CROSBY & OVERTON, INC.
8430 AMELIA STREET • OAKLAND, CA 94621
(800) 821-0424 • (415) 633-0336
FAX (415) 633-0759

January 2, 1992

Mr. Bill Ridle
RF & Associates
462 Wilson Ave.
Richmond, CA 94805

RE: Groundwater Monitor Well Sampling, 5903 Christie, Emeryville

Dear Mr. Ridle:

Crosby & Overton, Inc. is pleased to submit this letter report concerning the results of groundwater monitoring well sampling and analyses. On November 22, 1991, Crosby & Overton personnel re-sampled three groundwater monitoring wells (MW-1, MW-2, & MW-3) located at 5903 Christie Avenue in Emeryville, California (formerly Weatherford BMW). Please refer to the attached site map and site plan for site and well locations.

BACKGROUND

Groundwater monitoring well MW-1 was installed on June 2, 1989, and subsequently sampled on June 2, 1989.[1]

Two of the three wells on this site (MW-2 and MW-3), were originally installed on September 27, 1989, and sampled September 27, 1989.[2] The most recent groundwater sampling (prior to this sampling event) from the three wells took place on May 22, 1991. The results of all sampling events are summarized in Table 1.

PROCEDURES

A minimum of three well volumes were pumped from each well, each well was permitted to recharge to ≥80% of original capacity and stabilize. Stabilization was determined by measuring the parameters of pH, temperature, and electrical conductivity. When two subsequent measurements of these three parameters were within 10% of each other, the well was regarded as stabilized and was sampled.

[1] *See* Crosby & Overton *report dated June 23, 1989.*
[2] *See* Crosby & Overton *report dated October 18, 1989.*

The samples were collected using a new, disposable, polyethylene bailers, with bottom siphon and nylon cord. One bailer was used for each well. Each bailer was properly disposed of, and therefore, never reused. Duplicate water samples were collected from each well and placed, by draining the bailer through the bottom siphon, into three clear 40 ml VOA vials and two amber 950 ml bottles. The samples were labeled, placed on Blue Ice® in an ice chest, and sent to Quanteq Laboratories (formerly Med-Tox Associates) under Chain-of-Custody documentation. Quanteq is licensed by the State of California to perform the analyses requested. The samples were analyzed for total petroleum hydrocarbons as diesel plus benzene, toluene, xylenes, and ethylbenzene (TPHd + BTXE) [Method 3510 GCFID, EPA 8020]. The samples were also analyzed for total oil and grease (TOG) and total hydrocarbon oil and grease (THOG) [Methods 5520 C,F]. Copies of all analyses and Chain-of-Custody documentation are attached at the end of this report.

ANALYTIC RESULTS

The analyses of the November 22, 1991 sampling yielded the following results:

MW-1 had non-detectable (ND) results for all analyses except for 1.6 parts per million (ppm) TPH-d; TOG was detected at 0.5 ppm.

MW-2 yielded 1.2 ppm TPH-d; and 1.0 TOG. All other compounds were at ND levels.

MW-3 had TPH-d at 1.3 ppm; all other compounds were at ND levels.

3/11/90 TOG (413.1)
MW1 - 3.3 ppm
MW2 - 2.3
MW3 - 3.1

TPHd + BTXE all ND.

TABLE 1. ANALYTIC SUMMARY

DATE	SAMPLE	5520 B ppm	5520 C ppm	5520 F ppm	TPHd ppm	B ppb	T ppb	X ppb	E ppb
6/89	MW-1	ND	NA	NA	ND	ND	ND	ND	ND
9/89	MW-2	1.8	NA	NA	ND	ND	ND	ND	ND
9/89	MW-3	0.87	NA	NA	ND	ND	ND	ND	ND
5/91	MW-1	NA	0.6	ND	ND	ND	ND	ND	ND
5/91	MW-2	NA	1.6	1.0	ND	ND	ND	ND	ND
5/91	MW-3	NA	ND	ND	ND	ND	ND	ND	ND
11/91	MW-1	NA	0.5	ND	1.6	ND	ND	ND	ND
11/91	MW-2	NA	1.0	ND	1.2	ND	ND	ND	ND
11/91	MW-3	NA	ND	ND	1.3	ND	ND	ND	ND

5520 B = Total Oil and Grease (Gravimetric)
5520 C = Total Oil and Grease (IR)
5520 F = Total Hydrocarbon Oil and Grease
TPHd = Total Petroleum Hydrocarbons as diesel

ppm = parts per million (mg/L)
ppb = parts per billion (µg/L)
ND = not detected
NA = not analyzed by this method

REPORTAGE

Submission to the Regional Water Quality Control Board and the Alameda County Health Care Services Agency should include a copy of this report (in its entirety) and a cover letter from the property owner.

The following addresses have been listed here for your convenience:

San Francisco Bay Regional Water Quality Control Board
1800 Harrison Street, Suite 700
Oakland, CA 94621
Attn: **Mr. Eddy So**

Alameda County Health Care Services Agency
80 Swan Way, Rm. 200
Oakland, CA 94621
Attn: **Mr. Dennis Byrne**

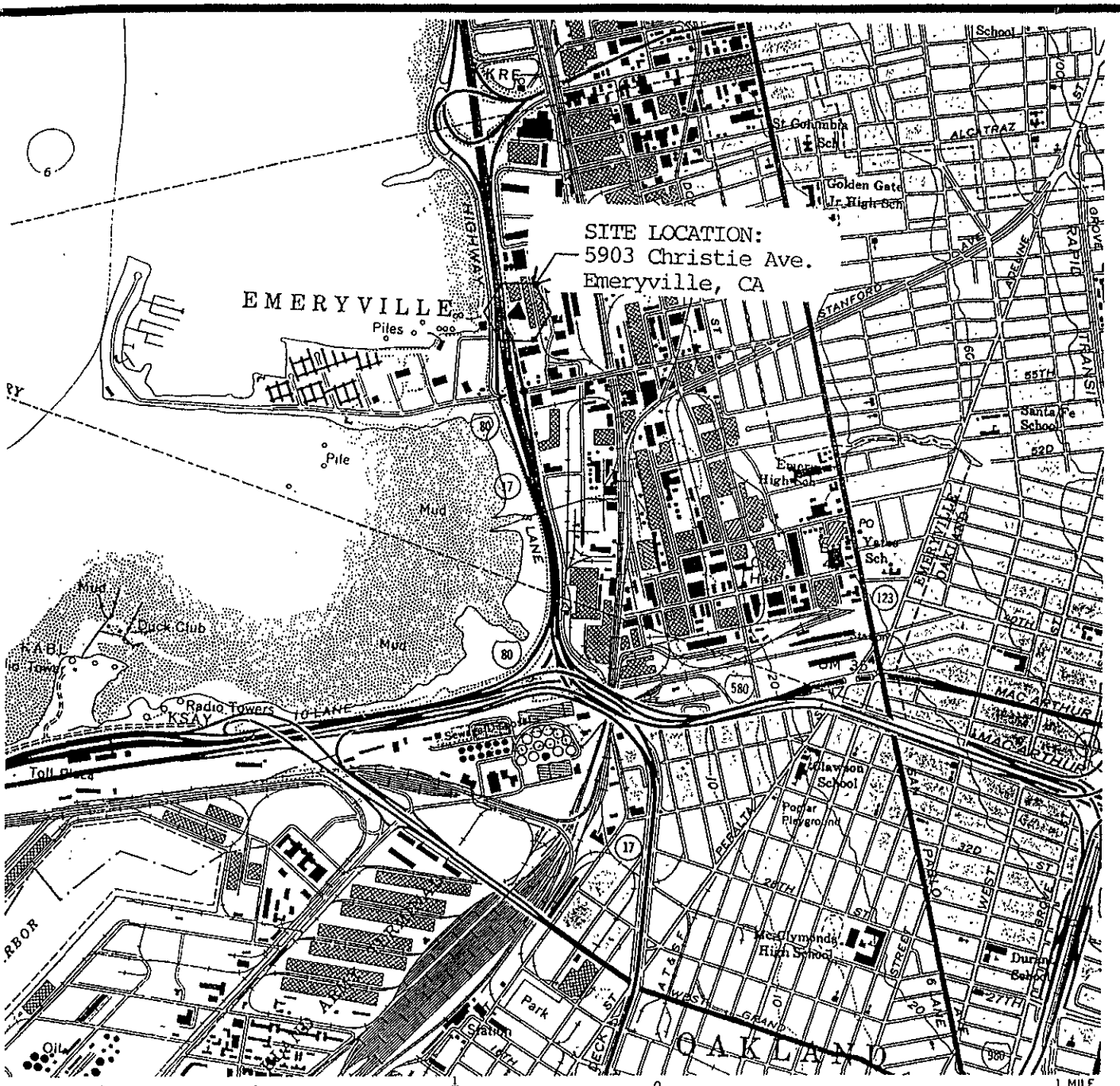
If you should have any questions please contact us at (510) 633-0336.

Sincerely,

Dave Sadoff
Project Environmental Geologist

REGISTERED GEOLOGIST
JAMES A. JACOBS
NO. 4815
STATE OF CALIFORNIA

James A. Jacobs
CA Registered Geologist #4815



OAKLAND WEST, CALIF.
N3745—W12215/7.5

1959
PHOTOREVISED 1980
DMA 1559 IV SE—SERIES V895

CROSBY & OVERTON, INC.
8430 AMELIA STREET • OAKLAND, CA 94621

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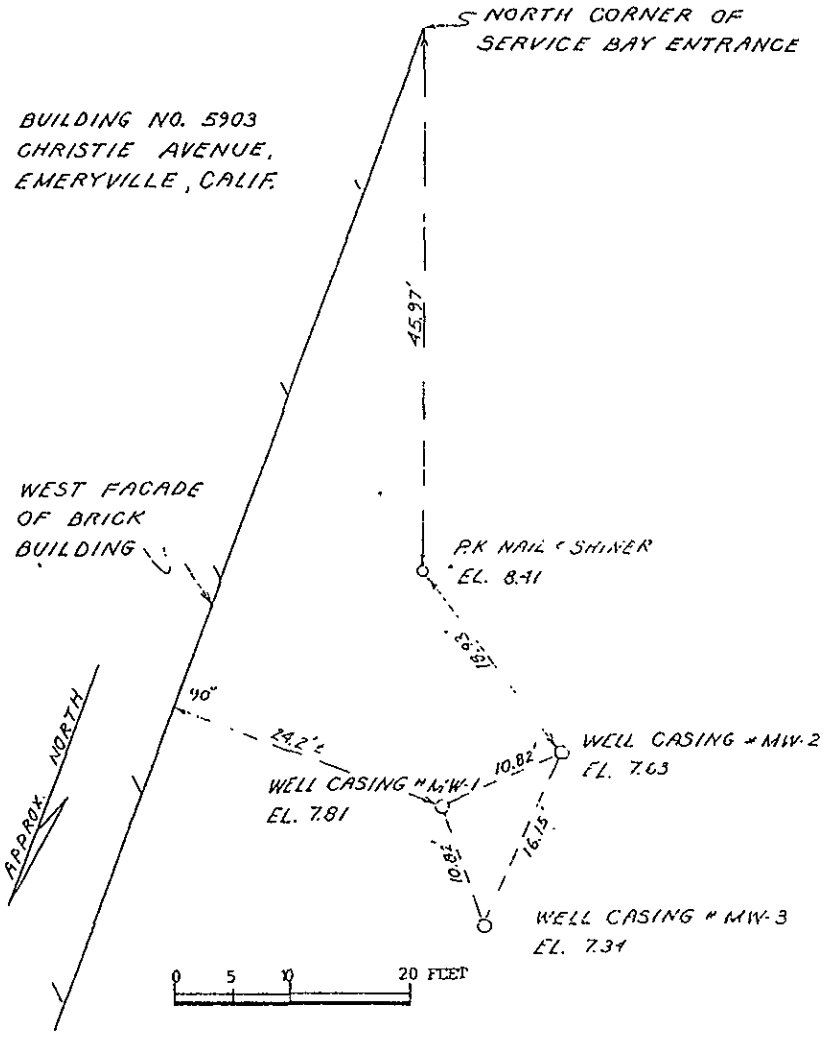
FIGURE	SITE MAP
JOB NUMBER:	8759-S
DATE:	6-21-91
DRAWN BY:	MHW
After USGS 15' quadrangle 1959.	



ELEVATIONS BASED ON NATIONAL GEODETIC VERTICAL DATUM (MEAN SEA LEVEL)

LICENSED LAND SURVEYOR
JEFFREY D. BLACK
5252
OF CALIFORNIA

SEPT. 29, 1989

LICENSE EXPIRES 12-31-91

PLAT OF SURVEY

LOCATION OF WELL CASINGS
5903 CHRISTIE AVENUE
EMERYVILLE CALIF.
SEPT. 1989

MORAN ENGINEERING
BERKELEY, CALIF.

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FIGURE	SITE PLAN
JOB NUMBER:	8759-S
DATE:	6-21-91
DRAWN BY:	MHW

Quanteq Laboratories
An Ecologics Company

Certificate of Analysis

DOHS CERTIFICATION NO. E772

AIHA ACCREDITATION NO. 332

CROSBY & OVERTON, INC.
8430 AMELIA STREET
OAKLAND, CA 94621
ATTN: DAVE SADOFF

CLIENT PROJ. ID: 9277-S
PURCHASE ORDER NO: 12643

REPORT DATE: 12/09/91

DATE SAMPLED: 11/22/91

DATE RECEIVED: 11/25/91

QUANTEQ JOB NO: 9111151

ANALYSIS OF: WATER SAMPLES

Sample Identification Client Id.	Lab No.	Extractable Hydrocarbons as Diesel (mg/L)	Extractable Hydrocarbons as Oil (mg/L)	Oil & Grease (mg/L)	Hydrocarbons (mg/L)
AQ-1	01D	1.6	ND	---	---
AQ-1	01E	---	---	0.5	ND
AQ-2	02D	1.2	ND	---	---
AQ-2	02E	---	---	1.0	ND
AQ-3	03D	1.3	ND	---	---
AQ-3	03E	---	---	ND	ND
Detection Limit		0.05	0.1	0.5	0.5
Method		3520 GCFID	3520 GCFID	5520C	5520F
Instrument:		C	C	IR	IR
Date Extracted:		12/02/91	12/02/91	12/04/91	12/04/91
Date Analyzed:		12/03/91	12/03/91	12/04/91	12/04/91

ND = Not Detected

Andrew Bradeen

Andrew Bradeen, Manager
Organic Laboratory

Results FAXed 12/06/91

CROSBY & OVERTON, INC.

CLIENT PROJ. ID: 9277-S
CLIENT ID: AQ-1
DATE SAMPLED: 11/22/91
DATE RECEIVED: 11/25/91
REPORT DATE: 12/09/91

QUANTEQ LAB NO: 9111151-01A
QUANTEQ JOB NO: 9111151

DATE ANALYZED: 11/25/91
INSTRUMENT: F

BTEX (WATER MATRIX)

METHOD: EPA 8020 (5030)

	CAS #	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
Benzene	71-43-2	ND	0.3
Toluene	108-88-3	ND	0.3
Ethylbenzene	100-41-4	ND	0.3
Xylenes, Total	1330-20-7	ND	1

ND = Not Detected

CROSBY & OVERTON, INC.

CLIENT PROJ. ID: 9277-S
CLIENT ID: AQ-2
DATE SAMPLED: 11/22/91
DATE RECEIVED: 11/25/91
REPORT DATE: 12/09/91

QUANTEQ LAB NO: 9111151-02A
QUANTEQ JOB NO: 9111151

DATE ANALYZED: 11/25/91
INSTRUMENT: F

BTEX (WATER MATRIX)

METHOD: EPA 8020 (5030)

	CAS #	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
Benzene	71-43-2	ND	0.3
Toluene	108-88-3	ND	0.3
Ethylbenzene	100-41-4	ND	0.3
Xylenes, Total	1330-20-7	ND	1

ND = Not Detected

CROSBY & OVERTON, INC.

CLIENT PROJ. ID: 9277-S
CLIENT ID: AQ-3
DATE SAMPLED: 11/22/91
DATE RECEIVED: 11/25/91
REPORT DATE: 12/09/91

QUANTEQ LAB NO: 9111151-03A
QUANTEQ JOB NO: 9111151

DATE ANALYZED: 11/25/91
INSTRUMENT: F

BTEX (WATER MATRIX)

METHOD: EPA 8020 (5030)

	CAS #	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
Benzene	71-43-2	ND	0.3
Toluene	108-88-3	ND	0.3
Ethylbenzene	100-41-4	ND	0.3
Xylenes, Total	1330-20-7	ND	1

ND = Not Detected

Quanteq Laboratories
An Ecologics Company

QUALITY CONTROL DATA

CROSBY & OVERTON, INC.

CLIENT PROJECT ID: 9277-S

QUANTEQ JOB NO: 9111151

DATE EXTRACTED: 12/04/91
DATE ANALYZED: 12/04/91
SAMPLE SPIKED: D.I. WATER

QUANTEQ JOB NO: 9111151
CLIENT PROJ. ID: 9277-S
INSTRUMENT: IR

IR DETERMINATION FOR OIL & GREASE/HYDROCARBONS
MATRIX SPIKE RECOVERY SUMMARY
WATER MATRIX

ANALYTE	MS Conc. (mg/L)	Sample Result (mg/L)	MS Result (mg/L)	MSD Result (mg/L)	Average Percent Recovery	RPD
Oil	6.71	ND	6.71	6.71	100.0	0.0

CURRENT QC LIMITS (Revised 08/14/91)

Analyte	Percent Recovery	RPD
Oil	(87-116)	4.7

MS = Matrix Spike
MSD = Matrix Spike Duplicate
RPD = Relative Percent Difference
ND = Not Detected

PROJ. NO.	PROJECT NAME	P.O. NO.
9277-S	RF & Associates, 5903 Christie	12643

SAMPLERS: Signature

Send report attention to: D. Sadoff

STA NO	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	TPHd + BTXE	5520 C,F						REMARKS
AQ-1	11/22 1991	14:10		X	MW-1	5	X	X						2 950mL 3 VOA
AQ-2	11/22 1991	14:20		X	MW-2	5	X	X						"
AQ-3	11/22 1991	14:30		X	MW-3	5	X	X						"

Relinquished by:Signature	Date/Time	Received by:Signature	Date/Time
	11/25/91 10:15	Kim Flores	11/25/91 10:15
Relinquished by:Signature	Date/Time	Received by:Signature	Date/Time
Relinquished by:Signature	Date/Time	Received by:Signature	Date/Time

REMARKS: Normal TAT
Fax preliminaries

Company Name Med-Tox & Associates
Address 3440 Vincent Rd
Pleasant Hill, CA

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