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REPORT OF ADDITIONAL SITE ASSESSMENT ACTIVITIES
MALIBU PARK SCHOOL
MALIBU, CALIFORNIA

Prepared for:

The PMC-ADP Venture
2425 Sixteenth Street, Room #30
Santa Monica, California 90405-2699

Prepared by:

Earth Systems Environmental, Inc.
1731-B Walter Street
Ventura, California 93003

February 8, 1993

Project Number: EV-2125-2

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February 8, 1993

Document No.: 9302-1007.RPT
Project No.: EV-2125-2

The PMC-ADP Venture
2425 Sixteenth Street, Room #30
Santa Monica, California 90405-2699

Attn: Ms. Allyson Gipson and Mr. Jim McGrath, Project Managers

SUBJECT: REPORT OF ADDITIONAL SITE ASSESSMENT ACTIVITIES FOR MALIBU PARK SCHOOL MALIBU, CALIFORNIA

Dear Ms. Gipson and Mr. McGrath:

Pursuant to Earth Systems Environmental's proposal of December 21, 1992 (Document No.: 9212-1011.PRP), the following is a summary report of field activities conducted and analytical results obtained while performing the contracted scope of work.

EXECUTIVE SUMMARY

Two 10,000-gallon underground storage tanks and two dispenser pumps were removed from the site in August 1992. The tanks were located on the south side of the bus garage and the dispensers were located inside the garage (See Figure 2). When the tanks were removed in August, grab soil samples were collected and analyzed to determine if contamination was present. The results showed that contamination was present in the soil at the bottom of each of the tank pits and in the soil below the dispenser locations (See Previous Analytical Results August 1992 and Figure 2).

In October 1992, Earth Systems Environmental (ESE) drilled eight soil borings in response to a scope-of-work defined by the school district. The purpose of the scope-of-work was to assess the degree and extent of contamination. The results of the eight soil borings showed that the contamination related to the tanks was primarily limited to the west side of the east tank. Analytical results from the sample collected from soil boring B1, which was located at the northwest corner of the east tank pit had high levels of total petroleum hydrocarbons (TPH) and benzene, toluene, ethyl

benzene, and total xylene isomers (BTEX). Analytical results from the sample collected from soil boring B3, which was located at the southwest corner of the east tank pit, did not have detectable levels of TPH, but, did have levels of BTEX which exceed routinely used closure limits. The analytical results from the soil sample collected from B6, which was located approximately 12 feet east of the east tank pit was below the laboratory detection limit (BQL) for total hydrocarbons, however, small amounts of benzene, toluene, and total xylene, on the order of 25 to 43 times below routinely applied closure limits, were detected.

Analytical results from samples collected from soil borings B2 and B8, which were located at the northeast and southeast corners of the west tank pit, respectively, were BQL. The analytical results from the soil sample collected from B7, which was located at the southwest corner of the west tank, were BQL. The analytical results from the soil sample collected from B4, which was located approximately 30 feet south of the tank pits was BQL.

Thus from the eight soil borings, which constituted the first phase of assessment, the contamination was shown to be primarily located near the west side of the east tank pit.

In January 1993, a second phase of assessment was completed. ESE drilled three additional soil borings. Soil boring B10 was drilled on an angle and extended northeast underneath the bus garage (See Figure 2). The purpose of boring B10 was to determine if contamination from the east tank pit had migrated northward underneath the building and to determine if contamination detected in surface samples from beneath the east dispenser had migrated downward. The analytical results from soil samples collected from B10 were all BQL which confirms that the contamination from the east tank pit did not migrate northward, to any significant degree, at least at depths above 30 feet bgs. Since the suspected direction of groundwater flow is southerly, soils beneath the garage which are deeper than 30 feet bgs have, most likely, not been impacted. The analytical results from B10 also confirms that the contamination from the east dispenser did not migrate downward to any significant degree.

Boring B9 was drilled approximately 10 feet south of the southeast corner of the east tank pit. The purpose of B9 was to determine if the contamination detected previously in B3 had migrated southward to any significant degree. The analytical results from soil samples collected from B9 shows that contamination is present at approximately 30 to 36.5 feet below ground surface (bgs), but, tapers off at approximately 40 feet bgs. Note - the contamination detected in B9 at 30 feet bgs is very low and ranges from 23 to 55 times below routinely applied closure limits. No TPH was detected in B9. The contamination detected in B9 at 35 feet bgs is slightly above routinely applied closure limits and suggests that the contamination has migrated southward at approximately 35-36 feet bgs probably from the effects of subsurface groundwater flow. This hypothesis is particularly supported by: 1) the high rainfall which fell during January, 2) the fact that both tank pits were open and accumulated runoff to significant depths, and 3) the accumulated water provided a driving force to cause the contamination to percolate downward and then to spread outward when it encountered a subsurface partially lithified shale layer.

Boring B11 was drilled approximately 16 feet west of the east tank pit. The purpose of B11 was to determine if the previously identified contamination had migrated westward. Note - borings B2 and B8 which were drilled at the northeast and southeast corners of the west tank pit as part of the first phase of assessment did not encounter contamination which indicates that the contamination detected in the bottom of the west tank pit at the time the tank was removed did not migrate eastward. B11 had the highest levels of contamination encountered during the January assessment. B11, at 30-31.5 feet bgs, encountered TPH, benzene, and ethyl benzene ranging from 3 to 71 times below routinely used closure values. Toluene and total xylene isomers were encountered at levels ranging from 2.3 to 2.9 times above routinely used closure levels.

The sample collected from 3 feet below the location of the west dispenser contained 18 mg/Kg TPH which is more than 55 times below the routinely used closure limit. No BTEX were detected beneath the west dispenser location, either during the sampling which took place in August 1992 or the sampling completed in January 1993.

The sample collected from 4.5 feet beneath the east dispenser contained 290 mg/Kg which is more than 3 times below the routinely used closure limit. No BTEX were detected at 4.5 bgs beneath the east dispenser during the sampling completed in January 1993, however, toluene and total xylene isomers were detected at very low levels beneath the east dispenser during the sampling completed in August 1992. Analytical results from B10 #1, which was collected at 12 feet beneath the east dispenser location did not detect TPH or BTEX.

In summary, ESE recommends that the contamination associated with soil samples SST1AW, SST1BE, SST2AW, and SST2BE, which were collected during the removal of the tanks in August 1992, be excavated from the tank pits. The volume of soil associated with the additional excavation is quite small and is estimated to be approximately 85 cubic yards. The depth of the additional excavation is estimated to be two feet. The excavation can be completed with a wheel-mounted extend-a-hoe backhoe.

Due to the sensitivity and the desire of school officials to expedite the remediation of this site, ESE recommends that the excavation be monitored by a qualified environmental professional and that soil samples be analyzed in the field for both PID readings and total recoverable petroleum hydrocarbons (TRPH) according to EPA Method 418.1. Additional soil samples should be collected and submitted to a California State-certified laboratory for verification. ESE also recommends that a representative from the County of Los Angeles, Department of Public Works be present to observe sampling and excavation activities. ESE also recommends that the area extending from borings B1 and B3 eastward to approximately half way to B11 (See Figure 2) be excavated in the same manner as the contamination associated with samples SST1AW, SST1BE, SST2AW, and SST2BE. The surface area associated with this additional excavation is quite small and is limited to approximately 88 square feet. This area should be excavated to approximately 20 feet below ground surface. Following the additional excavation and field verification, ESE recommends that both tank pits be backfilled and compacted to surface grade.

The contamination identified with the removal of the fuel dispensers and associated with samples SSD1C and SSD2C is very limited and was most likely related to the

disassembly of the transfer piping. Most likely, a small amount of fuel, perhaps on the order of 1 or 2 quarts leaked from the piping when it was disconnected. Soil samples collected at 3, 4.5, and 12 feet beneath the dispensers did not show evidence of any significant contamination. ESE recommends that the openings at the dispenser islands be filled with concrete and that NO FURTHER ACTION is required in the dispenser areas.

Since groundwater contamination was detected at this site, groundwater assessment is required. ESE recommends that a workplan be prepared which will call for the design, installation, and monitoring of a minimum of three groundwater monitoring wells. These wells are necessary to determine the elevation and direction of groundwater flow and to determine the degree of groundwater contamination.

The above cited recommendations are based on action limits and cleanup levels that are routinely encountered at similar sites and do not reflect cleanup levels which may be established for this site. ESE has not been advised regarding regulatory assessment or directives at this site. A discrete remediation effort, acceptable to a regulatory agency with authorized oversite, cannot be determined and should not be undertaken until such regulatory oversite is provided; including remediation cleanup levels.

ESE recommends that no additional work be performed at this site without regulatory approval from the County of Los Angeles, Department of Public Works and other regulatory agencies as necessary.

1.0 INTRODUCTION

1.1 Background

The Malibu Park School is located at 130215 Morning View Drive in Malibu, California (Figure 1). Two 10,000-gallon diesel fuel tanks were removed from in front of the bus garage in August 1992. Two pumps, located immediately inside the bus garage, were also removed at that time. The tank excavations remained open and the soil generated during tank removal was stockpiled on-site west of the bus garage.

Analytical results from soil samples collected from the tank pits showed evidence of hydrocarbon contamination.

On October 20 and 21, 1992, Earth System Environmental drilled eight soil borings around the two tank pits to assess the degree and extent of subsurface contamination (Figure 2). The soil borings ranged in depth from 20 feet to 40 feet below ground surface. Analytical results from soil samples collected from the borings indicate that subsurface contamination is limited to the area around the west end of the eastern tank pit. A summary of previous analytical results is included in Appendix A.

1.2 Scope of Work

To confirm that the subsurface contamination is limited to the suspected area, three soil borings were placed in that vicinity, and a grab water sample was collected when groundwater was encountered in one of the soil borings. In addition, shallow soil samples were collected from beneath the former dispenser locations. A total of 15 soil samples and one groundwater sample were submitted to a California-certified laboratory for analysis. The contracted scope of work also included preparation of this report.

2.0 FIELD METHODS AND OBSERVATIONS

A total of three borings (B9, B10, and B11) were drilled in the vicinity of the open tank excavation (Figure 2). A truck-mounted drill rig equipped with hollow stem auger was used to excavate the borings and collect soil samples. One grab water sample was collected from the open boring of B11 using a teflon bailer. Two shallow, hand-augered borings were drilled in the former dispenser locations. Drilling auger and sampling equipment underwent decontamination procedures, either steam cleaning or a hand wash and double rinse, prior to and in between each use. A photo ionization detector (PID) was used at five-foot intervals to monitor for organic vapors.

Boring B9 is located near the southwest corner of the eastern tank excavation and was drilled to a depth of 41.5 feet below ground surface (bgs) where groundwater was encountered. Boring B10 is located near the northwest corner of the eastern tank

excavation and was slant drilled at an angle of 30° from vertical, bearing northeast underneath the eastern dispenser location. The total depth of B10 was 30 feet bgs. Boring B11 was drilled between the two open tank excavations to a depth of 40.5 feet bgs where groundwater was encountered and sampled. The hand-augered borings underneath the former dispenser locations were excavated to a maximum depth of five feet bgs. Boring logs are included in Appendix B.

Subsurface conditions encountered during drilling consisted of firm to hard clays and clayey sands. Some coarse sand and fine gravel clasts, usually weathered, were observed at various depths. Groundwater was encountered in borings B9 and B11 at a depth of approximately 40 feet bgs. Following drilling, groundwater in B11 was measured at a depth of 34 feet bgs. PID readings were slightly elevated in B11.

3.0 LABORATORY METHODS AND RESULTS

Thirteen soil samples collected from the borings, one soil sample collected from beneath each dispenser location, and the grab groundwater sample were submitted to BTC Environmental, a California-certified hazardous waste laboratory. All of the soil samples were analyzed for total petroleum hydrocarbons (TPH) as diesel by EPA method 8015m and for benzene, toluene, ethyl benzene, and total xylenes (BTEX) by EPA method 8020. The groundwater sample was analyzed for TPH as gasoline and for BTEX by EPA methods 8015m and 8020, respectively. (The groundwater sample was analyzed for TPH as gasoline because there was not enough sample to analyze for TPH as diesel.) A copy of the laboratory report is included in Appendix C, and the analytical results are summarized in Table 1.

4.0 DISCUSSION AND CONCLUSIONS

Laboratory results and field observations show that the primary source of subsurface diesel fuel contamination was located in the bottom of the eastern tank excavation at the west end. The contaminant plume migrated vertically until it encountered a hard shale bed. The plume then migrated laterally within the fractured and weathered shale. Figure 3 shows two east-west cross sections, A-A' and B-B', as depicted on the

site plan. Cross section B-B' is overlaid in order to more easily understand how the contaminant has migrated in the third dimension. Cross section C-C', Figure 4, is a north-south cross section also showing the third dimension. The volume of the contaminant plume is estimated at 1200 cubic yards. The lateral extent of contamination within the shale layer has been estimated based on laboratory results from B10, field observations in B8, and the relative changes in contaminant concentrations in B3, B9, and B11. The vertical extent of contamination has been limited by the presence of groundwater and is supported by the laboratory results of the 41 foot sample from B9. A grab sample of groundwater from boring B11 indicates that the groundwater has been adversely impacted by the diesel contamination.

The bottom of the western tank excavation, as well as the surface samples from the dispenser locations, have been impacted by diesel fuel. Subsequent sampling shows that these contaminant zones are separate and isolated from the primary plume described above, and that these contaminant zones are limited in extent to the immediate release area.

5.0 RECOMMENDATIONS

The extent of soil contamination has been sufficiently defined to begin evaluating various remediation options. If in-situ methods are to be considered, soil borings confirming the lateral limit of contamination within the shale layer can be accomplished as part of the remediation pilot study. If the impacted soil is to be excavated and treated above ground, then the currently defined limits of contamination can be used to derive cost estimates to evaluate the remediation methods. Regardless, these costs cannot be accurately estimated until soil cleanup concentrations have been established and accepted by the appropriate regulatory agency.

Formal assessment of the groundwater using monitoring wells needs to be performed. A minimum of three wells are recommended in order to also determine the groundwater gradient at the site.

6.0 REPORT CLOSURE

This report has been prepared for the exclusive use of The PMC-ADP Venture as it pertains to the property described as Malibu Park School, Malibu, California. The findings and conclusions rendered in this report are opinions based on laboratory testing of soil samples collected and field observations made during subsurface investigations. This report does not reflect subsurface variations which may exist between sampling points. These variations cannot be anticipated nor could they be entirely accounted for in spite of exhaustive additional testing. This report should not be regarded as a guarantee that no further contamination, beyond that which may have been detected by specific laboratory analysis conducted within the scope of this investigation, is present on the said property. Undocumented, unauthorized releases of hazardous materials, the remains of which are not readily identifiable by visual inspection and are of different chemical constituents, are difficult and often impossible to detect within the scope of a chemical specific investigation. All work has been performed in accordance with generally accepted practices in geotechnical/environmental engineering, engineering geology, and hydrogeology. No other warranty, either express or implied, is made.

Thank you for this opportunity to have been of service. If you have any questions regarding this report or the information contained herein, please contact this office at your convenience.

Sincerely,

EARTH SYSTEMS ENVIRONMENTAL, INC.

Reviewed and Approved,

Dawn Ackerman, RG #5178
Project Geologist

Richard Kelly
Senior Engineer

DA/RK/da

Attachments: Figures and Tables
- Figure 1: Vicinity Map
- Figure 2: Site Map
- Figure 3: Cross Sections A-A' and B-B'
- Figure 4: Cross Section C-C'
- Table 1: Analytical Results

Appendix A: Previous Laboratory Results
Appendix B: Boring Logs
Appendix C: Laboratory Reports

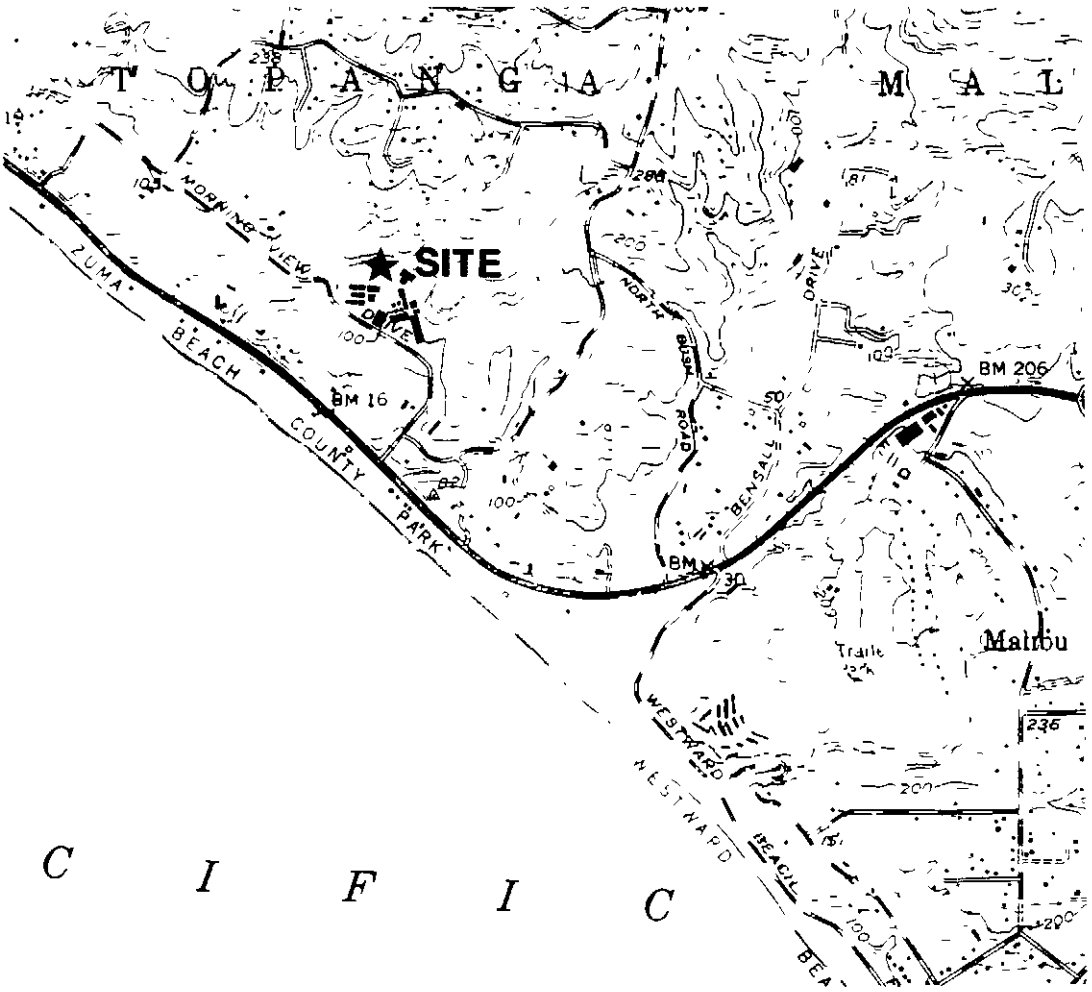
Distribution: 4/PMC-ADP Venture
1/SLO File
1/VTA File

FIGURES AND TABLES

VICINITY MAP

MALIBU PARK SCHOOL

MALIBU, CALIFORNIA



USGS QUADRANGLE - POINT DUME, CALIFORNIA 1981 SCALE 1"=2000'

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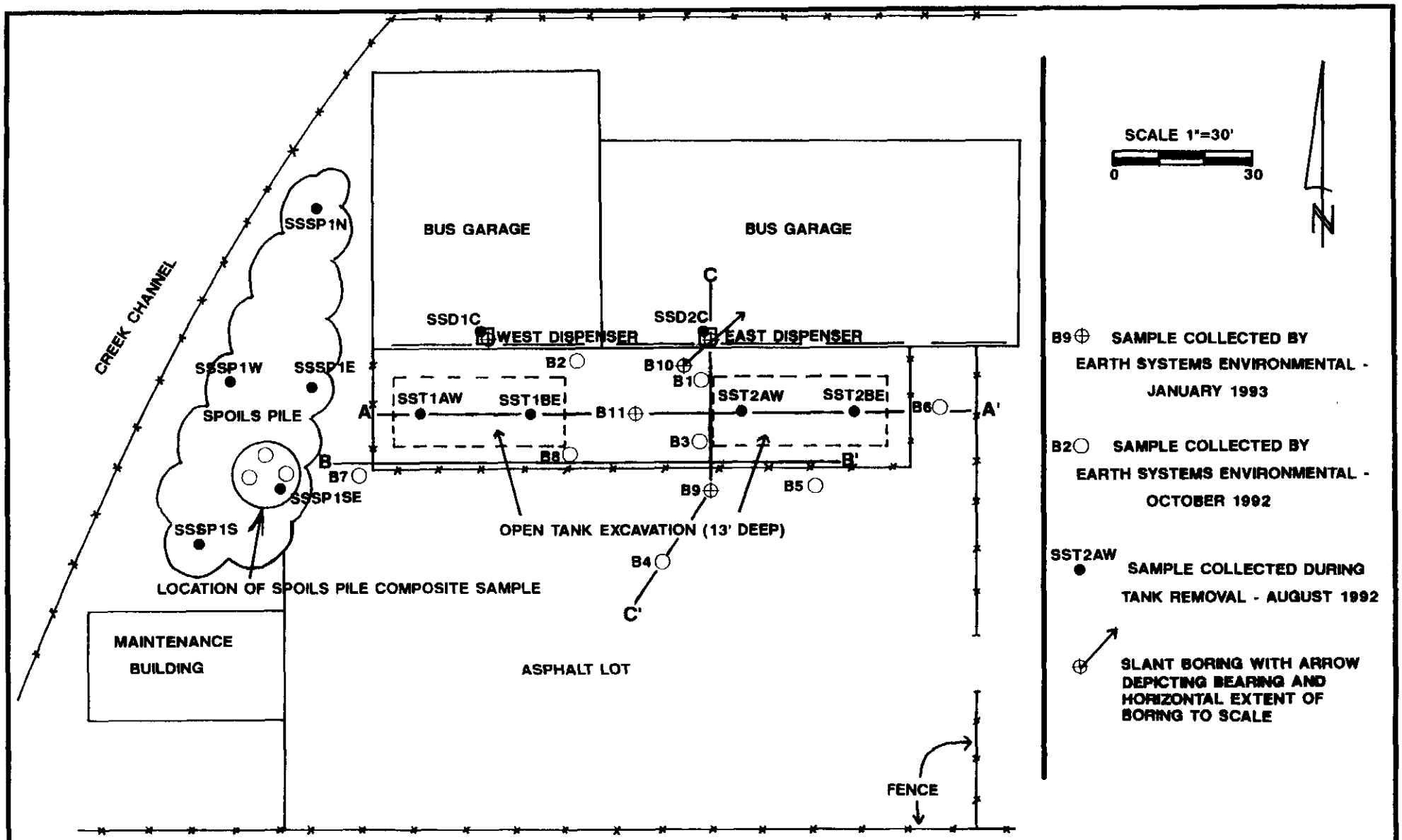
EV-2125-2

FIGURE 1



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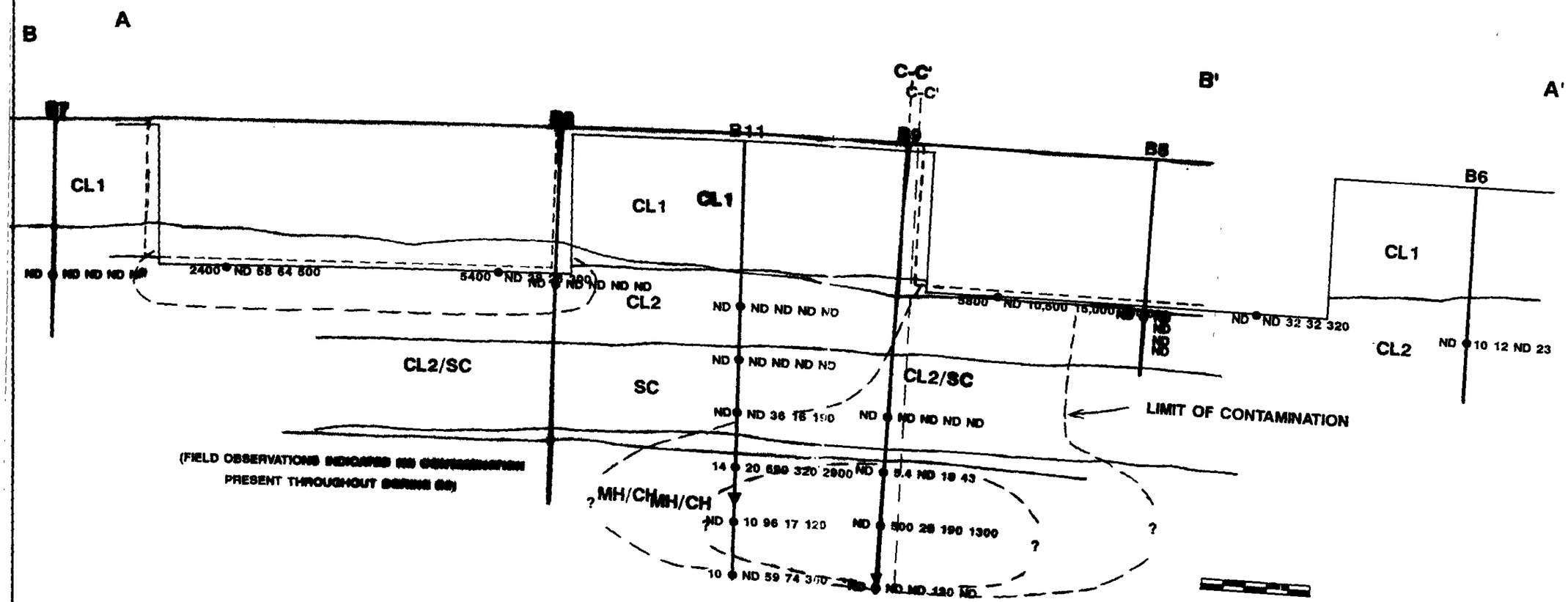
EV-2125-2

SITE PLAN

MALIBU PARK SCHOOL MALIBU, CALIFORNIA

FIGURE 2



CL1 SANDY CLAY to CLAYEY SAND: red-brown, fine to coarse grained sand, some angular gravel

CL2 SANDY CLAY: orange-brown, fine to coarse grained sand, some gravel lenses

SC CLAYEY SAND: orange-brown, silty, fine grained sand

MH/CH WEATHERED SHALE (CLAYEY SILT): mottled orange-brown and greenish yellow, fine grained sand, waxy

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

14 ● 20 690 320 2900

TPH (PPM) ● BENZENE TOLUENE (PPB) ETHYL BENZENE TOTAL XYLENES

ND = NOT DETECTED

▼ STATIC GROUNDWATER LEVEL FOLLOWING DRILLING

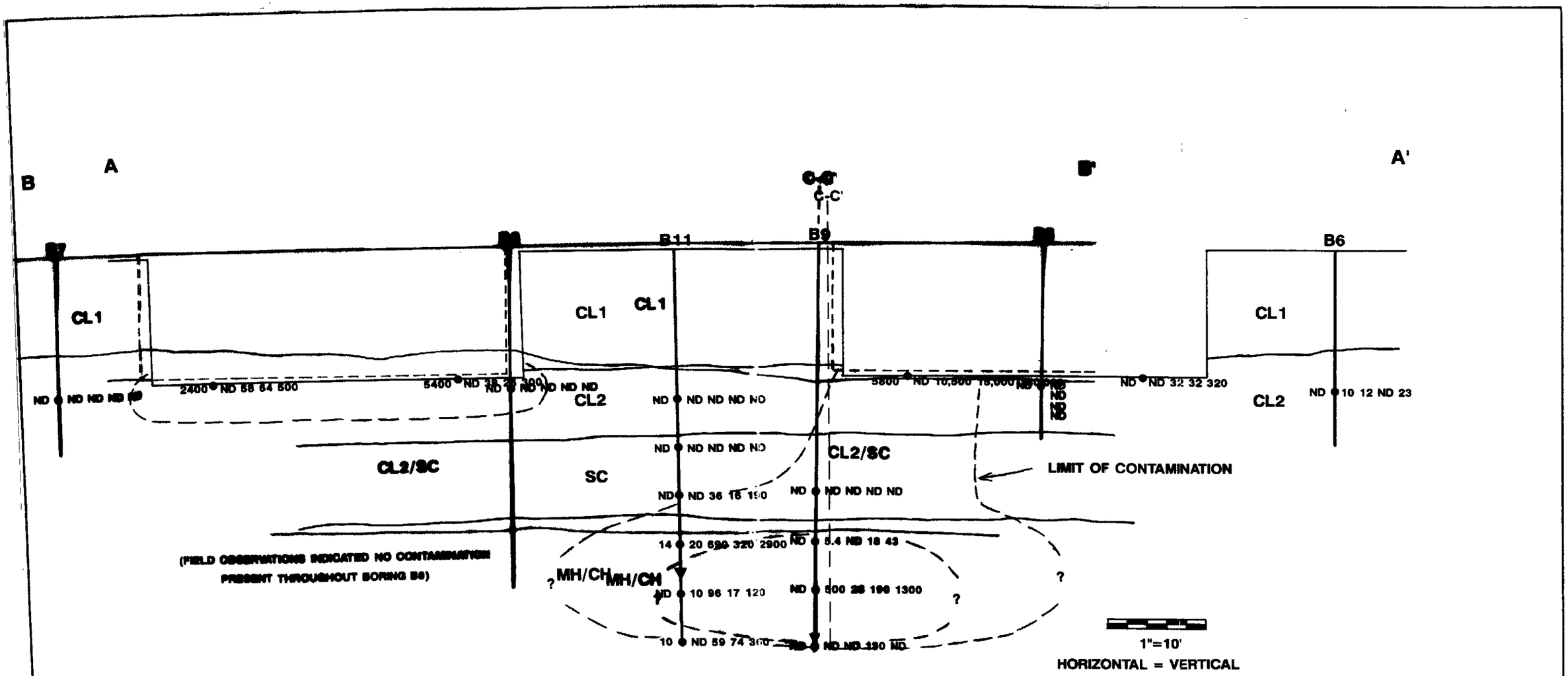
CROSS SECTIONS A-A' B-B'

MALIBU PARK SCHOOL

MALIBU, CALIFORNIA

EARTH SYSTEMS ENVIRONMENTAL

EV-2125-2 | FIGURE 3



CL1 SANDY CLAY to CLAYEY SAND: red-brown, fine to coarse grained sand, some angular gravel

CL2 SANDY CLAY: orange-brown, fine to coarse grained sand, some gravel lenses

SC CLAYEY SAND: orange-brown, silty, fine grained sand

MH/CH WEATHERED SHALE (CLAYEY SILT): mottled orange-brown and greenish yellow, fine grained sand, waxy

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

14 ● 20 690 320 2900

TPH (PPM) ● BENZENE TOLUENE ETHYL BENZENE TOTAL XYLENES (PPB)

ND = NOT DETECTED

▼ STATIC GROUNDWATER LEVEL FOLLOWING DRILLING

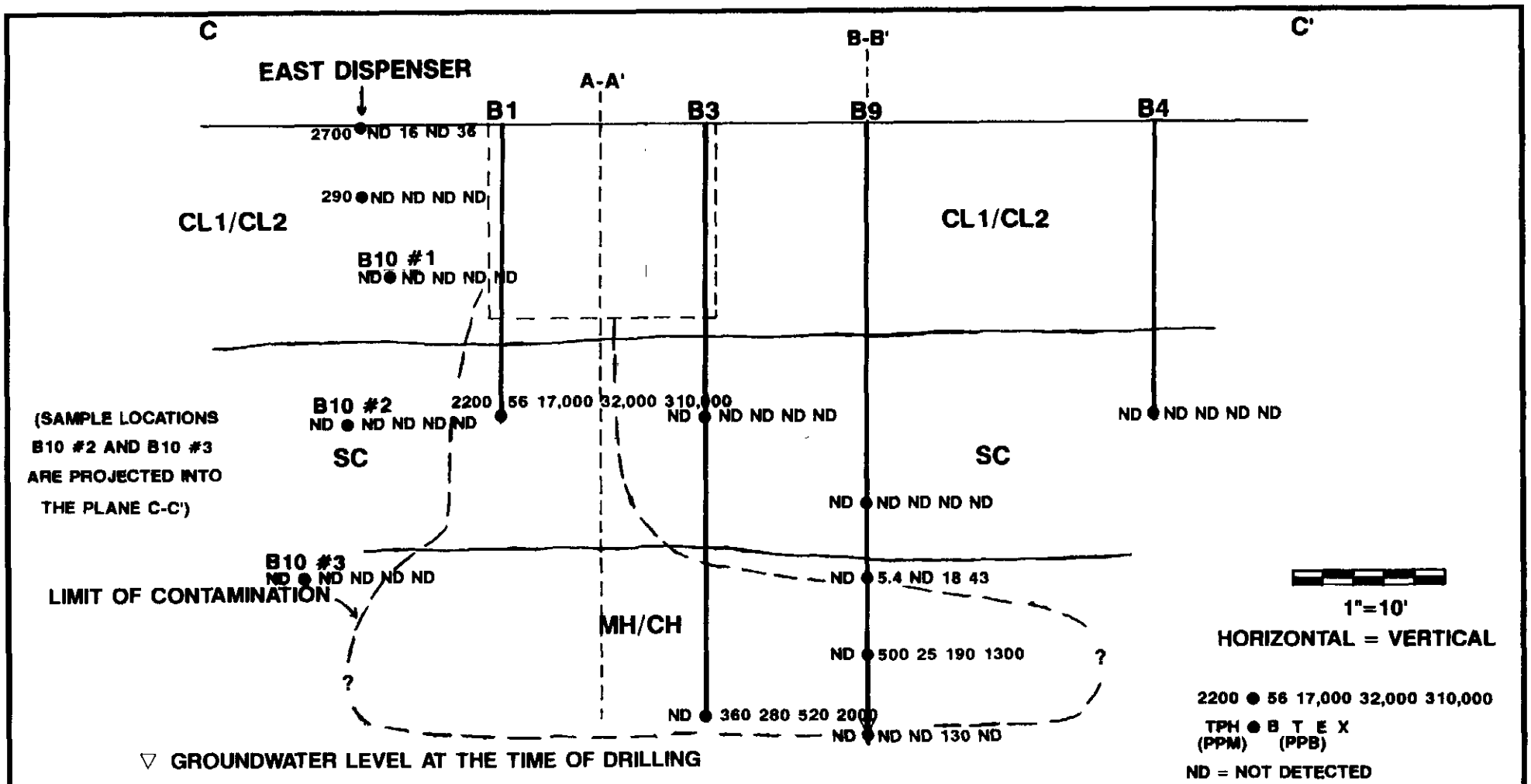
CROSS SECTIONS A-A' B-B'

MALIBU PARK SCHOOL

MALIBU, CALIFORNIA

EARTH SYSTEMS ENVIRONMENTAL

EV-2125-2 | FIGURE 3



CL1/CL2 SANDY CLAY to CLAYEY SAND: red-brown to orange-brown, fine to coarse grained sand, some gravel

SC CLAYEY SAND: orange-brown, silty fine grained sand

MH/CH WEATHERED SHALE (CLAYEY SILT): mottled orange-brown and greenish yellow, fine grained sand, waxy

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

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EV-2125-2

CROSS SECTION C-C'
MALIBU PARK SCHOOL MALIBU, CALIFORNIA

FIGURE 4

Table 1. Analytical Results

Sample	TPH as diesel[1]	Benzene[2]	Toluene[2]	Ethylbenzene[2]	Xylenes[2]
B9 #3	BQL	BQL	BQL	BQL	BQL
B9 #4	BQL	5.4	BQL	18	43
B9 #5	BQL	500	25	190	1300
B9 #6	BQL	BQL	BQL	130	BQL
B10 #1	BQL	BQL	BQL	BQL	BQL
B10 #2	BQL	BQL	BQL	BQL	BQL
B10 #3	BQL	BQL	BQL	BQL	BQL
B11 #1	BQL	BQL	BQL	BQL	BQL
B11 #2	BQL	BQL	BQL	BQL	BQL
B11 #3	BQL	BQL	36	16	190
B11 #4	14	20	690	320	2900
B11 #5	BQL	10	96	17	120
B11 #6	10	BQL	59	74	360
W. Disp. #1@3ft.	18	BQL	BQL	BQL	BQL
E. Disp. #1@4.5ft.	290	BQL	BQL	BQL	BQL
Action Limits[3]	1000	300	300	1000	1000
B11 G.W. (grab groundwater sample)	*	1500	19,000	2300	15,000

1 reported in mg/Kg
2 reported in ug/Kg
3 State of California Leaking Underground Fuel Tank Task Force recommended action limits for soil contamination based on an assumed medium leaching potential for the site
BQL - Below Practical Quantitation Limit
*TPH for groundwater standardized against gasoline

APPENDIX A

Previous Laboratory Results

Previous Analytical Results from Samples Collected Following Tank Removal
August 1992

Sample	TPH[1]	Benzene[2]	Toluene[2]	Ethylbenzene[2]	Xylenes[2]
SST1AW	2400	ND	58	64	500
SST1BE	5400	ND	38	26	300
SST2AW	5800	ND	10,500	15,000	130,000
SST2BE	11	ND	32	32	320
SSD1C	450	ND	ND	ND	ND
SSD2C	2700	ND	16	ND	36
SSSP1N	ND	ND	ND	ND	ND
SSSP1E	1200	ND	8.2	ND	880
SSSP1S	ND	ND	ND	ND	ND
SSSP1W	16	ND	ND	ND	ND
SSSP1SE	150	ND	ND	ND	450

[1] reported in mg/Kg
[2] reported in ug/Kg
ND - Not Detected
These results are copied from a poor quality facsimile and may not match actual results, although orders of magnitude appear correct.

Previous Analytical Results from Samples Collected by Earth Systems Environmental During Initial Site Assessment Activities Reported November 16, 1992

Sample	TPH[1]	Benzene[2]	Toluene[2]	Ethylbenzene[2]	Xylenes[2]
1@19	2200	56	17000	32000	310000
2@14	BQL	BQL	BQL	BQL	BQL
3@19	BQL	BQL	BQL	BQL	BQL
3@39	BQL	360	280	520	2000
4@19	BQL	BQL	BQL	BQL	BQL
5@14	BQL	BQL	BQL	BQL	BQL
6@14	BQL	10	12	BQL	23
7@14	BQL	BQL	BQL	BQL	BQL
8@14	BQL	BQL	BQL	BQL	BQL
Spoils Pile	2300	NA	NA	NA	NA
Action Limits[3]	1000	300	300	1000	1000

1 reported in mg/Kg
2 reported in ug/Kg
3 State of California Leaking Underground Fuel Tank Task Force recommended action limits based on an assumed medium leaching potential for the site
NA - Not Analyzed
BQL - Below Practical Quantitation Limit

APPENDIX B

Boring Logs

Earth Systems Environmental, Inc.

BORING: B-9
PROJECT NAME: MALIBU SCHOOLS
PROJECT NUMBER: EV-2125-2
PROJECT LOCATION: MALIBU PARK SCHOOL

DRILLING METHOD: CME 75, 8" HSA
DRILLING DATE: 1/21/93
DRILL: ESC - NC
LOGGED BY: DAVE REDDISH

DEPTH (in feet)	USCS CLASS	SYMBOL	LITHOLOGY	SAMPLE DATA: INTERVAL	SAMPLE #	SAMPLE TYPE	P.I.D. (ppm)	BLOWS PER 6".	REMARKS
0	CL		A.C. + base = 12"						No PID readings available
			CLAY: Red-brown, silty with fine to coarse grained sand, some angular gravel, moist, stiff						
5			Clayey sand and gravel lenses						
10									
15	CL		SANDY CLAY: Yellowish brown, silty, fine to medium grained sand with some gravel, stiff, fairly moist	15-16.5	1	■		5/11/30	
20			same, dark orange brown, highly fractured, friable gravel	20-21	2	■		11/50+	
25			same, with some weathered gravel	25-26	3	■		8/50+	
									Very hard drilling
30	CL		SILTY CLAY: Mottled yellowish green and orange brown, very silty, hard, blocky fracture -- very weathered shale, slightly moist, waxy	30-31.5	4	■		6/15/22	Faint petroleum odor
35			same	35-36.5	5	■		8/20/25	Faint petroleum odor
40			same, slightly less weathered, wet sampler nose	40-41.5	6	■		13/25/42	▽
45			Total Depth of Boring = 41.5' Groundwater encountered at 41'						
50									

SAMPLE SYMBOLS: ■ Split Spoon ○ Grab ● SPT

Note: This log of subsurface conditions is a simplification of actual conditions encountered. It applies at the location and time of drilling. Subsurface conditions may differ at other locations and times.

Earth Systems Environmental, Inc.

BORING: B-10
PROJECT NAME: MALIBU SCHOOLS
PROJECT NUMBER: EV-2125-2
PROJECT LOCATION: MALIBU PARK SCHOOL

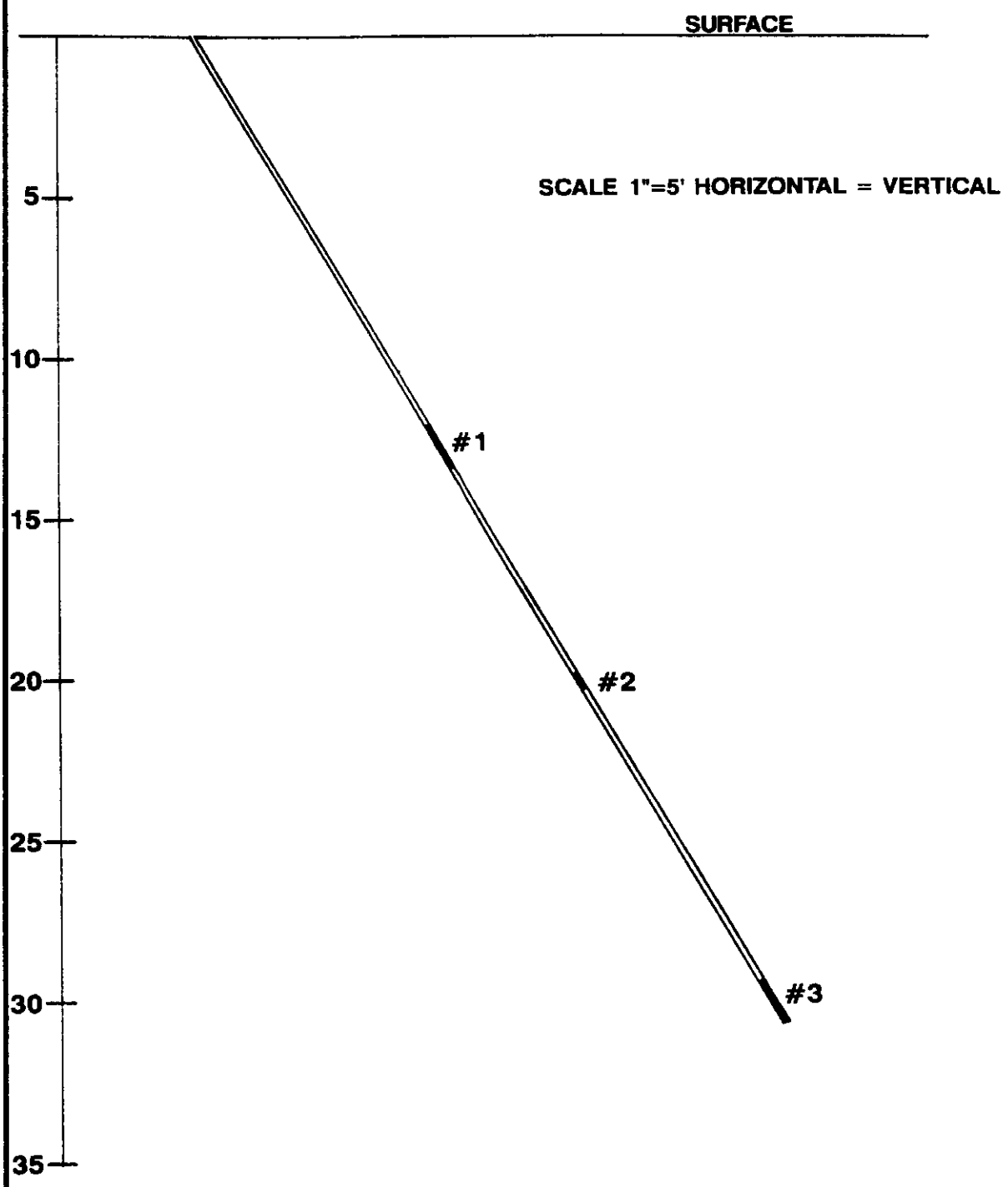
DRILLING METHOD: CME 75, 8" HSA, 30° ANGLE
DRILLING DATE: 1/20/93
DRILL: ESC - NC
LOGGED BY: DAVE REDDISH

DEPTH (in feet)	USCS CLASS	SYMBOL	LITHOLOGY	SAMPLE DATA: INTERVAL	SAMPLE #	SAMPLE TYPE	P.I.D. (ppm)	BLOWS PER 6"	REMARKS
0	CL SC		A.C. + base = 12" SANDY CLAY: Red-brown, fine to coarse grained sand with silt, some angular gravel, moist, stiff						Slant drilled at 30 degrees off vertical
5			Clayey sand and gravel lenses						
10			increasing moisture						
	CL		color change to orange brown SANDY CLAY: Orange brown, fine to coarse grained sand with some gravel, very stiff, moist.	12-13.5	1	■	0.1	28/45/50+	
15									drilling softens
20	CL		SILTY CLAY: Pale yellowish olive, silty, with fine to medium sand, soft, moist						
	CH/MH		SILTY CLAY (weathered shale): Pale greenish yellow, very silty, trace sand, diatomaceous (?), organic speckling, hard	20-20.5	2	■	2.0	100	drilling hardens
25			gravel at 28'						Very hard drilling
30	MH		WEATHERED SHALE: Mottled gray and orange brown, very weathered, blocky fracture, diatomaceous, very silty, slightly clayey, FeO2 staining, slightly moist	30-31	3	■	7.0	30/50+	
35			Total Depth of Boring = 35' No groundwater encountered						
40									
45									
50									

SAMPLE SYMBOLS: ■ Split Spoon ○ Grab ● SPT

Note: This log of subsurface conditions is a simplification of actual conditions encountered. It applies at the location and time of drilling. Subsurface conditions may differ at other locations and times.

B10 30° ANGLE BORING



Earth Systems Environmental, Inc.
A Member of The Earth Systems Group
1731-B Walter Street • Ventura, California 93003 • (805) 642-0942 • FAX (805) 642-1325

Earth Systems Environmental, Inc.

BORING: B-11
PROJECT NAME: MALIBU SCHOOLS
PROJECT NUMBER: EV-2125-2
PROJECT LOCATION: MALIBU PARK SCHOOL

DRILLING METHOD: CME 75, 8" HSA
DRILLING DATE: 1/20/93
DRILL: ESC - NC
LOGGED BY: DAVE REDDISH

DEPTH (in feet)	USCS CLASS	SYMBOL	LITHOLOGY	SAMPLE DATA: INTERVAL	SAMPLE #	SAMPLE TYPE	P.I.D. (ppm)	BLOWS PER 6".	REMARKS
0			A.C. + base = 12"						
	CL		SANDY CLAY: Red-brown, fine to coarse grained sand with silt, some angular gravel, moist, stiff						
5			Clayey sand and gravel lenses						
10			Increasing moisture						
			color change to orange brown						
15	CL		SANDY CLAY: Orange brown, fine to coarse grained sand with some gravelly lenses, stiff, moist	15-16.5	1	■	6.7	19/30/40	
20	SC		CLAYEY SAND: Orange brown, silty, fine grained sand, stiff, moist, trace gravel	20-21.5	2	■	12.9	10/20/30	
25			same, less stiff, fine to medium grained sand	25-26.5	3	■	2.5	8/12/15	petroleum odor at 24-25' drilling softens
30	MH/ CH		CLAYEY SILT (weathered shale): Mottled orange brown and greenish yellow, very clayey, with fine sand, highly fractured, slightly moist, waxy, diatomaceous (?)	30-31.5	4	■	30.4	8/12/25	petroleum odor drilling hardens
				35-36	5	■	26.2	30/50+	petroleum odor
35	MH		WEATHERED SHALE: Pale greenish gray, highly fractured, blocky fracture, clayey, slightly to moderately weathered.						
40			same slightly weathered, wet sampler nose	40-40.5	6	■	30.3	50	petroleum odor
45			Total Depth of Boring = 40.5' Groundwater encountered at the time of drilling at 40', settled at 34'						
50									

SAMPLE SYMBOLS: ■ Split Spoon ○ Grab ● SPT

Note: This log of subsurface conditions is a simplification of actual conditions encountered. It applies at the location and time of drilling. Subsurface conditions may differ at other locations and times.

APPENDIX C

Laboratory Reports

BTC Environmental, Incorporated
1536 Eastman Avenue, Suite B
Ventura, CA. 93003
(805) 644-1095

Prepared For: Earth Systems Environmental
1731-B Walter Street
Ventura, CA 93003

January 29, 1993

Attention: Richard Kelly

Laboratory No: 930175
Date Received: 22-JAN-93
Project: EV-2125-2
Malibu Park School

Job No: B00150
Sampled By: Client
Sample ID: See Below

RESULTS

On January 22, 1993, sixteen (16) samples were received for analysis by BTC Environmental, Inc. The samples were identified and assigned the lab numbers listed below. This report consists of 36 pages excluding the cover letter.

SAMPLE DESCRIPTION	BTCE LAB NUMBER
B10, #1	93017501
B10, #2	93017502
B10, #3	93017503
B11, #1	93017504
B11, #2	93017505
B11, #3	93017506
B11, #4	93017507
B11, #5	93017508
B11, #6	93017509
B9, #3	93017510
B9, #4	93017511
B9, #5	93017512
B9, #6	93017513
W. DISP #1 @ 3.0 ft	93017514
E. DISP #1 @ 4.5 ft	93017515
B-11 G.W.	93017516

Dan Farah

Dan A. Farah, Ph.D.
Director - Analytical Operations

BTC Environmental, Incorporated
1536 Eastman Avenue, Suite B
Ventura CA 93003
(805) 644-1095

Client: Earth Systems Environmental	Date Analyzed: 1/27/93
Sample ID: B10, #1	Analyst: Glenn
BTCE LAB NO: 93017501	Sample Matrix: Soil
Date Received: 1/22/93	Date Extracted: 1/26/93
Date Sampled: 1/20/93	Time Sampled: 10:15

TOTAL PETROLEUM HYDROCARBONS
EPA METHOD 8015m

Compound	Concentration mg/Kg	Dilution Factor	PQL mg/Kg
TPH as Diesel	BQL	1	10

BQL: Below Practical Quantitation Limit
PQL: Practical Quantitation Limit

Glenn Tillett for
C.S. Ellis Hsue
Department Supervisor

BTC Environmental, Incorporated
1536 Eastman Avenue, Suite B
Ventura CA 93003
(805) 644-1095

Client: Earth Systems Environmental	Date Analyzed: 1/27/93
Sample ID: B10, #2	Analyst: Glenn
BTCE LAB NO: 93017502	Sample Matrix: Soil
Date Received: 1/22/93	Date Extracted: 1/26/93
Date Sampled: 1/20/93	Time Sampled: 10:35

TOTAL PETROLEUM HYDROCARBONS
EPA METHOD 8015m

Compound	Concentration mg/Kg	Dilution Factor	PQL mg/Kg
TPH as Diesel	BQL	1	10

BQL: Below Practical Quantitation Limit
PQL: Practical Quantitation Limit

C.S. Ellis Hsue
Department Supervisor

BTC Environmental, Incorporated
1536 Eastman Avenue, Suite B
Ventura CA 93003
(805) 644-1095

Client: Earth Systems Environmental
Sample ID: B10, #3
BTCE LAB NO: 93017503
Date Received: 1/22/93
Date Sampled: 1/20/93

Date Analyzed: 1/27/93
Analyst: Glenn
Sample Matrix: Soil
Date Extracted: 1/26/93
Time Sampled: 11:00

TOTAL PETROLEUM HYDROCARBONS
EPA METHOD 8015m

Compound	Concentration mg/Kg	Dilution Factor	PQL mg/Kg
TPH as Diesel	BQL	1	10

BQL: Below Practical Quantitation Limit
PQL: Practical Quantitation Limit

C.S. Ellis Hsue
Department Supervisor

BTC Environmental, Incorporated
1536 Eastman Avenue, Suite B
Ventura CA 93003
(805) 644-1095

Client: Earth Systems Environmental	Date Analyzed: 1/27/93
Sample ID: B11, #1	Analyst: Glenn
BTCE LAB NO: 93017504	Sample Matrix: Soil
Date Received: 1/22/93	Date Extracted: 1/26/93
Date Sampled: 1/20/93	Time Sampled: 13:15

TOTAL PETROLEUM HYDROCARBONS
EPA METHOD 8015m

Compound	Concentration mg/Kg	Dilution Factor	PQL mg/Kg
TPH as Diesel	BQL	1	10

BQL: Below Practical Quantitation Limit
PQL: Practical Quantitation Limit

C.S. Ellis Hsue
Department Supervisor

BTC Environmental, Incorporated
1536 Eastman Avenue, Suite B
Ventura CA 93003
(805) 644-1095

Client: Earth Systems Environmental
Sample ID: B11, #2
BTCE LAB NO: 93017505
Date Received: 1/22/93
Date Sampled: 1/20/93

Date Analyzed: 1/27/93
Analyst: Glenn
Sample Matrix: Soil
Date Extracted: 1/26/93
Time Sampled: 13:25

TOTAL PETROLEUM HYDROCARBONS
EPA METHOD 8015m

Compound	Concentration mg/Kg	Dilution Factor	PQL mg/Kg
TPH as Diesel	BQL	1	10

BQL: Below Practical Quantitation Limit
PQL: Practical Quantitation Limit

G.S. Ellis Hsue
Department Supervisor

BTC Environmental, Incorporated
1536 Eastman Avenue, Suite B
Ventura CA 93003
(805) 644-1095

Client: Earth Systems Environmental	Date Analyzed: 1/27/93
Sample ID: B11, #3	Analyst: Glenn
BTCE LAB NO: 93017506	Sample Matrix: Soil
Date Received: 1/22/93	Date Extracted: 1/26/93
Date Sampled: 1/20/93	Time Sampled: 13:35

TOTAL PETROLEUM HYDROCARBONS
EPA METHOD 8015m

Compound	Concentration mg/Kg	Dilution Factor	PQL mg/Kg
TPH as Diesel	BQL	1	10

BQL: Below Practical Quantitation Limit
PQL: Practical Quantitation Limit

Glenn Tellett for
C.S. Ellis Hsue
Department Supervisor

BTC Environmental, Incorporated
1536 Eastman Avenue, Suite B
Ventura CA 93003
(805) 644-1095

Client: Earth Systems Environmental
Sample ID: B11, #4
BTCE LAB NO: 93017507
Date Received: 1/22/93
Date Sampled: 1/20/93

Date Analyzed: 1/27/93
Analyst: Glenn
Sample Matrix: Soil
Date Extracted: 1/26/93
Time Sampled: 13:45

TOTAL PETROLEUM HYDROCARBONS
EPA METHOD 8015m

Compound	Concentration mg/Kg	Dilution Factor	PQL mg/Kg
TPH as Diesel	14	1	10

BQL: Below Practical Quantitation Limit
PQL: Practical Quantitation Limit

Glenn Pellett for
C.S. Ellis Hsue
Department Supervisor

BTC Environmental, Incorporated
1536 Eastman Avenue, Suite B
Ventura CA 93003
(805) 644-1095

Client: Earth Systems Environmental
Sample ID: B11, #5
BTCE LAB NO: 93017508
Date Received: 1/22/93
Date Sampled: 1/20/93

Date Analyzed: 1/27/93
Analyst: Glenn
Sample Matrix: Soil
Date Extracted: 1/26/93
Time Sampled: 13:52

TOTAL PETROLEUM HYDROCARBONS
EPA METHOD 8015m

Compound	Concentration mg/Kg	Dilution Factor	PQL mg/Kg
TPH as Diesel	BQL	1	10

BQL: Below Practical Quantitation Limit
PQL: Practical Quantitation Limit

Glenn Pellett for
C/S. Ellis Hsue
Department Supervisor

BTC Environmental, Incorporated
1536 Eastman Avenue, Suite B
Ventura CA 93003
(805) 644-1095

Client: Earth Systems Environmental
Sample ID: B11, #6
BTCE LAB NO: 93017509
Date Received: 1/22/93
Date Sampled: 1/20/93

Date Analyzed: 1/27/93
Analyst: Glenn
Sample Matrix: Soil
Date Extracted: 1/26/93
Time Sampled: 14:07

TOTAL PETROLEUM HYDROCARBONS
EPA METHOD 8015m

Compound	Concentration mg/Kg	Dilution Factor	PQL mg/Kg
TPH as Diesel	10	1	10

BQL: Below Practical Quantitation Limit
PQL: Practical Quantitation Limit

C.S. Ellis Hsue
Department Supervisor

BTC Environmental, Incorporated
1536 Eastman Avenue, Suite B
Ventura CA 93003
(805) 644-1095

Client: Earth Systems Environmental
Sample ID: B9, #3
BTCE LAB NO: 93017510
Date Received: 1/22/93
Date Sampled: 1/21/93

Date Analyzed: 1/27/93
Analyst: Glenn
Sample Matrix: Soil
Date Extracted: 1/26/93
Time Sampled: 10:03

TOTAL PETROLEUM HYDROCARBONS
EPA METHOD 8015m

Compound	Concentration mg/Kg	Dilution Factor	PQL mg/Kg
TPH as Diesel	BQL	1	10

BQL: Below Practical Quantitation Limit
PQL: Practical Quantitation Limit

Glenn Gellett for
C.S. Ellis Hsue
Department Supervisor

BTC Environmental, Incorporated
1536 Eastman Avenue, Suite B
Ventura CA 93003
(805) 644-1095

Client: Earth Systems Environmental
Sample ID: B9, #4
BTCE LAB NO: 93017511
Date Received: 1/22/93
Date Sampled: 1/21/93

Date Analyzed: 1/28/93
Analyst: Glenn
Sample Matrix: Soil
Date Extracted: 1/26/93
Time Sampled: 10:15

TOTAL PETROLEUM HYDROCARBONS
EPA METHOD 8015m

Compound	Concentration mg/Kg	Dilution Factor	PQL mg/Kg
TPH as Diesel	BQL	1	10

BQL: Below Practical Quantitation Limit
PQL: Practical Quantitation Limit

Allen Pellett for
C.S. Ellis Hsue
Department Supervisor

BTC Environmental, Incorporated
1536 Eastman Avenue, Suite B
Ventura CA 93003
(805) 644-1095

Client: Earth Systems Environmental
Sample ID: B9, #5
BTCE LAB NO: 93017512
Date Received: 1/22/93
Date Sampled: 1/21/93

Date Analyzed: 1/28/93
Analyst: Glenn
Sample Matrix: Soil
Date Extracted: 1/26/93
Time Sampled: 10:25

TOTAL PETROLEUM HYDROCARBONS
EPA METHOD 8015m

Compound	Concentration mg/Kg	Dilution Factor	PQL mg/Kg
TPH as Diesel	BQL	1	10

BQL: Below Practical Quantitation Limit
PQL: Practical Quantitation Limit

C.S. Ellis Hsue
Department Supervisor

BTC Environmental, Incorporated
1536 Eastman Avenue, Suite B
Ventura CA 93003
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Client: Earth Systems Environmental	Date Analyzed: 1/28/93
Sample ID: B9, #6	Analyst: Glenn
BTCE LAB NO: 93017513	Sample Matrix: Soil
Date Received: 1/22/93	Date Extracted: 1/26/93
Date Sampled: 1/21/93	Time Sampled: 10:38

TOTAL PETROLEUM HYDROCARBONS
EPA METHOD 8015m

Compound	Concentration mg/Kg	Dilution Factor	PQL mg/Kg
TPH as Diesel	BQL	1	10

BQL: Below Practical Quantitation Limit
PQL: Practical Quantitation Limit

C.S. Ellis Hsue
Department Supervisor

BTC Environmental, Incorporated
1536 Eastman Avenue, Suite B
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Client: Earth Systems Environmental
Sample ID: W. Disp. #1 @ 3.0ft
BTCE LAB NO: 93017514
Date Received: 1/22/93
Date Sampled: 1/21/93

Date Analyzed: 1/28/93
Analyst: Glenn
Sample Matrix: Soil
Date Extracted: 1/26/93
Time Sampled: 12:10

TOTAL PETROLEUM HYDROCARBONS
EPA METHOD 8015m

Compound	Concentration mg/Kg	Dilution Factor	PQL mg/Kg
TPH as Diesel	18	1	10

BQL: Below Practical Quantitation Limit
PQL: Practical Quantitation Limit

C.S. Ellis Hsue
Department Supervisor

BTC Environmental, Incorporated
1536 Eastman Avenue, Suite B
Ventura CA 93003
(805) 644-1095

Client: Earth Systems Environmental
Sample ID: E. Disp. #1 @ 4.5ft
BTCE LAB NO: 93017515
Date Received: 1/22/93
Date Sampled: 1/21/93

Date Analyzed: 1/28/93
Analyst: Glenn
Sample Matrix: Soil
Date Extracted: 1/26/93
Time Sampled: 12:42

TOTAL PETROLEUM HYDROCARBONS
EPA METHOD 8015m

Compound	Concentration mg/Kg	Dilution Factor	PQL mg/Kg
TPH as Diesel	290	10	100

BQL: Below Practical Quantitation Limit
PQL: Practical Quantitation Limit

C.S. Ellis Hsue
Department Supervisor

BTC Environmental, Incorporated
1536 Eastman Avenue, Suite B
Ventura CA 93003
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Client: Earth Systems Environmental
Sample ID: B-11 G.W.
BTCE LAB NO: 93017516
Date Received: 1/22/93
Date Sampled: 1/21/93

Date Analyzed: 1/26/93
Analyst: VDV
Sample Matrix: Water
Time Sampled: 11:50

TOTAL PETROLEUM HYDROCARBONS
EPA METHOD 8015m

Compound	Concentration mg/L	Dilution Factor	PQL mg/L
TPH as Gasoline	57	20	10

BQL: Below Practical Quantitation Limit
PQL: Practical Quantitation Limit

C.S. Ellis Hsue
Department Supervisor

BTC Environmental, Incorporated
1536 Eastman Avenue, Suite B
Ventura CA 93003
(805) 644-1095

Client: Earth Systems Environmental
Sample ID: Method Blank
BTCE LAB NO: 930175-MB
Date Extracted: 1/26/93

Date Analyzed: 1/27/93
Analyst: Glenn
Sample Matrix: MB for Soil

METHOD BLANK ANALYSIS
EPA METHOD 8015m

Compound	Concentration mg/Kg	Dilution Factor	PQL mg/Kg
TPH as Diesel	BQL	1	10

BQL: Below Practical Quantitation Limit
PQL: Practical Quantitation Limit

C.S. Ellis Hsue
Department Supervisor

BTC Environmental, Incorporated
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Ventura CA 93003
(805) 644-1095

Client: Earth Systems Environmental
Sample ID: B10, #1
BTCE LAB NO: 93017501
Date Received: 1/22/93
Date Sampled: 1/20/93

Date Analyzed: 1/25/93
Analyst: VDV
Sample Matrix: Soil
Time Sampled: 10:15

AROMATIC VOLATILE COMPOUNDS
EPA Method 8020

Compound	Concentration ug/Kg	Dilution Factor	PQL ug/Kg
Benzene	BQL	1	5
Toluene	BQL	1	5
Ethylbenzene	BQL	1	5
Xylenes	BQL	1	20

BQL: Below Practical Quantitation Limit
PQL: Practical Quantitation Limit

C.S. Ellis Hsue
Department Supervisor

BTC Environmental, Incorporated
1536 Eastman Avenue, Suite B
Ventura CA 93003
(805) 644-1095

Client: Earth Systems Environmental
Sample ID: B10, #2
BTCE LAB NO: 93017502
Date Received: 1/22/93
Date Sampled: 1/20/93

Date Analyzed: 1/25/93
Analyst: VDV
Sample Matrix: Soil
Time Sampled: 10:35

AROMATIC VOLATILE COMPOUNDS
EPA Method 8020

Compound	Concentration ug/Kg	Dilution Factor	PQL ug/Kg
Benzene	BQL	1	5
Toluene	BQL	1	5
Ethylbenzene	BQL	1	5
Xylenes	BQL	1	20

BQL: Below Practical Quantitation Limit
PQL: Practical Quantitation Limit

C.S. Ellis Hsue
Department Supervisor

BTC Environmental, Incorporated
1536 Eastman Avenue, Suite B
Ventura CA 93003
(805) 644-1095

Client: Earth Systems Environmental
Sample ID: B10, #3
BTCE LAB NO: 93017503
Date Received: 1/22/93
Date Sampled: 1/20/93

Date Analyzed: 1/25/93
Analyst: VDV
Sample Matrix: Soil
Time Sampled: 11:00

AROMATIC VOLATILE COMPOUNDS
EPA Method 8020

Compound	Concentration ug/Kg	Dilution Factor	PQL ug/Kg
Benzene	BQL	1	5
Toluene	BQL	1	5
Ethylbenzene	BQL	1	5
Xylenes	BQL	1	20

BQL: Below Practical Quantitation Limit
PQL: Practical Quantitation Limit

C.S. Ellis Hsue
Department Supervisor

BTC Environmental, Incorporated
1536 Eastman Avenue, Suite B
Ventura CA 93003
(805) 644-1095

Client: Earth Systems Environmental
Sample ID: B11, #1
BTCE LAB NO: 93017504
Date Received: 1/22/93
Date Sampled: 1/20/93

Date Analyzed: 1/25/93
Analyst: VDV
Sample Matrix: Soil
Time Sampled: 13:15

AROMATIC VOLATILE COMPOUNDS
EPA Method 8020

Compound	Concentration ug/Kg	Dilution Factor	PQL ug/Kg
Benzene	BQL	1	5
Toluene	BQL	1	5
Ethylbenzene	BQL	1	5
Xylenes	BQL	1	20

BQL: Below Practical Quantitation Limit
PQL: Practical Quantitation Limit

C.S. Ellis Hsue
Department Supervisor

BTC Environmental, Incorporated
1536 Eastman Avenue, Suite B
Ventura CA 93003
(805) 644-1095

Client: Earth Systems Environmental
Sample ID: B11, #2
BTCE LAB NO: 93017505
Date Received: 1/22/93
Date Sampled: 1/20/93

Date Analyzed: 1/25/93
Analyst: VDV
Sample Matrix: Soil
Time Sampled: 13:25

AROMATIC VOLATILE COMPOUNDS
EPA Method 8020

Compound	Concentration ug/Kg	Dilution Factor	PQL ug/Kg
Benzene	BQL	1	5
Toluene	BQL	1	5
Ethylbenzene	BQL	1	5
Xylenes	BQL	1	20

BQL: Below Practical Quantitation Limit
PQL: Practical Quantitation Limit

C.S. Ellis Hsue
Department Supervisor

BTC Environmental, Incorporated
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Ventura CA 93003
(805) 644-1095

Client: Earth Systems Environmental
Sample ID: B11, #3
BTCE LAB NO: 93017506
Date Received: 1/22/93
Date Sampled: 1/20/93

Date Analyzed: 1/25/93
Analyst: VDV
Sample Matrix: Soil
Time Sampled: 13:35

AROMATIC VOLATILE COMPOUNDS
EPA Method 8020

Compound	Concentration ug/Kg	Dilution Factor	PQL ug/Kg
Benzene	BQL	1	5
Toluene	36	1	5
Ethylbenzene	16	1	5
Xylenes	190	1	20

BQL: Below Practical Quantitation Limit
PQL: Practical Quantitation Limit

C.S. Ellis Hsue
Department Supervisor

BTC Environmental, Incorporated
1536 Eastman Avenue, Suite B
Ventura CA 93003
(805) 644-1095

Client: Earth Systems Environmental
Sample ID: B11, #4
BTCE LAB NO: 93017507
Date Received: 1/22/93
Date Sampled: 1/20/93

Date Analyzed: 1/26/93
Analyst: VDV
Sample Matrix: Soil
Time Sampled: 13:45

AROMATIC VOLATILE COMPOUNDS
EPA Method 8020

Compound	Concentration ug/Kg	Dilution Factor	PQL ug/Kg
Benzene	20	1	5
Toluene	690	1	5
Ethylbenzene	320	1	5
Xylenes	2900	1	20

BQL: Below Practical Quantitation Limit
PQL: Practical Quantitation Limit

C.S. Ellis Hsue
Department Supervisor

BTC Environmental, Incorporated
1536 Eastman Avenue, Suite B
Ventura CA 93003
(805) 644-1095

Client: Earth Systems Environmental
Sample ID: B11, #5
BTCE LAB NO: 93017508
Date Received: 1/22/93
Date Sampled: 1/20/93

Date Analyzed: 1/27/93
Analyst: VDV
Sample Matrix: Soil
Time Sampled: 13:52

AROMATIC VOLATILE COMPOUNDS
EPA Method 8020

Compound	Concentration ug/Kg	Dilution Factor	PQL ug/Kg
Benzene	10	1	5
Toluene	96	1	5
Ethylbenzene	17	1	5
Xylenes	120	1	20

BQL: Below Practical Quantitation Limit
PQL: Practical Quantitation Limit

C.S. Ellis Hsue
Department Supervisor

BTC Environmental, Incorporated
1536 Eastman Avenue, Suite B
Ventura CA 93003
(805) 644-1095

Client: Earth Systems Environmental
Sample ID: B11, #6
BTCE LAB NO: 93017509
Date Received: 1/22/93
Date Sampled: 1/20/93

Date Analyzed: 1/27/93
Analyst: VDV
Sample Matrix: Soil

Time Sampled: 14:07

AROMATIC VOLATILE COMPOUNDS
EPA Method 8020

Compound	Concentration ug/Kg	Dilution Factor	PQL ug/Kg
Benzene	BQL	1	5
Toluene	59	1	5
Ethylbenzene	74	1	5
Xylenes	360	1	20

BQL: Below Practical Quantitation Limit
PQL: Practical Quantitation Limit

C.S. Ellis Hsue
Department Supervisor

BTC Environmental, Incorporated
1536 Eastman Avenue, Suite B
Ventura CA 93003
(805) 644-1095

Client: Earth Systems Environmental
Sample ID: B9, #3
BTCE LAB NO: 93017510
Date Received: 1/22/93
Date Sampled: 1/21/93

Date Analyzed: 1/25/93
Analyst: VDV
Sample Matrix: Soil
Time Sampled: 10:03

AROMATIC VOLATILE COMPOUNDS
EPA Method 8020

Compound	Concentration ug/Kg	Dilution Factor	PQL ug/Kg
Benzene	BQL	1	5
Toluene	BQL	1	5
Ethylbenzene	BQL	1	5
Xylenes	BQL	1	20

BQL: Below Practical Quantitation Limit
PQL: Practical Quantitation Limit

C.S. Ellis Hsue
Department Supervisor

BTC Environmental, Incorporated
1536 Eastman Avenue, Suite B
Ventura CA 93003
(805) 644-1095

Client: Earth Systems Environmental
Sample ID: B9, #4
BTCE LAB NO: 93017511
Date Received: 1/22/93
Date Sampled: 1/21/93

Date Analyzed: 1/25/93
Analyst: VDV
Sample Matrix: Soil
Time Sampled: 10:15

AROMATIC VOLATILE COMPOUNDS
EPA Method 8020

Compound	Concentration ug/Kg	Dilution Factor	PQL ug/Kg
Benzene	5.4	1	5
Toluene	BQL	1	5
Ethylbenzene	18	1	5
Xylenes	43	1	20

BQL: Below Practical Quantitation Limit
PQL: Practical Quantitation Limit

C.S. Ellis Hsue
Department Supervisor

BTC Environmental, Incorporated
1536 Eastman Avenue, Suite B
Ventura CA 93003
(805) 644-1095

Client: Earth Systems Environmental
Sample ID: B9, #5
BTCE LAB NO: 93017512
Date Received: 1/22/93
Date Sampled: 1/21/93

Date Analyzed: 1/25/93
Analyst: VDV
Sample Matrix: Soil
Time Sampled: 10:25

AROMATIC VOLATILE COMPOUNDS
EPA Method 8020

Compound	Concentration ug/Kg	Dilution Factor	PQL ug/Kg
Benzene	500	1	5
Toluene	25	1	5
Ethylbenzene	190	1	5
Xylenes	1300	5	100

Note: The sample was analyzed for Xylenes on 1/26/93.

BQL: Below Practical Quantitation Limit
PQL: Practical Quantitation Limit

C.S. Ellis Hsue
Department Supervisor

BTC Environmental, Incorporated
1536 Eastman Avenue, Suite B
Ventura CA 93003
(805) 644-1095

Client: Earth Systems Environmental
Sample ID: B9, #6
BTCE LAB NO: 93017513
Date Received: 1/22/93
Date Sampled: 1/21/93

Date Analyzed: 1/25/93
Analyst: VDV
Sample Matrix: Soil
Time Sampled: 10:38

AROMATIC VOLATILE COMPOUNDS
EPA Method 8020

Compound	Concentration ug/Kg	Dilution Factor	PQL ug/Kg
Benzene	BQL	1	5
Toluene	BQL	1	5
Ethylbenzene	130	1	5
Xylenes	BQL	1	20

BQL: Below Practical Quantitation Limit
PQL: Practical Quantitation Limit

Dan Farah For
C.S. Ellis Hsue
Department Supervisor

BTC Environmental, Incorporated
1536 Eastman Avenue, Suite B
Ventura CA 93003
(805) 644-1095

Client: Earth Systems Environmental
Sample ID: W. Disp. #1 @ 3.0ft
BTCE LAB NO: 93017514
Date Received: 1/22/93
Date Sampled: 1/21/93

Date Analyzed: 1/25/93
Analyst: VDV
Sample Matrix: Soil
Time Sampled: 12:10

AROMATIC VOLATILE COMPOUNDS
EPA Method 8020

Compound	Concentration ug/Kg	Dilution Factor	PQL ug/Kg
Benzene	BQL	1	5
Toluene	BQL	1	5
Ethylbenzene	BQL	1	5
Xylenes	BQL	1	20

BQL: Below Practical Quantitation Limit
PQL: Practical Quantitation Limit

C.S. Ellis Hsue
Department Supervisor

BTC Environmental, Incorporated
1536 Eastman Avenue, Suite B
Ventura CA 93003
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Client: Earth Systems Environmental
Sample ID: E. Disp. #1 @ 4.5ft
BTCE LAB NO: 93017515
Date Received: 1/22/93
Date Sampled: 1/21/93

Date Analyzed: 1/25/93
Analyst: VDV
Sample Matrix: Soil
Time Sampled: 12:42

AROMATIC VOLATILE COMPOUNDS
EPA Method 8020

Compound	Concentration ug/Kg	Dilution Factor	PQL ug/Kg
Benzene	BQL	1	5
Toluene	BQL	1	5
Ethylbenzene	BQL	1	5
Xylenes	BQL	1	20

BQL: Below Practical Quantitation Limit
PQL: Practical Quantitation Limit

C.S. Ellis Hsue
Department Supervisor

BTC Environmental, Incorporated
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Ventura CA 93003
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Client: Earth Systems Environmental
Sample ID: B-11 G.W.
BTCE LAB NO: 93017516
Date Received: 1/22/93
Date Sampled: 1/21/93

Date Analyzed: 1/26/93
Analyst: VDV
Sample Matrix: Water
Time Sampled: 11:50

AROMATIC VOLATILE COMPOUNDS
EPA Method 8020

Compound	Concentration ug/L	Dilution Factor	PQL ug/L
Benzene	1500	20	6
Toluene	19000	20	6
Ethylbenzene	2300	20	6
Xylenes	15000	20	20

BQL: Below Practical Quantitation Limit
PQL: Practical Quantitation Limit

C.S. Ellis Hsue
Department Supervisor

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Client: Earth Systems Environmental
Sample ID: Method Blank
BTCE LAB NO: 930175-MB

Date Analyzed: 1/25/93
Analyst: VDV
Sample Matrix: MB for Solid

METHOD BLANK ANALYSIS
EPA Method 8020

Compound	Concentration ug/Kg	Dilution Factor	PQL ug/Kg
Benzene	BQL	1	5
Toluene	BQL	1	5
Ethylbenzene	BQL	1	5
Xylenes	BQL	1	20

BQL: Below Practical Quantitation Limit
PQL: Practical Quantitation Limit

C.S. Ellis Hsue
Department Supervisor

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(805) 644-1095

Client: Earth Systems Environmental
Sample ID: Method Blank #2
BTCE LAB NO: 930175-MB2

Date Analyzed: 1/26/93
Analyst: VDV
Sample Matrix: Liquid

METHOD BLANK ANALYSIS
EPA Method 8020

Compound	Concentration ug/L	Dilution Factor	PQL ug/L
Benzene	BQL	1	0.3
Toluene	BQL	1	0.3
Ethylbenzene	BQL	1	0.3
Xylenes	BQL	1	0.9

BQL: Below Practical Quantitation Limit
PQL: Practical Quantitation Limit

C.S. Ellis Hsue
Department Supervisor

BTC Environmental, Incorporated
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Ventura CA 93003
(805) 644-1095

Client: Earth Systems Environmental
Sample ID: Method Blank #3
BTCE LAB NO: 930175-MB3
Date Received: 1/22/92
Date Sampled: 1/28/93

Date Analyzed: 1/26/93
Analyst: VDV
Sample Matrix: Soil

AROMATIC VOLATILE COMPOUNDS
EPA Method 8020

Compound	Concentration ug/Kg	Dilution Factor	PQL ug/Kg
Benzene	BQL	1	5
Toluene	BQL	1	5
Ethylbenzene	BQL	1	5
Xylenes	BQL	1	20

BQL: Below Practical Quantitation Limit
PQL: Practical Quantitation Limit

C.S. Ellis Hsue
Department Supervisor

BTC Environmental, Incorporated
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Ventura CA 93003
(805) 644-1095

Client: Earth Systems Environmental
Sample ID: Method Blank #4
BTCE LAB NO: 930175-MB4
Date Received: 1/22/93
Date Sampled: N/A

Date Analyzed: 1/27/93
Analyst: VDV
Sample Matrix: Soil

AROMATIC VOLATILE COMPOUNDS
EPA Method 8020

Compound	Concentration ug/Kg	Dilution Factor	PQL ug/Kg
Benzene	BQL	1	5
Toluene	BQL	1	5
Ethylbenzene	BQL	1	5
Xylenes	BQL	1	20

BQL: Below Practical Quantitation Limit
PQL: Practical Quantitation Limit

C.S. Ellis Hsue
Department Supervisor

BTC ENVIRONMENTAL INCORPORATED

1536 Eastman Avenue
Ventura, CA 93003
(805) 644-1095

930175-

CHAIN OF CUSTODY RECORD

BILL TO Company. EARTH SYSTEMS IRON[illegible]
Address 1731-B WALTER ST
VENTURA CA 93003
Phone # (805) 642-0942 Contact R. KELLY

PROJ NO	PROJECT NAME
EV-2125-2	MALIBU PARK SCHOOL

SAMPLERS (Signature) Dave Reddick

NO	DATE	TIME	COMP	GRAB	SAMPLE I D	NO. OF CONTAINERS	ANALYSIS: TPH DIESEL	BTEX	1,2 DCA				REMARKS	CHECK IF RUSH
14	1-21-93	12:10		X	W. DISP #1 @ 3.0 ft	1	X	X					5 DAY LUFT	
15	"	12:42		↓	E. DISP. #1 @ 4.5 ft	1	X	X					"	
16	"	11:50		↓	B-11 G.W.	2	X	X	X				"	

The undersigned hereby acknowledges having received a copy of the Fee Schedule/General Information and Conditions, the provisions of which are a part of this agreement.

Relinquished by (Signature)	Date/Time	Received by: (Signature)	Relinquished by. (Signature)	Date/Time	Received by. (Signature)
Dave Reddick	1-22-93 10:30	Dawn R. Ackerman			
Relinquished by (Signature)	Date/Time	Received for Laboratory by. (Signature)	Date/Time	NAME	
Dawn R. Ackerman	1/22/93 1:15	Yena Ditmore		ADDRESS	
				PHONE NO	

WHITE COPY_____ CANARY COPY_____ PINK COPY_____

BTC ENVIRONMENTAL INCORPORATED

1536 Eastman Avenue
Ventura, CA 93003
(805) 644-1095

930175

CHAIN OF CUSTODY RECORD

BILL TO Company [redacted]

Address 1731-B WALTER ST
VENTURA, CA 93003

Phone # (805) 642-0942 Contact R. KELLY Richard

PROJ NO: EV-2125-2

PROJECT NAME: MALIBU PARK SCHOOL

SAMPLERS. (Signature)

NO	DATE	TIME	COMP	GRAB	SAMPLE I D	NO OF CONTAINERS	ANALYSIS: TPH Diesel	ANALYSIS: BTEX	REMARKS
1	1-20-93	10:15		X	B10, [redacted] #1	1	X	X	5 DAY LUFT
2		10:35			2	1	X	X	
3		11:08			3	1	X	X	
4		1:15p			B11, # 1	1	X	X	
5		1:25p			2	1	X	X	
6		1:35p			3	1	X	X	
7		1:45p			4	1	X	X	
8		1:52p			5	1	X	X	
9		2:07p			6	1	X	X	
	1-21-93	9:37			B9, # 1	1	X	X	NOT SUBMITTED
		9:46			2	1	X	X	NOT SUBMITTED
10		10:03			3	1	X	X	
11		10:15			4	1	X	X	
12		10:25			5	1	X	X	
13		10:38			6	1	X	X	

CHECK IF RUSH

The undersigned hereby acknowledges having received a copy of the Fee Schedule/General Information and Conditions, the provisions of which are a part of this agreement.

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by (Signature)	Date/Time	Received by: (Signature)
Dave Reddick	1-22-93 10:30	Dawn R. Ackerman			
Relinquished by (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	NAME	
Dawn R. Ackerman	1/22/93 1:15	Jena Ditmore		ADDRESS	
				PHONE NO	

WHITE COPY_____ CANARY COPY_____ PINK COPY_____