INVESTIGATIVE SUMMARY REPORT
FORMER SCHOOL DISTRICT CORPORATION YARD
21000 WILBEAM AVENUE
CASTRO VALLEY, CALIFORNIA
FOR BAY AREA RAPID TRANSIT DISTRICT

Job No. 03715-051-043
August 17, 1994

DAMES & MOORE

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Alameda County Department of Environmental Health
Hazardous Materials Division
1131 Harbor Bay Parkway, Room 250
Alameda, CA 94602

Attention: Mr. Scott Seery
Senior Hazardous Materials Specialist

Dear Mr. Seery:

Investigative Summary Report
Former School District Corporation Yard
21000 Wilbeam Avenue
Castro Valley Station

1.0 INTRODUCTION

Dames & Moore is pleased to submit this summary report for soil and groundwater investigation conducted at the former Castro Valley Unified School District Corporation Yard (the site) located at 21000 Wilbeam Avenue in Castro Valley, California (Figure 1).

2.0 SITE DESCRIPTION

The site (Figure 2) is owned by the Bay Area Rapid Transit District (BART) and was leased to the CVUSD for the past 30+ years. The former corporation yard occupies approximately 60,000 square feet and was used as the school district's maintenance/service yard. The school district operated two small (approximately 2,000 gallon) underground storage tanks (USTs) at the site. In addition, one abandoned UST was also present. A more detailed site description is presented in our report entitled "Soil and Groundwater Investigation, Former Castro Valley Unified School District Corporation Yard, 21000 Wilbeam Avenue, Castro Valley, California" dated August 23, 1993.

3.0 PREVIOUS WORK

A Preliminary Site Assessment (PSA) conducted for the Dublin/Pleasanton BART extension by Bechtel Environmental, Inc. in December 1990[1] (PHASE A) and April 1991[2] (PHASE 2A) identified two small USTs, reported to contain gasoline and diesel fuel, and a fuel dispensing island. The two USTs were reportedly installed around 1957. Fuel was dispensed through two product dispensers located in the center of a concrete slab overlying the USTs (Bechtel, 1990 and 1991).

Prior to removal of the tanks in 1992, a preliminary environmental investigation was conducted at the site, including drilling three soil borings in the vicinity of the tanks to evaluate subsurface conditions prior to excavation and removal of the tanks. Soil and grab groundwater samples were collected from the borings and analyzed. The results of the environmental investigation are presented in our report entitled "Underground Storage Tank Removal, Asbestos Removal and Environmental Investigation, Former School District Corporation Yard, Castro Valley Station" dated August 26, 1992 (Dames & Moore).

The three tanks were removed on June 25 and 26, 1992. The details of the tank removals are presented in our report entitled "Tank Closure Report, Underground Storage Tank Removal, Former School District Corporation Yard, Castro Valley Station" dated December 16, 1992. Confirmatory soil samples were collected from sidewalls of the tank excavations just above the standing water line. Confirmatory samples were also collected from beneath the two product dispensers and along the vent tube line for the regular gas tank. Confirmatory soil sampling locations are shown on Figure 3. Groundwater was present in the bottoms of the excavations, at approximately 10.0 feet bgs and rose to approximately 5.5 to 6.0 feet bgs when allowed to equilibrate.

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[1]Bechtel Environmental, Inc., December 1990, Dublin/Pleasanton Extension, Preliminary Site Assessment, Phase A — Prior Use Report.

[2]Bechtel Environmental, Inc., April 1991, Dublin/Pleasanton Extension, Preliminary Site Assessment, Phase 2A and Field Investigation Work Plan (Phase B).

The confirmatory soil samples were analyzed for total petroleum hydrocarbons (TPH) as gasoline (EPA Method 8015M); TPH as diesel (EPA Method 8015M); benzene, toluene, ethylbenzene, and xylenes (BTEX; EPA Method 8020); and total lead (EPA Method 6010). A summary of the confirmatory soil sample analytical results is presented in Table 1. Based on the results of the confirmatory sampling, additional excavation was conducted in the areas around the abandoned UST location and the fuel dispenser location to reduce concentrations of fuel hydrocarbons in soil to acceptable levels in order to obtain regulatory approval to backfill the excavations. After over-excavation was complete there were no detectable levels of TPH as gasoline or TPH as diesel in the confirmatory soil samples from the three excavations.

Approximately 250 cubic yards of soil were generated during excavation and removal of the tanks. After proper waste characterization analyses were conducted, the soil was disposed of at the Browning Ferris Industries Class III landfill in Livermore, California. Prior to backfilling, approximately 15,000 gallons of groundwater was pumped from the excavations into a holding tank. After appropriate analytical testing was conducted, the Ora Loma Sanitary District approved the request for discharge of the water to their sewer system.

4.0 INVESTIGATIVE METHODS

Dames & Moore installed and sampled three monitoring wells at the site on February 18 through 25, 1993. Subsequent quarterly monitoring of the wells was performed over a 12 month period, between the date of construction and February 1994. Monitoring included collection of water level data and sampling of the three wells. The investigative procedures followed during the investigation of this site are summarized below and described in detail in our workplan entitled "Workplan, Soil and Groundwater Investigation, Former Castro Valley Unified School District Corporation Yard, 21000 Wilbeam Avenue, Castro Valley, California" dated January 5, 1993.

4.1 DRILLING AND SOIL SAMPLING

Monitoring well borings were advanced using a hollow-stem auger, each to a total depth of 15.5 feet. Soil samples were collected at five-foot intervals. Soil samples were screened for the presence of petroleum hydrocarbons using and organic vapor meter (OVM). Boring logs for each well boring are presented in Appendix A of our report entitled "Soil and Groundwater Investigation, Former Castro Valley Unified School District Corporation Yard, 21000 Wilbeam Avenue, Castro Valley, California" dated August 23, 1993.

Based on results of the OVM screening and visual observations of the samples, two soil samples from above the water table in each boring were submitted for chemical analyses.

4.2 MONITORING WELL INSTALLATION AND DEVELOPMENT

A monitoring well was constructed in each boring. Well completion details for each of the three monitoring wells are included on the boring logs in Appendix A of our report entitled "Soil and Groundwater Investigation, Former Castro Valley Unified School District Corporation Yard, 21000 Wilbeam Avenue, Castro Valley, California" dated August 23, 1993.

Following completion of the well installations, each well casing elevation was surveyed with reference to an established benchmark. Top of casing elevations for each of the three wells are included on the boring logs, and listed in Table 1 of this report.

The wells were developed on February 23, 1993. Development consisted of a combination of surging and bailing. Physical parameters of pH, conductivity and temperature were monitored and recorded during development. A minimum of ten casing volumes of water was removed from each well during development.

4.3 GROUNDWATER SAMPLING

Groundwater samples were collected from each well on February 25 and November 30, 1993 and February 25, 1994. Wells were purged prior to sampling by bailing until a minimum of four casing volumes were removed from each well and the physical parameters of pH, conductivity and temperature had stabilized. Once purging was completed, the water level was allowed to recover to 80% of its original static level prior to sampling.

Groundwater samples were collected using disposable polyethylene bailers and immediately transferred directly to laboratory supplied containers and labeled.

4.4 WATER LEVEL MONITORING

Depth to groundwater was measured in the three monitoring wells on February 25, March 25, April 22, May 10, August 30, and November 30, 1993, and again on March 1, 1994. These measurements were used in conjunction with well casing elevations to calculate the groundwater elevation in the monitoring wells. Table 2 summarizes these measurements and the corresponding groundwater elevations.

4.5 ANALYTICAL METHODS

Soil and groundwater samples collected from the site were analyzed for total petroleum hydrocarbons as gasoline (TPHG) by EPA Method 8015M; total petroleum hydrocarbons as diesel (TPHD) by EPA Method 8015M; and benzene, toluene, ethylbenzene and xylene (BTEX) by EPA Method 8020. In addition to primary groundwater samples, a travel blank was analyzed with each batch of water samples for quality control purposes. The travel blank was analyzed for TPHG and BTEX.

5.0 EXTENT OF HYDROCARBON PRESENCE IN SOIL AND GROUNDWATER

5.1 HYDROCARBONS IN SOIL

Table 3 summarizes the analytical results for the soil samples collected from the monitoring well borings. As shown in Table 3, TPH as gasoline, TPH as diesel, and BTEX were not detected in any of the six soil samples. Total lead was detected in the 4-foot sample from MW-1 and the 5-foot samples from MW-2 and MW-3, at 5.8, 7.0, and 7.2 mg/kg, respectively. Total lead was detected in the 10-foot samples from MW-1 and MW-2 at 6.9 and 8.8 mg/kg. Copies of the analytical reports and chain-of-custody documentation for the soil samples are included in Appendix B of our report entitled "Soil and Groundwater Investigation, Former Castro Valley Unified School District Corporation Yard, 21000 Wilbeam Avenue, Castro Valley, California" dated August 23, 1993.

5.2 HYDROCARBONS IN GROUNDWATER

Table 4 summarizes the analytical results for the groundwater samples collected from the monitoring wells. As shown in Table 4, TPH as gasoline, TPH as diesel, and BTEX were not detected in any of the groundwater samples. Total lead was detected in MW-1, MW-2, and MW-3, at 94, 76, and 37 μg/l, respectively. TPH as gasoline and BTEX were not detected in the trip blank. Copies of the analytical reports and chain-of-custody documents for the groundwater samples are included in Appendix B of our report entitled "Soil and Groundwater Investigation, Former Castro Valley Unified School District Corporation Yard, 21000 Wilbeam Avenue, Castro Valley, California" dated August 23, 1993.

6.0 HYDROGEOLOGIC SETTING

First groundwater at the site occurs within the unconsolidated alluvial deposits at depths ranging from 10.0 to 12.0 feet bgs. When allowed to equilibrate in the open boreholes the water level was observed to rise to within 5.0 feet of the ground surface indicating locally confined groundwater conditions. Groundwater elevations have fluctuated over the twelve month period that water levels were monitored. Groundwater elevation contour maps were

generated using the groundwater elevation data. These maps are presented on Figures 4 through 7 of our report entitled "Soil and Groundwater Investigation, Former Castro Valley Unified School District Corporation Yard, 21000 Wilbeam Avenue, Castro Valley, California" dated August 23, 1993, and in our Quarterly Groundwater Quality Monitoring Reports dated December, 1993 and April, 1994. Groundwater elevation contours indicate the groundwater flow direction to be generally toward the southwest throughout the period of monitoring.

7.0 CONCLUSIONS

Based on chemical data for soil and groundwater samples from this site, there is no indication that contamination related to the former presence of USTs exists. Data gathered during the soil and groundwater investigation, and subsequent quarterly groundwater monitoring activities spanning over a year have not identified any hydrocarbon contamination in soil or groundwater. Any hydrocarbons which may have been present in soil or groundwater around the USTs were apparently removed at the time of the tank excavations through overexcavation and dewatering activities.

8.0 RECOMMENDATIONS

Based on the conclusion that soil or groundwater contamination related to the former presence of USTs does not appear to be present at the site, we recommend that site closure be granted. Additionally, we recommend that the three groundwater monitoring wells at the site be drilled out and abandoned.

Very truly yours,

DAMES & MOORE

Raymond Rice, C.E.G.
GES Program Manager

Andrew Mork, R.G.
Project Geologist

Attachments:

Table 1	Figure 1
Table 2	Figure 2
Table 3	Figure 3
Table 4	

TABLE 1
SUMMARY OF CONFIRMATORY SOIL SAMPLE ANALYTICAL RESULTS
BART, FORMER CASTRO VALLEY UNIFIED SCHOOL DISTRICT CORPORATION YARD

Sample No.	Analytical Results (mg/kg)						
	TPHG[1]	TPHD[2]	B[3]	T[3]	E[3]	X[3]	Lead[4]
RTCS-1	ND[5]	ND	ND	ND	ND	ND	27
RTCS-2	ND	ND	ND	0.010	0.010	0.030	31
DTCS-1	ND	ND	ND	ND	ND	ND	27
DTCS-2	ND	ND	0.010	ND	ND	0.017	30
UTCS-1	1,100	1400	7.3	2.8	44.0	20.0	2040
UTCS-2	810	80	4.8	1.4	37.0	16.0	45
DDCS-1	7.5	ND	0.70	0.31	0.31	0.96	52
RDCS-1	5.5	ND	0.44	1.0	0.20	1.2	60
UTCS-3	ND	ND	ND	ND	ND	ND	31
UTCS-4	ND	ND	ND	ND	ND	ND	39
UTCS-5	ND	ND	ND	ND	ND	ND	26
UTCS-6	ND	ND	ND	ND	ND	ND	46
DDCS-2	ND	ND	ND	ND	ND	ND	45
RTVCS-1	ND	ND	ND	ND	ND	ND	26
Detection Limits (mg/kg)	5.0	5.0	0.005	0.005	0.005	0.005	5.0

Notes: (1) TPHG = total petroleum hydrocarbons as gasoline by EPA Method 8015M.
(2) TPHD = total petroleum hydrocarbons as diesel by EPA Method 8015M.
(3) BTEX = benzene, toluene, ethylbenzene, xylenes by EPA Method 8020.
(4) Lead = total lead by EPA Method 6010.
(5) ND = not detected.

TABLE 2
SUMMARY OF GROUNDWATER ELEVATION DATA
BART, FORMER CASTRO VALLEY UNIFIED SCHOOL DISTRICT YARD

Well No.	Date Collected	Depth to Water (feet)	TOC[1] Elevation	Groundwater Surface Elevation
MW-1	2/25/93	2.44	164.68	162.24
	3/25/93	2.41	164.68	162.27
	4/22/93	2.99	164.68	161.69
	5/10/93	3.47	164.68	161.21
	8/30/93	4.57	162.48*	157.97
	11/30/93	1.41	162.48	161.07
	3/1/94	0.65	162.48	161.83
MW-2	2/25/93	2.47	164.64	162.17
	3/25/93	2.86	164.64	161.78
	4/22/93	3.52	164.64	161.12
	5/10/93	3.50	164.64	161.14
	8/30/93	3.22	163.01*	159.79
	11/30/93	2.24	163.01	160.77
	3/1/94	1.17	163.01	161.84
MW-3	2/25/93	2.54	165.58	163.04
	3/25/93	3.73	165.58	161.85
	4/22/93	3.93	165.58	161.65
	5/10/93	4.10	165.58	161.48
	8/30/93	5.32	162.65*	157.33
	11/30/93	1.52	162.65	161.13
	3/1/94	0.46	162.65	162.19

Notes: [1] TOC = Top of casing. Elevation referenced to Mean Sea Level.
* Wells cut down and resurveyed to facilitate construction activities at the site.

TABLE 3
SOIL ANALYTICAL RESULTS
MONITORING WELL BORINGS
BART, FORMER CASTRO VALLEY SCHOOL DISTRICT CORPORATION YARD

Monitoring Well No.	Sample Date	Sample No.	Depth (feet)	Analytical Results (mg/kg)						
				TPHG[1]	TPHD[2]	B[3]	T[3]	E[3]	X[3]	Lead[4]
MW-1	2/18/93	1A	4.0	ND[5]	ND	ND	ND	ND	ND	5.8
	2/18/93	2A	10.0	ND	ND	ND	ND	ND	ND	6.9
MW-2	2/18/93	1A	5.0	ND	ND	ND	ND	ND	ND	7.0
	2/18/93	2A	10.0	ND	ND	ND	ND	ND	ND	8.8
MW-3	2/18/93	1A	5.0	ND	ND	ND	ND	ND	ND	7.2
	2/18/93	2A	10.0	ND	ND	ND	ND	ND	ND	ND
Detection Limits (mg/kg)				5.0	5.0	0.005	0.005	0.005	0.005	5.0

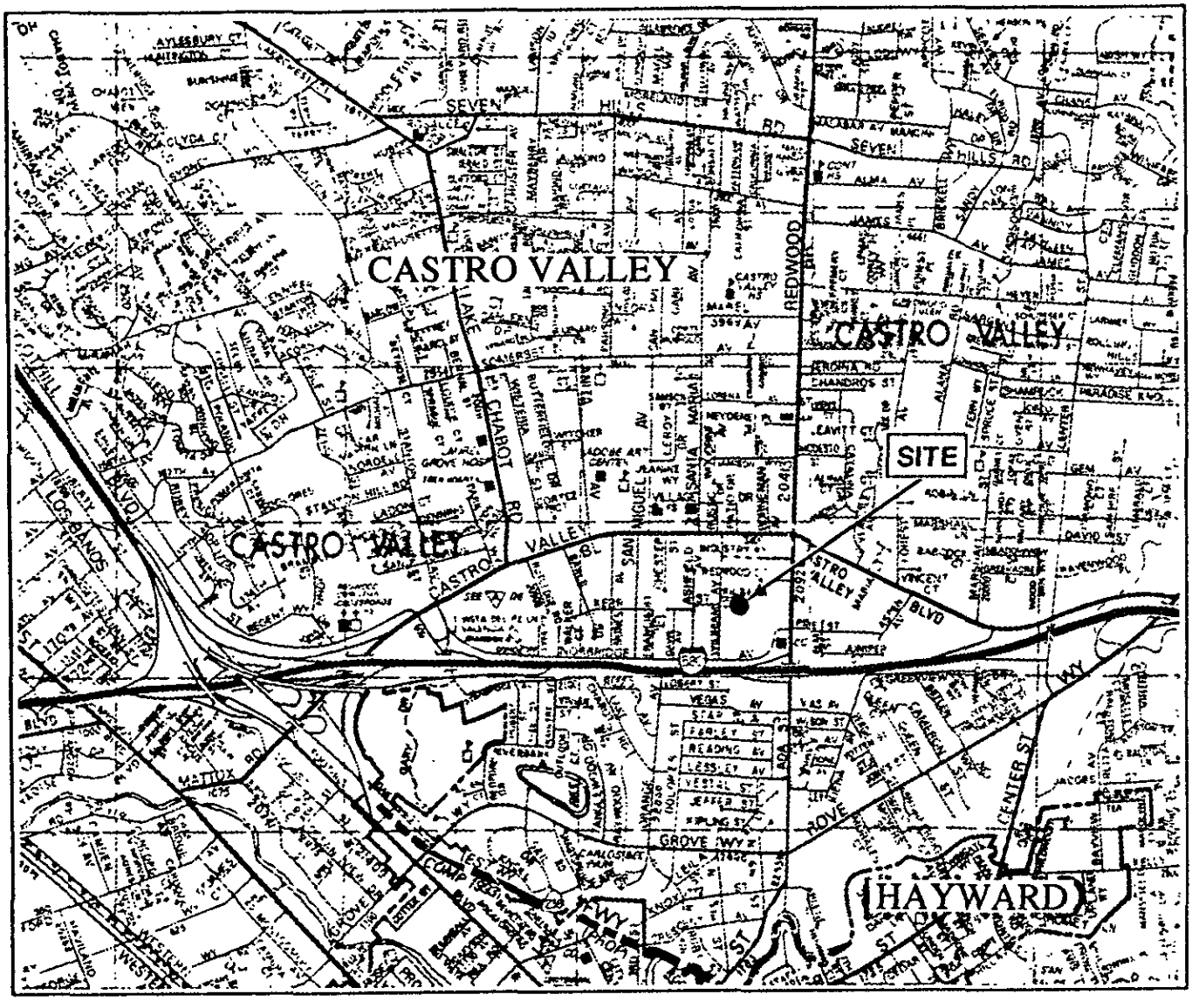
Notes:
(1) TPHG = total petroleum hydrocarbons as gasoline, EPA Method 8015M.
(2) TPHD = total petroleum hydrocarbons as diesel, EPA Method 8015M.
(3) BTEX = Benzene, Toluene, Ethylbenzene and Xylenes
(4) Lead = total lead, EPA Method 6010.
(5) ND = Not Detected

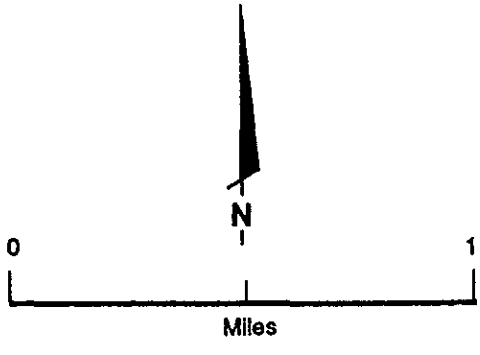
TABLE 4
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
BART, FORMER CASTRO VALLEY SCHOOL DISTRICT CORPORATION YARD

Monitoring Well No.	Sample Date	Analytical Results						
		TPHG[1]	TPHD[2]	B[3]	T[3]	E[3]	X[3]	Lead[4]
MW-1	2/25/93	ND[5]	ND	ND	ND	ND	ND	94[7]
	11/30/93	ND	ND	ND	ND	ND	ND	ND
	2/25/94	ND	ND	ND	ND	ND	ND	ND
MW-2	2/25/93	ND	ND	ND	ND	ND	ND	76[7]
	11/30/93	ND	ND	ND	ND	ND	ND	ND
	2/25/94	ND	ND	ND	ND	ND	ND	ND
MW-3	2/25/93	ND	ND	ND	ND	ND	ND	37[7]
	11/30/93	ND	ND	ND	ND	ND	ND	ND
	3/1/94	ND	ND	ND	ND	ND	ND	ND
Trip Blank	2/25/93	ND	NA[6]	ND	ND	ND	ND	NA
	11/30/93	ND	NA	ND	ND	ND	ND	NA
	2/25/94	ND	NA	ND	ND	ND	ND	NA
	3/1/94	ND	NA	ND	ND	ND	ND	NA
Detection Limits		1.0[7]	1.0[7]	1.0[8]	1.0[8]	1.0[8]	1.0[8]	10.0/0.06/ 0.05[9]

Aug 93 data?

Notes:
(1) TPHG = total petroleum hydrocarbons as gasoline, EPA Method 8015M.
(2) TPHD = total petroleum hydrocarbons as diesel, EPA Method 8015M.
(3) BTEX = benzene, toluene, ethylbenzene and xylenes.
(4) Lead = total lead, EPA Method 6010.
(5) ND = not detected.
(6) NA = not analyzed.
(7) Analytical results and detection limit in mg/L (ppm).
(8) Analytical results and detection limit in µg/L (ppb).
(9) Detection limit for lead analyses on 2/25/93 samples is 10 mg/L. Detection limit for lead analyses on 11/30/93 samples is 0.06 mg/L. Detection limit for lead analyses on 2/25/94 and 3/1/94 samples is 0.05 mg/L.





LOCATION MAP

BART
May 1994 — Castro Valley District Corporation Yard
3715-051-043 — Castro Valley, California

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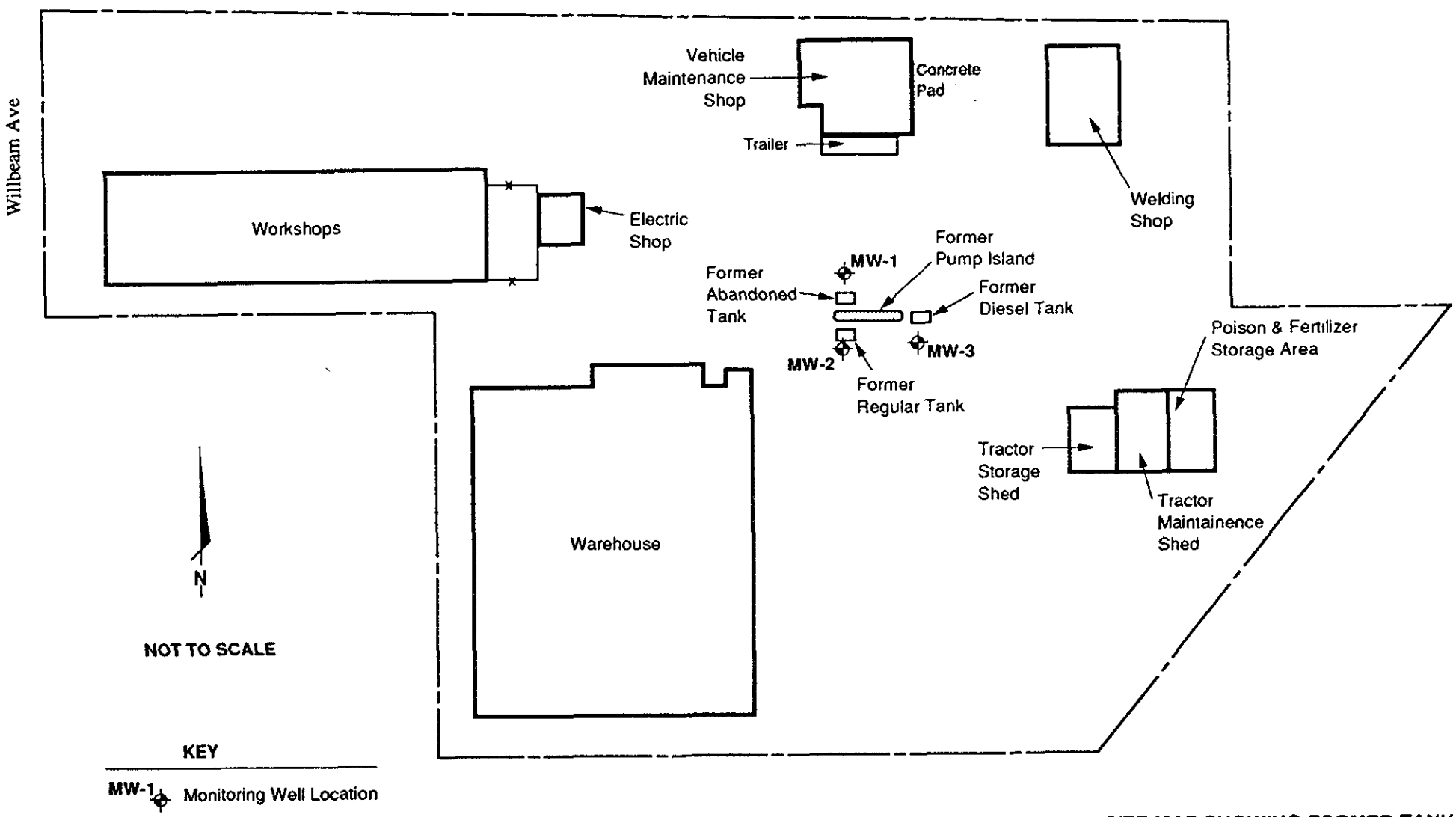
FIGURE 1

20924 W 21013 R



SITE MAP SHOWING FORMER TANK LOCATIONS AND MONITORING WELLS

BART
Castro Valley District Coporation Yard
Castro Valley, California

May 1994
3715-051-043

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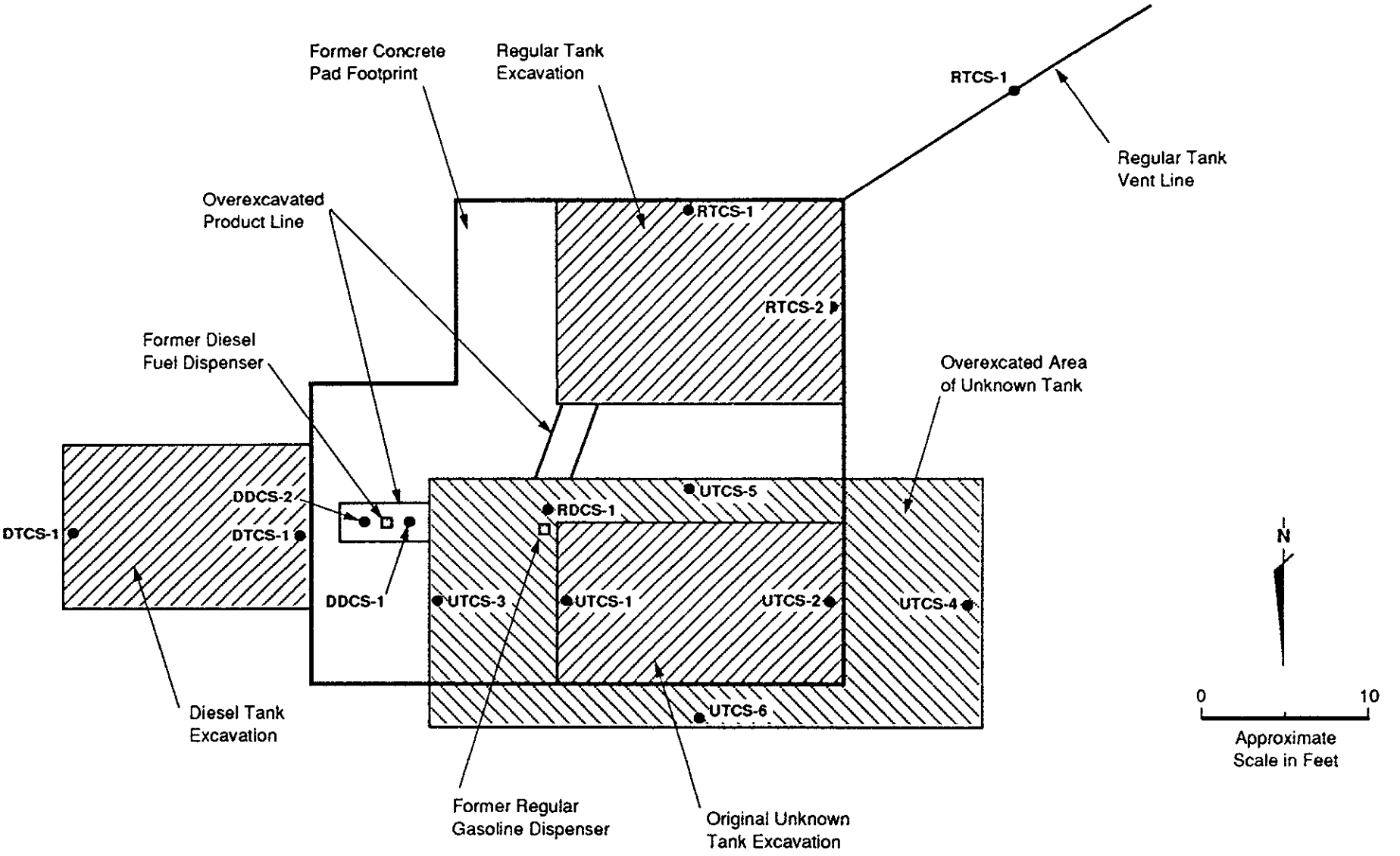
FIGURE 2



TANK EXCAVATIONS AND CONFIRMATORY SAMPLE LOCATIONS

BART
May 1994 — Castro Valley District Corporation Yard
3715-051-043 — Castro Valley, California

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FIGURE 3