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ENGINEERS, HYDROGEOLOGISTS & APPLIED SCIENTISTS

October 4, 1994 LF 1649.34

Ms. Susan Hugo
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Second Floor
Alameda, California 94502

Subject: Work Plan to Conduct Soil Excavation for the Proposed 40th Street Extension in Emeryville, California

Dear Susan:

The attached work plan presents the scope of work for excavation planned for the proposed 40th Street extension in Emeryville, California. The scope of work was verbally approved in a meeting on Thursday, September 22, 1994, among representatives of the Alameda County Health Care Services Agency, the City of Emeryville, Levine•Fricke, and Catellus Development Corporation.

As you are aware, the 40th Street extension is to be constructed by the end of November 1994. We are therefore planning to begin excavation activities during the first or second week of October 1994.

If you have any questions or comments concerning the activities proposed in this work plan, please do not hesitate to call me (510-652-4500) or Ms. Kimberly Brandt at Catellus Development (415-974-4500).

Sincerely,

for

Ron Goloubow
Senior Project Geologist

cc: Ms. Kimberly Brandt, Catellus Development
Mr. Ignacio Dayrit, City of Emeryville
Mr. Sumadhu Arigala, Regional Water Quality Control Board

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October 4, 1994 LF 1649.34

WORK PLAN TO CONDUCT SOIL EXCAVATION FOR THE PROPOSED 40TH STREET EXTENSION EMERYVILLE, CALIFORNIA

This work plan presents the scope of work to conduct soil excavation in conjunction with the proposed 40th Street extension in Emeryville, California ("the Site"; Figure 1). This scope of work was verbally approved by the Alameda County Health Care Services Agency (ACHA) in a meeting on Thursday, September 22, 1994, among representatives of the ACHCA, the City of Emeryville ("the City"), Levine·Fricke, and Catellus Development Corporation ("Catellus").

BACKGROUND

The City has requested that 40th Street be extended between Adeline Street and San Pablo Avenue. Levine·Fricke conducted a Phase I and Phase II Investigation of soil and ground-water quality beneath the Site in June and August 1993. At that time, the Site was occupied by Celis' Service Station and Anderson Linoleum and Carpet (ALC) Sales Warehouse (Figure 1). The Celis service station and the ALC warehouse were demolished in May and September 1994, respectively, to prepare for road construction.

One monitoring well (MW-1), located just west of the ALC Warehouse, had been installed on behalf of the San Francisco Bread Company (SFBC), former tenants at the property, to monitor a possible release from two former underground storage tanks (USTs) owned and operated by the SFBC. The USTs were reportedly removed in 1989. According to a report dated June 24, 1993, prepared by SEACOR on behalf of the SFBC, analytical results for well MW-1 indicated concentrations of total petroleum hydrocarbons as gasoline (TPHg) and benzene in ground water at concentrations of 1.4 mg/l and 0.470 mg/l, respectively.

Levine·Fricke's Phase II Investigation included drilling soil borings throughout the Site (SB-1 through SB-19) and installing monitoring wells at the Celis' service station (LF-1, LF-2, and LF-3). Results of that investigation

identified various areas of petroleum hydrocarbon-affected soil, and elevated concentrations of TPHg, benzene, toluene, ethylbenzene, and xylenes (BTEX) and TPH as diesel in shallow ground water beneath the service station.

To address petroleum hydrocarbon-affected soil in the vicinity of the former service station, the six former fuel USTs were removed in June 1994 and affected soil was excavated to approximately 9 feet below ground surface (bgs) within the service station property boundary.

Recent Soils Investigation

To further characterize soil east of the service station and west of Adeline Avenue, Levine·Fricke drilled an additional 16 soil borings (B1 through B16) in August 1994 to depths of 10 feet bgs. A summary of analytical results for these borings is presented in Table 1 (analytical results for soil samples collected during the Phase II investigation are presented in Table 2). Analytical results for borings B1 through B16 indicated elevated concentrations of TPHg and BTEX in soil samples collected from borings B3 and B4. Elevated concentrations of TPHg and BTEX were also detected in samples collected at 10 feet bgs from borings B1, B7, B8, B9, B11, and B16. However, ground water beneath the Site is encountered at approximately 9 to 10 feet bgs and concentrations reported for these samples likely are a result of contact with petroleum-affected ground water previously identified beneath the property in the vicinity of the former SFBC USTs and the Celis service station.

PROPOSED SOIL EXCAVATION ACTIVITIES

To accommodate construction of the proposed 40th Street extension, Catellus will remove the upper 2 feet of soil from the Site. Before this soil is removed, localized areas of petroleum-affected soil identified during previous soil investigations will be excavated and removed from the Site. Soil excavation activities will be conducted in accordance with the tasks described below.

Task 1: Soil Excavation

As discussed in a meeting on September 22, 1994 among representatives of the ACHA, the City, Levine·Fricke, and Catellus, it is proposed that soil in the vicinity of recent borings B3 and B4 be excavated to a depth of 8 to 10 feet bgs, the approximate depth of ground water beneath the Site. In

addition, it is proposed that soil in the vicinity of recent boring B5 and Phase II soil borings SB-12, SB-15, SB-18, and SB-19 be excavated to a depth of 5 to 6 feet bgs or until field observations indicate that affected soil has been removed. Soil samples collected from the excavations will be screened in the field for volatile organic compound (VOC) concentrations using a photoionization detector (PID) to assess whether affected soil has been removed. When affected soil appears to have been removed, confirmation soil samples will be collected in designated areas, as described in Task 2.

Soil excavated from the Site will be temporarily stockpiled on plastic and segregated so that the affected soil is not mixed with the soil to be removed from the upper 2 feet of the Site during road construction activities.

Task 2: Confirmation Soil Samples

As agreed in the meeting on September 22, 1994, a maximum of five confirmation soil samples will be collected from final excavations in the vicinity of former soil borings SB-12 and SB-15, where the vertical extent of petroleum-affected soil has not been assessed. Confirmation soil samples will not be collected from final excavations in the vicinity of former borings B3, B4, B5, where the vertical extent of affected soil has been assessed to 10 feet bgs, the approximate depth to ground water, or near former borings SB-18 and SB-19, where only TPH as motor oil has been detected (these areas will be excavated to 5 or 6 feet bgs as described in Task 1).

Soil samples will be submitted to American Environmental Network in Pleasant Hill, California, for analysis of TPHg using modified EPA Method 8015, BTEX using modified EPA Method 8020, and TPH as diesel and motor oil using EPA Method 3550. Samples will be submitted on a normal turn-around time basis.

In addition, one sample for every 100 cubic yards of excavated soil will be collected for analysis to characterize the soil for disposal. It is anticipated these soil samples will be analyzed for CAM 17 metals (waste extraction test) using the EPA 6000 Series, VOCs using EPA Method 8240, semivolatile organic compounds (SVOCs) using EPA Method 8270, TPHg using EPA Method 8015, and TPHd using EPA Method 3550, polychlorinated biphenyls (PCBs) using EPA Method 8080, and reactivity, corrosivity, and ignitability (RCI).

Task 3: Excavation Backfilling And Compaction

After excavation and sampling activities have been completed, the final excavations will be backfilled with clean imported soil or on-site soil determined to be clean. It is anticipated that excavations will be backfilled on the same day that soil is excavated (i.e., excavations will be backfilled prior to receipt of analytical results for confirmation samples).

Fill soils will be placed in loose lifts not exceeding 8 inched in thickness. Fill soils beneath 5 feet bgs will be compacted to at least 90 percent relative compaction. Fill soils above 5 feet bgs will be compacted to at least 95 percent relative compaction.

A Levine·Fricke engineer will monitor backfill placement and compaction. Field density tests will be taken using a nuclear density gauge to measure the level of compaction being achieved by the contractor.

Task 4: Reporting

A report will be prepared for submittal to the ACHA following completion of field work and receipt of analytical results. The report will describe field activities and present analytical results for soil samples collected from final excavations.

SCHEDULE

It is anticipated that field work can be initiated during the first or second week of October 1994, pending approval of this work plan by the ACHA. It is estimated that all field work can be completed within one week and that a report of soil excavation activities can be completed within four weeks following the completion of field work.

Changes to this schedule may result due to circumstances beyond Levine·Fricke's control, such as work delays due to adverse weather conditions, contractor or laboratory availability, and/or unanticipated site conditions.

TABLE 1
ANALYTICAL RESULTS FOR SOIL SAMPLES COLLECTED FROM SOIL BORINGS
PROPOSED 40TH STREET EXTENSION, EMERYVILLE, CALIFORNIA
(concentrations in milligrams per kilogram [mg/kg])

Sample Name		Depth (ft)	Sample Date	TPHg	TPHd	TRPH	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total BTEX
B1-2		2	29-Aug-94	0.8	<1	<10	0.01	<0.005	0.016	0.085	0.109
B1-5		5	29-Aug-94	110	<1	30	0.84	0.52	3.2	12	16.56
B1-10		10	29-Aug-94	690	<1	30	12	50	18	99	179.0
B2-2		2	29-Aug-94	110	<1	10	0.6	2.9	3.3	16	22.8
B2-5		5	29-Aug-94	66	1	10	0.37	0.8	0.79	3.5	5.46
B2-10		10	29-Aug-94	830	<1	30	13	52	21	110	196.0
B3-2		2	29-Aug-94	440	<1	80	8.5	36	12	58	114.5
B3-5		5	29-Aug-94	810	8	200	14	62	22	100	198.0
B3-10		10	29-Aug-94	390	<1	50	7.1	22	7.2	38	74.3
B4-2		2	29-Aug-94	49	<1	40	0.14	0.12	2.3	11	13.56
B4-5		5	29-Aug-94	8,800	28	1,300	6.8	7.3	190	870	1,074.1
B4-10		10	29-Aug-94	510	3	110	1.1	0.96	3.4	13	18.46
B5-2		2	29-Aug-94	0.4	<1	10	<0.005	<0.005	<0.005	<0.005	<0.005
B5-5		5	29-Aug-94	<0.2	<1	2,400	<0.005	<0.005	<0.005	<0.005	<0.005
B5-10		10	29-Aug-94	<0.2	<1	<10	<0.005	<0.005	<0.005	<0.005	<0.005
B6-2 *		2	29-Aug-94	<0.2	<1	20	<0.005	<0.005	<0.005	<0.005	<0.005
B6-5 *		5	29-Aug-94	<0.2	<1	10	<0.005	<0.005	<0.005	<0.005	<0.005
B6-10*		10	29-Aug-94	<0.2	<1	<10	<0.005	<0.005	<0.005	<0.005	<0.005
B7-2		2	30-Aug-94	27	<1	10	0.42	<.010	0.75	0.05	1.22
B7-5		5	30-Aug-94	16	<1	<10	0.67	<0.020	<0.020	0.025	0.695
B7-10		10	30-Aug-94	520	<1	20	7.4	30.000	14	78	129.4
B8-2		2	29-Aug-94	3.4	<3	50	0.2	<0.005	0.56	0.0	0.78
B8-5		5	29-Aug-94	14	<1	<10	0.3	0.01	0.26	<0.020	0.57
B8-10		10	29-Aug-94	140	<1	20	2.1	5.8	4	21	32.90
B9-2		2	29-Aug-94	2.8	<1	20	0.33	0.005	0.41	0.07	0.82
B9-5		5	29-Aug-94	40	5	<10	1.2	0.013	2.6	0.15	3.96
B9-10		10	29-Aug-94	190	<1	20	4.3	11	5.5	28	48.80
B10-2		2	29-Aug-94	29	<1	150	0.04	0.048	0.18	1.2	1.466
B10-5		5	29-Aug-94	13	<1	30	<0.01	0.02	0.050	<0.010	0.07
B-10-10		10	29-Aug-94	<0.2	<1	<10	<0.005	<0.005	<0.005	<0.005	<0.005
B11-2		2	30-Aug-94	<0.2	<1	20	<0.005	<0.005	<0.005	<0.005	<0.005
B11-5		5	30-Aug-94	1	<1	<10	<0.005	<0.005	<0.005	<0.005	<0.005
B11-10		10	30-Aug-94	250	<1	40	1.1	0.35	4.4	21	26.85
B12-2		2	30-Aug-94	<0.2	<1	30	<0.005	<0.005	<0.005	<0.005	<0.005
B12-5		5	30-Aug-94	0.9	<1	<10	<0.005	<0.005	<0.005	<0.005	<0.005
B12-10		10	30-Aug-94	160	<1	30	0.97	0.19	4.1	20	25.26
B13-2		2	30-Aug-94	<1	220	600	<0.005	<0.005	<0.005	<0.005	<0.005
B13-5		5	30-Aug-94	4.2	10	40	<0.005	<0.005	0.02	<0.005	0.02
B13-10		10	30-Aug-94	6.9	3	20	0.36	<0.005	0.45	0.13	0.94
B14-2 *	(1)	2	30-Aug-94	<1	<100	410	<0.005	<0.005	<0.005	<0.005	<0.005
B14-5 *		5	30-Aug-94	1.6	<1	<10	0.01	<0.005	<0.005	<0.005	0.01
B14-10*	(2)	10	30-Aug-94	2.9	<1	<10	0.01	<0.005	0.01	<0.005	0.016
B15-2		2	30-Aug-94	<0.2	<10	420	<0.005	<0.005	<0.005	<0.005	<0.005
B15-5		5	30-Aug-94	<0.2	<1	<10	<0.005	<0.005	<0.005	<0.005	<0.005
B15-10		10	30-Aug-94	<0.2	<1	20	<0.005	<0.005	<0.005	<0.005	<0.005
B16-2		2	30-Aug-94	<0.2	10	50	<0.005	<0.005	<0.005	<0.005	<0.005
B16-5		5	30-Aug-94	28	<1	<10	0.16	<0.010	0.96	0.037	1.157
B16-10		10	30-Aug-94	130	<1	20	2.5	5.4	2.6	15	25.5

Data entered by DLM/19 SEP 94 Data proofed by REG QA/QC by REG

Notes:
* denotes that the sample was analyzed for semi-volatile organic chemicals using EPA method 8270
(1) 2-Methylnaphthalene detected at 0.670 ppm.
(2) 2-Methylnaphthalene detected at 1.100 ppm.

NA = not analyzed
TPHg = total petroleum hydrocarbons as gasoline
TPHd = total petroleum hydrocarbons as diesel
TRPH = total recoverable petroleum hydrocarbons

TABLE 2
ANALYTICAL RESULTS FOR SOIL SAMPLES COLLECTED FROM THE EASTERN PORTION OF THE SITE
40TH STREET RIGHT-OF-WAY, EMERYVILLE, CALIFORNIA
(concentrations in milligrams per kilogram [mg/kg])

Sample Name	Depth (ft)	Sample Date	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethyl-benzene	Total Xylenes	TRPH	PCBs	VOCs	SVOCs
Railroad Tracks													
SB-12-1	1	09-Aug-93	<0.5	<200	400	NA	NA	NA	NA	4,600	ND	NA	NA
SB-12-3	3	09-Aug-93	6,500	560	64	NA	NA	NA	NA	420	ND	NA	NA
SB-13-5	5	09-Aug-93	23	<10	<10	NA	NA	NA	NA	63	ND	NA	NA
SB-13-6.5	6.5	09-Aug-93	13	<10	<10	NA	NA	NA	NA	37	ND	NA	NA
SB-14-2	2	09-Aug-93	42	<200	480	NA	NA	NA	NA	2,200	(7)	NA	NA
SB-14-4.5	4.5	09-Aug-93	<0.5	<10	<10	NA	NA	NA	NA	47	ND	NA	NA
SB-15-4.5	4.5	09-Aug-93	4,700	140	12	NA	NA	NA	NA	480	ND	NA	NA
SB-15-6	6	09-Aug-93	3,700	59	14	NA	NA	NA	NA	120	ND	NA	NA
SB-16-4.5	4.5	09-Aug-93	9	<10	<10	NA	NA	NA	NA	60	ND	NA	NA
SB-16-6	6	09-Aug-93	8	<10	<10	NA	NA	NA	NA	53	ND	NA	NA
SB-18-1	1	09-Aug-93	1	<200	320	NA	NA	NA	NA	2,200	ND	NA	NA
SB-18-3	3	09-Aug-93	<0.5	<200	390	NA	NA	NA	NA	1,100	ND	NA	NA
SB-19-1.5	1.5	09-Aug-93	<0.5	<200	530	NA	NA	NA	NA	2,200	ND	NA	NA
SB-19-3	3	09-Aug-93	1	<200	740	NA	NA	NA	NA	3,600	ND	NA	NA
San Francisco French Bread Company													
SB-17-4.5	4.5	09-Aug-93	260	40	<10	2	22	12	69	70	ND	(1)	(4)
SB-17-7	7	09-Aug-93	440	17	<10	4	27	8	43	50	ND	(2)	(5)
SB-17-12	12	09-Aug-93	500	130	190	2	9	4	23	47	ND	(3)	(6)

Data entered by MEK/20-Aug-93. Data proofed by JJB/26-Aug-93. QA/QC by JJB/08-Sep-93.

TPHg = total petroleum hydrocarbons as gasoline
TPHd = total petroleum hydrocarbons as diesel
TPHmo = total petroleum hydrocarbons as motor oil
TRPH = total recoverable petroleum hydrocarbons
PCBs = polychlorinated biphenyls
VOCs = volatile organic compounds
SVOCS = semivolatile organic compounds
ND = Not detected above laboratory detection limits

(1) 2.6 mg/kg methylene chloride
(2) 2.0 mg/kg methylene chloride
(3) 0.660 mg/kg methylene chloride
(4) 0.4 mg/kg 4-methylphenol, 1.6 mg/kg naphthalene, and 1.8 mg/kg 2-methylnaphthalene
(5) 0.57 mg/kg naphthalene and 0.630 mg/kg 2-methylnaphthalene
(6) 1.7 mg/kg naphthalene and 1.8 mg/kg 2-methylnaphthalene
(7) 0.22 mg/kg Aroclor 1260

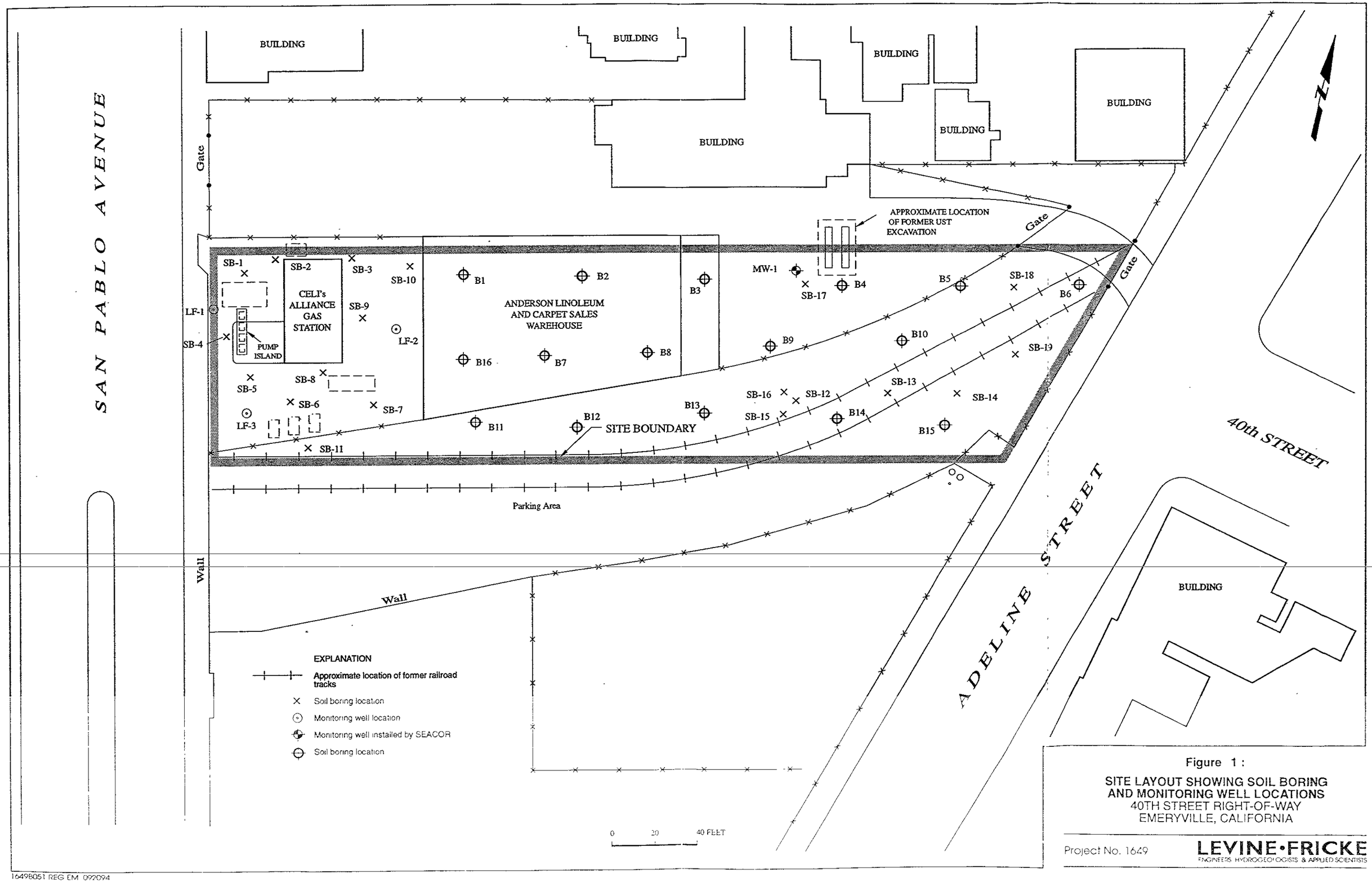

Figure 1 :

SITE LAYOUT SHOWING SOIL BORING AND MONITORING WELL LOCATIONS
40TH STREET RIGHT-OF-WAY
EMERYVILLE, CALIFORNIA

Project No. 1649

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1649B05T REG EM 092094