

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN FRANCISCO BAY REGION**

**ORDER NO. 01-040**

**UPDATED WASTE DISCHARGE REQUIREMENTS AND RESCISSION OF ORDER  
NO. 91-052, FOR:**

**KELLER CANYON LANDFILL COMPANY  
CLASS II SOLID WASTE DISPOSAL SITE  
PITTSBURG, CONTRA COSTA COUNTY**

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

**SITE OWNER AND LOCATION**

1. The Keller Canyon Landfill Company, hereafter called the discharger, is a wholly owned subsidiary of Allied Waste. The discharger owns and operates a 2,628-acre site containing a Class II solid waste management unit, with a permitted waste disposal area of 244 acres. The site is located immediately south of the City of Pittsburg, to the east of Bailey Road, and as shown on Figures 1 and 2.
2. The discharger submitted a Report of Waste Discharge on October 2, 1990, which served as an application for Waste Discharge Requirements for the landfill. In 1990, Contra Costa County certified the final Environmental Impact Report for the landfill construction. In 1998, the discharger submitted a draft Joint Technical Document, intended to update the operational data for the landfill, such as increases in waste receipt and changes in their alternative daily cover. This document remains in a draft form.

**PURPOSE OF ORDER UPDATE**

3. The primary objectives of this Order are to: 1) Revise the groundwater, surface water, subdrain and leachate monitoring programs in order to evaluate the landfill's impact to water quality, and 2) Update the Waste Discharge Requirements and bring the site into compliance with Title 27, California Code of Regulations (CCR) and Part 268 (Subtitle D), Title 40 of the Code of Federal Regulations.

**SITE DESCRIPTION AND HISTORY**

4. The Keller Canyon Landfill is an "engineered canyon fill" landfill. Excavation and grading occur in the bottom and along the sides of the canyon. The existing canyon topography is recontoured prior to placement of the liner system and subsequent waste filing. A toe berm was then constructed to bridge the open end of the canyon at its downstream end, enclosing the canyon and providing a stable bowl for waste placement.

5. The landfill was originally to be built in eight phases on top of each other, with Phase 1 being the lowermost phase, and Phase 8 as the uppermost. Waste filling in the first phase would occur from the low elevation northern end of the canyon to the high elevation southern end. Subsequent phases would be filled in the opposite direction (from south to north). Phase development would occur vertically (i.e. a phase would traverse the canyon, and the next phase would be built over the previous one). The toe berm would be built at low open end of the canyon and then built up and lined concurrently with the construction of the first three phases.
6. The discharger has not followed the proposed fill sequencing plan, and has constructed several landfill liner expansions out of sequence. It is the Board's intent to request a revised fill-sequencing plan (see Provision C.4) and to not allow future waste placement that is not in accord with the approved plan.
7. The landfill started to accept waste in May 1992 in Phase 1A, a 15-acre lined cell. Phase 1B consists of 26 acres, and was completed in two parts. The western portion was completed in November 1992, and the eastern portion was completed in June 1993. Phase 1C consists of a 4.4-acre area, which was completed in June 1996. Phase 1D consists of 3.1 acres, which was completed in July 1997. The 9.1-acre Phase 3A liner (now referred to as Phase 2A) to the south of Phase 1B was completed in September 1998. The one-acre interim waste disposal liner, a horizontal and vertical expansion of the Phase 1 liner, was completed in November 1999. Lastly, the Phase 2B liner expansion was completed in August 2000. This area consists of 16.2 acres of liner built in two separate projects, located to the southeast of the Phase 1 area.
8. Phases 1A and 1B contain about 3 million cubic yards of waste. Phase 1C and 1D contain 1.2 million and 650,000 cubic yards of waste respectively. Phase 2B is currently being filled. The discharger has recently submitted design documents for the next liner expansion, termed the Phase 2B-III liner. The design capacity of the landfill is approximately 60 million cubic yards, with an expected closure date in 2030. To date, no areas have been closed.

## **WASTE DISCHARGE REQUIREMENTS**

9. The current Waste Discharge Requirements for the discharger are contained in Board Order No. 91-052, issued by the Board on April 15, 1991. The discharger has also filed a Notice of Intent for the State Water Resources Control Board's General Permit for Stormwater Discharges Associated with Industrial Activities. Following the issuance of Waste Discharge Requirements, the City of Pittsburg appealed Order No. 91-052 to the State Water Resources Control Board. The State Board responded by issuing Order No. WQ 92-06, on June 3, 1992. This Order amended Order No. 91-052. The Regional Board amended the waste discharge requirements again on September 15, 1993, in Order No. 93-113. This was a general amendment of waste discharge requirements intended to bring all of this Region's landfills into compliance with federal RCRA Subtitle D requirements for monitoring and waste containment.

10. The 1991 waste discharge requirements were amended again on May 21, 1997, in Order No. 97-060, which allowed for an alternative liner design for a lined area of the landfill's toe berm. The requirements were also amended on August 19, 1998 in Order No. 98-081, which allowed for an alternative liner design for the Phase 3A (now called the Phase 2A) liner. Lastly, the requirements were amended on August 16, 2000 in Order No. 00-091, which allowed for an alternative liner design for the Phase 2B liner.

## **WASTES AND THEIR CLASSIFICATION**

11. The landfill accepts municipal solid wastes, non-hazardous wastes, construction and demolition wastes, and dewatered sewage sludges for disposal in the permitted landfill area. These wastes are classified as "designated," non-hazardous solid waste," or "inert wastes," using criteria set forth in Sections 20210, 20220, and 20230 of Division 2, Title 27 of the California Code of Regulations (formerly referred to as Chapter 15, Title 23). Title 27 contains the regulations promulgated by the State Water Resources Control Board for the water quality aspects of discharges of solid waste to land for disposal. These regulations establish waste and site classifications and waste management requirements for solid waste disposal in landfills.
12. The discharger is allowed to accept up to 3,500 tons per day of waste. Currently, the discharger receives an average of 2,300 tons of waste per day, or a fill volume of about 3,500 cubic yards per day. About  $\frac{3}{4}$  of this consists of municipal solid waste, with the remainder being special wastes, construction & demolition wastes, and soil cover.

## **TITLE 27 REQUIREMENTS**

13. Title 27, Section 20310, requires that Class II waste management units be designed and constructed to prevent migration of wastes from the Units to adjacent geologic materials, groundwater, or surface water, during disposal operations, and the closure and the post-closure maintenance periods.
14. The landfill is designed to isolate wastes from Waters of the State pursuant to Title 27, Section 20250(b). This is accomplished by installing a composite liner system consisting of a granular drain system to intercept rising groundwater, overlain by at least two feet of clay compacted to a permeability of not more than  $1 \times 10^{-7}$  cm/sec, overlain by a synthetic flexible membrane liner consisting of 80 mil (2mm) thick High Density Polyethylene (HDPE), and lastly overlain by a leachate collection and removal system.
15. The discharger's excavation and grading plan reduced the separation between wastes and Waters of the State to less than the 5 feet required by Title 27, Section 20240(c). It is not feasible for the discharger to maintain the requisite separation without incurring unreasonable expense to import fill material and reconfigure the design of the landfill. Section 20080(b) of Title 27, however, allows for an engineered alternative to the separation requirement. The discharger has installed a blanket underdrain as an engineered alternative to the prescribed separation, because it will prevent rising

groundwater from infiltrating the waste management unit at least as effectively as the prescribed separation.

16. Keller Canyon is an area of rapid geologic change. The landfill site includes several landslides and slopes that are known, or have shown, the potential for instability. In response, the discharger has undertaken substantial technical analysis of slope stability for the first phase of the landfill development. The Board approved the discharger's technical reports submitted June 11, 1992 as amended by reports dated August 4, 1992 and August 21, 1992 regarding the stability of the cut slope beyond the southern edge of the Phase 1 area.
17. A landslide, designated LS-5, developed following heavy rains on January 18, 1998. LS-5 measured about 2,100 feet in length and about 620 feet in width near its toe. The slide mass moved over 100 feet to the northwest, leaving a head scarp up to 85 feet high. This slide buried the floor of the then proposed Phase 3A (now called Phase 2A) liner, forcing a complete redesign of the liner, as well as the design of a means to stabilize or remove LS-5. The discharger elected to partially remove and stabilize LS-5. The slide was entirely removed above an elevation of 750 feet MSL, and partially replaced with engineered fill. The lower portion of the slide was partly removed, with the remainder being stabilized by construction of a buttress of engineered fill. About 2.1 million cubic yards of excess soil were placed in a stockpile, built at the southern portion of the site. The liner was redesigned so that the floor of the liner lay at the north of the LS-5, and the new toe buttress was used to support the south slope of the new liner. Two third party reviewers analyzed the slope and liner stability calculations for the liner proposal. Based on design reports and calculations submitted by the discharger and the third party reviewers, the Board found that the proposed design met relevant Title 27 requirements.
18. The Phase 2B liner also involved the partial removal and stabilization of an active landslide known as LS-4. The slopes above the slide were stabilized by reducing them to a grade of 4.2:1, involving the removal of about 2.9 million cubic yards of soil. About 2 million cubic yards of this soil were used to build a buttress of engineered fill to stabilize LS-4 at its base. The remaining 0.9 million cubic yards of soil were placed in the existing soil stockpile. The new liner was placed partly on and above the new buttress. The discharger again submitted slope and liner stability calculations to support their proposal.
19. In order to proceed with the development of any future developments, the discharger must, as required by Title 27, Section 21750(f)(5)(A), provide slope stability analyses, ensuring the integrity of the waste management unit under both static and dynamic conditions throughout the unit's life. Section 21750(f)(5)(C) further provides that the discharger show a factor of safety for the unit's critical slope of at least 1.5 under dynamic conditions. Section 21750(f)(5)(D) allows for an exception where the discharger can estimate the magnitude of movement during the maximum credible earthquake (MCE), and demonstrate that this amount of movement can be accommodated without jeopardizing the integrity of the Unit.

## ORDER AMENDMENTS

20. Order No. 91-052 listed the minimum criteria for the landfill composite liner in Specification B.13. As detailed below in Findings 22, 23, and 24, Order No. 91-052 was amended three times to allow for alternative liner designs to those specified in Order No. 91-052. It is not the Board's intent to amend the Waste Discharge Requirements for this landfill prior to the next scheduled update.
21. Following the Regional Board's issuance of Waste Discharge Requirements in Order No. 91-052, the City of Pittsburg appealed this Order to the State Water Resources Control Board. The principal contention on appeal was the proposed landfill containment system design approved by the Regional Board did not meet Chapter 15 (now Title 27) Class II standards. The City also raised issues regarding slope stability and toe berm stability. The State Board responded by issuing Order No. WQ 92-06, on June 3, 1992. This Order amended Order No. 91-052. The State Board determined that the landfill site characteristics and design did meet Class II standards, but they also determined that additional information regarding the preparation of stability analyses, and additional information regarding development plans for subsequent phases of the landfill, should be submitted to the Regional Board prior to the development of the future phases of the landfill.
22. The waste discharge requirements have been subsequently amended three more times, in 1997, 1998 and 2000, to allow for alternative liner designs to those specified in Order No. 91-052. In all three orders amending the original Waste Discharge Requirements, the Board found that the submitted liner design met the Title 27 requirements for engineered alternatives. Order No. 97-060 amended the requirements allowing for an alternative liner design for a small portion of the landfill's toe berm. One design change was the deletion of the underdrain. This revision was warranted as the lined area did not contain shallow groundwater, and hence the required 5-foot separation from groundwater was already achieved. The other design change was the substitution of the standard 2-foot thick natural clay liner with a manufactured blanket known as a geosynthetic clay liner (GCL). The use of a GCL on a steep landfill slopes is an increasingly common alternative to a clay liner as it offers low permeability with cost savings due to its ease of installation. Order No. 97-060 also allowed for the substitution of a manufactured drainage layer in place of the 1-foot thick gravel leachate collection layer.
23. Order No. 98-081 amended the requirements, allowing for an alternative liner design for the 9.1-acre Phase 3A area (now called the Phase 2A area). The discharger used a GCL in lieu of the clay liner, and an engineered alternative, the geonet, in place of the underdrain on the east slope. The south slope also used a GCL, with no underdrain, as the liner was installed on engineered fill well above the groundwater level.
24. Order No. 00-091 amended the requirements to allow for an alternative design for the liner in the Phase 2B area. The underdrain was eliminated for the second and third phases, as they too were built on engineered fill providing for more than 5-feet of separation from groundwater.

## **GEOLOGICAL SETTING**

25. Keller Canyon and the surrounding hills are located south of Suisun Bay in the Los Medanos Hills along the northern flank of the Diablo Range. The topography is predominantly rolling hills with a few outcrops of moderately dipping weather resistant bedrock. The bedrock underlying the landfill consists primarily of alternating sequences of siltstone and claystone of the Kreyenhagen Formation, which dip about 30 degrees from horizontal in a northeastern direction. The Kreyenhagen formation is overlain by the Cierbo Sandstone, which is in turn overlain by the Neroly Sandstone. The sandstone layers surface downgradient of the landfill and toe berm. Near the ground surface, the Kreyenhagen has been extensively altered by weathering, which increases its porosity and creates closely spaced fractures. The thickness of the weathered zone varies from less than 20 feet beneath the bottom of the canyon, to over 100 feet on top of the ridges. Unconsolidated deposits overlying the bedrock consist of alluvium and landslide deposits in the canyon drainage, and a thin mantle of colluvium and residual soils on the canyon side slopes.
26. Earthquakes posing a threat to the landfill could occur along the San Andreas, Concord and the Clayton Faults. The maximum free field ground acceleration is estimated to be 0.65g originating from a Richter Magnitude 6.25 Maximum Credible Earthquake from the Clayton fault about 1 mile from the site. The distance from the landfill to the Concord Fault is about 6 miles, and to the San Andreas Fault is about 37 miles.

## **SURFACE WATER**

27. Keller Canyon is a closed hydrologic basin consisting of approximately 558 acres that discharge to a large onsite detention pond. The outlet of this pond drains to an inlet of the City of Pittsburg's storm drain system that eventually enters into Suisun Bay. The watershed's discharge volume is estimated to be between zero to five gallons per minute (gpm) in the dry season, and up to 180 gpm during wet seasons. The 1,000 year, 24 hour precipitation event, as estimated by computer modeling, could produce a peak flow rate of up to 305 cubic feet per second for the existing site conditions of the watershed. The water from the landfill underdrain, as well as some seasonal springs, drains to an 8.57-acre wetland area that was built as compensation for 3.37 acres of wetland fill that resulted from the landfill construction. There have been occasional, low-level detections of volatile organic compounds (VOC) in the underdrain over the past year. The discharger has stated that the source of the VOCs is not the landfill, but has not conclusively determined what the source is. To date, the discharge to the wetland has not shown detectable VOCs. If the discharger cannot readily find the source of, or abate the detection of the VOCs, or if there is a discharge of VOCs to the wetland, separate enforcement action may be prepared.

## HYDROGEOLOGY

28. The intact Kreyenhagen formation has a low hydraulic conductivity, generally less than  $1 \times 10^{-6}$  cm/sec. The unweathered siltstone and claystone has an even lower hydraulic conductivity, generally  $1 \times 10^{-7}$  cm/sec or less. Weathering creates secondary permeability in the rock, greatly increasing its hydraulic conductivity to between  $1 \times 10^{-4}$  and  $1 \times 10^{-6}$  cm/sec. The weathered zone is therefore significantly more transmissive than the intact unweathered bedrock, and most groundwater flow takes place within this zone. In the bottom of the canyon, groundwater also occurs in the alluvial soil. The hydraulic conductivity of this material is generally between  $1 \times 10^{-4}$  and  $1 \times 10^{-3}$  cm/sec. The higher conductivity results from the thin sandy layers within the soil. The Cierbo and Neroly sandstones are very transmissive and together form an aquifer lying to the north of the landfill. This aquifer has been developed by the discharger for non-potable water supply. The hydraulic conductivity is estimated to be approximately  $1 \times 10^{-2}$  cm/sec.
29. The predominant groundwater flow paths in Keller Canyon are defined by the topography of the canyon. Precipitation recharges on the ridge tops and percolates through the alluvium and weathered bedrock towards the bottom of the canyon and north to the mouth of the canyon where the flows surface as the canyon narrows. Absent surface diversion to storm drains, these flows would be tributary to the aquifer in the Cierbo and Neroly formations underlying the Pittsburg plain. There is a slight downward gradient in the unweathered bedrock formations underlying the landfill site. There is a net upward direction of groundwater directly beneath the landfill and toe berm, into the underdrain system. Flow velocities in the soil and bedrock beneath the landfill and toe are very slow, in the range of 5 to 50 feet per year. The canyon floor is not a significant groundwater recharge area, however, and the only possible hydraulic connection between the canyon watershed and the underlying groundwater plain is through the mouth of the canyon. This confined area is monitored to determine the landfill's compliance with Title 27 requirements.
30. Groundwater in the bedrock and within the unconsolidated materials beneath the Keller Canyon Landfill area contains levels of TDS, sodium, chloride, and sulfate exceeding the federal secondary drinking water standards. The concentrations of nitrate and iron are also above the federal standards at some locations. The groundwater in this area is not considered suitable or potentially suitable for municipal or domestic water supply. Total dissolved solids concentrations range between 278 and 7,200 mg/l. The poorest quality water comes from deeper wells in the Kreyenhagen, where sodium and sulfate are the major ions and TDS is generally above 3,000 mg/l. Better quality water is found in the Cierbo/Neroly aquifer, which contains a mixed sodium/sulfate/bicarbonate type water with a TDS level generally less than 1,500 mg/l.

## BASIN PLAN AND BENEFICIAL USES

31. The Regional Board adopted a revised Water Quality Plan for the San Francisco (Basin Plan) in June 1995. This updated and consolidated plan represents the Board's master

water quality control planning document. The revised Basin Plan was approved by the State Water Resources Control Board and the Office of Administrative Law on July 20 and November 13, respectively, of 1995. A summary of regulatory provisions is contained in Title 23, California Code of Regulations, Section 3912. The Basin Plan defines beneficial uses and water quality objectives for Waters of the State, including both surface water and groundwater.

32. The existing and potential beneficial uses of the surface waters in the vicinity of the site include:

Livestock Water Supply  
Wildlife Habitat  
Warm Water Habitat

33. The existing and potential beneficial uses of the ground waters in the vicinity of the site include:

Municipal Water Supply  
Agricultural Supply  
Industrial Process Water Supply  
Industrial Service Supply

#### **MONITORING PROGRAMS**

34. Groundwater: The discharger conducts semiannual detection monitoring at 12 wells and one spring, in areas downgradient from the landfill. The discharger also performs semiannual monitoring of the blanket drain underlying the toe berm, and monthly detection monitoring of the discharge from the underdrain underlying the entire landfill. The detection-monitoring program relies mainly on volatile organic compounds to detect a release from the landfill. The concentrations of inorganic parameters already in the groundwater underlying the landfill preclude the use of these parameters to detect a release. The discharger also performs annual background monitoring at nine wells and one spring, in areas upgradient or cross-gradient from the landfill. Lastly, the discharger performs water level monitoring at all wells, and monthly flow rate monitoring at three springs and the drain discharge. This is described more fully in the Discharge Monitoring Program attached to this Order.
35. Leachate: The discharger measures the quantity of leachate generated weekly, and quarterly samples and analyses it. This is described more fully in the Discharge Monitoring Program attached to this Order.
36. Surface Water: The stormwater discharges from this site are monitored at five locations, during two major storm events, as required by the State Board's General Permit for Stormwater Discharges Associated with Industrial Activities. This is described more fully in the Discharge Monitoring Program attached to this Order.

37. Vadose Zone: Vadose Zone monitoring, as required by Section 20415 (Title 27) is not technically feasible at this site. Groundwater is currently in contact with the subdrain, effectively eliminating the vadose zone.

### **CALIFORNIA ENVIRONMENTAL QUALITY ACT**

38. The County of Contra Costa has certified a final Environmental Impact Report in accordance with the California Environmental Quality Act (CEQA, Public Resources Code Section 21000 et. seq.). The landfill could cause significant effects on water quality and might degrade the water quality unless appropriate mitigation measures were taken.
39. The Board has considered the Keller Canyon Landfill FEIR and the mitigation measures described therein relating to the protection of surface water and groundwater quality. In the Keller Canyon FEIR, various mitigation measures were recommended for the protection of surface water and groundwater quality:
40. The Board finds that water quality impacts were mitigated or avoided by a series of design measures to control erosion and assure containment of waste and leachate through the use of liners, leachate collection and removal systems, groundwater control and limits on the physical dimensions of the fill.
41. This update of the Waste Discharge Requirements is exempt from the provisions of the California Environmental Quality Act (CEQA) pursuant to Section 15308, Title 14 of the California Code of Regulations.

### **NOTIFICATIONS AND MEETING**

42. The Board has notified the discharger and interested agencies and persons of its intent to update these waste discharge requirements, and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
43. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED that the Keller Canyon Landfill Company, and their agents, successors and assigns shall meet the applicable provisions contained in Title 27, Division 2, Subdivision 1 of the California Code of Regulations and Division 7 of the California Water Code, and shall comply with the following:

**A. PROHIBITIONS**

1. The discharge of "hazardous waste" at this facility, except for waste that is hazardous due only to its friable asbestos content, is prohibited. For the purposes of this Order, the term "hazardous waste" is as defined in Section 2521 of Chapter 15.
2. The discharge of liquid or semi-solid waste to the landfill unit, (i.e. waste containing less than 50% solids by weight), other than dewatered sewage or water treatment sludge as described in Section 20220(c) of Title 27, is prohibited per Section 20200(3) of Title 27.
3. The discharge of wastes which have the potential to cause corrosion or decay, or otherwise reduce or impair the integrity of the containment structures or which, if mixed or commingled with other wastes in the unit, could produce a violent reaction (including heat or pressure, fire or explosion, or the production of toxic by-products) which:
  - a. requires a higher level of containment than provided by the unit,
  - b. are "restricted hazardous wastes", or
  - c. impairs the integrity of the containment structures,is prohibited per Section 20200(2)(b) of Title 27.
4. Neither the treatment nor the discharge of waste shall create a condition of pollution, contamination or nuisance as defined in Section 13050 of the California Water Code (CWC) (Health & Safety Code Section 5411, CWC Section 13263).
5. Wastes **shall not** be placed in any portion of a newly constructed phase until the Executive Officer receives and has approved the detailed plans relating to the design and construction of the containment structures. Construction of the containment features of all future phases must be in compliance with this Order and Title 27 requirements. Waste **shall not** be placed in any portion of a newly constructed phase until the Executive Officer receives and approves the supporting Final Construction Quality Assurance (CQA) documentation for the construction of the containment structures, and has received written certification by a California registered civil engineer or certified engineering geologist that the containment structures have been constructed in accordance with those plans.
6. Wastes **shall not** be placed in or allowed to contact ponded water from any source whatsoever.
7. Wastes **shall not** be disposed of in any position where they migrate from the disposal site 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 Section 20310(a) of Title 27.

8. The discharger, or any future owner or operator of this site, shall not cause the following conditions to exist in waters of the State at any place outside the waste management facility:

- a. Surface Waters

- Floating, suspended, or deposited macroscopic particulate matter or foam.
- Bottom deposits or aquatic growth.
- Adversely alter temperature, turbidity, or apparent color beyond natural background levels.
- Visible, floating, suspended or deposited oil or other products of petroleum origin.
- Toxic or other deleterious substances to be present in concentrations or quantities which may cause deleterious effects on aquatic biota, wildlife or waterfowl, or which 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

- The groundwater shall not be degraded as a result of the waste disposal operation.

9. Leachate from wastes and ponded water containing leachate or in contact with solid waste **shall not** be discharged to waters of the State or the United States.
10. Surface water collected from within the limits of waste disposal area **shall not** be discharged to waters of the State except as permitted by an NPDES Permit.

## **B. SPECIFICATIONS**

1. Water used during disposal operations shall be limited to a minimal amount necessary for dust suppression, fire control and earthfill moisture conditioning.
2. The site shall be protected from any washout or erosion of wastes or covering material and from inundation that could occur as a result of a 100-year, 24-hour precipitation event, or as the result of flooding with a return frequency of 100 years.
3. Surface drainage from tributary areas, and internal site drainage from surface and subsurface sources, shall not contact or percolate through wastes during disposal operations or during the life of the site. Surface drainage from tributary areas, and internal site drainage from surface sources, shall be collected using surface drainage ditches, and/or other conveyance and collection methods. The Stormwater General Permit issued by the State Board shall govern the discharge of these water discharges.

Surface drainage ditches shall be constructed and maintained to ensure that rainwater is diverted away from the disposal area

4. The discharger shall design, install and operate a Leachate Collection and Removal System, (LCRS), acceptable to the Executive Officer, for all of the landfill areas, such that no more than one-foot of hydraulic head of leachate remains on any portion of the landfill liner. The system shall be designed to collect and remove twice the potential maximum daily volume of leachate. The system shall be designed and operated to function without clogging (Section 20340 of Title 27), shall be inspected monthly, and any accumulated fluid shall be removed and disposed of to the leachate collection tank. The discharger shall submit reports, on an annual basis, which demonstrate that the leachate control system is functioning properly.

Measures shall be taken to ensure that leachate in the leachate collection system can flow freely into any collection sump. Measures shall also be taken to assure that the LCRS will remain operational throughout the closure/post-closure maintenance period of the landfill.

5. The discharger shall ensure that all engineered structures (including, but not limited to, containment structures) of any part of the landfill shall have a foundation capable of providing support for the structures, and capable of withstanding hydraulic pressure gradients to prevent failure due to settlement, compression, or uplift and all effects of ground motions, from at least the maximum credible earthquake event at the San Andreas and Clayton fault zones.
6. The existing containment, drainage, and monitoring systems at the facility shall be maintained as long as the wastes and leachate pose a threat to water quality. The discharger shall continue the water quality-monitoring program, pursuant to Section 20410 of Title 27, as long as a threat of a release from the landfill exists.
7. As portions of the landfill are closed, the exterior surfaces shall be graded to promote lateral runoff of precipitation and to prevent ponding and infiltration of water. The final cover for the landfill will be constructed on 4:1 (horizontal/vertical) slopes with 25-foot wide benches at 25-foot vertical intervals. This allows for a 100-foot horizontal distance between each bench and an overall slope angle of 5:1 (horizontal/vertical). In addition, all completed disposal areas shall be covered with a minimum of four feet of cover to include a two-foot structural base; a one-foot low permeability clay barrier; and a one-foot vegetative soil. The final cover must also meet all other applicable requirements as described in Title 27.
8. Slopes within and adjacent to the disposal area shall be maintained in such a manner as to minimize the potential for sliding by control of grades, drainage or other means. Any slides shall be stabilized as soon as possible, and the Regional Board shall be notified immediately. All lined and fill slopes shall not have a grade exceeding 3:1 (horizontal/vertical).

9. The discharger shall operate the waste management facility so as to isolate waste from waters of the State and so as to prevent a statistically significant difference from existing in the concentrations of monitoring parameters (defined in Section 20420 of Title 27) in waters passing through the point of compliance, as defined in Section 20405, Title 27. The discharger shall operate the waste management facility so as to not exceed the "Water Quality Protection Standards" (WQPS) of the Discharge Monitoring Program.
10. In the event of a measurably significant evidence of a release of a constituent of concern beyond the Point of Compliance, or where there is significant physical evidence of a release from the landfill, the site begins an Evaluation Monitoring Program under Section 20425 of Title 27. The discharger shall then institute a corrective action program under Section 20430 of Title 27, when the Board determines that the assessment of the nature and extent of the release and the design of a Corrective Action Program have been satisfactorily completed, and the Board approves the application for an amended report of waste discharge for corrective action submitted by the discharger during the evaluation monitoring program.
11. The discharger shall install any additional groundwater and leachate monitoring devices required to fulfill the terms of any future Discharge-Monitoring Program issued by the Executive Officer.
12. Designated wastes, Non-hazardous solid wastes, Asbestos and Medical wastes may be disposed of provided that all regulations and provisions of the California Integrated Waste Management Board, California Department of Toxic Substances Control, local health agencies and County Land Use Permit requirements are complied with. Hazardous wastes may not be disposed of or stored at this site.
13. The minimum criteria for the landfill liner shall include, but not be limited to: a one foot thick granular underdrain, overlain by two feet of low permeability clay (with a hydraulic conductivity not more than  $1 \times 10^{-7}$  cm/sec), overlain by an 80-"mil" thick HDPE liner, overlain by a cushion geotextile, overlain by a one-foot thick dendritic LCRS designed and operated to prevent the development of hydraulic head on the liner, overlain by a filter geotextile, and lastly overlain by a one-foot thick operations layer. However, upon approval by the Executive Officer, the one-foot thick granular blanket underdrain may be deleted in those areas where such an underdrain is not necessary as an engineered alternative, pursuant to Title 27, Section 20080(b), to the prescribed separation between wastes and groundwater required by Title 27, Section 20240(c).
14. All reports pursuant to this Order shall be prepared under the supervision of a registered civil engineer, California registered geologist or certified engineering geologist.
15. Interim cover shall be maintained over all waste, at all times, except for the working face of the disposal area of the landfill, or as provided for by the performance standards adopted by the California Integrated Waste Management Board.

16. Methane and other landfill gases shall be adequately vented, removed from the landfill units, or otherwise controlled to prevent the danger of explosion, adverse health effects, nuisance conditions, or the impairment of beneficial uses of water due to migration of gas through the vadose (unsaturated) zone.
17. Interim and final leachate sumps and berms shall be designed and constructed to withstand the maximum credible earthquake at the facility.
18. Landfill leachate shall be discharged to an aboveground, secondarily contained, enclosed tank. Recirculation of leachate and landfill gas condensate shall be limited to areas of the landfill equipped with a composite liner and leachate collection and recovery system.
19. This Board considers the property owner and site operator to have continuing responsibility for correcting any problems which arise in the future as a result of this waste discharge or related operations during the active life and post-closure maintenance period.
20. 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.
21. The discharger shall, at all times, properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the discharger to achieve compliance with 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)).

### **C. PROVISIONS**

1. The discharger shall comply with all Prohibitions, Specifications, and Provisions of this Order immediately upon adoption of this Order. All required submittals must be acceptable to the Executive Officer.
2. The discharger must comply with all conditions of these waste discharge requirements. Violations may result in enforcement actions, including Regional 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 Board (CWC Sections 13261, 13267, 13263, 13265, 13268, 13300, 13301, 13304, 13340, 13350).
3. The discharger shall submit semi-annual monitoring reports, to be submitted no later than October 31 and April 30 of each year in accordance with the attached Updated Discharge



7. The discharger shall submit a Final Cover Construction Plan which shall include, but is not limited to, the following: a schedule for completion of all construction field activities; a CQA testing frequencies for in-place soils and any borrow materials; final cover design drawings; details of landfill gas and leachate well contingencies during cover construction; proposed final landfill gas and leachate well configuration with system changes.

**PLAN DUE DATE:** 180 days prior to anticipated receipt of last waste, or 180 days prior to the anticipated reaching of final elevation of any portion of the landfill.

8. The dischargers shall submit a letter report to the Board detailing the repair and maintenance activities that need to be completed prior to the commencement of the following rainy season. This letter shall also include a schedule for repair and maintenance activities and monitoring during the next 12 months. Repair and maintenance estimates shall be based on rainy season inspections conducted throughout the winter as required in the attached Discharge Monitoring Plan.

**REPORT DUE DATE:** July 31 yearly.

9. The discharger shall maintain, in conjunction with this Board and the California Integrated Waste Management Board, an **Irrevocable Closure Fund**, pursuant to Section 22207 of Title 27. The Closure Fund must provide sufficient funds to properly close the landfill and for the post-closure monitoring and maintenance of the site. For the purposes of planning the amount of the fund, the discharger shall assume a post-closure period of at least 30 years. However, the post-closure maintenance period shall extend as long as the wastes pose a threat to water quality.
10. If a groundwater contamination or potential contamination is detected, the discharger shall give immediate notification to the San Francisco Bay Regional Water Quality Control Board, the Local Enforcement Agency (LEA), and the Department of Health Services (DOHS). The discharger shall initiate its corrective action plan to stop and contain the migration of pollutants from the existing landfill.
11. The discharger shall file with the Regional Board Discharge-Monitoring reports performed according to any Discharge Monitoring Program issued by the Executive Officer.
12. The discharger shall comply with all applicable provisions of Title 27 that are not specifically referred to in this Order.
13. The discharger shall remove and relocate any wastes that are discharged at this site in violation of these requirements.
14. The discharger shall file with this Board a report of any material change or proposed change in the character, location, or quantity of the waste discharge. For the purpose of

these requirements, this includes any proposed change in the boundaries of the disposal areas or the ownership of the site.

15. The discharger shall maintain a copy of this Order at the site so as to be available at all times to site operating personnel.
16. In the event that the discharger-owned property adjacent to the landfill is developed into residential dwellings, the discharger will notify prospective home purchasers of the presence of the landfill.
17. In accordance with California Water Code Section 13267 (c), the discharger shall, at any time, permit the Regional Board or its authorized representative, upon presentation of credentials:
  - a. Immediate entry upon the premises on which wastes are located or in which any required records are kept.
  - b. Access to copy any records required to be kept under the terms and conditions of this Order.
  - c. Inspection of any treatment equipment, monitoring equipment, or monitoring method required by this Order or by any other California State agency.
  - d. Sampling of any discharge or groundwater governed by this Order.
18. The discharger shall immediately notify the Board of any flooding, equipment failure, slope failure, or other change in site conditions that could impair the integrity of waste or leachate containment facilities or precipitation and drainage control structures. Any such failure shall be promptly corrected after approval of the method and schedule by the Executive Officer.
19. The discharger shall notify the Regional Board at least 180 days prior to beginning any intermediate or final closure activities. This notice shall include a statement that all closure activities will conform to the most recently approved closure plan and that the plan provides for site closure in compliance with all applicable regulations.
20. The discharger shall submit, within 90 days after the closure of any portion of the landfill, a closure certification report that documents that the area has been closed according to the requirements of this Order and Title 27. The discharge shall certify under penalty of perjury that all closure activities were performed in accordance with the most recently approved closure plan and in accordance with applicable regulations.
21. This Order does not convey any property rights of any sort or any exclusive privileges. These requirements do not authorize commission of any act causing injury to the property of another or of the public; do not convey any property rights; do not remove liability under Federal, State or Local laws; and do not authorize the discharge of wastes without appropriate permits from other agencies or organizations, nor do they create a vested right for the discharger to continue the waste discharge (CWC Sections 13263 (g)).

22. This Order is subject to Board review and updating, as necessary, to comply with changing State or Federal laws, regulations, policies, or guidelines; changes in the Board's Basin Plan; or changes in the discharge characteristics.
23. The discharger shall file a technical report on any changes in site occupancy or ownership associated with the property described in this Order.
24. Provisions of these waste discharge requirements are severable. If any provisions of these requirements are found to be invalid, the remainder of these requirements shall not be affected.
25. Where the discharger becomes aware that it failed to submit any relevant facts in a Report of Waste Discharge or submitted incorrect information in a Report of Waste Discharge or in any report to the Regional Board, it shall promptly submit and/or correct such facts or information (CWFC Sections 13260 and 13267).
26. 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 probably will be, the discharger shall report such discharge to the Regional Board by calling (510) 622-2300 during regular office hours (Monday through Friday, 8 – 5). A written report shall be filed with the Board within five working days. The report shall describe: the nature of the hazardous substance, estimated quantity involved, duration of the incident, cause of the release, estimated size of the affected area, nature of the effect, corrective actions taken or planned, schedule of corrective actions planned, and person/agencies notified. This reporting is in addition to reporting to the Office of Emergency Services required pursuant to the Health and Safety Code.
27. The discharger shall report any noncompliance that may endanger human health or the environment. Any such information shall be provided orally to the Executive Officer within 24 hours from the time the discharger becomes aware of the circumstances. A written submission shall also be provided within five 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 (CWC Sections 13263 and 13267).
28. The discharger shall maintain in good working order and operate as efficiently as possible any facility or control system installed to achieve compliance with the requirements of this Order.
29. All samples shall be analyzed by State-certified laboratories, or laboratories accepted by the Board using approved EPA methods for the type of analysis to be performed. All laboratories shall maintain quality assurance/quality control records for Board review.

This provision does not apply to analyses that can only be reasonably performed onsite (e.g. temperature).

30. The discharger shall provide the following technical reports not less than two months before initiating any construction activity, including excavation or grading, outside of the Phase I area for subsequent phases of the landfill.
  - a. Comprehensive slope stability analyses, including analysis of seismic stability for all containment structures, and including documentation of the basis for selecting the angle of internal friction and the coefficient of cohesion to be used, for the remaining phases of construction. The Executive Officer shall approve the discharger's selections before the discharger undertakes the slope stability analysis required by this paragraph.
31. Board Order No. 91-052, as amended by Order No. WQ 92-06 of the State Water Resources Control Board, is hereby rescinded.

I, Loretta K. Barsamian, 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 April 18, 2001.

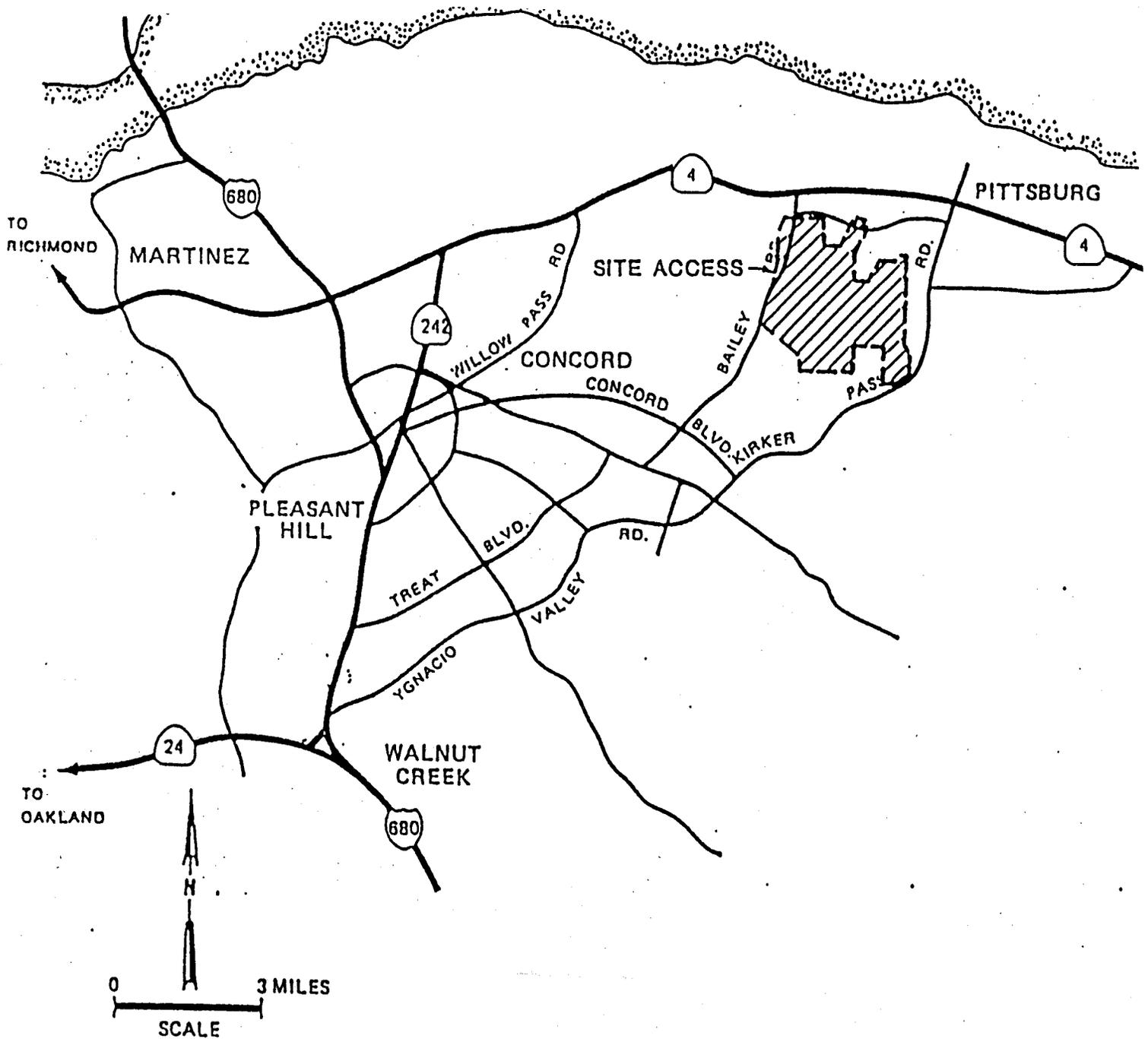


Loretta K. Barsamian  
Executive Officer

Attachments: Figures 1 & 2, Site location Site Map  
Self-Monitoring Program  
Tables A-1 to A-4, Monitoring points, parameters & frequency

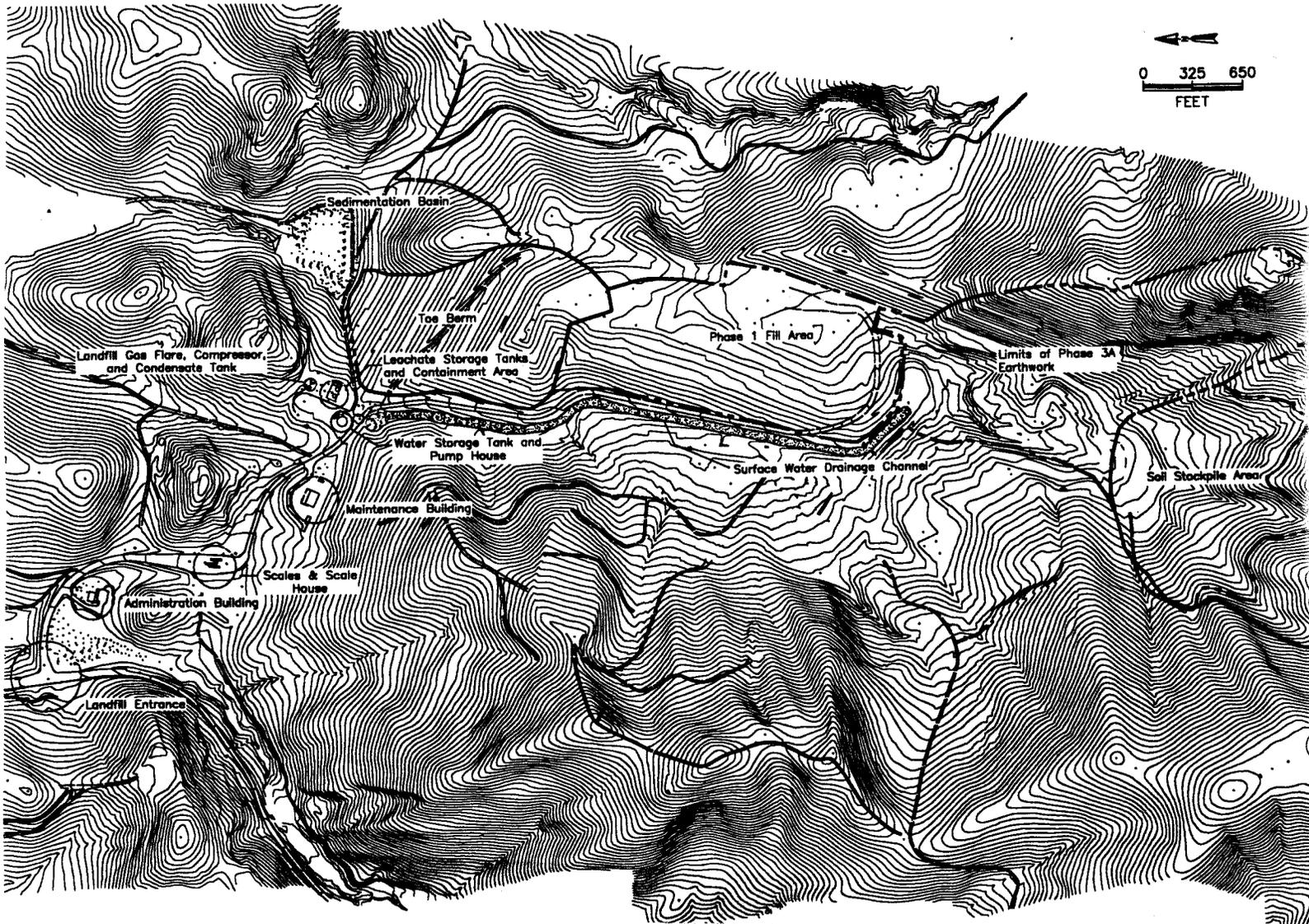
**FIGURE 1**

**SITE LOCATION MAP  
KELLER CANYON LANDFILL  
PITTSBURG, CONTRA COSTA COUNTY**



# FIGURE 2

SITE MAP  
KELLER CANYON LANDFILL  
PITTSBURG, CONTRA COSTA COUNTY



CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM

FOR

KELLER CANYON LANDFILL COMPANY

CLASS II SOLID WASTE DISPOSAL SITE

CONTRA COSTA COUNTY

ORDER NO. 01-040

CONSISTS OF

PART A

AND

PART B

## **DISCHARGE MONITORING AND REPORTING REQUIREMENTS**

### **A. GENERAL**

For discharges of waste to land, water quality monitoring is required pursuant to the California Code of Regulations, Division 2, Title 27, Subdivision 1, Chapter 3, Subchapter 3, Sections 20380 through 20435. The principal purposes of a discharge-monitoring program are: (1) to document compliance with waste discharge requirements and prohibitions established by the Board, (2) to facilitate self-policing by the waste 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. SAMPLING, ANALYTICAL METHODS AND OBSERVATIONS**

The Regional Board may require monitoring of any of the following media pursuant to Title 27 requirements:

1. Groundwater
2. Surface water (streams, stormwater runoff, etc.)
3. Leachate
4. Landfill gas

Sample collection, storage, and analyses shall be performed according to most recent version of EPA Standard Methods and in accordance with an approved sampling and analysis plan. Water and waste analyses shall be performed by a California State approved laboratory for the required analyses. The director of the laboratory whose name appears on the certification shall supervise all analytical work in his/her laboratory and shall sign all reports of such work submitted to the Regional Board. All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurements.

The reporting of standard observations refers to the following:

#### **a. Receiving waters**

1. Floating and suspended materials of waste origin: presence or absence, source, and size of affected area.
2. Discoloration and turbidity: description of color, source, and size of affected area.
3. Evidence of odors, presence or absence, characterization, source, and distance of travel from source.
4. Evidence of beneficial use: presence of water associated with wildlife.
5. Flow rate.

6. Weather conditions; wind direction and estimated velocity, total precipitation.

b. Perimeter of the waste management unit

1. Evidence of liquid leaving or entering the waste management unit, estimated size of affected area and flowrate (show affected area on map)
2. Evidence of odors, presence or absence, characterization, source, and distance of travel from source.
3. Evidence of erosion and/or daylighted refuse.

c. The waste management unit

1. Evidence of ponded water at any point on the waste management facility.
2. Evidence of odors, presence or absence, characterization, source, and distance of travel from source.
3. Evidence of erosion ad/or daylighted refuse.
4. Standard Analysis and measurements are listed on Table A (attached).

C. **REPORTING REQUIREMENTS**

Reporting responsibilities of waste dischargers are specified in Sections 13225(a), 13267(b), 13383, and 13387(b) of the California Water Code and this Regional Board's Resolution No.73-16 and Order No. 93-113. The reporting frequency and due dates for monitoring reports will be established by the Regional Board. Each monitoring report shall include the following information:

1. **Transmittal Letter:** A letter transmitting the essential points in each self-monitoring report shall accompany each report. The letter shall discuss any violations during the reporting period, and actions taken or planned for correcting the violations. The letter shall also certify the completion of all monitoring requirements. Monitoring reports and the letter transmitting the monitoring reports shall be signed by a principal executive officer at the level of vice president or his duly authorized representative, and shall include a statement by the official, under penalty of perjury, that to the best of the signer's knowledge the report is true, complete, and correct.
2. Each monitoring report shall include a compliance evaluation summary. The summary shall contain:
  - 1) A graphic description of the velocity and direction of groundwater flow under/around the waste management unit, based upon the past and present water level elevations and pertinent visual observations.

- 2) A summary and certification of completion of all standard observations for the waste management unit, the perimeter of the waste management unit, and the receiving waters.
- 3) The quantity and types of wastes disposed of during the past quarter, and the locations of the disposal operations.
- 4) A map or aerial photograph shall accompany each report showing observation and monitoring station locations.
- 5) Laboratory statements of results of analyses specified in Part B must be included in each report. The director of the laboratory whose name appears on the laboratory certification shall supervise all analytical work in his/her laboratory and shall sign all reports of such work submitted to the Board.

The methods of analyses and detection limits must be appropriate for the expected concentrations. Specific methods of analyses must be identified. If methods other than EPA approved methods or Standard Methods are used, the exact methodology must be submitted for review and approval by the Executive Officer prior to use.

In addition to the results of the analyses, laboratory quality control/quality assurance (QA/QC) information must be included in the monitoring report. The laboratory QA/QC information should include the method, equipment and analytical detection limits; the recovery rates; an explanation for any recovery rate that is less than 80%; the results of equipment and method blanks; the results of spiked and surrogate samples; the frequency of quality control analysis; and the name and qualifications of the person(s) performing the analyses.

- 6) An evaluation of the effectiveness of the leachate monitoring/ control facilities, which includes an evaluation of leachate buildup within the disposal units, a summary of leachate volumes removed from the units, and a discussion of the leachate disposal methods utilized.

### 3. Contingency Reporting:

- a. A report shall be made by telephone of any seepage from the disposal area immediately after it is discovered. A written report shall be filed with the Board within five days. This report shall contain the following information:
  - 1) a map showing the location(s) of discharge;
  - 2) approximate flow rate;
  - 3) nature of effects; i.e. all pertinent observations and analyses; and
  - 4) corrective measures underway or proposed.
- b. A report shall be made in writing to the Board within seven days of determining that a statistically significant difference occurred between a self- monitoring sample set and a WQPS. Notification shall indicate what WQPS(s) have been exceeded. The discharger shall immediately resample at the compliance point(s) where this difference has been found and analyze another sample set of at least four portions split in the laboratory from the source sample.
- c. If resampling and analysis confirms the earlier finding of a statistically significant difference between self-monitoring results and WQPS(s) the discharger must submit to the an amended Report of Waste Discharge as specified in Section 20420 for establishment of an Evaluation Monitoring program meeting the requirements of Section 20425 of Title 27.
- d. Within 180 days of determining statistically significant evidence of a release, submit to the Regional Board an engineering feasibility study for a Corrective Action Program necessary to meet the requirements of Section 20430. At a minimum, the feasibility study shall contained a detailed description of the corrective action measures that could be taken to achieve background concentrations for all constituents of concern.

### 4. Appendices

The method and time of water level measurement, the type of pump used for purging, pump placement in the well; method of purging, pumping rate, equipment and methods used to monitor field pH, temperature, and conductivity during purging, calibration of the field equipment, results of the pH, temperature conductivity and turbidity testing, well recovery time, and method of disposing of the purge water.

Type of pump used, pump placement for sampling, a detailed description of the sampling procedure; number and description of equipment, field and travel blanks; number and description of duplicate samples; type of sample containers

and preservatives used, the date and time of sampling, the name and qualifications of the person actually taking the samples, and any other observations.

A boring log shall be submitted for each sampling well established for this monitoring program, as well as a report of inspection or certification that each well has been constructed in accordance with the construction standards of the Department of Water Resources. These shall be submitted within 30 days after well installation.

#### **D. ANNUAL REPORTING**

By April 30 of each year the discharger shall submit an annual report to the Board covering the previous calendar year. This report shall contain:

- a. Tabular and graphical summaries of the monitoring data obtained during the previous year.
- b. A comprehensive discussion of the compliance record, and the corrective actions taken or planned which may be needed to bring the discharger into full compliance with the waste discharge requirements.
- c. A map showing the area, if any, in which filling has been completed during the previous calendar year.
- d. A written summary of the groundwater analyses indicating any change in the quality of the groundwater.
- e. An evaluation of the effectiveness of the leachate monitoring/ control facilities, which include an evaluation of leachate buildup within the disposal units, a summary of leachate volumes removed from the units, and a discussion of the leachate disposal methods utilized.

#### **E. SCHEDULE OF SAMPLING, ANALYSIS, AND OBSERVATIONS**

Written self-monitoring reports shall be filed by the April 30 and October 31 of each year. In addition an annual report shall be filed as indicated by April 30 of each year.

#### **F. RECORDS TO BE MAINTAINED**

Written reports shall be maintained by the discharger, and shall be retained for a minimum of five years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge or when requested by the Board. Such records shall show the following for each sample:

1. Identity of sample and sample station number.
2. Date and time of sampling.
3. Date and time that analyses are started and completed, and name of the personnel performing the analyses.
4. Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used. A reference to a specific section of a reference required in Part A, Section B is satisfactory.
5. Calculation of results.
6. Results of analyses, and detection limits for each analyses.

## Part B

### 1. DESCRIPTION OF OBSERVATION STATIONS AND SCHEDULE OF OBSERVATIONS

#### A. WASTE MONITORING – Observe Monthly

1. Record the total volume and weight of refuse in cubic yards and tons disposed at the site during each month showing locations and dimensions on a sketch or map.
2. Record a description of waste stream to include percentage of waste type, i.e., Residential, Commercial, Industrial or Construction/ Demolition debris.
3. Record location and aerial extent of disposal of each waste type during the month.

#### B. ON-SITE OBSERVATIONS

**Stations V-1 to V-10:** Weekly Standard observations of the waste disposal area.

**Stations P-1 to P-10:** Weekly standard observations of the landfill perimeter.

**Receiving Water:** Monthly standard observations at receiving water stations.

#### C. SURFACE, GROUND WATER AND LEACHATE MONITORING

The discharger shall sample surface water, groundwater, leachate, surface springs and the underdrains as detailed in Table A-1 to A-4.

#### D. FACILITIES MONITORING

The discharger shall inspect all facilities to ensure proper and safe operation once per quarter and report annually. The facilities to be monitored shall include, but not be limited to:

- a. Leachate Collection and Removal System
- b. Sedimentation Pond
- c. Leachate Tank
- d. Perimeter diversion channels
- e. Leachate Management procedures and containment capacity.
- f. Underdrain system.

E. REPORT DUE DATES

Reports shall be due on the following schedule:

**FIRST SEMI-ANNUAL REPORT  
& ANNUAL REPORT:** April 30 of each year  
**SECOND SEMI-ANNUAL REPORT:** October 31 of each year

I, Loretta K. Barsamian, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedures set forth in this Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in this Board's Order No. 01- .
2. Is effective on the date shown below.
3. May be reviewed or modified at any time subsequent to the effective date, upon written notice from the Executive Officer.

  
Loretta K. Barsamian  
Executive Officer

Date Ordered: April 18, 2001

Attachment: Tables A-1 to A-4, Monitoring points, parameters & frequency

**TABLE A-1 – GROUNDWATER DETECTION MONITORING**

STATION	SAMPLING FREQUENCY	PURPOSE	ANALYTICAL PARAMETERS
MW-1	Semi-Annual	Detection	Monitoring parameters (1A)
MW-2	Semi-Annual	Detection	Monitoring parameters (1A)
MW-3	Semi-Annual	Detection	Monitoring parameters (1A)
MW-4(s)	Semi-Annual	Detection	Monitoring parameters (1A)
MW-4(d)	Semi-Annual	Detection	Monitoring parameters (1A)
MW-5	Semi-Annual	Detection	Monitoring parameters (1A)
MW-5(m)	Semi-Annual	Detection	Monitoring parameters (1A)
MW-11(s)	Semi-Annual	Detection	Monitoring parameters (1A)
MW-11(m)	Semi-Annual	Detection	Monitoring parameters (1A)
MW-12(m)	Semi-Annual	Detection	Monitoring parameters (1A)
MW-13	Semi-Annual	Detection	Monitoring parameters (1A)
KL-1R	Semi-Annual	Detection	Monitoring parameters (1A)
SFC-0	Semi-Annual	Detection	Monitoring parameters (1A)
Underdrain	Monthly	Detection	Monitoring parameters (1A)
Blanket drain	Semi-Annual	Detection	Monitoring parameters (1A)

(1A) VOCs (EPA 8260 plus MTBE), pH, TDS, Chloride, Sulfate, Nitrate, Temperature, Electrical Conductivity, Turbidity, Alkalinity. **Every 5 years**, also analyze for the following additional constituents of concern: semi-volatile compounds (EPA 8270), metals (California Title 22 list), cyanide, TKN, COD and ammonia.

**TABLE A-2 – GROUNDWATER BACKGROUND MONITORING**

<b>STATION</b>	<b>SAMPLING FREQUENCY</b>	<b>PURPOSE</b>	<b>ANALYTICAL PARAMETERS</b>
MW-6	Annual	Background	Monitoring Parameters (1B)
MW-6(d)	Annual	Background	Monitoring Parameters (1B)
MW-7S	Annual	Background	Monitoring Parameters (1B)
MW-7D	Annual	Background	Monitoring Parameters (1B)
MW-8	Annual	Background	Monitoring Parameters (1B)
MW-9	Annual	Background	Monitoring Parameters (1B)
MW-10	Annual	Background	Monitoring Parameters (1B)
KL-10A	Annual	Background	Monitoring Parameters (1B)
KL-12	Annual	Background	Monitoring Parameters (1B)
LR-1	Annual	Background	Monitoring Parameters (1B)

(1B) VOCs (EPA 8260 plus MTBE), pH, TDS, Chloride, Sulfate, Nitrate, Temperature, Electrical Conductivity, Turbidity, Alkalinity

**TABLE A-3 – OTHER MONITORING**

<b>STATION</b>	<b>SAMPLING FREQUENCY</b>	<b>ANALYTICAL PARAMETERS</b>
Leachate	Quarterly	Monitoring Parameters (2)
Leachate	Daily	Flowrate
Condensate	Quarterly	Monitoring Parameters (2)
Underdrain	Monthly	Flowrate
Blanket drain	Monthly	Flowrate
SFC-0	Monthly	Flowrate
LR-1	Monthly	Flowrate
LR-2	Monthly	Flowrate
I-1	Monthly	Displacement
I-2R	Monthly	Displacement
I-3	Monthly	Displacement
I-4	Monthly	Displacement
I-6	Monthly	Displacement
Surface Water Stations	2 storm events	Monitoring Parameters (3)

Monitoring parameters (2): Ammonia, VOCs (EPA 8260 plus MTBE), Metals (RCRA Appendix I). **In December of every year**, leachate is to be sampled for RCRA Appendix II list.

Monitoring parameters (3): To be sampled, per SWRCB General Industrial Activities Storm water Permit, for pH, TSS, electrical conductivity, TOC, TDS, COD, mercury and semi-volatile organic compounds (EPA 8270).

**TABLE A-4 WATER LEVEL MEASUREMENT**

<b>STATION</b>	<b>FREQUENCY</b>
MW-1	Monthly
MW-2	Monthly
MW-3	Monthly
MW-4(s)	Monthly
MW-4(d)	Monthly
MW-5	Monthly
MW-5(m)	Monthly
MW-5(d)	Monthly
MW-11S	Monthly
MW-11M	Monthly
MW-11D	Monthly
MW-12M	Monthly
MW-12D	Monthly
MW-13	Monthly
KL-1R	Monthly
MW-6	Quarterly
MW-6D	Quarterly
MW-7S	Quarterly
MW-7D	Quarterly
MW-8	Quarterly
MW-9	Quarterly
MW-10	Quarterly
KL-10A	Quarterly
KL-12	Quarterly
CH-1	Quarterly
P-11(s)	Quarterly
P-11(d)	Quarterly
P-12(s)	Quarterly
P-12(d)	Quarterly
P-13(s)	Quarterly
P-13(d)	Quarterly
P-14	Quarterly
P-15	Quarterly