James P. Bowers, PE
R. William Rudolph, Jr., PE

LETTER OF TRANSMITTAL

TO: Mr. Dante Sambajon
Plant Engineer
Coulter Steel & Forge Company
1494 67th Street
Emeryville, CA 94662-0901

DATE: August 10, 1992
PROJECT 722 Folger Avenue/Diesel Fuel Tank Area
SCI JOB NUMBER: 727.001

WE ARE SENDING YOU:

- ___4___ copies
- [X] of our final report
- [ ] a draft of our report
- [ ] a Service Agreement
- [ ] a proposed scope of services
- [ ] specifications
- [ ] grading/foundation plans
- [ ] soil samples/groundwater samples
- [ ] an executed contract
- [ ] _____

- [X] if you have any questions, please call
- [ ] for your review and comment
- [ ] please return an executed copy
- [ ] for geotechnical services
- [ ] with our comments
- [ ] with Chain of Custody documents
- [X] for your use
- [ ] _____
- [ ] _____

REMARKS:

COPIES TO: (1) Ms. Susan Hugo, Alameda Health Care Services Agency, 80 Swan Way, Room 350, Oakland, CA 94621
(1) Mr. Rich Hiett, Regional Water Quality Control Board, 2101 Webster Street, Suite 500, Oakland, CA 94612

BY: Jeriann Alexander
Jeriann Alexander

Subsurface Consultants, Inc.
171 12th Street • Suite 201 • Oakland, California 94607 • Telephone 510-268-0461 • FAX 510-268-0137

HYDROCARBON CONTAMINATION ASSESSMENT
DIESEL FUEL TANK AREA
722 FOLGER AVENUE
BERKELEY, CALIFORNIA
SCI 727.001

Prepared for:

Mr. Dante Sambajon
Plant Engineer
Coulter Steel & Forge Company
1494-67th Street
Emeryville, California 94662-0901

By:

Jeriann N. Alexander
Civil Engineer 40469 (expires 3/31/95)

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August 7, 1992

I INTRODUCTION

This report presents the results of a hydrocarbon contamination assessment conducted by Subsurface Consultants, Inc. (SCI) at the Coulter Steel and Forge Company diesel tank area located north of 722 Folger Avenue in Berkeley, California. The tank area is situated between Folger Avenue and Ashby Avenue as shown on the Site Plan, Plate 1.

In December 1991, a 10,000-gallon underground diesel tank was removed from the tank area by the Scott Company. Water was observed to be present at a depth of about 10 feet during tank removal. Two soil samples obtained from the soils situated at the soil/groundwater interface contained 630 and 670 mg/kg of diesel. In an effort to remove significantly contaminated soil, the excavation was widened 5 to 7 feet and deepened 3 to 5 feet. Samples obtained from the extended excavation limits contained concentrations of diesel ranging from 110 to 2900 mg/kg. Excavated soils were stockpiled adjacent to the excavation.

SCI was retained in February 1992 to provide environmental engineering services to bring the tank area into compliance with Alameda County Health Care Services Agency requirements. The ACHCSA has requested that the lateral and vertical extent of soil contamination be determined and that impacts to groundwater be evaluated whenever significant soil contamination is detected following tank removal. To date SCI's services have consisted of (1) submitting a work plan to ACHCSA, (2) exploring subsurface

conditions by drilling seven test borings, (3) analyzing selected soil samples, (4) evaluating impacts to groundwater by converting four of the test borings into monitoring wells, (5) performing a level survey to establish elevations for the wells (6) determining the groundwater flow and gradient (7) evaluating remediation alternatives and (8) observing bioremediation of the existing excavated soils.

II FIELD INVESTIGATIONS

Subsurface conditions were investigated by drilling 7 test borings ranging in depth from 17 to 32 feet. To evaluate impacts to groundwater, four of the test borings (3, 4, 5 and 6) were completed as groundwater monitoring wells. The location of the test borings and monitoring wells are shown on the Site Plan.

A level survey was performed to determine the top of casing (TOC) elevation for the wells. The elevation reference is City Survey Monument C10 situated on Folger Avenue. The benchmark has a known elevation of +21.34 feet, City of Berkeley datum. A detailed discussion of field procedures is provided in Appendix A.

III SITE LOCATION

A. Regional Setting

The site is situated on a broad alluvial plain which extends in a south western direction from the Berkeley Hills toward the San Francisco Bay. The site is located approximately 2200 feet from the eastern shoreline of the bay. The historic shoreline was situated about 1,000 feet west of the site.

Groundsurface grades in the area were significantly altered in the late 1930s with the construction of the Southern Pacific (SP) Railroad underpass. The SP right-of-way extends in a northerly direction about 200 feet west of the study area. The underpass was constructed to accommodate traffic on the proposed Ashby Avenue beneath the SP right-of-way. The approach to the underpass parallels the north side of the study area. The surface grade of Ashby is about 15 to 20 feet below the groundsurface grade at the site. A relatively steep slope at the north property boundary provides the transition between the site grade and Ashby Avenue.

B. Surface Conditions

The tank area encompasses a triangular shaped parcel located between Folger and Ashby Avenues. The groundsurface is relatively flat and unimproved except for a small storage shed. Beyond the north property line the groundsurface slopes steeply downward (about 1.25 horizontal:1 vertical) towards Ashby Avenue.

The former tank was located near the southeastern corner of the parcel as shown on the Site Plan. We understand that a dispenser island was located near the north side of the excavation.

C. Subsurface Conditions

The study indicates that the previous tank area is blanketed by a thin layer of fill which extends to depths varying from 0.5 to 3.0 feet. The fill consists of sandy gravels, clayey silts, and clays containing appreciable quantities of silt, sand and gravel. Fill was not encountered at Boring 6.

Interbedded alluvial deposits were encountered beginning at the groundsurface at Test Boring 6 and beneath the fill at the other boring locations. The alluvial soils consist primarily of silty clays with occasional thin layers of sandy clays, clayey silts, silty sands and gravels.

Groundwater levels have been measured periodically within the wells using a well sounder and/or a steel tape with water sensitive paste. Water level data indicates that the groundwater flow direction is toward the southwest at a gradient of about 2 to 5 percent. Free product was not observed floating on the water within any well during this study. Groundwater contours for the July 1992 readings are presented on Plate 1. Water level dated is summarized in Table 1.

IV ANALYTICAL TESTING

Selected soil and groundwater samples were analyzed by Coast to Coast Analytical Services, a laboratory certified by the DHS for hazardous waste and water testing. Chain-of-Custody records accompanied all samples transmitted to the laboratory. Analytical test reports and Chain-of-Custody records are presented in Appendix B.

Fuel fingerprint analyses were performed on selected samples. The fingerprint analyses included tests for total volatile hydrocarbons (TVH) as gasoline, total extractable hydrocarbons (TEH) as diesel, benzene, toluene, xylene and ethylbenzene (BTXE). The results of the analyses are presented in Tables 1 and 2. Sample preparation and analytical test methods for the analyses are summarized in Appendix B.

V BIOREMEDIATION

Approximately 350 cubic yards of soil has been generated during tank removal and supplemental excavation activities at the site. The soil was stockpiled on-site adjacent to the excavation. The stockpiled soil is currently undergoing biotreatment to reduce contaminant concentrations.

Bay Area Tank & Marine (BATM), a remediation contractors, was retained to biotreat the stockpiled soils. SCI observed BATM mix

the soil with bacteria enriched compost and water. The soil was repiled in windrows and covered with plastic sheeting. BATM has periodically tested the soil to check on the progress of remediation. As of June 1992, diesel concentrations in the beds appear to have been reduced to about 700 mg/kg. BATM has indicated that the beds will be remixed to promote biological activity. Once concentrations are reduced to non-detectable levels, it is proposed to reuse the soil as backfill within the excavation.

VI CONCLUSIONS

A. Soil Contamination

Based on studies to date, it appears that contaminated soil still remains near the location of the previous diesel tank. Within the existing excavation, bottom and sidewall samples contain diesel at concentrations ranging from 110 to 2900 mg/kg. Contaminated soils were also detected near the groundwater surface at boring locations 1 (9700 mg/kg at 9.0 feet) and 3 (250 mg/kg at 9.5 feet) situated up to 20 feet west and northwest of the previous tank location, respectively. Based on the groundwater direction Boring 1 is situated downgradient of the tank area. Contaminated soil was not detected at Boring 4 situated 45 feet down gradient of the tank.

The contaminated soil appears to extend up to 15 feet deep in the tank area which is about 5 feet below the current groundwater surface. Away from the tank area, contaminated soil appears to exist in a 2 to 3 feet thick band situated near groundwater.

B. Groundwater Contamination

Elevated concentrations of dissolved diesel have been detected in groundwater near and downgradient of the previous diesel tank. The plume has migrated at least 50 feet toward the west (the downgradient direction). The plume concentrations decrease toward the north, which may indicate that it does not impact the Ashby right of way. However, the plume may extend beneath Folger Avenue to the south, and the adjacent property to the east.

VII REMEDIATION

Excavation activities have generated approximately 350 cubic yards of soil requiring remediation. Based on the studies to date, it appears that soil within a thin layer at the groundwater surface also will require remediation. Groundwater at the site has also been impacted.

The most effective approach to remediation will be to continue with physical removal and biotreatment of the contaminated soil. In general, the work will progress as detailed in the approved work plan. We estimate that diesel effected soils within the area shown on the Site Plan will be removed. Apparently clean soils will be stockpiled separately from apparently diesel effected soils. The

apparently clean soils will be sampled and analyzed for diesel and BTEX at a rate of 1 sample for every 20 cubic yards. Diesel effected soils will be biotreated on-site to reduce contaminant levels to nondetectable concentrations. The diesel effected soils will be sampled and analyzed as specified above following treatment. The ACHCSA will be petitioned to allow the clean and treated soils to be replaced in the excavation.

Proposed excavation activities will extend beyond well MW4. Well MW4 should be abandoned in accordance with ACHCSA guidelines prior to excavation. At least two new wells should be installed beyond the limits of the final excavation for future groundwater monitoring. Proposed well locations are shown on the Site Plan.

The groundwater monitoring program presently underway will be continued as soil remediation proceeds. The next sampling event is scheduled for the second week in August. New monitoring wells will be added to the program once they are completed. Letter reports will be submitted to the ACHCSA and Regional Water Quality Control Board following each events.

VIII LIMITATIONS

This assessment was intended to provide a preliminary means of evaluating the risk of the property containing significant soil and/or groundwater contamination near the previous diesel tank. Contamination may exist in other areas not investigated by SCI.

The conclusions drawn from this assessment are an expression of our professional opinion, and do not constitute a warranty or guaranty, either expressed or implied. Additional investigative work, if undertaken, may modify the conclusions presented herein, as additional information is generated.

SCI has performed this assessment in accordance with generally accepted standards of care which exist in northern California at the time of this study. Please recognize that the definition and evaluation of environmental conditions is difficult and inexact. Judgements leading to conclusions and recommendations are generally made with an incomplete knowledge of the subsurface and/or historic conditions applicable to the site. In addition, the conclusions made herein reflect site conditions at the time of the investigation. These conditions may change with time and as such the conclusion may also change.

The conclusions and opinions presented herein may also be affected by rapid changes in the field of environmental engineering and the laws governing hazardous waste. The reader is advised to consult with SCI prior to relying upon the information provided.

Illustrations

Plate 1	Site Plan
Plates 2 thru 8	Logs of Test Borings
Plate 9	Unified Soil Classification System

Tables

Table 1	Groundwater Elevation Data
Table 2	Contaminants in Soil
Table 3	Contaminants in Water

Appendices

A Investigation Protocol

B Analytical Testing

Distribution

4 copies: Mr. Dante Sambajon
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Coulter Steel & Forge Company
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1 copy: Ms. Susan Hugo
Alameda Health Care Services Agency
80 Swan Way, Room 350
Oakland, California 94621

1 copy: Mr. Rich Hiett
Regional Water Quality Control Board
2101 Webster Street, Suite 500
Oakland, California 94612

JTW:JNA:RWR:sld:egh

ASHBY AVENUE

SHED

6

4

1

3

2

5

7

10.0

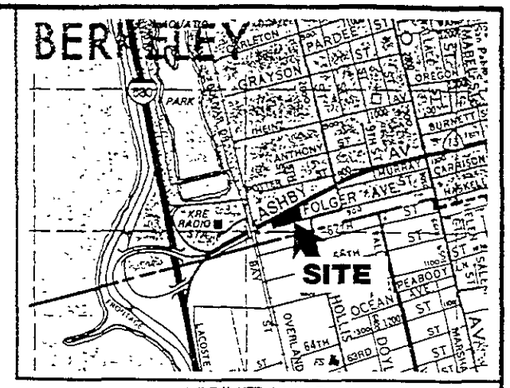
11.0

12.0

13.0

CITY SURVEY MONUMENT

FOLGER AVENUE



VICINITY MAP

- TEST BORING
- MONITORING WELL
- PROPOSED WELL LOCATION
- EXISTING EXCAVATION
- FENCE
- PREVIOUS TANK LOCATION
- GROUNDWATER FLOW CONTOURS (feet) 7/1/92 (12.0)
- PROPOSED LIMIT OF EXCAVATION

1494 67th STREET WAREHOUSE

722 FOLGER AVENUE

APPROXIMATE SCALE (feet)

0 20 40

SITE PLAN

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722 FOLGER AVENUE – BERKELEY, CA

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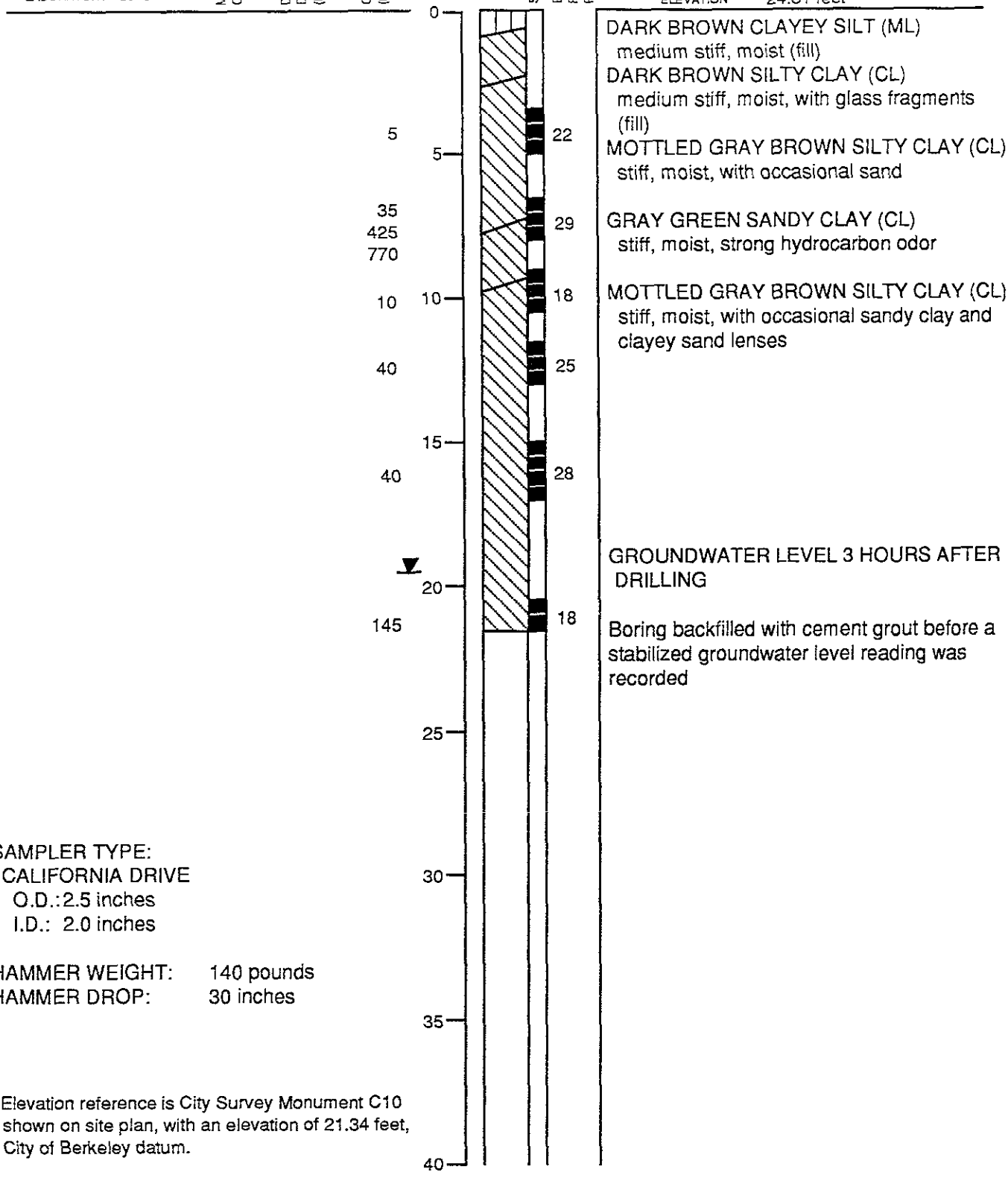
PLATE 1

LOG OF TEST BORING 1

EQUIPMENT 8" Hollow Stem Auger
DATE DRILLED 5/12/92
ELEVATION 24.31 feet*



SAMPLER TYPE:
CALIFORNIA DRIVE
O.D.:2.5 inches
I.D.: 2.0 inches

HAMMER WEIGHT: 140 pounds
HAMMER DROP: 30 inches

*Elevation reference is City Survey Monument C10 shown on site plan, with an elevation of 21.34 feet, City of Berkeley datum.

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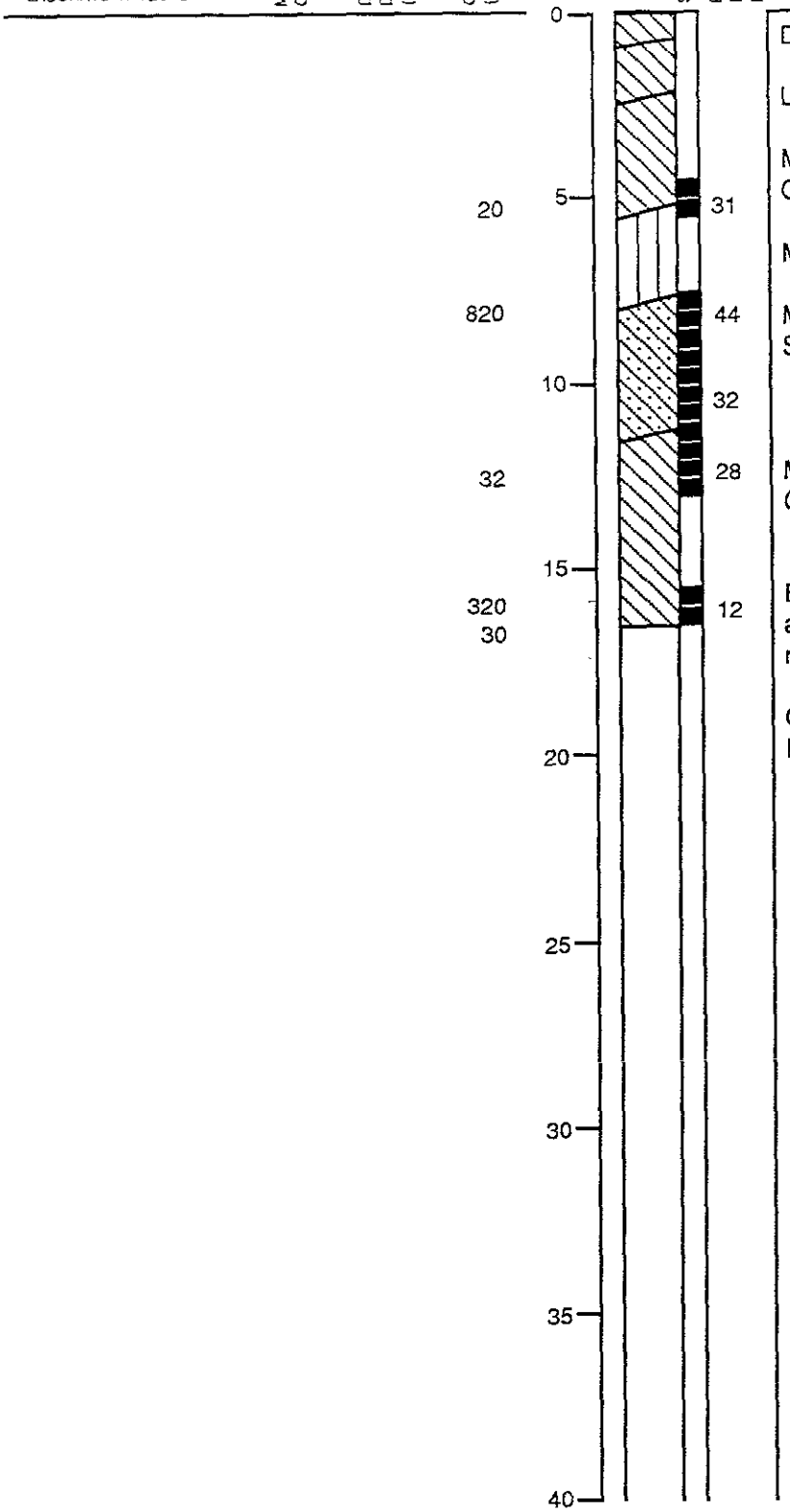
PLATE 2

LOG OF TEST BORING 2

EQUIPMENT 8" Hollow Stem Auger
DATE DRILLED 5/13/92
ELEVATION 25.14 feet



DARK BROWN SANDY CLAY (CL)
soft, moist (fill)
LIGHT GRAY BROWN SILTY CLAY (CL)
medium stiff, moist
MOTTLED YELLOW BROWN SILTY CLAY (CL)
stiff, moist, with some sand
MOTTLED GRAY SANDY SILT (ML)
stiff, moist, slight hydrocarbon odor
MOTTLED GRAY BROWN CLAYEY SAND (SC)
dense, moist, moderate hydrocarbon odor

strong hydrocarbon odor from 10-12 feet
MOTTLED GRAY AND BROWN SILTY CLAY (CL)
stiff, moist, slight hydrocarbon odor

Boring backfilled with cement grout before a stabilized groundwater level reading was recorded

GROUNDWATER NOT ENCOUNTERED DURING DRILLING

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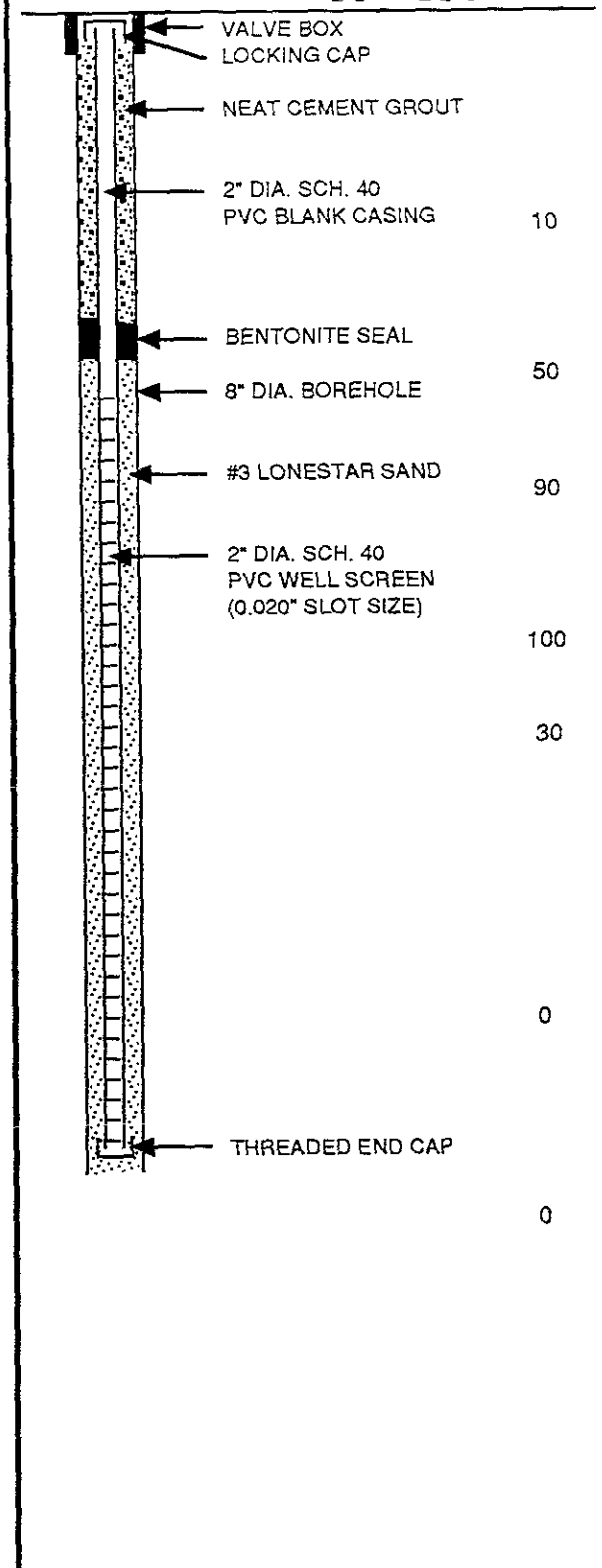
PLATE 3

LOG OF TEST BORING 3

EQUIPMENT 8" Hollow Stem Auger
DATE DRILLED 5/12/92
TOC ELEVATION 24.70 feet



YELLOW BROWN SANDY GRAVEL (GM)
medium dense, moist (fill)

DARK BROWN SANDY CLAYEY SILT (ML)
medium stiff, moist (fill)

MOTTLED BROWN SILTY CLAY (CL)
medium stiff, moist, with occasional sand

MOTTLED BROWN CLAYEY SAND (SC)
dense, moist, with some gravel
color changes to gray green with hydrocarbon odor at 7.5 - 9.5 feet

MOTTLED BROWN SILTY CLAY (CL)
medium dense, moist

GROUNDWATER LEVEL DURING DRILLING

GROUNDWATER LEVEL 7/1/92

MOTTLED BROWN CLAYEY SILT (ML)
medium dense, moist

MOTTLED GRAY BROWN SILTY CLAY (CL)
medium stiff, moist, hydrocarbon odor

slight hydrocarbon odor, some sand

MOTTLED BROWN SILTY SAND (SM)
medium dense, moist

MOTTLED GRAY BROWN SILTY CLAY (CL)
stiff, moist

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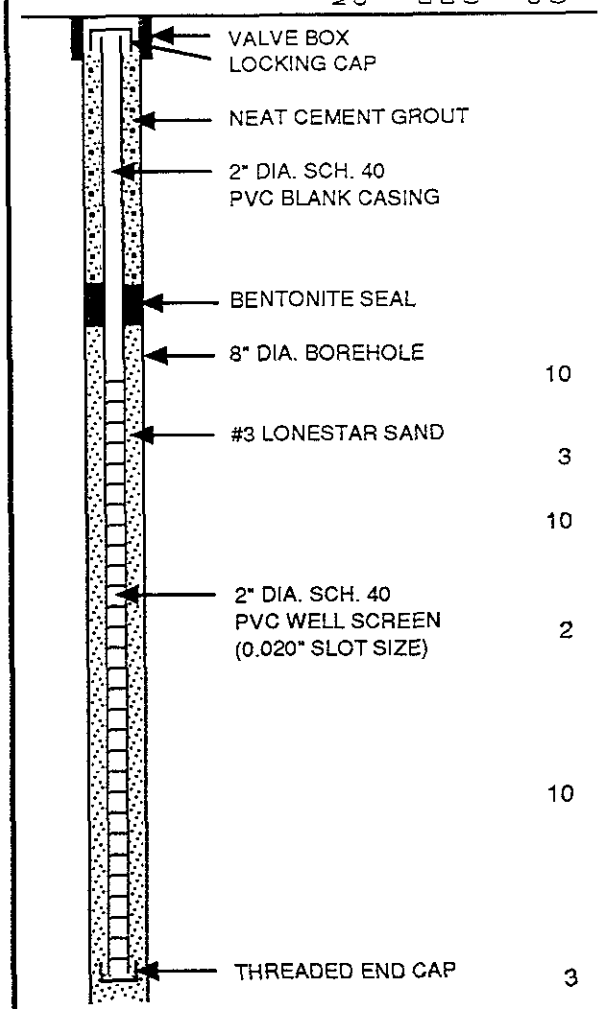
PLATE 4

LOG OF TEST BORING 4

EQUIPMENT 8" Hollow Stem Auger
DATE DRILLED 5/12/92
TOC ELEVATION 23.92 feet



MOISTURE CONTENT %	DRY DENSITY (PCF)	OVM (ppm)	DEPTH (feet)	SAMPLE	BLOWS PER FOOT
			0		
		10	5		54
		3	10		42
		10	15		21
		2	20		27
		10	25		18
		3	30		27
			35		
			40		

YELLOW BROWN SANDY GRAVEL (GM)
medium dense, moist (fill)
DARK BROWN SILTY CLAY (CL)
medium stiff, moist
MOTTLED BROWN SILTY CLAY (CL)
stiff, moist, with some sand
BROWN CLAYEY SAND (SC)
very dense, moist
BROWN SILTY CLAY (CL)
stiff, moist

GROUNDWATER LEVEL 7/1/92
color change to mottled gray brown at 11 feet
slight hydrocarbon odor at 13 feet

GROUNDWATER LEVEL DURING DRILLING

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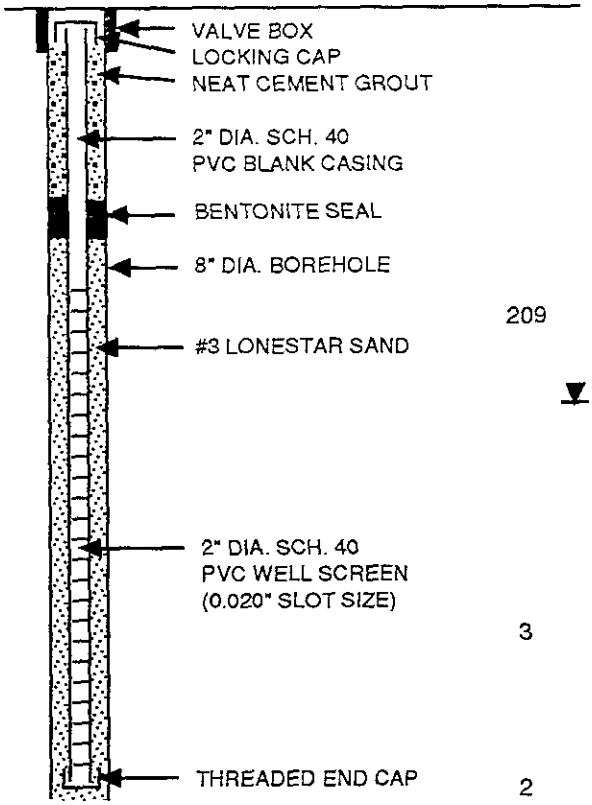
PLATE 5

LOG OF TEST BORING 5

EQUIPMENT 8" Hollow Stem Auger
DATE DRILLED 5/13/92
TOC ELEVATION 23.85 feet



MOISTURE CONTENT %	DRY DENSITY (PCF)	OVM (ppm)	DEPTH (feet)	SAMPLE	BLOWS PER FOOT	
			0			BROWN GRAVELLY CLAY (CL) medium stiff, dry (fill)
						DARK BROWN SILTY CLAY (CL) medium stiff, moist
			5		36	MOTTLED BROWN SANDY CLAY (CL) stiff, moist, with some gravel
		209			19	GREEN GRAY CLAYEY SILT (ML) stiff, moist, slight hydrocarbon odor
			10		19	BROWN SILTY CLAY (CL) medium stiff, moist
						GROUNDWATER LEVEL 7/1/92
						GROUNDWATER LEVEL DURING DRILLING
					22	
			15		11	
		3				
			20		28	
		2				
			25			
			30			
			35			
			40			

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JOB NUMBER 727.001

DATE 6/22/92

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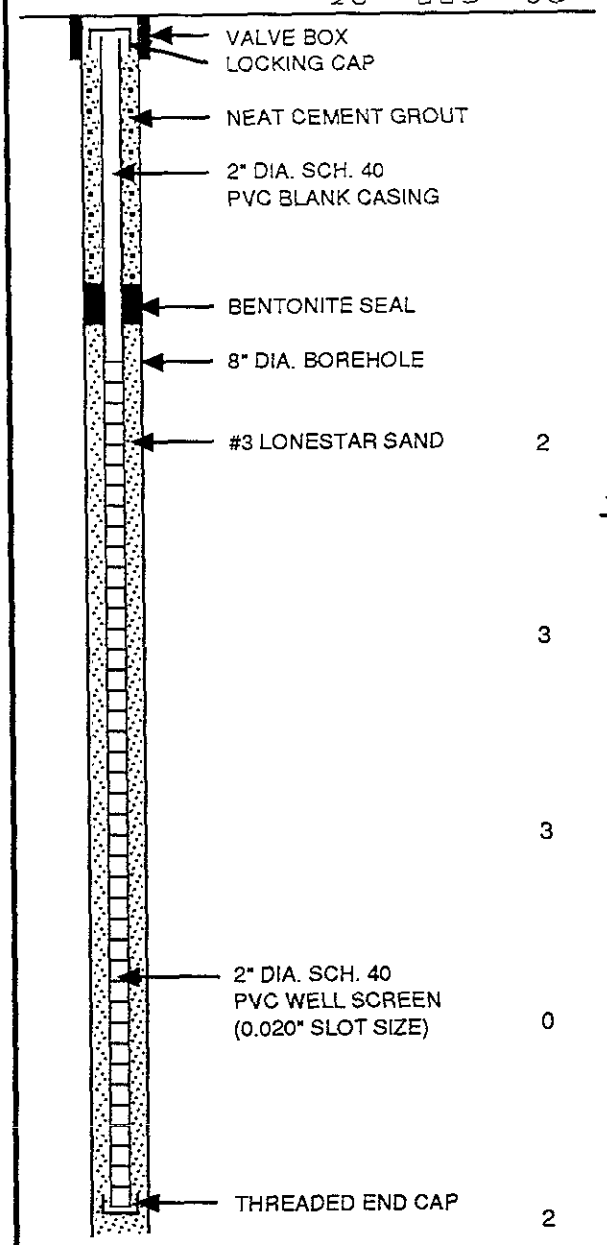
PLATE 6

LOG OF TEST BORING 6

EQUIPMENT 8" Hollow Stem Auger
DATE DRILLED 5/13/92
TOC ELEVATION 22.98 feet



MOISTURE CONTENT %	DRY DENSITY (PCF)	OVM (ppm)	DEPTH (feet)	SAMPLE	BLOWS PER FOOT	
			0			DARK GRAY BROWN SILTY CLAY (CL) medium stiff, moist
			5			BROWN CLAYEY GRAVEL (GM) dense, moist
			10			MOTTLED BROWN GRAY SILTY CLAY (CL) medium dense, moist, with occasional gravel
		2			14	
				▼ ▽		GROUNDWATER LEVEL DURING DRILLING GROUNDWATER LEVEL 7/1/92
			15			
		3			30	
			20			
		3			18	
			25			
		0			19	
			30			MOTTLED BROWN CLAYEY SANDY SILT (ML) stiff, moist
		2				
			35			
			40			

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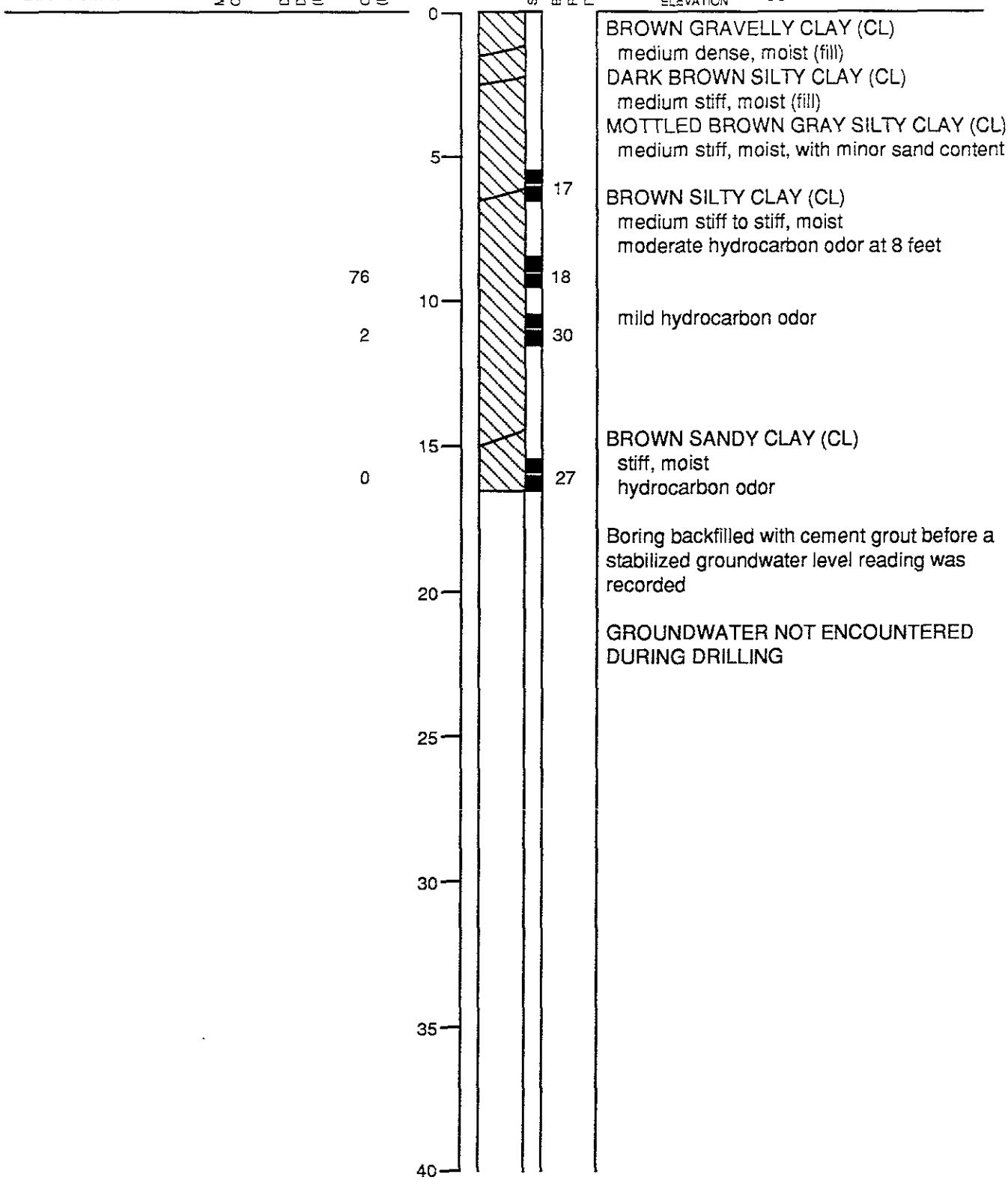
PLATE 7

LOG OF TEST BORING 7

EQUIPMENT 8" Hollow Stem Auger
DATE DRILLED 5/13/92
ELEVATION - -



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722 FOLGER AVENUE - BERKELEY, CA

JOB NUMBER	DATE	APPROVED
727.001	6/22/92	

PLATE 8

GENERAL SOIL CATEGORIES			SYMBOLS	TYPICAL SOIL TYPES
COARSE GRAINED SOILS More than half is larger than No. 200 seive	GRAVEL More than half coarse fraction is larger than No. 4 seive size	Clean Gravel with little or no fines	GW	Well Graded Gravel, Gravel-Sand Mixtures
			GP	Poorly Graded Gravel, Gravel-Sand Mixtures
		Gravel with more than 12% fines	GM	Silty Gravel, Poorly Graded Gravel-Sand-Silt Mixtures
			GC	Clayey Gravel, Poorly Graded Gravel-Sand-Clay Mixtures
	SAND More than half coarse fraction is smaller than No. 4 seive size	Clean Sand with little or no fines	SW	Well Graded Sand, Gravelly Sand
			SP	Poorly Graded Sand, Gravelly Sand
		Sand with more than 12% fines	SM	Silty Sand, Poorly Graded Sand-Silt Mixtures
			SC	Clayey Sand, Poorly Graded Sand-Clay Mixtures
FINE GRAINED SOILS More than half is smaller than No. 200 seive	SILT AND CLAY Liquid Limit Less than 50%		ML	Inorganic Silt and Very Fine Sand, Rock Flour, Silty or Clayey Fine Sand, or Clayey Silt with Slight Plasticity
			CL	Inorganic Clay of Low to Medium Plasticity, Gravelly Clay, Sandy Clay, Silty Clay, Lean Clay
			OL	Organic Clay and Organic Silty Clay of Low Plasticity
	SILT AND CLAY Liquid Limit Greater than 50%		MH	Inorganic Silt, Micaceous or Diatomaceous Fine Sandy or Silty Soils, Elastic Silt
			CH	Inorganic Clay of High Plasticity, Fat Clay
			OH	Organic Clay of Medium to High Plasticity, Organic Silt
HIGHLY ORGANIC SOILS			PT	Peat and Other Highly Organic Soils

UNIFIED SOIL CLASSIFICATION SYSTEM

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722 FOLGER AVENUE - BERKELEY, CA

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PLATE 9

Table 1.
Groundwater Elevation Data

Boring/Well Number	TOC Elev[1] (feet)	Date	Groundwater Depth[2] (feet)	Groundwater Elevation (feet)
MW3		5/15/92	11.15	13.55
	24.70	7/01/92	11.60	13.10
MW4		5/15/92	10.00	13.92
	23.92	7/01/92	11.26	12.66
MW5		5/15/92	10.52	13.33
	23.85	7/01/92	9.93	13.92
MW6		5/15/92	12.46	10.52
	22.98	7/01/92	12.96	10.02

[1] Reference datum is City of Berkeley Survey Monument in Folger Avenue as shown on Site Plan.
[2] Measured below TOC

Table 2. Contaminants in Soil

Sample	TVH as Gas mg/kg	TEH as Diesel mg/kg	B mg/kg	T mg/kg	E mg/kg	X mg/kg
Tank Removal						
S1 @ 10.0'	--	**630**	--	--	--	--
S4 @ 10.0'	--	**670**	--	--	--	--
Supplemental Excavation						
CS-1 @ 14.5'	--	**680**	<0.005	<0.005	<0.005	<0.005
CS-2 @ 14.0'	--	**280**	<0.005	<0.005	<0.005	<0.005
CS-3 @ 15.5'	--	**110**	<0.005	<0.005	<0.005	<0.005
CS-4 @ 7.0'	--	**1700**	<0.05	<0.05	<0.05	<0.05
CS-5 @ 7.0'	--	**1500**	<0.05	<0.05	<0.05	<0.05
CS-6 @ 7.0'	--	**2900**	<0.05	<0.05	<0.05	<0.05
CS-7 @ 7.0'	--	**2000**	<0.05	<0.05	<0.05	<0.05
SCI Investigation						
1 @ 9.0'	<0.5	**9700**	<0.005	<0.005	<0.005	<0.005
1 @ 12.5'	<0.5	<0.5	<0.005	<0.005	<0.005	<0.005
2 @ 8.5'	<0.5	<0.5	<0.005	<0.005	<0.005	<0.005
2 @ 16.0'	<0.5	**3.0**	<0.005	<0.005	<0.005	<0.005
3 @ 9.5'	<0.5	**250**	<0.005	<0.005	<0.005	<0.005
3 @ 16.0'	<0.5	**25.0**	<0.005	<0.005	<0.005	<0.005
4 @ 9.5'	<0.5	<0.5	<0.005	<0.005	<0.005	<0.005
4 @ 13.5'	<0.5	<0.5	<0.005	<0.005	<0.005	<0.005
5 @ 9.5'	<0.5	<0.5	<0.005	<0.005	<0.005	<0.005
5 @ 13.0'	<0.5	<0.5	<0.005	<0.005	<0.005	<0.005
6 @ 11.0'	<0.5	<0.5	<0.005	<0.005	<0.005	<0.005
7 @ 6.0'	<0.5	**28**	<0.005	<0.005	<0.005	<0.005
7 @ 11.0'	<0.5	<0.5	<0.005	<0.005	<0.005	<0.005

TVH = total volatile hydrocarbons
TEH = total extractable hydrocarbons
B = Benzene
T = Toluene
E = Ethylbenzene
X = Xylene
-- Test not requested
< = Chemical not present at a concentration greater than analytical reporting limit stated.
mg/kg = milligrams per kilogram, parts per million

Table 3.
Contaminants in Groundwater

Boring/ Well Number	Date	TVH as gas ug/l	TEH as Diesel ug/l	B ug/l	T ug/l	E ug/l	X ug/l
MW3	05/18/92	<50	**100**	<0.5	<0.5	<0.5	**2.5**
MW4	05/18/92	<50	**10000**	<0.5	<0.5	<0.5	**4.0**
MW5	05/18/92	<50	**510**	<0.5	<0.5	<0.5	**2.0**
MW6	05/18/92	<50	<50	<0.5	<0.5	<0.5	**2.0**

ug/l = micrograms per liter, parts per billion

Appendix A

Investigation Protocol

APPENDIX A
INVESTIGATION PROTOCOL

A. Test Borings

The test borings were drilled using a truck-mounted drill rig equipped with 8-inch diameter hollow stem augers. Our field engineer observed drilling operations, prepared detailed logs of the test borings and obtained undisturbed samples of the materials encountered. Test boring logs are presented on Plates 2 through 8. Soils are classified in accordance with the Unified Soil Classification System described on Plate 9.

A California Drive Sampler (outside diameter of 2.5 inches, inside diameter of 2.0 inches) was used to obtain soil samples. The number of blows required to drive the sampler the final 12 inches of each 18-inch penetration was recorded and are presented on the test borings logs. Drilling and sampling equipment was thoroughly steam-cleaned prior to each use to reduce the likelihood of cross-contamination between samples and/or borings.

Soil samples were retained in 2.0-inch and 2.5-inch-diameter brass liners. Teflon sheeting was placed over the ends of the soil liners; the liners were subsequently capped and sealed with duct tape. The shoe sample from each drive was retained in a plastic bag and screened for volatile organics using an Organic Vapor Meter (OVM). OVM measurements are recorded on the logs of the test borings. The sealed liners were placed in ice-filled coolers and remained iced until delivery to the analytical laboratory. Chain-of-custody records accompanied the samples.

Test Borings 3, 4, 5 and 6 were completed as a groundwater monitoring wells, as detailed in the following section. The remaining test borings were backfilled with a cement-based grout. Soil cuttings generated during drilling were stockpiled on-site with the previous tank excavation spoils.

B. Groundwater Monitoring Wells

At the completion of drilling, a monitoring well was installed in Test Borings 3, 4, 5 and 6. Well schematics are shown on the respective test boring log. In general, the well consists of 2-inch diameter, Schedule 40 PVC pipe having flush-threaded joints. The pipe was steam-cleaned prior to being placed in the borehole.

The lower 15 to 20 feet of each well consists of machine-slotted well screen having 0.02-inch slots. The remaining portion of the wells consist of blank pipe. The wells were provided with a bottom cap and locking top cap. The well screen is encased in a filter composed of Lonestar No. 3 washed sand. The filter sand was placed by carefully pouring it through the annulus between the hollow stem of the auger and the well casing. Periodically, the augers were raised to allow the sand to fill the annulus between the casing and the borehole. The filter extends from just below the bottom of the well to at least one foot above the top of the screened section. A one-foot thick bentonite pellet seal was placed above the sand filter. The annulus above the seal was backfilled with cement grout. The grout mixture consists of portland cement mixed with clean water. It was placed in a manner

similar to the sand filter. The monitoring well was completed below grade and is protected by a traffic-rated valve boxes.

The wells were developed after the grout seal was placed. Initially, the depth to water was measured below the top of the well casing using an electric sounder. The wells were then developed by removing water with a new disposable bailer. Approximately 20 gallons of water were removed from each well. The wells were sampled 24 hours after development. Prior to sampling the wells were purged of about four gallons of water. When the wells had recharged to within 80 percent of their initial levels they were sampled with a new disposable bailer. Well development and purge water were replaced in a 55 gallon drums and left on-site for later disposal by others. Well development and purge logs are attached.

Groundwater samples were retained in chilled, pre-cleaned containers supplied by the laboratory. Water samples were placed in ice-filled coolers and remained iced until delivery to the analytical laboratory. Chain-of-custody records accompanied the samples to the laboratory.

WELL DEVELOPMENT FORM

Project Name: Coulter Steel Well Number: MW 3

Project Number: 727.001 Well Casing Diameter: 2 inches

Developed By: ADen Date: 5/15/92

TOC Elevation: 24.70 Weather: Clear, Sunny

Depth to Casing Bottom (below TOC) 30 feet

Depth to Groundwater (below TOC) 11.1 3/4" feet

Feet of water in Well 18.7 feet

Casing Volume (feet of water x Casing DIA^2 x 0.0408) 3 gallons

Depth Measurement Method (Tape & Paste/) Elect. Sounder/ Other

Development Method

no free product

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°C)	Conductivity (micromhos/cm)	Comments
0	6.83	66.3	1650	
1	7.13	65.0	1680	
3	7.13	66.1	1640	
6	6.89	65.3	1420	
9	6.88	66.1	1300	
12	6.85	65.9	1270	
15	6.88	66.1	1310	
18	6.87	65.8	1305	Cloudy here 15-20

Total Gallons Removed 20 gallons

Depth to Groundwater After Development (below TOC) 12 feet

WELL DEVELOPMENT FORM

Project Name: Coulter Steel Well Number: MW 4

Project Number: 727-001 Well Casing Diameter: 2 inches

Developed By: CNDca Date: 5/15/92

TOC Elevation: 23.92 Weather: Sunny

Depth to Casing Bottom (below TOC) 24 feet

Depth to Groundwater (below TOC) 10.0' feet

Feet of water in Well 9 feet

Casing Volume (feet of water x Casing DIA^2 x 0.0408) 3 gallons

Depth Measurement Method (Tape & Paste)/ Elect. Sounder/ Other

Development Method

no free product

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°C)	Conductivity (micromhos/cm)	Comments
0	6.89	66.7	1530	Slight odor
1	6.92	66.7	1680	present
3	6.91	66.9	1580	during
6	6.90	67.6	1530	development
9	6.91	67.5	1570	
12	6.89	66.5	1535	Cleared a little
	bailed Dry at 12 gals			

Total Gallons Removed 12 gallons

Depth to Groundwater After Development (below TOC) 11 feet

WELL DEVELOPMENT FORM

Project Name: Coulter Steel Well Number: MW 5

Project Number: 727.001 Well Casing Diameter: 2 inches

Developed By: Dora Date: 5/5/02

TOC Elevation: 23.85 Weather: Sunny

Depth to Casing Bottom (below TOC) 19.5' feet

Depth to Groundwater (below TOC) 10' 6 1/4" feet

Feet of water in Well 9.7 feet

Casing Volume (feet of water x Casing DIA^2 x 0.0408) 1.5 gallons

Depth Measurement Method (Tape & Paste) Elect. Sounder/ Other

Development Method teflon bailer

no free product

FIELD MEASUREMENTS

Bailed well dry at 5 gals. very slow recharge

Bailed well dry after 6th gal. sit for 2 hrs.

Gallons Removed	pH	Temp (°C)	Conductivity (micromhos/cm)	Comments
1	6.65	72.0	2280	
3	6.94	69.0	1720	
6	6.95	72.3	1710	water very clear
9				
12				

Total Gallons Removed 6 1/2 gallons

Depth to Groundwater After Development (below TOC) 17 feet

WELL DEVELOPMENT FORM

Project Name: Courtesy Steel Well Number: MW 6

Project Number: 727.001 Well Casing Diameter: 2 inches

Developed By: CDeu Date: 5/15/92

TOC Elevation: 22.98 Weather:

Depth to Casing Bottom (below TOC) 29 feet

Depth to Groundwater (below TOC) 12' 5 1/2" feet

Feet of water in Well 16.4 feet

Casing Volume (feet of water x Casing DIA^2 x 0.0408) 2.6 gallons

Depth Measurement Method (Tape & Paste/) Elect. Sounder/ Other

Development Method

no free product

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°C)	Conductivity (micromhos/cm)	Comments
0	6.99	62.8	1410	
1	6.87	61.0	1690	
3	6.85	62.0	1650	
6	6.83	62.1	1625	
9	6.85	62.3	1595	
12	6.87	61.4	1585	
15	6.84	60.9	1600	

Total Gallons Removed 15 gallons

Depth to Groundwater After Development (below TOC) 14 feet

WELL SAMPLING FORM

Project Name: 722 Folger Ave Well Number: MW3

Project Number: 727.001 Well Casing Diameter: 2 inch

Sampled By: CODea Date: 5/18/92

TOC Elevation: 24.70 Weather: Clear, Sunny

Depth to Casing Bottom (below TOC) 30 feet

Depth to Groundwater (below TOC) 11.28 feet

Feet of Water in Well 18.72 feet

Depth to Groundwater When 80 % Recovered 12.70 feet

Casing Volume (feet of water x Casing DIA^2 x 0.0408) 3.05 gallons

Depth Measurement Method Tape & Paste (Elect. Sounder) Other

Free Product None

Purge Method Bailer (Teflon)

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°C)	Conductivity (micromhos/cm)	Comments
0	6.51	71.8	1183	
1	6.69	70.0	1426	
2	6.68	70.8	1482	
3	6.70	69.4	1461	
			groundwater at 14.10 immed. after purging	

Total Gallons Purged 4 gallons

Depth to Groundwater Before Sampling (below TOC) 12.70 feet

Sampling Method Teflon bailer

Containers Used 2 (40 ml) 1 (liter) (pint)

WELL SAMPLING FORM

Project Name: 722 Folger Ave Well Number: MW-4

Project Number: 727.001 Well Casing Diameter: 2 inch

Sampled By: Allen Date: 5/18/92

TOC Elevation: 23.97 Weather: Clear/Sunny

Depth to Casing Bottom (below TOC) 24.0 feet

Depth to Groundwater (below TOC) 14.92 feet

Feet of Water in Well 9.08 feet

Depth to Groundwater When 80 % Recovered _____ feet

Casing Volume (feet of water x Casing DIA^2 x 0.0408) 2.8 gallons ft wat level a 80

Depth Measurement Method Tape & Paste/ Elect. Sounder/ Other

Free Product None detected

Purge Method Teflon Bailer

water level at 15.44 when opened lots of pressure released when cap opened & water level slowly rising.

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°C)	Conductivity (micromhos/cm)	Comments
0	6.49	80.0	1505	Diesel odor
1	6.64	73.4	1643	
2	6.67	71.0	1510	
3	6.66	70.5	1601	

Total Gallons Purged 3 gallons

Depth to Groundwater Before Sampling (below TOC) _____ feet

Sampling Method Teflon Bailer

Containers Used 2 (40 ml) 1 (liter) _____ (pint)

WELL SAMPLING FORM

Project Name: 722 Eleventh Ave Well Number: MW 5

Project Number: 727.001 Well Casing Diameter: 2 inch

Sampled By: DJ Date: 5/18/92

TOC Elevation: 23.85 Weather: Clear, Sunny

Depth to Casing Bottom (below TOC) 19.5' feet

Depth to Groundwater (below TOC) 9.80 feet

Feet of Water in Well 9.70 feet

Depth to Groundwater When 80 % Recovered 13.42 feet

Casing Volume (feet of water x Casing DIA^2 x 0.0408) 1.58 gallons

Depth Measurement Method Tape & Paste/ (Elect. Sounder/) Other

Free Product None

Purge Method teflon bailer

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°C)	Conductivity (micromhos/cm)	Comments
0	6.27	79.6	1486	
1	6.42	72.7	1626	
2	6.45	70.5	1569	

Total Gallons Purged 2 gallons

Depth to Groundwater Before Sampling (below TOC) 13.42 feet

Sampling Method teflon bailer

Containers Used 2 (40 ml) 1 (liter) ____ (pint)

WELL SAMPLING FORM

Project Name: 272 Foker Ave Well Number: MW6

Project Number: 727.001 Well Casing Diameter: 2 inch

Sampled By: CODea Date: 5/18/92

TOC Elevation: 22.98 Weather: Clear, Sunny

Depth to Casing Bottom (below TOC) 29 feet

Depth to Groundwater (below TOC) 12.58 feet

Feet of Water in Well 16.42 feet

Depth to Groundwater When 80 % Recovered 13.35 feet

Casing Volume (feet of water x Casing DIA^2 x 0.0408) 2.68 gallons

Depth Measurement Method Tape & Paste/ Elect. Sounder/ Other

Free Product None

Purge Method Teflon Bailer

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°C)	Conductivity (micromhos/cm)	Comments
0	6.54	75.7	1225	
1	6.86	69.4	1298	
2	6.84	68.0	1475	
3	6.89	67.8	1402	
			Depth after purge 15.10	

Total Gallons Purged 3 gallons

Depth to Groundwater Before Sampling (below TOC) 13.35 feet

Sampling Method Teflon Bailer

Containers Used 2 (40 ml) 1 (liter) (pint)

Appendix B

Analytical Testing

APPENDIX B

ANALYTICAL TESTING

Analytical testing services were provided by Coast to Coast Analytical, a State of California Department of Health Services (DHS) certified laboratory for hazardous waste and water testing. The analytical tests were performed on individual samples. A summary of sample preparation and test methods are presented below.

Test Analysis	Sample Preparation Method	Analysis Method
Fuel Fingerprint	EPA 5030	EPA 8260 and Cal DHS Draft TPH

Test results are summarized in Tables 2 and 3. Analytical test reports and chain-of-custody records are attached.

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

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Benicia Division
6006 Egret Court, Benicia, California 94510

(707) 747-2757
FAX (707)747-2765

QC Batch ID: BDE19I1

CLIENT: Coast-to-Coast Analytical Services, Inc.

Analyzed : 05/19/92
Analyzed by: AZ
Method : As Listed

METHOD BLANK
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
METHOD BLANK	Solid			

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
FUEL FINGERPRINT ANALYSIS				1,2,3
Benzene	(71432)	0.005	ND	
Toluene	(108883)	0.005	ND	
Ethylbenzene	(100411)	0.005	ND	
Xylenes		0.005	ND	
1,2-Dichloroethane (EDC)	(107062)	0.005	ND	
Ethylene Dibromide (EDB)	(106934)	0.005	ND	
Total Petroleum Hydrocarbons (Gasoline)		0.5	ND	
Total Petroleum Hydrocarbons (Diesel 2)		0.5	ND	
BTX as a percent of fuel			Not Appl.	
1,2-Dichloroethane-d4 (Surrogate)			0.034	
Toluene-d8 (Surrogate)			0.039	
p-Bromofluorobenzene (Surrogate)			0.036	

Benicia Division Lab Certifications: CAELAP #1719; L.A.Co.CSD#10185
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) TPPH
(2) EXTRACTED by EPA 5030 (purge-and-trap)
(3) Surrogates were spiked at 0.040mg/Kg

05/21/92
INCOS 50-387
MH/trk/htc
ED0283-2

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

Mary Havlicek, Ph.D.
President

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
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(707) 747-2757
FAX (707)747-2765

QC Batch ID: BDE19I1

CLIENT: Coast-to-Coast Analytical Services, Inc.

Analyzed : 05/19/92
Analyzed by: AZ
Method : As Listed

QC SPIKE
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
QC SPIKE	Solid			

CONSTITUENT	*PQL mg/Kg	SPIKE AMOUNT	RESULT mg/Kg	%REC	NOTE
FUEL FINGERPRINT ANALYSIS					1,2
Benzene	0.005		NS		
Toluene	0.005		NS		
Ethylbenzene	0.005		NS		
Xylenes	0.005		NS		
1,2-Dichloroethane (EDC)	0.005		NS		
Ethylene Dibromide (EDB)	0.005		NS		
Total Petroleum Hydrocarbons (Gasoline)	0.5		NS		
Total Petroleum Hydrocarbons (Diesel 2)	0.5	44.	37.	84.	
BTX as a percent of fuel			Not Appl.		
1,2-Dichloroethane-d4 (Surrogate)		0.040	0.050	125.	
Toluene-d8 (Surrogate)		0.040	0.039	98.	
p-Bromofluorobenzene (Surrogate)		0.040	0.035	88.	

Benicia Division Lab Certifications: CAELAP #1719; L.A.Co.CSD#10185
* RESULTS listed as 'NS' were not spiked. PQL = Practical Quantitation Limit
(1) ANALYZED by CAL DHS DRAFT TPH (modified) and EPA 8260 (GC/MS)
(2) EXTRACTED by EPA 5030 (purge-and-trap)

05/21/92
INCOS 50-387
MH/trk/htc
BD0283-2

Respectfully submitted,
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FAX (707)747-2765

QC Batch ID: BDE19I1

CLIENT: Coast-to-Coast Analytical Services, Inc.

Analyzed : 05/19/92
Analyzed by: AZ
Method : As Listed

QC SPIKE
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
QC SPIKE DUPLICATE	Solid			

CONSTITUENT	*PQL mg/Kg	SPIKE AMOUNT	RESULT mg/Kg	%REC	%DIFF	NOTE
FUEL FINGERPRINT ANALYSIS						1,2
Benzene	0.005		NS			
Toluene	0.005		NS			
Ethylbenzene	0.005		NS			
Xylenes	0.005		NS			
1,2-Dichloroethane (EDC)	0.005		NS			
Ethylene Dibromide (EDB)	0.005		NS			
Total Petroleum Hydrocarbons (Gasoline)	0.5		NS			
Total Petroleum Hydrocarbons (Diesel 2)	0.5	44.	49.	111.	28.	
BTX as a percent of fuel			Not Appl.			
1,2-Dichloroethane-d4 (Surrogate)		0.040	0.045	113.	11.	
Toluene-d8 (Surrogate)		0.040	0.041	103.	5.	
p-Bromofluorobenzene (Surrogate)		0.040	0.034	85.	2.9	

Benicia Division Lab Certifications: CAELAP #1719; L.A.Co.CSD#10185
* RESULTS listed as 'NS' were not spiked. PQL = Practical Quantitation Limit
(1) ANALYZED by CAL DHS DRAFT TPH (modified) and EPA 8260 (GC/MS)
(2) EXTRACTED by EPA 5030 (purge-and-trap)

05/21/92
INCOS 50-387
MH/trk/htc
BD0283-2

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

Mary Havlicek, Ph.D.
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(707) 747-2757
FAX (707)747-2765

CLIENT: Jeri Alexander
Subsurface Consultants
171 12th Street STE-201
Oakland, CA 94607-4411

Lab Number : BD-0283-1
Project : 727-001 Coulter Steel - 722 Folger Avenue, Emeryville
Analyzed : 05/19/92
Analyzed by: AZ
Method : As Listed

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
1 at 9.0'	Soil	J. Wolfe	05/12/92	05/18/92

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
FUEL FINGERPRINT ANALYSIS				1,2,3,4
Benzene	(71432)	0.005	ND	
Toluene	(108883)	0.005	ND	
Ethylbenzene	(100411)	0.005	ND	
Xylenes		0.005	ND	
1,2-Dichloroethane (EDC)	(107062)	0.005	ND	
Ethylene Dibromide (EDB)	(106934)	0.005	ND	
Total Petroleum Hydrocarbons (Gasoline)		0.5	ND	
Total Petroleum Hydrocarbons (Diesel 2)		0.5	9700.	
BTX as a percent of fuel			Not Appl.	
1,2-Dichloroethane-d4 (Surrogate)			0.036	
Toluene-d8 (Surrogate)			0.040	
p-Bromofluorobenzene (Surrogate)			0.034	

Benicia Division Lab Certifications: CAELAP #1719; L.A.Co.CSD#10185
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) ANALYZED by CAL DHS DRAFT TPH (modified) and EPA 8260 (GC/MS)
(2) EXTRACTED by EPA 5030 (purge-and-trap)
(3) Surrogates were spiked at 0.040mg/Kg
(4) High concentration of some analytes caused the sample to be run diluted resulting in raised Practical Quantitation Limits for analytes. Refer to instrument blank for undiluted Practical Quantitation Limits.

05/21/92
INCOS 50-387
MH/trk/htc
BDE19I1

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Haylicek

Mary Haylicek, Ph.D.
President

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CLIENT: Jeri Alexander
Subsurface Consultants
171 12th Street STE-201
Oakland, CA 94607-4411

Lab Number : BD-0283-2
Project : 727-001 Coulter Steel - 722 Folger Avenue, Emeryville
Analyzed : 05/19/92
Analyzed by: AZ
Method : As Listed

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
1 at 12.5'	Soil	J. Wolfe	05/12/92	05/18/92

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
FUEL FINGERPRINT ANALYSIS				1,2,3
Benzene	(71432)	0.005	ND	
Toluene	(108883)	0.005	ND	
Ethylbenzene	(100411)	0.005	ND	
Xylenes		0.005	ND	
1,2-Dichloroethane (EDC)	(107062)	0.005	ND	
Ethylene Dibromide (EDB)	(106934)	0.005	ND	
Total Petroleum Hydrocarbons (Gasoline)		0.5	ND	
Total Petroleum Hydrocarbons (Diesel 2)		0.5	ND	
BTX as a percent of fuel			Not Appl.	
1,2-Dichloroethane-d4 (Surrogate)			0.035	
Toluene-d8 (Surrogate)			0.038	
p-Bromofluorobenzene (Surrogate)			0.034	

Benicia Division Lab Certifications: CAELAP #1719; L.A.Co.CSD#10185
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) TPPH
(2) EXTRACTED by EPA 5030 (purge-and-trap)
(3) Surrogates were spiked at 0.040mg/Kg

05/21/92
INCOS 50-387
MH/trk/htc
BDE19I1

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Hawlicek

Mary Hawlicek, Ph.D.
President

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CLIENT: Jeri Alexander
Subsurface Consultants
171 12th Street STE-201
Oakland, CA 94607-4411

Lab Number : BD-0283-3
Project : 727-001 Coulter Steel - 722 Folger Avenue, Emeryville
Analyzed : 05/19/92
Analyzed by: AZ
Method : As Listed

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
2 at 8.5'	Soil	J. Wolfe	05/12/92	05/18/92

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
FUEL FINGERPRINT ANALYSIS				1,2,3
Benzene	(71432)	0.005	ND	
Toluene	(108883)	0.005	ND	
Ethylbenzene	(100411)	0.005	ND	
Xylenes		0.005	ND	
1,2-Dichloroethane (EDC)	(107062)	0.005	ND	
Ethylene Dibromide (EDB)	(106934)	0.005	ND	
Total Petroleum Hydrocarbons (Gasoline)		0.5	ND	
Total Petroleum Hydrocarbons (Diesel 2)		0.5	ND	
BTX as a percent of fuel			Not Appl.	
1,2-Dichloroethane-d4 (Surrogate)			0.035	
Toluene-d8 (Surrogate)			0.040	
p-Bromofluorobenzene (Surrogate)			0.036	

Benicia Division Lab Certifications: CAELAP #1719; L.A.Co.CSD#10185
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) ANALYZED by CAL DHS DRAFT TPH (modified) and EPA 8260 (GC/MS)
(2) EXTRACTED by EPA 5030 (purge-and-trap)
(3) Surrogates were spiked at 0.040mg/Kg

05/21/92
INCOS 50-387
MH/trk/htc
BD019I1

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

Mary Havlicek, Ph.D.
President

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

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Benicia Division
6006 Egret Court, Benicia, California 94510

(707) 747-2757
FAX (707)747-2765

CLIENT: Jeri Alexander
Subsurface Consultants
171 12th Street STE-201
Oakland, CA 94607-4411

Lab Number : BD-0283-4
Project : 727-001 Coulter Steel - 722 Folger Avenue, Emeryville
Analyzed : 05/19/92
Analyzed by: AZ
Method : As Listed

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
2 at 16.0'	Soil	J. Wolfe	05/12/92	05/18/92

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
FUEL FINGERPRINT ANALYSIS				1,2,3
Benzene	(71432)	0.005	ND	
Toluene	(108883)	0.005	ND	
Ethylbenzene	(100411)	0.005	ND	
Xylenes		0.005	ND	
1,2-Dichloroethane (EDC)	(107062)	0.005	ND	
Ethylene Dibromide (EDB)	(106934)	0.005	ND	
Total Petroleum Hydrocarbons (Gasoline)		0.5	ND	
Total Petroleum Hydrocarbons (Diesel 2)		0.5	3.0	
BTX as a percent of fuel			Not Appl.	
1,2-Dichloroethane-d4 (Surrogate)			0.034	
Toluene-d8 (Surrogate)			0.036	
p-Bromofluorobenzene (Surrogate)			0.032	

Benicia Division Lab Certifications: CAELAP #1719; L.A.Co.CSD#10185
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) ANALYZED by CAL DHS DRAFT TPH (modified) and EPA 8260 (GC/MS)
(2) EXTRACTED by EPA 5030 (purge-and-trap)
(3) Surrogates were spiked at 0.040mg/Kg

05/21/92
INCOS 50-387
MH/trk/htc
BDE19I1

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

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CLIENT: Jeri Alexander
Subsurface Consultants
171 12th Street STE-201
Oakland, CA 94607-4411

Lab Number : BD-0283-5
Project : 727-001 Coulter Steel - 722 Folger Avenue, Emeryville
Analyzed : 05/19/92
Analyzed by: AZ
Method : As Listed

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
3 at 9.5'	Soil	J. Wolfe	05/12/92	05/18/92

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
FUEL FINGERPRINT ANALYSIS				1,2,3
Benzene	(71432)	0.005	ND	
Toluene	(108883)	0.005	ND	
Ethylbenzene	(100411)	0.005	ND	
Xylenes		0.005	ND	
1,2-Dichloroethane (EDC)	(107062)	0.005	ND	
Ethylene Dibromide (EDB)	(106934)	0.005	ND	
Total Petroleum Hydrocarbons (Gasoline)		0.5	ND	
Total Petroleum Hydrocarbons (Diesel 2)		0.5	250.	
BTX as a percent of fuel			Not Appl.	
1,2-Dichloroethane-d4 (Surrogate)			0.033	
Toluene-d8 (Surrogate)			0.044	
p-Bromofluorobenzene (Surrogate)			0.039	

Benicia Division Lab Certifications: CAELAP #1719; L.A.Co.CSD#10185
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) ANALYZED by CAL DHS DRAFT TPH (modified) and EPA 8260 (GC/MS)
(2) EXTRACTED by EPA 5030 (purge-and-trap)
(3) Surrogates were spiked at 0.040mg/Kg

05/22/92
INCOS 50-387
MH/trk/htc
BDE19I1

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

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CLIENT: Jeri Alexander
Subsurface Consultants
171 12th Street STE-201
Oakland, CA 94607-4411

Lab Number : BD-0283-6
Project : 727-001 Coulter Steel - 722 Folger Avenue, Emeryville
Analyzed : 05/19/92
Analyzed by: AZ
Method : As Listed

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
3 at 16.0'	Soil	J. Wolfe	05/12/92	05/18/92

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
FUEL FINGERPRINT ANALYSIS				1,2,3
Benzene	(71432)	0.005	ND	
Toluene	(108883)	0.005	ND	
Ethylbenzene	(100411)	0.005	ND	
Xylenes		0.005	ND	
1,2-Dichloroethane (EDC)	(107062)	0.005	ND	
Ethylene Dibromide (EDB)	(106934)	0.005	ND	
Total Petroleum Hydrocarbons (Gasoline)		0.5	ND	
Total Petroleum Hydrocarbons (Diesel 2)		0.5	25.	
BTX as a percent of fuel			Not Appl.	
1,2-Dichloroethane-d4 (Surrogate)			0.038	
Toluene-d8 (Surrogate)			0.040	
p-Bromofluorobenzene (Surrogate)			0.036	

Benicia Division Lab Certifications: CAELAP #1719; L.A.Co.CSD#10185
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) ANALYZED by CAL DHS DRAFT TPH (modified) and EPA 8260 (GC/MS)
(2) EXTRACTED by EPA 5030 (purge-and-trap)
(3) Surrogates were spiked at 0.040mg/Kg

05/21/92
INCOS 50-387
MH/trk/htc
EDE19I1

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

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CLIENT: Jeri Alexander
Subsurface Consultants
171 12th Street STE-201
Oakland, CA 94607-4411

Lab Number : BD-0283-7
Project : 727-001 Coulter Steel - 722 Folger Avenue, Emeryville
Analyzed : 05/19/92
Analyzed by: AZ
Method : As Listed

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
4 at 9.5'	Soil	J. Wolfe	05/12/92	05/18/92

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
FUEL FINGERPRINT ANALYSIS				1,2,3
Benzene	(71432)	0.005	ND	
Toluene	(108883)	0.005	ND	
Ethylbenzene	(100411)	0.005	ND	
Xylenes		0.005	ND	
1,2-Dichloroethane (EDC)	(107062)	0.005	ND	
Ethylene Dibromide (EDB)	(106934)	0.005	ND	
Total Petroleum Hydrocarbons (Gasoline)		0.5	ND	
Total Petroleum Hydrocarbons (Diesel 2)		0.5	ND	
BTX as a percent of fuel			Not Appl.	
1,2-Dichloroethane-d4 (Surrogate)			0.037	
Toluene-d8 (Surrogate)			0.036	
p-Bromofluorobenzene (Surrogate)			0.034	

Benicia Division Lab Certifications: CAELAP #1719; L.A.Co.CSD#10185
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) ANALYZED by CAL DHS DRAFT TPH (modified) and EPA 8260 (GC/MS)
(2) EXTRACTED by EPA 5030 (purge-and-trap)
(3) Surrogates were spiked at 0.040mg/Kg

05/21/92
INCOS 50-387
MH/trk/htc
BDE19I1

Respectfully submitted,
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Mary Havlicek, Ph.D.
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CLIENT: Jeri Alexander
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171 12th Street STE-201
Oakland, CA 94607-4411

Lab Number : BD-0283-8
Project : 727-001 Coulter Steel - 722 Folger Avenue, Emeryville
Analyzed : 05/19/92
Analyzed by: AZ
Method : As Listed

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
4 at 13.5'	Soil	J. Wolfe	05/12/92	05/18/92

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
FUEL FINGERPRINT ANALYSIS				1,2,3
Benzene	(71432)	0.005	ND	
Toluene	(108883)	0.005	ND	
Ethylbenzene	(100411)	0.005	ND	
Xylenes		0.005	ND	
1,2-Dichloroethane (EDC)	(107062)	0.005	ND	
Ethylene Dibromide (EDB)	(106934)	0.005	ND	
Total Petroleum Hydrocarbons (Gasoline)		0.5	ND	
Total Petroleum Hydrocarbons (Diesel 2)		0.5	ND	
BTX as a percent of fuel			Not Appl.	
1,2-Dichloroethane-d4 (Surrogate)			0.037	
Toluene-d8 (Surrogate)			0.038	
p-Bromofluorobenzene (Surrogate)			0.035	

Benicia Division Lab Certifications: CAELAP #1719; L.A.Co.CSD#10185
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) ANALYZED by CAL DHS DRAFT TPH (modified) and EPA 8260 (GC/MS)
(2) EXTRACTED by EPA 5030 (purge-and-trap)
(3) Surrogates were spiked at 0.040mg/Kg

05/21/92
INCOS 50-387
MH/trk/htc
BDE19I1

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CLIENT: Jeri Alexander
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Lab Number : BD-0283-9
Project : 727-001 Coulter Steel - 722 Folger Avenue, Emeryville
Analyzed : 05/19/92
Analyzed by: AZ
Method : As Listed

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
5 at 9.5'	Soil	J. Wolfe	05/13/92	05/18/92

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
FUEL FINGERPRINT ANALYSIS				1,2,3
Benzene	(71432)	0.005	ND	
Toluene	(108883)	0.005	ND	
Ethylbenzene	(100411)	0.005	ND	
Xylenes		0.005	ND	
1,2-Dichloroethane (EDC)	(107062)	0.005	ND	
Ethylene Dibromide (EDB)	(106934)	0.005	ND	
Total Petroleum Hydrocarbons (Gasoline)		0.5	ND	
Total Petroleum Hydrocarbons (Diesel 2)		0.5	ND	
BTX as a percent of fuel			Not Appl.	
1,2-Dichloroethane-d4 (Surrogate)			0.036	
Toluene-d8 (Surrogate)			0.037	
p-Bromofluorobenzene (Surrogate)			0.033	

Benicia Division Lab Certifications: CAELAP #1719; L.A.Co.CSD#10185
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) ANALYZED by CAL DHS DRAFT TPH (modified) and EPA 8260 (GC/MS)
(2) EXTRACTED by EPA 5030 (purge-and-trap)
(3) Surrogates were spiked at 0.040mg/Kg

05/21/92
INCOS 50-387
MH/trk/htc
BDE19I1

Respectfully submitted,
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Mary Havlicek

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CLIENT: Jeri Alexander
Subsurface Consultants
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Oakland, CA 94607-4411

Lab Number : BD-0283-10
Project : 727-001 Coulter Steel - 722 Folger Avenue, Emeryville
Analyzed : 05/19/92
Analyzed by: AZ
Method : As Listed

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
5 at 13.0'	Soil	J. Wolfe	05/13/92	05/18/92

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
FUEL FINGERPRINT ANALYSIS				1,2,3
Benzene	(71432)	0.005	ND	
Toluene	(108883)	0.005	ND	
Ethylbenzene	(100411)	0.005	ND	
Xylenes		0.005	ND	
1,2-Dichloroethane (EDC)	(107062)	0.005	ND	
Ethylene Dibromide (EDB)	(106934)	0.005	ND	
Total Petroleum Hydrocarbons (Gasoline)		0.5	ND	
Total Petroleum Hydrocarbons (Diesel 2)		0.5	ND	
BTX as a percent of fuel			Not Appl.	
1,2-Dichloroethane-d4 (Surrogate)			0.037	
Toluene-d8 (Surrogate)			0.040	
p-Bromofluorobenzene (Surrogate)			0.034	

Benicia Division Lab Certifications: CAELAP #1719; L.A.Co.CSD#10185
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) ANALYZED by CAL DHS DRAFT TPH (modified) and EPA 8260 (GC/MS)
(2) EXTRACTED by EPA 5030 (purge-and-trap)
(3) Surrogates were spiked at 0.040mg/Kg

05/21/92
INCOS 50-387
MH/trk/htc
BDE19I1

Respectfully submitted,
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CLIENT: Jeri Alexander
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Oakland, CA 94607-4411

Lab Number : BD-0283-11
Project : 727-001 Coulter Steel - 722 Folger Avenue, Emeryville
Analyzed : 05/19/92
Analyzed by: AZ
Method : As Listed

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
6 at 11.0'	Soil	J. Wolfe	05/13/92	05/18/92

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
FUEL FINGERPRINT ANALYSIS				1,2,3
Benzene	(71432)	0.005	ND	
Toluene	(108883)	0.005	ND	
Ethylbenzene	(100411)	0.005	ND	
Xylenes		0.005	ND	
1,2-Dichloroethane (EDC)	(107062)	0.005	ND	
Ethylene Dibromide (EDB)	(106934)	0.005	ND	
Total Petroleum Hydrocarbons (Gasoline)		0.5	ND	
Total Petroleum Hydrocarbons (Diesel 2)		0.5	ND	
BTX as a percent of fuel			Not Appl.	
1,2-Dichloroethane-d4 (Surrogate)			0.035	
Toluene-d8 (Surrogate)			0.038	
p-Bromofluorobenzene (Surrogate)			0.037	

Benicia Division Lab Certifications: CAELAP #1719; L.A.Co.CSD#10185
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) ANALYZED by CAL DHS DRAFT TPH (modified) and EPA 8260 (GC/MS)
(2) EXTRACTED by EPA 5030 (purge-and-trap)
(3) Surrogates were spiked at 0.040mg/Kg

05/22/92
INCOS 50-387
MH/trk/htc
BDE19I1

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

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CLIENT: Jeri Alexander
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Lab Number : BD-0283-12
Project : 727-001 Coulter Steel - 722 Folger Avenue, Emeryville
Analyzed : 05/19/92
Analyzed by: AZ
Method : As Listed

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
7 at 6.0'	Soil	J. Wolfe	05/13/92	05/18/92

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
FUEL FINGERPRINT ANALYSIS				1,2,3
Benzene	(71432)	0.005	ND	
Toluene	(108883)	0.005	ND	
Ethylbenzene	(100411)	0.005	ND	
Xylenes		0.005	ND	
1,2-Dichloroethane (EDC)	(107062)	0.005	ND	
Ethylene Dibromide (EDB)	(106934)	0.005	ND	
Total Petroleum Hydrocarbons (Gasoline)		0.5	ND	
Total Petroleum Hydrocarbons (Diesel 2)		0.5	28.	
BTX as a percent of fuel			Not Appl.	
1,2-Dichloroethane-d4 (Surrogate)			0.033	
Toluene-d8 (Surrogate)			0.037	
p-Bromofluorobenzene (Surrogate)			0.034	

Benicia Division Lab Certifications: CAELAP #1719; L.A.Co.CSD#10185
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) ANALYZED by CAL DHS DRAFT TPH (modified) and EPA 8260 (GC/MS)
(2) EXTRACTED by EPA 5030 (purge-and-trap)
(3) Surrogates were spiked at 0.040mg/Kg

05/21/92
INCOS 50-387
MH/trk/htc
BDE19I1

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

Mary Havlicek, Ph.D.
President

COAST - TO - COAST ANALYTICAL SERVICES

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CLIENT: Jeri Alexander
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Lab Number : BD-0283-13
Project : 727-001 Coulter Steel - 722 Folger Avenue, Emeryville
Analyzed : 05/19/92
Analyzed by: AZ
Method : As Listed

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
7 at 11.0'	Soil	J. Wolfe	05/13/92	05/18/92

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
FUEL FINGERPRINT ANALYSIS				1,2,3
Benzene	(71432)	0.005	ND	
Toluene	(108883)	0.005	ND	
Ethylbenzene	(100411)	0.005	ND	
Xylenes		0.005	ND	
1,2-Dichloroethane (EDC)	(107062)	0.005	ND	
Ethylene Dibromide (EDB)	(106934)	0.005	ND	
Total Petroleum Hydrocarbons (Gasoline)		0.5	ND	
Total Petroleum Hydrocarbons (Diesel 2)		0.5	ND	
BTX as a percent of fuel			Not Appl.	
1,2-Dichloroethane-d4 (Surrogate)			0.037	
Toluene-d8 (Surrogate)			0.038	
p-Bromofluorobenzene (Surrogate)			0.038	

Benicia Division Lab Certifications: CAELAP #1719; L.A.Co.CSD#10185
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) ANALYZED by CAL DHS DRAFT TPH (modified) and EPA 8260 (GC/MS)
(2) EXTRACTED by EPA 5030 (purge-and-trap)
(3) Surrogates were spiked at 0.040mg/Kg

05/22/92
INCOS 50-387
MH/trk/htc
BDE19I1

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Haylicek

Mary Haylicek, Ph.D.
President

CHAIN OF CUSTODY FORM

PAGE 1 OF 2

PROJECT NAME: Coulter Steel - 722 Folger Avenue Emeryville

JOB NUMBER: 727.001 LAB: Coast to Coast

PROJECT CONTACT: J. Alexander TURNAROUND: Normal - 5day

SAMPLED BY: J. Wolfe REQUESTED BY: J. Alexander

LABORATORY I.D. NUMBER	SCI SAMPLE NUMBER	MATRIX: WATER	SOIL	WASTE	AIR			CONTAINERS: VOA	LITER	PINT	TUBE			METHOD PRESERVED: HCL	H_2SO_4	HNO_3	ICE	NONE	SAMPLING DATE: MONTH	DAY	YEAR	TIME				NOTES	ANALYSIS REQUESTED: TPH Diesel - Unknown	BTEX									
√	1 at 9.0'		X								X						X		05	12	92						X	X								-1
√	1 at 12.5'		X								X						X		05	12	92						X	X								-2
√	2 at 8.5'		X								X						X		05	12	92						X	X								-3
√	2 at 16.0'		X								X						X		05	12	92						X	X								-4
√	3 at 9.5'		X								X						X		05	12	92						X	X								-5
√	3 at 16.0		X								X						X		05	12	92						X	X								-6

COMMENTS & NOTES:

CHAIN OF CUSTODY RECORD

RELEASED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
E. Alexander	5/18/92 1:55	B. Christensen	5/18/92 2p.m.
RELEASED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
RELEASED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME

Subsurface Consultants, Inc.

171 12TH STREET, SUITE 201, OAKLAND, CALIFORNIA 94607

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CHAIN OF CUSTODY FORM

PAGE 2 OF 2

PROJECT NAME: Coulter Steel - 722 Folger Avenue Emeryville

JOB NUMBER: 727.001 LAB: Coast to Coast

PROJECT CONTACT: J. Alexander TURNAROUND: Normal - 5 day

SAMPLED BY: J. Wolfe REQUESTED BY: J. Alexander

LABORATORY I.D. NUMBER	SCI SAMPLE NUMBER	MATRIX: WATER	SOIL	WASTE	AIR			CONTAINERS: VOA	LITER	PINT	TUBE			METHOD PRESERVED: HCL	H_2SO_4	HNO_3	ICE	NONE	SAMPLING DATE: MONTH	DAY	YEAR	TIME	NOTES	ANALYSIS REQUESTED: TPH - Diesel - Unknown	BTEX	
✓	4 at 9.5		X								X						X		05	12	92			X	X	7
✓	4 at 13.5		X								X						X		05	12	92			X	X	8
✓	5 at 9.5		X								X						X		05	12	92			X	X	9
✓	5 at 13.0		X								X						X		05	13	92			X	X	10
✓	6 at 11		X								X						X		05	13	92			X	X	11
✓	7 at 6.0		X								X						X		05	13	92			X	X	12
✓	7 at 11.0		X								X						X		05	13	92			X	X	13

COMMENTS & NOTES:

CHAIN OF CUSTODY RECORD

RELEASED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
J. Alexander	5/18/92 1:55	BK Christensen	5/18/92 2pm

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6006 Egret Court, Benicia, California 94510

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CLIENT: Jeri Alexander
Subsurface Consultants
171 12th Street STE-201
Oakland, CA 94607-4411

Lab Number : BD-0286-1
Project : 727.001 Coulter Steel - 722 Folger Avenue, Emeryville
Analyzed : 05/20/92
Analyzed by: AZ
Method : As Listed

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
Sample No. 3	Aqueous	C. O'dea	05/18/92	05/19/92

CONSTITUENT	(CAS RN)	*PQL µg/L	RESULT µg/L	NOTE
FUEL FINGERPRINT ANALYSIS				1,2,3
Benzene	(71432)	0.5	ND	
Toluene	(108883)	0.5	ND	
Ethylbenzene	(100411)	0.5	ND	
Xylenes		0.5	2.5	
1,2-Dichloroethane (EDC)	(107062)	0.5	ND	
Ethylene Dibromide (EDB)	(106934)	0.5	ND	
Total Petroleum Hydrocarbons (Gasoline)		50.	ND	
Total Petroleum Hydrocarbons (Diesel 2)		50.	100.	
BTX as a percent of fuel			2.5	
1,2-Dichloroethane-d4 (Surrogate)			32.3	
Toluene-d8 (Surrogate)			39.0	
p-Bromofluorobenzene (Surrogate)			36.6	

Benicia Division Lab Certifications: CAELAP #1719; L.A.Co.CSD#10185
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) ANALYZED by CAL DHS DRAFT TPH (modified) and EPA 8260 (GC/MS)
(2) EXTRACTED by EPA 5030 (purge-and-trap)
(3) Surrogates were spiked at 40.0ug/L

05/22/92
INCOS 50-387
MH/trk/htc
BDE20I1

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

Mary Havlicek, Ph.D.
President

COAST - TO - COAST ANALYTICAL SERVICES

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CLIENT: Jeri Alexander
Subsurface Consultants
171 12th Street STE-201
Oakland, CA 94607-4411

Lab Number : BD-0286-2
Project : 727.001 Coulter Steel - 722 Folger Avenue, Emeryville
Analyzed : 05/20/92
Analyzed by: AZ
Method : As Listed

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
Sample No. 4	Aqueous	C. O'dea	05/18/92	05/19/92

CONSTITUENT	(CAS RN)	*PQL µg/L	RESULT µg/L	NOTE
FUEL FINGERPRINT ANALYSIS				1,2,3
Benzene	(71432)	0.5	ND	
Toluene	(108883)	0.5	ND	
Ethylbenzene	(100411)	0.5	ND	
Xylenes		0.5	4.0	
1,2-Dichloroethane (EDC)	(107062)	0.5	ND	
Ethylene Dibromide (EDB)	(106934)	0.5	ND	
Total Petroleum Hydrocarbons (Gasoline)		50.	ND	
Total Petroleum Hydrocarbons (Diesel 2)		50.	10000.	
BTX as a percent of fuel			<0.1	
1,2-Dichloroethane-d4 (Surrogate)			35.0	
Toluene-d8 (Surrogate)			40.5	
p-Bromofluorobenzene (Surrogate)			37.8	

Benicia Division Lab Certifications: CAELAP #1719; L.A.Co.CSD#10185
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) ANALYZED by CAL DHS DRAFT TPH (modified) and EPA 8260 (GC/MS)
(2) EXTRACTED by EPA 5030 (purge-and-trap)
(3) Surrogates were spiked at 40.0ug/L

05/22/92
INCOS 50-387
MH/trk/htc
EDE2011

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

Mary Havlicek, Ph.D.
President

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CLIENT: Jeri Alexander
Subsurface Consultants
171 12th Street STE-201
Oakland, CA 94607-4411

Lab Number : BD-0286-3
Project : 727.001 Coulter Steel - 722 Folger Avenue, Emeryville
Analyzed : 05/20/92
Analyzed by: AZ
Method : As Listed

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
Sample No. 5	Aqueous	C. O'dea	05/18/92	05/19/92

CONSTITUENT	(CAS RN)	*PQL µg/L	RESULT µg/L	NOTE
FUEL FINGERPRINT ANALYSIS				1,2,3
Benzene	(71432)	0.5	ND	
Toluene	(108883)	0.5	ND	
Ethylbenzene	(100411)	0.5	ND	
Xylenes		0.5	2.0	
1,2-Dichloroethane (EDC)	(107062)	0.5	ND	
Ethylene Dibromide (EDB)	(106934)	0.5	ND	
Total Petroleum Hydrocarbons (Gasoline)		50.	ND	
Total Petroleum Hydrocarbons (Diesel 2)		50.	510.	
BTX as a percent of fuel			0.4	
1,2-Dichloroethane-d4 (Surrogate)			36.0	
Toluene-d8 (Surrogate)			39.0	
p-Bromofluorobenzene (Surrogate)			37.7	

Benicia Division Lab Certifications: CAELAP #1719; L.A.Co.CSD#10185
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) ANALYZED by CAL DHS DRAFT TPH (modified) and EPA 8260 (GC/MS)
(2) EXTRACTED by EPA 5030 (purge-and-trap)
(3) Surrogates were spiked at 40.0ug/L

05/22/92
INCOS 50-387
MH/trk/htc
BDE20I1

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Hawlicek

Mary Hawlicek, Ph.D.
President

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CLIENT: Jeri Alexander
Subsurface Consultants
171 12th Street STE-201
Oakland, CA 94607-4411

Lab Number : BD-0286-4
Project : 727.001 Coulter Steel - 722 Folger Avenue, Emeryville
Analyzed : 05/20/92
Analyzed by: AZ
Method : As Listed

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
Sample No. 6	Aqueous	C. O'dea	05/18/92	05/19/92

CONSTITUENT	(CAS RN)	*PQL µg/L	RESULT µg/L	NOTE
FUEL FINGERPRINT ANALYSIS				1,2,3
Benzene	(71432)	0.5	ND	
Toluene	(108883)	0.5	ND	
Ethylbenzene	(100411)	0.5	ND	
Xylenes		0.5	2.0	
1,2-Dichloroethane (EDC)	(107062)	0.5	ND	
Ethylene Dibromide (EDB)	(106934)	0.5	ND	
Total Petroleum Hydrocarbons (Gasoline)		50.	ND	
Total Petroleum Hydrocarbons (Diesel 2)		50.	ND	
BTX as a percent of fuel			Not Appl.	
1,2-Dichloroethane-d4 (Surrogate)			38.4	
Toluene-d8 (Surrogate)			40.7	
p-Bromofluorobenzene (Surrogate)			38.5	

Benicia Division Lab Certifications: CAELAP #1719; L.A.Co.CSD#10185
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) ANALYZED by CAL DHS DRAFT TPH (modified) and EPA 8260 (GC/MS)
(2) EXTRACTED by EPA 5030 (purge-and-trap)
(3) Surrogates were spiked at 40.0ug/L

05/22/92
INCOS 50-387
MH/trk/htc
EDE20I1

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

Mary Havlicek, Ph.D.
President

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QC Batch ID: BDE20I1

CLIENT: Coast-to-Coast Analytical Services, Inc.

Analyzed : 05/20/92
Analyzed by: AZ
Method : As Listed

METHOD BLANK
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
METHOD BLANK	Aqueous			

CONSTITUENT	(CAS RN)	*PQL µg/L	RESULT µg/L	NOTE
FUEL FINGERPRINT ANALYSIS				1,2,3
Benzene	(71432)	0.5	ND	
Toluene	(108883)	0.5	ND	
Ethylbenzene	(100411)	0.5	ND	
Xylenes		0.5	ND	
1,2-Dichloroethane (EDC)	(107062)	0.5	ND	
Ethylene Dibromide (EDB)	(106934)	0.5	ND	
Total Petroleum Hydrocarbons (Gasoline)		50.	ND	
Total Petroleum Hydrocarbons (Diesel 2)		50.	ND	
BTX as a percent of fuel			Not Appl.	
1,2-Dichloroethane-d4 (Surrogate)			34.9	
Toluene-d8 (Surrogate)			38.6	
p-Bromofluorobenzene (Surrogate)			33.8	

Benicia Division Lab Certifications: CAELAP #1719; L.A.Co.CSD#10185
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) ANALYZED by CAL DHS DRAFT TPH (modified) and EPA 8260 (GC/MS)
(2) EXTRACTED by EPA 5030 (purge-and-trap)
(3) Surrogates were spiked at 40.0ug/L

05/22/92
INCOS 50-387
MH/trk/htc
BD0286-4

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

Mary Havlicek, Ph.D.
President

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QC Batch ID: BDE2011

CLIENT: Coast-to-Coast Analytical Services, Inc.

Analyzed : 05/20/92
Analyzed by: AZ
Method : As Listed

QC SPIKE
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
QC SPIKE	Aqueous			

CONSTITUENT	*PQL µg/L	SPIKE AMOUNT	RESULT µg/L	%REC	NOTE
FUEL FINGERPRINT ANALYSIS					1,2
Benzene	0.5		NS		
Toluene	0.5		NS		
Ethylbenzene	0.5		NS		
Xylenes	0.5		NS		
1,2-Dichloroethane (EDC)	0.5		NS		
Ethylene Dibromide (EDB)	0.5		NS		
Total Petroleum Hydrocarbons (Gasoline)	50.		NS		
Total Petroleum Hydrocarbons (Diesel 2)	50.	44000.	35000.	80.	
BTX as a percent of fuel			Not Appl.		
1,2-Dichloroethane-d4 (Surrogate)		40.0	43.2	108.	
Toluene-d8 (Surrogate)		40.0	39.7	99.	
p-Bromofluorobenzene (Surrogate)		40.0	35.1	88.	

Benicia Division Lab Certifications: CAELAP #1719; L.A.Co.CSD#10185
* RESULTS listed as 'NS' were not spiked. PQL = Practical Quantitation Limit
(1) ANALYZED by CAL DHS DRAFT TPH (modified) and EPA 8260 (GC/MS)
(2) EXTRACTED by EPA 5030 (purge-and-trap)

05/22/92
INCOS 50-387
MH/trk/htc
BD0286-4

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

Mary Havlicek, Ph.D.
President

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FAX (707)747-2765

QC Batch ID: BDE20I1

CLIENT: Coast-to-Coast Analytical Services, Inc.

Analyzed : 05/20/92
Analyzed by: AZ
Method : As Listed

QC SPIKE
REPORT OF ANALYTICAL RESULTS

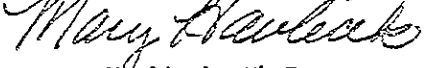
SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
QC SPIKE DUPLICATE	Aqueous			

CONSTITUENT	*PQL µg/L	SPIKE AMOUNT	RESULT µg/L	%REC	%DIFF	NOTE
FUEL FINGERPRINT ANALYSIS						1,2
Benzene	0.5		NS			
Toluene	0.5		NS			
Ethylbenzene	0.5		NS			
Xylenes	0.5		NS			
1,2-Dichloroethane (EDC)	0.5		NS			
Ethylene Dibromide (EDB)	0.5		NS			
Total Petroleum Hydrocarbons (Gasoline)	50.		NS			
Total Petroleum Hydrocarbons (Diesel 2)	50.	44000.	37000.	84.	5.6	
BTX as a percent of fuel			Not Appl.			
1,2-Dichloroethane-d4 (Surrogate)		40.0	50.0	125.	15.	
Toluene-d8 (Surrogate)		40.0	39.1	98.	1.5	
p-Bromofluorobenzene (Surrogate)		40.0	34.8	87.	0.86	

Benicia Division Lab Certifications: CAELAP #1719; L.A.Co.CSD#10185
* RESULTS listed as 'NS' were not spiked. PQL = Practical Quantitation Limit
(1) ANALYZED by CAL DHS DRAFT TPH (modified) and EPA 8260 (GC/MS)
(2) EXTRACTED by EPA 5030 (purge-and-trap)

05/22/92
INCOS 50-387
MH/trk/htc
BD0286-4

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.



Mary Havlicek, Ph.D.
President

CHAIN OF CUSTODY FORM

PAGE 1 OF 1

PROJECT NAME: Coulter Steel - 722 Folger Avenue - Emeryville

JOB NUMBER: 727.001 LAB: Coast-to-Coast

PROJECT CONTACT: J. Alexander TURNAROUND: Normal - 5day

SAMPLED BY: C. O'dea REQUESTED BY: Jeri Alexander

LABORATORY I.D. NUMBER	SCI SAMPLE NUMBER	MATRIX: WATER	SOIL	WASTE	AIR			CONTAINERS: VOA	LITER	PINT	TUBE			METHOD PRESERVED: HCL	H_2SO_4	HNO_3	ICE	NONE	SAMPLING DATE: MONTH	DAY	YEAR	TIME	NOTES	ANALYSIS REQUESTED: TPH - Diesel - Unknown	BTEX									
	3	X						2	1								X		05	18	92	1200		X	X										
	4	X						2	1								X		05	18	92	1530		X	X										
	5	X						2	1								X		05	18	92	1445		X	X										
	6	X						2	1								X		05	18	92	1330		X	X										

TPH - Diesel - Unknown

BTEX

COMMENTS & NOTES:

CHAIN OF CUSTODY RECORD

RELEASED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
[signature]	5/19/92 1:15	[signature]	5-19-92 1:15
RELEASED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
RELEASED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME

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