

97 NOV 26 11 0:22

Project No.
4186-F4A

September 22, 1997

Mr. Roger Holt
Ervin, Cohen and Jessup
9401 Wilshire Blvd., Ninth Floor
Beverly Hills, CA 90212

Subject: Former Parker's Shell
5293 Crow Canyon Road
Castro Valley, California

REPORT ON PIPING EXCAVATION AND SOIL SAMPLING

Dear Mr. Holt:

As requested, ENGEO Incorporated has provided additional consultation services regarding the former service station located in Castro Valley, California (Figure 1). The scope of services included observation of piping excavation and overexcavation, field PID screenings, and soil sampling with submittal of the samples for laboratory analyses.

FIELD ACTIVITIES

Evidence of potential soil contamination associated with the former service station operation was noted during the week of August 29, 1997, during the pre-grading demolition activities. Additional site grading was postponed pending the additional environmental studies. On September 4, 1997, ENGEO observed the excavation of the remaining piping material. The existence of this piping was previously unknown to ENGEO and the client. Review of regulatory records during earlier studies had found no indication of remaining delivery and dispenser piping on the subject property.

Observation of the piping excavation and sampling work was undertaken on September 4 and 5, 1997, with an ENGEO Environmental Geologist on site during the work. Observation of the piping trenches found some evidence of fuel releases, primarily within the area of the piping couplings (Figures 2 and 3). Some residual product was noted within one of the former delivery pipes. Areas within the piping excavations which exhibited significant photoionization detector readings were overexcavated until the field PID readings dropped below 100 parts per million.

Soil samples were recovered at depths of six to twelve feet at the locations shown on Figure 2. Sampling was conducted under the observation of Mr. Scott Seery with the Alameda County Environmental Health Services Department (ACEHD). Soil samples were recovered using a hand slide hammer equipped with 6-inch-long, 2-inch-diameter stainless steel tubes. The soil samples were retrieved directly from the trenches, where feasible. The deeper soil samples were recovered

directly from the backhoe bucket. Sampling equipment was washed with a detergent solution and rinsed with clean water between samples.

In order to determine remedial options and the potential reuse of the excavated soil, four composite soil samples were recovered from the soil stockpiles (Figure 3). The stockpile samples were recovered approximately two feet below the surface of the stockpiles, with four tubes composited by the laboratory into a single sample for testing.

LABORATORY ANALYSIS

At the request of ACEHD, the trench samples were tested for total petroleum hydrocarbons as gasoline (TPHg) and BTEX. In addition to the TPHg and BTEX analysis, the stockpile samples were also analyzed for total lead. Tables I and II provide a summary of the laboratory analyses:

TABLE I
 Piping Trench Excavation Samples
 (Concentrations reported in parts per million - ppm)

SAMPLE NO.	TPHg	BENZ	TOL	E.BENZ	XYL
1-1	17	<0.05	<0.62	<0.62	<0.62
1-2	12	0.14	<0.62	<0.62	<0.62
1-3	56	0.27	<0.62	<0.62	<0.62
2-1	1.7	0.071	<0.0050	0.093	0.026
2-2	<1.0	<0.0050	0.013	0.0081	0.046
3-1	1.3	0.014	<0.0050	0.035	0.093
3-2	12	<0.05	<0.62	<0.62	<0.62
4-1	<1.0	<0.0050	<0.0050	<0.0050	<0.0050
4-2	23	<0.05	<0.62	<0.62	<0.62
5-1	26	<0.05	<0.62	<0.62	<0.62
5-2	<1.0	<0.0050	<0.0050	<0.0050	<0.0050
6-1	1.6	<0.0050	<0.0050	0.0056	<0.0050
6-2	<1.0	0.0055	<0.0050	0.0071	0.0053

TABLE II
 Stockpile Soil Samples
 (Concentrations reported in parts per million - ppm)

SAMPLE	TPHg	BENZ	TOL	E.BENZ	XYL	LEAD
SP1	<1.0	<0.005	<0.005	<0.005	<0.005	12
SP2	<1.0	<0.005	<0.005	<0.005	<0.005	10
SP3	<1.0	<0.005	<0.005	<0.005	<0.005	6.1
SP4	<1.0	<0.005	<0.005	<0.005	0.006	9.6

DISCUSSION

Review of the reported analyses shows low levels of TPH and BTEX in 11 of the 13 piping trench samples. The samples exhibiting detectable TPH/BTEX are located outside of the footprint of the proposed residential structures (Figure 3). The piping trenches located beneath the proposed structure locations did not exhibit field PID readings; therefore, these sections of the piping trenches would not be expected to present a health risk to future residents. In addition, the site risk management plan, which has been approved by ACEHD, includes the installation of vapor barriers beneath the residences proposed for the former service station parcel. Given the reported TPH/BTEX levels, the depth of the samples, and the configuration of the proposed development plan, we would not expect that the remaining residual hydrocarbons would present a health risk or environmental hazard.

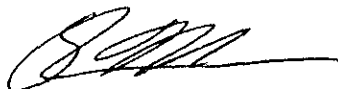
No detectable levels of TPHg or BTEX were found from the laboratory analyses of the soil stockpile samples. Physical observations conducted during the excavation and placement of stockpile SP1 suggested the presence of some contamination. Given these observations, we recommend that this stockpile is either removed for off-site disposal, or with the approval of ACEHD, reused as encapsulated fill outside of residential pad areas. The remaining soil stockpiles could be backfilled and recompacted with the authorization of ACEHD.

Based on the field and laboratory test data compiled to date, it is our opinion that no further characterization or remedial activities would be necessary in association with the piping and trenches.

We appreciate the opportunity to be of continued service to you regarding this project. A copy of this report should be provided to Mr. Scott Seery with ACEHD. If you have any questions regarding the scope of our services, please do not hesitate to contact our office.

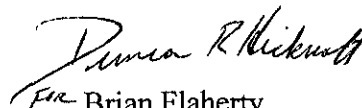
Very truly yours,

ENGEO INCORPORATED



Shawn Munger
Environmental Services Manager
REA 2070
CHG 413

Reviewed by:



For Brian Flaherty
Vice President

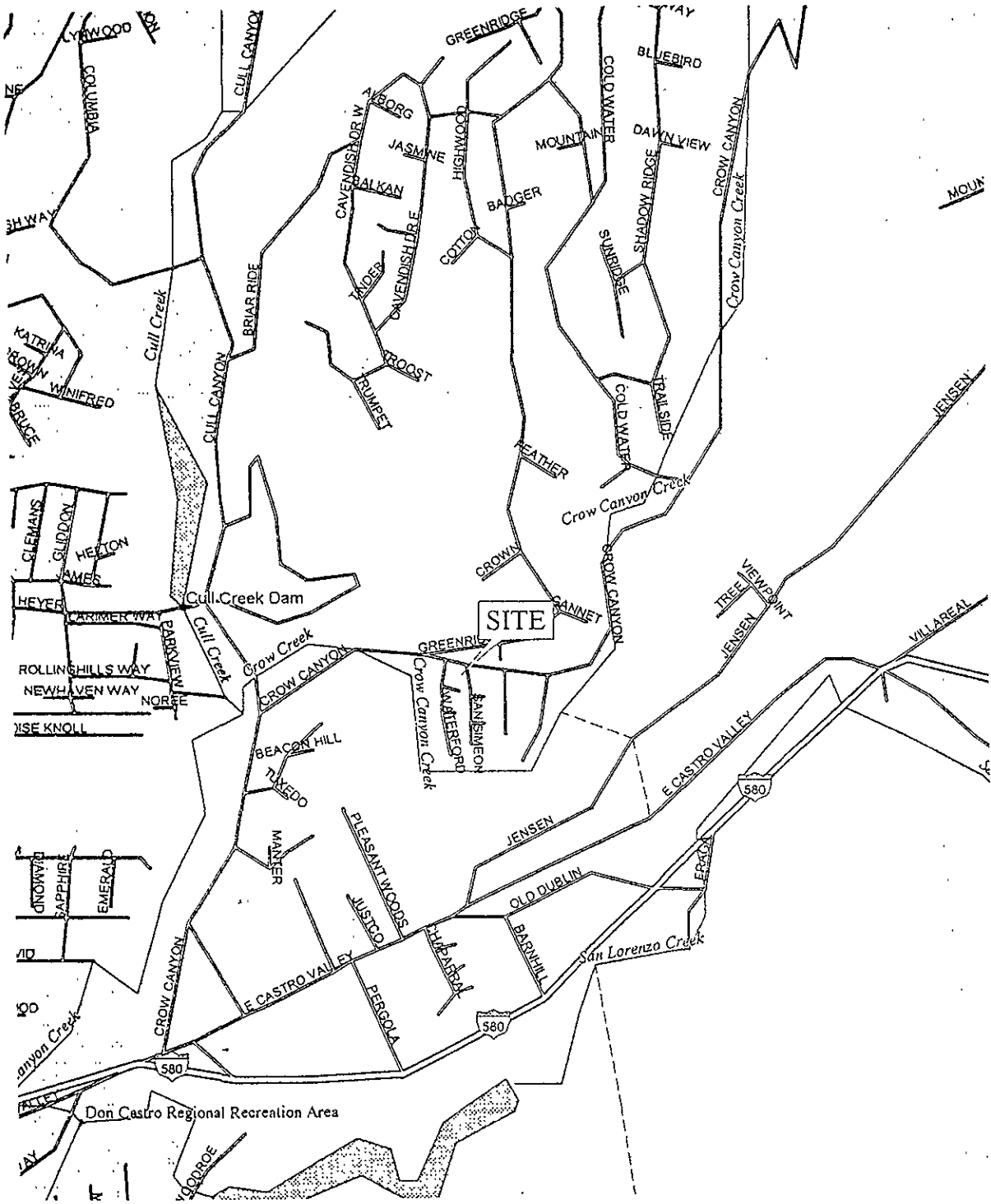
sm/jf:pipe
Attachments

cc: 1 - Western Pacific Development, Mr. Ed Galigher
1 - Alameda County Environmental Health Services Department, Mr. Scott Seery

APPENDIX A

Figure 1	Site Location
Figure 2	Piping Sampling Locations
Figure 3	Soil Stockpiles

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N.T.S.

ENGEO
INCORPORATED

SITE LOCATION
FORMER PARKER SHELL SITE, 5293 CROW CANYON ROAD
CASTRO VALLEY, CALIFORNIA

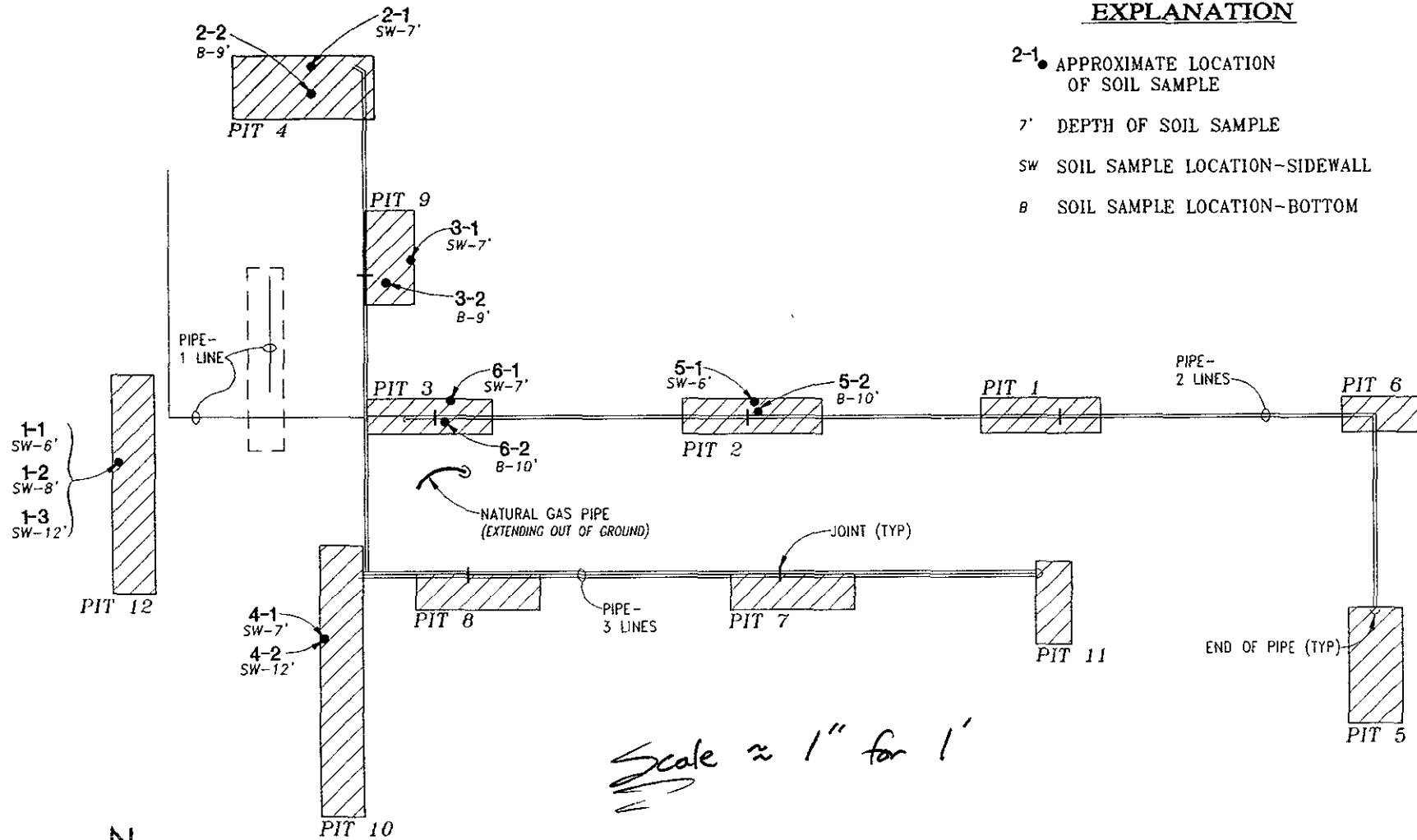
PROJECT NO.: 4186-F4A
DATE: SEPTEMBER 1997
DRAWN BY: [Signature] CHECKED BY: [Signature]

FIGURE NO.
1

CROW CANYON ROAD

EXPLANATION

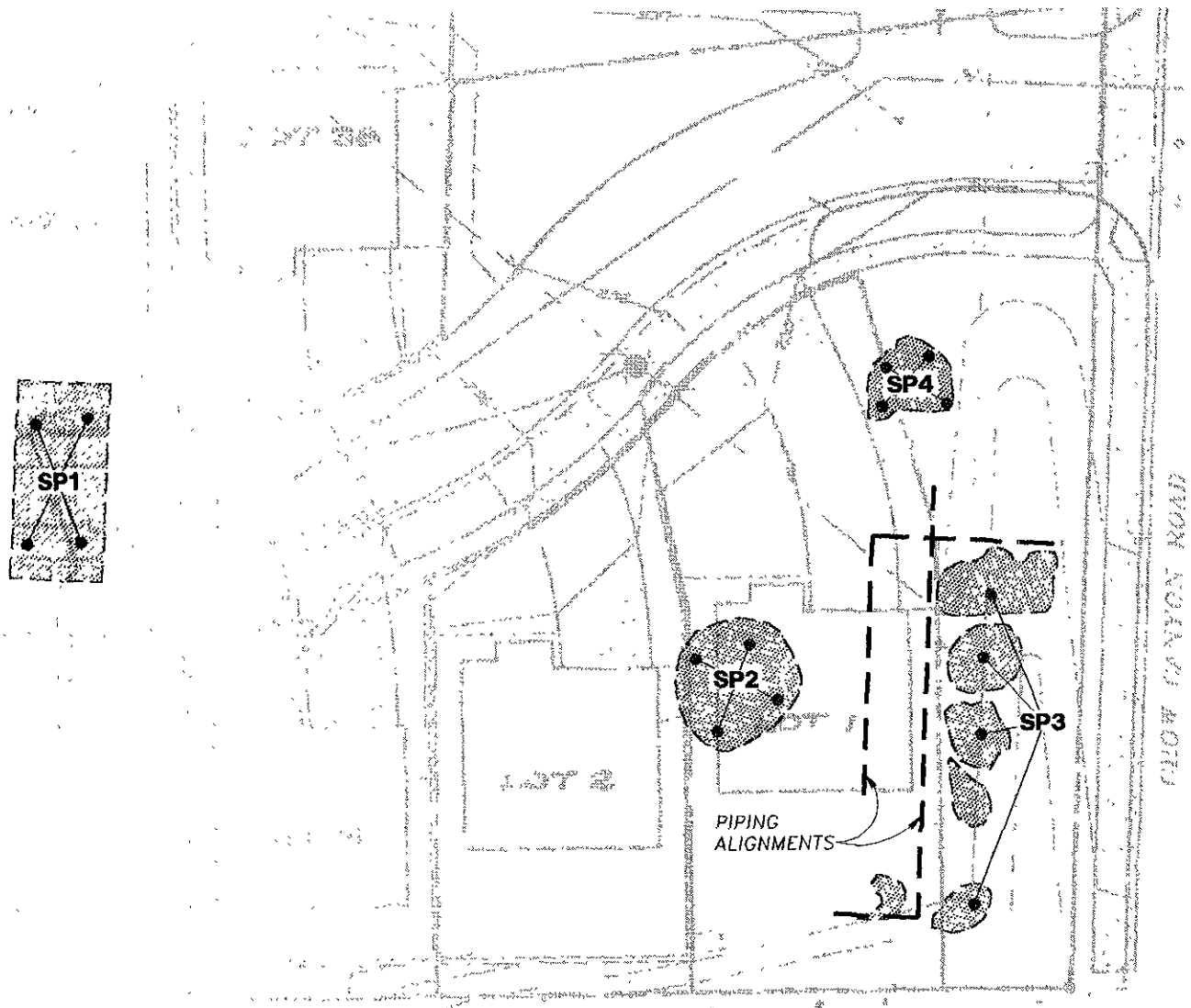
- 2-1 • APPROXIMATE LOCATION OF SOIL SAMPLE
- 7' DEPTH OF SOIL SAMPLE
- SW SOIL SAMPLE LOCATION-SIDEWALL
- B SOIL SAMPLE LOCATION-BOTTOM





Scale ≈ 1" for 1'

	PIPING SAMPLING LOCATIONS FORMER PARKER SHELL SITE, 5293 CROW CANYON ROAD CASTRO VALLEY, CALIFORNIA		JOB NO: 4186-F4A	FIGURE NO.
			DATE: SEPTEMBER 1997	2
			DRAWN BY: <i>[Signature]</i>	

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EXPLANATION

-  APPROXIMATE LOCATION OF STOCKPILE
-  APPROXIMATE LOCATION OF STOCKPILE SOIL SAMPLE



ENGEO
INCORPORATED

SOIL STOCKPILES
FORMER PARKER SHELL SITE, 5293 CROW CANYON ROAD
CASTRO VALLEY, CALIFORNIA

PROJECT NO.: 4186-F4A
DATE: SEPTEMBER 1997
DRAWN BY: *JB* CHECKED BY: *SM*

FIGURE NO.
3

APPENDIX B

Superior Analytical Laboratory Report

Chain of Custody Record



Superior

Analytical Laboratory

ENGEO INC
2401 Crow Canyon Rd, Suite 200
San Ramon, CA 9458

Date: September 19, 1997

SEP 25 1997

Attn: Keith Nowell

Laboratory Number : 23209

Project Number/Name : 4186-F6

Facility/Site : 5293 CROW CANYON ROAD

Dear Keith Nowell:


Attached is Superior Analytical Laboratory report for the samples received on September 16, 1997. This report has been reviewed and approved for release. Reproduction of this report is permitted only in its entirety. Following the cover letter is the Case Narrative detailing sample receipt and analysis. Also enclosed is a copy of the original Chain-of-Custody record confirming receipt of samples.

Please note that any unused portion of the sample will be discarded after October 16, 1997, unless you have requested otherwise.

We appreciate the opportunity to be of service to you. If you have any questions, please contact our Laboratory at (510) 313-0850.

Sincerely,


Afsaneh Salimpour
Project Manager


Sanjay Panda
QA/QC Manager



Superior

Analytical Laboratory

CASE NARRATIVE

ENGEO INC

Project Number/Name: 4186-F6

Laboratory Number: 23209

Sample Receipt

Four soil samples were received by
Superior Analytical Laboratory on September 16, 1997.

Cooler temperature was 5.1°C

No abnormalities were noted with sample receiving.

Sample Analysis

The samples were analyzed for methods 6010, 8015M, 8020 and COMP.

NOTE: Reproduction of this report is permitted only in its entirety.



Superior

Analytical Laboratory

ENGEO INC
Attn: Keith Nowell

Project 4186-F6
Reported on September 18, 1997

Gasoline Range Petroleum Hydrocarbons and BTXE
by EPA SW-846 5030/8015M/8020
Gasoline Range quantitated as all compounds from C6-C10

Chronology

Laboratory Number 23209

Sample ID	Sampled	Received	Extract.	Analyzed	QC Batch	LAB #
SP-1	09/16/97	09/16/97	09/17/97	09/17/97	DI171.05	01
SP-2	09/16/97	09/16/97	09/17/97	09/17/97	DI171.05	02
SP-3	09/16/97	09/16/97	09/17/97	09/17/97	DI171.05	03
SP-4	09/16/97	09/16/97	09/17/97	09/17/97	DI171.05	04

QC Samples

QC Batch #	QC Sample ID	Type	Ref.	Matrix	Extract.	Analyzed
DI171.05-01	Method Blank	MB		Soil	09/17/97	09/17/97
DI171.05-02	Laboratory Spike	LS		Soil	09/17/97	09/17/97
DI171.05-03	SP-1	MS	23209-01	Soil	09/17/97	09/17/97
DI171.05-04	SP-1	MSD	23209-01	Soil	09/17/97	09/17/97



Superior

Analytical Laboratory

ENGEO INC
Attn: Keith Nowell

Project 4186-F6
Reported on September 18, 1997

Gasoline Range Petroleum Hydrocarbons and BTXE
by EPA SW-846 5030/8015M/8020
Gasoline Range quantitated as all compounds from C6-C10

LAB ID	Sample ID	Matrix	Dil. Factor	Moisture
23209-01	SP-1	Soil	1.0	-
23209-02	SP-2	Soil	1.0	-
23209-03	SP-3	Soil	1.0	-
23209-04	SP-4	Soil	1.0	-

RESULTS OF ANALYSIS

Compound	23209-01		23209-02		23209-03		23209-04		
	Conc.	RL	Conc.	RL	Conc.	RL	Conc.	RL	
	mg/kg		mg/kg		mg/kg		mg/kg		
Gasoline Range	ND	1	ND	1	ND	1	ND	1	
Benzene	ND	0.005	ND	0.005	ND	0.005	ND	0.005	
Toluene	ND	0.005	ND	0.005	ND	0.005	ND	0.005	
Ethyl Benzene	ND	0.005	ND	0.005	ND	0.005	ND	0.005	
Xylenes	ND	0.005	ND	0.005	ND	0.005	0.006	0.005	
>> Surrogate Recoveries (%) <<									
Trifluorotoluene (SS)	80		83		87		94		



Superior

Analytical Laboratory

Gasoline Range Petroleum Hydrocarbons and BTXE
by EPA SW-846 5030/8015M/8020
Gasoline Range quantitated as all compounds from C6-C10

Quality Assurance and Control Data

Laboratory Number: 23209
Method Blank(s)

DI171.05-01
Conc. RL
mg/kg

Gasoline Range	ND	1
Benzene	ND	0.005
Toluene	ND	0.005
Ethyl Benzene	ND	0.005
Xylenes	ND	0.005

>> Surrogate Recoveries (%) <<
Trifluorotoluene (SS) 94



Superior

Analytical Laboratory

Gasoline Range Petroleum Hydrocarbons and BTXE
 by EPA SW-846 5030/8015M/8020
 Gasoline Range quantitated as all compounds from C6-C10

Quality Assurance and Control Data

Laboratory Number: 23209

Compound	Sample conc.	SPK Level	SPK Result	Recovery %	Limits %	RPD %
----------	--------------	-----------	------------	------------	----------	-------

For Soil Matrix (mg/kg)
 DI171.05 02 / - Laboratory Control Spikes

Gasoline Range		10	10	100	65-135	
Benzene		0.100	0.10	100	65-135	
Toluene		0.100	0.11	110	65-135	
Ethyl Benzene		0.100	0.11	110	65-135	
Xylenes		0.300	0.32	107	65-135	

>> Surrogate Recoveries (%) <<

Trifluorotoluene (SS)				98	50-150	
-----------------------	--	--	--	----	--------	--

For Soil Matrix (mg/kg)
 DI171.05 03 / 04 - Sample Spiked: 23209 - 01

Gasoline Range	ND	10	8.4/8.2	84/82	65-135	2
Benzene	ND	0.100	0.092/0.096	92/96	65-135	4
Toluene	ND	0.100	0.093/0.098	93/98	65-135	5
Ethyl Benzene	ND	0.100	0.096/0.098	96/98	65-135	2
Xylenes	ND	0.300	0.29/0.29	97/97	65-135	0

>> Surrogate Recoveries (%) <<

Trifluorotoluene (SS)				88/92	50-150	
-----------------------	--	--	--	-------	--------	--

Definitions:

ND = Not Detected

RL = Reporting Limit

NA = Not Analysed

RPD = Relative Percent Difference

ug/L = parts per billion (ppb)

mg/L = parts per million (ppm)

ug/kg = parts per billion (ppb)

mg/kg = parts per million (ppm)



Superior

Analytical Laboratory

ENGEO INC
Attn: Keith Nowell

Project 4186-F6
Reported on September 18, 1997

EPA SW-846 Method 6010 and/or 7000 Series Metals

Chronology

Laboratory Number 23209

Sample ID	Sampled	Received	Extract.	Analyzed	QC Batch	LAB #
SP-1	09/16/97	09/16/97	09/17/97	09/17/97	DI172.44	01
SP-2	09/16/97	09/16/97	09/17/97	09/17/97	DI172.44	02
SP-3	09/16/97	09/16/97	09/17/97	09/17/97	DI172.44	03
SP-4	09/16/97	09/16/97	09/17/97	09/17/97	DI172.44	04

QC Samples

QC Batch #	QC Sample ID	Type	Ref.	Matrix	Extract.	Analyzed
DI172.44-01	Method Blank	MB		Soil	09/17/97	09/18/97
DI172.44-02	Laboratory Spike	LS		Soil	09/17/97	09/18/97
DI172.44-03	Laboratory Spike Duplicate	LSD		Soil	09/17/97	09/18/97
DI172.44-04	SS-1	MS	23197-24	Soil	09/17/97	09/18/97
DI172.44-05	SS-1	MSD	23197-24	Soil	09/17/97	09/18/97



Superior

Analytical Laboratory

ENGEO INC
Attn: Keith Nowell

Project 4186-F6
Reported on September 18, 1997

EPA SW-846 Method 6010 and/or 7000 Series Metals

LAB ID	Sample ID	Matrix	Dil. Factor	Moisture
23209-01	SP-1	Soil	1.0	-
23209-02	SP-2	Soil	1.0	-
23209-03	SP-3	Soil	1.0	-
23209-04	SP-4	Soil	1.0	-

R E S U L T S O F A N A L Y S I S

Compound	23209-01		23209-02		23209-03		23209-04	
	Conc.	RL	Conc.	RL	Conc.	RL	Conc.	RL
	mg/kg		mg/kg		mg/kg		mg/kg	
Lead (SW-846 6010)	12	2.5	10	2.5	6.1	2.5	9.6	2.5



Superior

Analytical Laboratory

EPA SW-846 Method 6010 and/or 7000 Series Metals

Quality Assurance and Control Data

Laboratory Number: 23209

Method Blank(s)

DI172.44-01

Conc. RL

mg/kg

Lead (SW-846 6010)

ND 2.5



Superior

Analytical Laboratory

EPA SW-846 Method 6010 and/or 7000 Series Metals

Quality Assurance and Control Data

Laboratory Number: 23209

Compound	Sample conc.	SPK Level	SPK Result	Recovery %	Limits %	RPD %
For Soil Matrix (mg/kg)						
DI172.44 02 / 03 - Laboratory Control Spikes						
Lead (SW-846 6010)		50	53.9/52.6	108/105	75-125	3
For Soil Matrix (mg/kg)						
DI172.44 04 / 05 - Sample Spiked: 23197 - 24						
Lead (SW-846 6010)	496	50	485/580C	-22/168	75-125	260

C - The Matrix Spike recovery is not meaningful due to the high concentration of the analyte in the sample relative to the spike

Definitions:

ND = Not Detected

RL = Reporting Limit

NA = Not Analysed

RPD = Relative Percent Difference

ug/L = parts per billion (ppb)

mg/L = parts per million (ppm)

ug/kg = parts per billion (ppb)

mg/kg = parts per million (ppm)

23209

CHAIN OF CUSTODY RECORD

PROJECT NUMBER		PROJECT NAME															REMARKS			
4186-F6		5293 Crow Canyon Road															REQUIRED DETECTION LIMITS			
SAMPLED BY: (SIGNATURE)																				
Shawn Minger																				
SAMPLE NUMBER	DATE	TIME	MATRIX	NUMBER OF CONTAINERS	CONTAINER SIZE	PRESERVATIVE	TPH - GASOLINE (EPA 8015/8030)	TPH - DIESEL (EPA 8015/3550/3510)	PURGEABLE AROMATICS BITEX (EPA 802, 8020)	PURGEABLE HALOCARBONS (EPA 801, 8010)	VOLATILE ORGANICS (EPA 824, 8240)	BASE/NEUTRALS, ACIDS (EPA 823/8270)	TOTAL OIL & GREASE (SMWW 5520(F))	OC PESTICIDES/PCB (EPA 808, 8080)	OP PESTICIDES (EPA 814/8140)	TITLE 26 METALS (17)	PRIORITY METALS (13)			
SP1	9-16-97	14:40	S	4	2'x 6"	ICC	X	X	X	X	X	X	X	X	X	X	X	X	X	4-Liner Composite
SP2	9-16-97	14:50	S	4	1	1	X	X	X	X	X	X	X	X	X	X	X	X	X	1
SP3	9-16-97	14:58	S	4	1	1	X	X	X	X	X	X	X	X	X	X	X	X	X	4-Liner Composite
SP4	9-16-97	15:03	S	4	2'x 6"	ICC	X	X	X	X	X	X	X	X	X	X	X	X	X	
<p>Stored in ice. <input checked="" type="checkbox"/></p> <p>Containers <input checked="" type="checkbox"/></p> <p>Sealed <input checked="" type="checkbox"/></p> <p>Headspace <input checked="" type="checkbox"/></p>							<p style="font-size: 2em; transform: rotate(-45deg);">/</p>													
RELINQUISHED BY: (SIGNATURE)		DATE/TIME		RECEIVED BY: (SIGNATURE)			RELINQUISHED BY: (SIGNATURE)		DATE/TIME		RECEIVED BY: (SIGNATURE)			RELINQUISHED BY: (SIGNATURE)		DATE/TIME		RECEIVED BY: (SIGNATURE)		
Shawn Minger		9/16/97		[Signature]			[Signature]				[Signature]			[Signature]				[Signature]		
RELINQUISHED BY: (SIGNATURE)		DATE/TIME		RECEIVED BY: (SIGNATURE)			RELINQUISHED BY: (SIGNATURE)		DATE/TIME		RECEIVED BY: (SIGNATURE)			RELINQUISHED BY: (SIGNATURE)		DATE/TIME		RECEIVED BY: (SIGNATURE)		
[Signature]				[Signature]			[Signature]				[Signature]			[Signature]				[Signature]		
RELINQUISHED BY: (SIGNATURE)		DATE/TIME		RECEIVED FOR LABORATORY BY: (SIGNATURE)			DATE/TIME		REMARKS											
[Signature]				Shawn Minger			9/16/97 4:50		48-HR FAT											

APPENDIX C

Chromalab, Inc. Report
Chain of Custody Record

CHROMALAB, INC.

Environmental Services (SDB)

Revised from September 11, 1997

September 11, 1997

Submission #: 9709085

ENGE0, INC.

Atten: Keith Norwell

Project: 5293 CROW CANYON RD
Received: September 5, 1997

Project#: 4186-F5

re: One sample for Gasoline BTEX analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: 1-1

Spl#: 146438

Matrix: SOIL

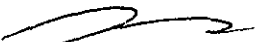
Sampled: September 5, 1997


Run#: 8540

Analyzed: September 9, 1997

<u>ANALYTE</u>	<u>RESULT</u> (mg/Kg)	<u>REPORTING</u> <u>LIMIT</u> (mg/Kg)	<u>BLANK</u> <u>RESULT</u> (mg/Kg)	<u>BLANK</u> <u>SPIKE</u> (%)	<u>DILUTION</u> <u>FACTOR</u>
GASOLINE	17	12	N.D.	--	1
BENZENE	N.D.	0.05	N.D.	119	1
TOLUENE	N.D.	0.62	N.D.	100	1
ETHYL BENZENE	N.D.	0.62	N.D.	92	1
XYLENES	N.D.	0.62	N.D.	93	1

Note: Reporting Limits Increased Due To Sample Interference.


Kayvan Kimyai
Chemist


Marianne Alexander
Gas/BTEX Supervisor

CHROMALAB, INC.

Environmental Services (SDB)

Revised from September 11, 1997

September 11, 1997

Submission #: 9709085

ENGEO, INC.

Atten: Keith Norwell

Project: 5293 CROW CANYON RD
Received: September 5, 1997

Project#: 4186-F5

re: One sample for Gasoline BTEX analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: 1-2

Spl#: 146439

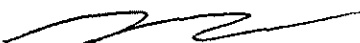
Matrix: SOIL

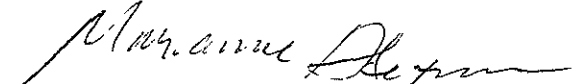
Sampled: September 5, 1997

Run#: 8540

Analyzed: September 9, 1997

<u>ANALYTE</u>	<u>RESULT</u> (mg/Kg)	<u>REPORTING</u> <u>LIMIT</u> (mg/Kg)	<u>BLANK</u> <u>RESULT</u> (mg/Kg)	<u>BLANK</u> <u>SPIKE</u> (%)	<u>DILUTION</u> <u>FACTOR</u>
<i>Note: Reporting Limits Increased Due To Sample Interference.</i>					
GASOLINE	12	12	N.D.	--	1
BENZENE	0.14	0.05	N.D.	119	1
TOLUENE	N.D.	0.62	N.D.	100	1
ETHYL BENZENE	N.D.	0.62	N.D.	92	1
XYLENES	N.D.	0.62	N.D.	93	1


Kayvan Kimyai
Chemist


Marianne Alexander
Gas/BTEX Supervisor

CHROMALAB, INC.

Environmental Services (SDB)

Revised from September 11, 1997

September 11, 1997

Submission #: 9709085

ENGEO, INC.

Atten: Keith Norwell

Project: 5293 CROW CANYON RD
Received: September 5, 1997

Project#: 4186-F5

re: One sample for Gasoline BTEX analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: 1-3

Spl#: 146440

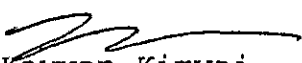
Matrix: SOIL

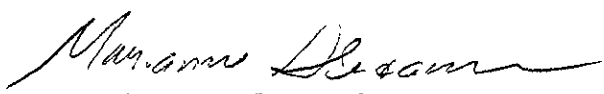
Sampled: September 5, 1997

Run#: 8540

Analyzed: September 9, 1997

<u>ANALYTE</u>	<u>RESULT</u> (mg/Kg)	<u>REPORTING</u> <u>LIMIT</u> (mg/Kg)	<u>BLANK</u> <u>RESULT</u> (mg/Kg)	<u>BLANK</u> <u>SPIKE</u> (%)	<u>DILUTION</u> <u>FACTOR</u>
Note: Reporting Limits Increased Due To Sample Interference.					
GASOLINE	56	12	N.D.	--	1
BENZENE	0.27	0.05	N.D.	119	1
TOLUENE	N.D.	0.62	N.D.	100	1
ETHYL BENZENE	N.D.	0.62	N.D.	92	1
XYLENES	N.D.	0.62	N.D.	93	1


Kayvan Kimyai
Chemist


Marianne Alexander
Gas/BTEX Supervisor

CHROMALAB, INC.

Environmental Services (SDB)

September 11, 1997

Submission #: 9709085

ENGEO, INC.

Atten: Keith Norwell

Project: 5293 CROW CANYON RD
Received: September 5, 1997

Project#: 4186-F5

re: One sample for Gasoline BTEX analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: 2-1

Spl#: 146441

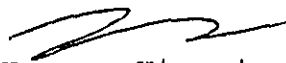
Matrix: SOIL


Sampled: September 5, 1997

Run#: 8547

Analyzed: September 8, 1997

<u>ANALYTE</u>	<u>RESULT</u> (mg/Kg)	<u>REPORTING</u> <u>LIMIT</u> (mg/Kg)	<u>BLANK</u> <u>RESULT</u> (mg/Kg)	<u>BLANK</u> <u>SPIKE</u> (%)	<u>DILUTION</u> <u>FACTOR</u>
GASOLINE	1.7	1.0	N.D.	116	1
BENZENE	0.071	0.0050	N.D.	91	1
TOLUENE	N.D.	0.0050	N.D.	92	1
ETHYL BENZENE	0.093	0.0050	N.D.	90	1
XYLENES	0.026	0.0050	N.D.	85	1


Kayvan Kimyai
Chemist


Marianne Alexander
Gas/BTEX Supervisor

CHROMALAB, INC.

Environmental Services (SDB)

September 11, 1997

Submission #: 9709085

ENGEO, INC.

Atten: Keith Norwell

Project: 5293 CROW CANYON RD
Received: September 5, 1997

Project#: 4186-F5

re: One sample for Gasoline BTEX analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: 2-2

Spl#: 146442

Matrix: SOIL

Sampled: September 5, 1997

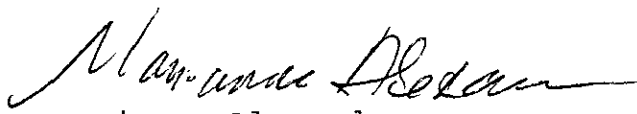
Run#: 8547

Analyzed: September 8, 1997

ANALYTE	RESULT (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
GASOLINE	N.D.	1.0	N.D.	116	1
BENZENE	N.D.	0.0050	N.D.	91	1
TOLUENE	0.013	0.0050	N.D.	92	1
ETHYL BENZENE	0.0081	0.0050	N.D.	90	1
XYLENES	0.046	0.0050	N.D.	85	1

Note: Surrogate Recoveries demonstrate Matrix interference.


Kayvan Kimyai
Chemist


Marianne Alexander
Gas/BTEX Supervisor

CHROMALAB, INC.

Environmental Services (SDB)

September 11, 1997

Submission #: 9709085

ENGEO, INC.

Atten: Keith Norwell

Project: 5293 CROW CANYON RD
Received: September 5, 1997

Project#: 4186-F5

re: One sample for Gasoline BTEX analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: 3-1

Spl#: 146443

Matrix: SOIL


Sampled: September 5, 1997

Run#: 8547

Analyzed: September 8, 1997

ANALYTE	RESULT (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
GASOLINE	1.3	1.0	N.D.	116	1
BENZENE	0.014	0.0050	N.D.	91	1
TOLUENE	N.D.	0.0050	N.D.	92	1
ETHYL BENZENE	0.035	0.0050	N.D.	90	1
XYLENES	0.093	0.0050	N.D.	85	1


Kayvan Kimyai
Chemist


Marianne Alexander
Gas/BTEX Supervisor

CHROMALAB, INC.

Environmental Services (SDB)

Revised from September 11, 1997

September 11, 1997

Submission #: 9709085

ENGE0, INC.

Atten: Keith Norwell

Project: 5293 CROW CANYON RD
Received: September 5, 1997

Project#: 4186-F5

re: One sample for Gasoline BTEX analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: 3-2

Spl#: 146444

Matrix: SOIL

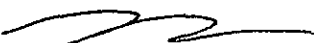
Sampled: September 5, 1997


Run#: 8540

Analyzed: September 9, 1997

ANALYTE	RESULT (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
GASOLINE	12	12	N.D.	--	1
BENZENE	N.D.	0.05	N.D.	119	1
TOLUENE	N.D.	0.62	N.D.	100	1
ETHYL BENZENE	N.D.	0.62	N.D.	92	1
XYLENES	N.D.	0.62	N.D.	93	1

Note: Reporting Limits Increased Due To Sample Interference. Surrogate Recoveries biased high due to Hydrocarbon co-elution.


Kayvan Kimyai
Chemist


Marianne Alexander
Gas/BTEX Supervisor

CHROMALAB, INC.

Environmental Services (SDB)

September 11, 1997

Submission #: 9709085

ENGE0, INC.

Atten: Keith Norwell

Project: 5293 CROW CANYON RD
Received: September 5, 1997

Project#: 4186-F5

re: One sample for Gasoline BTEX analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: 4-1

Spl#: 146445

Matrix: SOIL


Sampled: September 5, 1997

Run#: 8547

Analyzed: September 8, 1997

<u>ANALYTE</u>	<u>RESULT</u> (mg/Kg)	<u>REPORTING</u> <u>LIMIT</u> (mg/Kg)	<u>BLANK</u> <u>RESULT</u> (mg/Kg)	<u>BLANK</u> <u>SPIKE</u> (%)	<u>DILUTION</u> <u>FACTOR</u>
GASOLINE	N.D.	1.0	N.D.	116	1
BENZENE	N.D.	0.0050	N.D.	91	1
TOLUENE	N.D.	0.0050	N.D.	92	1
ETHYL BENZENE	N.D.	0.0050	N.D.	90	1
XYLENES	N.D.	0.0050	N.D.	85	1


Kayvan Kimyai
Chemist


Marianne Alexander
Gas/BTEX Supervisor

CHROMALAB, INC.

Environmental Services (SDB)

Revised from September 11, 1997

September 11, 1997

Submission #: 9709085

ENGEO, INC.

Atten: Keith Norwell

Project: 5293 CROW CANYON RD
Received: September 5, 1997

Project#: 4186-F5

re: One sample for Gasoline BTEX analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: 4-2

Spl#: 146446

Matrix: SOIL

Sampled: September 5, 1997

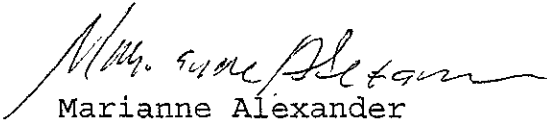
Run#: 8540

Analyzed: September 9, 1997

<u>ANALYTE</u>	<u>RESULT</u> (mg/Kg)	<u>REPORTING</u> <u>LIMIT</u> (mg/Kg)	<u>BLANK</u> <u>RESULT</u> (mg/Kg)	<u>BLANK</u> <u>SPIKE</u> (%)	<u>DILUTION</u> <u>FACTOR</u>
GASOLINE	23	12	N.D.	--	1
BENZENE	N.D.	0.05	N.D.	119	1
TOLUENE	N.D.	0.62	N.D.	100	1
ETHYL BENZENE	N.D.	0.62	N.D.	92	1
XYLENES	N.D.	0.62	N.D.	93	1

Note: Reporting Limits Increased Due To Sample Interference. Surrogate Recoveries biased high due to Hydrocarbon co-elution.


Kayvan Kimyai
Chemist


Marianne Alexander
Gas/BTEX Supervisor

CHROMALAB, INC.

Environmental Services (SDB)

Revised from September 11, 1997

September 11, 1997

Submission #: 9709085

ENGE0, INC.

Atten: Keith Norwell

Project: 5293 CROW CANYON RD
Received: September 5, 1997

Project#: 4186-F5

re: One sample for Gasoline BTEX analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: 5-1

Spl#: 146447

Matrix: AIR

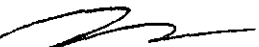
Sampled: September 5, 1997

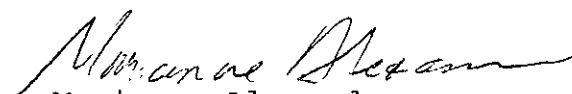
Run#: 8540

Analyzed: September 9, 1997

<u>ANALYTE</u>	<u>RESULT</u> (mg/Kg)	<u>REPORTING</u> <u>LIMIT</u> (mg/Kg)	<u>BLANK</u> <u>RESULT</u> (mg/Kg)	<u>BLANK</u> <u>SPIKE</u> (%)	<u>DILUTION</u> <u>FACTOR</u>
GASOLINE	26	12	N.D.	--	1
BENZENE	N.D.	0.05	N.D.	119	1
TOLUENE	N.D.	0.62	N.D.	100	1
ETHYL BENZENE	N.D.	0.62	N.D.	92	1
XYLENES	N.D.	0.62	N.D.	93	1

Note: Reporting Limits Increased Due To Sample Interference. Surrogate Recoveries biased high due to Hydrocarbon co-elution.


Kayvan Kimyai
Chemist


Marianne Alexander
Gas/BTEX Supervisor

CHROMALAB, INC.

Environmental Services (SDB)

September 11, 1997

Submission #: 9709085

ENGEQ, INC.

Atten: Keith Norwell

Project: 5293 CROW CANYON RD
Received: September 5, 1997

Project#: 4186-F5

re: One sample for Gasoline BTEX analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: 5-2

Spl#: 146448


Matrix: SOIL


Sampled: September 5, 1997

Run#: 8547

Analyzed: September 9, 1997

<u>ANALYTE</u>	<u>RESULT</u> <u>(mg/Kg)</u>	<u>REPORTING</u> <u>LIMIT</u> <u>(mg/Kg)</u>	<u>BLANK</u> <u>RESULT</u> <u>(mg/Kg)</u>	<u>BLANK</u> <u>SPIKE</u> <u>(%)</u>	<u>DILUTION</u> <u>FACTOR</u>
GASOLINE	N.D.	1.0	N.D.	116	1
BENZENE	N.D.	0.0050	N.D.	91	1
TOLUENE	N.D.	0.0050	N.D.	92	1
ETHYL BENZENE	N.D.	0.0050	N.D.	90	1
XYLENES	N.D.	0.0050	N.D.	85	1


Kayvan Kimyai
Chemist


Marianne Alexander
Gas/BTEX Supervisor

CHROMALAB, INC.

Environmental Services (SDB)

September 11, 1997

Submission #: 9709085

ENGE0, INC.

Atten: Keith Norwell

Project: 5293 CROW CANYON RD
Received: September 5, 1997

Project#: 4186-F5

re: One sample for Gasoline BTEX analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: 6-1

Spl#: 146449

Matrix: SOIL

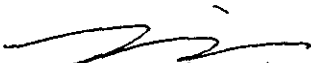
Sampled: September 5, 1997

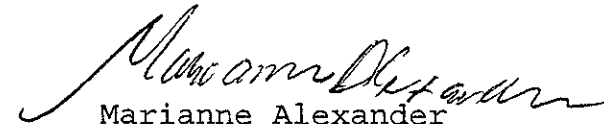
Run#: 8547

Analyzed: September 9, 1997

<u>ANALYTE</u>	<u>RESULT</u> (mg/Kg)	<u>REPORTING</u> <u>LIMIT</u> (mg/Kg)	<u>BLANK</u> <u>RESULT</u> (mg/Kg)	<u>BLANK</u> <u>SPIKE</u> (%)	<u>DILUTION</u> <u>FACTOR</u>
GASOLINE	1.6	1.0	N.D.	116	1
BENZENE	N.D.	0.0050	N.D.	91	1
TOLUENE	N.D.	0.0050	N.D.	92	1
ETHYL BENZENE	0.0056	0.0050	N.D.	90	1
XYLENES	N.D.	0.0050	N.D.	85	1

Note: Surrogate Recoveries biased high due to Hydrocarbon co-elution.


Kayvan Kimyai
Chemist


Marianne Alexander
Gas/BTEX Supervisor

CHROMALAB, INC.

Environmental Services (SDB)

September 11, 1997

Submission #: 9709085

ENGEO, INC.

Atten: Keith Norwell

Project: 5293 CROW CANYON RD
Received: September 5, 1997

Project#: 4186-F5

re: One sample for Gasoline BTEX analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: 6-2

Spl#: 146450

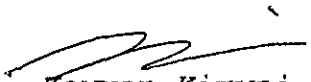
Matrix: SOIL

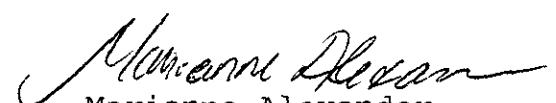
Sampled: September 5, 1997

Run#: 8547

Analyzed: September 9, 1997

ANALYTE	RESULT (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
GASOLINE	N.D.	1.0	N.D.	116	1
BENZENE	0.0055	0.0050	N.D.	91	1
TOLUENE	N.D.	0.0050	N.D.	92	1
ETHYL BENZENE	0.0071	0.0050	N.D.	90	1
XYLENES	0.0053	0.0050	N.D.	85	1


Kayvan Kimyai
Chemist


Marianne Alexander
Gas/BTEX Supervisor

99085/146438-146450

35378

ENGEO
INCORPORATED
2401 CROW CANYON ROAD, SUITE 200
SAN RAMON, CALIFORNIA 94583
PHONE (510) 838-1600

CHAIN OF CUSTODY RECORD

PROJECT NUMBER 4186-F5	PROJECT NAME 5293 Crow Canyon Road
----------------------------------	--

SUBM #: 9709085 REP: FM
CLIENT: ENGEO
DUE: 09/09/97
REF #: 35378

SAMPLED BY: (SIGNATURE)
Keith Nowell (Keith Nowell)

SAMPLE NUMBER	DATE	TIME	MATRIX	NUMBER OF CONTAINERS	CONTAINER SIZE	PRESERVATIVE	TPH - GASOLINE	TPH - DIESEL	PURGEABLE AROMATICS	PURGEABLE HALOCARBONS	VOLATILE ORGANICS	BASE/NEUTRALS, ACIDS	TOTAL OIL & GREASE	OC PESTICIDES/PCB	OP PESTICIDES	TITLE 26 METALS	PRIORITY METALS
							(EPA 8015/5030)	(EPA 8013/3550/3510)	BTEX (EPA 602, 8020)	(EPA 601, 8010)	(EPA 824, 8240)	(EPA 825, 8270)	(SMW 5320(F))	(EPA 608, 8080)	(EPA 614/8140)	(17)	(13)
1-1	9/05/97	15:00	Soil	1	2"x6"	Ice	X	X									
1-2	9/05/97	15:05	Soil	1	2"x6"	Ice	X	X									
1-3	9/05/97	15:15	Soil	1	2"x6"	Ice	X	X									
2-1	9/05/97	15:25	Soil	1	2"x6"	Ice	X	X									
2-2	9/05/97	15:20	Soil	1	2"x6"	Ice	X	X									
3-1	9/05/97	15:40	Soil	1	2"x6"	Ice	X	X									
3-2	9/05/97	15:45	Soil	1	2"x6"	Ice	X	X									
4-1	9/05/97	16:00	Soil	1	2"x6"	Ice	X	X									
4-2	9/05/97	15:55	Soil	1	2"x6"	Ice	X	X									
5-1	9/05/97	16:30	Soil	1	2"x6"	Ice	X	X									
5-2	9/05/97	16:25	Soil	1	2"x6"	Ice	X	X									
6-1	9/05/97	16:20	Soil	1	2"x6"	Ice	X	X									
6-2	9/05/97	16:15	Soil	1	2"x6"	Ice	X	X									

RUSH

RELINQUISHED BY: (SIGNATURE) Keith Nowell	DATE/TIME 9/05/97 18:15	RECEIVED BY: (SIGNATURE)	RELINQUISHED BY: (SIGNATURE)	DATE/TIME	RECEIVED BY: (SIGNATURE)
RELINQUISHED BY: (SIGNATURE)	DATE/TIME	RECEIVED BY: (SIGNATURE)	RELINQUISHED BY: (SIGNATURE)	DATE/TIME	RECEIVED BY: (SIGNATURE)
RELINQUISHED BY: (SIGNATURE)	DATE/TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE) [Signature]	DATE/TIME	REMARKS Rush - 48 hr TAT - Need results by 4:00 PM Tuesday 9/9/97	

DISTRIBUTION: ORIGINAL ACCOMPANIES SHIPMENT; COPY TO PROJECT FIELD FILES

CHROMALAB, INC.

Environmental Service (SDB)

Sample Receipt Checklist

Client Name: ENGEO, INC.

Date/Time Received: 09/05/97 | 1815

Reference/Submis: 35378 | 9709085

Received by: MN

Checklist completed by: Chris Rowley Signature | 9/8/97 Date | Reviewed by: _____ Initials | Date

Matrix: soil Carrier name: Client - C/L _____

- Shipping container/cooler in good condition? Yes No Not Present
- Custody seals intact on shipping container/cooler? Yes No Not Present
- Custody seals intact on sample bottles? Yes No Not Present
- Chain of custody present? Yes No
- Chain of custody signed when relinquished and received? Yes No
- Chain of custody agrees with sample labels? Yes No
- Samples in proper container/bottle? Yes No
- Sample containers intact? Yes No
- Sufficient sample volume for indicated test? Yes No
- All samples received within holding time? Yes No
- Container/Temp Blank temperature in compliance? Yes No Temp: 6.5 °C
- Water - VOA vials have zero headspace? Yes No VOA vials submitted Yes No
- Water - pH acceptable upon receipt? Adjusted? Checked by _____ chemist for VOAs

Any No and/or NA (not applicable) response must be detailed in the comments section below.
=====

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action: _____

