

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

ORDER NO. 92-087
WASTE DISCHARGE REQUIREMENTS
AND REVISION OF ORDER NOS. 76-070 and 87-047 FOR:

BROWNING-FERRIS INDUSTRIES
CORINDA LOS TRANCOS LANDFILL,
CLASS III SOLID WASTE DISPOSAL SITE
HALF MOON BAY, SAN MATEO COUNTY

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

1. Browning-Ferris Industries (hereinafter called the discharger) owns and operates a Class III municipal refuse disposal site in Corinda Los Trancos Canyon, San Mateo County, located approximately 3 miles northeast of the City of Half Moon Bay, as shown on Figures 1 and 2. Figures 1 and 2 are incorporated herein and made part of this Order.
2. The discharger submitted a Report of Waste Discharge (ROWD) on September 30, 1991, for the purpose of updating the site's Waste Discharge Requirements to include a 140 acre expansion of the existing landfill. The discharger is currently permitted to operate on 73 acres (called the existing landfill) of their approximately 2800 acre property. The expansion will include a 40 acre overlap of the existing landfill, and is expected to provide approximately 25.5 million cubic yards of additional waste capacity to the existing facility (using a 5:1 waste to cover ratio). The discharger estimates this will provide an additional service life of 23 years. The ROWD, including all referenced materials is hereby incorporated as part of this Order. The discharger has also submitted addendums to the ROWD dated March 20, 1992, April, 1992, May 1, 1992, and May 11, 1992 that are hereby incorporated as part of this Order.
3. The Board on June 15, 1976, adopted Order No. 76-070, prescribing Waste Discharge Requirements for the disposal of Class III waste (formerly called Class II-2 waste) in the upper portion of the Corinda Los Trancos Canyon. Order No. 76-070 was updated on May 20, 1987, with the adoption of Order No. 87-047, in accordance with Title 23, Division 3, Chapter 15 of the California Code of Regulations (hereinafter called Chapter 15).
4. Sections 2533(b), (c), (d), and (e) of Chapter 15 states that new Class III and existing Class II-2 shall be sited where soil characteristics, distance from groundwater, and other

factors will ensure no impairment of beneficial uses of surface water or of groundwater beneath or adjacent to the landfill. These factors have been evaluated as indicated below:

- a. size of the waste management unit [Finding No.2];
- b. permeability and transmissivity of underlying soils [Finding No.14];
- c. depth to groundwater and variations in depth to groundwater [Finding No.14];
- d. background quality of groundwater [Finding No.16];
- e. current and anticipated use of groundwater [Finding No.17];
- f. annual precipitation [Finding No.13];
- g. potential for ground rupture [Finding No. 12]; and
- h. potential for rapid geologic change [Finding Nos. 18, 19, 20, and 21]

WASTES AND THEIR CLASSIFICATION

5. The discharger proposes to continue to discharge the following wastes to the landfill:
 - a. Municipal solid waste - classified as "nonhazardous solid wastes" or "inert wastes" using the criteria set forth in Chapter 15.
 - b. Nonhazardous automobile shredder waste - consistent with a Board staff letter to the discharger dated December 6, 1990.
 - c. Friable asbestos - consistent with Title 22 of the Health and Safety Code (Section 25143.7).

The discharger also proposes discharging municipal sewage sludge to the landfill pursuant to Section 2523(c) of Chapter 15. Provision 9 of this Order requires the discharger to submit a Sludge Management Plan prior to accepting sludge for disposal at the landfill.

6. Leachate from the landfill's leachate collection and recovery system will be recirculated to the landfill or sent off-site to the South Bayside System Authority's sewage treatment plant in Redwood City. Gas condensate from the landfill's methane gas recovery system will be placed in an above ground tank for

temporary storage prior to on-site recirculation or trucking off-site to a treatment/disposal facility approved by the Board. Effective October 1, 1993, recirculation of leachate and gas condensate will be limited to areas of the landfill equipped with a composite liner and leachate collection and recovery system.

SITE DESCRIPTION

7. The site is located in portions of Sections 9, 10, and 16 of Township 5 South, Range 5 West, Mount Diablo Base Meridian.
8. Approximately 7.5 million cubic yards of waste have been deposited at the existing landfill since operation began in 1976. The existing landfill is believed to be underlain by a 2 foot thick low permeability base of unknown areal extent. Refuse fill of the existing landfill is limited to the upper portions of the canyon.
9. Corinda Los Trancos Canyon is a north-trending canyon, approximately 2.5 miles long, and 0.35 mile wide with natural side slopes averaging about 20 to 50 percent. Due to clearing and excavation operations near the existing landfill, there are steeper slopes approaching 100 percent.

GEOLOGY

10. The surface and subsurface geology at the site has been evaluated based on field mapping, literature review, a seismic refraction survey, and review of the geologic logs for 70 borings (totalling approximately 3800 feet of drilling). Based on this evaluation the stratigraphy and structure at the site is summarized in Findings 11. and 12. below.
11. STRATIGRAPHY - The landfill expansion area is underlain by granitic rocks, alluvial and colluvial deposits, and landslide and debris flow deposits. The primary geologic units at the site are as follows:

Alluvial Stream Deposits (Qal) consist of poorly- to well-graded gravel, sand, silt, and clay. These deposits range from a few feet thick in the narrow side valleys to approximately 100 feet thick in the central parts of the main valley. The alluvial deposits underlying the canyon floor are susceptible to liquefaction (See Finding 21.).

Uncemented Colluvial Deposits (Qc) mantle most of the slopes at the site. These deposits accumulated by slow movement of soil and weathered rock debris and consist of poorly graded to well graded cobbles, gravel, sand, silt and clay.

Fan Deposits (Qf) form broad cone-shaped fans at the confluence of steep ravines and alluviated valley floors. These deposits consist of poorly graded to well graded cobbles, gravel, sand, silt, and lesser amounts of clay than the alluvial deposits.

Landslide deposits (Qls) include shallow translational / rotational earthflows, translational block-slides, and rotational slumps. None of the observed landslides are considered active. However, the landslides may reactivate if subjected to heavy rains, seismic shaking, or undercutting during excavation. The slope stability analyses are discussed in Findings 18, 19, and 20, below.

Granitic Rocks of Montara Mountains (Kgr) underlie the surficial deposits at the site. This formation is subdivided into three weathering profiles. From the surface down they are: (1) deeply weathered bedrock (Kgr1), (2) moderately weathered bedrock (Kgr2), and (3) slightly weathered to fresh bedrock (Kgr3). The combined thickness of the deeply and moderately weathered bedrock is generally less than 30 feet.

12. **STRUCTURE** - The primary structural elements evaluated in the landfill expansion area were Holocene faults and shear zones.

Holocene active faults are those which show evidence of displacement in the past 11,000 years. There are no known Holocene active faults within the limits of the proposed landfill expansion. The closest known Holocene fault is the San Andreas Fault, located approximately 3 miles northeast of the site. The discharger has conducted analyses to evaluate the potential for seismic damage to the waste containment structure (See Finding Nos. 20. and 21.).

Shear zones are defined as fractures that show evidence of minor displacement and generally contain pulverized material along their surfaces. Several shear zones were mapped in cut slopes in the landfill expansion area. Since surficial deposits exposed in the cut slopes are not displaced, the shear zones were not considered active faults.

SURFACE WATER and GROUNDWATER

13. **Surface Water:** The Corinda Los Trancos Basin encompasses 572 acres within the lower portion of the 7,590 acre Pilarcitos Creek Basin. The entire landfill site drains into the Corinda Los Trancos Creek, which, in turn, drains south into the west-flowing Pilarcitos Creek. In 1984, Corinda Los Trancos Creek was routed around the perimeter of the existing landfill into a settling pond, which discharges back into the natural creek drainage downgradient of the landfill. Prior to the diversion, the creek flowed through a culvert beneath the

refuse. Groundwater still collects in the old culvert beneath the existing landfill, and is currently discharged to clay lined ponds and used for dust abatement at the site. Corinda Los Trancos Creek is characterized as an intermittent stream on the upper tributary area, and perennial stream in the lower tributary area. Evaluation of flows for the drainage shed area of the landfill expansion indicates that postproject flows will be essentially the same as the preproject flows.

The mean annual precipitation for the site was calculated to be 36.3 inches. The 100 year, 24 hour storm event was estimated to be 8.2 inches and the probable maximum precipitation, 15.7 inches. The mean annual evaporation was estimated to be 41.1 inches.

14. Groundwater: Based on their hydraulic properties, the four major water-bearing units identified at the site (Qal, Qc, Kgr1, Kgr2 (refer to Finding 11)) can be grouped into two hydraulically connected hydrostratigraphic units. The upper hydrostratigraphic unit includes the alluvial and colluvial deposits, the deeply weathered bedrock, and the moderately weathered bedrock. The results of aquifer tests indicate that these materials within the canyon floor all responded as a single hydraulically connected unit. This upper hydrostratigraphic unit transmits enough water to be considered an aquifer. The lower hydrostratigraphic unit, composed of slightly weathered to fresh bedrock, is not considered an aquifer, although, this unit may serve as a significant recharge source area. Vertical hydraulic gradients between the upper and lower hydrostratigraphic units vary throughout the canyon (both spatially and temporally).

The hydraulic conductivity of the upper hydrostratigraphic unit ranged from 4.2×10^{-4} to 5.8×10^{-4} cm/sec based on pump test data. The transmissivity of the upper hydrostratigraphic unit ranged from 880 to 1500 gallons per day per foot.

The hydraulic conductivity of the lower hydrostratigraphic unit ranged from 8.0×10^{-7} to 1.0×10^{-4} cm/sec based on packer test data (most values ranged from 1.1×10^{-6} to 8.4×10^{-6} cm/sec).

During the wet season, groundwater rises to within a few feet of the ground surface along the canyon floor. Depth to groundwater along the ridge tops is roughly 85 feet, however, seasonal fluctuations of 20 feet have been observed. Seep and spring discharges, varying from localized wet spots to a few tenths of a gallon per minute, exist along the side slopes of the canyon walls.

15. Groundwater degradation: Groundwater beneath the existing and proposed landfill area was degraded by the existing landfill.

However, no significant degradation has been detected during quarterly groundwater monitoring since October 1990. Historical groundwater monitoring data shows TDS as high as 1600 mg/l and chloride as high as 780 mg/l. In addition, volatile organic compounds were detected sporadically at levels ranging from 1000 ppb of acetone in 1987 to 72 ppb of toluene in 1990. A new toe berm and grout curtain cutoff wall were constructed in 1990 to provide leachate control measures needed for final closure of the existing landfill. During 1991, no VOCs were detected in monitoring wells at the site. Thus, it appears that the containment structures are acting to retard onsite groundwater degradation.

16. Background water quality: Ground and surface water from most of the sampling locations in Corinda Los Trancos Canyon is mixed sodium/calcium-bicarbonate/chloride with a pH of less than or equal to 8 and a Total Dissolved Solids less than 500 parts-per-million.
17. Beneficial Uses: The beneficial uses of the groundwater in the vicinity of the site include municipal, domestic and agricultural uses. The beneficial uses of Corinda Los Trancos and Pilarcitos Creeks are as follows:
 - o Wildlife habitat
 - o Agricultural supply
 - o Non-contact water recreation
 - o Sport fishing
 - o Preservation of rare and endangered species
 - o Estuarine habitat
 - o Fish migration and spawning
 - o Groundwater recharge
 - o Cold fresh water habitat
 - o Municipal and domestic supply

SLOPE STABILITY (Refer to Table 1, Slope Stability Analyses Summary)

18. As part of the geotechnical evaluation and design, the discharger evaluated the static and seismic stability of the permanently exposed cut slopes, the toe berm, and the final landfill slopes (See Finding Nos. 19., 20. and 21.). In addition, the discharger has evaluated a proposed ground improvement program intended to mitigate the potential for liquefaction. A summary of the slope stability evaluation is shown on Table 1.
19. Static Slope Stability: The static stability of the permanently exposed cut slopes, the toe berm, and the final landfill slopes was analyzed using the computer slope stability programs PCSTABL5, developed by Purdue University, and CLARA, developed by O. Hungr Geotechnical Research Inc.

The minimum acceptable factor of safety used as part of the evaluation was 1.5. The strength parameters and soil properties used for input to PCSTABL5 and CLARA are friction angle, cohesion, and total unit weight. Board staff has reviewed the strength parameters and soil properties used by the discharger in the stability analysis and finds that they appear reasonable. Thus the Board finds that the static slope stability analysis is acceptable.

20. Seismic Stability - Ground Response and Deformation Analysis: Chapter 15 requires that "Class III waste management units be designed to withstand the maximum probable earthquake without damage to the foundation or to the structures that control leachate, erosion, or gas". Since the landfill expansion area is near the San Andreas fault and is underlain by saturated cohesionless materials, the seismic stability of the permanently exposed cut slopes, the toe berm, and final landfill slopes were evaluated by performing ground response, deformation and liquefaction analyses.

The maximum probable earthquake was evaluated to be an 8.25 magnitude which could produce a resulting peak rock accelerations at the site of 0.71 g. The discharger used the computer model SHAKE-88, developed at the University of California Earthquake Research Center, to analyze seismically induced horizontal accelerations in the landfill area. These accelerations were then used in the deformation analysis. In the landfill area, the estimated average deformations were calculated to be less than one foot. Board staff believe that the landfill liner is sufficient to withstand deformation of up to 1 foot (the proposed clay liner is two feet thick). Thus, based on the seismic stability analysis and the requirement for a detailed Post Earthquake Inspection Plan, the Board finds that the seismic slope stability analysis is acceptable.

21. Seismic Stability - Liquefaction: The seismic stability analysis also determined that the saturated sandy deposits underlying the expansion area would have a high susceptibility to liquefaction during the maximum probable earthquake (magnitude 8.25). To mitigate the potential instability of the waste containment unit due to liquefaction improvement of the soils is required. A pilot study to evaluate the effectiveness of two in-situ ground improvement techniques was conducted in two study areas at the site. According to the discharger, the results of the pilot study indicate that a Vibro-Replacement (Stone Columns) technique was effective in improving the alluvial soils underlying the site. Therefore, following the in-situ ground improvement program, the waste containment structure can be considered safe from liquefaction.

To properly prepare the landfill base, the in-situ ground improvement program will have to be applied to portions of the alluvial deposits beneath the Module 1 area, the toe berm, and approximately 250 feet down gradient of the toe berm. In addition, the soils underlying the leachate tank and groundwater treatment/reuse area will also be improved. Thus, the Board finds that the in-situ ground improvement program will mitigate the liquefaction potential at the site.

DESIGN OF WASTE MANAGEMENT UNIT

22. The Corinda Los Trancos Canyon is situated where geologic and hydrogeologic conditions alone do not ensure against impairment of groundwater. Chapter 15 requires that there be a minimum 5 foot separation between waste and groundwater, Section 2530(c). The site does not meet this requirement because shallow groundwater exists in the canyon which could potentially enter the waste. The proposed design is intended to address this condition by including: (1) a groundwater subdrain to intercept the springs and any other groundwater on the site and convey it for discharge downgradient of the facility, and (2), by including a composite liner and leachate collection system to assure that wastes are contained within the landfill.

Section 2510(b) of Chapter 15 allows consideration of alternatives to the 5 foot separation requirement. The discharger has requested an exemption to the five foot separation of wastes and the highest anticipated elevation of groundwater, on the grounds that the 5 foot separation is unreasonable and unnecessarily burdensome, and will cost substantially more than the proposed engineered alternative which meets the performance standards of Chapter 15 and should provide equivalent water quality protection. The proposed engineered alternative to the 5 foot separation is the groundwater subdrain system and the composite liner. The subdrain system has been designed to prevent the groundwater level from extending into the base liner.

The Board finds that the proposed containment design is a satisfactory alternative to the 5 foot separation requirement of Section 2530(c) in accordance with the criteria of Section 2510. Compliance with the 5 foot separation specification of Chapter 15 is impractical because of the excessive cost to place the additional fill which would not promote attainment of applicable performance standards compared to the proposed design. The Board finds that the proposed design is consistent with the performance goal of maintaining a separation between groundwater and waste and it affords equivalent or superior protection against water quality impairment.

23. After improvement of the alluvial materials has been successfully completed, the landfill base will be graded in preparation for installation of the subdrain and base liner/leachate collection and removal system. The foundation of the landfill will include the following components:
- a. A one foot thick groundwater subdrain constructed of granular materials with a minimum permeability of 3×10^{-2} cm/sec. To increase the flow efficiency, perforated high density polyethylene (HDPE) pipes will be placed in trenches beneath the subdrain blanket. The subdrain has been designed to accommodate an inflow of 200 gallons per minute. Along the canyon side slopes, slotted drain pipes will be installed in horizontal holes drilled into the canyon walls to collect groundwater from seepage areas.
 - b. An 8 inch HDPE nonperforated pipe will be connected to the groundwater subdrain outlet of the existing landfill. This 8 inch HDPE pipe will be placed in a trench beneath the groundwater subdrain layer of the expansion area and will convey the groundwater collected beneath the existing landfill directly to a treatment/reuse area downstream of the toe berm.
 - c. The composite base and side slope liner system will consist of two feet of a low permeability (1×10^{-6} cm/sec) soil/clay admixture overlain by an 80-mil textured HDPE geomembrane. The soil/clay admixture will consist of 70% on site Kgr1 weathered granitic material and/or alluvial materials, and 30% imported Ione clay.
 - d. A blanket-type Leachate Collection and Removal System will be placed above the 80-mil HDPE liner. The leachate collection and recovery system will consist of perforated HDPE pipes placed within a one foot thick highly permeable drainage layer. The pipes will collect leachate from the drainage layer and direct it towards a main leachate collection header which in turn will gravity drain into a leachate holding tank. To protect the leachate collection and recovery system, a nonwoven geotextile and a two foot thick operations layer composed of on-site materials will be placed above the leachate drainage layer.
24. The landfill expansion will also include the following design features:
- a. For stability, a toe berm 150 feet high with an average outboard slope of 3:1 will be constructed at the south down stream end of the expansion area. The results of

the stability analyses indicate that the toe berm will be stable under both long term static and seismic loading conditions.

- b. All landslide deposits within the expansion area will be completely excavated during construction.
- c. Surface water runoff will be channeled into a sedimentation basin to be located down slope of the toe berm. The sedimentation basin has been designed to trap most of the sediment from annual and 10 year storm events and to maintain one foot of freeboard during the 100 year storm. Drainage ditches constructed over waste fill areas will be underlain by a minimum three feet thickness of compacted soil, and lined with asphalt or vegetation to minimize erosion.
- d. There is one existing groundwater supply well within the expansion area that will be sealed and abandoned before preparing the area for waste disposal. The discharger shall document proper abandonment of this well in the quarterly monitoring report due following the well abandonment. One or more new water supply wells will be developed downgradient of the expansion to provide for site operation, domestic (landfill facility only) and fire protection needs.
- e. As part of the final design, the discharger has proposed installation of septic tanks, sewage pipes, and a leach field. The final design for this sewage system must be acceptable to the Board's Executive Officer.
- f. Approximately 2,700 linear feet of Corinda Los Trancos stream habitat will be eliminated by the landfill expansion project. The extent of the riparian corridor to be affected is approximately 5.5 acres, which includes 0.96 acres that are subject to U.S. Army Corps of Engineers jurisdiction pursuant to Section 404 of the Clean Water Act. A riparian mitigation plan will create approximately 5.8 acres of new habitat on three sites along the lower reaches of Corinda Los Trancos Creek (4.4 acres total), and at an off-site location along Pilarcitos Creek, called the Stone Pine site (1.4 acres). The discharger is subject to Nationwide Permit No. 26 issued on September 21, 1990 (No. 16611S91A) from the U.S. Army Corps of Engineers to remove the 0.96 acres of wetland habitat. No fisheries exist in Corinda Los Trancos Creek and no sensitive invertebrate species have been identified.

MONITORING PROGRAM

25. The discharger is proposing to conduct an initial one-year discharge monitoring program prior to submitting a proposed Water Quality Protection Standards and a revised Discharge Monitoring Program. Provision C.3. of this Order requires the discharger to submit proposed Water Quality Protection Standards and a revised Discharge Monitoring Program within 18 months after the date that the landfill expansion begins accepting waste. A summary of the initial Discharge Monitoring Program (See Attachment B) follows:
- a. Groundwater will be monitored from 16 wells (15 new wells and one existing well). A significant feature of the Discharge Monitoring Program is the well cluster consisting of six wells located on the proposed toe berm. The six wells will be staggered vertically with discrete monitoring intervals of 20 feet and will monitor the entire saturated thickness of the upper hydrostratigraphic unit (approximately 125 feet thick).
 - b. The groundwater subdrain discharge point for the existing landfill will be monitored. In addition, the groundwater subdrain discharge point for the landfill expansion will be monitored separately from the subdrain discharge point of the existing landfill.
 - c. Surface water in Corinda Los Trancos Creek will be monitored both upstream and downstream of the landfill.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

26. The County of San Mateo certified a final Environmental Impact Report on November 13, 1991, in accordance with the California Environmental Quality Act (Public Resources Code Section 21000 et. seq.). It is intended that the findings, prohibitions, specifications, and provisions of this Order be consistent with the certified final Environmental Impact Report.
27. The final Environmental Impact Report found that the proposed landfill and landfill activity, as approved by the County, could cause significant effects on water quality and may degrade the water quality unless appropriate mitigation measures are taken. Potential impacts to the water quality could occur as a result of:
- o Earthquake damage or failure of leachate collection system;
 - o Slope instability or failure as a result of water saturation of embankments;
 - o Potential degradation of surface water quality as a result of increased sediment load and/or erosion;

- o Potential groundwater contamination due to contact with leachate;
- o Potential downstream impacts to aquatic biota from accidental discharge of contaminated water;
- o Alteration of existing surface and groundwater flow;

The preceding impacts are 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. The mitigation measures are described in the ROWD, San Mateo County Land Use Permit and by the Provisions of these Waste Discharge Requirements.

28. The Board finds that it is environmentally preferable to expand this existing canyon landfill rather than to pursue siting a new landfill in another location not presently utilized for waste disposal.
29. The Board adopted a revised Water Quality Plan for the San Francisco Bay Basin (Basin Plan) on December 9, 1991. This Order implements the water quality objectives stated in that plan and its subsequent amendments.
30. The Board has notified the discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge, and has provided them with an opportunity to submit their written views and recommendations.
31. The Board in a public meeting heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED pursuant to authority in Section 13263 of the California Water Code, the discharger, its agents, successors and assigns may discharge waste at the Corinda Los Trancos Landfill providing compliance is maintained with regulations adopted under Division 7 of the California Water Code and with the following:

A. PROHIBITIONS

1. The disposal of waste shall not create a pollution or nuisance as defined in Section 13050 (1) and (m) of the California Water Code.
2. Wastes shall not be placed in or allowed to contact ponded water from any source whatsoever.
3. Wastes shall not be disposed of in any position where they can be carried from the disposal site and discharged into waters of the State or of the United States.

4. Leachate from wastes and ponded water containing leachate or in contact with refuse shall not be discharged to waters of the State or of the United States.
5. Hazardous and designated wastes as defined in Sections 2521 and 2522 of Chapter 15, except for waste that is hazardous due only to its friable asbestos content, shall not be deposited or stored at this site.
6. High moisture content wastes (including restaurant grease) containing less than 50% solids, shall not be deposited or stored at this site except as provided in an approved sludge management plan. Wastes containing at least 50% solids and defined by Section 2523 of Chapter 15 as Non-hazardous Solid Waste, may be deposited at this site.
7. The discharge of wastes which have the potential to reduce or impair the integrity of the containment structures or which, if commingled with other wastes in the unit, which could produce chemical reactions that create heat or pressure, fire or explosion, toxic by-products, or reaction products which in turn:
 - a. require a higher level of containment than provided by the unit,
 - b. are "restricted hazardous wastes", or
 - c. impair the integrity of the containment structures.
8. Construction of the containment features of the expansion must be in compliance with this Order and Chapter 15. Wastes shall not be placed in any area of the expansion until the Executive Officer has received written certification by a California registered civil engineer or certified engineering geologist that the structures have been constructed in accordance with those design plans.
9. 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.

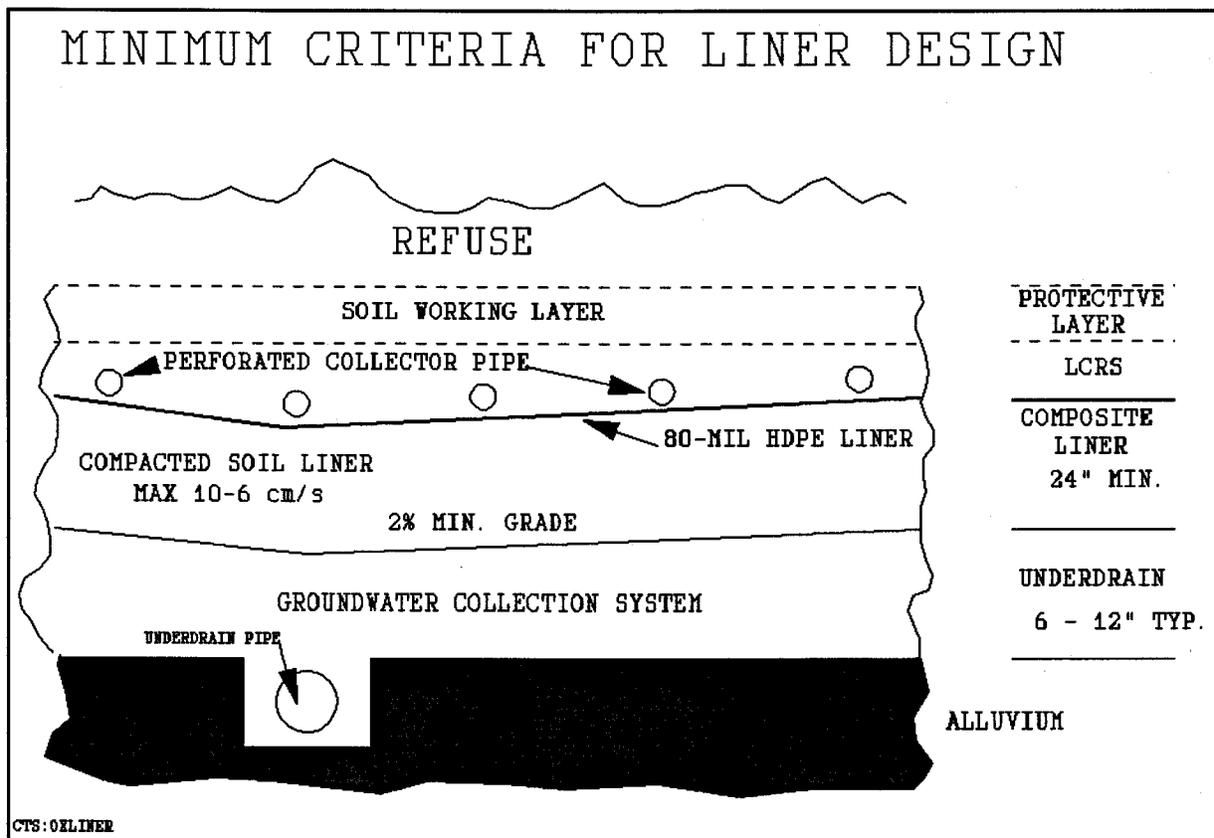
B. SPECIFICATIONS

1. All reports pursuant to this Order shall be prepared under the supervision of a registered civil engineer, California registered geologist or certified engineering geologist.
2. Water used during disposal operations shall be limited to dust control, fire suppression and earthfill moisture conditioning.
3. The site shall be protected from any washout or erosion of wastes from inundation which 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.
4. Hazardous wastes, Designated wastes and Infectious wastes shall not be disposed of at this landfill. Non-hazardous, Inert wastes and Asbestos may be disposed of at this landfill provided that all regulations and provisions of the California Integrated Waste Management Board, California Department of Toxic Substance Control, local health agencies and County Land Use Permit requirements are complied with.
5. Surface drainage from tributary areas, and internal site drainage from surface sources, shall be collected into a sedimentation basin. The discharge of impounded water shall be subject to an NPDES permit issued separately by this Board. Surface drainage ditches shall be constructed to ensure that all rainwater is diverted away from the disposal area and into the impoundment. In addition, groundwater occurring under waste shall be collected by an "underdrain system" and also diverted to the sedimentation basin except as necessary for pond maintenance as permitted by a NPDES permit.
6. The discharger shall design, install and operate a blanket-type leachate collection and removal system for the base of the landfill expansion, such that no more than 1 foot of

hydraulic head remains on any portion of the liner.

The leachate collection and recovery system shall be designed and operated to function without clogging, (per Sect. 2543.d), and inspected quarterly for excess fluid. The design shall be equipped with an accessible clean-out of the lateral drain(s).

7. Landfill leachate shall be discharged to an above-ground, secondarily contained, enclosed tank. Effective October 1, 1993, recirculation of leachate and gas condensate will be limited to areas of the landfill equipped with a composite liner and leachate collection and recovery system.
8. Minimum criteria for the liner specified in B.5 and B.6 above are as follows:



9. The landfill shall be designed and constructed in conformance with Chapter 15 and this Order. The final design plans shall be submitted to the Executive Officer for review and approval and shall include, but not be limited to, the engineered design plans for the fill cell, the construction specifications, a construction quality assurance (QA/QC) plan,

- and a revised discharge monitoring program. The final construction report shall include, but not be limited to, construction record drawings (as-built drawings) for the waste management unit, a QA/QC report with a written summary of the QA/QC program and all test results and analyses, and a certification as described in Specification No. B.1 .
10. The discharger shall ensure that the foundations of the landfill, and the waste containment features which control leachate, surface drainage, and erosion for this site, are constructed and maintained to withstand conditions generated during a maximum probable earthquake event.
 11. As portions of the landfill are closed, the exterior surfaces shall be graded to promote lateral runoff of precipitation. The final cover for the landfill will have a minimum slope of three percent plus an allowance for subsidence. The final cover shall be a minimum of 4 feet thick to include, 2 feet of structural base, 1 foot of a low permeability clay barrier, and 1 foot of vegetative soil. The final cover must also meet all other applicable requirements as described in Article 8 of Chapter 15.
 12. The discharger shall operate the waste management facility so as to prevent a statistically significant difference to exist between water quality of the background water and water passing the point of compliance as provided in Section 2550.5, Article 5 of Chapter 15.
 13. The concentrations of indicator parameters or waste constituents in waters passing through the point of compliance, as defined in Section 2550.2 of Article 5, Chapter 15, shall not exceed the "Water Quality Protection Standard" (WQPS), of the Discharge Monitoring Program proposed by the discharger pursuant to Provision C.2 of this Order and subsequently issued by the Executive Officer.
 14. Pursuant to Section 2550.3 of the Revised Article 5, Chapter 15, these Waste Discharge Requirements specify the constituents of concern to which the water quality protection standard of Section 2550.2 of Article 5 applies. Constituents of concern are the waste constituents, reaction products, and hazardous constituents that are reasonably expected to be in or derived from waste contained in the waste management unit. The constituents of concern are those incorporated into Appendix I of Subtitle D, Title 40, CFR, in addition to Sulfate, Carbonate and Chloride unless the discharger proposes an alternate list of Constituents of Concern as provided in Article 5, Chapter 15 and in Provision C.2 below.
 15. In the event of a release of a constituent of concern beyond the Point of Compliance, the site begins a Compliance Period

(Sect. 2550.6(a)). During the Compliance Period, the discharger shall perform an Evaluation Monitoring Program and a Corrective Action Program.

16. The discharger shall install any reasonable additional groundwater and leachate monitoring devices required to fulfill the terms of any Discharge Monitoring Program issued by the Executive Officer.
17. Interim cover shall be maintained over all waste, at all times, except for the active face area of the disposal operations, or as provided for by the performance standards adopted by the California Integrated Waste Management Board.
18. Methane and other landfill gases shall be adequately vented, removed from the landfill units, or otherwise controlled to minimize the danger of explosion, adverse health effects, nuisance conditions, or the impairment of beneficial uses of water due to migration through the vadose (unsaturated) zone.
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 postclosure maintenance period.
20. 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.
21. 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.
22. The Regional Board shall be notified immediately of any slope failure occurring in the waste management unit. Any failure which threatens the integrity of containment features or the landfill shall be promptly corrected after approval of the method and schedule by the Executive Officer.
23. 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.

24. The discharger shall submit, within 90 days after the closure of any portion of the landfill, a closure certification report which documents that the area has been closed according to the requirements of this Order and Chapter 15. The discharger 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 all applicable regulations.
25. The discharger shall comply with all applicable provisions of Chapter 15 that are not specifically referred to in this Order.

C. PROVISIONS

1. The discharger shall comply with all Prohibitions, Specifications, and Provisions of this Order, immediately upon adoption of this Order or as provided below.
2. The discharger shall submit a report that evaluates and proposes a **Water Quality Protection Standard (WQPS)** and a revised Discharge Monitoring Program for the site, pursuant to Article 5 of Chapter 15. The WQPS to be proposed by the discharger shall consist of the five elements required by Article 5; 1) a list of constituents to be monitored for; 2) the concentration limits to be used in analysis; 3) the Point Of Compliance; 4) the addition of monitoring points; and 5) the Compliance Period in the event of a detected leak.

REPORT DUE DATE: within 18 months after the date that the landfill expansion begins accepting waste.

3. The discharger shall submit a detailed **Post Earthquake Inspection and Corrective Action Plan** acceptable to the Executive Officer to be implemented 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, and ground water monitoring and leachate control facilities potentially impacted by the static and seismic deformations of the landfill. The plan shall provide for reporting results of the post earthquake inspection to the Board within 72 hours of the occurrence of the earthquake. Immediately after an earthquake event causing damage to the landfill structures, the corrective action plan shall be implemented and this Board shall be notified of any damage.

REPORT DUE DATE: within three months of adoption of this Order.

4. The discharger shall submit to this Board and to the California Integrated Waste Management Board, evidence of an **Irrevocable Closure Fund** or provide other means to ensure closure and postclosure maintenance of the waste management unit, pursuant to Section 2580(f) of Chapter 15. The Closure Fund must provide sufficient funds to properly close the landfill and for the post-closure monitoring, leachate management, 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.

REPORT DUE DATE: within three months of adoption of this Order.

5. The discharger shall submit **Final Construction Details** acceptable to the Executive Officer pursuant to the specifications of this Order. The proposal should provide workplans for development of the various components of the landfill, including detailed specifications for construction of composite liners and leachate collection and removal systems and should include Quality Assurance & Quality Control Procedures, (QA/QC), for all aspects of construction and installation. The workplans for construction of the liners and the leachate collection and recovery system should include detailed specifications regarding the sequence of construction of the various segments of the project, and provide sufficient detail about how the various cells and modules of the landfill areas will interface structurally. The Final Construction Details must be determined to be consistent with this Order by the Executive Officer prior to acceptance of waste.
6. The discharger shall submit a **Contingency Plan** to be instituted in the event of a leak or spill from the leachate facilities. The discharger shall give immediate notification to the San Francisco Bay Regional Water Quality Control Board, the Local Enforcement Agency (LEA), and the California Department of Toxic Substance Control. The discharger shall initiate its corrective action plan to stop and contain the migration of pollutants from the site.

REPORT DUE DATE: within three months of adoption of this Order.

7. The discharger shall submit a **Sludge Management Plan** acceptable to the Executive Officer prior to accepting sludge for disposal at the landfill.

REPORT DUE DATE: 90 days prior to proposed discharge of municipal sewage sludge at the landfill.

8. The discharger shall file with the Regional Board Discharge Monitoring Reports performed according to any Discharge Monitoring Program issued by the Executive Officer.
9. The discharger shall remove and relocate any wastes which are discharged after the date of adoption of this Order in violation of these requirements.
10. 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.
11. The discharger shall immediately notify the Board of any flooding, equipment failure, slope failure, or other change in site conditions which could impair the integrity of waste or leachate containment facilities or precipitation and drainage control structures.
12. The discharger shall maintain a copy of this Order at the site so as to be available at all times to site operating personnel.
13. The discharger shall permit the 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 ground water governed by this Order.
14. This Board's Order Nos. 76-070 and 87-047 are hereby rescinded.
15. 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.

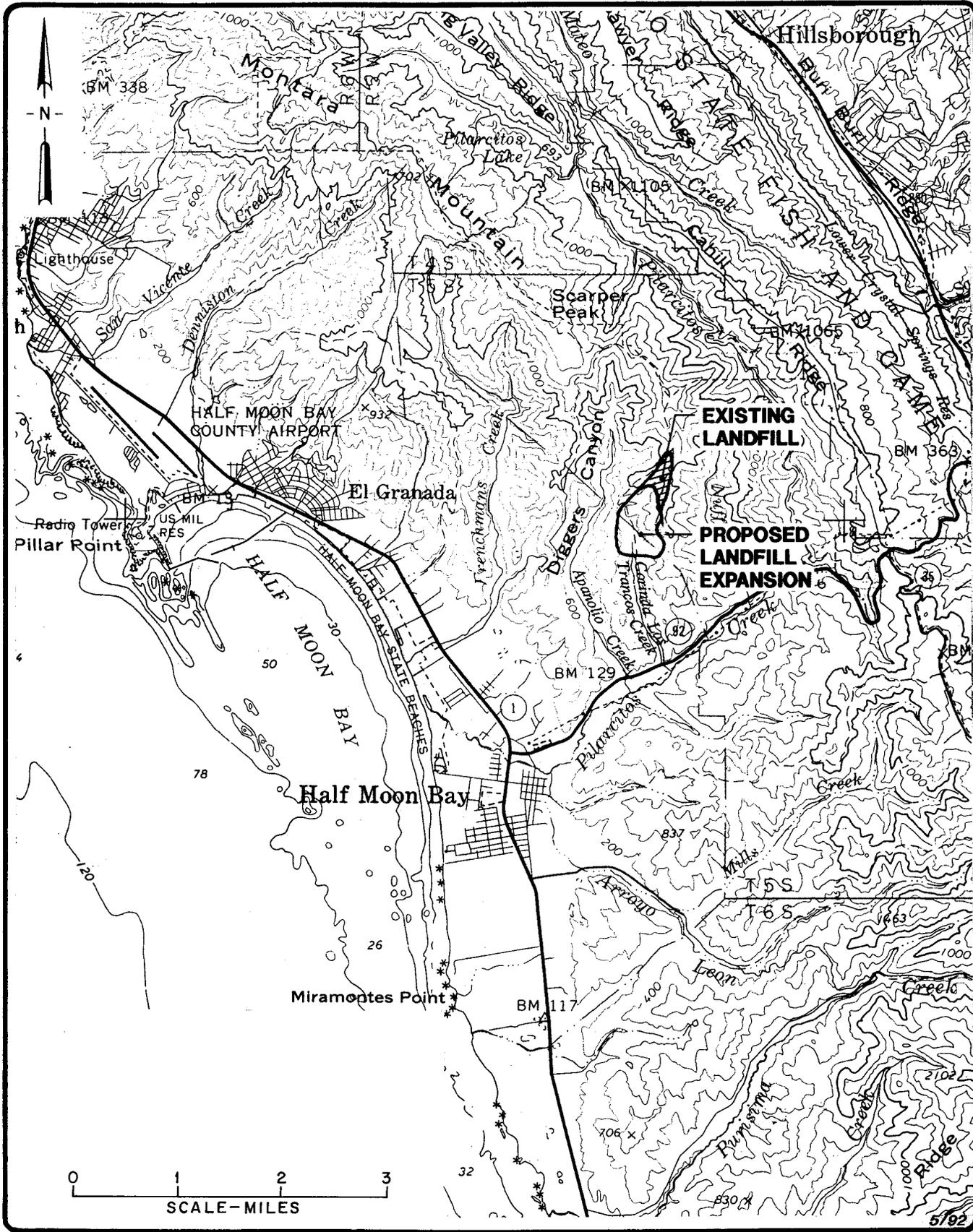
16. This Order is subject to Board review and updating, as necessary, to comply with changing State or Federal laws, regulations, policies, or guidelines; changes in the Board's Basin Plan; or changes in the discharge characteristics.

I, Loretta K. Barsamian, Assistant 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 July 15, 1992.



Loretta K. Barsamian
Loretta K. Barsamian
Assistant Executive Officer

Attachments: Figure 1. Site Location Map
Figure 2. Facility Map
Table 1, Summary of Slope Stability Analyses
Discharge Monitoring Program

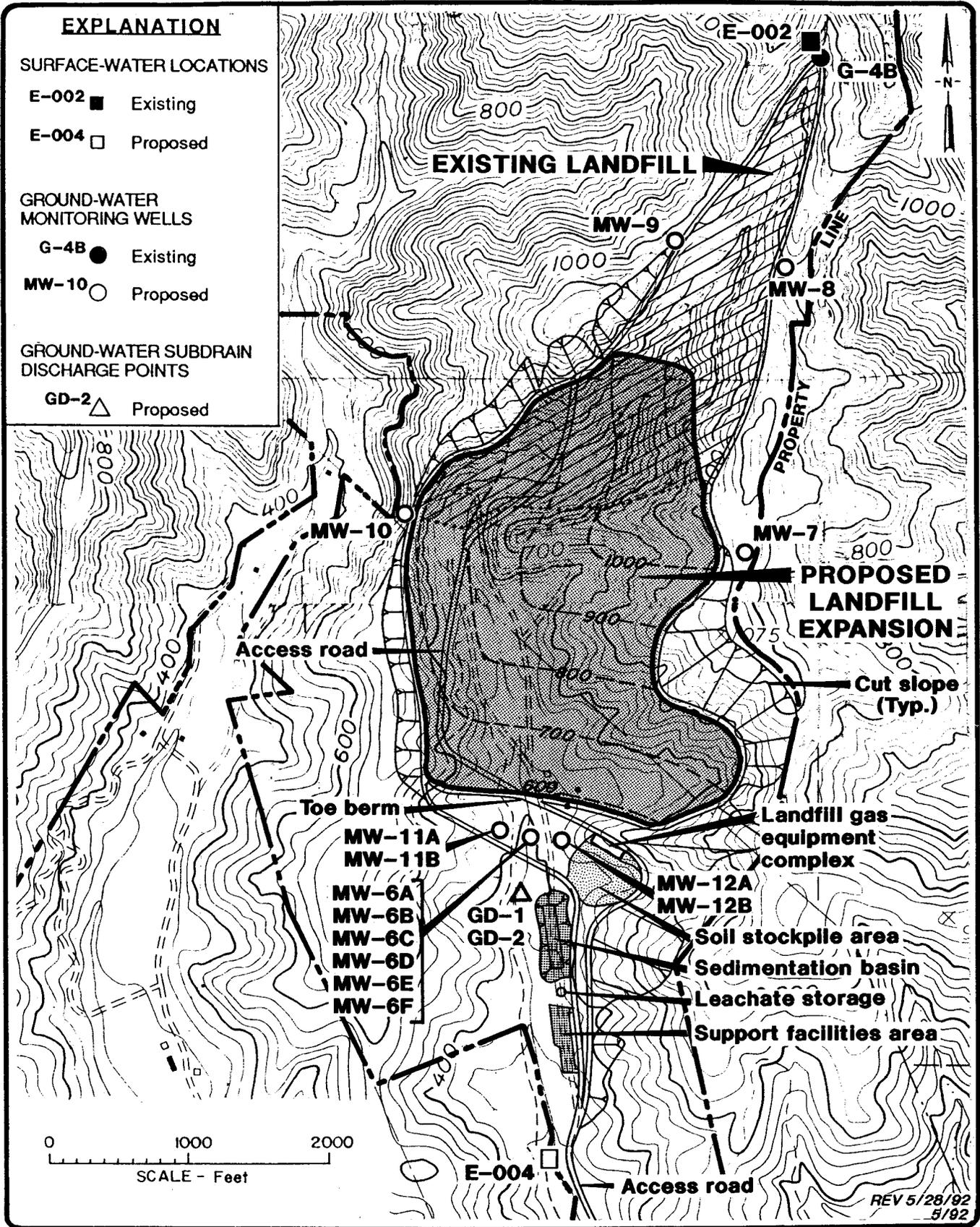


LOCATION MAP SHOWING PROPOSED EXPANSION OF
CORINDA LOS TRANCOS LANDFILL
OX MOUNTAIN RANCH, SAN MATEO COUNTY

SAN FRANCISCO BAY REGIONAL
WATER QUALITY CONTROL BOARD

FIGURE

1



FACILITY MAP SHOWING PROPOSED EXPANSION AND MONITORING POINTS
CORINDA LOS TRANCOS LANDFILL
OX MOUNTAIN RANCH, SAN MATEO COUNTY

SAN FRANCISCO BAY REGIONAL
WATER QUALITY CONTROL BOARD

FIGURE

2

TABLE 1
SLOPE STABILITY ANALYSES
SUMMARY TABLE
CORINDA LOS TRANCOS LANDFILL EXPANSION

| | CANYON FLOOR | PERMANENT EXCAVATIONS [3] | | TOE BERM | FINAL LANDFILL SLOPE |
|--|---|---|-------------------------------|-----------------------------|----------------------|
| Slope Ratio | - | 2H:1V (Within Landfill; prior to refuse placement) | 1.5H:1V (Outside landfill) | 3H:1V (Outboard side) | 3H:1V to 4H:1V |
| Height (ft) | - | 100-250 | 100-250 | 150 | 200-300 |
| Static Slope Stability Min. Factor of Safety Ref: PCSTABLE5 (Purdue University) and CLARA (O. Hungr Geotechnical Research Inc.) | [1] | 2.8 | 1.6 | 2.1 | 1.7-2.0 |
| Seismic Stability Seismic Deformation (ft) [2] Ref: SHAKE-88 (Schnabel, et al., 1972) and Makdisi and Seed (1977) | [1] | 0.0 | 4.5 | 0.7 | 0.4-1.0 |
| Seismic Stability Liquefaction Ref: Simplified evaluation procedure Seed and Harder (1990) | Improve alluvial deposits to beyond liquefaction by stone columns | | | | |

Notes:

- [1] The foundation soils (alluvial deposits) would be improved to beyond liquefaction
- [2] Maximum predicted deformation based on Magnitude 8-1/4 earthquake with the corresponding ky/kmax ratio
- [3] Based on soil mechanics approach which yields a lower factor of safety than the rock mechanics approach; provided that surface drainage and subsurface horizontal drains are installed

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

DISCHARGE MONITORING PROGRAM

FOR

BROWNING-FERRIS INDUSTRIES
CORINDA LOS TRANCOS
CLASS III SOLID WASTE DISPOSAL SITE

SAN MATEO COUNTY

ORDER NO. 92-087

CONSISTS OF

PART A

AND

PART B

PART A

A. GENERAL

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. This Discharge Monitoring Program is issued in accordance with Provision 8. of Regional Board Order No. 92-087.

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 waste discharge, (3) to develop or assist in the development of standards of performance, and toxicity standards, (4) to assist the discharger in complying with the requirements of Article 5, Chapter 15 as revised July 1, 1991.

B. SAMPLING AND ANALYTICAL METHODS

Sample collection, storage, and analyses shall be performed according to the most recent version of EPA Standard Methods and in accordance with an approved sampling and analysis plan.

Water and waste analysis shall be performed by a laboratory approved for these analyses by the State of California. 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.

C. DEFINITION OF TERMS

1. A grab sample is a discrete sample collected at any time.
2. Receiving waters refers to any surface water which actually or potentially receives surface or groundwaters which pass over, through, or under waste materials or contaminated soils. In this case the groundwater beneath and adjacent to the landfill areas, the surface runoff from the site, and Corinda Los Trancos Creek are considered receiving waters.
3. Standard observations refer to:
 - 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 wildlife.
- 5) Flow rate.
- 6) Weather conditions: wind direction and estimated velocity, total precipitation during the previous five days and on the day of observation.

b. Perimeter of the waste management unit.

- 1) Evidence of liquid leaving or entering the waste management unit, estimated size of affected area and flow rate. (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 and/or daylighted refuse.
- 4) Standard Analysis (SA) and measurements are listed on Table A (attached)

D. SAMPLING, ANALYSIS, AND OBSERVATIONS

The discharger is required to perform sampling, analyses, and observations in the following media:

1. Groundwater per Section 2550.7(b) and
2. Surface water per Section 2550.7(c)

and per the general requirements specified in Section 2550.7(e) of Article 5, Chapter 15.

E. RECORDS TO BE MAINTAINED

Written reports shall be maintained by the discharger or laboratory, 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.
5. Calculation of results.
6. Results of analyses, and detection limits for each analysis.

F. REPORTS TO BE FILED WITH THE BOARD

1. Written detection monitoring reports shall be filed by the 15th day of the month following the report period. In addition an annual report shall be filed as indicated in F.3 below. The reports shall be comprised of the following:

a. Letter of Transmittal

A letter transmitting the essential points in each report should accompany each report. Such a letter shall include a discussion of any requirement violations found during the last report period, and actions taken or planned for correcting the violations. If the discharger has previously submitted a detailed time schedule for correcting requirement violations, a reference to the correspondence transmitting such schedule will be satisfactory. If no violations have occurred in the last report period this shall be stated in the letter of transmittal. 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, if such representative is responsible for the overall operation of the facility from which the discharge originates. The letter shall contain 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.

- b. 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) 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.
 - 3) 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.
- c. A map or aerial photograph shall accompany each report showing observation and monitoring station locations.
- d. 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.
- 1) 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 approved by the Executive Officer prior to use.
 - 2) In addition to the results of the analyses, laboratory quality assurance/quality control (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.

- e. An evaluation of the effectiveness of the leachate monitoring or 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.
- f. 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.
- g. The quantity and types of wastes disposed of during the past quarter, and the locations of the disposal operations.

2. 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 thereafter. 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 down gradient sample and a WQPS. Notification shall indicate what WQPS(s) has/have been exceeded. The discharger shall immediately resample at the compliance point where this difference has been found and re-analyze.
- c. If resampling and analysis confirms the earlier finding of a statistically significant difference between monitoring results and WQPS(s) the discharger must submit to the Board an amended Report of Waste Discharge as specified in Section 2550.8(k)(5) for establishment of an Evaluation Monitoring Program (EMP) meeting the requirements of Section 2550.9 of Chapter 15.
- 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 (CAP) necessary to meet the requirements of Section 2550.10. At a minimum, the feasibility study shall contain a detailed description

of the corrective action measures that could be taken to achieve background concentrations for all constituents of concern.

3. REPORTING

By January 31 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; the report should be accompanied by a 5¹/₄" computer data disk, MS-DOS ASCII format, tabulating the year's data.
- 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 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.

4. WELL LOGS

A boring log and a monitoring well construction 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.

Part B

1. DESCRIPTION OF OBSERVATION STATIONS AND SCHEDULE OF OBSERVATIONS

A. WASTE MONITORING - Report Quarterly

1. Record the total volume and weight of refuse in cubic yards and tons disposed of 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, ie., Residential, Commercial, Industrial or Construction debris.
3. Record location and aerial extent of disposal of each waste type.

B. ON-SITE OBSERVATIONS - Report Quarterly

| STATION | DESCRIPTION | OBSERVATIONS | FREQUENCY |
|----------------------------------|---|--|-----------|
| V-1 thru V-'n' | Located on the waste disposal area as delineated by a 500 foot grid network. | Standard observations for the waste management unit. | Weekly |
| P-1 thru P-'n' (perimeter) | Located at equidistant intervals not exceeding 1000 feet around the perimeter of the waste management unit. | Standard observations for the perimeter. | Weekly |

C. GROUND WATER and SURFACE WATER MONITORING - Report Quarterly

Groundwater and surface water shall be monitored as outlined below and on Table A (Attached) and shown on Figure A (Attached).

Monitoring Points and Background Monitoring Points For Each Monitored Media

| | Compliance Point | Background Point |
|--------------------------------|---|--------------------|
| Surface Water | E-004 | E-002 |
| Groundwater Subdrain | GD-1, GD-2 | MW-13 ¹ |
| Alluvium | MW-6A, 6B, 6C, 6D, 6E, 6F, 11A, 11B, 12A, and 12B | MW-13 ¹ |
| Weathered Bedrock (ridge tops) | MW-8, 9, and 10 | G-4B and MW-7 |

E. FACILITIES MONITORING

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

- a. Leachate Collection and Removal System
- b. Surface water impoundment
- c. Leachate handling facilities
- d. Perimeter diversion channels
- e. Leachate Management facilities and secondary containment.

¹ Shallow groundwater and groundwater subdrain background point (MW-13) to be installed in Apanolio Canyon. No suitable location available in Corinda Los Trancos Canyon.

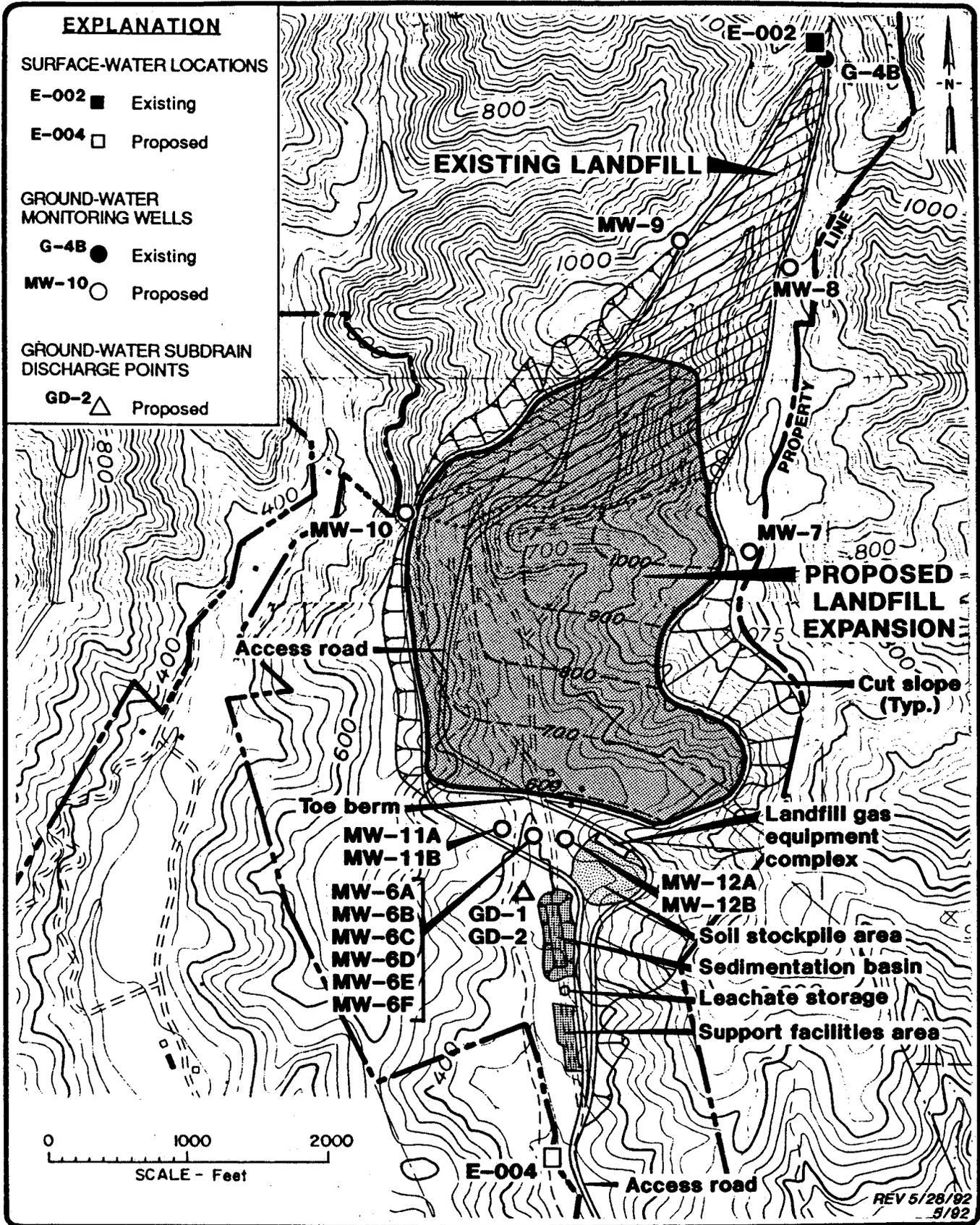
I, Loretta K. Barsamian, Assistant Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

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. 92-087.
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
Assistant Executive Officer

Date Ordered: July 15, 1992

Attachment: Figure A - Site Map
Table A - Schedule for Sampling, Measurement, and Analysis



FACILITY MAP SHOWING PROPOSED EXPANSION AND MONITORING POINTS
CORINDA LOS TRANCOS LANDFILL
OX MOUNTAIN RANCH, SAN MATEO COUNTY

SAN FRANCISCO BAY REGIONAL
WATER QUALITY CONTROL BOARD

FIGURE

A

Table A - Discharge Monitoring Plan, List of Analytical Parameters

| Parameters | Method | Reference | Frequency |
|---|-----------|-----------|---------------|
| Water level | Field | 1 | Monthly (a) |
| Temperature | Field | 1 | Quarterly |
| Alkalinity, bicarbonate | 310.1 | 2 | Quarterly |
| Alkalinity, carbonate | 310.1 | 2 | Quarterly |
| Alkalinity, hydroxide | 310.1 | 2 | Quarterly |
| Chemical oxygen demand | 410.2 | 2 | Quarterly |
| Chloride | 9252 | 3 | Quarterly |
| Ammonia nitrogen | 350.3 | 2 | Quarterly |
| Nitrate nitrogen | 9200 | 3 | Quarterly |
| Total Kjeldahl nitrogen | 351.4 | 2 | Quarterly |
| Total organic carbon | 415.1 | 2 | Quarterly |
| Total phenols | 9065 | 3 | Quarterly |
| Total dissolved solids | 160.1 | 2 | Quarterly |
| Electrical conductivity | 9050 | 3 | Quarterly |
| Total suspended solids | 160.2 | 2 | Quarterly |
| Turbidity | Field | 1 | Quarterly (c) |
| Settleable solids | 160.5 | 2 | Quarterly |
| Sulfate | 9038 | 3 | Quarterly (b) |
| Volatile organic compounds | 8010/8020 | 3 | Annually (d) |
| Volatile organic compounds | 8240 | 3 | Annually (d) |
| Semivolatile organic compounds | 8270 | 3 | Quarterly |
| Arsenic | 6010 | 3 | Quarterly |
| Fluoride | 340.2 | 2 | Quarterly |
| Calcium | 6010 | 3 | Quarterly |
| Cadmium | 6010 | 3 | Quarterly |
| Total Chromium | 6010 | 3 | Quarterly |
| Copper | 6010 | 3 | Quarterly |
| Magnesium | 6010 | 3 | Quarterly |
| Manganese | 6010 | 3 | Quarterly |
| Mercury | 6010 | 3 | Quarterly |
| Iron | 6010 | 3 | Quarterly |
| Lead | 6010 | 3 | Quarterly |
| Nickel | 6010 | 3 | Quarterly |
| Potassium | 6010 | 3 | Quarterly |
| Selenium | 7740 | 3 | Quarterly |
| Sodium | 6010 | 3 | Quarterly |
| Silver | 6010 | 3 | Quarterly |
| Zinc | 6010 | 3 | Quarterly |
| Dissolved oxygen | Field | 1 | Quarterly (c) |
| pH | 9040 | 3 | Quarterly |
| Fish bioassay (96 hour acute toxicity % survival) | NA (5) | 4 | Quarterly (e) |
| | | | |

Table A - Discharge Monitoring Plan, List of Analytical Parameters

1. Not Applicable
2. Methods for Chemical Analysis of Water and Wastes,
EPA 600/4/79/029, revised March 1983.
3. EPA SW-846
4. Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine
Organisms. EPA 600/4-85/013, April 1985, 3rd Edition
5. NA = not applicable
 - (a) monthly for first year, quarterly thereafter
 - (b) groundwater samples only
 - (c) surface water samples only
 - (d) Instead of method 8010/8020 for one quarter per year
 - (e) surface water location E-004 only