Weiss Associates
Environmental and Geologic Services
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[redacted] 26, 1991

Mr. Scott Seery
Alameda County Environmental Health Department
Hazardous Materials Division
80 Swan Way Room 200
Oakland, CA 94621

Re: Soil Vapor Extraction Test
Chevron SS # 9-2960
[redacted]
Castro Valley, California
WA Job # 4-552-13

Dear Mr. Seery:

As you requested during our November 21, 1991 telephone conversation, Weiss Associates (WA) presents this scope of work for a soil vapor extraction (SVE) pilot test at the subject site (Figure 1) for your review. The SVE test is designed to evaluate the effective radius of induced vacuum, soil vapor flow and hydrocarbon concentrations in subsurface materials.

We propose using monitoring well C-1 as the primary vapor extraction test well. This well is located at the edge of the tank excavation where floating hydrocarbons have been measured. It is screened from 10 to 30 ft below the ground surface. The upper nine ft of screen extends into the unsaturated zone.

We will use existing on-site monitoring wells and temporary points to monitor vacuum influence. Monitoring well and proposed vacuum influence point locations are shown in Figure 2. Because all on-site wells are screened similarly to C-1, they will be suitable to monitor influence. Temporary points will provide additional vacuum data to better define the effective radius of influence. Point locations may be adjusted to account for subsurface conditions. One vacuum influence point will be installed on the opposite side of the tank excavation to determine if air preferentially flows through the fill material.

Temporary points are one-inch diameter with a four ft perforated section. They will be driven to a depth of about 14 to 15 ft which is about three to four ft above the water table to avoid interference from capillary fringe intersticial water. At the conclusion of the test, temporary points will be removed and the holes will be filled with grout.

Periodically throughout the test, WA will collect soil vapor samples to determine total petroleum hydrocarbon concentrations on site using a flame ionization detector. WA will also submit bag samples to Superior Precision Analytical, Inc., San Francisco, California for total petroleum hydrocarbons as gasoline, benzene, ethylbenzene, toluene and total xylenes analyses.

Vacuum will be monitored at each well and vacuum influence point until vacuum influence stabilizes. We anticipate stabilization within two hours after starting the test. To verify the effective radius of influence, we will conduct a second test from the extraction well at a higher flow rate.

We will use a positive displacement vacuum pump with a 3 HP explosion-proof motor to induce the vacuum. Extracted soil vapor will be routed through two activated carbon canisters in series to prevent hydrocarbon emissions. Breakthrough will be monitored at a sample port between the canisters. Spent carbon will be disposed by Westates Carbon, Inc., Oakland, California.

The data collected from this test will be used to develop a work plan for site remediation. Presentation and discussion of test results will be included as a part of the work plan which will be submitted to your department for review.

We are in the process of applying for a Drilling Permit with Flood Control Zone 7 and have tentatively scheduled the test for December 18, 1991. Please review this work plan and if acceptable, send written approval to my attention. Please feel free to call if you have any questions or comments. Thank you.

Sincerely,
Weiss Associates

Thomas R. Berry
Project Geologist

TRB:trb

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Attachments: Figure 1. Site Location Map
Figure 2. Proposed Extraction and Monitoring Locations

cc: Kenneth L. Kan, Chevron U.S.A., Inc.