

APPENDIX K - CONTAMINATED MATERIALS MANAGEMENT PLAN

This Contaminated Materials Management Plan (CMMP) has been prepared for the proposed Dynegy Energy Morro Bay Marine Terminal Decommissioning Project. The purpose of this CMMP is to present an overview of the procedures and protocols that will be utilized during the Project to safely and appropriately recover, handle, characterize, store, transport and dispose of any contaminated materials identified during the terminal decommissioning Project.

K.1 PROJECT BACKGROUND

K.1.1 Exterior Pipeline Condition

The Dynegy Morro Bay Power Plant (MBPP) was originally constructed to operate on fuel oil or natural gas. As such, the MBPP Marine Terminal submarine pipeline was constructed by Pacific Gas and Electric (PG&E) in the early 1950's to facilitate the offloading of fuel oil from marine tankers. Existing facility records indicate that there have been no documented pipeline ruptures and/or leaks at the Dynegy Marine Terminal.

K.1.2 Valve Boxes and Onshore Pipeline Route

The existing conditions beneath the valve box and onshore pipeline route at the Morro Bay Power Plant have recently been extensively investigated for soil and ground water contamination (Fluor-Daniel, 1997). Fluor-Daniel completed a total of five soil borings within the beach valve area utilizing hand-auger or Geoprobe direct-push drilling techniques during their site assessment activities completed in 1997. One soil sample (Sample No. BB03-01@0.25') was indicated with total petroleum hydrocarbons (TPH) at a concentration of 1,500 milligrams per kilogram (mg/kg). A soil sample collected from the same drill hole at a depth of 5.0 feet (ft) (1.5 meter [m]) (Sample No. BB03-01@5.25') was not indicated with detectable TPH concentrations. Based on the results of the subsurface investigation, a small area approximately 15.0 ft (4.6 m) south of the beach valves within the upper 1.0 to 2.0 ft (0.3 to 0.6 m) has been impacted by petroleum hydrocarbons.

One ground water sample (Sample No. BB03-13@W) was collected by Fluor-Daniel at the beach valve area during their site assessment activities in 1997. This sample was collected at the same location as drill hole BB03-1 discussed above. Ground water was indicated at a depth of 10.5 ft (3.2 m). This sample indicated with TPH concentrations at 1,880 micrograms per liter (ug/L).

Along the onshore pipeline route, Fluor Daniel advanced eight drill holes utilizing Geoprobe drilling techniques for the collection of soil and ground water samples for chemical analyses. The drill holes were spaced approximately 100 to 150 ft (30.5 to 45.7 m) apart along the onshore route between the beach and the MBPP. In general, the drill holes were advanced until ground water was encountered. Soil samples were collected for chemical analyses. Depths to ground water encountered during the drilling activities ranged from 8 to 18 ft (2.4 to 5.35 m) below ground surface. A total of twenty-three soil samples and one ground water sample were submitted for chemical analyses. Detectable concentrations of TPH were not indicated in the soil or ground water samples collected. No additional contaminants of concern were identified in this area during the site assessment activities completed by Fluor-Daniel.

The hydrocarbon-containing soils and groundwater identified in the vicinity of beach valves may be encountered during the proposed decommissioning activities. This CMMP is intended to ensure that soil and ground water encountered during the Project activities are properly managed and disposed. PG&E has retained responsibility for the remediation of areas of petroleum hydrocarbon-soil and ground water as part of the sale agreement for the MBPP. Dynegy will appropriately handle and dispose of any contaminated soil or ground water encountered during the proposed pipeline decommissioning activities.

K.2 HEALTH AND SAFETY PLAN

Dynegy's decommissioning contractor will prepare a site-specific Health and Safety Plan for the Project prior to initiation of Project field activities. This Health and Safety Plan will be included in the Contractor Work Plan and will present protocols to protect worker and community health and safety during the course of the Project. In addition, the decommissioning contractor will provide documentation demonstrating completion of health and safety training for all employees involved with subsurface work at the Project site.

K.3 FIELD PROCEDURES AND PROTOCOLS

The following field procedures and protocols will be applied to appropriately handle hydrocarbon-containing sediments and groundwater encountered during decommissioning of the facility. In addition, the following provides the procedures and protocols to be implemented during the pipeline flushing operation.

K.3.1 Field Monitoring

During the onshore decommissioning activities, a Dynegy-approved monitor will be on-site to observe the excavated materials. The field monitor will conduct field screening of the excavated soil to segregate any identified hydrocarbon-contaminated materials from the clean overburden material. Suspect materials will be screened visually and through the use of a field portable photoionization detector (PID).

As an option, a petroleum field test kit (Petroflag® System described below) can be used to screen any suspect materials identified during excavation (if necessary). The use of this field screening technique will allow for real-time decision-making regarding the extent of impacted soils identified during excavation.

The Petroflag® Hydrocarbon Analyzer uses an extraction, filtration, and turbidimeter analysis procedure that quantifies total petroleum hydrocarbons. The Petroflag® analysis has been assigned an Interim U.S. Environmental Protection Agency (EPA) Method Number 9074. It does not use chlorinated solvents in the extraction process, thereby eliminating special disposal for the solvent. The unit has a normal range of 0 to 2,000 ppm, but can be calibrated for higher concentrations through dilution of the sample. The unit's lower detection limit is 10 to 20 ppm.

K.3.2 Stockpiling Excavated Materials

During excavation activities, uncontaminated materials will be stockpiled adjacent to the excavation for reuse as fill material during the backfill and compaction process. At locations where petroleum hydrocarbon-containing soils may be encountered (50 cubic yards of material or less), the soil will be stockpiled separately on plastic sheeting (i.e., visqueen). Additionally, hydrocarbon-containing soil stockpiles will be covered with the plastic sheeting. It is anticipated that the designated equipment

staging and refueling area at the site will be used to stockpile any hydrocarbon-containing soils encountered during excavation activities. Hydrocarbon-containing stockpiles will be assessed for hydrocarbon content per the procedures outlined below.

K.3.3 Sample Collection

Confirmation soil samples will be collected from all excavation and stockpile areas at the discretion of the on-site Dynegy representative. Soil samples will be collected using a remote sampler or from the excavator bucket. Samples will be preserved in the field per EPA protocol and delivered to the analytical laboratory the day of collection. Chain-of-custody forms will be used to document sample management. The field monitor will log the earth material encountered and environmental conditions within the excavations.

Groundwater sampling may also be collected from the excavations. Groundwater samples will be collected if soil contamination is detected at depth, and there is an apparent potential that groundwater has been compromised. Samples will be preserved in the field per EPA protocol and delivered to the analytical laboratory the day of collection. Chain-of-custody forms will be used to document sample management.

K.4 ANALYTICAL PROCEDURES

Samples collected during the proposed Project will be analyzed by a State of California certified analytical laboratory approved by Dynegy. Samples will be analyzed for the presence of TPH by EPA Method 8015 modified for diesel fuel. TPH will be reported in the following ranges: C₄-C₁₂, C₁₃-C₂₂ and C₂₃-C₄₀. The analytical data will be used to determine if the subject materials are hazardous waste, designated waste or uncontaminated material.

K.5 WASTE MANAGEMENT

Dynegy proposes to handle wastewater generated during any identified petroleum hydrocarbon-containing soil or ground water in the following manner:

- TPH-containing ground water removed from excavations at the beach valve area will be treated as necessary and disposed of at an approved wastewater disposal and/or treatment facility. The final treatment and disposal locations will be determined based on the amount of contaminants contained in the groundwater (to be determined based on analytical procedures described above).
- Petroleum hydrocarbon-containing soil will be hauled to an approved waste treatment facility for proper disposal and/or treatment.

K.6 REPORTING

In consultation with the regulatory agencies, the procedures presented in this CMMP will be implemented. Dynegy will notify the following agencies if additional petroleum hydrocarbon-containing materials are encountered during construction operations:

- County of San Luis Obispo, Division of Environmental Health
- Central Coast Regional Water Quality Control Board

K.7 REFERENCES

Fluor Daniel GTI, 1997, *Phase II Environmental Site Assessment Report, Pacific Gas and Electric Company, Morro Bay Power Plant, Morro Bay, California*, Three Volumes, July.

U.S. Environmental Protection Agency, SW-846 - *Test Methods for Evaluating Solid Waste, Physical and Chemical Methods*, <http://www.epa.gov/epaoswer/hazwaste/test/main.htm>.