

**APPENDIX A
HISTORICAL DATA**

TABLE 1
SOIL SAMPLE LABORATORY ANALYTICAL RESULTS
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE, DIESEL AND MOTOR OIL
MERCURY CLEANERS, SACRAMENTO, CALIFORNIA

SAMPLE IDENTIFICATION	ANALYTE		
	TPH-G	TPH-D	TPH-MO
	ANALYTICAL RESULTS (mg/kg)		
B1-S-2-1	<1.0	<1.1	<5.5
B1-S-5-1	<1.4	4.5Y	<6.4
B1-S-10-1	<1.2	2.1Y	<6.0
B1-S-15-1	NA	NA	NA
B2-S-2-1	<1.0	71HY	76
B2-S-5-1	<1.3	3.8Y	<6.5
B2-S-10-1	<1.3	<1.2	<6.0
B2-S-15-1	NA	NA	NA
B3-S-2-1	<1.1	100HY	710
B3-S-5-1	<1.2	<1.2	<6.1
B3-S-10-1	<1.1	<1.2	<6.1
B3-S-15-1	NA	NA	NA
B4-S-2-1	NA	NA	NA
B4-S-5-1	NA	NA	NA
B4-S-10-1	NA	NA	NA
B4-S-15-1	NA	NA	NA
B5-S-2-1	NA	NA	NA
B5-S-5-1	NA	NA	NA
B5-S-10-1	NA	NA	NA
B5-S-15-1	NA	NA	NA
B6-S-2-1	NA	NA	NA
B6-S-5-1	NA	NA	NA
B6-S-10-1	NA	NA	NA
B6-S-15-1	NA	NA	NA
B22-S-2-1	<1.0	31HY	100
B25-S-2-1	NA	NA	NA
*Screening Levels (mg/kg)	100 ^a	100 ^a	500 ^a
	100 ^b	100 ^b	1,000 ^b

NOTES:

a = San Francisco Bay RWQCB Environmental Screening Levels for **Residential Use** - Where Groundwater is a current or potential source of drinking water (February 2005)

b = San Francisco Bay RWQCB Environmental Screening Levels for **Commercial Use** - Where Groundwater is a current or potential source of drinking water (February 2005)

TPH-G, TPH-D and TPH-MO = Total petroleum hydrocarbons as gasoline, diesel and motor oil

TPH-G, TPH-D and TPH-MO analyzed using EPA Method 8015M
mg/kg = milligrams per kilogram

< = below laboratory reporting limits

Shaded cells indicate concentrations reported greater than Screening Levels

Bold indicates analysis reported above laboratory reporting limit

H indicates heavier hydrocarbons contributed to the quantitation

Y indicates the sample exhibits a chromatographic pattern which does not resemble standard

L indicates lighter hydrocarbons contributed to the quantitation

NA = Not analyzed

**TABLE 2
SOIL SAMPLE LABORATORY ANALYTICAL RESULTS
VOLATILE ORGANIC COMPOUNDS
MERCURY CLEANERS
SACRAMENTO, CALIFORNIA**

ANALYTE	SAMPLE IDENTIFICATION																								SCREENING LEVELS (µg/kg)					
	B1-S-2-1	B1-S-5-1	B1-S-10-1	B1-S-15-1	B2-S-2-1	B2-S-5-1	B2-S-10-1	B2-S-15-1	B3-S-2-1	B3-S-5-1	B3-S-10-1	B3-S-15-1	B4-S-2-1	B4-S-5-1	B4-S-10-1	B4-S-15-1	B5-S-2-1	B5-S-5-1	B5-S-10-1	B5-S-15-1*	B6-S-2-1	B6-S-5-1	B6-S-10-1	B6-S-15-1	B22-S-2-1	B25-S-2-1	Residential		Commercial	
	ANALYTICAL RESULTS (µg/kg)																								PRGs	ESLs	PRGs	ESLs		
Freon 12	<12	<12	<10	NA	<14	<13	<10	NA	<13	<10	<11	NA	<12	<12	<12	NA	<470	<1200	<300	<40,000	<13	<10	<9.7	NA	<12	<840	94,000	---	310,000	---
Chloromethane	<12	<12	<10	NA	<14	<13	<10	NA	<13	<10	<11	NA	<12	<12	<12	NA	<470	<1200	<300	<40,000	<13	<10	<9.7	NA	<12	<840	47,000	70	---	---
Vinyl Chloride	<12	<12	<10	NA	<14	<13	<10	NA	<13	<10	<11	NA	<12	<12	<12	NA	<470	<1200	<300	<40,000	<13	<10	<9.7	NA	<12	<840	79	6.7	---	---
Bromomethane	<12	<12	<10	NA	<14	<13	<10	NA	<13	<10	<11	NA	<12	<12	<12	NA	<470	<1200	<300	<40,000	<13	<10	<9.7	NA	<12	<840	3,900	220	---	---
Chloroethane	<12	<12	<10	NA	<14	<13	<10	NA	<13	<10	<11	NA	<12	<12	<12	NA	<470	<1200	<300	<40,000	<13	<10	<9.7	NA	<12	<840	3,000	630	---	---
Trichlorofluoromethane	<6.1	<6.0	<5.1	NA	<6.9	<6.5	<5.1	NA	<6.5	<5.1	<5.4	NA	<5.8	<6.0	<6.0	NA	<230	<620	<150	<20,000	<6.4	<5.1	<4.8	NA	<5.9	<420	390,000	---	---	---
Acetone	<24	<24	<20	NA	<28	<26	<20	NA	<26	<20	<22	NA	<23	<24	<24	NA	<930	<2500	<600	<80,000	<26	<20	<19	NA	<24	<1700	1,400,000	500	---	---
Freon <113	<6.1	<6.0	<5.1	NA	<6.9	<6.5	<5.1	NA	<6.5	<5.1	<5.4	NA	<5.8	<6.0	<6.0	NA	<230	<620	<150	<20,000	<6.4	<5.1	<4.8	NA	<5.9	<420	5,600,000	---	---	---
1,1-Dichloroethene	<6.1	<6.0	<5.1	NA	<6.9	<6.5	<5.1	NA	<6.5	<5.1	<5.4	NA	<5.8	<6.0	<6.0	NA	<230	<620	<150	<20,000	<6.4	<5.1	<4.8	NA	<5.9	<420	120,000	1,000	---	---
Methylene Chloride	<24	<24	<20	NA	<28	<26	<20	NA	<26	<20	<22	NA	<23	<24	<24	NA	<930	<2500	<600	<80,000	<26	<20	<19	NA	<24	<1700	9,100	77	---	---
Carbon Disulfide	<6.1	<6.0	<5.1	NA	<6.9	<6.5	<5.1	NA	<6.5	<5.1	<5.4	NA	<5.8	<6.0	<6.0	NA	<230	<620	<150	<20,000	<6.4	<5.1	<4.8	NA	<5.9	<420	360,000	---	---	---
MTBE	<6.1	<6.0	<5.1	NA	<6.9	<6.5	<5.1	NA	<6.5	<5.1	<5.4	NA	<5.8	<6.0	<6.0	NA	<230	<620	<150	<20,000	<6.4	<5.1	<4.8	NA	<5.9	<420	32,000	23	---	---
trans-1,2-Dichloroethene	<6.1	<6.0	<5.1	NA	<6.9	<6.5	<5.1	NA	<6.5	<5.1	<5.4	NA	<5.8	<6.0	<6.0	NA	<230	<620	<150	<20,000	<6.4	<5.1	<4.8	NA	<5.9	<420	69,000	670	---	---
Vinyl Acetate	<61	<60	<51	NA	<69	<65	<51	NA	<65	<51	<54	NA	<58	<60	<60	NA	<2300	<6200	<1500	<200,000	<64	<51	<48	NA	<59	<4200	430,000	---	---	---
1,1-Dichloroethane	<6.1	<6.0	<5.1	NA	<6.9	<6.5	<5.1	NA	<6.5	<5.1	<5.4	NA	<5.8	<6.0	<6.0	NA	<230	<620	<150	<20,000	<6.4	<5.1	<4.8	NA	<5.9	<420	2,800	200	---	---
2-Butanone	<12	<12	<10	NA	<14	<13	<10	NA	<13	<10	<11	NA	<12	<12	<12	NA	<470	<1200	<300	<20,000	<13	<10	<9.7	NA	<12	<840	22,000,000	3,900	---	---
cis-1,2-Dichloroethene	<6.1	<6.0	<5.1	NA	<6.9	<6.5	<5.1	NA	<6.5	<5.1	<5.4	NA	<5.8	<6.0	<6.0	NA	<230	<620	<150	23,000	<6.4	<5.1	<4.8	NA	<5.9	<420	43,000	190	150,000	190
2,2-Dichloropropane	<6.1	<6.0	<5.1	NA	<6.9	<6.5	<5.1	NA	<6.5	<5.1	<5.4	NA	<5.8	<6.0	<6.0	NA	<230	<620	<150	<20,000	<6.4	<5.1	<4.8	NA	<5.9	<420	---	---	---	---
Chloroform	<6.1	<6.0	<5.1	NA	<6.9	<6.5	<5.1	NA	<6.5	<5.1	<5.4	NA	<5.8	<6.0	<6.0	NA	<230	<620	<150	<20,000	<6.4	<5.1	<4.8	NA	<5.9	<420	220	880	---	---
Bromochloromethane	<6.1	<6.0	<5.1	NA	<6.9	<6.5	<5.1	NA	<6.5	<5.1	<5.4	NA	<5.8	<6.0	<6.0	NA	<230	<620	<150	<20,000	<6.4	<5.1	<4.8	NA	<5.9	<420	---	14	---	---
1,1,1-Trichloroethane	<6.1	<6.0	<5.1	NA	<6.9	<6.5	<5.1	NA	<6.5	<5.1	<5.4	NA	<5.8	<6.0	<6.0	NA	<230	<620	<150	<20,000	<6.4	<5.1	<4.8	NA	<5.9	<420	1,200,000	7,800	---	---
1,1-Dichloropropene	<6.1	<6.0	<5.1	NA	<6.9	<6.5	<5.1	NA	<6.5	<5.1	<5.4	NA	<5.8	<6.0	<6.0	NA	<230	<620	<150	<20,000	<6.4	<5.1	<4.8	NA	<5.9	<420	---	---	---	---
Carbon Tetrachloride	<6.1	<6.0	<5.1	NA	<6.9	<6.5	<5.1	NA	<6.5	<5.1	<5.4	NA	<5.8	<6.0	<6.0	NA	<230	<620	<150	<20,000	<6.4	<5.1	<4.8	NA	<5.9	<420	250	12	---	---
1,2-Dichloroethane	<6.1	<6.0	<5.1	NA	<6.9	<6.5	<5.1	NA	<6.5	<5.1	<5.4	NA	<5.8	<6.0	<6.0	NA	<230	<620	<150	<20,000	<6.4	<5.1	<4.8	NA	<5.9	<420	280	4.5	---	---
Benzene	<6.1	<6.0	<5.1	NA	<6.9	<6.5	<5.1	NA	<6.5	<5.1	<5.4	NA	<5.8	<6.0	<6.0	NA	<230	<620	<150	<20,000	<6.4	<5.1	<4.8	NA	<5.9	<420	640	44	---	---
Trichloroethene	<6.1	<6.0	<5.1	NA	<6.9	<6.5	<5.1	NA	<6.5	<5.1	<5.4	NA	<5.8	<6.0	<6.0	NA	<230	<620	<150	<20,000	<6.4	<5.1	<4.8	NA	<5.9	<420	53	260	---	---
1,2-Dichloropropane	<6.1	<6.0	<5.1	NA	<6.9	<6.5	<5.1	NA	<6.5	<5.1	<5.4	NA	<5.8	<6.0	<6.0	NA	<230	<620	<150	<20,000	<6.4	<5.1	<4.8	NA	<5.9	<420	340	51	---	---
Bromodichloromethane	<6.1	<6.0	<5.1	NA	<6.9	<6.5	<5.1	NA	<6.5	<5.1	<5.4	NA	<5.8	<6.0	<6.0	NA	<230	<620	<150	<20,000	<6.4	<5.1	<4.8	NA	<5.9	<420	820	14	---	---
Dibromomethane	<6.1	<6.0	<5.1	NA	<6.9	<6.5	<5.1	NA	<6.5	<5.1	<5.4	NA	<5.8	<6.0	<6.0	NA	<230	<620	<150	<20,000	<6.4	<5.1	<4.8	NA	<5.9	<420	---	0.33	---	---
4-Methyl-2-Pentanone	<12	<12	<10	NA	<14	<13	<10	NA	<13	<10	<11	NA	<12	<12	<12	NA	<470	<1200	<300	<40,000	<13	<10	<9.7	NA	<12	<840	4,300,000	2,800	---	---
cis-1,3-Dichloropropene	<6.1	<6.0	<5.1	NA	<6.9	<6.5	<5.1	NA	<6.5	<5.1	<5.4	NA	<5.8	<6.0	<6.0	NA	<230	<620	<150	<20,000	<6.4	<5.1	<4.8	NA	<5.9	<420	---	33	---	---
Toluene	<6.1	<6.0	<5.1	NA	<6.9	<6.5	<5.1	NA	<6.5	<5.1	<5.4	NA	<5.8	<6.0	<6.0	NA	<230	<620	<150	<20,000	<6.4	<5.1	<4.8	NA	<5.9	<420	520,000	2,900	---	---
trans-1,3-Dichloropropene	<6.1	<6.0	<5.1	NA	<6.9	<6.5	<5.1	NA	<6.5	<5.1	<5.4	NA	<5.8	<6.0	<6.0	NA	<230	<620	<150	<20,000	<6.4	<5.1	<4.8	NA	<5.9	<420	780	33	---	---
1,1,2-Trichloroethane	<6.1	<6.0	<5.1	NA	<6.9	<6.5	<5.1	NA	<6.5	<5.1	<5.4	NA	<5.8	<6.0	<6.0	NA	<230	<620	<150	<20,000	<6.4	<5.1	<4.8	NA	<5.9	<420	730	32	---	---
2-Hexanone	<12	<12	<10	NA	<14	<13	<10	NA	<13	<10	<11	NA	<12	<12	<12	NA	<470	<1200	<300	<40,000	<13	<10	<9.7	NA	<12	<840	---	---	---	---
1,3-Dichloropropane	<6.1	<6.0	<5.1	NA	<6.9	<6.5	<5.1	NA	<6.5	<5.1	<5.4	NA	<5.8	<6.0	<6.0	NA	<230	<620	<150	<20,000	<6.4	<5.1	<4.8	NA	<5.9	<420	100,000	---	---	---
Tetrachloroethene	<6.1	<6.0	<5.1	NA	<6.9	<6.5	<5.1	NA	<6.5	<5.1	<5.4	NA	<5.8	<6.0	<6.0	NA	3,100	7,300	1,600	<20,000	<6.4	<5.1	<4.8	NA	<5.9	4,500	480	87	1,300	240
Dibromochloromethane	<6.1	<6.0	<5.1	NA	<6.9	<6.5	<5.1	NA	<6.5	<5.1	<5.4	NA	<5.8	<6.0	<6.0	NA	<230	<620	<150	<20,000	<6.4	<5.1	<4.8	NA	<5.9	<420	1,100	19	---	---
1,2-Dibromoethane	<6.1	<6.0	<5.1	NA	<6.9	<6.5	<5.1	NA	<6.5	<5.1	<5.4	NA	<5.8	<6.0	<6.0	NA	<230	<620	<150	<20,000	<6.4	<5.1	<4.8	NA	<5.9	<420	32	0.33	---	---
Chlorobenzene	<6.1	<6.0	<5.1	NA	<6.9	<6.5	<5.1	NA	<6.5	<5.1	<5.4	NA	<5.8	<6.0	<6.0	NA	<230	<620	<150	<20,000	<6.4	<5.1	<4.8	NA	<5.9	<420	150,000	1,500	---	---
1,1,1,2-Tetrachloroethane	<6.1	<6.0	<5.1	NA	<6.9	<6.5	<5.1	NA	<6.5	<5.1	<5.4	NA	<5.8	<6.0	<6.0	NA	<230	<620	<150	<20,000	<6.4	<5.1	<4.8	NA	<5.9	<420	3,200	24	---	---

**TABLE 2
SOIL SAMPLE LABORATORY ANALYTICAL RESULTS
VOLATILE ORGANIC COMPOUNDS
MERCURY CLEANERS
SACRAMENTO, CALIFORNIA**

ANALYTE	SAMPLE IDENTIFICATION																								SCREENING LEVELS (µg/kg)					
	B1-S-2-1	B1-S-5-1	B1-S-10-1	B1-S-15-1	B2-S-2-1	B2-S-5-1	B2-S-10-1	B2-S-15-1	B3-S-2-1	B3-S-5-1	B3-S-10-1	B3-S-15-1	B4-S-2-1	B4-S-5-1	B4-S-10-1	B4-S-15-1	B5-S-2-1	B5-S-5-1	B5-S-10-1	B5-S-15-1*	B6-S-2-1	B6-S-5-1	B6-S-10-1	B6-S-15-1	B22-S-2-1	B25-S-2-1	Residential		Commercial	
	ANALYTICAL RESULTS (µg/kg)																								PRGs	ESLs	PRGs	ESLs		
Ethylbenzene	<6.1	<6.0	<5.1	NA	<6.9	<6.5	<5.1	NA	<6.5	<5.1	<5.4	NA	<5.8	<6.0	<6.0	NA	<230	<620	<150	<20,000	<6.4	<5.1	<4.8	NA	<5.9	<420	400,000	3,300	---	---
m,p-Xylenes	<6.1	<6.0	<5.1	NA	<6.9	<6.5	<5.1	NA	<6.5	<5.1	<5.4	NA	<5.8	<6.0	<6.0	NA	<230	<620	<150	23,000	<6.4	<5.1	<4.8	NA	<5.9	<420	270,000	2,300	420,000	2,300
o-Xylene	<6.1	<6.0	<5.1	NA	<6.9	<6.5	<5.1	NA	<6.5	<5.1	<5.4	NA	<5.8	<6.0	<6.0	NA	<230	<620	<150	<20,000	<6.4	<5.1	<4.8	NA	<5.9	<420	270,000	2,300	---	---
Styrene	<6.1	<6.0	<5.1	NA	<6.9	<6.5	<5.1	NA	<6.5	<5.1	<5.4	NA	<5.8	<6.0	<6.0	NA	<230	<620	<150	<20,000	<6.4	<5.1	<4.8	NA	<5.9	<420	1,700,000	1,500	---	---
Bromoform	<6.1	<6.0	<5.1	NA	<6.9	<6.5	<5.1	NA	<6.5	<5.1	<5.4	NA	<5.8	<6.0	<6.0	NA	<230	<620	<150	<20,000	<6.4	<5.1	<4.8	NA	<5.9	<420	62,000	2,200	---	---
Isopropylbenzene	<6.1	<6.0	<5.1	NA	<6.9	<6.5	<5.1	NA	<6.5	<5.1	<5.4	NA	<5.8	<6.0	<6.0	NA	<230	<620	<150	<20,000	<6.4	<5.1	<4.8	NA	<5.9	<420	570,000	---	---	---
1,1,2,2-Tetrachloroethane	<6.1	<6.0	<5.1	NA	<6.9	<6.5	<5.1	NA	<6.5	<5.1	<5.4	NA	<5.8	<6.0	<6.0	NA	<230	<620	<150	<20,000	<6.4	<5.1	<4.8	NA	<5.9	<420	410	9.1	---	---
1,2,3-Trichloropropane	<6.1	<6.0	<5.1	NA	<6.9	<6.5	<5.1	NA	<6.5	<5.1	<5.4	NA	<5.8	<6.0	<6.0	NA	<230	<620	<150	<20,000	<6.4	<5.1	<4.8	NA	<5.9	<420	34	---	---	---
Propylbenzene	<6.1	<6.0	<5.1	NA	<6.9	<6.5	<5.1	NA	<6.5	<5.1	<5.4	NA	<5.8	<6.0	<6.0	NA	<230	<620	<150	<20,000	<6.4	<5.1	<4.8	NA	<5.9	<420	240,000	---	---	---
Bromobenzene	<6.1	<6.0	<5.1	NA	<6.9	<6.5	<5.1	NA	<6.5	<5.1	<5.4	NA	<5.8	<6.0	<6.0	NA	<230	<620	<150	<20,000	<6.4	<5.1	<4.8	NA	<5.9	<420	28,000	---	---	---
1,3,5-Trimethylbenzene	<6.1	<6.0	<5.1	NA	<6.9	<6.5	<5.1	NA	<6.5	<5.1	<5.4	NA	<5.8	<6.0	<6.0	NA	<230	<620	<150	9,000	<6.4	<5.1	<4.8	NA	<5.9	<420	21,000	---	70,000	---
2-Chlorotoluene	<6.1	<6.0	<5.1	NA	<6.9	<6.5	<5.1	NA	<6.5	<5.1	<5.4	NA	<5.8	<6.0	<6.0	NA	<230	<620	<150	<20,000	<6.4	<5.1	<4.8	NA	<5.9	<420	---	---	---	---
4-Chlorotoluene	<6.1	<6.0	<5.1	NA	<6.9	<6.5	<5.1	NA	<6.5	<5.1	<5.4	NA	<5.8	<6.0	<6.0	NA	<230	<620	<150	<20,000	<6.4	<5.1	<4.8	NA	<5.9	<420	---	---	---	---
tert-Butylbenzene	<6.1	<6.0	<5.1	NA	<6.9	<6.5	<5.1	NA	<6.5	<5.1	<5.4	NA	<5.8	<6.0	<6.0	NA	<230	<620	<150	<20,000	<6.4	<5.1	<4.8	NA	<5.9	<420	390,000	---	---	---
1,2,4-Trimethylbenzene	<6.1	<6.0	<5.1	NA	<6.9	<6.5	<5.1	NA	<6.5	<5.1	<5.4	NA	<5.8	<6.0	<6.0	NA	<230	<620	<150	10,000	<6.4	<5.1	<4.8	NA	<5.9	<420	52,000	---	170,000	---
sec-Butylbenzene	<6.1	<6.0	<5.1	NA	<6.9	<6.5	<5.1	NA	<6.5	<5.1	<5.4	NA	<5.8	<6.0	<6.0	NA	<230	<620	<150	<20,000	<6.4	<5.1	<4.8	NA	<5.9	<420	220,000	---	---	---
para-Isopropyl Toluene	<6.1	<6.0	<5.1	NA	<6.9	<6.5	<5.1	NA	<6.5	<5.1	<5.4	NA	<5.8	<6.0	<6.0	NA	<230	<620	<150	<20,000	<6.4	<5.1	<4.8	NA	<5.9	<420	N/A	---	---	---
1,3-Dichlorobenzene	<6.1	<6.0	<5.1	NA	<6.9	<6.5	<5.1	NA	<6.5	<5.1	<5.4	NA	<5.8	<6.0	<6.0	NA	<230	<620	<150	<20,000	<6.4	<5.1	<4.8	NA	<5.9	<420	530,000	7,400	---	---
1,4-Dichlorobenzene	<6.1	<6.0	<5.1	NA	<6.9	<6.5	<5.1	NA	<6.5	<5.1	<5.4	NA	<5.8	<6.0	<6.0	NA	<230	<620	<150	<20,000	<6.4	<5.1	<4.8	NA	<5.9	<420	3,400	46	---	---
n-Butylbenzene	<6.1	<6.0	<5.1	NA	<6.9	<6.5	<5.1	NA	<6.5	<5.1	<5.4	NA	<5.8	<6.0	<6.0	NA	<230	<620	<150	22,000	<6.4	<5.1	<4.8	NA	<5.9	<420	240,000	---	240,000	---
1,2-Dichlorobenzene	<6.1	<6.0	<5.1	NA	<6.9	<6.5	<5.1	NA	<6.5	<5.1	<5.4	NA	<5.8	<6.0	<6.0	NA	<230	<620	<150	<20,000	<6.4	<5.1	<4.8	NA	<5.9	<420	600,000	1,100	---	---
1,2-Dibromo-3-Chloropropane	<6.1	<6.0	<5.1	NA	<6.9	<6.5	<5.1	NA	<6.5	<5.1	<5.4	NA	<5.8	<6.0	<6.0	NA	<230	<620	<150	<20,000	<6.4	<5.1	<4.8	NA	<5.9	<420	460	4.5	---	---
1,2,4-Trichlorobenzene	<6.1	<6.0	<5.1	NA	<6.9	<6.5	<5.1	NA	<6.5	<5.1	<5.4	NA	<5.8	<6.0	<6.0	NA	<230	<620	<150	<20,000	<6.4	<5.1	<4.8	NA	<5.9	<420	62,000	380	---	---
Hexachlorobutadiene	<6.1	<6.0	<5.1	NA	<6.9	<6.5	<5.1	NA	<6.5	<5.1	<5.4	NA	<5.8	<6.0	<6.0	NA	<230	<620	<150	<20,000	<6.4	<5.1	<4.8	NA	<5.9	<420	6,200	1,000	---	---
Naphthalene	<6.1	<6.0	<5.1	NA	<6.9	<6.5	<5.1	NA	<6.5	<5.1	<5.4	NA	<5.8	<6.0	<6.0	NA	<230	<620	<150	31,000	<6.4	<5.1	<4.8	NA	<5.9	<420	56,000	460	190,000	1,500
1,2,3-Trichlorobenzene	<6.1	<6.0	<5.1	NA	<6.9	<6.5	<5.1	NA	<6.5	<5.1	<5.4	NA	<5.8	<6.0	<6.0	NA	<230	<620	<150	<20,000	<6.4	<5.1	<4.8	NA	<5.9	<420	---	---	---	---

NOTES:

ESLs = San Francisco Bay RWQCB Environmental Screening Levels - Shallow Soils (= 3 mbgs) - Where Groundwater is a Current or Potential Source of Drinking Water (February 2005)

PRGs = USEPA Preliminary Remedial Goals

Volatile Organic Compounds analyzed using EPA Method 8260B

Shaded cells indicate concentrations reported greater than Screening Levels

Bold indicates analysis above laboratory reporting limit

µg/kg = micrograms per kilogram

< = below laboratory reporting limit

NA=not analyzed

--- = Screening levels were either not available or not applicable because the compound was not detected above reporting limits.

*Holding time exceeded

TABLE 3
SOIL SAMPLE LABORATORY ANALYTICAL RESULTS
LUFT 5 METALS
MERCURY CLEANERS
SACRAMENTO, CALIFORNIA

SAMPLE IDENTIFICATION	ANALYTE				
	Cadmium	Chromium	Lead	Nickel	Zinc
	ANALYTICAL RESULTS (mg/kg)				
B1-S-2-1	1.1	51	7.9	46	45
B1-S-5-1	1.3	54	8.2	63	64
B1-S-10-1	1.3	60	8.8	63	58
B1-S-15-1	NA	NA	NA	NA	NA
B2-S-2-1	1.5	60	94	52	56
B2-S-5-1	1.4	59	8.3	64	66
B2-S-10-1	1.3	56	9.2	58	57
B2-S-15-1	NA	NA	NA	NA	NA
B3-S-2-1	1.1	55	36	52	54
B3-S-5-1	1.3	55	7.6	59	54
B3-S-10-1	1.1	57	8.8	59	58
B3-S-15-1	NA	NA	NA	NA	NA
B4-S-2-1	NA	NA	NA	NA	NA
B4-S-5-1	NA	NA	NA	NA	NA
B4-S-10-1	NA	NA	NA	NA	NA
B4-S-15-1	NA	NA	NA	NA	NA
B5-S-2-1	NA	NA	NA	NA	NA
B5-S-5-1	NA	NA	NA	NA	NA
B5-S-10-1	NA	NA	NA	NA	NA
B5-S-15-1	NA	NA	NA	NA	NA
B6-S-2-1	NA	NA	NA	NA	NA
B6-S-5-1	NA	NA	NA	NA	NA
B6-S-10-1	NA	NA	NA	NA	NA
B6-S-15-1	NA	NA	NA	NA	NA
B22-S-2-1	1.3	42	100	39	150
B25-S-2-1	NA	NA	NA	NA	NA
Screening Levels (mg/kg)	37 ^a	210 ^a	150 ^a	1,600 ^a	23,000 ^a
	450 ^b	450 ^b	800 ^b	20,000 ^b	100,000 ^b
	1.7 ^c	100,000 ^c	150 ^c	1,600 ^c	23,000 ^c
	7.5 ^d	100,000 ^d	3,500 ^d	16,000 ^d	100,000 ^d

NOTES:

a=USEPA Residential PRGs (October 2004)

b=USEPA Commercial PRGs (October 2004)

c=Cal EPA Residential CHHSLs for Soil (January 2005)

d=Cal EPA Commercial CHHSLs for Soil (January 2005)

LUFT 5 Metals analyzed using EPA Method 6010B

mg/kg = milligrams per kilogram

Shaded cells indicate concentrations reported greater than Screening Levels

Bold indicates analysis reported above laboratory reporting limit

NA= Not analyzed

< = below laboratory reporting limits

TABLE 4
GROUNDWATER SAMPLE ANALYTICAL DATA
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE, DIESEL AND MOTOR OIL
MERCURY CLEANERS
SACRAMENTO, CALIFORNIA

SAMPLE IDENTIFICATION	ANALYTE		
	TPH-G	TPH-D	TPH-MO
	ANALYTICAL RESULTS (µg/L)		
B3-GW-1	58YZ	<50	<300
B6-GW-1	280YZ	<50	<300
B16-GW-1	310YY	<50	<300
B28-GW-1	<50	<50	<300
B29-GW-1	<50	NA	NA
Screening Levels (µg/L)	100 ^a	100 ^a	100 ^a

NOTES:

a = San Francisco Bay RWQCB Environmental Screening Levels for Residential Use - Shallow Soils (= 3 mbgs) - Where Groundwater is a Current or Potential Source of Drinking Water (February 2005)

TPH-G, TPH-D and TPH-MO = Total petroleum hydrocarbons as gasoline, diesel and motor oil

TPH-G, TPH-D and TPH-MO analyzed using EPA Method 8015M

µg/L = Micrograms per liter

< = Below laboratory reporting limits

Shaded cells indicate concentrations reported greater than Screening Levels

Bold indicates analysis above laboratory reporting limits

H indicates heavier hydrocarbons contributed to the quantitation

Y indicates the sample exhibits a chromatographic pattern which does not resemble standard

L indicates lighter hydrocarbons contributed to the quantitation

NA = Not analyzed

N/A = Not available

TABLE 5
GROUNDWATER SAMPLE LABORATORY ANALYTICAL RESULTS
VOLATILE ORGANIC COMPOUNDS
MERCURY CLEANERS
SACRAMENTO, CALIFORNIA

ANALYTE	SAMPLE ID					Screening Levels (µg/L)	
	B3-GW-1	B6-GW-1	B16-GW-1	B28-GW-1	B29-GW-1	ESLs	MCLs
	ANALYTICAL RESULTS (µg/L)						
Freon 12	<1.0	<10	<10	<1.0	<1.0	—	—
Chloromethane	<1.0	<10	<10	<1.0	<1.0	2.7	—
Vinyl Chloride	<0.5	<5.0	<5.0	<0.5	<0.5	0.5	0.5
Bromomethane	<1.0	<10	<10	<1.0	<1.0	9.8	—
Chloroethane	<1.0	<10	<10	<1.0	<1.0	12	—
Trichlorofluoromethane	<1.0	<10	<10	<1.0	<1.0	—	150
Acetone	<10	<100	<100	<10	<10	1500	—
Freon 113	<0.5	<5.0	<5.0	<0.5	<0.5	—	—
1,1-Dichloroethene	<0.5	<5.0	<5.0	<0.5	<0.5	6.0	6.0
Methylene Chloride	<10	<100	<100	<10	<10	5.0	—
Carbon Disulfide	<0.5	<5.0	<5.0	<0.5	<0.5	—	—
MTBE	<0.5	<5.0	<5.0	<0.5	<0.5	5.0	13
trans-1,2-Dichloroethene	<0.5	<5.0	<5.0	<0.5	<0.5	10	—
Vinyl Acetate	<10	<100	<100	<10	<10	—	—
1,1-Dichloroethane	<0.5	<5.0	<5.0	<0.5	<0.5	5.0	5.0
2-Butanone	<10	<100	<100	<10	<10	4200	—
cis-1,2-Dichloroethene	<0.5	<5.0	<5.0	<0.5	<0.5	6.0	6.0
2,2-Dichloropropane	<0.5	<5.0	<5.0	<0.5	<0.5	—	—
Chloroform	1.4	<5.0	<5.0	<0.5	<0.5	70	—
Bromochloromethane	<0.5	<5.0	<5.0	<0.5	<0.5	100	—
1,1,1-Trichloroethane	<0.5	<5.0	<5.0	<0.5	<0.5	62	—
1,1-Dichloropropene	<0.5	<5.0	<5.0	<0.5	<0.5	—	—
Carbon Tetrachloride	<0.5	<5.0	<5.0	<0.5	<0.5	0.5	0.5
1,2-Dichloroethane	<0.5	<5.0	<5.0	<0.5	<0.5	0.5	0.5
Benzene	<0.5	<5.0	<5.0	<0.5	<0.5	1.0	1.0
Trichloroethene	<0.5	<10	<10	<0.5	<0.5	5.0	5.0
1,2-Dichloropropane	<0.5	<5.0	<5.0	<0.5	<0.5	5.0	5.0
Bromodichloromethane	<0.5	<5.0	<5.0	<0.5	<0.5	100	—
Dibromomethane	<0.5	<5.0	<5.0	<0.5	<0.5	—	—
4-Methyl-2-Pentanone	<10	<100	<100	<10	<10	—	—
cis-1,3-Dichloropropene	<0.5	<5.0	<5.0	<0.5	<0.5	—	—
Toluene	<0.5	<5.0	<5.0	<0.5	<0.5	40	150
trans-1,3-Dichloropropene	<0.5	<5.0	<5.0	<0.5	<0.5	—	—
1,1,2-Trichloroethane	<0.5	<5.0	<5.0	<0.5	<0.5	5.0	5.0
2-Hexanone	<10	<100	<100	<10	<10	—	—
1,3-Dichloropropane	<0.5	<5.0	<5.0	<0.5	<0.5	—	—
Tetrachloroethene	<10	<10	<10	<0.5	<0.5	5.0	5.0
Dibromochloromethane	<0.5	<5.0	<5.0	<0.5	<0.5	—	—
1,2-Dibromoethane	<0.5	<5.0	<5.0	<0.5	<0.5	0.05	—

TABLE 5
GROUNDWATER SAMPLE LABORATORY ANALYTICAL RESULTS
VOLATILE ORGANIC COMPOUNDS
MERCURY CLEANERS
SACRAMENTO, CALIFORNIA

ANALYTE	SAMPLE ID					Screening Levels (µg/L)	
	B3-GW-1	B6-GW-1	B16-GW-1	B28-GW-1	B29-GW-1	ESLs	MCLs
	ANALYTICAL RESULTS (µg/L)						
Chlorobenzene	<0.5	<5.0	<5.0	<0.5	<0.5	25	---
1,1,1,2-Tetrachloroethane	<0.5	<5.0	<5.0	<0.5	<0.5	1.3	---
Ethylbenzene	<0.5	<5.0	<5.0	<0.5	<0.5	30	300
m,p-Xylenes	<0.5	<5.0	<5.0	<0.5	<0.5	20	---
o-Xylene	<0.5	<5.0	<5.0	<0.5	<0.5	20	---
Styrene	<0.5	<5.0	<5.0	<0.5	<0.5	10	100
Bromoform	<1.0	<10	<10	<1.0	<1.0	100	---
Isopropylbenzene	<0.5	<5.0	<5.0	<0.5	<0.5	---	---
1,1,2,2-Tetrachloroethane	<0.5	<5.0	<5.0	<0.5	<0.5	1.0	1.0
1,2,3-Trichloropropane	<0.5	<5.0	<5.0	<0.5	<0.5	---	---
Propylbenzene	<0.5	<5.0	<5.0	<0.5	<0.5	---	---
Bromobenzene	<0.5	<5.0	<5.0	<0.5	<0.5	---	---
1,3,5-Trimethylbenzene	<0.5	<5.0	<5.0	<0.5	<0.5	---	---
2-Chlorotoluene	<0.5	<5.0	<5.0	<0.5	<0.5	---	---
4-Chlorotoluene	<0.5	<5.0	<5.0	<0.5	<0.5	---	---
tert-Butylbenzene	<0.5	<5.0	<5.0	<0.5	<0.5	---	---
1,2,4-Trimethylbenzene	<0.5	<5.0	<5.0	<0.5	<0.5	---	---
sec-Butylbenzene	<0.5	<5.0	<5.0	<0.5	<0.5	---	---
para-Isopropyl Toluene	<0.5	<5.0	<5.0	<0.5	<0.5	---	---
1,3-Dichlorobenzene	<0.5	<5.0	<5.0	<0.5	<0.5	65	---
1,4-Dichlorobenzene	<0.5	<5.0	<5.0	<0.5	<0.5	5.0	5.0
n-Butylbenzene	<0.5	<5.0	<5.0	<0.5	<0.5	---	---
1,2-Dichlorobenzene	<0.5	<5.0	<5.0	<0.5	<0.5	10	600
1,2-Dibromo-3-Chloropropane	<2.0	<20	<20	<2.0	<2.0	---	---
1,2,4-Trichlorobenzene	<0.5	<5.0	<5.0	<0.5	<0.5	25	5.0
Hexachlorobutadiene	<0.5	<5.0	<5.0	<0.5	<0.5	---	---
Naphthalene	<2.0	<20	<20	<2.0	<2.0	17	---
1,2,3-Trichlorobenzene	<0.5	<5.0	<5.0	<0.5	<0.5	---	---

Notes:

ESLs = San Francisco Bay RWQCB Environmental Screening Levels - Shallow Soils (= 3 mbgs) - Where Groundwater is a current or potential source of drinking water (February 2005)

MCLs = Maximum Contaminant Levels for drinking water

Shaded cells indicate concentrations reported greater than Screening Levels

Bold indicates analysis above laboratory reporting limits

µg/L = Micrograms per liter

NA = Not analyzed

VOCs analyzed using EPA Method 8260B

< = Below laboratory reporting limit

--- = Not available

TABLE 6
GROUNDWATER SAMPLE LABORATORY ANALYTICAL RESULTS
LUFT 5 METALS
MERCURY CLEANERS
SACRAMENTO, CALIFORNIA

SAMPLE IDENTIFICATION	ANALYTE				
	Cadmium	Chromium	Lead	Nickel	Zinc
	ANALYTICAL RESULTS (µg/L)				
B3-GW-1	<5.0	15	<3.0	<20	<20
B6-GW-1	<5.0	27	<3.0	<20	<20
B16-GW-1	<5.0	31	<3.0	<20	<20
B28-GW-1	<5.0	<10	<3.0	<20	<20
B29-GW-1	NA	NA	NA	NA	NA
*Screening Levels (µg/L)	5.0 ^a	50 ^a	15 ^a	100 ^b	81 ^c

NOTES:

LUFT 5 Metals analyzed using EPA Method 6010B

< = Below laboratory reporting limit

NA = Not analyzed

µg/L = micrograms per liter

a = California Department of Health Services Regulatory Action Level (2003)

b = California Code of Regulations, Title 22, MCLs (2003)

c = San Francisco Bay RWQCB Environmental Screening Levels for Residential Use - Shallow Soils (= 3 mbgs) - Where Groundwater is a Current or Potential Source of Drinking Water (February 2005)

Bold indicates analysis above laboratory reporting limits

TABLE 7
SOIL GAS SAMPLE ANALYTICAL DATA
VOLATILE ORGANIC COMPOUNDS
MERCURY CLEANERS, SACRAMENTO, CALIFORNIA

ANALYTE	SAMPLE ID			SCREENING LEVELS ($\mu\text{g}/\text{m}^3$)			
	B2-SG-5-1	B5-SG-5-1	B12-SG-5-1	ESLs		CHHSLs	
	ANALYTICAL RESULTS ($\mu\text{g}/\text{m}^3$)			Residential	Commercial	Residential	Commercial
Freon 12	< 3.6	< 3.3	< 3.6	--	--	--	--
Freon 114	< 5.1	< 4.6	< 5.0	--	--	--	--
Chloromethane	< 6.0	< 5.4	< 5.9	330	1,100	--	--
Vinyl Chloride	< 1.9	< 1.7	< 1.8	32	110	--	--
1,3-Butadiene	14	< 1.5	< 1.6	--	--	--	--
Bromomethane	< 2.8	< 2.6	< 2.8	--	--	--	--
Chloroethane	< 1.9	< 1.7	< 1.9	2,900	9,900	--	--
Freon 11	< 4.1	< 3.7	< 4.0	--	--	--	--
Ethanol	13	15	8.1	--	--	--	--
Freon 113	< 5.6	< 5.0	< 5.5	--	--	--	--
1,1-Dichloroethene	< 2.9	< 2.6	< 2.8	--	--	--	--
Acetone	170	12	100	660,000	1,800,000	--	--
2-Propanol	< 7.2	< 6.5	< 7.1	--	--	--	--
Carbon Disulfide	< 3.7	< 2.0	4.1	--	--	--	--
3-Chloropropene	< 9.1	< 8.3	< 9.0	--	--	--	--
Methylene Chloride	< 2.5	< 2.3	< 2.5	2,400	8,000	--	--
Methyl tert-butyl ether	< 2.6	< 2.4	< 2.6	9,400	31,000	--	--
trans-1,2-Dichloroethene	< 2.9	< 2.6	< 2.8	14,600	40,880	--	--
Hexane	12	< 2.3	3.4	--	--	--	--
1,1-Dichloroethane	< 3.0	< 2.7	< 2.9	120	390	--	--
2-Butanone (Methyl Ethyl Ketone)	26	< 1.9	9.7	211,700	592,760	--	--
cis-1,2-Dichloroethene	< 2.9	7.0	< 2.8	7,300	20,440	15,900	44,000
Tetrahydrofuran	5.5	2.8	4.0	--	--	--	--
Chloroform	< 3.6	< 3.2	< 3.5	448	1,506	--	--
1,1,1-Trichloroethane	< 4.0	< 3.6	< 3.9	--	--	--	--
Cyclohexane	6.7	< 2.3	< 2.5	--	--	--	--
Carbon Tetrachloride	< 4.6	< 4.2	< 4.5	--	--	--	--
2,2,4-Trimethylpentane	210	3.1	110	--	--	--	--
Benzene	26	< 2.1	< 5.5	85	286	36.2	122
1,2-Dichloroethane	< 3.0	< 2.7	< 2.9	--	--	--	--
Heptane	9.5	< 2.7	5.4	--	--	--	--
Trichloroethene	< 3.9	8.4	< 3.9	1,217	4,088	528	1,770
1,2-Dichloropropane	< 3.4	< 3.0	< 3.3	--	--	--	--
1,4-Dioxane	< 10	< 9.5	< 10	--	--	--	--
Bromodichloromethane	< 4.9	< 4.4	< 4.8	--	--	--	--
cis-1,3-Dichloropropene	< 3.3	< 3.0	< 3.3	--	--	--	--
4-Methyl-2-pentanone	< 3.0	< 2.7	< 2.9	--	--	--	--

TABLE 7
SOIL GAS SAMPLE ANALYTICAL DATA
VOLATILE ORGANIC COMPOUNDS
MERCURY CLEANERS, SACRAMENTO, CALIFORNIA

ANALYTE	SAMPLE ID			SCREENING LEVELS ($\mu\text{g}/\text{m}^3$)			
	B2-SG-5-1	B5-SG-5-1	B12-SG-5-1	ESLs		CHHSLs	
	ANALYTICAL RESULTS ($\mu\text{g}/\text{m}^3$)			Residential	Commercial	Residential	Commercial
Toluene	71	3.8	32	62,561	175,171	135,000	378,000
trans-1,3-Dichloropropene	< 3.3	< 3.0	< 3.3	--	--	--	--
1,1,2-Trichloroethane	< 4.0	< 3.6	< 3.9	500	--	--	--
Tetrachloroethene	28	230	20	406	1,363	180	603
2-Hexanone	< 12	< 11	< 12	--	--	--	--
Dibromochloromethane	< 6.2	< 5.6	< 6.1	--	--	--	--
1,2-Dibromoethane (EDB)	< 5.6	< 5.1	< 5.5	--	--	--	--
Chlorobenzene	< 3.4	< 3.0	< 3.3	--	--	--	--
Ethyl Benzene	12	< 2.9	7.9	416,100	1,165,080	--	--
m,p-Xylene	24	3.1	19	146,000	408,800	319,000	887,000
o-Xylene	11	< 2.9	10	146,000	408,800	319,000	887,000
Styrene	70	< 2.8	61	211,700	592,760	--	--
Bromoform	< 7.5	< 6.8	< 7.4	--	--	--	--
Cumene	3.8	< 3.2	< 3.5	--	--	--	--
1,1,2,2-Tetrachloroethane	< 5.0	< 4.5	< 4.9	--	--	--	--
Propylbenzene	3.6	< 3.2	< 3.5	--	--	--	--
4-Ethyltoluene	7.9	< 3.2	7.4	--	--	--	--
1,3,5-Trimethylbenzene	< 3.6	< 3.2	< 3.5	--	--	--	--
1,2,4-Trimethylbenzene	9.6	< 3.2	10	--	--	--	--
1,3-Dichlorobenzene	< 4.4	< 4.0	< 4.3	--	--	--	--
1,4-Dichlorobenzene	< 4.4	< 4.0	< 4.3	--	--	--	--
alpha-Chlorotoluene	< 3.8	< 3.4	< 3.7	--	--	--	--
1,2-Dichlorobenzene	< 4.4	< 4.0	< 4.3	--	--	--	--
1,2,4-Trichlorobenzene	< 22	< 20	< 21	--	--	--	--
Hexachlorobutadiene	< 31	< 28	< 31	--	--	--	--

Notes:

$\mu\text{g}/\text{m}^3$ = micrograms per meter cubed

< = Less than laboratory reporting limit

Soil gas samples analyzed using US EPA Method TO-15

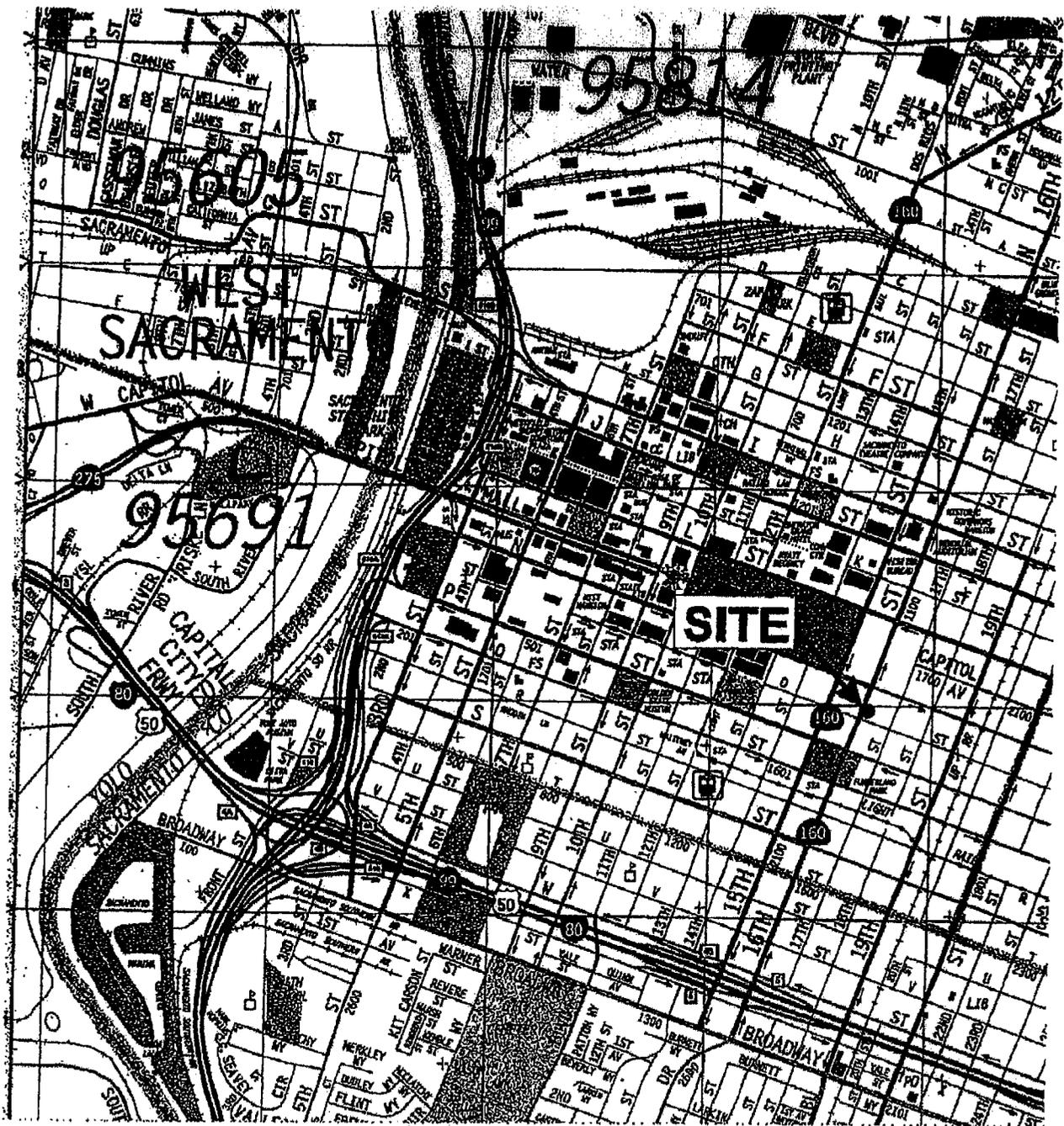
ESLs = San Francisco Bay RWQCB Environmental Screening Levels, Shallow Soil Gas Screening Levels (February 2005).

CHHSLs = Cal EPA California Human Health Screening Levels, Shallow Soil Gas (January 2005)

Bold indicates analysis above laboratory reporting limits

Shaded cells indicate concentrations reported greater than Screening Levels

--- = Screening levels were either not available or not applicable because the compound was not detected above reporting limits.



1900 0 1900

Approximate Scale in Feet



REFERENCE: 2005 THOMAS GUIDE FOR SACRAMENTO & SOLOANO COUNTIES STREET GUIDE AND DIRECTORIES

Ninyo & Moore

SITE LOCATION MAP

MERCURY CLEANERS
1419 16TH STREET
SACRAMENTO, CALIFORNIA

PROJECT NO.

401071003

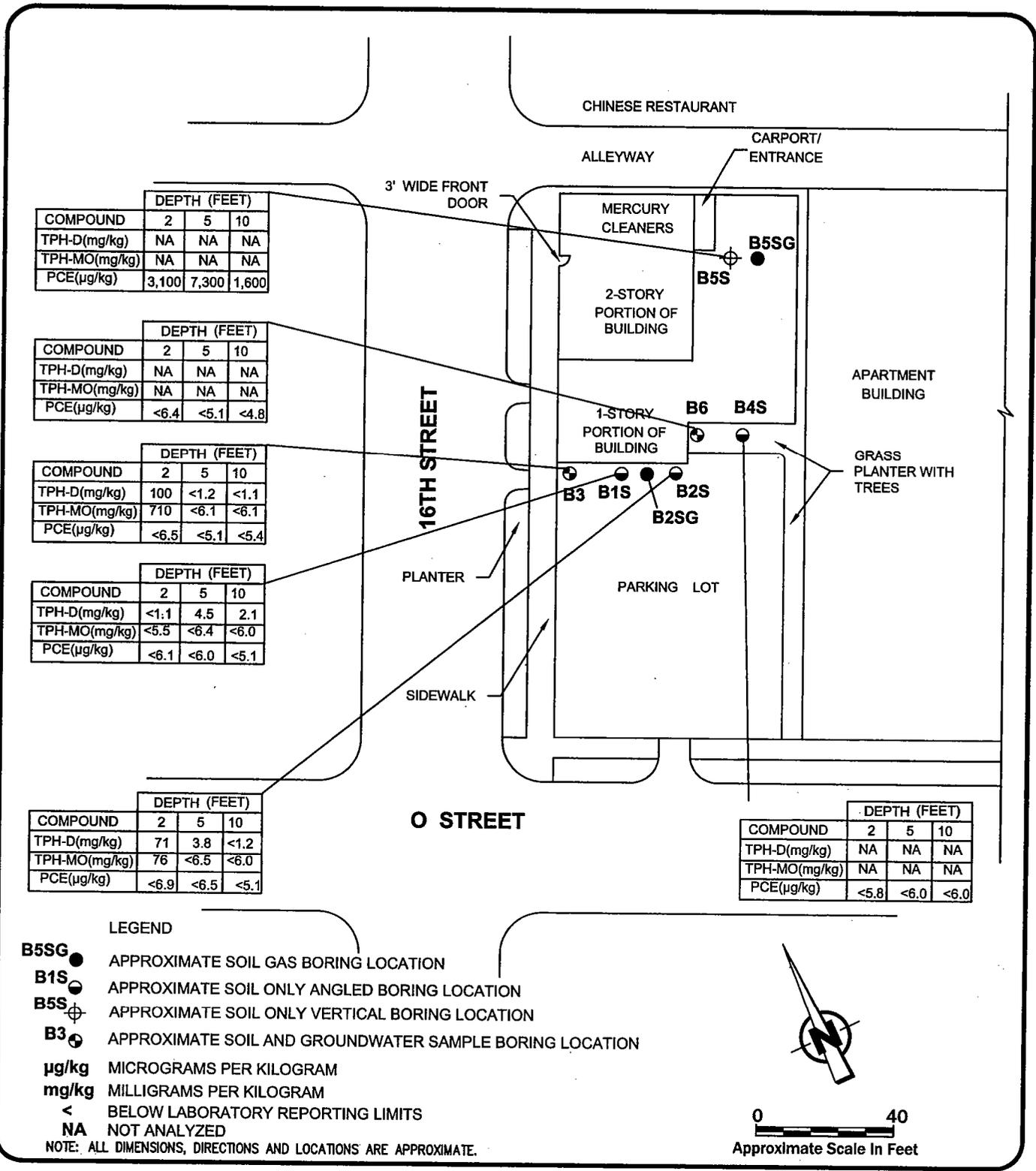
DATE

9/2006

FIGURE

1

401071FIG2rev.DWG



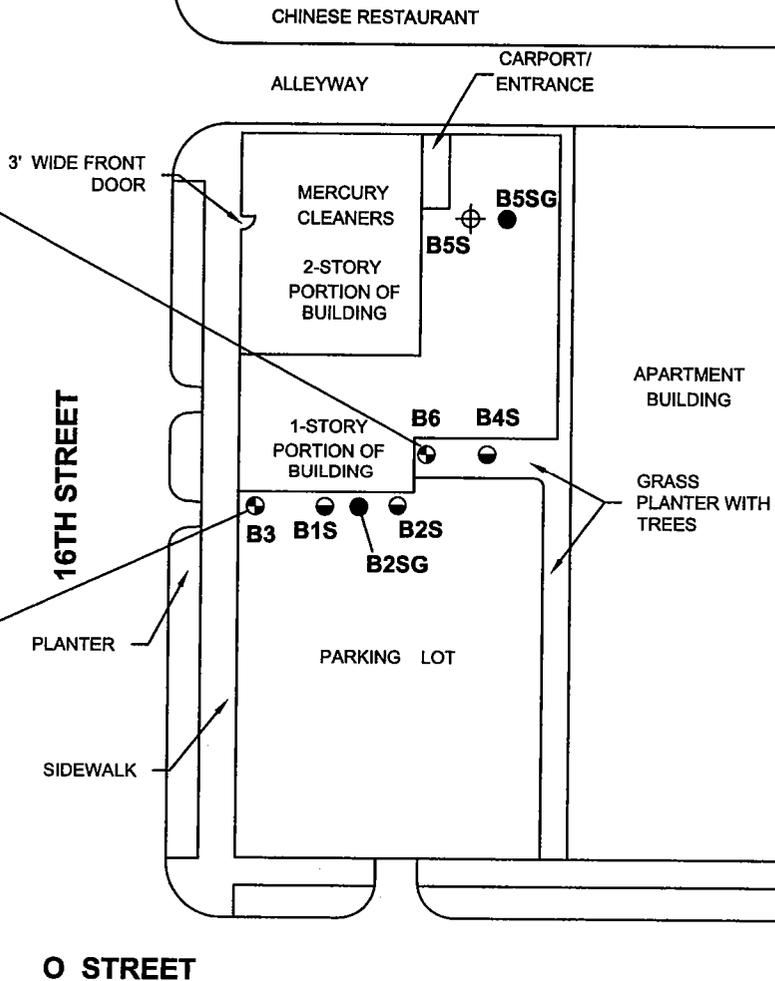
SOIL SAMPLE CONCENTRATION MAP

1419 16th STREET
SACRAMENTO, CALIFORNIA

PROJECT NO.	DATE	FIGURE
401071003	9/2006	2

COMPOUND	CONCENTRAION (µg/L)
TPH-G	280
CIS-1,2-DCE	100
TCE	110
PCE	810

COMPOUND	CONCENTRAION (µg/L)
TPH-G	58
CIS-1,2-DCE	14
TCE	12
PCE	140



LEGEND

- B5SG** ● APPROXIMATE SOIL GAS BORING LOCATION
- B1S** ● APPROXIMATE SOIL ONLY ANGLED BORING LOCATION
- B5S** ⊕ APPROXIMATE SOIL ONLY VERTICAL BORING LOCATION
- B3** ● APPROXIMATE SOIL AND GROUNDWATER SAMPLE BORING LOCATION
- µg/L** MICROGRAMS PER LITER

NOTE: ALL DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.



0 40
Approximate Scale in Feet

401071FIG2rev.DWG

Ninyo & Moore

SHALLOW GROUNDWATER SAMPLE CONCENTRATION MAP

1419 16th STREET
SACRAMENTO, CALIFORNIA

PROJECT NO.

401071003

DATE

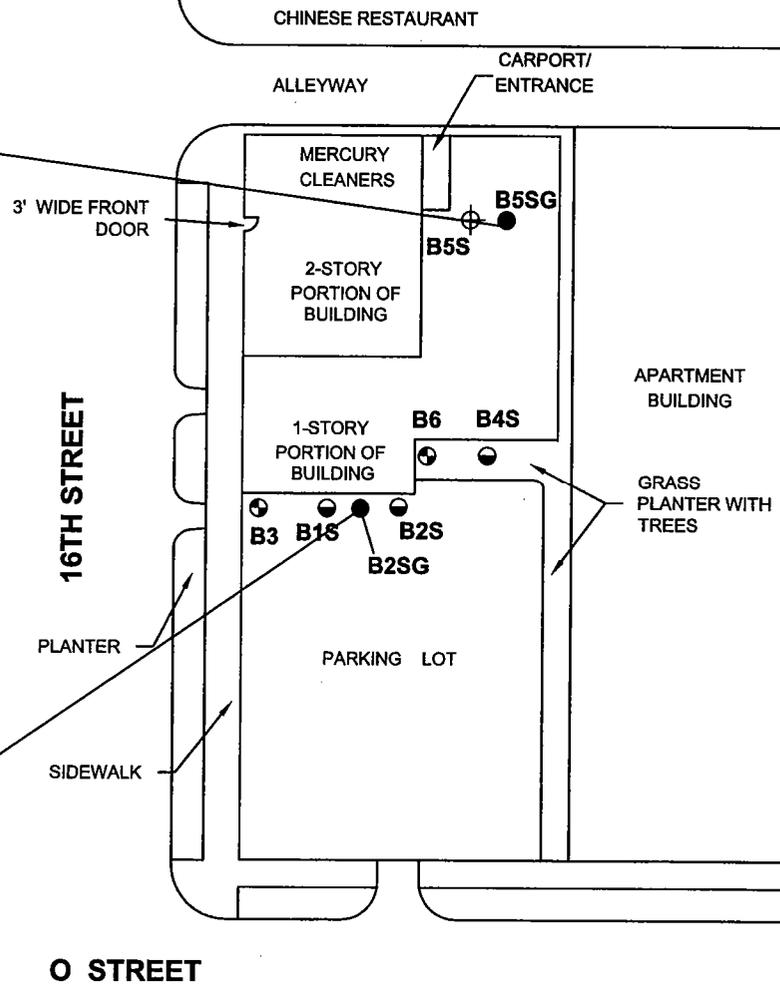
9/2006

FIGURE

3

COMPOUND	CONCENTRAION (ug/m3)
CIS-1,2-DCE	7.0
TCE	8.4
PCE	780

COMPOUND	CONCENTRAION (ug/m3)
CIS-1,2-DCE	<2.9
TCE	<3.9
PCE	28



LEGEND

- B5SG** ● APPROXIMATE SOIL GAS BORING LOCATION
- B1S** ○ APPROXIMATE SOIL ONLY ANGLED BORING LOCATION
- B5S** ⊕ APPROXIMATE SOIL ONLY VERTICAL BORING LOCATION
- B3** ⊙ APPROXIMATE SOIL AND GROUNDWATER SAMPLE BORING LOCATION
- ug/m3** MICROGRAMS PER METER CUBED
- <** BELOW LABORATORY REPORTING LIMITS



NOTE: ALL DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

401071FIG4-rev.DWG

Ninyo & Moore

SOIL GAS SAMPLE CONCENTRATION MAP

1419 16TH STREET
SACRAMENTO, CALIFORNIA

PROJECT NO.

401071003

DATE

9/2006

FIGURE

4

TABLE 1
 SUMMARY OF INDOOR AIR ANALYTICAL DATA - VOLATILE ORGANIC COMPOUNDS
 MERCURY CLEANERS
 SACRAMENTO, CALIFORNIA

SAMPLE ID	DATE	Propylene	Chloromethane	Ethanol	Acetone	2-Butanone(MEK)	Toluene	PCE
		Results in ppbv						
IA1	12/7/2007	1.5	0.6	27	12	2.5	0.7	2.4
IA2	12/7/2007	1.2	<0.5	18	7.9	<1.5	0.6	5.2
IA3	12/7/2007	1.1	1.8	15	12	2.4	0.7	20
PEL (8-hr)		---	5,000	1,000,000	500,000	200,000	50,000	25,000

Notes:

MEK = Methyl ethyl ketone

PCE = Tetrachloroethene

ppbv = Parts Per Billion Volume

< = Less than the respective laboratory test method reporting limits for each tested analyte

PEL = Permissible Exposure Limit in ppbv

TABLE 2
 SUMMARY OF SOIL GAS ANALYTICAL DATA – VOLATILE ORGANIC COMPOUNDS
 MERCURY CLEANERS
 SACRAMENTO, CALIFORNIA

SAMPLE ID	Sample Depth (feet bgs)	DATE	PCE	TCE	Toluene	1,2-DCA	cis-1,2-DCE	trans-1,2-DCE	Methylene Chloride	Hexane	Chloroform	Acetone	Ethanol	B	MTBE
CAS No.			127-18-4	79-01-6	108-88-3	107-06-2	156-59-2	156-60-5	75-09-2	110-54-3	67-66-3	67-64-1	64-17-5	71-43-2	1634-04-4
DP1SG-5	5.0	12/8/2007	2,600,000	480,000	5,100	6,700	670,000	10,000	13,000	7,700	<5,400	24,000	24,000	<3,500	<4,000
DP2SG-5	5.0	12/8/2007	200,000	21,000	1,100	2,000	37,000	720	3,200	700	<550	2,800	2,200	<360	<400
DP3SG-5	5.0	12/8/2007	39,000	1,400	<79	<84	1,100	<83	<73	<74	110	<200	240	<67	<75
CHHSLs (Residential)			180	528	135,000	50	15,900	31,900	---	---	---	---	---	36	4,000
CHHSLs (Commercial)			603	1,770	378,000	167	44,400	88,700	---	---	---	---	---	122	13,400
ESLs (Residential)			410	1,200	63,000	94	7,300	15,000	5,200	---	460	660,000	---	84	9,400
ESLs (Commercial)			1,400	4,100	180,000	310	20,000	41,000	17,000	---	1,500	1,800,000	---	280	31,000

Notes: bgs = below ground surface
 PCE = Tetrachloroethene
 TCE = Trichloroethene
 DCA = Dichloroethane
 DCE = Dichloroethylene
 B = Benzene
 MTBE = Methyl tert-butyl ether
 CHHSLs = California Human Health Screening Level
 ESLs = Environmental Screening Levels
 $\mu\text{g}/\text{m}^3$ = Micrograms per cubic meter
 < = Less than the respective laboratory test method reporting limits for each tested analyte
 --- = No established screening level

TABLE 3
SUMMARY OF GROUNDWATER ANALYTICAL DATA - GASOLINE RANGE ORGANICS AND VOLATILE ORGANIC COMPOUNDS
MERCURY CLEANERS
SACRAMENTO, CALIFORNIA

SAMPLE ID	DATE	GRO	Benzene	1,1-DCE	trans 1,2-DCE	cis-1,2-DCE	PCE	TCE	VC
DP1GW	12/8/2007	8,700	8.2	6.6	100	14,000	920	1,400	2.0
DP2GW	12/8/2007	78,000	5.4	6.9	260	16,000	3,600	1,400	2.7
DP3GW	12/8/2007	16,000	<10	<10	19	1,800	2,600	550	<10
DP4GW	12/8/2007	2,800	<0.5	<0.5	1.1	44	120	22	<0.5
DP5GW	12/8/2007	260	<0.5	<0.5	0.59	12	98	8.2	<0.5
DP6GW	12/8/2007	170	<0.5	<0.5	<0.5	23	79	5.8	<0.5
MCLs		(ESL = 100 µg/l)	1	6	10	6	5	5	0.5

Notes:

GRO = Gasoline Range Organics (TPHg)

DCE = Dichloroethene

TCE = Trichloroethene

PCE = Tetrachloroethene

VC = Vinyl Chloride

µg/l = micrograms per liter

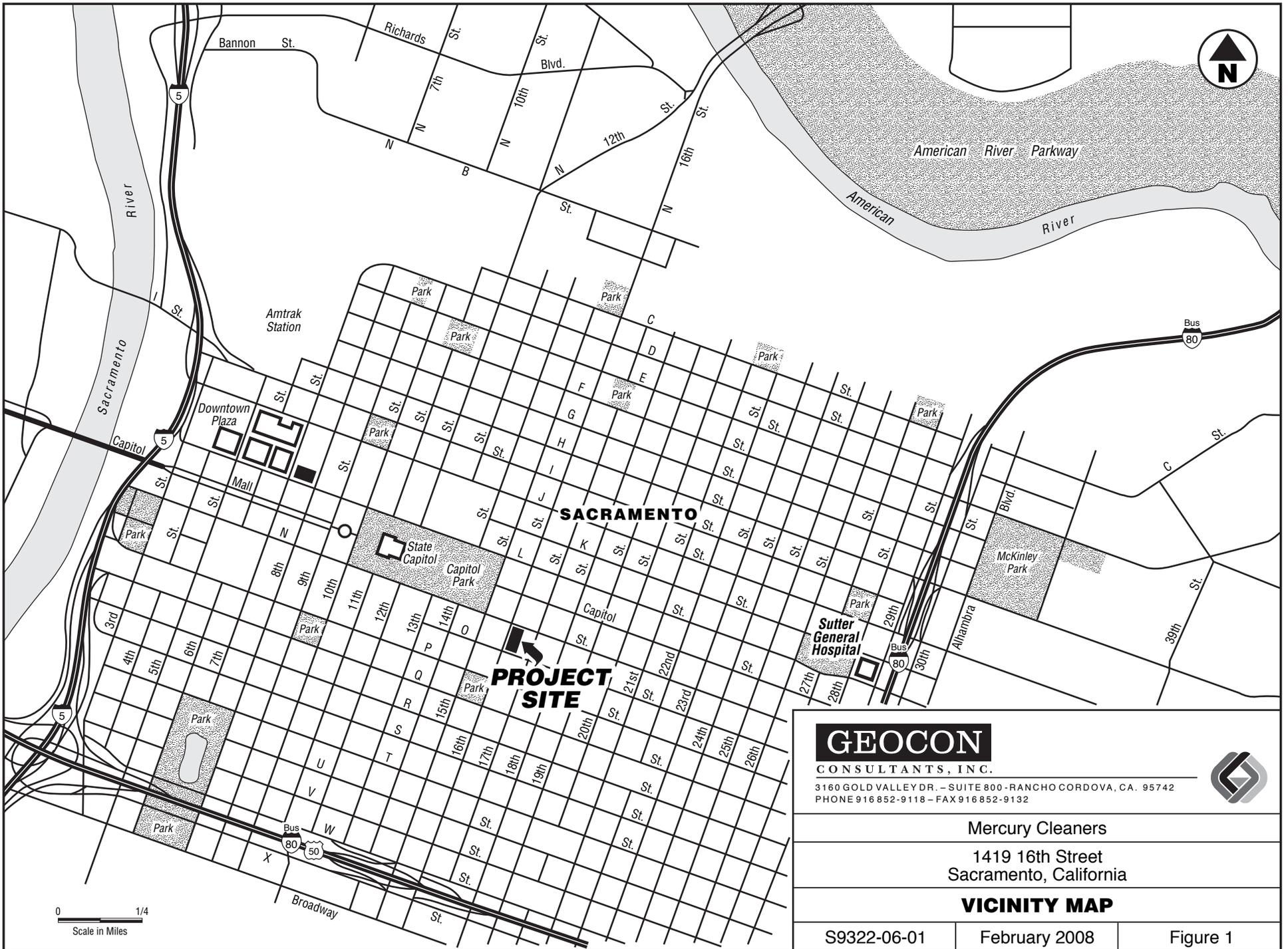
ESL = San Francisco Bay Regional Water Quality Control Board Environmental Screening Level - Table F1a, Water is a Potential Drinking Water Source

MCLs = California Regional Water Quality Control Board, Central Valley Region Maximum Contaminant Levels

TABLE 4
 SUMMARY OF JOHNSON & ETTINGER SOIL VAPOR MODEL RESULTS
 MERCURY CLEANERS
 SACRAMENTO, CALIFORNIA

Soil Gas Boring	Chemical	Maximum Concentration ($\mu\text{g}/\text{m}^3$ of vapor)	Carcinogens IELCR ¹	Non-Carcinogens Hazard Quotient/ Hazard Index
Residential				
DP1SG-5	PCE	2.60E+06	1.15E-04	1.30E+00
DP1SG-5	TCE	4.80E+05	7.22E-06	1.40E-02
DP1SG-5	Toluene	5.10E+03	NA	2.99E-04
DP1SG-5	1,2-DCA	6.70E+03	1.07E-06	2.96E-04
DP1SG-5	cis-1,2-DCE	6.70E+05	NA	3.35E-01
DP1SG-5	trans-1,2-DCE	1.00E+04	NA	2.50E-03
DP1SG-5	Methylene Chloride	1.30E+04	9.84E-08	5.74E-04
DP1SG-5	Hexane	7.70E+03	NA	7.28E-04
DP1SG-5	Chloroform	1.10E+02	4.42E-09	6.48E-06
DP1SG-5	Acetone	2.40E+04	NA	1.23E-03
DP1SG-5	Benzene*	1.75E+03	3.83E-07	1.03E-03
		<i>Totals</i>	1.24E-04	1.6557
Commercial				
DP1SG-5	PCE	2.60E+06	4.13E-05	5.59E-01
DP1SG-5	TCE	4.80E+05	2.59E-06	6.04E-03
DP1SG-5	Toluene	5.10E+03	NA	1.29E-04
DP1SG-5	1,2-DCA	6.70E+03	3.82E-07	1.27E-04
DP1SG-5	cis-1,2-DCE	6.70E+05	NA	1.44E-01
DP1SG-5	trans-1,2-DCE	1.00E+04	NA	1.08E-03
DP1SG-5	Methylene Chloride	1.30E+04	3.53E-08	2.47E-04
DP1SG-5	Hexane	7.70E+03	NA	3.13E-04
DP1SG-5	Chloroform	1.10E+02	1.58E-09	2.79E-06
DP1SG-5	Acetone	2.40E+04	NA	5.27E-04
DP1SG-5	Benzene*	1.75E+03	1.37E-07	4.41E-04
		<i>Totals</i>	4.44E-05	0.7119

Notes: $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter
 PCE = Tetrachloroethene
 TCE = Trichloroethene
 DCA = Dichloroethane
 DCE = Dichloroethylene
 MTBE = Methyl tert-butyl ether
 NA = Not applicable
¹ = Individual excess lifetime cancer risk
 * = Soil gas concentration taken as one-half the maximum non-detect reporting limit



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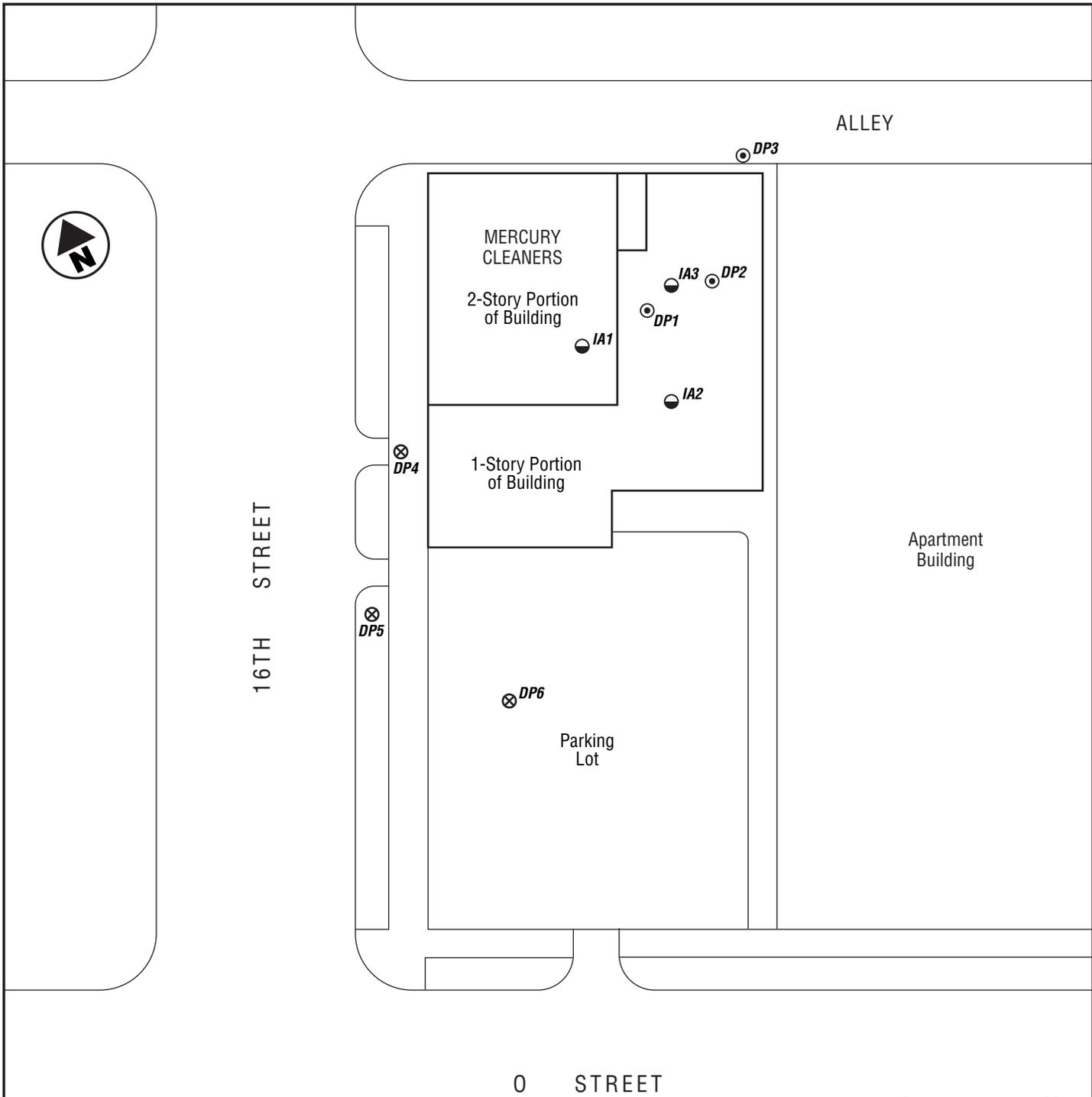
1419 16th Street
 Sacramento, California

VICINITY MAP

S9322-06-01

February 2008

Figure 1



LEGEND:

- DP4 ⊗ Approximate Soil & Groundwater Sampling Location
- DP1 ⊙ Approximate Soil Gas & Groundwater Sampling Location
- IA1 ● Approximate Indoor Air Sampling Location

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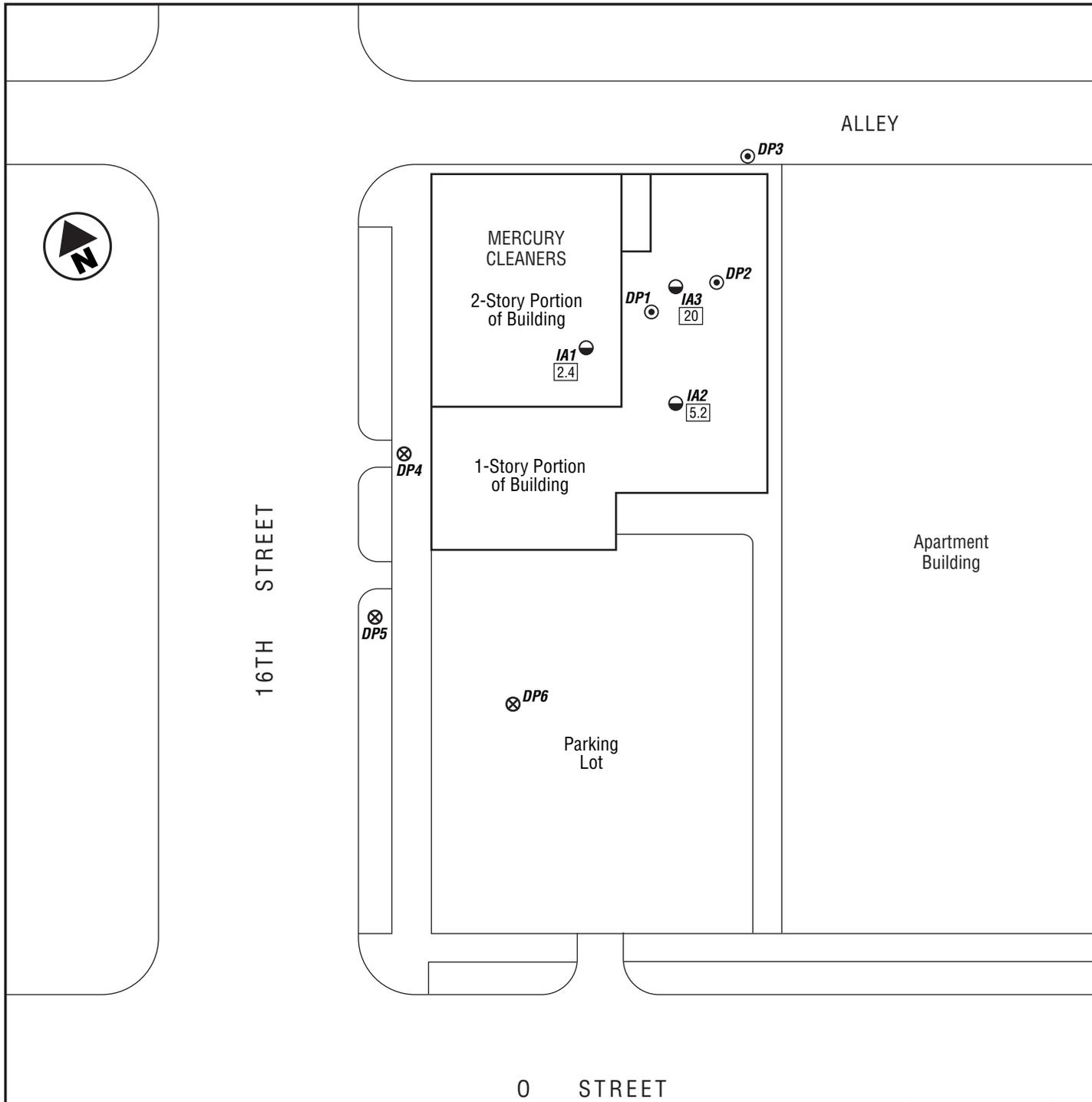
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SITE PLAN



LEGEND:

- DP4** ⊗ Approximate Soil & Groundwater Sampling Location
- DP1** ⊙ Approximate Soil Gas & Groundwater Sampling Location
- IA1** ● Approximate Indoor Air Sampling Location
- PCE = Tetrachloroethene
- [20]** PCE Concentration (ppbv)



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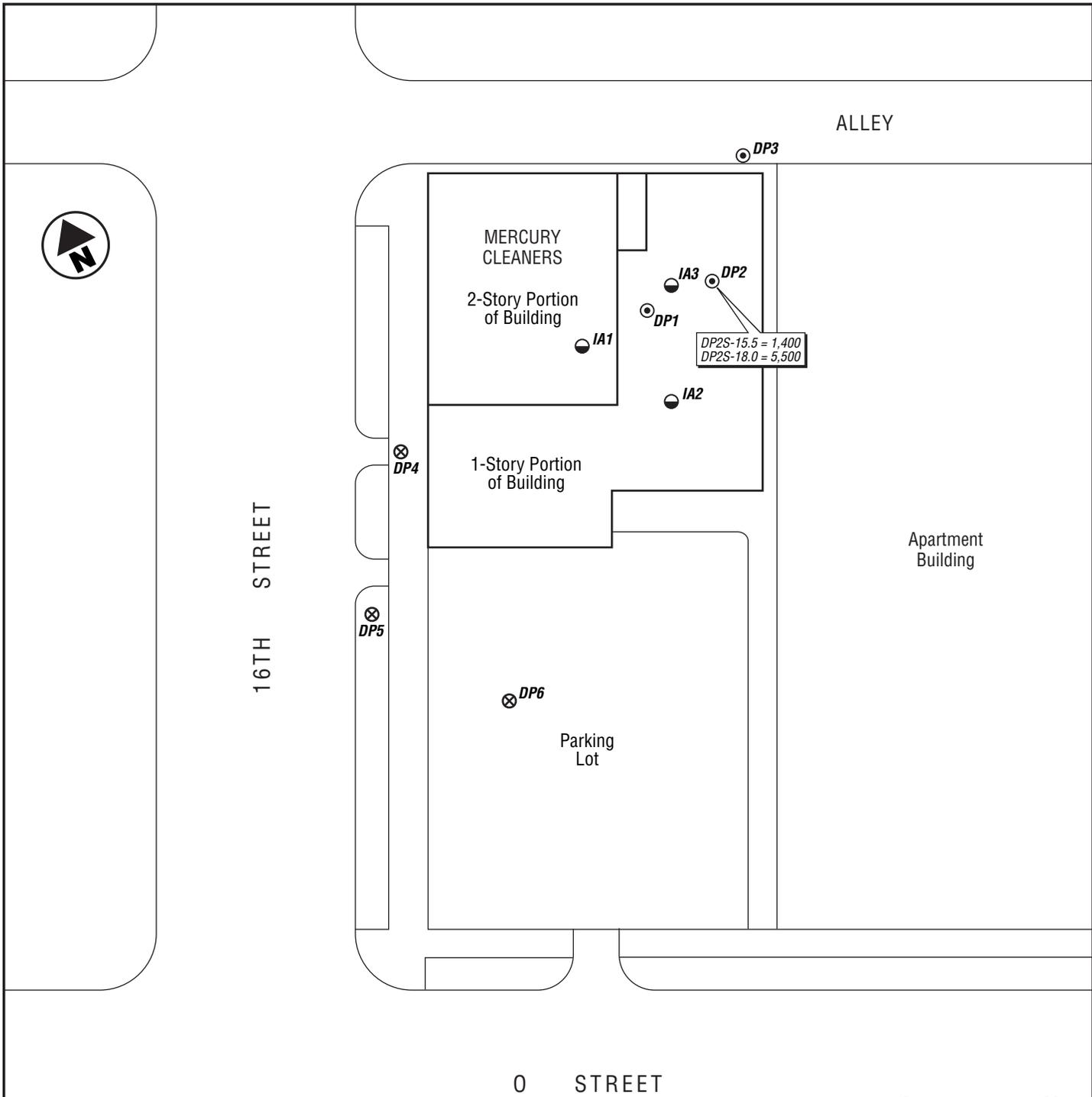
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Indoor Air Sampling Locations

S9322-06-01

February 2008

Figure 3



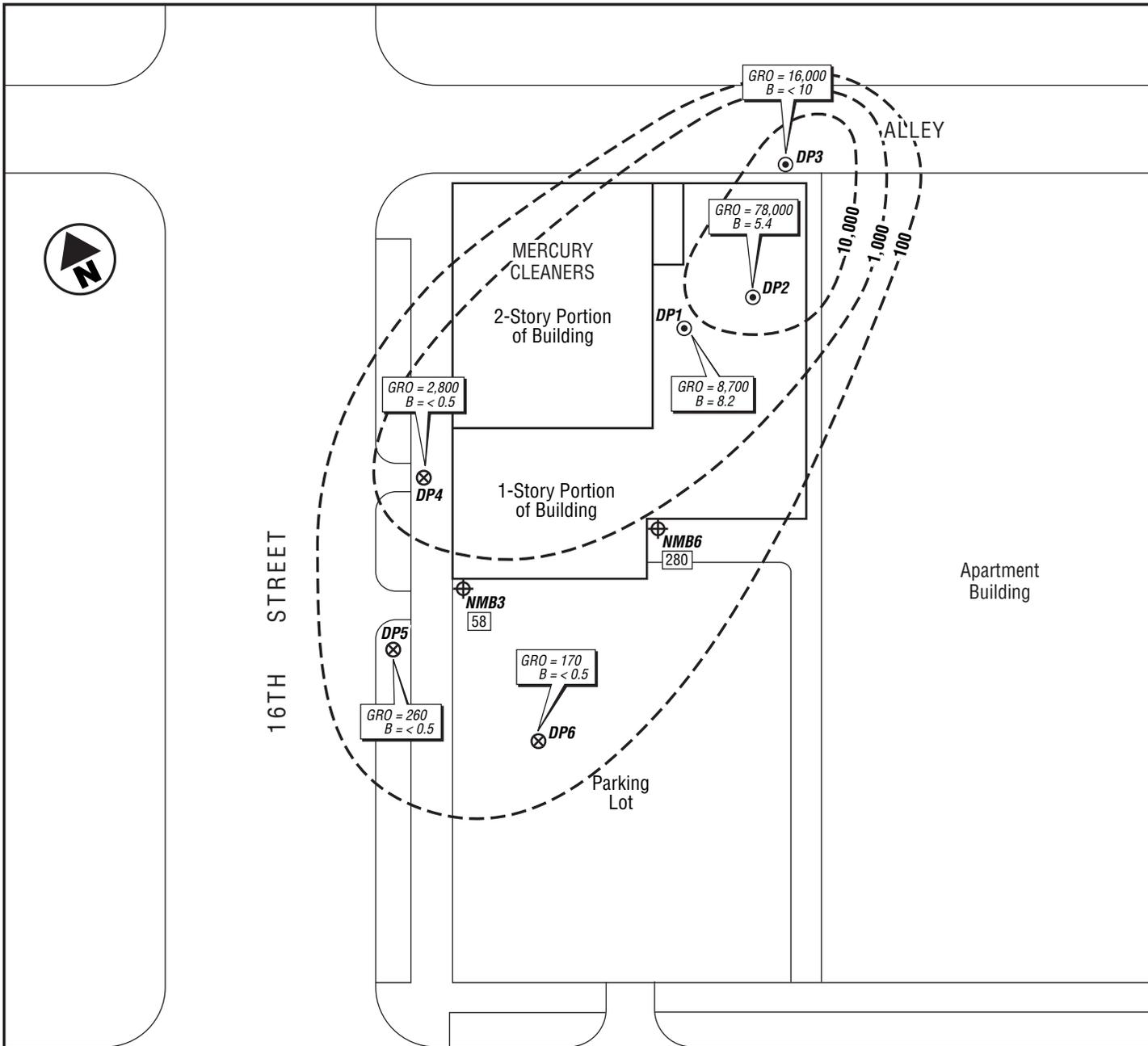
LEGEND:

- DP4 ⊗ Approximate Soil & Groundwater Sampling Location
- DP1 ⊙ Approximate Soil Gas & Groundwater Sampling Location
- IA1 ● Approximate Indoor Air Sampling Location

DP2S-15.5 = 1,400
 DP2S-18.0 = 5,500 Gasoline Range Organics Concentrations (mg/kg)



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Mercury Cleaners		
1419 16th Street Sacramento, California		
SITE PLAN		
S9322-06-01	February 2008	Figure 4



LEGEND:

- DP4 ⊗ Approximate Soil & Groundwater Sampling Location
- DP1 ⊙ Approximate Soil Gas & Groundwater Sampling Location
- NMB3 ⊕ Approximate Ninyo & Moore Boring Location
- 280 TPHg Concentration (ug/l)
- GRO Gasoline Range Organics (ug/l)
- B Benzene (ug/l)
- 10,000 - - - GRO Isoconcentration Contour (ug/l)
- TPHg Total Petroleum Hydrocarbons as Gasoline

0 STREET



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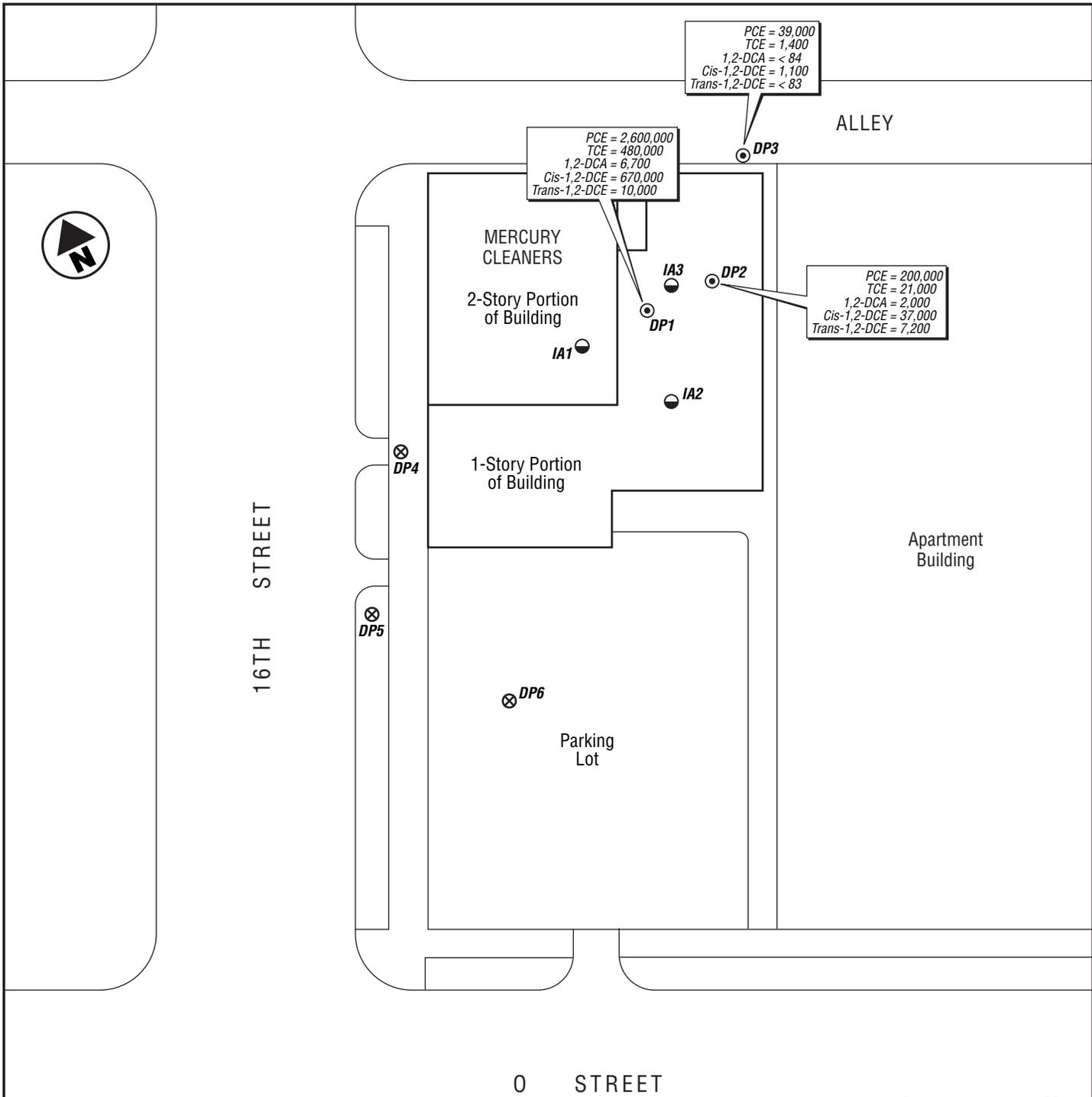
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Groundwater Sampling Locations and Results - GRO and Benzene



LEGEND:

- DP4** ⊗ Approximate Soil & Groundwater Sampling Location
- DP1** ⊙ Approximate Soil Gas & Groundwater Sampling Location
- IA1** ● Approximate Indoor Air Sampling Location

PCE = Tetrachloroethene (ug/m³)
TCE = Trichloroethene (ug/m³)
1,2-DCA = 1,2-Dichloroethane (ug/m³)
Cis-1,2-DCE = Cis-1,2-Dichloroethylene (ug/m³)
Trans-1,2-DCE = Trans-1,2-Dichloroethylene (ug/m³)
ug/m³ = Micrograms Per Cubic Meter



0 STREET

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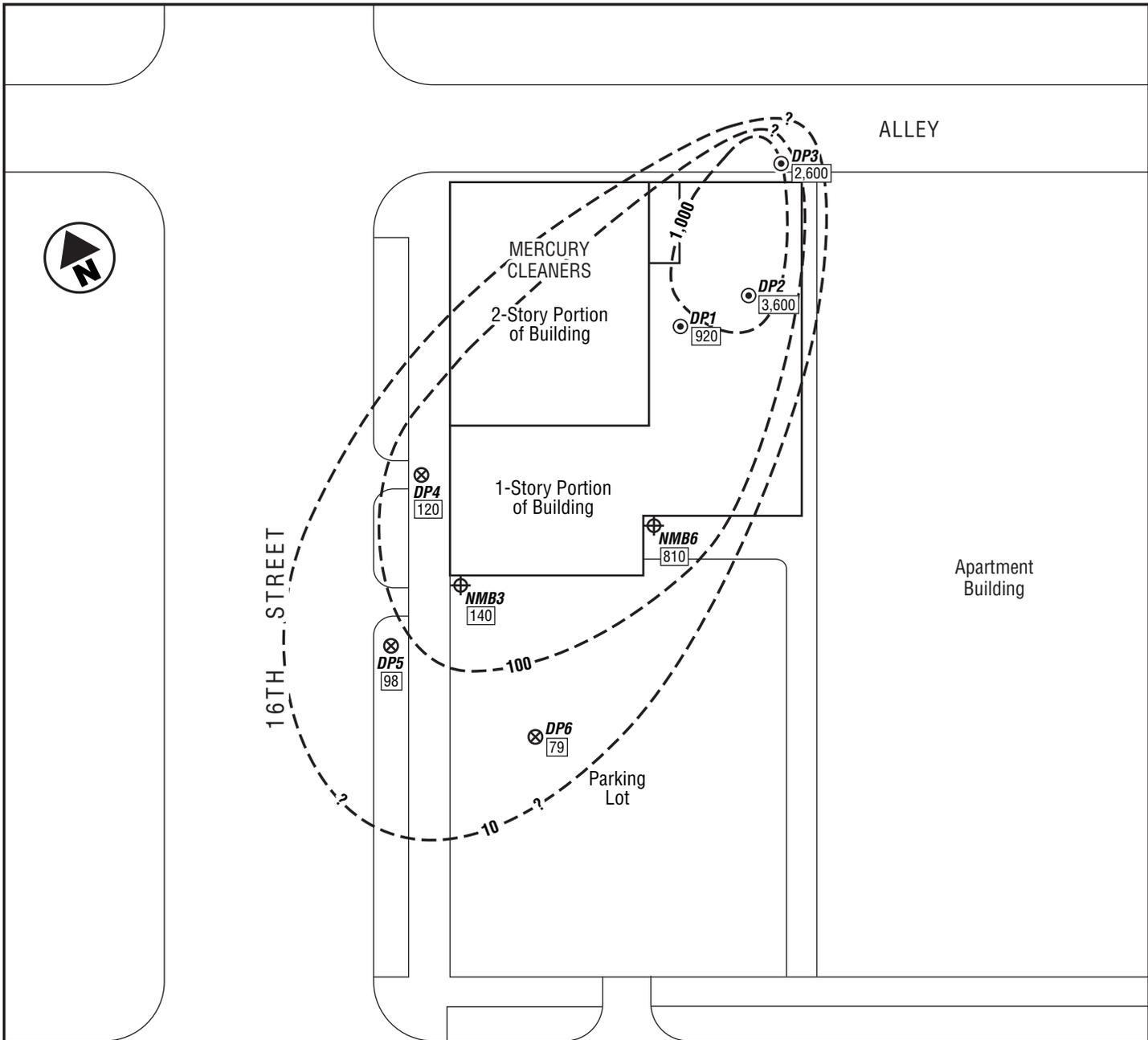
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Soil Gas Sampling Locations



LEGEND:

- DP4 ⊗ Approximate Soil & Groundwater Sampling Location
- DP1 ⊙ Approximate Soil Gas & Groundwater Sampling Location
- NMB3 ⊕ Approximate Ninyo & Moore Boring Location

PCE = Tetrachloroethene

3,600 PCE Concentration (ug/l)

1,000 - - - - PCE Isoconcentration Contour (ug/l)



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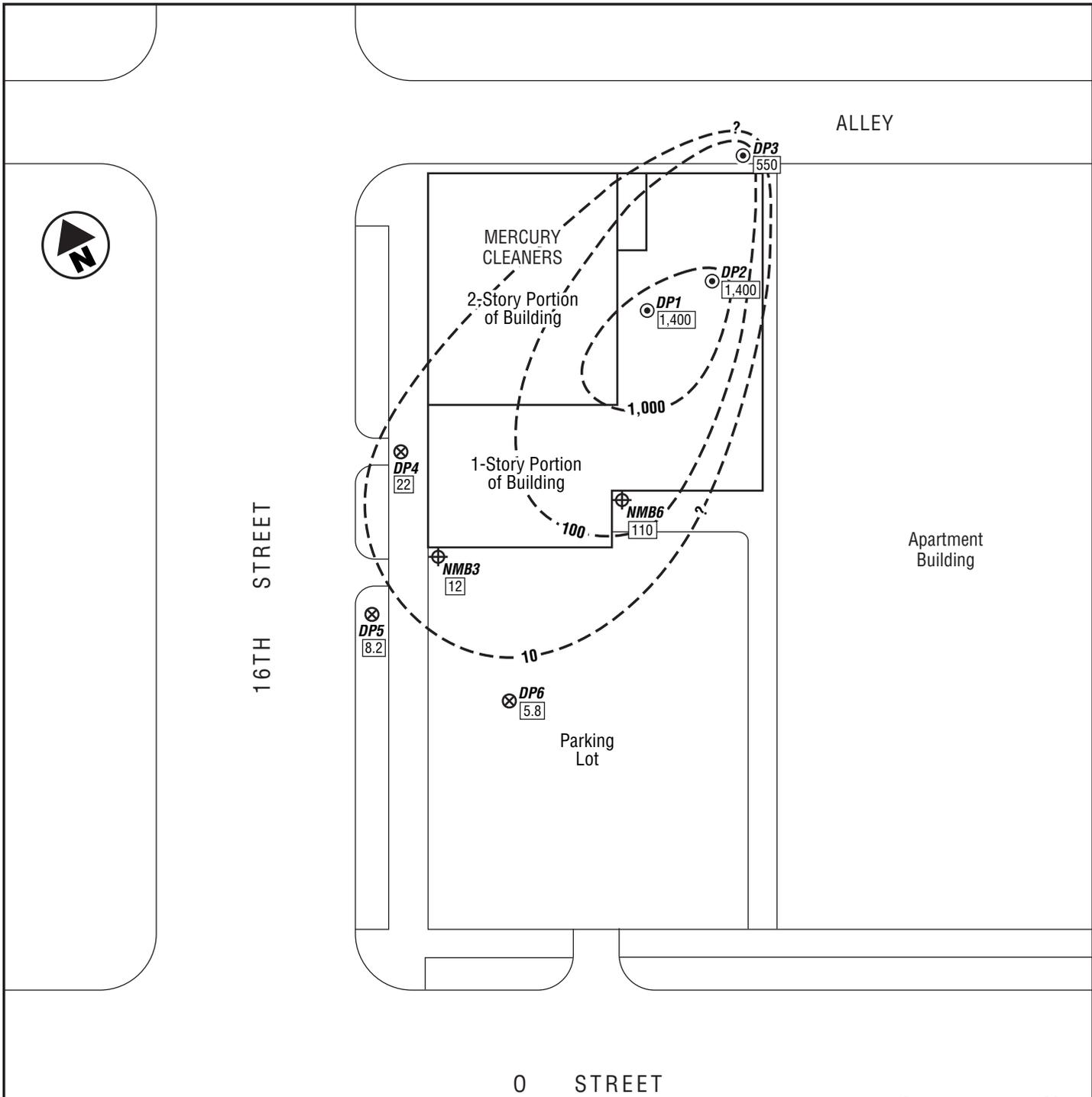
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PCE Isoconcentration Map



LEGEND:

- DP4** ⊗ Approximate Soil & Groundwater Sampling Location
- DP1** ⊙ Approximate Soil Gas & Groundwater Sampling Location
- NMB3** ⊕ Approximate Ninyo & Moore Boring Location
- TCE = Trichloroethene
- 1,400** TCE Concentration (ug/l)
- 1,000** - - - - TCE Isoconcentration Contour (ug/l)



0 STREET

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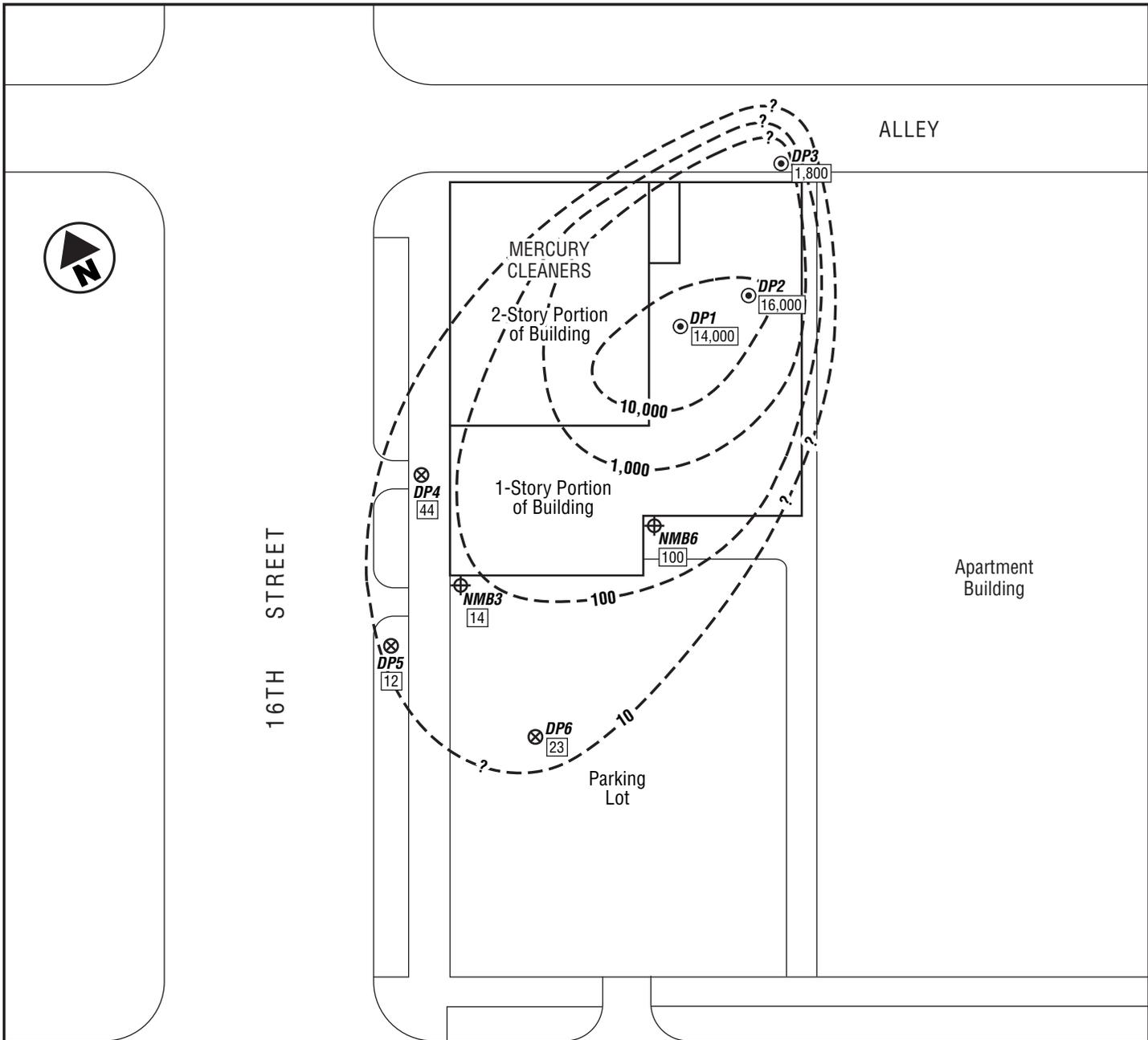
TCE Isoconcentration Map

Ref: Ninyo & Moore, 9/06

S9322-06-01

February 2008

Figure 8



0 STREET



LEGEND:

- DP4 ⊗ Approximate Soil & Groundwater Sampling Location
- DP1 ⊙ Approximate Soil Gas & Groundwater Sampling Location
- NMB3 ⊕ Approximate Ninyo & Moore Boring Location

DCE = Dichloroethylene

16,000 cis-1,2-DCE Concentration (ug/l)

10,000 - - - - cis-1,2-DCE Isoconcentration Contour (ug/l)

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Mercury Cleaners

1419 16th Street
Sacramento, California

cis-1,2-DCE Isoconcentration Map

Ref: Ninyo & Moore, 9/06

S9322-06-01

February 2008

Figure 9

TABLE 1
 SUMMARY OF INDOOR AIR ANALYTICAL DATA - VOLATILE ORGANIC COMPOUNDS
 MERCURY CLEANERS
 SACRAMENTO, CALIFORNIA

SAMPLE ID	DATE	Results in ppbv									
		Propylene	Chloromethane	Ethanol	Acetone	2-Butanone (MEK)	Toluene	PCE	Carbon Disulfide		
IA1	12/7/2007	1.5	0.6	27	12	2.5	0.7	2.4	<1.0		
IA2	12/7/2007	1.2	<0.5	18	7.9	<1.5	0.6	5.2	<1.0		
IA3	12/7/2007	1.1	1.8	15	12	2.4	0.7	20	<1.0		
IA4	6/15/2010	NA	<3.9	37	10	1.1	<0.98	2.9	<0.98		
IA5	6/15/2010	NA	<3.8	35	5.3	<0.96	<0.96	2.7	1.1		
IA6	6/15/2010	NA	<3.4	13	5.5	<0.86	<0.86	<0.86	<0.86		
IA7	6/15/2010	NA	<3.7	14	7.9	<0.92	<0.92	<0.92	<0.92		
IA8	6/15/2010	NA	<3.7	9.1	<3.7	<0.92	<0.92	<0.92	<0.92		
IA9	6/15/2010	NA	<4.0	6.8	12	1.4	<1.0	<1.0	<1.0		
IA10	11/23/2010	NA	<3.5	37	6.5	<0.88	<0.88	8.5	<0.88		
IA11	11/23/2010	NA	<3.5	37	4.3	<0.88	<0.88	9.2	<0.88		
IA12	11/23/2010	NA	<3.5	25	9.3	<0.86	<0.86	4.7	<0.86		
IA13	11/23/2010	NA	<3.6	25	<3.6	<0.90	<0.90	4.8	<0.90		
IA14	11/23/2010	NA	<3.1	28	4.9	<0.78	<0.78	5.0	<0.78		
IA15	11/23/2010	NA	<3.3	6.3	5.9	<0.83	<0.83	2.0	<0.83		
PEL (8-hr)			100,000	1,000,000	1,000,000	200,000	200,000	100,000	20,000		
CHSLs (Commercial)			13	387	509	116	0.1	0.1			
ESLs (Commercial)						23	0.1				

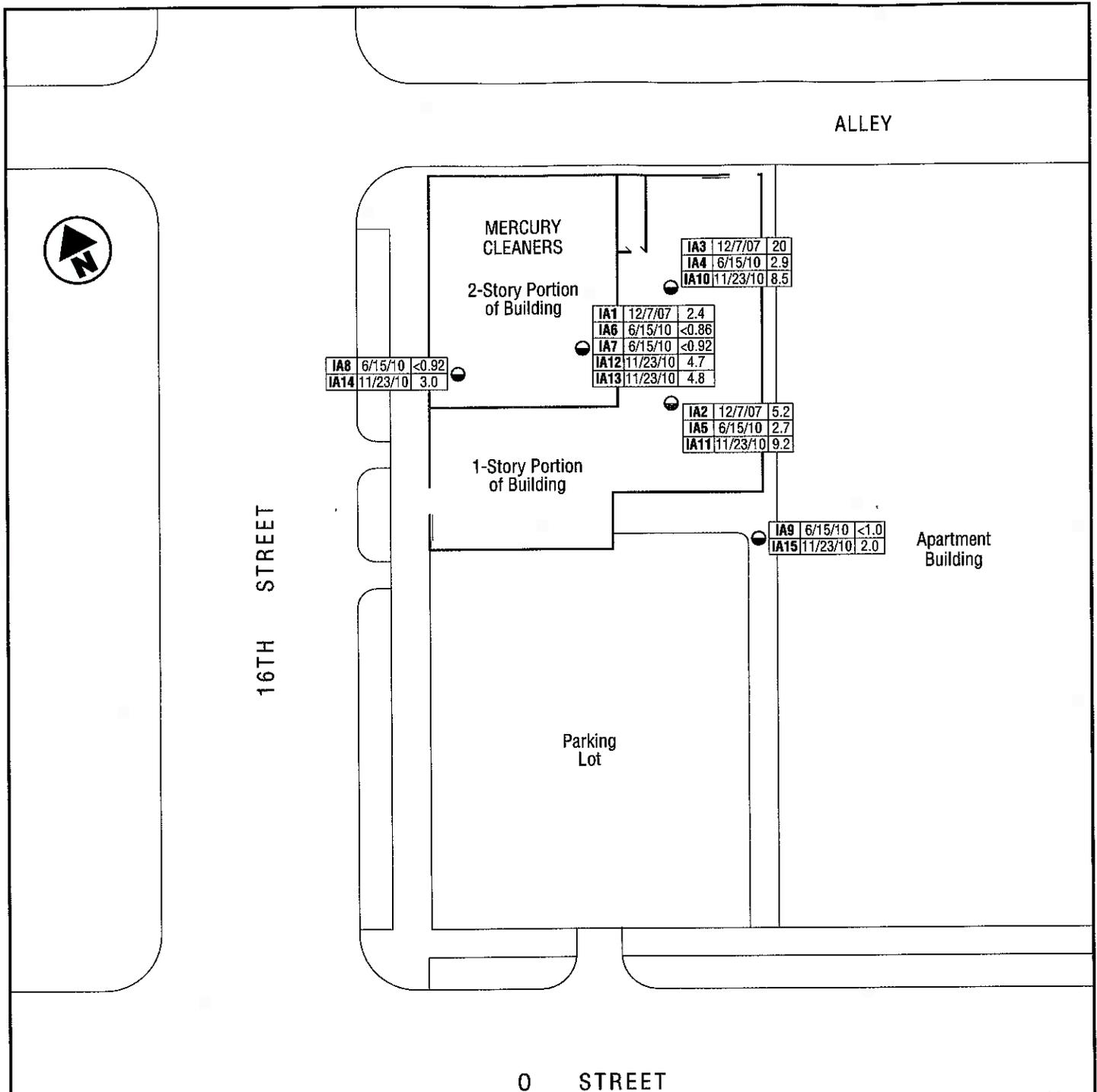
Notes:
 MEK = Methylmethylketone
 PCE = Tetrachloroethene
 ppbv = Parts Per Billion Volume
 <= Less than the respective laboratory reporting limits for each tested analyte
 PEL = Permissible Exposure Limit in ppbv
 --- = No established screening level
 NA = Not analyzed
 CHSLs = California Human Health Screening Level in ppbv
 ESL = San Francisco Bay Regional Water Quality Control Board Environmental Screening Level in ppbv

TABLE 2
 SUMMARY OF DRUM CONTENT, WASTE STREAM, AND UST ANALYTICAL DATA - VOLATILE ORGANIC COMPOUNDS AND STODDARD SOLVENT
 MERCURY CLEANERS
 SACRAMENTO, CALIFORNIA

SAMPLE ID	DATE	Stoddard Solvent		PCE	Carbon Dioxide	Cyclohexanol	Results in µg/kg (except D2)		
		Results in mg/kg	Results in mg/kg				2,2-Dimethyldecane	2,7,10-Trimethyldecane	2,7,10-Trimethyldecane
D1	8/30/2010	140,000	ND	64,000,000	ND	ND	ND	ND	ND
D2*	8/30/2010	---	6.6	86	18	ND	ND	ND	ND
D3	8/30/2010	400,000	ND	<120,000	ND	830,000	830,000	4,700,000	4,700,000
WS1*	9/28/2010	34	---	4.9	---	---	---	---	---
TI*	9/28/2010	0.5	---	5.3	---	---	---	---	---

Notes:

- PCE = Tetrachloroethene
- mg/kg = milligrams per kilogram
- µg/kg = micrograms per kilogram
- < = Less than the respective laboratory reporting limits for each tested analyte
- = Not analyzed
- ND = Not detected
- * = Reported in micrograms per liter



0 STREET



LEGEND:

- DP4 ⊗ Approximate Groundwater Sampling Location
- DP1 ⊙ Approximate Soil, Soil Gas & Groundwater Sampling Location
- Approximate Indoor Air Sampling Location

PCE = Tetrachloroethene

IA1 | 12/7/07 | 2.4 Sample ID, Date, and PCE Concentration (ppbv)

 <p>GEOCON CONSULTANTS, INC. 3160 GOLD VALLEY DR. - SUITE 800 - RANCHO CORDOVA, CA. 95742 PHONE 916 852-9118 - FAX 916 852-9132</p>	Mercury Cleaners	
	1419 16th Street Sacramento, California	
Indoor Air Sampling Locations		
S9322-06-02	January 2011	Figure 2



Analyte	Units	Sample ID		Screening Criteria
		AQ-5	BKG-1	CHHSLs
Site		Mercury Cleaners	Hand in Hand	Indoor Air Human Health Screening Levels
Location		Indoor	Outdoor (Background)	
Date		2/10 - 2/11/2012	2/10 - 2/11/2012	Commercial
Dry Cleaning Related VOCs				
Tetrachloroethene	µg/m ³	40	<0.07	0.70
Trichloroethene	µg/m ³	1.7	<0.05	2.04
cis-1,2 Dichloroethene	µg/m ³	2.8	<0.04	51
trans-1,2 Dichloroethene	µg/m ³	<0.04	<0.04	102
Vinyl Chloride	µg/m ³	<0.03	<0.03	0.05
Naphthalene	µg/m ³	<0.05	0.31	0.12
Fuel Related VOCs				
Benzene	µg/m ³	0.31	0.22	0.14
Toluene	µg/m ³	0.71	0.90	438
Ethylbenzene	µg/m ³	0.18	0.23	1.4*
m,p-Xylene	µg/m ³	1.4	2.2	2,040
o-Xylene	µg/m ³	0.52	0.43	1,020
MTBE	µg/m ³	<0.04	<0.04	15.70
Other VOCs				
Carbon Tetrachloride	µg/m ³	0.17	0.17	0.0973

Notes:

VOCs = Volatile Organic Compounds

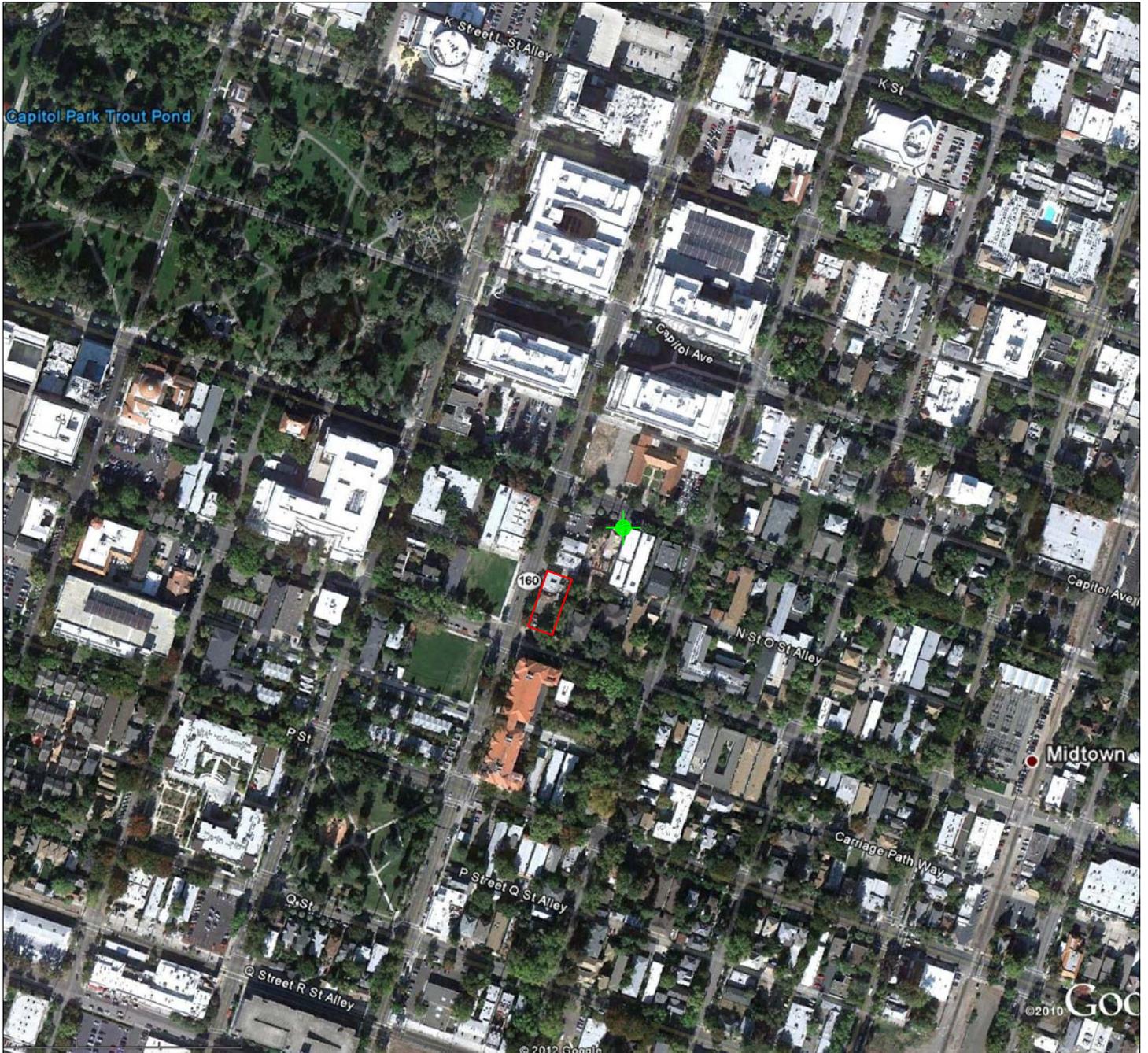
NE= Not established

µg/m³ = micrograms per cubic meter

<0.5 = Not detected above laboratory detection limits

CHHSL = Use of California Human Health Screening Levels (CHHSLs) in Evaluation of Contaminated of Contaminated Properties, dated January 2005

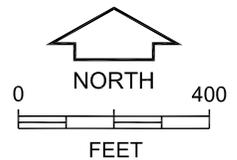
* Draft CHHSLs for Ethylbenzene, dated November 2009. Assumes structure is placed over native soil, not engineered fill



BASE MAP SOURCE: Aerial photograph provided by Google Earth Pro 2012.

LEGEND

-  Site Boundary
-  Approximate Location of Background Air Sample

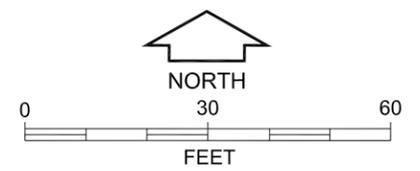


VICINITY MAP
Mercury Cleaners
Sacramento, California



LEGEND

-  **AQ-5** Approximate location of Fugro's AQ Sample
-  **DP-5** Approximate location of previous Soil-Gas Sample
-  **IA-15** Approximate location of previous Indoor Air Sample



SITE PLAN
 Mercury Cleaners
 Sacramento, California

M:\Drafting\JOBFILES\2012\04.72120008\Drawings\B04.72120008-02 Mercury site.dwg 03-21-2012 - 9:30am

BASE MAP SOURCE: Aerial photograph provided by Google Earth Pro 2011.

Appendix D - Table
Air Quality Survey and Assessment
February 10-11, 2012 Field Observations



Sample ID	AQA Start Time	Initial Pressure	Flow Controller Serial #	Initial PID Reading (ppm)	AQA End Time	Final Pressure	Final PID Reading (ppm)
BKG-1	1720	-30	1996	0.0	1559	0/-1*	0.0
AQ-1	1705	-30	1937	0.0	1556	-3	0.0
AQ-2	1705	-30	4124	0.0	1555	-2	0.0
AQ-3	1225	-30	1998	0.0	1145	-12	0.0
AQ-4	1640	-30	4129	0.0	1614	-3	0.0
DUP	1640	-30	4127	0.0	1615	-2	0.0
AQ-5	1625	-30	4133	4.9	1546	-2	0.9

Notes:

* At the completion of the test, Fugro confirmed that all canisters, with the exception of BKG-1 still held negative pressure at the completion of the survey. While the survey ended at a time period short of the full 24 hours, the background canister pressure valve registered zero in the field. ATL was contacted and confirmed that negative pressure on the background sample canister read -1 mmHg at the laboratory.

**RAE Systems, MultiRAE Plus



Analyte	Units	Sample ID			Screening Criteria
		AQ-4	DUP	BKG-1	CHHSLs
Site		Simon's Restaurant		Hand in Hand	Indoor Air Human Health Screening Levels
Location		Indoor	Indoor	Outdoor (Background)	
Date		2/10 - 2/11/2012	2/10 - 2/11/2012	2/10 - 2/11/2012	Commercial
Dry Cleaning Related VOCs					
Tetrachloroethene	µg/m ³	1.3	1.3	<0.07	0.70
Trichloroethene	µg/m ³	<0.05	<0.05	<0.05	2.04
cis-1,2 Dichloroethene	µg/m ³	0.87	0.91	<0.04	51
trans-1,2 Dichloroethene	µg/m ³	<0.04	<0.04	<0.04	102
Vinyl Chloride	µg/m ³	<0.03	<0.03	<0.03	0.05
Naphthalene	µg/m ³	0.35	0.63	0.31	0.12
Fuel Related VOCs					
Benzene	µg/m ³	0.93	1.1	0.22	0.14
Toluene	µg/m ³	2.2	2.3	0.90	438
Ethylbenzene	µg/m ³	0.34	0.44	0.23	1.4*
m,p-Xylene	µg/m ³	2.0	2.3	2.2	2,040
o-Xylene	µg/m ³	0.33	0.39	0.43	1,020
MTBE	µg/m ³	<0.04	0.07	<0.04	15.70
Other VOCs					
Carbon Tetrachloride	µg/m ³	0.18	0.18	0.17	0.0973

Notes:

VOCs = Volatile Organic Compounds

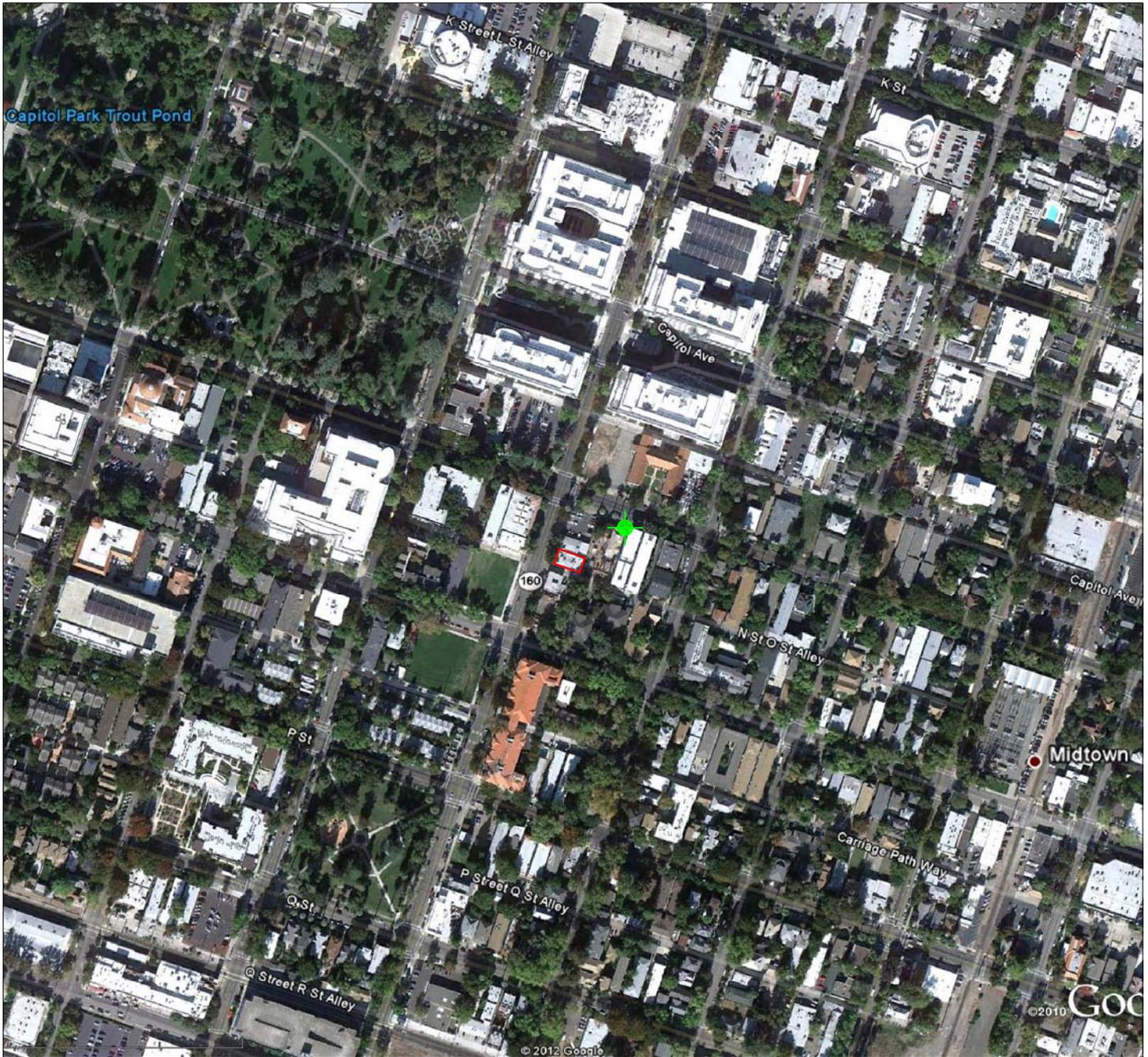
NE= Not established

µg/m³ = micrograms per cubic meter

<0.5 = Not detected above laboratory detection limits

CHHSL = Use of California Human Health Screening Levels (CHHSLs) in Evaluation of Contaminated Properties, January 2005

* Draft CHHSLs for Ethylbenzene, dated November 2009. Assumes structure is placed over native soil, not engineered fill



BASE MAP SOURCE: Aerial photograph provided by Google Earth Pro 2012.

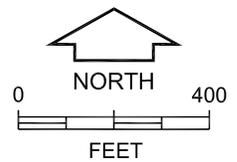
LEGEND



Site Boundary

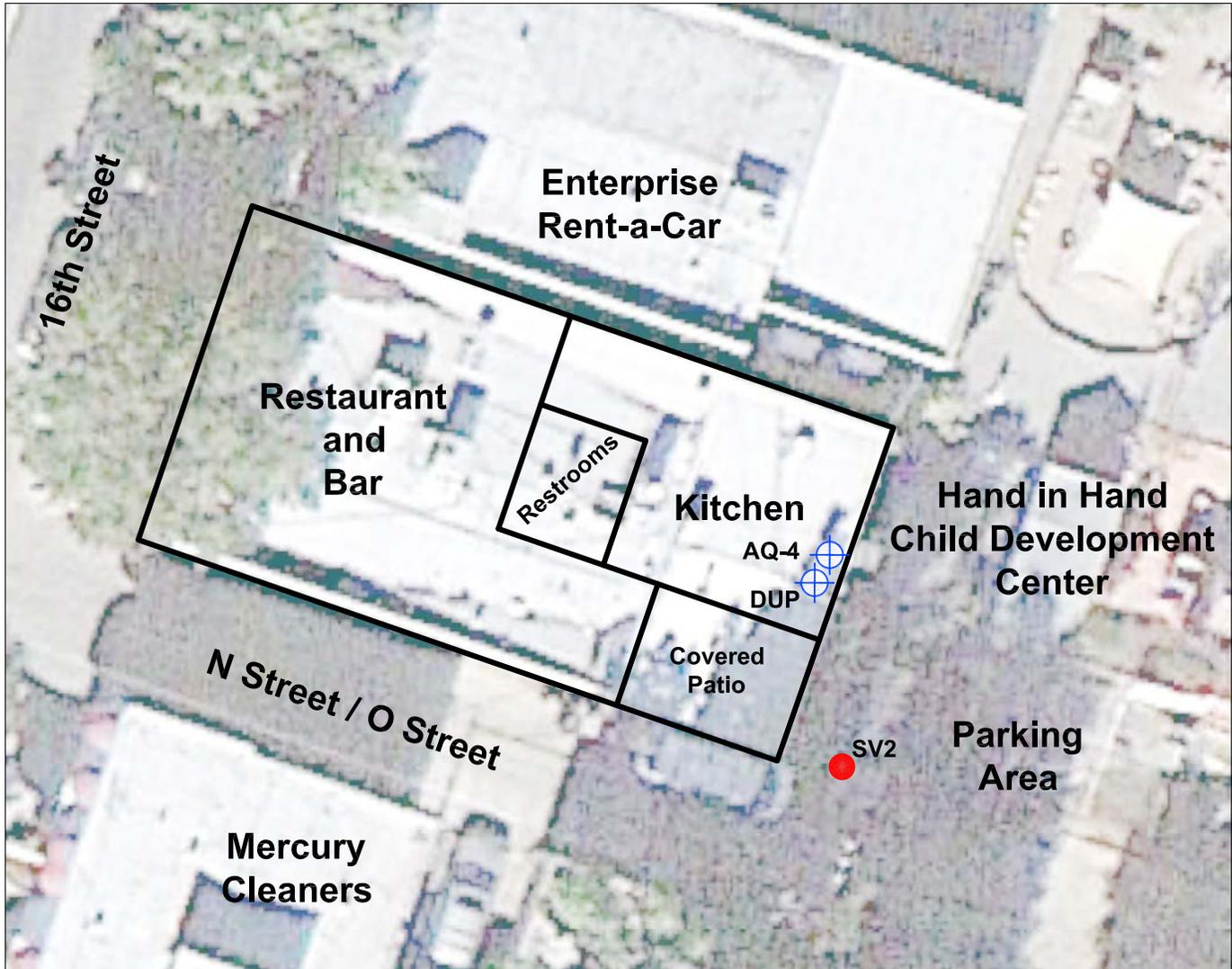


Approximate Location
of Background Air Sample



VICINITY MAP
Simon's Restaurant
Sacramento, California

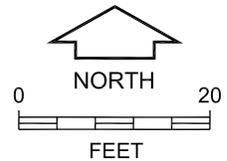
M:\Drafting\JOBFILES\2012\04.72120008\Drawings\A04.72120008-01 Simons Vicn.dwg 03-20-2012 - 4:25pm



BASE MAP SOURCE: Aerial photograph provided by Google Earth Pro 2011.

LEGEND

-  **AQ-4** Approximate location of Fugro's AQ Sample
-  **SV2** Approximate location of previous Soil-Gas Sample



SITE PLAN
Simon's Restaurant
Sacramento, California

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Analyte	Units	Sample ID			Screening Criteria
		AQ-1	AQ-2	BKG-1	CHHSLs
Location		Outdoor	Outdoor	Outdoor (Background)	Indoor Air Human Health Screening Levels
Date		2/10 - 2/11/2012	2/10 - 2/11/2012	2/10 - 2/11/2012	Commercial
Dry Cleaning Related VOCs					
Tetrachloroethene	µg/m ³	<0.07	<0.07	<0.07	0.70
Trichloroethene	µg/m ³	<0.05	<0.05	<0.05	2.04
cis-1,2 Dichloroethene	µg/m ³	<0.04	0.07	<0.04	51
trans-1,2 Dichloroethene	µg/m ³	<0.04	<0.04	<0.04	102
Vinyl Chloride	µg/m ³	<0.03	<0.03	<0.03	0.05
Naphthalene	µg/m ³	0.77	0.10	0.31	0.12
Fuel Related VOCs					
Benzene	µg/m ³	0.28	0.24	0.22	0.14
Toluene	µg/m ³	1.4	0.70	0.90	438
Ethylbenzene	µg/m ³	0.37	0.09	0.23	1.4*
m,p-Xylene	µg/m ³	2.3	0.63	2.2	2,040
o-Xylene	µg/m ³	0.43	0.16	0.43	1,020
MTBE	µg/m ³	<0.04	<0.04	<0.04	15.70
Other VOCs					
Carbon Tetrachloride	µg/m ³	0.17	0.17	0.17	0.0973

Notes:

VOCs = Volatile Organic Compounds

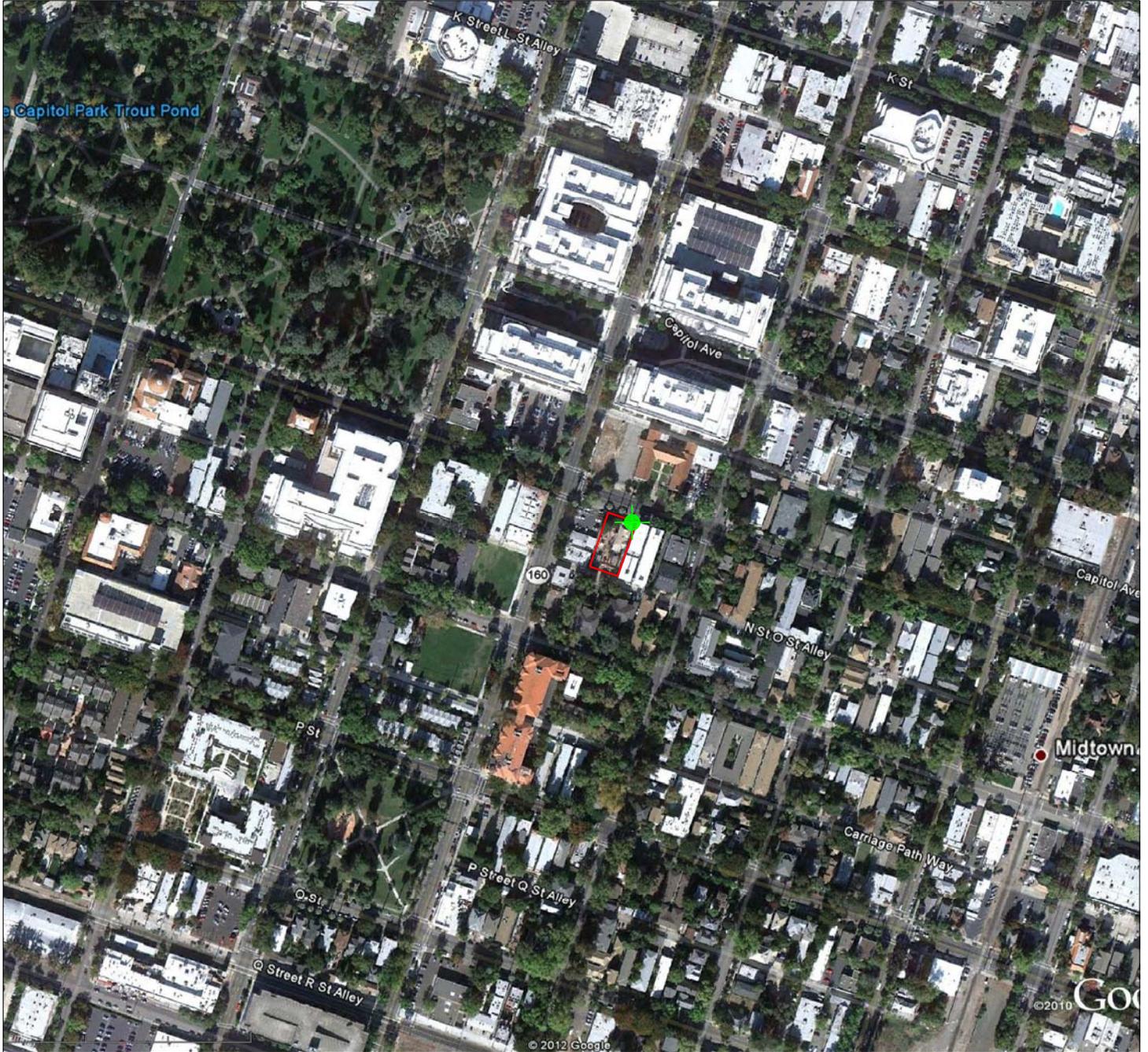
NE= Not established

µg/m³ = micrograms per cubic meter

<0.5 = Not detected above laboratory detection limits

CHHSL = Use of California Human Health Screening Levels (CHHSLs) in Evaluation of Contaminated Properties, January 2005.

* Draft CHHSLs for Ethylbenzene, dated November 2009. Assumes structure is situated over native soil, not engineered fill.



BASE MAP SOURCE: Aerial photograph provided by Google Earth Pro 2012.

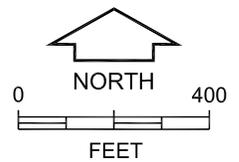
LEGEND



Site Boundary

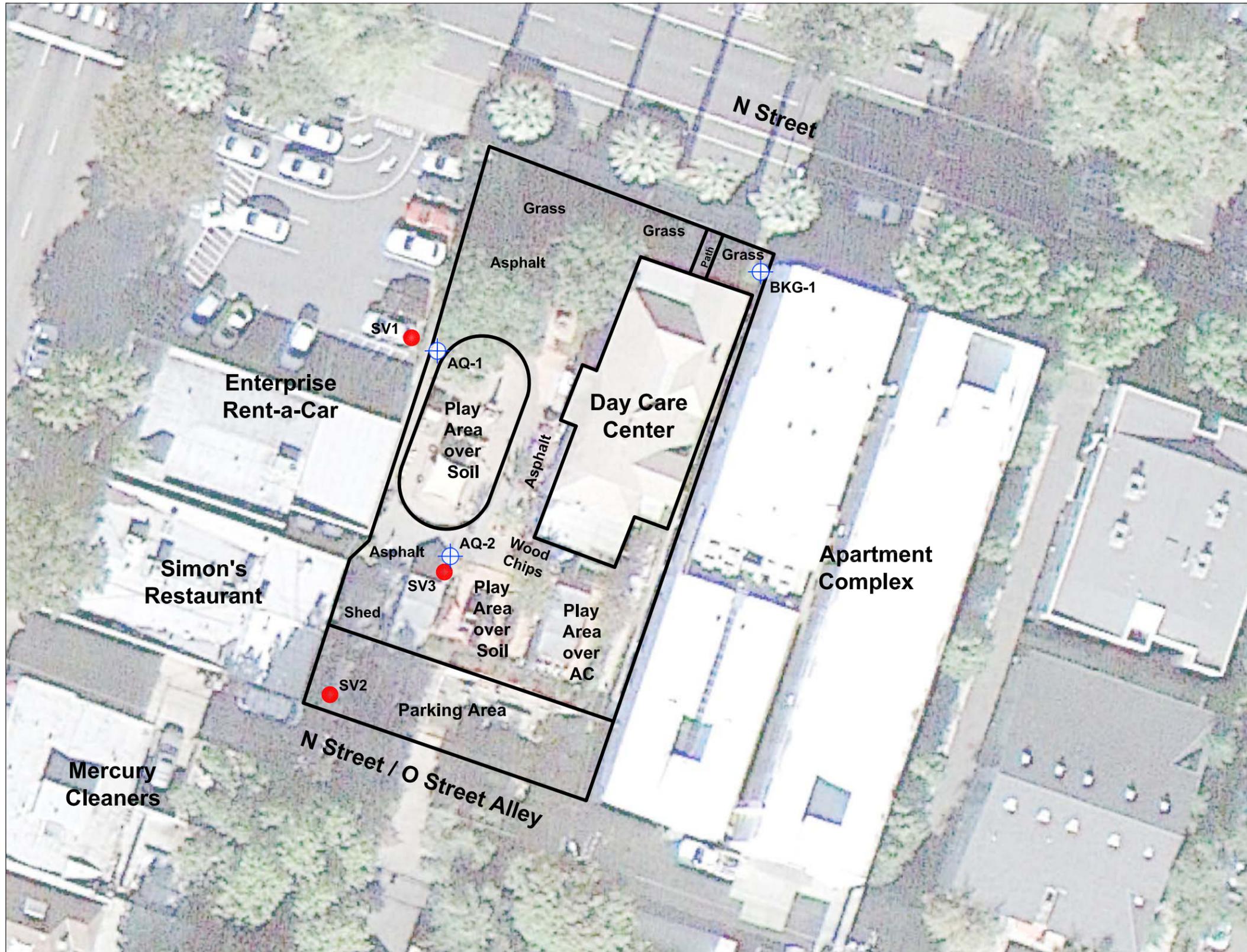


Approximate Location
of Background Air Sample

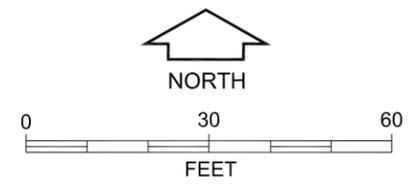


VICINITY MAP
Hand in Hand Child Development Center
Sacramento, California

M:\Drafting\JOBFILES\2012\04.72120008\Drawings\A04.72120008-01 HnH Vfcen.dwg 03-20-2012 - 4:22pm



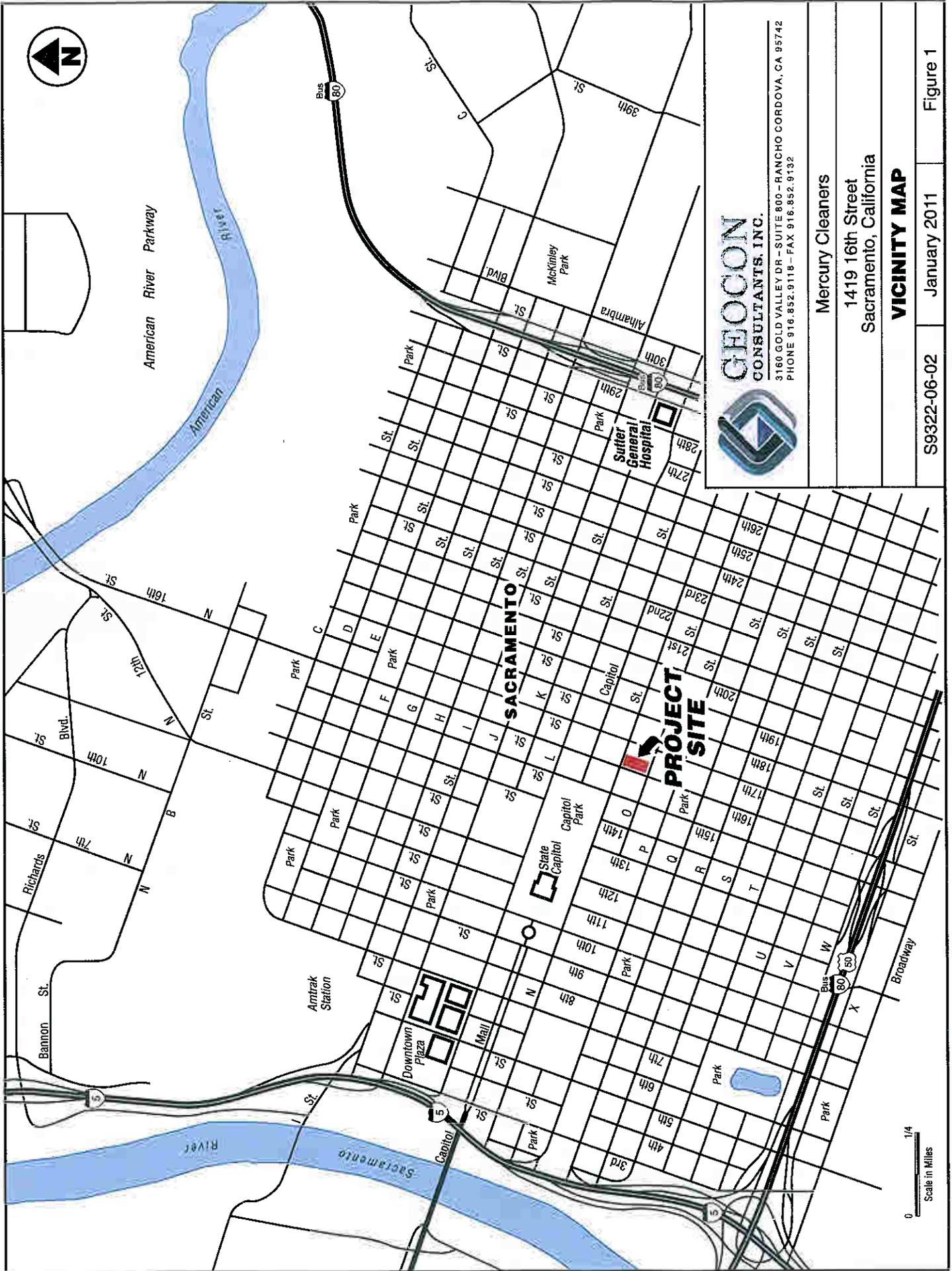
- LEGEND**
- AQ-2** Approximate location of Fugro's AQ Sample
 - SV3** Approximate location of previous Soil-Gas Sample



SITE PLAN
Hand in Hand Child Development Center
Sacramento, California

BASE MAP SOURCE: Aerial photograph provided by Google Earth Pro 2011.

M:\Drafting\JOBFILES\2012\04.72120008\Drawings\B04.72120008-02 HH site.dwg 03-26-2012 - 3:42pm



CHOCCON
CONSULTANTS INC.



3160 GOLD VALLEY DR - SUITE 800 - RANCHO CORDOVA, CA 95742
PHONE 916.852.9118 - FAX 916.852.9132

Mercury Cleaners

1419 16th Street
Sacramento, California

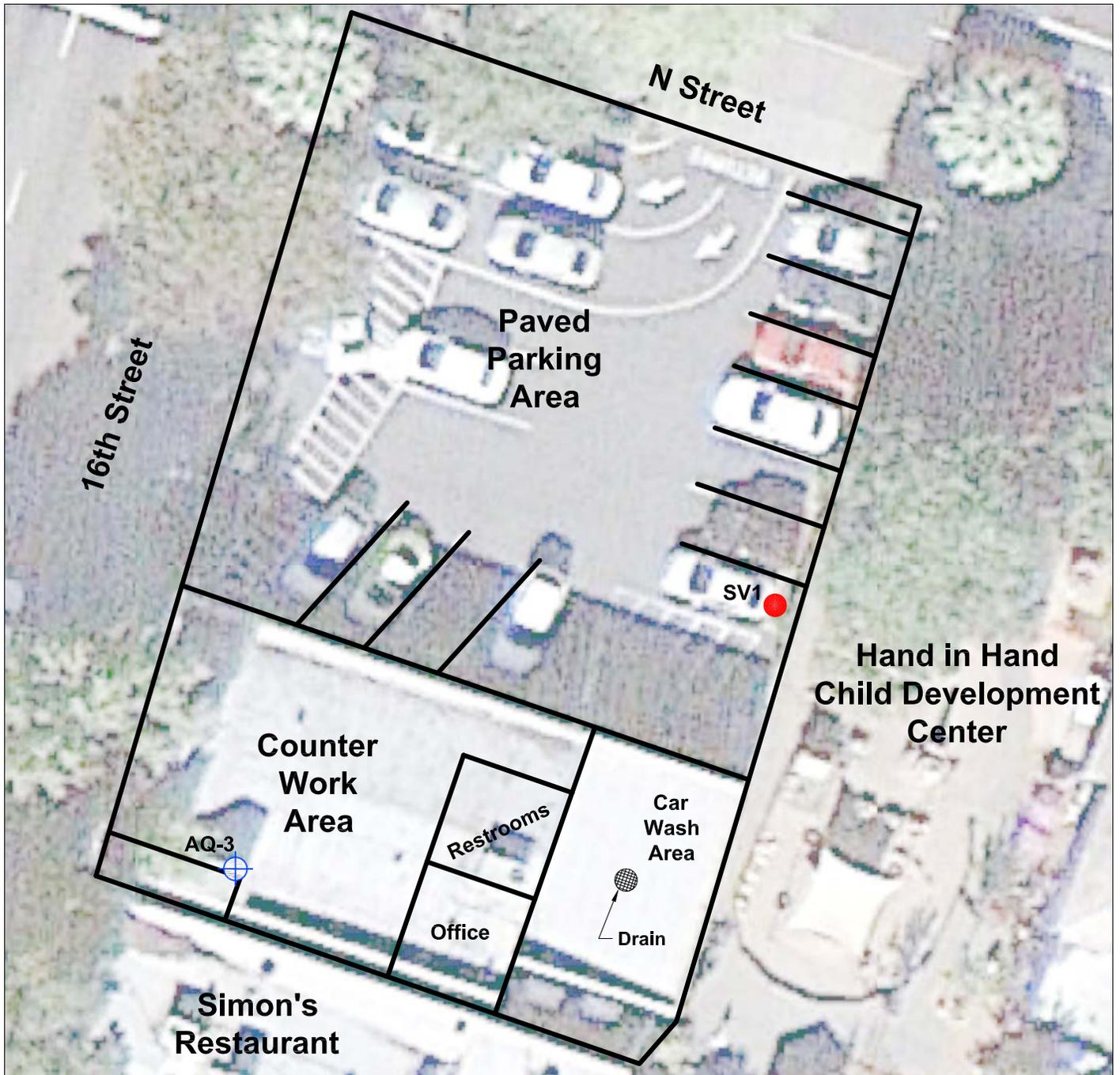
VICINITY MAP

S9322-06-02

January 2011

Figure 1

0 1/4
Scale in Miles



BASE MAP SOURCE: Aerial photograph provided by Google Earth Pro 2011.

LEGEND



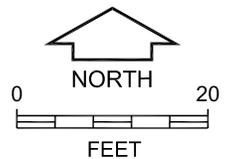
AQ-1

Approximate location of Fugro's AQ Sample

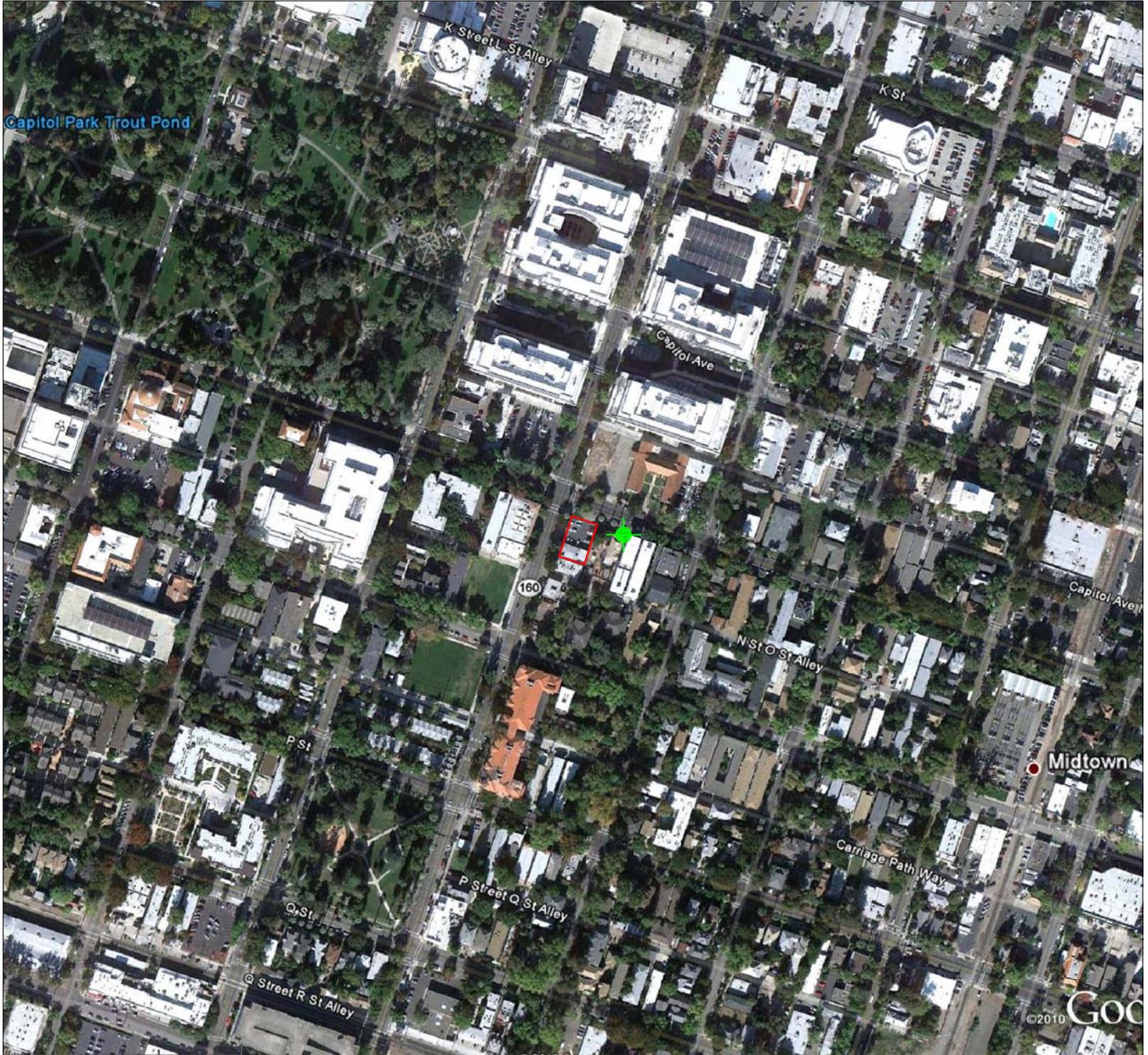


SV1

Approximate location of previous Soil-Gas Sample



SITE PLAN
 Enterprise Rent-a-Car
 Sacramento, California



BASE MAP SOURCE: Aerial photograph provided by Google Earth Pro 2012.

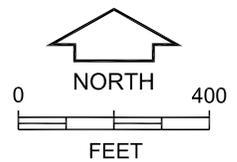
LEGEND



Site Boundary



Approximate Location
of Background Air Sample



VICINITY MAP
Enterprise Rent-a-Car
Sacramento, California

M:\Drafting\JOBFILES\2012\04.72120008\Drawings\A04.72120008-01 Enterprise vicn.dwg 03-20-2012 - 4:15pm



Analyte	Units	Sample ID		Screening Criteria
		AQ-3	BKG-1	CHHSLs
Site		Enterprise	Hand in Hand	Indoor Air Human Health Screening Levels
Location		Indoor	Outdoor (Background)	
Date		2/10 - 2/11/2012	2/10 - 2/11/2012	Commercial
Dry Cleaning Related VOCs				
Tetrachloroethene	µg/m ³	<0.07	<0.07	0.70
Trichloroethene	µg/m ³	<0.05	<0.05	2.04
cis-1,2 Dichloroethene	µg/m ³	<0.04	<0.04	51
trans-1,2 Dichloroethene	µg/m ³	<0.04	<0.04	102
Vinyl Chloride	µg/m ³	<0.03	<0.03	0.05
Naphthalene	µg/m ³	0.20	0.31	0.12
Fuel Related VOCs				
Benzene	µg/m ³	0.31	0.22	0.14
Toluene	µg/m ³	1.0	0.90	438
Ethylbenzene	µg/m ³	0.18	0.23	1.4*
m,p-Xylene	µg/m ³	1.4	2.2	2,040
o-Xylene	µg/m ³	0.26	0.43	1,020
MTBE	µg/m ³	<0.04	<0.04	15.70
Other VOCs				
Carbon Tetrachloride	µg/m ³	0.13	0.17	0.0973

Notes:

VOCs = Volatile Organic Compounds

NE= Not established

µg/m³ = micrograms per cubic meter

<0.5 = Not detected above laboratory detection limits

CHHSL = Use of California Human Health Screening Levels (CHHSLs) in Evaluation of Contaminated Properties, January 2005

* Draft CHHSLs for Ethylbenzene, dated November 2009. Assumes structure is placed over native soil, not engineered fill

TABLE 1 Analytical Results of Soil Samples				
Sample ID	Depth (feet)	Volatile Organic Compounds (reported in µg/kg)	Total Petroleum Hydrocarbons (reported in mg/kg)	Lead (reported in mg/kg)
JA-OWS	3.5	ND (<5.0-100)	32 (Motor Oil Range)	4.9
JA-FD	4	ND (<5.0-100)	ND (<1.0)	32
JA-Lift-1	6.5	NT	21 (Motor Oil Range)	NT
JA-Lift-2	8	NT	3.6 (Motor Oil Range)	NT
JA-PL-1	0.5-1	NT	NT	64
JA-PL-2	0.5-1	NT	NT	85
JA-PL-3	0.5-1	NT	NT	660
JA-PL-4	0.5-1	NT	NT	480
JA-PL-5	0.5-1	NT	NT	450
AL-PL-1	0.5-1	NT	NT	210
AL-PL-2	0.5-1	NT	NT	230
AL-PL-3	0.5-1	NT	NT	350
AL-PL-4	0.5-1	NT	NT	540
AL-PL-5	0.5-1	NT	NT	88
AL-PL-6	0.5-1	NT	NT	130
AL-PL-7	0.5-1	NT	NT	210
AL-PL-8	0.5-1	NT	NT	460
AL-PL-9	0.5-1	NT	NT	510

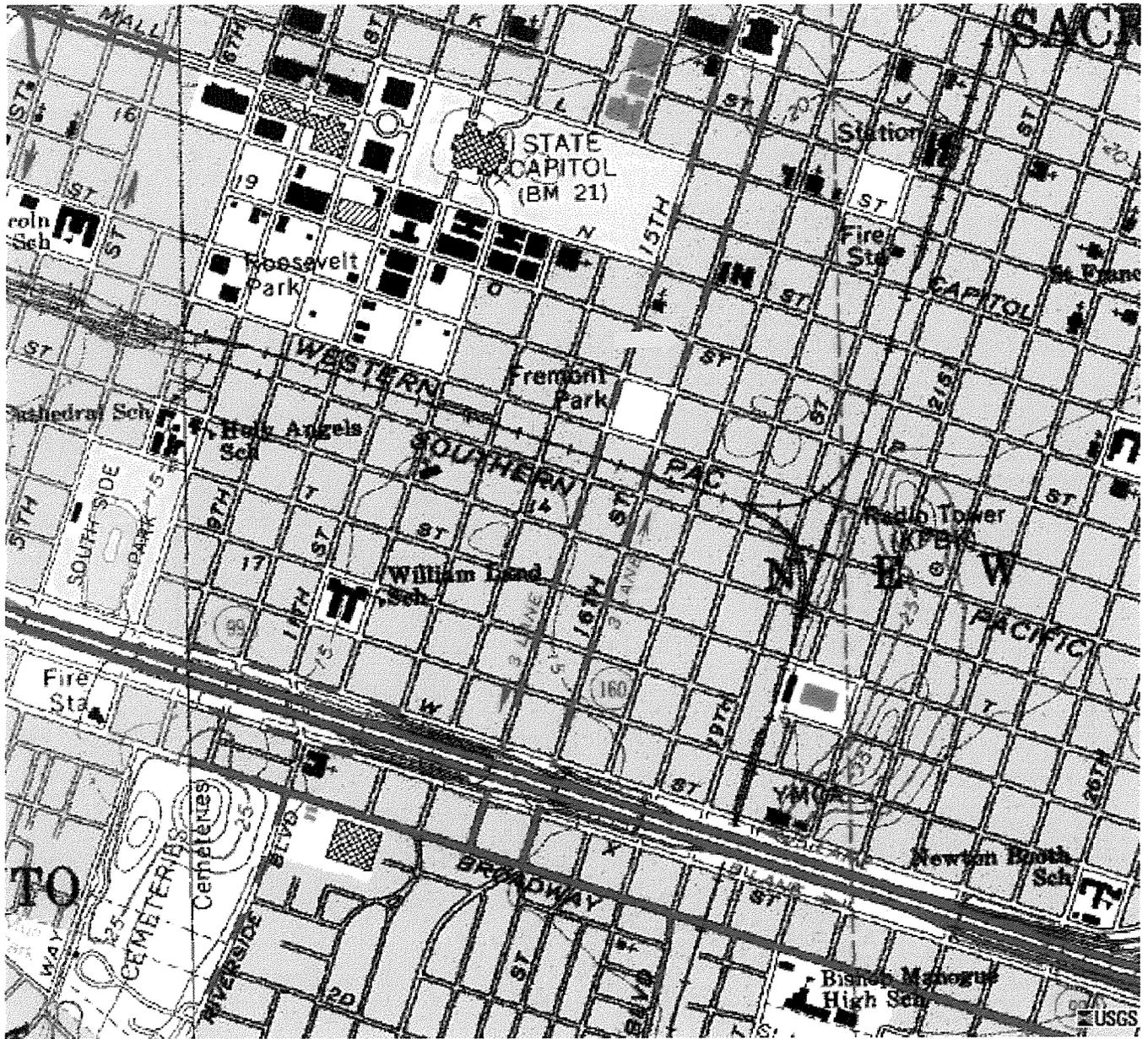
Total Petroleum Hydrocarbons includes analysis for diesel and motor oil.
 ND = Not Detected; NT = Not Tested. Results in **bold** exceed regulatory threshold (150 mg/kg for lead).
 Complete Laboratory Analytical Results and Chain-of-Custody documentation are enclosed

TABLE 2 Analytical Results of Soil Samples						
Sample ID	Total Petroleum Hydrocarbons (reported in mg/kg)	Benzene	Toluene	Ethylbenzene	Xylenes	Total Lead (reported in mg/kg)
		(Reported in ug/kg)				
GB1-8'	ND (<1.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<10)	7.2
GB1-12'	ND (<1.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<10)	NT
GB1-16'	ND (<1.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<10)	NT
GB1-20'	ND (<1.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<10)	NT
GB2-8'	ND (<1.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<10)	7.1
GB2-12'	ND (<1.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<10)	NT
GB2-16'	ND (<1.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<10)	NT
GB2-20'	ND (<1.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<10)	NT
GB3-8'	ND (<1.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<10)	6.9
GB3-12'	ND (<1.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<10)	NT
GB3-16'	ND (<1.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<10)	NT
GB3-20'	ND (<1.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<10)	NT

Total Petroleum Hydrocarbons includes analysis for gasoline, kerosene, diesel, mineral oil, hydraulic oil, and motor oil
 ND = Not Detected, NT = Not Tested
 Complete Laboratory Analytical Results and Chain-of-Custody documentation are enclosed.

TABLE 3 Analytical Results of Groundwater Samples (reported in ug/l)		
Sample ID	Total Petroleum Hydrocarbons	Volatile Organic Compounds
GB1-W	ND (<50)	ND (<0.5 - 10) for all constituents, except: chloroform - 0.94 cis-1,2-dichloroethene - 1.3 tetrachloroethene - 1.3
GB2-W	ND (<50)	ND (<0.5 - 10) for all constituents, except: chloroform - 1.1 cis-1,2-dichloroethene - 1.0 tetrachloroethene - 0.97
GB3-W	ND (<50)	ND (<0.5 - 10) for all constituents, except: chloroform - 1.1 cis-1,2-dichloroethene - 3.4 tetrachloroethene - 1.6

Total Petroleum Hydrocarbons includes analysis for gasoline, kerosene, diesel, mineral oil, hydraulic oil, and motor oil
 ND = Not Detected. Complete Laboratory Analytical Results and Chain-of-Custody documentation are enclosed.



SCALE: 1" = 2000'



SOURCE: USGS 7.5' TOPOGRAPHIC MAPS
WEST/EAST SACRAMENTO, CALIF., 1994

SITE LOCATION MAP
 PROPOSED EAST END GATEWAY PROJECT
 1422/1510 16th Street
 Sacramento, California



EEI

Expertise . . . Service . . . Solutions

FIGURE 1

Parking Lot

JA-PL2 JA-PL1

JA-PL3

Floor Drain

JA-FD

Hoist #2 Hoist #1

Hydraulic Lift Location

JA-PL4

Suspected Former Oil/
Water Separator Location

Shed

JA-OWS

Parking Lot

Japanese Imports

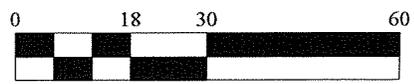
Driveway

JA-PL5

16th Street

O Street

APPROXIMATE SCALE: 1" = 30'



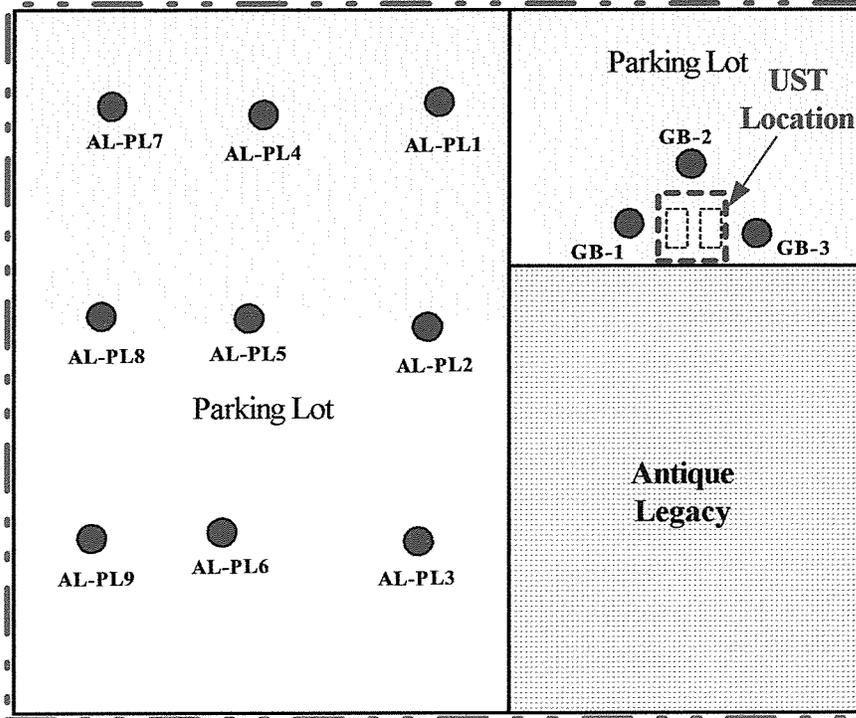
All Locations Are Approximate

SAMPLING PLAN
FORMER JAPANESE IMPORTS AUTOMOTIVE
1422 16th Street
Sacramento, California



FIGURE 2

O Street



16th Street

APPROXIMATE SCALE: 1"=50'



All Locations Are Approximate

SAMPLING PLAN
FORMER ANTIQUE LEGACY
1510 16th Street
Sacramento, California



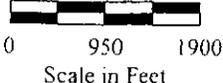
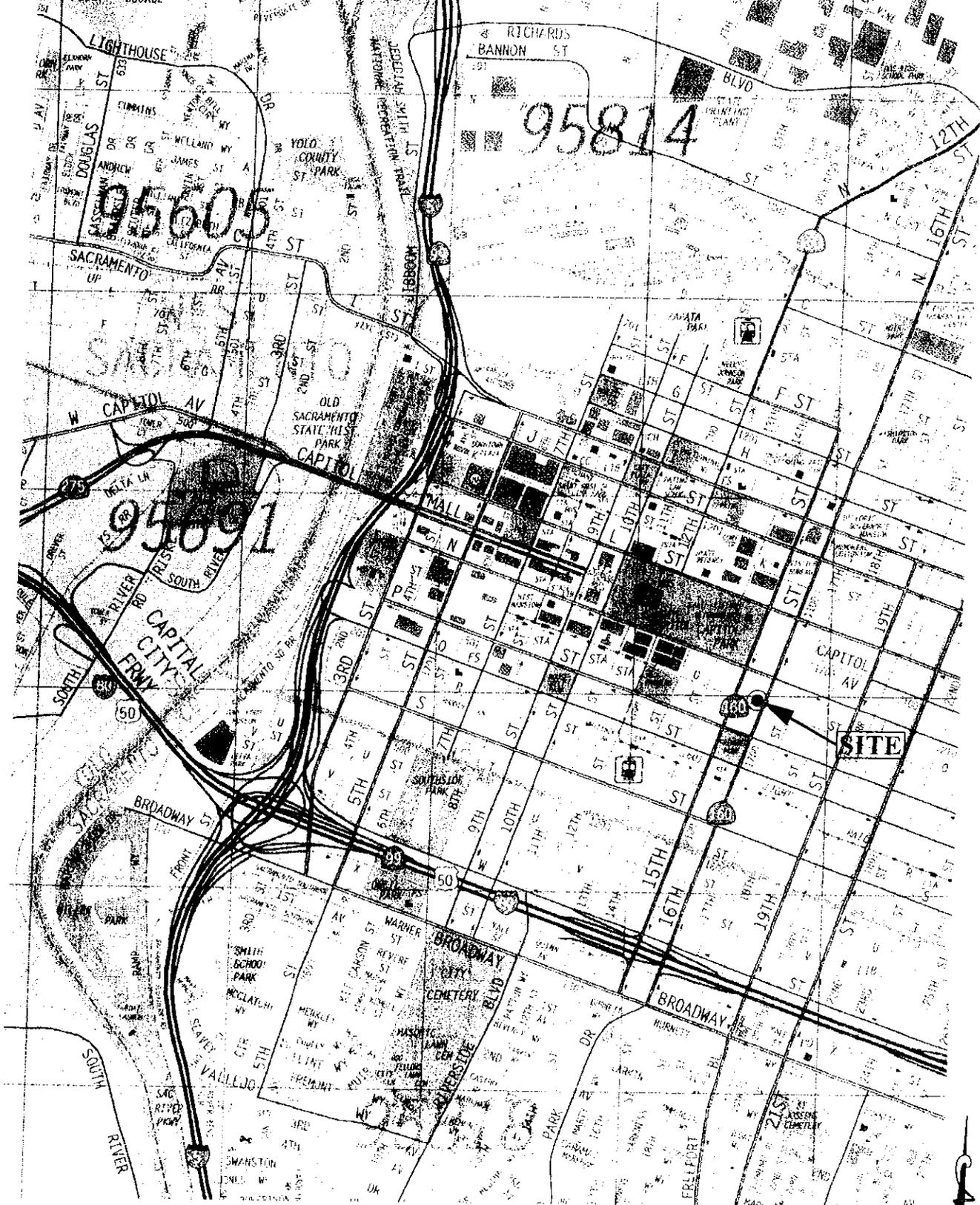
EEI

FIGURE 3

TABLE I
SUMMARY OF ANALYTICAL RESULTS FOR WATER SAMPLES
 Reported in µg/l (parts per billion)

SAMPLE DATA		EPA METHOD 800B CHLORINATED HYDROCARBONS Chromatim			Tetrahydroethene
Sample Designation	Date Sampled	cis-1,2-Dichloroethene			
GP2-W	8/28/01	1.3	1.5	0.52	
GP4-W	8/28/01	1.1	1.8	0.72	
GP5-W	8/28/01	1.6	1.6	1.6	
Maximum Contaminant Levels (MCL)*		6	80	5	

Note: *= Drinking Water Standards from the California Department of Health Services



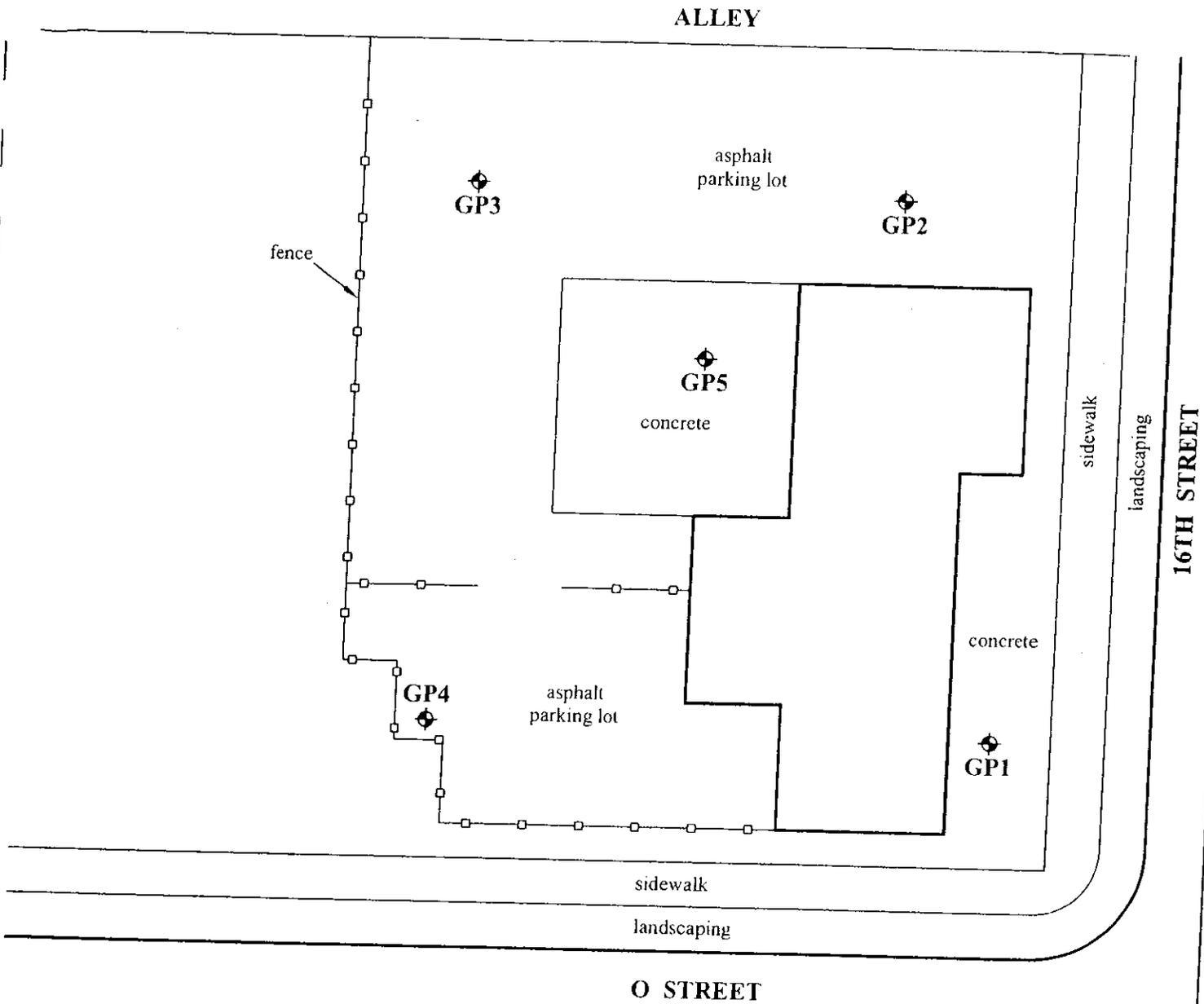
Adapted from the Thomas Guide
Sacramento County Street Guide
and Directory, 2001 edition.



WALLACE • KUHL & ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING
GEOLOGIC & ENVIRONMENTAL SERVICES

VICINITY MAP
1422 16th STREET
Sacramento, California

WKA NO: 4916.01
DATE: 9/01
PLATE NO: 1



Legend:
 ◆ - Approximate geoprobe locations

Note:
 Adapted from field measurements.



NOT TO SCALE

WALLACE • KUHL & ASSOCIATES, INC.
 GEOTECHNICAL ENGINEERING
 GEOLOGIC & ENVIRONMENTAL SERVICES

SITE PLAN
 1422 16th STREET
 Sacramento, California

WKA NO: 4916.01
 DATE: 9/01
 PLATE NO: 2

APPENDIX B
WORK PLAN AND APPROVAL LETTER, CITY AND COUNTY PERMITS
AND USA TICKET



2420 Del Paso Road, Suite 250
Sacramento, California 95834
Tel: (916) 773-2600
Fax: (916) 782-4846

December 6, 2013
Project No. 04.72120008

Regional Water Quality Control Board
Central Valley Region
11020 Sun Center Drive, #200
Rancho Cordova, CA 95670

Attention: Mr. Nathan Casebeer

Subject: Work Plan – Data Gap Investigation Activities for Fiscal Year 2013/2014,
Mercury Cleaners Site Area, 1419 16th Street, Sacramento, California

Dear Mr. Casebeer:

On behalf of the State of California Department of General Services (DGS), Fugro Consultants, Inc. (Fugro) presents this Work Plan to conduct additional Site investigation activities at, and in the vicinity of Mercury Cleaners, located at 1419 16th Street in Sacramento, California (Site). Select studies have been conducted for this Site by others which suggest that soil, soil-vapor, and groundwater have been impacted by dry cleaner chemical releases. Additional studies are necessary to fill in data gaps to facilitate the development of a Conceptual Site Model. A number of possible investigation and source removal tasks were discussed with Central Valley Regional Water Quality Control Board (CVRWQCB) staff in a meeting held on September 10, 2013. The purpose of this Work Plan is to describe those investigation activities that will be completed during the Fiscal Year 2013/2014 (FY 13/14) to further evaluate source area and boundary conditions for Site releases, as well as preferential migration pathways.

SETTING AND BACKGROUND

The Site occupies the southeast corner of the intersection of 16th Street and the N-O Street Alley in downtown Sacramento as shown on Plate 1. The Site encompasses an approximately 0.29 acre level lot in a densely developed urban setting. A commercial building, approximately 6,200 square foot in size and varying in height from one to two stories, and a parking lot comprise Site improvements. The building comprises several interconnected structures, constructed at various times and used for different commercial activities including dry cleaning activities. Dry cleaning activities have been conducted at the Site since the late 1940's.

Mercury Cleaners, a commercial dry cleaning business, occupies the lower floor areas throughout the structure; one other professional service tenant occupies the second floor space. Most of the building is constructed with an at-grade slab-on-grade floor; however a basement previously used as a workshop and for miscellaneous storage is situated below a portion of the northernmost part of the structure (adjacent to the N-O Street Alley).



The chemical dry cleaning process is primarily conducted in the portion of the building which is located in the northeast corner of the Site. Based on our Site reconnaissance's, and brief discussions with the current dry cleaning operator, tetrachloroethene (PCE)-based dry cleaning solvents have not been used at the Site since about 2005, however, since then a naphtha based product has been in use. Floor cracks and floor patches from previous machine equipment are visible throughout the dry cleaning and conventional washing areas. Additionally, the concrete floor throughout the building is traversed by shallow trench drains, some of which are partially covered by metal grates. Reportedly, the drains were used to channel dry cleaning and conventional wash water through filters and into the sanitary sewer system, likely at a time when the City of Sacramento was using a combined sanitary/storm sewer system. It has been observed that some of the drains are still used to convey conventional wash water and condensates from the Site, however, the current dry cleaning equipment is self-containing its waste stream which is periodically removed from the Site by a hazardous waste hauler.

Four underground storage tanks (UST), believed to be previously associated with the dry cleaning business, still exist below a small carport located between two of the building areas. These tanks are inactive and have reportedly not been in use since at least 2000. Access to the UST area is provided from the N-O Street Alley. The tanks were checked for the presence of product in 2011; reportedly three of the four tanks were found to be dry and one tank contained some clear liquid which was chemically tested to contain 5.3 micrograms per liter ($\mu\text{g/L}$) of PCE and 0.5 $\mu\text{g/L}$ of Stoddard Solvent. In August 2012 the tank ports were again checked for the presence of liquid and two of the tanks contained 1 to 2 inches of clear liquid; no testing was conducted. The tanks were noted to vary from 9 to 13 feet deep. Records suggest that the tank capacities are as follows: one-550 gallon horizontal tank, two-550 gallon vertical tanks with cone bottoms, and one-275 gallon horizontal tank. Two additional pipe penetrations were also noted in the carport in 2012, but the penetrations could not be opened.

Limited data collected by others in the Site area suggests that volatile organic compounds (VOCs) including PCE and its degradation products, and petroleum hydrocarbon fuel constituents have impacted the subsurface environment, potentially impacted existing structural materials at the Site due to past usage and spillage, and have resulted in impacts to indoor air quality (Geocon 2008 and Ninyo & Moore 2006). Studies conducted by Geocon in 2011 further indicated that the nearby property north of the N-O Street Alley and immediately adjacent to the patio area of Simons Restaurant (1413 16th Street) has also been chemically impacted (Geocon 2011). In addition, indoor air quality has been impacted by vapor intrusion from the subsurface environment as documented through indoor air quality surveying conducted by Fugro in February 2012 (Fugro 2012).

WORK PLAN FOR FY 13/14 DATA GAP INVESTIGATION ACTIVITIES

Studies conducted to date have not assessed the lateral or vertical impacts to soil, soil-vapor or groundwater in the primary source areas identified to date as the dry cleaning rooms and the UST area. Fugro proposes a multi-media investigation to further evaluate source area and boundary conditions for Site releases, as well as preferential migration pathways. The



investigation will include the completion of a utility survey, and exterior and interior subsurface investigations to evaluate lateral and vertical limits of impacts to soil, groundwater, and/or soil-vapor at and in the vicinity of Mercury Cleaners. Fugro will also complete a second round of indoor air testing at Mercury and the adjacent Simon's Restaurant. Proposed sampling points are shown on Plates 2 and 2A; details of the investigation task are briefly described in this section. At the completion of the studies, a comprehensive report including all previous study data will be prepared for submittal to the CVRWQCB.

All investigation activities will be conducted using standard industry practices for sample collection, sample handling, equipment decontamination, and worker safety. In addition, City of Sacramento encroachment permits and County of Sacramento Environmental Management Department permits will be obtained for the work.

Interior sampling activities outlined herein are proposed for weekend work periods to minimize the disturbance to the existing Mercury Cleaners business. In addition, the work is scheduled to begin in early January 2014 while the existing dry cleaning equipment room is undergoing modifications to meet current Fire Code requirements.

Utility Survey

Fugro and Kimley Horn will map utility lines within the N-O Street Alley and 16th Street right-of-ways near the Site to assist with the assessment of preferential migration pathways. Mapping will include documentation of both wet and dry utility alignments, flow line depths, flow direction, size of pipelines, service connection points, and points of intersection of pipeline trenches. In addition, an attempt will be made to video inspect the existing sewer service from the building to the public sewer and the section of the public sewer between the manhole immediately upstream of the Mercury Cleaners service connection and the manhole immediately downstream of the connection. The approximate limit of the proposed survey area is shown on Plate 2.

Soil-Vapor Survey

Soil-vapor sampling will be conducted in general accordance with guidelines provided by the California Department of Toxic Substances Control (DTSC) in their Advisory Active Soil Gas Investigation, April 2012 documentation. Field work will be conducted using TEG North America (TEG) and most samples will be tested using their mobile laboratory.

Fugro will mark the proposed boring locations and will notify Underground Service Alert (USA) a minimum of 48 hours prior to the start of intrusive field activities. Attempts will be made to locate subsurface utility lines by a private utility locator. Using limited access direct-push and/or hand auger methodologies, Fugro will complete the following to evaluate the lateral and vertical extent of impacts to soil-vapor in and around the vicinity of the dry cleaning machine use area and UST areas (suspected source area) as illustrated on Plates 2 and 2A. Soil-vapor sampling will also be conducted in the N-O Street Alley due to previous positive findings at the

adjacent Simons property, and at other locations to bracket the area of impact. Proposed sampling points include:

- Up to ten (10) probes within the interior of Mercury Cleaners
- Up to two (2) probes within the carport (UST Area)
- Up to five (5) probes within the N-O Street Alley
- Up to two (2) probes within the southern parking lot

This work will be scheduled to be completed over one weekend to minimize impact on the existing business. As a result, Fugro will attempt to complete as many of the probes listed above as possible during the first study weekend.

Each soil-vapor probe will be completed to a depth of 5 feet below ground surface (bgs) using ¼ inch Teflon tubing fitted with a ¼ inch diameter sampling point with a compression fitting. After the drill rod is retracted, the Teflon tubing and sampling point will be emplaced within the borehole midway between a one foot thick sand pack. One foot of dry granular bentonite will be placed over the sand pack, followed by hydrated bentonite grout to the surface to prevent infiltration of ambient air.

Probes will be allowed to stabilize undisturbed for approximately 30 minutes prior to purging and sampling. Each probe will be fitted with a flow regulator and particulate filter placed in-line to maintain a 100-200 cc (ml) per min flow rate and prevent influx of soil particles into samples containers while purging or collecting soil gas samples.

Samples will be collected from the soil-vapor probes using a 50 cubic centimeter glass syringe, connected to the ¼ inch Teflon tubing surface point via an on-off valve. Prior to sample collection, a purge volume test will be conducted at the beginning of the soil-vapor survey to purge ambient air from the sampling system. Three different volumes will be sampled and analyzed immediately using an onsite mobile laboratory to determine the Site-specific draw volume with the highest concentration. Based on the result of the purge volume test, a purge volume will be determined and used during the entire soil-vapor investigation.

A tracer compound will be used during the soil-vapor sampling investigation to test for leaks around the ground surface and near the syringe sampling system. Given that the syringe sample collection system is immediately ready to draw a sample and there is no waiting time, a shroud will not be used in the sampling train following application of the tracer gas.

Once soil-vapor samples are obtained, they will be immediately analyzed using an onsite mobile laboratory. Soil-vapor samples will be analyzed for VOCs using EPA Test Method 8260, and naphtha using EPA Test Method 8270.

After sample collection, the sampling components will be removed and each probe will then be backfilled with neat cement grout placed under observation or approval by County of Sacramento Environmental Management Department.



Soil and Grab Groundwater Investigation

Based on the results of the soil-vapor investigation, Fugro will collect soil and grab groundwater samples from companion probes installed adjacent to selected soil-vapor sampling locations described above. This work will also be completed using hand augering equipment, or direct push drilling equipment. Similar to the soil-vapor sampling, the scheduling of any interior points will be completed during a weekend work period to minimize impact on the existing business. Exterior locations will be conducted during a normal work week. Depending on Site conditions, our goal will be to collect soil and grab groundwater samples from up to 6 interior and 6 exterior locations.

Probes will be completed to a maximum depth of 20 feet bgs. Fugro will screen the soil in the field using visual and olfactory methods, as well as a Photoionization Detector (PID). Soil samples will be retained in stainless steel tubes or plastic liners, sealed with Teflon sheets and plastic end caps. Select soil samples will be analyzed by either the onsite mobile laboratory or a stationary state-certified testing laboratory for some or all of the following:

- Total Petroleum Hydrocarbons as gasoline (TPHg) using EPA Method 8015/8260b;
- Total Petroleum Hydrocarbons as diesel and motor oil (TPHd and TPHmo) using EPA Methods 8015m, with silica gel cleanup;
- VOCs using EPA Method 8260; and/or
- Naphtha using EPA Method 8270.

Where encountered, grab groundwater samples will be obtained from the boreholes from pre-cleaned 1-inch diameter machine slotted well screens placed into the holes. The groundwater samples will be collected and retained in pre-cleaned laboratory-supplied containers, stored in cooled ice-chests, and transported to a state-certified analytical laboratory under chain-of-custody documentation. These samples will be analyzed for the following:

- TPHg using EPA Method 8015/8260b;
- TPHd and TPHmo using EPA Methods 8015m, with silica gel cleanup;
- VOCs using EPA Method 8260; and
- Naphtha using EPA Method 8270.

Following sample collection, the temporary casings will be removed and the probe holes will be backfilled with cement grout placed under observation or approval by County of Sacramento Environmental Management Department. Investigation derived wastes will be placed in labeled 55-gallon drums which will be relocated to a secure location at the Site where they will be temporarily stored pending classification and offsite disposal.



Indoor Air Quality Monitoring

The purpose of the proposed air quality investigation is to conduct further monitoring of VOC impacts to indoor air, thus providing more data upon which to evaluate potential human health risks and to determine what, if any, additional engineering controls may be necessary. Indoor air monitoring will be conducted following guidelines provided by the DTSC.

Mercury Cleaners Monitoring – Supplemental indoor air quality monitoring is required to provide data following a change in the ventilation fan operation in the dry cleaning equipment room and to provide additional data representative of concentrations over the anticipated daily exposure period for building occupants. For this monitoring Fugro will collect air samples over a 24 hr and an 8 hr period. The 24 hr air sample results will be directly comparable to the data Fugro collected in February 2012 and Fugro will be able to comment on the significance of any change in data following a modification of the ventilation fan operation. The 8 hr test will be used for comparison to future periodic monitoring events.

Simon's Restaurant Monitoring – Supplemental indoor air quality monitoring is required to provide data following a change in the stove hood operation in the kitchen area and to provide additional data representative of concentrations over the anticipated daily exposure period for building occupants. For this monitoring Fugro will collect air samples over a 24 hr and an 8 hr period. The 24 hr air sample results will be directly comparable to the data Fugro collected in February 2012 and Fugro will be able to comment on the significance of any change in data following a modification of the hood operation. The 8 hr test will be used for comparison to future periodic monitoring events. For this property the 8 hr test locations will be obtained from within the kitchen and bathroom locations.

During each test event, Fugro will also use a PID to obtain measurements for quality control purposes, Fugro will also collect one duplicate and one background air sample concurrent with the test event. The background air sample will be collected from a secure location at a location defined in consultation with the DGS. The background air sample is to represent ambient air conditions during the test event.

Indoor air samples will be submitted under chain-of-custody documentation to a state-certified testing laboratory and will be analyzed for VOCs using EPA Method TO-15 SIM.

Comprehensive Data Report

Fugro will prepare a comprehensive data evaluation report which will summarize all studies completed by Fugro and other consultants to date for the Site. The report will also include a preliminary assessment of the extent of impacts based on this data, proposed locations for groundwater monitoring wells, recommend additional data gap studies, and possible interim remediation strategies.

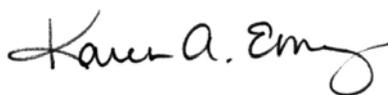
CLOSING STATEMENT

At the request of DGS, Fugro has tentatively scheduled the proposed activities described herein to begin on January 4, 2014. Procurement of necessary permits is underway. Fugro respectfully requests RWQCB expedited review of this Work Plan and would appreciate receiving any comments by December 23, 2013.

If you should have any questions or comments, please feel free to contact the undersigned at (510) 268-0461.

Sincerely,

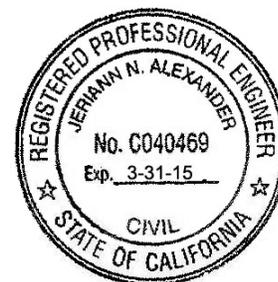
FUGRO CONSULTANTS, INC.



Karen A. Emery, P.G.
Senior Geologist



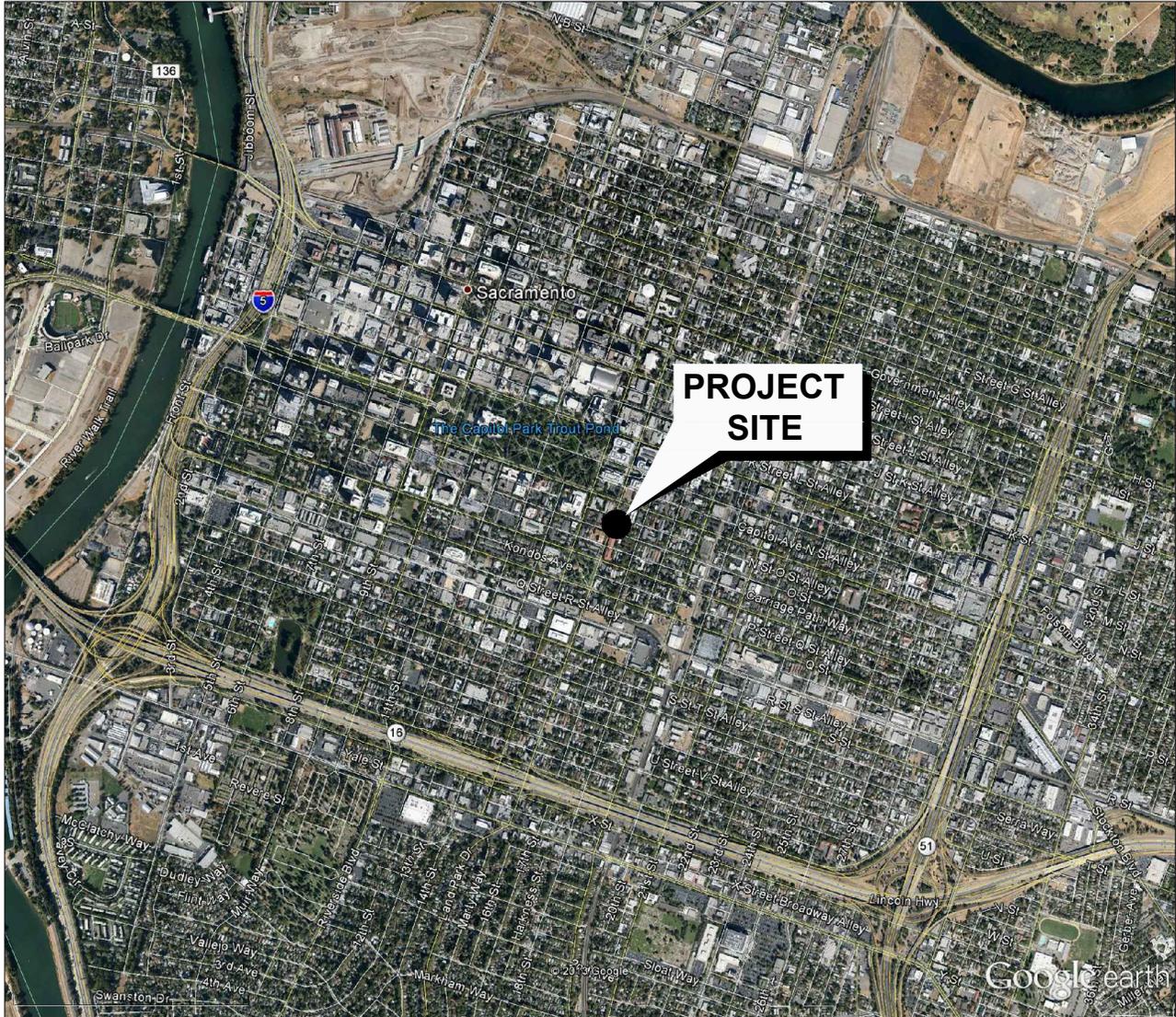
Jerriann Alexander, P.E., REPA
Principal Engineer



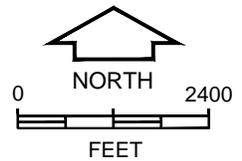
KAE/JNA:ke

Copies Submitted: (1 Hardcopy + PDF) Addressee
(5 Hardcopies + PDF on CD), Mr. Daniel O'Brien, DGS

Attachments: Plate 1 - Vicinity Map
Plate 2 - Proposed Investigation Plan
Plate 2A - Proposed Investigation Plan - Detail 2A

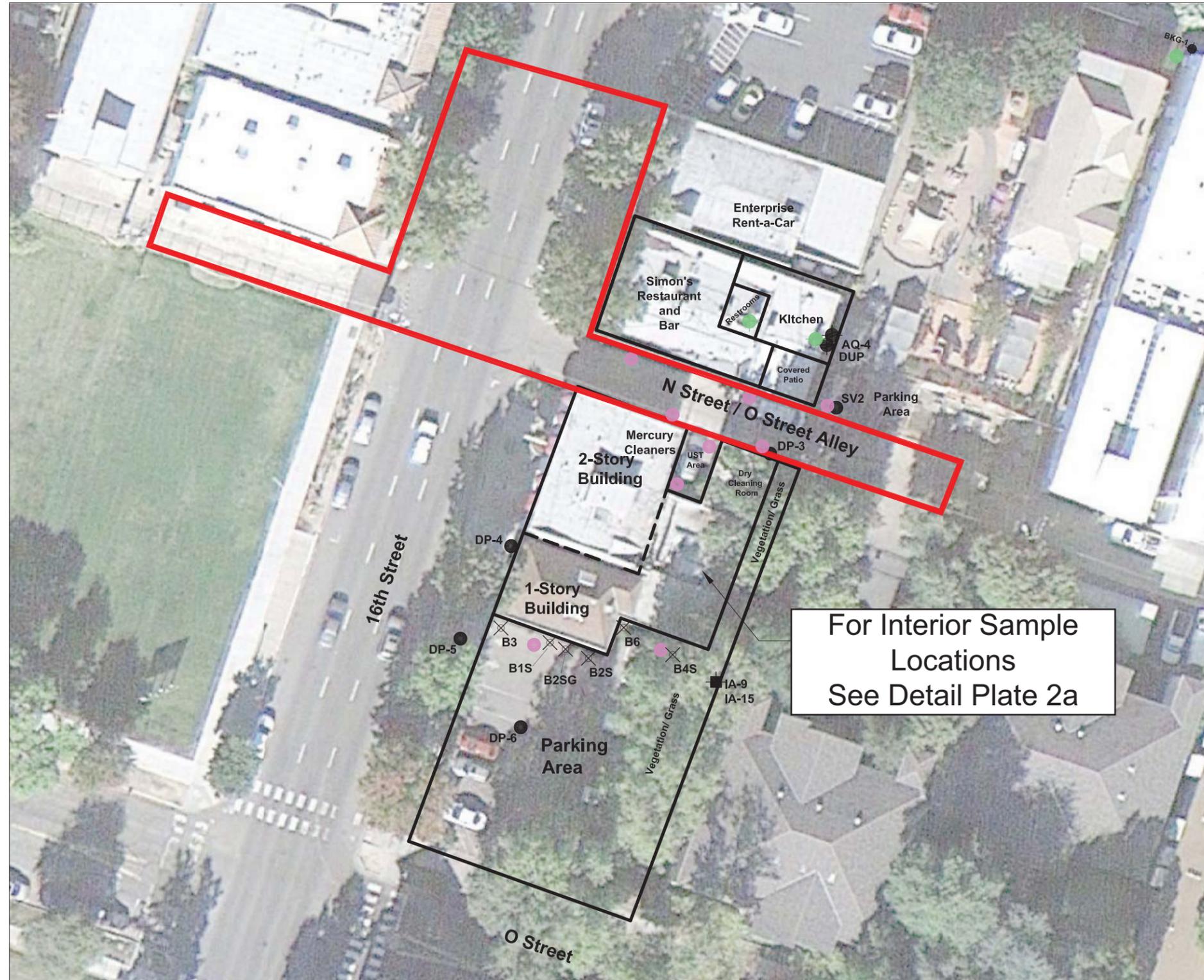


BASE MAP SOURCE: Google Earth Pro 2013, Aerial photograph.

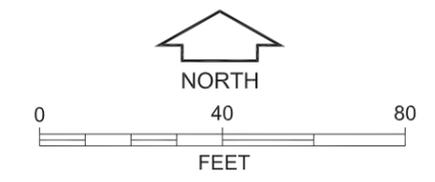


VICINITY MAP
Mercury Cleaners
Sacramento, California

M:\Drafting\JOBFILES\2013\04_72120008\Phase 1\Drawings\A04_72120008-01 vicn.dwg 12-05-2013 - 8:32am



- LEGEND**
- AQ-5 Approximate location of Fugro's AQ Sample
 - DP-5 Approximate location of Geocon's Soil-Gas Sample
 - IA-15 Approximate location of Geocon's Indoor Air Sample
 - B1S Approximate location of Ninyo & Moore's Boring
 - Approximate location of Proposed Soil, Groundwater, and/or Soil-Vapor Probe
 - Approximate location of Proposed AQ Sample
 - Approximate Area of Utility Survey

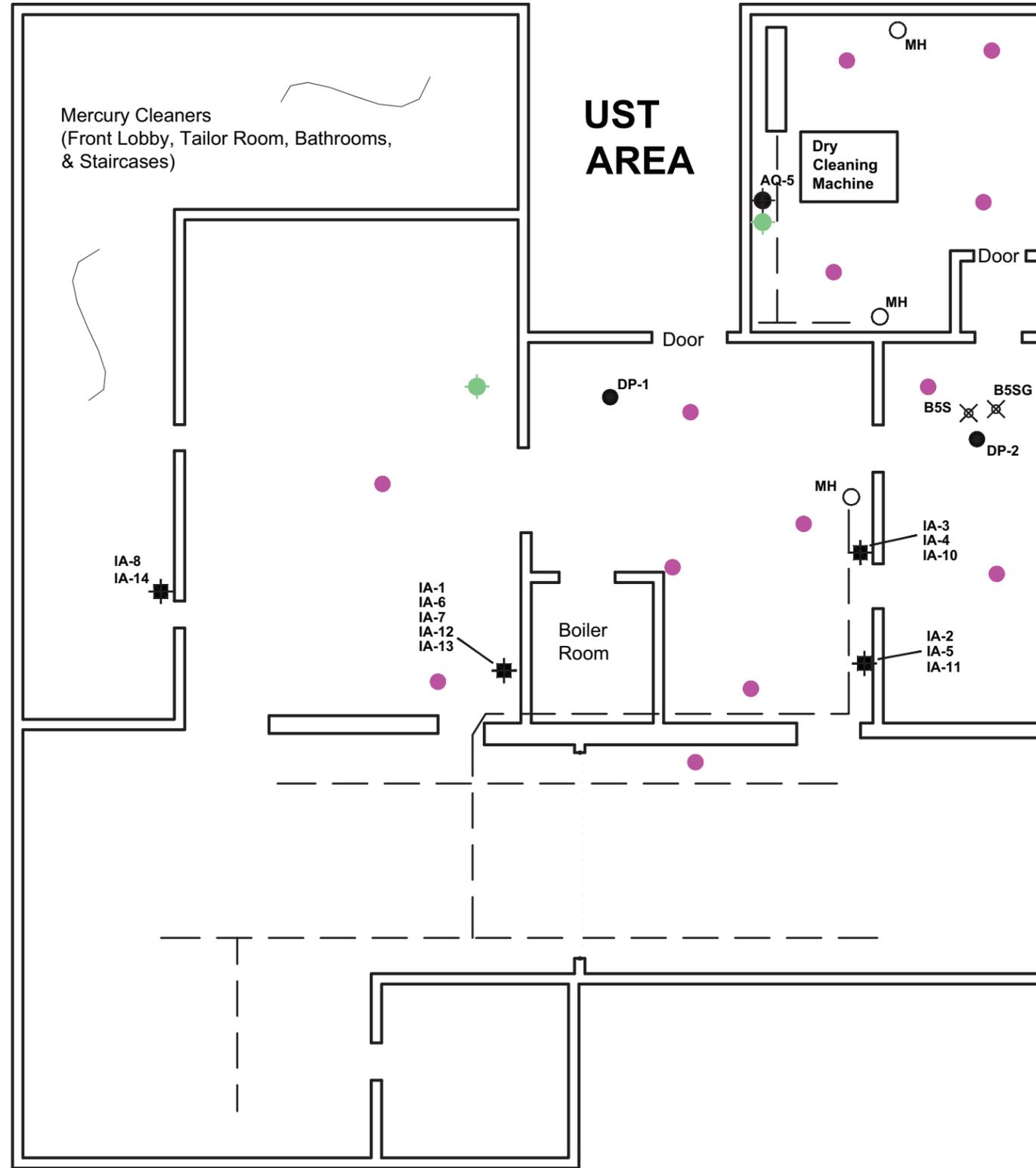


PROPOSED INVESTIGATION PLAN
 Mercury Cleaners
 Sacramento, California

M:\Drafting\JOBFILES\2013\04.72120008\Phase 14\Drawings\B04.72120008-02 PIP.dwg 12-04-2013 - 2:13pm

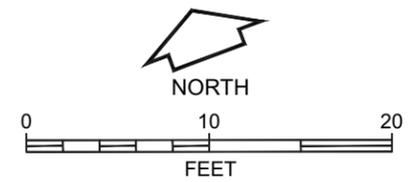
BASE MAP SOURCE: Aerial photograph provided by Google Earth Pro 2011.

N-O STREET ALLEY



LEGEND

- Approximate location of manhole
- Approximate location of floor drainage channels
- Approximate location of Fugro's AQ Sample
- Approximate location of Geocon's Soil-Vapor Sample
- Approximate location of Geocon's Indoor Air Sample
- Approximate location of Ninyo & Moore's Boring
- Approximate location of Proposed Soil, Groundwater, and/or Soil-Vapor Probe
- Approximate location of Proposed AQ Sample



PROPOSED INVESTIGATION PLAN - DETAIL 2A
 Mercury Cleaners
 Sacramento, California

M:\Drafting\JOBFILES\2013\04.72120008\Phase 14\Drawings\B04.72120008-02a Floor plan.dwg 12-04-2013 - 2:14pm

Central Valley Regional Water Quality Control Board

18 December 2013

Daniel P. O'Brien
Chief, Environmental Services
Real Estate Services Division, Professional Services Branch
State of California Department of General Services
707 Third Street, 3rd floor, Suite 401
West Sacramento, CA 95605

REVIEW OF WORK PLAN – DATA GAP INVESTIGATION ACTIVITIES FOR FISCAL YEAR 2013/2014, MERCURY CLEANERS, 1419 16TH STREET, SACRAMENTO, SACRAMENTO COUNTY

Central Valley Regional Water Quality Control Board (Central Valley Water Board) staff reviewed the 6 December 2013 *Work Plan – Data Gap Investigation Activities for Fiscal Year 2013/2014* prepared by Fugro Consultants, Inc. on behalf of the State of California Department of General Services (DGS) for the Mercury Cleaners site located at 1419 16TH Street in Sacramento. The purpose of the proposed scope of work is to further investigate the site source(s) of pollution as well as preferential pathways to develop a Conceptual Site Model for releases of tetrachloroethene (PCE) and petroleum hydrocarbon constituents to soil and groundwater beneath the site.

Fugro proposes a source area investigation that includes a utility survey, soil vapor survey, soil and groundwater sampling, and indoor air sampling. The utility survey will include the N-O Street Alley and 16th Street in front of the site as well as a video inspection of the building and public sewer in this area. The soil vapor survey will utilize a mobile laboratory and limited access direct-push and/or hand auger tools. Following the soil vapor investigation, soil and grab groundwater samples will be collected adjacent to selected soil vapor sampling locations. Indoor air sampling will be conducted to further evaluate previously identified vapor intrusion and the efficacy of previously implemented institutional controls.

Soil vapor probes are proposed in and around the vicinity of the dry cleaning machine use area, underground storage tank (UST) area, and within the N-O Street Alley. Up to 10 probes are proposed within the interior of the Mercury Cleaners building, up to 2 within the UST area, up to 5 within the N-O Street Alley, and up to 2 within the southern parking lot. Each soil vapor probe will be 5 feet deep and will consist of a sampling point set within a one-foot sand pack and

attached by Teflon tubing to the surface. Bentonite will be filled above the sand pack to the ground surface. These soil vapor probes will be purged and sampled in accordance with Department of Toxic Substances Control guidelines including leak checking and conducting a purge volume test. Soil vapor samples will be collected at each of these locations in a glass syringe for analysis of volatile organic compounds (VOCs) by EPA Method 8260 using an on-site mobile laboratory.

Following the soil vapor investigation, Fugro proposes to collect soil and grab groundwater samples from hand auger or direct push borings located adjacent to selected soil vapor sampling locations. Up to 6 interior and 6 exterior locations will be sampled, with maximum boring depths of 20 feet below ground surface. Selected soil samples and grab groundwater samples will be analyzed for total petroleum hydrocarbons (TPH) as gasoline by EPA Method 8015/8260B, TPH as diesel and motor oil using EPA Method 8015M, with silica gel cleanup, VOCs using EPA Method 8260, and semi-VOCs using EPA Method 8270.

Fugro proposes indoor air monitoring within the Mercury Cleaners and Simon's Restaurant as a followup to indoor air sampling conducted in February 2012. Based on concentrations of PCE detected in those locations at the time, changes to building operations were proposed. The indoor air sampling will help determine if any additional engineering controls may be needed at the present time. Both 8-hour and 24-hour samples will be collected and analyzed for VOCs using EPA Method TO-15 SIM.

Central Valley Water Board staff generally concurs with the proposed scope of work outlined in the work plan. Please note and incorporate the following comments into the work implementation:

- As part of the utility survey, the additional pipe penetrations noted in the carport in 2012 should be investigated if possible.
- Sampling locations should be adjusted based on the results of the utility survey. In particular, sample locations should be positioned in proximity to any possible sewer line breaks or perforations as identified during the video inspection.
- Initial sample locations should focus on potential release areas where solvents and wastes were delivered, stored, used, and/or disposed. A good review of these potential source areas is included in the report by the State Coalition for Remediation of Drycleaners titled *Conducting Contamination Assessment Work at Drycleaning Sites* revised October 2010 and available at <http://www.drycleancoalition.org/download/assessment.pdf>
- Sampling for soil and groundwater is proposed to a maximum depth of 20 feet below ground surface. Boreholes for groundwater sampling should be drilled deeper if necessary to collect first encountered groundwater. Some previous borings drilled at the site by Ninyo & Moore went as deep as 24 feet to collect groundwater that was encountered at 20 feet.

- Silica gel cleanup is proposed for the TPH as diesel and motor oil analyses. Any sample locations that are analyzed following a silica gel cleanup must also be analyzed separately without silica gel cleanup and both results reported.
- Where other TPH ranges are reported, laboratory results should also include quantification of TPH as Stoddard Solvent.
- The use of a shroud during soil vapor sample collection is preferred because it can provide a means to quantitatively estimate leakage into a sample, if any, and provide allowance for a small percentage leak. Without a shroud, any detection of tracer in the sample may require collection of a new sample or may even require a replacement sampling point location.

Please notify Central Valley Water Board staff at least one week prior to conducting the field activities to provide us the opportunity to observe the work. Based on the schedule provided by DGS, an investigation report is due to this office by 30 June 2014. Recommendations in the report should focus on interim remediation of any source areas identified during the investigation.

If you have any questions regarding this letter please contact me at (916) 464-4665 or ncasebeer@waterboards.ca.gov.

ORIGINAL SIGNED BY

Nathan Casebeer, P.G.
Engineering Geologist
Private Sites Cleanup Unit

cc: Jeriann Alexander, Fugro Consultants, Inc., Sacramento



County of Sacramento

Well Program Contact List

Cheryl Hawkins,
Supervising Environmental Specialist
(916) 875-8429 (office)
(916) 591-2638 (cell)
Hawkinsc@saccounty.net

Susan Williams, Permitting/Enforcement
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(916) 591-2687 (cell)
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Sophia Johnston, Small Water Systems
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(916) 591-0823 (cell)
Johnstons@saccounty.net

Lisa Christy, Permitting
(916) 875-8466 (office)
(916) 261-3490 (cell)
ChristyL@saccounty.net

Accounting/Cashiering
(916) 875-8481, (916) 875-8485 or (916) 875-8599

Well Inspection Scheduling (916) 875-8524

Field Inspectors

Name	Office Phone	Cell Phone
Jack Bellan	(916) 876-7560	(916) 202-8689
Sue Erikson	(916) 875-8433	(916) 591-2635
Terry Kociemba	(916) 875-8504	(916) 591-1205
Charley Langer	(916) 875-8474	(916) 591-2648
David Von Aspern	(916) 875-8467	(916) 591-2679



WELL APPLICATION AND PERMIT FORM

ENVIRONMENTAL MANAGEMENT DEPARTMENT – ENVIRONMENTAL COMPLIANCE DIVISION
10590 ARMSTRONG AVENUE • SUITE A • MATHER, CA 95655
TELEPHONE (916) 875-8400 FAX: (916) 875-8513

WELL INSPECTION LINE: (916) 875-8524

AR 66913

IS THIS PERMIT FOR A HAZARDOUS SUBSTANCE INVESTIGATION? YES NO

FOR OFFICE USE ONLY		EXPEDITED PROCESSING? <input type="checkbox"/> YES <input type="checkbox"/> NO	
<input type="checkbox"/> APPROVED	<input checked="" type="checkbox"/> APPROVED W/CONDITIONS (ATTACHED)	PERMIT NUMBER(S): <u>53499 (A-V)</u>	
BY: <u>EBN</u>	DATE: <u>12/19/13</u>	DATE RECEIVED: <u>12/13/13</u>	TOTAL FEE: <u>476</u>
INITIAL GROUT BY: _____	DATE: _____	RECEIPT NO: <u>346139</u>	DEPTH TO WATER: _____
FINAL INSPECTION BY: _____	DATE: _____	WELL DEPTH: _____	GROUT DEPTH: _____
DESTRUCTION BY: _____	DATE: _____	GPS: N: <u>38</u>	W: <u>-121</u>
COMMENTS: _____			

SITE ADDRESS: <u>1419 16th Street, Sacramento, CA</u>	
Job Address: <u>1419 16th Street</u>	Nearest Major Cross Street: <u>N Street</u>
Property Owner: <u>State of CA, Dept. of General Services</u>	Parcel Number(s): <u>006-0233-023-0000</u>
Well Contractor: <u>TEG-Northern California, Inc.</u> <u>11350 Monier Place, Rancho Cordova, CA 95742 &</u> <u>Moore Twinning Associates, Inc.</u> <u>2527 Fresno Street, Fresno, CA 93721</u>	CA License No.: <u>TEG: C57-706568</u> <u>Moore Twinning: C57-506159</u>
Contractor's Address: <u>SEE ABOVE</u>	
Well/Boring Identification Number(s): <u>FB-1 THROUGH FB-22</u>	

CR12

ap. 5/21/15
ap. 7/28/15
of EBN

TYPE OF WORK: (California C-57 License required unless noted otherwise)

- Well construction
- Vault box repair (General A or B)
- Well destruction (SUPPLEMENT REQUIRED)
- Pump replacement (or C-61)
- Well repair
- Exploratory boring (C-57 if water present)
- Well inactivation (Owner only)
- Pump repair (or C-61)
- Other: _____

INTENDED USE:

- Domestic/private
- Dewatering
- Geotechnical boring
- Irrigation/agricultural
- Cathodic protection
- Environmental boring
- Water/vapor monitoring/extraction
- Heat exchange
- Other: _____
- Public water system: _____

(NAME OF WATER PURVEYOR WITH CONTACT NAME AND TELEPHONE NUMBER)

DRILLING METHOD:

- Mud rotary
- Air Rotary
- Cable tool
- Auger
- Driven
- Other: Either Direct Push or Hand Auger

SETBACKS: (Wells only) N/A

- Is the well located within 50 feet of a: sewer line, stream, ditch, drainage course, pond, or lake? No
- Is the well located within 100 feet of a: septic tank, leach line, deep trench, or animal enclosure? No

SPECIFICATIONS:

BOREHOLE: Diameter: 4" Depth: 20" 20 feet CASING: Diameter: _____ Depth: _____

CONDUCTOR: Diameter: _____ Depth: _____ CASING: Diameter: _____ Depth: _____

ANNULAR SEAL: Depth: _____ Material: Next cement IF STEEL: Gauge: _____ or Thickness: _____

TRANSITION SEAL: Material: _____ IF PLASTIC: Type: _____ (Must meet ASTM F-480)

COMMENTS: _____ MULTIPLE COMPLETION? Yes (DIAGRAM REQUIRED)

PUMP INSTALLATION/REPAIR: N/A

Contractor: _____
License Number: _____ Type of Pump: _____ Horsepower: _____

I will comply with all Codes, Rules and Regulations of the State and County pertaining to or regulating wells and pumps, call (916) 875-8524 for a grout inspection at least 24 hours prior to the requested appointment time, submit a "Well Completion Report" (if required) within 60 days of the completion of my work so a final inspection can be made, and obtain WPD approval before placing a well in service.

SIGNATURE: Karen Emery Property Owner Well Contractor Agent (REQUIRES AUTHORIZATION FORM)

PRINTED NAME: Karen Emery

COMPANY: Fugro Consultants, Inc.

MAILING ADDRESS: 1000 Broadway, Ste. 440, Oakland, CA 94607

PHONE NUMBER: 510-267-4432 FIELD PHONE: Mike D'Anna 510-610-5416



County of Sacramento

ATTACHMENT
WELL APPLICATION & PERMIT FORM

Pursuant to the Sacramento County Code, Chapter 6.28, Section 6.28.030.E.1, Permit Number 53499 is conditioned as follows:

- Permit approval is contingent upon work scope concurrence and incorporation of December 18, 2013 comments by CVRWQCB staff.
- Temporary soil vapor probes completed to a depth of 5 feet or less are exempt from regulation under Sacramento County Code, Chapter 6.28.
- **Sealing materials shall terminate at a depth of 5 feet below ground surface. Clean fill shall be used between 5 feet bgs and ground surface. EMD defers surface patching specifications to the property owner.**
- Neat cement shall be mixed at a ratio of one ninety-four (94) pound sack of Portland cement to five to six gallons of clean water.
- All other applicable provisions of Chapter 6.28 of the Sacramento County Code remain in full force and effect.

By: 
Susan B. Williams, M.S.
Permitting & Enforcement

Date: December 19, 2013

W:\DATA\WILLIAMSS\WELLPERMITATTACHMENTS\FUGRO_53499.DOC

SITE ADDRESS: 1419 16TH ST

Permit Number	Boring Name/ID	Inspected By	Date	Total Depth (ft)	Depth to Water (ft)	Actual Grout Depth (ft)
53499-A	FB-1					
Comments: (ALTERNATE LOCATION)						

Permit Number	Boring Name/ID	Inspected By	Date	Total Depth (ft)	Depth to Water (ft)	Actual Grout Depth (ft)
53499-B	FB-2					
Comments:						

Permit Number	Boring Name/ID	Inspected By	Date	Total Depth (ft)	Depth to Water (ft)	Actual Grout Depth (ft)
53499-C	FB-3					
Comments:						

SITE ADDRESS: 1419 16TH ST

Permit Number	Boring Name/ID	Inspected By	Date	Total Depth (ft)	Depth to Water (ft)	Actual Grout Depth (ft)
53499-D	FB-4					
Comments: (ALTERNATE LOCATION)						

Permit Number	Boring Name/ID	Inspected By	Date	Total Depth (ft)	Depth to Water (ft)	Actual Grout Depth (ft)
53499-E	FB-5					
Comments:						

Permit Number	Boring Name/ID	Inspected By	Date	Total Depth (ft)	Depth to Water (ft)	Actual Grout Depth (ft)
53499-F	FB-6					
Comments:						

SITE ADDRESS: 1419 16TH ST

Permit Number	Boring Name/ID	Inspected By	Date	Total Depth (ft)	Depth to Water (ft)	Actual Grout Depth (ft)
53499-G	FB-7					
Comments: (ALTERNATE LOCATION)						

Permit Number	Boring Name/ID	Inspected By	Date	Total Depth (ft)	Depth to Water (ft)	Actual Grout Depth (ft)
53499-H	FB-8					
Comments:						

Permit Number	Boring Name/ID	Inspected By	Date	Total Depth (ft)	Depth to Water (ft)	Actual Grout Depth (ft)
53499-I	FB-9					
Comments:						

SITE ADDRESS: 1419 16TH ST

Permit Number	Boring Name/ID	Inspected By	Date	Total Depth (ft)	Depth to Water (ft)	Actual Grout Depth (ft)
53499-J	FB-10					
Comments: (ALTERNATE LOCATION)						

Permit Number	Boring Name/ID	Inspected By	Date	Total Depth (ft)	Depth to Water (ft)	Actual Grout Depth (ft)
53499-K	FB-11					
Comments:						

Permit Number	Boring Name/ID	Inspected By	Date	Total Depth (ft)	Depth to Water (ft)	Actual Grout Depth (ft)
53499-L	FB-12					
Comments:						

SITE ADDRESS: 1419 16TH ST

Permit Number	Boring Name/ID	Inspected By	Date	Total Depth (ft)	Depth to Water (ft)	Actual Grout Depth (ft)
53499-M	FB-13					
Comments: (ALTERNATE LOCATION)						

Permit Number	Boring Name/ID	Inspected By	Date	Total Depth (ft)	Depth to Water (ft)	Actual Grout Depth (ft)
53499-N	FB-14					
Comments:						

Permit Number	Boring Name/ID	Inspected By	Date	Total Depth (ft)	Depth to Water (ft)	Actual Grout Depth (ft)
53499-O	FB-15					
Comments:						

SITE ADDRESS: 1419 16TH ST

Permit Number	Boring Name/ID	Inspected By	Date	Total Depth (ft)	Depth to Water (ft)	Actual Grout Depth (ft)
53499-P	FB-16					
Comments: (ALTERNATE LOCATION)						

Permit Number	Boring Name/ID	Inspected By	Date	Total Depth (ft)	Depth to Water (ft)	Actual Grout Depth (ft)
53499-Q	FB-17					
Comments:						

Permit Number	Boring Name/ID	Inspected By	Date	Total Depth (ft)	Depth to Water (ft)	Actual Grout Depth (ft)
53499-R	FB-18					
Comments:						

SITE ADDRESS: 1419 16TH ST

Permit Number	Boring Name/ID	Inspected By	Date	Total Depth (ft)	Depth to Water (ft)	Actual Grout Depth (ft)
53499-S	FB-19					
Comments: (ALTERNATE LOCATION)						

Permit Number	Boring Name/ID	Inspected By	Date	Total Depth (ft)	Depth to Water (ft)	Actual Grout Depth (ft)
53499-T	FB-20					
Comments:						

Permit Number	Boring Name/ID	Inspected By	Date	Total Depth (ft)	Depth to Water (ft)	Actual Grout Depth (ft)
53499-U	FB-21					
Comments:						

SITE ADDRESS: 1419 16TH ST

Permit Number	Boring Name/ID	Inspected By	Date	Total Depth (ft)	Depth to Water (ft)	Actual Grout Depth (ft)
53499-V	FB-22					
Comments: (ALTERNATE LOCATION)						

Permit Number	Boring Name/ID	Inspected By	Date	Total Depth (ft)	Depth to Water (ft)	Actual Grout Depth (ft)
Comments:						

Permit Number	Boring Name/ID	Inspected By	Date	Total Depth (ft)	Depth to Water (ft)	Actual Grout Depth (ft)
Comments:						



BASE MAP SOURCE: Aerial photograph provided by Google Earth Pro 2011.

LEGEND

- Approximate location of Proposed Soil, Groundwater, and/or Soil-Vapor Probe

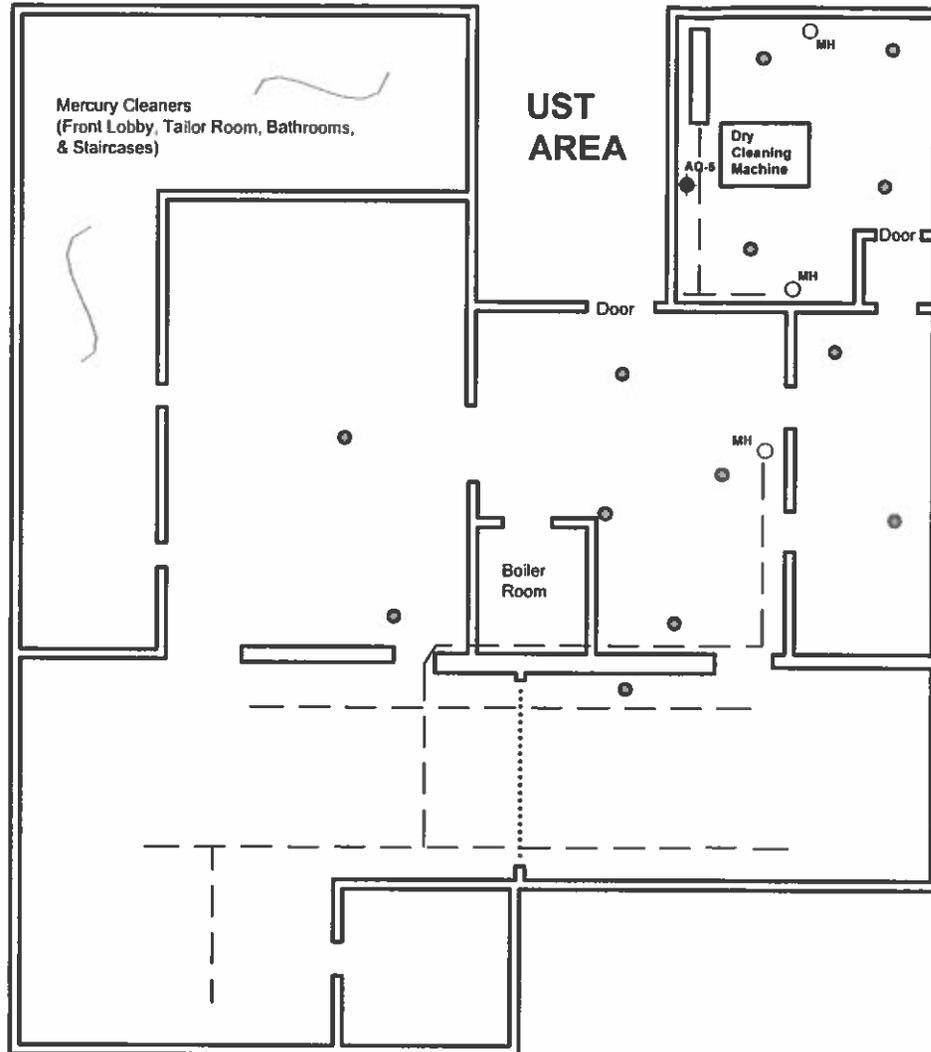


PROPOSED EXTERIOR SAMPLE LOCATIONS
Mercury Cleaners
Sacramento, California



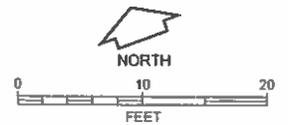
N-O STREET ALLEY

16TH STREET



LEGEND

-  Approximate location of manhole
-  Approximate location of floor drainage channels
-  Approximate location of Proposed Soil, Groundwater, and/or Soil-Vapor Probe



PROPOSED INTERIOR SAMPLE LOCATIONS
Mercury Cleaners
Sacramento, California

BASE MAP SOURCE: Engineering sketch of floor plan.

PARKING AREA

M:\Drawing\ORFILES\041304\72120008\Phase 1\Drawings\04 72120008-02a Floor plan.dwg 12/11/2013 - 2:41pm

Parcel Viewer



Rivers



Ortho - Street Names

Freeways



County Boundary Lines

Major Streets



Deleted Parcels



Parcel Boundaries



Information For Parcel:

006-0233-023-0000

PROPERTY INFORMATION

APN 00602330230000
Situs Address 1417 16TH ST
Postal SACRAMENTO, CA 95814
City/St/Zip

Additional Addresses for this Parcel

Thomas Bros 297 D 5
Landuse Code WBAC0A
Jurisdiction SACRAMENTO
Sup. District District 1 - Phil Serna

OWNERSHIP INFORMATION

Owner • STATE OF CALIFORNIA
Mailing 1522 14TH ST
Address SACRAMENTO, CA 95814
Transfer Date 1967-01-23
Deed View Property Transfer Document

Owner History View Owner History

PARCEL DETAIL LINKS

General Info View General Parcel Data
Districts View District Data
Recorded Map No maps are available.
Assessor Maps View Assessor Map
Parcel History No Parcel History records available.
Assessment View Assessor Data
Info
Building View Permits
Permits
Parcel Notes No Parcel Notes recorded. ✖
Business No Business License Data available.
Licenses
SHRA Info View SHRA Data
CUBS Info View CUBS Data
Refuse Pickup No Refuse Pickup schedule available.
Water Meters No Water Meter Data available.
Easements View Easements Data ✖
Planning View Planning Parcel Page ✖
Parcel Page



DEPARTMENT OF CONSUMER AFFAIRS

Contractors State License Board**Contractor's License Detail - License # 706568**

⚠️ DISCLAIMER: A license status check provides information taken from the CSLB license database. Before relying on this information, you should be aware of the following limitations.

CSLB complaint disclosure is restricted by law ([B&P 7124.6](#)) If this entity is subject to public complaint disclosure, a link for complaint disclosure will appear below. Click on the link or button to obtain complaint and/or legal action information.

Per [B&P 7071.17](#), only construction related civil judgments reported to the CSLB are disclosed.

Arbitrations are not listed unless the contractor fails to comply with the terms of the arbitration.

Due to workload, there may be relevant information that has not yet been entered onto the Board's license database.

License Number	706568	Extract Date 12/19/2013						
Business Information	TEG - NORTHERN CALIFORNIA INC Business Phone Number: (916) 853-8010 11350 MONIER PARK PLACE RANCHO CORDOVA, CA 95742							
Entity	Corporation							
Issue Date	05/13/1995							
Expire Date	05/31/2015							
License Status	ACTIVE This license is current and active. All information below should be reviewed.							
Classifications	<table border="1"> <thead> <tr> <th>CLASS</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td>C57</td> <td><u>WELL DRILLING (WATER)</u></td> </tr> <tr> <td>A</td> <td><u>GENERAL ENGINEERING CONTRACTOR</u></td> </tr> </tbody> </table>	CLASS	DESCRIPTION	C57	<u>WELL DRILLING (WATER)</u>	A	<u>GENERAL ENGINEERING CONTRACTOR</u>	
CLASS	DESCRIPTION							
C57	<u>WELL DRILLING (WATER)</u>							
A	<u>GENERAL ENGINEERING CONTRACTOR</u>							
Certifications	<table border="1"> <thead> <tr> <th>CERT</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td>HAZ</td> <td><u>HAZARDOUS SUBSTANCES REMOVAL</u></td> </tr> </tbody> </table>	CERT	DESCRIPTION	HAZ	<u>HAZARDOUS SUBSTANCES REMOVAL</u>			
CERT	DESCRIPTION							
HAZ	<u>HAZARDOUS SUBSTANCES REMOVAL</u>							
Bonding	CONTRACTOR'S BOND This license filed a Contractor's Bond with <u>OLD REPUBLIC SURETY COMPANY</u> . Bond Number: GCL1153926 Bond Amount: \$12,500 Effective Date: 05/02/2007 <u>Contractor's Bond History</u> BOND OF QUALIFYING INDIVIDUAL 1. The Responsible Managing Officer (RMO) JERPAK MARK JAMES certified that he/she owns 10 percent or more of the voting stock/equity of the corporation. A bond of qualifying individual is not required.							

Effective Date: 05/13/1995

- 2. The Responsible Managing Officer (RMO) WILKINSON HENRY BERNARD III certified that he/she owns 10 percent or more of the voting stock/equity of the corporation. A bond of qualifying individual is not required.

Effective Date: 04/22/1998

WORKERS' COMPENSATION

This license has workers compensation insurance with HARTFORD UNDERWRITERS INSURANCE COMPANY

Workers' Compensation

Policy Number: 72WECLY9973

Effective Date: 10/04/2012

Expire Date: 10/04/2014

Workers' Compensation History

Personnel listed on this license (current or disassociated) are listed on other licenses.

Personnel List	Other Licenses
----------------	----------------

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DEPARTMENT OF CONSUMER AFFAIRS

Contractors State License Board**Contractor's License Detail (Personnel List)**

Contractor License #: 706568

Contractor Name: TEG - NORTHERN CALIFORNIA INC

Click on the person's name to see a more detailed page of information on that person

NAME	TITLE	ASSOCIATION DATE	DISASSOCIATION DATE	CLASS	MORE CLASS
MARK JAMES JERPBAK	RMO/CEO/PRES	05/13/1995		C57	
HENRY BERNARD WILKINSON III	RMO	05/13/1995		A	More
LEIF FREDRICK JONSSON	OFFICER	05/13/1995			

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Countywide Services Agency
Environmental Management Department
Environmental Compliance Division
Elise Rothschild, Chief

Bradley J. Hudson, County Executive
Ann Edwards, Chief Deputy County Executive
Val F. Siebal, Department Director

County of Sacramento

WELL DRILLER'S AUTHORIZATION LETTER

Site Address	1419 16 th Street, Sacramento CA		
Well Driller	TEG - NORTHERN CALIFORNIA, INC.		
Driller's Address	11350 MONIER PK. PL., RANCHO CORDOVA		
Driller's Phone No.	916-853-8010		
C-57 License No.	706568	Exp. Date	5/31/15

For the sole purpose of procuring permits for the construction, modification, repair, or destruction of wells or soil borings and the installation, repair, or replacement of well pumps at the aforementioned site, I hereby designate the following entity(ies) to act as my authorized representative:

Name(s)	Karen Emery, Jeriann Alexander, and/or Mike D'Anna		
Company	FUGRO CONSULTANTS, INC.		
Address	1000 Broadway, Ste 440		
City, State, Zip	Oakland, CA 94607		

I understand that as the applicant for permits for activities regulated under Chapter 6.28 of the Sacramento County Code, I am responsible for compliance with all provisions of that Chapter. I further understand that upon written notification to the EMD, I may rescind this authorization.

Signature	
Printed	MARK JERPAK
Title (RMO, RME, Director)	RMO
Date	12-12-13



DEPARTMENT OF CONSUMER AFFAIRS

Contractors State License Board**Contractor's License Detail - License # 506159**

DISCLAIMER: A license status check provides information taken from the CSLB license database. Before relying on this information, you should be aware of the following limitations.

CSLB complaint disclosure is restricted by law (B&P 7124.6) If this entity is subject to public complaint disclosure, a link for complaint disclosure will appear below. Click on the link or button to obtain complaint and/or legal action information.

Per B&P 7071.17 , only construction related civil judgments reported to the CSLB are disclosed.

Arbitrations are not listed unless the contractor fails to comply with the terms of the arbitration.

Due to workload, there may be relevant information that has not yet been entered onto the Board's license database.

License Number	506159	Extract Date 12/19/2013				
Business Information	MOORE TWINING ASSOCIATES INC Business Phone Number: (559) 268-7021 P O BOX 1472 FRESNO, CA 93721					
Entity	Corporation					
Issue Date	02/24/1987					
Expire Date	02/28/2015					
License Status	ACTIVE This license is current and active . All information below should be reviewed.					
Classifications	<table border="1"> <thead> <tr> <th>CLASS</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td>C57</td> <td>WELL DRILLING (WATER)</td> </tr> </tbody> </table>	CLASS	DESCRIPTION	C57	WELL DRILLING (WATER)	
CLASS	DESCRIPTION					
C57	WELL DRILLING (WATER)					
Bonding	CONTRACTOR'S BOND This license filed a Contractor's Bond with OLD REPUBLIC SURETY COMPANY . Bond Number: WCL1245830 Bond Amount: \$12,500 Effective Date: 01/01/2007 Contractor's Bond History BOND OF QUALIFYING INDIVIDUAL 1. The Responsible Managing Officer (RMO) MOORE HARRY DALE certified that he/she owns 10 percent or more of the voting stock/equity of the corporation. A bond of qualifying individual is not required. Effective Date: 03/18/1993 BQI's Bond History					
Workers' Compensation	WORKERS' COMPENSATION					

This license has workers compensation insurance with
EMPLOYERS INSURANCE COMPANY OF WAUSAU

Policy Number: WCCZ91449195013

Effective Date: 05/01/2012

Expire Date: 05/01/2014

Workers' Compensation History

Personnel List

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DEPARTMENT OF CONSUMER AFFAIRS

Contractors State License Board**Contractor's License Detail (Personnel List)**

Contractor License #: 506159

Contractor Name: MOORE TWINING ASSOCIATES INC

Click on the person's name to see a more detailed page of information on that person

NAME	TITLE	ASSOCIATION DATE	DISASSOCIATION DATE	CLASS	MORE CLASS
GEORGE CROSBY HAMPARSON	CEO/PRESIDENT	02/24/1987	02/08/1993		
ANITA MARY HAMPARSON	OFFICER	02/06/1989	02/08/1993		
MABLE TWINING	OFFICER	02/24/1987	02/06/1989		
HARRY DALE MOORE	RMO/CEO/PRES	02/24/1987		C57	More
RUTH ESTHER MOORE	OFFICER	02/08/1993			

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Countywide Services Agency

Environmental Management Department

Environmental Compliance Division
Else Rothschild, Chief



Bradley J. Hudson, County Executive
Ann Edwards, Chief Deputy County Executive
Val F. Siebal, Department Director

County of Sacramento

WELL DRILLER'S AUTHORIZATION LETTER

Site Address	1419 16th Street, Sacramento, CA		
Well Driller	Moore Twinning Associates, Inc.		
Driller's Address	2527 Fresno Street, Fresno, CA 93721		
Driller's Phone No.	559-268-7021		
C-57 License No.	506159	Exp. Date	2/28/2015

For the sole purpose of procuring permits for the construction, modification, repair, or destruction of wells or soil borings and the installation, repair, or replacement of well pumps at the aforementioned site, I hereby designate the following entity(ies) to act as my authorized representative:

Name(s)	Karen Emery, Jeriann Alexander and/or Mike D'Anna
Company	Fugro Consultants, Inc.
Address	1000 Broadway, Suite 440
City, State, Zip	Oakland, CA 94607

I understand that as the applicant for permits for activities regulated under Chapter 6.28 of the Sacramento County Code, I am responsible for compliance with all provisions of that Chapter. I further understand that upon written notification to the EMD, I may rescind this authorization.

Signature	
Printed	Harry D. Moore
Title: RMO, RME, Officer	RMO
Date:	12/17/2013

Williams. Susan

From: Emery, Karen [FCL] <kemery@fugro.com>
Sent: Thursday, December 19, 2013 2:04 PM
To: Williams. Susan
Cc: Alexander, Jeriann [FCL]
Subject: RE: Permit Application - 1419 16th Street - Additional Requested Items

Importance: High

Hi Susan,

These borings are soil, groundwater and/or soil-vapor borings depending on what we can get done during the time we are onsite (Jan 4 through 7 and Jan 11 & 12). It is the intention to do soil-vapor probes first to a depth of 5 feet bgs, then based on the soil-vapor results, we will complete companion borings to obtain soil and grab groundwater.

Sorry about the typo – It should have said 20 feet. We anticipate groundwater at a depth of around 15 to 16 feet so the borings would go to a depth of 20 feet. However, as the RWQCB indicated in their workplan approval letter they may want us to go to 25 feet if we don't encounter groundwater by 20 feet.

Regarding your last question, no, borings will go to either 5 feet bgs and/or to a depth of 20 feet bgs (or so) if we elect to complete a companion soil/groundwater probe based on the soil-vapor results.

Please call me if you have any questions or require additional information/clarification.

Regards,

Karen A. Emery, P.G.
Senior Geologist

Fugro Consultants, Inc.
1000 Broadway, Suite 440
Oakland, California 94607
Office: (510) 268-0461 / Direct: (510) 267-4432 / Cell: (510) 610-2832
kemery@fugro.com / www.FugroConsultants.com

From: Williams. Susan [mailto:WilliamsSB@saccounty.net]
Sent: Thursday, December 19, 2013 1:51 PM
To: Emery, Karen [FCL]
Cc: Alexander, Jeriann [FCL]
Subject: RE: Permit Application - 1419 16th Street - Additional Requested Items
Importance: High

Are these strictly soil borings, or are you doing vapor sampling at these locations?
Your permit says the maximum depth is 20 inches – I assume that's a typo and it's really 20 feet?
Are you going to 20 feet at all of the locations, or is the maximum depth 20 feet?

Susan B. Williams, M.S.
Permitting, Inspections and Enforcement
Environmental Compliance Division – Well Program
(916) 875-8452 (desk) (916) 591-2687 (cell)

Please visit our Well Program website at <http://www.emd.saccounty.net/EnvComp/WP/Wells.html> for "Frequently Asked Questions" and information about permitting, inspections, fees, and online payments.

From: Emery, Karen [FCL] [<mailto:kemery@fugro.com>]
Sent: Thursday, December 19, 2013 8:22 AM
To: Williams, Susan
Cc: Alexander, Jeriann [FCL]
Subject: RE: Permit Application - 1419 16th Street - Additional Requested Items

Thanks Susan. Email will be just fine. If you wouldn't mind sending the permit to myself as well as Jeriann Alexander (copied on this email) I would greatly appreciate it.

Regards,

Karen A. Emery, P.G.
Senior Geologist

Fugro Consultants, Inc.
1000 Broadway, Suite 440
Oakland, California 94607
Office: (510) 268-0461 / Direct: (510) 267-4432 / Cell: (510) 610-2832
kemery@fugro.com / www.FugroConsultants.com

From: Williams, Susan [<mailto:WilliamsSB@saccounty.net>]
Sent: Thursday, December 19, 2013 7:25 AM
To: Emery, Karen [FCL]
Cc: Alexander, Jeriann [FCL]
Subject: RE: Permit Application - 1419 16th Street - Additional Requested Items

Thanks, Karen. Our standard practice is to e-mail you a copy of the approved permit when it's ready.

Susan B. Williams, M.S.
Permitting, Inspections and Enforcement
Environmental Compliance Division – Well Program
(916) 875-8452 (desk) (916) 591-2687 (cell)

Please visit our Well Program website at <http://www.emd.saccounty.net/EnvComp/WP/Wells.html> for "Frequently Asked Questions" and information about permitting, inspections, fees, and online payments.

From: Emery, Karen [FCL] [<mailto:kemery@fugro.com>]
Sent: Wednesday, December 18, 2013 4:32 PM
To: Williams, Susan
Cc: Alexander, Jeriann [FCL]
Subject: Permit Application - 1419 16th Street - Additional Requested Items
Importance: High

Hi Susan,

As requested, please find attached the Authorization form for Moore Twinning, signed by Harry Moore. I have also attached the letter from the Central Valley RWQCB approving our investigation activities at the site. This should complete all requested items in order to process our drilling permit application.

Once the permit is approved, please notify me and I will send someone down to pick the permit up at your office.

As we discussed on Tuesday, we need the approved permit in hand in order to obtain the Encroachment Permit through the City of Sacramento to complete the portion of the work within the N-O Street Alley.

I appreciate all your help on getting this application processed. Please let me know if there is anything else from me that you will require.

Best regards,

Karen A. Emery, P.G.
Senior Geologist

Fugro Consultants, Inc.
1000 Broadway, Suite 440
Oakland, California 94607
Office: (510) 268-0461 / Direct: (510) 267-4432 / Cell: (510) 610-2832
kemery@fugro.com / www.FugroConsultants.com

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County of Sacramento Email Disclaimer: This email and any attachments thereto may contain private, confidential, and privileged material for the sole use of the intended recipient. Any review, copying, or distribution of this email (or any attachments thereto) by other than the County of Sacramento or the intended recipient is strictly prohibited. If you are not the intended recipient, please contact the sender immediately and permanently delete the original and any copies of this email and any attachments thereto.



December 13, 2013
Project No. 04.72120008

1000 Broadway Street, Suite 440
Oakland, California 94607
Tel: (510) 268-0461
Fax: (510) 268-0545

County of Sacramento
Environmental Management Department
10590 Armstrong Avenue, Suite A
Mather, CA 95655

Subject: Drilling Permit Application for within and adjacent to Mercury Cleaners, 1419 16th Street, Sacramento, California

Fugro respectfully requests your expedited review of the enclosed drilling permit application. Fugro is completing a subsurface investigation on behalf of the State of California, Department of General Services which will include the completion of up to 13 interior borings within Mercury Cleaners at 1419 16th Street in Sacramento, and up to 9 exterior borings in the vicinity of Mercury Cleaners. Proposed boring locations are shown on Plates 2 and 2A.

Exploratory borings will be completed by either TEG Northern California, Inc. or Moore Twinning Associates, Inc. Copies of their Well Driller's Authorization letters are included herein.

Borings will be no larger than 4-inches in diameter, and all borings will be backfilled with neat cement grout to match existing conditions.

Work will begin on Saturday, January 4, 2014 and will be completed over the following dates: Saturday, January 4 through Tuesday January 7, 2014 and Saturday, January 11 through Sunday, January 12, 2014. Work will be completed between the hours of 8:00 am and 6:00 pm.

We have also included the permit fee of \$426.00. We understand we will be invoiced for additional staff time after this initial fee is exhausted.

Please contact me at 510-267-4424 with any questions.

Sincerely,

FUGRO CONSULTANTS, INC.

A handwritten signature in black ink that reads "Karen Emery".

Karen A. Emery, P.G.
Senior Geologist

Enclosure: Permit Application Packet and Fee of \$426.00

CONT.

CITY OF SACRAMENTO DEPARTMENT OF PUBLIC WORKS

PERMIT NUMBER

ENCROACHMENT/EXCAVATION PERMIT

201302424

APPLICANT: Fugro Consultants PHONE: (510) 267-4432

ADDRESS: 1000 Broadway, Ste. 440

Oakland, CA 94607

Application is hereby made for Encroachment/Excavation Permit to perform the following:

1. Applicant's work order or job number: _____

2. Location or work: N/O Alley

3. General description of work to be done:

(a) Excavations: 0 0 0
Width Depth Length Surface Material

(b) Conduit: 0
Type: (PVC, Metal, etc.) Diameter: Conveying: (Water, Gas, etc)

(c) Other: Up to 4, 4" borings in alley
(Sidewalk, Sign, Driveway, etc.)

4. Estimated: Start Date 1/6/2014 Days for Completion 1

5. Person familiar with details:
Name: Karen Emery Phone No: (510) 267-4432

6. Applicants Inspector, Contractor, Foreman or Supervisor as appropriate:
Name: Mike D'Anna Phone No.: (510) 610-5416

Note: See General Conditions (attached). See "Special Provisions" below. Call Encroachment-Streetuse Permit Help Desk 808-6810 one week prior to starting work.

DATE: 12/27/2013

FILE NUMBER

ENC13 - 0162

CIP Number:

PERMIT DATE

12/27/2013

COMPLETION DATE

Engineering		
Const Inspection		
Traffic		
Elect		

Days

Trench Cut Fee: \$

Ordinance #83070

INSPECTOR

Morris

(916)837-8110

"SPECIAL PROVISIONS"

Copy of USA ticket required. All USA markings shall be removed upon completion of project. Traffic Control Plan must be submitted and approved prior to the start of work. The Traffic Control Plan is required to be on site with this permit at all times. Failure to comply will result in a Fine.

D'Anna, Michael [FCL]

From: support@usan.org
Sent: Monday, December 23, 2013 2:28 PM
To: D'Anna, Michael [FCL]
Subject: USAN 2013/12/23 #00000 0500220-000 NORM NEW

Follow Up Flag: Follow up
Flag Status: Completed

00000 USAN 12/23/13 14:28:00 0500220 NORMAL NOTICE

Message Number: 0500220 Received by USAN at 14:15 on 12/23/13 by JWH

Work Begins: 12/26/13 at 14:30 Notice: 020 hrs Priority: 2
Night Work: Y Weekend Work: Y

Expires: 01/20/14 at 23:59 Update By: 01/15/14 at 16:59

Caller: MIKE D'ANNA
Company: FUGRO WEST
Address: 1000 BROADWAY STE 440, OAKLAND
City: OAKLAND State: CA Zip: 94607
Business Tel: 510-610-5416 Fax: 510-268-0545
Email Address: MDANNA@FUGRO.COM

Nature of Work: VERTICAL BORING FOR SOIL SAMPLES
Done for: STATE OF CALIFORNIA Explosives: N
Foreman: CALLER
Field Tel: Cell Tel: 510-610-5416
Area Premarked: Y Premark Method: WHITE PAINT
Permit Type: COUNTY Number: 53499
Vac / Pwr Equip Use In The Approx Location Of Member Facilities Requested: N Excavation Enters Into Street Or Sidewalk Area: Y

Location:

ALL/O THE AL FR 16TH ST GO 105'SE (WRK TO INCL 10'N & 165'S INTO
PROP FR THE AL FOR ENT DIST & THE AL IS LOC APP 175'S/O N ST PER CUST)

Place: SACRAMENTO County: SACRAMENTO State: CA

Long/Lat Long: -121.488717 Lat: 38.571899 Long: -121.485358 Lat: 38.574131

Sent to:
CTYSA4 = CITY SACRAMENTO UTIL DEP COMSAC = COMCAST-SACRAMENTO
CCICM2 = CONSOLIDATED COMM 2 COSAC1 = COUNTY SACRAMENTO - ADMI
INTTEL = INTEGRA TELECOM, INC. - LEVCAL = LEVEL 3 COMM - CALIF
MCIWSA = MCI WORLDCOM MPOWER = MPOWER COMMUNICATIONS
OTECSV = OFFICE OF TECHNOLOGY SER PACBEL = PACIFIC BELL
PGESAC = PGE DISTR SACRAMENTO SPTTEL = QWEST COMM (CA)
SACBEE = SACRAMENTO BEE SMUDSO = SMUD
XOCOM3 = XO COMM SVCS DBA XO COMM

Member Contact Information

Member Utility	Main Contact #	Vacuum Contact #	Emergency #	After hours #
CITY SACRAMENT	(916)808-4029			
COMCAST-SACRAM	(707)421-8653	(916)830-6749	(888)824-8219	(888)824-8219
		(916)641-4310		

CONSOLIDATED C (916)223-0893		(916)786-1060	
COUNTY SACRAME (916)875-2730			
(916)876-5297			
INTEGRA TELECO (209)579-3400	(800)622-4354	(800)622-4354	
	(209)552-5500		
LEVEL 3 COMM - (877)366-8344x3	(877)366-8344x3	(877)366-8344x3	
MCI WORLDCOM (800)624-9675	(800)624-9675	(800)624-9675	
MPOWER COMMUNI (916)903-6028			
(877)370-4482			
OFFICE OF TECH (916)657-9351			
(916)657-9243			
(916)463-9921			
PACIFIC BELL (510)645-2929	(510)645-2929	(510)645-2929	(800)332-1321x8
PGE DISTR SACR (800)743-5000x00	(800)743-5000	(800)743-5000	(800)743-5000
QWEST COMM (CA (800)283-4237		(800)283-4237	
SACRAMENTO BEE (916)321-1721			
SMUD (916)732-5889	(916)732-5889		
	(800)877-7683		
	(916)732-6225	XO COMM SVCS D (801)364-1063	

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APPENDIX C
LOGS OF BORINGS



MOORE TWINING ASSOCIATES, INC.

LOG OF SOIL BORING

BORING FB-1

Project: Mercury Cleaners, Sacramento, CA.

Location: 1419 16th Street, Inside Building

Logged By: Vern Bennett

Drilled By: Fernando Ambriz, Cascade Drilling

Auger Type: 1.5 inch Diameter Continuous Core

Depth to Groundwater: 17 FT

Project Number: A28019.01

Date Started: 1/11/14

Date Completed: 1/11/14

Drill Type: Geoprobe 420M

Elevation: N/A

DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Soil Description	Blows per foot	PID READINGS (ppm)
0		C	Reinforced Concrete		0.0
		SM	Silty Sand; moist, dark brown, fine to very fine grained, no odor		0.0
5		ML	Silt, Sandy; dark brown, slightly plastic, no odor		0.0
10			at 10 ft color to medium gray		0.0
15			at 13 ft decrease in sand, color to reddish brown at 14 ft color to gray, chemical odor	57 422	
20			at 18.5 ft color to brown, soil becomes wet at 20 ft some chemical odor	385 0.0	
25			at 21.5 ft increase in very fine grained sand Bottom of Boring	1.9	

Notes: Continuous core sampling. Casing set at approximately 22 feet bsg. Grab groundwater sample collected once temp casing was set. Groundwater sample had some chemical odor with no sheen observed. Boring backfilled with neat cement via tremie through well casing.



MOORE TWINING ASSOCIATES, INC.

LOG OF SOIL BORING

BORING FB-3

Project: Mercury Cleaners, Sacramento, CA.

Location: 1419 16th Street, Inside Building

Logged By: Vern Bennett

Drilled By: Fernando Ambriz, Cascade Drilling

Auger Type: 1.5 inch Diameter Continuous Core

Depth to Groundwater: 17 FT

Project Number: A28019.01

Date Started: 1/11/14

Date Completed: 1/11/14

Drill Type: Geoprobe 420M

Elevation: N/A

DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Soil Description	Blows per foot	PID READINGS (ppm)
0		C	Reinforced Concrete		0.0
		SM	Sand, Silty; moist, medium brown, very fine to fine grained, about 45% silt, no odor		0.0
5		ML	Silt, Sandy; moist, slightly plastic, medium brown, no odor	2.7	
10			at 10 ft color to brown	3	
15			at 15 ft increase in very fine grained sand, moderate chemical odor	302	
18.5			at 18.5 ft soil becomes wet	789	
20				110	
21.5			at 21.5 ft slight chemical odor	5	
			Bottom of Boring		

Notes: Continuous core sampling. Casing set at approximately 22 feet bsg. Grab groundwater sample collected once temp casing was set. Groundwater sample had some chemical odor with no sheen observed. Boring backfilled with neat cement via tremie through well casing.



LOG OF SOIL BORING

BORING FB-5

Project: Mercury Cleaners, Sacramento, CA.

Location: 1419 16th Street, Inside Building

Project Number: A28019.01

Logged By: Vern Bennett

Date Started: 1/11/14

Drilled By: Fernando Ambriz, Cascade Drilling

Date Completed: 1/11/14

Auger Type: 1.5 inch Diameter Continuous Core

Drill Type: Georobe 420M

Depth to Groundwater: 17 FT

Elevation: N/A

DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Soil Description	Blows per foot	PID READINGS (ppm)
0		C	Reinforced Concrete		
		SM	Sand, Silty; moist, medium brown, fine to medium grained loose, no odor at 1 ft soil becomes dense, more silt		0.0 1.0 0.0
5			at 5 ft increase in silt, very fine to fine grained sand, no odor		1.0
10		ML	Silt, Sandy; moist, slightly plastic, medium brown, slight chemical odor		67
15			at 15 ft color to reddish brown, slight chemical odor		28
20			at 20 ft soil becomes damp, no odor		20
			at 21.5 ft soil becomes wet, no odor		0.0
			Bottom of Boring		

Notes: Continuous core sampling. Casing set at approximately 22 feet bsg. Grab groundwater sample collected once temp casing was set. Groundwater sample had no odor with no sheen observed. Boring backfilled with neat cement via tremie through well casing.



MOORE TWINING ASSOCIATES, INC.

LOG OF SOIL BORING

BORING FB-8

Project: Mercury Cleaners, Sacramento, CA.

Location: 1419 16th Street, Inside Building

Project Number: A28019.01

Logged By: Vern Bennett

Date Started: 1/12/14

Drilled By: Fernando Ambriz, Cascade Drilling

Date Completed: 1/12/14

Auger Type: 1.5 inch Diameter Continuous Core

Drill Type: Geoprobe 420M

Depth to Groundwater: 17.1 FT

Elevation: N/A

DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Soil Description	Blows per foot	PID READINGS (ppm)	
0		C	Reinforced Concrete		0.0	
		SM	Sand; Silty moist, light brown, fine to medium grained, loose, no odor at 2.5 ft increase in silt, very fine to fine grained sand		0.6	
5		ML	Silt; moist, gray brown, slightly plastic, no odor		0.6	
10				at 10 ft color to reddish brown, some very fine to fine grained sand		4
15						2.1
20			at 18 ft increase in fine graind sand, wet, no odor		0.3	
					0.0	
			Bottom of Boring			
25						

Notes: Continuous core sampling. Casing set at approximately 22 feet bsg. Grab groundwater sample collected once temp casing was set. Groundwater sample had no odor with no sheen observed. Boring backfilled with neat cement via tremie through well casing.



MOORE TWINING ASSOCIATES, INC.

LOG OF SOIL BORING

BORING FB-9

Project: Mercury Cleaners, Sacramento, CA.

Location: 1419 16th Street, Inside Building

Logged By: Vern Bennett

Drilled By: Fernando Ambriz, Cascade Drilling

Auger Type: 1.5 inch Diameter Continuous Core

Depth to Groundwater: 16.7 FT

Project Number: A28019.01

Date Started: 1/12/14

Date Completed: 1/12/14

Drill Type: Geoprobe 420M

Elevation: N/A

DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Soil Description	Blows per foot	PID READINGS (ppm)
0		C	Reinforced Concrete		0.0
		SM	Sand, Silty; moist, medium brown, fine to medium grained, loose, no odor		0.0
5		ML	Silt, Sandy; moist, medium brown, non-plastic, no odor	10	
10				7	
15			at 15 ft decrease in fine grained sand, some clay, slightly plastic, color to reddish brown, no odor	6	
			at 18 ft color to grayish brown, no clay, increase in very fine grained sand	2	
20			at 20 ft soil becomes damp, further increase in very fine grained sand, no odor	0	
			at 21.5 ft soil becomes wet, no odor	0.0	
25			Bottom of Boring		

Notes: Continuous core sampling. Casing set at approximately 22 feet bsg. Grab groundwater sample collected once temp casing was set. Groundwater sample had no odor with no sheen observed. Boring backfilled with neat cement via tremie through well casing.



MOORE TWINING ASSOCIATES, INC.

LOG OF SOIL BORING

BORING FB-10

Project: Mercury Cleaners, Sacramento, CA.

Location: 1419 16th Street, Inside Building

Logged By: Vern Bennett

Drilled By: Fernando Ambriz, Cascade Drilling

Auger Type: 1.5 inch Diameter Continuous Core

Depth to Groundwater: 16.2 FT

Project Number: A28019.01

Date Started: 1/12/14

Date Completed: 1/12/14

Drill Type: Geoprobe 420M

Elevation: N/A

DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Soil Description	Blows per foot	PID READINGS (ppm)
0		C	Reinforced Concrete		0.0
		SM	Silty Sand; moist, medium brown, fine grained, medium dense, no odor		0.2
5		ML	Silt; Sandy, moist, slightly plastic, medium brown, no odor		0.8
10			at 10 ft decrease in very fine grained sand, color to grayish brown, very slight chemical odor		35
15			at 15 ft color to reddish brown, some chemical odor		78
18			at 18 ft soil becomes wet, strong chemical odor		1103
20					52
21.5			at 21.5 ft soil has no odor		10
			Bottom of Boring		

Notes: Continuous core sampling. Casing set at approximately 22 feet bsg. Grab groundwater sample collected once temp casing was set. Groundwater sample had chemical odor with no sheen observed. Boring backfilled with neat cement via tremie through well casing.



MOORE TWINING ASSOCIATES, INC.

LOG OF SOIL BORING

BORING FB-12

Project: Mercury Cleaners, Sacramento, CA.

Location: 1419 16th Street, Inside Building

Project Number: A28019.01

Logged By: Vern Bennett

Date Started: 1/12/14

Drilled By: Fernando Ambriz, Cascade Drilling

Date Completed: 1/12/14

Auger Type: 1.5 inch Diameter Continuous Core

Drill Type: Geoprobe 420M

Depth to Groundwater: 16.7 FT

Elevation: N/A

DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Soil Description	Blows per foot	PID READINGS (ppm)
0		C	Reinforced Concrete		0.0
		SM	Sand, Silty; moist, light brown, very fine to fine grained, loose, no odor		0.3
5		ML	Silt, Sandy; moist, grayish brown, slightly plastic, no odor		0.3
10			at 10 ft color to brown, decrease in very fine grained sand		3
15					2.5
19			at 19 ft increase in very fine grained sand, soil becomes wet		0.9
20					0.4
			Bottom of Boring		

Notes: Continuous core sampling. Casing set at approximately 22 feet bsg. Grab groundwater sample collected once temp casing was set. Groundwater sample had no odor with no sheen observed. Boring backfilled with neat cement via tremie through well casing.



DEPTH, ft	MATERIAL SYMBOL	SAMPLER TYPE	BLOW COUNT OR PRESSURE, psi	N VALUE OR RQD%	RECOVERY	LOCATION:	DRY UNIT WEIGHT, pcf	WATER CONTENT, %	% PASSING #200 SIEVE	LIQUID LIMIT, %	PLASTICITY INDEX	UNDRAINED SHEAR STRENGTH, S _u , ksf	OTHER TESTS
						1419 16th Street, Sacramento, CA 95814							
						4 inches of Asphalt							
						SILT (ML): dark brown, moist, no odor or staining							
5						- color change to tan							PID = 0.2
10						Lean CLAY (CL): reddish brown, moist, low plasticity, no odor or staining							PID = 0.9
15						- static groundwater at 16.5 ft bgs							PID = 0.5
						Clayey SILT with SAND (ML-CL): reddish brown, moist, very fine grained sand, no odor or staining							
20						- groundwater encountered during drilling at 20 ft bgs							PID = 0.7
						CLAYEY SAND (SC): tan, wet, very fine grained sand, no odor or staining							
						Boring Terminated at 24 feet bgs.							PID = 0.7
						NOTES: 1. Terms and symbols defined on Plate A-1.							

BORING DEPTH: 24.0 ft
 BACKFILL: Grout
 DEPTH TO WATER: 16.5 ft
 FIELDWORK DATE: January 11, 2014
 DRILLING METHOD: 2.5-in. dia. Direct Push

HAMMER TYPE: Automatic Trip
 RIG TYPE: Power Probe 9500 PTO
 DRILLED BY: TEG
 LOGGED BY: M. D'Anna
 CHECKED BY: K. Emery

LOG OF BORING NO. FB-14
 Mercury Cleaners
 Sacramento, California



MOORE TWINING ASSOCIATES, INC.

LOG OF SOIL BORING

BORING FB-15

Project: Mercury Cleaners, Sacramento, CA.

Location: Southeast Corner of UST Location

Logged By: Shawn Vaughn

Drilled By: Keith Mayes

Auger Type: 3-inch Diameter

Depth to Groundwater: 16.45 FT

Project Number: A28019.01

Date Started: 1/6/14

Date Completed: 1/6/14

Drill Type: Hand Auger

Elevation: N/A

DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Soil Description	Blows per foot	PID READINGS (ppm)
0		C	Reinforced Concrete		
		ML	Silt; moist, reddish brown, no odors		10.5
		SP	Poorly Graded Sand; moist, very fine grained, reddish brown, no odor		
5		ML	Silt; moist, slightly plastic, grayish brown, no odors		27.0
			at 7 ft color to reddish brown		
10					107
			at 12 ft color to grayish green, slight chemical odor		76.8
			at 13 ft increase in chemical odor		370
15			at 14 ft color to reddish brown, silt becoming harder		1244
			at 15 ft color to grayish green		
			at 17.5 ft silt becomes wet		349
20					8.6
			Bottom of Boring		
25					

Notes: Temp well constructed of 2-inch diameter PVC well casing. Bottom 5 feet comprised of 0.01-inch diameter screen. Casing set at approximately 20 feet bsg. Grab groundwater sample collected once temp casing was set. Groundwater sample had a strong chemical odor with a sheen. Boring backfilled with neat cement via tremie through well casing.



DEPTH, ft	MATERIAL SYMBOL	SAMPLER TYPE	BLOW COUNT OR PRESSURE, psi	N VALUE OR RQD%	RECOVERY	LOCATION:	DRY UNIT WEIGHT, pcf	WATER CONTENT, %	% PASSING #200 SIEVE	LIQUID LIMIT, %	PLASTICITY INDEX	UNDRAINED SHEAR STRENGTH, S _u ksf	OTHER TESTS
						1419 16th Street, Sacramento, CA 95814							
						4 inches of Asphalt							PID = 0.7
						SILT with SAND (ML): dark brown, moist, very fine grained sand, no odor or staining							
5						SILT (ML): dark brown, moist, no odor or staining							PID = 0.8
						- color change to brown							
10													PID = 1.0
15						▼ - static groundwater at 16 ft bgs ▼ - groundwater encountered during drilling at 20 ft bgs							PID = 1.6
20						SANDY SILT (ML): brown, wet, very fine grained sand, no odor or staining							
						Boring Terminated at 24 feet bgs. NOTES: 1. Terms and symbols defined on Plate A-1.							PID = 1.5

BORING DEPTH: 24.0 ft
 BACKFILL: Grout
 DEPTH TO WATER: 16.0 ft
 FIELDWORK DATE: January 12, 2014
 DRILLING METHOD: 2.5-in. dia. Direct Push

HAMMER TYPE: Automatic Trip
 RIG TYPE: Power Probe 9500 PTO
 DRILLED BY: TEG
 LOGGED BY: M. D'Anna
 CHECKED BY: K. Emery

LOG OF BORING NO. FB-17
 Mercury Cleaners
 Sacramento, California



DEPTH, ft	MATERIAL SYMBOL	SAMPLER TYPE	BLOW COUNT OR PRESSURE, psi	N VALUE OR RQD%	RECOVERY	LOCATION:	DRY UNIT WEIGHT, pcf	WATER CONTENT, %	% PASSING #200 SIEVE	LIQUID LIMIT, %	PLASTICITY INDEX	UNDRAINED SHEAR STRENGTH, S _u ksf	OTHER TESTS
						1419 16th Street, Sacramento, CA 95814							
						SILT (ML): brown, moist, no odor or staining, organics (roots)							PID = 1.2
5						- no organics (roots)							PID = 2.1
10						- color change to reddish brown							PID = 1.1
15						SILT with Clay (ML-CL): reddish brown, moist, no odor or staining							PID = 1.2
						- static groundwater at 16 ft bgs							
20						- groundwater encountered during drilling at 20 ft bgs							PID = 1.6
						SANDY SILT (ML): tan, wet, very fine grained sand, no odor or staining							
						Boring Terminated at 24 feet bgs.							PID = 1.3
						NOTES: 1. Terms and symbols defined on Plate A-1.							

BORING DEPTH: 24.0 ft
 BACKFILL: Grout
 DEPTH TO WATER: 16.0 ft
 FIELDWORK DATE: January 12, 2014
 DRILLING METHOD: 2.5-in. dia. Direct Push

HAMMER TYPE: Automatic Trip
 RIG TYPE: Power Probe 9500 PTO
 DRILLED BY: TEG
 LOGGED BY: M. D'Anna
 CHECKED BY: K. Emery

LOG OF BORING NO. FB-18
 Mercury Cleaners
 Sacramento, California



MOORE TWINING ASSOCIATES, INC.

LOG OF SOIL BORING

BORING FB-19

Project: Mercury Cleaners, Sacramento, CA.

Location: N Steet / O Street Alley

Logged By: Shawn Vaughn

Drilled By: Keith Mayes

Auger Type: 3-inch Diameter

Depth to Groundwater: 16.15 FT

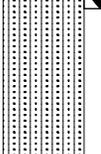
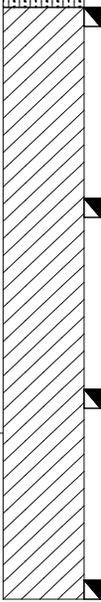
Project Number: A28019.01

Date Started: 1/6/14

Date Completed: 1/6/14

Drill Type: Hand Auger

Elevation: N/A

DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Soil Description	Blows per foot	PID READINGS (ppm)
0		C	Reinforced Concrete		
		SM	Silty Sand; moist, dark brown, some brick debris, no odor color to reddish brown, no debris		0.9
5		CL	Clay with silt; moist, moderately plastic, dark brown, no odor		1.1
10			color to reddish brown		1.0
15					1.1
			at 17.5 ft clay becomes wet, color to grayish brown, strong chemical odor		1060
			at 18.5 ft color to reddish brown, less chemical odor		
20			at 20 ft no chemical odor observed in soil		4.3
			Bottom of Boring		
25					

Notes: Temp well constructed of 2-inch diameter PVC well casing. Bottom 5 feet comprised of 0.01-inch diameter screen. Casing set at approximately 20 feet bsg. Grab groundwater sample collected once temp casing was set. Groundwater sample had no odor with no sheen observed. Boring backfilled with neat cement via tremie through well casing.



MOORE TWINING ASSOCIATES, INC.

LOG OF SOIL BORING

BORING FB-20

Project: Mercury Cleaners, Sacramento, CA.

Location: N Steet / O Street Alley

Logged By: Shawn Vaughn

Drilled By: Keith Mayes

Auger Type: 3-inch Diameter

Depth to Groundwater: 16.30 FT

Project Number: A28019.01

Date Started: 1/7/14

Date Completed: 1/7/14

Drill Type: Hand Auger

Elevation: N/A

DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Soil Description	Blows per foot	PID READINGS (ppm)
0		C	Reinforced Concrete		
		SM	Silty Sand; moist, dark brown, some gravel and brick debris, no odor at 1.5 ft no gravel or debris		0.7
5		ML	Silt; moist, slightly plastic, grayish brown, no odor		0.9
		CL	Clay; moist, dark brown, moderately plastic, no odor		
10			at 10 ft color to reddish brown		0.6
15			at 15 ft strong chemical odor, clay becomes harder		106
			at 17.5 ft clay becomes wet, slight chemical odor		6.0
			at 18.5 ft color to reddish brown, less chemical odor		
20			at 19 ft no chemical odor		5.2
			Bottom of Boring		

Notes: Temp well constructed of 2-inch diameter PVC well casing. Bottom 5 feet comprised of 0.01-inch diameter screen. Casing set at approximately 20 feet bsg. Grab groundwater sample collected once temp casing was set. Groundwater sample had no odor with no sheen observed. Boring backfilled with neat cement via tremie through well casing.



MOORE TWINING ASSOCIATES, INC.

LOG OF SOIL BORING

BORING FB-21

Project: Mercury Cleaners, Sacramento, CA.

Location: N Steet / O Street Alley

Logged By: Shawn Vaughn

Drilled By: Keith Mayes

Auger Type: 3-inch Diameter

Depth to Groundwater: 16.85 FT

Project Number: A28019.01

Date Started: 1/7/14

Date Completed: 1/7/14

Drill Type: Hand Auger

Elevation: N/A

DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Soil Description	Blows per foot	PID READINGS (ppm)
0		C	Reinforced Concrete		0.0
		SM	Silty Sand; moist, dark brown, some gravel and brick debris, no odor at 1 ft color to reddish brown		0.0
		ML	Silt; moist, grayish brown, no odor		0.0
		SM	Silty Sand; mosit, reddish brown, some tile debris, no odor		0.0
5		CL	Clay; moist, dark brown, moderately plastic, no odor at 7 ft color to reddish brown		0.0
10					0.0
15			at 14 ft clay becomes damp		161
			at 17.5 ft silt becomes wet, no odor		0.0
20			Bottom of Boring		0.0
25					

Notes: Temp well constructed of 2-inch diameter PVC well casing. Bottom 5 feet comprised of 0.01-inch diameter screen. Casing set at approximately 20 feet bsg. Grab groundwater sample collected once temp casing was set. Groundwater sample had no odor with no sheen observed. Boring backfilled with neat cement via tremie through well casing.

KEY TO SYMBOLS

Symbol Description

Strata symbols



Concrete



Silty sand



Low plasticity
clay



Silt

Misc. Symbols



Water table during
drilling

Soil Samplers



Bulk/Grab sample

Notes:

1. These logs are subject to the limitations, conclusions, and recommendations in this report.
2. Abbreviations used on the logs are:
bsg = below surface grade pid = photoionization detector
N/A = not applicable ppm = parts per million
ft = feet USCS = Unified Soil Classification System



DEPTH, ft	MATERIAL SYMBOL	SAMPLER TYPE	BLOW COUNT OR PRESSURE, psi	N VALUE OR RQD%	RECOVERY	LOCATION:	DRY UNIT WEIGHT, pcf	WATER CONTENT, %	% PASSING #200 SIEVE	LIQUID LIMIT, %	PLASTICITY INDEX	UNDRAINED SHEAR STRENGTH, S _u ksf	OTHER TESTS
						1419 16th Street, Sacramento, CA 95814							
						6 inches of Concrete							
						SILTY SAND (SM): brown, moist, fine grained sand, no odor or staining							
						- organics (roots)							
5						CLAYEY SILT (ML-CL): brown, moist, no odor or staining							PID = 0.2
						- color change to gray brown							
						- organics (roots)							
						SILT (ML): brown, moist, no odor or staining							
10						CLAYEY SILT (ML-CL): brown, moist, no odor or staining							PID = 0.3
						- color change to reddish brown							
						- solvent odor detected, slight discoloration, gray mottling							PID = 0.5 PID = 133
						- static groundwater at 16.5 ft bgs							PID = 4.5
						- groundwater encountered during drilling at 20 ft bgs							PID = 1.3
						SILTY SAND (SM): brown, wet, very fine grained sand, no odor or staining							
						Boring Terminated at 24 feet bgs.							
						NOTES: 1. Terms and symbols defined on Plate A-1.							

BORING DEPTH: 24.0 ft
 BACKFILL: Grout
 DEPTH TO WATER: 16.5 ft
 FIELDWORK DATES: January 11, 2014 to January 11, 2012
 DRILLING METHOD: 2.5-in. dia. Direct Push

HAMMER TYPE: Automatic Trip
 RIG TYPE: Power Probe 9500 PTO
 DRILLED BY: TEG
 LOGGED BY: M. D'Anna
 CHECKED BY: K. Emery

LOG OF BORING NO. FB-22
 Mercury Cleaners
 Sacramento, California



DEPTH, ft	MATERIAL SYMBOL	SAMPLER TYPE	BLOW COUNT OR PRESSURE, psi	N VALUE OR RQD%	RECOVERY	LOCATION:	DRY UNIT WEIGHT, pcf	WATER CONTENT, %	% PASSING #200 SIEVE	LIQUID LIMIT, %	PLASTICITY INDEX	UNDRAINED SHEAR STRENGTH, S _u ksf	OTHER TESTS
						1419 16th Street, Sacramento, CA 95814							
						4 inches of Asphalt							
						SILT (ML): dark brown, moist, no odor or staining							
5						- color change to brown							PID = 1.1
10													PID = 1.0
15						▼ - static groundwater at 16 ft bgs							PID = 1.9
20						▼ - groundwater encountered during drilling at 20 ft bgs							PID = 1.7
						SILT with SAND (ML): brown, wet, medium to coarse grained sand, no odor or staining							PID = 1.7
						Boring Terminated at 24 feet bgs.							
						NOTES: 1. Terms and symbols defined on Plate A-1.							

BORING DEPTH: 24.0 ft
 BACKFILL: Grout
 DEPTH TO WATER: 16.0 ft
 FIELDWORK DATE: January 12, 2014
 DRILLING METHOD: 2.5-in. dia. Direct Push

HAMMER TYPE: Automatic Trip
 RIG TYPE: Power Probe 9500 PTO
 DRILLED BY: TEG
 LOGGED BY: M. D'Anna
 CHECKED BY: K. Emery

LOG OF BORING NO. FB-26
 Mercury Cleaners
 Sacramento, California

APPENDIX D
KIMLEY-HORN UTILITY SURVEY

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 Fax: 407-425-1569



PACP Sewer Report

Surveyor's name: OPERATOR		Surveyor's certificate No: 2005		System owner:		Survey Customer		Drainage area:		Sheet number: 1			
Work order:		Pipeline segment ref: 711		Start date/time: 2014/02/04 20:53		Location (street name and number): 16TH N-0 ALLEY			Locality: KIMLEY HORN				
Further location details:						Upstream manhole No: 711		Rim to invert:		Grade to invert:		Rim to grade:	
Downstream manhole No: 805				Rim to invert:		Grade to invert:		Rim to grade:		Use of sewer:		Direction: D	
Flow control: N		Height: 8		Width: C		Shape: C		Material: VCP		Ln. method:		Pipe joint length: 6.0	
Total length:		Length surveyed: 337.0		Year laid:		Year rehabilitated:		Media label: DVD					
Purpose: G		Sewer category:		Pre-cleaning: J		Date cleaned:		Weather: 1		Location code: C		Additional info:	

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Severity	Continuous Defect	S/M/L	Value		%	Joint	Circumferential Location		Image Ref.	Remarks
						1st	2nd			At/From	to		
0.0	11	AMH										KIMLEY HORN-MERCURY CLEANERS-711-805 AMH at 0 ft (D).jpg	711
0.0	23	MWL						15				KIMLEY HORN-MERCURY CLEANERS-711-805 MWL at 0 ft (D).jpg	
1.9	298	MWLS		S1				30					
1.9	306	MGO										KIMLEY HORN-MERCURY CLEANERS-711-805 MGO at 1.9 ft (D).jpg	PLUGGED TO REDUCE FLOW
1.9	327	TFA				4				2		KIMLEY HORN-MERCURY CLEANERS-711-805 TFA at 1.9 ft (D).jpg	
1.9	341	MWM						40				KIMLEY HORN-MERCURY CLEANERS-711-805 MWM at 1.9 ft (D).jpg	
5.3	298	MWLS		F1				30					
17.4	587	CL								9		KIMLEY HORN-MERCURY CLEANERS-711-805 CL at 17.4 ft (D).jpg	
21.5	693	TBI				4	1			10		KIMLEY HORN-MERCURY CLEANERS-711-805 TBI at 21.5 ft (D).jpg	INTRUDING PVC TAP

Surveyor's name:
 OPERATOR

System owner:

Start date/time:
 2014/02/04

Upstream manhole No:
 711

Pipeline segment ref:
 711

Sheet number:
 2

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Severity	Continuous Defect	S/M/L	Value		%	Joint	Circumferential Location		Image Ref.	Remarks
						Inches (mm)				At/From	to		
						1st	2nd						
22.3	729	TFC				4				2		KIMLEY HORN-MERCURY CLEANERS-711-805 TFC at 22.3 ft (D).jpg	
24.6	754	TFC				4				10		KIMLEY HORN-MERCURY CLEANERS-711-805 TFC at 24.6 ft (D).jpg	
32.0	819	CL								2			
33.0	847	SSS								2	5	KIMLEY HORN-MERCURY CLEANERS-711-805 SSS at 33 ft (D).jpg	
36.9	901	MWLS		S2				30				KIMLEY HORN-MERCURY CLEANERS-711-805 MWLS at 36.9 ft (D).jpg	
39.9	946	LL						15				KIMLEY HORN-MERCURY CLEANERS-711-805 LL at 39.9 ft (D).jpg	
40.2	978	JSM			M							KIMLEY HORN-MERCURY CLEANERS-711-805 JSM at 40.2 ft (D).jpg	12 TO 6 O'CLOCK
42.4	1039	FL								12		KIMLEY HORN-MERCURY CLEANERS-711-805 FL at 42.4 ft (D).jpg	
44.6	1072	CL								12		KIMLEY HORN-MERCURY CLEANERS-711-805 CL at 44.6 ft (D).jpg	
45.5	1097	TFC				4				10		KIMLEY HORN-MERCURY CLEANERS-711-805 TFC at 45.5 ft (D).jpg	
47.6	1125	TFA				4				2			
47.6	1153	RBL						90		2		KIMLEY HORN-MERCURY CLEANERS-711-805 RBL at 47.6 ft (D).jpg	LAT 100% WITH DEBRIS, POSSIBLE COLLAPSED
52.3	901	MWLS		F2				30				KIMLEY HORN-MERCURY CLEANERS-711-805 MWLS at 36.9 ft (D).jpg	
53.0	1275	FL								12		KIMLEY HORN-MERCURY CLEANERS-711-805 FL at 53 ft (D).jpg	
56.8	1333	MMC										KIMLEY HORN-MERCURY CLEANERS-711-805 MMC at 56.8 ft (D).jpg	VCP TO SDR 35
58.3	1398	TFA				4				2		KIMLEY HORN-MERCURY CLEANERS-711-805 TFA at 58.3 ft (D).jpg	
59.5	1426	TFA				3				2		KIMLEY HORN-MERCURY CLEANERS-711-805 TFA at 59.5 ft (D).jpg	

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Surveyor's name:
 OPERATOR

System owner:

Start date/time:
 2014/02/04

Upstream manhole No:
 711

Pipeline segment ref:
 711

Sheet number:
 3

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Severity	Continuous Defect	S/M/L	Value		%	Joint	Circumferential Location		Image Ref.	Remarks
						1st	2nd			At/From	to		
61.8	1454	MMC										KIMLEY HORN-MERCURY CLEANERS-711-805 MMC at 61.8 ft (D).jpg	SDR TO VCP
61.8	1484	JSM			M							KIMLEY HORN-MERCURY CLEANERS-711-805 JSM at 61.8 ft (D).jpg	1" GAP
67.7	1535	CL								12		KIMLEY HORN-MERCURY CLEANERS-711-805 CL at 67.7 ft (D).jpg	
76.0	1679	FL								12		KIMLEY HORN-MERCURY CLEANERS-711-805 FL at 76 ft (D).jpg	
77.3	1721	MWLS		S3				30					
82.3	1816	CL								7		KIMLEY HORN-MERCURY CLEANERS-711-805 CL at 82.3 ft (D).jpg	
83.6	1838	DAGS		S4				20		9	3	KIMLEY HORN-MERCURY CLEANERS-711-805 DAGS at 83.6 ft (D).jpg	
85.5	1893	DSF		S5				30		5	7	KIMLEY HORN-MERCURY CLEANERS-711-805 DSF at 85.5 ft (D).jpg	SETTLED SAND
107.0	1721	MWLS		F3				30					
107.0	1838	DAGS		F4				20		9	3	KIMLEY HORN-MERCURY CLEANERS-711-805 DAGS at 83.6 ft (D).jpg	
107.0	1893	DSF		F5				30		5	7	KIMLEY HORN-MERCURY CLEANERS-711-805 DSF at 85.5 ft (D).jpg	SETTLED SAND
107.6	2071	FL								12		KIMLEY HORN-MERCURY CLEANERS-711-805 FL at 107.6 ft (D).jpg	
113.9	2157	JSM			M							KIMLEY HORN-MERCURY CLEANERS-711-805 JSM at 113.9 ft (D).jpg	1" GAP
116.1	2183	JSM			M							KIMLEY HORN-MERCURY CLEANERS-711-805 JSM at 116.1 ft (D).jpg	1" GAP
119.8	2271	RFJ							J	7	10	KIMLEY HORN-MERCURY CLEANERS-711-805 RFJ at 119.8 ft (D).jpg	
122.2	2308	JSM			M							KIMLEY HORN-MERCURY CLEANERS-711-805 JSM at 122.2 ft (D).jpg	1 1/4" GAP
122.3	2341	BSV								7	5	KIMLEY HORN-MERCURY CLEANERS-711-805 BSV at 122.3 ft (D).jpg	GAP AT JOINT, SOIL VISABLE

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Surveyor's name:
 OPERATOR

System owner:

Start date/time:
 2014/02/04

Upstream manhole No:
 711

Pipeline segment ref:
 711

Sheet number:
 4

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Severity	Continuous Defect	S/M/L	Value		%	Joint	Circumferential Location		Image Ref.	Remarks
						Inches (mm)				1st	2nd		
126.5	2389	MMC										KIMLEY HORN-MERCURY CLEANERS-711-805 MMC at 126.5 ft (D).jpg	VCP TO SDR 35
130.2	2422	TFA				8				10		KIMLEY HORN-MERCURY CLEANERS-711-805 TFA at 130.2 ft (D).jpg	
130.3	2450	MMC										KIMLEY HORN-MERCURY CLEANERS-711-805 MMC at 130.3 ft (D).jpg	PVC TO VCP
133.2	2490	MMC										KIMLEY HORN-MERCURY CLEANERS-711-805 MMC at 133.2 ft (D).jpg	SDR 35 TO VCP
137.1	6	FL								12		KIMLEY HORN-MERCURY CLEANERS-711-805 FL at 137.1 ft (D).jpg	
139.1	33	FC								3	5	KIMLEY HORN-MERCURY CLEANERS-711-805 FC at 139.1 ft (D).jpg	
142.7	84	RMJ		S6				15	J	7	5	KIMLEY HORN-MERCURY CLEANERS-711-805 RMJ at 142.7 ft (D).jpg	
143.5	109	JSM			M							KIMLEY HORN-MERCURY CLEANERS-711-805 JSM at 143.5 ft (D).jpg	1" VCP
146.9	165	FC								7	10	KIMLEY HORN-MERCURY CLEANERS-711-805 FC at 146.9 ft (D).jpg	ROOTS INTRUDING THRU FRACTURE
147.8	201	TBA				4				10		KIMLEY HORN-MERCURY CLEANERS-711-805 TBA at 147.8 ft (D).jpg	CAST IRON TAP
158.2	333	JSL			L							KIMLEY HORN-MERCURY CLEANERS-711-805 JSL at 158.2 ft (D).jpg	GAP 2" SOIL VISABLE
161.2	400	TFC				4				2		KIMLEY HORN-MERCURY CLEANERS-711-805 TFC at 161.2 ft (D).jpg	DEBRIS IN TAP
163.3	451	TFC				4				10		KIMLEY HORN-MERCURY CLEANERS-711-805 TFC at 163.3 ft (D).jpg	
163.3	461	RFL								12	12	KIMLEY HORN-MERCURY CLEANERS-711-805 RFL at 163.3 ft (D).jpg	
165.5	483	TFD				4				2		KIMLEY HORN-MERCURY CLEANERS-711-805 TFD at 165.5 ft (D).jpg	TAP FILLED WITH DEBRIS, POSSIBLE BREAK
166.5	84	RMJ		F6				15	J	7	5	KIMLEY HORN-MERCURY CLEANERS-711-805 RMJ at 142.7 ft (D).jpg	

Surveyor's name: OPERATOR System owner: _____ Start date/time: 2014/02/04 Upstream manhole No: 711 Pipeline segment ref: 711 Sheet number: 5

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Severity	Continuous Defect	S/M/L	Value		%	Joint	Circumferential Location		Image Ref.	Remarks
						1st Inches (mm)	2nd Inches (mm)			At/From	to		
178.3	697	TBI				4	2			2		KIMLEY HORN-MERCURY CLEANERS-711-805 TBI at 178.3 ft (D).jpg	
178.3	710	RML						20		12	12	KIMLEY HORN-MERCURY CLEANERS-711-805 RML at 178.3 ft (D).jpg	
190.1	866	TFC				4				10		KIMLEY HORN-MERCURY CLEANERS-711-805 TFC at 190.1 ft (D).jpg	
192.1	889	TBA				4				2		KIMLEY HORN-MERCURY CLEANERS-711-805 TBA at 192.1 ft (D).jpg	
192.6	902	RMJ						20	J	2	7	KIMLEY HORN-MERCURY CLEANERS-711-805 RMJ at 192.6 ft (D).jpg	
196.3	929	TFD				4				1		KIMLEY HORN-MERCURY CLEANERS-711-805 TFD at 196.3 ft (D).jpg	OFFSET IN LAT , SOIL VISABLE, DEBRIS IN TAP
200.4	1029	TBA				4				2		KIMLEY HORN-MERCURY CLEANERS-711-805 TBA at 200.4 ft (D).jpg	
211.0	1099	TFC				4				10		KIMLEY HORN-MERCURY CLEANERS-711-805 TFC at 211 ft (D).jpg	
213.0	1119	TFA				4				2		KIMLEY HORN-MERCURY CLEANERS-711-805 TFA at 213 ft (D).jpg	
213.0	1126	BSV								2		KIMLEY HORN-MERCURY CLEANERS-711-805 BSV at 213 ft (D).jpg	BREAK IN TAP SOIL VISABLE, LAT FILLED WITH DEBRIS
217.0	1167	MMC										KIMLEY HORN-MERCURY CLEANERS-711-805 MMC at 217 ft (D).jpg	VCP TO SDR 35
218.0	1190	TFA				4				10		KIMLEY HORN-MERCURY CLEANERS-711-805 TFA at 218 ft (D).jpg	
219.0	1204	MMC										KIMLEY HORN-MERCURY CLEANERS-711-805 MMC at 219 ft (D).jpg	SDR 35 TO SDR
221.6	1235	TBA				4				2		KIMLEY HORN-MERCURY CLEANERS-711-805 TBA at 221.6 ft (D).jpg	
231.5	1294	TFC				4				2		KIMLEY HORN-MERCURY CLEANERS-711-805 TFC at 231.5 ft (D).jpg	LIGHT DEBRIS IN TAP
233.5	1319	TFA				4				10		KIMLEY HORN-MERCURY CLEANERS-711-805 TFA at 233.5 ft (D).jpg	

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Surveyor's name:
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System owner:

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 2014/02/04

Upstream manhole No:
 711

Pipeline segment ref:
 711

Sheet number:
 6

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Severity	Continuous Defect	Value			Joint	Circumferential Location		Image Ref.	Remarks	
					S/M/L	Inches (mm)			%	At/From			to
						1st	2nd						
236.4	1337	TBA				4			2		KIMLEY HORN-MERCURY CLEANERS-711-805 TBA at 236.4 ft (D).jpg	DEBRIS IN LAT	
236.6	1360	CL							2		KIMLEY HORN-MERCURY CLEANERS-711-805 CL at 236.6 ft (D).jpg		
248.1	1480	TFD				4			2		KIMLEY HORN-MERCURY CLEANERS-711-805 TFD at 248.1 ft (D).jpg	BROKEN SOIL VISABLE	
251.2	1567	CM							10	2	KIMLEY HORN-MERCURY CLEANERS-711-805 CM at 251.2 ft (D).jpg		
258.2	1664	TFA				4			2		KIMLEY HORN-MERCURY CLEANERS-711-805 TFA at 258.2 ft (D).jpg		
263.3	1738	MWLS									KIMLEY HORN-MERCURY CLEANERS-711-805 MWLS at 263.3 ft (D).jpg		
265.7	1767	MMC									KIMLEY HORN-MERCURY CLEANERS-711-805 MMC at 265.7 ft (D).jpg	VCP TO SDR 35	
268.0	1804	MMC									KIMLEY HORN-MERCURY CLEANERS-711-805 MMC at 268 ft (D).jpg	SDR TO VCP	
272.8	1886	TFC				4			10		KIMLEY HORN-MERCURY CLEANERS-711-805 TFC at 272.8 ft (D).jpg	DEBRIS IN TAP	
278.0	1966	CC							12	12	KIMLEY HORN-MERCURY CLEANERS-711-805 CC at 278 ft (D).jpg		
291.5	2126	TFC				4			9		KIMLEY HORN-MERCURY CLEANERS-711-805 TFC at 291.5 ft (D).jpg	MISSING PLUG, SOIL VISABLE	
293.6	2163	TFA				4			2		KIMLEY HORN-MERCURY CLEANERS-711-805 TFA at 293.6 ft (D).jpg		
305.3	2291	MMC									KIMLEY HORN-MERCURY CLEANERS-711-805 MMC at 305.3 ft (D).jpg	VCP TO SDR	
306.2	2318	TFA				4			10		KIMLEY HORN-MERCURY CLEANERS-711-805 TFA at 306.2 ft (D).jpg		
307.7	2339	MMC									KIMLEY HORN-MERCURY CLEANERS-711-805 MMC at 307.7 ft (D).jpg	SDR TO VCP	
312.5	2372	TFD				4			2			CAP MISSING, SOIL VISABLE	

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Surveyor's name:
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System owner:

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 2014/02/04

Upstream manhole No:
 711

Pipeline segment ref:
 711

Sheet number:
 7

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Severity	Continuous Defect	S/M/L	Value		%	Joint	Circumferential Location		Image Ref.	Remarks
						Inches (mm)				At/From	to		
						1st	2nd						
314.4	2421	TFA				4				10		KIMLEY HORN-MERCURY CLEANERS-711-805 TFA at 314.4 ft (D).jpg	
317.1	2474	MWLS	S7					30					
317.1	2486	MWM						50					
319.8	2514	FL								12		KIMLEY HORN-MERCURY CLEANERS-711-805 FL at 319.8 ft (D).jpg	
323.7	1	FC								12	3	KIMLEY HORN-MERCURY CLEANERS-711-805 FC at 323.7 ft (D).jpg	
324.7	19	TBA				4				10		KIMLEY HORN-MERCURY CLEANERS-711-805 TBA at 324.7 ft (D).jpg	
326.8	41	TBA				4				2		KIMLEY HORN-MERCURY CLEANERS-711-805 TBA at 326.8 ft (D).jpg	
333.6	2474	MWLS	F7					30					
334.4	126	FM								7	5	KIMLEY HORN-MERCURY CLEANERS-711-805 FM at 334.4 ft (D).jpg	
335.4	153	TFA				4				10		KIMLEY HORN-MERCURY CLEANERS-711-805 TFA at 335.4 ft (D).jpg	CONCRETE CAP
337.0	199	AMH										KIMLEY HORN-MERCURY CLEANERS-711-805 AMH at 337 ft (D).jpg	805



CONSTRUCTION FEATURES

The Construction Features Family of codes is used to describe various features and conditions associated with the methods used to construct the sewer. The Construction Features Family is comprised of the following 4 Groups:

1. Tap (T)
2. Intruding Seal Material (IS)
3. Line (Direction/Alignment of the sewer) (L)
4. Access Points (A)

Group - Tap (T)

General

This group is used to describe the various kinds of taps connecting the service pipe from buildings to the main sewer. This is sometimes referred to by others as connections, lateral connections or wyes.

The following details should be recorded for all taps:

1. The service connection diameter to the nearest inch or mm (value – inches (mm) 1st); and
2. The clock reference at the center of the tap.

Where the tap is not circular the height should be detailed in the Value Inches (mm) 1st column and the width in the Value Inches (mm) 2nd column.

If the tap is intruding, the amount of intrusion to the nearest inch or mm should be recorded in the Value Inches (mm) 2nd column. If the tap is non-circular *and* intruding, record the amount of intrusion in the Value Inches (mm) 2nd column and the tap width in the Remarks.

Descriptors

The following can be used to describe the tap:

- **Factory Made (TF)** - A purpose-made or pre-formed pipe fitting that was built into the sewer during construction. Includes junction “blocks” constructed in brick sewers. Although Taps in brick sewers are obviously not “Factory Made” if the tap appears to be built during the original brick sewer construction they are coded as Tap Factory (TF).



- **Break-in/hammer Tap (TB)** - A rough hole has been broken in the side of the main sewer and the lateral pipe inserted without use of a special fitting for connecting or sealing the lateral pipe.
- **Saddle Tap (TS)** – A special fitting is used to connect and seal the lateral pipe to the main sewer. The Saddle tap is a better method than Tap Break-in since the Saddle fits tightly to the main sewer and is attached to the main sewer using straps. Saddles also have rubber seals that prevent infiltration and roots from entering between the lateral pipe and main.
- **Rehabilitated Tap (TR)** - A tap that has been repaired using an internal repair method. **The TR code is new in PACP 2010.**

Modifiers

The tap group can further be categorized as follows;

- **Intruding (I)**– The tap intrudes into the sewer. Record tap diameter (value – inches (mm) 1st) and distance of intrusion in 1-inch (mm) increments (value – inches (mm) 2nd). If visual estimation of intrusion is used, estimate to the nearest inch/millimetre. If precision measurement is used, record intrusion up to three decimal places. Intruding taps are by definition also defective and therefore do not need to also be coded as defective.
- **Activity (A)**– If the tap obviously has **Activity** during the inspection (in use). Not using the Activity Modifier does not mean the building is unoccupied or that the service line is abandoned. It only means that while the CCTV camera was inspecting the tap no **Activity** was observed.
- **Capped (C)** - A tap which has been blocked off, e.g. with a stopper. Sometimes referred to by others as a plug or biscuit.
- **Abandoned (B)**- A lateral that is obviously no longer in use. The pipe may be collapsed or filled with debris.
- **Defective (D)**– The tap meets one or more of **Defective** tap conditions.
A defective tap is when:
 - Tap or sewer immediately around the tap has become damaged during or after construction;
 - There is a gap around the tap;
 - Tap has infiltration or roots at the connection with the lateral and main
 - Tap is installed against the flow and pointing upstream rather than downstream.
 - The tap is a smaller diameter than the sewer and enters below normal flow level causing debris to accumulate as the flow from the lateral enters the main.



Note: The details of and other defects must also be recorded in a separate line entry e.g. break, fracture, infiltration, or roots.

Continuous Defect

The continuous defect feature is not used.

Value

- * The diameter of the tap must be entered in the inches (mm) – 1st field.
- * Where a tap is intruding the length of the intrusion should be entered in the value – 2nd field.
- * All measurements are to the nearest inch or mm.

Joint

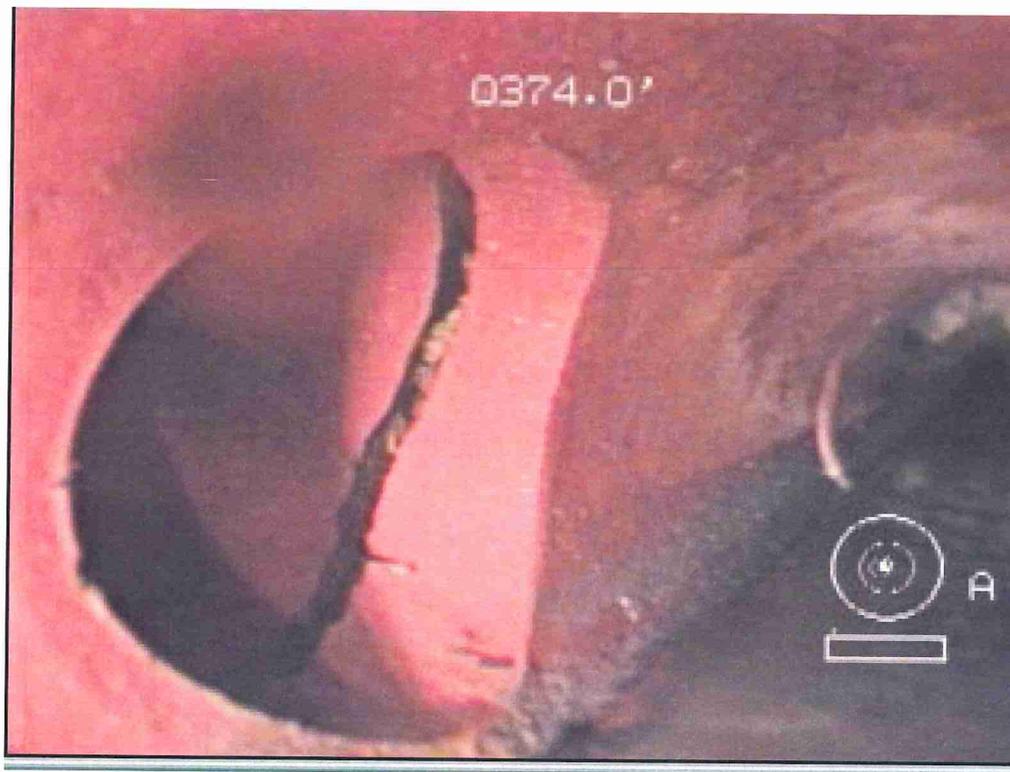
Not required.

Clock Reference

A single clock reference will be required to locate the center of the connection.



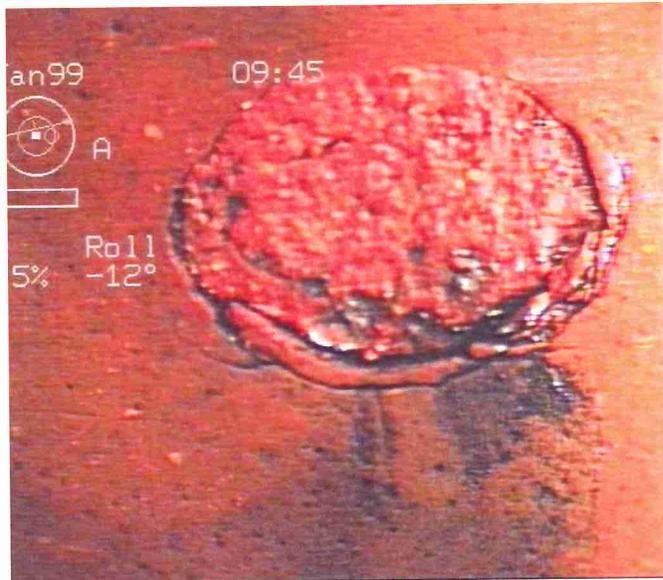
Tap - Factory Made Defective (TFD)



Distance (Feet) (meters)	Video Ref.	Code		Continuous defect	Value			Joint	Circumferential Location		Image Ref.	Remarks	
		Group/ Descriptor	Modifier/ severity		S/M/L	Inches (mm)			%	At/ From			To
						1st	2nd						
374.00		TF	D			6			09				



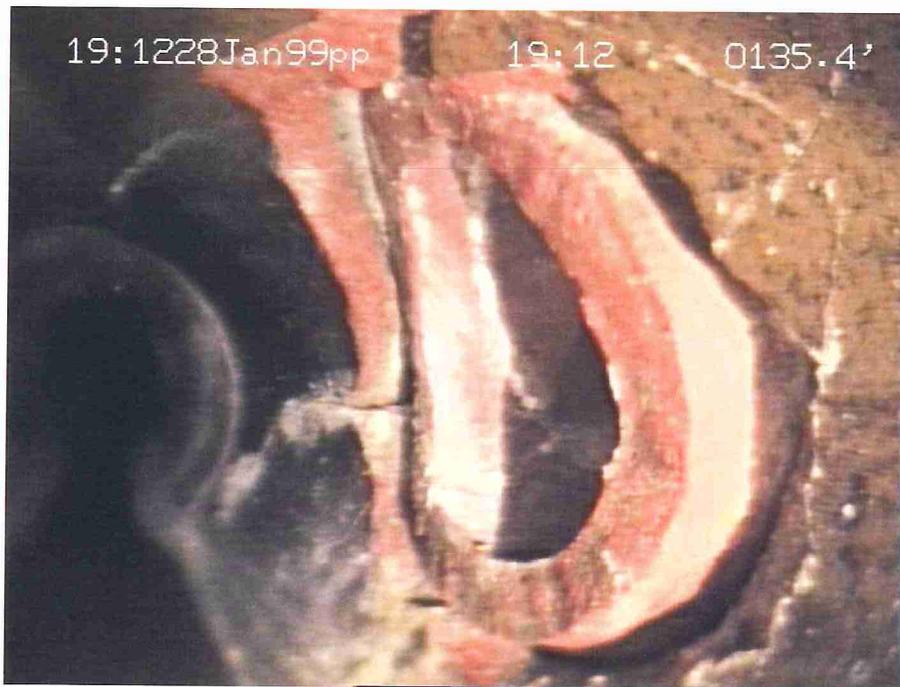
TAP – Break-in – Capped (TBC)



Distance (Feet) (meters)	Video Ref.	Code		Continuous defect	Value			Joint	Circumferential Location		Image Ref.	Remarks	
		Group/ Descriptor	Modifier/ severity		S/M/L	Inches (mm)			%	At/ From			To
						1st	2nd						
266.70		TB	C			6			03				



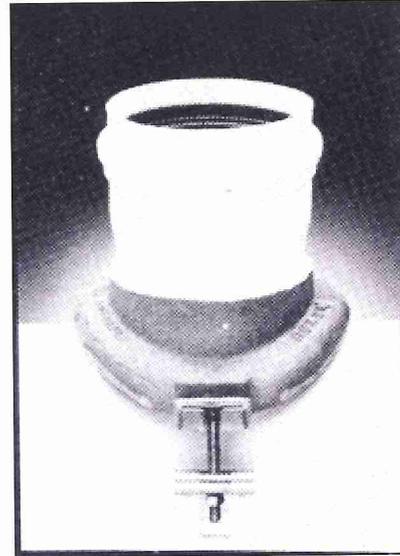
Tap - Break-in / Hammer Connection (TB)



Distance (Feet) (meters)	Video Ref.	Code		Continuous defect	Value			Joint	Circumferential Location		Image Ref.	Remarks	
		Group/ Descriptor	Modifier/ severity		S/M/L	Inches (mm)			%	At/ From			To
						1st	2nd						
135.40		TB	I			4	1		03				



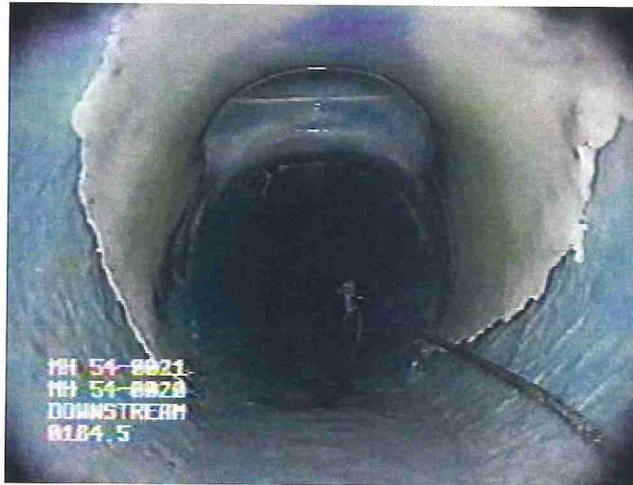
Tap - Saddle connection (TS)



- * • Code only used where a service pipe connection is made using a saddle/special fitting, such as Inserta-Tee.
- * • If a portion of the original pipe is removed and replaced with pipe that includes a Factory-Made connection, code as Factory-Made.



Tap Rehabilitated (TR)



Distance (Feet) (meters)	Video Ref.	Code		Continuous defect	Value			Joint	Circumferential Location		Image Ref.	Remarks	
		Group/ Descriptor	Modifier/ severity		S/M/L	Inches (mm)			%	At/ From			To
						1st	2nd						
135.40		TR	D			6			12			Liner detached	



*2010

Intruding Sealing Material (IS)

General

This group of codes are used to describe situations where the joint sealing material between two pipe sections is intruding into the sewer. These codes are associated with pipe sewers.

Group – Intruding Sealing Material (IS)

Descriptor

Intruding sealing material will be one of the following descriptors :

- **Sealing ring (ISSR)** - A sealing ring or gasket is visible.
- **Grout (ISGT)** – Grout, concrete, or similar sealing material is visible.
- **Loose, Poorly Fitting (ISSRL)** – An internally installed joint sealing ring was not properly placed or has moved from the correct position and does not seal the joint. **This code is new in PACP 2010.**
- **Other (ISZ)** – Another material used to seal the joints is visible.

Modifiers

The sealing ring descriptors have the following modifiers:

- **Hanging (ISSRH)** - A sealing ring or gasket, which is hanging into the sewer.
- **Broken (ISSRB)** - A sealing ring or gasket, which is visibly broken.

Continuous Defect

The joint repeated continuous defect feature may be used, where the defect appears in at least 3 out of 4 joints.

Value

The percentage (%) of cross sectional area loss should be entered into the % column to the nearest 5%.

Joint

Not used (all such defects will be at joints)

Clock references

For sealing ring, two clock references will be required to locate the entrance and exit points of the ring. For grout and other materials, two clock references will be required to locate where the grout or other material is visible.



Intruding Sealing Ring (ISSR)



Distance (Feet) (meters)	Video Ref.	Code		Continuous defect	Value			Joint	Circumferential Location		Image Ref.	Remarks	
		Group/ Descriptor	Modifier/ severity		S/M/L	Inches (mm)			%	At/ From			To
						1st	2nd						
134.20		ISSR	H				10		09	02			



Line (L)

Group – Line (L)

General

This group of codes are used to describe a visible change in direction of the sewer line.

These codes are usually associated with brick sewers and with bends in pipes sewers.

These codes should **NOT** be used for angular deviation at joints where the direction of the pipeline does not change.

Descriptor

Direction change may be vertical (up or down), horizontal (left or right) or a combination of the two. Codes are:

- **Left (LL)** - The sewer deviates to the left
- **Left up (LLU)** - The sewer deviates to the left and up.
- **Left down (LLD)** – The sewer deviates to the left and down.
- **Right (LR)** – The sewer deviates to the right.
- **Right up (LRU)** – The sewer deviates to the right and up.
- **Right down (LRD)** – The sewer deviates to the right and down.
- **Up (LU)** - The sewer deviates up.
- **Down (LD)** – The sewer deviates down.

Modifiers

No Modifiers are required.

Continuous Defect

If the change in direction is a long bend in the sewer, the continuous defect facility should be used.



Value

Enter percentage of deviation in the Value-% column. Consider a 90 degree change in direction equivalent to 100 percent.

45° = 50% ← 90° = 100%

Joint

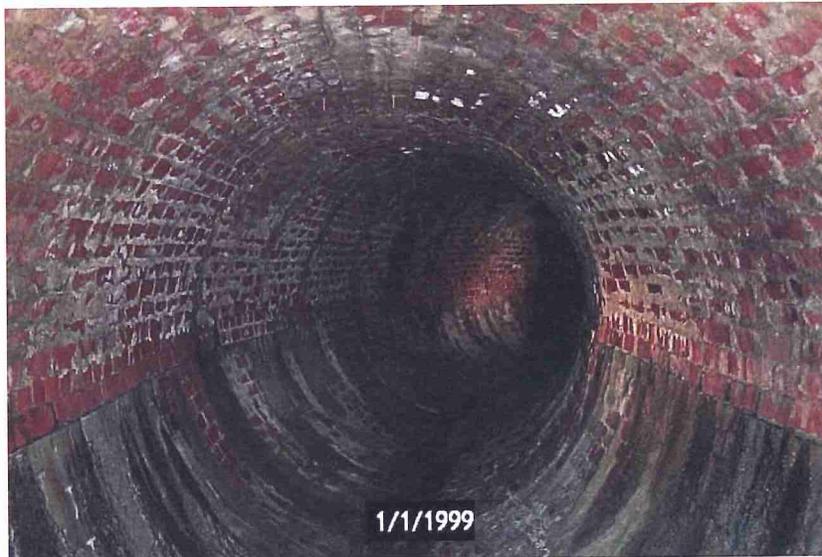
Not used.

Clock reference

Not applicable.



Line - Right (LR)



Enter %
based on total
change in
direction

Distance (Feet) (meters)	Video Ref.	Code		Continuous defect	Value			Joint	Circumferential Location		Image Ref.	Remarks	
		Group/ Descriptor	Modifier/ severity		S/M/L	Inches (mm)			%	At/ From			To
						1st	2nd						
30.70		LR		S 01			10						



Access Points (A)

Group - Access Points (A)

General

Access points, usually manholes, will be the start and finish point of a survey.

When access points have a reference number, and it is known, the full number should be given in the Remarks field. When further details are required, details should also be given in the Remarks field.

Distances of PACP defects are referenced from where the survey begins. The starting distance point will be where the camera enters the pipe segment. The finish distance point will be where the camera enters the Access Point the survey ends.

Descriptor

The following may be used:

- **Manhole (AMH)** – A man-entry structure designed to provide access to the pipes for maintenance and inspection.
- **Wastewater access (AWA)** - A device designed to provide intermediate access between manholes, at deflection, or at end-of-line segments. These devices are not large enough for man entry but allow access for CCTV and cleaning.
- **Discharge point (ADP)** - A location where the sewer (normally a storm sewer) empties into a stream or other body of water.
- **Tee connection (ATC)** - A tee connection refers to sewers connecting without use of an access device. The following should be entered – vertical dimension (value – inches(mm) 1st), horizontal dimension (value – inches(mm) 2nd) (if not circular), clock reference in the clock ref. column, shape and material should be coded, using the standard codes available for the header sheet, in the remarks column.
- **Other special chamber (AOC)** - An Access Point not described elsewhere.
- **Meter (AM)** - Structure built to house flow measurement equipment. Regular manholes that have flow meters installed should be coded as AMH and the presence of a flow meter entered in the Comments of the Header Section.



- **Wet well (AWW)** – Reservoir for a lift station.
- **Junction box (AJB)** - Chamber constructed where two or more sewers join. These are usually built where large diameter pipes flow together outside a treatment facility.
- **Clean out (ACO)** - Small access device typically the same diameter as the main pipe.
- **Catch Basin (ACB)** – An entry point for storm water into the storm sewer, usually located along the street, curb or low point in a parking lot.
- **End of Pipe (AEP)** – Where the pipe ends without a manhole, cleanout or other structure.

Modifiers

The following modifiers are required for a clean out:

- Mainline (**ACOM**)
- Property (**ACOP**)
- House (**ACOH**)

Continuous Defect

Not applicable.

Value

Not applicable except for Tee Connection.

Joint

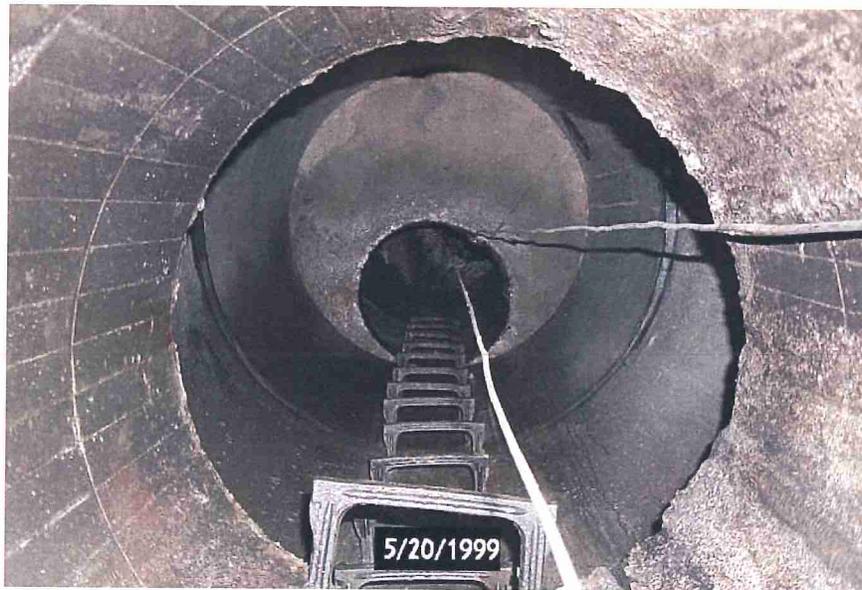
Not applicable.

Clock references

A clock reference will be required for Tee Connections.



Manhole (AMH)



Note: This is a picture from the bottom of the manhole looking up at a manhole with a flat-top

Distance (Feet) (meters)	Video Ref.	Code		Continuous defect	Value			Joint	Circumferential Location		Image Ref.	Remarks	
		Group/ Descriptor	Modifier/ severity		S/M/L	Inches (mm)			%	At/ From			To
						1st	2nd						
298.70		AMH										03- 13145	



Junction Box (AJB)



Distance (Feet) (meters)	Video Ref.	Code		Continuous defect	Value			Joint	Circumferential Location		Image Ref.	Remarks	
		Group/ Descriptor	Modifier/ severity		S/M/L	Inches (mm)			%	At/ From			To
						1st	2nd						
102.60		AJB										05- 18171	

NASSCO'S PIPELINE ASSESSMENT & CERTIFICATION PROGRAM (PACP)©

Section 6—Operational and Maintenance (Module 6B)

D DEPOSITS 6-1	D DEPOSITS 6-1	D DEPOSITS 6-1	R ROOTS 6-7	R ROOTS 6-7	R ROOTS 6-7
DA Attached 6-1	DS Settled 6-1	DN (continued) 6-1	RF Fine 6-7	RT Tap 6-7	RB Ball 6-7
DAE -Encrustation 6-2	DSF -Fine 6-2	DNF -Ingress 6-3	RFB -Barrel 6-7	RTB -Barrel 6-7	RBB -Barrel 6-7
DAGS -Grease 6-2	DSGV -Gravel 6-2	DNGV -Gravel (silt & sand) 6-3	RFL -Lateral 6-7	RTL -Lateral 6-7	RBL -Lateral 6-7
DAR -Rafting 6-2	DSC -Hard/Compacted 6-2	DNZ -Other 6-3	RFC -Connection 6-8	RTC -Connection 6-8	RBC -Connection 6-8
DAZ -Other 6-2	DSZ -Other 6-2				
I INFILTRATION 6-13	OB OBSTACLES/ OBSTRUCTIONS 6-19	OB OBSTACLES/ OBSTRUCTIONS 6-19	V VERMIN 6-31	G GROUT TEST & SEAL 6-33	G GROUT TEST & SEAL 6-33
IS Stain 6-13	OB B Brick or Masonry 6-19	OBJ Object wedged in joint 6-19	VR Rat 6-31	GTP Grout Test Passed 6-33	GTU Grout Test Unable 6-33
IW Weeper 6-13	OBM Pipe Material 6-19	OBC Object through connection/junction 6-19	VC Cockroach 6-31	GTP -J -Joint 6-33	GTU -J -Joint 6-33
ID Dripper 6-13	OBI Object protruding through wall 6-19	OBP External Pipe Cable 6-19	VZ Other 6-31	GTP -L -Lateral 6-33	GTU -L -Lateral 6-33
IR Runner 6-13				GTF Grout Test Failed 6-33	GRT Grout Test Location 6-33
IG Gusher 6-13				GTF -J -Joint 6-33	
				GTF -L -Lateral 6-33	

Section 7—Construction Features Coding (Module 6C)

T TAP 7-1	T TAP 7-1	T TAP 7-1	IS INTRUDING SEALING MATERIAL 7-9	IS INTRUDING SEALING MATERIAL 7-9	A ACCESS POINT 7-14
TF Factory Made 7-1	TS Saddle 7-2	TR Rehabilitated 7-2	ISSR Sealing Ring 7-9	ISGT Grout 7-9	ACB Catch Basin 7-15
TFI -Intruding 7-2	TSI -Intruding 7-2	TRI -Intruding 7-2	ISSRH -Hanging 7-9	ISZ Other 7-9	AEP End of Pipe 7-15
TFA -Active 7-2	TSA -Active 7-2	TRA -Active 7-2	ISSRB -Broken 7-9	ISSRL Loose 7-9	
TFC -Capped 7-2	TSC -Capped 7-2	TRC -Capped 7-2			
TFB -Abandoned 7-2	TSB -Abandoned 7-2	TRB -Abandoned 7-2			
TFD -Defective 7-2	TSD -Defective 7-2	TRD -Defective 7-2			
L LINE 7-11	A ACCESS POINT 7-14	A ACCESS POINT 7-14	A ACCESS POINT 7-14	A ACCESS POINT 7-14	A ACCESS POINT 7-14
LL (of sewer) 7-11	AMH Manhole 7-14	AOC Other Special Chamber 7-14	ACO Clean Out 7-15	ACB Catch Basin 7-15	
LLU Left Up 7-11	AWA Wastewater Access 7-14	AM Meter 7-14	ACOM -Mainline 7-15	AEP End of Pipe 7-15	
LLD Left Down 7-11	ADP Discharge Point 7-14	AWW Wet Well 7-15	ACOP -Property 7-15		
LR Right 7-11	ATC Tee Connection 7-14	AJB Junction Box 7-15	ACOH -House 7-15		

Section 8—Miscellaneous Features Coding (Module 6D)

M MISCELLANEOUS FEATURES 8-1	M MISCELLANEOUS FEATURES 8-1	M MISCELLANEOUS FEATURES 8-1	M MISCELLANEOUS FEATURES 8-1
MCO Camera Underwater 8-1	MLC Lining Change 8-2	MWM Water Mark 8-2	MWY Dye Test 8-2
MGU General Observation 8-1	MMC Material Change 8-2	MYV -Dye Visible 8-3	MYN -Not Visible 8-3
MGP General Photograph 8-1	MSA Survey Abandoned 8-2		
MSC Shape/Size Change (Sewer Dimension/Vertical/Horizontal) 8-1	MWL Water Level 8-2		
MJL Joint Length Change 8-1	MWLS -Sag 8-2		

Updated June 2010