CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER No. R2-2016-XXXX

UPDATED WASTE DISCHARGE REQUIREMENTS and
RESCISSION OF ORDER No. 99-026 for:

CITY OF PALO ALTO
CLASS III SOLID WASTE DISPOSAL
FACILITY

PALO ALTO, SANTA CLARA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter the Regional Water Board or Board), finds that:

DISCHARGER AND LOCATION

1. The City of Palo Alto Class III municipal refuse disposal site (Landfill) is a closed landfill located at the northeastern end of Embarcadero Road on a former salt marsh along the southwestern margin of the San Francisco Bay. The Landfill occupies approximately 126 acres and is bounded by Mayfield Slough on the east, Matadero Creek on the south, and a marsh area and former yacht harbor on the north (Figure 1).

2. The City of Palo Alto (hereinafter, the Discharger) owned and operated the Landfill during its active life from 1954 to closure in 2011. The Discharger continues to own the Landfill and retains responsibility for managing and monitoring the Landfill and is responsible for compliance with this Order.

PURPOSE OF ORDER UPDATE

3. The primary objectives of this Order are to:
   a. Update the Waste Discharge Requirements (WDRs) to reflect the current closed status of the Landfill;

   b. Require investigations related to leachate mounding and the presence of elevated selenium in groundwater; and

   c. Update the Landfill's Self-Monitoring Program for the post-closure period.

REGULATORY HISTORY

4. The Regional Water Board has regulated the Landfill under the following orders:
   a. In August 1975, the Board adopted WDR Order No. 75-55, prescribing waste discharge requirements and compliance time schedules for the Landfill.

   b. In January 1977, the Board adopted WDR Order No. 77-3, amending the time schedule

for Provision C.2 of Order No. 75-55. Provision C.2 required that the sanitary landfill be protected from a 100-year flood. The compliance date was extended due to preparation of an Environmental Impact Report and an Army Corps of Engineers permit.

c. In December 1977, the Board adopted Order No. 77-154, amending the revised compliance time schedule for Provision C.2 of Order No. 75-55, and rescinding Order No. 77-3.

d. In September 1979, the Board adopted WDR Order No. 79-116, which rescinded Orders No. 75-55 and 77-154 and revised the WDRs based on an updated Report of Waste Discharge submitted by the Discharger in June 1979.

e. In March 1988, the Board adopted WDR Order No. 88-038, which rescinded Order No. 79-116 and revised the WDRs pursuant to Title 23, Chapter 3, Subchapter 15 of the California Administrative Code (Subchapter 15), for the continued operation of the landfill.

f. In May 1999, the Board adopted WDR Order No. 99-026, which rescinded Order No. 88-0386 and revised the WDRs to comply with Title 27 of the California Code of Regulations (CCR) (Title 27) and required updating the Discharge Monitoring Program, establishing a schedule for technical report submissions related to eventual site closure and evaluating the existing leachate collection and removal system.

g. This Order rescinds and supersedes WDR Order No. 99-026.

LANDFILL DESCRIPTION AND HISTORY

5. **Dates of Operation**: Landfilling activities at the site began in the 1930s when uncontrolled filling and refuse burning was common practice. Around 1954, refuse burning was discontinued and the site began operation as a sanitary landfill. The Landfill ceased accepting waste for disposal in 2011. The closed landfill occupies approximately 126 acres and has a maximum elevation of 65 feet above mean sea level (MSL). Closure of the Landfill was the subject of an environmental impact report (EIR) prepared in accordance with the California Environmental Quality Act (CEQA) and issued in September 2013 (State Clearinghouse #2013082019).

6. **Wastes Accepted:** During its operation between 1954 and 2011, the Landfill accepted municipal solid waste (i.e., Class III waste), including non-hazardous residential, commercial, and industrial waste. Over this 57 year period, the Landfill accepted approximately 7,758,854 cubic yards of waste material.

GEOLOGICAL AND HYDROGEOLOGICAL SETTING

7. **Geology**: The Landfill is located on the northern edge of the San Jose Plain adjacent to the San Francisco Bay on part of the extensive Santa Clara Valley alluvial basin. The alluvial basin is composed of unconsolidated Quaternary alluvium deposited by streams draining the surrounding mountain areas. The alluvium includes clay, silt, sand, and gravel, deposited as part of a series of coalescing alluvial fans. The tidal salt marsh environment on which the Landfill is constructed is underlain by up to 16 feet of Younger Bay Mud, a very soft, unconsolidated deposit of organic-rich silt and clay with scattered lenses of sandy clay. The Younger Bay Mud is underlain by Older Bay Mud, a very stiff to firm clay containing varying amounts of silt and layers of sandy clay, sand, and gravel. In the vicinity of the Landfill, the Bay Mud interfingers with and grades into fine-grained alluvium derived from the Santa Cruz Mountains.

   Under the Landfill, two sandy layers are present within the upper portion of the Older Bay Mud. At an elevation of about -20 feet MSL is the "20-foot sand," which is 2 to 4 feet thick and considered fairly continuous under the southern portion of the Landfill. It is discontinuous or absent in the northernmost part of the Landfill. At an elevation of about -35 to -40 feet MSL is the "40-foot sand," which is 2 to 10 feet thick and is generally considered to be continuous beneath the Landfill. These sands are fine- to medium-grained and poorly graded. Thin gravel layers were also encountered at some locations. Franciscan Formation bedrock underlies the alluvial materials beneath the site at depths exceeding 1,000 feet.

8. **Seismicity:** The site is located in a seismically active area approximately 8 miles east of the San Andreas Fault, 11 miles southwest of the Hayward Fault and 20 miles west of the Calaveras fault. Several minor bedrock faults near the site have been inferred from geophysical data. The closest includes the San Jose Fault, which crosses approximately 1,500 feet east of the site and the Palo Alto Fault, which crosses approximately one mile west of the site (California Geological Survey, 2010). There is no evidence of historical ground movement along these faults (Palo Alto, 2007, Joint Technical Document).

9. **Hydrogeology**: The Landfill is located within Santa Clara groundwater basin, which includes unconfined and confined water-bearing zones. Shallow groundwater beneath the Site occurs in sand zones that are interbedded within the Bay Mud (EMCON, June 1988). The "20-foot" and "40-foot" sand zones are the uppermost major water-bearing zones beneath the Site. The permeability of the "20-foot sand zone" ranges from $1.2x10^{-4}$ to $5.1x10^{-4}$ cm/sec and the "40-foot sand zone" ranges from $1.2x10^{-4}$ to $3.0x10^{-3}$ cm/sec (Emcon, April 1994). Regional groundwater flow is to the northeast, towards the Bay. Water levels fluctuate seasonally in response to changes in precipitation. Beneath the Landfill, groundwater flow in the "20-foot sand" is typically to the southwest, whereas flow in the "40-foot sand" is typically to the west. Between the "20-foot sand" and "40-foot sand", the vertical hydraulic gradient varies from upward to downward. Tidal influences and lack of continuity of the "20-foot sand" may obscure the determination of upgradient versus downgradient flow directions beneath the Landfill.

10. **Groundwater Quality:** Shallow groundwater at the Site is non-potable given that its average natural electrical conductivity exceeds 5,000 microsiemens per centimeter (µS/cm) and total dissolved solids exceed 3,000 milligrams per liter (µ/L), typically by ten times or more. In general, the groundwater chemistry of monitoring wells located close to the Bay closely resembles that of seawater or brine. Historical detections of compounds typically found in leachate are sporadic and at very low concentrations in groundwater. Therefore, there is no indication of a significant release from the leachate to groundwater.

11. **Selenium:** Selenium has been detected in both the "20-foot sand" and the "40-foot sand" at concentrations ranging from 280 to 1,000 µg/L (2014). Selenium has also been detected in leachate sample LP-1 (which represents an average of all extracted leachate), although at lower concentrations (up to 190 µg/L). These concentrations significantly exceed the water quality objective of 5.0 µg/L for ecological receptors (Basin Plan). In addition, selenium concentrations in groundwater and leachate have been generally increasing between 1996 and 2014. The distribution of selenium in leachate has not been evaluated, nor has the source of the selenium been determined. It is not clear whether selenium is derived from wastes buried within the Landfill, or if geochemical conditions associated with the landfill leachate are inducing mobilization of naturally occurring selenium from the Bay Mud into groundwater. There is no selenium data available for surface waters surrounding the Landfill, nor for groundwater beyond the perimeter monitoring wells. For these reasons, Provision C.4 of this Order requires the Discharger to perform a selenium evaluation at and adjacent to the Landfill.

12. **Surface Water Quality**:
The current main surface water bodies adjacent to the site are the former Palo Alto yacht harbor and marsh (extensions of San Francisco Bay), the Palo Alto Flood Basin (including Matadero Creek and Mayfield Slough), and a recently restored wetlands habitat sanctuary (Figure 1). Through the 1950s and 1960s, Mayfield Slough was progressively rechanneled to the south and east perimeter of the site to improve the flood basin. The slough contains stagnant water during most of the year, and is characterized by extensive growth and decomposition of algae and vegetation. A tidal gate east of the Landfill limits the flow of Bay water into Mayfield Slough east and south of the Landfill, and maintains a surface water elevation of -2.2 feet msl. Bay water along the north side of the Landfill remains subject to full tidal influence. Matadero Creek flows east along the southern perimeter of the Site and terminates at Mayfield Slough. The creek and flood basin system drains surface runoff from Barron and Adobe creeks, several municipal storm drains, and stormwater pumped from collection facilities in Mountain View.

The mean annual precipitation at the Landfill is about 13 inches (Santa Clara Valley Water District). Most rain falls between November and April.

CONSTRUCTION AND CLOSURE

13. **Landfill Construction**: The Landfill location was primarily a low-lying flood plain until its development for landfill operations. Early landfill operations included excavating several feet of bay mud to increase disposal capacity and for use as landfill cover material. Hydrogeologic cross sections from previous studies of the site have indicated that pre-landfill elevations were

approximately at sea level. These cross sections revealed that the west side of the Landfill was excavated to approximately 13 feet below MSL before being raised (by waste disposal) to approximately 18 feet above MSL. The northeast and southwest portions of the site were also excavated prior to development. The base of refuse elevation, as determined in the 1990s from leachate extraction wells, ranged from 2.2 to -11.1 feet MSL (Section 2.4, Final Closure and Postclosure Maintenance Plan Palo Alto Landfill Phase IIC, Golder Associates, Inc., December 2013).

The groundwater potentiometric surface beneath the Landfill is as high as -1 foot MSL, and therefore higher than the base of waste at some locations. Thus, the Landfill would not meet the siting criteria for new Class III landfills specified in Title 27, section 20240(c), which requires that the base of waste be a minimum of 5 feet above the highest anticipated elevation of underlying groundwater.

14. **Landfill Base Liner**: The Landfill does not have an engineered base liner. In accordance with accepted practices at the time the Landfill began receiving waste, wastes were deposited directly onto San Francisco Bay Mud. Due to its intrinsically low permeability, the Bay Mud is thought to form a fairly effective barrier to vertical leachate migration if present in sufficient thickness. Geotechnical data showed the permeability of the Bay Mud to be between 1×10^{-7} cm/sec and 7×10^{-8} cm/sec (Solid Waste Assessment Test, SAIC, September 1987).

15. **Landfill Closure:** The Landfill was closed in phases as specific portions of the Landfill reached capacity. Phase I (28.9 acres), Phase IIA (22.5 acres), and Phase IIB (23.2 acres) were closed in 1991, 1992, and 2001, respectively. The final cover of Phases I, IIA, and IIB consisted of the minimum prescriptive standard closure cover, a 1-foot thick compacted clay layer. The final phase of the Landfill (Phase IIC; 51.2 acres) stopped receiving wastes in July 2011.

16. **Final Cover Construction**: Water Board staff approved a final closure plan for Phase IIC on March 30, 2010. Unlike the previously closed phases, an evapotranspirative (ET) or "water balance" cover was proposed (and approved) as an engineered alternative cap for Phase IIC. The ET cover consists of a 4-foot thick layer of soils with appropriate characteristics (clay content, grain size, permeability) for isolating waste and preventing excessive infiltration into the waste mass. The ET cap was determined to provide equivalent or better performance than the cap prescribed in Title 27, and was approved by Water Board staff on April 22, 2013. Construction of the Phase IIC cover system began in January 2014 and was completed in November 2015.

17. **Stormwater Drainage**: The final cover of the Landfill is graded to allow stormwater to sheet-flow directly to the Bay, to surrounding water bodies, or into drainage ditches that discharge to the Bay. Regular maintenance of this system is necessary to minimize infiltration of storm and irrigation water into the Landfill.

18. **Leachate Collection and Removal System:** The Landfill pre-dates waste disposal practices and regulations requiring engineered liners and leachate collection and removal systems (LCRS). Therefore, neither was constructed at the base of the Landfill prior to refuse

placement. However, Bay Mud underlying the landfill consists largely of clayey soils with permeabilities less than 1 x 10^{-6} cm/sec, which is thought to form a natural liner under the facility. Leachate elevations are measured approximately monthly in fourteen piezometers. Leachate is pumped from the Landfill through 24 6-inch diameter extraction wells. This extraction network comprises the Landfill's LCRS. Well spacing averages approximately 300 feet, with locations selected based on historic information and leachate conditions at the time of well installation. Collected leachate is transported and discharged under an Industrial Waste Discharge Permit to the adjacent Palo Alto Regional Water Quality Control Plant (POTW). The quantity of leachate pumped from the LCRS to the POTW is routinely measured and reported in the semi-annual monitoring reports.

19. **Leachate Mounding:** This Order (Specification B.22) requires the Discharger to maintain and operate the LCRS during the closure and post-closure period and maintain an inward flow gradient. However, a leachate mound, with levels exceeding 17 feet msl, has existed within the Landfill for many years. Despite the presence of this mound, the Discharger has stated that leachate containment at the Landfill is favored by an upward vertical gradient between the Younger Bay Mud and the refuse, and because the transmissivity of the refuse is much higher than that of the underlying Bay Mud (Einarson Geoscience, Inc., 1995). As noted in Finding 10, groundwater monitoring indicates no evidence of a significant release of leachate from the Landfill. However, because leachate elevations are well above groundwater and surface water levels outside the Landfill, the potential exists for leachate to migrate outward and discharge to adjacent surface water bodies through seeps. For this reason, this order (Provision C.3) requires the Discharger to evaluate the leachate collection system and its ability to prevent leachate migration to adjacent shallow groundwater and surface waters. This evaluation shall include sampling and analysis of adjacent surface waters.

20. **Landfill Gas Collection and Removal System:** The Landfill gas recovery system consists of 109 landfill gas extraction wells, which are connected by a pipe network within the vegetative soil cover. Extracted landfill gas is transported from the extraction wells to the Palo Alto Regional Water Quality Control Plant sewage sludge incinerator or the adjacent flare.

21. **Operation and Maintenance Plan**: The Discharger provided the Final Closure and Postclosure Maintenance Plan (CPCMP) to the Water Board in September 2013. The Water Board accepted the plan on January 15, 2014. The CPCMP specifically addresses Phase IIC. However, the acceptance of the plan was based on applying it to the entire site. Elements of the CPCMP that address required site operations and maintenance are as follows:

    - Semi-annual stormwater drainage infrastructure inspection and maintenance.
    - Quarterly stormwater runoff inspection.
    - Final cover system inspection semi-annually for the first five years and annually thereafter.
    - A rodent abatement plan to address rodent population control and any impacts that might threaten the Landfill cover.
    - Periodic maintenance of the LCRS, leachate monitoring wells, and Landfill gas monitoring and control systems.

Although periodic inspection of perimeter levees for failures that may cause erosion or any other condition that could threaten water quality, or expose debris or waste was not specified, the CPCMP includes an emergency response plan to address any failures.

POST-CLOSURE LAND USE

22. The current and intended future use of the closed landfill site is a park (Byxbee Park) for hiking, bird watching, bicycling, et al. The park also includes an area dedicated for structures as art. There is a restroom at Byxbee Park with an underground septic system that is periodically cleaned out.

MONITORING PROGRAMS

23. **Groundwater and Leachate**: The Self-Monitoring Program (SMP) attached to this Order revises the groundwater monitoring program that was adopted in WDR Order No. 99-026. The groundwater monitoring program consists of a network of 13 monitoring wells (listed in Table B.1 of the SMP). The leachate monitoring program originally included collection and analysis of samples from each leachate well every five years. In May 2014, the Regional Board concurred with a request to modify the monitoring program to take a single composite leachate sample from one location (LP-1) as the representative of the entire leachate system, rather than sampling each leachate well.

24. **Surface Water**: No routine monitoring of permanent surface water bodies bordering the Site is performed. Stormwater runoff was monitored from seven designated points (SW-1 to SW-7) located at drainage points around the Landfill. Prior to 2015, the monitoring program included sampling during the first and any subsequent storm event during the rainy season (October through May) for specific conductance and pH (in the field), and total suspended solids, oil and grease, and iron. On June 15, 2015, the Discharger requested a withdrawal of its Industrial Storm Water Permit, since there are no longer any industrial activities at the Landfill site, and the Landfill is now completely capped. The request was approved, and the notice of termination of the permit was issued effective June 30, 2015.

FINANCIAL ASSURANCE

25. On August 6, 2004, Regional Water Board staff approved the Landfill's Corrective Action Cost Estimate for all Known or Reasonably Foreseen Releases. In May 2013, the Discharger submitted the Specific Non-Water Release Corrective Action Plan and Cost Estimate to the Local Enforcement Agency (LEA) and CalRecycle in accordance with Title 27 requirements. The plan was approved by the LEA and CalRecycle on October 11, 2013. The highest cost of all the potential release events of the non- water release corrective action plan were determined to be less than the Known or Reasonably Foreseen Releases cost estimate approved by the Regional Water Board.

    Post-Closure financial assurance is in the form of a Pledge of Revenue by the Discharger. The Pledge of Revenue financial assurance agreement between the City and CalRecycle went into effect on July 14, 2009. The recent pledge of revenue was submitted to CalRecycle on June 16, 2015. The Corrective Action financial assurance is a reserve fund.

The City's Enterprise Refuse Fund was established on July 23, 1990, and the most recent adequacy of corrective action fund balances was submitted to CalReycle on June 16, 2015.

ANTIDEGRADATION POLICY

26. CFR Title 40, part 131.12, requires that state water quality standards include an anti-degradation policy consistent with federal policy. The State Water Board established California's anti- degradation policy through State Water Board Resolution 68-16, which incorporates the federal anti-degradation policy where federal policy applies. Resolution 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. This order complies with the anti-degradation policy by prohibiting degradation of existing water quality in the vicinity of the Landfill.

BASIN PLAN

27. The Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) is the Regional Water Board's master water quality control planning document. It designates beneficial uses and water quality objectives for waters of the State, including surface waters and groundwater. It also includes programs of implementation to achieve water quality objectives. The Basin Plan was duly adopted by the Regional Water Board and approved by the State Water Resources Control Board (State Water Board), U.S. EPA, and the Office of Administrative Law, where required.

BENEFICIAL USES AND SOURCES OF DRINKING WATER

28. Historically, groundwater use in the vicinity of the Landfill site includes municipal, domestic, and irrigation supply west of Highway 101. Municipal water supply wells for Palo Alto and East Palo Alto are located approximately 1 to 2 miles southwest to northwest of the site. These include active and idle (emergency supply) wells. Additional municipal supply wells within 1 to 2 miles of the site are being considered. It is not known whether any shallow domestic/irrigation wells in the vicinity are currently used.

    Due to elevated total dissolved solids and salinity, shallow groundwater is not potable in the vicinity of the Landfill. A regional aquitard exists under the site, from a depth of 75 to 140 feet (Palo Alto Regional Water Control Plant seismic velocity well; East Palo Alto Water Security Feasibility Study, November 2012). This aquitard is expected to prevent or minimize leaching of potential contaminants to the deeper aquifers where the municipal wells are screened.

29. In May 2003, the San Francisco Bay Regional Water Board Groundwater Committee, in coordination with the Alameda County Water District, the Santa Clara Valley Water District, and the San Mateo County Environmental Health Services Division issued a report entitled "A Comprehensive Groundwater Protection Evaluation for South San Francisco Bay Basins," which included an evaluation of the Santa Clara Valley Groundwater Basin.

30. The existing beneficial uses of the receiving waters are as follows:

    a. South San Francisco Bay wetlands (the salt water marshes) (Basin Plan, Table 2-4):

i. Estuarine habitat
ii. Fish spawning
iii. Fish migration
iv. Wildlife habitat
v. Preservation of rare and endangered species
vi. Commercial and sport fishing
vii. Water contact recreation
viii. Non-contact water recreation.

b. Santa Clara Valley Basin, Santa Clara Sub-Basin Groundwater (Basin Plan, Table 2-2):

i. Industrial service supply
ii. Industrial process supply
iii. Agricultural water supply
iv. Municipal and domestic water supply (however, due to the proximity of tidal marshes and the Bay, shallow groundwater at the Landfill contains elevated electrical conductivity levels that render the groundwater non-potable).

SAFE DRINKING WATER POLICY

31. It is the policy of the State of California that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. This Order promotes that policy by requiring discharges to meet MCLs to protect human health and ensure that water is safe for domestic use.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

32. Adoption of this Order is exempt from the California Environmental Quality Act (CEQA). Under CEQA Guidelines §15061(b)(3), CEQA applies only to projects that have the potential for causing a significant effect on the environment. Where it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment, the activity is not subject to CEQA. This Order requires the Discharger to continue site monitoring and maintenance activities, and these will not result in any additional actions that may have an effect on the environment beyond the existing baseline conditions.

NOTIFICATIONS AND MEETING

33. The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to amend the Landfill's WDRs and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

34. The Regional Water Board, in a public meeting, heard and considered all comments pertaining to this amendment of WDRs.

IT IS HEREBY ORDERED, pursuant to the authority in California Water Code (CWC) section 13263, and CCR, Title 27, Division 2, Subdivision 1, that the Discharger shall meet the applicable provisions contained in Title 27 and shall comply with the following:

A. PROHIBITIONS

1. Untreated or inadequately treated groundwater or leachate shall not create a condition of pollution or nuisance, nor degrade the quality of waters of the State or of the United States.

2. No additional waste shall be deposited or stored at this Landfill, with the exception of purge water from monitoring wells, litter receptacles, or waste temporarily contained in the Byxbee park restroom septic system, which may be stored temporarily but not deposited at the Landfill.

3. Waste materials shall not be exposed or relocated to any position where they can migrate from the Landfill to adjacent geologic materials, waters of the State, or of the United States during the post-closure maintenance period.

4. The relocation of wastes is prohibited without prior Regional Water Board concurrence.

5. The creation of any new waste management unit is prohibited.

6. The Discharger shall not perform any intrusive activities on the Landfill surface that have the potential to negatively affect the integrity and proper function of the Landfill cap, such as digging or trenching, without prior Regional Water Board approval except for routine maintenance as described in the Final Closure and Postclosure Maintenance Plan or in the event of an emergency repair to the environmental control system (landfill gas collection system and the leachate collection system) to protect human health and the environment.

7. The Discharger shall not disc the Landfill cap to control vegetative growth. For subsidence repairs on the evapotranspirative cap, discing is allowable if suitable soils and methods as described in the Final Closure and Postclosure Maintenance Plan are utilized to repair the cap and maintain positive surface water flow.

8. Excavation within or reconfiguration of any existing waste management unit is prohibited without prior concurrence of Regional Water Board Minor excavation or reconfiguration activities, such as installation of signs or landscaping or for routine maintenance and repair, do not require prior staff concurrence.

9. Surface drainage from tributary areas and internal site drainage from surface sources shall be intercepted and controlled so as to not contact or percolate through wastes during the Landfill post-closure period.

10. Leachate or stormwater or groundwater containing leachate or in contact with waste, shall not be discharged to waters of the State or of the United States unless specifically authorized under an NPDES permit.

11. Buildup or mounding of leachate levels within the Landfill that adversely impacts waters of the State is prohibited and shall be prevented by operation of the Landfill's LCRS

12. The Discharger, or any future owner or operator of the Landfill, shall not cause the following conditions to exist in waters of the State or of the United States at any place outside existing waste management units:

    a. Surface Waters:

        i. Floating, suspended, or deposited macroscopic particulate matter or foam;
        ii. Bottom deposits or aquatic growth;
        iii. Adverse changes in temperature, turbidity, or apparent color beyond natural background levels;
        iv. Visible, floating, suspended, or deposited oil, or other products of petroleum origin; or
        v. Toxic or other deleterious substances to exist in concentrations or quantities that may cause deleterious effects on aquatic biota, wildlife, or waterfowl, or that render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentrations.

    b. Groundwater:

        i. Degradation of groundwater quality; or
        ii. Significant migration of pollutants through subsurface transport.

B. SPECIFICATIONS

1. The Discharger shall implement a Detection Monitoring Program (DMP), pursuant to Title 27 section 20420. The DMP shall be designed to identify any water quality impacts from the Landfill and demonstrate compliance with the Water Quality Protection Standard (WQPS), which is required pursuant to Title 27 section 20390. The SMP attached to this Order is intended to constitute the DMP for the Landfill.

2. The Discharger shall conduct monitoring activities according to the SMP, and as may be amended by the Executive Officer, to verify the effectiveness of the Landfill's systems for monitoring, containment, collection, treatment, and removal of leachate and landfill gas.

3. All monitoring wells shall be constructed in a manner that maintains the integrity of the drill hole, prevents cross-contamination of saturated zones, and produces representative groundwater samples from discrete zones within the water-bearing zone each well is intended to monitor.

4. The Discharger shall install new monitoring stations to replace any monitoring wells designated as monitoring stations that are damaged, destroyed, or rendered non-functional during the Landfill's post-closure maintenance period.

5. The Discharger shall maintain all devices or designed features, installed in accordance with this Order, such that they continue to operate as intended without interruption.

6. The Discharger shall install any reasonable additional groundwater and leachate monitoring devices required to fulfill the terms of any future SMP issued by the Executive Officer.

7. All samples shall be analyzed by State-certified laboratories, or laboratories accepted by the Regional Water Board, using approved U.S. EPA methods for the type of analysis to be performed. All laboratories shall maintain quality assurance/quality control records for Regional Water Board review. This specification does not apply to analyses that can only be reasonably performed onsite (e.g., pH).

8. The WQPS for the Landfill shall include constituents of concern, concentration limits, point of compliance and all monitoring points. The WQPS shall establish and comply with all of the following:

   a. Constituents of Concern: Constituents of Concern (COCs) include "all waste constituents, reaction products, and hazardous constituents that are reasonably expected to be in or derived from waste contained in the Unit." (Cal. Code Regs., Title 27, § 20395(a).) COCs include monitoring parameters identified in the SMP attached to this Order or any future amendment thereof.

   b. Monitoring Parameters: Monitoring parameters (MPs), a subset of the COCs, are typically the most mobile and commonly detected COCs in groundwater at the site and are measured on a more frequent basis than the other COCs. The MPs for the site shall include, at a minimum, all constituents identified as such in the SMP attached to this Order or any future amendments thereof. The Discharger may propose modification to the MPs as additional data become available concerning site-specific source characteristics and natural background water quality. However, modifications shall only be made upon written concurrence from the Executive Officer.

   c. Concentration Limits: Concentration limits (CLs) for all COCs detected at the specified points of compliance shall be established using the background value set pursuant to Title 27, section 20400, subdivision (a)(1). A prediction limit (PL) or control limit (CL) shall be calculated from the background data set using statistical methods as appropriate. CLs are equal to background values for individual constituents in individual wells and are re-determined periodically in accordance with the approved statistical procedure. Specific CLs are, therefore, presented in monitoring reports submitted to the Regional Water Board, with the most recent report providing the most up-to-date concentration limits.

   d. Point of Compliance (POC): The POC is the "vertical surface located at the hydraulically downgradient limit of the Unit that extends through the uppermost aquifer underlying the Unit." (Cal. Code Regs., Title 27, § 20405(a).)

   e. Background Monitoring Points: A Background Monitoring Point is "a well, device, or location specified in the waste discharge requirements at which monitoring is conducted and at which the water quality protection standard applies." (Cal. Code Regs., Title 27, § 20164.)

9. The Discharger shall maintain the Landfill so as to prevent a measurably significant increase in water quality parameters at points of compliance.

10. Whenever there is "measurably significant" geochemical evidence of an exceedance of concentration limits or significant physical evidence of a release, the Discharger shall be prepared to implement an Evaluation Monitoring Program (EMP) at the direction of the Regional Water Board. In such a case, the Discharger shall continue implementing the DMP as prescribed in the SMP. If required by the Executive Officer, the EMP shall be implemented to determine the nature and extent of any release detected by the DMP.

11. The Discharger may file a written request (including supporting documentation) with the Executive Officer proposing modifications to the attached SMP. If the proposed modifications are acceptable, the Executive Officer may issue a letter of approval that incorporates the proposed revisions into the SMP.

12. The final cover system shall be graded and maintained to promote lateral runoff and prevent ponding and infiltration of water.

13. The Landfill shall be protected from any washout or erosion of wastes from inundation, which could occur as a result of a l00-year, 24-hour storm event, or as the result of flooding with a return frequency of 100 years.

14. The Discharger shall notify the Regional Water Board immediately of any failure occurring in the Landfill. Any failure that threatens the integrity of containment or control features or structures at the Landfill shall be promptly corrected after approval of the method and schedule by the Executive Officer.

15. The Discharger shall provide and maintain a minimum of two permanent, surveyed monuments near the Landfill from which the location and elevation of wastes, containment structures, and monitoring facilities can be determined throughout closure, and post-closure maintenance periods. These monuments shall be installed by a licensed land surveyor or registered civil engineer.

16. Containment, collection, drainage, and monitoring systems for groundwater, surface water, and leachate shall be maintained and operated as long as waste or leachate is present and poses a threat to water quality.

17. Methane and other landfill gases shall be adequately vented, removed from the Landfill, or otherwise controlled to minimize the danger of explosion, adverse health effects, nuisance conditions, and the impairment of beneficial uses of water due to gas migration.

18. The Discharger shall assure that the structures that control leachate, surface drainage, erosion, and landfill gas are constructed and maintained to withstand conditions generated during the maximum probable earthquake.

19. The Discharger shall provide reasonable access to any property it owns or leases at the Landfill to allow for installation, sampling, monitoring, etc., of all devices and equipment necessary for compliance with the requirements of this Order.

20. All reports submitted pursuant to this Order shall be prepared under the supervision of and signed by appropriately licensed professionals, such as a California registered civil engineer, registered geologist, and/or certified engineering geologist, and acceptable to the Executive Officer.

21. The Discharger shall comply with all applicable provisions of Title 27 that are not specifically referred to in this Order.

22. The Discharger is required to maintain and operate the LCRS during the closure and post-closure period and maintain an inward gradient.

23. The operations and maintenance of the entire Landfill site shall comply with the CPCMP approved in 2013. In addition, inspection of perimeter levees for failures that may cause erosion or any other condition that could threaten water quality, or expose debris or waste shall be performed at least semi-annually.

24. If a seep from the Landfill is observed coming into contact with any bordering surface water body, the Discharger shall immediately notify the Water Board. Sampling of upstream and downstream locations on that surface water body may be required on a schedule to be determined by Water Board staff.

C. PROVISIONS

1. **Duty to Comply**: The Discharger shall comply immediately, or as prescribed by the time schedule below, with all Prohibitions, Specifications, and Provisions of this Order. All required submittals must be acceptable to the Executive Officer. The Discharger must also comply with all conditions of these waste discharge requirements. Violations may result in enforcement actions, including Regional Water Board orders or court orders requiring corrective action or imposing civil monetary liability, or in modification or revocation of these WDRs by the Regional Water Board.

2. **Authority**: All technical and monitoring reports required by this Order are required pursuant to CWC section 13267. Failure to submit reports in accordance with schedules established by this Order or failure to submit a report of sufficient technical quality to be acceptable to the Executive Officer may subject the Discharger to enforcement action pursuant to CWC section13268.

3. **Leachate Control Evaluation:** The Discharger shall submit technical reports acceptable to the Executive Officer to evaluate the leachate collection and recovery system with respect to the prevention of leachate migration to adjacent shallow groundwater and surface waters. This evaluation shall include the sampling and analysis of adjacent surface waters and determine whether the maintenance of an inward leachate gradient is necessary to prevent outward migration of leachate. The Report shall include additional

proposed investigation and/or proposed changes to the SMP as warranted by the evaluation.

WORK PLAN DUE DATE: September 1, 2016
REPORT DUE DATE: September 1, 2017

4. **Selenium Evaluation:** The Discharger shall submit technical reports acceptable to the Executive Officer to evaluate the potential source(s) of elevated selenium in leachate and groundwater adjacent to the site. This evaluation shall include the sampling and analysis of adjacent surface waters. The Report shall include additional proposed investigation and/or proposed changes to the SMP as warranted by the evaluation.

   WORK PLAN DUE DATE: September 1, 2016
   REPORT DUE DATE: September 1, 2017

5. **Self-Monitoring Program:** The Discharger shall implement and comply with the SMP attached to this Order and any revisions issued by the Executive Officer. The attached SMP is designed to identify significant water quality impacts from the Landfill and demonstrate compliance with the WQPS. The Discharger shall submit semi-annual monitoring reports, acceptable to the Executive Officer, no later than January 31 and July 31 of each year in accordance with the SMP. Conversely, the Discharger may incorporate both semi-annual monitoring event data into one annual report to be submitted no later than January 31. The January 31 report shall include an annual summary as described in the SMP. The report shall include a section detailing repair and maintenance activities needed and performed prior to each rainy season and a section detailing compliance with maintaining an inward gradient.

   COMPLIANCE DATE: Immediately upon adoption of this Order
   REPORT DUE DATE: January 31 (and July 31 if reported semi-annually) of each year

6. **Post-Closure Material Change in Land Use Reporting**: The Discharger shall submit a technical report, acceptable to the Executive Officer, describing any proposed change in land use or post-closure development of the Landfill. The technical report shall describe the project, identify key changes to the design that may impact any portion of the Landfill, and specify components of the design necessary to maintain the integrity of the Landfill cover and prevent water quality impacts. No material changes to any portion of the Landfill shall be made without approval by the Regional Water Board.

   COMPLIANCE DATE: 120 days prior to any proposed material change

7. **Construction-Related Stormwater Permit**: For any proposed grading or development project greater than one acre in size, the Discharger shall submit a Notice of Intent to the State Water Board, submit a SWPPP acceptable to the Executive Officer, and implement Best Management Practices for the control of stormwater in accordance with requirements specified in the State Water Board's General Permit for Storm Water Discharges Associated with Construction Activities (NPDES Permit No. CAS000001). The Discharger will be deemed in compliance with this Provision if another party constructing improvements on property owned by the Discharger, pursuant to an easement granted by the Discharger, has obtained coverage under the General Permit.

   COMPLIANCE DATE: 30 days prior to construction

8. **Well Installation or Destruction Report**: The Discharger shall submit a technical report, acceptable to the Executive Officer, which provides well construction details, geologic boring logs, and well development logs for all new wells installed or destroyed as part of the DMP.

   REPORT DUE DATE: 60 days following well installation or destruction

9. **Long-Term Flood Protection Report**: The Discharger shall submit a report, acceptable to the Executive Officer, for long-term flood protection of the Landfill. The report shall include a consideration of feasible options for achieving protection from a 100-year flood in the face of rising sea levels and increasing flood frequency and intensity. The report shall consider methods developed by the San Francisco Bay Conservation and Development Commission to predict and protect against future flooding. The report shall be updated every 5 years throughout the post-closure maintenance period of the Landfill utilizing the most recently available and credible information at the time of the update.

   REPORT DUE DATE: November 30, 2016, and update every five years thereafter

10. **Earthquake Inspection**: The Discharger shall submit a detailed Post-Earthquake Inspection Report, acceptable to the Executive Officer, in the event of any earthquake generating ground shaking of Richter Magnitude 7 or greater at or within 30 miles of the Landfill. The report shall describe the containment features, groundwater monitoring, and control facilities potentially impacted by seismic deformations of the Landfill. Damage to any waste containment facility that may impact waters of the State must be reported immediately to the Executive Officer.

    COMPLIANCE DATE: Within 6 weeks of earthquake

11. **Change in Site Conditions:** The Discharger shall immediately notify the Regional Water Board of any flooding, ponding, settlement, equipment failure, slope failure, exposure of waste, liner leakage, or other change in site conditions that could impair the integrity of the Landfill's cap, waste or leachate containment facilities, and/or drainage control structures and shall immediately make repairs. Within 30 days, the Discharger shall prepare and submit a technical report, acceptable to the Executive Officer, documenting the corrective measures taken.

NOTIFICATION DUE DATE: Immediately upon occurrence
REPORT DUE DATE: 30 days after initial notification

12. **Availability:** A copy of these WDRs shall be maintained by the Discharger and shall be made available by the Discharger to all employees or contractors performing work (maintenance, monitoring, repair, construction, etc.) at the Landfill.

13. **Change in Ownership**: The Discharger must notify the Executive Officer, in writing, at least 30 days in advance of any proposed transfer of ownership of the Landfill. The new owner then must apply for an amendment to this order for the Water Board to acknowledge the transfer of ownership and responsibilities under the order.

14. **Information Correction**: When a Discharger becomes aware that it failed to submit any relevant facts in a Report of Waste Discharge (ROWD) or submitted incorrect information in a ROWD or in any report to the Regional Water Board, it shall promptly submit such facts or information.

15. **Revision**: This Order is subject to review and revision by the Regional Water Board.

16. **Vested Rights**: This Order does not convey any property rights of any sort or any exclusive privileges. The requirements prescribed herein do not authorize the commission of any act causing injury to persons or property, do not protect the Discharger from liability under federal, State or local laws, nor do they create a vested right for the Discharger to continue the waste discharge.

17. **Severability**: Provisions of this Order are severable. If any provision of these WDRs is determined to be invalid by the State Water Resources Control Board or a court, the remainder of these requirements shall not be affected.

18. **Operation and Maintenance**: The Discharger shall, at all times, properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the Discharger to achieve compliance with conditions of this Order. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this Order.

19. **Reporting of Hazardous Substance Release**: If any hazardous substance is discharged in or on any waters of the State, or discharged or deposited where it is, or probably will be, discharged in or on any waters of the State, the Discharger shall report such discharge to the Regional Water Board by calling (510) 622-2369. A written report shall be mailed or submitted electronically to the Regional Water Board within five business days. The report shall describe: the nature of the hazardous substance, estimated quantity involved, duration of incident, cause of release, estimated size of affected area, nature of effect,

corrective actions taken or planned, schedule of corrective actions planned, and persons/agencies notified.

20. **Entry and Inspection**: The Discharger shall allow the Regional Water Board, or an authorized representative upon the presentation of credentials and other documents as may be required by law, to:

    a. Enter upon a Discharger's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this Order;

    b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order;

    c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order; and

    d. Sample or monitor at reasonable times, for the purposes of assuring compliance with this Order or as otherwise authorized by the California Water Code, any substances or parameters at any location.

21. **Analytical Methods**: Unless otherwise permitted by the Regional Water Board Executive Officer, all analyses shall be conducted at a laboratory certified for such analyses by the State Water Resources Control Board, Division of Drinking Water. The Executive Officer may allow use of an uncertified laboratory under exceptional circumstances, such as when the closest laboratory to the monitoring location is outside the State boundaries and therefore not subject to certification. All analyses shall be required to be conducted in accordance with the latest edition of U.S. EPA SW-846 or other equivalent U.S. EPA Method.

22. **Discharges to Navigable Waters**: Any person discharging or proposing to discharge to navigable waters from a point source (except for discharge of dredged or fill material subject to section 404 of the Clean Water Act and discharges subject to a general NPDES permit) must file an NPDES permit application with the Regional Water Board.

23. **Endangerment of Health or the Environment**: The Discharger shall report any event of noncompliance that may endanger human health or the environment. Any such information shall be provided orally to the Executive Officer, or an authorized representative, within 24 hours from the time the Discharger becomes aware of the circumstances by calling (510) 622-2369. A written submission to the Regional Water Board shall also be provided within five days of the time a Discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times; and, if the noncompliance has not been corrected, the anticipated time it is expected to continue and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. The Executive Officer, or an authorized

representative, may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.

24. **Document Distribution**: Copies of all correspondence, technical reports, and other documents pertaining to compliance with this Order shall be provided to the following agencies:

    a. Regional Water Board and
    b. Santa Clara County Department of Environmental Health (Local Enforcement Agency)

    The Executive Officer may modify this distribution list as needed.

25. **Reporting Requirements**: All reports submitted pursuant to this Order must be in accordance with the State Water Board-adopted regulations requiring electronic report and data submittal to the State's GeoTracker database (CCR §§ 3890-3895). Email notification should be provided to Regional Water Board staff whenever a file is uploaded to GeoTracker. In addition, the Discharger shall submit hard copies of reports to Regional Water Board staff upon request.

    The Discharger is responsible for submitting the following via GeoTracker:

    a. All chemical analytical results for soil, water, and vapor samples;

    b. The latitude and longitude of any sampling point for which data is reported, accurate to within 1 meter and referenced to a minimum of two reference points from the California Spatial Reference System, if available, unless specified in the SMP;

    c. The surveyed elevation relative to a geodetic datum of any permanent sampling point;

    d. The elevation of groundwater in any permanent monitoring well relative to the surveyed elevations;

    e. A site map or maps showing the location of all sampling points;

    f. The depth of the sampling point or depth and length of screened interval for any permanent monitoring well;

    g. PDF copies of boring logs; and

    h. PDF copies of all reports, workplans, and other documents (the document, in its entirety [signature pages, text, figures, tables, etc.] must be saved to a single PDF file) including the signed transmittal letter and professional certification by a California professional civil engineer or a professional geologist.

Upon request, monitoring results shall also be provided electronically in Microsoft Excel® to allow for ease of review of site data and to facilitate data computations and/or plotting that Water Board staff may undertake during the review process. Electronic tables shall include the following information:

a. Well designations;

b. Well location coordinates (latitude and longitude);

c. Well construction (including top of well casing elevation, total well depth, screen interval depth below ground surface, screen interval elevation, and a characterization of geology of subsurface the well is located in);

d. Groundwater depths and elevations (water levels);

e. Current analytical results by constituent of concern (including detection limits for each constituent);

f. Historical analytical results (including the past five years unless otherwise requested); and

g. Measurement dates.

26. This Order supersedes and rescinds Order No. 99-026

I, Bruce H. Wolfe, Executive Officer, do hereby certify that the foregoing is a full, complete, and correct copy of an order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on DATE.

_____

Bruce H. Wolfe
Executive Officer

Attachments:

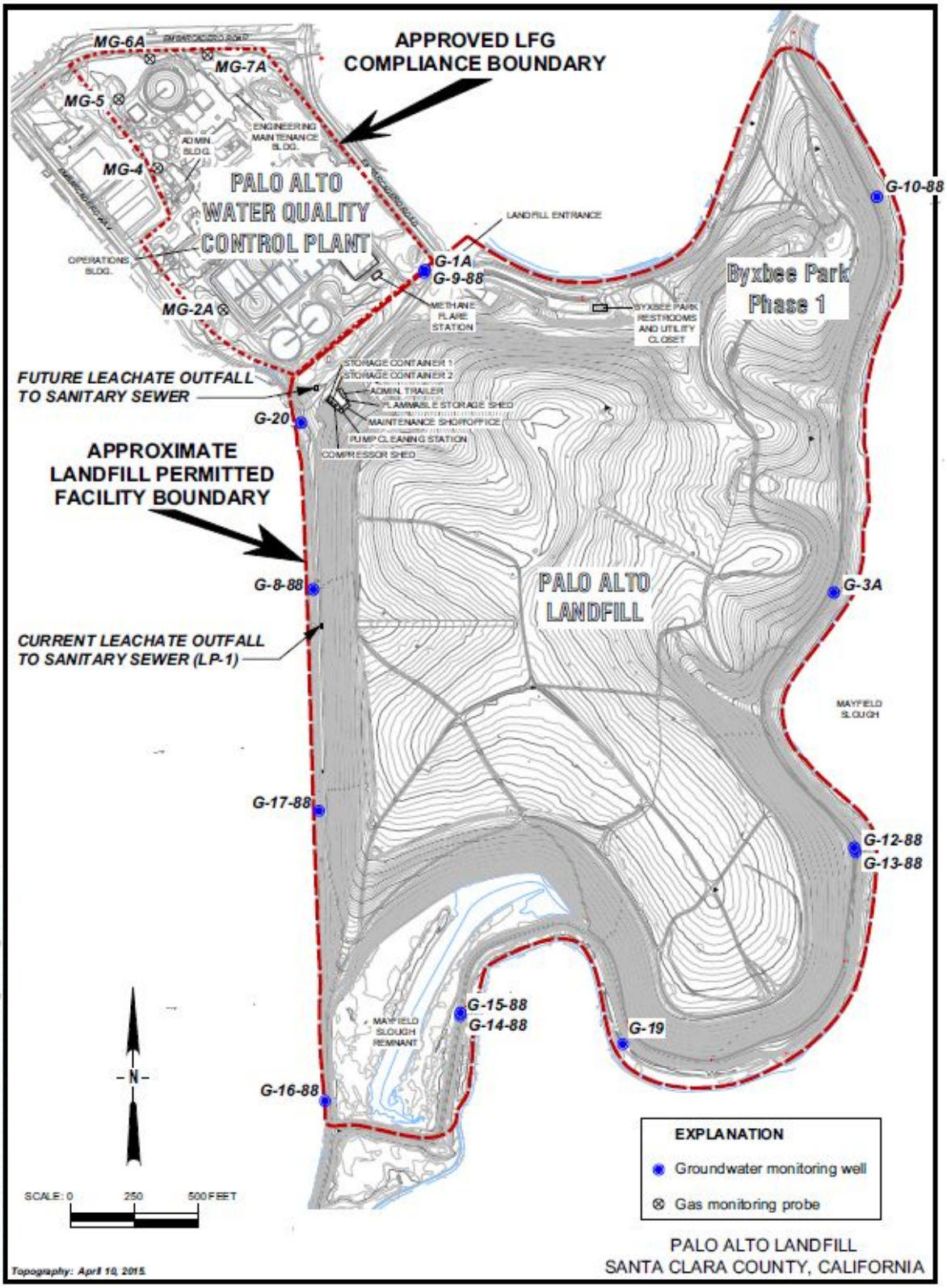
Figure 1 –Palo Alto Landfill Project Site Location

Figure 2 – Palo Alto Landfill Monitoring Points

Self-Monitoring Program

Figure 1. Palo Alto Landfill Project Site Location.

Figure 2. Palo Alto Landfill Monitoring Points



CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM

FOR

CITY OF PALO ALTO
CLASS III SOLID WASTE DISPOSAL FACILITY

PALO ALTO, SANTA CLARA COUNTY

ORDER NO. R2-2016-XXXX

CONSISTS OF

PART A AND

PART B

PART A

This Self-Monitoring Program (SMP) specifies monitoring and reporting requirements, including:

a. General monitoring requirements for Landfills and waste management units (Part A);
b. Self-monitoring report content and format (Part A);
c. Self-monitoring report submittal frequency and schedule (Part B);
d. Monitoring locations and frequency (Part B); and
e. Monitoring parameters and analytes (Part B).

A. AUTHORITY AND PURPOSE

For discharges of waste to land, water quality monitoring is required pursuant to the California Code of Regulations (CCR), Title 27, sections 20380 through 20435. The principal purposes of an SMP are: (1) to document compliance with waste discharge requirements (WDRs) and prohibitions established by the Regional Water Board; (2) to facilitate self-policing by waste dischargers in the prevention and abatement of pollution arising from the waste discharge; (3) to develop or assist in the development of effluent standards of performance and toxicity standards; and (4) to assist dischargers in complying with the requirements of Title 27.

B. MONITORING REQUIREMENTS

Monitoring refers to the observation, inspection, measurement, and/or sampling of environmental media, the Landfill containment and control facilities, and waste disposed in the Landfill. The following defines the types of monitoring that may be required.

Monitoring of Environmental Media

The Regional Water Board may require monitoring of groundwater, surface water, stormwater, leachate, landfill gas, and any other environmental media that may pose a threat to water quality or provide an indication of a water quality threat at the Landfill.

Sample collection, storage, and analyses shall be performed according to the most recent version of U.S. EPA-approved methods or in accordance with a sampling and analysis plan approved by Regional Water Board staff. Analytical testing of environmental media required by this SMP shall be performed by a State-approved laboratory for the required analyses. The director of the laboratory whose name appears on the certification shall be responsible for supervising all analytical work in his/her laboratory and shall have signing authority for all reports or may designate signing of all such work submitted to the Regional Water Board.

All monitoring instruments and devices used to conduct monitoring in accordance with this SMP shall be maintained and calibrated as necessary to ensure their continued accuracy. All flow measurement devices shall be calibrated at least once every two years.

“Receiving waters” refers to any surface water that actually or potentially receives surface or groundwater that passes over, through, or under waste materials or impacted soils. In this case, the groundwater beneath and adjacent to the Landfill and the surface runoff from the Site are considered “receiving waters.”

Standard Observations

"Standard observations" refers to observations within the limits of the Landfill, at the Landfill perimeter, and of the receiving waters. Standard observations to be performed and recorded include:

1. The Landfill:
    a. Evidence of ponded water on the Landfill, including a map of approximate locations, and an estimate of the size of the area affected and the volume of water;
    b. Evidence of odors, including presence or absence, characterization, source, and distance of travel from source; and
    c. Evidence of erosion and/or exposed waste, including a map of the approximate location and an assessment of the likelihood that soil or waste was discharged to the waters of the State.

2. Perimeter of the Landfill:
    a. Evidence of liquid leaving or entering the Landfill, estimated size of affected area and flow rate (show affected area on map);
    b. Evidence of odors, including presence or absence, characterization, source, and distance of travel from source;
    c. Evidence of erosion and/or exposed waste;
    d. Vegetation coverage; and
    e. Measurement of groundwater elevations.

3. Receiving Waters:
    a. Floating and suspended materials of waste originating from the Landfill, including their presence or absence, source, and size of affected area;
    b. Discoloration and turbidity: description of color, source, and size of affected area;
    c. Evidence of odors, including presence or absence, characterization, source, and distance of travel from source;
    d. Evidence of beneficial use, such as presence of water associated with wildlife;
    e. Estimated flow rate; and
    f. Weather conditions, such as estimated wind direction and velocity, total precipitation.

Facilities Inspections

"Facilities inspections" refers to the inspection of all containment and control structures and devices associated with the Landfill. Containment and control facilities may include the following:

1. Final cover;
2. Stormwater management system elements such as perimeter drainage and diversion channels, ditches and down-chutes, and detention and sedimentation ponds or collection tanks;
3. Landfill gas collection and control system; and
4. Leachate extraction system elements such as leachate storage tanks or sumps, piping, pumps and control equipment.

Quality Assurance/Quality Control Sample Monitoring

The Discharger shall collect duplicate, field blank, equipment blank (if appropriate) and trip blank samples for each semiannual monitoring event at the following frequencies:

1. Duplicate sample – one sample per 20 regular samples;
2. Field blank – one per semiannual monitoring event;
3. Equipment blank – one sample per 10 monitoring stations (except where dedicated equipment is used); and
4. Trip blank – one sample per cooler.

C. REPORTING REQUIREMENTS

Reporting responsibilities of waste dischargers are specified in Water Code sections 13260, 13267 subdivision (b), and 13383, and this Regional Water Board's Resolution No.73-16 and Order No. 93-113. At a minimum, each Self-Monitoring Report (SMR) shall include the following information:

1. Transmittal Letter: A cover letter transmitting the essential points of the monitoring report shall be included with each monitoring report. The transmittal letter shall discuss any violations during the reporting period and actions taken or planned to correct the problem. The letter shall also certify the completion of all monitoring requirements. The letter shall be signed by the Discharger's principal executive officer, or his/her duly authorized representative, and shall include a statement by the official, under penalty of perjury, that the report is true and correct to the best of the official's knowledge.

2. Graphic Presentation: The following maps, figures, and graphs (if applicable) shall be included in each SMR to visually present data collected pursuant to this SMP:
   a. Plan-view maps showing all monitoring and sampling locations, waste management units, containment and control structures, treatment facilities, surface water bodies, and site/property boundaries;
   b. Groundwater level/piezometric surface contour maps for each groundwater-bearing zone of interest showing inferred groundwater gradients and flow directions under/around the Landfill based upon the past and present water level elevations and pertinent visual observations; and
   c. Any other maps, figures, photographs, cross-sections, graphs, and charts necessary to visually demonstrate the appropriateness and effectiveness of sampling, monitoring, characterization, investigation, or remediation activities relative to the goals of this SMP.

3. Tabular Presentation: The following data (if applicable) shall be presented in tabular form and included in each SMR to show a chronological history and allow easy reference:
   a. Well designation;
   b. Well location coordinates (latitude and longitude);
   c. Well construction (including top of well casing elevation, total well depth, screen interval depth below ground surface, and screen interval elevation);
   d. Groundwater depths;
   e. Groundwater elevations;
   f. Current analytical results (including analytical method and detection limits for each constituent);
   g. Historical analytical results (including at least the past five years unless otherwise requested); and
   h. Measurement dates.

4. Compliance Evaluation Summary and Discussion:

   a. A summary and certification of completion of all environmental media monitoring, standard observations, and facilities inspections;
   b. The signature of the laboratory director or his/her designee indicating that he/she has supervised all analytical work in his/her laboratory; and
   c. A discussion of the field and laboratory results that includes the following information:

      i. Data interpretations
      ii. Conclusions
      iii. Recommendations
      iv. Newly implemented or planned investigations and remedial measures
      v. Data anomalies
      vi. Variations from protocols
      vii. Condition of wells, and
      viii. Effectiveness of leachate monitoring and control facilities.

5. Appendices: The following information shall be provided as appendices in electronic format only unless requested otherwise by Regional Water Board staff and unless the information is already contained in a sampling and analysis plan approved by Regional Water Board staff:

   a. New boring and well logs;
   b. Method and time of water level measurements;
   c. Purging methods and results, including:

      i. The type of pump used, pump placement in the well, and pumping rate;
      ii. The equipment and methods used to monitor field pH, temperature, and electrical conductivity;
      iii. The calibration of the field equipment used to measure pH, temperature, conductivity, and turbidity; and
      iv. The method of disposing of the purge water;

   d. Sampling procedures, field, equipment, and travel blanks, number and description of duplicate samples, type of sample containers and preservatives used, the date and time of sampling, the name of the person actually taking the samples, and any other relevant observations; and
   e. Documentation of laboratory results, analytical methods, detection limits (DLs) and reporting limits (RLs), and Quality Assurance/Quality Control (QA/QC) procedures for the required sampling.

D. CONTINGENCY REPORTING

1. The Discharger shall report to the Regional Water Board by telephone (510-622-2369) any measurably significant discharge from the Landfill immediately after it is discovered. The Discharger shall submit a written report with the Regional Water Board within five days of discovery of any discharge. The written report shall contain the following information:

   a. A map showing the location(s) of discharge;
   b. Approximate flow rate;
   c. Nature of effects (e.g., all pertinent observations and analyses); and
   d. Corrective measures underway or proposed.

2. The Discharger shall submit a written report to the Regional Water Board within seven days of determining that a statistically significant difference occurred between a SMP sample set and an approved Water Quality Protection Standard (WQPS). The written report shall indicate which WQPS(s) has been exceeded. If appropriate, within 30 days the Discharger shall resample at the compliance point(s) where this difference occurred.

3. If re-sampling and analysis confirms the earlier finding of a statistically significant difference between SMP results and WQPS(s), the Discharger shall, upon determination by the Executive Officer, submit to the Regional Water Board an amended Report of Waste Discharge (ROWD) for establishment of an Evaluation Monitoring Program (EMP) meeting the requirements of Title 27, section 20425.

E. REPORTING REQUIREMENTS

The Discharger shall submit SMRs to Regional Water Board staff in accordance with the schedule indicated in Table B-1. Reports due at the same time may be combined into one report for convenience, as long as monitoring activities and results pertaining to each monitoring period are clearly distinguishable. Reports shall be submitted in accordance with Provision C.26 of the WDR.

F. MAINTENANCE OF WRITTEN RECORDS

The Discharger shall maintain information required pursuant to this SMP for at least five years. The five-year period of retention shall be extended during the course of any unresolved litigation regarding a discharge or when requested by the Regional Water Board.

PART B

A. MONITORING LOCATIONS AND FREQUENCY

Monitoring locations, frequencies, parameters, and analytes are specified in Table B-1 of this SMP and as indicated below. Monitoring locations are shown in Figure 2.

1. **Environmental Media**

   a. Groundwater: Groundwater shall be monitored at the locations specified in Table B-1 and shown on Figure 2. Monitoring frequencies, parameters, and analytes shall be in accordance with Table B-1.
   b. Leachate: Leachate shall be monitored at the locations specified in Part A. Monitoring frequencies, parameters, and analytes shall be in accordance with Table B-1.
   c. Stormwater: As outlined in the CPCMP.

2. **Standard Observations**

   Standard observations (described in Part A) shall be made within the Landfill, along the perimeter of the Landfill, and of the water courses and receiving waters beyond their limits. Standard observations shall be conducted at the frequency specified in Table B-1.

3. **Facilities Inspections**

   The Discharger shall inspect all containment and control structures and devices associated with the Landfill in accordance with the CPCMP, to ensure proper and safe operation.

4. **Quality Assurance/Quality Control Samples**

   The QA/QC samples shall be analyzed for VOCs (field blank, equipment blank and trip blank) or for the same tests as a regular sample (duplicate sample).

B. REPORTING SCHEDULE

The Discharger shall submit SMRs to Regional Water Board staff in accordance with the schedule indicated in Table B-1. Reports due at the same time may be combined into one report for convenience, as long as monitoring activities and results pertaining to each monitoring period are clearly distinguishable.

Attachment: Self-Monitoring Program Table B-1

Table B-1: Self-Monitoring Program **Groundwater (POC) Wells:** G-9/88, G-13/88, G-14/88, G-16/88, G-17/88, G-19, G-1A, G-3A, G-8/88, G-10/88, G-12/88, G-15/88, G-20		
Monitoring Event	**Frequency**	**Parameters**
Constituents of Concern	**Once every five years** beginning 2019 (Report due with 2nd Semi-Annual report for 2019)	**Monitoring Parameters and Volatile Organic Compounds** (Subtitle D Appendix I) **Dissolved Metals** (As, Ba, Co, Cr, Hg, Ni, Se, Ag, Sn, V, Zn) **Field Parameters –** pH, electrical conductivity, temperature, turbidity, and dissolved oxygen
Monitoring Parameters (MPs)	**Semi-Annually** 1st Semi-Annual Sampling event – 2nd Quarter REPORT DUE July31 (report may be combined with subsequent event; 2nd Semi-Annual Sampling event – 4th Quarter REPORT DUE January 31	**Bicarbonate Alkalinity, Total Kjeldahl Nitrogen, Total Organic Carbon** **Volatile Organic Compounds** (Subtitle D Appendix I) **Field Parameters –** pH, electrical conductivity, temperature, turbidity, and dissolved oxygen
Groundwater Levels	**Semi-Annually**	**As detailed in Part A**
Leachate	**Monthly/Semi-Annually**	The perimeter LCRS and the Landfill slopes shall be inspected at least once every month to confirm integrity and operation of the LCRS, and for leachate seeps, respectively. Leachate shall be sampled and tested at least semi-annually.
Standard Observations	**Quarterly**	**As detailed in Part A**