

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

MONITORING AND REPORTING PROGRAM
NO. 95-109

FOR MARINE CORPS BASE CAMP PENDLETON
CLASS II WASTE MANAGEMENT FACILITY
FOR TREATMENT OF PETROLEUM HYDROCARBON CONTAMINATED SOILS
AT UNITED STATES MARINE CORPS BASE CAMP PENDLETON
SAN DIEGO COUNTY

A. MONITORING PROVISIONS

1. Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. All samples shall be taken at the monitoring points specified in this Order and, unless otherwise specified, before the effluent joins or is diluted by any other waste stream, body of water, or substance. Monitoring points shall not be changed without notification to and the approval of the Executive Officer.
2. Monitoring must be conducted according to United States Environmental Protection Agency test procedures approved under Title 40, Code of Federal Regulations (CFR), Part 136, "Guidelines Establishing Test Procedures for Analysis of Pollutants Under the Clean Water Act" as amended, unless other test procedures have been specified in this Order.
3. All analyses shall be performed in a laboratory certified to perform such analyses by the California Department of Health Services or a laboratory approved by the Executive Officer.
4. Monitoring results must be reported on discharge monitoring report forms approved by the Executive Officer.
5. If the discharger monitors any pollutants more frequently than required by this Order, using test procedures approved under 40 CFR, Part 136, or as specified in this Order, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the discharger's monitoring report. The increased frequency of monitoring shall also be reported.
6. The discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order. Records shall be maintained for a minimum of five years from the date of the sample, measurement, report or application. This period may be extended during the course of any unresolved litigation regarding this discharge or when requested by the Executive Officer.

7. All monitoring instruments and devices which are used by the discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy.
8. The discharger shall report all instances of noncompliance not reported under the Reporting Requirement D.5. of Order No. 95-109 at the time monitoring reports are submitted. The reports shall contain the information listed in the Reporting Requirements of Order No. 95-109.
9. Records of monitoring information shall include:
 - a. The date, identity of sample, Monitoring Point from which it was taken, weather conditions at time of sampling, and time of sampling or measurement;
 - b. The individual(s) who performed the sampling or measurements;
 - c. Date and time that analyses were started and completed, and the name of the personnel performing each analysis;
 - d. The analytical techniques or method used, including method of preserving the sample and the identity and volumes of reagents used;
 - e. Calculation of results;
 - f. Results of analyses, and the Method Detectable Limit (MDL) for each parameter, and;
 - g. Laboratory quality assurance/quality control (QA/QC) results (e.g. percent recovery, response factor, etc.)
10. The monitoring reports shall be signed by an authorized person as required by the Reporting Requirement D.8. of Order No. 95-109.

B. UNTREATED SOIL MONITORING

1. The discharger shall monitor each load of soil accepted at the Class II waste management facility. The following parameters shall be reported quarterly:

<u>Parameter</u>	<u>Terms of</u>
Quantity accepted	tons, cubic yards
Source(s) of soil accepted	address, Unauthorized Release No., type of facility
Major pollutants(s) and range(s) of concentration	appropriate units

2. Documentation of the non-hazardous nature of each lot of untreated soil shall be included in quarterly reports. Hazardous characteristics shall be determined by criteria contained in California Code of Regulations (CCR) Title 22, Division 4, Chapter 30 Article 11.

C. TREATED SOIL MONITORING

1. The discharger shall monitor "track" each lot of treated soil disposed/reused of off-site. The following parameters shall be reported quarterly:

<u>Parameter</u>	<u>Terms of</u>
Quantity discharged	tons, cubic yards
Ultimate location of treated soil disposal or use	Address/Zoning
Results from analysis	See below (include summary of QA/QC)

2. Each lot of petroleum hydrocarbon contaminated soils must be sampled and analyzed as follows:
- a) **Sampling:** All soil samples shall be taken in accordance with sampling guidelines set forth in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, Third Edition," U.S. Environmental Protection Agency, 1986. A minimum of **four** samples shall be analyzed for either primary and/or secondary analysis.
 - b) **Analysis:** The minimum detection levels for the methods prescribed are listed in **Table 1** of this Monitoring and Reporting Program.

Primary

Diesel Hydrocarbons

Diesel and heavier petroleum hydrocarbon contaminated soils shall be analyzed using the DHS/EPA Method 8015 modified to quantify the total petroleum hydrocarbons through the carbon range C₁₂ to C₃₀.

Crude Oil and Other Heavy-Ended Petroleum Hydrocarbons

Waste oil and other heavy-ended petroleum hydrocarbon contaminated soils shall be analyzed using the both EPA Method 418.1 and DHS/EPA Method 8015 modified to quantify the total petroleum hydrocarbons through the carbon range C₆ to C₅₀.

Secondary

Diesel/Heavy-Chain Hydrocarbon

Diesel and heavier petroleum hydrocarbon contaminated soils shall be analyzed for Benzene, Toluene, Ethylbenzene, Total xylene (BTEX) as described above. Also, the soils shall be extracted using the Toxicity Characteristic Leaching Procedure (TCLP) modified to extract with deionized water. Subsequently, the extract shall be analyzed for: 1) diesel using DHS/EPA Method 8015 modified to quantify the total petroleum hydrocarbons through the carbon range C₁₂ to C₃₀.

Table 1. Test Methods and Minimum Detection Levels for Petroleum Contaminated Soils

<u>Type of Contaminant</u>	<u>Constituent of Concern</u>	<u>Ext. Method</u>	<u>Carbon Range</u>	<u>Prep. Method</u>	<u>DHS/EPA Method of Analysis</u>	<u>Minimum Detection Level</u>
Diesel	TPH-Diesel		C ₁₂ -C ₃₀	3550	8015M/DHS	10 mg/kg
Diesel	Leachable Diesel	DI-TCLP	C ₁₂ -C ₃₀	3510	8015M/DHS	100 µg/L
Crude/Heavy Oil	Heavy-Ended Hydrocarbons		C ₆ -C ₅₀		418.1	10 mg/kg
All	BTEX				8020	0.5 µg/kg

D. FINAL DISPOSAL OF TREATED SOILS

1. For each disposal activity of treated soils, the discharger shall report that the following conditions have been met:
 - a. All treated soils have been sampled and analyzed in accordance with this Monitoring and Reporting Program.
 - b. Concentration Limits: All specifications regarding "daily landfill cover and industrial fill" disposal conditions and concentrations limits in Order No. 95-109 have been met.
 - c. Site Conditions: The proposed final disposal site meets the following conditions:
 - 1) Separation from Ground Water: The soil/waste shall be placed at least five feet above the highest anticipated level of ground water. The soil that separates the waste soil from groundwater shall have a significant clay content (greater than 5% clay-sized material) and a permeability of less than 10⁻⁵ cm/sec.
 - 2) Separation from Surface Water: The soil/waste shall be placed at least 100 feet from the nearest surface water.
 - 3) Flood Plain Protection: The soil/waste shall be protected against 100 year peak stream flows as defined by the County of San Diego flood control agency.
 - 4) Landfill use: Soil/waste discharged to a landfill shall either be:
 - a. Disposed of into the landfill (i.e., codisposed with municipal refuse); or,
 - b. used as daily cover as defined in Chapter 15, §2544. Daily cover shall be protected from impacting surface waters through erosion, runoff and nuisance conditions.

- 5) Cover: The soil/waste shall be covered by either 1) engineered materials (e.g. used as road base, fill beneath buildings, bridge abutments, etc.), or 2) not less than 2 feet of noncontaminated, clean fill. The cover shall provide a permeability of less than 10^{-5} cm/sec.

d. Treated soil disposed of is consistent with Discharge Specification B.20.

E. SITE MAINTENANCE

- 1. The discharger shall perform quarterly inspections of the site and report the results **quarterly**. The report shall contain information on the sites condition and a discussion of any significant findings regarding:
 - a) General site condition;
 - b) Waste pile cover condition;
 - c) Drainage facilities on and immediately off site;
 - d) Groundwater monitoring wells condition; and
 - e) Maintenance activities at the site.

F. SURFACE WATER QUALITY MONITORING

- 1. Pursuant to Discharge Specifications of Order No. 95-109, surface waters (e.g., tributary to the Santa Margarita River) shall be sampled at a minimum of one station upstream, one station along side the facility, and one station at the southeastern corner of the facility where on site drainage exits via the drainage swale (Figure 2). Samples shall be collected during the first stream flow period of the rainy season and during any subsequent rain events when a spill/release from the containment area is suspected. Surface water samples shall be analyzed for:

Table 2. Surface Water Monitoring Program Analyses

<u>Constituent of Concern</u>	<u>Carbon Range</u>	<u>Prep. Meth.</u>	<u>DHS/EPA Method of Analysis</u>	<u>Minimum Detection Level</u>
TPH-Diesel	C ₁₂ -C ₃₀	3510	8015M/DHS	100 µg/L
Heavy-Ended Hydrocarbons	C ₆ -C ₃₀		418.1	100 µg/L
BTEX			601/602	0.5 µg/L

G. GROUNDWATER QUALITY MONITORING

1. Pursuant to Discharge Specifications of Order No. 95-109, groundwater shall be sampled upgradient at groundwater monitoring well MW-1, and downgradient at groundwater monitoring wells MW-2 and MW-3 (Figure 2). Samples shall be collected prior to treatment system startup, and quarterly thereafter. Samples shall be analyzed as follows in **Table 3**:

Table 3. Groundwater Monitoring Program Analyses

<u>Constituent</u>	<u>Units</u>	<u>DHS/EPA Method of Analyses</u>	<u>Frequency of Analyses</u>
Water elevation	0.01 feet from datum	(in field)	Quarterly
TPH-diesel	mg/l	8015M/DHS	Quarterly
Benzene	ug/l	8020	Quarterly
Toluene	ug/l	8020	Quarterly
Total xylenes	ug/l	8020	Quarterly
Ethylbenzene	ug/l	8020	Quarterly
Lead (total)	ug/l	7421	Initial only
pH	pH units	(in field)	Quarterly
Temperature	°F/°C	(in field)	Quarterly
Conductivity	($\Omega \cdot m$) ⁻¹	(in field)	Quarterly

H. REPORTS TO BE FILED WITH THE BOARD

All reports shall be submitted no later than one month following the end of their respective Reporting Period. The reports shall also include the following information:

1. Transmittal Letter

A letter summarizing the essential points shall be submitted with each report. The transmittal letter shall include:

- a. A discussion of any requirement violations found since the last such report was submitted and shall describe actions taken or planned for correcting the violations. If the discharger has previously submitted a detailed time schedule for correcting said requirement violations, a reference to the correspondence transmitting such schedule will be satisfactory. If no violations have occurred since the last submittal, this shall be stated in the transmittal letter; and

- b. A statement certifying that, under penalty of perjury, that to the best of the signer's knowledge the report is true, complete, and correct. This statement shall be signed by an individual that meets the requirements contained in Reporting Requirement D.8.

2. Quarterly Report

The discharger shall submit a quarterly report to the Land Discharge Unit covering the previous three months of sampling and analytical data. The quarterly report shall include, but not be limited to, the results of treated soil disposal monitoring (tracking).

3. Annual Summary Report

The discharger shall submit an annual report to the Executive Officer covering the previous monitoring year. The annual Reporting Period ends March 31. The annual report shall include, but not be limited to, the following:

- a. Presentation of Analytical Data - For each disposal activity, submit in an Executive Officer approved format the laboratory analytical data for all samples taken that characterize the soil disposed of.
- b. Summary of Changes - A written summary of the monitoring results and monitoring system(s), indicating any changes made or observed since the previous annual report.

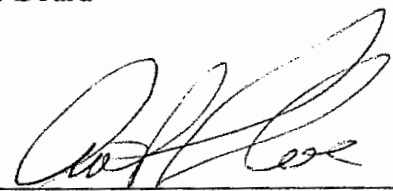
Reporting Schedule

<u>Reporting Frequency</u>	<u>Report Period</u>	<u>Report Due</u>
Quarterly	January through March	April 30
	April through June	July 30
	July through September	October 30
	October through December	January 30
Annually	April through March	April 30

Monitoring reports shall be submitted to:

Land Discharge Unit
California Regional Water Quality Control Board
San Diego Region
9771 Clairemont Mesa Blvd., Suite B
San Diego, CA 92124-1331

Ordered by: _____



ARTHUR L. COE, Executive Officer

10/12/95

(Date)

FIGURE 2

UNITED STATES MARINE CORPS BASE CAMP PENDLETON
CLASS II WASTE MANAGEMENT FACILITY
SITE LAYOUT AND MONITORING POINT LOCATIONS

