

January 25, 2002

Eva Chu
Alameda County Environmental Health Department
1131 Harbor Bay Parkway
Alameda, California 94502-6577

RE: Work Plan for Monitoring Well Installation
Tosco (Unocal) Service Station #7124
10151 East 14th Street
Oakland, California

Dear Ms. Chu:

SECOR International Incorporated (SECOR) is pleased to submit this Work Plan to the Alameda County Environmental Health Department (ACEHD) on behalf of Tosco Corporation (Tosco), a subsidiary of Phillips Petroleum Company (Phillips), to further investigate the subsurface beneath Tosco (former Unocal) Service Station #7124, located at 10151 East 14th Street in Oakland, California (the Site, see Figure 1). This Work Plan is in response to recommendations made in April 2000 regarding the Removal and Replacement of Product Lines and Dispensers and proposes the installation of four groundwater monitoring wells at the Site.

BACKGROUND

The Site is located at the intersection of East 14th Street and 102nd Avenue in Oakland, California. The Site is currently operating as a retail gasoline service station. Three gasoline underground storage tanks (USTs) and associated product lines and dispensers are present at the Site.

On March 22, 2000, SECOR supervised the removal and replacement of product lines and dispensers by Balch Petroleum (Balch) of Milpitas, California. Soil samples collected from beneath the dispensers and product lines revealed the presence of total petroleum hydrocarbons as gasoline (TPHg) at a maximum concentration of 6,200 milligrams per kilogram (mg/kg), methyl tertiary butyl ether (MtBE) at a maximum concentration of 120 mg/kg, and benzene at a maximum concentration of 7.4 mg/kg. Excavation and sampling activities were observed and approved by Inspector Gomez.

On March 27, 2000, SECOR observed the over-excavation of approximately 60 cubic yards of soil from the beneath those portions of the dispensers and product lines where previously collected soil samples revealed elevated concentrations of petroleum hydrocarbons. Areas measuring approximately 8 to 10 feet long by 8 to 10 feet wide were over-excavated to an approximate depth of 8 feet below ground surface (bgs) in each of these areas. Additional over-excavation in these areas was not possible due to their proximity to the footings of the service station canopy. TPHg was detected in 2 of the 3 samples at a maximum concentration of 108 mg/kg, benzene was detected in 1 of the 3 samples at a maximum concentration of 0.162 mg/kg, and MtBE was detected in all 3 samples at a maximum concentration of 43.8 mg/kg. Lead was not detected at or above laboratory reporting limits in any samples.

PROPOSED SCOPE OF WORK

As part of the proposed Subsurface Investigation activities SECOR will complete three primary tasks as described below:

Task 1 - Preliminary Field Activities

Prior to conducting the proposed investigation, SECOR will obtain groundwater monitoring well installation permits from the Alameda County Public Works Department (ACPWD). A Site-specific Health and Safety Plan (HASP) will be prepared for use by personnel implementing the Work Plan. The HASP will address the proposed Subsurface Investigation activities, and a copy of the HASP will be available on Site at all times. The subcontractor(s) performing the field activities will be provided with a copy of the HASP prior to initiating work.

Prior to drilling, SECOR will mark the proposed boring locations, contact Underground Service Alert (USA) at least 48 hours in advance, and contract a private utility locator (Cruz Brothers) to clear the proposed boring locations of subsurface obstructions.

Task 2 – Subsurface Investigation

SECOR proposes to install four groundwater monitoring wells (MW-1 through MW-4) at the locations depicted on attached Figure 2. No depth to groundwater data has been gathered at the Site; however, groundwater is found beneath nearby properties at approximately 10 feet bgs, with a northwesterly flow direction. Borings will be advanced to an approximate depth of 20 feet bgs (approximately 10 feet below the first encountered water), although the actual well depth may vary based upon conditions encountered. All borings will be advanced with truck mounted hollow stem augers under the supervision of a SECOR geologist, and under direction of a State of California Registered Geologist. Soil samples will be collected at 5-foot intervals from each borehole.

The boreholes will be periodically monitored by a SECOR field geologist for parameters including odor, staining, volatile organic compounds (VOCs) using a photo-ionization detector (PID), color, grain size, and moisture content of the soil collected from each boring. Each sample for possible chemical analysis will be collected in brass tubes, covered at each end with Teflon™ sheeting, capped with plastic end caps, labeled, and placed in an ice-filled cooler for preservation.

After well bore advancement to the desired depth, flush threaded, four-inch diameter Schedule 40 PVC slotted well screen and threaded end cap will be placed in the well bore with an estimated 15 feet of well screen emplaced between 5 and 20 feet bgs to intercept the water-bearing interval. The wells will be completed to ground surface with four-inch diameter, Schedule 40 blank PVC casing. Monterey #3 sand or equivalent will be placed in the annular space adjacent to the well screens to approximately two feet above the top of the well screens. One to two feet of bentonite pellets will be placed above the sand, followed by a 5 to 10% bentonite-cement mixture to ground surface.

The wellheads will be completed at ground surface with locking well caps and traffic-rated, bolt-down Christy boxes. The Christy boxes will be installed slightly above the surrounding grade and finished with cement aprons to provide positive relief away from the wellheads. A California-licensed land surveyor will then survey the wellheads with respect to mean sea level (msl). The wellhead elevations will be measured from an existing permanent monument, and compared with depth to groundwater measurements to calculate groundwater elevation above msl, as well as a groundwater flow direction and gradient.

After allowing the wellheads and grout to cure for at least 48 hours, SECOR will measure the total well depths and depths to water of each well using a water level indicator calibrated to within 0.01 foot. SECOR will also check for the potential presence of separate phase hydrocarbons (free product) in each well using a Solinst 122 Interface Probe capable of detecting free product thickness as low as 1 millimeter.

Survey to
lat/long to
submeter
accuracy
and get well
casing diameter

SECOR will develop the wells by alternately swabbing and surging each well using a surge block. SECOR will then remove 8 to 10 casing volumes of water from the wells by pumping and/or bailing, monitoring the removed water for parameters such as pH, turbidity, temperature, and conductivity.

Upon completion of well development, SECOR will again gauge the wells and collect water samples by lowering dedicated, disposable bailers into the wells, collecting water, and decanting the collected water directly into laboratory-supplied glassware. The water samples will be labeled and placed in an ice-filled cooler for preservation. Selected soil samples and one groundwater sample from each well will be transported under chain-of-custody protocol to a California-certified analytical laboratory for analysis of TPHg, benzene, toluene, ethylbenzene, and xylenes (BTEX compounds), and fuel oxygenates (MtBE, tertiary amyl methyl ether or TAME, di-isopropyl ether or DIPE, ethyl tertiary butyl ether or EtBE, ethanol, 1,2-dichloroethane or 1,2-DCA, 1,2-dibromoethane or 1,2-EDB, and tertiary butyl alcohol or TBA) by EPA Methods 8015, Modified, 8021, and 8260, respectively. SECOR anticipates that the samples will be analyzed on a standard 10-working day basis.

The residual materials generated during drilling activities will be temporarily stored on Site, pending the results of chemical analysis. The analytical results will be used for waste profiling and disposal. The waste materials will be profiled with a State-certified disposal facility, and transported as non-hazardous waste under bill of lading or manifest.

Task 3 - Letter Report

Upon completing the well installation activities described above, SECOR will prepare a Letter Report describing the methods for and results of the investigation. The Letter Report will be submitted to Tosco and the ACEHD, and will include tabulated analytical data, figures depicting subsurface conditions including soil and groundwater chemical analytical results, and appendices containing laboratory reports and well completion and soil boring logs. The Letter Report will also include conclusions and recommendations for further work, if warranted.

SCHEDULE

SECOR is prepared to initiate field activities upon approval of this Work Plan by the ACEHD. We anticipate that the project will require approximately four to six weeks to complete, pending driller availability and upon acquisition of monitoring well installation permits from the ACPWD.


We greatly appreciate the opportunity to submit this Work Plan on behalf of Tosco and trust that this document meets with your approval. Please do not hesitate to contact us at (650) 691-0131 with any questions or comments.

Sincerely,

SECOR International Incorporated



Daniel S. Vargas
Staff Scientist



James G. Ritchie, R.G.
Principal Geologist



Attachments:

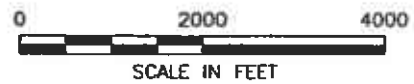
Figure 1 – Site Location Map

Figure 2 – Site Map with Proposed Monitoring Well Locations

cc: Mr. David Dewitt, Tosco



SOURCE: USGS 7.5 MINUTE TOPOGRAPHIC MAP
 SAN LEANDRO, CALIFORNIA
 (1961, PHOTOREVISED 1980)



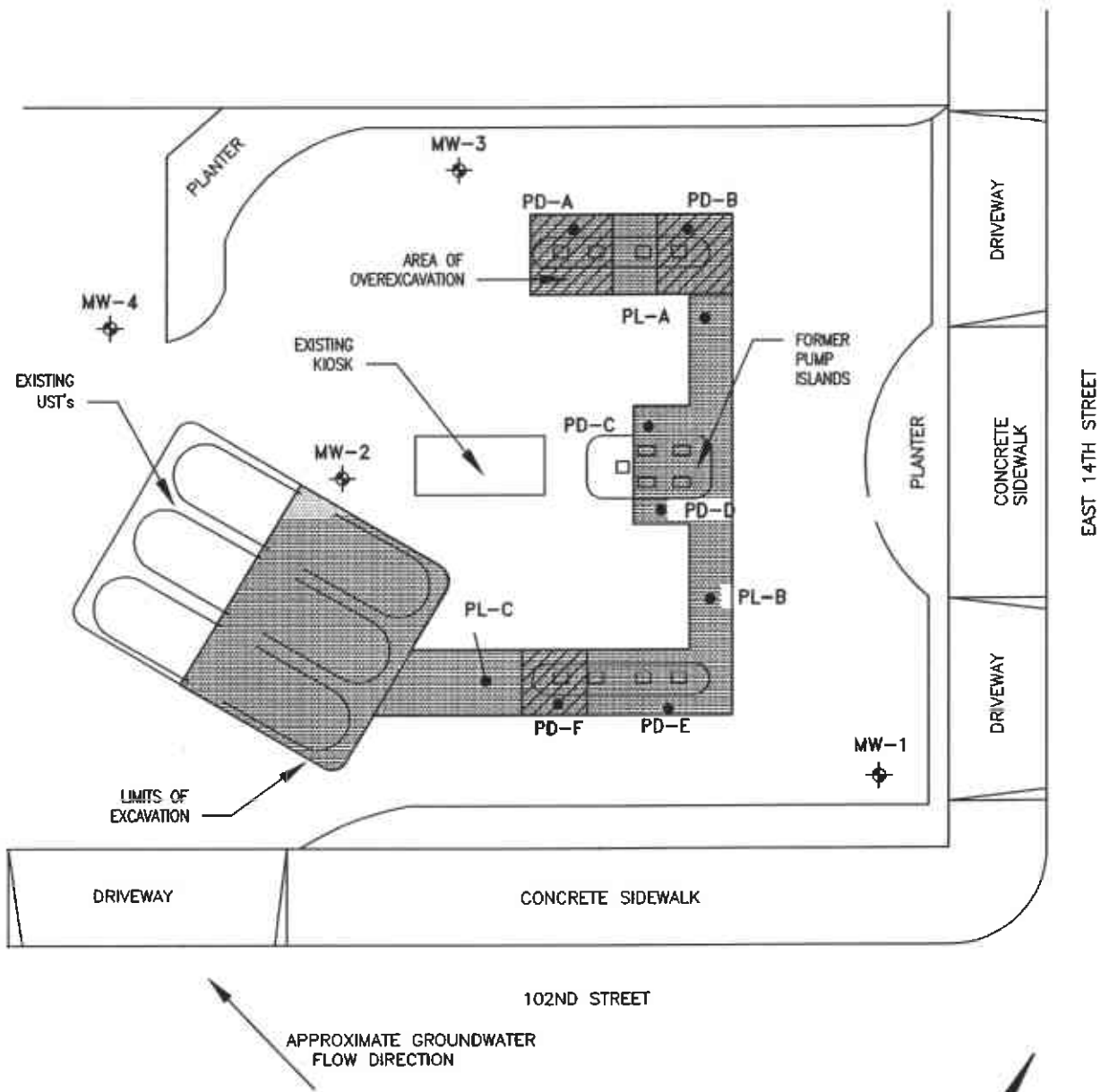
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
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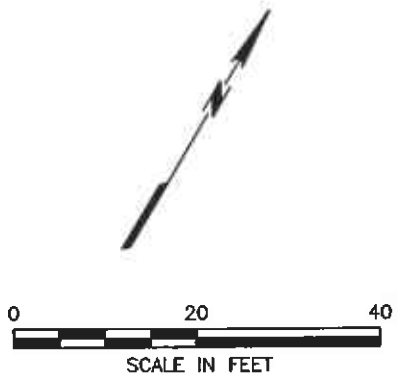
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|---------|----------------|
| DRAWN | GEL |
| APPR | RP |
| DATE | 11 APRIL 00 |
| JOB NO. | 006.003477.602 |

FIGURE 1
TOSCO (UNOCAL) SS#7124
 10151 EAST 14TH STREET
 OAKLAND, CALIFORNIA
SITE LOCATION MAP



LEGEND:

- MW-1  PROPOSED MONITORING WELL LOCATION
- PD-F  SOIL SAMPLE LOCATION WITH ID NUMBER
-  EXCAVATION AREA
-  AREA OF OVEREXCAVATION



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| | | | |
|--------------|----------------|----------|----|
| DRAWN BY: | LG | APP. BY: | RP |
| DATE: | 10-18-01 | | |
| JOB NO.: | 006.003477.602 | | |
| DRAWING NO.: | 7124-2-A | REV.: | A |

FIGURE 2
TOSCO (UNOCAL) SS #7124
10151 EAST 14th STREET
OAKLAND, CALIFORNIA
**SITE PLAN WITH
MONITORING WELL LOCATIONS**