9/24/92
WORKPLAN

Work Plan

for a

Subsurface Petroleum Hydrocarbon Contamination Assessment

at

3055 35th Avenue

Oakland, California

STID 515

PREPARED FOR:

Mr. Lynn Worthington

Better Homes Realty

5942 MacArthur Blvd., Suite B

Oakland, CA 94605

[redacted]

PREPARED BY:

CONSOLIDATED TECHNOLOGIES

1777 Saratoga Avenue, Suite 100

San Jose, CA 95129

September 1992

Mr. Lynn Worthington
Better Homes Realty
5942 MacArthur Blvd., Suite B
Oakland, CA 94605

September 24, 1992

INTRODUCTION

The following is a proposed work plan to assess possible soil and groundwater contamination for the property located at 3055 35th Avenue, Oakland, California.

The proposed work plan involves:

- The installation and sampling of three groundwater monitoring wells to define the extent of groundwater contamination, assist in making hydrogeologic interpretations, assist in determining the extent of soil contamination, and to aid in the development of a remediation plan.

- Review pertinent literature to evaluate the possible impact of the pollution plume on beneficial groundwater and surface water uses.

General guidance and/or clarification in this matter will be provided by the Alameda County Health Agency (ACHA) and the California Regional Water Quality Control Board (RWQCB).

STATEMENT OF QUALIFICATIONS

The project will be supervised by California Registered Geologist Victor B. Cherven (state registration number 3475), telephone number (916) 677-8624.

SITE DESCRIPTION

The subject property is located at 3055 35th Avenue, Oakland, California, at the intersection of 35th Avenue and School Street; land usage in the immediate vicinity primarily is mixed residential and commercial. The site is located approximately two miles east of the Inner Harbor section of San Francisco Bay. The location of the site is depicted in Figure 1, Site Location Map.

The site is an approximately ~~100-foot by 100-foot~~ unpaved, relatively-flat lot which is devoid of buildings or other structures. The site is bounded to the east by School Street, to the south by 35th Avenue, and to the north and west by private residences. Specific features of the site are shown in Figure 2, Site Detail Map. ~~Groundwater is believed to occur at approximately 25 to 35 feet below surface grade.~~

Site History

An Exxon gasoline service station formerly was located at the site. The gasoline station, presumably established in 1970, utilized five underground storage tanks: 2~~four of these tanks reportedly were~~ 4000-gallon capacity tanks used for storage of motor fuel (the specific type of fuel is unknown); the fifth tank was a 500-gallon capacity tank used for storage of waste oil. It is the understanding of Consolidated Technologies (CT) that as-built plans for the tanks and associated piping are not available. The current property owner is not aware of any unauthorized discharges from the tanks.

The property was sold on February 14, 1990. The underground storage tanks were removed ~~on January 23, 1991~~, by Pacific Excavators. ~~Although soil samples were collected after the tanks were removed,~~ laboratory analyses of the samples may not have occurred. The property owner did not receive analytical results of the collected samples, and also did not receive a Tank Closure Report.

Previous Work

On November 5, 1991, Consolidated Technologies (consultant) installed twelve exploratory soil borings at the site and collected

soil samples from each boring. The boring installations were supervised by California Registered Geologist Victor B. Cherven (state registration number 3475).

Figure 3, Soil Boring Locations Map, depicts the location of each soil boring installation, and Table 1 lists the contamination levels associated with each soil boring. Copies of the Boring Logs and laboratory analytical results are included in Appendix A.

The soil samples were analyzed at a State-certified laboratory, and the following concentrations of petroleum hydrocarbons (TPHg and BTEX) were reported: Total Petroleum Hydrocarbons as gasoline (TPHg) ranging from non-detectable to 2100 ppm (parts per million); Benzene ranging from non-detectable to 56,000 ppb (parts per billion); Toluene ranging from non-detectable to 100,000 ppb; Ethylbenzene ranging from non-detectable to 38,000 ppb; and Total Xylenes ranging from non-detectable to 290,000 ppb.

One of the borings (B-7) was drilled near the former location of the waste oil tank. A soil sample collected at 15 feet below surface grade from this boring was analyzed for detection of Halogenated Volatile Organics, Oil and Grease, and the metals Cadmium, Chromium, Lead, Nickel, and Zinc. Oil and Grease and the Halogenated Volatile Organics were not detected. The following concentrations of metals were reported: Cadmium at 3.51 ppm; Chromium at 25.1 ppm; Lead at 3.19 ppm; Nickel at 34.3 ppm; and Zinc at 47.7 ppm.

SCOPE OF WORK

The following work plan is based on the assumption that three, 4-inch O.D. (outside diameter), groundwater monitoring wells will be installed at appropriate locations.

Monitoring Well 1 (MW-1) will be installed near the northern property line, approximately 60 feet west of School Street. Monitoring Well 2 (MW-2) will be installed approximately 70 feet south-southeast of MW-1, and Monitoring Well 3 (MW-3) will be installed approximately 80 feet southwest of MW-1.

These monitoring wells are necessary to investigate the extent of possible groundwater and soil contamination at the site, and to aid in determining the best possible remedial action alternatives. One or more of these wells may later be converted to groundwater and/or vapor-extraction wells. Figure 4, Proposed Well Locations, depicts the approximate anticipated locations of monitoring wells.

The following activities are included in our subsurface, hydrocarbon contamination investigation. A copy of our Drilling, Sealing, and Sampling Protocol (DSSP) is included in Appendix B. Work will be conducted in accordance with the Health and Safety Plan, included in Appendix C.

- The installation of three (3) 4-inch O.D. groundwater monitoring wells to a depth of approximately 40 feet, or to a depth at least 10 feet below the water table. The depth to groundwater is assumed to be 25-35 feet below surface grade. These wells will be screened from an approximate depth of 25 feet (approximately 5 ft. above the water table) to approximately 40 feet, unless a confining layer is encountered at a shallower depth. The monitoring wells will be properly permitted, and installed in accordance with RWQCB guidelines.

- The borings will be drilled with 8-inch diameter hollow-stem augers, and soil samples will be collected at 5-foot intervals using a split-spoon sampler loaded with 2-inch O.D., 6-inch long brass sampling tubes. The samples will be properly handled, and stored, for later laboratory analysis by a State-certified analytical laboratory.

- Drill cuttings between sample intervals will also be examined, and both cuttings and core samples will be described on boring logs to provide a detailed soil profile.

- Record soil or rock type, color, plasticity, consistency, sorting, roundness, grain size, soil classification (using the Unified Soil Classification System), moisture content, and water level. These data will be presented in a boring/well log format.

- During the drilling process, all drill cuttings will be added to the spoils piles that are presently on site.

- Purge and develop the wells of at least five (5) well volumes, noting pH, conductivity, temperature, water color, and phase-separated hydrocarbons (if present). Purged waters will be containerized in 55-gallon drums and stored on-site until laboratory analytical results determine which disposal method is appropriate.

- Sample groundwater from each monitoring well not less than 72 hours after each well is developed. Groundwater samples will be collected in accordance with CT's DSSP. These samples will be properly handled and preserved in accordance with RWQCB guidelines.

- Well casing elevations will be surveyed to a common, permanent bench mark and the direction of groundwater flow and flow gradient will be determined.

- Soil samples will be analyzed at a State-certified analytical laboratory for Total Petroleum Hydrocarbons (TPH) as gasoline (EPA Method 5030/8015) and Benzene, Toluene, Ethyl benzene, and Xylenes (BTEX) (EPA Method 8020), and Lead (EPA Method 7420).

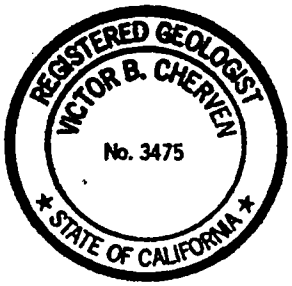
- Water samples will be analyzed for TPH as gasoline (EPA Method 5030/8015), BTEX (EPA Method 602), and Lead (EPA Method 7420).

- A report that includes our field program, analytical results, and findings and recommendations will be written upon completion of the investigation. Copies of the report will be submitted upon your authorization to the Regional Water Quality Control Board and the Alameda County Health Agency.

Sincerely,

Jack Forsythe
Associate Geologist

Victor B. Cherven
Registered Geologist



Attachments:
Figure 1: Site Location Map
Figure 2: Site Detail Map
Figure 3: Soil Boring Locations
Table 1: TPHg and BTEX concentration range
Figure 4: Proposed Well Locations

Appendix A: Boring Logs and Analytical Results of Soil Samples (November 5, 1991 Exploratory Soil Borings)
Appendix B: Drilling, Sealing, and Sampling Protocol
Appendix C: Health and Safety Plan

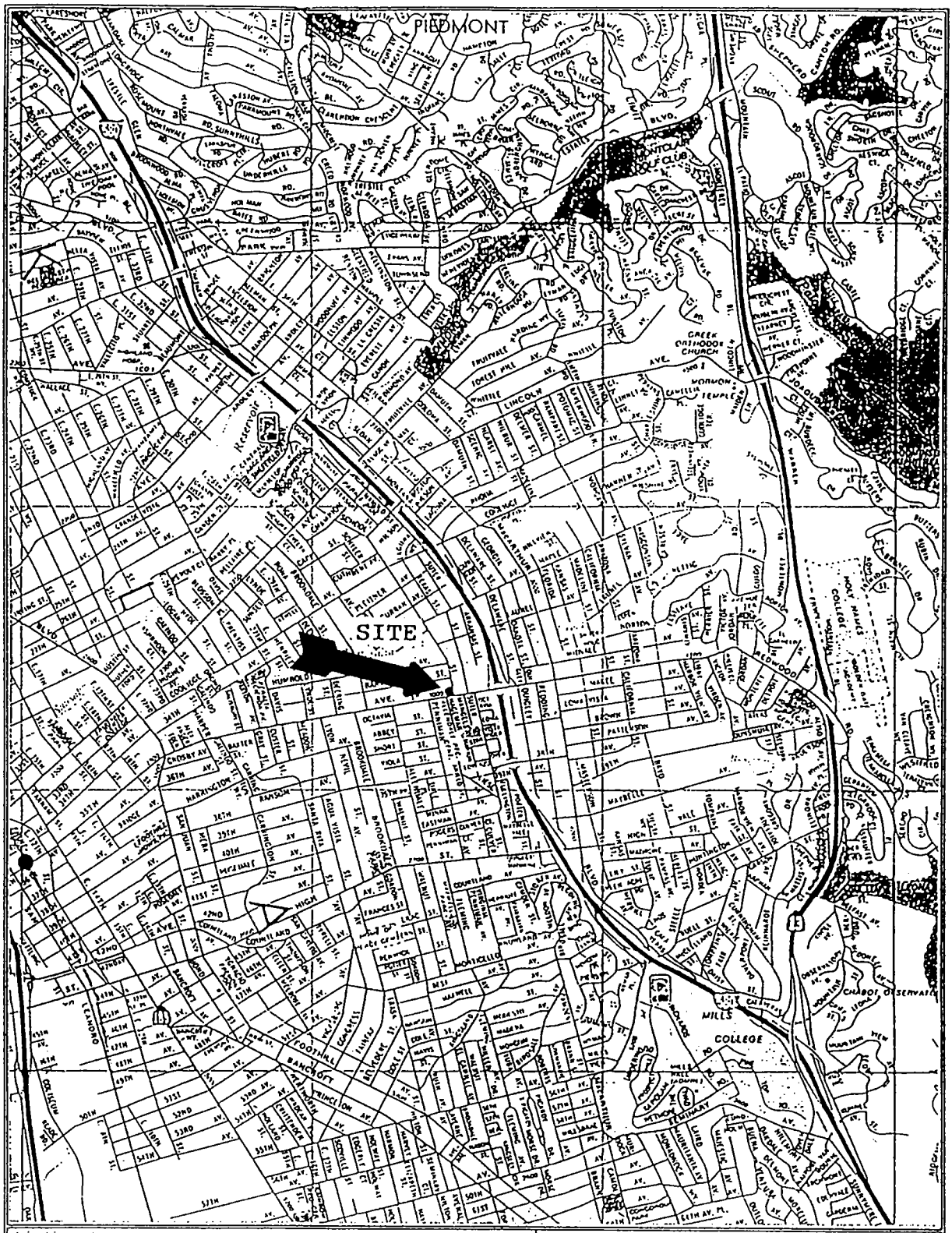


FIGURE 1: SITE LOCATION MAP	SEPTEMBER, 1992
LYNN WORTHINGTON PROPERTY 3055 35th Ave., Oakland, CA	SCALE: 1 inch = approximately 0.5 mile
SOURCE: Calif. State Automobile Association, Oakland street map	CONSOLIDATED TECHNOLOGIES

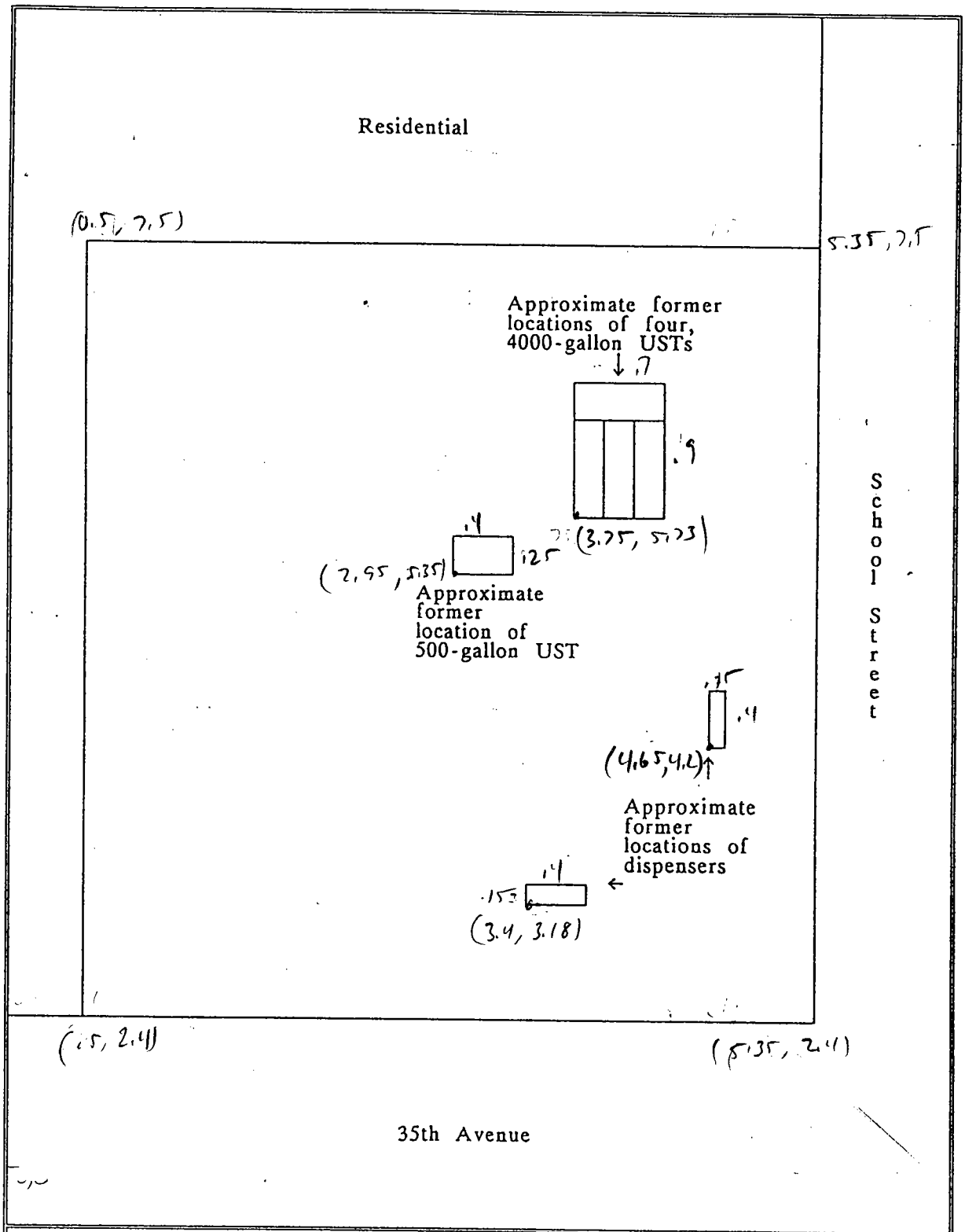


FIGURE 2: SITE DETAIL MAP	SEPTEMBER, 1992
LYNN WORTHINGTON PROPERTY 3055 35th Ave., Oakland, CA	SCALE: 1 inch = approximately 20 feet
SOURCE: CT personnel	CONSOLIDATED TECHNOLOGIES

0,0

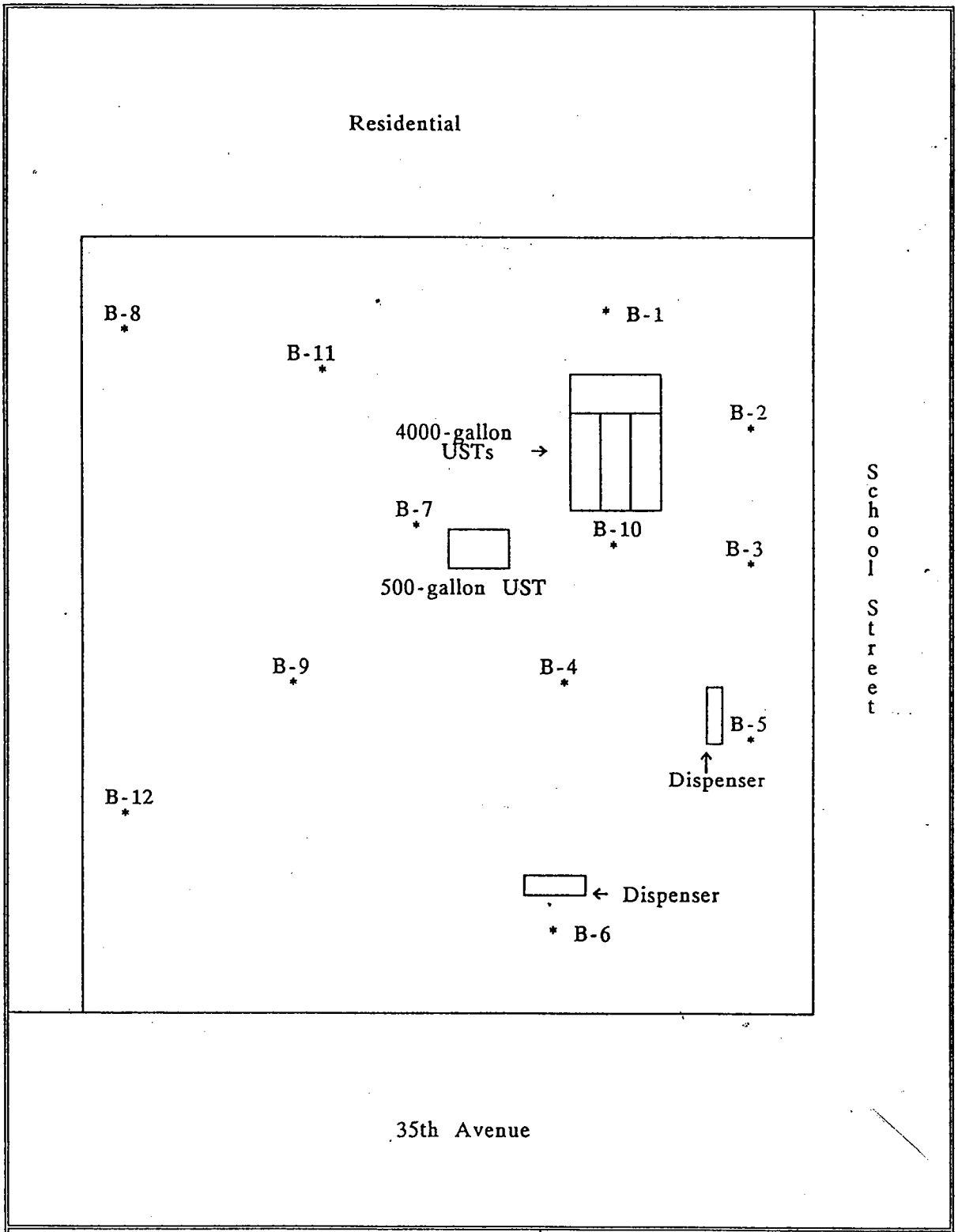


FIGURE 3: SOIL BORING LOCATIONS (11/5/91 Exploratory Borings)	SCALE: 1 inch = approximately 20 feet
LYNN WORTHINGTON PROPERTY 3055 35th Ave., Oakland, CA	SEPTEMBER, 1992
SOURCE: CT personnel	CONSOLIDATED TECHNOLOGIES

Boring Number	TPHg (ppm)	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Xylenes (ppm)
B-1	ND-1500	.013-56	ND-44	ND-24	.015-140
B-2	ND-290	ND-.057	ND-1.3	ND-3.8	ND-17
B-3	ND-130	ND-3.4	ND-4.7	ND-2.4	ND-19
B-4	ND-1.0	ND-.270	ND-.180	ND-.018	ND-.170
B-5	ND-660	ND-3.2	ND-4.1	ND-8.9	ND-29
B-6	1.7-1200	.130-6.6	.220-21	.066-18	.430-98
B-7	ND-2100	ND-28	ND-100	ND-38	ND-290
B-8	ND	ND	ND	ND	ND
B9(1 sample)	480	5.9	23	8.9	72
B-10	1.0-260	.022-7.3	.017-21	ND-6.6	.011-54
B-11	ND-20	ND-1.4	ND-.150	ND-.680	ND-1.8
B-12	ND-5.6	ND-1.0	ND-.750	ND-.110	ND-.910
DETECTION LIMIT	1.0	.005	.005	.005	.005
METHOD OF ANALYSIS	5030/ 8015	8020	8020	8020	8020

ND = Not Detected
ppm = parts per million

Table 1: Minimum and maximum concentrations of TPHg and BTEX constitutuents detected in soil samples collected during 11/5/91 soil boring installations.

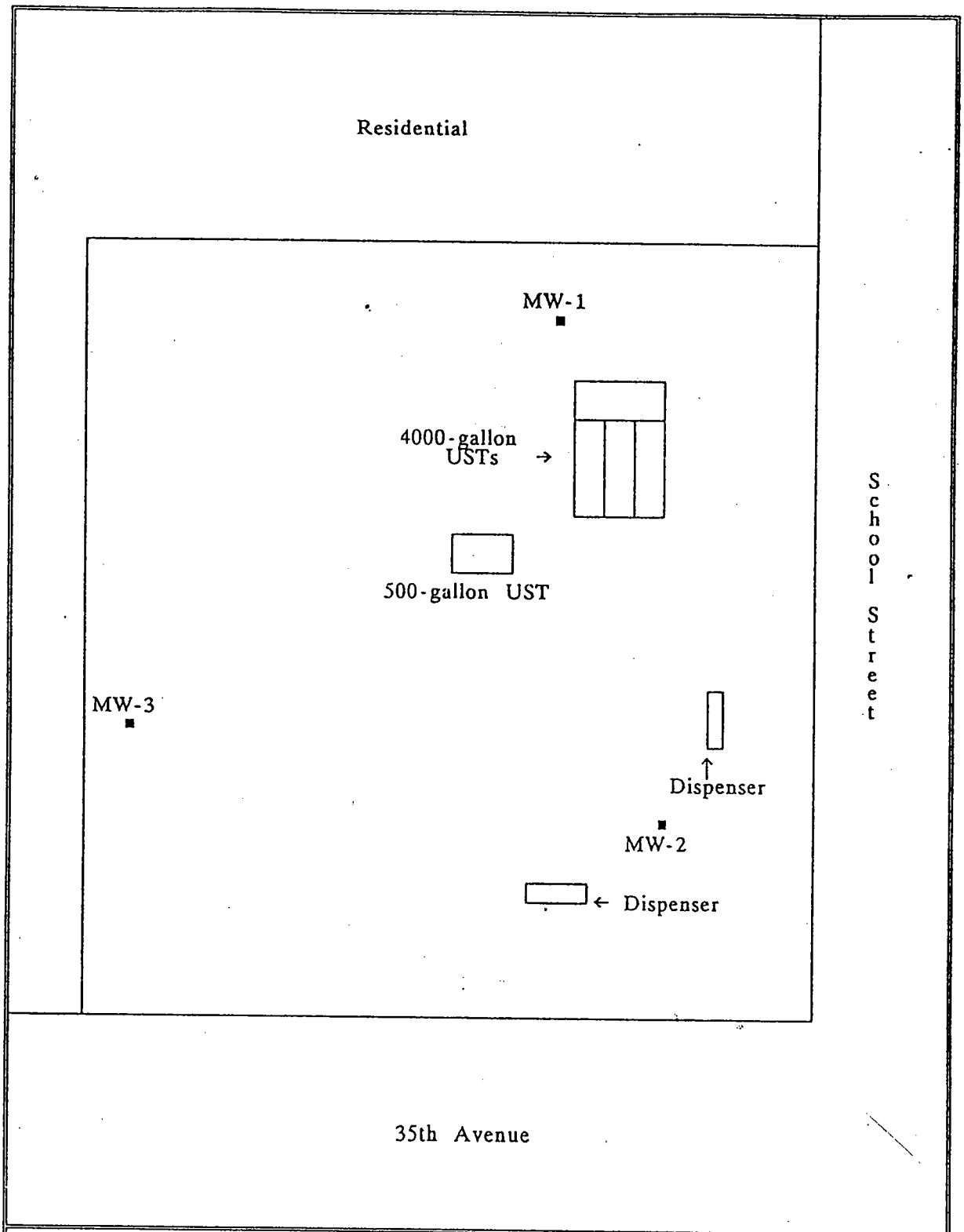


FIGURE 4: PROPOSED WELL LOCATIONS	SEPTEMBER, 1992
LYNN WORTHINGTON PROPERTY 3055 35th Ave., Oakland, CA	SCALE: 1 inch = approximately 20 feet
SOURCE: CT personnel	CONSOLIDATED TECHNOLOGIES

APPENDIX A

BORING LOGS and ANALYTICAL RESULTS of SOIL SAMPLES (NOVEMBER 5, 1991 EXPLORATORY SOIL BORINGS)

Project: 35th and School (Oakland)

Project No.: AC10C7-1.27

Field Geologist: Cherven/Marty

Drilling Co.: K L Drilling

Auger Type: 8" Hollow Stem

Geological Audit Services, Inc.
Yorba Linda - Stockton

BORING LOG

Boring: B-1

Date: 5 November 1991

Page 1 of 1

Depth (feet)	Sample Identification	OV Reading (PPM)	Blow Counts	Group Symbol	Soil Description
					Clayey, silty, sandy, gravelly; may be backfill material in upper 2 feet. Moderate odor.
				ML	Well graded pebbly, sandy, clayey silt
10	B1-10	44	5 10 15		Yellow-brown, slightly damp, medium dense, clayey-pebbly sand moderate hydrocarbon odor
	B1-15	117	4 16 26	SC	
20	B1-20	525	5 11 14		sandy clay to clayey sand moderate hydrocarbon odor
	B1-25	0	6 12 14		clayey sand to slightlly clayey coarse grained sand
30	B1-30	12	7 21 35		Light brown, dry to slightly moist, dense, slightly clayey coarse grained sand slight hydrocarbon odor driller reports water at 34 feet
	B1-35	3	4 17 23	SM-SC	Reddish brown,moist, medium dense, medium to coarse grained sand strongly mottled
40					Total Depth of Boring 35 feet

REGISTERED GEOLOGIST
VICTOR B. CHERVEN
No. 3475
STATE OF CALIFORNIA

Project: 35th and School (Oakland)

Project No.: AC10C7-1.27

Field Geologist: Cherven/Marty

Drilling Co.: K L Drilling

Auger Type: 8" Hollow Stem

Geological Audit Services, Inc.

Yorba Linda - Stockton

BORING LOG

Boring: B-2

Date: 5 November 1991

Depth (feet)	Sample Identification	OV Reading (PPM)	Blow Counts	Group Symbol	Soil Description
					Yellow-brown clayey, pebbly, coarse sand
10	B2-10	177	6 12 13	SC	Light yellow-brown, medium dense, clayey fine sand some oxidation and mottling
				ML	Slightly moist, very sticky, fine grained silty clay; slight hydrocarbon odor
	B2-15	119	13 19 26	SW	Yellow green, slightly clayey, very coarse gravelly sand
	B2-18.5	0	8 7	GC	Slightly damp, medium dense, clayey gravel clasts to 1" in diameter
20			16		slight hydrocarbon odor
	B2-25	0	3 11 13	ML	Light yellow to tan, very stiff, sandy silt or silty sand
					Moist gravelly clay
30	B2-30	2	9 36 45	GC	Yellow-reddish clayey gravel reddish mottles
	B2-35	0	4 10 22	SC	Yellow, moist, clayey coarse sand no hydrocarbon odor
					Total Depth of Boring 35 feet
40					

REGISTERED GEOLOGIST
VICTOR B. CHERVEN
No. 3475
STATE OF CALIFORNIA

Project: 35th and School (Oakland)

Project No.: AC10C7-1.27

Field Geologist: Cherven/Marty

Drilling Co.: K L Drilling

Auger Type: 8" Hollow Stem

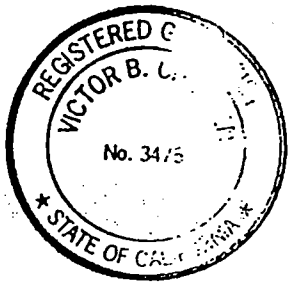
Geological Audit Services, Inc.
Yorba Linda - Stockton

BORING LOG

Boring: B-3

Date: 6 November 1991

Depth (feet)	Sample Identification	OV Reading (PPM)	Blow Counts	Group Symbol	Soil Description
10					
	B3-15		7 18 26	SC	Light yellow-brown, dense, clayey sand and gravel strong hydrocarbon odor
20	B3-20		5 10 15		Greenish-brown, medium dense, clayey sand little weathering strong hydrocarbon odor
	B3-24		8 15 16	SC-GC	Moist to very moist, dense, gravelly, clayey sand no odor; driller reports water at 24'
30					
40					



Project: 35th and School (Oakland)

Project No.: AC10C7-1.27

Field Geologist: Cherven

Drilling Co.: S E S

Auger Type: 8" Hollow Stem

Geological Audit Services, Inc.
Yorba Linda - Stockton

BORING LOG

Boring: B-4

Date: 6 November 1991

Depth (feet)	Sample Identification	OV Reading (PPM)	Blow Counts	Group Symbol	Soil Description
				SC	Clayey sand, no odor
				GC	Clayey, pebbly gravel
10				SM-MH	Silty sand with some clay; few pebbles
				SW	Medium brown, slightly clayey sand; few pebbles, no odor
				GP	Medium brown to grey, well sorted pea gravel; some clay
	B4-15	463	6 12 18	SC	Yellow brown, moist, medium dense, clayey sand moderate hydrocarbon odor
20	B4-20	544	6 12 18	SC-CL	Yellow brown, moist, medium dense, clayey coarse sand slight hydrocarbon odor
	B4-25		2 4 10	ML	Yellow orange, moist, stiff, clayey-silty sand; abundant oxidation, no odor
30	B4-30		4 9 14	CH-SW	Damp, sandy clay with saturated gravel lenses no odor
	B4-35		11 17 23	GC	Saturated, dense, clayey, sandy gravel oxidized, no odor driller reports water at 29 Ft
					Bottom of Boring 35 feet
40					

REGISTERED GEOLOGIST
VICTOR B. CHERVEN

Project: 35th and School (Oakland)

Project No.: AC10C7-1.27

Field Geologist: Cherven

Drilling Co.: S E S

Auger Type: 8" Hollow Stem

Geological Audit Services, Inc.
Yorba Linda - Stockton

BORING LOG

Boring: B-5

Date: 6 November 1991

Depth (feet)	Sample Identification	OV Reading (PPM)	Blow Counts	Group Symbol	Soil Description
10					
	B5-15			SC	Greenish-brown, very moist, loose, very coarse clayey sand; strong hydrocarbon odor
			15		
20	B5-20		16 30	GC	Green, moist, dense, clayey, gravelly sand moderate to strong hydrocarbon odor
			7		
	B5-25		9 9	ML	Yellow brown, wet, very stiff, clayey fine sand no odor
					Bottom of Boring 25 feet
30					
40					

REGISTERED GEOLOGIST
VICTOR B. CHERVEN
No. 3475
STATE OF CALIFORNIA

Project: 35th and School (Oakland)

Project No.: AC10C7-1.27

Field Geologist: Cherven

Drilling Co.: S E S

Auger Type: 8" Hollow Stem

Geological Audit Services, Inc.
Yorba Linda - Stockton

BORING LOG

Boring: B-6

Date: 6 November 1991

Depth (feet)	Sample Identification	OV Reading (PPM)	Blow Counts	Group Symbol	Soil Description
10					
	B6-15		3 14 10	SW	Medium brown, dry, medium dense, clayey, gravelly sand greenish mottling moderate hydrocarbon odor
20	B6-20			SC	Reddish-yellow, slightly moist, clayey fine sand slight odor
	B6-25		9 10 12	ML	Light yellow-brown, moist, very stiff,clayey, silty fine sand
				SP	Well-sorted coarse sand, saturated
30					Bottom of Boring 25.5 feet
40					

REGISTERED GEOLOGIST
VICTOR B. CHERVEN
No. 3475
STATE OF CALIFORNIA

Project: 35th and School (Oakland)

Project No.: AC10C7-1.27

Field Geologist: Cherven

Drilling Co.: S E S

Auger Type: 8" Hollow Stem

Geological Audit Services, Inc.
Yorba Linda - Stockton

BORING LOG

Boring: B-7

Date: 6 November 1991

Depth (feet)	Sample Identification	OV Reading (PPM)	Blow Counts	Group Symbol	Soil Description
	B7-5		8 18 26	SW	Black, dense, gravelly sand; organic at the top clasts to 2"; no odor
10	B7-10		11 25 32		25% recovery; very gravelly; no sample for description
	B7-15		7 12 14	SW- SC	Light brown, moist, medium dense, clayey, gravelly sand moderate odor
20	B7-20		2 5 10		Greenish brown to yellow-brown, moist, medium dense, clayey gravelly sand moderate to strong odor
	B7-25		3 10 18	ML	Light yellow-brown, very stiff, clayey fine sand no odor
30	B7-30		12 18 26	SC	Yellow-brown, moist, dense, coarse to very coarse clayey sand no odor
					Bottom of Boring 30 feet
40					

REGISTERED GEOLOGIST
VICTOR B. CHERVEN
No. 3475
STATE OF CALIFORNIA

Project: 35th and School (Oakland)

Project No.: AC10C7-1.27

Field Geologist: Cherven

Drilling Co.: S E S

Auger Type: 8" Hollow Stem

Geological Audit Services, Inc.
Yorba Linda - Stockton

BORING LOG

Boring: B-8

Date: 6 November 1991

Depth (feet)	Sample Identification	OV Reading (PPM)	Blow Counts	Group Symbol	Soil Description
					REGISTERED GEOLOGIST VICTOR B. CHERVEN No. 3475 STATE OF CALIFORNIA
10	B8-15		3 7 12	GC	Yellow-brown, medium dense, clayey gravel blue-green mottling
20	B8-20		2 11 16	SC	Light brown, moist, mdium dense, medium to coarse clayey sand no odor
	B8-25		2 5 9	SL-ML	Light yellow-brown, stiff, slightly sandy clay no odor
30	B8-30		2 10 12	SW	Driller reports water at 33 feet
	B8-35		20 50		Liight brown, saturated, clayey gravelly sand no odor
40					Bottom of Boring 35 feet

BORING LOG

Geological Audit Services, Inc.

Project: 35th and School (Oakland)

Project Number: AC 10C7-1.27

Drilling Co.: Soils Exploration Service

Date : 5/11/91

Field Geologist: Cherven

Auger Type: 8" Hollow Stem

Boring: B-9

DEPTH (FEET)	SAMPLE IDENTIFICATION	OV READING (PPM)	BLOW CNTS.	GROUP SYMBL	SOIL DESCRIPTION
10	SB9-15		3 9 14	SC- SP	Light yellow brown, clayey, medium- to coarse-grained sand, grading down to very coarse, pebbly, loose, very moist sand; sharp contact in lower 2 inches with medium brown to greenish black, very clayey sand; strong odor
20					Terminated boring and moved back to edge of property to drill B-12
30					
40					

REGISTERED GEOLOGIST
VICTOR B. CHERVEN
No. 3475
STATE OF CALIFORNIA

Project: 35th and School (Oakland)

Project No.: AC10C7-1.27

Field Geologist: Cherven

Drilling Co.: S E S

Auger Type: 8" Hollow Stem

Geological Audit Services, Inc.

Yorba Linda - Stockton

BORING LOG

Boring: B-10

Date: 6 November 1991

Depth (feet)	Sample Identification	OV Reading (PPM)	Blow Counts	Group Symbol	Soil Description
10					
	B10-15		7 11 13	GC- SC	Yellow-brown, moist, medium dense, clayey-gravelly sand very strong odor
20	B10-20		5 13 20		Yellow-brown, medium dense, clayey medium-to-coarse sand with dark brown clay lenses strong odor
	B10-25		3 8 11	SC- OH	Light-yellow to brown, medium dense, clayey medium-grained sand with black clay leses no odor
30	B10-30				Water at 28 feet; saturated clayey coarse sand
					Bottom of boring 30 feet oil sheen no sample
40					

REGISTERED GEOLOGIST
VICTOR B. CHERVEN
No. 3475
STATE OF CALIFORNIA

Project: 35th and School (Oakland)

Project No.: AC10C7-1.27

Field Geologist: Cherven

Drilling Co.: S E S

Auger Type: 8" Hollow Stem

Geological Audit Services, Inc.
Yorba Linda - Stockton

BORING LOG

Boring: B-11

Date: 6 November 1991

Depth (feet)	Sample Identification	OV Reading (PPM)	Blow Counts	Group Symbol	Soil Description
10					
	B11-14		4 10 15	SW-GP	Medium-brown, medium dense, slightly clayey sand with gravel to 3/4"; sharp contact with light-green fine to medium sand for 2"; grades down to gravel with 2" clasts moderate to strong odor
20	B11-20		8 15 18	SP-SC	Reddish-brown, slightly moist, medium dense, coarse sand moderate odor
	B11-25		4 6 8	SC	Yellow brown, damp, medium dense, clayey-fine sand no odor
30					Bottom of boring 27 feet
40					

REGISTERED GEOLOGIST
VICTOR B. CHERVEN
No. 3475
STATE OF CALIFORNIA

Project: 35th and School (Oakland)

Project No.: AC10C7-1.27

Field Geologist: Cherven

Drilling Co.: S E S

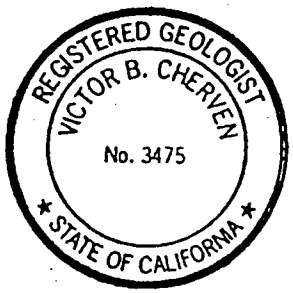
Auger Type: 8" Hollow Stem

Geological Audit Services, Inc.
Yorba Linda - Stockton

BORING LOG

Boring: B-12

Date: 6 November 1991

Depth (feet)	Sample Identification	OV Reading (PPM)	Blow Counts	Group Symbol	Soil Description
					
10					
			9		
	B12-15		15	SC-SW	Yellow-brown, dry, dense, clayey, gravelly, very coarse sand moderate odor
			23		
			4		
20	B12-20		7		moderate to strong odor
			12		
			2		
	B12-25		7	ML	Yellow-brown, dry, medium dense, clayey fine silty sand no odor
			15		
			5		
30	B12-30		18	SW-SC	Saturated, dense, clayey gravelly sand slight odor driller reports water at 30 feet
			42		
			8		
	B12-35		14	SC-GC	no odor
			20		
					Bottom of boring 35 feet
40					

CHROMALAB, INC.

Analytical Laboratory (E694)

5 DAYS TURNAROUND

November 11, 1991 ChromaLab File No.: 1191040

CONSOLIDATED TECHNOLOGIES

Attn: Tracy Bennett

RE: Seven soil samples for Gasoline/BTEX analysis

Date Sampled: Nov. 5, 1991 Date Submitted: Nov. 5, 1991
Date Extracted: Nov. 8, 1991 Date Analyzed: Nov. 8, 1991

RESULTS:

Sample I.D.	Gasoline (mg/kg)	Benzene (µg/kg)	Toluene (µg/kg)	Ethyl Benzene (µg/kg)	Total Xylenes (µg/kg)
B1-15'	19	150	340	140	1600
B1-20'	1500	56000	44000	24000	140000
B1-30'	N.D.	13	13	13	15
B1-35'	N.D.	15	N.D.	N.D.	26
B2-15'	290	57	1300	3800	17000
B2-25'	4.7	N.D.	N.D.	N.D.	120
B2-35'	N.D.	N.D.	N.D.	N.D.	N.D.
BLANK	N.D.	N.D.	N.D.	N.D.	N.D.
SPIKE RECOVERY	98.7%	108.8%	103.6%	102.1%	108.0%
DUP SPIKE REC.	98.0%	98.9%	105.4%	106.9%	107.2%
DETECTION LIMIT	1.0	5.0	5.0	5.0	5.0
METHOD OF ANALYSIS	5030/ 8015	8020	8020	8020	8020

ChromaLab, Inc.

David Duong
Chief Chemist

Eric Tam (by DD)
Eric Tam
Laboratory Director

2239 Omega Road, #1 • San Ramon, California 94583
510/831-1788 • Facsimile 510/831-8798
Federal ID #68-0140157

CHROMALAB, INC.

Analytical Laboratory (E694)

5 DAYS TURNAROUND

November 14, 1991 ChromaLab File No.: 1191065

CONSOLIDATED TECHNOLOGIES, INC. Attn: Tracy Bennett
RE: Twenty-nine soil samples for Gasoline/BTEX, Diesel, and Oil and Grease analyses
Date Sampled: Nov. 6, 1991 Date Submitted: Nov. 6, 1991
Date Extracted: Nov. 8-13, 1991 Date Analyzed: Nov. 8-13, 1991

RESULTS:

Sample I.D.	Gasoline (mg/kg)	Diesel (mg/kg)	Benzene (µg/kg)	Toluene (µg/kg)	Ethyl Benzene (µg/kg)	Total Xylenes (µg/kg)	Oil & Grease (mg/kg)
B3-15	45	----	3400	3600	1200	7500	----
B3-20	130	----	1900	4700	2400	19000	----
B3-25	N.D.	----	N.D.	N.D.	N.D.	N.D.	----
B4-25	1.0	----	270	180	18	170	----
B4-30	N.D.	----	N.D.	8.3	N.D.	38	----
B4-35	N.D.	----	N.D.	N.D.	N.D.	N.D.	----
B5-15	660	----	1800	4100	8900	29000	----
B5-20	97	----	3200	1200	1700	4600	----
B5-25	N.D.	----	N.D.	N.D.	N.D.	N.D.	----
B6-15	1200	----	6600	21000	18000	98000	----
B6-20	7.3	----	1500	1500	360	1800	----
B6-25	1.7	----	130	220	66	430	----
B7-15	2100	N.D.	28000	100000	38000	290000	N.D.
B7-25	1.0	----	30	18	5.8	60	----
B7-30	N.D.	----	N.D.	N.D.	N.D.	N.D.	----
B8-15	N.D.	----	N.D.	N.D.	N.D.	N.D.	----
B8-25	N.D.	----	N.D.	N.D.	N.D.	N.D.	----
B9-15	480	----	5900	23000	8900	72000	----
B10-15	76	----	1700	5100	1300	13000	----
B10-20	260	----	7300	21000	6600	54000	----
B10-25	1.0	----	37	59	8.9	64	----
B10-30	1.0	----	22	17	N.D.	11	----
B11-15	20	----	340	33	550	1000	----
B11-20	11	----	1400	150	680	1800	----
B11-25	N.D.	----	N.D.	N.D.	N.D.	N.D.	----
B12-15	5.6	----	1000	750	110	910	----
B12-25	N.D.	----	N.D.	N.D.	N.D.	N.D.	----
B12-30	N.D.	----	N.D.	N.D.	N.D.	N.D.	----
WOS	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
BLANK	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
SPIKE REC.	91.5%	89.1%	85.7%	93.9%	100.8%	106.6%	----
DUP SPIKE REC	94.5%	----	95.6%	99.4%	100.5%	101.4%	----
DET. LIMIT	1.0	1.0	5.0	5.0	5.0	5.0	10
METHOD OF ANALYSIS	5030/ 8015	3550/ 8015	8020	8020	8020	8020	5520 E&F

ChromaLab, Inc.

David Duong
Chief Chemist

Eric Tam (by DD)
Eric Tam
Laboratory Director

Plate #4

2239 Omega Road, #1 · San Ramon, California 94583
510/831-1788 · Facsimile 510/831-8798

CHROMALAB, INC.

Analytical Laboratory (E694)

5 DAYS TURNAROUND

November 18, 1991 ChromaLab File No.: 1191065

CONSOLIDATED TECHNOLOGIES, INC.

Attn: Tracy Bennett

RE: Two soil samples for Cadmium, Chromium, Lead, Nickel and Zinc analyses

Date Sampled: Nov. 6, 1991 Date Submitted: Nov. 6, 1991
Date Extracted: Nov. 15, 1991 Date Analyzed: Nov. 15, 1991

RESULTS:

Sample No.	Cadmium (mg/Kg)	Chromium (mg/Kg)	Lead (mg/Kg)	Zinc (mg/Kg)	Nickel (mg/Kg)
B7-15	3.51	25.1	3.19	47.7	34.3
WOS	3.42	31.2	1.76	23.9	30.9
BLANK	N.D.	N.D.	N.D.	N.D.	N.D.
SPIKE RECOVERY	125%	75%	85%	88%	58%
DUP SPIKE REC	88%	101%	84%	98%	60%
DETECTION LIMIT	0.25	0.25	0.10	0.25	0.50
METHOD OF ANALYSIS	6010	6010	6010	6010	6010

ChromaLab, Inc.

Refaat A. Mankarious
Inorganics Supervisor

Eric Tam
Laboratory Director

2239 Omega Road, #1 · San Ramon, California 94583
510/831-1788 · Facsimile 510/271-9799
Federal ID #68-0140157

CHROMALAB, INC.

Analytical Laboratory (E694)

5 DAYS TURNAROUND

November 15, 1991 — ChromaLab File # 1191065 A

Client: Consolidated Technologies, Inc.
Attn: Tracy Bennett
Date Sampled: Nov. 06, 1991 — Date Submitted: Nov. 06, 1991
Date Analyzed: Nov. 12, 1991

Sample I.D.: B7-15
Method of Analysis: 8010 — Detection Limit: 100 µg/kg*

COMPOUND NAME	µg/kg	Spike Recovery
CHLOROMETHANE	N.D.	---
VINYL CHLORIDE	N.D.	---
BROMOMETHANE	N.D.	---
CHLOROETHANE	N.D.	---
TRICHLOROFLUOROMETHANE	N.D.	96.5% 93.2%
1,1-DICHLOROETHENE	N.D.	---
METHYLENE CHLORIDE	N.D.	---
1,2-DICHLOROETHENE (TOTAL)	N.D.	---
1,1-DICHLOROETHANE	N.D.	---
CHLOROFORM	N.D.	92.1% 93.7%
1,1,1-TRICHLOROETHANE	N.D.	---
CARBON TETRACHLORIDE	N.D.	---
1,2-DICHLOROETHANE	N.D.	---
TRICHLOROETHENE	N.D.	---
1,2-DICHLOROPROPANE	N.D.	---
BROMODICHLOROMETHANE	N.D.	---
2-CHLOROETHYLVINYLETHER	N.D.	---
TRANS-1,3-DICHLOROPROPENE	N.D.	---
CIS-1,3-DICHLOROPROPENE	N.D.	---
1,1,2-TRICHLOROETHANE	N.D.	95.8% 96.7%
TETRACHLOROETHENE	N.D.	---
DIBROMOCHLOROMETHANE	N.D.	---
CHLOROBENZENE	N.D.	---
BROMOFORM	N.D.	---
1,1,2,2-TETRACHLOROETHANE	N.D.	---
1,3-DICHLOROBENZENE	N.D.	---
1,4-DICHLOROBENZENE	N.D.	---
1,2-DICHLOROBENZENE	N.D.	94.2% 95.0%

*High detection due to presence of high gasoline in sample.

ChromaLab, Inc.

David Duong
Senior Chemist

Eric Tam
Lab Director

Plate #5

2239 Omega Road, #1 · San Ramon, California 94583
510/831-1788 · Facsimile 510/831-9798
Federal ID #68-0150157

CHROMALAB, INC.

Analytical Laboratory (E694)

5 DAYS TURNAROUND

November 15, 1991 ChromaLab File # 1191065 A

Client: Consolidated Technologies, Inc.
Attn: Tracy Bennett
Date Sampled: Nov. 06, 1991 Date Submitted: Nov. 06, 1991
Date Analyzed: Nov. 12, 1991

Sample I.D.: B7-15
Method of Analysis: EPA 8270 Matrix: soil

COMPOUND NAME	Sample mg/Kg	MDL mg/Kg	Spike Recovery
PHENOL	N.D.	0.05	-----
BIS(2-CHLOROETHYL) ETHER	N.D.	0.05	91.5% 89.2%
2-CHLOROPHENOL	N.D.	0.05	-----
1,3-DICHLOROBENZENE	N.D.	0.05	-----
1,4-DICHLOROBENZENE	N.D.	0.05	-----
BENZYL ALCOHOL	N.D.	0.10	-----
1,2-DICHLOROBENZENE	N.D.	0.05	-----
2-METHYLPHENOL	N.D.	0.05	-----
BIS(2-CHLOROISOPROPYL)ETHER	N.D.	0.05	-----
4-METHYLPHENOL	N.D.	0.05	-----
N-NITROSO-DI-N-PROPYLAMINE	N.D.	0.05	-----
HEXACHLOROETHANE	N.D.	0.05	-----
NITROBENZENE	N.D.	0.05	-----
ISOPHORONE	N.D.	0.05	-----
2-NITROPHENOL	N.D.	0.05	-----
2,4-DIMETHYLPHENOL	N.D.	0.05	-----
BENZOIC ACID	N.D.	0.25	-----
BIS(2-CHLOROETHOXY)METHANE	N.D.	0.05	91.5% 93.2%
2,4-DICHLOROPHENOL	N.D.	0.05	-----
1,2,4-TRICHLOROBENZENE	N.D.	0.05	-----
NAPHTHALENE	N.D.	0.05	-----
4-CHLOROANILINE	N.D.	0.10	-----
HEXACHLOROBUTADIENE	N.D.	0.05	-----
4-CHLORO-3-METHYLPHENOL	N.D.	0.10	-----
2-METHYLNAPHTHALENE	N.D.	0.05	-----
HEXACHLOROCYCLOPENTADIENE	N.D.	0.05	-----
2,4,6-TRICHLOROPHENOL	N.D.	0.05	-----
2,4,5-TRICHLOROPHENOL	N.D.	0.05	-----
2-CHLORONAPHTHALENE	N.D.	0.05	-----
2-NITROANILINE	N.D.	0.25	-----
DIMETHYL PHTHALATE	N.D.	0.05	-----
ACENAPHTHYLENE	N.D.	0.05	-----
3-NITROANILINE	N.D.	0.25	-----
ACENAPHTHENE	N.D.	0.05	87.5% 88.2%
2,4-DINITROPHENOL	N.D.	0.25	-----
4-NITROPHENOL	N.D.	0.25	-----
DIBENZOFURAN	N.D.	0.05	-----

(continued on next page)

Plate #6

2239 Omega Road, #1 · San Ramon, California 94583
510/831-1788 · Facsimile 510/831-8796
Federal ID #68-0140157

CHROMALAB, INC.

Analytical Laboratory (E694)

5 DAYS TURNAROUND

ChromaLab File # 1191065 A

Sample I.D.: B7-15
Method of Analysis: EPA 8270 Matrix: soil

COMPOUND NAME	Sample mg/Kg	MDL mg/Kg	Spike Recovery
2,4-DINITROTOLUENE	N.D.	0.05	-----
2,6-DINITROTOLUENE	N.D.	0.05	89.1% 87.1%
DIETHYL PHTHALATE	N.D.	0.05	-----
4-CHLORO-PHENYL PHENYL ETHER	N.D.	0.05	-----
FLUORENE	N.D.	0.05	-----
4-NITROANILINE	N.D.	0.25	-----
4,6-DINITRO-2-METHYL PHENOL	N.D.	0.25	-----
N-NITROSODIPHENYLAMINE	N.D.	0.05	-----
4-BROMOPHENYL PHENYL ETHER	N.D.	0.05	-----
HEXACHLOROBENZENE	N.D.	0.05	-----
PENTACHLOROPHENOL	N.D.	0.25	-----
PHENANTHRENE	N.D.	0.05	-----
ANTHRACENE	N.D.	0.05	-----
DI-N-BUTYL PHTHALATE	N.D.	0.05	-----
FLUORANTHENE	N.D.	0.05	-----
PYRENE	N.D.	0.05	-----
BUTYLBENZYLPHTHALATE	N.D.	0.05	-----
3,3'-DICHLOROBENZIDINE	N.D.	0.10	-----
BENZO(A)ANTHRACENE	N.D.	0.05	-----
BIS(2-ETHYLHEXYL)PHTHALATE	N.D.	0.05	-----
CHRYSENE	N.D.	0.05	86.1% 85.1%
DI-N-OCTYLPHTHALATE	N.D.	0.05	-----
BENZO(B)FLUORANTHENE	N.D.	0.05	-----
BENZO(K)FLUORANTHENE	N.D.	0.05	-----
BENZO(A)PYRENE	N.D.	0.05	-----
INDENO(1,2,3 C,D)PYRENE	N.D.	0.05	-----
DIBENZO(A,H)ANTHRACENE	N.D.	0.05	-----
BENZO(G,H,I)PERYLENE	N.D.	0.05	-----

ChromaLab, Inc.

David Duong
Senior Chemist

Eric Tam
Lab Director

Plate #6 Control

CHROMALAB, INC.

Analytical Laboratory (E694)

5 DAYS TURNAROUND

November 15, 1991 ChromaLab File # 1191065 B

Client: Consolidated Technologies, Inc.
Attn: Tracy Bennett
Date Sampled: Nov. 06, 1991 Date Submitted: Nov. 06, 1991
Date Analyzed: Nov. 12, 1991

Sample I.D.: WOS
Method of Analysis: 8010 Detection Limit: 5.0 µg/kg

COMPOUND NAME	µg/kg	Spike Recovery
CHLOROMETHANE	N.D.	---
VINYL CHLORIDE	N.D.	---
BROMOMETHANE	N.D.	---
CHLOROETHANE	N.D.	---
TRICHLOROFLUOROMETHANE	N.D.	96.5% 93.2%
1,1-DICHLOROETHENE	N.D.	---
METHYLENE CHLORIDE	N.D.	---
1,2-DICHLOROETHENE (TOTAL)	N.D.	---
1,1-DICHLOROETHANE	N.D.	---
CHLOROFORM	N.D.	92.1% 93.7%
1,1,1-TRICHLOROETHANE	N.D.	---
CARBON TETRACHLORIDE	N.D.	---
1,2-DICHLOROETHANE	N.D.	---
TRICHLOROETHENE	N.D.	---
1,2-DICHLOROPROPANE	N.D.	---
BROMODICHLOROMETHANE	N.D.	---
2-CHLOROETHYLVINYLETHER	N.D.	---
TRANS-1,3-DICHLOROPROPENE	N.D.	---
CIS-1,3-DICHLOROPROPENE	N.D.	---
1,1,2-TRICHLOROETHANE	N.D.	95.8% 96.7%
TETRACHLOROETHENE	N.D.	---
DIBROMOCHLOROMETHANE	N.D.	---
CHLOROBENZENE	N.D.	---
BROMOFORM	N.D.	---
1,1,2,2-TETRACHLOROETHANE	N.D.	---
1,3-DICHLOROBENZENE	N.D.	---
1,4-DICHLOROBENZENE	N.D.	---
1,2-DICHLOROBENZENE	N.D.	94.2% 95.0%

ChromaLab, Inc.

David Duong
Senior Chemist

Eric Tam
Lab Director

Plate #7

2239 Omega Road, #1 • San Ramon, California 94583
[illegible]

CHROMALAB, INC.

Analytical Laboratory (E694)

5 DAYS TURNAROUND

November 15, 1991 ChromaLab File # 1191065 B

Client: Consolidated Technologies, Inc.
Attn: Tracy Bennett
Date Sampled: Nov. 06, 1991 Date Submitted: Nov. 06, 1991
Date Analyzed: Nov. 12, 1991

Sample I.D.: WOS
Method of Analysis: EPA 8270 Matrix: soil

COMPOUND NAME	Sample mg/Kg	MDL mg/Kg	Spike Recovery
PHENOL	N.D.	0.05	-----
BIS(2-CHLOROETHYL) ETHER	N.D.	0.05	91.5% 89.2%
2-CHLOROPHENOL	N.D.	0.05	-----
1,3-DICHLOROBENZENE	N.D.	0.05	-----
1,4-DICHLOROBENZENE	N.D.	0.05	-----
BENZYL ALCOHOL	N.D.	0.10	-----
1,2-DICHLOROBENZENE	N.D.	0.05	-----
2-METHYLPHENOL	N.D.	0.05	-----
BIS(2-CHLOROISOPROPYL)ETHER	N.D.	0.05	-----
4-METHYLPHENOL	N.D.	0.05	-----
N-NITROSO-DI-N-PROPYLAMINE	N.D.	0.05	-----
HEXACHLOROETHANE	N.D.	0.05	-----
NITROBENZENE	N.D.	0.05	-----
ISOPHORONE	N.D.	0.05	-----
2-NITROPHENOL	N.D.	0.05	-----
2,4-DIMETHYLPHENOL	N.D.	0.05	-----
BENZOIC ACID	N.D.	0.25	-----
BIS(2-CHLOROETHOXY)METHANE	N.D.	0.05	91.5% 93.2%
2,4-DICHLOROPHENOL	N.D.	0.05	-----
1,2,4-TRICHLOROBENZENE	N.D.	0.05	-----
NAPHTHALENE	N.D.	0.05	-----
4-CHLOROANILINE	N.D.	0.10	-----
HEXACHLOROBUTADIENE	N.D.	0.05	-----
4-CHLORO-3-METHYLPHENOL	N.D.	0.10	-----
2-METHYLNAPHTHALENE	N.D.	0.05	-----
HEXACHLOROCYCLOPENTADIENE	N.D.	0.05	-----
2,4,6-TRICHLOROPHENOL	N.D.	0.05	-----
2,4,5-TRICHLOROPHENOL	N.D.	0.05	-----
2-CHLORONAPHTHALENE	N.D.	0.05	-----
2-NITROANILINE	N.D.	0.25	-----
DIMETHYL PHTHALATE	N.D.	0.05	-----
ACENAPHTHYLENE	N.D.	0.05	-----
3-NITROANILINE	N.D.	0.25	-----
ACENAPHTHENE	N.D.	0.05	87.5% 88.2%
2,4-DINITROPHENOL	N.D.	0.25	-----
4-NITROPHENOL	N.D.	0.25	-----
DIBENZOFURAN	N.D.	0.05	-----

(continued on next page)

Blank #8

CHROMALAB, INC.

Analytical Laboratory (E694)

5 DAYS TURNAROUND

ChromaLab File # 1191065 B

Sample I.D.: WOS
Method of Analysis: EPA 8270 Matrix: soil

COMPOUND NAME	Sample mg/Kg	MDL mg/Kg	Spike Recovery
2,4-DINITROTOLUENE	N.D.	0.05	-----
2,6-DINITROTOLUENE	N.D.	0.05	89.1% 87.1%
DIETHYL PHTHALATE	N.D.	0.05	-----
4-CHLORO-PHENYL PHENYL ETHER	N.D.	0.05	-----
FLUORENE	N.D.	0.05	-----
4-NITROANILINE	N.D.	0.25	-----
4,6-DINITRO-2-METHYL PHENOL	N.D.	0.25	-----
N-NITROSODIPHENYLAMINE	N.D.	0.05	-----
4-BROMOPHENYL PHENYL ETHER	N.D.	0.05	-----
HEXACHLOROBENZENE	N.D.	0.05	-----
PENTACHLOROPHENOL	N.D.	0.25	-----
PHENANTHRENE	N.D.	0.05	-----
ANTHRACENE	N.D.	0.05	-----
DI-N-BUTYL PHTHALATE	N.D.	0.05	-----
FLUORANTHENE	N.D.	0.05	-----
PYRENE	N.D.	0.05	-----
BUTYLBENZYLPHTHALATE	N.D.	0.05	-----
3,3'-DICHLOROBENZIDINE	N.D.	0.10	-----
BENZO(A)ANTHRACENE	N.D.	0.05	-----
BIS(2-ETHYLHEXYL)PHTHALATE	N.D.	0.05	-----
CHRYSENE	N.D.	0.05	86.1% 85.1%
DI-N-OCTYLPHTHALATE	N.D.	0.05	-----
BENZO(B)FLUORANTHENE	N.D.	0.05	-----
BENZO(K)FLUORANTHENE	N.D.	0.05	-----
BENZO(A)PYRENE	N.D.	0.05	-----
INDENO(1,2,3 C,D)PYRENE	N.D.	0.05	-----
DIBENZO(A,H)ANTHRACENE	N.D.	0.05	-----
BENZO(G,H,I)PERYLENE	N.D.	0.05	-----

ChromaLab, Inc.

David Duong
Senior Chemist

Eric Tam
Lab Director

Plate # & cont'd

2239 Omega Road, #1 · San Ramon, California 94583
(510) 831-1786 · Facsimile (510) 831-4724

CHROMALAB, INC.

2269 Omega Road, #1 • San Ramon, California 94583
415/831-1788 • Facsimile 415/831-8798

CHROMALAB FILE ORDER # 4052

DATE 11/5/91 PAGE 1 OF 1

PROJ. MGR. Vic CHERVEN/Tracy Brant
COMPANY Consolidated Technologies
ADDRESS 1777 Saratoga Blvd
San Jose
SAMPLERS (SIGNATURE) (PHONE NO.)
V. Cherven

ANALYSIS REPORT

SAMPLE ID.	DATE	TIME	MATRIX	LAB ID.	TPH - Gasoline (EPA 5030)	TPH - Gasoline (5030, 8015) w/BTEX (EPA 602, 8020)	TPH - Diesel (EPA 3510, 3550, 8015)	PURGEABLE AROMATICS BTEX (EPA 602, 8020)	PURGEABLE HALOCARBONS (EPA 601, 8010)	VOLATILE ORGANICS (EPA 624, 8240)	BASE/NEUTRALS, ACIDS (EPA 625/627, 8270)	TOTAL OIL & GREASE (EPA 5520 D&F)	PESTICIDES/PCB (EPA 608, 8080)	PHENOLS (EPA 604, 8040)		METALS: Cd, Cr, Pb, Zn	CAM METALS (16) w/Cr VI	PRIORITY POLLUTANT METALS (13)						NUMBER OF CONTAINERS
B1-15	11/5/91	—	soil		✓	✓																		
B1-20	11/5/91	—	"			✓																		
B1-30	11/5/91		"			✓																		
B1-35	"		"			✓																		
B2-15	"		"			✓																		
B2-25	"		"			✓																		
B2-35	"		"			✓																		

PROJECT INFORMATION

PROJECT NAME:
PROJECT NUMBER:
SHIPPING ID. NO.
VIA

SAMPLE RECEIPT

TOTAL NO. OF CONTAINERS
CHAIN OF CUSTODY SEALS
REC'D GOOD CONDITION/COLD
CONFORMS TO RECORD
LAB NO.

SPECIAL INSTRUCTIONS/COMMENTS:

STAT

RELINQUISHED BY 1.	RELINQUISHED BY 2.	RELINQUISHED BY
V. Cherven 3:30 pm		
(SIGNATURE) (TIME)	(SIGNATURE) (TIME)	(SIGNATURE) (TIME)
(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)
(COMPANY)	(COMPANY)	(COMPANY)
RECEIVED BY 1.	**RECEIVED BY 2.**	**RECEIVED BY (LABORATORY)**
		3:30
(SIGNATURE) (TIME)	(SIGNATURE) (TIME)	(SIGNATURE) (TIME)
(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)	P. MONETTE 11:5
(COMPANY)	(COMPANY)	(PRINTED NAME) (DATE)
		(LAB)

1141040

CHROMALAB, INC.

2239 Omega Road, #1 • San Ramon, California 94583
415/831-1788 • Facsimile 415/831-8798

Chain of Custody

DATE 11/5/91 PAGE 2 OF 2

PROJ. MGR. Tracy Bennett
COMPANY Consolidated Technologies
ADDRESS
SAMPLERS (SIGNATURE) (PHONE NO.)

SAMPLE ID.	DATE	TIME	MATRIX	LAB ID.	TPH - Gasoline (EPA 5030)	TPH - Gasoline (5030, 8015) w/BTEX (EPA 602, 8020)	TPH - Diesel (EPA 3510, 3550, 8015	PURGEABLE AROMATICS BTEX (EPA 602, 8020)	PURGEABLE HALOCARBONS (EPA 601, 8010)	VOLATILE ORGANICS (EPA 624, 8240)	BASE/NEUTRALS, ACIDS (EPA 625/627, 8270)	TOTAL OIL & GREASE (EPA 5520 D&F)	PESTICIDES/PCB (EPA 608, 8080)	PHENOLS (EPA 604, 8040)			METALS: Cd, Cr, Pb, Zn	CAM METALS (18) w/Cr VI	PRIORITY POLLUTANT METALS (13)						NUMBER OF CONTAINERS
B1-10	11/5/91		Soil																					
B1-25																								
B2-10																								
B2-20																								
B2-30																								
B4-15																								
B4-20																								

ANALYSIS REPORT

PROJECT INFORMATION

PROJECT NAME:
PROJECT NUMBER:
SHIPPING ID. NO.
VIA:

SAMPLE RECEIPT

TOTAL NO. OF CONTAINERS	
CHAIN OF CUSTODY SEALS	
REC'D GOOD CONDITION/COLD	
CONFORMS TO RECORD	
LAB NO.	

SPECIAL INSTRUCTIONS/COMMENTS:

ARCHIVE UNTIL NOTIFIED

RELINQUISHED BY 1.	RELINQUISHED BY 2.	RELINQUISHED BY 3.
J. Pharmer 3:30pm		
(SIGNATURE) (TIME)	(SIGNATURE) (TIME)	(SIGNATURE) (TIME)
(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)
(COMPANY)	(COMPANY)	(COMPANY)
RECEIVED BY 1.	**RECEIVED BY 2.**	**RECEIVED BY (LABORATORY) 3.**
(SIGNATURE) (TIME)	(SIGNATURE) (TIME)	(SIGNATURE) 3.30 (TIME)
(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)	T. MONETTE 11/5 (PRINTED NAME) (DATE)
(COMPANY)	(COMPANY)	(LAB)

CHROMALAB, INC.

2239 Omega Road, #1 · Sa[illegible]
415/831-1788 · Fac[illegible]

CHROMALAB FILE # 1191065

4728

Chain of Custod[y]

DATE 11/6/91 PAGE 1 OF 6

PROJ. MGR. TRACY BENNETT

COMPANY

ADDRESS

SAMPLERS (SIGNATURE) (PHONE NO.)

V. Chernin

ANALYSIS REPORT

SAMPLE ID.	DATE	TIME	MATRIX	LAB ID.	TPH - Gasoline (EPA 5030)	TPH - Gasoline (5030, 8015) w/BTEX (EPA 602, 8020)	TPH - Diesel (EPA 3510, 3550, 8015)	PURGEABLE AROMATICS BTEX (EPA 602, 8020)	PURGEABLE HALOCARBONS (EPA 601, 8010)	VOLATILE ORGANICS (EPA 624, 8240)	BASE/NEUTRALS, ACIDS (EPA 625/627, 8270)	TOTAL OIL & GREASE (EPA 5520 D&F)	PESTICIDES/PCB (EPA 608, 8080)	PHENOLS (EPA 604, 8040)		METALS: Cd, Cr, Pb, Zn	CAM METALS (18) w/Cr VI	PRIORITY POLLUTANT METALS (13)		NUMBER OF CONTAINERS
B3-15	11/6/91		Soil			✓														
B3-20																				
B3-25																				
(B4-15)																			1135779	
(B4-20)																			1135780	
B4-25																				
B4-30																				
B4-35	↓		↓			✓														

PROJECT INFORMATION

PROJECT NAME:

PROJECT NUMBER

P.O. NO.

VIA

SAMPLE RECEIPT

TOTAL NO. OF CONTAINERS

CHAIN OF CUSTODY SEALS

REC'D GOOD CONDITION/COLD

CONFORMS TO RECORD

LAB NO.

SPECIAL INSTRUCTIONS/COMMENTS:

STAT

RELINQUISHED BY 1.	RELINQUISHED BY 2.	RELINQUISHED BY 3.
V. Chernin 4:00		
(SIGNATURE) (TIME)	(SIGNATURE) (TIME)	(SIGNATURE) (TIME)
(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)
(COMPANY)	(COMPANY)	(COMPANY)

RECEIVED BY 1.	RECEIVED BY 2.	RECEIVED BY (LABORATORY) 3.
(SIGNATURE) (TIME)	(SIGNATURE) (TIME)	(SIGNATURE) (TIME)
(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)
(COMPANY)	(COMPANY)	(LAB)

CHROMALAB, INC.

2239 Omega Road, #1 • San Ramon, California 94583
415/831-1788 • Facsimile 415/831-8798

Chain of Custo

DATE 11/6/91 PAGE 2 OF 2

PROJ. MGR. TRACY BENOIT
COMPANY CONSOLIDATED TECHNOLOGIES
ADDRESS
SAMPLER'S (SIGNATURE) (PHONE NO.)
V. Chrisman

ANALYSIS REPORT

SAMPLE ID.	DATE	TIME	MATRIX	LAB ID.	TPH - Gasoline (EPA 5030)	TPH - Gasoline (5030, 8015) w/BTEX (EPA 602, 8020)	TPH - Diesel (EPA 3510, 3550, 8015)	PURGEABLE AROMATICS BTEX (EPA 602, 8020)	PURGEABLE HALOCARBONS (EPA 601, 8010)	VOLATILE ORGANICS (EPA 624, 8240)	BASE/NEUTRALS, ACIDS (EPA 625/625, 8270)	TOTAL OIL & GREASE (EPA 5520 B&F)	PESTICIDES/PCB (EPA 608, 8080)	PHENOLS (EPA 604, 8040)	METALS: Cr, Cd, Pb, Zn	CAM METALS (17) w/Cr VI	PRIORITY POLLUTANT METALS (13)							
B5-15	11/6/91		Soil			✓																		
B5-20																								
B5-25																								
B6-15																								
B6-20																								
B6-25	↓		↓			↓																		

PROJECT INFORMATION

PROJECT NAME:
PROJECT NUMBER:
SHIPPING ID. NO.
VIA:

SAMPLE RECEIPT

TOTAL NO. OF CONTAINERS
CHAIN OF CUSTODY SEALS
REC'D GOOD CONDITION/COLD
CONFORMS TO RECORD
(METRO)

SPECIAL INSTRUCTIONS/COMMENTS:

RELINQUISHED BY 1.	RELINQUISHED BY 2.	RELINQUISHED BY 3.
V. Chrisman 4:00		
(SIGNATURE) (TIME)	(SIGNATURE) (TIME)	(SIGNATURE) (TIME)
(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)
(COMPANY)	(COMPANY)	(COMPANY)
RECEIVED BY 1.	**RECEIVED BY 2.**	**RECEIVED BY (LABORATORY)**
(SIGNATURE) (TIME)	(SIGNATURE) (TIME)	(SIGNATURE) (TIME)
(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)
(COMPANY)	(COMPANY)	(LAB)

CHROMALAB, INC.

2239 Omega Road, #1 · San Ramon, California 94583
415/831-1788 · Facsimile 415/831-8798

Chain of Custo

DATE 4/6/91 PAGE 3 OF t

PROJ. MGR. TRACY DOWNEY

COMPANY CROSSROADS TECHNOLOGIES

ADDRESS

SAMPLERS (SIGNATURE) (PHONE NO.)

V. Chernow

ANALYSIS REPORT

SAMPLE ID.	DATE	TIME	MATRIX	LAB ID.	TPH - Gasoline (EPA 5030)	TPH - Gasoline (5030, 8015) w/BTEX (EPA 602, 8020)	TPH - Diesel (EPA 3510, 3550, 8015)	PURGEABLE AROMATICS BTEX (EPA 602, 8020)	PURGEABLE HALOCARBONS (EPA 601, 8010)	VOLATILE ORGANICS (EPA 624, 8240)	BASE/NEUTRALS, ACIDS (EPA 625/627, 8270)	TOTAL OIL & GREASE (EPA 5520 E&F)	PESTICIDES/PCB (EPA 608, 8080)	PHENOLS (EPA 604, 8040)			METALS: Cd, Cr, Pb, Zn	CAM METALS (18) w/Cr VI	PRIORITY POLLUTANT METALS (13)					
B7-5	11/6/91		Soil		ARCHIVE																			
B7-10					ARCHIVE																			
B7-15						✓	✓		✓		✓	✓					✓							
B7-20					ARCHIVE																			
B7-25						✓																		
B7-30	↓		↓			✓																		

PROJECT INFORMATION

PROJECT NAME:

PROJECT NUMBER

SHIPPING ID NO.

P/A

SAMPLE RECEIPT

TOTAL NO. OF CONTAINERS

CHAIN OF CUSTODY SEALS

RCVD GOOD CONDITION/COLD

CONFORMS TO RECORD

LAB NO.

SPECIAL INSTRUCTIONS/COMMENTS:

WOP on B7-15

RELINQUISHED BY 1.	RELINQUISHED BY 2.	RELINQUISHED BY
V. Chernow 4:00		
(SIGNATURE) (TIME)	(SIGNATURE) (TIME)	(SIGNATURE) (TIME)
(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)
(COMPANY)	(COMPANY)	(COMPANY)
RECEIVED BY 1.	**RECEIVED BY 2.**	**RECEIVED BY (LABORATORY)**
(SIGNATURE) (TIME)	(SIGNATURE) (TIME)	(SIGNATURE) (TIME)
(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)
(COMPANY)	(COMPANY)	(LAB)

CHROMALAB, INC.

2239 Omega Road, #1 • San Ramon, California 94583
415/831-1788 • Facsimile 415/831-8798

Chain of Custo

DATE 11/6/91 PAGE 1 OF

PROJ. MGR. TARA DEMARTT
COMPANY CONSOLIDATED TECHNOLOGY
ADDRESS
SAMPLERS (SIGNATURE) (PHONE NO.)
V. Chrisman

ANALYSIS REPORT

SAMPLE ID.	DATE	TIME	MATRIX	LAB ID.	TPH - Gasoline (EPA 5030)	TPH - Gasoline (5030, 8015) w/BTEX (EPA 602, 8020)	TPH - Diesel (EPA 3510, 3550, 8015)	PURGEABLE AROMATICS BTEX (EPA 602, 8020)	PURGEABLE HALOCARBONS (EPA 601, 8010)	VOLATILE ORGANICS (EPA 624, 8240)	BASE/NEUTRALS, ACIDS (EPA 625/627, 8270)	TOTAL OIL & GREASE (EPA 5520 D&F)	PESTICIDES/PCB (EPA 608, 8080)	PHENOLS (EPA 604, 8040)	METALS: Cd, Cr, Pb, Zn	CAM METALS (18) w/Cr VI	PRIORITY POLLUTANT METALS (13)
B8-15	11/6/91		Soil			✓											
B8-20						ARCHIVE											
B8-25						✓											
B8-30						ARCHIVE											
B8-35																	
B9-15						✓											

PROJECT INFORMATION

PROJECT NAME:
PROJECT NUMBER:
SHIPPING ID. NO
VIA

SAMPLE RECEIPT

TOTAL NO. OF CONTAINERS
CHAIN OF CUSTODY SEALS
RCD GOOD CONDITION/COLD
CONFORMS TO RECORD
LAB NO.

SPECIAL INSTRUCTIONS/COMMENTS:

RELINQUISHED BY 1.	RELINQUISHED BY 2.	RELINQUISHED BY
V. Chrisman 4:00		
(SIGNATURE) (TIME)	(SIGNATURE) (TIME)	(SIGNATURE) (TIME)
(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)
(COMPANY)	(COMPANY)	(COMPANY)
RECEIVED BY 1.	**RECEIVED BY 2.**	**RECEIVED BY (LABORATORY)**
(SIGNATURE) (TIME)	(SIGNATURE) (TIME)	(SIGNATURE) (TIME)
(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)
(COMPANY)	(COMPANY)	(LAB)

CHROMALAB, INC.

2239 Omega Road, #1 • San Ramon, California 94583
415/831-1788 • Facsimile 415/831-8798

Chain of Custo

DATE 11/6/91 PAGE 1 OF 2

PROJ. MGR. TRACY DE NAULT

COMPANY CONSOLIDATED TECHNOLOGY

ADDRESS

SAMPLERS (SIGNATURE) (PHONE NO.)

V. Chuman

ANALYSIS REPORT

SAMPLE ID.	DATE	TIME	MATRIX	LAB ID.	TPH - Gasoline (EPA 5030)	TPH - Gasoline (5030, 8015) w/BTEX (EPA 502, 8020)	TPH - Diesel (EPA 3510, 3550, 8015	PURGEABLE AROMATICS BTEX (EPA 502, 8020)	PURGEABLE HALOCARBONS (EPA 601, 8010)	VOLATILE ORGANICS (EPA 624, 8240)	BASE/NEUTRALS, ACIDS (EPA 625/627, 8270)	TOTAL OIL & GREASE (EPA 5520 D&F)	PESTICIDES/PCB (EPA 608, 8080)	PHENOLS (EPA 604, 8040)			METALS: Cd, Cr, Pb, Zn	CAM METALS (18) w/Cr VI	PRIORITY POLLUTANT METALS (13)					
B8-15	11/6/91		Soil			✓																		
B8-20						ARCHIVE																		
B8-25						✓																		
B8-30						ARCHIVE																		
B5-35						↓																		
B7-15						✓																		

PROJECT INFORMATION

PROJECT NAME:

PROJECT NUMBER:

SHIPPING ID. NO

VIA

SAMPLE RECEIPT

TOTAL NO. OF CONTAINERS

CHAIN OF CUSTODY SEALS

RCVD GOOD CONDITION/COLD

CONFORMS TO RECORD

LAB NO.

SPECIAL INSTRUCTIONS/COMMENTS:

RELINQUISHED BY 1.	RELINQUISHED BY 2.	RELINQUISHED BY
V. Chuman 11/6/91		
(SIGNATURE) (TIME)	(SIGNATURE) (TIME)	(SIGNATURE) (TIME)
(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)
(COMPANY)	(COMPANY)	(COMPANY)
RECEIVED BY 1.	**RECEIVED BY 2.**	**RECEIVED BY (LABORATORY)**
(SIGNATURE) (TIME)	(SIGNATURE) (TIME)	(SIGNATURE) (TIME)
(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)
(COMPANY)	(COMPANY)	(LAB)

CHROMALAB, INC.

2239 Omega Road, #1 • San Ramon, California 94583
415/831-1788 • Facsimile 415/831-8798

Chain of Custoc

DATE 11/6/91 PAGE 5 OF 6

PROJ MGR. TRACY BENNETT

COMPANY Low Stress Environmental Technologies

ADDRESS

SAMPLERS (SIGNATURE) (PHONE NO.)

V. Chernow

ANALYSIS REPORT

SAMPLE ID.	DATE	TIME	MATRIX	LAB ID.	TPH - Gasoline (EPA 5030)	TPH - Gasoline (8015) w/BTEX (EPA 602, 8020)	TPH - Diesel (EPA 3510, 3550, 8015)	PURGEABLE AROMATICS BTEX (EPA 602, 8020)	PURGEABLE HALOCARBONS (EPA 601, 8010)	VOLATILE ORGANICS (EPA 624, 8240)	BASE/NEUTRALS, ACIDS (EPA 625/8270, 8270)	TOTAL OIL & GREASE (EPA 5520 E&F)	PESTICIDES/PCB (EPA 608, 8080)	PHENOLS (EPA 604, 8040)			METALS: Cd, Cr, Pb, Zn	CAM METALS (18) w/Cr VI	PRIORITY POLLUTANT METALS (13)						
B10-15	11/6/91		Soil			✓																			
B10-20						✓																			
B10-25						✓																			
B10-30						✓																			
B11-15						✓																			
B11-20						✓																			
B11-25						✓																			

PROJECT INFORMATION

PROJECT NAME:

PROJECT NUMBER:

SHIPPING ID NO.

VIA:

SAMPLE RECEIPT

TOTAL NO. OF CONTAINERS

CHAIN OF CUSTODY SEALS

RCVD GOOD CONDITION/COLD

CONFORMS TO RECORD

LAB NO.

SPECIAL INSTRUCTIONS/COMMENTS:

RELINQUISHED BY 1.	RELINQUISHED BY 2.	RELINQUISHED BY
V. Chernow 4:20		
(SIGNATURE) (TIME)	(SIGNATURE) (TIME)	(SIGNATURE) (TIME)
(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)
(COMPANY)	(COMPANY)	(COMPANY)
RECEIVED BY 1.	**RECEIVED BY 2.**	**RECEIVED BY (LABORATORY)**
(SIGNATURE) (TIME)	(SIGNATURE) (TIME)	(SIGNATURE) (TIME)
(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)
(COMPANY)	(COMPANY)	(LAB)

CHROMALAB, INC.

2239 Omega Road, #1 · San Ramon, California 94583
415/831-1788 · Facsimile 415/831-8798

Chain of Custo(

DATE 11/6/91 PAGE 6 OF 6

PROJ. MGR. TRACY BENNETT
COMPANY Consolidated Todd
ADDRESS
SAMPLERS (SIGNATURE) (PHONE NO.)
V. Chuan

ANALYSIS REPORT

SAMPLE ID.	DATE	TIME	MATRIX	LAB ID.	TPH - Gasoline (EPA 5030)	TPH - Gasoline (5030, 8015) w/BTEX (EPA 602, 8020)	TPH - Diesel (EPA 3510, 3550, 8015	PURGEABLE AROMATICS BTEX (EPA 602, 8020)	PURGEABLE HALOCARBONS (EPA 601, 8010)	VOLATILE ORGANICS (EPA 624, 8240)	BASE/NEUTRALS, ACIDS (EPA 625/627, 8270)	TOTAL OIL & GREASE (EPA 5520 B&F)	PESTICIDES/PCB (EPA 608, 8080)	PHENOLS (EPA 604, 8040)			METALS: Cd, Cr, Pb, Zn, NI	CAM METALS (16) w/Cr VI	PRIORITY POLLUTANT METALS (13)						
B12-15	11/6/91		Soil			✓																		
B12-20	↓		↓			ARCHIVE																		
B12-25						✓																		
B12-30						✓																		
B12-35	↓		↓			ARCHIVE																		
WOS	11/6/91		Soil			✓	✓		✓		✓	✓					✓							

PROJECT INFORMATION

PROJECT NAME:
PROJECT NUMBER:
SHIPPING ID NO.
VIA:

SAMPLE RECEIPT

TOTAL NO. OF CONTAINERS
CHAIN OF CUSTODY SEALS
RCD GOOD CONDITION/COLD
CONFORMS TO RECORD
LAB NO.

SPECIAL INSTRUCTIONS/COMMENTS:
WOP ON SAMPLE WOS

RELINQUISHED BY 1.	RELINQUISHED BY 2.	RELINQUISHED BY
V. Chuan 4:02		
(SIGNATURE) (TIME)	(SIGNATURE) (TIME)	(SIGNATURE) (TIME)
(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)
(COMPANY)	(COMPANY)	(COMPANY)
RECEIVED BY 1.	**RECEIVED BY 2.**	**RECEIVED BY (LABORATORY)**
(SIGNATURE) (TIME)	(SIGNATURE) (TIME)	(SIGNATURE) (TIME)
(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)
(COMPANY)	(COMPANY)	(LAB)

APPENDIX B

DRILLING, SEALING, AND SAMPLING PROTOCOL

Soil Borings/Well Installations

Lynn Worthington Property
3055 35th Street
Oakland, CA

DRILLING, SEALING AND SAMPLING PROTOCOL

DRILLING PROTOCOL

Well installation procedures will follow guidelines recommended by the California Regional Water Quality Control Board.

1. Drilling will be performed by a state-licensed (C-57) drilling contractor, using a continuous-flight, minimum eight-inch outer diameter (OD), hollow-stem auger. All augers and other down-hole drilling equipment will be thoroughly steam-cleaned prior to their use at the site. In order to minimize the possibility of cross-contamination between drilling locations, augers will either be thoroughly steam-cleaned before a new hole is drilled, or adequate clean augers will be available to complete all of the drillings without re-using auger sections.

2. A geologic drilling log (Boring Log; Figure 1) will be maintained, recording the materials encountered and the locations of collected soil samples. The log will include field descriptions of the soil properties and lithologic variations using the Unified Soil Classification System (USCS), penetration rate of the split-spoon sampler (blows per 6-inch interval), moisture conditions, well construction, and any unusual characteristics that may indicate the presence of chemical contamination. The log will be signed by a Registered Professional Engineer or Registered Geologist.

3. During the drilling process, all drill cuttings will be placed on thick plastic sheeting. Pending the analytical results of soil samples, drill cuttings will be covered with plastic sheeting and stored on site.

MONITORING WELL INSTALLATION

1. Each well boring will be advanced until a water saturated zone is encountered. When the saturated zone is encountered, the boring may extend through the depth of the aquifer to an underlying clay layer or aquitard. If the layer of the

saturated zone is more than 20 feet thick, the well will be completed at a depth of up to 15 feet below the depth that the saturated zone was first encountered.

2. A typical well construction is shown in Figure 2. A clean, inert, two-inch OD, Schedule 40 PVC pipe will be used as casing in the bore-hole. Pipe sections will be threaded and screwed together without the use of cement. Screening of two relatively permeable aquifer lenses, which appear to be separated by a relatively impermeable layer, will not occur.

3. The well screen will be two-inch OD, Schedule 40 PVC pipe, typically with 0.010- or 0.020-inch continuous slot, depending on design criteria. Slot size will be determined by the sizes of soil grains encountered during drilling. The slotted pipe will extend above the estimated seasonal high groundwater level. The annulus of the perforated section will be packed with clean number-two or number-three Monterey sand, or the equivalent, for the length of the screen and approximately two feet above the uppermost slot. The size of the material used for the sand pack will be from three to five times the 50% size of the soil grains and will be determined in the field. The slot size selected will restrict at least 90% of the sand pack material.

4. One foot of bentonite (expansive clay) will be placed on top of the sand pack, in order to create a spacer between the sand and annular seal. An annular seal of cement grout composed of Portland Type I/II cement (94 pounds/5 gallons water) will be placed immediately above the bentonite layer to approximately three feet below surface grade. A sand-cement slurry may also be used, with a minimum 11 sacks of Portland Type I/II cement per cubic yard of sand. If a sand-cement slurry is used it must be mixed off-site at a batch plant. If more than 30 feet of seal is required, the sealant must be tremie-piped to a minimum depth of three feet above the bentonite seal.

5. Well completion may occur at surface grade or above surface grade, depending upon the location of the well. Above-grade completion will require an eight-inch diameter, locking, steel, waterproof protective casing set into a concrete pad. A sketch of an above-grade completion is shown in Figure 3. At-grade completion will require a steel casing and a Christy (or equivalent) traffic box. Additionally, a concrete pad with approximately three inches of slope away from the center of the well box is necessary, in order to prevent surface-water runoff from entering the well box. A watertight cap will be installed on the well head and the top of the well will be secured with a locking cap. A sketch of an at-grade completion is shown in Figure 4.

6. The cover of each well will be marked "Monitoring Well." A small metal tag will be permanently attached to each well or within the well vault. This tag will include the well number, hole and casing diameters, location of screened interval, and total depth of the well.

7. The elevation of each well will be surveyed vertically to an average mean sea level (AMSL) and horizontally to a permanent bench mark. This data will be recorded on the boring log.

WELL DEVELOPMENT

1. Each well will be developed no earlier than 72 hours after seal emplacement and no later than one week after the well is initially installed.

2. Wells will be developed until water is free of fine-grained sediments and/or until field measurements of pH, conductivity and temperature stabilize. At least five, and up to ten, well volumes of water will be removed during development of each well. Water removal will be accomplished by either bailing with a 1.5-inch diameter PVC bailer or using a bottom loading airlift pump. All down-hole tubing will be flushed with a mixture of TSP (Trisodium Phosphate) and water, rinsed with tap water, rinsed with distilled water and air-dried prior to and after use.

3. Water extracted during well developments will be collected in 55-gallon drums; these drums will be labeled (Figure 5), covered and stored on-site for later disposition contingent on analytical results of the water samples. Stored water will not be kept on site more than 30 days after the time of initial placement in the drums. Upon receipt of analytical results, the water will be properly disposed of either on site (if not contaminated) or by manifest to a certified disposal facility. Disposal of contaminated water will conform to applicable hazardous waste requirements.

SAMPLE HANDLING AND PRESERVATION

1. Soil and water sampling, handling, and storage will be conducted in accordance with Regional Water Quality Control Board guidelines for the investigation of suspected underground storage tank leaks.

2. In the field, each sample container will be properly sealed, labeled and identified. The label information will include the date, identification number, sample depth, project name and number, and the name of the person that collected the sample. An example of a completed sample label is shown in Figure 6.

3. The samples will be delivered to Chromalab Inc. of San Ramon, California, a state-certified analytical laboratory (Certification #E694) within 3 days of sample collection. Before, during and after transport to the laboratory, samples will be continually kept on ice and/or refrigerated. In the field, ice will be used for all soil sample storage prior to transport to the laboratory.

4. Unless otherwise requested by the laboratory, no preservatives will be added to the samples.

5. The sealed samples will be opened only by laboratory personnel who will perform the chemical analysis.

6. The samples will be analyzed within 14 days from their collection date.

7. A Chain of Custody form (Figure 7) will be properly completed prior to relinquishing samples to the analytical laboratory. The form is used to record the site name and address, consulting firm name and telephone number, sample identification numbers, date and time of sampling, type of matrix, preservation method, number and size of containers, and analysis requested.

SOIL SAMPLING PROTOCOL

1. Soil sampling will commence at approximately five feet below surface grade. The samples will be taken with a California-modified split-spoon sampler at five-foot increments to a depth directly above the groundwater saturated zone. Samples also will be collected whenever a lithology change occurs while drilling and when the water table is encountered.

2. The California-modified split spoon sampler will be steam-cleaned or cleaned in a TSP and water solution, rinsed with clean tap water, rinsed with deionized water, and air-dried prior to re-assembly. The sampler will then be re-assembled with three laboratory-supplied brass sample liners and carefully lowered through the hollow stem auger.

3. The soils in the bottom liner of the sampler will be taken as the sample to be tested, if the liner is in good condition. The samples will be labeled and sealed in the field in their original liners. The ends of the sample liners will be capped with aluminum foil, and sealed with plastic end-caps and aluminized tape.

4. The center liner will be retained at CT, in case additional testing is required at a later date.

5. Soils within the top liner of the sampler will be extruded at the drilling site, and examined for lithology information required in the boring logs. Bore cuttings will be examined during drilling to provide a continuous log of the materials encountered. The cuttings, and the soil samples not retained for chemical analysis, will be placed on thick plastic sheeting until their waste classification is determined. Contaminated soils will be properly disposed of at an appropriate landfill, or undergo bioremediation on site.

6. At least two soil samples from each boring will be analyzed, and the samples will be from different depths.

GROUND WATER SAMPLING PROTOCOL

1. Each well will be sampled no earlier than 72 hours after well development.

2. The wells will be purged of 4-5 well volumes of stale water prior to collection of the water sample. The wells will be purged with a clean teflon or acrylic bailer. Before and after purging, the bailer will be cleaned in a TSP and water solution, rinsed in fresh tap water, then rinsed with de-ionized water and air dried. A field log (Figure 8) of well water-level measurements will be maintained during the purging procedure. While awaiting analytical results, the purged water will be stored on-site in labeled 55-gallon drums; the water will be stored on-site no longer than 30 days.

3. All water collected for chemical analysis will be placed in laboratory-supplied, 40-milliliter VOA (Volatile Organic Analysis) glass vials and/or 1-liter amber glass bottles, and sealed with a teflon screw cap. The containers will be topped-off to avoid air space, inverted and visually inspected for the presence of air bubbles. If bubbles are detected, the sample will be discarded and a new sample collected. After collection, the samples will at all times be kept on ice or refrigerated.

4. Groundwater samples will be collected from the wells by using a clean teflon or acrylic bailer. Prior to collection of each sample, the bailer will be thoroughly steam-cleaned or cleaned in a TSP and water solution, rinsed with clean tap water, then rinsed with de-ionized water.

5. Prior to collection of a groundwater sample, final rinsate from the bailer will be collected as a water sample blank. Water sample blanks will be placed in laboratory-supplied, 40-milliliter VOA glass vials and/or 1-liter amber glass bottles, and sealed with a teflon screw cap. One water sample blank will be taken for each water sample collected from each well.

SAMPLE RECORDS AND CHAIN OF CUSTODY

1. Records for each sample will contain information on sample type and source, sampling date, location, significant conditions that may impact the sampling, laboratory name, sampling method and analysis requested.

2. A chain of positive, signature custody (Figure 7) and transference will be strictly maintained at all times.

3. A copy of the laboratory analytical results and the completed chain of custody forms will be provided with the technical report.

4. Water level measurements will be taken before each sampling event and recorded on the water sampling log (Figure 8). Water levels will be measured and recorded to the nearest 0.01 foot by an optical probe or other device of equivalent accuracy.

REPORTING OF DATA

1. The results of the soil and water analysis will be reported to the Regional Water Quality Control Board in a timely manner. A timely manner, for the purposes of this site investigation, is considered to be no longer than 21 days after receiving the analytical results of the samples.

2. A Department of Water Resources (DWR) Water Well Drillers Report, Form 188, will be filed within 15 days after the well installation phase of this project is completed.

3. All significant increases in background readings indicate a suspected release of chemical contamination and will be reported within 24 hours of receipt of analytical results.

4. The report submitted upon completion of this project will be comprehensive, and will include the following items:

    1. Cover Letter
    2. Introduction
    3. Site Description
    4. Site Status
    5. Well Installation/Boring Information
    6. Sample Collection
    7. Analytical Results of Sampling
    8. Tables
    9. Maps
    10. Cross Sections
    11. Preliminary Conclusions and Recommendations of Remedial Action (if necessary)

Attachments: Figures 1 through 8

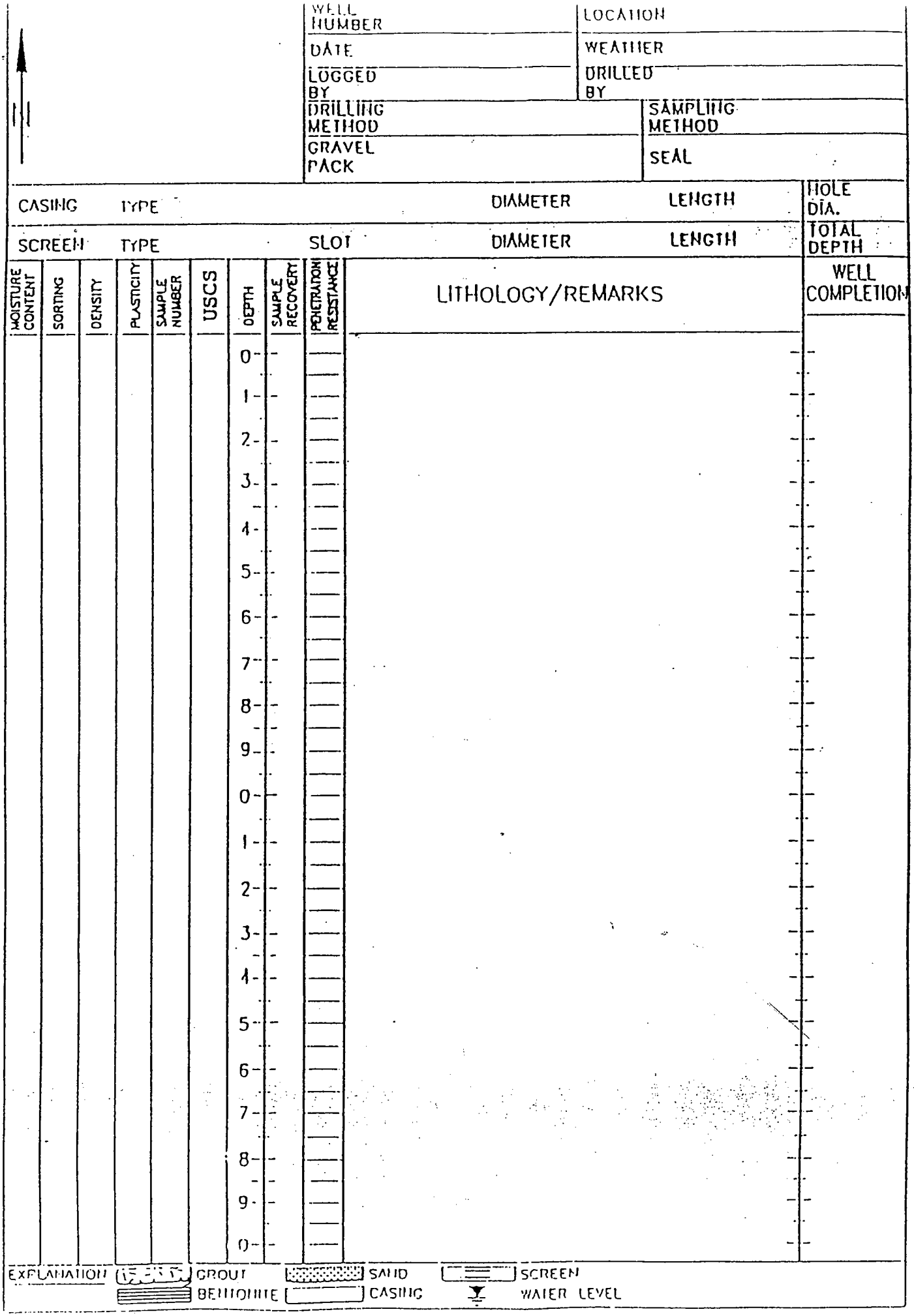

WELL NUMBER
LOCATION
DATE
WEATHER
LOGGED BY
DRILLED BY
DRILLING METHOD
SAMPLING METHOD
GRAVEL PACK
SEAL
CASING TYPE
DIAMETER
LENGTH
HOLE DIA.
SCREEN TYPE
SLOT
DIAMETER
LENGTH
TOTAL DEPTH
MOISTURE CONTENT
SORTING
DENSITY
PLASTICITY
SAMPLE NUMBER
USCS
DEPTH
SAMPLE RECOVERY
PENETRATION RESISTANCE
LITHOLOGY/REMARKS
WELL COMPLETION
0
1
2
3
4
5
6
7
8
9
0
1
2
3
4
5
6
7
8
9
0
EXPLANATION
GROUT
SAND
SCREEN
BENTONITE
CASING
WATER LEVEL

FIGURE 1

TYPICAL WELL CONSTRUCTION DIAGRAM

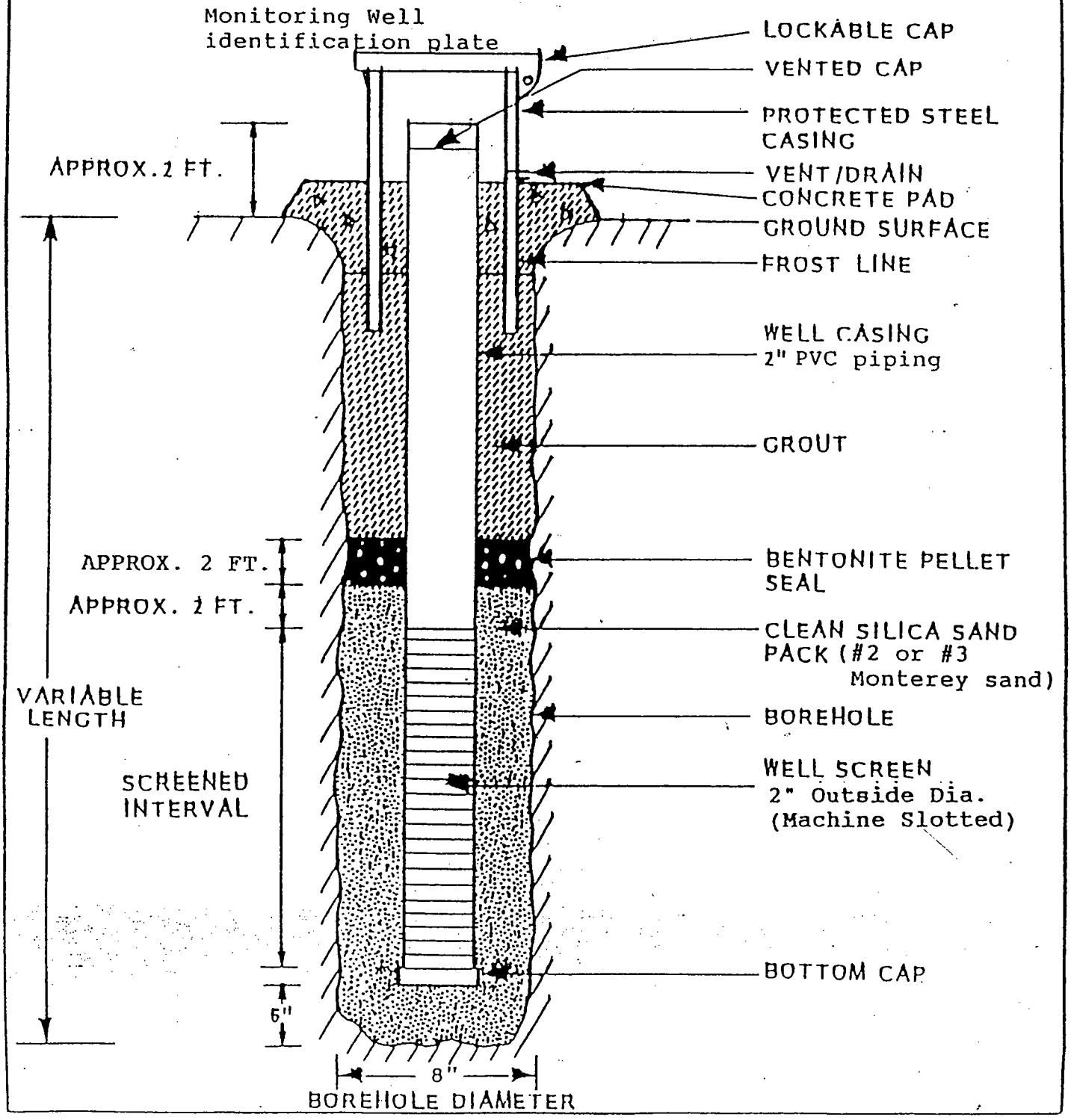


FIGURE 2

TYPICAL WELL CONSTRUCTION DIAGRAM

ABOVE GRADE COMPLETION

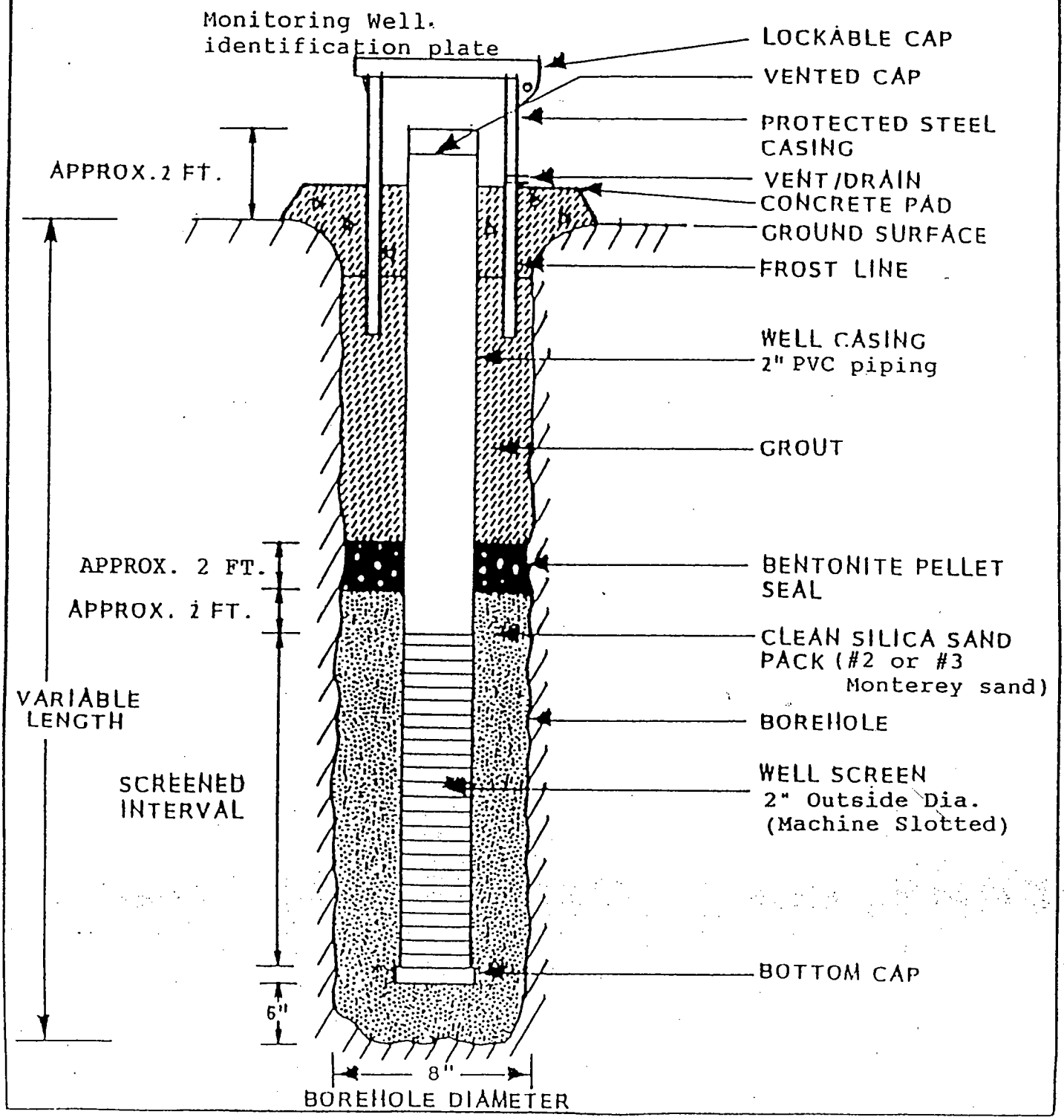


FIGURE 3

TYPICAL WELL CONSTRUCTION DIAGRAM

FLUSH MOUNT

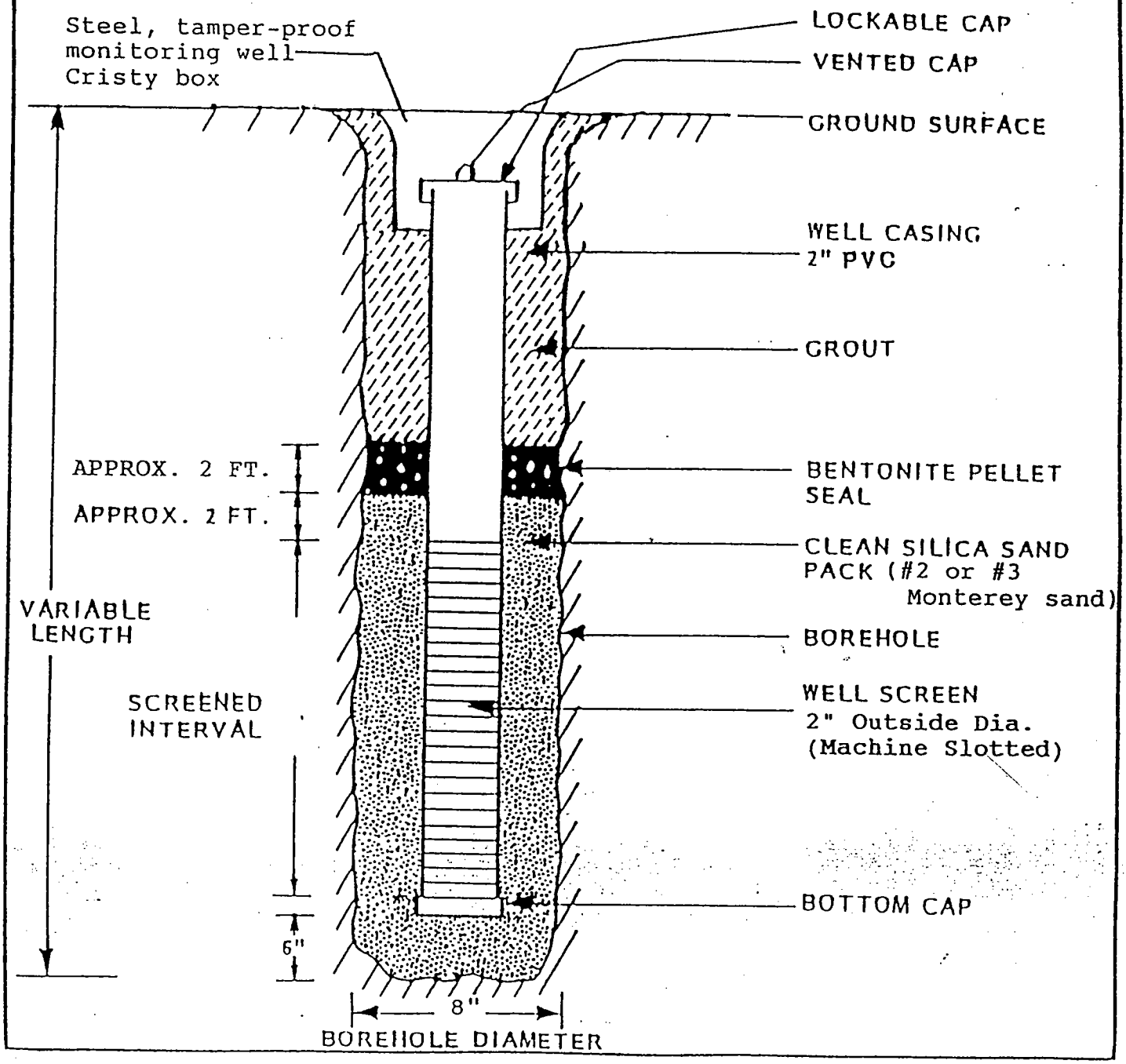


FIGURE 4

CONTAINERIZATION LABEL

MATERIAL: _____

KNOWN OR SUSPECTED
CHEMICAL CONTAMINANT: _____

DATE FILLED: _____

EXPECTED REMOVAL DATE: _____

COMPANY NAME: _____

CONTACT OR CONSULTANT: _____

PHONE: _____

FIGURE 5

SAMPLE LABEL

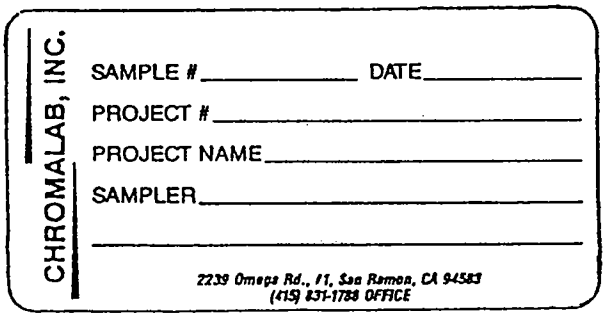


FIGURE 6

FIGURE 7

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUES

Project Manager: | Phone #:

Project Number: | Project Name:

Project Location: | Sampler Signature:

Sample ID	Lab # (Lab use only)	# CONTAINERS	Volume/Amount	Matrix: WATER	SOIL	AIR	SLUDGE	OTHER	Method Preserved: HCl	HNO3	ICE	H2SO4	OTHER	Sampling: DATE	TIME	BTEX (602/8020)	BTEX/TPH as Gasoline (602/8020/5030-8015)	TPH as Diesel 3550-8015	TPH as Jetfuel (8015 or 8270)	Total Oil & Grease 5520 E & F	Total Oil & Grease (413.2)	Total Petroleum Hydrocarbons (418.1)	EPA 601/8010	EPA 602/8020	EPA 608/8080	EPA 608/8080 PCBs Only	EPA 624/8240	EPA 625/8270	CAM - 17 Metals	EPTOX - 8 Metals	EPA - Priority Pollutant Metals	LEAD(7420/7421/239.2)	ORGANIC LEAD	OTHER	OTHER	OTHER	PRIORITY ONE SERVICE (24 hr)	EXPEDITED SERVICE (2-4 days)

Relinquished by: | Date | Time | Received by:

Relinquished by | Date | Time | Received by:

Relinquished by | Date | Time | Received by Laboratory:

Have all the samples received for analysis been stored o
Will samples remain refrigerated until analyzed ?_____
Did any samples received have head space ?_____
If so, estimate amount._____
Were samples in appropriate containers and properly packa

GROUND-WATER SAMPLING INFORMATION SHEET

WELL NO: _____

SITE: _____ JOB NUMBER: _____

COLLECTOR: _____ DATE SAMPLED: _____

DEPTH TO WATER PRIOR TO PURGING: _____ ft.

DEPTH TO BOTTOM OF WELL: _____ ft.

STANDING WELL VOLUME: _____ gallons

PURGE METHOD (Check One)

_____ Submersible Pump (ISCO or other)

_____ Bailer

_____ Other (specify) _____

START PURGE: _____ o'clock

END PURGE: _____ o'clock

PURGE DURATION: _____ minutes

PURGE RATE: _____ gpm

pH Meter Calibration: _____

WELL VOLUMES PURGED: _____

Conductivity Meter Calibration: _____

Time	Temp (°c)	pH	Conductivity (Umhos)

SAMPLES COLLECTED:

Sample No.	Type	Time	Remarks

DECON PROCEDURE: (internal) _____

_____

(external) _____

_____

FIGURE 8

APPENDIX C

HEALTH AND SAFETY PLAN

HEALTH AND SAFETY PLAN

FOR

LYNN WORTHINGTON PROPERTY

3055 35th Street

Oakland, CA

PREPARED BY:

CONSOLIDATED TECHNOLOGIES

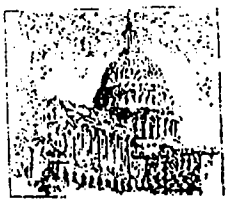
1777 Saratoga Avenue, Ste. 100

San Jose, CA 95129

September 1992

REVIEWED AND APPROVED BY:

	NAME	DATE
Project Manager	[signature]	10/28/92
Site Safety Officer	[signature]	10/28/92



DUFOUR & ASSOCIATES

BUSINESS EDUCATION AND
TRAINING INSTITUTE

August 27, 1990

Mr. John R. Ellis
SOILS EXPLORATION
561 Buckeye Street
Vacaville, California 95688

Re: Confirmation of 1910.120 Certification

Dear John:

This letter certifies that the following persons received training as specified in the OSHA Hazardous Waste Operations and Emergency Response Standard [29 CFR 1910.120(e)] consistent with the function and responsibilities of investigation and remedial actions at hazardous waste sites:

John R. Ellis
Richard E. Carr
Courtney D. Mossman

This training level has been achieved by a combination of on-the-job training, work experience, prior safety training, and satisfactory completion of a comprehensive training program under my direction. This is the equivalent of 40 hours of initial and three days of supervised, actual field experience.

The above training was conducted in July of 1988. Should you have any questions or require additional information, please call Jeannie Hayes, Program Manager.

Sincerely,

James T. Dufour, J.D., C.I.H., R.E.A.
Principal Instructor

JTD:jmh

830 F Street, Sacramento, CA 95814 • Mailing Address: P.O. Box 667, Sacramento, CA 95812-0867 • Tel. (916) 441-7016 • FAX (916) 553-3250

WESTEX
WESTERN STRATA EXPLORATION

CERTIFICATE OF COMPLETION

8 HOUR REFRESHER COURSE
HAZARDOUS MATERIALS
HEALTH & SAFETY TRAINING

JOHN R. ELLIS

HAS COMPLETED 8-HOURS OF CLASSROOM AND FIELD INSTRUCTION IN HAZARDOUS MATERIALS OPERATIONS AND EMERGENCY RESPONSE IN ORDER TO MEET OSHA'S TRAINING REQUIREMENTS UNDER TITLE 29CFR 1910.120 FOR ANY EMPLOYEE EXPOSED TO HAZARDOUS SUBSTANCES OR SAFETY HAZARDS IN THE COURSE OF THEIR EMPLOYMENT.

Ronald Miller

RONALD MILLER
INDUSTRIAL HYGENIST

NOVEMBER 3, 1991

CONSOLIDATED TECHNOLOGIES

SITE SPECIFIC SAFETY PLAN

INTRODUCTION

This document describes the personnel protection standards and mandatory safety practices and procedures for the activities planned during the installation of three groundwater monitoring wells at the subject site located at **3055 35th Street, Oakland, California.** All personnel and subcontractors will follow this plan. The prime responsibility for employee safety lies with each company that is involved in the work for its own employees. It is expressly intended that all project work will comply with applicable sections of the **California Occupational Health and Safety Code.** All parties working on this project will maintain a general responsibility to identify and correct any health and safety hazards and are responsible for working in a safe manner.

Key Personnel:

Project personnel who will have overall responsibility for the safe operation of this project are:

Site Safety Officer:

Contractor Responsibilities:

* To conduct initial site safety training for all project field team members as described in this document.
* To assure all field team personnel have read and understand the Health and Safety Plan.
* To assure that all work performed on this project is conducted in a safe manner.
* To coordinate with field personnel fire watch, traffic control and site security.
* To monitor activities to assure the proper use of protective equipment such as hard hats, protective eyewear, gloves, coveralls, respirators, etc.
* To monitor ambient hydrocarbon vapors.
* To shut down or modify field work activities based on criteria in the site safety plan.

* To read, understand and accept this Health and Safety Plan.

* To assure all members of its crew attend the safety training program.

* To make certain all equipment and other machines are properly inspected and maintained and are in compliance with applicable sections of the California Health and Safety Code.

* To supply and maintain safety related protective equipment such as hard hats, safety boots, protective coveralls gloves, safety eye wear, respirators, etc., as specified in this plan.

* To assure each employee working at this site will read and comply with this Health and Safety Plan.

* To enforce corrective action under the direction of the Site Safety Officer.

Field Team Member Responsibilities:

* To read, understand and follow this plan.

* To perform work safely.

* To cooperate with key personnel.

* To report any unsafe conditions to the Site Safety Officer.

* To be aware and alert for signs and symptoms of potential exposure to site contaminates and heat stress.

HAZARD CRITERIA

Hazard Evaluation

As air, water, soil and chemical substance monitoring data become available for all site work, the information will b e evaluated by the site safety officer. Health and Safety Modifications will be initiated by the Safety officer if necessary. The anticipated activities of this project include:

* Soil borings, using heavy machinery.

* Collection of soil samples.

* Monitoring of ambient hydrocarbon concentrations during project activities.

The general types of hazards associated with this project are:

* Mechanical hazards: swinging objects, machinery, etc.
* Electrical hazards: buried cables, overhead power lines.
* Chemical hazards: gasoline, diesel, waste oil.
* Fire hazards: natural gas and product lines, flammable petroleum hydrocarbons, and motor driven equipment.
* Thermal hazards: heat stress.
* Acoustical hazards: excessive noise created by machinery.

Job hazard analyses associated with each major work activity are presented in the following sections.

Chemical hazards:

A number of products containing hazardous chemicals may be encountered at UST sites. The chemicals of primary concern will be those associated with petroleum hydrocarbons. These compounds include gasoline, diesel, oil and grease, chlorinated hydrocarbons, benzene, ethylbenzene, toluene, and xylenes. These compounds may be present as both liquids and vapors.

Hydrocarbon Vapors

Hydrocarbon vapors expected to be encountered consist of gasoline and BTEX. Exposure to elevated levels of hydrocarbon vapors presents potential health risks that need to be properly controlled. Work practices and methods will be instituted to limit exposures. Where elevated exposures persist, respiratory protection will be the primary control method to protect personnel from inhalation of hydrocarbon vapors. The hydrocarbon vapors expected to be encountered during project activities are composed of a variety of volatile refined petroleum compounds. The majority of these have limited toxicity requiring minimal controls at the concentrations expected.

Petroleum fuel consists of hundreds of chemical compounds. There are certain compounds such as Benzene that present significant hazards and must be properly controlled. To do so, a working limit of 100 ppm total hydrocarbon is proposed as the maximum acceptable level of exposure without respiratory protection. In a typical situation with 1% of the hydrocarbon vapors being benzene, a 100 ppmv concentration of total hydrocarbon

will result in a breathing zone of less than 1 ppmv benzene. This level is one tenth of the current occcupational Permissible Exposure Limit (PEL) for an 8 hour exposure to benzene.

Action Levels Of Hydrocarbon Components in Petroleum Fuel:

Gasoline	>300ppm	PEL	LEL > 10%
Benzene	> 1ppm	"	Oxygen <19.5%
Toluene	>100ppm	"	
Xylene	>100ppm	"	
Ethyl Benzene	>100ppm	"	

A hydrocarbon vapor analyzer will be used to measure real time breathing zone concentration for comparison with the 100 ppmv working limit. When a persistent level of 100 ppmv is observed, appropriate respirators will be donned and other vapor measurements will be made. If hydrocarbon vapors exceed 1000 ppmv or 10 ppm benzene, work will be stopped. The field crew will be instructed to stay up wind and methods will be applied to subdue fugitive vapor emissions such as sprinkling soil with water, or the use of copus blower.

The site Safety Officer will make such determinations.

If oxygen levels in the immediate work area are < 19.5%, work must stop until determinated safe and/or levels are >19.5%.

If one of the following conditions develop:

Symptoms Of Acute Overexposure:

Although proper monitoring for the presence of chemicals will be routinely conducted and appropriate protective equipment used, the possibility of exposure to hazardous chemicals may exist. The symptoms of exposure to hazardous chemicals include; behavioral changes, breathing difficulties, changes in skin color, coughing, dizziness, fatigue, respiratory irritation, headache, nausea, or light-headedness. If these symptoms are present in any on-site personnel, they will be removed from the site; if the problem persists or is severe, they will be taken to the nearest medical facility.

Symptoms of Oxygen Deficiency:

May cause dizziness.

Physical Hazards:

Physical hazards may arise due to the following elements:

* operating machinery
* falling objects
* exposure to outside temperature extremes.

Explosion

Gasoline vapors can be highly explosive, having a flash point of about -40 F, and are considered to be a fire hazard.

Heat Stress

A hazard exists when individuals are required to work in warm temperatures, particularly while wearing impervious protective clothing. When the ambient air temperature exceeds 65 degrees, heat stress may become a problem. Monitoring of personnel wearing personal protective clothing should commence when the ambient temperature exceeds 65 degrees. Monitoring frequency should increase as the ambient temperature increases or as slow recovery rates are observed. If these conditions are encountered, the following precautions on the next will be taken:

* During day-to-day field work, the on-site supervisor will be alert for the signs and symptoms of heat stress.

Field workers will be observed for the following signs and symptoms of heat stress.

* profuse sweating, or complete lack of sweating
* skin color change
* increased heart rate
* body temperatures in excess of 100 degrees as measured by thermometers
* vision problems
* confusion, dizziness, or nausea

These symptoms may lead to impaired functional ability, putting a worker and his co-workers at risk. Continued heat stress may lead to heat stroke and possibly death. Avoiding overprotection, careful training and frequent monitoring of personnel who wear protective clothing, judicious scheduling of work and rest periods, and frequent replacement of fluids can protect against the threat of suffering heat stress.

Any team member who exhibits any of these signs or symptoms will be removed immediately from field work and be requested to consume electrolyte fluid or cool water while resting in a shaded area. The individual will be instructed to rest until the symptoms are not recognizable. If the symptoms appear critical, persist, or get worse, immediate medical attention will be sought.

Fire, Electrical and Noise Hazards:

* underground gas and product lines
* excessive machinery noise.

Due to the nature of drilling, there is a risk for electrical shock from over head and underground electrical lines. There is also a risk of physical injury from moving machinery and heavy drilling equipment. Explosive hazards exist when fuel concentrations in the bore hole reach explosive levels; > 10% LEL.

When working around mechanical equipment the potential exists for exposure to excessive noise. To deal with the health hazards of excessive noise, ear plugs will be provided.

PERSONAL PROTECTIVE EQUIPMENT REQUIREMENTS

This section specifies personal protective equipment required for the various tasks of this project.

Sampling

Respiratory Protection: All field personnel will be required to have available an air purifying respirator with organic vapor cartridges. The respirators will be required based on criteria presented in this safety plan. All respirators must be NIOSH approved, canister-equipped for all organic vapors up to 1000 ppm.

Protective Clothing: All field personnel who handle contaminated soil or liquid will wear impervious coveralls (Tyvex) and butyl rubber gloves. Impervious coveralls will not be required if soil or water is not visibly contaminated, or if vapor measurements are below 500 ppmv. Level "D" protective clothing and equipment will be worn at all times on the job site. All employees will have level "C" protective equipment available at all times. The site safety officer will monitor airborne contaminate levels for determination of when to don level "C" equipment.

Head Protection: Field personnel will wear non-metallic safety helmets.

Foot Protection: Field Personnel will wear neoprene rubber boots with steel toes. Under non-liquid exposure conditions, leather boots with steel toes and shanks are permissible.

Ear Protection: Field Personnel, based on noise levels, may be required to wear earplugs during soil boring activity.

Eye Protection: Field Personnel will wear chemical-resistant safety glasses with attached side shield when splashes of potentially hazardous liquid or particles are likely.

Work Zones

During soil drilling operations, a work zone around the immediate vicinity of the project will be established. Only authorized personnel will be permitted to enter the work zone. Authorized personnel will include those who have duties requiring their presence in the work zone and have read this site safety plan. The establishment of the work zones will help ensure that: personnel are properly protected against the hazards present where they are working; work activities and contamination are confined to the appropriate areas; and, personnel can be located and evacuated in an emergency. The following describes the zones to be established:

Exclusion Zone: A 75 foot zone around the work area will be defined before work starts. The area inside the circle will constitute the "Exclusion Zone". The Exclusion Zone constitutes the area where the potentially hazardous airborne contaminates and physical hazards to the workers exist. Full personal protection must be available to all personnel in this area. The size of the Exclusion Zone may be changed to accommodate site conditions and to assure contaminate containment. All personnel within the exclusion zone will be required to use the specified level of protection. No food, drink, or smoking will be allowed in the exclusion or decontamination zones.

Contamination Reduction Zone: A formal decontamination zone may not be required during the soil boring process. However, an area will be designated in the event extreme gasoline contamination is encountered. The decontamination zone will be an area where personnel canclean protective equipment. A waste container will be placed outside of the exclusion zone so contaminated equipment can be placed inside and covered. Personnel and equipment in the exclusion zone must pass through this zone before entering the support zone.

Support Zone: A Support Zone, the outermost zone, must be defined for each field activity. Support equipment is located in this uncontaminated or clean area. Normal work clothes are appropriate within this zone. The location of this zone depends on factors such as accessibility, wind direction (it should be up-wind of borings), and resources (e.g. roads, utilities, shelter). No equipment or personnel will be permitted to enter the clean zone from the exclusion zone without passing through the personnel or equipment decontamination station. Eating, smoking, and drinking will be allowed only in this area.

Decontamination Procedures

Petroleum hydrocarbon liquids and vapors are anticipated. Due to the volatile nature of hydrocarbons that may be encountered during the drilling and sampling operations, decontamination of equipment and vehicles will be of minimal importance since the volatile hydrocarbons will rapidly vaporize. Therefore, no formal decontamination procedure will be followed with the exception of general cleaning. No eating, drinking or smoking will be permitted in the exclusion zone. All personnel involved in work activities will be instructed to wash their hands, face, neck and forearms at the end of the work day. Soap, water and towels will be provided at the site for this purpose. The field personnel will also be instructed to shower at home at the end of each work day.

As work progresses, the nature of materials handled and the extent of contamination may possibly require formal decontamination procedures and delineated work/clean zones. However, we do not expect that such formal procedures will be necessary at this site and will only proceed at the Safety Officer discretion. In the event extreme contamination is encountered, decontamination of personnel, equipment and vehicles will be important to insure that contamination does not spread to unsuspecting people and property. Personal decontamination mainly involves personal hygiene. Contamination should not be present on the skin if the proper protective methods specified in this plan are used. However all field personnel will be instructed to follow these guidelines to insure that contamination dose not remain on equipment, sample containers or in contact with their bodies.

The field team should remove their personal protective clothing in the following sequence:

Step 1: Move out of the exclusion zone and into the decontamination zone. Do not remove personal protective equipment.

Step 2: Decontaminate the spades, shovels and other equipment by brushing them off.

Step 3: Remove outer gloves and coveralls and place them inside a garbage bag. Keep the air purifying respirator on.

Step 4: Move to the support zone and remove the respirator.

In the event that Level C protection is required at the site, more rigorous decontamination will be necessary. The following OSHA-specified procedures included steps necessary for complete decontamination prior to entry into the support zone, and steps necessary if a worker only needs to change a respirator or respirator canister.

Modification can be made to the twelve station decontamination process depending on the extent of contamination.

Station 1: Segregated Equipment Drop

Deposit equipment used on site (tools, sampling devices and containers, monitoring instruments, clipboards, etc.) on plastic drop cloths or in different containers with plastic liners. Each will be contaminated to a different degree. Segregation at the drop reduces the probability of cross-contamination.

Station 2: Suit/Safety Boot and Outer Glove Wash

Thoroughly wash safety boots and outer gloves. Scrub with a long-handled, soft bristle scrub brush and copious amounts of alconox/water solution.

Necessary equipment includes:

* Wash tub (30 gallon or large enough for person to stand in)
* Alconox/water solution
* Long-handled soft bristle scrub brushes

Station 3: Suit/Safety Boot and Outer Glove Rinse

Rinse off alconox/water solution using copious amounts of water. Repeat as many times as necessary.

Necessary equipment includes:

* Wash tub (30 gallon or large enough for person to stand in)
* Spray unit
* Water
* Long-handled, soft bristle scrub brushes

MONITORING PROGRAM

Personal exposure to ambient airborne hazards will be monitored to assure that personnel exposures do not exceed acceptable limits and that appropriate selection of protective equipment items is made. Airborne hydrocarbon vapor concentrations will be measured primarily by the use of a hydrocarbon vapor meter. If concentrations approach criteria levels, all personnel will be notified of possible site safety changes. Audits will be conducted by the Safety Officer to insure compliance with the Safety Plan and to provide additional support as required.

Ambient Vapor Reading

A hydrocarbon vapor detector will be used during excavation activities. This instrument will be used to measure breathing zone concentration of hydrocarbon vapors. The instrument will be calibrated on a regular schedule using known calibrated gases.

Readings will be taken in the area where the field team members are working and surrounding down-wind areas. Measurements will be taken every 30 minutes where hydrocarbon vapors indicate levels above 30 ppmv. All readings will be recorded in a field notebook.

Emergency Procedures listed in this plan are designed to give the field team instruction on how to handle medical emergencies and fires and explosions. The emergency procedures will be carefully reviewed with the field team during the health and safety training session.

EMERGENCY RESPONSE PLAN

In the event of any situation or unplanned occurrence requiring assistance, the appropriate contact(s) should be made from the list below. For emergency situations, contact should first be made with the field team leader (or designee), who will notify emergency personnel, who will then contact the appropriate response teams. The emergency contacts list must be kept in an easily accessible location at the site.

Contingency Contacts	Phone Number
Nearest phone located on-site	N/A
Fire Department	911
Police	911
County Sheriff	911
Poison Control	911

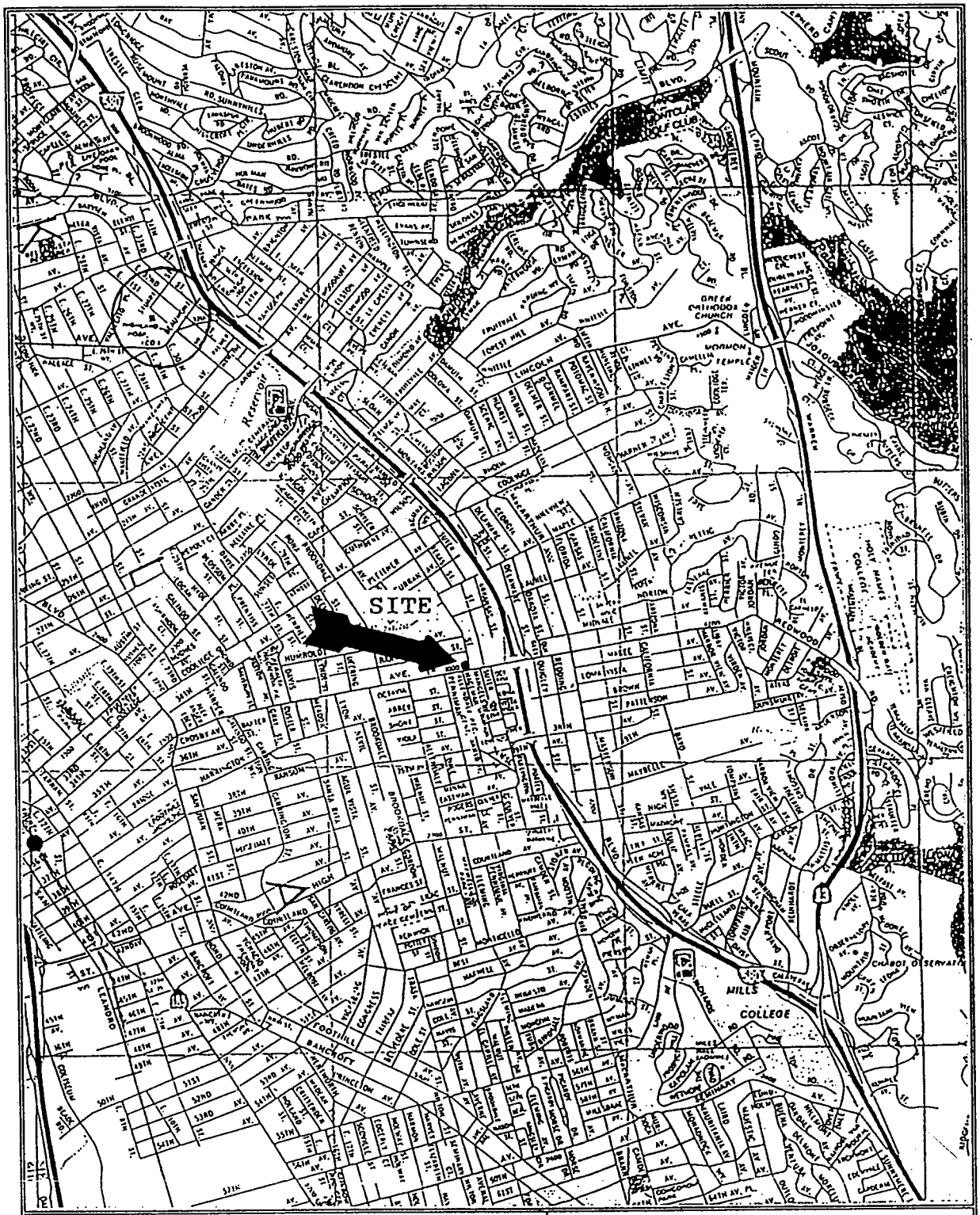
Medical Emergency

Hospital Name	Highland General
Hospital Phone No.	(510) 534-8055
Hospital Address	1441 E. 31st St., Oakland
Travel Time from Site	10 minutes
Map to Hospital (see next page)	
Ambulance Service	911

Route to Hospital: East on 35th Ave. approximately 1/4 mile; north on Interstate 580 approximately 1-1/2 miles to MacArthur Blvd. exit; north on MacArthur Blvd. approximately 1/4 mile; west on 13th Ave. approximately 1/2 mile; south on E. 31st St. approximately 1/4 mile to Highland Hospital on left side.

Poison Control Center	(415) 428-3248
Chem Trec	(800) 424-9300
EPA Emergency Response	(415) 974-7500
State Office of Emergency Services	(800) 852-7550

* Note: Prior to starting work, note the nearest location of functional telephone.



Route from subject Site to nearest hospital	Scale: 1 inch = approximately 0.5 mile
LYNN WORTHINGTON PROPERTY 3055 35th Ave., Oakland, CA	CONSOLIDATED TECHNOLOGIES

Emergency First Aid Procedures:

Injuries

Medical problems occurring on site will be handled quickly. Emergency telephone numbers will be written down and posted in the passenger compartments of the field vehicles.

Eye Contact: Flush with clear water for 15 minutes or until irritation subsides. See a physician.

Skin Contact: Wash thoroughly with soap and water.

Inhalation: Remove from area away from vapor/exposure. Call physician and start resuscitation IMMEDIATELY if breathing has stopped.

Ingestion: DO NOT INDUCE VOMITING; call a physician immediately.

Oxygen Deficiency: Move out of oxygen deficient area into fresh air. Call physician IMMEDIATELY and induce resuscitation if breathing has stopped.

The field team will be instructed to seek immediate professional medical attention for all serious injuries. A first aid kit will be present at the work site in case of minor injuries. If anyone receives a splash or particle in the eye the field team will be instructed to irrigate the eye for 15 minutes. Instruction will also be provided to wash any skin areas with soap and water if direct contact with contaminates has occurred.

Fire and Explosion Hazards

Fires on site are possible during soil boring and sampling activities, due to the possibility of encountering flammable petroleum hydrocarbon liquids or vapors. During these activities the site safety officer will be present and equipped with an explosive vapor monitor for area monitoring and a multipurpose (A, B, C) fire extinguisher.

Flammable materials will be cleared away from the site prior to the start of work. If a fire does occur, the local fire department will be contacted immediately.

Operation Shutdown

Under extreme circumstances the on-site supervisor, safety officer, or project manager may request that operations be temporarily suspended while the underlying hazard is corrected or controlled. If vapor measurements with the explosive vapor monitor show levels approaching explosive limits, operations will be stopped while the area is controlled. During this activity, all personnel will be required to stand up-wind to prevent exposure to fugitive vapor emissions. . The safety officer will have ultimate authority for operation shutdown.

Community Protection

To assure the community is protected from health and fire hazards, up-wind and down-wind vapor monitoring will be performed if the general work area has hydrocarbon levels exceeding 100 ppmv. If down-wind monitoring indicates persistent levels of 30 ppmv at the perimeter of the work area, work will be shutdown and vapor control efforts will be instituted until measurements indicate levels have dropped below 30 ppmv. An alternative approach of expanding the taped-off area zone may be used to provide additional community protection.