



Crown METAL MFG. CO.

5925 SOUTH LOWE AVENUE, CHICAGO, ILLINOIS 60621-2896 • TELEPHONE 312/873-3833

December 4, 1990

Alemeda County Health Care Services Agency
Department of Environmental Health
80 Swan Way Room 200
Oakland, CA 94621-1439

Attention: Ms. Pamela Evans

Dear Ms. Evans:

Enclosed please find the November Quarterly Groundwater Sampling and Analysis for our site at: 16525 Worthley Drive in San Lorenzo. This report was generated in conjunction with our ongoing clean-up effort by Exceltech. They have suggested that I forward these reports to your attention in a timely manner.

Should you have any questions on the contents of this report, please feel free to contact Exceltech directly with your questions or concerns. Should you have any problem in communicating with them, I would be happy to assist you.

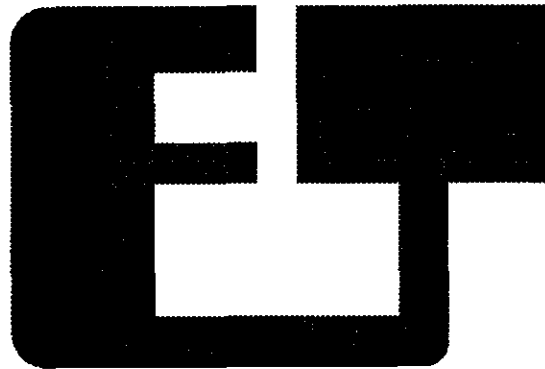
Regards,

Richard C. Ernest
President

RCE/meb
Enc.

cc: Britt Von Thaden/Exceltech

90 DEC -6 PM 11:35



EXCELTECH

**NOVEMBER QUARTERLY
GROUNDWATER SAMPLING
AND ANALYSIS**

FOR

**CROWN METAL MANUFACTURING
AT PACIFIC INTERNATIONAL
STEEL FACILITY
16525 WORTHLEY DRIVE
SAN LORENZO, CALIFORNIA**

**Project No. 1587-2G
November 1990**



November 27, 1990

Crown Metal Manufacturing
5925 South Lowe Avenue
Chicago, IL 60621-2896

Attention: Mr. Richard C. Ernest

Subject: November Quarterly Groundwater Sampling and Analysis
Pacific International Steel Facility
16525 Worthley Drive, San Lorenzo, California
Exceltech Project No. 1587-2G

Dear Mr. Ernest:

Exceltech, Inc. has completed the November quarterly groundwater sampling and laboratory analysis at the subject site in the City of San Lorenzo, Alameda County, California (Figure 1). We collected groundwater samples from two of the seven on-site wells on November 6, 1990: monitoring wells MW-2 and MW-7. Well RW-1 was not sampled because the pump for the remediation system has been installed and limits access in the well. The four other wells; MW-1, MW-4, MW-5, and MW-6; are on a yearly sampling schedule and will be sampled next in February 1991.

Groundwater Sampling

Before sampling, Exceltech measured the depth to groundwater in each well with an electric sounding tape and checked for the presence of free-phase hydrocarbons using a clear acrylic bailer. No free-phase hydrocarbons were detected. Groundwater samples were collected following Exceltech's groundwater sampling protocol (Appendix A) and an equipment rinse water sample (bailer blank) was collected for quality control. Approximately seven well-casing volumes of groundwater were removed from well MW-2 and 12 from well MW-7 prior to sampling. Equipment rinse water and groundwater removed from the wells were placed in drums approved by the Department of Transportation and left at the site pending receipt of the analytical results.

Hydrogeology

The groundwater surface contour map (Figure 2) reveals a shallow groundwater gradient in the area of investigation for November 6, 1990. The contours indicate that a variable gradient was present at the time of sampling. Groundwater flow directions were to the southwest and the east. The average calculated gradient for this sampling date is approximately 0.3 percent.

Laboratory Analyses and Results

The groundwater and bailer blank samples were analyzed by Sequoia Analytical, a state-certified laboratory, located in Redwood City, California. Sequoia analyzed the samples for the presence of total petroleum hydrocarbons as gasoline (TPHG), as well as benzene, toluene, ethyl benzene, and total xylenes (BTEX) using Environmental Protection Agency Methods 5030/8015/8020.



Sequoia reported that petroleum hydrocarbons were detected in the two monitoring well samples submitted from the November sampling. The compounds identified in the samples and their concentrations are listed below.

Compound	MW-2	MW-7
TPHG	170	<30
Benzene	0.37	<0.3
Toluene	1.2	0.55
Ethyl Benzene	2.0	<0.3
Total Xylenes	1.5	0.32

< 0.3 Not detected at or above laboratory detection limit
Results in micrograms per liter (parts per billion)

No petroleum hydrocarbons were detected in the equipment rinse sample. A summary of past and present analytical results is presented in Table 1 and copies of the analytical report and chain-of-custody document are attached in Appendix B.

Reporting Requirements

A copy of this report should be forwarded by Crown Metal Manufacturing to the following agencies in a timely manner:

California Regional Water Quality Control Board
San Francisco Bay Region
1800 Harrison Street, Suite 700
Oakland, California 94612-3429
Attention: Mr. Lester Feldman

Alameda County
Health Care Services Agency
Department of Environmental Health
80 Swan Way, Room 200
Oakland, California 94621-1439
Attention: Ms. Pamela Evans

Limitations

The discussion and recommendations presented in this report are based on the following:

1. The observations by field personnel.
2. The results of laboratory analyses performed by a state-certified laboratory.
3. Our understanding of the regulations of the State of California and Alameda County and/or the City of San Lorenzo.

It is possible that variations in the soil or groundwater conditions could exist beyond the points explored in this investigation. Also, changes in the groundwater conditions could occur at some time in the future due to variations in rainfall, temperature, regional water usage, or other factors.

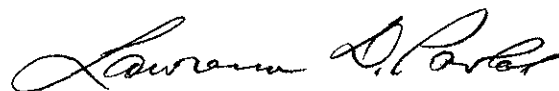
The service performed by Exceltech has been conducted in a manner consistent with the level of care and skill ordinarily exercised by members of our profession currently practicing under similar conditions in the San Lorenzo area. Please note that contamination of soil and groundwater must be reported to the appropriate agencies in a timely manner. No other warranty, expressed or implied, is made.

Exceltech includes in this report chemical analytical data from a state-certified laboratory. The analytical results are performed according to procedures suggested by the U.S. EPA and State of California. Exceltech is not responsible for laboratory errors in procedure or result reporting.

The next quarterly sampling is scheduled for February 1991. If you have any questions, please call.

Sincerely,
Exceltech, Inc.

Britt Von Thaden
Britt Von Thaden
Project Geologist



Lawrence D. Pavlak, C.E.G. 1187
Corporate C.E.G.

BVT/LDP/sw

cc: Mr. James Lewis
Pacific International Steel

Exceltech, Inc.
 Project No. 1587-2G
 November 27, 1990

Crown Metal Manufacturing
 Pacific International Steel Facility
 San Lorenzo, CA

TABLE 1
SUMMARY OF GROUNDWATER ANALYSES DATA

Well	Date Sampled	TPHG (ug/l)	Benzene (ug/l)	Toluene (ug/l)	Ethyl Benzene (ug/l)	Total Xylenes (ug/l)	Well Elevation (ft)	Depth to Water (ft)	Floating Product (ft)
MW-1	7/14/87	BDL	BDL	BDL	—	BDL	8.86	7.56	—
	11/24/87	BDL	BDL	BDL	—	9.0		7.51	—
	2/29/88	BDL	BDL	BDL	—	BDL		7.18	—
	5/25/88	BDL	BDL	BDL	—	BDL		7.40	—
	8/10/88	ND	ND	ND	ND	ND		7.85	—
	11/29/88	ND	ND	ND	ND	ND		7.86	—
	2/7/89	ND	ND	ND	ND	ND		7.43	—
	5/12/89	ND	1.4	ND	ND	ND		7.23	—
	8/4/89	ND	ND	ND	ND	ND		8.17	—
	11/14/89	ND	ND	ND	—	—		7.93	—
	1/3/90	—	—	—	—	—		7.77	—
	2/22/90	ND	ND	ND	ND	ND		7.28	—
	5/17/90	—	—	—	—	—		7.62	—
	8/17/90	—	—	—	—	—		7.91	—
11/6/90	—	—	—	—	—	8.01	—		
MW-2	7/14/87	110	1.2	1.9	—	2.0	9.17	7.79	—
	11/24/87	3,600	82	47	—	13		7.73	—
	2/29/88	800	BDL	BDL	—	BDL		7.26	—
	5/25/88	250	ND	ND	—	ND		7.45	—
	8/10/88	260	ND	ND	ND	ND		7.90	—
	11/29/88	870	9.0	ND	1.0	1.0		8.20	—
	2/7/89	710	16	ND	ND	ND		7.47	—
	5/12/89	260	2.8	0.76	1.3	3.0		7.27	—
	8/4/89	360	ND	ND	ND	0.48		8.23	—
	11/14/89	85	ND	3.5	0.36	2.5		8.08	—
	1/3/90	—	—	—	—	—		7.95	—

Exceltech, Inc.
 Project No. 1587-2G
 November 27, 1990

Crown Metal Manufacturing
 Pacific International Steel Facility
 San Lorenzo, CA

TABLE 1
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Well	Date Sampled	TPHG (ug/l)	Benzene (ug/l)	Toluene (ug/l)	Ethyl Benzene (ug/l)	Total Xylenes (ug/l)	Well Elevation (ft)	Depth to Water (ft)	Floating Product (ft)
MW-2 Con't	2/22/90	120	N D	N D	1.5	0.55		7.47	—
	5/17/90	240	N D	N D	N D	N D		7.70	—
	8/17/90	130	N D	2.9	1.2	0.68		8.00	—
	11/6/90	170	0.37	1.2	2.0	1.5		8.30	—
MW-3	7/14/87	260	BDL	1.0	—	2.0	8.54	7.09	—
	11/24/87	8,900	1,700	3.0	—	12		7.11	—
	2/29/88	9,300	1,600	93	—	99		6.57	—
	5/25/88	11,000	140	16	—	34		6.80	—
	8/10/88	4,600	23	4.8	140	3.0		7.20	—
	11/29/88	16,000	3,900	11	600	40		7.41	—
	2/7/89	—	—	—	—	—		N A	—
	5/12/89	2,500	N D	5.6	N D	2.7		6.64	—
	8/4/89	2,900	800	7.5	96	N D		7.38	—
	11/14/89	Destroyed in August 1989							
MW-4	7/14/87	BDL	BDL	BDL	—	BDL	8.48	7.25	—
	11/24/87	60	BDL	0.65	—	7.6		6.97	—
	2/29/88	BDL	BDL	BDL	—	BDL		6.54	—
	5/25/88	BDL	BDL	BDL	—	BDL		6.36	—
	8/10/88	—	—	—	—	—		N A	—
	11/29/88	N D	0.87	N D	N D	N D		6.85	—
	2/7/89	N D	N D	N D	N D	N D		6.26	—
	5/12/89	N D	N D	N D	N D	0.76		6.55	—
	8/4/89	—	—	—	—	—		N A	—
	11/14/89	—	—	—	—	—		—	—
2/22/90	—	N D	N D	N D	N D		6.67	—	

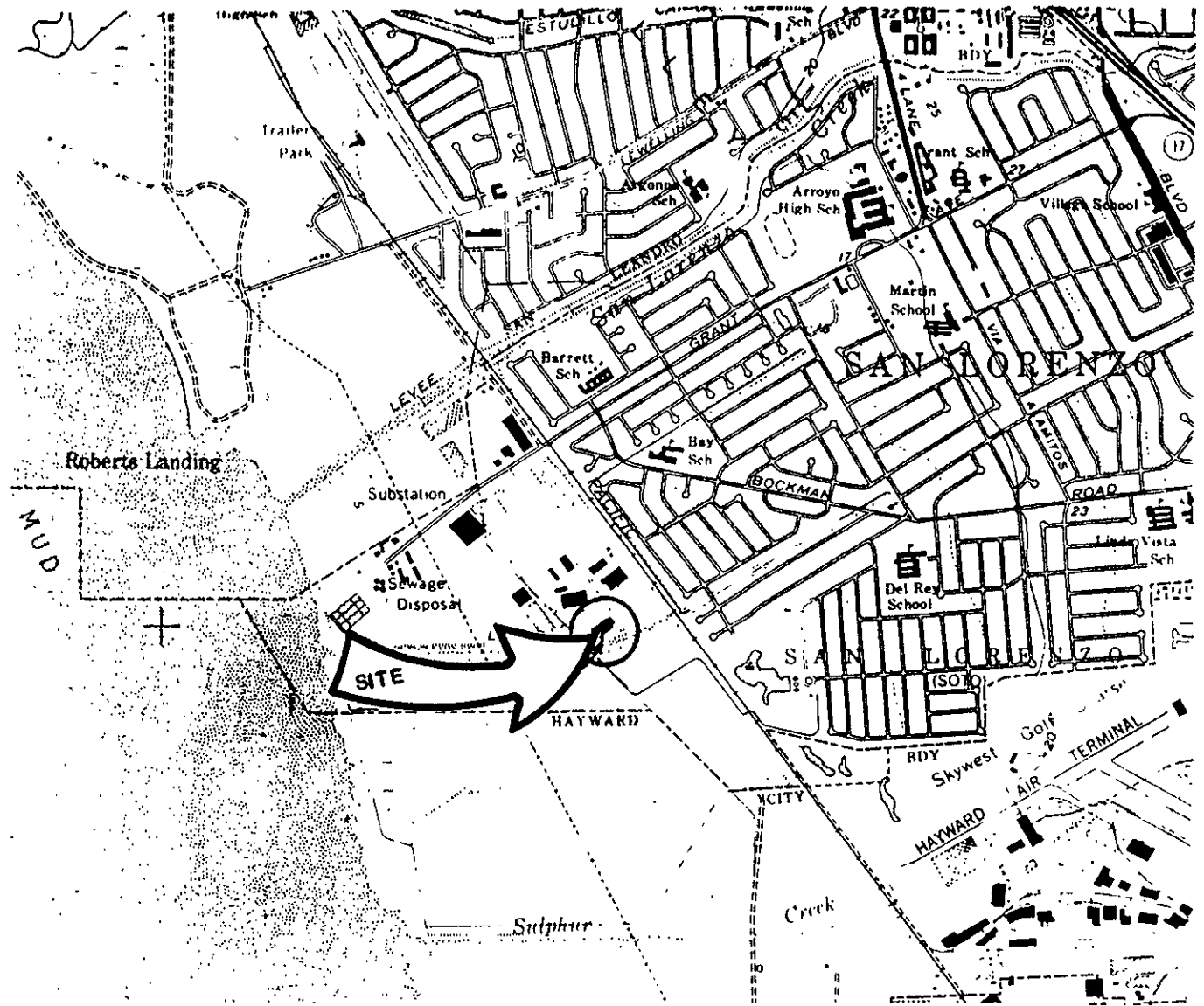
TABLE 1
SUMMARY OF GROUNDWATER ANALYSES DATA

Well	Date Sampled	TPHG (ug/l)	Benzene (ug/l)	Toluene (ug/l)	Ethyl Benzene (ug/l)	Total Xylenes (ug/l)	Well Elevation (ft)	Depth to Water (ft)	Floating Product (ft)
MW-4 Con't	5/17/90	ND	—	—	—	—		—	—
	8/17/90	—	—	—	—	—		7.30	—
	11/6/90	—	—	—	—	—		7.15	—
MW-5	7/14/87	—	BDL	BDL	—	BDL	9.11	7.06	—
	11/24/87	BDL	BDL	BDL	—	7.2		7.24	—
	2/29/88	BDL	BDL	BDL	—	BDL		6.75	—
	5/25/88	BDL	—	—	—	—		—	—
	8/10/88	—	ND	ND	ND	ND		7.35	—
	11/29/88	ND	ND	ND	ND	ND		—	—
	2/7/89	ND	ND	ND	ND	ND		7.02	—
	5/12/89	ND	ND	ND	ND	0.84		6.69	—
	8/4/89	ND	ND	ND	ND	ND		7.52	—
	11/14/89	ND	ND	ND	ND	ND		7.51	—
	1/3/90	ND	—	—	—	—		7.42	—
	2/21/90	—	ND	ND	ND	ND		6.85	—
	5/17/90	ND	—	—	—	—		7.09	—
	8/17/90	—	—	—	—	—		7.36	—
11/6/90	—	—	—	—	—		7.65	—	
MW-6	7/14/87	BDL	BDL	BDL	—	BDL	9.19	—	—
	11/24/87	—	—	—	—	—		—	—
	1/5/88	BDL	BDL	BDL	—	BDL		—	—
	2/29/88	BDL	BDL	BDL	—	BDL		7.19	—
	5/25/88	BDL	BDL	BDL	ND	BDL		7.33	—
	8/10/88	BDL	ND	ND	ND	ND		7.50	—
	11/29/88	ND	ND	ND	ND	ND		7.93	—
	2/7/89	ND	ND	ND	ND	ND		7.56	—

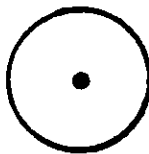
TABLE 1
SUMMARY OF GROUNDWATER ANALYSES DATA

Well	Date Sampled	TPHG (ug/l)	Benzene (ug/l)	Toluene (ug/l)	Ethyl Benzene (ug/l)	Total Xylenes (ug/l)	Well Elevation (ft)	Depth to Water (ft)	Floating Product (ft)
MW-6 Con't	5/12/89	ND	ND	ND	ND	ND		7.16	—
	8/4/89	ND	ND	ND	ND	ND		7.94	—
	11/14/89	ND	ND	ND	ND	ND		8.92	—
	1/3/90	ND	—	—	—	—		7.89	—
	2/21/90	—	ND	ND	ND	ND		7.28	—
	5/17/90	ND	—	—	—	—		8.62	—
	8/17/90	—	—	—	—	—		7.68	—
	11/6/90	—	—	—	—	—		8.05	—
MW-7	1/3/90	—	—	—	—	—	8.41	8.06	—
	1/9/90	ND	ND	ND	ND	ND		8.42	—
	2/21/90	ND	ND	ND	ND	ND		6.63	—
	5/17/90	ND	ND	ND	ND	ND		6.81	—
	8/17/90	48	ND	ND	ND	ND		7.13	—
	11/6/90	ND	ND	0.55	ND	0.32		7.29	—
RW-1	1/3/90	—	—	—	—	—	11.02	9.81	—
	1/9/90	1,300	150	15	100	170		9.75	—
	3/1/90	440	9.4	1.3	16	25		9.34	—
	5/17/90	1,400	52	1.0	20	12		9.55	—
	8/17/90	1,800	410	7.8	160	65		9.84	—
	11/6/90	—	—	—	—	—		10.15	—
	BB-1	1/9/90	ND	ND	ND	ND	ND	—	—
	5/17/90	ND	ND	ND	ND	ND	—	—	—
	11/6/90	ND	ND	ND	ND	ND	—	—	—

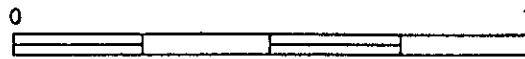
TPHG Total petroleum hydrocarbons as gasoline µg/l Micrograms per liter (parts-per-billion)
 ND Not detected at or above the method detection limit BB-1 Bailer blank
 — No data obtained



LEGEND



SITE LOCATION



SCALE IN MILES



USGS 7.5 MINUTE SAN LEANDRO QUADRANGLE 1980



SITE LOCATION MAP

CROWN METAL MFG-PACIFIC INT'L STEEL

16525 WORTHLEY DRIVE

SAN LORENZO, CALIFORNIA

JOB #: 1587-2G

SCALE: 1:24000

DATE: 6/6/87

DRAWN BY:

DRAWING #: FIG. 1


LEGEND

 MW-1 GROUNDWATER MONITORING WELL

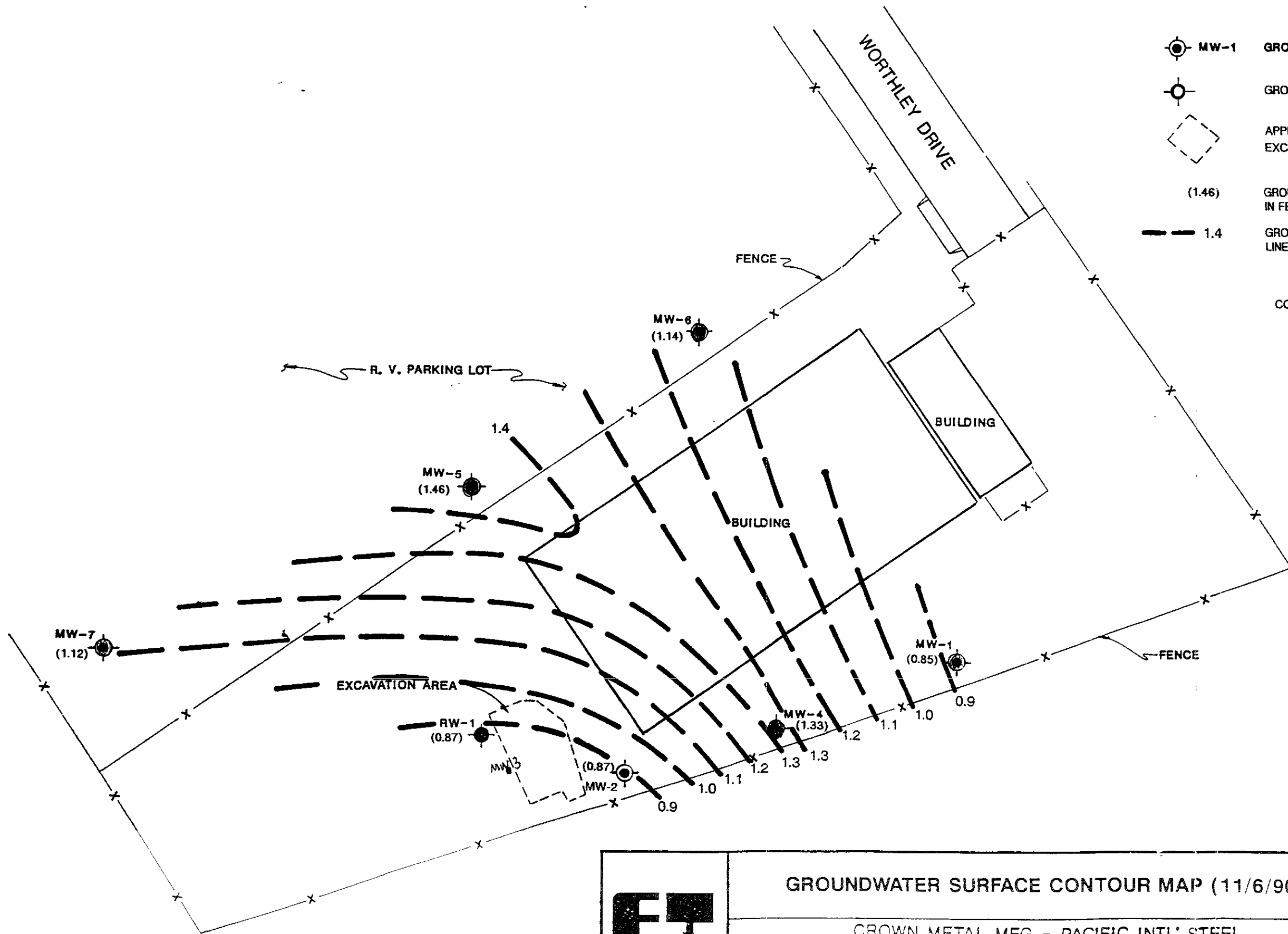
 GROUNDWATER RECOVERY WELL

 APPROXIMATE BOUNDARY OF SOIL EXCAVATION (NOVEMBER 1988)

(1.46) GROUNDWATER SURFACE ELEVATION IN FEET (DATUM: M.S.L.)

 1.4 GROUNDWATER SURFACE ELEVATION CONTOUR LINE IN FEET (DATUM: M.S.L.)

CONTOUR INTERVAL = 0.10 FEET



GROUNDWATER SURFACE CONTOUR MAP (11/6/90)

CROWN METAL MFG - PACIFIC INTL' STEEL

16525 WORTHLEY DRIVE
SAN LORENZO, CALIFORNIA

REVIEWED BY: <i>3/1</i>	APPROVED BY: <i>[Signature]</i>
DESIGNED BY:	DATE:
JOB #: 1587-2G	DRAWN BY: SLS
DATE: 1/4/90	DRAWING #: FIG 2

APPENDIX A

GROUNDWATER SAMPLING PROTOCOL



EXCELTECH

**Groundwater Sampling
Protocol**

GROUNDWATER SAMPLING PROTOCOL

Sampling of groundwater is performed by Exceltech, Inc. sampling technicians. Summarized field sampling procedures are as follows:

1. Measurements of liquid surface in the well and depth of monitoring well.
2. Field check for presence of floating product.
3. Purge well prior to collecting samples.
4. Monitor groundwater for temperature, pH, and specific conductance during purging.
5. Collect samples using Environmental Protection Agency (EPA) approved sample collection devices, i.e., teflon or stainless steel bailers or pumps.
6. Transfer samples into laboratory-supplied EPA-approved containers.
7. Label samples and log onto chain-of-custody form.
8. Store samples in a chilled ice chest for shipment to a state-certified analytical laboratory.

GROUNDWATER SAMPLING PROCEDURES

Equipment Cleaning

All water samples are placed in precleaned laboratory-supplied bottles. Sample bottles and caps remain sealed until actual usage at the site. All equipment which comes in contact with the well or groundwater is thoroughly cleaned with a trisodium phosphate (TSP) solution and rinsed with deionized or distilled water before use at the site. This cleaning procedure is followed between each well sampled. Wells are sampled in approximate order of increasing contamination. If a teflon cord is used, the cord is cleaned. If a nylon or cotton cord is used, a new cord is used in each well. All equipment blanks are collected prior to sampling. The blanks are analyzed periodically to ensure proper cleaning.

Water Level Measurements

Depth to groundwater is measured in each well using a sealed sampling tape or scaled electric sounder prior to purging or sampling. If the well is known or suspected of containing free-phase petroleum hydrocarbons, an optical interface probe is used to measure the hydrocarbon thickness and groundwater level. Measurements are collected and recorded to the nearest 0.01 foot.

Bailer Sheen Check

If no measurable free-phase petroleum hydrocarbons are detected, a clear acrylic bailer is used to determine the presence of a sheen. Any observed film as well as odor and color of the water is recorded.

Groundwater Sampling

Prior to groundwater sampling, each well is purged of "standing" groundwater. Either a bailer, hand pump, or submersible pump is used to purge the well. The amount of purging is dependent on the well yield. In a high yield formation, samples will be collected when normal field measurement, including temperature, pH, and specific conductance stabilize, provided a minimum of three well-casing volumes of water have been removed. Field measurements will be taken after purging each well volume. In low yield formations, the well is purged such that the "standing" water is removed and the well is allowed to recharge. (Normal field measurements will be periodically recorded during the purging process.) In

situations where recovery to 80% of static water level is estimated, or observed to exceed a two hour duration, a sample will be collected when sufficient volume is available for a sample for each parameter. At no time will the well be purged dry so that the recharge rate causes the formation water to cascade into the well.

In wells where free-phase hydrocarbons are detected, the free-phase portion will be bailed from the well and the volume removed recorded. A groundwater sample will be collected if bailing reduces the amount of free-phase hydrocarbons to the point where they are not present in the well. Well sampling will be conducted using one of the aforementioned methods depending on the formation yield. However, if free-phase hydrocarbons persist throughout bailing, then a groundwater samples will not be collected.

Groundwater sample containers are labeled with a unique sample number, location, product name and number, and date of collection. All samples are logged into a chain-of-custody form and placed in a chilled ice chest for shipment to a laboratory certified by the State of California Department of Health Services.

APPENDIX B

**LABORATORY REPORTS
AND
CHAIN-OF-CUSTODY DOCUMENT**



SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Exceltech
41674 Christy Street
Fremont, CA 94538
Attention: Britt Von Thaden

Client Project ID: #1587, Crown Metals, PO#21175
Matrix Descript: Water
Analysis Method: EPA 5030/8015/8020
First Sample #: 011-0622 A

Sampled: Nov 6, 1990
Received: Nov 6, 1990
Analyzed: Nov 6, 1990
Reported: Nov 9, 1990

TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

Sample Number	Sample Description	Low/Medium B.P.	Benzene	Toluene	Ethyl Benzene	Xylenes
		Hydrocarbons $\mu\text{g/L}$ (ppb)	$\mu\text{g/L}$ (ppb)	$\mu\text{g/L}$ (ppb)	$\mu\text{g/L}$ (ppb)	$\mu\text{g/L}$ (ppb)
0110622 A	MW7	N.D.	N.D.	0.55	N.D.	0.32
0110623 A	BB	N.D.	N.D.	N.D.	N.D.	N.D.
0110624 A	MW2	170	0.37	1.2	2.0	1.5

Detection Limits:

30

0.30

0.30

0.30

0.30

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL


Vickie Tague
Project Manager



SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Exceltech
41674 Christy Street
Fremont, CA 94538
Attention: Britt Von Thaden

Client Project ID: #1587, Crown Metals, PO#21175

QC Sample Group: 0110622-24

Reported: Nov 9, 1990

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
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Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	G. Meyer	G. Meyer	G. Meyer	G. Meyer
Reporting Units:	ng	ng	ng	ng
Date Analyzed:	Nov 6, 1990	Nov 6, 1990	Nov 6, 1990	Nov 6, 1990
QC Sample #:	010-3965	010-3965	010-3965	010-3965

Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Spike Conc. Added:	100	100	100	300
Conc. Matrix Spike:	88	86	88	265
Matrix Spike % Recovery:	88	86	88	88
Conc. Matrix Spike Dup.:	96	94	98	291
Matrix Spike Duplicate % Recovery:	96	94	98	97
Relative % Difference:	8.7	8.9	11	9.4

SEQUOIA ANALYTICAL

VMTague
Vickie Tague
Project Manager

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$

