protection Standard. All detection 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 VI.

The Discharger may use alternative analytical test methods, including new 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:

Section	Monitoring Program
A.1	Groundwater Monitoring
A.2	Leachate Seep Monitoring
A.3	Surface Water Monitoring
A.4	Facility Monitoring
A.5	Corrective Action Monitoring

1. Groundwater Monitoring

The Discharger shall operate and maintain a groundwater detection monitoring system that complies with the applicable provisions of Title 27, sections 20415 and 20420. The detection monitoring system shall be certified by a California-licensed professional civil engineer or geologist as meeting the requirements of Title 27. The current groundwater detection monitoring system meets the applicable requirements of Title 27. The Discharger shall revise the groundwater detection monitoring system (after review and approval by Central Valley Water Board staff) as needed each time a new landfill cell or module is constructed.

The current groundwater monitoring network shall consist of the following:

Well	Status	Zone	Units Being Monitored
MW-1	Background	Shallow	Unit 1
MW-3	Detection	Shallow	Unit 1
MW-4	Detection	Shallow	Unit 1
MW-5	Detection	Shallow	Unit 1
MW-6	Detection	Shallow	Unit 1
MW-7	Detection	Shallow	Unit 1
MW-8S	Detection	Shallow	Unit 1
MW-8D	Detection	Deep	Unit 1
Mack	Corrective Action	Deep	Unit 1
Oestreich	Corrective Action	Deep	Unit 1
Prinvale	Corrective Action	Deep	Unit 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, with the exception of the Mack, Oestreich and Prinvale domestic wells which will only be sample for 8260b extended list. The Discharger shall collect, preserve, and transport groundwater samples in accordance with the approved Sample Collection and Analysis Plan.

Once per quarter, 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).

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 2011 and shall be monitored again in **2016**. The results shall be reported in the Annual Monitoring Report for the year in which the samples were collected.

2. Leachate Seep Monitoring

Leachate that seeps to surface from a landfill unit shall be sampled and analyzed for the field and monitoring parameters listed in Table II 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.

3. 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, sections 20415 and 20420. At the Portola Landfill, runoff from landfill areas flows to sedimentation basins that periodically discharge to an unnamed seasonal drainage that rarely contains flow. During the post-closure period, the Discharger will monitor stormwater in accordance with the General Industrial Stormwater Permit. It should be noted that the stormwater basins have never been observed to discharge in the history of the facility.

4. 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). The Discharger shall take photos of any problems areas before and after repairs. Any necessary construction, maintenance, or repairs shall be completed by **31 October**.

Annual facility inspection reporting shall be submitted as required in Section 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. 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 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 2019.

d. **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:

Landfill Unit Type	Frequency	Season
Inactive/Closed	Monthly	Wet: 1 October to 30 April
Inactive/Closed	Quarterly	Dry: 1 May to 30 September

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/leachate 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

b) Evidence of erosion and/or of day-lighted refuse.

3) 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.

5. 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 Discharger shall sample the three off-site private wells listed in Section A.1 of this MRP on a quarterly basis for VOCs, in accordance with Table V of this MRP. The quarterly sampling results shall be reported and discussed in semi-annual monitoring reports. All sampling results shall be reported to the well owner and immediate notification shall be provided to both the well owner and the occupants of any facilities being served by the well if any primary maximum contaminant level is exceeded.

B. REPORTING

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

Reporting Schedule

Section	Report	End of Reporting Period	Due Date
B.1	Semiannual Monitoring Report	30 June, 31 December	**1 August, 1 February**
B.2	Annual Monitoring Report	31 December	**1 February**
B.3	Seep Reporting	Continuous	**Immediately & 7 Days**
B.4	Annual Facility Inspection Report	31 October	**15 November**
B.5	Major Storm Event Reporting	Continuous	**7 days from damage discovery**
B.6	Survey and Iso-Settlement Map for Closed Landfills	Every Five Years	**Every Five Years**
B.7	Financial Assurances Report	31 December	**1 June**

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 No. R5-2015-0083 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 into the online Geotracker database as required by Division 3 of Title 27.

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:

9. 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;

10. Date, time, and manner of sampling;

11. Date and time that analyses were started and completed, and the name of the personnel and laboratory performing each analysis;

12. Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used;

13. Calculation of results; and

14. Results of analyses, and the MDL and PQL for each analysis. All peaks shall be reported.

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 groundwater flow rate and direction in the uppermost aquifer, in any zones of perched water, and in any additional zone of saturation monitored based upon water level elevations taken prior to the collection of the water quality data submitted in the report [Title 27, section 20415(e)(15)].

   d) Cumulative tabulated monitoring data for all monitoring points and constituents for groundwater, unsaturated zone, leachate, and surface water. Concentrations below the laboratory reporting limit shall not be reported as “ND” unless the reporting limit is also given in the table. Otherwise they shall be reported “<” the reporting limit (e.g., <0.10). Units shall be as required in Tables I through IV 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.

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.4.d 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.

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 written summary of the monitoring results, indicating any changes made or observed since the previous Annual Monitoring Report.

g) The results of the annual testing of leachate collection and removal systems required under Standard Facility Specification E.14 of the SPRRs.

h) Updated concentration limits for each monitoring parameter at each monitoring well based on the new data set.

i) A comprehensive discussion of any Corrective Action Program required by this MRP under Section A.5.

3. **Seep Reporting:** The Discharger shall report by telephone any seepage from the 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 **15 November** of each year, the Discharger shall submit a report describing the results of the inspection and the repair measures implemented, preparations for winter, and include photographs of any problem areas and the repairs. Refer to Section A.4 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.4 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.4 of this MRP, above. The next report is due by 2019.

7. **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 E.1 through E.3 of the WDRs.

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 COCs, the concentration limit for each constituent of concern, the verification retesting procedure to confirm measurably significant evidence of a release, the point of compliance, and all water quality monitoring points for each monitored medium.

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 14 March 2006 *Water Quality Protection Standard Report*. The limits are calculated using inter-well tolerance limits at 95% confidence and 95% coverage based on background data from background monitoring well MW-1.

The Water Quality Protection Standard shall be updated annually for each monitoring well using new and historical monitoring data.

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 V 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 IV for the specified monitored medium, and Table VI. 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 **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 14 March 2006 *Water Quality Protection Standard Report*. The approved method uses Interwell tolerance limits at 95% confidence and 95% coverage based on background data from background monitoring well MW-1.

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:

Cell or Module	Point of Compliance Monitoring Wells
Unit 1	MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8s, MW-8D

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, 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.

Original signed by

Ordered by: _____
PAMELA C. CREEDON, Executive Officer

5 June 2015

GCS

TABLE I

GROUNDWATER DETECTION MONITORING PROGRAM

Parameter	Units	Sampling Frequency	Reporting Frequency
Field Parameters			
Groundwater Elevation	Ft. & 100ths, M.S.L.	Quarterly	Semiannual
Temperature	^{o}F	Quarterly	Semiannual
Electrical Conductivity	umhos/cm	Quarterly	Semiannual
pH	pH units	Quarterly	Semiannual
Turbidity	Turbidity units	Quarterly	Semiannual
Monitoring Parameters			
Total Dissolved Solids (TDS)	mg/L[1]	Quarterly	Semiannual
Chloride	mg/L	Quarterly	Semiannual
Carbonate	mg/L	Quarterly	Semiannual
Bicarbonate	mg/L	Quarterly	Semiannual
Nitrate - Nitrogen	mg/L	Quarterly	Semiannual
Sulfate	mg/L	Quarterly	Semiannual
Calcium	mg/L	Quarterly	Semiannual
Magnesium	mg/L	Quarterly	Semiannual
Potassium	mg/L	Quarterly	Semiannual
Sodium	mg/L	Quarterly	Semiannual
Volatile Organic Compounds (USEPA Method 8260B, extended list, see Table V)	ug/L[2]	Quarterly	Semiannual
5-Year Constituents of Concern (see Table VI)			
Inorganics (dissolved)	mg/L	Annually	Annually
Semi-Volatile Organic Compounds (USEPA Method 8270D)	ug/L	5 years	Every 5 years
Chlorophenoxy Herbicides (USEPA Method 8151A)	ug/L	5 years	'' ''
Organophosphorus Compounds (USEPA Method 8141B)	ug/L	5 years	'' ''

[1] Milligrams per liter
[2] Micrograms per liter

TABLE III

SEEP MONITORING [2]

Parameter	Units	Sampling Frequency	Reporting Frequency
Field Parameters			
Total Flow	Gallons	Upon detection	
Flow Rate	Gallons/Day	Upon detection	
Electrical Conductivity	umhos/cm	Upon detection	
pH	pH units	Upon detection	
Monitoring Parameters			
Total Dissolved Solids (TDS)	mg/L	Upon detection	
Chloride	mg/L	Upon detection	
Carbonate	mg/L	Upon detection	
Bicarbonate	mg/L	Upon detection	
Nitrate - Nitrogen	mg/L	Upon detection	Sulfate mg/L Upon detection
Calcium	mg/L	Upon detection	
Magnesium	mg/L	Upon detection	
Potassium	mg/L	Upon detection	Sodium mg/L Upon detection
Volatile Organic Compounds (USEPA Method 8260B, short list, see Table V)	ug/L	Upon detection	
5-Year Constituents of Concern (see Table VI)			
Inorganics (dissolved)	ug/L	Upon detection	
Volatile Organic Compounds (USEPA Method 8260B, extended list)	ug/L	Upon detection	
Semi-Volatile Organic Compounds (USEPA Method 8270D)	ug/L	Upon detection	
Chlorophenoxy Herbicides (USEPA Method 8151A)	ug/L	Upon detection	
Organophosphorus Compounds (USEPA Method 8141B)	ug/L	Upon detection	

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

TABLE V

MONITORING PARAMETERS FOR DETECTION MONITORING

Surrogates for Metallic Constituents:

pH
Total Dissolved Solids
Electrical Conductivity
Chloride
Sulfate
Nitrate nitrogen

Volatile Organic Compounds, short list:

USEPA Method 8260B
Acetone
Acrylonitrile
Benzene
Bromochloromethane
Bromodichloromethane
Bromoform (Tribromomethane)
Carbon disulfide
Carbon tetrachloride
Chlorobenzene
Chloroethane (Ethyl chloride)
Chloroform (Trichloromethane)
Dibromochloromethane (Chlorodibromomethane)
1,2-Dibromo-3-chloropropane (DBCP)
1,2-Dibromoethane (Ethylene dibromide; EDB)
o-Dichlorobenzene (1,2-Dichlorobenzene)
m-Dichlorobenzene (1,3-Dichlorobenzene)
p-Dichlorobenzene (1,4-Dichlorobenzene)
trans- l ,4-Dichloro-2-butene
Dichlorodifluoromethane (CFC-12)
1,1-Dichloroethane (Ethylidene chloride)
1,2-Dichloroethane (Ethylene dichloride)
1,1 -Dichloroethylene (1,1 -Dichloroethene; Vinylidene chloride)
cis- 1,2-Dichloroethylene (cis- 1,2-Dichloroethene)
trans-1,2-Dichloroethylene (trans-1,2-Dichloroethene)
1,2-Dichloropropane (Propylene dichloride)
cis- 1,3-Dichloropropene
trans- 1,3-Dichloropropene
Di-isopropylether (DIPE)
Ethanol
Ethyltertiary butyl ether
Ethylbenzene
2-Hexanone (Methyl butyl ketone)
Hexachlorobutadiene
Methyl bromide (Bromomethene)
Methyl chloride (Chloromethane)

TABLE V

MONITORING PARAMETERS FOR DETECTION MONITORING

Continued

Methylene bromide (Dibromomethane)
Methylene chloride (Dichloromethane)
Methyl ethyl ketone (MEK: 2-Butanone)
Methyl iodide (Iodomethane)
Methyl t-butyl ether
4-Methyl-2-pentanone (Methyl isobutylketone)
Naphthalene
Styrene
Tertiary amyl methyl ether
Tertiary butyl alcohol
1,1,1,2-Tetrachloroethane
1,1.2,2-Tetrachloroethane
Tetrachloroethylene (Tetrachloroethene; Perchloroethylene)
Toluene
1,2,4-Trichlorobenzene
1,1,1-Trichloroethane (Methylchloroform)
1,1,2-Trichloroethane
Trichloroethylene (Trichloroethene)
Trichlorofluoromethane (CFC- 11)
1,2,3-Trichloropropane
Vinyl acetate
Vinyl chloride
Xylenes

TABLE VI

5-YEAR COCs & APPROVED USEPA ANALYTICAL METHODS

Inorganics (dissolved):	**USEPA Method**
Aluminum	6010
Antimony	7041
Barium	6010
Beryllium	6010
Cadmium	7131A
Chromium	6010
Cobalt	6010
Copper	6010
Silver	6010
Tin	6010
Vanadium	6010
Zinc	6010
Iron	6010
Manganese	6010
Arsenic	7062
Lead	7421
Mercury	7470A
Nickel	7521
Thallium	7841
Cyanide	9010C
Sulfide	9030B

Volatile Organic Compounds, extended list:

USEPA Method 8260B

Acetone
Acetonitrile (Methyl cyanide)
Acrolein
Acrylonitrile
Allyl chloride (3-Chloropropene)
Benzene
Bromochloromethane (Chlorobromomethane)
Bromodichloromethane (Dibromochloromethane)
Bromoform (Tribromomethane)
Carbon disulfide
Carbon tetrachloride
Chlorobenzene
Chloroethane (Ethyl chloride)
Chloroform (Trichloromethane)
Chloroprene
Dibromochloromethane (Chlorodibromomethane)
1,2-Dibromo-3-chloropropane (DBCP)
1,2-Dibromoethane (Ethylene dibromide; EDB)
o-Dichlorobenzene (1,2-Dichlorobenzene)

TABLE VI

5-YEAR COCs & APPROVED USEPA ANALYTICAL METHODS

Continued

m-Dichlorobenzene (1,3-Dichlorobenzene)
p-Dichlorobenzene (1,4-Dichlorobenzene)
trans- 1,4-Dichloro-2-butene
Dichlorodifluoromethane (CFC 12)
1,1 -Dichloroethane (Ethylidene chloride)
1,2-Dichloroethane (Ethylene dichloride)
1,1 -Dichloroethylene (1, l-Dichloroethene; Vinylidene chloride)
cis- l ,2-Dichloroethylene (cis- 1,2-Dichloroethene)
trans- l ,2-Dichloroethylene (trans- 1,2-Dichloroethene)
1,2-Dichloropropane (Propylene dichloride)
1,3-Dichloropropane (Trimethylene dichloride)
2,2-Dichloropropane (Isopropylidene chloride)
1,1 -Dichloropropene
cis- 1,3-Dichloropropene
trans- l ,3-Dichloropropene
Di-isopropylether (DIPE)
Ethanol
Ethyltertiary butyl ether
Ethylbenzene
Ethyl methacrylate
Hexachlorobutadiene
2-Hexanone (Methyl butyl ketone)
Isobutyl alcohol
Methacrylonitrile
Methyl bromide (Bromomethane)
Methyl chloride (Chloromethane)
Methyl ethyl ketone (MEK; 2-Butanone)
Methyl iodide (Iodomethane)
Methyl t-butyl ether
Methyl methacrylate
4-Methyl-2-pentanone (Methyl isobutyl ketone)
Methylene bromide (Dibromomethane)
Methylene chloride (Dichloromethane)
Naphthalene
Propionitrile (Ethyl cyanide)
Styrene
Tertiary amyl methyl ether
Tertiary butyl alcohol
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
Tetrachloroethylene (Tetrachloroethene; Perchloroethylene; PCE)
Toluene
1,2,4-Trichlorobenzene

TABLE VI

5-YEAR COCs & APPROVED USEPA ANALYTICAL METHODS

Continued

1,1,1 -Trichloroethane (Methylchloroform)
1,1,2-Trichloroethane
Trichloroethylene (Trichloroethene; TCE)
Trichlorofluoromethane (CFC- 11)
1,2,3-Trichloropropane
Vinyl acetate
Vinyl chloride (Chloroethene)
Xylene (total)

Semi-Volatile Organic Compounds:

USEPA Method 8270D - base, neutral, & acid extractables

Acenaphthene
Acenaphthylene
Acetophenone
2-Acetylaminofluorene (2-AAF)
Aldrin
4-Aminobiphenyl
Anthracene
Benzo[a]anthracene (Benzanthracene)
Benzo[b]fluoranthene
Benzo[k]fluoranthene
Benzo[g,h,i]perylene
Benzo[a]pyrene
Benzyl alcohol
Bis(2-ethylhexyl) phthalate
alpha-BHC
beta-BHC
delta-BHC
gamma-BHC (Lindane)
Bis(2-chloroethoxy)methane
Bis(2-chloroethyl) ether (Dichloroethyl ether)
Bis(2-chloro-1-methyethyl) ether (Bis(2-chloroisopropyl) ether; DCIP)
4-Bromophenyl phenyl ether
Butyl benzyl phthalate (Benzyl butyl phthalate)
Chlordane
p-Chloroaniline
Chlorobenzilate
p-Chloro-m-cresol (4-Chloro-3-methylphenol)
2-Chloronaphthalene
2-Chlorophenol
4-Chlorophenyl phenyl ether
Chrysene
o-Cresol (2-methylphenol)
m-Cresol (3-methylphenol)
p-Cresol (4-methylphenol)

TABLE VI

5-YEAR COCs & APPROVED USEPA ANALYTICAL METHODS

Continued

4,4'-DDD
4,4'-DDE
4,4'-DDT
Diallate
Dibenz[a,h]anthracene
Dibenzofuran
Di-n-butyl phthalate
3,3'-Dichlorobenzidine
2,4-Dichlorophenol
2,6-Dichlorophenol
Dieldrin
Diethyl phthalate
p-(Dimethylamino)azobenzene
7,12-Dimethylbenz[a]anthracene
3,3'-Dimethylbenzidine
2,4-Dimehtylphenol (m-Xylenol)
Dimethyl phthalate
m-Dinitrobenzene
4,6-Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)
2,4-Dinitrophenol
2,4-Dinitrotoluene
2,6-Dinitrotoluene
Di-n-octyl phthalate
Diphenylamine
Endosulfan I
Endosulfan II
Endosulfan sulfate
Endrin
Endrin aldehyde
Ethyl methanesulfonate
Famphur
Fluoranthene
Fluorene
Heptachlor
Heptachlor epoxide
Hexachlorobenzene
Hexachlorocyclopentadiene
Hexachloroethane
Hexachloropropene
Indeno(1,2,3-c,d)pyrene
Isodrin
Isophorone
Isosafrole
Kepone
Methapyrilene
Methoxychlor
3-Methylcholanthrene

TABLE VI

5-YEAR COCs & APPROVED USEPA ANALYTICAL METHODS

Continued

Methyl methanesulfonate
2-Methylnaphthalene
1,4-Naphthoquinone
1-Naphthylamine
2-Naphthylamine
o-Nitroaniline (2-Nitroaniline)
m-Nitroaniline (3-Nitroaniline)
p-Nitroaniline (4-Nitroaniline)
Nitrobenzene
o-Nitrophenol (2-Nitrophenol)
p-Nitrophenol (4-Nitrophenol)
N-Nitrosodi-n-butylamine (Di-n-butylnitrosamine)
N-Nitrosodiethylamine (Diethylnitrosamine)
N-Nitrosodimethylamine (Dimethylnitrosamine)
N-Nitrosodiphenylamine (Diphenylnitrosamine)
N-Nitrosodipropylamine (N-Nitroso-N-dipropylamine; Di-n-propylnitrosamine)
N-Nitrosomethylethylamine (Methylethylnitrosamine)
N-Nitrosopiperidine
N-Nitrosospyrrolidine
5-Nitro-o-toluidine
Pentachlorobenzene
Pentachloronitrobenzene (PCNB)
Pentachlorophenol
Phenacetin
Phenanthrene
Phenol
p-Phenylenediamine
Polychlorinated biphenyls (PCBs; Aroclors)
Pronamide
Pyrene
Safrole
1,2,4,5-Tetrachlorobenzene
2,3,4,6-Tetrachlorophenol
o-Toluidine
Toxaphene
2,4,5-Trichlorophenol
0,0,0-Triethyl phosphorothioate
sym-Trinitrobenzene

TABLE VI

5-YEAR COCs & APPROVED USEPA ANALYTICAL METHODS

Continued

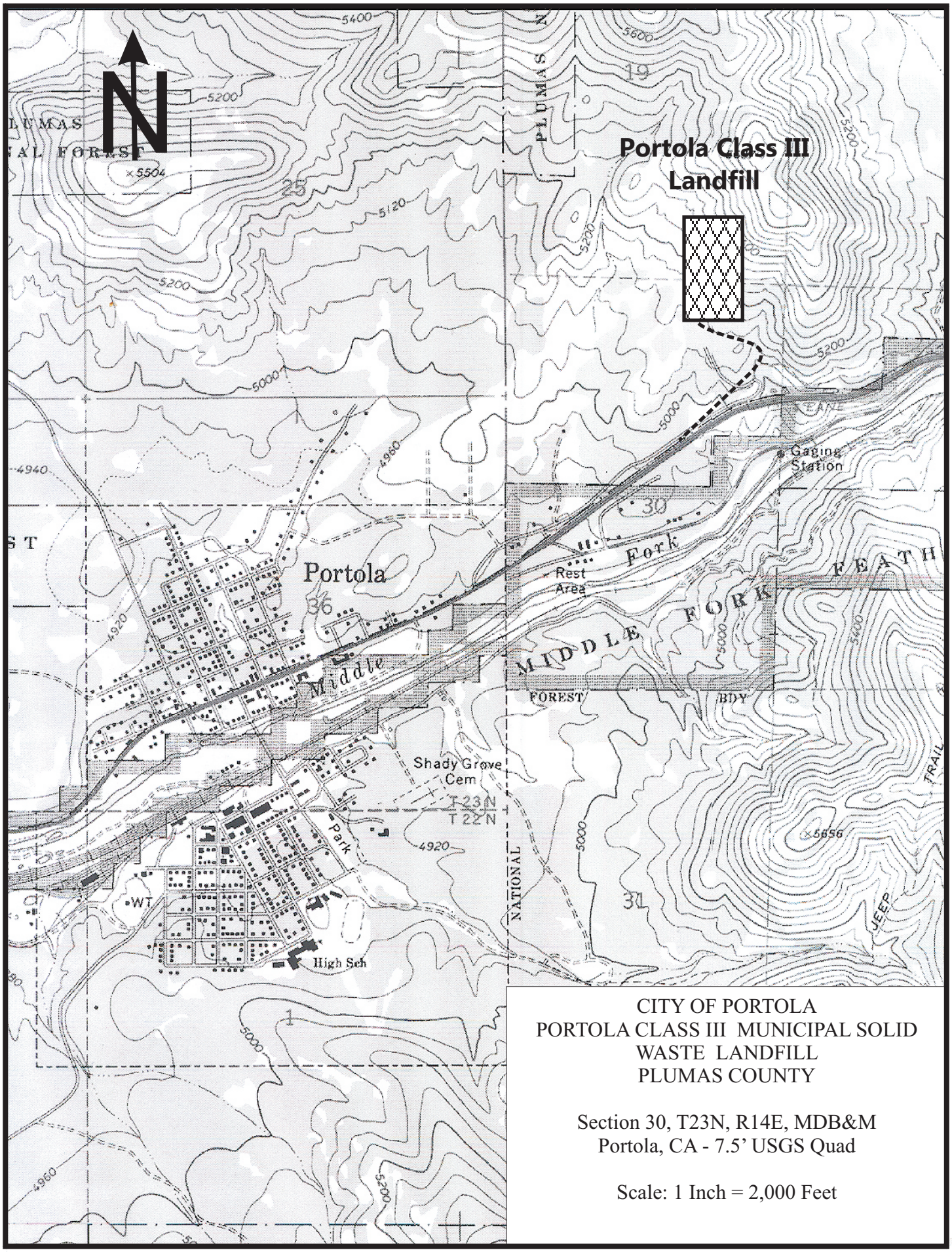
Chlorophenoxy Herbicides:

USEPA Method 8151A
2,4-D (2,4-Dichlorophenoxyacetic acid)
Dinoseb (DNBP; 2-sec-Butyl-4,6-dinitrophenol)
Silvex (2,4,5-Trichlorophenoxypropionic acid; 2,4,5-TP)
2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)

Organophosphorus Compounds:

USEPA Method 8141B
Atrazine
Chlorpyrifos
0,0-Diethyl 0-2-pyrazinyl phosphorothioate (Thionazin)
Diazinon
Dimethoate
Disulfoton
Methyl parathion (Parathion methyl)
Parathion
Phorate
Simazine

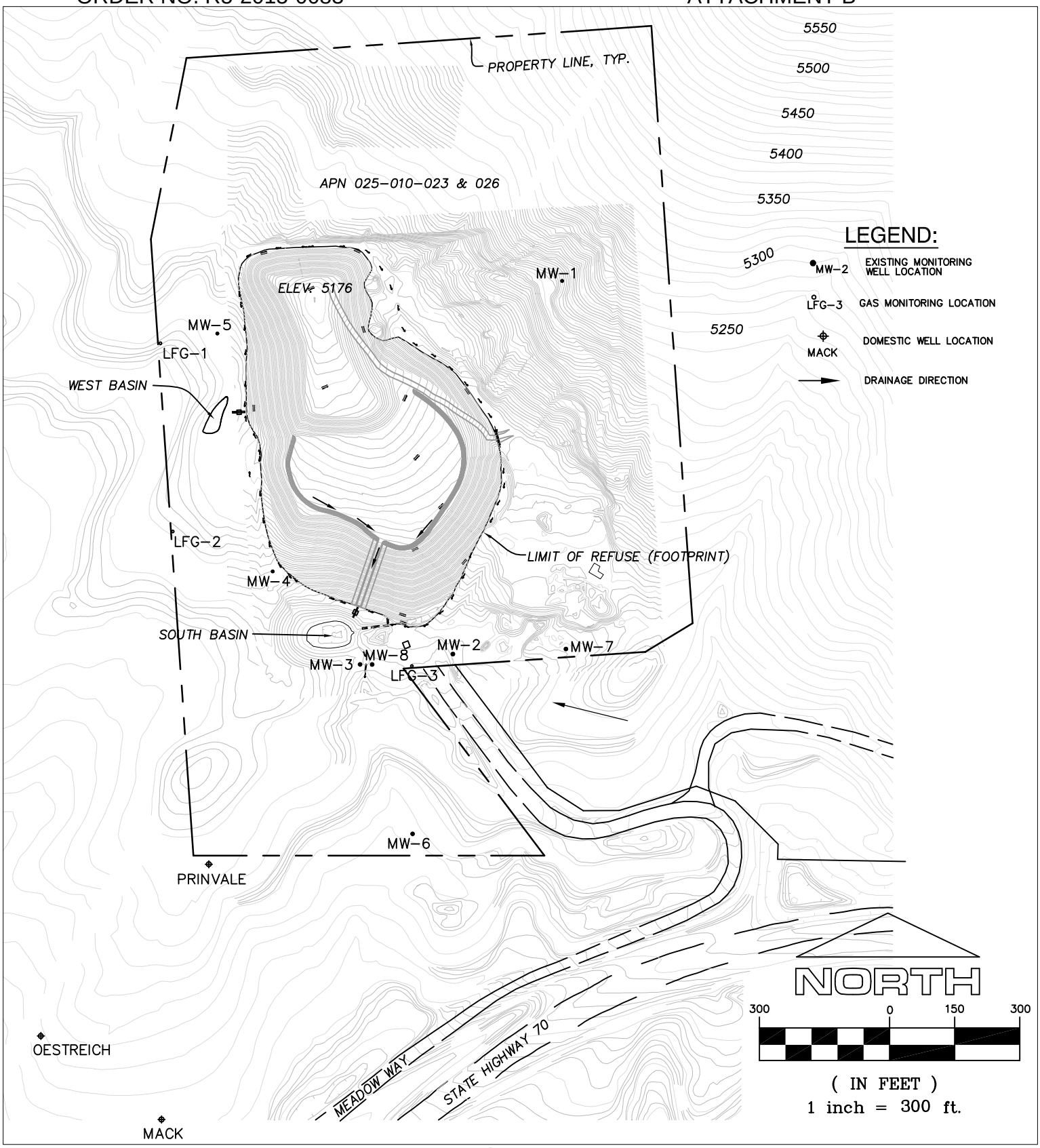
ATTACHMENT A



CITY OF PORTOLA
PORTOLA CLASS III MUNICIPAL SOLID WASTE LANDFILL
PLUMAS COUNTY

Section 30, T23N, R14E, MDB&M
Portola, CA - 7.5' USGS Quad

Scale: 1 Inch = 2,000 Feet



March 30, 2015

ATTACHMENT B

CITY OF PORTOLA LANDFILL

PLUMAS COUNTY, CALIFORNIA

INFORMATION SHEET

ORDER NO. R5-2015-0083
CITY OF PORTOLA
PORTOLA CLASS III MUNICIPAL SOLID WASTE LANDFILL
PLUMAS COUNTY

The Portola Class III Municipal Solid Waste Landfill is located approximately 1.5 miles northeast of the City of Portola. The 48-acre property is comprised of two parcels owned by the City of Portola (hereafter Discharger). Solid waste operations have been conducted wholly within the larger 22.46-acre parcel. The site consists of one unlined closed waste management unit, a scrap metal storage area, and a green waste storage area. The facility opened in 1968 as an open burn dump operated by Plumas County. In 1974, Plumas County, in agreement with the City of Portola, began operating the site as a sanitary landfill. On 27 May 1978, the City of Portola took over landfill operations.

The landfill is located within the Basin and Range physiographic province, an area characterized by uplifted and tilted mountain ranges separated by broad elongated basins. Quartz diorite is the predominant geologic unit beneath the site. The quartz diorite is generally very deeply weathered at the surface and grades to a silty sand. Shallow groundwater flow beneath and surrounding the landfill occurs in the highly weathered quartz diorite. Groundwater flow direction in this shallow zone is largely controlled by topography, and generally parallels the slope of the landscape with a flow direction of northeast to southwest.

The facility receives an average of 23.90 inches of precipitation per year (measured at Portola Station) as provided by the California Department of Water Resources *Rainfall Analysis for Drainage Design, Volume II, Long Duration Precipitation Frequency Data, Bulletin* 195, October 1976. Nearly all precipitation occurs as rainfall during the wet weather season (November through March). The average unadjusted evaporation rate at the site is approximately 45 inches per year as provided by the California Department of Water Resources *Evaporation from Water Surfaces in California, Bulletin 73*-70, November 1979. The 100-year, 24-hour precipitation event for the facility is estimated to be 4.32 inches, based on *Rainfall Analysis for Drainage Design, Volume II, Long Duration Precipitation Frequency Data, Bulletin* 195, October 1976. The waste management facility is not within a 100-year flood plain based on the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map, Community-Panel Number 0600570350B.

Nine monitoring wells make up the facility's groundwater monitoring system. First encountered groundwater is about 13 to 38 feet below ground surface. Groundwater monitoring at the site has identified elevated levels of alkalinity, chloride, sulfate, and total dissolved solids in downgradient monitoring wells. Additionally, volatile organic compounds, including Benzene, Chlorobenzene, Chloroethane, 4-Chlorotoluene, Chloromethane, 1,4-Dichlorobenzene, 1,1-Dichloroethane, cis-1,2-Dichloroethene, Dichlorofloromethane, Methyl-tert-Butyl Ether (MtBE), and Methylene Chloride have been detected in downgradient monitoring wells. In response to

the groundwater impacts, the Discharger evaluated corrective action measures and proposed landfill closure as the preferred remedial alternative. The landfill halted disposal of municipal solid waste at the landfill on 1 November 2002. In 2005 the Discharger completed partial-final closure of the landfill by installing a temporary 30 mil HDPE cover over the landfill unit. In October 2014 the Discharger completed final closure of the landfill by installing an approved permanent LLDPE cover over the landfill unit.

A rural residential neighborhood exists within 1,500 feet southwest of the landfill. Many of the residences receive water through individual domestic supply wells. Three of the properties have been routinely sampled by the Discharger as part of the groundwater detection monitoring program. These wells, owned by Mack (APN 125-080-018), Prinvale (APN 125-080-024), and Ostreich (APN 125-80-019) have, or have had, regular detections of volatile organic compounds. The Mack well has contained MtBE at a maximum concentration of 3.9 ug/L, the Prinvale well has contained chloroform, cis-1,2-Dichloroethene and Dichlorodifluoromethane at maximum concentration of 0.65, 0.37 and 0.25 ug/L, respectively, and the Ostreich well has contained Dichlorodifluoromethane at a maximum concentration of 0.33 ug/L. It should be noted that none of the VOC detections in the domestic wells have exceeded Primary or Secondary Maximum Contaminant Levels for drinking water quality.

These proposed Waste Discharge Requirements (WDR) prescribe a post-closure monitoring and maintenance schedule for the landfill, require continued implementation of a corrective action and evaluation monitoring program, and update existing WDR Order No. R5-2005-0048 to be consistent with applicable provisions of Title 27 California Code of Regulations.