W. A. CRAIG, INC.
Environmental Consulting and Contracting
P. O. Box 448
Napa, California 94559-0448
Contractor and Hazardous Substances License #455752
Cal/OSHA Statewide Annual Excavation Permit #559351
(800) 522-7244
Berkeley (510) 525-2780 Napa (707) 252-3353
Fax: (707) 252-3385

GROUNDWATER MONITORING REPORT
MARCH 1996

DAMELE PROPERTY
4401 Market Street
Oakland, California

July 24, 1996
W.A. Craig, Inc.
Project No. 3365-D

12/4/96

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Fax: (707) 252-3385

July 24, 1996

Mr. and Mrs. Casimiro Damele
3750 Victor Avenue
Oakland, California 94619
510/ 531-0778

Attention: Mr. and Mrs. Damele **Project No. 3365-D**

Subject: **REPORT - Groundwater Monitoring**
March 1996
Damele Property
4401 Market Street
Oakland, California

Dear Mr. and Mrs. Damele:

W. A. Craig, Inc. (WAC), is pleased to submit this Groundwater Monitoring Report for sampling conducted on March 7, 1996 at the Damele Property site located at 4401 Market Street, Oakland, California. The site location is shown on **Figure 1**. This is the sixth quarter of groundwater monitoring since the installation of three groundwater monitoring wells at the site in October, 1994. This work was performed in accordance with the scope of work presented in WAC's Work Plan dated February 10, 1994.

Scope of Work

The scope of work conducted by WAC during this period included the following tasks:

- Measuring static water levels in three monitoring wells;
- Purging and sampling groundwater from the three monitoring wells at the site;
- Analyzing groundwater samples for total petroleum hydrocarbons as gasoline range organic compounds (TPH-g), and benzene, toluene, ethylbenzene, and xylenes (BTEX) and methyl tertiary butyl ether (MTBE); and
- Preparation of this report.

Groundwater Elevations

On March 7, 1996, WAC technical staff measured water levels in the monitoring wells using an electronic water level indicator. The monitoring wells were surveyed by a State-Licensed surveyor in November, 1994. The surveyed elevations and the field water level measurements were used to interpret the groundwater surface elevations at the site. The groundwater elevations indicate groundwater generally flows to the southwest. The average groundwater elevations were approximately 3.2-feet higher than previously measured during the December, 1995 sampling event. Groundwater elevations for this and previous monitoring events are presented in **Table 1.** The locations of the monitoring wells and a depiction of the site groundwater elevation contours are shown in **Figure 2.**

Groundwater Sampling

Three well casing volumes were purged from each monitoring well prior to collecting groundwater samples. Field parameters including temperature, pH, conductivity, and turbidity were intermittently monitored during purging of the wells. Groundwater samples were collected using disposable polyethylene bailers. The field groundwater sampling logs are included as **Attachment A.**

The samples were submitted under chain-of-custody control to McCampbell Analytical, Inc. (MAI), of Pacheco, California. The purged groundwater is currently stored on-site in labeled, DOT approved, 55-gallon, steel drums.

Analytical Results

The groundwater samples were analyzed by MAI for TPH-g using EPA Method 8015 (modified) and purgeable aromatic hydrocarbons (BTEX) andMTBE using EPA Method 8020. MAI is certified by the State of California to perform the required analyses. The results of the analyses are summarized on **Table 2.** Copies of the laboratory analytical report and chain-of-custody documents are in **Attachment B.**

Groundwater samples from monitoring well MW-1 were reported to contain 77 micrograms per liter (μg/l) TPH-g. BTEX and MTBE were not detected above the laboratory limit of detection in the groundwater samples from monitoring well MW-1. The following constituents were detected in the groundwater samples from monitoring well MW-2: TPH-g - 12,000 μg/l; benzene - 790μg/l; toluene - 170 μg/l; ethylbenzene - 440 μg/l; xylenes - 2,000 μg/l; and MTBE - 18 μg/l. TPH-g, BTEX, or MTBE were not detected above the laboratory limits of detection in the groundwater samples collected from monitoring well MW-3.

Conclusions

Groundwater elevations were approximately 3.2-feet higher than previously measured during the December, 1995 sampling event. **The groundwater flow in the general site area is consistently toward the southwest.**

Analytical results for monitoring well MW-1 have remained below the detectable reporting limits for BTEX for two sampling periods but concentrations of TPH-g have reappeared. MW-2 results have continued to increase suggesting the source of contamination has not been entirely removed. MW-3 concentrations continue to be below the laboratory limits of detection.

Recommendations

On the basis of the review of the information from six quarterly groundwater monitoring events and the results of previous investigations, WAC recommends the following:

- **Install additional down gradient monitoring wells to assess the vertical and horizontal extent of the remaining plume of contamination;**
- Review inventory and delivery records to check if the gasoline additive MTBE was included in the products delivered to the site; and
- Continue the existing groundwater monitoring program;

Professional Certification

This report has been prepared by the staff of W. A. Craig, Inc., under the professional supervision of the persons whose seals and signatures appear hereon. No warranty, either expressed or implied, is made as to the professional advice presented herein. The analysis, conclusions and recommendations contained in this report are based upon site conditions as they existed at the time of quarterly monitoring and sampling and they are subject to change.

The conclusions presented in this report are professional opinions based solely upon visual observations of the site and vicinity, and interpretation of available information as described in this report. W.A. Craig, Inc., recognizes that the limited scope of services performed in execution of this scope of work may not be appropriate to satisfy the needs, or requirements of other state agencies, or of other users. Any use or reuse of this document or its findings, conclusions or recommendations presented herein is at the sole risk of said user. There is no other warranty, either expressed or implied.

Closing Statement

The next quarterly sampling event is scheduled for June, 1996. We appreciate this opportunity to be of service to you on this groundwater monitoring project. Should you have any questions regarding this report please give us a call at (707) 252-3353.

Sincerely,

W.A. Craig, Inc.,

REGISTERED PROFESSIONAL GEOLOGIST
GEOFFERY A. FIEDLER
No. 6340
Exp. 9/30/97
STATE OF CALIFORNIA

REGISTERED ENVIRONMENTAL ASSESSOR
WILLIAM A. CRAIG, II
No. 01414
Expires 6-97
STATE OF CALIFORNIA

G. A. Fiedler

Geoffery A. Fiedler, R.G.
Principal Geologist

William A. Craig, II, R.E.A. 01414
President

WAC/ GAF:snk

Attachments: Table 1 - Groundwater Elevations
Table 2 - Groundwater Sample Analytical Results
Figure 1 - Site Location Map
Figure 2 - Groundwater Contour Map
A - Groundwater Sampling Logs
B - Laboratory Analytical Reports

cc:Ms. Susan Hugo, Alameda County Department of Environmental Management

A:\DAMELE6Q\DAMELE.6QT

TABLE 1

Groundwater Elevations
4401 Market Street, Oakland, California

Well Number	Date	Well Elevation	Depth to Water	Elevation
MW-1	02/14/95	71.12	12.65	58.47
	06/07/95	71.12	14.62	56.50
	08/29/95	71.12	15.04	56.08
	12/08/95	71.12	15.94	55.18
	03/07/96	**71.12**	**12.36**	**58.76**
MW-2	02/14/95	70.62	12.12	58.50
	06/07/95	70.62	14.38	56.24
	08/29/95	70.62	14.40	56.22
	12/08/95	70.62	15.22	55.40
	03/07/96	**70.62**	**12.04**	**58.58**
MW-3	02/14/95	71.79	13.45	58.34
	06/07/95	71.79	14.64	57.15
	08/29/95	71.79	14.94	56.85
	12/08/95	71.79	15.82	55.97
	03/07/96	**71.79**	**12.89**	**58.90**

Note: Groundwater elevations are referenced to Mean Sea Level.

TABLE 2

Groundwater Sample Analytical Results
4401 Market Street,
Oakland, California
(reported in µg/l)

Well Number	Sample Date	MTBE	TPH-g	Benzene	Toluene	Ethylbenzene	Xylenes
MW-1	11/08/94	NT	54	ND	ND	ND	1.2
	02/14/95	NT	71	ND	ND	ND	0.97
	06/07/95	NT	540	0.60	ND	1.7	1.3
	08/29/95	NT	440	ND	ND	1.3	1.1
	12/08/95	NT	ND	ND	ND	ND	ND
	03/07/96	**44**	**77**	**ND**	**ND**	**ND**	**ND**
MW-2	11/08/94	NT	20,000	1,400	960	980	4,600
	02/14/95	NT	8,600	380	210	410	2,000
	06/07/95	NT	6,200	500	78	270	1,200
	08/29/95	NT	4,100	330	61	210	980
	12/08/95	NT	9,400	360	190	440	2,000
	03/07/96	**18**	**12,000**	**790**	**170**	**440**	**2,000**
MW-3	11/08/94	NT	ND	0.71	0.84	1.2	5.8
	02/14/95	NT	ND	ND	ND	ND	ND
	06/07/95	NT	ND	ND	ND	ND	1.6
	08/29/95	NT	ND	ND	ND	ND	ND
	12/08/95	NT	ND	ND	ND	ND	ND
	03/07/96	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**
California EPA MCLs		40 *	None Listed	1.0	150	700	1750

MCL = Maximum Contaminant Level, Drinking Water Standards and Health Advisories Table, EPA Document dated August, 1995.
ND = Not detected above the laboratory limit of detection.
NT = Not Tested
µg/l= micrograms per liter
* California water quality objective is 40 µg/l for MTBE

Mag 14.00
Fri Sep 13 12:46 1996

Scale 1:31,250 (at center)
2000 Feet

NORTH

Project No. 3365.4

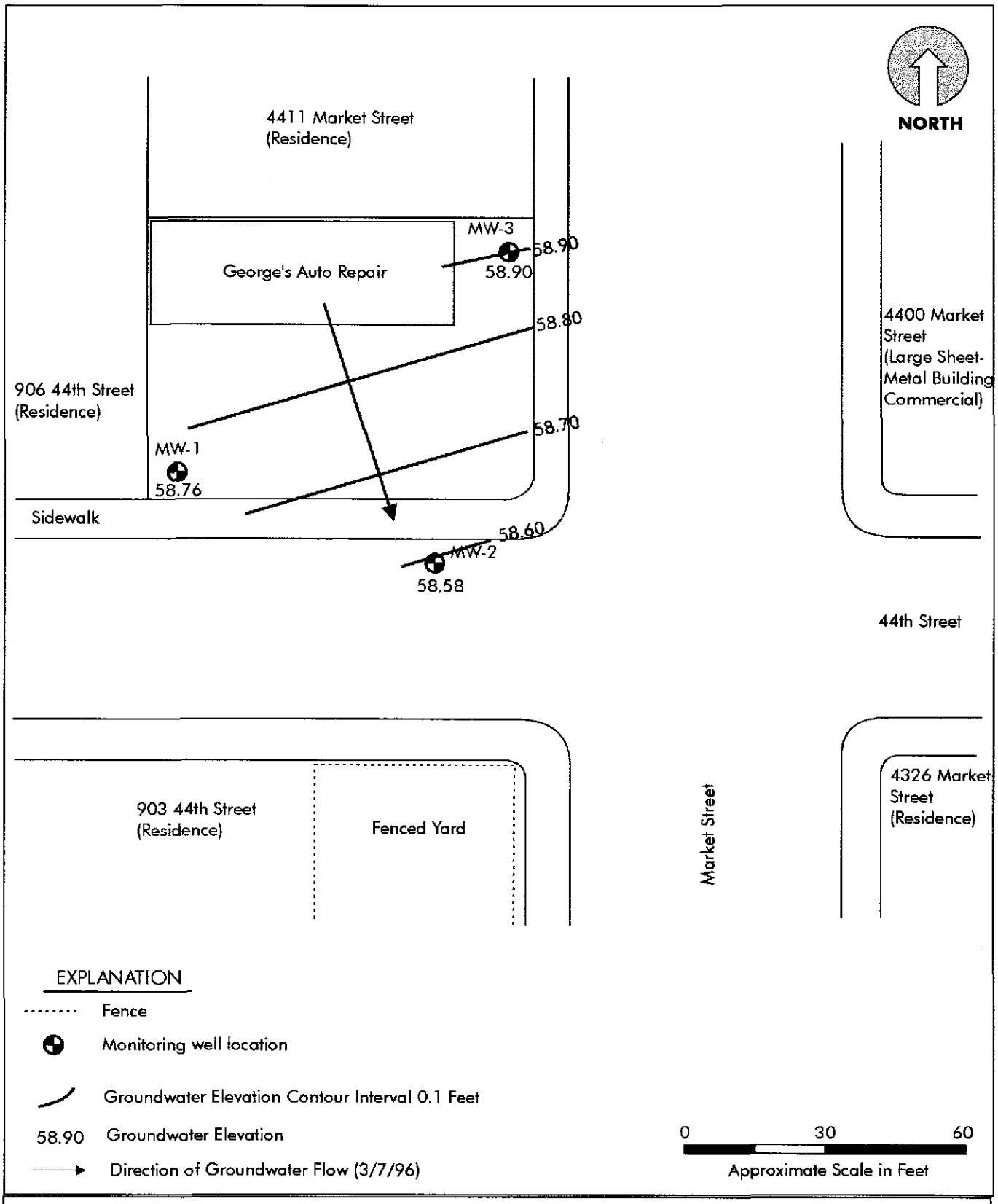
July 1996

SITE LOCATION MAP
Damele Site
4401 Market Street
Oakland, CA

Figure 1

Checked by:

W. A. CRAIG, INC.
Environmental Contracting and Consulting
P. O. Box 448
Napa, California 94559-0448
Cal License #455752
(707) 252-3353
FAX (707) 252-3385



Project No. 3365-D

July 1996

GROUNDWATER ELEVATION CONTOURS

Damele Property
4401 Market Street
Oakland, CA

Figure 2

Checked by:

W. A. CRAIG, INC.
Environmental Contracting and Consulting
P. O. Box 448
Napa, California 94559-0448
Cal License #455752
(707) 252-3353
FAX (707) 252-3385

ATTACHMENT A

GROUNDWATER SAMPLING LOGS

GROUNDWATER SAMPLING
WELL DEVELOPMENT LOG

WELL NUMBER: MW-1 FIELD PERSON(S): Russell Gentry

DATE STARTED: 6/19/96

TIME STARTED: JOB NUMBER: 3365

DATE COMPLETED: JOB NAME: Daniels

TIME COMPLETED:

DEPTH TO BOTTOM OR CASING LENGTH						WELL INSIDE DIAMETER		
TOTAL DEPTH TO BOTTOM	24.58'	- DEPTH TO WATER =	13.70	= Δ(FT)	10.88'	VOLUME FACTOR V.F.= GAL/FT	1"=0.041	4"=0.653
							1-1/2"=0.092	6"=1.469
							2"=0.163	8"=2.611
Δ H (FT)	10.88'	X (V.F.) =	0.163	= WELL CASING VOLUME (GAL)	1.77		3"=0.367	12"=5.875
DATE(S) PURGED:	—					WELL DEWATERED	[ ] YES	[X] NO
PURGE METHOD:	Disp Hand Bailer					DATE SAMPLED:	6/19/96	
INITIAL DEPTH TO WATER:	—					TIME SAMPLED:	1405	
TOTAL VOLUME REMOVED (GAL):	5.50					SAMPLING METHOD:	Bailer	
CASING VOLUMES REMOVED:	3+					WEATHER CONDITIONS:	Sun, Hot, breeze	
PURGE RATE (GPM):	—					PURGES/SAMPLED BY:	RG	

DEPTH TO WATER AFTER RECOVERY 14.96 (FT) = 80+ % RECOVERED PRIOR TO SAMPLING

FIELD PARAMETERS;

TIME (24 HR CLOCK)	VOLUME REMOVED (GAL)	TEMPERATURE	X100 ELECTRICAL CONDUCTIVITY	PH	TURBIDITY (NTU)
1351	1.75	71.7	4.79	6.87	Clear
1356	~~3.75~~ 3.75	69.4	~~6~~ 4.68	~~7.01~~ 6.78	Slight
1400	5.50	68.4	4.62	6.96	Slight

COMMENTS: Slight odor, no sheen detected.
Medium odor as ~~bail~~ purging progressed.

GROUNDWATER SAMPLING
WELL DEVELOPMENT LOG

WELL NUMBER: MW-2 FIELD PERSON(S): Russell Gentry

DATE STARTED: 6/19/96

TIME STARTED: JOB NUMBER: 3365

DATE COMPLETED: JOB NAME: Damele

TIME COMPLETED:

DEPTH TO BOTTOM OR CASING LENGTH						WELL INSIDE DIAMETER		
TOTAL DEPTH TO BOTTOM	24.54'	DEPTH TO WATER	13.38'	= Δ(FT)	11.16'	VOLUME FACTOR V.F.= GAL/FT	1"=0.041	4"=0.653
							1-1/2"=0.092	6"=1.469
							2"=0.163	8"=2.611
							3"=0.367	12"=5.875
Δ H (FT)	11.16'	X (V.F.)	0.163	= WELL CASING VOLUME (GAL)	1.82			
DATE(S) PURGED:	—					WELL DEWATERED	[ ] YES	[X] NO
PURGE METHOD:	Disp. Hand Bailer					DATE SAMPLED:	6/19/96	
INITIAL DEPTH TO WATER:	—					TIME SAMPLED:	1420	
TOTAL VOLUME REMOVED (GAL):	5.5					SAMPLING METHOD:	Bailer	
CASING VOLUMES REMOVED:	3+					WEATHER CONDITIONS:	Sun, warm, breeze	
PURGE RATE (GPM):	—					PURGES/SAMPLED BY:	RS	

DEPTH TO WATER AFTER RECOVERY 13.60 (FT) = 80+ % RECOVERED PRIOR TO SAMPLING

FIELD PARAMETERS:

TIME (24 HR CLOCK)	VOLUME REMOVED (GAL)	TEMPERATURE	X100 ELECTRICAL CONDUCTIVITY	PH	TURBIDITY (NTU)
1247	2.00	72.8	7.60	6.91	Medium
1251	3.75	72.2	7.51	6.66	Slight
1257	5.50	72.1	7.43	6.64	Clear

COMMENTS: Medium odor, no sheen detected.

GROUNDWATER SAMPLING
WELL DEVELOPMENT LOG

WELL NUMBER: MW-3 FIELD PERSON(S): Russell Gentry

DATE STARTED: 6/19/96

TIME STARTED: JOB NUMBER: 3365

DATE COMPLETED: JOB NAME: Damele

TIME COMPLETED:

DEPTH TO BOTTOM OR CASING LENGTH							WELL INSIDE DIAMETER		
TOTAL DEPTH TO BOTTOM	24.62'	DEPTH - TO WATER =	13.94'	= Δ(FT)	10.68'		VOLUME FACTOR V.F.= GAL/FT	1"=0.041	4"=0.653
								1-1/2"=0.092	6"=1.469
								2"=0.163	8"=2.611
								3"=0.367	12"=5.875
ΔH (FT)	10.68'	X (V.F.) =	0.163	= WELL CASING VOLUME (GAL)	1.74				
DATE(S) PURGED:	—						WELL DEWATERED	[ ] YES	[✓] NO
PURGE METHOD:	Disp. Hand Bailer						DATE SAMPLED:	6/19/96	
INITIAL DEPTH TO WATER:	—						TIME SAMPLED:	1330	
TOTAL VOLUME REMOVED (GAL):	5.25						SAMPLING METHOD:	Bailer	
CASING VOLUMES REMOVED:	3+						WEATHER CONDITIONS:	Sun, warm, breeze	
PURGE RATE (GPM):	—						PURGES/SAMPLED BY:	RJ	

DEPTH TO WATER AFTER RECOVERY 16.00' (FT) = 80 % RECOVERED PRIOR TO SAMPLING

FIELD PARAMETERS:

TIME (24 HR CLOCK)	VOLUME REMOVED (GAL)	TEMPERATURE	X100 ELECTRICAL CONDUCTIVITY	PH	TURBIDITY (NTU)
13.18	1.75	70.2	3.87	7.23	Clear
1321	3.50	67.9	3.69	7.26	Slight
1326	5.25	68.1	3.60	7.18	Slight

COMMENTS: No sheen or odor detected.

ATTACHMENT B

LABORATORY ANALYTICAL REPORTS

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

W.A. Craig, Inc. P.O. Box 448 Napa, CA 94559-0448	Client Project ID: # 3365-D; Danele	Date Sampled: 03/07/96
		Date Received: 03/07/96
	Client Contact: Bill Craig	Date Extracted: 03/08-03/09/96
	Client P.O:	Date Analyzed: 03/08-03/09/96

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with MTBE & BTEX*

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g)+	MTBE	Benzene	Toluene	Ethylben-zene	Xylenes	% Rec. Surrogate
62230	MW-3	W	ND	ND	ND	ND	ND	ND	101
62231	MW-1	W	77,b	44	ND	ND	ND	ND	99
62232	MW-2	W	12,000,a	18	790	170	440	2000	111#
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		W	50 ug/L	5.0	0.5	0.5	0.5	0.5	
		S	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

* water and vapor samples are reported in ug/L, soil samples in mg/kg, and all TCLP extracts in mg/L

cluttered chromatogram; sample peak coelutes with surrogate peak

+ The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~ 5 vol. % sediment; j) no recognizable pattern.

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

QC REPORT FOR HYDROCARBON ANALYSES

Date: 03/08/96-03/09/96 Matrix: Water

Analyte	Concentration (ug/L) Sample (#62031)	MS	MSD	Amount Spiked	% Recovery MS	MSD	RPD
TPH (gas)	0.0	97.5	95.7	100.0	97.5	95.7	1.9
Benzene	0.0	8.8	8.7	10.0	88.0	87.0	1.1
Toluene	0.0	9.1	9.2	10.0	91.0	92.0	1.1
Ethyl Benzene	0.0	9.3	9.3	10.0	93.0	93.0	0.0
Xylenes	0.0	27.5	27.9	30.0	91.7	93.0	1.4
TPH (diesel)	0	157	157	150	104	105	0.1
TRPH (oil & grease)	0	19500	21200	23700	82	89	8.4

% Rec. = (MS - Sample) / amount spiked x 100

RPD = (MS - MSD) / (MS + MSD) x 2 x 100

5971AWACX589

W. A. CRAIG, INC.

CHAIN-OF-CUSTODY RECORD

Ck # 8247

PROJECT NO.	PROJECT NAME
3365-D	Daniele
PURCHASE ORDER NO.	SIGNATURE OF SAMPLER
	Russell Grant

Paid

	DATE 1996	TIME	W. A. CRAIG, INC.'S SAMPLE IDENTIFICATION	MATRIX: Soil, Water, Air, Sludge, Other	ANALYSIS: TPHgasoline (8015)	BTEX (602/8020)	TPHdiesel (8015)	TPHg & BTEX	MTBE				Preserved? ICE HCl	REMARKS	LABORATORY I. D. NUMBER
+	3-7	12:35	MW-3 (3 Vials)	W				✓	✓				✓	(MTBE Vials Non-preserved)	62230
+	3-7	13:34	MW-1	W				✓	✓				✓		62231
(+)	3-7	13:40	MW-2	W				✓	✓				✓		62232

MWS | OSG | METALS | OTHER

ICE/T ✓ PRESERVATIVE ✓
GOOD CONDITION ✓ APPROPRIATE
HEAD SPACE ABSENT ✓ CONTAINERS ✓

RELINQUISHED BY (Signature):	DATE/TIME	RECEIVED BY (Signature):
Russell Grant	3-7-96 15:30	Nicole Ricca
RELINQUISHED BY (Signature):	DATE/TIME	RECEIVED BY (Signature):
RELINQUISHED BY (Signature):	DATE/TIME	RECEIVED BY (Signature):

LABORATORY: McCampbell Analytical

TURNAROUND TIME: 5-day

PLEASE SEND RESULTS TO:

W. A. CRAIG, INC.
P.O. BOX 448
NAPA, CA 94559-0448
(707) 252-3353

ATTN:

TRANSMITTAL

[redacted]

DATE: September 13, 1996 **PROJECT**: 3365.4

ATTENTION: Mr. Casimero Damele

COMPANY: 3750 Victor Avenue
Oakland, California 94619

REGARDING: Damele Property

ENCLOSURE: REPORT - Quarterly Groundwater Monitoring
March 1996
Damele Propery
4401 Market Street
Oakland, California

COMMENTS:

Enclosed you will find a final report of the Quarterly Groundwater Monitoring - March 1996 performed at 4401 Market Street in Oakland, California.

Please note a final copy of this report has been submitted, as per your authorization, to the Alameda County Department of Environmental Health.

SENT BY: Geoffery Fiedler, R.G.

✓ cc: Alameda County Department of Environmental Health