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September 11, 1998

Ms. Sue Patton
Environmental Administrator
AC Transit
10626 East 14th Street
Oakland, CA 94603

Re: Monitoring Well Location Search
AC Transit Facility, 1100 Seminary Avenue
Oakland, CA

Project No. 2327

Dear Ms. Patton,

PolyMatrix performed an initial file and field search to ascertain the status of groundwater monitoring wells at the above referenced site. As you know, five underground storage tanks (Gasoline, Motor Oil, Automatic Transmission Fluid & Two Diesel)[1] were removed from the site in January 1987 by S.J. Amoroso Construction Co., Inc. of Foster City, California. Five phases of field work to define soil and groundwater contamination were performed. The Alameda County Health Care Services (ACHCS) has requested additional information regarding the status of the wells and investigation in their letter, dated April 27, 1998.

ACHCS File Search

A file search of the ACHCS files for the AC Transit site was performed on June 10, 1998 (see attached file Xerox abstract). Historical files contained three reports prepared by Baseline Environmental, dated March 09, 1987, Wiess Associates, dated May 28, 1987, and Kaiser Engineers, dated April 13, 1987. The three reports assess the geochemical and geostructural conditions of the local soil and ground water.

The field work was done by Weiss Associates and Baseline Associates, who apparently drilled five phases of subsurface work. Three soil borings, prior to the tank removals, were performed in September 1986. Three monitoring wells (MW-1, 2, and 3) were installed in January 1987 under approved permits of the Alameda County Flood Control and Water Conservation District (Zone 7).

A single well (MW-4) was installed on March 10, 1987. A third set of three monitoring wells (MW-5, MW-7 & MW-8) was installed on March 20, 1987. There is no information, based on historical records, that a monitoring well identified as MW-6 was ever installed. Four additional borings (B-10, 11, 12 & 13) were drilled on April 06, 1987. It appears that the reason for constructing MW-4 and additional borings B-10, 11,12 &13 was to determine the geochemical and geostructural conditions of the soil and ground water with regard to the future environmental and safety concerns pertaining to new construction in this area.

The boring logs from the field investigations indicate the presence of surficial artificial fill underlain by clayey alluvium with sandy interbeds to depths of 5- to 17 feet. Groundwater was apparently encountered at depths of 4- to 10 feet, and potentiometric surfaces at about 5-feet. Groundwater flow has been mapped as southwesterly[2]. Field observations showed petroleum hydrocarbons observed in pre-tank removal borings B-1, B-2 and B-1A. Groundwater samples collected from the monitoring wells confirmed the presence of petroleum hydrocarbons at concentrations ranging from 32-290 mg/l (see Table 1) quantified as Total Fuel Hydrocarbons(gas and diesel). Groundwater samples were also analyzed for volatile organic compounds (VOC's) that ranged from 13/9.4/20/4.6 (see Table 1) as benzene, toluene, xylene and ethlybenzene respectively.

Field Search

A walk of the site revealed that only three wells (MW-1, MW-2 & MW-3) could be identified using the location map of Weiss Associates[3]. These wells appeared to been damaged to various degrees, and we were unable to open MW-2 due to a severely depressed surface box. MW-1 was intact and had a weak hydrocarbon odor upon opening the cap, the depth to water was 3.8 feet. MW-3 appeared to have been flooded from evidence of surface and casing stains. Due to the potential flooding or leaching of surface materials down into MW-3, the depth to water was not measured at MW-3.

The new building is located such that it apparently covers wells MW-4, MW-5, MW-7 and MW-8. A brief discussion with the AC Transit's, Division 4, facility manager on June 12, 1998 indicates that they do not know whether the wells were removed prior to building construction. **Given the deep cuts into the ground for service bays, it appears that the wells, if not abandoned before construction, were destroyed during the building's construction.**

Zone 7 does not have records of any well abandonments at the site. However, Zone 7 has purged its records of permits older than ten years.

Conclusions and Recommendations

A review of available records revealed that seven monitoring wells were installed in 1987 and three investigation reports were prepared in total. The ACHCS files did not have any reports later than 1987, suggesting that no further investigative work was continued. The majority of the geochemical and geostructural investigations were performed to determine if future construction of a newly slated maintenance building would be affected by the existence of the recently discovered hydrocarbon contamination. The facility underwent major reconstruction in the mid to late 1980's. As part of this reconstruction a new maintenance building was constructed in the area of four wells (MW-4, MW-5, MW-7 & MW-8). Information that these wells underwent proper closure does not exist. The array of wells was installed prior to the construction of the new building and on the basis of field and file information, these wells were apparently left in the ground when the building was built.

The three existing wells (MW-1, MW-2 & MW-3) are damaged and may be serviceable with some repairs. Although due to surface and casing stains, simple development and sample collection may not give rise to accurate ground water data. From the historical records a few observations should be noted, one, the extent of the detectable hydrocarbon plume was never determined, two, the analysis of the soils and ground water samples collected were not analyzed for the materials stored in the original underground tanks.

In order to address the ACHCS letter, PolyMatrix recommends the following:

- Abandon the existing wells (MW-1, MW-2 & MW-3).
- Prepare a work plan for a reconnaissance study to determine the existence of potential contaminants, within the soil and ground water, that were stored in the original tanks.
- Determine, from the reconnaissance study, the future work that may be required.

Sincerely,

Fred Davis, Project Manager
PolyMatrix Associates

Attachments: Complete File abstract of ACHCS file

1= The existence of two diesel tanks was confirmed by a conversation with the original project foreman, Mike Chambers of S.J. Amorosa Construction Co., Inc. on September 14, 1998.
2= Ground water flows are concluded from Wiess Associates report, dated May 28, 1987, page 9 paragraph 2.
3 = Wiess Associates, report dated May 28, 1987, Figure 1.

Table 1
Field Data and Laboratory Results
AC Transit, Division 4
1100 Seminary Avenue
Oakland, California

Monitoring Well (MW) or Bore Hole (B)	Date Field Operation	Depth of Well Base (feet)	Depth to Water Level During Drilling	Depth to Water Level Depth /Days	Presence of Free Product Deeper than 0.25"	Soil Sample Depth (feet)	Soil Analytical results (mg/kg) TPH/BTX	Water Results for TPH-Total Hydro-carbon Fuels (mg/l)	Water Results for B/T/X (mg/l)
MW-1	~~01/26/87~~ 2/3/87	22	9.7	5/7	Negative	~~6.6.5~~ 8.8.5	~~<10/ NA[a]~~ <10/ NA[a]	32	1.5/4.0/6.4
MW-2	~~01/26/87~~ 2/3/87	26	13.5	5.5/7	Negative	8-8.5 13.5-14	~~2200/NA[a]~~ ~~100/NA[a]~~	50	13.0/6.0/2.9
MW-3	~~01/27/87~~ 2/3/87	19	11.5	4/7	Negative	~~9-9.5~~ 11.5-12	~~130/NA[a]~~ 110/NA[a]	29	5.3/6.8/5.4
MW-4	03/10/87 03/13/87	19.5	11.5	4/7	Negative	8-8.5	<10/NA[a]	290 20	6.2/9.4/20 6.8/14/0.9/ 4.6[b]
MW-5	03/20/87	16	11	5.1/4	Negative	NA	NA	64	0.7/4.8/6.5
MW-7	03/20/87	25	17	4.3/14	Negative	NA	NA	<1	<0.001
MW-8	03/20/87	25	11	ND[c]	Negative	NA	NA	<1	<.0.001
B-10	04/06/87	11.5	Dry	Dry	ND	4.5	NA/<0.01	NA	NA
B-11	04/06/87	11.5	8	8/0.1	Negative	7	NA/0.01	NA	NA
B-12	04/06/87	11.5	8	7/0.1	Negative	6.5	NA/Tol. = 0.1	NA	NA
B-13	04/06/87	11.5	Dry	Dry	ND	NA	NA	NA	NA

a = Not Analyzed.
b = Ethyl benzene.
c = Not Determined.