CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2013-XXXX

WASTE DISCHARGE REQUIREMENTS
FOR
COUNTY OF SACRAMENTO
DEPARTMENT OF WASTE MANAGEMENT AND RECYCLING
ELK GROVE CLASS III LANDFILL
POST-CLOSURE MAINTENANCE AND CORRECTIVE ACTION
SACRAMENTO COUNTY

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

1. The County of Sacramento, Department of Waste Management and Recycling (hereinafter Discharger) owns and operates the Elk Grove Class III Landfill (facility) in the City of Elk Grove, in Section 31, T7N, R6E, MDB&M, as shown in Attachment A, which is incorporated herein and made part of this Order by reference. The facility is a closed municipal solid waste (MSW) landfill regulated under authority given in Water Code section 13000 et seq. and California Code of Regulations, title 27 ("Title 27"), section 20005 et seq. The landfill was operated by Independent Disposal Service for approximately 17 years until 1978 when the landfill stopped accepting waste. The landfill was known as the Waterman Disposal Site and the service area included the communities of Elk Grove, Galt, Walnut Grove, Thornton, Locke, and the general public in the surrounding County area south of Calvine Road. Approximately 930,000 cubic yards of waste was disposed of at the site using a trench and fill method. The landfill is not subject to 40 Code of Federal Regulations section 258 (a.k.a., "Subtitle D") or State Water Resources Control Board (State Water Board) Resolution 93-62 since it stopped accepting waste before 9 October 1991 [40 C.F.R. 258.1(c)].

2. The 37-acre landfill facility is comprised of Assessor's Parcel Numbers 127-160-12 and 127-160-57. The landfill received final closure in 1992. The landfill closure consisted of installation of a landfill gas extraction system and the placement of a final cover consisting of, from bottom to top, a two-foot thick foundation layer, a one-foot thick low permeability layer ($<1x10^{-6}$ centimeters per second), a vapor barrier (10-mil PVC geomembrane), a one-foot thick soil cover sloped at a minimum of three percent, and vegetation. The landfill gas control system became active in 1993 and consists of 23 in-fill landfill gas extraction wells. Landfill gas is removed from the wells under vacuum. The landfill area is shown in Attachments B and C, which are incorporated herein and made part of this Order by reference.

3. The Central Valley Water Board issued previous WDRs Order No. R5-2003-0046 in which the landfill was classified as a Class III landfill. This Order continues to classify the landfill as a Class III landfill in accordance with Title 27. This Order provides a ten-year update of

the WDRs to continue post-closure maintenance of the closed landfill and to continue corrective action for groundwater impacts. Groundwater investigation and corrective action requirements began in 1999 with the adoption of WDRs Order No. 99-104 and continued under Order No. R5-2003-0046 to address low levels of volatile organic compounds (VOCs) in the groundwater. The Discharger's proposed Corrective Action Program was approved in Order No. R5-2003-0046 and included groundwater extraction and treatment with reinjection into the unsaturated zone, injection of Hydrogen Release Compound (HRC®)/groundwater mixture into the groundwater for in-situ treatment of VOCs, and operation of the landfill gas system to control the source area in the landfill. The corrective action efforts have reduced or eliminated VOCs in some of the impacted monitoring wells; however, groundwater impacts are still present in other monitoring wells. This Order continues to require corrective action to address the remaining impacts (refer to "Groundwater Degradation and Corrective Action" starting at Finding 30).

4. 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. R5-201X-XXXX and in the SPRRs. In general, requirements that are either in regulation or otherwise apply to all MSW landfills are considered to be "standard" and are therefore in the SPRRs. Any site-specific changes to a requirement in the SPRRs are included in the applicable section (A through H) of these WDRs, and the requirement in the WDRs supersedes the requirement in the SPRRs.

5. 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

6. The Class III Landfill used a trench disposal operation to receive ordinary household and commercial waste (municipal solid waste) that is classified as "nonhazardous solid waste" using the criteria set forth in Title 27. The discharge consisted of residential and commercial waste, white goods (major appliances), street sweepings, tires, wood wastes, construction demolition, and dead animals. Since the landfill is closed, this Order prohibits the discharge of any waste to the landfill.

SITE DESCRIPTION

7. The surface elevation of the landfill is approximately 60 feet above mean sea level. The landfill site is bounded by Laguna Creek to the north and west, Waterman Road to the east, and a park and cemetery to the south. There is a horse trail and an embankment between the landfill and the creek. The landfill is generally flat, but is sloped to drain to a concrete-lined perimeter drainage channel that discharges storm water to the creek at two locations. The landfill is also enclosed by a chain-link fence for site security.

8. Land uses within 1,000 feet of the landfill include a park, a cemetery, residential housing, agriculture, and grazing.

9. There are three municipal supply wells within one mile of the landfill to the west and southwest that are owned by Elk Grove Water District (Well 1D, Well 9, and Well 12); however, the Well 12 is scheduled to be permanently closed in 2013. The wells are sampled by the District for VOCs. Locations of these wells relative to the facility are shown on Attachment D, which is incorporated herein and made part of this Order by reference.

10. The surface soils in the area of the landfill are predominantly Arroyo Seco Gravel, which extend to a maximum depth of 20 feet. Regional geology consists of the erosional ridge of exposed Laguna formation surrounded by the adjacent plains and stream channels underlain by younger unconsolidated alluvium and Riverbank formation. Information on geology directly beneath the landfill indicates three members within the Laguna formation. The uppermost Laguna member consists of reddish clayey sand and gravel to a depth of up to 40 feet below ground surface (bgs). The underlying middle member extends to a depth of about 180 feet bgs and consists of weakly compacted silty clays with interbedded thin sandy beds. The sandy beds of this member are less than 15 feet thick and are variable in their sand size distribution. Below a depth of about 180 feet bgs, a more massive, silty clay is found, which has been informally referred to as the lower member of the Laguna formation.

11. No major seismic faults transect Sacramento County. The nearest reported earthquake epicenter of magnitude 4.0 or greater is 22 miles west of Sacramento.

12. The facility receives an average of 17.9 inches of precipitation per year as measured at the Sacramento AP Station located nine miles northwest of the landfill. The mean pan evaporation is 57 inches per year.

13. The 100-year, 24-hour precipitation event for the facility is estimated to be 5.52 inches, based on precipitation and frequency data at the Sacramento AP Station from the National Oceanic and Atmospheric Association.

14. A portion of the site is within the 100-year floodplain of Laguna Creek. Rock riprap has been placed on the slope between the landfill and the creek to prevent washout of the waste management unit due to floods with a 100-year return period.

SURFACE WATER AND GROUNDWATER CONDITIONS

15. The *Water Quality Control Plan for Sacramento and San Joaquin River Basins, Fourth Edition* or (hereafter Basin Plan), designates beneficial uses, establishes water quality objectives, and contains implementation plans and policies for all waters of the Basin.

16. Surface water drainage from the site is to Laguna Creek, then to Morrison Creek, and then to the Sacramento-San Joaquin Delta at Snodgrass Slough.

17. The designated beneficial uses of the Sacramento-San Joaquin Delta, as specified in the Basin Plan, are municipal and domestic supply; agricultural supply; industrial service supply; industrial process supply; water contact and non-contact water recreation; warm freshwater habitat; cold fresh water habitat; migration of aquatic organisms; spawning, reproduction, and/or early development; wildlife habitat; and navigation.

18. The first water-bearing formation is approximately 80 feet bgs. The direction of ground water flow is generally ranges from northwest to southwest at an average hydraulic gradient of approximately 0.0005 to 0.001. The groundwater velocity calculated by the Discharger ranges from approximately 250 to 300 feet per year.

19. Monitoring data indicate background groundwater quality for first encountered groundwater as measured at monitoring well MW-1 prior to the 1998 emergence of VOCs in the well had electrical conductivity (EC) ranging between 250 and 350 micromhos/cm, with total dissolved solids (TDS) ranging between 180 and 260 milligrams per liter (mg/L).

20. 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, SURFACE WATER, AND UNSATURATED ZONE MONITORING

21. The groundwater monitoring network consists of detection monitoring wells in two zones (shallow and deep) and corrective action monitoring wells in the shallow zone, as shown on Attachment B. A complete listing of monitoring wells and their associated monitoring program (detection or corrective action) is given in Monitoring and Reporting Program (MRP) No. R5-2013-XXXX, which is incorporated herein and made part of this Order by reference. Monitoring well MW-1 was formerly the background monitoring well for the landfill, but became impacted with low levels of VOCs beginning in 1998. There is a large amount of historical data from this well prior to it becoming impacted. The historical data has been used by the Discharger to determine concentration limits for the constituents of concern at the facility that are listed in the attached MRP.

22. The Discharger's detection monitoring program and corrective action monitoring program for groundwater at the landfill satisfies the requirements contained in Title 27.

23. Surface water monitoring locations are R-1 through R-4, as shown on Attachment B.

24. Three suction lysimeters (1U, 2US, and 2UN) for unsaturated zone soil-pore liquid monitoring are located west of the landfill. Previous WDRs R5-2003-0046 waived monitoring at the suction lysimeters due to the known groundwater impacts at the landfill from both leachate and landfill gas. This Order and the MRP require monitoring for soil-pore liquid at the suction lysimeters to resume with annual sampling to assess and to track the effectiveness of corrective action at the site related to soil-pore liquid. This Order and the MRP also require that unsaturated zone monitoring be conducted at several landfill gas probes and soil vapor extraction wells for the presence of landfill gas and vapor-phase VOCs to ensure that the landfill gas system is preventing waste constituents from entering the unsaturated zone outside of the landfill unit.

25. Volatile organic compounds 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.

26. 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.

27. 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.

28. 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).

29. The Discharger's Water Quality Protection Standard (WQPS) was originally proposed in a 20 September 1991 *Water Quality Protection Standard Report*, and has been refined over time and is included in the required Annual Monitoring Reports for the landfill. The current WQPS uses historical monitoring data from background monitoring well MW-1 prior to VOCs being detected in the well to calculate the concentration limits for each monitored naturally occurring constituent in accordance with Title 27. The WQPS uses Interwell data analysis to calculate concentration limits for the monitored constituents. The WQPS, approved data evaluation methods, and approved concentration limits are included in MRP No. R5-2013-XXXX.

GROUNDWATER DEGRADATION AND CORRECTIVE ACTION

30. Groundwater at the landfill has been impacted with VOCs and degraded with inorganic (salt) constituents. Detection of VOCs began in the late 1990s. The Central Valley Water Board required the Discharger to investigate and provide corrective action for the groundwater impacts with the adoption of previous WDRs 99-104 and R5-2003-0046, and as proposed by the Discharger in Reports of Waste Discharge dated March and November 2002. Corrective action has consisted of groundwater extraction, landfill gas extraction, and in-situ groundwater treatment using Hydrogen Release Compound (HRC®). Groundwater at the extraction wells has been treated by in-well aeration with re-injection into the unsaturated zone within the same well under effluent limits included in the WDRs. Groundwater extraction was conducted in extraction wells EW-5 and EW-6 beginning in April 2002 and was discontinued in October 2008 as discussed in the following Findings.

31. HRC® is a polylactate ester honey-like material that accelerates the reductive bioremediation process to degrade chlorinated hydrocarbons. Prior to placement into an injection well, the material is mixed with several hundred gallons of groundwater from extraction well EW-1, which has been non-detect for VOCs. During 2008, the Central Valley Water Board adopted general WDRs Order R5-2008-0149 for in-situ groundwater remediation using products such as HRC®. Prior to continuing HRC use at the site, this Order requires that the Discharger obtain coverage under WDRs Order R5-2008-0149.

32. During 2007, the Discharger conducted an investigation into the effectiveness of the corrective action efforts. The investigation resulted in the Discharger conducting additional HRC® injections in the vicinity of wells MW-1, MW-6, MW-7R, MW-10, EW-4, EW-5, and EW-6. HRC® injections were conducted annually from 2007 through 2011.

33. The Discharger submitted a 10 July 2008 *Work Plan – Optimization of Monitoring and Reporting Program and Corrective Action Program* wherein they concluded that groundwater extraction was no longer effective in reducing the remaining VOCs and proposed to shut down the groundwater extraction system for one year while monitoring the groundwater for VOCs quarterly in wells EW-5, EW-6, MW-10, and MW-6. The Discharger proposed to reassess continued groundwater extraction after the one-year shut down period. The additional monitoring was conducted under revised MRP R5-2003-0046 issued on 14 October 2008.

34. The Discharger reported the results of the one-year shutdown monitoring in Appendix J of the 2009 Annual Monitoring Report. The Discharger reported that data indicate that operation of the groundwater extraction system is no longer effective in reducing VOCs in groundwater and that downward trends in specific wells, including EW-5 and EW-6, can be directly attributed to the HRC® injections. The Discharger requested permanent discontinuance of groundwater extraction at these wells because of the effectiveness of the HRC® injections in reducing VOCs in EW-5 and EW-6. Conditional approval was given on 9 March 2010 subject to implementation of specific corrective action measures if VOC levels at the extraction wells substantially increased. The Discharger reported in the 2012 Annual Monitoring Report that significant reduction in VOCs has occurred at MW-7R, EW-5, and EW-6, and that VOCs are no longer being detected at EW-5 and EW-6. VOCs have been below detection limits in EW-5 since the second quarter of 2009 and in EW-6 since the third quarter of 2010.

35. On 30 January 2013, Central Valley Water Board staff issued a letter requiring that the Discharger address the remaining VOCs present in monitoring wells MW-2, MW-3, MW-4, MW-6, MW-7R, MW-10, and MW-12 as reported in the First Semiannual 2012 monitoring report. The letter required, by 15 April 2013, that the Discharger submit a Landfill Gas Optimization Report Work Plan evaluating the effectiveness of the landfill gas extraction system, specifically in the areas of wells MW-3 and MW-6. The letter also requested a proposal for groundwater remedial methods that could include upgrading the landfill gas extraction system and installing additional HRC® injection wells.

36. The Work Plan was submitted and provided an outline to evaluate the physical components and operation of the LFG system, including a review of existing site data focused on LFG migration, LFG system design, LFG system operational data, gas probe monitoring data, geologic and hydrologic information, and waste management unit construction designs. The work plan also proposed installation of additional LFG gas probes and two additional HRC injection points. The Discharger subsequently proposed to install three additional HRC injection points. A report of results is required to be submitted in January 2014.

EFFLUENT LIMITATIONS FOR DISCHARGES TO THE UNSATURATED ZONE

37. Previous WDRs R5-2003-0046 included effluent limitations for the discharge of treated groundwater into the unsaturated zone at the extraction wells using the in-well aeration system. This Order continues to include effluent limitations for this discharge in the event that groundwater extraction is needed for continued corrective action at the site. The effluent limitations have been updated based on current information and are as follows:

Constituent	Water Quality Objective (ug/L)	Source of Objective
Chloroform	1.1	Cal/EPA Cancer Potency Factor
cis-1,2-Dichloroethene	6	California Primary MCL
Dichlorodifluoromethane	1,000	California DHS Notification Level
Tetrachloroethene (PCE)	0.06	California Public Health Goal
Tricholoroethene (TCE)	1.7	California Public Health Goal
Vinyl Chloride	0.05	California Public Health Goal

38. As with previous Order R5-2003-0046, this Order specifies maximum effluent concentration limits at or below the above listed Water Quality Objectives. In most cases the applicable WQO is greater than the Practical Quantitation Limit (PQL) for laboratory analysis. In those cases, the effluent limit is set at the PQL (0.5 ug/L for most VOCs). In the case of PCE and vinyl chloride, the WQO is lower than the lowest PQL that can be reliably achieved by most laboratories. In these cases, the effluent limit remains at the WQO; however, the Discharger is required to use the lowest PQL available for these constituents. The Discharger has reported that a PQL of 0.1 ug/L is available for PCE, which is the primary constituent of concern for this site.

LANDFILL CLOSURE

39. The Discharger submitted a July 1988 *Closure and Postclosure Maintenance Plan* for closure and post-closure maintenance of the landfill. An additional report comparing final cover alternatives was submitted during 1991. The landfill was closed during 1992 and a report documenting the completion of closure was submitted during June 1993. The landfill was closed with a final cover consisting of a two-foot thick foundation layer, a one-foot thick low permeability soil layer ($<1x10^{-6}$ cm/second), a vapor barrier (10-mil PVC), a one-foot thick soil cover sloped at a minimum of three percent, and vegetation.

40. A paved bicycle/horse trail was subsequently constructed adjacent to the western edge of the landfill next to Laguna Creek at the request of the Elk Grove Community Services District. The vegetative soil layer was removed from a 1.1-acre area at the northern end of the landfill and replaced with a layer of compacted soil to accommodate a parking lot for access to the trail. Following an inspection during 2001, Central Valley Water Board staff requested that the Discharger take measures to protect the cover soil in this area due to erosion. The Discharger submitted a request for an amendment of post-closure land use to the Local Enforcement Agency and portions of the parking lot area were paved while other portions were vegetated.

41. A landfill gas control system became operational at the site during January 1993, and was expanded during 1994. The landfill gas control system includes 23 in-fill landfill gas extraction wells and landfill gas is removed from the wells under vacuum and discharged under a permit from the Sacramento Metropolitan Air Quality Management District. Perimeter landfill gas probes are monitored for the presence of methane and carbon dioxide.

42. This Order requires a survey of the final cover for later comparison with iso-settlement surveys required to be conducted every five years.

LANDFILL POST-CLOSURE MAINTENANCE

43. The July 1988 *Closure and Postclosure Maintenance Plan* includes the plan for post-closure maintenance of the landfill. 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, unsaturated zone monitoring points, 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.

44. 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. This Order requires the Discharger to conduct a baseline survey of the final cover in 2014 and to prepare iso-settlement maps every five years thereafter (SPRRs G.22 and MRP).

45. This Order requires the final cover to be periodically visually inspected for damage or defects, and for defects to be repaired in accordance with SPRRs G.28. A periodic leak search is not required since the landfill was closed prior to 18 July 1997 [Title 27 section 21090(a)(4)].

46. For final cover repairs that involve installing new final cover over an area that has settled, the Discharger proposes an engineered alternative final cover consisting of, from bottom

to top: foundation soil layer, a geosynthetic clay liner (GCL), a 60-mil high-density polyethylene geomembrane, and one foot of vegetative soil. The Discharger provided information to show that installing the prescriptive cover in limited areas of settlement would be unreasonably and unnecessarily burdensome since there is no onsite or known local source of clay soil, the limited size of the repair area or areas would not warrant the costs for typical clay layer construction, and the proposed alternative cover for these limited areas is practical, feasible, and provides at least equivalent water quality protection. This Order allows the Discharger to install the engineered alternative cover in areas needing replacement cover due to settlement or other damage.

FINANCIAL ASSURANCES

47. Title 27, section 22222 requires the Discharger to establish an irrevocable fund for corrective action to address a known or reasonably foreseeable release from the landfill. The Discharger submitted a cost estimate on 17 April 2000 that was approved by the Executive Officer on 27 April 2000 in the amount of $219,000. As provided by Title 27, sections 22228 and 22245, the Discharger entered into a Pledge of Revenue Agreement with the Central Valley Water Board on 24 August 2000. The agreement establishes that the Discharger will use revenue generated from the County solid waste collection system to fund corrective action at the Elk Grove Landfill. This Order requires annual adjustments to account for inflation by 1 June of each year.

48. Title 27, section 22212 requires the Discharger to establish an irrevocable fund to ensure post-closure maintenance at the landfill. The Discharger submitted a cost estimate on 29 November 1999 that was approved on 14 December 1999 in the amount of $109,332. As provided by Title 27, sections 22228 and 22245, the Discharger entered into a Pledge of Revenue Agreement with the Central Valley Water Board on 26 January 2000. The agreement establishes that the Discharger will use revenue generated from the County solid waste collection system to fund post-closure maintenance at the Elk Grove Landfill. This Order requires annual adjustments to account for inflation by 1 June of each year.

CEQA AND OTHER CONSIDERATIONS

49. On 7 November 2001, the County of Sacramento Board of Supervisors adopted a Notice of Exemption for the Elk Grove Landfill groundwater remediation project. The Department of Environmental Review and Assessment filed the Notice of Exemption with the County of Sacramento County Clerk. The Notice of Exemption stated that the project was found to be exempt from CEQA under General Rule, section 15061(b)(3) because the project does not have the potential for significant effects on the environment.

50. 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.

51. 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.

52. 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.”

53. State Water Board Resolution 68-16 (Resolution 68-16) requires the Central Valley Water Board, in regulating the discharge of waste, to maintain high quality waters of the state until it is demonstrated that any change in quality will be consistent with maximum benefit to the people of the State, will not unreasonably affect beneficial uses, and will not result in water quality less than that described in the Board’s policies (e.g., quality that exceeds water quality objectives). The Central Valley Water Board finds that the discharge of treated groundwater to the unsaturated zone, as allowed in these waste discharge requirements, is consistent with Resolution 68-16 since (1) the purpose of the discharge is to implement the cleanup of groundwater pollution and such remediation will benefit the people of the State; (2) this Order requires use of best practicable treatment, including adequate monitoring and contingency plans to assure protection of water quality; and (3) this Order does not allow discharges of waste to degrade water quality. If the discharge causes or threatens to cause degradation of water quality, then the Discharger will be required to cease the discharge, implement source control, change the method of disposal, or take other action.

54. 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.

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

PROCEDURAL REQUIREMENTS

56. 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.

57. 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.

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

59. 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. R5-2003-0046 is rescinded except for purposes of enforcement, and that the County of Sacramento Department of Waste Management and Recycling, 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 waste at the Elk Grove Class III Landfill facility, except as specifically provided in this Order, is prohibited.

2. The discharge of untreated or partially treated groundwater to the unsaturated zone above the effluent limitations listed in Finding 37 of this Order is prohibited.

3. 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. Standard Prohibition 6 is waived for discharges of treated groundwater to the unsaturated zone that are in compliance with this Order.

B. DISCHARGE SPECIFICATIONS

1. The Discharger shall, in a timely manner, remove and relocate any wastes discharged at this facility in violation of this Order. If the waste is a hazardous waste, the Discharger shall immediately notify the Department of Toxic Substances Control.

2. 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. CONSTRUCTION SPECIFICATIONS

1. The requirement to comply with Standard Construction Specifications listed in Section F of the SPRRs dated January 2012 is waived since the landfill is closed and no new landfill liner systems can be built at the facility.

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.

E. CLOSURE AND POST-CLOSURE MAINTENANCE SPECIFICATIONS

1. The Discharger shall maintain an active landfill gas extraction system for the closed landfill unit 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.

2. For final cover repairs requiring limited areas of final cover replacement due to differential settlement or other damage, the Discharger shall install an engineered alternative final cover consisting of, from bottom to top: foundation soil layer, a GCL, a 60-mil HDPE geomembrane layer, and one foot of vegetative soil. Repaired areas shall be vegetated to prevent erosion.

3. The Discharger shall ensure that the vegetative/erosion resistant layer receives necessary seed, binder, and nutrients to maintain the vegetation proposed in the final closure plan.

4. The Discharger shall comply with Standard Closure and Post-Closure Specifications 25 and 27 through 30 in Section G 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 adequate assurances of financial responsibility for initiating and completing corrective action for all known or reasonably foreseeable releases from a waste management unit at the facility in accordance with Title 27, sections 20380(b) and 22222. In the event that the Central Valley Water Board determines that the Discharger has failed or is failing to perform corrective action as required by law, the Central Valley Water Board may direct the Discharger to pay from the pledged revenue such amounts as necessary to insure sufficient corrective action, as provided in the Pledge of Revenue Agreement described in Finding 47. The Discharger shall be obligated to use such funds for corrective action in accordance with the directives of the Central Valley Water Board.

2. The Discharger shall obtain and maintain adequate assurances of financial responsibility for post-closure maintenance at the facility in accordance with Title 27, section 22212. In the event that the Central Valley Water Board determines that the Discharger has failed or is failing to perform post-closure maintenance as required by law, the Central Valley Water Board may direct the Discharger to pay from the pledged revenue such amounts as necessary to insure sufficient post-closure maintenance, as provided in the Pledge of Revenue Agreement described in Finding 48. The Discharger shall be obligated to use such funds for post-closure maintenance in accordance with the directives of the Central Valley Water Board.

3. By **1 June** of each year, the Discharger shall submit a report to the Central Valley Water Board that adjusts the approved post-closure and corrective action pledge amounts from Findings 47 and 48 to account for inflation in accordance with Title 27 Section 22236, and shows that the Pledge of Revenue contains the adjusted amount. The report due by **1 June 2014** shall include annual inflation adjustments from 2000 to 2014.

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. Financial assurance requirements for closure are waived since the landfill has already been closed.

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) No. R5-201X-XXXX, 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. R5-201X-XXXX, 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. R5-201X-XXXX, 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. R5-201X-XXXX.

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. R5-201X-XXXX 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. Prior to continuing the use of HRC at the site, the Discharger shall obtain coverage under general WDRs Order R5-2008-0149 and comply with its requirements.

7. 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 administrative offices of the Waste Management and Recycling Division, including the MRP No. R5-201X-XXXX 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 that are not specifically referred to in this Order.

3. The Discharger shall comply with MRP No. R5-201X-XXXX, 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, dated January 2012, which are attached hereto and made part of this Order by reference. Those provisions that are from Subtitle D only (referenced with "[40 C.F.R. § 258.XX]" after them) and are not also referenced as being from Title 27, are not applicable to this facility.

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. By **31 January 2014**, the Discharger shall prepare a *LFG System Optimization Report* evaluating the effectiveness of the existing LFG system in terms of the system's ability to capture LFG, provide site-wide source control, and prevent any additional LFG from migrating into the unsaturated zone or groundwater. The Report shall describe steps that have been taken to modify the physical components or operating elements of the landfill gas system to prevent landfill gas, to the extent possible, from entering groundwater throughout the entire footprint of the landfill and surrounding unsaturated zone adjacent to and beneath the landfill. The Report shall include:

        i. A description of the measures that have been taken to provide and maintain, to the extent possible, continuous negative pressure[1] in each landfill gas extraction well for each interval monitored;

        ii. Certification by an independent third party that those measures have been fully implemented; and

[1] For purposes of this Order, "continuous negative pressure" means that each wellhead shall be operated under a vacuum (negative pressure) except (a) when a well has been decommissioned with approval of Board staff, (b) when necessary to prevent or control a landfill fire, (c) during maintenance, construction, or well raising activities on a well, or (d) when the gas collection system has been temporarily shut down for maintenance or repairs.

iii. An *Operational Procedures* document that describes on-going procedures that will be implemented to ensure that landfill gas extraction is continuously optimized. The document may reference requirements from the regulations pertaining to Methane Emissions from Municipal Solid Waste Landfills contained in the California Code of Regulations, title 17, Subchapter 10, Article 4, Subarticle 6, section 95460 et seq.

b. Monitoring Reporting Program (MRP) R5-2013-XXXX requires the submittal of semi-annual groundwater monitoring and corrective action progress reports. Beginning with the **First Semester 2014 report** (due by **1 August 2014)**, each of the semi-annual reports shall include the following information:

i. The landfill gas system operational and monitoring data listed in Section A.6 of MRP No. R5-201X-XXXX;

ii. Time versus concentration graphs for the average of total VOCs measured at or above the PQL, excluding freons, for the most recent four semiannual periods in groundwater monitoring wells MW-2, MW-3, MW-6, MW-7R, and MW-12, starting with the first semi-annual 2012 monitoring data (MW-10 shall also be included if the data allow for a time series graph to be generated);

iii. The results of a statistical trend test performed for each of the wells listed in 7.b.ii. The trend tests will be used to determine if the total VOC concentrations show a statistically significant upward or downward trend. The statistical tests shall be conducted using the tests recommended in the USEPA Unified Guidance[2], such as Mann-Kendall, Theil-Sen, or Linear Regression, using an average of total VOCs excluding freons for the most recent four semiannual periods; and

iv. If the Discharger elects to install additional LFG extraction wells or complete additional enhancements to the LFG system, or conduct other corrective action measures such as pneumatic connectivity testing and monitoring, then the report shall contain a description of the work accomplished during the monitoring period.

c. For the **First Semester 2017 report** (due by **1 August 2017**): If the total VOC concentrations in the groundwater monitoring wells listed in 7.b.ii do not show a statistically significant decrease (using the data collected between the First Semester 2012 and the First Semester 2017) and VOC concentrations do not meet Water Quality Protection Standards, then the report shall contain a brief evaluation of treatment options to enhance corrective action and shall state what measures

[2] March 2009 Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities- Unified Guidance.

the Discharger will implement, including groundwater extraction and treatment, if concentrations do not decrease by the end of the Second Half 2017.

d. For the **Second Semester/Annual 2017 report** (due by **1 February 2018**): If the total VOC concentrations in the wells listed in 7.b.ii do not show a statistically significant decrease (using the data collected between the First Semester 2014 and the Second Semester 2017), then the report shall include a work plan to install the treatment options identified in the First Semester 2017 report. The work plan shall include a schedule for implementation not to exceed **15 July 2018**.

e. If the Discharger was required to submit the work plan described in Item d, above, then by **15 August 2018**, the Discharger shall submit a *Remediation Installation Report* summarizing the installation of additional corrective action measures identified in Item c, above.

8. If the Discharger wishes to re-initiate groundwater extraction, then at least 90 days prior, the Discharger shall submit a technical report describing how the system will be designed, operated, and monitored to ensure compliance with this Order. The system shall not be operated until Water Board staff approve the report.

9. If corrective action measures do not result in compliance with the water quality protection standard, then the Discharger may elect to submit a technical report proposing concentration limits greater than background (CLGB). The report must include a demonstration that it is technically and economically infeasible to comply with the water standard in accordance with Title 27, section 20400(c) and (e).

10. Corrective action will be deemed complete once compliance with the water quality protection standard has been met. To terminate corrective action, the Discharger must submit a technical report that demonstrates to the satisfaction of Central Valley Water Board staff that concentrations of all constituents of concern have been reduced to levels below the established concentration limits throughout the entire zone affected by the release (Title 27, Section 20430 (f)).

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 _____.

_____
PAMELA C. CREEDON, Executive Officer

WLB