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

ALCO
HAZMAT
94 JAN 18 PM 2:45

January 14, 1994
SCI 727.001

STID 1385
upgradient well MW8=ND for BTEX & 1ppm TPHd

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

Progress Report
Well Installation/Soil Remediation/Groundwater Monitoring-November 1993 Event
722 Folger Avenue
Berkeley, California

Dear Mr. Sambajon:

This letter summarizes recent activities performed by Subsurface Consultants, Inc. (SCI) at the referenced site. Activities included (1) observing the completion of soil remediation, (2) performing the November 1993 groundwater monitoring event, and (3) installing an up-gradient groundwater monitoring well.

Soil Remediation

In February 1993, the previous diesel tank excavation was extended in all dimensions. Approximately 530 cubic yards of soil were generated during over excavation. The soils were stockpiled and bioremediated on-site by Bay Area Tank & Marine (BATM). The remediated soils were sampled at a rate of 1 sample per 20 cy and analyzed for total extractable hydrocarbons (TEH) and benzene, toluene, ethylbenzene and xylenes (BTEX). Analytical test data showed that the contaminated soils were remediated to an average concentration of less than 10 mg/kg of TEH. Ms. Susan Hugo of the Alameda County Health Care Services Agency (ACHCSA) approved the reuse of the treated soil as backfill material to be placed in the existing excavation.

Backfill operations were performed from October 20 to October 29, 1993 by BATM. Backfill material was placed in thin lifts not exceeding 8 inches in loose thickness. The lifts were compacted using a backhoe equipped with a vibrating head compactor. Our field engineer observed backfill placement and periodically checked

fill compaction with a nuclear gauge. Field density test data will be retained in our files for future reference.

Groundwater, which had previously been pumped out of the former excavation and stored in an above ground tank, was removed from the site by H&H Environmental Services (H&H). H&H picked up 5000 gallons on November 5, 1993, and 600 gallons on November 10, 1993. The water was transported to H&H's China Basin facility in San Francisco.

Quarterly Groundwater Monitoring

For the November event, wells MW-3, MW-4, MW-5 and MW-6 were purged and sampled on November 4, 1993. 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 purging. 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 protocol. The samples were placed in an ice filled cooler and transmitted to Curtis & Tompkins, Ltd. (C&T), an analytical laboratory certified by the Department of Health Services. The testing program for this event included the following analyses:

1. Total Extractable Hydrocarbons, as diesel (TEH, EPA Methods 5030/8015), and

2. Benzene, toluene, ethylbenzene and xylene (BTEX, EPA Methods 5030/8020).

The results of all quarterly monitoring events are presented in Table 2. Analytical test reports and Chain-of-Custody documents for the current event are attached.

Monitoring Well Installation

In a letter dated September 20, 1993, the ACHCSA requested further groundwater contamination characterization due to the presence of TEH as diesel in MW-5, the upgradient well. Additional characterization involved the installation of a new upgradient well (MW-8).

On December 2, 1993, groundwater monitoring well MW-8 was installed in a test boring drilled in the parking lane along Folger Avenue, approximately 35 feet east of the former tank excavation. The well was installed in general accordance with the work plan dated October 4, 1993. The test boring location is presented on the Site Plan, Plate 1.

Prior to drilling the test boring, SCI obtained a drilling permit from the Alameda County Flood Control & Water Conservation District (Zone 7) and an excavation permit from the City of Berkeley Department of Public Works. Copies of the permits are attached. Underground utility locators for known utilities were contacted in order to check the boring location for underground utilities.

The test boring was drilled using a truck-mounted drill rig equipped with 8-inch-diameter hollow stem augers. Our field engineer observed drilling operations, prepared a detailed log of the test boring and obtained undisturbed samples of the materials encountered. The test boring log is presented on Plate 2. Soils are classified in accordance with the Unified Soil Classification System described on Plate 3.

A California Drive Sampler having an outside diameter of 2.5 inches and an 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 were recorded and are presented on the test boring log. Drilling and sampling equipment was thoroughly cleaned prior to each use to reduce the likelihood of cross-contamination between samples.

At the completion of drilling, a monitoring well was installed in the test boring. The well schematic is shown on the test boring log. In general, the well consists of 2-inch Schedule 40 PVC pipe having flush-threaded joints. The pipe was cleaned with Alconox prior to being placed in the borehole.

The lower 15 feet of the well consists of machine-slotted well screen having 0.02-inch slots. The remaining portion of the well consists of blank pipe. The well is provided with a bottom cap and a 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 borehole and the well casing. The filter extends from just below the bottom of the well to about one foot above the top of the screened section. A one-foot thick bentonite pellet seal was placed above the sand filter. The bentonite pellets were hydrated using de-ionized water. The annulus above the seal was backfilled with cement grout. The grout mixture consists of portland cement mixed with clean water. The monitoring well was completed below grade and is protected by a traffic-rated valve box. A level survey was conducted to measure the top of casing elevation in relation to the other wells.

The new well was developed on December 6, 1993, after the grout seal was allowed to set-up. Initially, the depth to water was measured below the top of the well casing using an electric sounder. The well was developed by removing water with a disposable bailer. After the well was allowed to recharge to within 80 percent of its initial level, it was sampled with a pre-cleaned sampling device, as described in the groundwater monitoring section. Well development water was placed in a 55-gallon drum for later disposal by others. A well development log is attached.

One soil sample and the water sample were transmitted to C&T. The sample was selected from the soil/water table interface to further characterize the extent of soil contamination. The samples were analyzed for the following:

1. Total extractable hydrocarbons (TEH, EPA Methods 3550/8015), and

2. Benzene, toluene, ethylbenzene and xylenes (BTEX, EPA Methods 5030/8020).

Analytical test results for all groundwater monitoring events and soil borings are presented in Tables 2 and 3.

Conclusions

Groundwater Gradient

Based on the groundwater elevation data, it appears that the groundwater flow direction is towards the southwest under a gradient of about 2.4 percent. This data is consistent with previous findings. The groundwater flow contours and direction for this event are shown on Plate 1.

Diesel Contamination

In general, data from the quarterly monitoring events indicate that groundwater locally around the previous tank site has been impacted by previous diesel releases. It appears that the upgradient extent of the site plume has been determined. Neither TEH as diesel nor BTXE were detected in the groundwater sample obtained from the new upgradient well, MW-8. In accordance with the groundwater monitoring program, the next quarterly monitoring event will be conducted in February 1994. All wells will be sampled during the February event.

If you have any questions, please call.

Yours very truly,

Subsurface Consultants, Inc.

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

MFW:JNA:sld

2 copies submitted

Attachments:
Plate 1 - Site Plan
Plate 2 - Log of Test Boring MW-8
Plate 3 - Unified Soil Classification System

Table 1 - Groundwater Elevation Data
Table 2 - Contaminant Concentration in Soil
Table 3 - Contaminant Concentrations in Groundwater

Well Development and Sampling Forms
Permits
Analytical Test Reports
Chain-of-Custody Documents

cc: ✓Ms. Susan Hugo
Hazardous Materials Specialist
Alameda County Health Care Services Agency
80 Swan Way
Oakland, California 94621

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

Table 1.
Groundwater Elevation Data

Well	TOC Elevation (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)
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
		11/04/93	12.05	12.65
		12/06/93	11.62	13.08
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
		11/04/93	11.53	12.39
		12/06/93	11.11	12.81
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
		11/94/93	10.33	13.52
		12/06/93	9.91	13.94
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
		11/04/93	13.62	9.36
		12/06/93	13.08	9.90
MW-8	23.85	12/06/93	9.07	14.15

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

Groundwater Depth Measured below top of casing

Table 2.
Contaminant Concentrations in Soil

Sample	TEH as Diesel (mg/kg)	B (ug/kg)	T (ug/kg)	E (ug/kg)	X (ug/kg)
1 @ 9.0'	9700	<5	<5	<5	<5
1 @ 12.5'	<0.5	<5	<5	<5	<5
2 @ 8.5'	<0.5	<5	<5	<5	<5
2 @ 16.0'	3.0	<5	<5	<5	<5
3 @ 9.5'	250	<5	<5	<5	<5
3 @ 16.0'	25.0	<5	<5	<5	<5
4 @ 9.5'	<0.5	<5	<5	<5	<5
4 @ 13.5'	<0.5	<5	<5	<5	<5
5 @ 9.5'	<0.5	<5	<5	<5	<5
5 @ 13.0'	<0.5	<5	<5	<5	<5
6 @ 11.0'	<0.5	<5	<5	<5	<5
7 @ 6.0'	28	<5	<5	<5	<5
7 @ 11.0'	<0.5	<5	<5	<5	<5
8 @ 8'	1	<5	<5	<5	<5

TEH = Total extractable hydrocarbons, as diesel
mg/kg = milligrams per kilogram, parts per million
ug/kg = micrograms per kilogram, parts per billion
B = benzene
T = toluene
E = ethylbenzene
X = xylenes

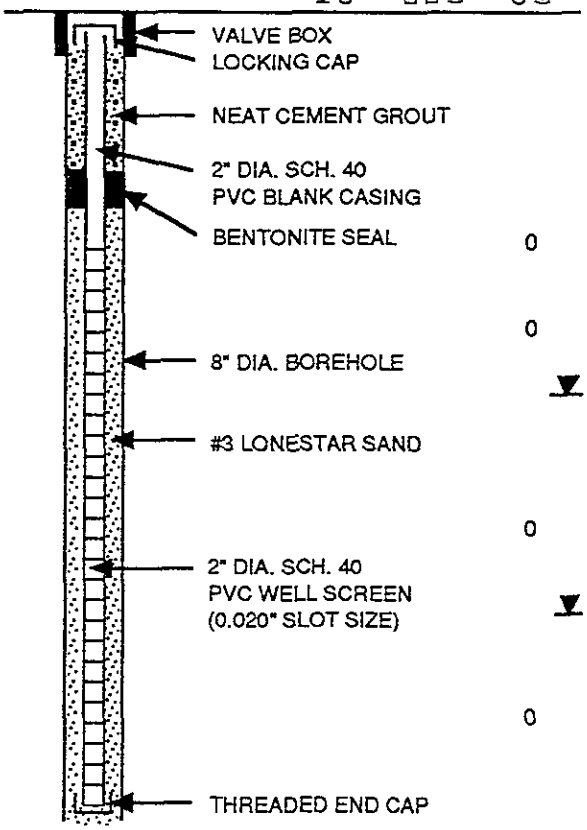
Table 3.
Contaminant Concentrations in Groundwater

Sample	Date	TEH ug/l	B ug/l	T ug/l	E ug/l	X ug/l
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
	11/04/93	**60**	<0.5	**0.6**	<0.5	**1.2**
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
	11/04/93	<50	**0.5**	**0.5**	<0.5	**0.9**
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
	11/04/93	**930**	<0.5	**0.5**	<0.5	**0.9**
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
	11/04/93	<50	<0.5	<0.5	<0.5	**0.7**
MW-8	12/06/93	<50	<0.5	<0.5	<0.5	<0.5

ug/l= micrograms per liter, parts per billion
TEH = Total extractable hydrocarbons
B = benzene
T = toluene
E = ethylbenzene
X = xylenes

LOG OF TEST BORING MW-8

EQUIPMENT 8" Hollow Stem Auger
DATE DRILLED 12/2/93
TOC ELEVATION 23.85'



MOISTURE CONTENT %	DRY DENSITY (PCF)	OVM (ppm)	DEPTH (feet)	SAMPLE	BLOWS PER FOOT
			0		
		0	5		28
		0			17
			10		
		0			22
			15		
		0			36
			20		
			25		
			30		
			35		
			40		

ASPHALTIC CONCRETE - 2" thick
MOTTLED BROWN SANDY CLAY (CL)
stiff, moist, with some gravel to 1/2 inch in dia.

MOTTLED BROWN SILTY CLAY (CL)
medium stiff, moist

GROUNDWATER LEVEL 12/6/93

GROUNDWATER LEVEL DURING DRILLING

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

HAMMER WEIGHT: 140 pounds
HAMMER DROP: 30 inches

Subsurface Consultants

722 FOLGER AVENUE - BERKELEY, CA

JOB NUMBER	DATE	APPROVED
727.001	12/13/93	

PLATE 2

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

Subsurface Consultants

722 FOLGER AVENUE - BERKELEY, CA

JOB NUMBER	DATE	APPROVED
727.001	6/22/92	

PLATE 3

ASHBY AVENUE

SHED

DIRECTION OF GROUNDWATER FLOW

11.0'

12.0'

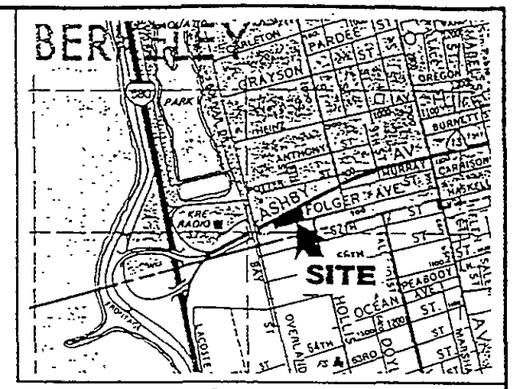
13.0'

14.0'

FOLGER AVENUE

722 FOLGER AVENUE

CITY SURVEY MONUMENT



VICINITY MAP

- TEST BORING
- MONITORING WELL
- EXTENT OF EXCAVATION
- FENCE
- PREVIOUS TANK LOCATION
- GROUNDWATER FLOW CONTOURS (feet) — 12.0

APPROXIMATE SCALE (feet)
0 20 40

* Water samples
* Soil samples

SITE PLAN

Subsurface Consultants

722 FOLGER AVENUE – BERKELEY, CA

JOB NUMBER	DATE	APPROVED	PLATE
727.001	12/13/93	WW	1

WELL SAMPLING FORM

Project Name: Coulter Steel
Well Number: MW-3
Job No.: 727.001
Well Casing Diameter: 2 inch
Sampled By: Charles Pearson
Date: 11-4-93
TOC Elevation:
Weather: Sunny / warm

Depth to Casing Bottom (below TOC) 30 feet
Depth to Groundwater (below TOC) 12.05 feet
Feet of Water in Well 17.95 feet
Depth to Groundwater When 80% Recovered 15.64 feet
Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 2.93 gallons
Depth Measurement Method Tape & Paste / Electronic Sounder / Other
Free Product None
Purge Method Hand bailing

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°c)	Conductivity (micromhos/cm)	Salinity S%	Comments
0	7.25	67.6	14.31 x 100		
9	6.94	65.2	13.39		
9½	6.96	65.2	13.48		
10	6.96	65.2	13.46		

Total Gallons Purged 10 gallons
Depth to Groundwater Before Sampling (below TOC) 15.64 feet
Sampling Method bailer
Containers Used 3 (40 ml) / 1 (liter) / (pint)

Subsurface Consultants

JOB NUMBER | DATE | APPROVED | PLATE

WELL SAMPLING FORM

Project Name: Coulter Steel
Well Number: MW-4
Job No.: 727.001
Well Casing Diameter: 2 inch
Sampled By: Charles Pearson
Date: 11-4-93
TOC Elevation: _____
Weather: Sunny / warm

Depth to Casing Bottom (below TOC) 30 feet
Depth to Groundwater (below TOC) 11.53 feet
Feet of Water in Well 18.47 feet
Depth to Groundwater When 80% Recovered 15.30 feet
Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 3.02 gallons
Depth Measurement Method Tape & Paste / (Electronic Sounder) / Other
Free Product None
Purge Method Hand bailing

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°c)	Conductivity (micromhos/cm)	Salinity S%	Comments
0	7.40	68.5	9.55x100		Smells of H-C's brn-gray
8 ½	6.89	66.5	13.03		turbid water,
9	7.00	66.9	13.10		Dry

Total Gallons Purged 9 gallons
Depth to Groundwater Before Sampling (below TOC) 15.30 feet
Sampling Method bailer
Containers Used 3 (40 ml) / 1 (liter) / _____ (pint)

Subsurface Consultants

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: Charles Pearson
Date: 11-4-93
TOC Elevation: _____
Weather: Sunny / warm

Depth to Casing Bottom (below TOC) 20 feet
Depth to Groundwater (below TOC) 10.33 feet
Feet of Water in Well 9.67 feet
Depth to Groundwater When 80% Recovered 12 feet
Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 1.6 gallons
Depth Measurement Method Tape & Paste / (Electronic Sounder) / Other
Free Product None
Purge Method Hand bailing

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°c)	Conductivity (micromhos/cm)	Salinity S%	Comments
0	7.12	67.9			Gray-Brn water.
5	6.96	66.1			(odor?) Dry
					Not sampled 11-4-93
					Slow recharge

Total Gallons Purged 5 gallons
Depth to Groundwater Before Sampling (below TOC) 11.5 feet
Sampling Method bailer
Containers Used 3 (40 ml) / 1 (liter) / _____ (pint)

Subsurface Consultants

JOB NUMBER | DATE | APPROVED

PLATE

WELL SAMPLING FORM

Project Name: Coulter Steel
Well Number: MW-6
Job No.: 727.0001
Well Casing Diameter: 2 inch
Sampled By: Charles Pearson
Date: 11-4-93
TOC Elevation: _____
Weather: Sunny / warm

Depth to Casing Bottom (below TOC) 30 feet
Depth to Groundwater (below TOC) 13.62 feet
Feet of Water in Well 16.38 feet
Depth to Groundwater When 80% Recovered 17.90 feet
Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 2.67 gallons
Depth Measurement Method Tape & Paste / (Electronic Sounder) / Other
Free Product None
Purge Method Hand bailing

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°F)	Conductivity (micromhos/cm)	Salinity S%	Comments
0	7.67	68.7	16.60x100		
8	7.07	68.1	13.98		
9	7.08	68.1	14.07		
9½	7.08	68.1	14.04		

Total Gallons Purged 10 gallons
Depth to Groundwater Before Sampling (below TOC) 15 feet
Sampling Method bailer
Containers Used 3 (40 ml) / 1 (liter) / _____ (pint)

Subsurface Consultants

JOB NUMBER | DATE | APPROVED | PLATE

WELL DEVELOPMENT FORM

Project Name: Coulter Steel Well Number: MW-8

Job No.: 727.001 Well Casing Diameter: 2" inches

Developed By: DWL Date: 12/6/93

TOC Elevation: _____ Weather: cloudy

Depth to Casing Bottom (below TOC) 20.60 feet

Depth to Groundwater (below TOC) 9.70 feet

Feet of Water in Well 10.90 feet

Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 1.78 gallons

Depth Measurement Method Tape & Paste / Electronic Sounder / Other

Development Method Teflon bailer

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°c)	Conductivity (micromhos/cm)	Salinity S%	Comments
0	6.70	21.0	1600		Semi-clear
2	6.77	21.0	1725		murky
4	6.91	21.0	1750		"
6	6.89	21.0	1575		"
8	6.79	21.0	1550		"
10	6.70	21.0	1625		"
12	6.62	21.0	1600		"
14	6.82	21.0	1425		↓

Total Gallons Removed 15 gallons

Depth to Groundwater After Development (below TOC) 15.60 feet

Subsurface Consultants

JOB NUMBER DATE APPROVED PLATE

WELL SAMPLING FORM

Project Name: Coulter Steel Well Number: MW-8

Job No.: 727.001 Well Casing Diameter: 2" inch

Sampled By: DWA Date: 12/6/93

TOC Elevation: _____ Weather: cloudy

Depth to Casing Bottom (below TOC) 20.60 feet

Depth to Groundwater (below TOC) 9.70 feet

Feet of Water in Well 10.90 feet

Depth to Groundwater When 80% Recovered 11.88 feet

Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 1.78 gallons

Depth Measurement Method Tape & Paste / (Electronic Sounder) / Other

Free Product none

Purge Method teflon bailer

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°c)	Conductivity (micromhos/cm)	Salinity S%	Comments

Total Gallons Purged 15 gallons

Depth to Groundwater Before Sampling (below TOC) 12.25' feet

Sampling Method teflon bailer

Containers Used 3 (40 ml) / 1 (liter) / _____ (pint)

Subsurface Consultants	JOB NUMBER	DATE	APPROVED	PLATE

RECEIPT# _____ CITY OF BERKELEY

AMOUNT 25.00 DEPARTMENT OF PUBLIC WORKS

PERMIT FOR USE OF "NO PARKING" SIGNS

Date Nov. 22, 1993 Time 2:30 PM Clerk BW

Street Area Restricted 722 FOLGER ST. Metered Zone No

Restriction Dates Nov. 22, 1993 to Dec. 22, 1993

Hours of Day 8 AM to 5 PM

Reason for Use INSTALL WELLS No. of Cab Cards 2 No. of Signs 2

Issued to SUBSURFACE CONSULTANTS, INC.
Company or Individual Company Rep.

Address 171 - 12th St City Oakland Zip 94607

Phone 510 - 268 - 0461

Extension: Previous Dates: From _____ to _____

From _____ to _____

Previous Permit at same location: From: _____ to _____

From: _____ to _____

1. Temporary "No Parking" signs may be used only for the following:
   a) Curb clearance for house moving or heavy equipment moving.
   b) Curb clearance to provide for loading or unloading of materials.
   c) Curb clearance to provide access to property for construction or demolition.
   d) Curb clearance to allow temporary use of curb area for other than parking use.

2. Signs must be posted at least 24 hours before prohibitions are enforced. The date and time for which "No Parking" is desired must be clearly indicated on the sign. Signs must be removed to permit parking when the work is interrupted, and then reposted 24 hours before resuming the work.

3. If any construction or service vehicle is an essential part ofthe job and must be stopped for more than 20 minutes in the temporary "No Parking " zone herein established, a permit must be obtained and displayed in the vehicle. These permits may be obtained from the Department of Public Works.

4. This permit does not constitute a waiver for the necessity of obtaining a Street Use Permit if required under Ordinance No. 4111-N.S.

5. Signs must be removed from the street immediately upon expiration or work completion.

I hereby agree to indemnify and hold harmless the City of Berkeley and its officers and employees from any and all claims arising from or out of work connected with this permit and to comply with the above regulations and to the satisfaction of the Director of Public Works. I recognize that failure to comply with required regulations will preclude further issuance of signs to me.

Signed X Marianne Watada Title Engineer

MARIANNE WATADA
PRINT NAME

1/5/88/BT

Spec. Dept. No. 2660

Receipt No. 1558

CITY OF BERKELEY
Department of Public Works
Engineering Division

MISCELLANEOUS PERMIT

No. 1013

Date Nov. 22, 1993

PERMIT TO OBSTRUCT, EXCAVATE and/or CONSTRUCT

Permission is hereby granted SUBSURFACE CONSULTANTS, INC.

to Obstruct, Excavate and/or Construct on the NORTH side of FOLGER AVE ~~St.~~

30± feet WEST of ~~OR~~ ~~E~~ at House No. 722 FOLGER

for the purpose of WELLS

I hereby agree to protect and indemnify the City of Berkeley and hold it harmless in every way from all claims or suits for injury or damage to persons or property that may arise or be occasioned in any way because of the issuance of this permit or the work done thereunder. I agree to perform all work in accordance with the plans submitted and all applicable City ordinances and specifications and to pay all inspection and engineering costs in addition to those paid at time of issuance of this permit. I further agree to complete the work to the satisfaction of the Director of Public Works, and if for any reason the City of Berkeley is required to complete this work, I will pay all costs for such work.

Director of Public Works

By RW

Signature Marianne Watada

Address 171-12th St #201, Oakland

Title Engineer

Width	Length	Area Sq. Ft.	Insp. Hrs.
	Total		

Date Completed ..... Insp. By .....
Date Ready for Surfacing .....
Date Surfaced .....
Total Area . . . . . $ .....
Total Insp. . . . . $ .....
Total Charge . . . . . $ .....
Date Billed .....
Invoice No .....

ZONE 7 WATER AGENCY

5997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94588 VOICE (510) 484-2600
FAX (510) 462-3914

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 722 Folger Avenue
Berkeley

CLIENT
Name Coulter Steel & Forge Co.
Address 1494 67th St Voice 510-420-3500
City Emeryville Zip 94662

APPLICANT
Name Marianne Watada
Subsurface Consultants, Inc. Fax 510-268-0137
Address 171-12th St, Ste 201 Voice 510-268-0461
City Oakland Zip 94607

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	___	General	___
Water Supply	___	Contamination	___
Monitoring	✓	Well Destruction	___

PROPOSED WATER SUPPLY WELL USE
Domestic ___ Industrial ___ Other ___
Municipal ___ Irrigation ___

DRILLING METHOD:
Mud Rotary ___ Air Rotary ___ Auger ✓
Cable ___ Other ___

DRILLER'S LICENSE NO. ___

WELL PROJECTS

Drill Hole Diameter	8	in.	Maximum		
Casing Diameter	2	in.	Depth	20	ft.
Surface Seal Depth	5	ft.	Number	1	

GEOTECHNICAL PROJECTS

Number of Borings	___		Maximum		
Hole Diameter	___	in.	Depth	___	ft.

ESTIMATED STARTING DATE 11/30/93
ESTIMATED COMPLETION DATE 11/30/93

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE Marianne Watada Date 11/23/93

FOR OFFICE USE

PERMIT NUMBER 93662
LOCATION NUMBER ___

PERMIT CONDITIONS

Circled Permit Requirements Apply

(A.) GENERAL
1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well Projects, or drilling logs and location sketch for geotechnical projects.
3. Permit is void if project not begun within 90 days of approval date.

(B.) WATER WELLS, INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

C. GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

D. CATHODIC. Fill hole above anode zone with concrete placed by tremie.

E. WELL DESTRUCTION. See attached.

Approved Wyman Hong Date 24 Nov 93
Wyman Hong

91992

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

ANALYTICAL REPORT

Prepared for:

Subsurface Consultants
171 12th Street
Suite 201
Oakland, CA 94608

Date: 16-NOV-93
Lab Job Number: 113061
Project ID: 727.001
Location: Coulter Steel

Reviewed by: _____

Reviewed by: _____

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 113061
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 727.001
LOCATION: COULTER STEEL

DATE SAMPLED: 11/04/93
DATE RECEIVED: 11/05/93
DATE ANALYZED: 11/09/93
DATE REPORTED: 11/16/93

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)
113061-01	MW-3	ND	0.6	ND	1.2	0.5
113061-02	MW-4	ND	0.5	ND	0.9	0.5
113061-03	MW-5	ND	0.5	ND	0.9	0.5
113061-04	MW-6	ND	ND	ND	0.7	0.5

ND = Not detected at or above reporting limit.

Reporting Limit applies to all analytes.

QA/QC SUMMARY

RPD, %	3
RECOVERY, %	103

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 113061
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 727.001
LOCATION: COULTER STEEL

DATE SAMPLED: 11/04/93
DATE RECEIVED: 11/05/93
DATE EXTRACTED: 11/09/93
DATE ANALYZED: 11/11/93
DATE REPORTED: 11/16/93

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)
113061-01	MW-3	60	ND	50
113061-02	MW-4	ND	ND	50
113061-03	MW-5	**	930	50
113061-04	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, %	8
RECOVERY, %	74

CHAIN OF CUSTODY FORM

PAGE 1 OF 1

PROJECT NAME: Coulter Steel

JOB NUMBER: 727.001 LAB: Curtis & Tompkins

PROJECT CONTACT: Teri Alexander TURNAROUND: Normal

SAMPLED BY: Charles Pearson REQUESTED BY: JNA

LABORATORY I.D. NUMBER	SCI SAMPLE NUMBER	MATRIX						CONTAINERS						METHOD PRESERVED					SAMPLING DATE						NOTES	ANALYSIS REQUESTED	
		WATER	SOIL	WASTE	AIR			VOA	LITER	PINT	TUBE			HCL	H_2SO_4	HNO_3	ICE	NONE	MONTH	DAY	YEAR	TIME				TEH	BTEX
113061-1	MW-3	X						3	1					X			X		11	04	93					X	X
-2	MW-4	X						3	1					X			X		11	04	93					X	X
-3	MW-5	X						3	1					X			X		11	05	93					X	X
-4	MW-6	X						3	1					X			X		11	04	93					X	X

CHAIN OF CUSTODY RECORD

RELEASED BY: (Signature)	DATE / TIME	RELEASED BY: (Signature)	DATE / TIME
Charles Pearson 11-5-93	9AM		
RELEASED BY: (Signature)	DATE / TIME	RELEASED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RELEASED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RELEASED BY: (Signature)	DATE / TIME
		Teresa Morrow 11/5/93	9AM

COMMENTS & NOTES:

Subsurface Consultants, Inc.

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

(510) 268-0461 • FAX: 510-268-0137

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

ANALYTICAL REPORT

Prepared for:

Subsurface Consultants
171 12th Street
Suite 201
Oakland, CA 94608

Date: 13-DEC-93
Lab Job Number: 113448
Project ID: 727.001
Location: Coulter Steel

Reviewed by: _____

Reviewed by: _____

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 113448
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 727.001
LOCATION: COULTER STEEL

DATE SAMPLED: 12/02/93
DATE RECEIVED: 12/06/93
DATE ANALYZED: 12/09/93
DATE REPORTED: 12/13/93

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

LAB ID	SAMPLE ID	BENZENE (ug/Kg)	TOLUENE (ug/Kg)	ETHYL BENZENE (ug/Kg)	TOTAL XYLENES (ug/Kg)	REPORTING LIMIT (ug/Kg)
113448-001	MW-8 @8'	ND	ND	ND	ND	5
METHOD BLANK		ND	ND	ND	ND	5

ND = Not detected at or above reporting limit.

Reporting Limit applies to all analytes.

QA/QC SUMMARY

RPD, %	3
RECOVERY, %	91

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 113448
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 727.001
LOCATION: COULTER STEEL

DATE SAMPLED: 12/06/93
DATE RECEIVED: 12/06/93
DATE ANALYZED: 12/10/93
DATE REPORTED: 12/13/93

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)
113448-002	MW-8	ND	ND	ND	ND	0.5
METHOD BLANK		ND	ND	ND	ND	0.5

ND = Not detected at or above reporting limit.

Reporting Limit applies to all analytes.

QA/QC SUMMARY

RPD, %	<1
RECOVERY, %	98

Curtis & Tompkins, Ltd

LABORATORY NUMBER: 113448
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 727.001
LOCATION: COULTER STEEL

DATE SAMPLED: 12/02/93
DATE RECEIVED: 12/06/93
DATE EXTRACTED: 12/08/93
DATE ANALYZED: 12/12/93
DATE REPORTED: 12/13/93

Extractable Petroleum Hydrocarbons in Soils & Wastes
California DOHS Method
LUFT Manual October 1989

LAB ID	SAMPLE ID	KEROSENE RANGE (mg/Kg)	DIESEL RANGE (mg/Kg)	REPORTING LIMIT* (mg/Kg)
113448-001	MW-8 @8'	ND	1	1
METHOD BLANK		ND	ND	1

ND = Not detected at or above reporting limit.

* Reporting limit applies to all analytes.

QA/QC SUMMARY

RPD,%	12
RECOVERY, %	95

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 113448
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 727.001
LOCATION: COULTER STEEL

DATE SAMPLED: 12/06/93
DATE RECEIVED: 12/06/93
DATE EXTRACTED: 12/08/93
DATE ANALYZED: 12/11/93
DATE REPORTED: 12/13/93

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)
113448-002	MW-8	ND	ND	50
METHOD BLANK		ND	ND	50

ND = Not detected at or above reporting limit.

* Reporting limit applies to all analytes.

QA/QC SUMMARY

RPD, %	5
RECOVERY, %	107

CHAIN OF CUSTODY FORM

PAGE 1 OF 1

PROJECT NAME: Coulter Steel

JOB NUMBER: 727.001 LAB: Curtis & Tompkins

PROJECT CONTACT: Marianne Watada/Teri Alexander TURNAROUND: normal

SAMPLED BY: M. Watada/Dennis Alexander REQUESTED BY: M. Watada

LABORATORY I.D. NUMBER	SCI SAMPLE NUMBER	MATRIX						CONTAINERS						METHOD PRESERVED					SAMPLING DATE								NOTES	ANALYSIS REQUESTED	
		WATER	SOIL	WASTE	AIR			VOA	LITER	PINT	TUBE			HCL	H_2SO_4	HNO_3	ICE	NONE	MONTH	DAY	YEAR	TIME					TEH	BTXE
113448 -1	MW-8@8'		X								X						X		12	29	93						X	X
-2	MW-8	X						3	1					X			X		12	06	93	14	00				X	X

CHAIN OF CUSTODY RECORD

RELEASED BY: (Signature)	DATE / TIME	RELEASED BY: (Signature)	DATE / TIME
Dennis Alexander	12/6/93 2:30 p.m.	Marianne Watada	12/6 2:30
RELEASED BY: (Signature)	DATE / TIME	RELEASED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RELEASED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RELEASED BY: (Signature)	DATE / TIME

COMMENTS & NOTES:

Subsurface Consultants, Inc.

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

(510) 268-0461 • FAX: 510-268-0137