

QQ APR 14 PM 4:38

6940 Tremont Road Dixon, California 95620

Contractor and Hazardous Substances License #455752

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Fax: (707) 693-2922

April 11, 2000

Job No. 3890 Claim # 14885

Mr. Scott Seary Alameda County Department of Health Services 1131 Harbor Bay Parkway Alameda, California 94502

Subject:

Interim Remedial Action Report

111 East 14th Street San Leandro, California

Dear Mr. Seary:

Enclosed is the Interim Remedial Action Report for 111 East 14th Street in San Leandro, California. I am sending a copy of the report to Mr. Mashhoon and to Karl Busche of the City of San Leandro, Environmental Services Division. Please call me with any questions or comments.

Sincerely,

W. A. Craig, Inc.

Blu Atte

Brian Milton

Associate Engineer

cc: Mr. M. Mashhoon



W. A. CRAIG, INC.

Environmental Contracting and Consulting

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Dixon, California 95620
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INTERIM REMEDIAL ACTION REPORT

Project site: 111 East 14th Street San Leandro, California

Prepared for:
Mr. Mohammed Mashhoon
Mash Petroleum, Inc.
1721 Jefferson Street
Oakland, California 94612

Submitted to:
Mr. Karl Busche
Hazardous Materials Inspector
City of San Leandro
Environmental Services Division
835 East 14th Street
San Leandro, California 94577

W. A. CRAIG, INC. PROJECT # 3890

March 31, 2000

PROFESSIONAL CERTIFICATION

Interim Remedial Action Report

Mash Petroleum, Inc. 111 East 14th Street San Leandro, California

W.A. Craig, Inc., Project No. 3890 March 31, 2000

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 this report and they are subject to change.

Recommendations and 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 report 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 the user.

No. C054036

Exp. 1-31-03

CIVIL

IMPEOF CALIFORNIA

IMPEOR CALIFORNIA

Tim D. Cook, P.E. Principal Engineer

William A. Craig, IJ, R.E

Principal

1.0 INTRODUCTION

W. A. Craig, Inc. (WAC) is pleased to submit this Interim Remedial Action Report on behalf of Mash Petroleum, Inc. 111 East 14th Street, (site), in San Leandro, California (Figure 1). The investigation was performed in accordance with the scope of services described in the Interim Remedial Action Plan (IRAP) dated November 9, 1999. The IRAP was approved by the Environmental Services Division of the City of San Leandro.

1.1 Site Location and Description

The site is located at 111 East 14th Street, in San Leandro, California (Figure 1). The site topography is flat. Regionally, the topography slopes slightly to the west toward San Francisco Bay. Site soils are primarily sandy silts and clays. Site structures, and other features are indicated on Figure 2.

1.2 Background

On October 21, 1999 three 10,000-gallon underground storage tanks (USTs) for gasoline were excavated and removed fine the site. Following UST removal, six soil samples (samples T1 through T6) were collected from the excavation bottom. Total petroleum hydrocarbons as gasoline (TPF) was detected in all six samples in concentrations ranging from 2.8 milligrams per kilogram (mg/kg) to 11,000 mg/kg. Benzene concentrations ranged from 0.052 mg/kg to 2.8 mg/kg. A summary of the analytical results for TPH-g, benzene, toluene, ethylbenzene, and xylene (BTEX) is presented in Table 1. The locations of the samples taken at the time the tanks were removed are shown on Figure 2.

Soil samples (T1 through T6), taken at the time the USTs were removed, were analyzed for fuel oxygenates using EPA method 8260, modified. Methyl tertiary-butyl ether (MtBE) concentrations ranged from 640 micrograms per kilogram (ug/kg) to 78,000 ug/kg. A summary of the results for fuel oxygenates included in Table 2.

On October 25, 1999 one sample was obtained from each of the three dispenser island areas (samples D1 through D3) at approximately 3 feet bgs. A summary of the results for the dispenser samples is included in Table 1. Sample locations are included on Figure 2. TPH-g and BTEX were not detected in any of the soil samples taken from the dispenser islands.

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2.0 SCOPE OF WORK

Interim remedial activities conducted by WAC during this period from October 1999 to March 2000 include the following tasks:

- Excavating, loading, hauling, profiling and disposing of approximately 1,691 tons of hydrocarbon contaminated soil;
- Collecting representative soil samples to verify the cleanup and characterize the waste;
- Analysis of soil samples for TPH-g using EPA Method 8015 (modified), benzene, toluene, ethylbenzene and xylenes (BTEX) by EPA method 8020 and fuel oxygenates by EPA method 8260;
- Introduction of 350 pounds of Oxygen Releasing Compound (ORC) into the bottom of the excavation; and
- Preparation of this report.

3.0 SOIL EXCAVATION AND SAMPLING

3.1 Soil Excavation

Between December 28, 1999 and March 6, 2000 WAC excavated approximately 1,691 tons of contaminated soil from the former UST Pit. Soil was excavated to a depth of 29 feet below grade surface (bgs) at the southern end of the area and to 16 feet bgs in the northern end of the excavation area (Figure 3). Soil was excavated in areas with grossly contaminated soils as evidenced by a greenish gray colorizing and strong hydrocarbon odor. The pit was limited by a canopy footing on the east; by the existing building on the south; and by Farrelly Avenue on the north; and by the property line to the west.

Contaminated soil was disposed of as non-hazardous solid waste at the B&J Landfill in Vacaville, California. A summary of the amounts disposed, date of disposal, and the soil tag numbers of each truckload is included in **Appendix A**. The sample results for stockpiled soils are included in **Appendix B**.

3.2 Soil Sampling

Twelve soil samples were collected for laboratory analysis from native soil taken from the bettom and sidewall of the excavation. Samples were collected in 2-inch diameter brass tubes. The ends of the brass tubes were covered with Teflon film, capped with polyethylene lids, and placed in sealed polyethylene bags.

All soil samples for laboratory analysis were immediately placed on ice, inside a portable insulated container, and stored under refrigeration for delivery. The samples were submitted under chain-of-custody protocol to McCampbell Analytical, Inc. (MAI), of Pacheco, California. MAI is certified by the State of California to perform the required analyses.

3.3 Soil Sample Analytical Results

Laboratory analysis reported TPH-g concentrations ranging from 1.2 mg/kg to 6,800 mg/kg in excavation bottom samples. The concentration of MtBE (EPA method 8260) in soil samples ranged from 640 micrograms per kilogram (ug/mg) to 41,000 ug/kg. A summary of the soil sample results for TPH-g, BTEX and MtBE (EPA method 8015/8020) are presented in Table 3. The location code of each sample in Table 3 is shown on Figure 3. A summary of the soil sample results for fuel oxygenates by EPA method 8260 is presented in Table 4. Copies of the laboratory analytical reports and chain-of-custody documentation are included in Appendix B.

4.0 ORC INTRODUCTION

On February 10 and February 15, 2000, 350 pounds of a magnesium peroxide compound was introduced in a slurry form to the excavation bottom. The dry compound was slurried with clean water then spread in the excavation bottom. The slurried compound was mixed with clean fill material and clean soil from the excavation sidewall. The ORC was introduced and mixed from 24 to 28 feet bgs. The purpose of the ORC is to stimulate in-situ bio-remediation by raising the dissolved oxygen concentration in soil and groundwater at the site.

5.0 CONCLUSIONS AND RECOMMENDATIONS

Although residual concentrations of gasoline hydrocarbons remain in site soil, it is not feasible to excavate all contaminated soil. The foundations of the canopy on the eastern edge of the excavation and the building on the southern edge of the excavation could be undermined by further excavation. Farrelly Avenue could be damaged by further excavation to the north. The risk involved in further excavation is not warranted.

A Sensitive Receptor Survey (SRS) is recommended to identify and evaluate the potential for contamination of nearby surface and groundwater aquifers in the area. Known surface waters in the area include San Leandro Creek, an anadromous fish-bearing creek located approximately 2,500 feet south of the site.

WAC recommends preparation and implementation of a workplan to delineate and monitor the extent of soil and groundwater contamination and to characterize water-bearing zones in the site vicinity.

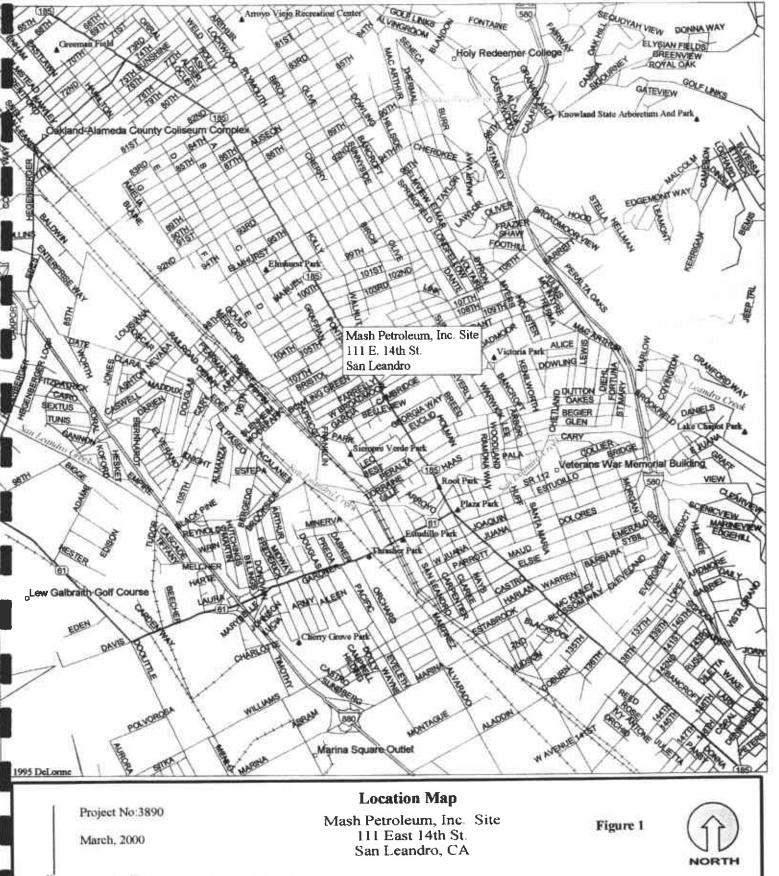
Due to the levels of MtBE in site soils and the proximity to San Leandro Creek it is recommended that future actions be implemented quickly to limit the spread of the contaminant plume, to utilize more efficient treatment methods, and to reduce overall project costs.

Attachments: Figure 1 Site Location Map

Figure 2 Tank Sampling Map Figure 3 Excavation Sampling Map

Appendix A -Summary of Soil Disposal Information

Appendix B -Laboratory Analytical Reports



W. A. Craig, Inc.

Environmental Contracting and Consulting

6940 Tremont Road Dixon, California 95620 Cal License #455752

(707) 693-2929 FAX (707) 693-2922 Table 1. Analytical Results for TPH-g, BTEX and Lead in Soil Samples
111 E. 14th St., San Leandro

Sample Site	Matrix	TPH-g	Benzene	Toluene	Ethyl-benzene	Xylenes	Lead
T 1	Soil	1,400	1.6	50	35	220	9.5
T2	Soil	3.7	0.052	0.10	0.076	0.20	8.0
T3	Soil	18	0.49	0.20	0.79	4.1	8.1
T4	Soil	2.8	0.24	0.43	0.008	0.11	5.0
T5	Soil	1,400	2.8	49	34	230	9.8
T6	Soil	12	0.74	0.060	0.65	2.5	8.9
D1	Soil	ND	ND	ND	ND	ND	90
D2	Soil	ND	ND	ND	ND	ND	15
D3	Soil	ND	ND	ND	ND	ND	14
SP1-SP4	Soil	2.4	ND	0.029	ND	0.061	13
SP5-SP8	Soil	260	ND<0.05	3.0	3.5	24	27
Detection limits	Soil	1.0	0.005	0.005	0.005	0.005	5.0

ND-Not Detectable at laboratory limits;

soil samples in mg/kg,

NA - Not Applicable

TPH-g and BTEX by EPA Method 8015 modified, Lead by EPA method 6010/200.7, 239.2

Table 2. Analytical Results for Fuel Oxygenates in Soil Samples from 111 E. 14th St. San Leandro.

Sample Site	Matrix	Di- isopropyl Ether (DIPE)	Ethyl tert- Butyl Ether (ETBE)	Methyl tert- Butyl Ether (MTBE)	Tert-Amyl Ether (TAME)	Tert-Butanol
T1	Soil	ND<1,700	ND<1,700	56,000	ND<1700	ND<8,500
T2	Soil	ND<200	ND<200	5,400	ND<200	ND<1,000
Т3	Soil	ND<710	ND<710	26,000	ND<710	ND<3,600
T4	Soil	Nd<20	Nd<20	640	Nd<20	ND<100
T5	Soil	ND<250	ND<250	78,000	ND<250	ND<13,000
T6	Soil	ND<2,000	ND<2,000	58,000	ND<2,000	NDND<10,000
SP1-SP4	Soil	ND<67	ND	40	ND	ND
SP5-SP8	Soil	ND	ND<67	760	ND<67	2,300
Detection limits	Soil	5.0	5.0	5.0	5.0	5.0

x 1 -1

ND-Not Detectable at laboratory limits;

soil samples in ug/kg,

EPA Method 8260 modified

initial

Table 3. Analytical Results for Gas, BTEX and Lead in Soil Samples from

			11	1 E. 14	Dt. Dall	Leanuro.			
Sample Site	Date	Depth (feet)	Map ID	TPH-g	MtBE	Benzene	Toluene	Ethyl- benzene	Xylene
SW1	1/5/00	16	Α	ND	ND	ND	ND	ND	ND
PB-1	1/5/00	18	В	1,300	33	ND<0.40	6.1	13	88
PB-2	1/5/00	20	C	890	11	ND<0.030	1.6	1.7	57
PB-3	1/11/00	29	D	120	3.4	ND<0.05	0.77	0.69	3.8
PB-4	1/11/00	29	Е	4,700	7.7	6.5	110	93	580
PB-1	2/1/00	26	F	1,100	4.5	1.1	3.8	15	84
PB-2	2/1/00	26	G	2,900	16	2.0	34	27	230
PB-7	2/8/00	25	H	640	46	1.8	16	9.3	64
PB-8	2/8/00	26	I	5,200	ND<5.0	9.5	96	81	480
PB-9	2/8/00	25	J	6,800	ND<9.0	16	220	110	680
PB-7	2/11/00	16	K	9.1	18	0.027	ND	0.051	0.26
PB-8	2/11/00	18	L	1.2	0.94	0.024	ND	ND	0.008
Detection limits			1.0	0.05	0.005	0.005	0.005	0.005	0.005

ND-Not Detectable at laboratory limits; NA-Not Analyzed

samples in mg/kg,

TPH-g and BTEX by EPA Methods 5030, 8015 modified, and 8020 or 602, California RWQCB (SF Bay Region) method GCFID(5030)

Lead by EPA method 6010/200.7, 239.2

Table 4. Analytical Results for Fuel Oxygenates in Soil Samples from 111 E. 14th St. San Leandro.

Sample Site	Dept h (feet)	Map ID	Di- isopropyl Ether	Ethyl tert-Butyl Ether (ETBE)	Matigate and Mutyl Ether (MTBE)	Tert-Amyl Ether (TAME)	Tert- Butanol
PB-3	29	Ď	ND<100	ND<100	640	ND<100	ND<1100
PB-4	29	E	ND<250	ND<250	7.770	ND<250	ND<1300
PB-1	26	F	ND<100	ND<100	1,500	ND<100	ND<500
PB-2	26	G	ND<350	ND<350	12000	ND<350	5900
PB-7	25	H	ND<1000	ND<1000	£ \$1,000	ND<1000	ND<5000
PB-8	26	I	ND<250	ND<250	3,200	ND<250	ND<1250
PB -9	25	J	ND<2500	ND<2500	8,700	ND<2500	ND<12500
PB -7	16	K	ND<1000	ND<1000	13,000	ND<1000	ND<5000
PB-8	18	L	ND<50	ND<50	840	ND<50	ND<250

5.0

5.0

5.0

5.0

ND-Not Detectable at laboratory limits; NA-Not Analyzed

5.0

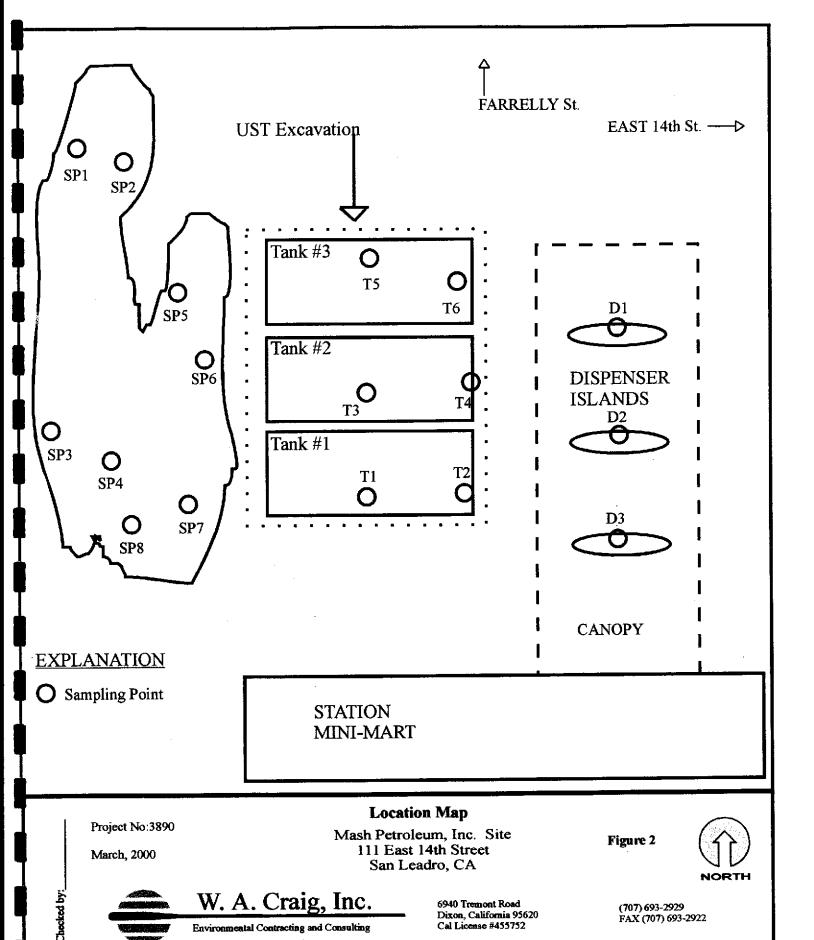
soil samples in ug/kg

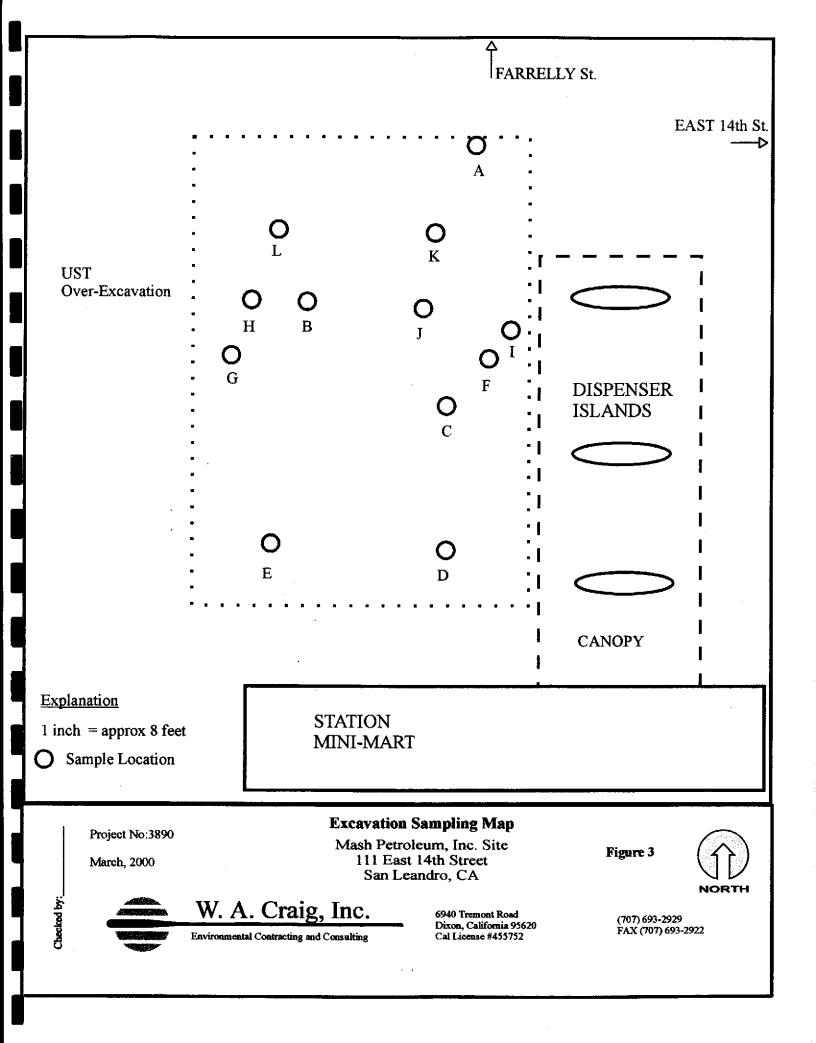
Detection

limits

EPA Method 8260 modified

final





Appendix A

Summary of Soil Disposal Information

Date	Landfill Acceptance #	Title	Tons
21-Dec	57154	Hue B&J Class II Landfill	19.40
21-Dec	57158	B&J Class II Landfill	10.64
22-Dec	57211	B&J Class II Landfill	23.39
23-Dec	57265	B&J Class II Landfill	23.39
23-Dec	57291	B&J Class II Landfill	19.78
23-Dec	57345	B&J Class II Landfill	18.78
28-Dec	57670	B&J Class II Landfill	23.75
29-Dec	57735	B&J Class II Landfill	19.20
29-Dec 29-Dec	57779	B&J Class II Landfill	22.31
29-Dec	57780 57849	B&J Class II Landfill B&J Class II Landfill	19.47 15.64
30-Dec	57862	B&J Class II Landfill	23.92
3-Jan	58252	B&J Class II Landfill	16.54
4-Jan	58357	B&J Class II Landfill	17.88
4-Jan	58444	B&J Class II Landfill	17.58
5-Jan	58523	B&J Class II Landfill	19.04
5-Jan	58584	B&J Class II Landfill B&J Class II Landfill	21.71
5-Jan 6-Jan	58593 58649	B&J Class II Landfill	18.13 21.32
6-Jan	58740	B&J Class II Landfill	18.61
7-Jan	58763	B&J Class II Landfill	22.98
7-Jan	58832	B&J Class II Landfill	22.74
10-Jan	59044	B&J Class II Landfill	20.31
10-Jan	59087	B&J Class II Landfill	10.80
11-Jan	59102	B&J Class II Landfill	20.89
12-Jan	59178	B&J Class II Landfill	17.62
12-Jan 13-Jan	59173 59261	B&J Class II Landfill B&J Class II Landfill	9.58 18.27
!4-Jan	59333	B&J Class II Landfill	21.06
i4-Jan	59363	B&J Class II Landfill	18.60
L4-Jan	59421	B&J Class II Landfill	19.61
14-Jan	59413	B&J Class II Landfill	20.85
19-Jan	59680	B&J Class II Landfill	23.82
19-Jan	59710	B&J Class II Landfill	18.61
19-Jan	59711	B&J Class II Landfill	17.90
20-Jan 23-Jan	59768 59828	B&J Class II Landfill B&J Class II Landfill	17.58 18,51
22-Jan	59904	B&J Class II Landfill	19,37
25-Jan	60074	B&J Class II Landfill	18.98
26-Jan	60141	B&J Class II Landfill	20.58
26-Jan	60142	B&J Class II Landfill	19,39
27-Jan	60198	B&J Class II Landfill	21.85
27-Jan	60199	B&J Class II Landfill	18.89
27-Jan	60312	B&J Class II Landfill	22.01
28-Jan 28-Jan	60323 60454	B&J Class II Landfill	19.00
28-Jan	60456	B&J Class II Landfill B&J Class II Landfill	19.21 24.20
1-Feb	60644	B&J Class II Landfill	21.41
1-Feb	60649	B&J Class II Landfill	18.50
1-Feb	60692	B&J Class II Landfill	18.37
2-Feb	60726	B&J Class II Landfill	21.03
2-Feb	60784	B&J Class II Landfill	17.32
3-Feb 3-Feb	60840 60859	B&J Class II Landfill	18.57
4-Feb	60890	B&J Class II Landfill B&J Class II Landfill	21.38 19.18
4-Feb	60931	B&J Class II Landfill	19.94
4-Feb	60932	B&J Class II Landfill	17.82
7-Feb	61101	B&J Class II Landfill	17.01
7-Feb	61102	B&J Class II Landfill	19.24
7-Feb	61157	B&J Class II Landfill	22.92
8-Feb	61174	B&J Class II Landfill	23.34
8-Feb 8-Feb	61215 61202	B&J Class II Landfill B&I Class III andfill	25.96 17.35
8-Feb	61268	B&J Class II Landfill B&J Class II Landfill	17.35 21.15
11-Feb	61424	B&J Class II Landfill	17.84
15-Feb	61607	B&J Class II Landfill	19.08
15-Feb	61608	B&J Class II Landfill	16.69
16-Feb	61667	B&J Class II Landfill	18.31
16-Feb	61668	B&J Class II Landfill	18.03
17-Feb 17-Feb	61712 61724	B&J Class II Landfill B&J Class II Landfill	18.63
17-Feb	61750	B&J Class II Landfill	19.87 21.41
18-Feb	61786	B&J Class II Landfill	21.05
18-Feb	61824	B&J Class II Landfill	18.35
18-Feb	61871	B&J Class II Landfill	22.38
25-Feb	61786	B&J Class II Landfill	12.59
25-Feb	61824	B&J Class [I Landfill	7.86
28-Feb	62881	B&J Class [] Landfill	19.32
28-Feb	62889	B&J Class II Landfill	18.16
28-Feb	62900 62915	B&J Class II Landfill R&J Class II Landfill	18.09
28-Feb 3-Mar	63226	B&J Class II Landfill R&I Class II Landfill	18.58
3-Mar	63252	B&J Class II Landfill B&J Class II Landfill	20.37 19.27
3-Mar	63270	B&J Class II Landfill	19,14
3-Mar	63288	B&J Class II Landfili	20.40
3-Mar	63206	B&J Class II Landfill	19.77
3-Mar	63301	B&J Class II Landfill	16.23
3-Mar	63277	B&J Class II Landfill	15.58

Appendix B

Laboratory Analytical Reports



110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone: 925-798-1620 Fax: 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

W. A. Craig, Inc.	Client Project ID: #3890; Mashhoon	Date Sampled: 02/11/00
6940 Tremont Road		Date Received: 02/11/00
Dixon, CA 95620-9603	Client Contact: Brian Milton	Date Extracted: 02/11/00
	Client P.O:	Date Analyzed: 02/11/00

02/18/00

Dear Brian:

Enclosed are:

- 1). the results of 3 samples from your #3890; Mashhoon project,
- 2). a QC report for the above samples
- 3). a copy of the chain of custody, and
- 4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits. If you have any questions please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,

Edward Hamilton, Lab Director



Client Project ID: #3890; Mashhoon	Date Sampled: 02/11/00		
	Date Received: 02/11/00		
Client Contact: Brian Milton	Date Extracted: 02/11-02/18/00		
Client P.O:	Date Analyzed: 02/11-02/18/00		
	Client Contact: Brian Milton		

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & 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) ⁺	МТВЕ	Benzene	Toluene	Ethylben- zene	Xylenes	% Recovery Surrogate
31061	PB-7	S	9.1,g	18	0.027	ND	0.051	0.26	107
31062	PB-8	S	1. 2, b	0.94	0.024	ND	ND	0.008	104
31063	SP 1-4	S	370,b	4.1	ND<0.20	3.5	2.4	25	105
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						······································			
			·			:			
otherwis	g Limit unless se stated; ND	W	50 ug/L	5.0	0.5	0.5	0.5	0.5	
means not the rep	detected above orting limit	S	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

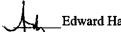
^{*} water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/L

*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.

^{*} cluttered chromatogram; sample peak coelutes with surrogate peak

W. A. Craig, Inc.	Client Project II	D: #3890; Mas	shhoon	Date	Sampled:	02/11/00		
6940 Tremont Road				Date	Date Received: 02/11/00			
Dixon, CA 95620-9603	Client Contact:	Brian Milton		Date	Date Extracted: 02/11/00			
	Client P.O:			Date	Analyzed	1: 02/11-02/15/00		
EPA method 8260 modified	Oxygenated Vo	latile Organi	cs By GC/	MS			 .	
Lab ID	31061	31062						
Client ID	PB-7	PB-8			Reporting Li		ig Limit	
Matrix	S	S				S	w	
Compound		Concentration*						
Di-isopropyl Ether (DIPE)	ND<1000	ND<50				5.0	1.0	
Ethyl tert-Butyl Ether (ETBE)	ND<1000	ND<50				5.0	1.0	
Methyl-tert Butyl Ether (MTBE)	13,000	840				5.0	1.0	
tert-Amyl Methyl Ether (TAME)	ND<1000	ND<50				5.0	1.0	
tert-Butanol	ND<5000	ND<250				25	5.0	
	Surro	gate Recoveries (%)					
Dibromofluoromethane	102	94						
Comments:					_			

^{*} water samples are reported in ug/L, soil and sludge samples in ug/kg, wipes in ug/wipe and all TCLP / STLC / SPLP extracts in ug/L



ND means not detected above the reporting limit; N/A means surrogate not applicable to this analysis

⁽h) lighter than water immiscible sheen is present; (i) liquid sample that contains greater than ~5 vol. % sediment; (j) sample diluted due to high organic content

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560 Telephone: 925-798-1620 Fax: 925-798-1622

http://www.mccampbell.com E-mail: main@mccampbell.com

	<u> </u>							
W. A. Craig,	Inc.	Client	Project ID: #3	390; Mashhoon	Date Sample	ed: 02/11/00		
6940 Tremor	nt Road				Date Receiv	ed: 02/11/00		
Dixon, CA 9	5620-9603	Client	Contact: Brian	Milton	Date Extracted: 02/11/00			
		Client	zed: 02/12/00					
EPA analytical r	methods 6010/200.7, 23	9.2 ⁺	Le	ad*				
Lab ID Client ID		Matrix	Extraction °	L	ead*	% Recovery Surrogate		
31063	SP 1-4	s	TTLC		4.8	103		
,								
					11.11			
			· · · · · · · · · · · · · · · · · · ·					
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	<u> </u>							
	······································							
					·			
		s	TTLC	3 N e	mg/kg			
stated; ND mean	it unless otherwise is not detected above	w	TTLC		5 mg/L	 		
the repo	orting limit		STLC,TCLP		mg/L			

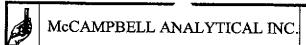
^{*} soil and sludge samples are reported in mg/kg, wipe samples in ug/wipe, and water samples and all STLC / SPLP / TCLP extracts in mg/L *Lead is analysed using EPA method 6010 (ICP)for soils, sludges, STLC & TCLP extracts and method 239.2 (AA Furnace) for water

[°] EPA extraction methods 1311(TCLP), 3010/3020(water, TTLC), 3040(organic matrices, TTLC), 3050(solids, TTLC); STLC - CA Title 22

^{*} surrogate diluted out of range; N/A means surrogate not applicable to this analysis

^{*} reporting limit raised due matrix interference

i) liquid sample that contains greater than ~2 vol. % sediment; this sediment is extracted with the liquid, in accordance with EPA methodologies and can significantly effect reported metal concentrations.



110 2nd Ave. South, :

Pacheco, CA 94553-5560

Telephone: 925-798-1620 Fax: 925-798-1622 http://www.mccampbell.com E-mail: main@mccampbell.com

QC REPORT

Date:

02/11/00-02/12/00

Matrix:

Soil

Extraction:

N/A

		Concentration: mg/kg %Recovery					
Compound	Sample	MS	MSD	Amount Spiked	MS MSD	RPD	

SamplelD: 25117

Instrument: GC-7

Xylenes	0.000	319.0	285.0	300.00	106	95	11.3
Ethyl Benzene	0.000	107.0	90.0	100.00	107	90	17.3
Toluene	0.000	99.0	90.0	100.00	99	90	9.5
Benzene	0.000	93.0	88.0	100.00	93	88	5.5
MTBE	0.000	0.88	82.0	100.00	88	82	7.1
GAS	0.000	1018.6	944.1	1000.00	102	94	7.6

SampleID: 16710

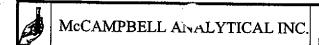
Instrument: GC-11 A

Surrogate1	0.000	111.0	113.0	100.00	111	113	1.8
TPH (diesel)	0.000	341.0	342.0	300.00	114	114	0.3

% Re covery = $\frac{(MS-Sample)}{AmountSpiked} \cdot 100$

 $RPD = \frac{(MS - MSD)}{(MS + MSD)} \cdot 2.100$

RPD means Relative Percent Deviation



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QC REPORT

VOCs (EPA 8240/8260)

Date:

02/11/00-02/12/00

Matrix:

Soil

Extraction:

N/A

		Concentration: ug/kg					
Compound	Sample	MS	MSD	Amount Spiked	MS	MSD	RPD
SampleID: 25118	·			Instr	ıment: "G	GC-4	
tert-Amyl Methyl Ether	0.000	85.0	86.0	100.00	85	86	1.2
Methyl tert-Butyl Ether	0.000	84.0	94.0	100.00	84	94	11.2
Ethyl tert-Butyl Ether	0.000	89.0	102.0	100.00	89	102	13.6
Di-isopropyl Ether	0.000	87.0	99.0	100.00	87	99	12.9

 $\% \text{ Re covery} = \frac{\left(MS - Sample \right)}{AmountSpiked} \cdot 100$

 $RPD = \frac{(MS - MSD)}{(MS + MSD)} \cdot 2 \cdot 100$

110 2nd Ave. South, #

Pacheco, CA 94553-5560

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QC REPORT

LUFT

Date:

02/12/00-02/13/00

Matrix:

Soil

Extraction:

TTLC

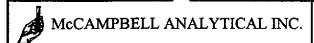
		Concent	tration:	mg/kg	%Rec	overy	
Compound	Sample	MS	MSD	Amount Spiked	MS	MSD	RPD
SampleID: 21200	,			Instru	ıment: IC	CP-1	
Surrogate1	0.000	109.6	108.7	100.00	110	109	0.8
Copper	0.000	5.1	5.0	5.00	102	100	2.0
Zinc	0.000	5.5	5.4	5.00	111	109	2.0
Lead	0.000	5.2	5.0	5.00	104	101	3.1
Nickel	0.000	5.4	5.2	5.00	107	103	3.5
Chromium	0.000	5.2	5.1	5.00	104	101	2.6
Cadmium	0.000	5.9	5.8	5.00	118	116	1.5

% Re covery = $\frac{(MS-Sample)}{AmountSpiked}$

 $RPD = \frac{(MS - MSD)}{(MS + MSD)} \cdot 2.100$

RPD means Relative Percent Deviation

McCAMPBELL ANALYTICAL INC. CHAIN OF CUSTODY RECORD 110 2nd AVENUE SOUTH, #D7 PACHECO, CA 94553-5560 TURN AROUND TIME Telephone: (925) 798-1620 Fax: (925) 798-1622 RUSH 24 HR Report To: Brian Milton 72 HR 5 DAY Bill To: Analysis Request Company: WA. Craig Inc Other Comments Total Petroleum Oil & Grease (5520 E&F/B&F) EPA 624/8240/8260 Fuel exys Only EPA 625 / 8270 / 8310 Tele: Fax: (Total Petroleum Hydrocarbons (418.1) Project #: /// E . 14th Project Name: Mashhoon Project Location: BTEX ONLY (EPA 602 / 8020) EPA 608 / 8080 PCB's ONLY Sampler Signature: BTEX & TPH as Gas (602/8020 Lead (7240/7421/239.2/6010) SAMPLING METHOD **MATRIX** TPH as Diesel (8015) Type Containers PRESERVED PAH's / PNA's by # Containers EPA 601 / 8010 EPA 608 / 8080 EPA 625 / 8270 CAM-17 Metals SAMPLE ID LUFT 5 Metals LOCATION Date Time Sludge Water Soil Other Ice HC1 HNO, Other Air 2 PB-7 16'69 त्रागिक त्रागिक त्रागिक 2.45 Χ 18/69 3:00 315 X 48 Hour VOASI ORGINETALS OTHER Relinquished By: Dale: Received By: Time: Remarks: 2425 **PRESERVATION** Ina ICE/IP Relinquished By: **APPROPRIATE** GOOD CONDITION Time: Received By: HEAD SPACE ABSENT_ CONTAINERS. Relinguished By: Date: Time: Received By:



110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone: 925-798-1620 Fax: 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

W. A. Craig, Inc.	Client Project ID: #3890; Mashoon	Date Sampled: 02/08/00
6940 Tremont Road		Date Received: 02/08/00
Dixon, CA 95620-9603	Client Contact: Brian Milton	Date Extracted: 02/08/00
	Client P.O:	Date Analyzed: 02/08/00

02/16/00

Dear Brian:

Enclosed are:

- 1). the results of 5 samples from your #3890; Mashoon project,
- 2). a QC report for the above samples
- 3). a copy of the chain of custody, and
- 4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits. If you have any questions please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly

Edward Hamilton, Lab Director

W. A. Craig, Inc.	Client Project ID: #3890; Mashoon	Date Sampled: 02/08/00		
6940 Tremont Road		Date Received: 02/08/00		
Dixon, CA 95620-9603	Client Contact: Brian Milton	Date Extracted: 02/08/00		
	Client P.O:	Date Analyzed: 02/08-02/09/00		

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX*

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

EPA metho	EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)											
Lab ID	Client ID	Matrix	TPH(g)⁺	МТВЕ	Benzene	Toluene	Ethylben- zene	Xylenes	% Recovery Surrogate			
30701	PB-7	S	640,b	46	1.8	16	9.3	64	110			
30702	PB-8	S	5200,b,j	ND<5.0	9.5	96	81	480	#			
30703	PB-9	S	6800,b,j	ND<9.0	16	220	110	680	104			
30704	SP-1-4	S	1300,b,j	7.8	0.85	17	13	100	104			
30705	SP-5-8	S	290,b	ND<1.0	ND<0.10	2.2	1.7	15	100			
					-							
												
					<u> </u>							
otherwis	g Limit unless se stated; ND	w	50 ug/L	5.0	0.5	0.5	0.5	0.5				
	detected above orting limit	S	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005				

^{*} water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/L.

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.



[&]quot; cluttered chromatogram; sample peak coelutes with surrogate peak

W. A. Craig, Inc.	Client Project II	D: #3890; Mas	shoon	Date Sampled:	02/08/00			
6940 Tremont Road				Date Received:	02/08/00			
Dixon, CA 95620-9603	Client Contact:	Brian Milton		Date Extracted	racted: 02/08/00			
	Client P.O:			Date Analyzed	: 02/10-02	/11/00		
EPA method 8260 modified	Oxygenated Vo	latile Organi	cs By GC/M	S	···			
Lab ID	30701	30702	30703		Reporting Limit			
Client 1D	PB-7	PB-8	PB-9		Reporting Lin			
Matrix	s	S	S.		s	w		
Compound		Concer	Concentration* ug/kg					
Di-isopropyl Ether (DIPE)	ND<1000	ND<250	ND<2500		5.0	1.0		
Ethyl tert-Butyl Ether (ETBE)	ND<1000	ND<250	ND<2500		5.0	1.0		
Methyl-tert Butyl Ether (MTBE)	41,000	3200	8700		5.0	1.0		
tert-Amyl Methyl Ether (TAME)	ND<1000	ND<250	ND<2500		5.0	1.0		
tert-Butanol	ND<5000	ND<1250	ND<12,500		25	5.0		
	Surro	gate Recoveries	(%)					
Dibromofluoromethane	99	92	87					
Comments:		allinda kaliman kaj kana paragan paga kalaman ya mananya naga inga manangkan kalaman kanan kanan kanan kanan k						

^{*} water samples are reported in ug/L, soil and sludge samples in ug/kg, wipes in ug/wipe and all TCLP / STLC / SPLP extracts in ug/L ND means not detected above the reporting limit; N/A means surrogate not applicable to this analysis



⁽h) lighter than water immiscible sheen is present; (i) liquid sample that contains greater than ~5 vol. % sediment; (j) sample diluted due to high organic content

W. A. Craig,		Client	Project ID: #38	90; Mashoon	Date Sampled:			
Dixon, CA 9		Client	Contact: Brian l	Milton	Date Extracted:			
		Client	P.O:		Date Analyzed:	zed: 02/08/00		
EPA analytical	methods 6010/200.7, 23	9.2 ⁺	Lea	d*				
Lab ID	Client ID	Matrix	Extraction °	Le	ad*	% Recovery Surrogate		
30704	SP-1-4	s	TTLC	1	7	103		
30705	SP-5-8	S	TTLC	. 1	6	101		
	-							
					,			
						1.		
					thing - provided that the same			
Reporting Lin	mit unless otherwise	S	TTLC		ng/kg			
stated; ND mea the re	ans not detected above porting limit	w	TTLC	 .	0.005 mg/L			
			STLC,TCLP	0.2 1	ng/L			

^{*} soil and sludge samples are reported in mg/kg, wipe samples in ug/wipe, and water samples and all STLC / SPLP / TCLP extracts in mg/L *Lead is analysed using EPA method 6010 (ICP) for soils, sludges, STLC & TCLP extracts and method 239.2 (AA Furnace) for water samples

[°] EPA extraction methods 1311(TCLP), 3010/3020(water,TTLC), 3040(organic matrices,TTLC), 3050(solids,TTLC); STLC - CA Title 22

[&]quot;surrogate diluted out of range; N/A means surrogate not applicable to this analysis

[&]amp; reporting limit raised due matrix interference

i) liquid sample that contains greater than ~2 vol. % sediment; this sediment is extracted with the liquid, in accordance with EPA methodologies and can significantly effect reported metal concentrations.

110 2nd Ave. South,

, Pacheco, CA 94553-5560 Telephone: 925-798-1620 Fax: 925-798-1622

http://www.mccampbell.com E-mail: main@mccampbell.com

QC REPORT

Date:

02/08/00

Matrix:

Soil

Extraction:

N/A

Compound		Concent	ration:	%Recovery		
	Sample	MS	MSD	Amount Spiked	MS .	MSD

SampleiD: 25117

Instrument: GC-7

					madamone QO /						
Surrogate1	0.000	101.0	101.0	. 100.00	101	101	0.0				
Xylenes	0.000	318.0	310.0	300.00	106	103	2.5				
Ethyl Benzene	0.000	102.0	98.0	100.00	102	98	4.0				
Toluene	0.000	100.0	97.0	100.00	100	97	3.0				
Benzene	0.000	95.0	92.0	100.00	95	92	3.2				
MTBE	0.000	93.0	91.0	100.00	93	91	2.2				
GAS	0.000	1057.9	1049.2	1000.00	106	105	0.8				

SampleID: 25118

Instrument: GC-11 A

Surrogate1	0.000	110.0	102.0	100.00	110	102	7.5
TPH (diesel)	0.000	306.0	286.0	300.00	102	95	6.8

% Re covery = $\frac{\text{(MS-Sample)}}{\text{AmountSpiked}} \cdot 100$

 $RPD = \frac{(MS - MSD)}{(MS + MSD)} \cdot 2 \cdot 100$

RPD means Relative Percent Deviation

110 2nd Ave. South,

, Pacheco, CA 94553-5560

Telephone: 925-798-1620 Fax: 925-798-1622 http://www.mccampbell.com E-mail: main@mccampbell.com

QC REPORT

VOCs (EPA 8240/8260)

Date:

02/09/00-02/10/00

Matrix:

Soil

Extraction:

N/A

		Concen	tration:	ug/kg	%Re	covery	·
Compound	Sample	мѕ	MSD	Amount Spiked	MS	MSD	RPD

SampleID: 25118

Instrument: GC-4

Sampleid: 20176				mstru	ment: G	∪ -4	
Surrogate	0.000	108.0	118.0	100.00	108	118	8.8
tert-Amyl Methyl Ether	0.000	87.0	88.0	100.00	87	88	1.1
Methyl tert-Butyl Ether	0.000	100.0	97.0	100.00	100	97	3.0
Ethyl tert-Butyl Ether	0.000	101.0	97.0	100.00	101	97	4.0
Di-isopropyl Ether	0.000	95.0	95.0	100.00	95	95	0.0
Surrogate	0.000	112.0	110.0	100.00	112	110	1.8
Tolune	0.000	110.0	120.0	100.00	110	120	8.7
Benzene	0.000	110.0	114.0	100.00	110	114	3.6
Chlorobenzene	0.000	105.0	111.0	100.00	105	111	5.6
Trichloroethane	0.000	81.0	84.0	100.00	81	84	3.6
1,1-Dichloroethene	0.000	94.0	97.0	100.00	94	97	3.1

% Re covery =
$$\frac{(MS-Sample)}{AmountSpiked} \cdot 100$$

$$RPD = \frac{(MS - MSD)}{(MS + MSD)} \cdot 2.100$$

QC REPORT

Lead

Date:

02/08/00-02/09/00

Matrix:

Soil

Extraction:

TTLC

:	i	Concer	tration:	%Rec				
Compound	Sample	MS	MSD	Amount Spiked	MS	MSD	RPD	
SampleID: 2800	Instrument: GFAA-1							
Lead	0.000	5.2	5.2	5.00	103	104	0.7	

 $\% \text{ Re covery} = \frac{\text{(}MS-Sample\text{)}}{AmountSpiked} \cdot 100$

 $RPD = \frac{(MS - MSD)}{(MS + MSD)} - 2.100$

RPD means Relative Percent Deviation

18859 ZWAC190

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SAMPLE ID	LOCATION			# Containers	ntai						1			Ē	icse		FPA 601 / 8010	\ <u>}</u>	EPA 608 / 8080	808/	/82	EPA 625 / 8270	ž	CAM-17 Metals	LUFT 5 Metals	2				
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SP-3		-		Π			X			Χ	1	1	75	χ	\top	\top			1							X				1 5 A
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W. A. Craig, Inc.	Client Project ID: #3890; Mashhoon	Date Sampled: 02/01/00
6940 Tremont Road		Date Received: 02/01/00
Dixon, CA 95620-9603	Client Contact: Brian Milton	Date Extracted: 02/01/00
	Client P.O:	Date Analyzed: 02/01/00

02/08/00

Dear Brian:

Enclosed are:

- 1). the results of 4 samples from your #3890; Mashhoon project,
- 2). a QC report for the above samples
- 3). a copy of the chain of custody, and
- 4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits. If you have any questions please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Osmil Vac

Yours truly,

Edward Hamilton, Lab Director

W. A. Craig, Inc.	Client Project ID: #3890; Mashhoon	Date Sampled: 02/01/00
6940 Tremont Road		Date Received: 02/01/00
Dixon, CA 95620-9603	Client Contact: Brian Milton	Date Extracted: 02/01-02/07/00
	Client P.O:	Date Analyzed: 02/01-02/07/00

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX*

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

Lab ID	ods 5030, modifie Client ID	Matrix	TPH(g) ⁺	МТВЕ	Benzene	Toluene	Ethylben- zene	Xylenes	% Recovery Surrogate
30072	SP-1-4	S	480,g	8.8	0.21	5.0	4.8	36	89
30073	SP-5-8	s	280,b,j	2.2	ND<0.01	0.94	1.2	14	107
30074	PB-1	S	1100,b,j	4.5	1.1	3.8	15	84	89
30075	PB-2	S	2900,ь	16	2.0	34	27	230	94
			· · · · · · · · · · · · · · · · · · ·						
						-			
	g Limit unless se stated; ND	W	50 ug/L	5.0	0.5	0.5	0.5	0.5	
means not	detected above orting limit	s	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

^{*} water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/L

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.



^{*} cluttered chromatogram; sample peak coelutes with surrogate peak

W. A. Craig, Inc.	Client Project ID: #3890; Mashh	oon	Date Sample	ed: 02/01/00				
6940 Tremont Road			Date Receiv	red: 02/01/00				
Dixon, CA 95620-9603	Client Contact: Brian Milton		Date Extrac	ted: 02/07/00				
	Client P.O:		Date Analyz	Date Analyzed: 02/08/00				
EPA method 8260 modified	Oxygenated Volatile Organics l	By GC/N	MS					
Lab ID	30074		30075	Reportir	ng Limit			
Client ID	PB-1		PB-2	Керопп	ig Linu			
Matrix	S		S	s	w			
Compound	Concentrat	ion*		ug/kg	ug/L			
Di-isopropyl Ether (DIPE)	ND<100		ND<350	5.0	1.0			
Ethyl tert-Butyl Ether (ETBE)	ND<100		ND<350	5.0	1,0			
Methyl-tert Butyl Ether (MTBE)	. 1500		17,000	5.0	1.0			
tert-Amyl Methyl Ether (TAME)	ND<100		ND<350	5.0	1.0			
tert-Butanol	ND<500		5900	25	5.0			
	Surrogate Recoveries (%)							
Dibromofluoromethane	97		97					
Comments:			<u></u>					

^{*} water samples are reported in ug/L, soil and sludge samples in ug/kg, wipes in ug/wipe and all TCLP / STLC / SPLP extracts in ug/L ND means not detected above the reporting limit; N/A means surrogate not applicable to this analysis



⁽h) lighter than water immiscible sheen is present; (i) liquid sample that contains greater than ~5 vol. % sediment; (j) sample diluted due to high organic content

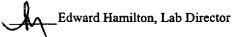
W. A. Craig, Inc.	Client	Project ID: #3890; Ma	Shhoon Date Sampled: 0	2/01/00
6940 Tremont Road			Date Received: ()2/01/00
Dixon, CA 95620-9603	Client	Contact: Brian Milton	Date Extracted:	02/01/00
	Client	P.O:	Date Analyzed:	02/01/00
EPA analytical methods 6010/200	.7, 239.2*	Lead*		
Lah ID Client ID	Moteix	Extraction 0	Load*	% Recovery

PA analytical r	methods 6010/200.7, 23	9.2*	Lea	ıd*	
Lab ID	Client ID	Matrix	Extraction ^o	Lead*	% Recovery Surrogate
30072	SP-1-4	s	TTLC	7.7	96
30073	SP-5-8	s	TTLC	9.3	97
	· · · · · · · · · · · · · · · · · · ·				
					,
Reporting Lin	nit unless otherwise	S	TTLC	3.0 mg/kg	
tated; ND mear	ns not detected above orting limit	w	TTLC	0.005 mg/L	
	_		STLC,TCLP	0.2 mg/L	

^{*} soil and sludge samples are reported in mg/kg, wipe samples in ug/wipe, and water samples and all STLC / SPLP / TCLP extracts in mg/L

*Lead is analysed using EPA method 6010 (ICP) for soils, sludges, STLC & TCLP extracts and method 239.2 (AA Furnace) for water samples

i) liquid sample that contains greater than ~2 vol. % sediment; this sediment is extracted with the liquid, in accordance with EPA methodologies and can significantly effect reported metal concentrations.



[°] EPA extraction methods 1311(TCLP), 3010/3020(water,TTLC), 3040(organic matrices,TTLC), 3050(solids,TTLC); STLC - CA Title 22

^{*} surrogate diluted out of range; N/A means surrogate not applicable to this analysis

[&] reporting limit raised due matrix interference

110 2nd Ave. South,

, Pacheco, CA 94553-5560 Telephone: 925-798-1620 Fax: 925-798-1622

http://www.mccampbell.com E-mail: main@mccampbell.com

QC REPORT

Date:

02/01/00

Matrix:

Soil

Extraction:

N/A

		Concen	tration:	%Re			
Compound	Sample	MS	MSD	Amount Spiked	MS	MSD	RPD

SampleID: 13100

Instrument: GC-7

Surrogate1	0.000	103.0	103.0	100.00	103	103	0.0
Xylenes	0.000	331.0	323.0	300.00	110	108	2.4
Ethyl Benzene	0.000	104.0	102.0	100.00	104	102	1.9
Toluene	0.000	104.0	102.0	100.00	104	102	1.9
Benzene	0.000	102.0	101.0	100.00	102	101	1.0
MTBE	0.000	93.0	94.0	100.00	93	94	1.1
GAS	0.000	1071.2	1071.2	1000.00	107	107	0.0

SampleID: 25117

Instrument: 'GC-11 A

Surrogate1	0.000	109.0	110.0	100.00	109	110	0.9
TPH (diesel)	0.000	351.0	325.0	300.00	117	108	7.7

SampleID: 25118

Instrument: IR-1

Surrogate1;	0.000	96.2	:	95.4	100.00	96	95	0.8
TRPH	0.000	23.4	:	24.4	20.80	113	117	4.2

(MS+MSD)

RPD means Relative Percent Deviation

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QC REPORT

VOCs (EPA 8240/8260)

Date:

02/07/00-02/08/00

Matrix:

Extraction:

N/A

0		Concent	tration:	ug/kg	%Rec	%Recovery			
Compound	Sample	мѕ	MSD	Amount Spiked	MS	MSD	RPD		
SampleID: 25118	· _			Instr	ıment: "G	iC-4			
Surrogate	0.000	113.0	100.00	113	105	7.3			
tert-Amyl Methyl Ether	0.000	87.0	91.0	100.00	87	91	4.5		
Methyl tert-Butyl Ether	0.000	100.0	102.0	100.00	100	102	2.0		
Ethyl tert-Butyl Ether	0.000	100.0	104.0	100.00	100	104	3.9		
Di-isopropyl Ether	0.000	96.0	105.0	100.00	96	105	9.0		
Tolune	0.000	117.0	107.0	100.00	117	107	8.9		
Benzene	0.000	118.0	104.0	100.00	118	104	12.6		
Chlorobenzene	0.000	109.0	99.0	100.00	109	99	9.6		
Trichloroethane	0.000	84.0	80.0	100.00	84	80	4.9		
1,1-Dichloroethene	0.000	95.0	83.0	100.00	95	83	13.5		

 $\% \text{ Re covery} = \frac{\left(MS - Sample \right)}{AmountSpiked} \cdot 100$

 $RPD = \frac{(MS - MSD)}{(MS + MSD)} \cdot 2.100$

QC REPORT

Lead

Date:

02/01/2000

Matrix:

Soil

Extraction:

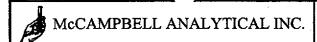
TTLC

Compound		Concen	tration:	ug/kg	%Rec	overy	
Compound	Sample	MS	MSD	Amount Spiked	MS	MSD	RPD
SampleID: 2200					ument: G		
Lead	0.000	5.2	4.8	5.00	104	96	7.7

 $\% \text{ Re covery} = \frac{\left(MS - Sample\right)}{AmountSpiked} \cdot 100$

 $RPD = \frac{(MS - MSD)}{(MS + MSD)} \cdot 2 \cdot 100$

18756 ZWAC 183 McCAMPBELL ANALYTICAL CHAIN OF CUSTODY RECORD 110 2M AVENUE SOUTH, #D7 TURN AROUND TIME PACHECO, CA 94553-5560 RUSH 2 HOUR 48 HOUR 5 DAY Telephone: (925) 798-1620 Fax: (925) 798-1622 Report To: Brian Milton Bill To: Analysis Request Other Comments Company: W. A. Craig Total Petroleum Oil & Grease (5520 E&F/B&F) 6940 Tremont Road Dixon, CA 95620-9603 BTEX & TPH as Gas (602/8020 + 8015) MTBE PAH's / PNA's by EPA 625 / 8270 / 8310 Tele: (707) 693-2929 Total Petroleum Hydrocarbons (418.1) Fax: (707) 693-2922 Project #: 3890 Project Name: Mashagan BTEX ONLY (EPA 602 / 8020) Project Location: III Fast EPA 608 / 8080 PCB's ONLY Lead (7240/7421/239.2/6010) EPA 624 / 8240 / 8260 515 Sampler Signature: METHOD PRESERVED TPH as Diesel (8015) SAMPLING **MATRIX** Type Containers # Contamers EPA 601 / 8010 EPA 608 / 8080 EPA 625 / 8270 CAM-17 Metals LUFT 5 Metals SAMPLE ID LOCATION Sludge Date Time Water Ice HCl HNO₃ Other Soil Š 2-1-∞ 24 tc. 30072 হনক| 28'b4 ე−1-დ 30073 J-F ∞ 30074 30075 Relinquished By: Received By: Time: Remarks: A Button 3:45 Relinquished By: Time: Received By: Relinquished By: Date: Time: Received By: Raid # 180 Charlett 4927)



110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone: 925-798-1620 Fax: 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

W. A. Craig, Inc.	Client Project ID: #3890; Mashoon	Date Sampled: 01/21/00
6940 Tremont Road		Date Received: 01/21/00
Dixon, CA 95620-9603	Client Contact: Brian Milton	Date Extracted: 01/21/00
	Client P.O:	Date Analyzed: 01/21/00

01/28/00

Dear Brian:

Enclosed are:

- 1). the results of 2 samples from your #3890; Mashoon project,
- 2). a QC report for the above samples
- 3). a copy of the chain of custody, and
- 4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits. If you have any questions please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,

W. A. Craig, Inc.	Client Project ID: #3890; Mashoon	Date Sampled: 01/21/00
6940 Tremont Road		Date Received: 01/21/00
Dixon, CA 95620-9603	Client Contact: Brian Milton	Date Extracted: 01/21/00
	Client P.O:	Date Analyzed: 01/21-01/24/00

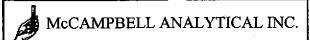
Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX*
EPA methods 5030, modified 8015, and 8020 or 602; California RWOCB (SE Bay Region) method GCEID(5030)

Lab ID	Client ID	Matrix	TPH(g)⁺	МТВЕ	Benzene	Toluene	Ethylben- zene	Xylenes	% Recovery Surrogate
29515	Comp 1-4	s	130,b,j	ND<0.25	ND<0.01	0.10	0.091	1.2	104
29516	Comp 5-8	S	95,g,j	0.30	ND	ND	ND	0.065	106
	·								
				·					
									·
otherwi	g Limit unless se stated; ND	w	50 ug/L	5.0	0.5	0.5	0.5	0.5	<u> </u>
	detected above orting limit	S	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

^{*} water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/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.



W. A. Craig	. Inc.	Client	Project ID: #38	90; Mashoon	Date Sampled: 01/21/00									
6940 Tremo			,		Date Receive	ed: 01/21/00								
Dixon, CA 9		Client	Contact: Brian l	Milton	Date Extracte	ed: 01/21/00								
		Client	P.O:		Date Analyze	ed: 01/22/00								
EBA application	methods 6010/200.7, 23		Lea	d*										
Lab ID	Client ID	Matrix	Extraction °		Lead*	% Recovery Surrogate								
29515	Comp 1-4	S	TTLC		20	101								
29516	Comp 5-8	S	TTLC		15	103								
				<u>-</u>										
		-												
					111 FEF -									
						·								
			<u> </u>		<u> </u>									
Reporting L	imit unless otherwise	S	TTLC	· · · · · · · · · · · · · · · · · · ·	3.0 mg/kg									
stated; ND me	ans not detected above eporting limit	W	TTLC		0.005 mg/L									
Lite II	-p		STLC,TCLP		0.2 mg/L									

^{*} soil and sludge samples are reported in mg/kg, wipe samples in ug/wipe, and water samples and all STLC / SPLP / TCLP extracts in mg/L †Lead is analysed using EPA method 6010 (ICP) for soils, sludges, STLC & TCLP extracts and method 239.2 (AA Furnace) for water samples

^o EPA extraction methods 1311(TCLP), 3010/3020(water,TTLC), 3040(organic matrices,TTLC), 3050(solids,TTLC); STLC - CA Title 22

[&]quot; surrogate diluted out of range; N/A means surrogate not applicable to this analysis

[&]amp; reporting limit raised due matrix interference

i) liquid sample that contains greater than ~2 vol. % sediment; this sediment is extracted with the liquid, in accordance with EPA methodologies and can significantly effect reported metal concentrations.

110 2nd Ave. South,

, Pacheco, CA 94553-5560

Telephone: 925-798-1620 Fax: 925-798-1622 http://www.mccampbell.com E-mail: main@mccampbell.com

QC REPORT

Date:

01/21/00-01/22/00

Matrix:

Soil

Extraction:

N/A

		Concer	mg/kg	%Red			
Compound	Sample	MS	MSD	Amount Spiked	MS	MSD	RPD

SampleID: 19799

Instrument: GC-3

Surrogate1	0.000	106.0	103.0	100.00	106	103	2.9
Xylenes	0.000	287.0	285.0	300.00	96	95	0.7
Ethyl Benzene	0.000	96.0	95.0	100.00	96	95	1.0
Toluene	0.000	99.0	98.0	100.00	99	98	1.0
Benzene	0.000	103.0	101.0	100.00	103	101	2.0
MTBE	0.000	82.0	81.0	100.00	82	81	1.2
GAS	0.000	902.6	916.8	1000.00	90	92	1.6

SampleID: - 15088

Instrument: GC-11 A

Surrogate1	0.000 113.0	113.0	100.00	113	113	0.0
TPH (diesel)	0.000 332.0	345.0	300.00	111	115	3.8

Sample!D: 12100

Instrument: IR-1

Surrogate1	0.000	97.7	93.9	100.00	98	94	4.0
TRPH	0.000		23.6	20.80	119	113	4.6

 $\% \text{ Re covery} = \frac{(MS - Sample)}{AmountSpiked}$

 $RPD = \frac{(MS - MSD)}{(MS + MSD)} \cdot 2 \cdot 100$

110 2nd Ave. South,

Pacheco, CA 94553-5560

Telephone: 925-790-1620 Fax: 925-798-1622 http://www.mccampbell.com E-mail: main@mccampbell.com

QC REPORT

Date:

01/21/00-01/22/00

Matrix:

Soil

Extraction: TTLC

		%Red					
Compound	Sample	MS	MSD	Amount Spiked	MS	MSD	RPD
SampleID: 12100				Instr	ument: 0	GFAA-1	
Lead	0.000	4.5	4.7	5.00	91	94	3.3
SampleID: 12100				Instr	ument: I	CP-1	
Zinc	0.000	4.7	4.8	5.00	94	96	2.6

 $\% \text{ Re covery} = \frac{\left(MS - Sample \right)}{AmountSpiked} \cdot 100$

 $RPD = \frac{(MS - MSD)}{(MS + MSD)} \cdot 2 \cdot 100$

18667 zwac. 181

TURN AROUND TIME THOUSE STATEMENT FOR STATEMENT SOUTH, 807 Telephone: (925) 798-1620 Report To: Brian Million Bill To: Company: W. A. Craig Dixon, CA 95620-9603 Tele: (707) 693-2939 Fax: (707) 693-2932 Froject Name: (707) 693-2932 Project Name: (707) 693-2932 Sampler Signature: John Untrakby SAMPLING S		McCAM	PBELL	ANAI	YTI	CAL	IN	IC.						Т		L	<u> </u>	04		ĆH	A	ĪN	n	<u>/</u> F (CI.	rz	'n	גֿעו	Ŕ	Ti(COI	RD	, 		\neg
Report To: Brian Million			10 2 nd AV	VENUE SO	OUTH,	#D7										T	UR	N.							•	X	.	7	₹	*	1	- 23		X	
Company: W. A. Craig 6940 Tremont Road Dixon, CA 95620-9603 Tele: (707) 693-2922 Project Location: Gast 14 th San Con 800 Ca. Sampler Signature: Son Location Date Time Sampler Signature: Son Son	Telephor	ne: (925) 798-		U, CA 945	33-336		ax: ((925)	798	3-16	22					•		•••					,			RÜ	Ŝн	\ ₂	4 H	ίδη	x 4	18 H	IOU	R 5 DAY	
G940 Tremont Road Dixon, CA 95620-9603 Tele: (707) 693-2922 Fax: (707) 693-2922	Report To: Brian M	lilton		B	Jill To	:														Anal	ysi	s R	equ	est							Oth	er	\Box	Comments	
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Stockpit - 31-00 11:35 1			Date	Time	l G	ğ.	ater	ᆿㅣ,	၂ ခို	ğ		ع ا ج	ڒۣٳڎٟ		3 5	g 6		조 S 류 S	2	Ž۱۶	8	8	2	A 62	H's,	M-1	FT 5	7				ĺ	- 1		
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Relinquished By: John Unthur Al-00 5:35 Inch Received By: Date: Time: Received By: Remarks:	Composite	<i>11</i> ₹ 7				 		V	+		1		_	- 1			十	\neg	1	十									1	~		24	1		_
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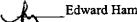
W. A. Craig, Inc.	Client Project ID: #3890; Mashhoon	Date Sampled: 01/11/00
6940 Tremont Road		Date Received: 01/12/00
Dixon, CA 95620-9603	Client Contact: Tim Cook	Date Extracted: 01/12/00
	Client P.O:	Date Analyzed: 01/13-01/14/00

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX*

Lab ID	Client ID	Matrix	TPH(g) ⁺	МТВЕ	Benzene	Toluene	Ethylben- zene	Xylenes	% Recovery Surrogate
29081	PB-3	s	120,b,j	3.4	ND<0.05	0.77	0.69	3.8	113
29082	PB-4	S	4700,b,j	7.7	6.5	110	93	580	#
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	- · · · · · · · · · · · · · · · · · · ·								
			· · · · · · · · · · · · · · · · · · ·						
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			······						
	g Limit unless se stated; ND	w	50 ug/L	5.0	0.5	0.5	0.5	0.5	
means not	detected above orting limit	s	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

^{*} water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/L

^{*}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.



[&]quot;cluttered chromatogram; sample peak coelutes with surrogate peak



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Telephone: 925-798-1620 Fax: 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

W. A. Craig, Inc.	Client Project ID: #3890; Mashhoon	Date Sample	Date Sampled: 01/11/00					
6940 Tremont Road	,	Date Receive	Date Received: 01/12/00 Date Extracted: 02/07/00					
Dixon, CA 95620-9603	Client Contact: Tim Cook	Date Extract						
	Client P.O:	ted: 02/08/00						
EPA method 8260 modified	Oxygenated Volatile Organics By GO	C/MS		11-11-11				
Lab ID	29081	29082		1 !!4				
Client ID	PB-3	PB-4	Reportin	ig Limit				
Matrix	S	S	S	W				
Compound	Concentration*		ug/kg	ug/L				
Di-isopropyl Ether (DIPE)	ND<100	ND<250	5.0	1.0				
Ethyl tert-Butyl Ether (ETBE)	. ND<100	ND<250	5.0	1.0				
Methyl-tert Butyl Ether (MTBE)	. 640	770	5.0	1.0				
tert-Amyl Methyl Ether (TAME)	ND<100	ND<250	5.0	1.0				
tert-Butanol	ND<1100	ND<1300	25	5.0				
	Surrogate Recoveries (%)		And the second					
Dibromofluoromethane	102	105						
Comments:	j	j						

^{*} water samples are reported in ug/L, soil and sludge samples in ug/kg, wipes in ug/wipe and all TCLP / STLC / SPLP extracts in ug/L ND means not detected above the reporting limit; N/A means surrogate not applicable to this analysis



⁽h) lighter than water immiscible sheen is present; (i) liquid sample that contains greater than ~5 vol. % sediment; (j) sample diluted due to high organic content

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QC REPORT

Hydrocarbons Analysis

Date:

01/13/00

Matrix:

Soil

Extraction:

N/A

		Concent	tration:	ug/kg	%Reco	overy	İ !	
Compound	Sample	MS	MSD	Amount Spiked	мѕ	MSD	RPD	
SampleID: 19790			-	Instru	ıment: G	C-7		
Xylenes	0.000	317.0	325.0	300.00	106	108	2.5	
Ethyl Benzene	0.000	103.0	104.0	100.00	103	104	1.0	
Toluene	0.000	102.7	106.0	100.00	103	106	3.2	
Benzene	0.000	99.1	102.0	100.00	99	102	2.9	
MTBE	0.000	100.0	103.0	100.00	100	103	3.0	
GAS	0.000	979.4	977.4	1000.00	98	98	0.2	

% Re covery =
$$\frac{\left(MS - Sample\right)}{AmountSpiked} \cdot 100$$

$$RPD = \frac{\left(MS - MSD\right)}{\left(MS + MSD\right)} \cdot 2 \cdot 100$$

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, Pacheco, CA 94553-5560 Telephone: 925-796-1620 Fax: 925-798-1622

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QC REPORT

VOCs (EPA 8240/8260)

Date:

02/07/00-02/08/00

Matrix:

Soil

Extraction:

N/A

		Concent	tration:	ug/kg	%Rec	overy	
Compound	Sample	MS	MSD	Amount Spiked	мѕ	MSD	RPD
SampleID: 25118				Instru	ıment: 'G	C-4	
Surrogate	0.000	113.0	105.0	100.00	113	105	7.3
tert-Amyl Methyl Ether	0.000	87.0	91.0	100.00	87	91	4.5
Methyl tert-Butyl Ether	0.000	100.0	102.0	100.00	100	102	2.0
Ethyl tert-Butyl Ether	0.000	100.0	104.0	100.00	100	104	3.9
Di-isopropyl Ether	0.000	96.0	105.0	100.00	96	105	9.0
Tolune	0.000	117.0	107.0	100.00	117	107	8.9
Benzene	0.000	118.0	104.0	100.00	118	104	12.6
Chlorobenzene	0.000	109.0	99.0	100.00	109	99	9.6
Trichioroethane	0.000	84.0	80.0	100.00	84	80	4.9
1,1-Dichloroethene	0.000	95.0	83.0	100.00	95	83	13.5

% Re covery = $\frac{(MS - Sample)}{AmountSpiked} \cdot 100$

 $RPD = \frac{(MS - MSD)}{(MS + MSD)} \cdot 2 \cdot 100$

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110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone: 925-798-1620 Fax: 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

W. A. Craig, Inc.	Client Project ID: #3890; Mashhoon	Date Sampled: 01/10/00
6940 Tremont Road		Date Received: 01/10/00
Dixon, CA 95620-9603	Client Contact: Brian Milton	Date Extracted: 01/10/00
	Client P.O:	Date Analyzed: 01/10/00

01/17/00

Dear Brian:

Enclosed are:

- 1). the results of 1 samples from your #3890; Mashhoon project,
- 2). a QC report for the above samples
- 3). a copy of the chain of custody, and
- 4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits. If you have any questions please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly...

W. A. Craig, Inc.	Client Project ID: #3890; Mashhoon	Date Sampled: 01/10/00
6940 Tremont Road		Date Received: 01/10/00
Dixon, CA 95620-9603	Client Contact: Brian Milton	Date Extracted: 01/10/00
	Client P.O:	Date Analyzed: 01/10-01/11/00

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX*

Lab ID	ods 5030, modifie Client ID	Matrix	TPH(g)⁺	МТВЕ	Benzene	Toluene	Ethylben- zene	Xylenes	% Recovery Surrogate
28909	SP-1-4	s	400,b,j	6.4	0.12	3.7	2.4	26	112
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otherwis	g Limit unless se stated; ND	w	50 ug/L	5.0	0.5	0.5	0.5	0.5	
	detected above orting limit	s	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

^{*} water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/L

'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.



[#] cluttered chromatogram; sample peak coelutes with surrogate peak

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W. A. Craig	, Inc.	Client	Project ID: #38	90; Mashhoon	Date Sampled: 01	/10/00				
6940 Tremo	nt Road				Date Received: 01	/10/00				
Dixon, CA	95620-9603	Client	Contact: Brian	Milton	Date Extracted: 0	1/10/00				
		Client	P.O:		Date Analyzed: 01/10/00					
EPA analytical	methods 6010/200.7, 23	9.2+	Lea	d*						
Lab ID	Client ID	Matrix	Extraction °	L	ead*	% Recovery Surrogate				
28909	SP-1-4	s	TTLC		12	101				
			·							
						······································				
Reporting Li	mit unless otherwise	s	TTLC	3.0	mg/kg					
stated; ND me	ans not detected above eporting limit	w	TTLC	0.00)5 mg/L					
,	porting mint		CTI C TCI D	0.2	ma/I					

^{*} soil and sludge samples are reported in mg/kg, wipe samples in ug/wipe, and water samples and all STLC / SPLP / TCLP extracts in mg/L

*Lead is analysed using EPA method 6010 (ICP) for soils, sludges, STLC & TCLP extracts and method 239.2 (AA Furnace) for water samples

^o EPA extraction methods 1311(TCLP), 3010/3020(water, TTLC), 3040(organic matrices, TTLC), 3050(solids, TTLC); STLC - CA Title 22

^{*} surrogate diluted out of range; N/A means surrogate not applicable to this analysis

[&]amp; reporting limit raised due matrix interference

i) liquid sample that contains greater than ~2 vol. % sediment; this sediment is extracted with the liquid, in accordance with EPA methodologies and can significantly effect reported metal concentrations.

QC REPORT

Date:

01/09/00-01/10/00

Matrix:

Soil

Extraction:

N/A

_		Concent	ration:	mg/kg	%Rec	overy					
Compound	Sample	MS	MSD	Amount Spiked	MS	MSD	RPD				
SampleID: 19797		Instrument: GC-7									
Xylenes	0.000	337.0	326.0	300.00	112	109	3.3				
Ethyl Benzene	0.000	110.0	107.0	100.00	110	107	2.8				
Toluene	0.000	111.0	106.0	100.00	111	106	4.6				
Benzene	0.000	107.0	104.0	100.00	107	104	2.8				
MTBE	0.000	112.0	104.0	100.00	112	104	7.4				
GAS	0.000	979.4	963.4	1000.00	98	96	1.6				
SampleID: 19101				Instru	ıment: M	B-1					
Oil & Grease	0.000	23.3	23.3	20.00	116	117	0.3				
SampleID: 19794				Instru	ment G	C-6 B					
TPH (diesel)	0.000	330.0	319.0	300.00	110	106	3.4				
SampleID: 19120				Instru	ıment: IF	₹-1					
TRPH	0.000	24.8	23.6	20.80	119	113	5.0				

% Re covery = $\frac{(MS-Sample)}{AmountSpiked} \cdot 100$

 $RPD = \frac{(MS - MSD)}{(MS + MSD)} \cdot 2.100$

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http://www.mccampbell.com

QC REPORT

LUFT

Date:

01/10/00-01/11/00

Matrix:

Soil

Extraction:

TTLC

		Concen	tration:	%Re	covery	555	
Compound	Sample	MS	MSD	Amount Spiked	MS	MSD	RPD

SampleID: 11000

Instrument: ICP-1

SampleiD: 11000					,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
Copper	0.000	4.7	4.8	5.00	94	95	0.8
Zinc	0.000	5.0	5.0	5.00	100	101	8.0
Lead	0.000	4.7	4.8	5.00	94	96	1.8
Nickel	0.000	4.9	4.9	5.00	98	99	1.1
Chromium	0.000	5.0	5.0	5.00	100	100	0.0
Cadmium	0.000	5.2	5.3	5.00	104	105	1.2

% Re covery = (MS-Sample)
AmountSpiked 100

 $RPD = \frac{(MS - MSD)}{(MS + MSD)} \cdot 2.100$

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Report To: Brian	Milton		В	ill To	:										<u> </u>			Āna	lysis	Re	que	t						Oti	ne <i>r</i>		Comments	1
Company: W. A.							·								Ē			\Box	Ī	Т	Ī	Т	T		T				Ţ			1 '
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W. A. Craig, Inc.	Client Project ID: #3890; San Leandro	Date Sampled: 01/05/00
6940 Tremont Road		Date Received: 01/05/00
Dixon, CA 95620-9603	Client Contact: Tim Cook	Date Extracted: 01/05/00
	Client P.O:	Date Analyzed: 01/05/00

01/12/00

Dear Tim:

Enclosed are:

- 1). the results of 5 samples from your #3890; San Leandro project,
- 2). a QC report for the above samples
- 3). a copy of the chain of custody, and
- 4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits. If you have any questions please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yoursitruly,



McCAMPBELL ANALYTICAL INC.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560 Telephone: 925-798-1620 Fax: 925-798-1622 http://www.mccampbell.com E-mail: main@mccampbell.com

W. A. Craig, Inc.	Client Project W. #3890; San Leandro	Date Sampled: 01/05/2000
6940 Tremont Road		Date Received: 01/05/2000
Dixon, CA 95620-9603	Client Contact: Tim Cook	Date Extracted: 01/05/2000
	Client P.O:	Date Analyzed: 01/05/2000

Gasoline Range (C6-C12) Volathe Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX*

l.ab ID	Client ID	Matrix	'୮ ₽ H(<u>g</u>) [*]	МТВЕ	WQCB (SF Ba) Benzene	Toluene	Ethylben- zene	Xylenes	% Recovery Surrogate
28577	SW-L	Ý.					-		
28578	PB-1	s							
28579	PB-2	S							
28580	SPt-4	S.	220,b	ND<0.40	ND<0.030	0.30	ND<0.030	2.0	95
28581	SP5-8	S	110,5	1.6	ND<0.060	ND<0.060	0.33	2.2	100
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		-							
	 			<u> </u>		 	1		
otherwise	Limit unless stated; ND	w	50 ug/L	5.0	0.5	0.5	0.5	0.5	
above th	ot detected in c reporting mit	s	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

^{*} water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts m ug/L

DHS Certification No. 1644

^{*} cluttered chromatogram; sample peak coefutes 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) gusoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (?); i) 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 concains greater than -5 vol. % sediment; j) no recognizable pattern.

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http://www.mccampbell.com E-mail: main@mccampbell.com

W. A. Craig, Inc.	Client Project ID: #3890; San Leandro	Date Sampled: 01/05/2000
6940 Tremont Road		Date Received: 01/05/2000
Dixon, CA 95620-9603	Client Contact: Tim Cook	Date Extracted: 01/05/2000
	Client P.O:	Date Analyzed: 01/05-01/07/00

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX*

EPA methods 5030, modified 8015, and 8020 or 602: California RWOCR (SE Bay Region) method GCEID(S030)

EPA meth	ods 5030, mod	lified 8015,	and 8020 or 60	2, California R	WQCB (SF Bay	Region) metho))	A/ T
Lab ID	Client ID	Matrix	TPH(g) ⁺	MTBE	Benzene	Toluene	Ethylben- zene	Xylenes	% Recovery Surrogate
28577	SW-1	s	ND	ND	ND	ND	ND	ND	98
28578	PB-1	s	1300,b	33	ND<0.40	6.1	13	88	103
28579	PB-2	S	890,b,j	11	ND<0.030	1.6	1.7	57	111
28580	SP1-4	S	220,b	ND<0.40	ND<0.030	0.30	ND<0.030	2.0	95
28581	SP5-8	S	110,b	1.6	ND<0.060	ND<0.060	0.33	2.2	100
		:							
				•					
					:				
	Limit unless stated; ND	w	50 ug/L	5.0	0.5	0.5	0.5	0.5	
means ne above the	ot detected e reporting mit	S	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

^{*} water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/L

^{&#}x27;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.



[&]quot; cluttered chromatogram; sample peak coelutes with surrogate peak

W. A. Craig,	, Inc.	Client	Project ID: #38	90; San Leandro	Date Sampled: 0	1/05/2000
6940 Tremo	nt Road				Date Received: 0	01/05/2000
Dixon, CA 9	5620-9603	Client	Contact: Tim C	cook	Date Extracted: (01/05/2000
		Client	P.O:		Date Analyzed: (01/06/2000
EPA analytical	methods 6010/200.7,	239.2+	Lea	ıd*		
Lab ID	Client ID	Matrix	Extraction 6	Le	ad*	% Recovery Surrogate
28580	SP1-4	S	TTLC)	10	101
28581	SP5-8	s	TTLC	9	0.0	101
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Reporting Limit unless otherwise stated; ND means not detected above the reporting limit

stated; ND means not detected above the reporting limit	w	TTLC	0.005 mg/L	
the reporting mitt		STLC,TCLP	0.2 mg/L	
* soil and sludge samples are reported in	mg/kg, wi	pe samples in ug/wi	pe, and water samples and all STLC / SPLP / TC	LP extracts in mg/L
*Lead is analysed using EPA method (6010 (ICP):	for soils, sludges, S	STLC & TCLP extracts and method 239.2 (AA	Furnace) for water

3.0 mg/kg

° EPA extraction methods 1311(TCLP), 3010/3020(water,TTLC), 3040(organic matrices,TTLC), 3050(solids,TTLC); STLC - CA Title 22

TTLC

" surrogate diluted out of range; N/A means surrogate not applicable to this analysis

S

- & reporting limit raised due matrix interference
- i) liquid sample that contains greater than ~2 vol. % sediment; this sediment is extracted with the liquid, in accordance with EPA methodologies and can significantly effect reported metal concentrations.

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QC REPORT

Date:

01/05/00

Matrix:

Soil

Extraction:

N/A

		Concent	tration:	mg/kg	%Rec	overy					
Compound	Sample	MS	MSD	Amount Spiked	мѕ	MSD	RPD				
SampleiD: 19799		Instrument: GC-3									
Xylenes	0.000	329.0	326.0	300.00	110	109	0.9				
Ethyl Benzene	0.000	110.0	109.0	100.00	110	109	0.9				
Toluene	0.000	109.0	107.0	100.00	109	107	1.9				
Benzene	0.000	108.0	106.0	100.00	108	106	1.9				
мтве	0.000	96.0	99.0	100.00	96	99	3.1				
GAS	0.000	926.8	975.8	1000.00	93	98	5.2				
SampleID: 19101				Instru	ment: M	IB-1 ,					
Oil & Grease	. 0.000	24.2	23.1	20.00	121	115	4.9				
SampleID: 15414				Instru	ment: G	C-6 A					
TPH (diesel)	0.000	328.0	334.0	300.00	109	111	1.8				
SampleiD: 19120				Instru	ment: IF	₹-1					
TRPH	0.000	23.4	23.7	20.80	113	114	1.3				

 $\% \text{ Re covery} = \frac{\left(MS - Sample \right)}{AmountSpiked} \cdot 100$

 $RPD = \frac{(MS - MSD)}{(MS + MSD)} \cdot 2.100$

110 2nd Ave. South, Telephone: 925-79

7, Pacheco, CA 94553-5560 520 Fax: 925-798-1622

http://www.mccampbell.com E-mail: main@mccampbell.com

QC REPORT

Date:

01/06/00-01/07/00

Matrix:

Soil

Extraction:

TTLC

		Concentr	ation:	ug/kg	%Red	covery	
Compound	Sample	MS	MSD	Amount Spiked	MS	MSD	RPD

SampleID: 1600

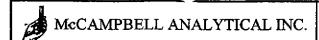
Instrument: GFAA-1

Lead 0.000 4.9 5.0 5.00 97 100 2.4

% Re covery = $\frac{\text{(}MS-Sample\text{)}}{AmountSpiked} \cdot 100$

 $RPD = \frac{(MS - MSD)}{(MS + MSD)} \cdot 2 \cdot 100$

8447 zwac 171. do -CHAIN OF CUSTODY/RECORD McCAMPBELL ANALYTICAL INC. 110 2nd AVENUE SOUTH, #D7 TURN AROUND TIME PACHECO, CA 94553-5560 72 HR 5 DAY 48 HR Telephone: (925) 798-1620 Fax: (925) 798-1622 Tim Cook Bill To: Analysis Request Report To: Other Comments W.A. CRAIS, INC Company: Grease (5520 E&F/B&F) 8015) MTBE EPA 625 / 8270 / 8310 Total Petroleum-Hydrocarbons (418.1) Tele: (707-693-2929 693-2922 Fax: (Project #: Project Name: BTEX ONLY (EPA 602 / 8020) Project Location: San Leanda EPA 608 / 8080 PCB's ONLY Lead (7240/7421/239.2/6010) Sampler Signature: -BTEX & TPH as Gas (602) EPA 624 / 8240 / 8260 Total Petroleum Oil & METHOD TPH as Diesel (8015) SAMPLING MATRIX PRESERVED Type Containers PAH's / PNA's by 28577 EPA 601 / 8010 CAM-17 Metals EPA 608 / 8080 EPA 625 / 8270 Containers LUFT 5 Metals LOCATION SAMPLE ID Sludge 28578 Date Time lce HCl HNO₃ Other Other Soil S 28579 X Schund 15 SW-28580 PIT LANT PB-1 PB-2 PIT bot SP-1 Stockale SP-2 X **SP-3** 5P-4 SP-B VOAS LO&GENETALS OTHER 28581 PRESERVATION GOOD CONDITION_ HEAD SPACE ABSENT APPROPRIATE Received By: Date: Time: Remarks: Relinquished By: 24- hr rush on SP-1-SP-4 Composite
SP-5-5P-8 Composite
5 day TAT on remaining samples 17/50 Time: Relinquished By: Received By: Relinquished By: Date: Time:



INVOICE FOR ANALYTICAL SERVICES

Attention: Accounts Payable



W. A. Craig, Inc.	Client Project ID: #3890; San Leandro	Date Sampled: 01/05/2000
6940 Tremont Road		Date Received: 01/05/2000
Dixon, CA 95620-9603	Client Contact: Tim Cook	Date Extracted: 01/05/2000
	Client P.O:	Date Analyzed: 01/05/2000

Billing Date: 01/12/2000

Invoice # 18447

Number of Samples	Analysis	TAT	Unit Price	Sub-Total
2	TPH(g)-BTEX MTBE	Rush	\$90	\$180
3	TPH(g)-BTEX MTBE	5d	\$45	\$135
0	Oil & Grease (418.1 or 5520 or 1661)	5d	\$45	\$0
0	EPA 601 / 8010 / EDB	5d	\$60	\$0
0	EPA 624 / 8240 / 8260	5d	\$125	\$0
0	Fuel Oxygenates by 8260	5d	\$90	\$0
. 0	EPA 625 / 8270	5d	\$180	\$0
0	PCB / Chlorinated Pesticides, EPA 608 / 8080	5d	\$50 / \$75	\$0
0	RCI	5d	\$60	\$0
0	CAM 17 Metals	5d	\$125	\$0
0	13 Priority Pollutant Metals	5d	\$110	\$0
0	RCRA 8 Metals	5d	\$80	\$0
0	5 LUFT Metals	5d	\$50	\$0
2	Lead	Rush	\$30	\$60
0	STLC Extraction	5d	\$50	\$0
0	ZHE TCLP Extraction	5d	\$100	\$0
0	Semi-Volatile TCLP Extraction	5d	\$50	\$0
0		Subbed	\$0	\$0
	INVOICE TOTAL :	\$375		

Please include the invoice number(s) with your check and remit to:

McCampbell Analytical Inc. 110 2nd Avenue South, #D7 Pacheco, CA 94553-5560

Terms are net 30 days from the billing date. After this period 1.5% interest per month will be charged. Overdue accounts are responsible for all legal and collection fees. If you have any questions about billing please contact Accounts Receivable at McCampbell Analytical.



McCAMPBELL ANALYTICAL INC.

110 2nd Avenue South, #D7, Pacheco, C.4 94553-5560 Telephone: 925-798-1620 Fax: 925-798-1622 http://www.mecampbell.com E-mail: main@mccampbell.com

W. A. Craig, Inc.	Client Project ID: #3890; San Leandro	Date Sampled: 01/05/2000
6940 Tremont Road		Date Received: 01/05/2000
Dixon, CA 95620-9603	Client Contact: Tim Cook	Date Extracted: 01/05/2000
Gasoline Range (C6-C12)	Chent P.O:	Date Analyzed: 01/05-01/07/00

EPA methods 5030, modified 8015, and 8020 or 602. Children's Physical Review of the Methyl tert-Butyl Ether* & BTEX:

EPA meth	ods 5030, mo	dified 801	and 8020 or 60	2; California I	ANOCHASE IN	ie", With M	ethyl tert-Br	ityl Ether	* & BTEX*
	Chen ip	Matrix	TPH(g) ⁺	. МТВЕ	Benzerre	Tolucne	Ethylbert-	(V) Xylenes	% Recovery Surrogate
28577	SW-I	S	סא	ND	ND	ND	ND	ND	98
28578	PB-1	S	1300 b	<i>3</i> 3	ND<0.40	6.1	13	88	103
28579	PB-2	s	j,d,0 98	11	ND<0090	16	1.7	57	111
28580	SPI-4	S	220,5	ND<0.40	ND<0.030	0.30	ND<0.030	2.0	95
28581	SP5-8	S	110%	1.6	`ND<0.060	ND<0.060	0.33	2.2	100
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Remoting Li	ray an ess	·							
otherwise st	ated; ND	w	50 ug/L	5.0	0.5	0.5	0.5	0.5	
alwye the ,c limit	accreting .	s	1.0 mg/kg	U.05	0.005	0.005	0.005	0.005	- (

^{*} water and vapor samples are repeated in agril, wipe samples in agrivine, soil and studge samples in mg/kg, and all TCLP and SPLP extracts in ug/L

DHS Certification No. 1644



[&]quot; clustered chromatogram; sample peak consister with surrogate peak

The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) arrandified or mostly 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.



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Telephone: 925-798-1620 Fax: 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

W. A. Craig, Inc.	Client Project ID: Mashhoon	Date Sampled: 12/29/99		
6940 Tremont Road		Date Received: 12/29/99		
Dixon, CA 95620-9603	Client Contact: Tim Cook	Date Extracted: 12/29/99		
	Client P.O:	Date Analyzed: 12/29/99		

01/06/00

Dear Tim:

Enclosed are:

- 1). the results of 1 samples from your Mashhoon project,
- 2). a QC report for the above samples
- 3). a copy of the chain of custody, and
- 4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits. If you have any questions please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly

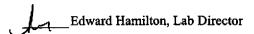
6940 Tremont Road		Date Received: 12/29/99
Dixon, CA 95620-9603	Client Contact: Tim Cook	Date Extracted: 12/29/99
	Client P.O:	Date Analyzed: 12/29/99

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX*

Lab ID	ds 5030, modified Client ID	Matrix	TPH(g) ⁺	МТВЕ	Benzene	Toluene	Ethylben- zene	Xylenes	% Recovery Surrogate
28318	SP-1-4	S	300,b,j	7.7	0.099	1.6	3.5	23	#
			-						
									,
									4
	.,								
otherwi	g Limit unless se stated; ND	W	50 ug/L	5.0	0.5	0.5	0.5	0.5	
	detected above orting limit	s	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

^{*} water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/L

^{*}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.



[#] cluttered chromatogram; sample peak coelutes with surrogate peak

	*hea I		
	Client P.O:	Date Analyzed: 12/29/99	
Dixon, CA 95620-9603	Client Contact: Tim Cook	Date Extracted: 12/29/99	
6940 Tremont Road		Date Received: 12/29/99	
W. A. Craig, Inc.	Client Project ID: Mashhoon	Date Sampled: 12/29/99	

Lab ID	Client ID	Matrix	Extraction °	Lead*	% Recovery Surrogate
28318	SP-1-4	S	TTLC	11	102
				1.00	
					,
·			·· · · · · · · · · ·		
Reporting Lir	mit unless otherwise	S	TTLC	3.0 mg/kg	
tated; ND mea	ns not detected above porting limit	W	TTLC	0.005 mg/L	
•	. <u>-</u>		STLC,TCLP	0.2 mg/L	

^{*} soil and sludge samples are reported in mg/kg, wipe samples in ug/wipe, and water samples and all STLC / SPLP / TCLP extracts in mg/L *Lead is analysed using EPA method 6010 (ICP)for soils, sludges, STLC & TCLP extracts and method 239.2 (AA Furnace) for water

[°] EPA extraction methods 1311(TCLP), 3010/3020(water, TTLC), 3040(organic matrices, TTLC), 3050(solids, TTLC); STLC - CA Title 22

^{*} surrogate diluted out of range; N/A means surrogate not applicable to this analysis

^{*} reporting limit raised due matrix interference

i) liquid sample that contains greater than ~2 vol. % sediment; this sediment is extracted with the liquid, in accordance with EPA methodologies and can significantly effect reported metal concentrations.

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QC REPORT

Date:

12/29/99

Matrix:

Soil

Extraction:

N/A

Compound	Concentration: mg/kg			%Recovery		
	Sample	MS	MSD	Amount Spiked	MS	MSD

SampleID: 19773

Instrument GC-7

Xylenes	0.000	349.0	346.0	300.00	116	115	0.9
Ethyl Benzene	0.000	114.0	114.0	100.00	114	114	0.0
Toluene	0.000	114.0	112.0	100.00	114	112	1.8
Benzene	0.000	111.0	110.0	100.00	111	110	0.9
MTBE	0.000	92.0	87.0	100.00	92	87	5.6
GAS	0.000	937.5	969.4	1000.00	94	97	3.3

SampleID: 122999

Instrument MB-1

Oil & Grease	1 11 11(11) 22 3	22.8 20.00 1	11 114 3.1

SampleID: 18387

Instrument GC-2 B

		11-11			
TPH (diesel)	0.000 260.0 265.0	300.00	87	88	1.9

 $\% \text{ Re covery} = \frac{\left(MS - Sample \right)}{AmountSpiked} \cdot 100$

 $RPD = \frac{(MS - MSD)}{(MS - MSD)} - 2.100$ (MS+MSD)

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Pacheco, CA 94553-5560 Telephone: 925-798-1620 Fax: 925-798-1622

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QC REPORT

LUFT

Date:

Chromium

Cadmium

12/29/99-12/30/99

Matrix:

Soil

5.00

5.00

96

107

96

107

0.0

0.7

Extraction:

0.000

0.000

TTLC

	Concentration: mg/kg %Recovery							
Compound	Sample	MS	MSD	Amount Spiked	MS	MSD	RPD	
SampleID: 122999				Instr	ument K	CP-1		
Copper	0.000	4.5	4.6	5.00	90	93	2.4	
Zinc	0.000	5.0	5.1	5.00	101	102	1.1	
Lead	0.000	4.7	4.7	5.00	94	95	0.7	
Nickel	0.000	4.7	4.9	5.00	94	98	3.4	

4.8

5.3

4.8

5.4

(MS-Sample) AmountSpiked RPD=(MS-MSD) 2·100

18280 ZWAC 169

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SAMPLE ID	LOCATION	_	m.	# Containers	Type Containers								BTEX & TPH as Gas (602/8020	TPH as Diesel (8015)	Tole	Total Petroleum Hydrocarbons (418.1)	EPA 601 / 8010	BTEX ONLY (EPA 602 / 8020)	EPA 608 / 8080	EPA 608 / 8080 PCB's ONLY	EPA 624 / 8240 / 8260	EPA 625 / 8270	PN/	CAM-17 Metals	LUFT 5 Metals	Lead (7240/7421/239.2/6010)					23	Smyle	
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110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone: 925-798-1620 Fax: 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

W. A. Craig, Inc.	Client Project ID: Mashoon	Date Sampled: 10/21/99
6940 Tremont Road		Date Received: 10/21/99
Dixon, CA 95620-9603	Client Contact: Tim Cook	Date Extracted: 10/21/99
	Client P.O:	Date Analyzed: 10/21/99

10/28/99

Dear Tim:

Enclosed are:

- 1). the results of 8 samples from your Mashoon project,
- 2). a QC report for the above samples
- 3). a copy of the chain of custody, and
- 4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits. If you have any questions please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,

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W. A. Craig, Inc.	Client Project ID: Mashoon	Date Sampled: 10/21/99
6940 Tremont Road		Date Received: 10/21/99
Dixon, CA 95620-9603	Client Contact: Tim Cook	Date Extracted: 10/23-10/25/99
	Client P.O:	Date Analyzed: 10/23-10/26/99

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX*

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

Lab ID	Client ID	Matrix	TPH(g) ⁺	МТВЕ	Benzene	Toluene	Ethylben- zene	Xylenes	% Recovery Surrogate
23876	SP1-4	s	2.4,b	0.075	ND	0.029	ND	0.061	97
23877	SP5-8	S	260,b,j	1.2	ND<0.05	3.0	3.5	24	104
23878	T-1	S	1400,b,j	82	1.6	50	35	220	100
23879	Т-2	S	3.7,a	7.2	0.052	0.10	0.076	0.20	101
23880	T-3	S	18,a	29	0.49	0.20	0.79	4.1	. 99
23881	T-4	s	2.8,a	0.80	0.24	0.43	0.008	0.11	102
23882	T-5	s	1400,b,j	130	2.8	49	34	230	103
23883	T-6	s	12,a	88	0.74	0.060	0.65	2.5	107
Reporting Limit unless otherwise stated; ND		w	50 ug/L	5.0	0.5	0.5	0.5	0.5	
	t detected above porting limit	s	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

^{*} water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts

^{*}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.



[&]quot; cluttered chromatogram; sample peak coelutes with surrogate peak

W. A. Craig, Inc.	Client Project II	D: Mashoon	-	Date Sampled:	10/21/99			
6940 Tremont Road				Date Received:	10/21/99			
Dixon, CA 95620-9603	Client Contact:	Tim Cook	. :	Date Extracted:	10/21/99			
	Client P.O:			Date Analyzed:	zed: 10/23-10/24/99			
EPA method 8260 modified	Oxygenated Vo	latile Organic	es By GC/MS					
Lab ID	23876	23877	23878	23879	Reporti	ng Limit		
Client ID	SPI-4	SP5-8	T-1	T-2	Корога	ng Limit		
Matrix	S	S	S	S	S	w		
Compound		Concen	tration*	ation*				
Di-isopropyl Ether (DIPE)	ND	ND<67	ND<1700	ND<200	5.0	1.0		
Ethyl tert-Butyl Ether (ETBE)	ND	ND<67	ND<1700	ND<200	5.0	1.0		
Methyl-tert Butyl Ether (MTBE)	40	760	56,000	5400	5.0	1.0		
tert-Amyl Methyl Ether (TAME)	ND	ND<67	ND<1700	ND<200	5.0	1.0		
tert-Butanol	ND	2300	ND<8500	ND<1000	25	5.0		
	Surro	gate Recoveries ((%)					
Dibromofluoromethane	102	100	99	99				
Comments:					i			

(h) lighter than water immiscible sheen is present; (i) liquid sample that contains greater than ~5 vol. % sediment; (j) sample diluted due to high organic content

DHS Certification No. 1644



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W. A. Craig, Inc.	Client Project I	D: Mashoon		Date Sampled: 10/21/99						
6940 Tremont Road				Date Received:	10/21/99					
Dixon, CA 95620-9603	Client Contact:	Tim Cook		Date Extracted:	racted: 10/21/99					
	Client P.O:		Date Analyzed: 10/23-10/24/99							
EPA method 8260 modified	Oxygenated Vo	latile Organi	es By GC/MS							
Lab ID	23880	23881	23882	23883	Penorti	na Limit				
Client ID	T-3	T-4	T-5	T-6	Reporting Lim					
Matrix	s	S	s	S	S	w				
Compound		Concer	tration*		ug/kg	ug/L				
Di-isopropyl Ether (DIPE)	ND<710	ND<20	ND<2500	ND<2000	5.0	1.0				
Ethyl tert-Butyl Ether (ETBE)	ND<710	ND<20	ND<2500	ND<2000	5.0	1.0				
Methyl-tert Butyl Ether (MTBE)	26,000	640	78,000	58,000	5.0	1.0				
tert-Amyl Methyl Ether (TAME)	ND<710	ND<20	ND<2500	ND<2000	5.0	1.0				
tert-Butanol	ND<3600	ND<100	ND<13,000	ND<10,000	25	5.0				
	Surro	gate Recoveries	(%)							
Dibromofluoromethane	. 101	106	102	106						
Comments:										
* water samples are reported in ug/L, s ND means not detected above the repo (h) lighter than water immiscible sheet high organic content	rting limit; N/A means	surrogate not app	licable to this and	ılysis						

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	Lead*	
	Client P.O:	Date Analyzed: 10/22/99
Dixon, CA 95620-9603	Client Contact: Tim Cook	Date Extracted: 10/21/99
6940 Tremont Road		Date Received: 10/21/99
W. A. Craig, Inc.	Client Project ID: Mashoon	Date Sampled: 10/21/99

EPA analytical meth	ods 6010/200 7 23	Q 2 ⁺	Lead	*	
Lab ID	Client ID	Matrix	Extraction 6	Lead*	% Recovery Surrogate
23876	SP1-4	S	TTLC	13	94
23877	SP5-8	S	TTLC	27	96
23878	T-1	S	TTLC	9.5	95
23879	T-2	S	TTLC	8.0	96
23880	T-3	S	TTLC	8.1	96
23881	T-4	S	TTLC	5.0	97
23882	T-5	s	TTLC	9.8	91
23883	Т-6	S	TTLC.	8.9	92
	7			· · · · · · · · · · · · · · · · · · ·	
			TTI C	20	
Reporting Limit u	mless otherwise	S	TTLC	3.0 mg/kg	
stated; ND means n the reporti	ot detected above ing limit	W	TTLC	0.005 mg/L	_
the reporting title			STLC,TCLP	0.2 mg/L	

^{*} soil and sludge samples are reported in mg/kg, wipe samples in ug/wipe, and water samples and all STLC / SPLP / TCLP extracts in mg/L *Lead is analysed using EPA method 6010 (ICP) for soils, sludges, STLC & TCLP extracts and method 239.2 (AA Furnace) for water samples

^o EPA extraction methods 1311(TCLP), 3010/3020(water,TTLC), 3040(organic matrices,TTLC), 3050(solids,TTLC), STLC - CA Title 22

^{*} surrogate diluted out of range; N/A means surrogate not applicable to this analysis

[&]amp; reporting limit raised due matrix interference

i) liquid sample that contains greater than ~2 vol. % sediment; this sediment is extracted with the liquid, in accordance with EPA methodologies and can significantly effect reported metal concentrations.

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QC REPORT

Date:

10/22/99-10/23/99

Matrix:

Soil

Extraction:

N/A

		Concen	tration:		%Red	overy	
Analyte	Sample	MS	MSD	Amount Spiked	MS	MSD	RPD
SampleID: 17868					Instrur	nent: GC	2-7
o-Xy	0.0	0.1	0.1	0.10	109	110	0.9
m,p-Xy	0.0	0.2	0.2	0.20	105	106	0.5
Ethyl Benzene	0.0	0.1	0.1	0.10	107	108	0.9
Toluene	0.0	0.1	0.1	0.10	106	109	2.8
Benzene	0.0	0.1	0.1	0.10	103	105	1.9
MTBE	0.0	0.1	0.1	0.10	94	97	3.1
GAS	0.0	0.9	0.9	1.00	94	92	2.1

SampleiD: 17868					Instrum	ent: GC	⊱6 A	
TPH (diesel)	0.0	308.1	303.4	300.00	103	101	1.5	

% Re covery = $\frac{(MS-Sample)}{AmountSpiked} \cdot 100$

 $RPD = \frac{(MS - MSD)}{(MS + MSD)} \cdot 2.100$

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QC REPORT

VOCs (EPA 8240/8260)

Date:

10/22/99-10/23/99

Matrix:

Soil

Extraction:

N/A

		Concent	ration:	ug/kg	%Re	%Recovery					
Analyte	Sample	MS	MSD	Amount Spiked	MS	MSD	RPD				

	Sample	MS	MSD	Spiked	MS	MSD	
SampleID: 17868					Instru	ment: GC	-4
Tolune	0.0	126.0	122.0	100.00	126	122	3.2
Benzene	0.0	102.0	98.0	100.00	102	98	4.0
Chlorobenzene	0.0	101.0	97.0	100.00	101	97	4.0
Trichloroethane	0.0	92.0	92.0	100.00	92	92	0.0
1,1-Dichloroethene	0.0	101.0	97.0	100.00	101	97	4.0

 $\% \text{ Re covery} = \frac{\text{(} MS-Sample\text{)}}{AmountSpiked} \cdot 100$

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QC REPORT

Date:

10/21/99-10/22/99

Matrix:

Soil

Extraction:

TTLC

		covery						
Compound	Sample	MS	MSD	Amount Spiked	MS	MSD	RPD	
SampleID: 102199				Instr	ument: 1	ICP-1		
Lead	0.0	5.4	5.3	5.00	108	106	1.6	

 $\% \text{ Re covery} = \frac{\left(MS - Sample \right)}{AmountSpiked} \cdot 100$ $RPD = \frac{\left(\frac{MS - MSD}{}\right)}{\left(\frac{MS + MSD}{}\right)} \cdot 2 \cdot 100$

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