Weiss Associates Environmental and Geologic Services

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September 21, 1993

Ms. Juliet Shin
Alameda County Department of
Environmental Health
Hazardous Materials Division
80 Swan Way, Room 200
Oakland, CA 94621

Re: STID #3014
Shell Service Station
1601 Webster Street
Alameda, California
WA Job #81-434-100

Dear Ms Shin:

This letter is in response to your July 27, 1993 letter to Dan Kirk of Shell Oil Company requesting a workplan for additional investigation in the vicinity of the former pump island at the station referenced above. Presented below are a brief site summary and our recommendations for future work at this site.

SITE BACKGROUND

1987 Waste Oil Tank Removal: In June 1987, a 550-gallon underground waste oil tank originally installed in 1962 was removed (Figure 1). Blaine Tech Services (BTS) of San Jose, California reported that the tank contained more than 77 holes and that a hydrocarbon sheen was observed on the water in the excavation.[1] Soil sampled from 9.5 ft depth in the excavations contained 133 parts per million (ppm) petroleum oil and grease (POG), 14 ppm total petroleum hydrocarbons (TPH) and 29 ppm 1,1,1-trichloroethane (TCA).[2] A grab water sample collected

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1 BTS, June 26, 1989, Consultant's letter-report presenting a summary of previously unpublished notes from the 1987 waste oil tank removal at the Shell service station at 1601 Webster Street in Alameda, California, prepared for Shell Oil Company, 19 pages.

2 BTS, July 16, 1987, Field Sampling at Shell Station, 1601 Webster Street, Alameda, California, consultant's letter-report prepared for Shell, 3 pages plus attachments.

from the subsurface at about 12.5 ft depth contained 244 ppm POG, 132 ppm TPH, 11 ppm TCA and 59 ppm methylene chloride.

1987 Well Installation: In September 1987, Pacific Environmental Group (PEG) of Santa Clara, California installed ground water monitoring well S-1 (Figure 1) immediately downgradient of the former waste oil tank to assess whether hydrocarbons detected during the excavation were in ground water.[3] Soil from the boring for the well between 3.5 and 15.5 ft depth contained POG at a maximum of 130 ppm at about 5 ft depth. No halogenated volatile organic compounds (HVOCs) were detected.

1990 Well Installation: In April 1990, WA installed wells MW-1 and MW-2.[4] TPH as gasoline (TPH-G) was detected at a maximum of 32 ppm in the boring for well MW-2, with the highest concentrations detected below the water table. Unsaturated soil from the two borings contained less than 0.1 ppm benzene, ethylbenzene, toluene and/or xylenes (BETX). No POG or HVOCs were detected in soil from either boring.

1993 Borings and Wells: In October 12 and 22, 1992 and February 19, 1993, WA drilled borings BH-C through BH-J to assess the source and extent of hydrocarbons in soil and ground water. WA also installed well MW-3 at the downgradient property boundary to monitor hydrocarbon concentrations in ground water leaving the site. The investigation results indicated that hydrocarbons detected in ground water from well MW-2 apparently originated from the former pump islands at the south end of the site. Based on the soil and water samples collected during this investigation and in subsequent quarterly sampling, hydrocarbons do not appear to be migrating offsite (Figure 2).

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3 PEG, October 23, 1987, Consultant's letter-report regarding a well installation at the Shell service station at 1601 Webster Street in Alameda, California, prepared for Gettler-Ryan, Inc., 3 pages plus attachments.

4 WA, July 6, 1990, Subsurface Investigation at Shell Service Station, 1601 Webster Street, Alameda, California, consultant's report prepared for Shell Oil Company, 17 pages and 3 appendices.

RECOMMENDATIONS

Since the extent of hydrocarbons in soil and ground water has been adequately assessed by the eleven soil borings and four wells installed at the site during previous investigations, we do not recommend any additional assessment at this time. The former pump islands have been removed for several years and can no longer contribute additional hydrocarbons to the subsurface. Therefore, the potential hydrocarbon source has been removed.

Since downgradient well MW-3 is ideally located to monitor hydrocarbon migration downgradient of the site, and since the existing wells and analytic results from the soil borings adequately define the extent of hydrocarbons in ground water, no additional wells or borings appear necessary at this time. We recommend continued quarterly monitoring of the site and may recommend additional investigation if site conditions change in the future.

We appreciate this opportunity to provide hydrogeologic consulting services on behalf of Shell Oil Company. Please call if you have any questions or comments.

Sincerely,
Weiss Associates

Joyce E. Adams
Senior Staff Geologist

N. Scott MacLeod, R.G.
Project Geologist

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cc: Dan Kirk, Shell Oil Company, P.O. Box 5278, Concord, California 94520-9998
Lester Feldman, Regional Water Quality Control Board - San Francisco Bay, 2101 Webster Street, Suite 500, Oakland, California 94612

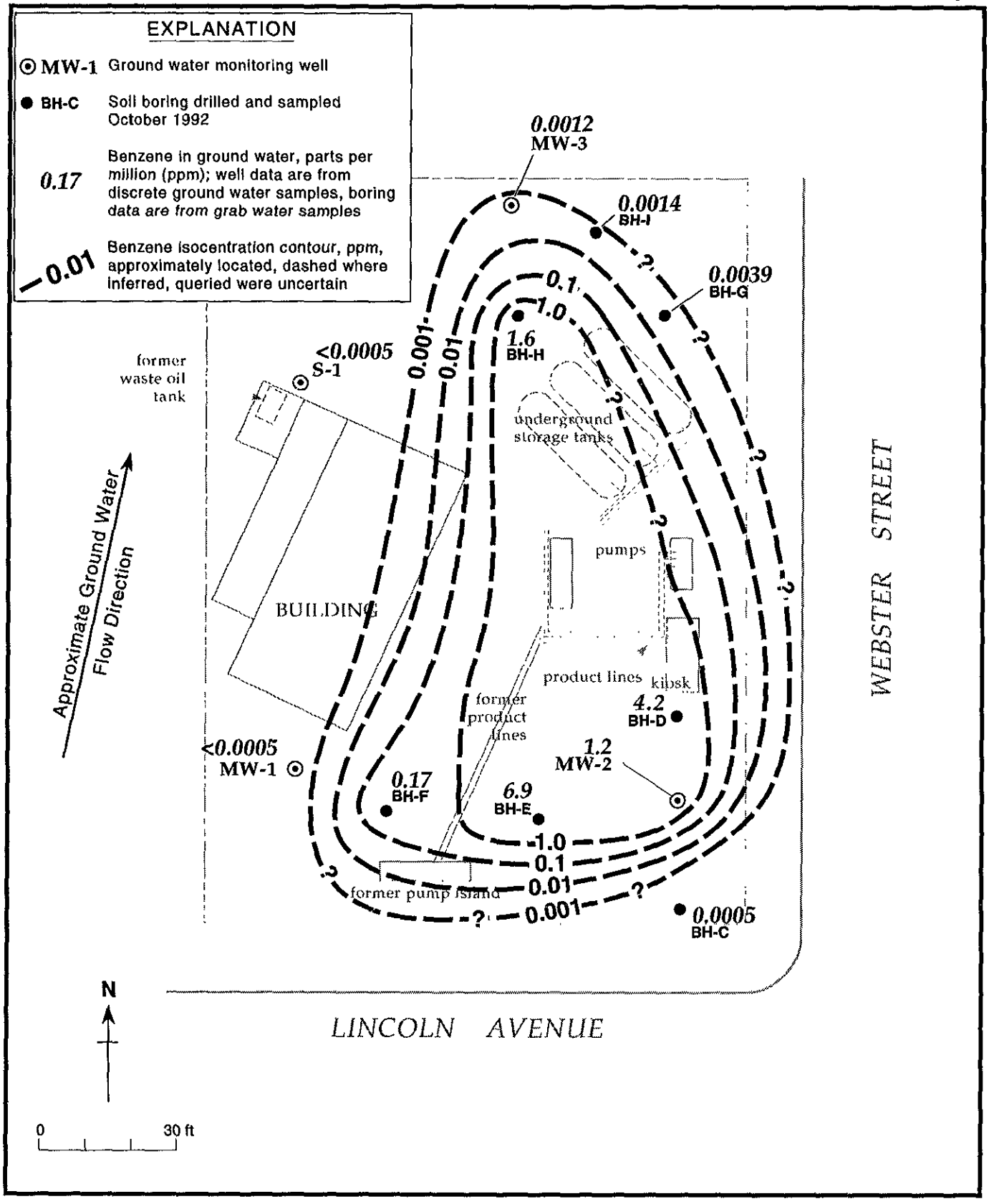

Figure 1. Benzene Concentrations in Ground Water - July 20, 1993 - Shell Service Station WIC #204-0072-0403, 1601 Webster Street, Alameda, California