

June 24, 1993
SCI 727.001

SC 0111 11 13:07

STIP 1385

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

**Quarterly Groundwater Monitoring
Sampling Event - June 1993
Coulter Steel and Forge Company
722 Folger Avenue/Diesel Fuel Area
Emeryville, California**

Dear Mr. Sambajon:

This letter records the results of the fourth sampling event conducted by Subsurface Consultants, Inc. (SCI) for the groundwater monitoring program at the referenced site. In May 1992, SCI performed an investigation of the tank area by drilling 7 test borings, 4 of which were completed as monitoring wells. The previous tank area and well locations area shown on the attached Site Plan, Plate 1.

Quarterly Groundwater Monitoring

The fourth quarterly groundwater monitoring event was conducted on June 8, 1993. For this sampling event, all four on-site wells (MW-3, MW-4, MW-5 and MW-6) were sampled. Initially, the depth to groundwater and the presence of free product were checked with a steel tape and water and petroleum product sensitive pastes. Groundwater level measurements are presented in Table 1.

Prior to sampling the wells were purged of at least three well volumes of water. Measurements of water temperature, pH and conductivity were recorded at various intervals during the purge process. Well sampling forms are attached.

The depth to water in each well was checked, following purging and before sampling, to assure that the wells had recharged to at least 80 percent of their initial volume. The wells were then sampled using new disposable bailers. The samples were retained in containers pre-cleaned by the supplier in accordance with EPA

■ Subsurface Consultants, Inc.

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protocol. The samples were placed in an ice filled cooler and transmitted to Curtis & Tompkins, Ltd. The testing program for this event included the following analyses:

1. Total Extractable Hydrocarbons as diesel (TEH) (EPA 5030/8015), and
2. Benzene, toluene, ethylbenzene and xylene (BTEX) (EPA 5030/602).

The results of all analytical testing events are presented on Table 2. Analytical test reports and Chain-of-Custody documents for the current event are attached.

Conclusions

Groundwater Gradient

Based on the data presented in Table 1, it appears that the groundwater flow direction is towards the southwest under a gradient of about 3.6 percent. This data is consistent with previous findings. The groundwater flow contours and direction for this event are shown on Plate 1.

Diesel Tank Releases

In general, data from the quarterly monitoring events indicate that groundwater locally around the previous tank site has been impacted by previous diesel releases. Free product has not been observed during any of the sampling events.

Ongoing Monitoring

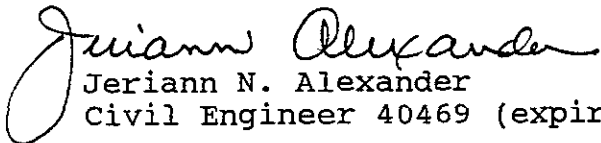
The four monitoring wells have been sampled and analyzed for one hydrogeologic cycle. Since the plume appears to be localized, we recommend that the monitoring program be revised to include only semi-annual testing of MW-3 (the side gradient well) and MW-6 (the downgradient well). Assuming Alameda County concurs with this revision, semi-annual sampling events will commence during the month of September 1993.

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If you have any questions, please call.

Yours very truly,

Subsurface Consultants, Inc.


Jeriann N. Alexander

Civil Engineer 40469 (expires 3/31/95)

JNA:RWR:egh

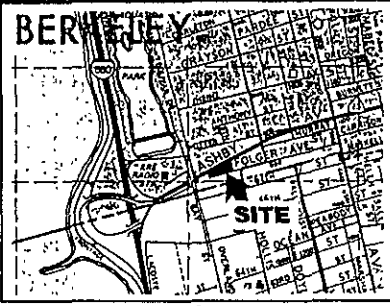
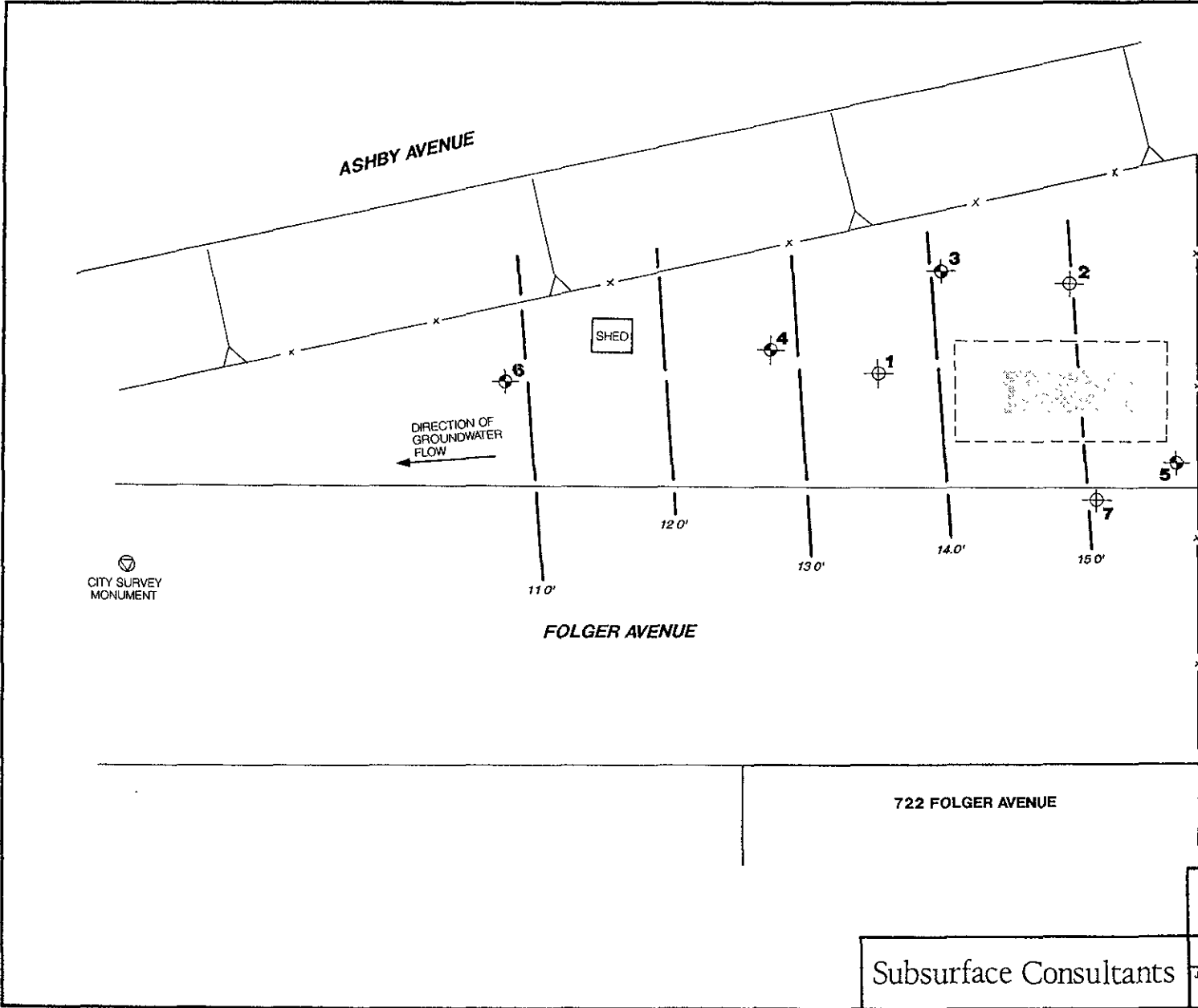
2 copies submitted

Attachments: Site Plan - Plate 1
Table 1 - Groundwater Elevations
Table 2 - Summary of Contaminants in Groundwater
Analytical Test Reports
Chain-of-Custody Documents
Groundwater Sampling Forms

cc: / Ms. Susan Hugo
Hazardous Materials Specialty
Alameda County Health Care Services Agency
80 Swan Way
Oakland, California 94612

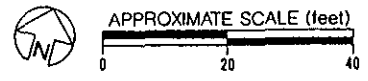
Mr. Dante Sambajon
Plant Engineer
Coulter Steel & Forge Company
1494 - 67th Street
Emeryville, California 94662-0901

Mr. Rich Heitt
Regional Water Quality Control Board
2101 Webster Street, Suite 500
Oakland, California 94612



VICINITY MAP

- MONITORING WELL
- TEST BORING
- EXISTING EXCAVATION
- FENCE
- PREVIOUS TANK LOCATION
- GROUNDWATER FLOW CONTOURS (feet)



SITE PLAN

Subsurface Consultants

722 FOLGER AVENUE - BERKELEY, CA			PLATE
JOB NUMBER	DATE	APPROVED	1
727.001	6/8/93	<i>[Signature]</i>	

Table 1.
Groundwater Elevation Data

<u>Well</u>	<u>TOC Elevation¹ (feet)</u>	<u>Date</u>	<u>Groundwater Depth² (feet)</u>	<u>Groundwater Elevation (feet)</u>
MW-3	24.70	5/15/92	11.15	13.55
		7/01/92	11.60	13.10
		8/18/92	12.00	12.70
		3/04/93	9.79	14.91
		6/08/93	10.47	14.23
MW-4	23.92	5/15/92	10.00	13.92
		7/01/92	11.26	12.66
		8/18/92	11.58	12.34
		3/04/93	9.39	14.53
		6/08/93	10.01	13.91
MW-5	23.85	5/15/92	10.52	13.33
		7/01/92	9.93	13.92
		8/18/92	9.24	14.61
		3/05/93	7.72	16.15
		6/08/93	8.31	15.54
MW-6	22.98	5/15/92	12.46	10.52
		7/01/92	12.96	10.02
		8/18/92	13.42	9.56
		3/04/93	11.60	11.38
		6/08/93	12.34	10.64

¹ Reference datum is City of Berkeley Survey Monument on Folger Avenue as shown on Site Plan

² Measured below top of casing

Table 2.
TEH and BTEX Concentrations in Groundwater

<u>Sample</u>	<u>Date</u>	<u>TEH</u> <u>ug/l¹</u>	<u>B</u> <u>ug/l</u>	<u>T</u> <u>ug/l</u>	<u>E</u> <u>ug/l</u>	<u>X</u> <u>ug/l</u>
MW-3	5/18/92	100	<0.5	<0.5	<0.5	2.5
	8/18/92	<50	<0.5	<1.0	<0.5	<0.5
	3/04/93	<50	<0.5	<0.5	<0.5	<0.5
	6/08/93	<50	<0.5	<0.5	<0.5	<0.5
MW-4	5/18/92	10,000	<0.5	<0.5	<0.5	4.0
	8/18/92	300	<0.5	<1.0	<0.5	<0.5
	3/04/93	<50	<0.5	<0.5	<0.5	<0.5
	6/08/93	190	<0.5	<0.5	<0.5	<0.5
MW-5	5/18/92	510	<0.5	<1.0	<0.5	<0.5
	8/18/92	<50	<0.5	<1.0	<0.5	<0.5
	3/05/93	1,400	<0.5	<0.5	<0.5	<0.5
	6/08/93	1,300	<0.5	<0.5	<0.5	<0.5
MW-6	5/18/92	<50	<0.5	<0.5	<0.5	2.0
	8/18/92	<50	<0.5	<1.0	<0.5	<0.5
	3/04/93	<50	<0.5	<0.5	<0.5	<0.5
	6/08/93	<50	<0.5	<0.5	<0.5	<0.5

¹ ug/l= micrograms per liter, parts per billion



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

DATE RECEIVED: 06/09/93

DATE REPORTED: 06/15/93


LABORATORY NUMBER: 111155

CLIENT: SUBSURFACE CONSULTANTS

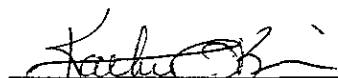
PROJECT ID: 727.001

LOCATION: COUTLER STEEL

RESULTS: SEE ATTACHED



Reviewed by



Reviewed by

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LABORATORY NUMBER: 111155
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 727.001
LOCATION: COUTLER STEEL

DATE SAMPLED: 06/08,09/93
DATE RECEIVED: 06/09/93
DATE EXTRACTED: 06/11/93
DATE ANALYZED: 06/11,12/93
DATE REPORTED: 06/15/93

Extractable Petroleum Hydrocarbons in Aqueous Solutions
California DOHS Method
LUFT Manual October 1989

LAB ID	CLIENT ID	KEROSENE RANGE (ug/L)	DIESEL RANGE (ug/L)	REPORTING LIMIT* (ug/L)
111155-1	MW-3	ND	ND	50
111155-2	MW-4	**	190	50
111155-3	MW-5	**	1,300	50
111155-4	MW-6	ND	ND	50

ND = Not detected at or above reporting limit.

* Reporting limit applies to all analytes.

** Kerosene range not reported due to overlap of hydrocarbon ranges.

QA/QC SUMMARY

RPD, %	3
RECOVERY, %	102



LABORATORY NUMBER: 111155
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 727.001
LOCATION: COUTLER STEEL

DATE SAMPLED: 06/08,09/93
DATE RECEIVED: 06/09/93
DATE ANALYZED: 06/09/93
DATE REPORTED: 06/15/93

Benzene, Toluene, Ethyl Benzene, Xylenes by EPA 8020
Extraction by EPA 5030 Purge and Trap

LAB ID	CLIENT ID	BENZENE (ug/L)	TOLUENE (ug/L)	ETHYL BENZENE (ug/L)	TOTAL XYLENES (ug/L)	REPORTING LIMIT (ug/L)
111155-1	MW-3	ND	ND	ND	ND	0.5
111155-2	MW-4	ND	ND	ND	ND	0.5
111155-3	MW-5	ND	ND	ND	ND	0.5
111155-4	MW-6	ND	ND	ND	ND	0.5

ND = Not detected at or above reporting limit.

Reporting Limit applies to all analytes.

QA/QC SUMMARY

RPD, %	4
RECOVERY, %	104

WELL SAMPLING FORM

Project Name: Chulte, Steel Well Number: MW-3
 Job No.: 727.001 Well Casing Diameter: 2 inch
 Sampled By: DWA Date: 6/2/93
 TOC Elevation: _____ Weather: Sunny

Depth to Casing Bottom (below TOC) 29.83 feet
 Depth to Groundwater (below TOC) 10.47 feet
 Feet of Water in Well 19.36 feet
 Depth to Groundwater When 80% Recovered 14.34 feet
 Casing Volume (feet of water x Casing DIA² x 0.0408) 3.16 gallons
 Depth Measurement Method Tape & Paste Electronic Sounder Other
 Free Product none
 Purge Method BAILER (disposable)

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°C)	Conductivity (micromhos/cm)	Salinity S%	Comments
<u>2</u>	<u>6.77</u>	<u>21.0</u>	<u>1125</u>		<u>semi-clear/no odor</u>
<u>4</u>	<u>6.75</u>	<u>21.0</u>	<u>1000</u>		
<u>6</u>	<u>6.70</u>	<u>19.5</u>	<u>1100</u>		
<u>8</u>	<u>6.71</u>	<u>19.0</u>	<u>1075</u>		
<u>10</u>	<u>6.73</u>	<u>19.0</u>	<u>1000</u>		<u>mucky / faint odor</u>

Total Gallons Purged 10 gallons
 Depth to Groundwater Before Sampling (below TOC) 14.20' feet
 Sampling Method BAILER (Teflon)
 Containers Used 2 40 ml 1 liter pint

Subsurface Consultants

		PLATE
JOB NUMBER	DATE	APPROVED

WELL SAMPLING FORM

Project Name: Coulter Steel Well Number: MW-4
 Job No.: 727.001 Well Casing Diameter: 2 inch
 Sampled By: DWA Date: 6/8/93
 TOC Elevation: _____ Weather: Sunny

Depth to Casing Bottom (below TOC) 21.45 feet
 Depth to Groundwater (below TOC) 10.01 feet
 Feet of Water in Well 11.44 feet
 Depth to Groundwater When 80% Recovered 12.30 feet
 Casing Volume (feet of water x Casing DIA² x 0.0408) 1.87 gallons
 Depth Measurement Method Tape & Paste / Electronic Sounder / Other
 Free Product None
 Purge Method BAILER (disposable)

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°C)	Conductivity (micromhos/cm)	Salinity S%	Comments
<u>2</u>	<u>6.75</u>	<u>20.0</u>	<u>1000</u>	_____	<u>murky / slight odor</u>
<u>4</u>	<u>6.81</u>	<u>20.0</u>	<u>1000</u>	_____	
<u>6</u>	<u>6.85</u>	<u>22.0</u>	<u>1000</u>	_____	
<u>8</u>	<u>6.87</u>	<u>22.0</u>	<u>1025</u>	_____	
<u>10</u>	<u>6.88</u>	<u>22.0</u>	<u>1025</u>	_____	<u>√ / Slight to moderate odor</u>

Total Gallons Purged 10 (bailed dry) gallons
 Depth to Groundwater Before Sampling (below TOC) 10.09 (6-9-93 @ 8:10 a.m.) feet
 Sampling Method BAILER (Teflon)
 Containers Used 2 40 ml 1 liter _____ pint

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JOB NUMBER

DATE

APPROVED

PLATE

WELL SAMPLING FORM

Project Name: Coulter Steel Well Number: MW-5
 Job No.: 727.001 Well Casing Diameter: 2 inch
 Sampled By: DWA Date: 6/8/93
 TOC Elevation: _____ Weather: Sunny

Depth to Casing Bottom (below TOC) 19.22 feet
 Depth to Groundwater (below TOC) 8.31 feet
 Feet of Water in Well 10.91 feet
 Depth to Groundwater When 80% Recovered 10.49 feet
 Casing Volume (feet of water x Casing DIA² x 0.0408) 1.78 gallons
 Depth Measurement Method Tape & Paste / Electronic Sounder / Other
 Free Product none
 Purge Method BAILER (disposable)

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°c)	Conductivity (micromhos/cm)	Salinity S%	Comments
<u>0</u>	<u>6.77</u>	<u>20.0</u>	<u>400</u>		<u>clear (slight color)</u>
<u>2</u>	<u>6.82</u>	<u>19.5</u>	<u>500</u>		
<u>4</u>	<u>6.69</u>	<u>19.5</u>	<u>825</u>		
<u>6</u>	<u>6.78</u>	<u>19.0</u>	<u>1100</u>		

Total Gallons Purged 6 gallons
 Depth to Groundwater Before Sampling (below TOC) 11.51' (6-9-93 @ 7:40 a.m.) feet
 Sampling Method BAILER (Teflon)
 Containers Used 2 40 ml 1 liter _____ pint

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JOB NUMBER

DATE

APPROVED

PLATE

WELL SAMPLING FORM

Project Name: Coalter Steel Well Number: MIN-6

Job No.: 727.001 Well Casing Diameter: 2 inch

Sampled By: DWA Date: 6/8/93

TOC Elevation: _____ Weather: Sunny

Depth to Casing Bottom (below TOC) 28.16 feet

Depth to Groundwater (below TOC) 12.34 feet

Feet of Water in Well 15.82 feet

Depth to Groundwater When 80% Recovered 15.50 feet

Casing Volume (feet of water x Casing DIA² x 0.0408) 2.58 gallons

Depth Measurement Method Tape & Paste / Electronic Sounder / Other

Free Product none

Purge Method BAILER (disposable)

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°C)	Conductivity (micromhos/cm)	Salinity S%	Comments
<u>2</u>	<u>6.85</u>	<u>20.0</u>	<u>1175</u>	_____	<u>murky / no odor</u> ↓
<u>4</u>	<u>6.86</u>	<u>20.0</u>	<u>1150</u>	_____	
<u>6</u>	<u>6.86</u>	<u>19.5</u>	<u>1150</u>	_____	
<u>8</u>	<u>6.84</u>	<u>19.5</u>	<u>1125</u>	_____	
<u>10</u>	<u>6.84</u>	<u>20.0</u>	<u>1125</u>	_____	

Total Gallons Purged 10 gallons

Depth to Groundwater Before Sampling (below TOC) 15.41' feet

Sampling Method BAILER (yellow)

Containers Used 2 40 ml 1 liter _____ pint

<h1 style="margin: 0;">Subsurface Consultants</h1>	JOB NUMBER	DATE	APPROVED	PLATE