STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

STAFF SUMMARY REPORT (Vic Pal)
MEETING DATE: March 14, 2012

ITEM: **5C**

SUBJECT: **Turk Island Company, Turk Island Landfill, Union City, Alameda County** – Issuance of Updated Waste Discharge Requirements and Rescission of Order No. 97-026

CHRONOLOGY: March 1997 – Waste Discharge Requirements (WDRs) adopted

DISCUSSION: The Revised Tentative Order (Appendix A) would update WDRs and the self-monitoring program for the Turk Island Landfill (Landfill). Turk Island Company owns the closed 53.3-acre Landfill, located at 32505 Union City Boulevard in Union City. The Landfill ceased accepting waste in 1986 and was capped in 1988. The Revised Tentative Order would require the Company to update its monitoring program for groundwater and leachate and to develop long-term flood protection reports, which shall stipulate mechanisms to provide protection against a 100-year flood event and sea-level rise.

We received comments on the tentative order from the Alameda County Water District (District), which are summarized in Appendix B (Response to Comments). Appropriate District comments have been incorporated into the Revised Tentative Order as have some minor staff-initiated edits and formatting changes. We expect this item to be uncontested.

RECOMMEN-DATION: Adoption of the Revised Tentative Order (Appendix A)

FILE NO.: 2199.9098, CIWQS Place ID 266726

APPENDICES: A. Revised Tentative Order
B. Response to Comments

APPENDIX A

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

REVISED TENTATIVE ORDER

UPDATED WASTE DISCHARGE REQUIREMENTS and
RESCISSION OF ORDER NO. 97-026 for:

TURK ISLAND COMPANY
TURK ISLAND LANDFILL
UNION CITY, ALAMEDA COUNTY

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

DISCHARGER AND LOCATION

1. The Turk Island Company (hereinafter referred to as the Discharger) is the legal owner of the closed Turk Island Landfill (Landfill). The Landfill is located at 32505 Union City Boulevard, approximately 1/4 mile west of the intersection of Union City Boulevard and Dyer Street, in the southwest portion of Union City, along the edge of San Francisco Bay (Figure 1). The Landfill is comprised of two parcels, a 47-acre parcel/landfill and a 6.3-acre parcel/landfill (Figure 2). The 47-acre landfill is maintained as an open parcel and is fenced off from public access. A proposal to consolidate the two landfills by clean closing the 6.3-acre landfill and placing the waste in the main landfill is being evaluated.

PURPOSE OF ORDER UPDATE

2. The primary objectives of this Order are to update the Discharger's current Waste Discharge Requirements (WDRs) and to update the Landfill's Self-Monitoring Program.

LANDFILL DESCRIPTION AND HISTORY

3. **Landfill Description:** The Landfill is an unlined, closed, Class III landfill located on Bay Mud as is shown in Figure 1. The 47-acre parcel is bounded on the west by salt ponds and on the east by a P.G. & E. easement. This easement separates the 47-acre parcel from the 6.3-acre parcel, which is immediately east of the easement and west of Union City Boulevard. The 6.3-acre parcel contains mostly construction debris and soil stockpiles with some municipal solid waste.

4. **Dates of Operation and Closure**: From 1962 till 1986, the Discharger operated the Landfill, which initially included both the 47- and 6.3-acre parcels. General municipal waste was disposed of at the 6.3-acre parcel until about 1970 and at the 47-acre parcel until 1986. The 6.3 acre parcel was closed and capped and excluded from future filling operations in 1974.

5. **Landfill Construction**: The Landfill was built up from the surrounding grades. Waste material is contained by a 12-foot wide dike and low permeable underlying native soils. The dike was constructed to a minimum crest elevation of 8.5 feet Mean Sea Level (MSL) to

protect against inundation from a 100-year flood. Approximately two million cubic yards of refuse and one-half million yards of earth cover comprise the total waste volume. The top-of-landfill height is at approximately 54 feet MSL.

6. **Waste Characterization**: Wastes disposed at the Landfill are comprised primarily of nonhazardous residential and commercial solid wastes that include household wastes, grass cuttings, tree trimmings, animal wastes, construction and demolition wastes, and solid industrial debris including auto shredder wastes and paint wastes.

7. **Landfill Base Liner**: There is no engineered base liner at the Landfill. In keeping with practices at the time, wastes were disposed of directly onto Bay Mud within the boundaries marked by the perimeter levees. Vertical containment is provided by the Landfill's underlying natural geologic structure, which consists of soft, silty clay (Young Bay Mud) underlain by stiff, silty clay (Old Bay Mud). These underlying fine-grained estuarine deposits exhibit very low permeabilities, ranging from 1×10^{-6} to 1×10^{-8} cm/sec. The thickness of Young Bay Mud beneath the Landfill's footprint ranges between about 10 to 15 feet and is underlain by Old Bay Mud ranging to a depth of about 55 feet MSL. Additional vertical containment is provided by the site's hydrogeologic conditions - the piezometric head in the underlying aquifer (Newark Aquifer) exceeds that in the near-surface water table zone - and the groundwater geochemistry. Due to its high salinity, the relative density of the local groundwater far exceeds that measured in any landfill liquids.

8. **Landfill Final Cover**: The Landfill was closed, under engineering supervision, from June 1986 to April 1988 in compliance with applicable regulations at the time. A four-foot thick, low-permeability soil cover was constructed over the Landfill that consists of a minimum two-foot thick foundation layer overlain by a one-foot thick clay layer, with a permeability of less than 1×10^{-6} centimeters per second (cm/s), overlain by a one-foot thick soil vegetation layer. The crown was graded with minimum slopes of three percent and side slopes were finished at an inclination of 3:1 (horizontal: vertical).

9. **Stormwater Drainage**: The Landfill's drainage control devices include a network of permanent drainage systems including landfill grades that are designed to control and discharge all runoff within the Landfill's footprint. Surface runoff at the Landfill is primarily due to sheet flow that is directed to an enclosed basin on the north, a flood control channel on the west, and either retention ponds or shallow drainage ditches on the east and south. The eastern drainage ditch conveys stormwater into a wetland area, subsequently to retention ponds, and then to the Alameda County Flood Control District Channel J-3. The southern drainage conveys stormwater into a channel between the Landfill's containment dike and a salt pond levee.

   Title 40 of the CFR, parts 122, 123, and 124, require specific categories of industrial activities, including landfills, to obtain a National Pollutant Discharge Elimination System (NPDES) permit for stormwater discharges. The State Water Resources Control Board (State Water Board) has issued a General Permit for Storm Water Discharges Associated with Industrial Activities (NPDES Permit No. CAS000001). The Landfill is subject to the requirements of the General Permit and as such is required to 1) submit a Notice of Intent

(NOI) for coverage under the General Permit, 2) prepare and implement a management and monitoring program, and 3) submit an annual report. The Discharger submitted an NOI that was accepted by the Regional Water Board on April 3, 1992 (WDID No. 2 01I004006).

10. **Leachate Collection and Removal Systems (LCRS)**: Consistent with the construction methods of the time, the Landfill has no LCRS.

11. **Landfill Gas Extraction System**: The existing gas collection consists of 32 gas extraction wells, an aboveground manifold system, two blowers, and a landfill gas flare.

12. **1997 Regional Water Board Requirements**: In Order No. 97-026, the Regional Water Board required the Discharger to implement a Self-Monitoring Program (SMP), to develop a Post-Earthquake Inspection and Corrective Action Plan, and to develop a Contingency Plan to address surface leaks or spills of leachate; these plans were submitted to the Regional Water Board in 1997. The SMP also required the submittal of reports on semi-annual groundwater monitoring, stormwater monitoring, and monthly site inspections.

    The reports have consistently documented that the Landfill is well maintained, that no significant groundwater impacts have been detected, and that no measurable impacts to the surrounding environment have been detected.

REGIONAL WATER BOARD ORDERS

13. The Regional Water Board adopted initial WDRs for the Landfill on August 28, 1968. Subsequent updates of WDRs were issued with the most recent permit revision, Order No. 97-026, adopted February 19, 1997. This Order rescinds Order No. 97-026.

GEOLOGICAL AND HYDROGEOLOGICAL SETTING

14. **Geology**: The Landfill is located in the Coast Range geomorphic province, at the northernmost extent of the Santa Clara Valley along southern San Francisco Bay's eastern margin. The Coyote Hills are approximately one mile south of the Landfill. The Landfill is located approximately 4 and 12 miles southwest of the Hayward and Calaveras faults, respectively, and 15 miles east of the San Andreas Fault system. No known Holocene faults exist at the Landfill.

15. **Hydrogeology**: The Landfill is within the western portion of the Niles Subarea of the Fremont Ground Water Area (Department of Water Resources [DWR] 1967), which occupies the southeastern margin of San Francisco Bay. The Niles Subarea is composed of alluvial sediments associated with the Niles Cone that extend south and westward beneath the Bay and the bay plain. The shallowest of the true water-bearing units within the Niles Subarea is the Newark Aquifer, which appears to underlie the entire Landfill under confined or, at least, semi-confined conditions. The Landfill is located in a transitional zone with sediments beneath the Landfill reflecting the influences of both the Niles Cone and the Bay. These sediments are divided into the following three units: Younger Bay Muds, Older Bay Muds, and Newark Aquifer sands and gravels.

    The surficial Younger Bay Mud materials are comprised of clay, silty clay, and subordinate

sandy clay to depths of approximately 10 to 15 feet below Mean Sea Level (MSL). This unit tends to have relatively low permeabilities and be poorly consolidated. Older Bay Muds are found at depths ranging from 10 to 15 feet through 45 to 55 feet below MSL. These older Bay Muds are comprised of more highly consolidated, interbedded clays, silty clays, and some sandy clays with permeability values of about 1×10^{-6} to 1×10^{-8} centimeters per second. A sharp contact exists at the base of the Older Bay Muds beneath which is a thick sequence of sands and gravels that comprise the Newark Aquifer, which extends to depths of up to 200 feet below MSL.

16. **Groundwater**: Groundwater monitoring and analyses for volatile organic compounds, dissolved solids, inorganic compounds, and field parameters (pH and EC) has been performed since 1988. The results indicate that the Landfill's waste is well contained and producing no impacts to the underlying groundwater. The underlying groundwater is super saturated with salt that has historically emanated from the surrounding flood control channels, stormwater retention ponds, and salt ponds. Dissolved solids measurements as much as sixteen percent solids, nearly five times as much as the average of San Francisco Bay, have been recorded in groundwater samples. The saline content of this water is too high for any domestic, agricultural, or industrial use.

    The Younger Bay Mud immediately underlying the Landfill is saturated under water table conditions to within a few feet of ground surface; the gradient is relatively flat. The underlying Newark Aquifer is under confined conditions with a historic groundwater flow from west to east due to excessive agricultural withdrawal from inland areas. The piezometric head is higher in the Newark Aquifer than in the first water bearing zone, indicating an upward component to groundwater flow beneath the Landfill.

17. **Surface Water**: Surface water from the East Bay hills drains into Alameda Creek, 3/4 mile north of the Landfill, and two Alameda County Public Works Agency (ACPWA) flood control channels, one along the north boundary of the Landfill and a larger channel approximately 3/4 mile south of the Landfill. Salt ponds and flood-water storage basins occupy the adjacent properties to the north and east of the Landfill, respectively. The original design of the salt ponds was adequate to contain the 100-year storm runoff from the north and east until it can be discharged to the Bay through Alameda Creek or the flood control channels. The U.S. Army Corps of Engineers has constructed a 15-foot wide channel along the Landfill's western boundary, between the Landfill and the salt ponds, to divert surface runoff and flood waters from the storage basins to the flood control channel.

MONITORING PROGRAMS

18. **Groundwater**: The Self-Monitoring Program pursuant to Order No. 97-026 requires the Discharger to monitor groundwater. Historic groundwater monitoring has been performed semi-annually at ten monitoring wells since 1997 (quarterly before 1997); all but one are screened in the uppermost water bearing zone of the Younger Bay Muds (MW-4A is screened in the Newark Aquifer). This Order updates the groundwater monitoring program as detailed in the Self-Monitoring Program (SMP) attached to this Order.

19. **Leachate**: Historic leachate well sampling and analyses were conducted during the Landfill's

Solid Waste Assessment Test investigation in 1988 and in response to a Regional Water Board request for technical information in 1995. Leachate level monitoring has been conducted quarterly at 6 leachate wells and 4 piezometers. This Order updates the leachate monitoring program as detailed in the SMP attached to this Order.

BASIN PLAN AND BENEFICIAL USES

20. 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 Board, U.S. EPA, and the Office of Administrative Law where required.

21. The existing beneficial uses of San Francisco Bay (the receiving water) are:

    a. Ocean, commercial, and sport fishing;
    b. Shellfish harvesting;
    c. Estuarine habitat;
    d. Fish migration;
    e. Preservation of rare and endangered species;
    f. Fish spawning;
    g. Wildlife habitat;
    h. Water contact recreation;
    i. Non-contact water recreation;
    j. Industrial service supply;
    k. Industrial process supply; and
    l. Navigation.

22. The Basin Plan provides that all groundwater is considered suitable, or potentially suitable, for municipal or domestic water supply (MUN) and that, in making any exceptions, the Regional Water Board will consider the criteria referenced in Regional Water Board Resolution No. 89-39, "Sources of Drinking Water" Policy, where:

    a. The groundwater's total dissolved solids (TDS) exceeds 3,000 mg/l (5,000 μS/cm, electrical conductivity), and it is not reasonably expected by the Regional Water Board that the groundwater could supply a public water system, or

    b. There is contamination, either by natural processes or human activity (unrelated to the specific pollution incident) that cannot reasonably be treated for domestic use using best management practices or best economically achievable treatment practices, or

    c. The water source does not provide sufficient water to supply a single well capable of producing an average, sustained yield of 200 gallons per day.

    The Landfill's underlying groundwater is super saturated with salt that has historically emanated from the surrounding flood control channels, stormwater retention ponds, and salt ponds. Dissolved solids measurements as much as sixteen percent solids, nearly five times as much as the average of the Bay, have been recorded in sampling of the groundwater. Since TDS in groundwater underlying the Landfill exceeds 3,000 mg/l, MUN is not

considered a probable future beneficial use.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

23. This action is an Order to enforce the laws and regulations administered by the Regional Water Board. This action is categorically exempt from the provisions of the California Environmental Quality Act pursuant to Section 15308, Title 14 CCR.

NOTIFICATIONS AND MEETING

24. The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to update the Waste Discharge Requirements and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

25. The Regional Water Board, in a public meeting, heard and considered all comments pertaining to this update of Waste Discharge Requirements.

IT IS HEREBY ORDERED pursuant to the authority in Section 13263 of the California Water Code (CWC), Title 27, Division 2, Subdivision 1 of the California Code of Regulations (CCR), and Chapter 15, Division 3, Title 23 of the California Code of Regulations (Chapter 15) that the Discharger, its agents, successors, and assigns shall meet the applicable provisions contained in CCR Title 27, Chapter 15, and Division 7 CWC, 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 as defined in CWC Section 13050(m), nor degrade the quality of waters of the State or of the United States.
2. No additional waste shall be deposited or stored at the Landfill.
3. Wastes shall not be disposed in any position where they can migrate from the Landfill to adjacent geologic materials, waters of the State or of the United States during disposal operations, closure, and during the post-closure maintenance period, per CCR Title 27 Section 20310(a).
4. Waste shall not be exposed.
5. 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.
6. The creation of any new waste management unit is prohibited.
7. The relocation of wastes is prohibited without prior Regional Water Board staff concurrence.
8. Excavation within or reconfiguration of any existing waste management unit is prohibited without prior concurrence of Regional Water Board staff. Minor excavation or reconfiguration activities such as for installation of signs or landscaping or for routine maintenance and repair do not require prior staff concurrence.
9. The Discharger shall not disc the Landfill's cap. Alternative methods of controlling

vegetative growth, which do not affect the integrity of the Landfill's cap, shall be utilized.

10. Surface drainage from tributary areas and internal landfill drainage from surface or subsurface sources shall not contact or percolate through wastes during the life of the Landfill.
11. The Discharger shall not perform any intrusive activities on the Landfill that have the potential to negatively affect the integrity and proper function of the Landfill's cap, such as digging or trenching, without prior Regional Water Board staff approval.
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 the existing waste management unit:
    a. Surface Waters:
        1. Floating, suspended, or deposited macroscopic particulate matter or foam;
        2. Bottom deposits or aquatic growth;
        3. Adverse changes in temperature, turbidity, or apparent color beyond natural background levels;
        4. Visible, floating, suspended, or deposited oil or other products of petroleum origin; or
        5. 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:
        1. Degradation of groundwater quality; or
        2. Significant migration of pollutants through subsurface transport.

B. SPECIFICATIONS

1. The Discharger shall implement a Detection Monitoring Program (DMP), pursuant to CCR 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 CCR Title 27 Section 20390. The SMP attached to this Order is intended to constitute the DMP for the Landfill. The Discharger shall conduct monitoring activities according to the SMP attached to this Order, 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 groundwater, surface water, leachate, and landfill gas (to minimize the impairment of beneficial uses of water due to gas migration).

2. The WQPS for the Landfill shall include the following:

   Constituents of Concern: CCR Title 27 Section 20395 defines Constituents of Concern (COCs) as "all waste constituents, reaction products, and hazardous constituents that are reasonably expected to be in or derived from waste contained in the Unit." COCs include the monitoring parameters identified in the SMP attached to this Order, or any future

amendment thereof, and all Appendix II parameters in the federal Subtitle D regulations.

Monitoring Parameters: Monitoring parameters (MPs), a subset of the COCs, are typically the most mobile and commonly detected COCs in groundwater at the Landfill and are measured on a more frequent basis than the entire list of COCs. The MPs 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 landfill-specific source characteristics and natural background water quality. However, modifications shall only be made upon written concurrence from the Executive Officer.

Concentration Limits: Concentration limits for all COCs detected at the specified monitoring wells are typically established using the background data set pursuant to CCR Title 27 Section 20400. However, use of background data is inappropriate at the Landfill for two reasons:

i. Background groundwater concentrations exceed those levels detected in leachate except for organic compounds.

ii. As a result of naturally-occurring connate water within the estuarine muds and infiltration from salt ponds, the regional groundwater has measured dissolved solids concentrations up to five times that of San Francisco Bay water and has been degraded well beyond the limits of any potentially beneficial end use (State Water Board Resolution No. 88-63). Leachate analyses indicate relatively low concentrations of organic compounds, and metal and dissolved solid concentrations that were less than those concentrations measured in surrounding groundwater. This indicates surrounding groundwater is much more highly saline and denser than the Landfill's leachate.

Point of Compliance: CCR Title 27 Section 20405 defines the Point of Compliance (POC) as the "vertical surface located at the hydraulically downgradient limit of the Unit that extends through the uppermost aquifer underlying the Unit." The POC shall be the hydraulically downgradient perimeter of the waste fill area and, therefore, circumscribes the Landfill.

Monitoring Points: CCR Title 27 Section 20164 defines Monitoring Points as "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." Monitoring points for the Landfill, which are located along the POC and at additional locations, are specified in the attached SMP.

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 aquifer unit each well is intended to monitor.

4. 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.

5. 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 at the Landfill (e.g., pH).

6. 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.

7. The Discharger shall maintain and monitor the Landfill so as not to cause a statistically significant difference to exist between water quality parameters at the POC, as defined in C.2. above, and the WQPS.

8. Whenever there is "measurably significant" geochemical evidence of an increase in concentration limits (as defined in CCR Title 27 Section 20164) or significant physical evidence of a release, the Discharger shall be prepared to implement an Evaluation Monitoring Program (EMP) pursuant to CCR Title 27 Section 20425, 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, the EMP shall be implemented to determine the nature and extent of any release detected by the DMP.

9. 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.

10. 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.

11. Final cover systems for waste management units shall be graded and maintained to promote lateral runoff and prevent ponding and infiltration of water.

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

13. The Discharger shall install new monitoring stations to replace any monitoring wells designated as monitoring stations that are destroyed or lost during landfill operation or post-closure.

14. 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.

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

16. 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.

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

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

19. When there are multiple landowners or lease holders involved, 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. The Discharger shall comply with all applicable provisions of CCR Title 27 that are not specifically referred to in this Order.

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 waste discharge requirements by the Regional Water Board. (CWC sections 13261, 13263, 13265, 13267, 13268, 13300, 13301, 13304, 13340, and 13350).

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 Section 13268.

3. **Self-Monitoring Program**: The Discharger shall comply with the SMP attached to this Order and submit semi-annual monitoring reports in accordance with the SMP. Sample

collection shall be conducted on a five-year interval beginning in 2017, and water level monitoring shall be performed annually. The Discharger shall also submit an annual report to the Regional Water Board covering the previous calendar year as described in Part A of the SMP. In addition to the requirements outlined in the SMP, this report shall also include the following: location of leachate and groundwater monitoring wells; groundwater and leachate contours for each monitoring event; and a discussion of the existing gas extraction system (annual report only).

SEMI-ANNUAL REPORT DUE DATE: February 15 and August 15 of each year
ANNUAL REPORT DUE DATE: February 15 of each year

4. **Report of Waste Discharge**: The Discharger shall submit a technical report, acceptable to the Executive Officer, describing any proposed material change in the character, location, or volume of a discharge, or in the event of a proposed change in use or development of the Landfill [CWC Section 13260 (c)]. 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 integrity of the Landfill's cover and prevent water quality impacts. No material changes to any portion of the Landfill shall be made without approval by the Executive Officer.

COMPLIANCE DATE: 120 days prior to any proposed material change

5. **Stormwater Pollution Prevention Plan:** The Discharger shall submit and implement an updated Stormwater Pollution Prevention Plan (SWPPP) as required under the General Permit described in Finding 9, acceptable to the Executive Officer. The SWPPP will provide the best management practices that shall be implemented at the site to control stormwater runoff and reduce erosion.

COMPLIANCE DATE: August 1, 2012, and each year thereafter

6. **Construction-Related Stormwater Permit**: For any proposed grading or development project greater than one-acre in size, the Discharger shall submit an NOI to the State Water Board, and submit and implement a SWPPP acceptable to the Executive Officer, in accordance with requirements specified in the State Water Board's General Permit for Stormwater Discharges Associated with Construction Activities (NPDES Permit No. CAS000002). 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: 60 days prior to construction

7. **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 SMP.

REPORT DUE DATE: 60 days following well installation or destruction

8. **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

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

COMPLIANCE DATE: December 31, 2012, and every 5 years thereafter

10. **Change in Landfill 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 landfill 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

11. **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 [CWC Section 13263].

12. **Change in Ownership**: The Discharger must notify the Executive Officer in writing at least 30 days in advance of any proposed transfer of this Order's responsibility and coverage to a new discharger. The notice must include a written agreement between the Discharger and the new discharger containing a specific date for the transfer of this Order's responsibility and coverage between the Discharger and the new discharger. This agreement shall include an acknowledgment of which discharger is liable for violations up to the transfer date and which discharger is liable from the transfer date on [CWC sections 13267 and 13263].

13. **ROWD Reporting**: 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 [CWC sections 13260 and 13267].

14. **Revision**: These WDRs are subject to review and revision by the Regional Water Board [CCR Section 13263].

15. **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 [CWC Section 13263(g)].

16. **Severability**: Provisions of this Order are severable. If any provisions of these WDRs are found invalid, the remainder of these requirements shall not be affected [CWC Section 9213].

17. **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 [CWC Section 13263(f)].

18. **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) 622-2300 during regular office hours (Monday through Friday, 8:00 a.m. to 5:00 p.m.). A written report shall be mailed or submitted electronically to the Regional Water Board within 5 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.

19. **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 the 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 CWC, any substances or parameters at any location [CWC Section 13267].

20. Analytical Methods: Unless otherwise permitted by the Executive Officer, all analyses shall be conducted at a laboratory certified for such analyses by the State Department of Public Health. 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 State boundaries and therefore not subject to certification. All analyses shall be required to be conducted in accordance with the latest edition of "Guidelines Establishing Test Procedures for Analysis of Pollutants" [40 CFR Part 136] promulgated by U.S. EPA [CCR Title 23 Section 2230].

21. 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 federal Clean Water Act and discharge subject to a general NPDES permit) must file an NPDES permit application with the Regional Water Board [CCR Title 2 Section 223571].

22. 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) 622-2300 during regular office hours (Monday through Friday, 8:00 a.m. to 5:00 p.m.). A written report shall be mailed or submitted electronically to the Regional Water Board within five business days of the time the 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.

23. Document Distribution: Copies of all correspondence, technical reports, and other documents pertaining to compliance with this Order shall be provided to the Regional Water Board, Alameda County Department of Environmental Health, and California Recycle Department. The Executive Officer may modify this distribution list as needed.

24. Requests for Technical Reports: All technical and monitoring reports required by this Order are requested pursuant to Section 13267 of the CWC. Failure to submit reports in accordance with the schedules established by this Order or failure to submit a report of sufficient technical quality acceptable to the Executive Officer may subject the Discharger to enforcement action pursuant to Section 13268 of the CWC.

25. Reporting Requirements:

a. Hard copies:

1. Technical reports/plans, submitted by the Discharger, in compliance with the Prohibitions, Specifications, and Provisions of this Order, shall be submitted to the Regional Water Board on the schedule specified herein. Hard copies of these reports/plans shall consist of a letter report that includes the following:

a) Identification of any obstacles that may threaten compliance with the schedule;

b) In the event of non-compliance with any Prohibition, Specification or Provision of this Order, written notification that clarifies the reasons for non-compliance and proposes specific measures and a schedule to achieve compliance. This written notification shall identify work not completed that was projected for completion and shall identify the impact of non-compliance on achieving compliance with the remaining requirements of this Order;

c) In the self-monitoring reports, an evaluation of the current groundwater monitoring system and a proposal for modifications as appropriate; and

d) A signed transmittal letter and professional certification by a California Licensed Civil Engineer or a Professional Geologist.

2. All application reports or information to be submitted to the Executive Officer shall be signed and certified as follows:

a) For a corporation – by a principal executive officer or the level of vice-president or an appropriate delegate;

b) For a partnership or sole proprietorship – by a general partner or the proprietor, respectively; or

c) For a municipality, State, federal, or other public agency – by either a principal executive officer or ranking elected official.

b. Electronic Submittals:

The State Water Board has adopted regulations requiring electronic report and data submittal to Geotracker [http://www.geotracker.swrcb.ca.gov/].

1. The Discharger is responsible for submitting the following via the internet:

a) Groundwater analytical data;

b) Surveyed locations of monitoring wells;

c) Boring logs describing monitoring well construction;

d) Portable data format (PDF) copies of all reports identified in a.1 and a. 2 above (the document, in its entirety [signature pages, text, figures, tables, etc.] must be saved to a single PDF file);

e) Copies of all correspondence, reports, and documents pertaining to compliance with the Prohibitions, Specifications, and Provisions of this Order related to

stormwater and compliance with the State Water Board General Permit No. CAS000001; and

f) Any additional submittal to GeoTracker the Executive Officer requires.

2. Upon request, monitoring results shall also be provided electronically in Microsoft Excel® to allow for ease of review of landfill data and to facilitate data computations and/or plotting that Regional Water Board staff may undertake during the review process. Data tables submitted in electronic spreadsheet format will not be included in the case of file review and should therefore be submitted on CD and included with the hard copy of the report. 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. 97-026.

I, Bruce H. Wolfe, Executive Officer, do hereby certify that the foregoing is a full, complete, and correct copy of and Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region on March 14, 2012.

_____

Bruce H. Wolfe
Executive Officer

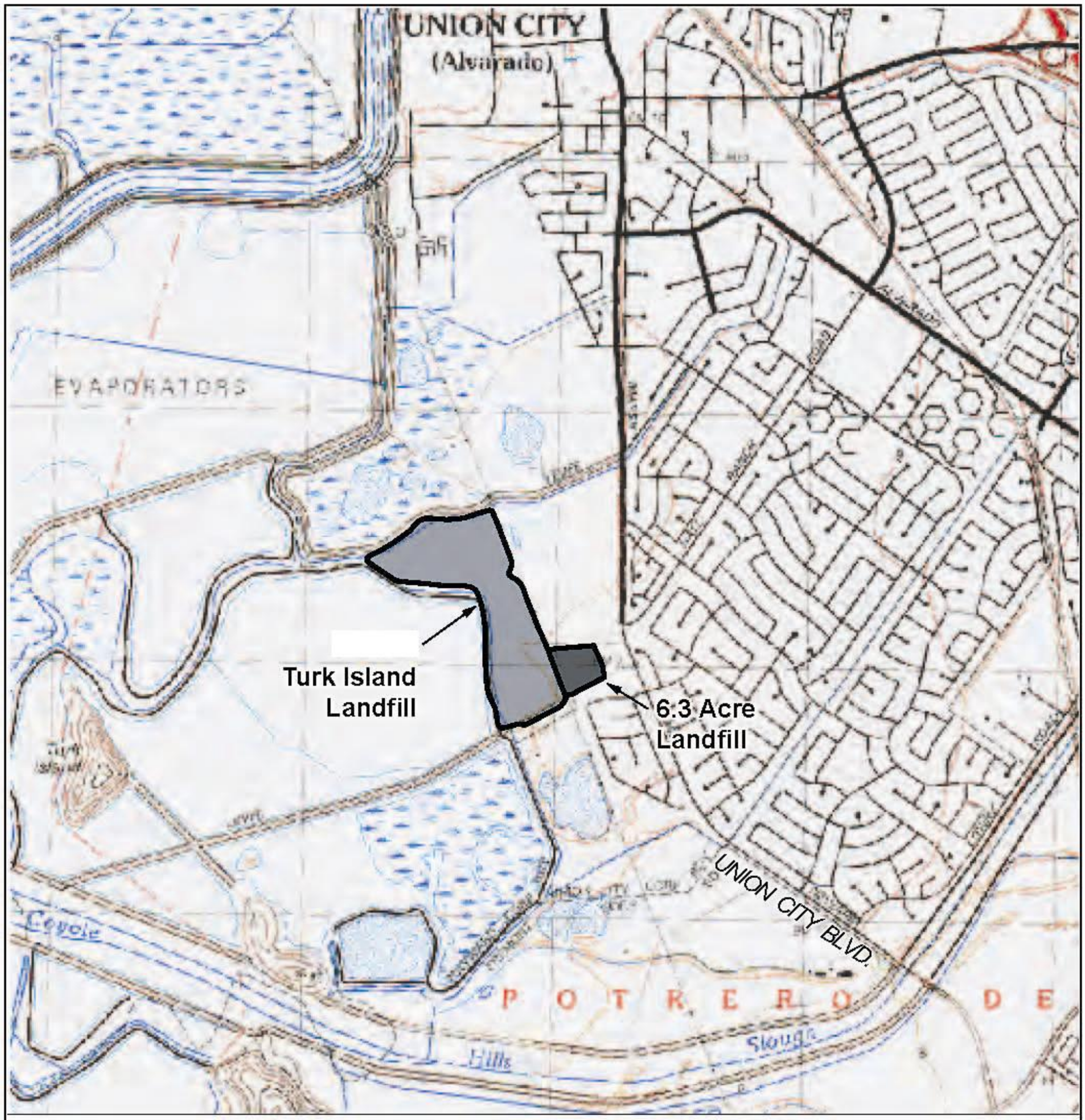
Attachments:

Figure 1, Turk Island Landfill Location Map

Figure 2, Landfill Vicinity, Aerial Photograph

Figure 3, Facilities Plan

Self-Monitoring Program



Base map: U.S.G.S. 7.5-minute series (topographic)
Newark California Quadrangle
dated 1997

0 2,000 Feet

Approximate scale

SITE LOCATION MAP

TURK ISLAND LANDFILL

Union City, California

Figure 1

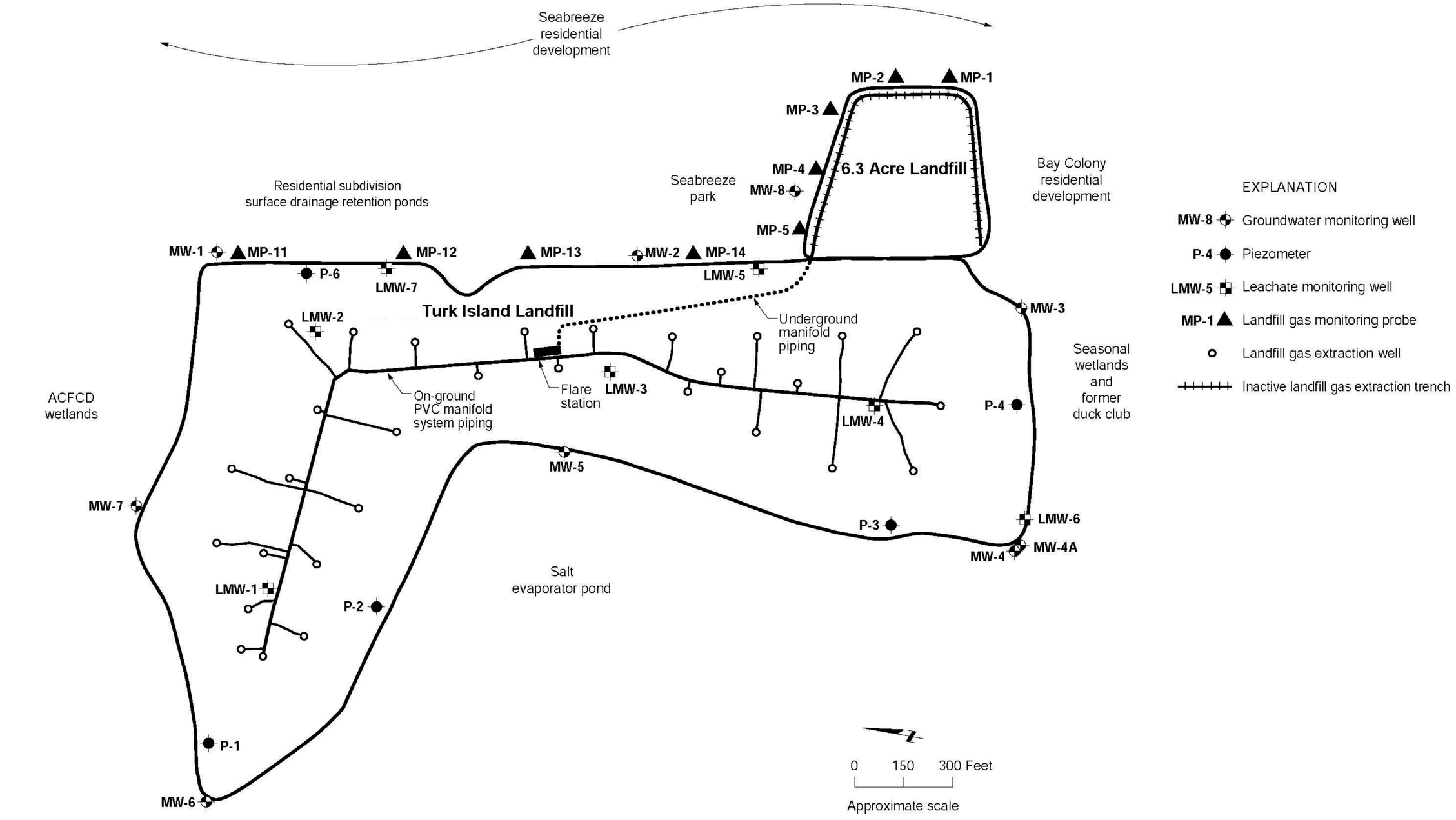
Base: Pacific Aerial Surveys AV-8202-17-47, dated June 26, 2002

SITE VICINITY

TURK ISLAND LANDFILL

Union City, California

Figure 2



Source: THE REMEDIATION GROUP, inc.

FACILITIES PLAN
TURK ISLAND LANDFILL
Union City, California
Figure 3

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM
FOR
TURK ISLAND COMPANY

TURK ISLAND LANDFILL,
32505 UNION CITY BOULEVARD,
UNION CITY, CA
ALAMEDA COUNTY

ORDER NO.

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 the Turk Island Landfill (Landfill) (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), Division 2, Title 27, Subdivision 1, Chapter 3, Subchapter 3, 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 the discharger 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 the discharger 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's containment and control facilities, and the 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 (SAP) 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 refer 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 areas and the surface runoff from the Landfill are

considered receiving waters.

Standard Observations

Standard observations refer to observations within the limits of the Landfill, at its perimeter, and of the receiving waters beyond its limits. 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 their presence or absence, characterization, source, and distance of travel from source; and
    c. Evidence of erosion and/or day-lighted waste, including a map of the approximate location and an assessment of the likelihood that soil or waste was lost to receiving waters.
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 their presence or absence, characterization, source, and distance of travel from source;
    c. Evidence of erosion and/or day lighted waste; and
    d. Measurement of groundwater elevations.
3. Receiving Waters:
    a. Floating and suspended materials of waste origin, 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, 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 refer 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 (SWMS) elements such as perimeter drainage and diversion channels, ditches and down-chutes, and detention and sedimentation ponds or collection tanks; and
3. Landfill gas system.

Quality Assurance/Quality Control (QA/QC) 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; and
4. Trip blank – one sample per cooler.

C. REPORTING REQUIREMENTS

Reporting responsibilities of dischargers are specified in CCR sections 13225(a), 13267(b), 13383, and 13387(b) and the 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 SMR. 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 landfill/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 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 quick and 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 SAP 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 the type of pump used; pump placement in the well; pumping rate; equipment and methods used to monitor field pH, temperature, and electrical conductivity; calibration of the field equipment, pH temperature, conductivity, and turbidity measurements; and 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 (510-622-2300, Monday

through Friday, 8 a.m. to 5 p.m.) any measurably significant discharge (CCR Title 27 Section 20164) from the disposal area immediately after it is discovered. The Discharger shall submit a written report to 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) have been exceeded. If appropriate, the Discharger shall resample at the compliance point(s) where this difference has been found within 30 days.

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) as specified in CCR Title 27 Section 20420 for establishment of an Evaluation Monitoring Program (EMP) meeting the requirements of CCR Title 27 Section 20425.

4. A measurably significant result is defined below for statistically and non-statistically evaluated parameters. Statistically and non-statistically evaluated parameters include site-specific detection monitoring parameters indicated on Table B-1 attached hereto:

   a. Statistically Evaluated Parameters: a measurably significant result is indicated when the reported parameter concentration is above an intra-well Shewart-CUSUM control chart limit or, as appropriate, an intra-well prediction limit.

   b. Non-Statistically Evaluated Parameters: for the composite VOC water monitoring parameter, a measurably significant result is indicated when the reported concentration of at least one parameter exceeds the Practical Quantitation Limit (PQL) or laboratory RL, whichever is lower. Common field and laboratory contaminants such as acetone, 2-butanone, methylene chloride, toluene, carbon disulfide, and chloroform are generally excluded from the non-statistical evaluation.

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.3 in the WDRs.

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 3.

1. **Environmental Media**

   a. Groundwater: Groundwater shall be monitored at the locations specified in Table B-1 and shown on Figure 3. Monitoring frequencies, parameters, and analytes shall be in accordance with Table B-1. Groundwater elevations shall be measured annually.

   b. Leachate: Leachate levels shall be measured on an annual basis at the locations specified in Table B-1 and shown on Figure 3.

   c. Seeps: Leachate seeps, in excess of one gallon per minute, shall be sampled at the time of discovery, and the sample shall be analyzed as specified in Table B-1. A report shall be made by telephone of any such seepage from the limits of the disposal area immediately after it is discovered. A written report shall be filed with the Regional Water Board within five days thereafter.

   d. Stormwater: Stormwater shall be monitored according to the Landfill's Stormwater Pollution Prevention Plan.

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 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 same tests as a regular sample (duplicate sample).

B. REPORTING SCHEDULE

The Discharger shall submit Self-Monitoring Reports 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.

Table B-1 Self-Monitoring Program

Groundwater Wells: [1] MW-2, MW-4 [2] MW-2, MW-4, MW-6 [3] MW-1, MW-2, MW-3, MW-4, MW-4A, MW-5, MW-6, MW-7		**Leachate Wells:** [4] LMW-1, LMW-2, LMW-3, LMW-4, LMW-6, LMW-7, P-1, P-2, P-3, P-4, P-6
Monitoring Event	**Frequency**	**Parameters**
Constituents of Concern [1, 2]	**Once every five years** beginning August 1, 2012	**Volatile Organic Compounds**
Monitoring Parameters [3, 4]	**Semi-Annually** 1st Semi-Annual Sampling event – December REPORT DUE February 1st 2nd Semi-Annual Sampling event – June REPORT DUE August 1st	**Water levels**
Seeps (greater than 1 gallon/ minute)	**Within five days of discovery**	**Volatile Organic Compounds**
Standard Observations	**Quarterly**	**As detailed in Part A**

Note: MW-4A, a deep aquifer well, will have water level measured only. If the Alameda County Water District begins pumping the adjacent well, MW-4A will also include annual monitoring of VOC's.

APPENDIX B

Response to Comments - Item 5.C - Turk Island Landfill

We received comments via email from the Alameda County Water District (ACWD) dated February 23, 2012, regarding the tentative order for **Turk Island Landfill, Union City, Alameda County**. ACWD's comments and Water Board staff's responses are provided below.

Comment 1 – *The presence of leachate is often reported in the leachate wells at this former landfill; however, the fate of the observed leachate is unclear. Alameda County Water District (ACWD) recommends that current protocols for leachate removal and disposal at the site be submitted for review. Field records regarding the disposal of leachate along with the associated waste manifest or USD permit/compliance documents should also be submitted as part of the semi-annual report for the Self-Monitoring Program.*

Response 1: The landfill does have a series of leachate extraction points (sumps) that have been monitored since the landfill was closed in the late 1980s, together with the landfill's leachate wells. Measured leachate levels have never triggered active leachate extraction. In fact, the most recent round of leachate fluid measurements (November 2011) found three of the site's four interior leachate wells to be completely dry. In the event leachate levels pose a threat to surface or groundwater quality, the Discharger will be required to address any adverse impacts consistent with the requirements of title 27 CCR.

Comment 2 – *The flood control channels are owned and managed by the Alameda County Public Works Agency and not by ACWD.*

Response 2: This clarification has been made to the Revised Tentative Order

Comment 3 – *Page 8-9: Concentration Limits: "Leachate analyses indicate relatively low concentrations of organic compounds, and metal and dissolved solid concentrations which were less than those concentrations measured in the surround groundwater..."*

According to Alisto Engineering Group's "2011 Second Semi-Annual/Annual Groundwater Monitoring and Sampling Report" dated January 3, 2012, in the most recent monitoring event, elevated concentrations of arsenic (with a maximum concentration of 96 parts per billion [ppb]) were detected in wells MW-1, MW-2, MW-3, MW-5, MW-6, and MW-7, at concentrations exceeding the MCL of 10 ppb. Historical arsenic data at the site are typically near the MCL or non-detect; therefore, the elevated arsenic concentrations detected are not indicative of surrounding groundwater conditions.

In addition, data in the January 3, 2012 report also documented that on multiple occasions water samples collected from the monitoring wells have pH values of less than 6. This suggests that shallow groundwater is being adversely impacted by the landfill and should be addressed.

The monitoring report also indicated that the leachate wells at the site have been sampled only once or twice for volatile organic compounds (VOCs), with the exception of chloroform, since 1988. Trichloroethylene (TCE) was detected at 45 ppb, a concentration above the MCL of 5 ppb in 1995 at LMW-7, but no subsequent sampling was conducted. ACWD recommends that water samples

collected from the leachate wells be analyzed for VOCs periodically for all regulated VOCs that can be determined by EPA Method 8260.

Response 3: Arsenic is a naturally-occurring background metal frequently found at elevated concentrations in salt evaporation pond residuals, such as the ones located adjacent to the landfill. Staff believe that salt pond impacts are the source of elevated concentrations of arsenic observed in groundwater at the landfill. This belief is supported by the fact that arsenic detections in landfill leachate, which one would expect to be high, are less than that noted in groundwater samples.

Historical landfill leachate testing detected pH levels ranging from 6.4 to 7.7. While staff recognize the current pH range is below that of historical levels, staff do not believe that the leachate or waste is posing a threat to water quality. Nevertheless staff will continue to monitor and evaluate conditions at the landfill including pH to ensure water quality is not adversely impacted.

As already demonstrated through historical sampling, the landfill contains low levels of VOCs. The site's Self-Monitoring Program has previously included VOC analyses (U.S. EPA Method 8240). Conditions have been well documented for nearly 30 years regarding VOC impacts at the landfill and remain minor.

Comment 4 – *The monitoring program may have to be modified if ACWD decides to operate well 4S/2W-21B007 (Site D), which is located adjacent to the southwestern corner of the site. There are no current plans to operate Site D.*

Response 4: Table B-1 of the Self-Monitoring Program has been updated to reflect this contingency.

Comment 5 – *Since the TO also contain specifications for well construction, replacement, and destructions, ACWD would also like to take this opportunity to provide the following information:*

1. In addition to the groundwater well installation criteria listed in the TO, all well construction must conform with standards set forth in ACWD's "Standards for The Construction, Use, Operation, Maintenance, Repair, Inactivation, or Destruction of Wells, Exploratory Holes, Other Excavations, and Appurtenances". Drilling permits are also required prior to the start of any subsurface drilling activities for wells, exploratory holes, and other excavations (ACWD's Well Ordinance No. 2010-01). Application for a permit may be obtained from ACWD's Engineering Department, at 43885 South Grimmer Boulevard, Fremont, or online at http://www.acwd.org/engineering/drilling_permit.php5. Before a permit is issued, a cash or check deposit is required in a sufficient sum to cover the fee for issuance of the permit or charges for field investigation and inspection. All permitted work requires scheduling for inspection; therefore, all drilling activities must be coordinated with ACWD prior to the start of any field work.

2. In order to protect the groundwater basin, all wells within a proposed development or expansion area must be in compliance with ACWD Ordinance No. 2010-01. If wells are to remain in a project area, a letter documenting the status of each well must be sent to ACWD and will require a permit for inactive classification if the wells will not be used for a period of twelve (12) months. All other wells located within the project area must be properly destroyed prior any development or expansion activities.

Response 5: This information is noted and acknowledged.