CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 00-27
SITE CLEANUP REQUIREMENTS FOR:

CITY OF DALY CITY, MUSSEL ROCK PARK LANDFILL
SAN MATEO COUNTY

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

SITE OWNER AND LOCATION

1. The City of Daly City, hereinafter referred to as the discharger, owns the Mussel Rock Park Landfill. The project site is located adjacent to the Pacific Ocean opposite and north of Mussel Rock in the City of Daly City, California, as shown in Figures 1 and 2, which are incorporated herein and made a part of this Order.

SITE DESCRIPTION AND HISTORY

2. The Mussel Rock Park Landfill is a closed, unlined Class III landfill located adjacent to the Pacific Ocean as shown in Figures 1 and 2. The landfill occupies 29 acres, and lies between steep, unstable slopes leading to the ocean, and steep slopes above leading to Highway 1 and residential areas of Daly City. The site started accepting waste in 1957, being operated by contract between the City of Daly City and the Daly City Scavenger Company. The site ceased accepting municipal refuse on February 15, 1978.

REGULATORY STATUS

3. The Regional Board initially adopted Waste Discharge Requirements (WDR) for the Mussel Rock Landfill on August 19, 1965, in Resolution 694. This Resolution was amended several times, and several enforcement orders were adopted in order to correct persistent problems relating to the instability of this site, and the subsequent discharge of refuse. Cease and Desist Orders mandating improvements were adopted in Resolutions 68-67 and 69-58, and finally, Order No. 77-119 required the closure of this site. This Order was subsequently amended several times, and the site finally stopped accepting waste on February 15, 1978. Closure tasks were completed but the site was not adequately maintained, and so Order No. 82-43 was adopted on July 21, 1982 to require improved site maintenance. The State Board's Industrial Activities Storm Water General Permit also governs this site.

PURPOSE OF ORDER

4. The purposes of this Order are to: 1) Evaluate the adequacy of the landfill closure through increased monitoring; 2) Require an emergency response contingency plan and a funding mechanism for the same; 3) Require improved maintenance and preparation of the landfill for winter rains; and 4) Bring the landfill into compliance with the appropriate portions of Title 27 of the California Code Of Regulations (formerly known as Chapter 15, Title 23), referred to hereinafter as Title 27.

WASTES AND THEIR CLASSIFICATION

5. Wastes disposed of at the Mussel Rock Landfill were reportedly comprised primarily of municipal solid waste. Hazardous or toxic wastes were reportedly not discharged. The exact volume of wastes is not known, but is approximately one million cubic yards.

GEOLOGIC SETTING OF THE SITE

6. The Mussel Rock Landfill is located in a major landslide area. There is a prominent drop in the central portion of the site, formed by the movement of several million cubic yards of soil, which created a series of cliffs that wrap around the site in a horseshoe shape open to the ocean. There is also a series of slides along the perimeter of this slide and along the cliffs fronting the ocean beach. The landfill was subsequently built in a pit at the toe of the main slide. This area is recognized as being unstable, by way of erosion of the toe of the site that is undercut by erosion from wave action, from the instability posed by the stormwater and groundwater going through the site, and the risk posed by the San Andreas Fault that traverses the site. The site has a history of both vertical and lateral movement towards the ocean, with some areas having moved several feet in a single year. Slide conditions have resulted in the abandonment of a portion of both Highway 1 and several homes along the southern boundary of the site.

SITE SURFACE WATER AND GROUNDWATER

7. The dynamic geology and the history of landslides at this site have made waste containment, as required by Title 27, very difficult. Proper maintenance of this site, such as diverting stormwater around slopes and areas where waste has been buried, is crucial. Likewise, swift repairs of failed or eroded slopes are also needed. This site requires an unusually large amount of maintenance and repairs, particularly during wet weather, simply to keep waste or the overlying cover material from entering the ocean. The discharger will therefore be engaged in a continuous effort to keep this site's wastes properly contained.

8. The Landfill is adjacent to the Pacific Ocean. While no creeks cross through the site, there are a number of drains and transient seepage points monitored as part of the site's Industrial Activities Storm Water General Permit. Most of these drains flow continuously, indicating that some or most of the sampled stormwater actually represents

groundwater discharges. Sampling of several of these drains, as well as some seeps, show some metals in excess of Basin Plan and Ocean Plan limits.

9. The groundwater at this site is not currently used, but is impacted by the landfill waste. There is little data, however, as to the background quality of the area's groundwater, nor its average flowrate or the extent to which it is infiltrating into the wastes. The site straddles the San Andreas Fault, which may be providing a significant amount of groundwater flow into the landfill. The discharger has been monitoring the drain discharges since 1993. The electrical conductivity of the drain water ranges up to 23,000 umhos/cm, and several metals have been detected: nickel at up to 190 ppb, zinc at up to 88 ppb, copper at up to 20 ppb, and lead at up to 23 ppb. Ammonia has likewise been measured at 16 ppm. Most organic compounds have not been detected, save for a few detections of some volatile organic compounds.

FEASIBILITY STUDY

10. Given the evidence that surface and groundwater are coming into contact with the waste then discharging into the ocean, Board staff requested a study for the feasibility of improving the waste containment at this site. This discharger compared the status quo (or Option 1), with three other options for improved waste containment: an up-gradient well gallery to extract groundwater, followed by an onsite treatment plant (Option 2A); a well field to extract leachate, followed by an onsite treatment plant (Option 2B); and finally complete removal of all of the waste, or a clean closure (Option 3). The discharger evaluated each of the three options for their regulatory compliance, ease of implementation, public acceptance, and finally their cost.

11. The discharger first compared the present value of the total capital and operations and maintenance costs over the next 30 years for each of the options. Then they evaluated the options with respect to the four evaluation criteria, by assigning scores for each criterion and adding up the points to give a total score for each alternative. Based on this analysis, Option 1 (the status quo) received the highest score and thus was the discharger's chosen option. While Options 2A, 2B and 3 had greater regulatory acceptance compared to Option 1, the increased costs of Options 2A, 2B and 3 lowered their scores.

12. The discharger's conclusion is largely based on the much lower costs of the status quo, but also on the uncertain ability of any option other than a clean closure to achieve full compliance with Title 27 requirements. It is not just impractical to construct improved waste containment measures at this landfill; it is not clear, even in principle, if the discharger could effectively stabilize or drain a site that is inherently dynamic. But while certain analytical values of the stormwater and seeps have exceeded Basin Plan or Ocean Plan criteria, the Pacific Ocean is not likely to be adversely impacted by the relatively small discharge coming from this site, and hence a clean closure is not warranted either.

13. This site does require improved site maintenance, however, and an emergency contingency plan to deal with stopping any pollutant migration as the result of earthquakes, excessive rainfall, or other significant events. A mechanism for financial

assurance is also required. The discharger should also evaluate the soundness of the landfill cap, and improve it if necessary. Lastly, better monitoring data is needed. An ongoing monitoring program should be implemented, and if analytical results indicate a significant variation in chemical constituents, these requirements should be modified as necessary. To accomplish this, a series of leachate and groundwater monitoring devices should be installed and monitored.

BASIS FOR CLEANUP STANDARDS

14. **General**: State Board Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California," applies to this discharge and requires attainment of background levels of water quality, or the highest level of water quality which is reasonable if background levels of water quality cannot be restored. Cleanup levels other than background must be consistent with the maximum benefit to the people of the State, not unreasonably affect present and anticipated beneficial uses of such water, and not result in a violation of applicable water quality objectives. The feasibility study confirms that background levels of water quality cannot be restored at this landfill. This conclusion is based on review of excessive costs that would be associated with a cleanup to background levels. This order and its requirements are therefore consistent with Resolution No. 68-16.

    State Board Resolution No. 92-49, "Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304," applies to this discharge. This order and its requirements are consistent with the provisions of Resolution No. 92-49, as amended.

15. **Beneficial Uses**: The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) on June 21, 1995. This updated and consolidated plan represents the Board's master water quality control planning document. The State Water Resources Control Board and the Office of Administrative Law approved the revised Basin Plan on July 20, 1995, and November 13, 1995, respectively. 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.

    Board Resolution No. 89-39, "Sources of Drinking Water," defines potential sources of drinking water to include all groundwater in the region, with limited exceptions for areas containing high TDS, high background contaminant levels, or those areas with a low-yield. Groundwater underlying and adjacent to the site qualifies as a potential source of drinking water, though there is no current use of the site's groundwater, nor any anticipated plans for its use

    The beneficial uses of the waters of the adjacent Pacific Ocean include:

    a. Wildlife habitat;
    b. Navigation;

c. Water contact recreation;
d. Non-contact water recreation;
e. Ocean, Commercial and sport fishing;
f. Preservation of rare and endangered species;
g. Marine habitat;
h. Fish spawning;
i. Fish migration;
j. Industrial service supply; and
k. Shellfish harvesting.

The present and potential beneficial uses of the site's groundwater are as follows:

a. Municipal and domestic water supply;
b. Industrial Process water supply;
c. Industrial service water supply; and
d. Agricultural water supply.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

16. This action is exempt from the provisions of the California Environmental Quality Act pursuant to Section 15321, Title 14 of the California Code of Regulations.

NOTIFICATIONS AND MEETING

17. The Board notified the Dischargers and interested agencies and persons of its intent to prescribe site cleanup requirements for discharges from the site and has provided them with an opportunity for a public meeting and an opportunity to submit their written views and recommendations.

18. The Board in a public meeting heard and considered all comments pertaining to the discharge.

BASIS FOR 13304 ORDER

19. The Dischargers have caused or permitted waste to be discharged or deposited where it is or probably will be discharged into waters of the State and creates or threatens to create a condition of pollution or nuisance.

COST RECOVERY

20. **Section 13304** – Pursuant to California Water Code Section 13304, the Dischargers are hereby notified that the Board is entitled to, and may seek reimbursement for, all reasonable costs actually incurred by the Board to investigate unauthorized discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, required by this order.

IT IS HEREBY ORDERED that the City of Daly City, its 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. Waste **shall not** be in contact with ponded water from any source whatsoever.

2. **No** further waste shall be deposited or stored at this site.

3. Leachate from waste and ponded water containing leachate or in contact with solid wastes **shall not** be discharged to waters of the State or of the United States.

4. Neither the treatment nor the discharge of waste shall create a pollution, contamination or nuisance, as defined by Section 13050 of the California Water Code (CWC). (H & SC Section 5411, CWC Section 13263).

5. The discharger, or any future owner or operator of the 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

   1. Floating, suspended, or deposited macroscopic particulate matter or foam.
   2. Bottom deposits or aquatic growths.
   3. Alteration of temperature, turbidity, or apparent color beyond natural background levels.
   4. Visible, floating, suspended or deposited oil or other products of petroleum origin.
   5. 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

   1. Groundwater shall not be impacted as a result of solid waste degradation.

B. TASKS

1. The discharger shall comply with all Prohibitions, Tasks and Provisions of this Order immediately upon adoption of this Order or as provided below. All required submittals must be acceptable to the Executive Officer.

2. The discharger shall submit an annual monitoring report, acceptable to the Executive Officer, by January 31 of each year in accordance with the attached Updated Discharge Monitoring Program (Attachment A). The annual report to the Board shall cover the

previous calendar year as described in Part A of the Updated Monitoring Program. In addition to the requirements outlined in Attachment A, this report shall also include the following: location and operational condition of all leachate and groundwater monitoring devices; and groundwater and leachate contours for each monitoring event. Additionally, the discharger shall submit semi-annual monitoring reports, to be submitted no later than July 31 and January 31 of each year; the January 31 semi-annual report may be combined with the annual report.

DUE DATES: **ANNUAL REPORT – JANUARY 31 (EACH YEAR)**
1st SEMI-ANNUAL REPORT – JULY 31 (EACH YEAR)
2nd SEMI-ANNUAL REPORT–JANUARY 31 (EACH YEAR)

3. The discharger shall submit a letter report to the Board, acceptable to the Executive Officer, detailing the repair and maintenance activities that need to be completed prior to the commencement of the next rainy season. This letter report shall also include a schedule for repair and maintenance activities, and a cost analysis detailing the anticipated expense for all repairs, maintenance 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 Discharge Monitoring Plan. The report shall also contain a demonstration of the adequacy of the funds needed for the site repair and maintenance.

REPORT DUE DATE: JULY 31 OF EACH YEAR.

4. The discharger shall submit an emergency response contingency plan, acceptable to the Executive Officer, intended to stop and contain the migration of pollutants to receiving waters as the result of earthquakes, excessive rainfall, tidal action, or other significant events. The contingency plan shall describe the containment features, and groundwater monitoring and leachate monitoring facilities potentially impacted by such events. The plan shall also include methods of containment and cleanup of waste exposed or displaced at the site. Immediately after an event causing damage to the landfill structures, the corrective action plan shall be implemented and the discharger shall give immediate notification to the Regional Board as well as the Local Enforcement Agency (LEA) of any damage, including corrective actions and cleanup activities, and the environmental impacts of such. The plan shall also include a demonstration of the adequacy of the funds needed for the site contingency actions.

PLAN DUE DATE: NO LATER THAN JULY 15, 2000.

5. The discharger shall submit a proposal, acceptable to the Executive Officer, for the establishment of a series of groundwater and leachate monitoring devices within the landfill area. The number and location of the devices shall be sufficient to characterize the level, flow and quality of the leachate and groundwater within the landfill, as monitored per the Discharge Monitoring Program (Attachment A). The discharger may propose alternate methods of monitoring device construction suitable for the dynamic

nature of this site. Following the Board's acceptance of this proposal, the Discharge Monitoring Program for these devices is to commence immediately.

PROPOSAL DUE DATE: NO LATER THAN JULY 15, 2000.

6. The discharger shall submit a proposal, acceptable to the Executive Officer, to evaluate the adequacy of the existing landfill final cover. The proposal shall propose a sufficient number of trenches or borings across the landfill so as to determine the thickness, extent and permeability of the final cover material, and shall propose whether any changes are required.

REPORT DUE DATE: NO LATER THAN JULY 15, 2000.

7. The discharger shall submit a proposal, acceptable to the Executive Officer, for the study of the stability of the slopes immediately surrounding and comprising the landfill. If the slopes are found to be prone to failure, the discharger shall propose such measures, to include but not be limited to drainage improvements or physical protection, so as to effectively manage the instability.

REPORT DUE DATE: NO LATER THAN JULY 15, 2000

8. 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. If needed, the emergency response contingency plan, required by Provision C.4, shall be immediately implemented.

NOTIFICATION DUE DATE: IMMEDIATELY

C. PROVISIONS

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. 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 or subsurface sources **shall not** contact or percolate through wastes 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 this 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 existing containment, drainage, and monitoring systems at the facility, shall be maintained as long as leachate is present and poses a threat to water quality.

5. The discharger shall assure that the foundation of the site, the solid waste fill, and the structures which control surface drainage and erosion are constructed and maintained to withstand conditions generated during the maximum probable earthquake.

6. The final cover system shall be maintained as required to promote lateral runoff and prevent ponding and infiltration of water. The final cover system shall meet all other applicable requirements as described in Title 27.

7. 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 observed shall be stabilized as soon as possible, and the Regional Board shall be notified immediately in accordance with the approved emergency response contingency plan, required by Provision B.4. of these requirements.

8. The existing sea wall shall be maintained at least one foot above the elevation of the highest expected tide including storm wave action and in adequate condition to prevent site erosion due to wave action and the deposition of any refuse in waters of the State due to erosion or slides.

9. Access to all portions of the site shall be maintained at all times to allow for immediate corrections of slides, drainage problems or erosion of cover material.

10. The discharger shall file with the Regional Board those Discharge Monitoring Reports performed according to the Discharge Monitoring Program outlined in Attachment A.

11. The discharger shall install any reasonable additional groundwater and leachate monitoring devices required to fulfill the terms of any future Discharge Monitoring Program issued by the Executive Officer.

12. The Regional Board shall be notified immediately of any failure occurring in the waste management unit. Any failure that threatens the integrity of containment features of the landfill shall be corrected in accordance with the emergency response contingency plan required by Provision B.4. of these requirements, and the Regional Board notified immediately..

13. In accordance with California Water Code Section 13267(c), the discharger shall permit the Board or its authorized representative:

    a. 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 methods required by this order or by any other California State Agency.

d. Sampling of any discharge or groundwater governed by this Order.

14. The discharger shall file a technical report on any changes in site occupancy or ownership associated with the property described in this Order.

15. 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.

16. Reporting of Hazardous Substance Release: If any hazardous substance is discharged in or on any waters of the State, or discharged or deposited where it is, or probably will be, discharged in or on any waters of the State, the discharger shall report such discharge to the Regional Board by calling (510) 622-2300 during regular office hours (Monday through Friday, 8:00 to 5:00).

A written report shall be filed with the Board within five working days. The report shall describe: the nature of the hazardous substance, estimated quantities involved, duration of incident, cause of release, estimated size of affected area, nature of effect, corrective actions taken or planned, and persons/agencies notified.

This reporting is in addition to reporting to the Office of Emergency Services required pursuant to the Health and Safety Code.

17. 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 (QA/QC) records for Board review. This provision does not apply to analyses that can only be reasonably performed on-site (e.g. temperature).

18. **Cost Recovery**: The discharger shall be liable, pursuant to California Water Code Section 13304, to the Board for all reasonable costs actually incurred by the Board to investigate unauthorized discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, required by this Order. If the site addressed by this Order is enrolled in a State Board-managed reimbursement program, reimbursement shall be made pursuant to this Order and according to the procedures established in that program. Any disputes raised by the discharger over reimbursement amounts or methods used in that program shall be consistent with the dispute resolution procedures for that program.

19. This Order serves to supplement the existing Waste Discharge Requirements adopted for this site, contained in Order No. 82- 43.

20. **Periodic SCR Review**: The Board will review this Order periodically and may revise it when necessary.

I, Lawrence P. Kolb, Assistant Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on April 19, 2000.

Lawrence P. Kolb
Acting Executive Officer

==========

FAILURE TO COMPLY WITH THE REQUIREMENTS OF THIS ORDER MAY SUBJECT YOU TO ENFORCEMENT ACTION, INCLUDING BUT NOT LIMITED TO: IMPOSITION OF ADMINISTRATIVE CIVIL LIABILITY UNDER WATER CODE SECTIONS 13268 OR 13350, OR REFERRAL TO THE ATTORNEY GENERAL FOR INJUNCTIVE RELIEF OR CIVIL OR CRIMINAL LIABILITY

==========

Figures: Figure 1 - Site Location Map
Figure 2 - Landfill map

Attachment: Attachment A - Discharge Monitoring Program

FIGURE 1 - LOCATION MAP

MUSSEL ROCK LANDFILL

DALY CITY

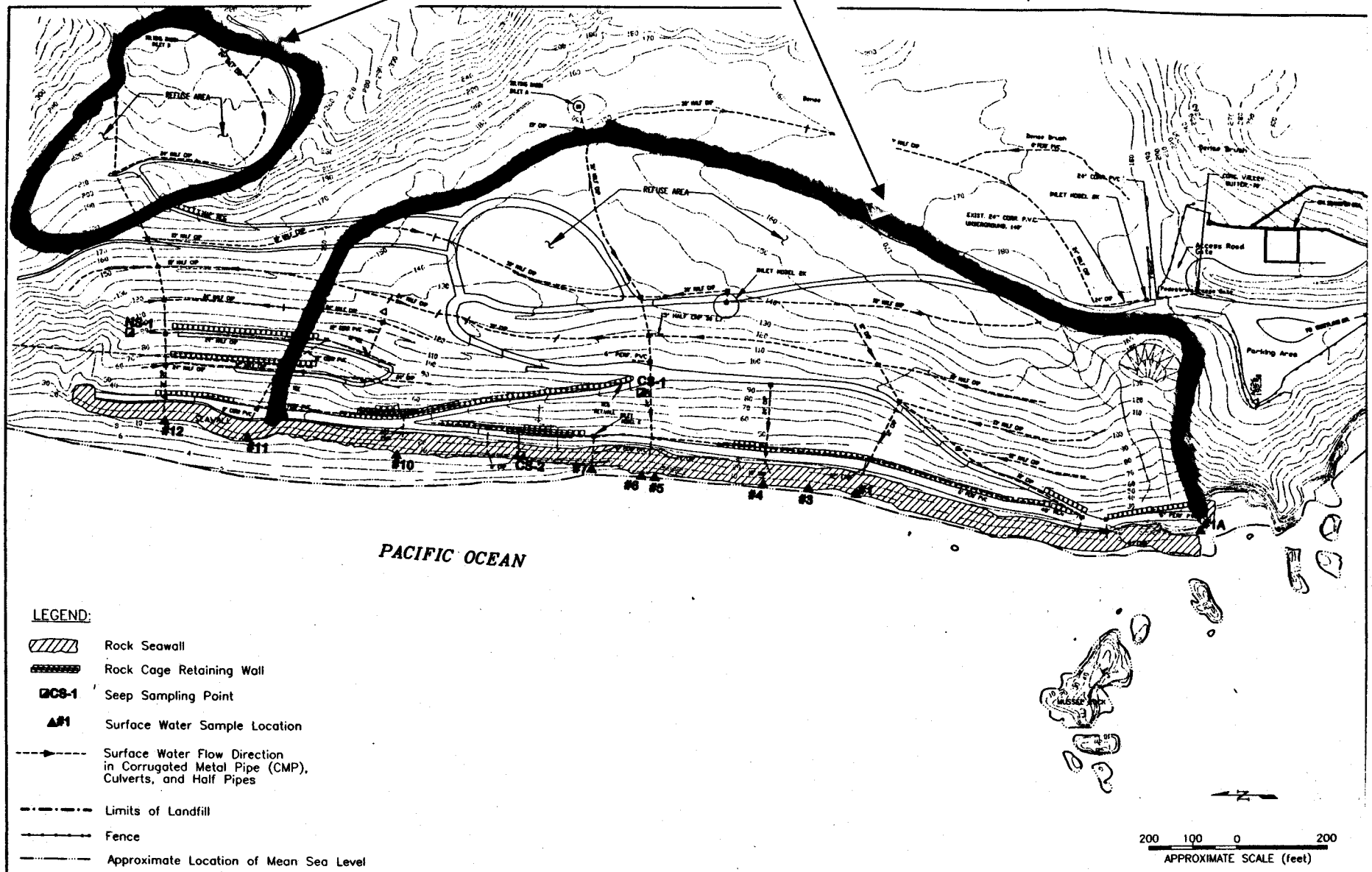


FIGURE 2 – LANDFILL MAP

MUSSEL ROCK LANDFILL

DALY CITY

ATTACHMENT A

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

UPDATED
DISCHARGE MONITORING PROGRAM

FOR

MUSSEL ROCK PARK LANDFILL
CLASS III SOLID WASTE DISPOSAL SITE
CITY OF DALY CITY, SAN MATEO COUNTY

ORDER NO. 00-27

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 Title 27.

The principal purposes of a discharge monitoring program are: (1) to document compliance with site cleanup 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 Title 27.

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 the Pacific Ocean 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, slope or ground movement, and/or daylighted refuse.
4) Adequacy of access road
5) Condition of site drains, silt basin capacity
6) Standard Analysis 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. Storm drain discharges per Section 20415
2. Groundwater and leachate per Section 20415

and per the general requirements specified in Section 20415(e) of Title 27.

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 January 31 and July 31 of each year. In addition an annual report shall be filed by January 31 of each year. 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 the director of public works for the City 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 facilities.

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.

2. CONTINGENCY REPORTING

a. Documentation of the seeps will continue in the monthly maintenance reports. This documentation shall contain the following information:
   1) a map showing the location(s) of discharge if any;
   2) approximate flow rate;
   3) nature of effects; i.e. all pertinent observations and analyses; and
   4) corrective measures underway, proposed, or as specified in the site cleanup requirements.

3. REPORTING

By January 31 of each year the discharger shall submit an annual report to the Board covering the previous calendar year. The annual report may incorporate the second semi-annual report of the previous year. The annual report shall contain:

a. Tabular and graphical summaries of the monitoring data obtained during the previous year; the report should be accompanied by a computer data disk, tabulating the year's data in Excel.

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 site cleanup requirements.

c. 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.

4. WELL LOGS

A boring log and a monitoring well construction log shall be submitted for each new 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. **ON-SITE OBSERVATIONS – Observe quarterly, Report Semi-annually** (as depicted on Fig. 1)

1.

STATION	DESCRIPTION	OBSERVATIONS	FREQUENCY
A-1 to E-14	Located on the area as deli-neated by a 200 foot grid network.	Standard observations for the waste management unit.	Monthly
L-1 thru L-'n'	At each point of discharge. Include a map indicating locations of discharge(s)	Standard test as outlined in Table A. Grab sample taken from seeps with flow rates exceeding 5 gpm.	Semi-annual

B. **SURFACE, GROUNDWATER AND LEACHATE MONITORING** - Report Semi-annually

i. Surface and Stormwater: Surface water shall be monitored as outlined below and in Table A (Attached). These monitoring points are also shown on Figure 1 (Attached). The results of the additional monitoring conducted as part of the General Permit for stormwater discharge shall be submitted as part of the annual report.

Monitoring Points:

Surface Water	**Outfalls 1, 3, 6, 8a, 10**

ii. Groundwater: Groundwater samples shall be analyzed as outlined below and in Table A (Attached). The Discharger shall analyze for all metals and organic compounds semi-annually the first year, then once every five years with the next sampling event scheduled for the year 2000.

Monitoring Points:

Groundwater	**Wells to be placed per Task B-5**

iii. Leachate: Leachate samples shall be analyzed as outlined below and in Table A (Attached). The Discharger shall analyze for all metals and organic compounds semi-annually the first year, then once every five years with the next sampling event scheduled for the year 2000.

Monitoring Points:

Leachate	**Wells to be placed per Task B-5**

C. **FACILITIES MONITORING**

The Discharger shall inspect all facilities to ensure proper and safe operation once per quarter and report semi-annually.

D. Reports shall be due on the following schedule:

First semi-annual report:	**July 31 of each year**
Second semi-annual Report:	**January 31 of each year**
Annual Report:	**Combined with the second semi-annual report, due January 31 of each year**

I, Lawrence P. Kolb, Acting 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 site cleanup requirements established in this Board's Order No. 00 - .

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.

Lawrence P. Kolb
Acting Executive Officer

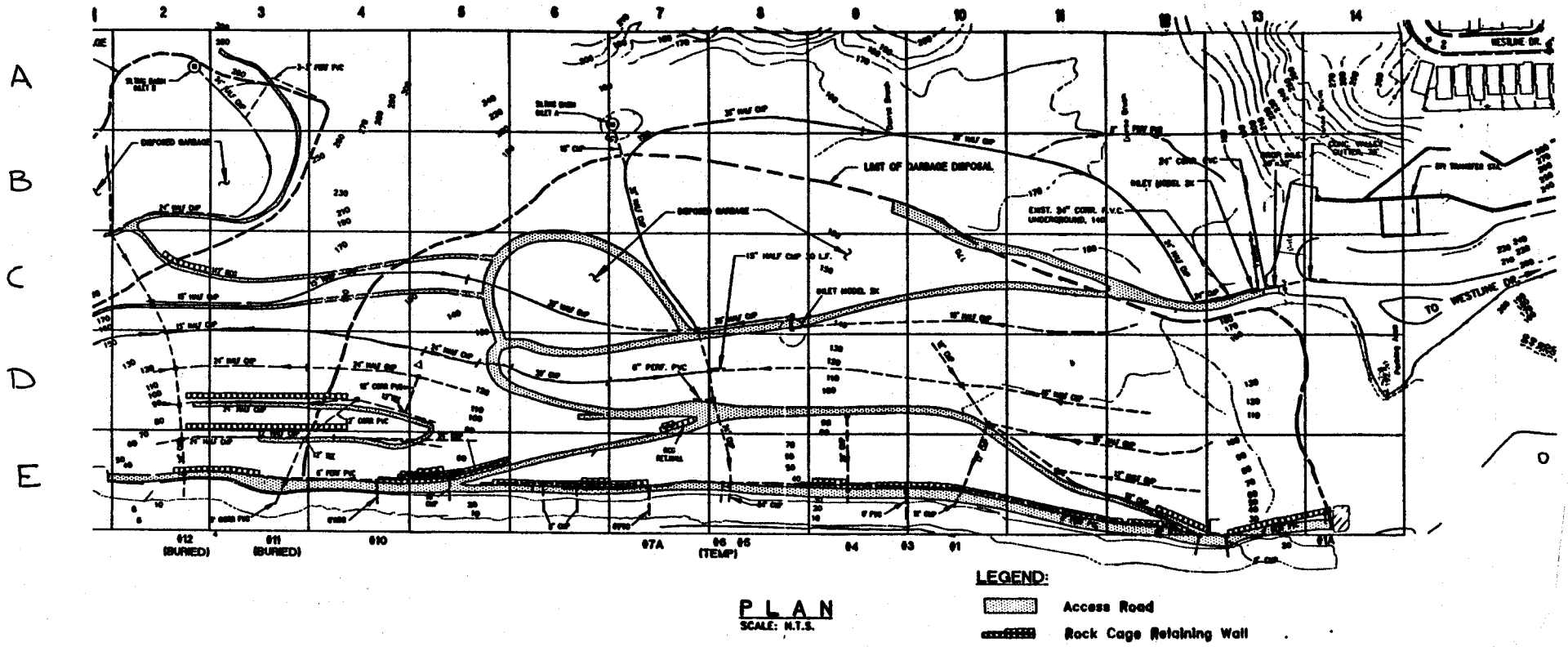
Date Ordered: April 19, 2000

(i)Attachment: Figure 1 - Landfill Map
Table A - Schedule for Sampling, Measurement, and Analysis

Figure 1 Landfill Map

Mussel Rock Landfill

Daly City



PLAN
SCALE: N.T.S.

Table A - Discharge Monitoring Plan, List of Analytical Parameters, Surface, Stormwater, Leachate and Groundwater

Parameters	Method**	Frequency
pH	Field	Semi-Annual
Chloride	300.0	Semi-Annual
Sulfate	300.0	Semi-Annual
Total Dissolved Solids	160.1	Semi-Annual
Ammonia (un-ionized)	350.1	Semi-Annual
Total organic carbon	415.1	Semi-Annual
Nitrate	9200	Semi-Annual
COD	410.2	Semi-Annual
Electrical conductivity	Field	Semi-annual
Volatile Organic compounds (including MTBE)	8260	Semi-Annual
Leachate Elevation	Field	Quarterly
Groundwater Elevation	Field	Quarterly
Semivolatile organic compounds	8270	Semi-Annual/Every 5 years*
Organochlorine Pesticides & PCBs	8080	Semi-Annual/Every 5 years*
Antimony	6010	Semi-Annual/Every 5 years*
Arsenic	7060	Semi-Annual/Every 5 years*

Barium	6010	Semi-Annual/Every 5 years*
Beryllium	6010	Semi-Annual/Every 5 years*
Cadmium	6010	Semi-Annual/Every 5 years*
Chromium	6010	Semi-Annual/Every 5 years*
Copper	6010	Semi-Annual/Every 5 years*
Lead	7421	Semi-Annual/Every 5 years*
Mercury	7470	Semi-Annual/Every 5 years*
Nickel	6010	Semi-Annual/Every 5 years*
Selenium	7740	Semi-Annual/Every 5 years*
Silver	6010	Semi-Annual/Every 5 years*
Thallium	7841	Semi-Annual/Every 5 years*
Tin	6010	Semi-Annual/Every 5 years*
Vanadium	6010	Semi-Annual/Every 5 years*
Zinc	6010	Semi-Annual/Every 5 years*

Notes:

* The discharger shall analyze for all metals and organic compounds Semi-Annually the first year, then every 5 years thereafter.

** Test methods per Methods for Chemical Analysis of Water and Waste, USEPA 600/4/79/029, revised March 1983, or Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods, USEPS SW-846, 3rd edition, November 1986 and revisions.