FILE

AC Transit
Alameda-Contra Costa Transit District

1600 Franklin Street, Oakland, California 94612 □ (415) 891-4777

PWD

October 29, 1987

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2/16/88

Mr. Peter Johnson
State of California
Regional Water Quality Control Board
San Francisco Bay Region
1111 Jackson Street, Room 6040
Oakland, CA 94607

Dear Mr. Johnson:

Subject: AC Transit Facilities Improvement Program
Division 4, Seminary Reconstruction
Contract D4-5, Maintenance Building
Transmittal of Remediation Plan

At our September 16, 1987, meeting with you concerning the soils contamination at the District's 7100 Seminary Avenue, OAKLAND site, you requested a remediation plan. This plan is attached and was prepared for your use by Kaiser Engineers. I have also included a copy of a background paper that will be helpful if you receive any inquiries from the media.

Please contact Dr. Beverly Ausmus at 268-6330 or Mr. Hal Nahler at 891-4888, both of Kaiser Engineers, if you have any questions concerning this plan.

Thank you for your cooperation in aiding us in keeping our project moving.

Very truly yours,

George Skezas
Facilities Administrator

gd
Attachments

cc: Lowell Miller - Alameda County
H. M. Nahler - KE
B. Ausmus - KE
S. Whitehead - KE
L. Hanson - KE

AC TRANSIT FACILITIES IMPROVEMENT PROGRAM

AC Transit District's Seminary Division
1100 Seminary Avenue, Oakland

Remediation Plan

Nature of Contamination

The contamination identified in the Seminary site soils consists of (1) oil and grease from asphaltic degradation and from mechanical service pits in the raised portion of the maintenance building and (2) total fuel hydrocarbons, specifically diesel fuel from a leaking underground storage tank.

There is no detectable groundwater contamination associated with the soils contamination.

Remediation Plan

Quantities of free product removed from pools overlaying tight clay have been moved to a storage bin and processed using the facility's oil water separator system.

Quantities of soil contaminated with greater than 1,000 ppm total fuel hydrocarbons were removed, manifested, and shipped to a state licensed RCRA-permitted facility.

Quantities of clean fill, that is less than 100 ppm total fuel hydrocarbons, were shipped off site for use locally as clean fill.

Quantities of contaminated soil excavated greater than 100 ppm TFH and less than 1,000 ppm TFH are being used as engineered fill in the new construction of the maintenance building within the area covered by the groundwater monitoring program.

All underground storage tanks that were leaking and any within the construction scope of work have been removed and disposed of in compliance with federal, state, and local regulations.

Alternative Assessment for Remediation

The basis of the remedial alternatives considered was the concentration of TFH and of oil and grease in soils removed from excavations and stockpiled for disposition.

Alternatives considered were as follows:

1. Off-site disposal at one or more sites depending on contaminant concentrations.

2. Off-site treatment followed by disposal.

3. On-site treatment followed by shipment off site for disposal.

4. On-site treatment and replacement on site as fill.

5. No treatment and replacement on site as fill.

6. No treatment and replacement on site as fill with option for future excavation, treatment, and disposition, if required.

Analysis:

1. Off-site disposal at one or more sites depending on contaminant concentrations.

   Soils contaminated greater than 1,000 ppm TFH were excavated and shipped to a California licensed RCRA-permitted facility for treatment, storage, or disposal at the discretion of the receiving facility. The volume of soils thus disposed was approximately 950 cu yds.

   Soils not significantly contaminated with TFH (less than 100 ppm) were excavated and shipped to the Oakland airport as fill. The volume of soils thus disposed was approximately 950 cu yds.

2. Off-site treatment followed by disposal.

   Option not exercised due to cost versus options 1 and 6.

3. On-site treatment followed by shipment off site for disposal.

   Option not exercised due to cost versus options 1 and 6.

4. On-site treatment and replacement on site as fill.

   Option not exercised due to cost versus options 1 and 6.

5. No treatment and replacement on site as fill.

   Option not exercised due to cost versus options 1 and 6.

6. No treatment and replacement on site as fill with option for future excavation, treatment, and disposition, if required.

   Soils have TFH greater than 100 ppm but less than 1,000 ppm or having appreciable oil and grease concentrations were stockpiled, sorted, and used as engineered fill in the construction area. The approximate volume of soils thus used is 2,500 cu yd.

   The site has a groundwater monitoring program which will allow surveillance of the area containing contaminated fill. The wells will be sampled quarterly and water analyzed for total fuel hydrocarbons and oil and grease. Results will be presented to SFBRWQCB and County Health Department. A minimum of one upgradient and four downgradient wells will be used for the monitoring program.

Residual Impacts of Remedial Actions and Associated Costs

Residual impacts of excavated and off-site disposed materials are negligible at the Seminary site.

Residual impacts of excavated and stockpiled soils subsequently used for engineered fill are minimal. The site has been shown to have an underlying clay that is thick and relatively impermeable to the asphaltic degradation products and the TFH residuals from diesel fuel and used motor oil. The groundwater has been verified to be not contaminated.

The only remaining unknown is whether there is any contaminated soils associated with the pits underlying the portion of the maintenance building that is currently being used. These soils will be excavated and their contamination level determined in the subsequent phase of construction (1988).

Verification Monitoring

The groundwater monitoring system consists of one well upgradient of the construction site and four wells downgradient. These wells are PVC wells installed in compliance with the California guidelines for investigation of leaking underground fuel tanks.

Retroactive Cleanup

The groundwater monitoring system will allow determination of any degradation of groundwater quality from the contaminated area. The authority has noted the location of the contaminated fill for their real estate files. If subsequent monitoring detects groundwater contaminated by TFH or oil and grease, this remediation plan will be revised to solve the problem. Alternatives include reexcavation and treatment on site, as well as off-site shipment for disposal as contaminated soils in an RCRA-permitted facility. The volume of soils would be expected to be at least 1.3 times that of the emplaced soils due to penetration of the clays, approximately $1 million at today's disposal costs. Groundwater remediation would be accomplished, if necessary, by pumping and separation at approximately $20,000 per well point.

BACKGROUND PAPER

Alameda-Contra Costa Transit District, during excavation after demolition of an old maintenance building constructed in 1947, discovered oil and grease in the soils. This was reported to the appropriate local and state agencies according to law, and testing began to determine the amount and location of the oil and grease.

This AC Transit operating division is located in East Oakland at the intersection of Seminary Avenue and San Leandro Boulevard. Approximately 250 buses are fueled, maintained, stored, and operated from this site. Key System, the forerunner of AC Transit, constructed the facility in 1947.

Work has been in progress since 1985 to rebuild the facility in stages in order to bring it up to modern standards, both in operational aspects and in environmental controls. Construction completed to date includes soundwalls, an island for fueling the buses and cleaning the interiors, bus washers, a bus driver reporting facility, new pavement of the bus parking areas, and an employee parking structure. The final element of this staged construction program includes constructing a new maintenance building and demolition of the old building, during which the current problem came to light.

As is standard procedure in these situations, additional tests were made to determine if any other pollutants were in the soils, e.g. total fuel hydrocarbons. Tests were performed for the priority pollutants (approximately 121 volatile organic hydrocarbons), polychlorinated biphenyls (PCB's), heavy metals, and base neutral acid extractable organics. Results from these tests showed that none of these pollutants are present in detectable levels. All tests were made by EPA- and state-approved laboratories using EPA- and state-approved testing procedures.

AC Transit and their engineers have met on numerous occasions with representatives of the Alameda County Health Department and the San Francisco Bay Regional Water Quality Control Board regarding the status of work and conditions at the site. The District has investigated the hydrogeologic profile of the area, location of groundwater table, and location of any wells in the area that could be impacted by the oil and grease.

There are two wells located approximately six-tenths of a mile from the site; neither has groundwater used for domestic purposes. These wells are used only for industrial (cooling) purposes and are not downgradient or in the direction of groundwater flow from the site. To AC Transit's knowledge, no oil and grease contamination has been reported in these wells.

Oil and grease in the site soils is located above clayey layers segregating the oil and grease from underlying groundwater. According to the work plan, wells are being installed; and these will be monitored on a periodic basis for potential movement of the oil and grease.

Since the site concrete paving will drain most precipitation to storm drains, there will be little or no water flow to drive the oil and grease towards the groundwater table, even if the clayey soils were not present. Groundwater elevations vary within the site and vary during the year, which is typical of a site that is an outwash plain from the Oakland hills. The highest water elevation is within 7 to 8 feet below the ground surface.

The project is proceeding with proper precautions being taken against groundwater degradation. If future monitoring shows that the groundwater will be impacted, the District will immediately initiate remedial actions according to the plan filed with the Regional Water Quality Control Board.