

NM2 - 3

**MONITORING
REPORTS
YEAR(S):**

2002-1997

BLAGG ENGINEERING, INC.

P.O. Box 87, Bloomfield, New Mexico 87413

Phone: (505)632-1199 Fax: (505)632-3903

November 25, 2002

RECEIVED

DEC 02 2002

Environmental Bureau
Oil Conservation Division

Ms. Martyne J. Kieling
New Mexico Oil Conservation Division
2040 South Pacheco Street
Santa Fe, New Mexico 87505

Re: BP America Production Company
Crouch Mesa Waste Management Facility, SW/4 SE/4 Sec. 2 - T29N - R12W
Annual Report on Treatment Zone Monitoring

Dear Ms. Kieling:

On behalf of BP America Production Company, Blagg Engineering, Inc. (BEI) is submitting treatment zone monitoring test results for the Crouch Mesa Waste Management Facility pursuant to Permit NM-02-003, dated November 25, 1998. This treatment zone monitoring is conducted quarterly and test results are submitted annually to NMOCD. This report is for the December 1, 2001 through November 30, 2002 reporting period.

Sampling protocol specifies that a subsurface sample is to be collected in the native ground surface below the treatment zone in each cell during quarterly monitoring. Annual analytical test procedures are to include total petroleum hydrocarbons (TPH), volatile aromatic organics (BTEX), heavy metals and major cations/anions. Quarterly test procedures are to include TPH and BTEX only.

In March, 2002 treatment cells No. 1, No. 3 and No. 4 were combined into one single cell and identified as cell No. 1. The permit allows individual cell sizes up to a size of 5-acres. Following the integration of cells No. 3 and No. 4 into cell No. 1 the re-configured cell has a size of approximately $3.8 \pm$ acres. During this combination remediated fill dirt was placed into cell No. 4 in order to bring the cell to the same elevation grade as cells 1 and 3. During quarterly cell sampling on April 18, 2002 this fill dirt was sampled and labeled as cell No. 1A (2' - 3'). Analytical test results exceeded the approved closure standard of 100 mg/Kg TPH. This fill is undergoing continued reclamation and will be closed out at a future date. During this same quarterly test event a sample was collected from the previous cell No. 4 and identified as cell No. 1B (2'-2.5'). The analytical test results indicated non-detect TPH values for this sample.

Included with this transmittal are the complete laboratory test reports for the waste management zone monitoring at the facility. Presented in Table 1 on the following page is a summary of the laboratory test reports for this monitoring.

myk
12/2/02

Table 1

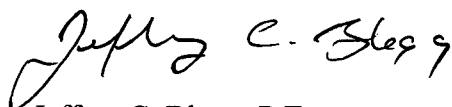
**BP Crouch Mesa Waste Management Facility
2002 Annual Treatment Zone Monitoring Test Results**

Treatment Cell Identification	TPH mg/Kg	Benz mg/Kg	BTEX mg/Kg	As mg/Kg	Ba mg/Kg	Cd mg/Kg	Cr mg/Kg	Pb mg/Kg	Hg mg/Kg	Se mg/Kg	Ag mg/Kg
<u>Cell No. 1</u>											
1/18/02	<0.2	ND	0.0219	--	--	--	--	--	--	--	--
4/18/02	<0.2	ND	ND	--	--	--	--	--	--	--	--
4/18/02 (No. 1A)	168	ND	0.603	--	--	--	--	--	--	--	--
4/18/02 (No. 1B)	<0.2	ND	0.0186	--	--	--	--	--	--	--	--
7/29/02	2.5	0.0113	0.156	0.016	4.27	0.002	0.006	0.012	<.001	0.007	<0.001
10/23/02	<0.2	ND	ND	--	--	--	--	--	--	--	--
<u>Cell No. 2</u>											
1/18/02	<0.2	0.019	0.0591	--	--	--	--	--	--	--	--
4/18/02	<0.2	ND	ND	--	--	--	--	--	--	--	--
7/29/02	1.2	ND	0.300	0.012	3.84	0.001	0.009	0.010	<.001	0.009	<0.001
10/23/02	<0.2	ND	ND	--	--	--	--	--	--	--	--
<u>Cell No. 3</u>											
1/18/02	<0.2	ND	0.0346	--	--	--	--	--	--	--	--
Combined w/Cell 1 in March, 2002											
<u>Cell No. 4</u>											
1/18/02	3.2	ND	0.021	--	--	--	--	--	--	--	--
Combined w/Cell 1 in March, 2002											
<u>Cell No. 5</u>											
1/18/02	<0.2	ND	0.047	--	--	--	--	--	--	--	--
4/18/02	3.3	ND	0.135	--	--	--	--	--	--	--	--
7/29/02	<0.2	ND	0.0343	0.017	4.46	0.002	0.007	0.014	<.001	0.004	<0.001
10/23/02	<0.2	ND	ND	--	--	--	--	--	--	--	--

ND = Not Detected

Questions or comments concerning the this transmittal may be directed to Jeff Blagg of Blagg Engineering at (505)632-1199 or to Brittany Benko with BP at (505)326-9235.

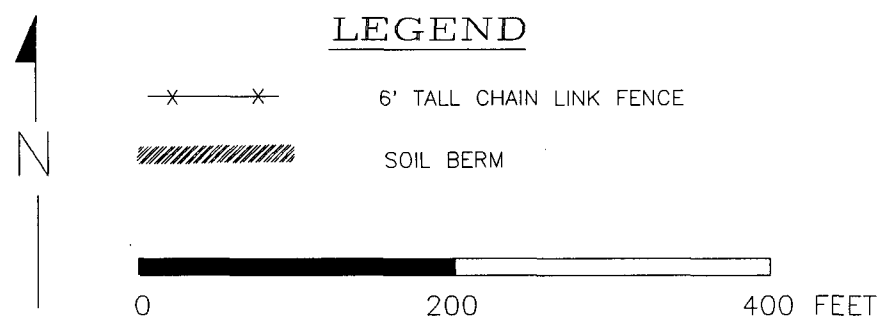
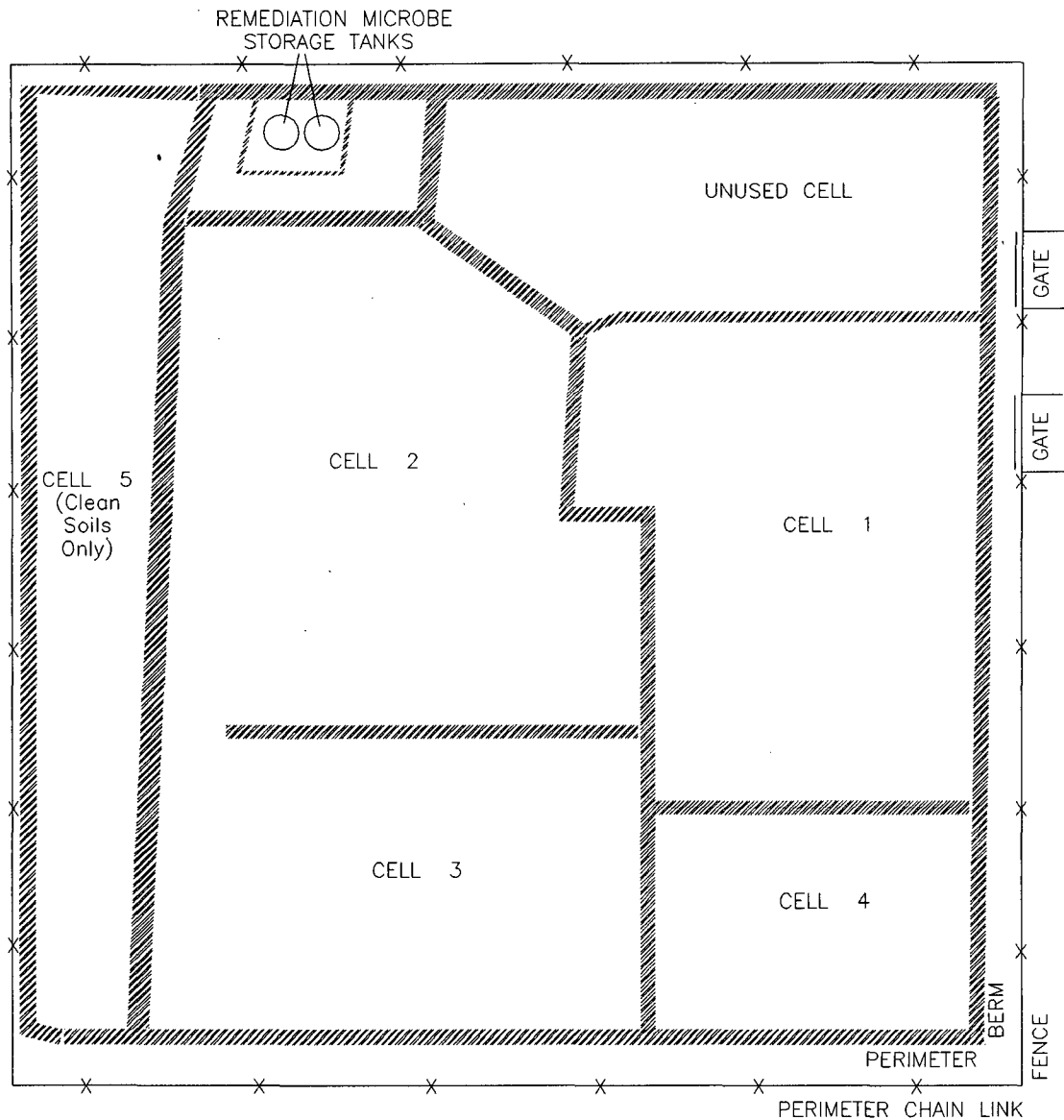
Respectfully submitted:
Blagg Engineering, Inc.



Jeffrey C. Blagg, P.E.
President

Attachments: Site Diagram
Soil Treatment Zone Monitoring Reports

cc: Denny Foust, NMOCD Aztec District Office
B.D. Benko, BP San Juan Operations Center
Jake Hatcher, EPC Farmington



BP AMERICA PRODUCTION CO.
CROUCH MESA WASTE MGMT FAC
SW/4 SE/4 SEC 2 T29N R12W
SAN JUAN CO., NEW MEXICO

Configuration December 01 - March 02

BLAGG ENGINEERING, INC.
CONSULTING ENGINEERING SERVICES

P.O. BOX 87
BLOOMFIELD, NEW MEXICO 87413

PHONE: (505) 632-1199

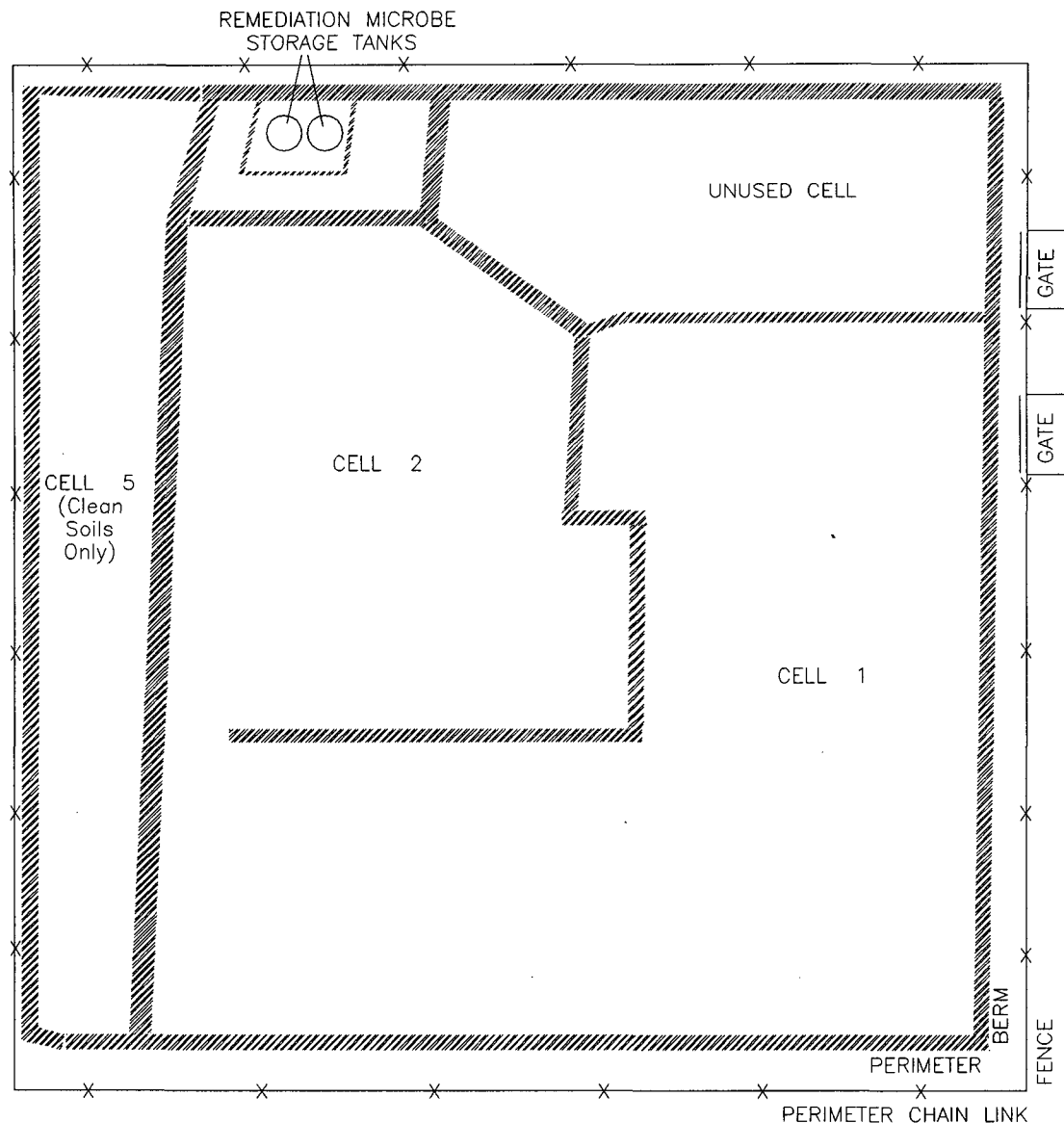
**SITE
SCHEMATIC**

FIGURE 1

DRWN BY:
JCB

CRMESA2

PROJ MGR:
JCB



LEGEND



6' TALL CHAIN LINK FENCE



SOIL BERM



0

200

400 FEET

BP AMERICA PRODUCTION CO.
CROUCH MESA WASTE MGMT FAC
SW/4 SE/4 SEC 2 T29N R12W
SAN JUAN CO., NEW MEXICO

Configuration April 02 - November 02

BLAGG ENGINEERING, INC.
CONSULTING ENGINEERING SERVICES

P.O. BOX 87
BLOOMFIELD, NEW MEXICO 87413

PHONE: (505) 632-1199

SITE SCHEMATIC

FIGURE 2

DRWN BY:
JCB

CRMESA4

PROJ MGR:
JCB

09747

Client / Project Name				Project Location		ANALYSIS / PARAMETERS										
Sampler:				Client No.												
Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	TPH	BTEX	12021								Remarks
CELL #1 2-3'	1-10-02	0900	21917	SOIL	1	X	X	X								
CELL #2 2-3'	"	0850	21918	"	1	X	X	X								
CELL #3 2'	"	0830	21919	"	1	X	X	X								
CELL #4 2-3'	"	0818	21920	"	1	X	X	X								
CELL #5 2-3'	"	0840	21921	"	1	X										
Relinquished by: (Signature)					Date	Time	Received by: (Signature)		Date							Time
J.C. - Begg					1-18-02	0927	Dennis P. Caplan		1-18-02							0927
Relinquished by: (Signature)					Received by: (Signature)											
Relinquished by: (Signature)					Received by: (Signature)											
Sample Receipt																
Y N N/A																
Received Intact																
Cool - Ice/Blue Ice																

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell #1 2' - 3'	Date Reported:	01-23-02
Laboratory Number:	21917	Date Sampled:	01-18-02
Chain of Custody No:	9747	Date Received:	01-18-02
Sample Matrix:	Soil	Date Extracted:	01-22-02
Preservative:	Cool	Date Analyzed:	01-22-02
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	ND	0.1
Total Petroleum Hydrocarbons	ND	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L.F.


Analyst


Review

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell #2 2' - 3'	Date Reported:	01-23-02
Laboratory Number:	21918	Date Sampled:	01-18-02
Chain of Custody No:	9747	Date Received:	01-18-02
Sample Matrix:	Soil	Date Extracted:	01-22-02
Preservative:	Cool	Date Analyzed:	01-22-02
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

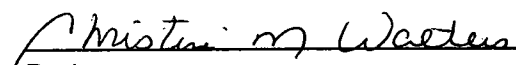
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	ND	0.1
Total Petroleum Hydrocarbons	ND	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Crouch Mesa L.F.**


Analyst


Review

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell #3 2'	Date Reported:	01-23-02
Laboratory Number:	21919	Date Sampled:	01-18-02
Chain of Custody No:	9747	Date Received:	01-18-02
Sample Matrix:	Soil	Date Extracted:	01-22-02
Preservative:	Cool	Date Analyzed:	01-22-02
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

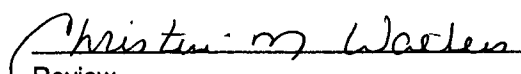
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	ND	0.1
Total Petroleum Hydrocarbons	ND	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L.F.


Analyst


Review

**EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons**

Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell #4 2' - 3'	Date Reported:	01-23-02
Laboratory Number:	21920	Date Sampled:	01-18-02
Chain of Custody No:	9747	Date Received:	01-18-02
Sample Matrix:	Soil	Date Extracted:	01-22-02
Preservative:	Cool	Date Analyzed:	01-22-02
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

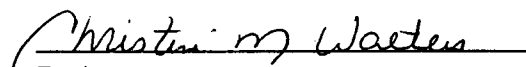
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	3.2	0.1
Total Petroleum Hydrocarbons	3.2	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Crouch Mesa L.F.**


Analyst


Review

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

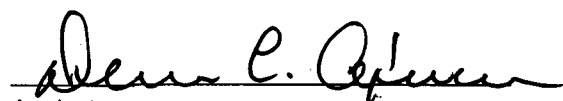
Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell #5 2' - 3'	Date Reported:	01-23-02
Laboratory Number:	21921	Date Sampled:	01-18-02
Chain of Custody No:	9747	Date Received:	01-18-02
Sample Matrix:	Soil	Date Extracted:	01-22-02
Preservative:	Cool	Date Analyzed:	01-22-02
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

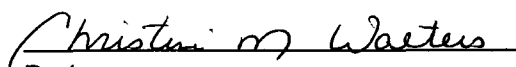
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	ND	0.1
Total Petroleum Hydrocarbons	ND	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L.F.


Analyst


Review

EPA Method 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	01-22-TPH QA/QC	Date Reported:	01-23-02
Laboratory Number:	21917	Date Sampled:	N/A
Sample Matrix:	Methylene Chloride	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	01-22-02
Condition:	N/A	Analysis Requested:	TPH

	I-Cal Date	I-Cal RF	C-Cal RF	% Difference	Accept Range
Gasoline Range C5 - C10	01-07-02	2.5028E-002	2.5003E-002	0.10%	0 - 15%
Diesel Range C10 - C28	01-07-02	1.2696E-002	1.2671E-002	0.20%	0 - 15%

Blank Conc. (mg/L - mg/Kg)	Concentration	Detection Limit
Gasoline Range C5 - C10	ND	0.2
Diesel Range C10 - C28	ND	0.1
Total Petroleum Hydrocarbons	ND	0.2

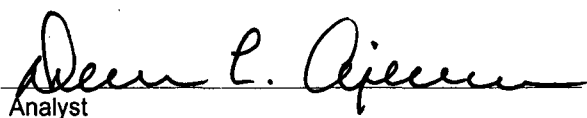
Duplicate Conc. (mg/Kg)	Sample	Duplicate	% Difference	Accept Range
Gasoline Range C5 - C10	ND	ND	0.0%	0 - 30%
Diesel Range C10 - C28	ND	ND	0.0%	0 - 30%

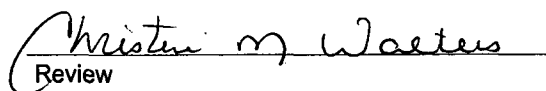
Spike Conc. (mg/Kg)	Sample	Spike Added	Spike Result	% Recovery	Accept Range
Gasoline Range C5 - C10	ND	250	250	100.0%	75 - 125%
Diesel Range C10 - C28	ND	250	250	100.0%	75 - 125%

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: QA/QC for samples 21917 - 21921 and 21928.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell #1 2' - 3'	Date Reported:	01-23-02
Laboratory Number:	21917	Date Sampled:	01-18-02
Chain of Custody:	9747	Date Received:	01-18-02
Sample Matrix:	Soil	Date Analyzed:	01-22-02
Preservative:	Cool	Date Extracted:	01-22-02
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	1.8
Toluene	ND	1.7
Ethylbenzene	6.3	1.5
p,m-Xylene	9.2	2.2
o-Xylene	6.4	1.0
Total BTEX	21.9	

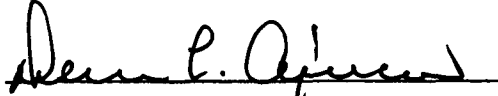
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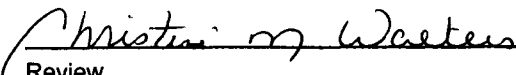
Surrogate Recoveries:	Parameter	Percent Recovery
	Fluorobenzene	94 %
	1,4-difluorobenzene	94 %
	Bromochlorobenzene	94 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L.F.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell #2 2' - 3'	Date Reported:	01-23-02
Laboratory Number:	21918	Date Sampled:	01-18-02
Chain of Custody:	9747	Date Received:	01-18-02
Sample Matrix:	Soil	Date Analyzed:	01-22-02
Preservative:	Cool	Date Extracted:	01-22-02
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	1.9	1.8
Toluene	ND	1.7
Ethylbenzene	7.9	1.5
p,m-Xylene	38.5	2.2
o-Xylene	10.8	1.0
Total BTEX	59.1	

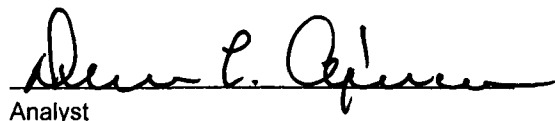
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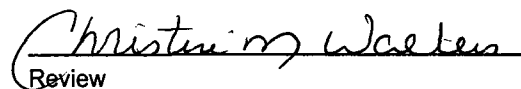
Surrogate Recoveries:	Parameter	Percent Recovery
	Fluorobenzene	94 %
	1,4-difluorobenzene	94 %
	Bromochlorobenzene	94 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L.F.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell #3 2'	Date Reported:	01-23-02
Laboratory Number:	21919	Date Sampled:	01-18-02
Chain of Custody:	9747	Date Received:	01-18-02
Sample Matrix:	Soil	Date Analyzed:	01-22-02
Preservative:	Cool	Date Extracted:	01-22-02
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	1.8
Toluene	14.5	1.7
Ethylbenzene	3.3	1.5
p,m-Xylene	13.4	2.2
o-Xylene	3.4	1.0
Total BTEX	34.6	

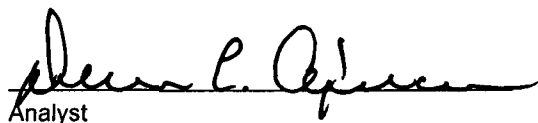
ND - Parameter not detected at the stated detection limit.

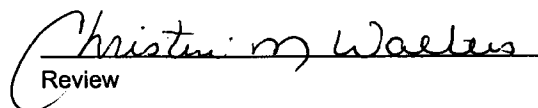
Surrogate Recoveries:	Parameter	Percent Recovery
	Fluorobenzene	94 %
	1,4-difluorobenzene	94 %
	Bromochlorobenzene	94 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L.F.


Analyst


Review

Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell #4 2' - 3'	Date Reported:	01-23-02
Laboratory Number:	21920	Date Sampled:	01-18-02
Chain of Custody:	9747	Date Received:	01-18-02
Sample Matrix:	Soil	Date Analyzed:	01-22-02
Preservative:	Cool	Date Extracted:	01-22-02
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	1.8
Toluene	12.5	1.7
Ethylbenzene	3.1	1.5
p,m-Xylene	3.2	2.2
o-Xylene	2.2	1.0
Total BTEX	21.0	

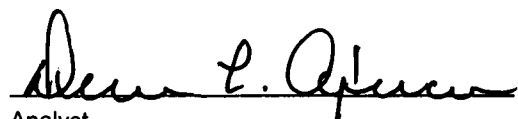
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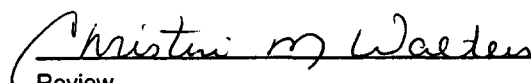
Surrogate Recoveries:	Parameter	Percent Recovery
	Fluorobenzene	94 %
	1,4-difluorobenzene	94 %
	Bromochlorobenzene	94 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L.F.


Analyst


Review

Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell #5 2' - 3'	Date Reported:	01-23-02
Laboratory Number:	21921	Date Sampled:	01-18-02
Chain of Custody:	9747	Date Received:	01-18-02
Sample Matrix:	Soil	Date Analyzed:	01-22-02
Preservative:	Cool	Date Extracted:	01-22-02
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	1.8
Toluene	ND	1.7
Ethylbenzene	2.9	1.5
p,m-Xylene	ND	2.2
o-Xylene	1.8	1.0
Total BTEX	4.7	

ND - Parameter not detected at the stated detection limit.

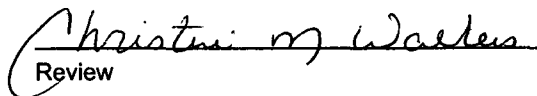
Surrogate Recoveries:	Parameter	Percent Recovery
	Fluorobenzene	95 %
	1,4-difluorobenzene	95 %
	Bromochlorobenzene	95 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L.F.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	N/A	Project #:	N/A
Sample ID:	01-22-BTEX QA/QC	Date Reported:	01-23-02
Laboratory Number:	21917	Date Sampled:	N/A
Sample Matrix:	Soil	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	01-22-02
Condition:	N/A	Analysis:	BTEX

Calibration and Detection Limits (ug/L)	I-Cal RF	C-Cal RF	%Diff	Blank Conc	Detect Limit
		Accept. Range 0 - 15%			
Benzene	1.7143E-001	1.7195E-001	0.3%	ND	0.2
Toluene	9.4693E-002	9.4883E-002	0.2%	ND	0.2
Ethylbenzene	1.2284E-001	1.2321E-001	0.3%	ND	0.2
p,m-Xylene	1.0810E-001	1.0843E-001	0.3%	ND	0.2
o-Xylene	9.2106E-002	9.2290E-002	0.2%	ND	0.1

Duplicate Conc. (ug/Kg)	Sample	Duplicate	%Diff	Accept. Range	Detect. Limit
Benzene	ND	ND	0.0%	0 - 30%	1.8
Toluene	ND	ND	0.0%	0 - 30%	1.7
Ethylbenzene	6.3	6.1	3.2%	0 - 30%	1.5
p,m-Xylene	9.2	8.9	3.3%	0 - 30%	2.2
o-Xylene	6.4	6.2	3.1%	0 - 30%	1.0

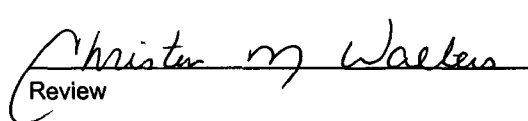
Spike Conc. (ug/Kg)	Sample	Amount Spiked	Spiked Sample	% Recovery	Accept. Range
Benzene	ND	50.0	49.9	99.8%	39 - 150
Toluene	ND	50.0	49.9	99.8%	46 - 148
Ethylbenzene	6.3	50.0	56.2	99.8%	32 - 160
p,m-Xylene	9.2	100	109	99.8%	46 - 148
o-Xylene	6.4	50.0	56.3	99.8%	46 - 148

ND - Parameter not detected at the stated detection limit.

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.
Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: QA/QC for samples 21917 - 21921 and 21928.


Analyst


Review

09879

Client / Project Name				Project Location		ANALYSIS / PARAMETERS									
BLAGG/BP				CROUGH MESA L.F.											
Sampler: Jeff Blagg				Client No. 94034-010											
Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	8015	8021							Remarks	
Cell #1 2'-3'	4-18-02	1010	22561	SOIL	1	X	X								
Cell #1A 2'-3'	"	1025	22562	"	1	X	X								
Cell #1B 2'-2 1/2'	"	1045	22563	"	1	X	X								
Cell #2 2'-3'	"	1100	22564	"	1	X	X								
Cell #5 2'-3'	"	1120	22565	"	1	X	X								
Relinquished by: (Signature) Jeff Blagg					Date	4/18/02	Time	1202	Received by: (Signature) E. Cep		Date	4-18-02	Time	1202	
Relinquished by: (Signature)					Received by: (Signature)										
Relinquished by: (Signature)					Received by: (Signature)										
Sample Receipt															
					Y		N		N/A						
					Received Intact										
					Cool - Ice/Blue Ice										

ENVIROTECH INC.

5796 U.S. Highway 64
Farmington, New Mexico 87401
(505) 632-0615

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell #1 2'-3'	Date Reported:	04-22-02
Laboratory Number:	22561	Date Sampled:	04-18-02
Chain of Custody No:	9879	Date Received:	04-18-02
Sample Matrix:	Soil	Date Extracted:	04-19-02
Preservative:	Cool	Date Analyzed:	04-22-02
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

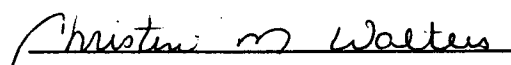
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	ND	0.1
Total Petroleum Hydrocarbons	ND	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L.F.


Analyst


Review

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell #1A 2'-3'	Date Reported:	04-22-02
Laboratory Number:	22562	Date Sampled:	04-18-02
Chain of Custody No:	9879	Date Received:	04-18-02
Sample Matrix:	Soil	Date Extracted:	04-19-02
Preservative:	Cool	Date Analyzed:	04-22-02
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

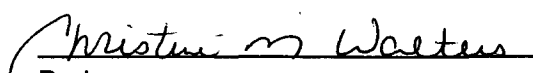
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	47.7	0.2
Diesel Range (C10 - C28)	120	0.1
Total Petroleum Hydrocarbons	168	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L.F.


Analyst


Review

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

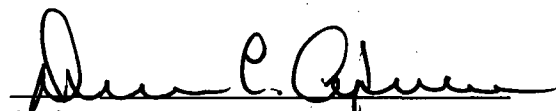
Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell #1B 2'-2½'	Date Reported:	04-22-02
Laboratory Number:	22563	Date Sampled:	04-18-02
Chain of Custody No:	9879	Date Received:	04-18-02
Sample Matrix:	Soil	Date Extracted:	04-19-02
Preservative:	Cool	Date Analyzed:	04-22-02
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

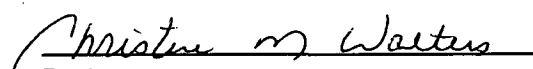
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	ND	0.1
Total Petroleum Hydrocarbons	ND	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L.F.


Analyst


Review

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

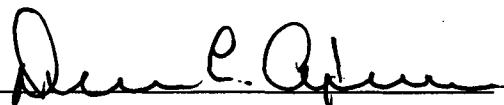
Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell #2 2'-3'	Date Reported:	04-22-02
Laboratory Number:	22564	Date Sampled:	04-18-02
Chain of Custody No:	9879	Date Received:	04-18-02
Sample Matrix:	Soil	Date Extracted:	04-19-02
Preservative:	Cool	Date Analyzed:	04-22-02
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

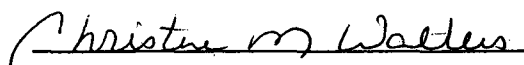
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	ND	0.1
Total Petroleum Hydrocarbons	ND	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L.F.


Analyst


Review

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

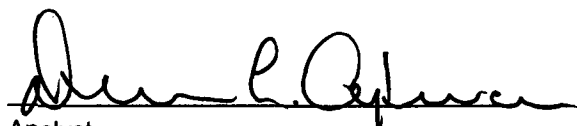
Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell #5 2'-3'	Date Reported:	04-22-02
Laboratory Number:	22565	Date Sampled:	04-18-02
Chain of Custody No:	9879	Date Received:	04-18-02
Sample Matrix:	Soil	Date Extracted:	04-19-02
Preservative:	Cool	Date Analyzed:	04-22-02
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

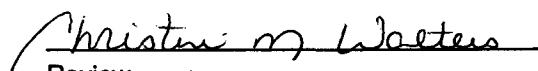
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	2.8	0.2
Diesel Range (C10 - C28)	0.5	0.1
Total Petroleum Hydrocarbons	3.3	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L.F.


Analyst


Review

EPA Method 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	04-22-TPH QA/QC	Date Reported:	04-22-02
Laboratory Number:	22561	Date Sampled:	N/A
Sample Matrix:	Methylene Chloride	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	04-22-02
Condition:	N/A	Analysis Requested:	TPH

	Test Date	MOA1 RE	MOA2 RE	% Difference	Acceptance Range
Gasoline Range C5 - C10	01-07-02	2.5028E-002	2.5003E-002	0.10%	0 - 15%
Diesel Range C10 - C28	01-07-02	1.2696E-002	1.2671E-002	0.20%	0 - 15%

Blank Conc. (mg/L - mg/Kg)	Concentration	Detection Limit
Gasoline Range C5 - C10	ND	0.2
Diesel Range C10 - C28	ND	0.1
Total Petroleum Hydrocarbons	ND	0.2

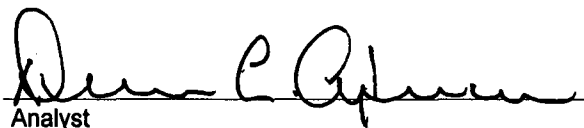
Duplicate Conc. (mg/Kg)	Sample	Duplicate	% Difference	Acceptance Range
Gasoline Range C5 - C10	ND	ND	0.0%	0 - 30%
Diesel Range C10 - C28	ND	ND	0.0%	0 - 30%

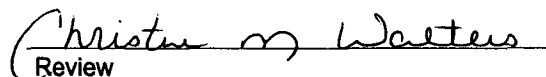
Spike Conc. (mg/Kg)	Sample	Spike Added	Spike Result	% Recovery	Acceptance Range
Gasoline Range C5 - C10	ND	250	250	100.0%	75 - 125%
Diesel Range C10 - C28	ND	250	249	99.6%	75 - 125%

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: QA/QC for samples 22561 - 22570.


Analyst


Review

Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell #1 2'-3'	Date Reported:	04-22-02
Laboratory Number:	22561	Date Sampled:	04-18-02
Chain of Custody:	9879	Date Received:	04-18-02
Sample Matrix:	Soil	Date Analyzed:	04-22-02
Preservative:	Cool	Date Extracted:	04-19-02
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	1.8
Toluene	ND	1.7
Ethylbenzene	ND	1.5
p,m-Xylene	ND	2.2
o-Xylene	ND	1.0
Total BTEX	ND	

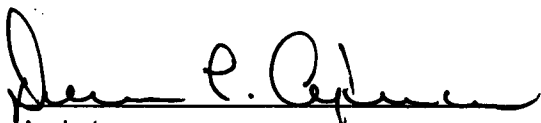
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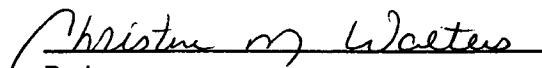
Surrogate Recoveries:	Parameter	Percent Recovery
	Fluorobenzene	96 %
	1,4-difluorobenzene	96 %
	Bromochlorobenzene	98 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L.F.


Analyst


Review

Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell #1A 2'-3'	Date Reported:	04-22-02
Laboratory Number:	22562	Date Sampled:	04-18-02
Chain of Custody:	9879	Date Received:	04-18-02
Sample Matrix:	Soil	Date Analyzed:	04-22-02
Preservative:	Cool	Date Extracted:	04-19-02
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	1.8
Toluene	135	1.7
Ethylbenzene	69.8	1.5
p,m-Xylene	309	2.2
o-Xylene	88.8	1.0
Total BTEX	603	

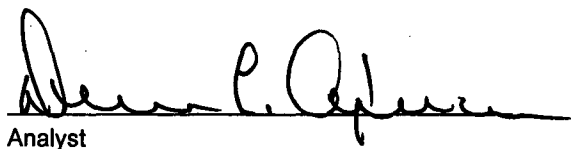
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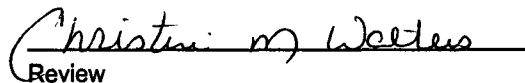
Surrogate Recoveries:	Parameter	Percent Recovery
	Fluorobenzene	96 %
	1,4-difluorobenzene	96 %
	Bromochlorobenzene	98 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L.F.


Analyst


Review

Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell #1B 2'-2½'	Date Reported:	04-22-02
Laboratory Number:	22563	Date Sampled:	04-18-02
Chain of Custody:	9879	Date Received:	04-18-02
Sample Matrix:	Soil	Date Analyzed:	04-22-02
Preservative:	Cool	Date Extracted:	04-19-02
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	1.8
Toluene	ND	1.7
Ethylbenzene	3.3	1.5
p,m-Xylene	10.3	2.2
o-Xylene	5.0	1.0
Total BTEX	18.6	

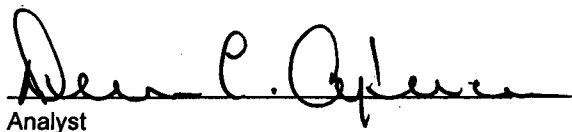
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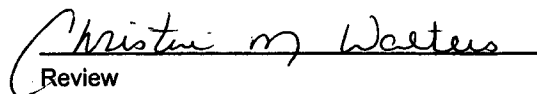
Surrogate Recoveries:	Parameter	Percent Recovery
	Fluorobenzene	98 %
	1,4-difluorobenzene	98 %
	Bromochlorobenzene	98 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L.F.


Analyst


Review

Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell #2 2'-3'	Date Reported:	04-22-02
Laboratory Number:	22564	Date Sampled:	04-18-02
Chain of Custody:	9879	Date Received:	04-18-02
Sample Matrix:	Soil	Date Analyzed:	04-22-02
Preservative:	Cool	Date Extracted:	04-19-02
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	1.8
Toluene	ND	1.7
Ethylbenzene	ND	1.5
p,m-Xylene	ND	2.2
o-Xylene	ND	1.0
Total BTEX	ND	

ND - Parameter not detected at the stated detection limit.

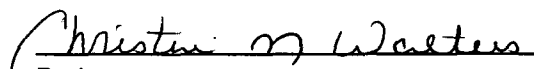
Surrogate Recoveries:	Parameter	Percent Recovery
	Fluorobenzene	98 %
	1,4-difluorobenzene	98 %
	Bromochlorobenzene	98 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L.F.


Analyst


Review

Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell #5 2'-3'	Date Reported:	04-22-02
Laboratory Number:	22565	Date Sampled:	04-18-02
Chain of Custody:	9879	Date Received:	04-18-02
Sample Matrix:	Soil	Date Analyzed:	04-22-02
Preservative:	Cool	Date Extracted:	04-19-02
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	1.8
Toluene	ND	1.7
Ethylbenzene	14.5	1.5
p,m-Xylene	90.7	2.2
o-Xylene	29.4	1.0
Total BTEX	135	

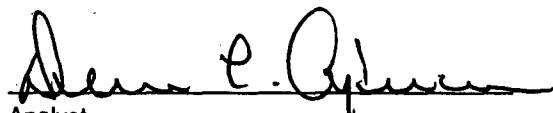
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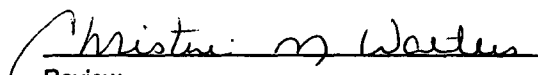
Surrogate Recoveries:	Parameter	Percent Recovery
	Fluorobenzene	98 %
	1,4-difluorobenzene	98 %
	Bromochlorobenzene	98 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L.F.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	N/A	Project #:	N/A
Sample ID:	04-22-BTEX QA/QC	Date Reported:	04-22-02
Laboratory Number:	22561	Date Sampled:	N/A
Sample Matrix:	Soil	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	04-22-02
Condition:	N/A	Analysis:	BTEX

Calibration and Detection Limits (ug/L)	E-Cal RF	C-Cal RF	%Diff	Blank Conc	Detect Limit
		Accept. Range	0 - 15%		
Benzene	6.9839E-002	7.0049E-002	0.3%	ND	0.2
Toluene	5.0724E-002	5.0825E-002	0.2%	ND	0.2
Ethylbenzene	8.2086E-002	8.2333E-002	0.3%	ND	0.2
p,m-Xylene	7.1064E-002	7.1278E-002	0.3%	ND	0.2
o-Xylene	6.2661E-002	6.2787E-002	0.2%	ND	0.1

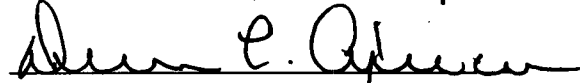
Duplicate Conc. (ug/Kg)	Sample	Duplicate	%Diff	Accept. Range	Detect Limit
Benzene	ND	ND	0.0%	0 - 30%	1.8
Toluene	ND	ND	0.0%	0 - 30%	1.7
Ethylbenzene	ND	ND	0.0%	0 - 30%	1.5
p,m-Xylene	ND	ND	0.0%	0 - 30%	2.2
o-Xylene	ND	ND	0.0%	0 - 30%	1.0

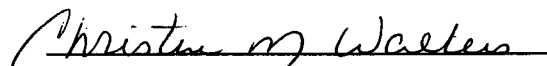
Spike Conc. (ug/Kg)	Sample	Amount Spiked	Spiked Sample	% Recovery	Accept. Range
Benzene	ND	50.0	49.8	99.6%	39 - 150
Toluene	ND	50.0	49.8	99.6%	46 - 148
Ethylbenzene	ND	50.0	49.8	99.6%	32 - 160
p,m-Xylene	ND	100	99.5	99.5%	46 - 148
o-Xylene	ND	50.0	49.8	99.6%	46 - 148

ND - Parameter not detected at the stated detection limit.

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.
Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: QA/QC for samples 22561 - 22570.


Analyst


Review

5796 U.S. Highway 64
Farmington, New Mexico 87401
(505) 632-0615

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

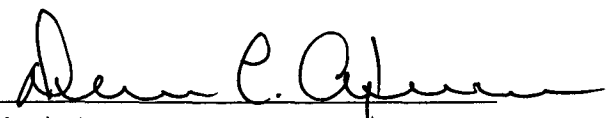
Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell #1 2' - 3'	Date Reported:	07-30-02
Laboratory Number:	23427	Date Sampled:	07-29-02
Chain of Custody No:	10128	Date Received:	07-29-02
Sample Matrix:	Soil	Date Extracted:	07-30-02
Preservative:	Cool	Date Analyzed:	07-30-02
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

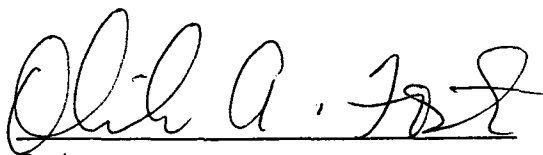
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	0.6	0.2
Diesel Range (C10 - C28)	1.9	0.1
Total Petroleum Hydrocarbons	2.5	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Crouch Mesa L.F.**


Analyst


Review

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

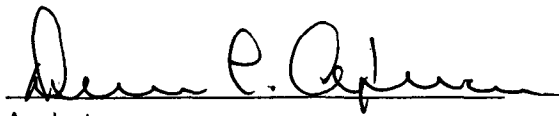
Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell #2 2' - 3'	Date Reported:	07-30-02
Laboratory Number:	23428	Date Sampled:	07-29-02
Chain of Custody No:	10128	Date Received:	07-29-02
Sample Matrix:	Soil	Date Extracted:	07-30-02
Preservative:	Cool	Date Analyzed:	07-30-02
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

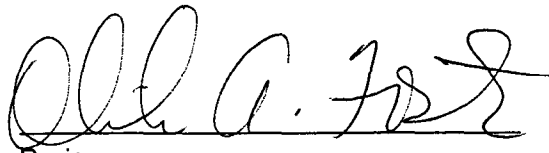
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	0.5	0.2
Diesel Range (C10 - C28)	0.7	0.1
Total Petroleum Hydrocarbons	1.2	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L.F.


Analyst


Review

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

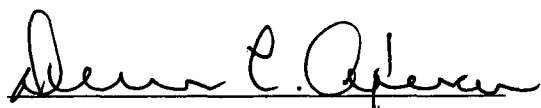
Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell #5 2' - 3'	Date Reported:	07-30-02
Laboratory Number:	23429	Date Sampled:	07-29-02
Chain of Custody No:	10128	Date Received:	07-29-02
Sample Matrix:	Soil	Date Extracted:	07-30-02
Preservative:	Cool	Date Analyzed:	07-30-02
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

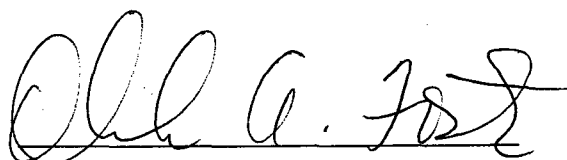
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	ND	0.1
Total Petroleum Hydrocarbons	ND	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L.F.


Analyst


Review

EPA Method 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	07-30-TPH QA/QC	Date Reported:	07-30-02
Laboratory Number:	23426	Date Sampled:	N/A
Sample Matrix:	Methylene Chloride	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	07-30-02
Condition:	N/A	Analysis Requested:	TPH

	I-Cal Date	I-Cal RF:	C-Cal RF:	% Difference	Accept. Range
Gasoline Range C5 - C10	04-25-02	2.7355E-002	2.7328E-002	0.10%	0 - 15%
Diesel Range C10 - C28	04-25-02	2.4557E-002	2.4508E-002	0.20%	0 - 15%

Blank Conc. (mg/L - mg/Kg)	Concentration	Detection Limit
Gasoline Range C5 - C10	ND	0.2
Diesel Range C10 - C28	ND	0.1
Total Petroleum Hydrocarbons	ND	0.2

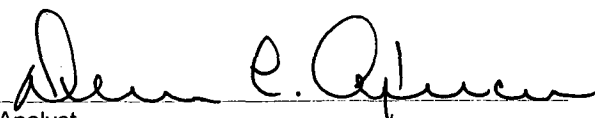
Duplicate Conc. (mg/Kg)	Sample	Duplicate	% Difference	Accept. Range
Gasoline Range C5 - C10	ND	ND	0.0%	0 - 30%
Diesel Range C10 - C28	ND	ND	0.0%	0 - 30%

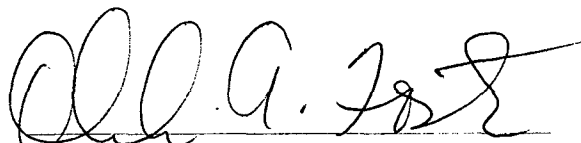
Spike Conc. (mg/Kg)	Sample	Spike Added	Spike Result	% Recovery	Accept. Range
Gasoline Range C5 - C10	ND	250	250	100.0%	75 - 125%
Diesel Range C10 - C28	ND	250	250	100.0%	75 - 125%

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: QA/QC for samples 23426 - 23429.


Analyst


Review

Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell #1 2' - 3'	Date Reported:	07-30-02
Laboratory Number:	23427	Date Sampled:	07-29-02
Chain of Custody:	10128	Date Received:	07-29-02
Sample Matrix:	Soil	Date Analyzed:	07-30-02
Preservative:	Cool	Date Extracted:	07-30-02
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	11.3	1.8
Toluene	36.7	1.7
Ethylbenzene	29.6	1.5
p,m-Xylene	75.4	2.2
o-Xylene	2.9	1.0
Total BTEX	156	

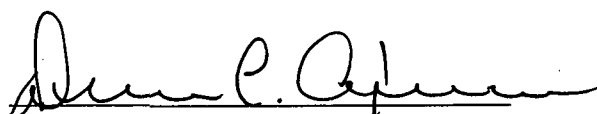
ND - Parameter not detected at the stated detection limit.

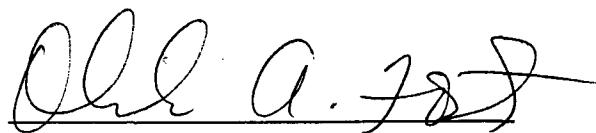
Surrogate Recoveries:	Parameter	Percent Recovery
	Fluorobenzene	95 %
	1,4-difluorobenzene	95 %
	Bromochlorobenzene	95 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L.F.


Analyst


Review

Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell #2 2' - 3'	Date Reported:	07-30-02
Laboratory Number:	23428	Date Sampled:	07-29-02
Chain of Custody:	10128	Date Received:	07-29-02
Sample Matrix:	Soil	Date Analyzed:	07-30-02
Preservative:	Cool	Date Extracted:	07-30-02
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	1.8
Toluene	70.0	1.7
Ethylbenzene	41.6	1.5
p,m-Xylene	152	2.2
o-Xylene	36.1	1.0
Total BTEX	300	

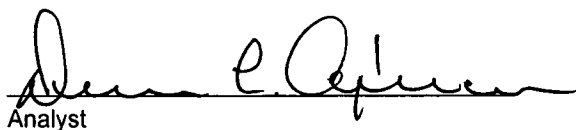
ND - Parameter not detected at the stated detection limit.

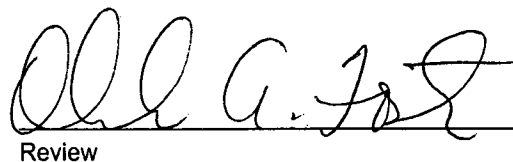
Surrogate Recoveries:	Parameter	Percent Recovery
	Fluorobenzene	96 %
	1,4-difluorobenzene	96 %
	Bromochlorobenzene	96 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L.F.


Analyst


Review

Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell #5 2' - 3'	Date Reported:	07-30-02
Laboratory Number:	23429	Date Sampled:	07-29-02
Chain of Custody:	10128	Date Received:	07-29-02
Sample Matrix:	Soil	Date Analyzed:	07-30-02
Preservative:	Cool	Date Extracted:	07-30-02
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	1.8
Toluene	14.7	1.7
Ethylbenzene	ND	1.5
p,m-Xylene	19.6	2.2
o-Xylene	ND	1.0
Total BTEX	34.3	

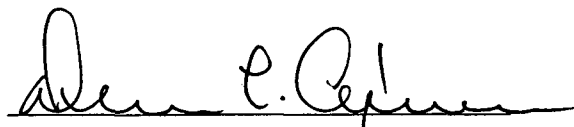
ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Fluorobenzene	96 %
	1,4-difluorobenzene	96 %
	Bromochlorobenzene	96 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L.F.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	N/A	Project #:	N/A
Sample ID:	07-30-BTEX QA/QC	Date Reported:	07-30-02
Laboratory Number:	23427	Date Sampled:	N/A
Sample Matrix:	Soil	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	07-30-02
Condition:	N/A	Analysis:	BTEX

Calibration and Detection Limits (ug/L)	I-Cal RF:	C-Cal RF:	%Diff.	Blank Conc	Detect Limit
		Accept. Range 0 - 15%			
Benzene	2.6914E-002	2.6995E-002	0.3%	ND	0.2
Toluene	3.3709E-002	3.3777E-002	0.2%	ND	0.2
Ethylbenzene	5.8262E-002	5.8438E-002	0.3%	ND	0.2
p,m-Xylene	7.1891E-002	7.2107E-002	0.3%	ND	0.2
o-Xylene	5.4522E-002	5.4631E-002	0.2%	ND	0.1

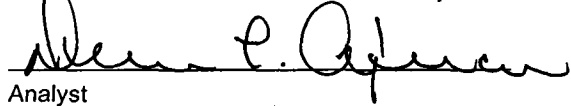
Duplicate Conc. (ug/Kg)	Sample	Duplicate	%Diff.	Accept Range	Detect Limit
Benzene	11.3	11.2	0.9%	0 - 30%	1.8
Toluene	36.7	36.0	1.9%	0 - 30%	1.7
Ethylbenzene	29.6	29.0	2.0%	0 - 30%	1.5
p,m-Xylene	75.4	74.9	0.7%	0 - 30%	2.2
o-Xylene	2.9	2.9	0.0%	0 - 30%	1.0

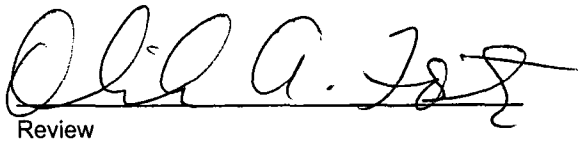
Spike Conc. (ug/Kg)	Sample	Amount Spiked	Spiked Sample	% Recovery	Accept Range
Benzene	11.3	50.0	61.2	99.8%	39 - 150
Toluene	36.7	50.0	86.6	99.9%	46 - 148
Ethylbenzene	29.6	50.0	79.5	99.9%	32 - 160
p,m-Xylene	75.4	100	175	99.9%	46 - 148
o-Xylene	2.9	50.0	52.8	99.8%	46 - 148

ND - Parameter not detected at the stated detection limit.

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.
Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: QA/QC for samples 23427 - 23429.


Analyst


Review

Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell #1 2' - 3'	Date Reported:	07-30-02
Laboratory Number:	23427	Date Sampled:	07-29-02
Chain of Custody:	10128	Date Received:	07-29-02
Sample Matrix:	Soil	Date Analyzed:	07-30-02
Preservative:	Cool	Date Digested:	07-30-02
Condition:	Cool & Intact	Analysis Needed:	RCRA Metals

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)	Regulatory Level (mg/Kg)
Arsenic	0.016	0.001	5.0
Barium	4.27	0.001	100
Cadmium	0.002	0.001	1.0
Chromium	0.006	0.001	5.0
Lead	0.012	0.001	5.0
Mercury	ND	0.001	0.2
Selenium	0.007	0.001	1.0
Silver	ND	0.001	5.0

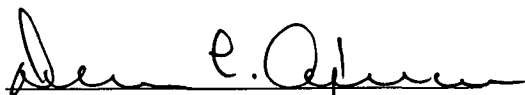
ND - Parameter not detected at the stated detection limit.

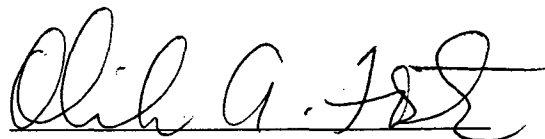
References: Method 3050B, Acid Digestion of Sediments, Sludges and Soils.
SW-846, USEPA, December 1996.

Method 6010B, Analysis of Metals by Inductively Coupled Plasma Atomic Emission Spectroscopy, SW-846, USEPA, December 1996.

Note: Regulatory Limits based on 40 CFR part 261 subpart C
section 261.24, August 24, 1998.

Comments: **Crouch Mesa L.F.**


Analyst


Review

Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell #2 2' - 3'	Date Reported:	07-30-02
Laboratory Number:	23428	Date Sampled:	07-29-02
Chain of Custody:	10128	Date Received:	07-29-02
Sample Matrix:	Soil	Date Analyzed:	07-30-02
Preservative:	Cool	Date Digested:	07-30-02
Condition:	Cool & Intact	Analysis Needed:	RCRA Metals

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)	Regulatory Level (mg/Kg)
Arsenic	0.012	0.001	5.0
Barium	3.84	0.001	100
Cadmium	0.001	0.001	1.0
Chromium	0.009	0.001	5.0
Lead	0.010	0.001	5.0
Mercury	ND	0.001	0.2
Selenium	0.009	0.001	1.0
Silver	ND	0.001	5.0

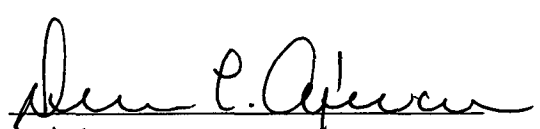
ND - Parameter not detected at the stated detection limit.

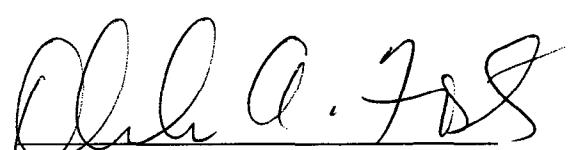
References: Method 3050B, Acid Digestion of Sediments, Sludges and Soils.
SW-846, USEPA, December 1996.

Method 6010B, Analysis of Metals by Inductively Coupled Plasma Atomic Emission Spectroscopy, SW-846, USEPA, December 1996.

Note: Regulatory Limits based on 40 CFR part 261 subpart C
section 261.24, August 24, 1998.

Comments: Crouch Mesa L.F.


Analyst


Review

Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell #5 2' - 3'	Date Reported:	07-30-02
Laboratory Number:	23429	Date Sampled:	07-29-02
Chain of Custody:	10128	Date Received:	07-29-02
Sample Matrix:	Soil	Date Analyzed:	07-30-02
Preservative:	Cool	Date Digested:	07-30-02
Condition:	Cool & Intact	Analysis Needed:	RCRA Metals

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)	Regulatory Level (mg/Kg)
Arsenic	0.017	0.001	5.0
Barium	4.46	0.001	100
Cadmium	0.002	0.001	1.0
Chromium	0.007	0.001	5.0
Lead	0.014	0.001	5.0
Mercury	ND	0.001	0.2
Selenium	0.004	0.001	1.0
Silver	ND	0.001	5.0

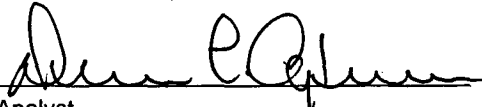
ND - Parameter not detected at the stated detection limit.

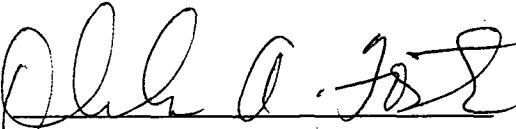
References: Method 3050B, Acid Digestion of Sediments, Sludges and Soils.
SW-846, USEPA, December 1996.

Method 6010B, Analysis of Metals by Inductively Coupled Plasma Atomic Emission Spectroscopy, SW-846, USEPA, December 1996.

Note: Regulatory Limits based on 40 CFR part 261 subpart C
section 261.24, August 24, 1998.

Comments: **Crouch Mesa L.F.**


Analyst


Review

TRACE METAL ANALYSIS
Quality Control /
Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	07-30-TM QA/QC	Date Reported:	07-30-02
Laboratory Number:	23427	Date Sampled:	N/A
Sample Matrix:	Soil	Date Received:	N/A
Analysis Requested:	Total RCRA Metals	Date Analyzed:	07-30-02
Condition:	N/A	Date Digested:	07-30-02

Blank & Duplicate Conc. (mg/Kg)	Instrument Blank (mg/L)	Method Blank	Detection Limit	Sample	Duplicate	% Diff.	Acceptance Range
Arsenic	ND	ND	0.001	0.016	0.016	0.0%	0% - 30%
Barium	ND	ND	0.001	4.27	4.25	0.5%	0% - 30%
Cadmium	ND	ND	0.001	0.002	0.002	0.0%	0% - 30%
Chromium	ND	ND	0.001	0.006	0.006	0.0%	0% - 30%
Lead	ND	ND	0.001	0.012	0.012	0.0%	0% - 30%
Mercury	ND	ND	0.001	ND	ND	0.0%	0% - 30%
Selenium	ND	ND	0.001	0.007	0.007	0.0%	0% - 30%
Silver	ND	ND	0.001	ND	ND	0.0%	0% - 30%

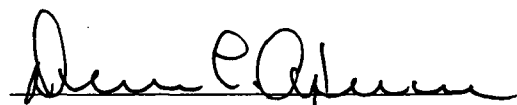
Spike Conc. (mg/Kg)	Spike Added	Sample	Spiked Sample	Percent Recovery	Acceptance Range
Arsenic	0.500	0.016	0.515	99.8%	80% - 120%
Barium	0.500	4.27	4.74	99.4%	80% - 120%
Cadmium	0.500	0.002	0.501	99.8%	80% - 120%
Chromium	0.500	0.006	0.51	99.8%	80% - 120%
Lead	0.500	0.012	0.510	99.6%	80% - 120%
Mercury	0.050	ND	0.049	98.0%	80% - 120%
Selenium	0.500	0.007	0.506	99.8%	80% - 120%
Silver	0.500	ND	0.499	99.8%	80% - 120%

ND - Parameter not detected at the stated detection limit.

References: Method 3050B, Acid Digestion of Sediments, Sludges and Soils.
SW-846, USEPA, December 1996.

Method 6010B, Analysis of Metals by Inductively Coupled Plasma Atomic Emission Spectroscopy, SW-846, USEPA, December 1996.

Comments: QA/QC for sample 23427 - 23429.


Analyst


Review

Client: Blagg / BP
 Sample ID: Cell #1 2' - 3'
 Laboratory Number: 23427
 Chain of Custody: 10128
 Sample Matrix: Soil
 Preservative: Cool
 Condition: Cool & Intact

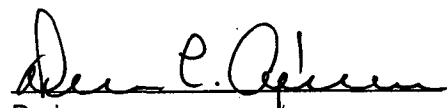
Project #: 94034-010
 Date Reported: 07-31-02
 Date Sampled: 07-29-02
 Date Received: 07-29-02
 Date Extracted: 07-30-02
 Date Analyzed: 07-31-02

Parameter	Analytical Result	Units	Units
pH	6.83	s.u.	
Conductivity @ 25° C	420	umhos/cm	
Total Dissolved Solids @ 180C	208	mg/L	
Total Dissolved Solids (Calc)	201	mg/L	
SAR	1.6	ratio	
Total Alkalinity as CaCO3	32.0	mg/L	
Total Hardness as CaCO3	92.0	mg/L	
Bicarbonate as HCO3	32.0	mg/L	0.52 meq/L
Carbonate as CO3	<0.1	mg/L	0.00 meq/L
Hydroxide as OH	<0.1	mg/L	0.00 meq/L
Nitrate Nitrogen	1.5	mg/L	0.02 meq/L
Nitrite Nitrogen	0.013	mg/L	0.00 meq/L
Chloride	84.0	mg/L	2.37 meq/L
Fluoride	0.23	mg/L	0.01 meq/L
Phosphate	0.7	mg/L	0.02 meq/L
Sulfate	21.6	mg/L	0.45 meq/L
Iron	0.001	mg/L	0.00 meq/L
Calcium	36.8	mg/L	1.84 meq/L
Magnesium	<0.01	mg/L	0.00 meq/L
Potassium	0.3	mg/L	0.01 meq/L
Sodium	36.0	mg/L	1.57 meq/L
Cations			3.41 meq/L
Anions			3.40 meq/L
Cation/Anion Difference			0.22%

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
 Water And Waste Water", 18th ed., 1992.

Comments: Crouch Mesa L.F.

 Analyst


 Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

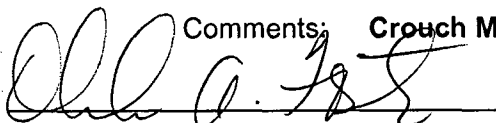
CATION / ANION ANALYSIS

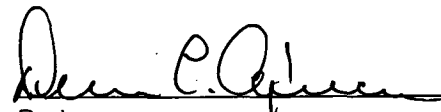
Client: Blagg / BP
Sample ID: Cell #2 2' - 3'
Laboratory Number: 23428
Chain of Custody: 10128
Sample Matrix: Soil
Preservative: Cool
Condition: Cool & Intact

Project #: 94034-010
Date Reported: 07-31-02
Date Sampled: 07-29-02
Date Received: 07-29-02
Date Extracted: 07-30-02
Date Analyzed: 07-31-02

Parameter	Analytical Result	Units	Units
pH	7.33	s.u.	
Conductivity @ 25° C	430	umhos/cm	
Total Dissolved Solids @ 180C	204	mg/L	
Total Dissolved Solids (Calc)	234	mg/L	
SAR	3.6	ratio	
Total Alkalinity as CaCO3	40.0	mg/L	
Total Hardness as CaCO3	52.0	mg/L	
Bicarbonate as HCO3	40.0	mg/L	0.66 meq/L
Carbonate as CO3	<0.1	mg/L	0.00 meq/L
Hydroxide as OH	<0.1	mg/L	0.00 meq/L
Nitrate Nitrogen	0.8	mg/L	0.01 meq/L
Nitrite Nitrogen	0.029	mg/L	0.00 meq/L
Chloride	56.0	mg/L	1.58 meq/L
Fluoride	0.19	mg/L	0.01 meq/L
Phosphate	0.8	mg/L	0.03 meq/L
Sulfate	68.1	mg/L	1.42 meq/L
Iron	0.001	mg/L	0.00 meq/L
Calcium	20.8	mg/L	1.04 meq/L
Magnesium	<0.01	mg/L	0.00 meq/L
Potassium	2.5	mg/L	0.06 meq/L
Sodium	60.0	mg/L	2.61 meq/L
Cations			3.71 meq/L
Anions			3.70 meq/L
Cation/Anion Difference			0.27%

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
Water And Waste Water", 18th ed., 1992.

Comments: Crouch Mesa L.F.

Analyst


Review

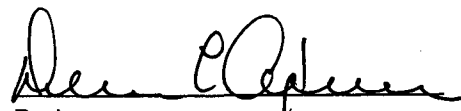
Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell #5 2' - 3'	Date Reported:	07-31-02
Laboratory Number:	23429	Date Sampled:	07-29-02
Chain of Custody:	10128	Date Received:	07-29-02
Sample Matrix:	Soil	Date Extracted:	07-30-02
Preservative:	Cool	Date Analyzed:	07-31-02
Condition:	Cool & Intact		

Parameter	Analytical Result	Units	Units
pH	7.20	s.u.	
Conductivity @ 25° C	780	umhos/cm	
Total Dissolved Solids @ 180C	388	mg/L	
Total Dissolved Solids (Calc)	344	mg/L	
SAR	3.3	ratio	
Total Alkalinity as CaCO ₃	36.0	mg/L	
Total Hardness as CaCO ₃	100	mg/L	
Bicarbonate as HCO ₃	36.0	mg/L	0.59 meq/L
Carbonate as CO ₃	<0.1	mg/L	0.00 meq/L
Hydroxide as OH	<0.1	mg/L	0.00 meq/L
Nitrate Nitrogen	0.1	mg/L	0.00 meq/L
Nitrite Nitrogen	<0.001	mg/L	0.00 meq/L
Chloride	60.0	mg/L	1.69 meq/L
Fluoride	<0.01	mg/L	0.00 meq/L
Phosphate	0.5	mg/L	0.02 meq/L
Sulfate	145	mg/L	3.02 meq/L
Iron	<0.001	mg/L	0.00 meq/L
Calcium	40.0	mg/L	2.00 meq/L
Magnesium	<0.01	mg/L	0.00 meq/L
Potassium	0.8	mg/L	0.02 meq/L
Sodium	76.0	mg/L	3.31 meq/L
Cations			5.32 meq/L
Anions			5.32 meq/L
Cation/Anion Difference			0.07%

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
Water And Waste Water", 18th ed., 1992.

Comments: **Crouch Mesa L.F.**

 Analyst


 Review

10373

[illegible]

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

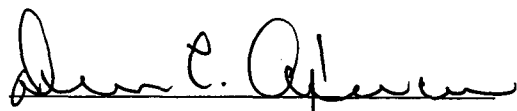
Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell #2 2' - 3'	Date Reported:	10-24-02
Laboratory Number:	24085	Date Sampled:	10-23-02
Chain of Custody No:	10373	Date Received:	10-23-02
Sample Matrix:	Soil	Date Extracted:	10-24-02
Preservative:	Cool	Date Analyzed:	10-24-02
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

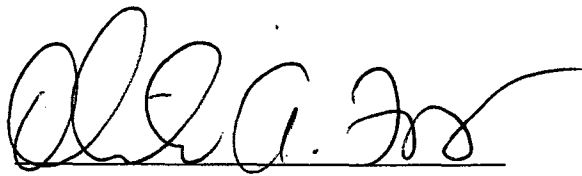
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	ND	0.1
Total Petroleum Hydrocarbons	ND	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L.F.


Analyst


Review

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

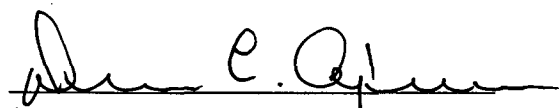
Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell #1 2' - 3'	Date Reported:	10-24-02
Laboratory Number:	24086	Date Sampled:	10-23-02
Chain of Custody No:	10373	Date Received:	10-23-02
Sample Matrix:	Soil	Date Extracted:	10-24-02
Preservative:	Cool	Date Analyzed:	10-24-02
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	ND	0.1
Total Petroleum Hydrocarbons	ND	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Crouch Mesa L.F.**


Analyst


Review

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Client: Blagg / BP
Sample ID: Cell #5 2' - 3'
Laboratory Number: 24087
Chain of Custody No: 10373
Sample Matrix: Soil
Preservative: Cool
Condition: Cool and Intact

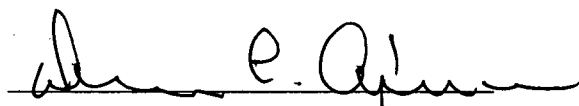
Project #: 94034-010
Date Reported: 10-24-02
Date Sampled: 10-23-02
Date Received: 10-23-02
Date Extracted: 10-24-02
Date Analyzed: 10-24-02
Analysis Requested: 8015 TPH

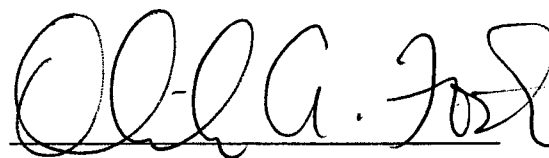
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	ND	0.1
Total Petroleum Hydrocarbons	ND	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L.F.


Analyst


Review

EPA Method 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	10-24-TPH QA/QC	Date Reported:	10-24-02
Laboratory Number:	24084	Date Sampled:	N/A
Sample Matrix:	Methylene Chloride	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	10-24-02
Condition:	N/A	Analysis Requested:	TPH

	I-Cal Date	I-Cal RF:	C-Cal RF:	% Difference	Accept. Range
Gasoline Range C5 - C10	04-25-02	2.7355E-002	2.7328E-002	0.10%	0 - 15%
Diesel Range C10 - C28	04-25-02	2.4557E-002	2.4508E-002	0.20%	0 - 15%

Blank Conc. (mg/L - mg/Kg)	Concentration	Detection Limit
Gasoline Range C5 - C10	ND	0.2
Diesel Range C10 - C28	ND	0.1
Total Petroleum Hydrocarbons	ND	0.2

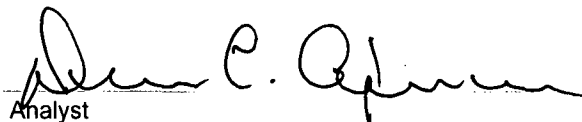
Duplicate Conc. (mg/Kg)	Sample	Duplicate	% Difference	Accept. Range
Gasoline Range C5 - C10	355	353	0.4%	0 - 30%
Diesel Range C10 - C28	151	151	0.0%	0 - 30%

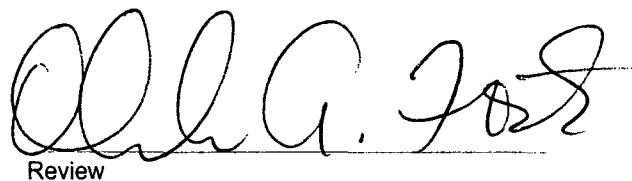
Spike Conc. (mg/Kg)	Sample	Spike Added	Spike Result	% Recovery	Accept. Range
Gasoline Range C5 - C10	355	250	603	99.8%	75 - 125%
Diesel Range C10 - C28	151	250	400	99.6%	75 - 125%

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: QA/QC for samples 24084 - 24091.


Analyst


Review

Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell #2 2' - 3'	Date Reported:	10-24-02
Laboratory Number:	24085	Date Sampled:	10-23-02
Chain of Custody:	10373	Date Received:	10-23-02
Sample Matrix:	Soil	Date Analyzed:	10-24-02
Preservative:	Cool	Date Extracted:	10-24-02
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	1.8
Toluene	ND	1.7
Ethylbenzene	ND	1.5
p,m-Xylene	ND	2.2
o-Xylene	ND	1.0
Total BTEX	ND	

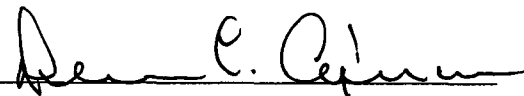
ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Fluorobenzene	99 %
	1,4-difluorobenzene	99 %
	Bromochlorobenzene	99 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L.F.


Analyst


Review

Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell #1 2' - 3'	Date Reported:	10-24-02
Laboratory Number:	24086	Date Sampled:	10-23-02
Chain of Custody:	10373	Date Received:	10-23-02
Sample Matrix:	Soil	Date Analyzed:	10-24-02
Preservative:	Cool	Date Extracted:	10-24-02
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	1.8
Toluene	ND	1.7
Ethylbenzene	ND	1.5
p,m-Xylene	ND	2.2
o-Xylene	ND	1.0
Total BTEX	ND	

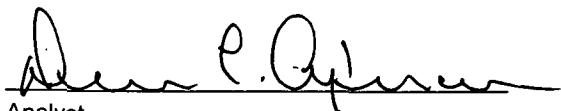
ND - Parameter not detected at the stated detection limit.

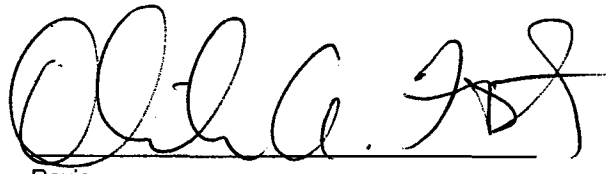
Surrogate Recoveries:	Parameter	Percent Recovery
	Fluorobenzene	99 %
	1,4-difluorobenzene	99 %
	Bromochlorobenzene	99 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L.F.


Analyst


Review

Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell #5 2' - 3'	Date Reported:	10-24-02
Laboratory Number:	24087	Date Sampled:	10-23-02
Chain of Custody:	10373	Date Received:	10-23-02
Sample Matrix:	Soil	Date Analyzed:	10-24-02
Preservative:	Cool	Date Extracted:	10-24-02
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	1.8
Toluene	ND	1.7
Ethylbenzene	ND	1.5
p,m-Xylene	ND	2.2
o-Xylene	ND	1.0
Total BTEX	ND	

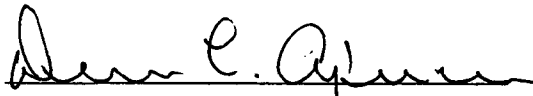
ND - Parameter not detected at the stated detection limit.

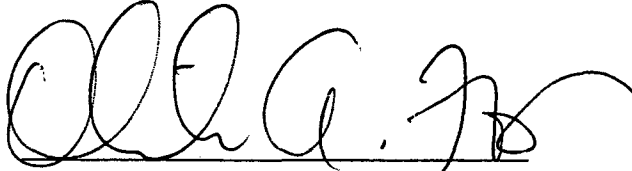
Surrogate Recoveries:	Parameter	Percent Recovery
	Fluorobenzene	99 %
	1,4-difluorobenzene	99 %
	Bromochlorobenzene	99 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L.F.


Analyst


Review

Client:	N/A	Project #:	N/A
Sample ID:	10-24-BTEX QA/QC	Date Reported:	10-24-02
Laboratory Number:	24084	Date Sampled:	N/A
Sample Matrix:	Soil	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	10-24-02
Condition:	N/A	Analysis:	BTEX

Calibration and Detection Limits (ug/L)	I-Cal RF	C-Cal RF:	%Diff.	Blank Conc	Detect. Limit
		Accept. Range 0 - 15%			
Benzene	2.6914E-002	2.6995E-002	0.3%	ND	0.2
Toluene	3.3709E-002	3.3777E-002	0.2%	ND	0.2
Ethylbenzene	5.8262E-002	5.8438E-002	0.3%	ND	0.2
p,m-Xylene	7.1891E-002	7.2107E-002	0.3%	ND	0.2
o-Xylene	5.4522E-002	5.4631E-002	0.2%	ND	0.1

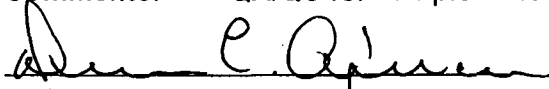
Duplicate Conc. (ug/Kg)	Sample	Duplicate	%Diff.	Accept Range	Detect. Limit
Benzene	21.7	22.3	2.8%	0 - 30%	1.8
Toluene	618	606	2.0%	0 - 30%	1.7
Ethylbenzene	640	627	2.0%	0 - 30%	1.5
p,m-Xylene	3,160	3,250	2.8%	0 - 30%	2.2
o-Xylene	1,430	1,480	3.5%	0 - 30%	1.0

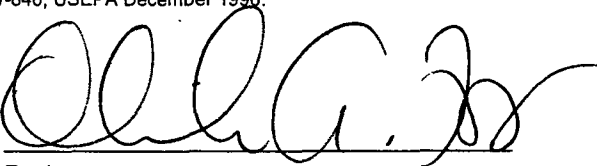
Spike Conc. (ug/Kg)	Sample	Amount Spiked	Spiked Sample	% Recovery	Accept Range
Benzene	21.7	50.0	71.6	99.9%	39 - 150
Toluene	618	50.0	667	99.8%	46 - 148
Ethylbenzene	640	50.0	689	99.8%	32 - 160
p,m-Xylene	3,160	100	3,250	99.7%	46 - 148
o-Xylene	1,430	50.0	1,470	99.3%	46 - 148

ND - Parameter not detected at the stated detection limit.

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.
Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: QA/QC for samples 24084 - 24091.


Analyst


Review

BLAGG ENGINEERING, INC.

P.O. Box 87, Bloomfield, New Mexico 87413

Phone: (505)632-1199 Fax: (505)632-3903

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NOV 26 2001

Environmental Bureau
Oil Conservation Division

November 19, 2001

Ms. Martyne J. Kieling
New Mexico Oil Conservation Division
2040 South Pacheco Street
Santa Fe, New Mexico 87505

Re: BP-Amoco
Crouch Mesa Waste Management Facility, SW/4 SE/4 Sec. 2 - T29N - R12W
Annual Report on Treatment Zone Monitoring

Dear Ms. Kieling:

On behalf of BP-Amoco, Blagg Engineering, Inc. (BEI) is submitting treatment zone monitoring test results for the Crouch Mesa Waste Management Facility pursuant to Permit NM-02-003, dated November 25, 1998. This treatment zone monitoring is conducted quarterly and test results are submitted annually to NMOCD. This report is for the December 1, 2000 through November 31, 2001 reporting period.

Sampling protocol specifies that a subsurface sample is to be collected in the native ground surface below the treatment zone in each cell during quarterly monitoring. Annual analytical test procedures are to include total petroleum hydrocarbons (TPH), volatile aromatic organics (BTEX), heavy metals and major cations/anions. Quarterly test procedures are to include TPH and BTEX only.

Treatment Cell No. 5, constructed in January, 1999 is only used to deposit treated waste that has passed reclamation standards. Therefore, BEI has not included this cell during all quarterly sample events. Additionally, Cell No. 4 has not been used for several years and was only included in one quarterly sample event to confirm prior years test results. Scheduled sampling will be re-initiated in Cell No's 4 and 5 in the event that these cells are used for soil remediation.

Included with this transmittal are the complete laboratory test reports for the waste management zone monitoring at the facility. Presented in Table 1 on the following page is a summary of the laboratory test reports for this monitoring.

Table 1

**BP-Amoco Crouch Mesa Waste Management Facility
2001 Annual Treatment Zone Monitoring Test Results**

Treatment Cell Identification	TPH mg/Kg	Benz mg/Kg	BTEX mg/Kg	As mg/Kg	Ba mg/Kg	Cd mg/Kg	Cr mg/Kg	Pb mg/Kg	Hg mg/Kg	Se mg/Kg	Ag mg/Kg
<u>Cell No. 1</u>											
1/24/01	<0.2	ND	ND	--	--	--	--	--	--	--	--
4/27/01	<0.2	ND	ND	--	--	--	--	--	--	--	--
7/27/01	<0.2	ND	0.0459	--	--	--	--	--	--	--	--
10/01/01	<0.2	ND	ND	0.056	7.08	0.042	0.354	0.284	0.006	0.032	ND
10/01/01 DUP	<0.2	ND	ND	0.056	7.04	0.040	0.354	0.280	0.004	0.032	ND
<u>Cell No. 2</u>											
1/24/01	<0.2	ND	ND	--	--	--	--	--	--	--	--
4/27/01	<0.2	ND	ND	--	--	--	--	--	--	--	--
7/27/01	<0.2	ND	ND	--	--	--	--	--	--	--	--
10/01/01	<0.2	ND	ND	0.074	6.96	0.064	0.584	0.190	0.002	0.028	0.004
<u>Cell No. 3</u>											
1/24/01	<0.2	ND	ND	--	--	--	--	--	--	--	--
4/27/01	<0.2	0.0018	0.0764	--	--	--	--	--	--	--	--
7/27/01	<0.2	ND	0.0706	--	--	--	--	--	--	--	--
10/01/01	<0.2	ND	ND	0.032	1.71	0.040	0.174	0.102	0.002	0.008	ND
<u>Cell No. 4(Unused)</u>											
1/24/01	<0.2	ND	ND	--	--	--	--	--	--	--	--
<u>Cell No. 5(Unused)</u>											
7/27/01	<0.2	ND	0.0824	--	--	--	--	--	--	--	--
10/01/01	<0.2	ND	ND	0.050	3.24	0.044	0.188	0.070	0.004	0.022	ND

ND = Not Detected

Questions or comments concerning the this transmittal may be directed to Jeff Blagg of Blagg Engineering at (505)632-1199 or to Buddy Shaw with Amoco at (505)326-9200.

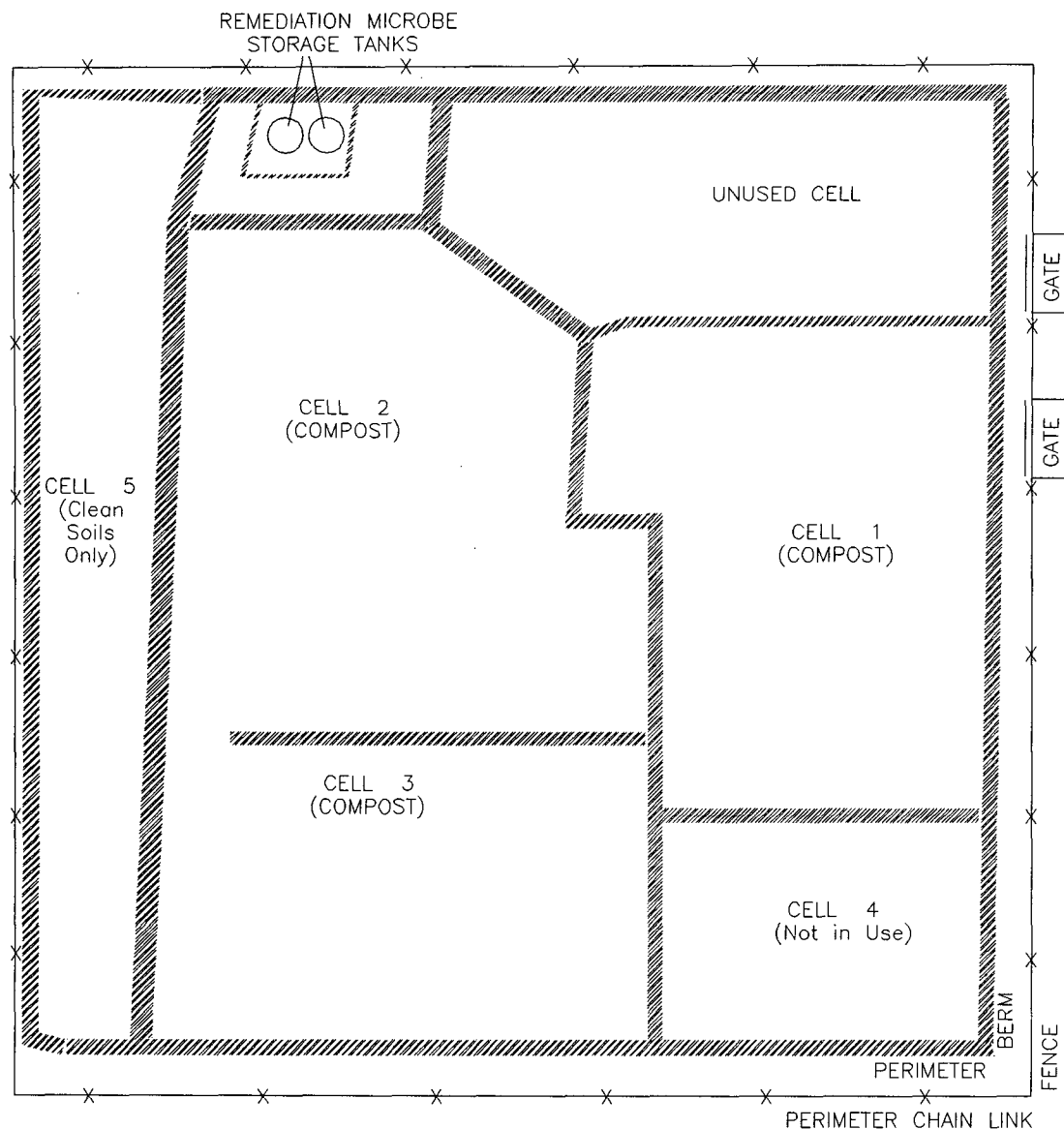
Respectfully submitted:
Blagg Engineering, Inc.



Jeffrey C. Blagg, P.E.
President

Attachments: Site Diagram
Soil Treatment Zone Monitoring Reports

cc: Denny Foust, NMOCD Aztec District Office
B.D. Shaw, BP-Amoco San Juan Operations Center



LEGEND

—X—X— 6' TALL CHAIN LINK FENCE

/// SOIL BERM

0 200 400 FEET

N

BP-AMOCO CROUCH MESA WASTE MGMT FAC SW/4 SE/4 SEC 2 T29N R12W SAN JUAN CO., NEW MEXICO NOVEMBER 2001	BLAGG ENGINEERING, INC. CONSULTING ENGINEERING SERVICES P.O. BOX 87 BLOOMFIELD, NEW MEXICO 87413 PHONE: (505) 632-1199	SITE SCHEMATIC	
		FIGURE 1	DRWN BY: JCB
		CRMESA2	PROJ MGR: JCB

08482

5796 U.S. Highway 64
Farmington, New Mexico 87401
(505) 632-0615

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

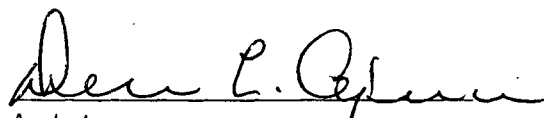
Client:	Blagg / BP	Project #:	04034-010
Sample ID:	Cell #3 @ 2'	Date Reported:	01-25-01
Laboratory Number:	19137	Date Sampled:	01-24-01
Chain of Custody No:	8482	Date Received:	01-24-01
Sample Matrix:	Soil	Date Extracted:	01-24-01
Preservative:	Cool	Date Analyzed:	01-25-01
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

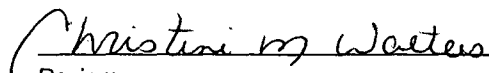
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	ND	0.1
Total Petroleum Hydrocarbons	ND	0.1

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L. F.


Analyst


Review

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

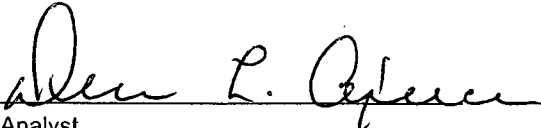
Client:	Blagg / BP	Project #:	04034-010
Sample ID:	CEll #2 @ 3'	Date Reported:	01-25-01
Laboratory Number:	19138	Date Sampled:	01-24-01
Chain of Custody No:	8482	Date Received:	01-24-01
Sample Matrix:	Soil	Date Extracted:	01-24-01
Preservative:	Cool	Date Analyzed:	01-25-01
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

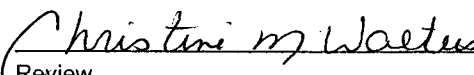
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	ND	0.1
Total Petroleum Hydrocarbons	ND	0.1

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L. F.


Analyst


Review

EPA Method 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	01-25-TPH QA/QC	Date Reported:	01-25-01
Laboratory Number:	19135	Date Sampled:	N/A
Sample Matrix:	Methylene Chloride	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	01-25-01
Condition:	N/A	Analysis Requested:	TPH

	I-Cal Date	I-Cal RF	C-Cal RF	% Difference	Accept. Range
Gasoline Range C5 - C10	12-20-00	1.7631E-002	1.7613E-002	0.10%	0 - 15%
Diesel Range C10 - C28	12-20-00	8.7678E-003	8.7503E-003	0.20%	0 - 15%

Blank Conc. (mg/L - mg/Kg)	Concentration	Detection Limit
Gasoline Range C5 - C10	ND	0.2
Diesel Range C10 - C28	ND	0.1
Total Petroleum Hydrocarbons	ND	0.2

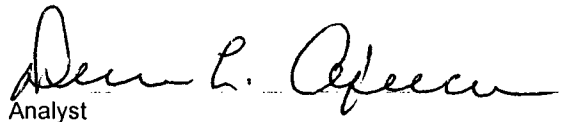
Duplicate Conc. (mg/Kg)	Sample	Duplicate	% Difference	Accept. Range
Gasoline Range C5 - C10	2.4	2.4	0.0%	0 - 30%
Diesel Range C10 - C28	36.8	36.7	0.3%	0 - 30%

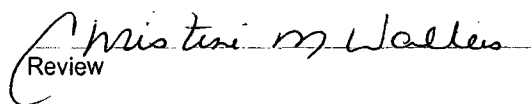
Spike Conc. (mg/Kg)	Sample	Spike Added	Spike Result	% Recovery	Accept. Range
Gasoline Range C5 - C10	2.4	250	252	100%	75 - 125%
Diesel Range C10 - C28	36.8	250	286	100%	75 - 125%

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: QA/QC for samples 19135 - 19139.


Analyst


Review

Client:	Blagg / BP	Project #:	04034-010
Sample ID:	Cell #4 @ 2'	Date Reported:	01-25-01
Laboratory Number:	19136	Date Sampled:	01-24-01
Chain of Custody:	8482	Date Received:	01-24-01
Sample Matrix:	Soil	Date Analyzed:	01-25-01
Preservative:	Cool	Date Extracted:	01-24-01
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	1.8
Toluene	ND	1.7
Ethylbenzene	ND	1.5
p,m-Xylene	ND	2.2
o-Xylene	ND	1.0
Total BTEX	ND	

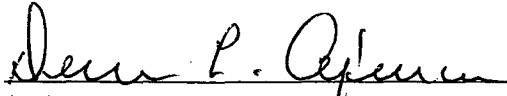
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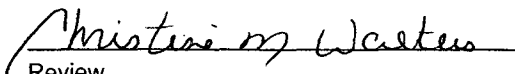
Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	100 %
	Bromofluorobenzene	100 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L. F.


Analyst


Review

Client:	Blagg / BP	Project #:	04034-010
Sample ID:	Cell #3 @ 2'	Date Reported:	01-25-01
Laboratory Number:	19137	Date Sampled:	01-24-01
Chain of Custody:	8482	Date Received:	01-24-01
Sample Matrix:	Soil	Date Analyzed:	01-25-01
Preservative:	Cool	Date Extracted:	01-24-01
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	1.8
Toluene	ND	1.7
Ethylbenzene	ND	1.5
p,m-Xylene	ND	2.2
o-Xylene	ND	1.0
Total BTEX	ND	

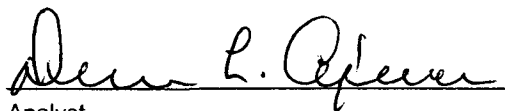
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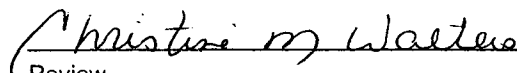
Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	100 %
	Bromofluorobenzene	100 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L. F.


Analyst


Review

Client:	Blagg / BP	Project #:	04034-010
Sample ID:	Cell #2 @ 3'	Date Reported:	01-25-01
Laboratory Number:	19138	Date Sampled:	01-24-01
Chain of Custody:	8482	Date Received:	01-24-01
Sample Matrix:	Soil	Date Analyzed:	01-25-01
Preservative:	Cool	Date Extracted:	01-24-01
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	1.8
Toluene	ND	1.7
Ethylbenzene	ND	1.5
p,m-Xylene	ND	2.2
o-Xylene	ND	1.0
Total BTEX	ND	

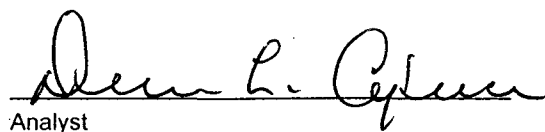
ND - Parameter not detected at the stated detection limit.

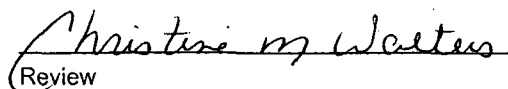
Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	100 %
	Bromofluorobenzene	100 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L. F.


Analyst


Review

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Blagg / BP	Project #:	04034-010
Sample ID:	Cell #1 @ 3'	Date Reported:	01-25-01
Laboratory Number:	19139	Date Sampled:	01-24-01
Chain of Custody:	8482	Date Received:	01-24-01
Sample Matrix:	Soil	Date Analyzed:	01-25-01
Preservative:	Cool	Date Extracted:	01-24-01
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	1.8
Toluene	ND	1.7
Ethylbenzene	ND	1.5
p,m-Xylene	ND	2.2
o-Xylene	ND	1.0
Total BTEX	ND	

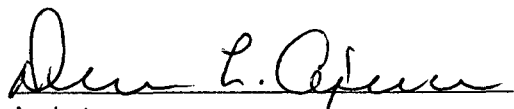
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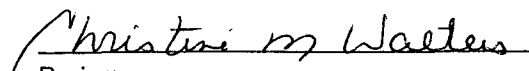
Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	100 %
	Bromofluorobenzene	100 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L. F.


Analyst


Review

Client:	N/A	Project #:	N/A
Sample ID:	01-25-BTEX QA/QC	Date Reported:	01-25-01
Laboratory Number:	19136	Date Sampled:	N/A
Sample Matrix:	Soil	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	01-25-01
Condition:	N/A	Analysis:	BTEX

Calibration and Detection Limits (ug/L)	I-Cal RF:	C-Cal RF:	%Diff:	Blank Conc	Detect. Limit
		Accept. Range 0 - 15%			
Benzene	3.8333E-002	3.8425E-002	0.2%	ND	0.2
Toluene	3.7664E-002	3.7732E-002	0.2%	ND	0.2
Ethylbenzene	5.9685E-002	5.9810E-002	0.2%	ND	0.2
p,m-Xylene	5.4964E-002	5.5102E-002	0.3%	ND	0.2
o-Xylene	4.7339E-002	4.7420E-002	0.2%	ND	0.1

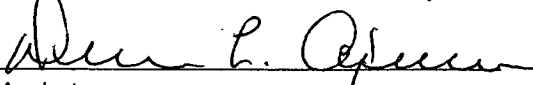
Duplicate Conc. (ug/Kg)	Sample	Duplicate	%Diff.	Accept Range	Detect. Limit
Benzene	ND	ND	0.0%	0 - 30%	1.8
Toluene	ND	ND	0.0%	0 - 30%	1.7
Ethylbenzene	ND	ND	0.0%	0 - 30%	1.5
p,m-Xylene	ND	ND	0.0%	0 - 30%	2.2
o-Xylene	ND	ND	0.0%	0 - 30%	1.0

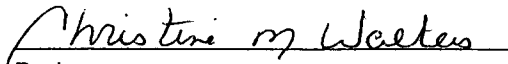
Spike Conc. (ug/Kg)	Sample	Amount Spiked	Spiked Sample	% Recovery	Accept Range
Benzene	ND	50.0	50.0	100%	39 - 150
Toluene	ND	50.0	50.0	100%	46 - 148
Ethylbenzene	ND	50.0	50.0	100%	32 - 160
p,m-Xylene	ND	100	100	100%	46 - 148
o-Xylene	ND	50.0	50.0	100%	46 - 148

ND - Parameter not detected at the stated detection limit.

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.
Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: QA/QC for samples 19136 - 19139.


Analyst


Review

08634

ENVIROTECH INC.

5796 U.S. Highway 64
Farmington, New Mexico 87401
(505) 632-0615

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

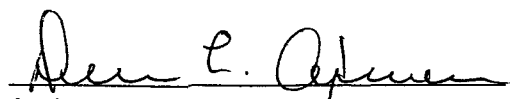
Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell 1 @ 2' - 3'	Date Reported:	04-30-01
Laboratory Number:	19794	Date Sampled:	04-27-01
Chain of Custody No:	8634	Date Received:	04-27-01
Sample Matrix:	Soil	Date Extracted:	04-30-01
Preservative:	Cool	Date Analyzed:	04-30-01
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

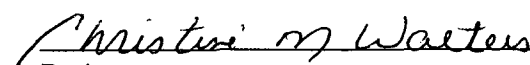
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	ND	0.1
Total Petroleum Hydrocarbons	ND	0.1

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L.F.


Analyst


Review

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

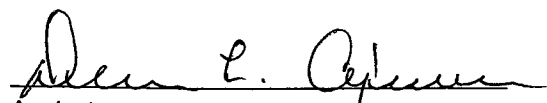
Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell 2 @ 2' - 3'	Date Reported:	04-30-01
Laboratory Number:	19795	Date Sampled:	04-27-01
Chain of Custody No:	8634	Date Received:	04-27-01
Sample Matrix:	Soil	Date Extracted:	04-30-01
Preservative:	Cool	Date Analyzed:	04-30-01
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

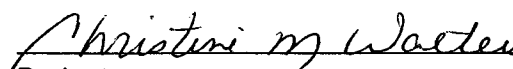
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	ND	0.1
Total Petroleum Hydrocarbons	ND	0.1

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L.F.


Analyst


Review

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

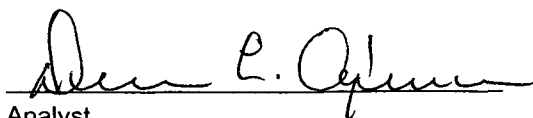
Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell 3 @ 1.5' - 2'	Date Reported:	04-30-01
Laboratory Number:	19796	Date Sampled:	04-27-01
Chain of Custody No:	8634	Date Received:	04-27-01
Sample Matrix:	Soil	Date Extracted:	04-30-01
Preservative:	Cool	Date Analyzed:	04-30-01
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

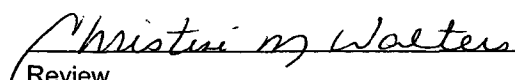
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	ND	0.1
Total Petroleum Hydrocarbons	ND	0.1

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Crouch Mesa L.F.**


Analyst


Review

EPA Method 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	04-30-TPH QA/QC	Date Reported:	04-30-01
Laboratory Number:	19794	Date Sampled:	N/A
Sample Matrix:	Methylene Chloride	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	04-30-01
Condition:	N/A	Analysis Requested:	TPH

	Cal Date	Cal RF	C-Cal RF	% Difference	Accept Range
Gasoline Range C5 - C10	04-09-01	2.5071E-002	2.5046E-002	0.10%	0 - 15%
Diesel Range C10 - C28	04-09-01	1.2428E-002	1.2403E-002	0.20%	0 - 15%

Blank Conc. (mg/L - mg/Kg)	Concentration	Detection Limit
Gasoline Range C5 - C10	ND	0.2
Diesel Range C10 - C28	ND	0.1
Total Petroleum Hydrocarbons	ND	0.2

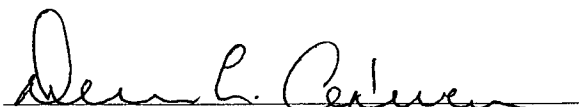
Duplicate Conc. (mg/Kg)	Sample	Duplicate	% Difference	Accept Range
Gasoline Range C5 - C10	ND	ND	0.0%	0 - 30%
Diesel Range C10 - C28	ND	ND	0.0%	0 - 30%

Spike Conc. (mg/Kg)	Sample	Spike Added	Spike Result	% Recovery	Accept Range
Gasoline Range C5 - C10	ND	250	250	100%	75 - 125%
Diesel Range C10 - C28	ND	250	250	100%	75 - 125%

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: QA/QC for samples 19794 - 19796.


Analyst


Review

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell 1 @ 2' - 3'	Date Reported:	04-30-01
Laboratory Number:	19794	Date Sampled:	04-27-01
Chain of Custody:	8634	Date Received:	04-27-01
Sample Matrix:	Soil	Date Analyzed:	04-30-01
Preservative:	Cool	Date Extracted:	04-30-01
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	1.8
Toluene	ND	1.7
Ethylbenzene	ND	1.5
p,m-Xylene	ND	2.2
o-Xylene	ND	1.0
Total BTEX	ND	

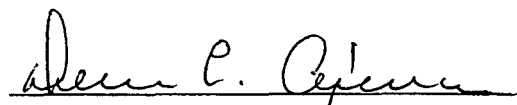
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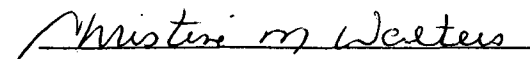
Surrogate Recoveries:	Parameter	Percent Recovery
	Fluorobenzene	100 %
	1,4-difluorobenzene	100 %
	Bromochlorobenzene	100 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L.F.


Analyst


Review

Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell 2 @ 2' - 3'	Date Reported:	04-30-01
Laboratory Number:	19795	Date Sampled:	04-27-01
Chain of Custody:	8634	Date Received:	04-27-01
Sample Matrix:	Soil	Date Analyzed:	04-30-01
Preservative:	Cool	Date Extracted:	04-30-01
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	1.8
Toluene	ND	1.7
Ethylbenzene	ND	1.5
p,m-Xylene	ND	2.2
o-Xylene	ND	1.0
Total BTEX	ND	

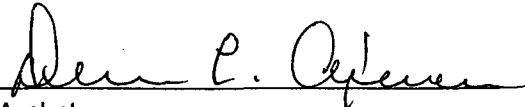
ND - Parameter not detected at the stated detection limit.

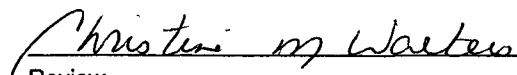
Surrogate Recoveries:	Parameter	Percent Recovery
	Fluorobenzene	100 %
	1,4-difluorobenzene	100 %
	Bromochlorobenzene	100 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L.F.


Analyst


Review

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell 3 @ 1.5' - 2'	Date Reported:	04-30-01
Laboratory Number:	19796	Date Sampled:	04-27-01
Chain of Custody:	8634	Date Received:	04-27-01
Sample Matrix:	Soil	Date Analyzed:	04-30-01
Preservative:	Cool	Date Extracted:	04-30-01
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	1.8	1.8
Toluene	12.4	1.7
Ethylbenzene	ND	1.5
p,m-Xylene	57.3	2.2
o-Xylene	4.9	1.0
Total BTEX	76.4	

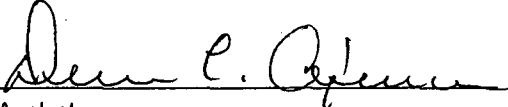
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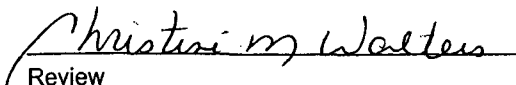
Surrogate Recoveries:	Parameter	Percent Recovery
	Fluorobenzene	100 %
	1,4-difluorobenzene	100 %
	Bromochlorobenzene	100 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L.F.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	N/A	Project #:	N/A
Sample ID:	04-30-BTEX QA/QC	Date Reported:	04-30-01
Laboratory Number:	19794	Date Sampled:	N/A
Sample Matrix:	Soil	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	04-30-01
Condition:	N/A	Analysis:	BTEX

Calibration and Detection Limits (ug/L)	L-Cal RF	C-Cal RF	%Diff	Blank Conc	Detect Limit
		Accept Range	0 - 15%		
Benzene	3.2255E-002	3.2333E-002	0.2%	ND	0.2
Toluene	4.0199E-002	4.0271E-002	0.2%	ND	0.2
Ethylbenzene	7.0232E-002	7.0380E-002	0.2%	ND	0.2
p,m-Xylene	6.3376E-002	6.3535E-002	0.3%	ND	0.2
o-Xylene	5.4448E-002	5.4541E-002	0.2%	ND	0.1

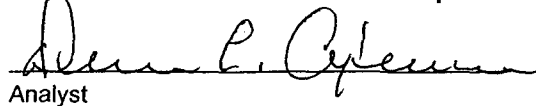
Duplicate Conc. (ug/Kg)	Sample	Duplicate	%Diff	Accept Range	Detect Limit
Benzene	ND	ND	0.0%	0 - 30%	1.8
Toluene	ND	ND	0.0%	0 - 30%	1.7
Ethylbenzene	ND	ND	0.0%	0 - 30%	1.5
p,m-Xylene	ND	ND	0.0%	0 - 30%	2.2
o-Xylene	ND	ND	0.0%	0 - 30%	1.0

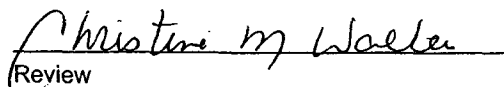
Spike Conc. (ug/Kg)	Sample	Amount Spiked	Spiked Sample	% Recovery	Accept Range
Benzene	ND	50.0	50.0	100%	39 - 150
Toluene	ND	50.0	50	100%	46 - 148
Ethylbenzene	ND	50.0	50	100%	32 - 160
p,m-Xylene	ND	100	100	100%	46 - 148
o-Xylene	ND	50.0	50	100%	46 - 148

ND - Parameter not detected at the stated detection limit.

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.
Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: QA/QC for samples 19794 - 19796.


Analyst


Review

09446

ENVIROTECH INC.

5796 U.S. Highway 64
Farmington, New Mexico 87401
(505) 632-0615

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

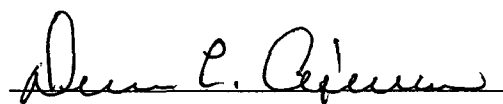
Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell #1 2½ - 3'	Date Reported:	07-31-01
Laboratory Number:	20491	Date Sampled:	07-27-01
Chain of Custody No:	9446	Date Received:	07-27-01
Sample Matrix:	Soil	Date Extracted:	07-27-01
Preservative:	Cool	Date Analyzed:	07-30-01
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	ND	0.1
Total Petroleum Hydrocarbons	ND	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L.F.


Analyst


Review

Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell #1 2½ - 3'	Date Reported:	07-30-01
Laboratory Number:	20491	Date Sampled:	07-27-01
Chain of Custody:	9446	Date Received:	07-27-01
Sample Matrix:	Soil	Date Analyzed:	07-30-01
Preservative:	Cool	Date Extracted:	07-27-01
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	1.8
Toluene	25.9	1.7
Ethylbenzene	1.7	1.5
p,m-Xylene	11.5	2.2
o-Xylene	6.8	1.0
Total BTEX	45.9	

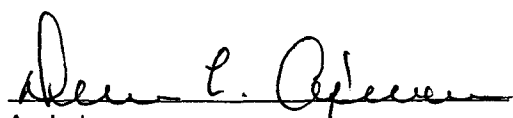
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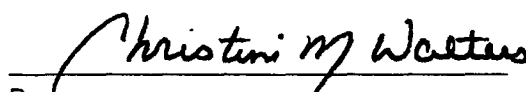
Surrogate Recoveries:	Parameter	Percent Recovery
	Fluorobenzene	98 %
	1,4-difluorobenzene	98 %
	Bromochlorobenzene	98 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L.F.


Analyst


Review

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell #2 2½ - 3'	Date Reported:	07-31-01
Laboratory Number:	20492	Date Sampled:	07-27-01
Chain of Custody No:	9446	Date Received:	07-27-01
Sample Matrix:	Soil	Date Extracted:	07-27-01
Preservative:	Cool	Date Analyzed:	07-30-01
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

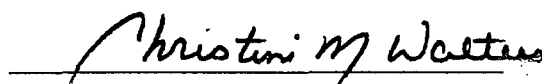
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	ND	0.1
Total Petroleum Hydrocarbons	ND	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L.F.


Analyst


Review

Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell #2 2½ - 3'	Date Reported:	07-30-01
Laboratory Number:	20492	Date Sampled:	07-27-01
Chain of Custody:	9446	Date Received:	07-27-01
Sample Matrix:	Soil	Date Analyzed:	07-30-01
Preservative:	Cool	Date Extracted:	07-27-01
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	1.8
Toluene	ND	1.7
Ethylbenzene	ND	1.5
p,m-Xylene	ND	2.2
o-Xylene	ND	1.0
Total BTEX	ND	

ND - Parameter not detected at the stated detection limit.

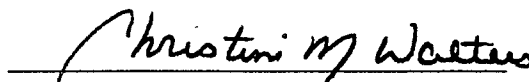
Surrogate Recoveries:	Parameter	Percent Recovery
	Fluorobenzene	97 %
	1,4-difluorobenzene	97 %
	Bromochlorobenzene	97 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L.F.


Analyst


Review

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

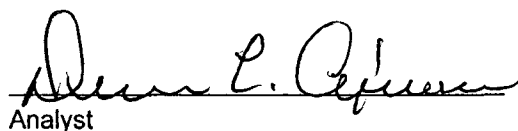
Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell #3 2'	Date Reported:	07-31-01
Laboratory Number:	20493	Date Sampled:	07-27-01
Chain of Custody No:	9446	Date Received:	07-27-01
Sample Matrix:	Soil	Date Extracted:	07-27-01
Preservative:	Cool	Date Analyzed:	07-30-01
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

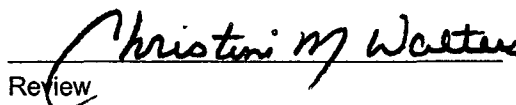
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	ND	0.1
Total Petroleum Hydrocarbons	ND	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L.F.


Analyst


Review

Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell #3 2'	Date Reported:	07-30-01
Laboratory Number:	20493	Date Sampled:	07-27-01
Chain of Custody:	9446	Date Received:	07-27-01
Sample Matrix:	Soil	Date Analyzed:	07-30-01
Preservative:	Cool	Date Extracted:	07-27-01
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	1.8
Toluene	50.2	1.7
Ethylbenzene	1.5	1.5
p,m-Xylene	11.2	2.2
o-Xylene	7.7	1.0
Total BTEX	70.6	

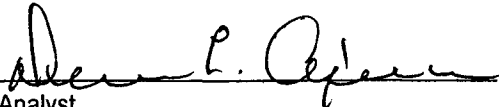
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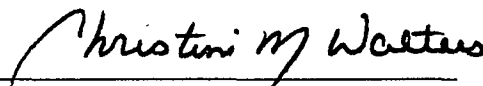
Surrogate Recoveries:	Parameter	Percent Recovery
	Fluorobenzene	97 %
	1,4-difluorobenzene	97 %
	Bromochlorobenzene	97 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L.F.


Analyst


Review

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

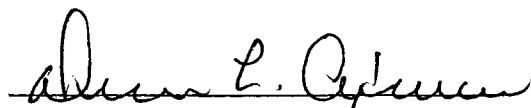
Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell #5 2½ - 3'	Date Reported:	07-31-01
Laboratory Number:	20494	Date Sampled:	07-27-01
Chain of Custody No:	9446	Date Received:	07-27-01
Sample Matrix:	Soil	Date Extracted:	07-27-01
Preservative:	Cool	Date Analyzed:	07-30-01
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

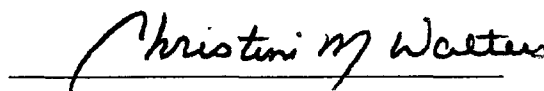
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	ND	0.1
Total Petroleum Hydrocarbons	ND	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L.F.


Analyst


Review

Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell #5 2½ - 3'	Date Reported:	07-30-01
Laboratory Number:	20494	Date Sampled:	07-27-01
Chain of Custody:	9446	Date Received:	07-27-01
Sample Matrix:	Soil	Date Analyzed:	07-30-01
Preservative:	Cool	Date Extracted:	07-27-01
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	1.8
Toluene	56.6	1.7
Ethylbenzene	1.6	1.5
p,m-Xylene	14.8	2.2
o-Xylene	9.4	1.0
Total BTEX	82.4	

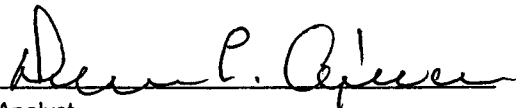
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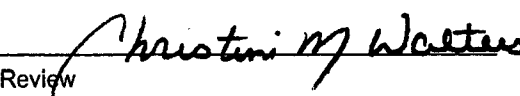
Surrogate Recoveries:	Parameter	Percent Recovery
	Fluorobenzene	97 %
	1,4-difluorobenzene	97 %
	Bromochlorobenzene	97 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L.F.


Analyst


Review

EPA Method 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	07-30-TPH QA/QC	Date Reported:	07-31-01
Laboratory Number:	20455	Date Sampled:	N/A
Sample Matrix:	Methylene Chloride	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	07-30-01
Condition:	N/A	Analysis Requested:	TPH

	I-Cal Date	I-Cal RF	C-Cal RF	% Difference	Accept Range
Gasoline Range C5 - C10	05-09-01	9.6854E-002	9.6757E-002	0.10%	0 - 15%
Diesel Range C10 - C28	05-09-01	2.0418E-002	2.0377E-002	0.20%	0 - 15%

Blank Conc. (mg/L - mg/Kg)	Concentration	Detection Limit
Gasoline Range C5 - C10	ND	0.2
Diesel Range C10 - C28	ND	0.1
Total Petroleum Hydrocarbons	ND	0.2

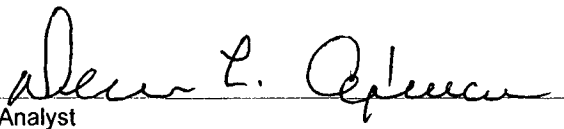
Duplicate Conc. (mg/Kg)	Sample	Duplicate	% Difference	Accept Range
Gasoline Range C5 - C10	ND	ND	0.0%	0 - 30%
Diesel Range C10 - C28	ND	ND	0.0%	0 - 30%

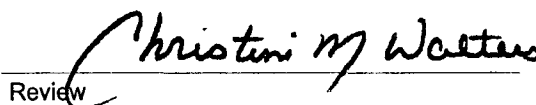
Spike Conc. (mg/Kg)	Sample	Spike Added	Spike Result	% Recovery	Accept Range
Gasoline Range C5 - C10	ND	250	250	100%	75 - 125%
Diesel Range C10 - C28	ND	250	250	100%	75 - 125%

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: QA/QC for samples 20455 - 20458 and 20491 - 20496.


Analyst


Review

Client:	N/A	Project #:	N/A
Sample ID:	07-30-BTEX QA/QC	Date Reported:	07-30-01
Laboratory Number:	20455	Date Sampled:	N/A
Sample Matrix:	Soil	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	07-30-01
Condition:	N/A	Analysis:	BTEX

Calibration and Detection Limits (ug/L)	L-Cal RF	C-Cal RF	%Diff	Blank Conc	Detect Limit
		Accept Range 0 - 15%			
Benzene	4.7251E-002	4.7365E-002	0.2%	ND	0.2
Toluene	4.3470E-002	4.3548E-002	0.2%	ND	0.2
Ethylbenzene	6.1736E-002	6.1866E-002	0.2%	ND	0.2
p,m-Xylene	6.3126E-002	6.3284E-002	0.3%	ND	0.2
o-Xylene	5.5325E-002	5.5419E-002	0.2%	ND	0.1

Duplicate Conc. (ug/Kg)	Sample	Duplicate	%Diff	Accept Range	Detect Limit
Benzene	4.6	4.5	2.2%	0 - 30%	1.8
Toluene	33.4	32.8	1.8%	0 - 30%	1.7
Ethylbenzene	8.7	8.6	1.1%	0 - 30%	1.5
p,m-Xylene	32.2	31.7	1.6%	0 - 30%	2.2
o-Xylene	17.3	17.1	1.2%	0 - 30%	1.0

Spike Conc. (ug/Kg)	Sample	Amount Spiked	Spiked Sample	% Recovery	Accept Range
Benzene	4.6	50.0	54.6	100%	39 - 150
Toluene	33.4	50.0	83.2	100%	46 - 148
Ethylbenzene	8.7	50.0	58.7	100%	32 - 160
p,m-Xylene	32.2	100	132	100%	46 - 148
o-Xylene	17.3	50.0	67.2	100%	46 - 148

ND - Parameter not detected at the stated detection limit.

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.
Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: QA/QC for samples 20455 - 20458 and 20491 - 20496.

Analyst

Review

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

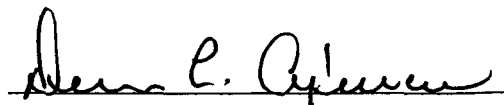
Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell #1 2'-3'	Date Reported:	10-04-01
Laboratory Number:	21110	Date Sampled:	10-01-01
Chain of Custody No:	8749	Date Received:	10-01-01
Sample Matrix:	Soil	Date Extracted:	10-03-01
Preservative:	Cool	Date Analyzed:	10-04-01
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

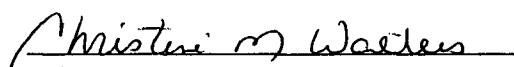
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	ND	0.1
Total Petroleum Hydrocarbons	ND	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L.F.


Analyst


Review

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell #2 2'-3'	Date Reported:	10-04-01
Laboratory Number:	21111	Date Sampled:	10-01-01
Chain of Custody No:	8749	Date Received:	10-01-01
Sample Matrix:	Soil	Date Extracted:	10-03-01
Preservative:	Cool	Date Analyzed:	10-04-01
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

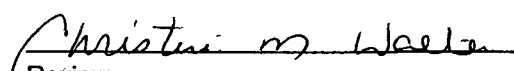
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	ND	0.1
Total Petroleum Hydrocarbons	ND	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L.F.


Analyst


Review

Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell #3 2' - 3'	Date Reported:	10-03-01
Laboratory Number:	21112	Date Sampled:	10-01-01
Chain of Custody:	8749	Date Received:	10-01-01
Sample Matrix:	Soil	Date Analyzed:	10-03-01
Preservative:	Cool	Date Digested:	10-03-01
Condition:	Cool & Intact	Analysis Needed:	RCRA Metals

Parameter	Concentration (mg/L)	Det. Limit (mg/L)	Regulatory Level (mg/L)
Arsenic	0.032	0.002	5.0
Barium	1.71	0.002	100
Cadmium	0.040	0.002	1.0
Chromium	0.174	0.002	5.0
Lead	0.102	0.002	5.0
Mercury	0.002	0.002	0.2
Selenium	0.008	0.002	1.0
Silver	ND	0.002	5.0

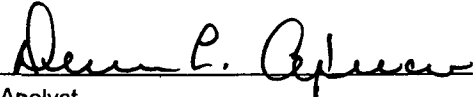
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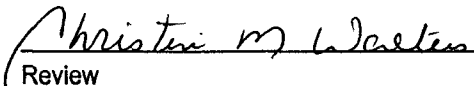
References: Method 3050B, Acid Digestion of Sediments, Sludges and Soils.
SW-846, USEPA, December 1996.

Method 6010B, Analysis of Metals by Inductively Coupled Plasma Atomic Emission Spectroscopy, SW-846, USEPA, December 1996.

Note: Regulatory Limits based on 40 CFR part 261 subpart C
section 261.24, August 24, 1998.

Comments: **Crouch Mesa L.F.**


Analyst


Review

Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell #5 2' - 3'	Date Reported:	10-03-01
Laboratory Number:	21113	Date Sampled:	10-01-01
Chain of Custody:	8749	Date Received:	10-01-01
Sample Matrix:	Soil	Date Analyzed:	10-03-01
Preservative:	Cool	Date Digested:	10-03-01
Condition:	Cool & Intact	Analysis Needed:	RCRA Metals

Parameter	Concentration (mg/L)	Det. Limit (mg/L)	Regulatory Level (mg/L)
Arsenic	0.050	0.002	5.0
Barium	3.24	0.002	100
Cadmium	0.044	0.002	1.0
Chromium	0.188	0.002	5.0
Lead	0.070	0.002	5.0
Mercury	0.004	0.002	0.2
Selenium	0.022	0.002	1.0
Silver	ND	0.002	5.0

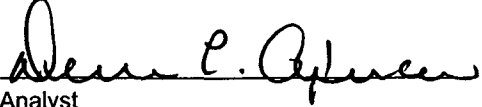
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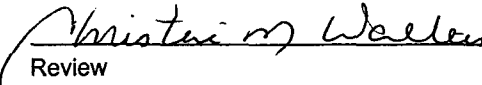
References: Method 3050B, Acid Digestion of Sediments, Sludges and Soils.
SW-846, USEPA, December 1996.

Method 6010B, Analysis of Metals by Inductively Coupled Plasma Atomic Emission Spectroscopy, SW-846, USEPA, December 1996.

Note: Regulatory Limits based on 40 CFR part 261 subpart C
section 261.24, August 24, 1998.

Comments: **Crouch Mesa L.F.**


Analyst


Review

Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell XX 2' - 3'	Date Reported:	10-03-01
Laboratory Number:	21114	Date Sampled:	10-01-01
Chain of Custody:	8749	Date Received:	10-01-01
Sample Matrix:	Soil	Date Analyzed:	10-03-01
Preservative:	Cool	Date Digested:	10-03-01
Condition:	Cool & Intact	Analysis Needed:	RCRA Metals

Parameter	Concentration (mg/L)	Det. Limit (mg/L)	Regulatory Level (mg/L)
Arsenic	0.056	0.002	5.0
Barium	7.04	0.002	100
Cadmium	0.040	0.002	1.0
Chromium	0.354	0.002	5.0
Lead	0.280	0.002	5.0
Mercury	0.004	0.002	0.2
Selenium	0.032	0.002	1.0
Silver	ND	0.002	5.0

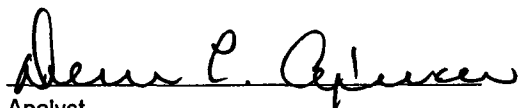
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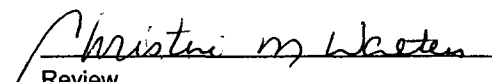
References: Method 3050B, Acid Digestion of Sediments, Sludges and Soils.
SW-846, USEPA, December 1996.

Method 6010B, Analysis of Metals by Inductively Coupled Plasma Atomic Emission Spectroscopy, SW-846, USEPA, December 1996.

Note: Regulatory Limits based on 40 CFR part 261 subpart C
section 261.24, August 24, 1998.

Comments: Crouch Mesa L.F.


Analyst


Review

TRACE METAL ANALYSIS Quality Control / Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	10-03-TM QA/QC	Date Reported:	10-03-01
Laboratory Number:	21088	Date Sampled:	N/A
Sample Matrix:	Soil	Date Received:	N/A
Analysis Requested:	Total RCRA Metals	Date Analyzed:	10-03-01
Condition:	N/A	Date Digested:	10-03-01

Blank & Duplicate Conc. (mg/Kg)	Instrument Blank (mg/L)	Method Blank	Detection Limit	Sample	Duplicate	% Diff	Acceptance Range
Arsenic	ND	ND	0.002	0.076	0.076	0.0%	0% - 30%
Barium	ND	ND	0.002	9.10	9.14	0.4%	0% - 30%
Cadmium	ND	ND	0.002	0.066	0.066	0.0%	0% - 30%
Chromium	ND	ND	0.002	1.91	1.91	0.0%	0% - 30%
Lead	ND	ND	0.002	0.504	0.500	0.8%	0% - 30%
Mercury	ND	ND	0.002	ND	ND	0.0%	0% - 30%
Selenium	ND	ND	0.002	0.042	0.042	0.0%	0% - 30%
Silver	ND	ND	0.002	ND	ND	0.0%	0% - 30%

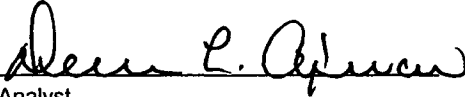
Spike Conc. (mg/Kg)	Spike Added	Sample	Spiked Sample	Percent Recovery	Acceptance Range
Arsenic	1.00	0.076	1.07	99.4%	80% - 120%
Barium	1.00	9.10	10.1	100.0%	80% - 120%
Cadmium	1.00	0.066	1.06	99.4%	80% - 120%
Chromium	1.00	1.91	2.90	99.7%	80% - 120%
Lead	1.00	0.504	1.50	99.7%	80% - 120%
Mercury	0.100	ND	0.098	98.0%	80% - 120%
Selenium	1.00	0.042	1.04	99.8%	80% - 120%
Silver	1.00	ND	0.998	99.8%	80% - 120%

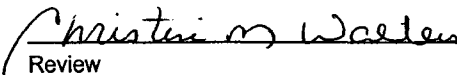
ND - Parameter not detected at the stated detection limit.

References: Method 3050B, Acid Digestion of Sediments, Sludges and Soils.
SW-846, USEPA, December 1996.

Method 6010B, Analysis of Metals by Inductively Coupled Plasma Atomic Emission
Spectroscopy, SW-846, USEPA, December 1996.

Comments: QA/QC for samples 21088 - 21089, 21106 - 21114 and 21126.


Analyst


Review

08796

ENVIROTECH INC.

5796 U.S. Highway 64
Farmington, New Mexico 87401
(505) 632-0615

Client: Blagg / BP
 Sample ID: Cell #1
 Laboratory Number: 21481
 Chain of Custody: 8796
 Sample Matrix: Soil
 Preservative: Cool
 Condition: Cool & Intact

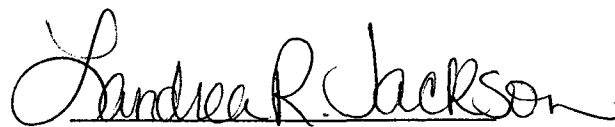
Project #: 94034-010
 Date Reported: 11-14-01
 Date Sampled: 11-12-01
 Date Received: 11-12-01
 Date Extracted: 11-12-01
 Date Analyzed: 11-13-01

Parameter	Analytical Result	Units		Units
pH	7.01	s.u.		
Conductivity @ 25° C	1,013	umhos/cm		
Total Dissolved Solids @ 180C	888	mg/L		
Total Dissolved Solids (Calc)	830	mg/L		
SAR	14.5	ratio		
Total Alkalinity as CaCO3	20.4	mg/L		
Total Hardness as CaCO3	298	mg/L		
Bicarbonate as HCO3	20.4	mg/L	0.33	meq/L
Carbonate as CO3	<0.1	mg/L	0.00	meq/L
Hydroxide as OH	<0.1	mg/L	0.00	meq/L
Nitrate Nitrogen	0.2	mg/L	0.00	meq/L
Nitrite Nitrogen	0.018	mg/L	0.00	meq/L
Chloride	22	mg/L	0.62	meq/L
Fluoride	0.57	mg/L	0.03	meq/L
Phosphate	0.3	mg/L	0.01	meq/L
Sulfate	525	mg/L	10.93	meq/L
Iron	<0.1	mg/L		
Calcium	8.2	mg/L	0.41	meq/L
Magnesium	8.0	mg/L	0.66	meq/L
Potassium	11.8	mg/L	0.30	meq/L
Sodium	243	mg/L	10.57	meq/L
Cations			11.94	meq/L
Anions			11.93	meq/L
Cation/Anion Difference			0.08%	

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
 Water And Waste Water", 18th ed., 1992.

Comments: Crouch Mesa L.F. 2'-3' Depth.


 Analyst


 Review

Client: Blagg / BP
 Sample ID: Cell #2
 Laboratory Number: 21482
 Chain of Custody: 8796
 Sample Matrix: Soil
 Preservative: Cool
 Condition: Cool & Intact

Project #: 94034-010
 Date Reported: 11-14-01
 Date Sampled: 11-12-01
 Date Received: 11-12-01
 Date Extracted: 11-12-01
 Date Analyzed: 11-13-01

Parameter	Analytical Result	Units		Units
pH	7.33	s.u.		
Conductivity @ 25° C	337	umhos/cm		
Total Dissolved Solids @ 180C	252	mg/L		
Total Dissolved Solids (Calc)	140	mg/L		
SAR	7.4	ratio		
Total Alkalinity as CaCO3	6.0	mg/L		
Total Hardness as CaCO3	124	mg/L		
Bicarbonate as HCO3	6.0	mg/L	0.10	meq/L
Carbonate as CO3	<0.1	mg/L	0.00	meq/L
Hydroxide as OH	<0.1	mg/L	0.00	meq/L
Nitrate Nitrogen	0.7	mg/L	0.01	meq/L
Nitrite Nitrogen	0.041	mg/L	0.00	meq/L
Chloride	21.6	mg/L	0.61	meq/L
Fluoride	0.22	mg/L	0.01	meq/L
Phosphate	0.5	mg/L	0.02	meq/L
Sulfate	61.2	mg/L	1.27	meq/L
Iron	0.008	mg/L		
Calcium	2.4	mg/L	0.12	meq/L
Magnesium	<0.1	mg/L	0.00	meq/L
Potassium	3.6	mg/L	0.09	meq/L
Sodium	41.6	mg/L	1.81	meq/L
Cations			2.02	meq/L
Anions			2.02	meq/L
Cation/Anion Difference			0.00%	

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
 Water And Waste Water", 18th ed., 1992.

Comments: Crouch Mesa L.F. 2'-3' Depth.

Christine M. Waeter
 Analyst

Landrea R. Jackson
 Review

Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell #3	Date Reported:	11-14-01
Laboratory Number:	21483	Date Sampled:	11-12-01
Chain of Custody:	8796	Date Received:	11-12-01
Sample Matrix:	Soil	Date Extracted:	11-12-01
Preservative:	Cool	Date Analyzed:	11-13-01
Condition:	Cool & Intact		

Parameter	Analytical Result	Units	Units
pH	7.04	s.u.	
Conductivity @ 25° C	730	umhos/cm	
Total Dissolved Solids @ 180C	525	mg/L	
Total Dissolved Solids (Calc)	480	mg/L	
SAR	5.2	ratio	
Total Alkalinity as CaCO3	13.2	mg/L	
Total Hardness as CaCO3	284	mg/L	
Bicarbonate as HCO3	13.2	mg/L	0.22 meq/L
Carbonate as CO3	<0.1	mg/L	0.00 meq/L
Hydroxide as OH	<0.1	mg/L	0.00 meq/L
Nitrate Nitrogen	1.0	mg/L	0.02 meq/L
Nitrite Nitrogen	0.07	mg/L	0.00 meq/L
Chloride	39.6	mg/L	1.12 meq/L
Fluoride	0.4	mg/L	0.02 meq/L
Phosphate	0.9	mg/L	0.03 meq/L
Sulfate	280	mg/L	5.83 meq/L
Iron	0.008	mg/L	
Calcium	5.3	mg/L	0.26 meq/L
Magnesium	20	mg/L	1.65 meq/L
Potassium	10	mg/L	0.26 meq/L
Sodium	116	mg/L	5.05 meq/L
Cations			7.21 meq/L
Anions			7.23 meq/L
Cation/Anion Difference			0.26%

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
Water And Waste Water", 18th ed., 1992.

Comments: Crouch Mesa L.F. 2'-3' Depth.

Christine M. Walters
Analyst

Sandra R. Jackson
Review

Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell #4	Date Reported:	11-14-01
Laboratory Number:	21484	Date Sampled:	11-12-01
Chain of Custody:	8796	Date Received:	11-12-01
Sample Matrix:	Soil	Date Extracted:	11-12-01
Preservative:	Cool	Date Analyzed:	11-13-01
Condition:	Cool & Intact		

Parameter	Analytical Result	Units		Units
pH	7.61	s.u.		
Conductivity @ 25° C	390	umhos/cm		
Total Dissolved Solids @ 180C	208	mg/L		
Total Dissolved Solids (Calc)	190	mg/L		
SAR	6.2	ratio		
Total Alkalinity as CaCO3	16	mg/L		
Total Hardness as CaCO3	56	mg/L		
Bicarbonate as HCO3	16	mg/L	0.26	meq/L
Carbonate as CO3	<0.1	mg/L	0.00	meq/L
Hydroxide as OH	<0.1	mg/L	0.00	meq/L
Nitrate Nitrogen	0.4	mg/L	0.01	meq/L
Nitrite Nitrogen	0.016	mg/L	0.00	meq/L
Chloride	12.4	mg/L	0.35	meq/L
Fluoride	0.4	mg/L	0.02	meq/L
Phosphate	1.8	mg/L	0.06	meq/L
Sulfate	102.5	mg/L	2.13	meq/L
Iron	0.001	mg/L		
Calcium	6.4	mg/L	0.32	meq/L
Magnesium	<0.1	mg/L	0.00	meq/L
Potassium	1.8	mg/L	0.05	meq/L
Sodium	56.7	mg/L	2.47	meq/L
Cations			2.83	meq/L
Anions			2.83	meq/L
Cation/Anion Difference			0.04%	

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
Water And Waste Water", 18th ed., 1992.

Comments: Crouch Mesa L.F. 2'-3' Depth.

Christine M. Walters
Analyst

Andrea R. Jackson
Review

Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell #5	Date Reported:	11-14-01
Laboratory Number:	21485	Date Sampled:	11-12-01
Chain of Custody:	8796	Date Received:	11-12-01
Sample Matrix:	Soil	Date Extracted:	11-12-01
Preservative:	Cool	Date Analyzed:	11-13-01
Condition:	Cool & Intact		

Parameter	Analytical Result	Units		Units
pH	7.01	s.u.		
Conductivity @ 25° C	2,137	umhos/cm		
Total Dissolved Solids @ 180C	1,100	mg/L		
Total Dissolved Solids (Calc)	1,160	mg/L		
SAR	2.5	ratio		
Total Alkalinity as CaCO3	14.8	mg/L		
Total Hardness as CaCO3	508	mg/L		
Bicarbonate as HCO3	14.8	mg/L	0.24	meq/L
Carbonate as CO3	<0.1	mg/L	0.00	meq/L
Hydroxide as OH	<0.1	mg/L	0.00	meq/L
Nitrate Nitrogen	1.1	mg/L	0.02	meq/L
Nitrite Nitrogen	0.04	mg/L	0.00	meq/L
Chloride	8.8	mg/L	0.25	meq/L
Fluoride	0.88	mg/L	0.05	meq/L
Phosphate	0.4	mg/L	0.01	meq/L
Sulfate	837	mg/L	17.43	meq/L
Iron	0.002	mg/L		
Calcium	5.92	mg/L	0.30	meq/L
Magnesium	136	mg/L	11.19	meq/L
Potassium	22	mg/L	0.56	meq/L
Sodium	137	mg/L	5.96	meq/L
Cations			18.01	meq/L
Anions			17.99	meq/L
Cation/Anion Difference			0.08%	

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
Water And Waste Water", 18th ed., 1992.

Comments: Crouch Mesa L.F. 2'-3' Depth.

Christine M. Warden
Analyst

Andrea R. Jackson
Review

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

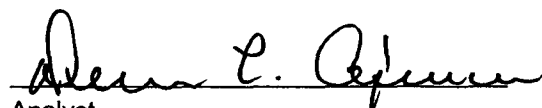
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Sample ID:	Cell #3 2'-3'	Date Reported:	10-04-01
Laboratory Number:	21112	Date Sampled:	10-01-01
Chain of Custody No:	8749	Date Received:	10-01-01
Sample Matrix:	Soil	Date Extracted:	10-03-01
Preservative:	Cool	Date Analyzed:	10-04-01
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

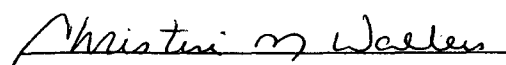
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	ND	0.1
Total Petroleum Hydrocarbons	ND	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L.F.


Analyst


Review

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

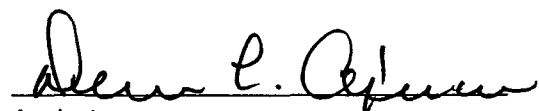
Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell #5 2'-3'	Date Reported:	10-04-01
Laboratory Number:	21113	Date Sampled:	10-01-01
Chain of Custody No:	8749	Date Received:	10-01-01
Sample Matrix:	Soil	Date Extracted:	10-03-01
Preservative:	Cool	Date Analyzed:	10-04-01
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

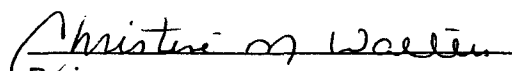
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	ND	0.1
Total Petroleum Hydrocarbons	ND	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L.F.


Analyst


Review

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

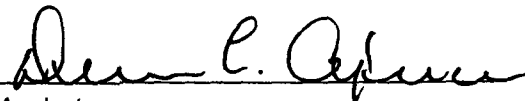
Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell XX 2'-3'	Date Reported:	10-04-01
Laboratory Number:	21114	Date Sampled:	10-01-01
Chain of Custody No:	8749	Date Received:	10-01-01
Sample Matrix:	Soil	Date Extracted:	10-03-01
Preservative:	Cool	Date Analyzed:	10-04-01
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

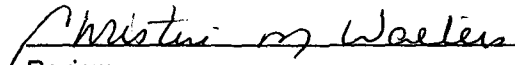
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	ND	0.1
Total Petroleum Hydrocarbons	ND	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L.F.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA Method 8015 Modified Nonhalogenated Volatile Organics Total Petroleum Hydrocarbons

Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	10-04-TPH QA/QC	Date Reported:	10-04-01
Laboratory Number:	21103	Date Sampled:	N/A
Sample Matrix:	Methylene Chloride	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	10-04-01
Condition:	N/A	Analysis Requested:	TPH

	EQ-1 Date	EQ-1 RF	EQ-2 RF	% Difference	Accept Range
Gasoline Range C5 - C10	08-22-01	1.6020E-002	1.6004E-002	0.10%	0 - 15%
Diesel Range C10 - C28	08-22-01	1.2062E-002	1.2038E-002	0.20%	0 - 15%

Blank Conc. (mg/L - mg/Kg)	Concentration	Detection Limit
Gasoline Range C5 - C10	ND	0.2
Diesel Range C10 - C28	ND	0.1
Total Petroleum Hydrocarbons	ND	0.2

Duplicate Conc. (mg/Kg)	Sample	Duplicate	% Difference	Accept Range
Gasoline Range C5 - C10	640	638	0.4%	0 - 30%
Diesel Range C10 - C28	10.2	10.2	0.0%	0 - 30%

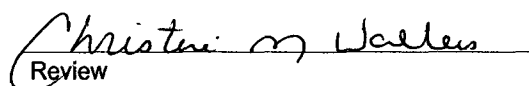
Spike Conc. (mg/Kg)	Sample	Spike Added	Spike Result	% Recovery	Accept Range
Gasoline Range C5 - C10	640	250	888	99.8%	75 - 125%
Diesel Range C10 - C28	10.2	250	260	99.8%	75 - 125%

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: QA/QC for samples 21103 and 21106 - 21114.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell #1 2'-3'	Date Reported:	10-04-01
Laboratory Number:	21110	Date Sampled:	10-01-01
Chain of Custody:	8749	Date Received:	10-01-01
Sample Matrix:	Soil	Date Analyzed:	10-04-01
Preservative:	Cool	Date Extracted:	10-03-01
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	1.8
Toluene	ND	1.7
Ethylbenzene	ND	1.5
p,m-Xylene	ND	2.2
o-Xylene	ND	1.0
Total BTEX	ND	

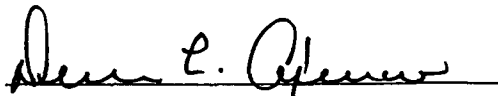
ND - Parameter not detected at the stated detection limit.

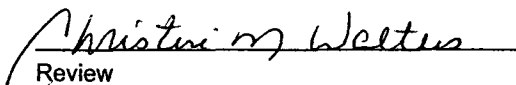
Surrogate Recoveries:	Parameter	Percent Recovery
	Fluorobenzene	96 %
	1,4-difluorobenzene	96 %
	Bromochlorobenzene	96 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L.F.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell #2 2'-3'	Date Reported:	10-04-01
Laboratory Number:	21111	Date Sampled:	10-01-01
Chain of Custody:	8749	Date Received:	10-01-01
Sample Matrix:	Soil	Date Analyzed:	10-04-01
Preservative:	Cool	Date Extracted:	10-03-01
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	1.8
Toluene	ND	1.7
Ethylbenzene	ND	1.5
p,m-Xylene	ND	2.2
o-Xylene	ND	1.0
Total BTEX	ND	

ND - Parameter not detected at the stated detection limit.

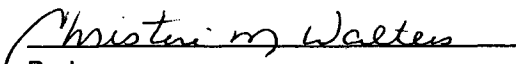
Surrogate Recoveries:	Parameter	Percent Recovery
	Fluorobenzene	96 %
	1,4-difluorobenzene	96 %
	Bromochlorobenzene	96 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L.F.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell #3 2'-3'	Date Reported:	10-04-01
Laboratory Number:	21112	Date Sampled:	10-01-01
Chain of Custody:	8749	Date Received:	10-01-01
Sample Matrix:	Soil	Date Analyzed:	10-04-01
Preservative:	Cool	Date Extracted:	10-03-01
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	1.8
Toluene	ND	1.7
Ethylbenzene	ND	1.5
p,m-Xylene	ND	2.2
o-Xylene	ND	1.0
Total BTEX	ND	

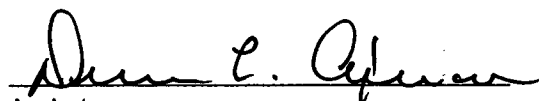
ND - Parameter not detected at the stated detection limit.

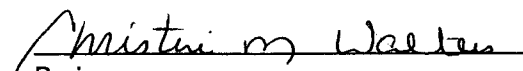
Surrogate Recoveries:	Parameter	Percent Recovery
	Fluorobenzene	96 %
	1,4-difluorobenzene	96 %
	Bromochlorobenzene	96 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L.F.


Analyst


Review

Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell #5 2'-3'	Date Reported:	10-04-01
Laboratory Number:	21113	Date Sampled:	10-01-01
Chain of Custody:	8749	Date Received:	10-01-01
Sample Matrix:	Soil	Date Analyzed:	10-04-01
Preservative:	Cool	Date Extracted:	10-03-01
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	1.8
Toluene	ND	1.7
Ethylbenzene	ND	1.5
p,m-Xylene	ND	2.2
o-Xylene	ND	1.0
Total BTEX	ND	

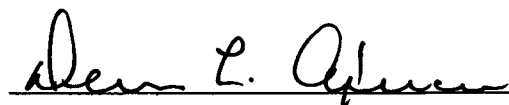
ND - Parameter not detected at the stated detection limit.

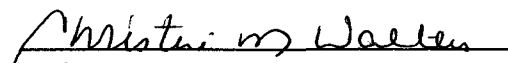
Surrogate Recoveries:	Parameter	Percent Recovery
	Fluorobenzene	97 %
	1,4-difluorobenzene	97 %
	Bromochlorobenzene	97 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L.F.


Analyst


Review

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell XX 2'-3'	Date Reported:	10-04-01
Laboratory Number:	21114	Date Sampled:	10-01-01
Chain of Custody:	8749	Date Received:	10-01-01
Sample Matrix:	Soil	Date Analyzed:	10-04-01
Preservative:	Cool	Date Extracted:	10-03-01
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	1.8
Toluene	ND	1.7
Ethylbenzene	ND	1.5
p,m-Xylene	ND	2.2
o-Xylene	ND	1.0
Total BTEX	ND	

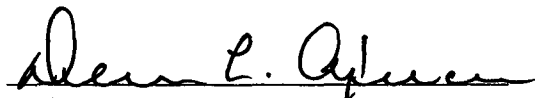
ND - Parameter not detected at the stated detection limit.

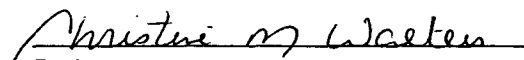
Surrogate Recoveries:	Parameter	Percent Recovery
	Fluorobenzene	98 %
	1,4-difluorobenzene	98 %
	Bromochlorobenzene	98 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L.F.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	N/A	Project #:	N/A
Sample ID:	10-04-BTEX QA/QC	Date Reported:	10-04-01
Laboratory Number:	21103	Date Sampled:	N/A
Sample Matrix:	Soil	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	10-04-01
Condition:	N/A	Analysis:	BTEX

Calibration and Detection Limits (ug/L)	LCAL REP	CCAL REP	%Diff	Blank Conc	Detect Limit
		Accept Range 0 - 15%			
Benzene	8.7501E-002	8.7764E-002	0.3%	ND	0.2
Toluene	5.5567E-002	5.5678E-002	0.2%	ND	0.2
Ethylbenzene	7.0072E-002	7.0283E-002	0.3%	ND	0.2
p,m-Xylene	6.7844E-002	6.8048E-002	0.3%	ND	0.2
o-Xylene	6.0968E-002	6.1090E-002	0.2%	ND	0.1

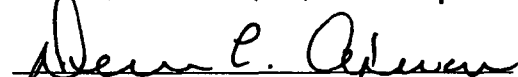
Duplicate Conc. (ug/Kg)	Sample	Duplicate	%Diff	Accept Range	Detect Limit
Benzene	1,130	1,100	2.7%	0 - 30%	1.8
Toluene	2,130	2,060	3.3%	0 - 30%	1.7
Ethylbenzene	2,220	2,150	3.2%	0 - 30%	1.5
p,m-Xylene	1,420	1,380	2.8%	0 - 30%	2.2
o-Xylene	3,640	3,550	2.5%	0 - 30%	1.0

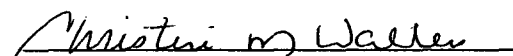
Spike Conc. (ug/Kg)	Sample	Amount Spiked	Spiked Sample	% Recovery	Accept Range
Benzene	1,130	50.0	1,170	99.2%	39 - 150
Toluene	2,130	50.0	2,170	99.5%	46 - 148
Ethylbenzene	2,220	50.0	2,260	99.6%	32 - 160
p,m-Xylene	1,420	100	1,510	99.3%	46 - 148
o-Xylene	3,640	50.0	3,670	99.5%	46 - 148

ND - Parameter not detected at the stated detection limit.

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.
Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: QA/QC for samples 21103 and 21106 - 21114.


Analyst


Review

Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell #1 2' - 3'	Date Reported:	10-03-01
Laboratory Number:	21110	Date Sampled:	10-01-01
Chain of Custody:	8749	Date Received:	10-01-01
Sample Matrix:	Soil	Date Analyzed:	10-03-01
Preservative:	Cool	Date Digested:	10-03-01
Condition:	Cool & Intact	Analysis Needed:	RCRA Metals

Parameter	Concentration (mg/L)	Det. Limit (mg/L)	Regulatory Level (mg/L)
Arsenic	0.056	0.002	5.0
Barium	7.08	0.002	100
Cadmium	0.042	0.002	1.0
Chromium	0.354	0.002	5.0
Lead	0.284	0.002	5.0
Mercury	0.006	0.002	0.2
Selenium	0.032	0.002	1.0
Silver	ND	0.002	5.0

ND - Parameter not detected at the stated detection limit.

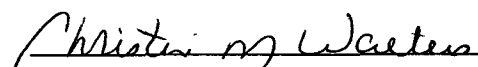
References: Method 3050B, Acid Digestion of Sediments, Sludges and Soils.
SW-846, USEPA, December 1996.

Method 6010B, Analysis of Metals by Inductively Coupled Plasma Atomic Emission Spectroscopy, SW-846, USEPA, December 1996.

Note: Regulatory Limits based on 40 CFR part 261 subpart C
section 261.24, August 24, 1998.

Comments: **Crouch Mesa L.F.**


Analyst


Review

Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Cell #2 2' - 3'	Date Reported:	10-03-01
Laboratory Number:	21111	Date Sampled:	10-01-01
Chain of Custody:	8749	Date Received:	10-01-01
Sample Matrix:	Soil	Date Analyzed:	10-03-01
Preservative:	Cool	Date Digested:	10-03-01
Condition:	Cool & Intact	Analysis Needed:	RCRA Metals

Parameter	Concentration (mg/L)	Det. Limit (mg/L)	Regulatory Level (mg/L)
Arsenic	0.074	0.002	5.0
Barium	6.96	0.002	100
Cadmium	0.064	0.002	1.0
Chromium	0.584	0.002	5.0
Lead	0.190	0.002	5.0
Mercury	0.002	0.002	0.2
Selenium	0.028	0.002	1.0
Silver	0.004	0.002	5.0

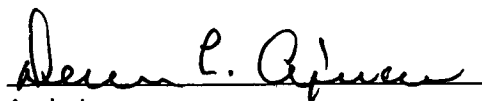
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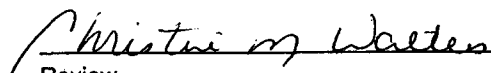
References: Method 3050B, Acid Digestion of Sediments, Sludges and Soils.
SW-846, USEPA, December 1996.

Method 6010B, Analysis of Metals by Inductively Coupled Plasma Atomic Emission Spectroscopy, SW-846, USEPA, December 1996.

Note: Regulatory Limits based on 40 CFR part 261 subpart C
section 261.24, August 24, 1998.

Comments: Crouch Mesa L.F.


Analyst


Review

BLAGG ENGINEERING, INC.

P.O. Box 87, Bloomfield, New Mexico 87413

Phone: (505)632-1199 Fax: (505)632-3903

NOV 15 2000

November 9, 2000

Ms. Martyne J. Kieling
New Mexico Oil Conservation Division
2040 South Pacheco Street
Santa Fe, New Mexico 87505

Re: BP-Amoco
Crouch Mesa Waste Management Facility, SW/4 SE/4 Sec. 2 - T29N - R12W
Annual Report on Treatment Zone Monitoring

Dear Ms. Kieling:

On behalf of BP-Amoco, Blagg Engineering, Inc. (BEI) is submitting treatment zone monitoring test results for the Crouch Mesa Waste Management Facility pursuant to Permit NM-02-003, dated November 25, 1998. This treatment zone monitoring is conducted quarterly and test results are submitted annually to NMOCD.

Sampling protocol specifies that a subsurface sample is to be collected from a depth of approximately 2' - 3' feet below the native ground surface in each cell during the quarterly monitoring. Annual analytical test procedures are to include total petroleum hydrocarbons (TPH), volatile aromatic organics (BTEX), heavy metals and major cations/anions. Quarterly test procedures are to include TPH and BTEX only.

Treatment Cell No. 5, constructed in January, 1999 has not been used to treat waste since it was built. Therefore, BEI ceased quarterly sampling for this cell following the July, 2000 sample event. Sampling will be re-initiated in the event that the cell is used for soil remediation.

A blind duplicate sample from Treatment Cell No. 1 was collected during the October, 2000 sample event. Test results from this blind sample, which was analyzed for TPH by U.S. EPA Method 8015 and for BTEX by U.S. EPA Method 8021, are within acceptable laboratory limits.

Included with this transmittal are the complete laboratory test reports for the waste management zone monitoring at the facility. Presented in Table 1 on the following page is a summary of the laboratory test reports for the monitoring.

Table 1

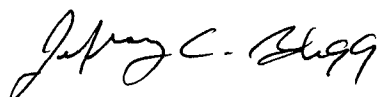
BP-Amoco Crouch Mesa Waste Management Facility
2000 Annual Treatment Zone Monitoring Test Results
All Samples Collected From 2'-3' Depth Below Grade

Treatment Cell Identification	TPH mg/Kg	Benz mg/Kg	BTEX mg/Kg	As mg/Kg	Ba mg/Kg	Cd mg/Kg	Cr mg/Kg	Pb mg/Kg	Hg mg/Kg	Se mg/Kg	Ag mg/Kg
<u>Cell No. 1</u>											
1/25/00	1.4	0.017	0.189	--	--	--	--	--	--	--	--
4/24/00	<0.2	ND	ND	--	--	--	--	--	--	--	--
7/19/00	<0.2	ND	ND	0.102	4.70	0.228	0.514	0.884	0.078	0.042	0.208
10/27/00	<0.2	0.007	0.055	--	--	--	--	--	--	--	--
10/27/00 DUP	<0.2	0.051	0.051	--	--	--	--	--	--	--	--
<u>Cell No. 2</u>											
1/25/00	1.7	0.015	0.180	--	--	--	--	--	--	--	--
4/24/00	<0.2	ND	ND	--	--	--	--	--	--	--	--
7/19/00	<0.2	ND	0.004	0.110	10.6	0.230	0.384	0.714	ND	0.012	0.204
10/27/00	3.5	0.010	0.168	--	--	--	--	--	--	--	--
<u>Cell No. 3</u>											
1/25/00	0.5	0.098	0.114	--	--	--	--	--	--	--	--
4/24/00	<0.2	ND	ND	--	--	--	--	--	--	--	--
7/19/00	<0.2	ND	ND	0.116	1.37	0.250	0.606	0.922	ND	0.026	0.094
10/27/00	2.0	0.059	0.059	--	--	--	--	--	--	--	--
<u>Cell No. 4</u>											
1/25/00	0.3	0.011	0.085	--	--	--	--	--	--	--	--
4/24/00	<0.2	ND	ND	--	--	--	--	--	--	--	--
7/19/00	<0.2	ND	ND	0.152	0.656	0.392	0.444	1.05	ND	0.082	0.148
10/27/00	<0.2	ND	ND	--	--	--	--	--	--	--	--
<u>Cell No. 5(Unused)</u>											
1/25/00	4.0	0.009	0.085	--	--	--	--	--	--	--	--
4/24/00	<0.2	ND	ND	--	--	--	--	--	--	--	--
7/19/00	<0.2	ND	ND	0.096	0.938	0.232	0.480	0.900	ND	0.022	0.090

ND = Not Detected

Questions or comments concerning the this transmittal may be directed to Jeff Blagg of Blagg Engineering at (505)632-1199 or to Buddy Shaw with Amoco at (505)326-9200.

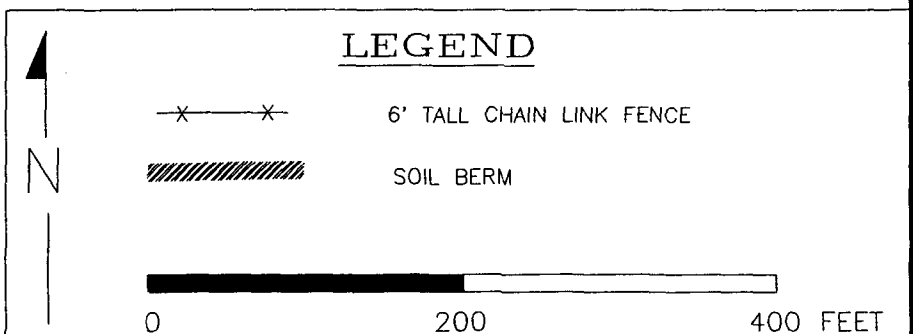
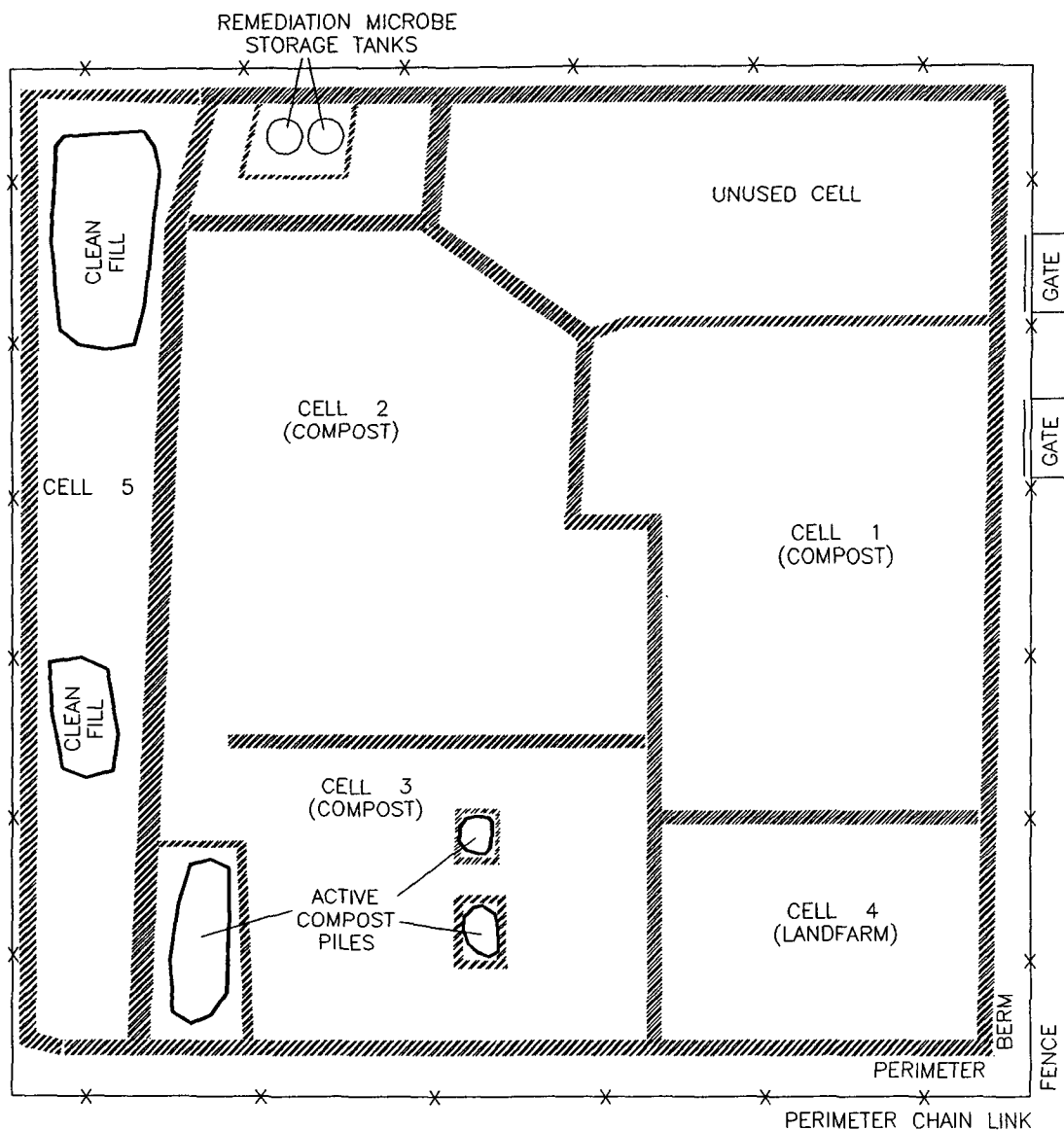
Respectfully submitted:
Blagg Engineering, Inc.



Jeffrey C. Blagg, P.E.
President

Attachments: Soil Treatment Zone Monitoring Reports

cc: Denny Foust, NMOCD Aztec District Office
B.D. Shaw, BP-Amoco San Juan Operations Center



BP-AMOCO
 CROUCH MESA WASTE MGMT FAC
 SW/4 SE/4 SEC 2 T29N R12W
 SAN JUAN CO., NEW MEXICO

NOVEMBER 2000

BLAGG ENGINEERING, INC.
 CONSULTING ENGINEERING SERVICES

P.O. BOX 87
 BLOOMFIELD, NEW MEXICO 87413

PHONE: (505) 632-1199

**SITE
 SCHEMATIC**

FIGURE 1

DRWN BY:
 JCB

CRMESA2

PROJ MGR:
 JCB

08352

[illegible]

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

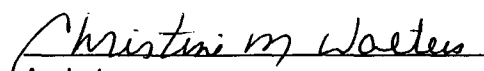
Client:	Blagg / BP AMOCO	Project #:	403410
Sample ID:	Cell #1 2'-3'	Date Reported:	10-31-00
Laboratory Number:	18454	Date Sampled:	10-27-00
Chain of Custody No:	8352	Date Received:	10-27-00
Sample Matrix:	Soil	Date Extracted:	10-27-00
Preservative:	Cool	Date Analyzed:	10-30-00
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

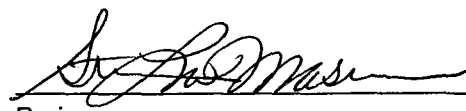
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	ND	0.1
Total Petroleum Hydrocarbons	ND	0.1

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa LF.


Analyst


Review

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

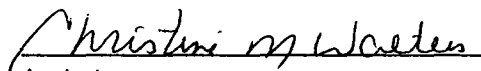
Client:	Blagg / BP AMOCO	Project #:	403410
Sample ID:	Duplicate	Date Reported:	10-31-00
Laboratory Number:	18458	Date Sampled:	10-27-00
Chain of Custody No:	8352	Date Received:	10-27-00
Sample Matrix:	Soil	Date Extracted:	10-27-00
Preservative:	Cool	Date Analyzed:	10-30-00
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

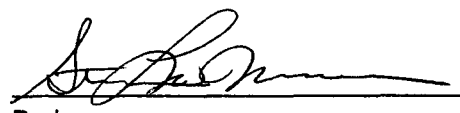
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	ND	0.1
Total Petroleum Hydrocarbons	ND	0.1

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste,
SW-846, USEPA, December 1996.

Comments: Crouch Mesa LF.


Analyst


Review

EPA Method 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	1030tblk.chr QA/QC	Date Reported:	10-31-00
Laboratory Number:	18454	Date Sampled:	N/A
Sample Matrix:	Methylene Chloride	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	10-30-00
Condition:	N/A	Analysis Requested:	TPH

	I-Cal Date	I-Cal RF	C-Cal RF	% Difference	Accept. Range
Gasoline Range C5 - C10	08-03-00	1.9502E-001	1.9482E-001	0.10%	0 - 15%
Diesel Range C10 - C28	08-03-00	6.3516E-002	6.3389E-002	0.20%	0 - 15%

Blank Conc. (mg/L - mg/Kg)	Concentration	Detection Limit
Gasoline Range C5 - C10	ND	0.2
Diesel Range C10 - C28	ND	0.1
Total Petroleum Hydrocarbons	ND	0.2

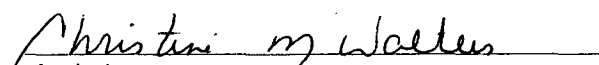
Duplicate Conc. (mg/Kg)	Sample	Duplicate	% Difference	Accept. Range
Gasoline Range C5 - C10	ND	ND	0.0%	0 - 30%
Diesel Range C10 - C28	ND	ND	0.0%	0 - 30%

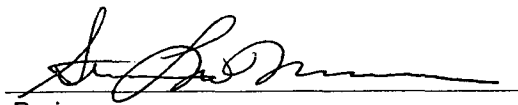
Spike Conc. (mg/Kg)	Sample	Spike Added	Spike Result	% Recovery	Accept. Range
Gasoline Range C5 - C10	ND	250	250	100%	75 - 125%
Diesel Range C10 - C28	ND	250	250	100%	75 - 125%

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: QA/QC for samples 18454 - 18458.


Analyst


Review

Client:	Blagg / BP AMOCO	Project #:	403410
Sample ID:	Cell #1 2'-3'	Date Reported:	10-31-00
Laboratory Number:	18454	Date Sampled:	10-27-00
Chain of Custody:	8352	Date Received:	10-27-00
Sample Matrix:	Soil	Date Analyzed:	10-30-00
Preservative:	Cool	Date Extracted:	10-27-00
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	7.2	1.8
Toluene	ND	1.7
Ethylbenzene	ND	1.5
p,m-Xylene	30.0	2.2
o-Xylene	17.3	1.0
Total BTEX	54.5	

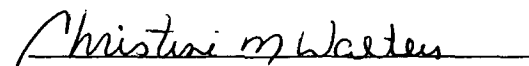
ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	100 %
	Bromofluorobenzene	100 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa LF.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	Blagg / BP AMOCO	Project #:	403410
Sample ID:	Cell #2 2'-3'	Date Reported:	10-31-00
Laboratory Number:	18455	Date Sampled:	10-27-00
Chain of Custody:	8352	Date Received:	10-27-00
Sample Matrix:	Soil	Date Analyzed:	10-30-00
Preservative:	Cool	Date Extracted:	10-27-00
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	9.5	1.8
Toluene	24.4	1.7
Ethylbenzene	71.5	1.5
p,m-Xylene	40.0	2.2
o-Xylene	22.5	1.0

Total BTEX 168

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	100 %
	Bromofluorobenzene	100 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa LF.

Christine M. Waeters
Analyst

Steve Palm
Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	Blagg / BP AMOCO	Project #:	403410
Sample ID:	Cell #3 2'-3'	Date Reported:	10-31-00
Laboratory Number:	18456	Date Sampled:	10-27-00
Chain of Custody:	8352	Date Received:	10-27-00
Sample Matrix:	Soil	Date Analyzed:	10-30-00
Preservative:	Cool	Date Extracted:	10-27-00
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	58.8	1.8
Toluene	ND	1.7
Ethylbenzene	ND	1.5
p,m-Xylene	ND	2.2
o-Xylene	ND	1.0
Total BTEX	58.8	

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	100 %
	Bromofluorobenzene	100 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa LF.

Christine M. Walters
Analyst

[Signature]
Review

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Blagg / BP AMOCO	Project #:	403410
Sample ID:	Cell #4 2'-3'	Date Reported:	10-31-00
Laboratory Number:	18457	Date Sampled:	10-27-00
Chain of Custody:	8352	Date Received:	10-27-00
Sample Matrix:	Soil	Date Analyzed:	10-30-00
Preservative:	Cool	Date Extracted:	10-27-00
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	1.8
Toluene	ND	1.7
Ethylbenzene	ND	1.5
p,m-Xylene	ND	2.2
o-Xylene	ND	1.0
Total BTEX	ND	

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	100 %
	Bromofluorobenzene	100 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa LF.

Christine M. Walters
Analyst

Steve Adams
Review

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Blagg / BP AMOCO	Project #:	403410
Sample ID:	Duplicate	Date Reported:	10-31-00
Laboratory Number:	18458	Date Sampled:	10-27-00
Chain of Custody:	8352	Date Received:	10-27-00
Sample Matrix:	Soil	Date Analyzed:	10-30-00
Preservative:	Cool	Date Extracted:	10-27-00
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	50.6	1.8
Toluene	ND	1.7
Ethylbenzene	ND	1.5
p,m-Xylene	ND	2.2
o-Xylene	ND	1.0
Total BTEX	50.6	

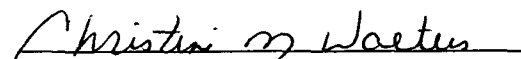
ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	100 %
	Bromofluorobenzene	100 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa LF.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	N/A	Project #:	N/A
Sample ID:	10-30-BTEX QA/QC	Date Reported:	10-31-00
Laboratory Number:	18454	Date Sampled:	N/A
Sample Matrix:	Soil	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	10-30-00
Condition:	N/A	Analysis:	BTEX

Calibration and Detection Limits (ug/L)	I-Cal RF	G-Cal RF	%Diff	Blank Conc	Detect Limit
		Accept. Range 0 - 15%			
Benzene	3.4634E-002	3.4718E-002	0.2%	ND	0.2
Toluene	3.8762E-002	3.8832E-002	0.2%	ND	0.2
Ethylbenzene	5.6290E-002	5.6408E-002	0.2%	ND	0.2
p,m-Xylene	6.1792E-002	6.1947E-002	0.3%	ND	0.2
o-Xylene	6.0646E-002	6.0749E-002	0.2%	ND	0.1

Duplicate Conc. (ug/Kg)	Sample	Duplicate	%Diff	Accept Range	Detect Limit
Benzene	7.2	7.0	2.8%	0 - 30%	1.8
Toluene	ND	ND	0.0%	0 - 30%	1.7
Ethylbenzene	ND	ND	0.0%	0 - 30%	1.5
p,m-Xylene	26.4	25.6	3.0%	0 - 30%	2.2
o-Xylene	17.3	16.9	2.3%	0 - 30%	1.0

Spike Conc. (ug/Kg)	Sample	Amount Spiked	Spiked Sample	% Recovery	Accept Range
Benzene	7.2	50.0	57.1	100%	39 - 150
Toluene	ND	50.0	50	100%	46 - 148
Ethylbenzene	ND	50.0	50	100%	32 - 160
p,m-Xylene	30.0	100	130	100%	46 - 148
o-Xylene	17.3	50.0	67.0	100%	46 - 148

* - Administrative range set to 80 - 120%.

ND - Parameter not detected at the stated detection limit.

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.
Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: QA/QC for samples 18454 - 18458.

Christine M. Waelen
Analyst

Steve Mas
Review

08084

ENVIROTECH INC.

5796 U.S. Highway 64
Farmington, New Mexico 87401
(505) 632-0615

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

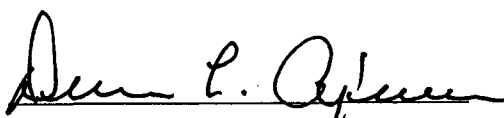
Client:	Blagg / Amoco	Project #:	403410
Sample ID:	Cell #1 @ 3'	Date Reported:	07-20-00
Laboratory Number:	H787	Date Sampled:	07-19-00
Chain of Custody No:	8084	Date Received:	07-19-00
Sample Matrix:	Soil	Date Extracted:	07-20-00
Preservative:	Cool	Date Analyzed:	07-20-00
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

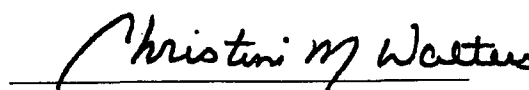
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	ND	0.1
Total Petroleum Hydrocarbons	ND	0.1

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste,
SW-846, USEPA, December 1996.

Comments: Crouch Mesa.


Analyst


Review

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

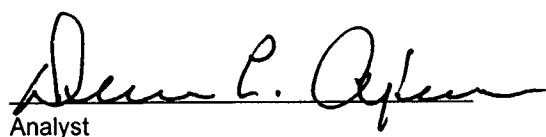
Client:	Blagg / Amoco	Project #:	403410
Sample ID:	Cell #2 @ 3'	Date Reported:	07-20-00
Laboratory Number:	H788	Date Sampled:	07-19-00
Chain of Custody No:	8084	Date Received:	07-19-00
Sample Matrix:	Soil	Date Extracted:	07-20-00
Preservative:	Cool	Date Analyzed:	07-20-00
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

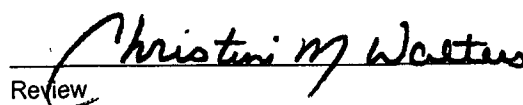
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	ND	0.1
Total Petroleum Hydrocarbons	ND	0.1

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa.


Analyst


Review

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

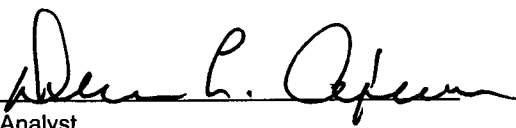
Client:	Blagg / Amoco	Project #:	403410
Sample ID:	Cell #3 @ 3'	Date Reported:	07-20-00
Laboratory Number:	H789	Date Sampled:	07-19-00
Chain of Custody No:	8084	Date Received:	07-19-00
Sample Matrix:	Soil	Date Extracted:	07-20-00
Preservative:	Cool	Date Analyzed:	07-20-00
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

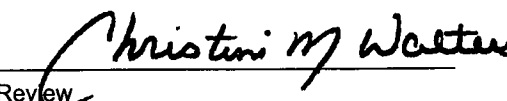
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	ND	0.1
Total Petroleum Hydrocarbons	ND	0.1

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Crouch Mesa.**


Analyst


Review

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Client: Blagg / Amoco
Sample ID: Cell #4 @ 3'
Laboratory Number: H790
Chain of Custody No: 8084
Sample Matrix: Soil
Preservative: Cool
Condition: Cool and Intact

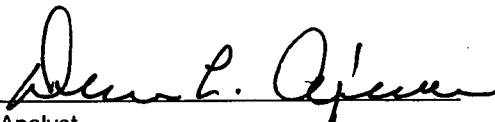
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Date Reported: 07-20-00
Date Sampled: 07-19-00
Date Received: 07-19-00
Date Extracted: 07-20-00
Date Analyzed: 07-20-00
Analysis Requested: 8015 TPH

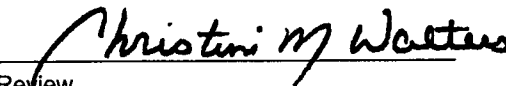
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	ND	0.1
Total Petroleum Hydrocarbons	ND	0.1

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa.


Analyst


Review

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

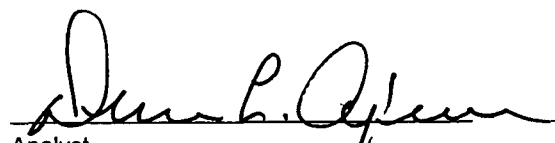
Client:	Blagg / Amoco	Project #:	403410
Sample ID:	Cell #5 @ 3'	Date Reported:	07-20-00
Laboratory Number:	H791	Date Sampled:	07-19-00
Chain of Custody No:	8084	Date Received:	07-19-00
Sample Matrix:	Soil	Date Extracted:	07-20-00
Preservative:	Cool	Date Analyzed:	07-20-00
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

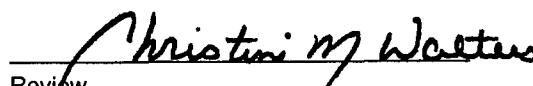
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	ND	0.1
Total Petroleum Hydrocarbons	ND	0.1

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa.


Analyst


Review

EPA Method 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	07-20-TPH QA/QC	Date Reported:	07-20-00
Laboratory Number:	H787	Date Sampled:	N/A
Sample Matrix:	Methylene Chloride	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	07-20-00
Condition:	N/A	Analysis Requested:	TPH

	I-Cal Date	I-Cal RF	C-Cal RF	% Difference	Accept. Range
Gasoline Range C5 - C10	05-15-00	2.7731E-002	2.7704E-002	0.10%	0 - 15%
Diesel Range C10 - C28	05-15-00	1.4027E-002	1.3999E-002	0.20%	0 - 15%

Blank Conc. (mg/L - mg/Kg)	Concentration	Detection Limit
Gasoline Range C5 - C10	ND	0.2
Diesel Range C10 - C28	ND	0.1
Total Petroleum Hydrocarbons	ND	0.2

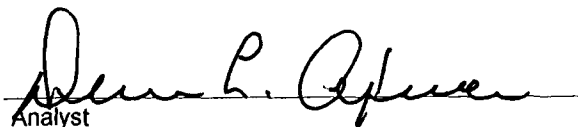
Duplicate Conc. (mg/Kg)	Sample	Duplicate	% Difference	Accept. Range
Gasoline Range C5 - C10	ND	ND	0.0%	0 - 30%
Diesel Range C10 - C28	ND	ND	0.0%	0 - 30%

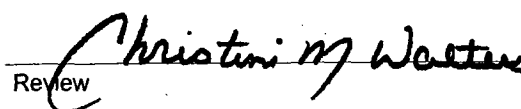
Spike Conc. (mg/Kg)	Sample	Spike Added	Spike Result	% Recovery	Accept. Range
Gasoline Range C5 - C10	ND	250	250	100%	75 - 125%
Diesel Range C10 - C28	ND	250	250	100%	75 - 125%

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: QA/QC for samples H787 - H792.


Analyst


Review

Client:	Blagg / Amoco	Project #:	403410
Sample ID:	Cell #1 @ 3'	Date Reported:	07-20-00
Laboratory Number:	H787	Date Sampled:	07-19-00
Chain of Custody:	8084	Date Received:	07-19-00
Sample Matrix:	Soil	Date Analyzed:	07-20-00
Preservative:	Cool	Date Extracted:	07-20-00
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	1.8
Toluene	ND	1.7
Ethylbenzene	ND	1.5
p,m-Xylene	ND	2.2
o-Xylene	ND	1.0
Total BTEX	ND	

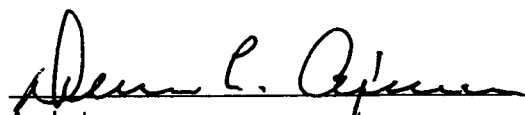
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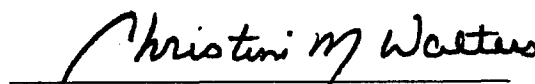
Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	100 %
	Bromofluorobenzene	100 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa.


Analyst


Review

Client:	Blagg / Amoco	Project #:	403410
Sample ID:	Cell #2 @ 3'	Date Reported:	07-20-00
Laboratory Number:	H788	Date Sampled:	07-19-00
Chain of Custody:	8084	Date Received:	07-19-00
Sample Matrix:	Soil	Date Analyzed:	07-20-00
Preservative:	Cool	Date Extracted:	07-20-00
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	1.8
Toluene	ND	1.7
Ethylbenzene	ND	1.5
p,m-Xylene	ND	2.2
o-Xylene	3.9	1.0
Total BTEX	3.9	

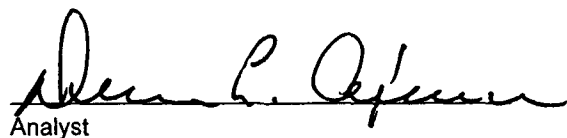
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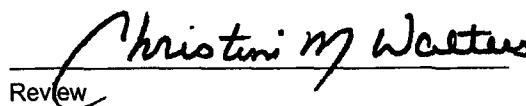
Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	100 %
	Bromofluorobenzene	100 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa.


Analyst


Review

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Blagg / Amoco	Project #:	403410
Sample ID:	Cell #3 @ 3'	Date Reported:	07-20-00
Laboratory Number:	H789	Date Sampled:	07-19-00
Chain of Custody:	8084	Date Received:	07-19-00
Sample Matrix:	Soil	Date Analyzed:	07-20-00
Preservative:	Cool	Date Extracted:	07-20-00
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	1.8
Toluene	ND	1.7
Ethylbenzene	ND	1.5
p,m-Xylene	ND	2.2
o-Xylene	ND	1.0
Total BTEX	ND	

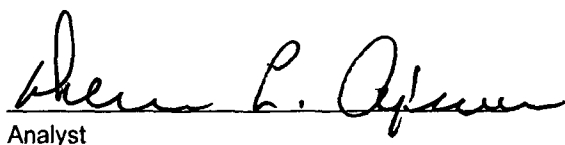
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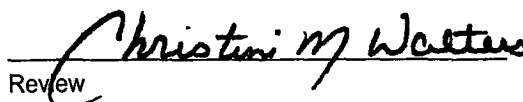
Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	100 %
	Bromofluorobenzene	100 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa.


Analyst


Review

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Blagg / Amoco	Project #:	403410
Sample ID:	Cell #4 @ 3'	Date Reported:	07-20-00
Laboratory Number:	H790	Date Sampled:	07-19-00
Chain of Custody:	8084	Date Received:	07-19-00
Sample Matrix:	Soil	Date Analyzed:	07-20-00
Preservative:	Cool	Date Extracted:	07-20-00
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	1.8
Toluene	ND	1.7
Ethylbenzene	ND	1.5
p,m-Xylene	ND	2.2
o-Xylene	ND	1.0
Total BTEX	ND	

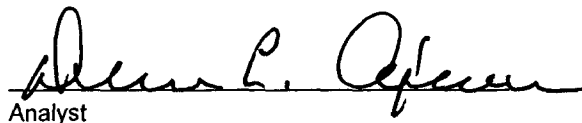
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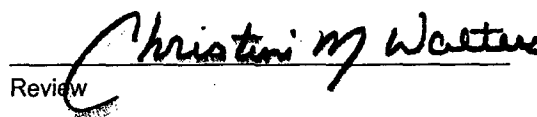
Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	100 %
	Bromofluorobenzene	100 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa.


Analyst


Review

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Blagg / Amoco	Project #:	403410
Sample ID:	Cell #5 @ 3'	Date Reported:	07-20-00
Laboratory Number:	H791	Date Sampled:	07-19-00
Chain of Custody:	8084	Date Received:	07-19-00
Sample Matrix:	Soil	Date Analyzed:	07-20-00
Preservative:	Cool	Date Extracted:	07-20-00
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	1.8
Toluene	ND	1.7
Ethylbenzene	ND	1.5
p,m-Xylene	ND	2.2
o-Xylene	ND	1.0
Total BTEX	ND	

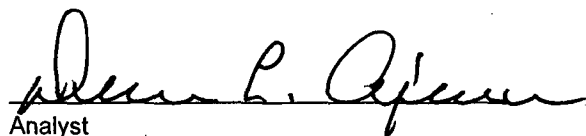
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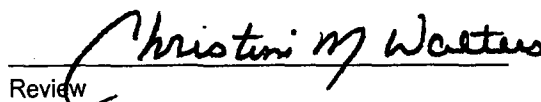
Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	100 %
	Bromofluorobenzene	100 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	N/A	Project #:	N/A
Sample ID:	07-20-BTEX QA/QC	Date Reported:	07-20-00
Laboratory Number:	H787	Date Sampled:	N/A
Sample Matrix:	Soil	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	07-20-00
Condition:	N/A	Analysis:	BTEX

Calibration and Detection Limits (ug/L)	I-Cal RF:	C-Cal RF:	%Diff.	Blank Conc	Detect. Limit
		Accept. Range 0 - 15%			
Benzene	1.0484E-001	1.0509E-001	0.2%	ND	0.2
Toluene	1.0600E-001	1.0619E-001	0.2%	ND	0.2
Ethylbenzene	1.1535E-001	1.1559E-001	0.2%	ND	0.2
p,m-Xylene	1.2973E-001	1.3005E-001	0.3%	ND	0.2
o-Xylene	1.1779E-001	1.1799E-001	0.2%	ND	0.1

Duplicate Conc. (ug/Kg)	Sample	Duplicate	%Diff.	Accept Range	Detect. Limit
Benzene	ND	ND	0.0%	0 - 30%	1.8
Toluene	ND	ND	0.0%	0 - 30%	1.7
Ethylbenzene	ND	ND	0.0%	0 - 30%	1.5
p,m-Xylene	ND	ND	0.0%	0 - 30%	2.2
o-Xylene	ND	ND	0.0%	0 - 30%	1.0

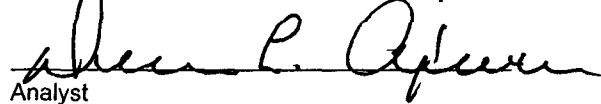
Spike Conc. (ug/Kg)	Sample	Amount Spiked	Spiked Sample	% Recovery	Accept Range
Benzene	ND	50.0	50.0	100%	39 - 150
Toluene	ND	50.0	50.0	100%	46 - 148
Ethylbenzene	ND	50.0	50.0	100%	32 - 160
p,m-Xylene	ND	100	100	100%	46 - 148
o-Xylene	ND	50.0	50.0	100%	46 - 148

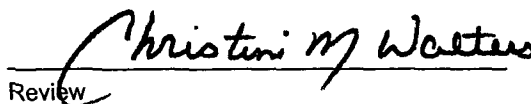
* - Administrative range set to 80 - 120%.

ND - Parameter not detected at the stated detection limit.

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.
Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: QA/QC for samples H787 - H791.


Analyst


Review

Client:	Blagg / Amoco	Project #:	403410
Sample ID:	Cell #1 @ 3'	Date Reported:	07-22-00
Laboratory Number:	H787	Date Sampled:	07-19-00
Chain of Custody:	8084	Date Received:	07-19-00
Sample Matrix:	Soil	Date Analyzed:	07-22-00
Preservative:	Cool	Date Digested:	07-20-00
Condition:	Cool & Intact	Analysis Needed:	RCRA Metals

Parameter	Concentration (mg/L)	Det. Limit (mg/L)	Regulatory Level (mg/L)
Arsenic	0.102	0.002	5.0
Barium	4.70	0.002	100
Cadmium	0.228	0.002	1.0
Chromium	0.514	0.002	5.0
Lead	0.884	0.002	5.0
Mercury	0.078	0.002	0.2
Selenium	0.042	0.002	1.0
Silver	0.208	0.002	5.0

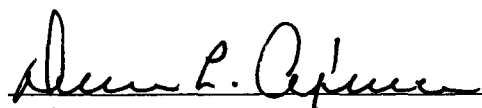
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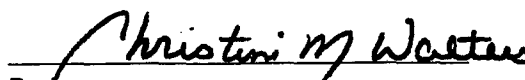
References: Method 3050B, Acid Digestion of Sediments, Sludges and Soils.
SW-846, USEPA, December 1996.

Method 6010B, Analysis of Metals by Inductively Coupled Plasma Atomic Emission Spectroscopy, SW-846, USEPA, December 1996.

Note: Regulatory Limits based on 40 CFR part 261 subpart C
section 261.24, August 24, 1998.

Comments: Crouch Mesa.


Analyst


Review

Client:	Blagg / Amoco	Project #:	403410
Sample ID:	Cell #2 @ 3'	Date Reported:	07-22-00
Laboratory Number:	H788	Date Sampled:	07-19-00
Chain of Custody:	8084	Date Received:	07-19-00
Sample Matrix:	Soil	Date Analyzed:	07-22-00
Preservative:	Cool	Date Digested:	07-20-00
Condition:	Cool & Intact	Analysis Needed:	RCRA Metals

Parameter	Concentration (mg/L)	Det. Limit (mg/L)	Regulatory Level (mg/L)
Arsenic	0.110	0.002	5.0
Barium	10.6	0.002	100
Cadmium	0.230	0.002	1.0
Chromium	0.384	0.002	5.0
Lead	0.714	0.002	5.0
Mercury	ND	0.002	0.2
Selenium	0.012	0.002	1.0
Silver	0.204	0.002	5.0

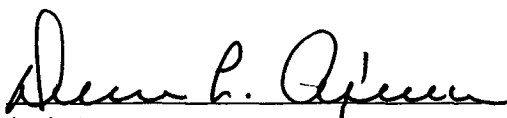
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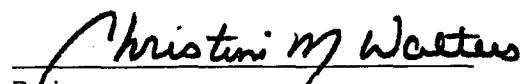
References: Method 3050B, Acid Digestion of Sediments, Sludges and Soils.
SW-846, USEPA, December 1996.

Method 6010B, Analysis of Metals by Inductively Coupled Plasma Atomic Emission Spectroscopy, SW-846, USEPA, December 1996.

Note: Regulatory Limits based on 40 CFR part 261 subpart C
section 261.24, August 24, 1998.

Comments: **Crouch Mesa.**


Analyst


Review

Client:	Blagg / Amoco	Project #:	403410
Sample ID:	Cell #3 @ 3'	Date Reported:	07-22-00
Laboratory Number:	H789	Date Sampled:	07-19-00
Chain of Custody:	8084	Date Received:	07-19-00
Sample Matrix:	Soil	Date Analyzed:	07-22-00
Preservative:	Cool	Date Digested:	07-20-00
Condition:	Cool & Intact	Analysis Needed:	RCRA Metals

Parameter	Concentration (mg/L)	Det. Limit (mg/L)	Regulatory Level (mg/L)
Arsenic	0.116	0.002	5.0
Barium	1.37	0.002	100
Cadmium	0.250	0.002	1.0
Chromium	0.606	0.002	5.0
Lead	0.922	0.002	5.0
Mercury	ND	0.002	0.2
Selenium	0.026	0.002	1.0
Silver	0.094	0.002	5.0

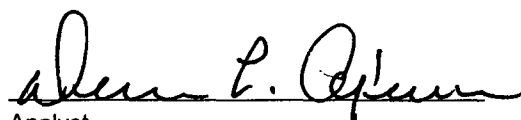
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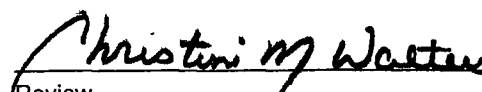
References: Method 3050B, Acid Digestion of Sediments, Sludges and Soils.
SW-846, USEPA, December 1996.

Method 6010B, Analysis of Metals by Inductively Coupled Plasma Atomic Emission Spectroscopy, SW-846, USEPA, December 1996.

Note: Regulatory Limits based on 40 CFR part 261 subpart C
section 261.24, August 24, 1998.

Comments: Crouch Mesa.


Analyst


Review

Client:	Blagg / Amoco	Project #:	403410
Sample ID:	Cell #4 @ 3'	Date Reported:	07-22-00
Laboratory Number:	H790	Date Sampled:	07-19-00
Chain of Custody:	8084	Date Received:	07-19-00
Sample Matrix:	Soil	Date Analyzed:	07-22-00
Preservative:	Cool	Date Digested:	07-20-00
Condition:	Cool & Intact	Analysis Needed:	RCRA Metals

Parameter	Concentration (mg/L)	Det. Limit (mg/L)	Regulatory Level (mg/L)
Arsenic	0.152	0.002	5.0
Barium	0.656	0.002	100
Cadmium	0.392	0.002	1.0
Chromium	0.444	0.002	5.0
Lead	1.05	0.002	5.0
Mercury	ND	0.002	0.2
Selenium	0.082	0.002	1.0
Silver	0.148	0.002	5.0

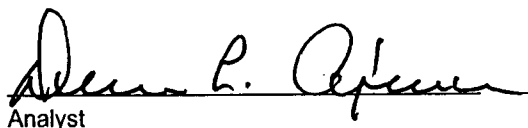
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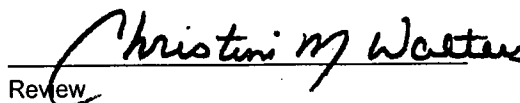
References: Method 3050B, Acid Digestion of Sediments, Sludges and Soils.
SW-846, USEPA, December 1996.

Method 6010B, Analysis of Metals by Inductively Coupled Plasma Atomic Emission Spectroscopy, SW-846, USEPA, December 1996.

Note: Regulatory Limits based on 40 CFR part 261 subpart C
section 261.24, August 24, 1998.

Comments: Crouch Mesa.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

TRACE METAL ANALYSIS

Client:	Blagg / Amoco	Project #:	403410
Sample ID:	Cell #5 @ 3'	Date Reported:	07-22-00
Laboratory Number:	H791	Date Sampled:	07-19-00
Chain of Custody:	8084	Date Received:	07-19-00
Sample Matrix:	Soil	Date Analyzed:	07-22-00
Preservative:	Cool	Date Digested:	07-20-00
Condition:	Cool & Intact	Analysis Needed:	RCRA Metals

Parameter	Concentration (mg/L)	Det. Limit (mg/L)	Regulatory Level (mg/L)
Arsenic	0.096	0.002	5.0
Barium	0.938	0.002	100
Cadmium	0.232	0.002	1.0
Chromium	0.480	0.002	5.0
Lead	0.900	0.002	5.0
Mercury	ND	0.002	0.2
Selenium	0.022	0.002	1.0
Silver	0.090	0.002	5.0

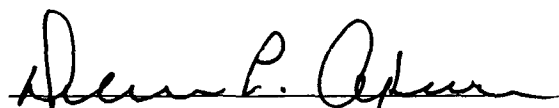
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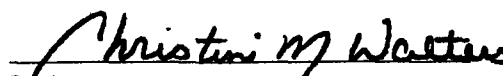
References: Method 3050B, Acid Digestion of Sediments, Sludges and Soils.
SW-846, USEPA, December 1996.

Method 6010B, Analysis of Metals by Inductively Coupled Plasma Atomic Emission Spectroscopy, SW-846, USEPA, December 1996.

Note: Regulatory Limits based on 40 CFR part 261 subpart C
section 261.24, August 24, 1998.

Comments: **Crouch Mesa.**


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

TRACE METAL ANALYSIS Quality Control / Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	07-22-TM QA/QC	Date Reported:	07-22-00
Laboratory Number:	H787	Date Sampled:	N/A
Sample Matrix:	Soil	Date Received:	N/A
Analysis Requested:	Total RCRA Metals	Date Analyzed:	07-22-00
Condition:	N/A	Date Digested:	07-20-00

Blank & Duplicate Conc. (mg/L)	Instrument Blank (mg/L)	Method Blank	Detection Limit	Sample	Duplicate	% Diff.	Acceptance Range
Arsenic	ND	ND	0.002	0.102	0.100	2.0%	0% - 30%
Barium	ND	ND	0.002	4.70	4.72	0.4%	0% - 30%
Cadmium	ND	ND	0.002	0.228	0.226	0.9%	0% - 30%
Chromium	ND	ND	0.002	0.514	0.510	0.8%	0% - 30%
Lead	ND	ND	0.002	0.884	0.880	0.5%	0% - 30%
Mercury	ND	ND	0.002	0.078	0.078	0.0%	0% - 30%
Selenium	ND	ND	0.002	0.042	0.042	0.0%	0% - 30%
Silver	ND	ND	0.002	0.208	0.208	0.0%	0% - 30%

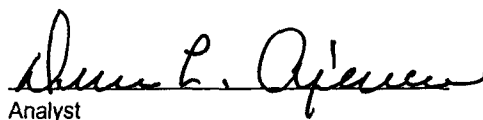
Spike Conc. (mg/L)	Spike Added	Sample	Spiked Sample	Percent Recovery	Acceptance Range
Arsenic	1.00	0.102	1.09	99%	80% - 120%
Barium	1.00	4.70	5.68	100%	80% - 120%
Cadmium	1.00	0.228	1.22	99%	80% - 120%
Chromium	1.00	0.514	1.51	100%	80% - 120%
Lead	1.00	0.884	1.88	100%	80% - 120%
Mercury	0.100	0.078	0.176	99%	80% - 120%
Selenium	1.00	0.042	1.04	100%	80% - 120%
Silver	1.00	0.208	1.20	99%	80% - 120%

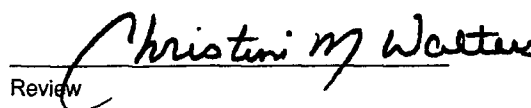
ND - Parameter not detected at the stated detection limit.

References: Method 3050B, Acid Digestion of Sediments, Sludges and Soils.
SW-846, USEPA, December 1996.

Method 6010B, Analysis of Metals by Inductively Coupled Plasma Atomic Emission
Spectroscopy, SW-846, USEPA, December 1996.

Comments: QA/QC for samples H787 - H791.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

CATION / ANION ANALYSIS

Client: Blagg / Amoco
Sample ID: Cell #1 @ 3'
Laboratory Number: H787
Chain of Custody: 8084
Sample Matrix: Soil Extract
Preservative: Cool
Condition: Cool & Intact

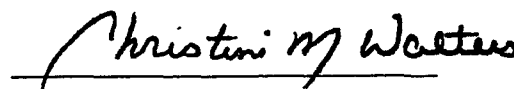
Project #: 403410
Date Reported: 07-22-00
Date Sampled: 07-19-00
Date Received: 07-19-00
Date Extracted: 07-20-00
Date Analyzed: 07/21 - 22/00

Parameter	Analytical Result	Units	Units
pH	8.05	s.u.	
Conductivity @ 25° C	144	umhos/cm	
Total Dissolved Solids @ 180C	71.2	mg/L	
Total Dissolved Solids (Calc)	65.1	mg/L	
SAR	1.8	ratio	
Total Alkalinity as CaCO3	19.8	mg/L	
Total Hardness as CaCO3	15.4	mg/L	
Bicarbonate as HCO3	19.8	mg/L	0.32 meq/L
Carbonate as CO3	<0.1	mg/L	0.00 meq/L
Hydroxide as OH	<0.1	mg/L	0.00 meq/L
Nitrate Nitrogen	0.5	mg/L	0.01 meq/L
Nitrite Nitrogen	0.014	mg/L	0.00 meq/L
Chloride	8.6	mg/L	0.24 meq/L
Fluoride	0.76	mg/L	0.04 meq/L
Phosphate	<0.1	mg/L	0.00 meq/L
Sulfate	19.9	mg/L	0.41 meq/L
Iron	0.037	mg/L	
Calcium	6.00	mg/L	0.30 meq/L
Magnesium	0.01	mg/L	0.00 meq/L
Potassium	1.3	mg/L	0.03 meq/L
Sodium	16.0	mg/L	0.70 meq/L
Cations			1.03 meq/L
Anions			1.03 meq/L
Cation/Anion Difference			0.03%

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
Water And Waste Water", 18th ed., 1992.

Comments: Crouch Mesa.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

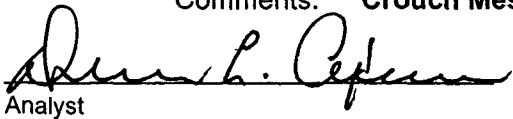
CATION / ANION ANALYSIS

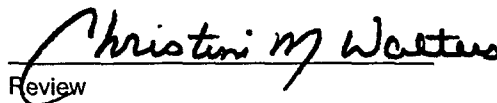
Client:	Blagg / Amoco	Project #:	403410
Sample ID:	Cell #2 @ 3'	Date Reported:	07-22-00
Laboratory Number:	H788	Date Sampled:	07-19-00
Chain of Custody:	8084	Date Received:	07-19-00
Sample Matrix:	Soil Extract	Date Extracted:	07-20-00
Preservative:	Cool	Date Analyzed:	07/21 - 22/00
Condition:	Cool & Intact		

Parameter	Analytical Result	Units	Units
pH	7.65	s.u.	
Conductivity @ 25° C	1,120	umhos/cm	
Total Dissolved Solids @ 180C	550	mg/L	
Total Dissolved Solids (Calc)	538	mg/L	
SAR	1.1	ratio	
Total Alkalinity as CaCO3	14.0	mg/L	
Total Hardness as CaCO3	321	mg/L	
Bicarbonate as HCO3	14.0	mg/L	0.23 meq/L
Carbonate as CO3	<0.1	mg/L	0.00 meq/L
Hydroxide as OH	<0.1	mg/L	0.00 meq/L
Nitrate Nitrogen	0.6	mg/L	0.01 meq/L
Nitrite Nitrogen	0.019	mg/L	0.00 meq/L
Chloride	119	mg/L	3.36 meq/L
Fluoride	0.75	mg/L	0.04 meq/L
Phosphate	<0.1	mg/L	0.00 meq/L
Sulfate	238	mg/L	4.96 meq/L
Iron	0.008	mg/L	
Calcium	106	mg/L	5.29 meq/L
Magnesium	14.1	mg/L	1.16 meq/L
Potassium	4.3	mg/L	0.11 meq/L
Sodium	46.6	mg/L	2.03 meq/L
Cations			8.59 meq/L
Anions			8.59 meq/L
Cation/Anion Difference			0.05%

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
Water And Waste Water", 18th ed., 1992.

Comments: Crouch Mesa.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

CATION / ANION ANALYSIS

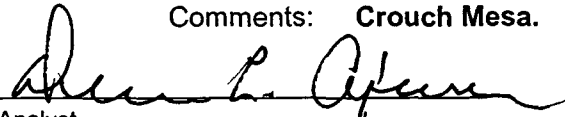
Client: Blagg / Amoco
Sample ID: Cell #3 @ 3'
Laboratory Number: H789
Chain of Custody: 8084
Sample Matrix: Soil Extract
Preservative: Cool
Condition: Cool & Intact

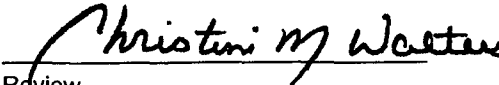
Project #: 403410
Date Reported: 07-22-00
Date Sampled: 07-19-00
Date Received: 07-19-00
Date Extracted: 07-20-00
Date Analyzed: 07/21 - 22/00

Parameter	Analytical Result	Units		Units
pH	7.83	s.u.		
Conductivity @ 25° C	329	umhos/cm		
Total Dissolved Solids @ 180C	163	mg/L		
Total Dissolved Solids (Calc)	151	mg/L		
SAR	0.0	ratio		
Total Alkalinity as CaCO3	18.6	mg/L		
Total Hardness as CaCO3	117	mg/L		
Bicarbonate as HCO3	18.6	mg/L	0.30	meq/L
Carbonate as CO3	<0.1	mg/L	0.00	meq/L
Hydroxide as OH	<0.1	mg/L	0.00	meq/L
Nitrate Nitrogen	0.8	mg/L	0.01	meq/L
Nitrite Nitrogen	0.005	mg/L	0.00	meq/L
Chloride	25.1	mg/L	0.71	meq/L
Fluoride	0.56	mg/L	0.03	meq/L
Phosphate	<0.1	mg/L	0.00	meq/L
Sulfate	65.0	mg/L	1.35	meq/L
Iron	<0.001	mg/L		
Calcium	42.4	mg/L	2.12	meq/L
Magnesium	2.64	mg/L	0.22	meq/L
Potassium	3.3	mg/L	0.08	meq/L
Sodium	<0.1	mg/L	0.00	meq/L
Cations			2.42	meq/L
Anions			2.41	meq/L
Cation/Anion Difference			0.36%	

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
Water And Waste Water", 18th ed., 1992.

Comments: Crouch Mesa.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

CATION / ANION ANALYSIS

Client: Blagg / Amoco
Sample ID: Cell #4 @ 3'
Laboratory Number: H790
Chain of Custody: 8084
Sample Matrix: Soil Extract
Preservative: Cool
Condition: Cool & Intact

Project #: 403410
Date Reported: 07-22-00
Date Sampled: 07-19-00
Date Received: 07-19-00
Date Extracted: 07-20-00
Date Analyzed: 07/21 - 22/00

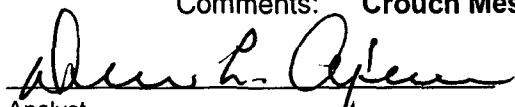
Parameter	Analytical Result	Units		Units
pH	7.70	s.u.		
Conductivity @ 25° C	1,070	umhos/cm		
Total Dissolved Solids @ 180C	526	mg/L		
Total Dissolved Solids (Calc)	511	mg/L		
SAR	0.0	ratio		
Total Alkalinity as CaCO3	12.2	mg/L		
Total Hardness as CaCO3	394	mg/L		
Bicarbonate as HCO3	12.2	mg/L	0.20	meq/L
Carbonate as CO3	<0.1	mg/L	0.00	meq/L
Hydroxide as OH	<0.1	mg/L	0.00	meq/L
Nitrate Nitrogen	0.2	mg/L	0.00	meq/L
Nitrite Nitrogen	0.003	mg/L	0.00	meq/L
Chloride	59.4	mg/L	1.68	meq/L
Fluoride	1.00	mg/L	0.05	meq/L
Phosphate	<0.1	mg/L	0.00	meq/L
Sulfate	290	mg/L	6.04	meq/L
Iron	<0.001	mg/L		
Calcium	137	mg/L	6.84	meq/L
Magnesium	12.5	mg/L	1.03	meq/L
Potassium	3.3	mg/L	0.08	meq/L
Sodium	<0.1	mg/L	0.00	meq/L
Cations			7.95	meq/L
Anions			7.97	meq/L

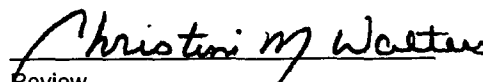
Cation/Anion Difference

0.25%

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
Water And Waste Water", 18th ed., 1992.

Comments: Crouch Mesa.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

CATION / ANION ANALYSIS

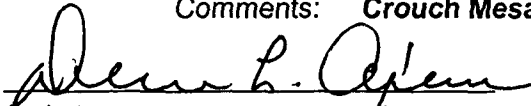
Client: Blagg / Amoco
Sample ID: Cell #5 @ 3'
Laboratory Number: H791
Chain of Custody: 8084
Sample Matrix: Soil Extract
Preservative: Cool
Condition: Cool & Intact

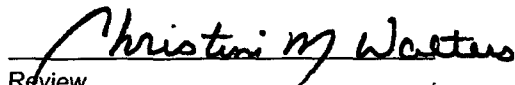
Project #: 403410
Date Reported: 07-22-00
Date Sampled: 07-19-00
Date Received: 07-19-00
Date Extracted: 07-20-00
Date Analyzed: 07/21 - 22/00

Parameter	Analytical Result	Units		Units
pH	8.58	s.u.		
Conductivity @ 25° C	311	umhos/cm		
Total Dissolved Solids @ 180C	153	mg/L		
Total Dissolved Solids (Calc)	150	mg/L		
SAR	3.2	ratio		
Total Alkalinity as CaCO3	23.8	mg/L		
Total Hardness as CaCO3	24.6	mg/L		
Bicarbonate as HCO3	23.8	mg/L	0.39	meq/L
Carbonate as CO3	<0.1	mg/L	0.00	meq/L
Hydroxide as OH	<0.1	mg/L	0.00	meq/L
Nitrate Nitrogen	0.4	mg/L	0.01	meq/L
Nitrite Nitrogen	0.006	mg/L	0.00	meq/L
Chloride	4.2	mg/L	0.12	meq/L
Fluoride	0.17	mg/L	0.01	meq/L
Phosphate	<0.1	mg/L	0.00	meq/L
Sulfate	80.5	mg/L	1.68	meq/L
Iron	0.871	mg/L		
Calcium	8.88	mg/L	0.44	meq/L
Magnesium	0.59	mg/L	0.05	meq/L
Potassium	3.7	mg/L	0.09	meq/L
Sodium	37.0	mg/L	1.61	meq/L
Cations			2.20	meq/L
Anions			2.20	meq/L
Cation/Anion Difference			0.00%	

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
Water And Waste Water", 18th ed., 1992.

Comments: Crouch Mesa.


Analyst


Review

7812

Client / Project Name			Project Location		ANALYSIS / PARAMETERS												
BAGG / AMCO			CROUCH MESA L.F.														
Sampler: J.C. Blagg			Client No. 453410														
Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	7PH	8015	BTEX	8021					Remarks			
Cell 1 @ 3'	4/24/00	0835	H140	SOIL	1	X	X	X									
Cell 2 @ 3'	"	0845	H141	"	1	X	X	X									
Cell 3 @ 2 1/2'	"	0854	H142	"	1	X	X	X									
Cell 4 @ 3'	"	0907	H143	"	1	X	X	X									
Cell 5 @ 3'	"	0920	H144	"	1	X		X									

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

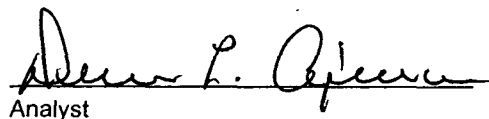
Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	Cell 1 @ 3'	Date Reported:	04-25-00
Laboratory Number:	H140	Date Sampled:	04-24-00
Chain of Custody No:	7812	Date Received:	04-24-00
Sample Matrix:	Soil	Date Extracted:	04-24-00
Preservative:	Cool	Date Analyzed:	04-25-00
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

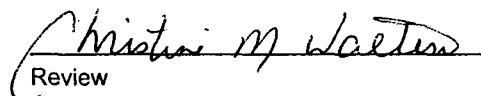
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	ND	0.1
Total Petroleum Hydrocarbons	ND	0.1

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L. F.


Analyst


Review

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

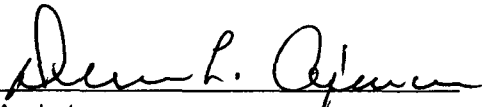
Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	Cell 2 @ 3'	Date Reported:	04-25-00
Laboratory Number:	H141	Date Sampled:	04-24-00
Chain of Custody No:	7812	Date Received:	04-24-00
Sample Matrix:	Soil	Date Extracted:	04-24-00
Preservative:	Cool	Date Analyzed:	04-25-00
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

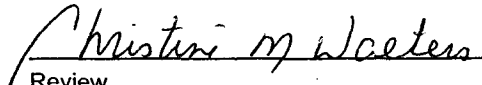
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	ND	0.1
Total Petroleum Hydrocarbons	ND	0.1

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L. F.


Analyst


Review

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

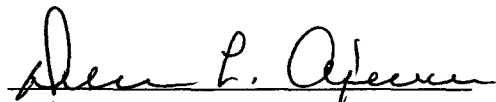
Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	Cell 3 @ 2 1/2'	Date Reported:	04-25-00
Laboratory Number:	H142	Date Sampled:	04-24-00
Chain of Custody No:	7812	Date Received:	04-24-00
Sample Matrix:	Soil	Date Extracted:	04-24-00
Preservative:	Cool	Date Analyzed:	04-25-00
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

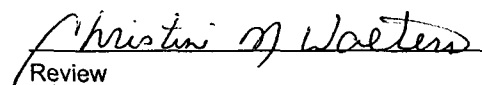
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	ND	0.1
Total Petroleum Hydrocarbons	ND	0.1

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Crouch Mesa L. F.**


Analyst


Review

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

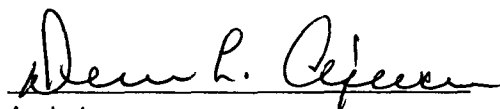
Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	Cell 4 @ 3'	Date Reported:	04-25-00
Laboratory Number:	H143	Date Sampled:	04-24-00
Chain of Custody No:	7812	Date Received:	04-24-00
Sample Matrix:	Soil	Date Extracted:	04-24-00
Preservative:	Cool	Date Analyzed:	04-25-00
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

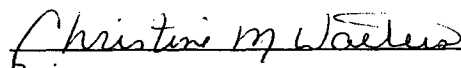
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	ND	0.1
Total Petroleum Hydrocarbons	ND	0.1

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L. F.


Analyst


Review

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	Cell 5 @ 3'	Date Reported:	04-25-00
Laboratory Number:	H144	Date Sampled:	04-24-00
Chain of Custody No:	7812	Date Received:	04-24-00
Sample Matrix:	Soil	Date Extracted:	04-24-00
Preservative:	Cool	Date Analyzed:	04-25-00
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

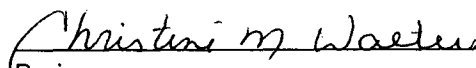
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	ND	0.1
Total Petroleum Hydrocarbons	ND	0.1

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L. F.


Analyst


Review

EPA Method 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	04-25-TPH QA/QC	Date Reported:	04-25-00
Laboratory Number:	H140	Date Sampled:	N/A
Sample Matrix:	Methylene Chloride	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	04-25-00
Condition:	N/A	Analysis Requested:	TPH

	I-Cal Date	I-Cal RF	C-Cal RF	% Difference	Accept. Range
Gasoline Range C5 - C10	12-06-99	3.5026E-002	3.4991E-002	0.10%	0 - 15%
Diesel Range C10 - C28	12-06-99	2.9799E-002	2.9739E-002	0.20%	0 - 15%

Blank Conc. (mg/L - mg/Kg)	Concentration	Detection Limit
Gasoline Range C5 - C10	ND	0.2
Diesel Range C10 - C28	ND	0.1
Total Petroleum Hydrocarbons	ND	0.2

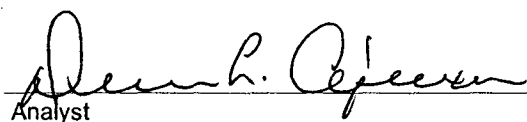
Duplicate Conc. (mg/Kg)	Sample	Duplicate	% Difference	Accept. Range
Gasoline Range C5 - C10	ND	ND	0.0%	0 - 30%
Diesel Range C10 - C28	ND	ND	0.0%	0 - 30%

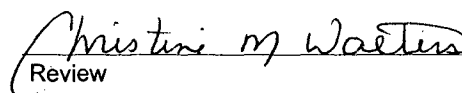
Spike Conc. (mg/Kg)	Sample	Spike Added	Spike Result	% Recovery	Accept. Range
Gasoline Range C5 - C10	ND	250	250	100%	75 - 125%
Diesel Range C10 - C28	ND	250	250	100%	75 - 125%

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: QA/QC for samples H140 - H144.


Analyst


Review

Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	Cell 1 @ 3'	Date Reported:	04-25-00
Laboratory Number:	H140	Date Sampled:	04-24-00
Chain of Custody:	7812	Date Received:	04-24-00
Sample Matrix:	Soil	Date Analyzed:	04-25-00
Preservative:	Cool	Date Extracted:	04-24-00
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	1.8
Toluene	ND	1.7
Ethylbenzene	ND	1.5
p,m-Xylene	ND	2.2
o-Xylene	ND	1.0
Total BTEX	ND	

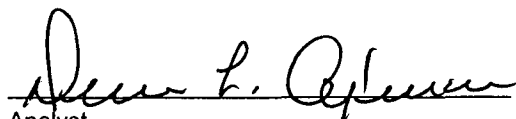
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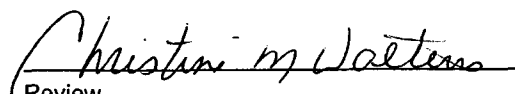
Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	100 %
	Bromofluorobenzene	100 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L. F.


Analyst


Review

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	Cell 2 @ 3'	Date Reported:	04-25-00
Laboratory Number:	H141	Date Sampled:	04-24-00
Chain of Custody:	7812	Date Received:	04-24-00
Sample Matrix:	Soil	Date Analyzed:	04-25-00
Preservative:	Cool	Date Extracted:	04-24-00
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	1.8
Toluene	ND	1.7
Ethylbenzene	ND	1.5
p,m-Xylene	ND	2.2
o-Xylene	ND	1.0
Total BTEX	ND	

ND - Parameter not detected at the stated detection limit.

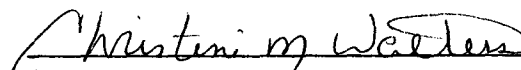
Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	100 %
	Bromofluorobenzene	100 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L. F.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	Cell 3 @ 2 1/2'	Date Reported:	04-25-00
Laboratory Number:	H142	Date Sampled:	04-24-00
Chain of Custody:	7812	Date Received:	04-24-00
Sample Matrix:	Soil	Date Analyzed:	04-25-00
Preservative:	Cool	Date Extracted:	04-24-00
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	1.8
Toluene	ND	1.7
Ethylbenzene	ND	1.5
p,m-Xylene	ND	2.2
o-Xylene	ND	1.0
Total BTEX	ND	

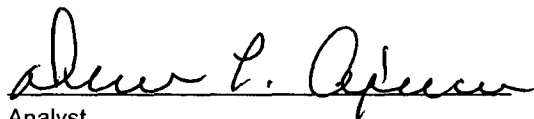
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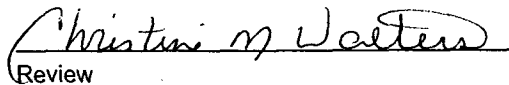
Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	100 %
	Bromofluorobenzene	100 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L. F.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	Cell 4 @ 3'	Date Reported:	04-25-00
Laboratory Number:	H143	Date Sampled:	04-24-00
Chain of Custody:	7812	Date Received:	04-24-00
Sample Matrix:	Soil	Date Analyzed:	04-25-00
Preservative:	Cool	Date Extracted:	04-24-00
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	1.8
Toluene	ND	1.7
Ethylbenzene	ND	1.5
p,m-Xylene	ND	2.2
o-Xylene	ND	1.0
Total BTEX	ND	

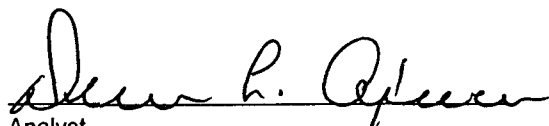
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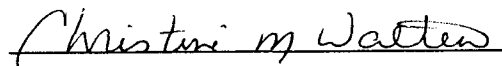
Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	100 %
	Bromofluorobenzene	100 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L. F.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	Cell 5 @ 3'	Date Reported:	04-25-00
Laboratory Number:	H144	Date Sampled:	04-24-00
Chain of Custody:	7812	Date Received:	04-24-00
Sample Matrix:	Soil	Date Analyzed:	04-25-00
Preservative:	Cool	Date Extracted:	04-24-00
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	1.8
Toluene	ND	1.7
Ethylbenzene	ND	1.5
p,m-Xylene	ND	2.2
o-Xylene	ND	1.0
Total BTEX	ND	

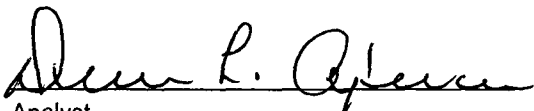
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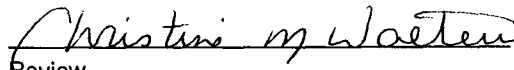
Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	100 %
	Bromofluorobenzene	100 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L. F.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	N/A	Project #:	N/A
Sample ID:	04-25-BTEX QA/QC	Date Reported:	04-25-00
Laboratory Number:	H140	Date Sampled:	N/A
Sample Matrix:	Soil	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	04-25-00
Condition:	N/A	Analysis:	BTEX

Calibration and Detection Limits (ug/L)	I-Cal RF:	C-Cal RF:	%Diff.	Blank Conc	Detect Limit
		Accept. Range 0 - 15%			
Benzene	1.3699E-001	1.3732E-001	0.2%	ND	0.2
Toluene	1.0687E-001	1.0707E-001	0.2%	ND	0.2
Ethylbenzene	9.2692E-002	9.2887E-002	0.2%	ND	0.2
p,m-Xylene	9.5968E-002	9.6209E-002	0.3%	ND	0.2
o-Xylene	8.0355E-002	8.0492E-002	0.2%	ND	0.1

Duplicate Conc. (ug/Kg)	Sample	Duplicate	%Diff.	Accept Range	Detect Limit
Benzene	ND	ND	0.0%	0 - 30%	1.8
Toluene	ND	ND	0.0%	0 - 30%	1.7
Ethylbenzene	ND	ND	0.0%	0 - 30%	1.5
p,m-Xylene	ND	ND	0.0%	0 - 30%	2.2
o-Xylene	ND	ND	0.0%	0 - 30%	1.0

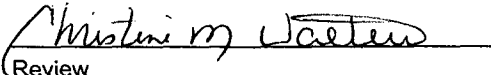
Spike Conc. (ug/Kg)	Sample	Amount Spiked	Spiked Sample	% Recovery	Accept Range
Benzene	ND	50.0	50.0	100%	39 - 150
Toluene	ND	50.0	50.0	100%	46 - 148
Ethylbenzene	ND	50.0	50.0	100%	32 - 160
p,m-Xylene	ND	100.0	100	100%	46 - 148
o-Xylene	ND	50.0	50.0	100%	46 - 148

ND - Parameter not detected at the stated detection limit.

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.
Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: QA/QC for samples H140 - H144.


Analyst


Review

7320

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified Nonhalogenated Volatile Organics Total Petroleum Hydrocarbons

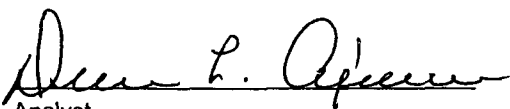
Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	Cell # 1	Date Reported:	01-26-00
Laboratory Number:	G720	Date Sampled:	01-25-00
Chain of Custody No:	7320	Date Received:	01-25-00
Sample Matrix:	Soil	Date Extracted:	01-26-00
Preservative:	Cool	Date Analyzed:	01-26-00
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

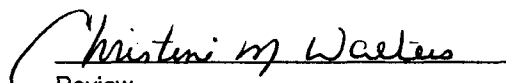
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	1.4	0.1
Total Petroleum Hydrocarbons	1.4	0.1

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa LF.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified Nonhalogenated Volatile Organics Total Petroleum Hydrocarbons

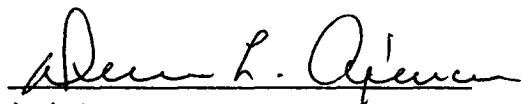
Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	Cell # 2	Date Reported:	01-26-00
Laboratory Number:	G721	Date Sampled:	01-25-00
Chain of Custody No:	7320	Date Received:	01-25-00
Sample Matrix:	Soil	Date Extracted:	01-26-00
Preservative:	Cool	Date Analyzed:	01-26-00
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

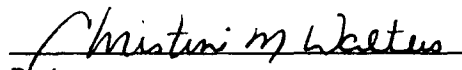
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	1.7	0.1
Total Petroleum Hydrocarbons	1.7	0.1

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa LF.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified Nonhalogenated Volatile Organics Total Petroleum Hydrocarbons

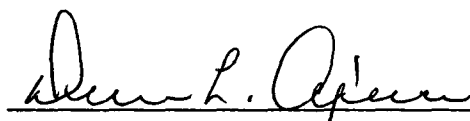
Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	Cell # 3	Date Reported:	01-26-00
Laboratory Number:	G722	Date Sampled:	01-25-00
Chain of Custody No:	7320	Date Received:	01-25-00
Sample Matrix:	Soil	Date Extracted:	01-26-00
Preservative:	Cool	Date Analyzed:	01-26-00
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

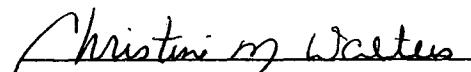
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	0.5	0.1
Total Petroleum Hydrocarbons	0.5	0.1

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Crouch Mesa LF.**


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified Nonhalogenated Volatile Organics Total Petroleum Hydrocarbons

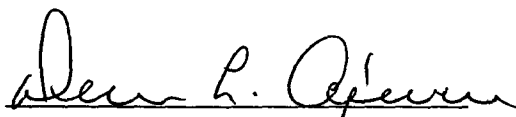
Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	Cell # 4	Date Reported:	01-26-00
Laboratory Number:	G723	Date Sampled:	01-25-00
Chain of Custody No:	7320	Date Received:	01-25-00
Sample Matrix:	Soil	Date Extracted:	01-26-00
Preservative:	Cool	Date Analyzed:	01-26-00
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

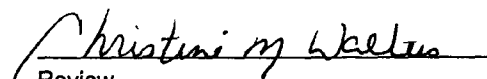
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	0.3	0.1
Total Petroleum Hydrocarbons	0.3	0.1

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa LF.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified Nonhalogenated Volatile Organics Total Petroleum Hydrocarbons

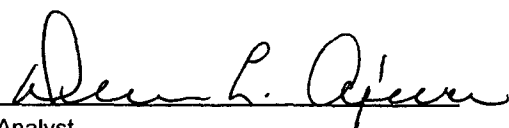
Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	Cell # 5	Date Reported:	01-26-00
Laboratory Number:	G724	Date Sampled:	01-25-00
Chain of Custody No:	7320	Date Received:	01-25-00
Sample Matrix:	Soil	Date Extracted:	01-26-00
Preservative:	Cool	Date Analyzed:	01-26-00
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

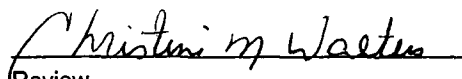
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	4.0	0.1
Total Petroleum Hydrocarbons	4.0	0.1

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa LF.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA Method 8015 Modified Nonhalogenated Volatile Organics Total Petroleum Hydrocarbons

Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	01-26-TPH QA/QC	Date Reported:	01-26-00
Laboratory Number:	G720	Date Sampled:	N/A
Sample Matrix:	Methylene Chloride	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	01-26-00
Condition:	N/A	Analysis Requested:	TPH

	I-Cal Date	I-Cal RF	C-Cal RF	% Difference	Accept. Range
Gasoline Range C5 - C10	12-06-99	2.9455E-002	2.9425E-002	0.10%	0 - 15%
Diesel Range C10 - C28	12-06-99	2.9706E-002	2.9646E-002	0.20%	0 - 15%

Blank Conc. (mg/L - mg/Kg)	Concentration	Detection Limit
Gasoline Range C5 - C10	ND	0.2
Diesel Range C10 - C28	ND	0.1
Total Petroleum Hydrocarbons	ND	0.2

Duplicate Conc. (mg/Kg)	Sample	Duplicate	% Difference	Accept. Range
Gasoline Range C5 - C10	ND	ND	0.0%	0 - 30%
Diesel Range C10 - C28	1.4	1.4	0.0%	0 - 30%

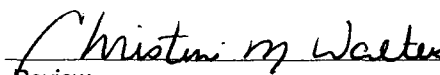
Spike Conc. (mg/Kg)	Sample	Spike Added	Spike Result	% Recovery	Accept. Range
Gasoline Range C5 - C10	ND	250	250	100%	75 - 125%
Diesel Range C10 - C28	1.4	250	251	100%	75 - 125%

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: QA/QC for samples G720 - G724.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	Cell # 1	Date Reported:	01-26-00
Laboratory Number:	G720	Date Sampled:	01-25-00
Chain of Custody:	7320	Date Received:	01-25-00
Sample Matrix:	Soil	Date Analyzed:	01-26-00
Preservative:	Cool	Date Extracted:	01-26-00
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	17.1	1.8
Toluene	39.8	1.7
Ethylbenzene	1.7	1.5
p,m-Xylene	89.9	2.2
o-Xylene	40.4	1.0
Total BTEX	189	

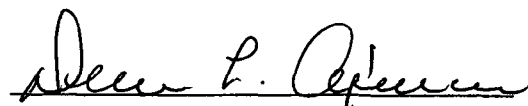
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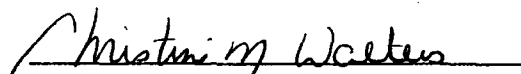
Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	100 %
	Bromofluorobenzene	100 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa LF.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	Cell # 2	Date Reported:	01-26-00
Laboratory Number:	G721	Date Sampled:	01-25-00
Chain of Custody:	7320	Date Received:	01-25-00
Sample Matrix:	Soil	Date Analyzed:	01-26-00
Preservative:	Cool	Date Extracted:	01-26-00
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	15.2	1.8
Toluene	37.9	1.7
Ethylbenzene	ND	1.5
p,m-Xylene	85.3	2.2
o-Xylene	41.4	1.0

Total BTEX 180

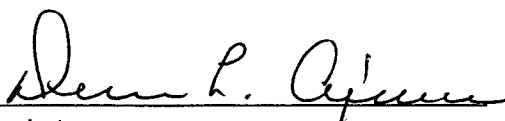
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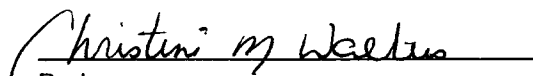
Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	100 %
	Bromofluorobenzene	100 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa LF.


Analyst


Review

Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	Cell # 3	Date Reported:	01-26-00
Laboratory Number:	G722	Date Sampled:	01-25-00
Chain of Custody:	7320	Date Received:	01-25-00
Sample Matrix:	Soil	Date Analyzed:	01-26-00
Preservative:	Cool	Date Extracted:	01-26-00
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	9.8	1.8
Toluene	26.7	1.7
Ethylbenzene	ND	1.5
p,m-Xylene	42.5	2.2
o-Xylene	35.0	1.0
Total BTEX	114	

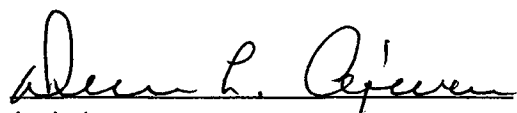
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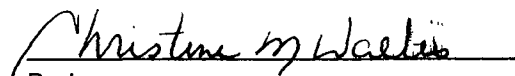
Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	100 %
	Bromofluorobenzene	100 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa LF.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	Cell # 4	Date Reported:	01-26-00
Laboratory Number:	G723	Date Sampled:	01-25-00
Chain of Custody:	7320	Date Received:	01-25-00
Sample Matrix:	Soil	Date Analyzed:	01-26-00
Preservative:	Cool	Date Extracted:	01-26-00
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	10.5	1.8
Toluene	20.0	1.7
Ethylbenzene	ND	1.5
p,m-Xylene	48.7	2.2
o-Xylene	5.6	1.0
Total BTEX	84.8	

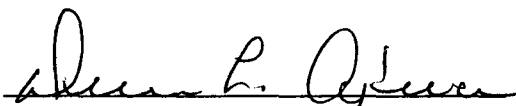
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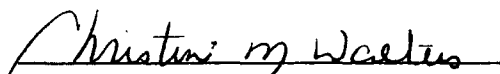
Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	100 %
	Bromofluorobenzene	100 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa LF.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	Cell # 5	Date Reported:	01-26-00
Laboratory Number:	G724	Date Sampled:	01-25-00
Chain of Custody:	7320	Date Received:	01-25-00
Sample Matrix:	Soil	Date Analyzed:	01-26-00
Preservative:	Cool	Date Extracted:	01-26-00
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	8.8	1.8
Toluene	22.6	1.7
Ethylbenzene	3.6	1.5
p,m-Xylene	47.1	2.2
o-Xylene	2.9	1.0
Total BTEX	85.0	

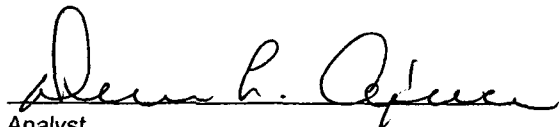
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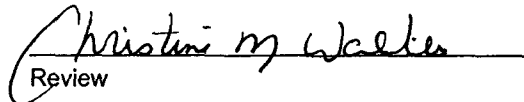
Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	100 %
	Bromofluorobenzene	100 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa LF.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	N/A	Project #:	N/A
Sample ID:	01-26-BTEX QA/QC	Date Reported:	01-26-00
Laboratory Number:	G720	Date Sampled:	N/A
Sample Matrix:	Soil	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	01-26-00
Condition:	N/A	Analysis:	BTEX

Calibration and Detection Limits (ug/L)	I-Cal RF:	C-Cal RF:	%Diff	Blank Conc	Detect Limit
		Accept. Range 0 - 15%			
Benzene	5.5550E-002	5.5683E-002	0.2%	ND	0.2
Toluene	5.4692E-002	5.4790E-002	0.2%	ND	0.2
Ethylbenzene	6.4324E-002	6.4459E-002	0.2%	ND	0.2
p,m-Xylene	7.3322E-002	7.3505E-002	0.3%	ND	0.2
o-Xylene	6.7093E-002	6.7208E-002	0.2%	ND	0.1

Duplicate Conc. (ug/Kg)	Sample	Duplicate	%Diff	Accept Range	Detect Limit
Benzene	17.1	16.8	1.7%	0 - 30%	1.8
Toluene	39.8	38.9	2.2%	0 - 30%	1.7
Ethylbenzene	1.7	1.6	2.1%	0 - 30%	1.5
p,m-Xylene	89.9	88.1	2.0%	0 - 30%	2.2
o-Xylene	40.4	39.9	1.4%	0 - 30%	1.0

Spike Conc. (ug/Kg)	Sample	Amount Spiked	Spiked Sample	% Recovery	Accept Range
Benzene	17.1	50.0	67.0	100%	39 - 150
Toluene	39.8	50.0	89.7	100%	46 - 148
Ethylbenzene	1.7	50.0	51.7	100%	32 - 160
p,m-Xylene	89.9	100.0	190	100%	46 - 148
o-Xylene	40.4	50.0	90.4	100%	46 - 148

ND - Parameter not detected at the stated detection limit.

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.
Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: QA/QC for samples G720 - G724.

Analyst

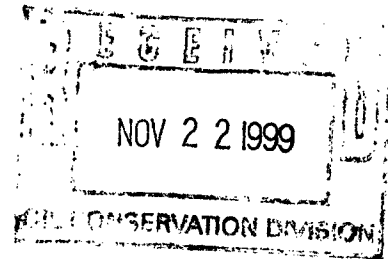
Review

BLAGG ENGINEERING, INC.

P.O. Box 87, Bloomfield, New Mexico 87413

Phone: (505)632-1199 Fax: (505)632-3903

November 17, 1999



Ms. Martyne J. Kieling
New Mexico Oil Conservation Division
2040 South Pacheco Street
Santa Fe, New Mexico 87505

Re: Amoco Production Company
Crouch Mesa Waste Management Facility, SW/4 SE/4 Sec. 2 - T29N - R12W
Annual Report on Treatment Zone Monitoring

Dear Ms. Kieling:

On behalf of Amoco Production Company, Blagg Engineering, Inc. (BEI) is submitting treatment zone monitoring test results for the Crouch Mesa Waste Management Facility. As stipulated in Permit NM-02-003 for the facility, dated November 25, 1998, treatment zone monitoring is conducted quarterly and test results are to be submitted annually to the NMOCD. This reporting is due by November 30th of each year.

Sampling protocol specifies that a subsurface sample is to be collected from a depth of approximately 2' - 3' feet below the native ground surface in each cell during the quarterly monitoring. Annual analytical test procedures are to include total petroleum hydrocarbons (TPH), volatile aromatic organics (BTEX), heavy metals and major cations/anions. Quarterly test procedures are to include TPH and BTEX only.

In January, 1999 an additional treatment cell, No. 5, was constructed along the west boundary of the waste management facility. This cell was placed on initial and quarterly treatment zone monitoring. However, during the period of January 1 - November 17, 1999 this new cell has not received waste for treatment.

Attached to this submittal are the complete laboratory test reports for the treatment zone monitoring at the waste management facility. Presented in Table 1 on the following page is a summary of this facility monitoring.

Table 1

Amoco Crouch Mesa Waste Management Facility
1999 Annual Treatment Zone Monitoring Test Results
All Samples Collected From 2'-3' Depth Below Grade

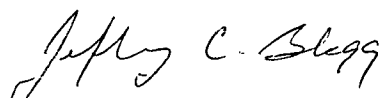
Treatment Cell Identification	TPH mg/Kg	Benz mg/Kg	BTEX mg/Kg	As mg/Kg	Ba mg/Kg	Cd mg/Kg	Cr mg/Kg	Pb mg/Kg	Hg mg/Kg	Se mg/Kg	Ag mg/Kg
<u>Cell No. 1</u>											
1/5/99	2.4	ND	0.080	ND	187	0.163	5.11	3.92	ND	ND	ND
4/12/99	3.8	0.042	2.02	--	--	--	--	--	--	--	--
7/9/99	2.4	0.294	0.410	--	--	--	--	--	--	--	--
10/14/99	3.3	0.031	0.352	--	--	--	--	--	--	--	--
<u>Cell No. 2</u>											
1/5/99	1.8	ND	0.049	ND	207	0.013	3.25	3.76	ND	ND	ND
4/12/99	104	0.231	11.45	--	--	--	--	--	--	--	--
7/9/99	1.1	0.241	0.366	--	--	--	--	--	--	--	--
10/14/99	3.7	0.019	1.200	--	--	--	--	--	--	--	--
<u>Cell No. 3</u>											
1/5/99	1.1	ND	0.057	ND	129	0.260	4.42	4.72	ND	ND	ND
4/12/99	2.3	0.039	1.56	--	--	--	--	--	--	--	--
7/9/99	0.8	0.268	0.392	--	--	--	--	--	--	--	--
10/14/99	1.9	0.016	0.048	--	--	--	--	--	--	--	--
<u>Cell No. 4</u>											
1/5/99	4.5	ND	0.054	ND	203	0.105	3.23	4.44	ND	ND	ND
4/12/99	1.0	0.017	0.674	--	--	--	--	--	--	--	--
7/9/99	1.9	0.227	1.230	--	--	--	--	--	--	--	--
10/14/99	2.0	0.023	0.047	--	--	--	--	--	--	--	--
<u>Cell No. 5(New)</u>											
1/18/99	ND	ND	0.021	ND	71.4	0.083	0.925	2.55	ND	ND	ND
4/12/99	0.9	0.028	0.304	--	--	--	--	--	--	--	--
7/9/99	3.5	0.078	0.197	--	--	--	--	--	--	--	--
10/14/99	1.0	0.004	0.081	--	--	--	--	--	--	--	--

ND = Not Detected

Questions or comments concerning the this transmittal may be directed to Jeff Blagg of Blagg Engineering at (505)632-1199 or to Buddy Shaw with Amoco at (505)326-9200.

Respectfully submitted:

Blagg Engineering, Inc.

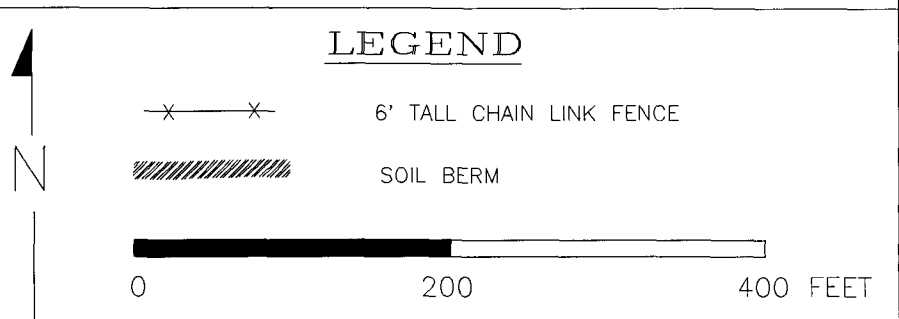
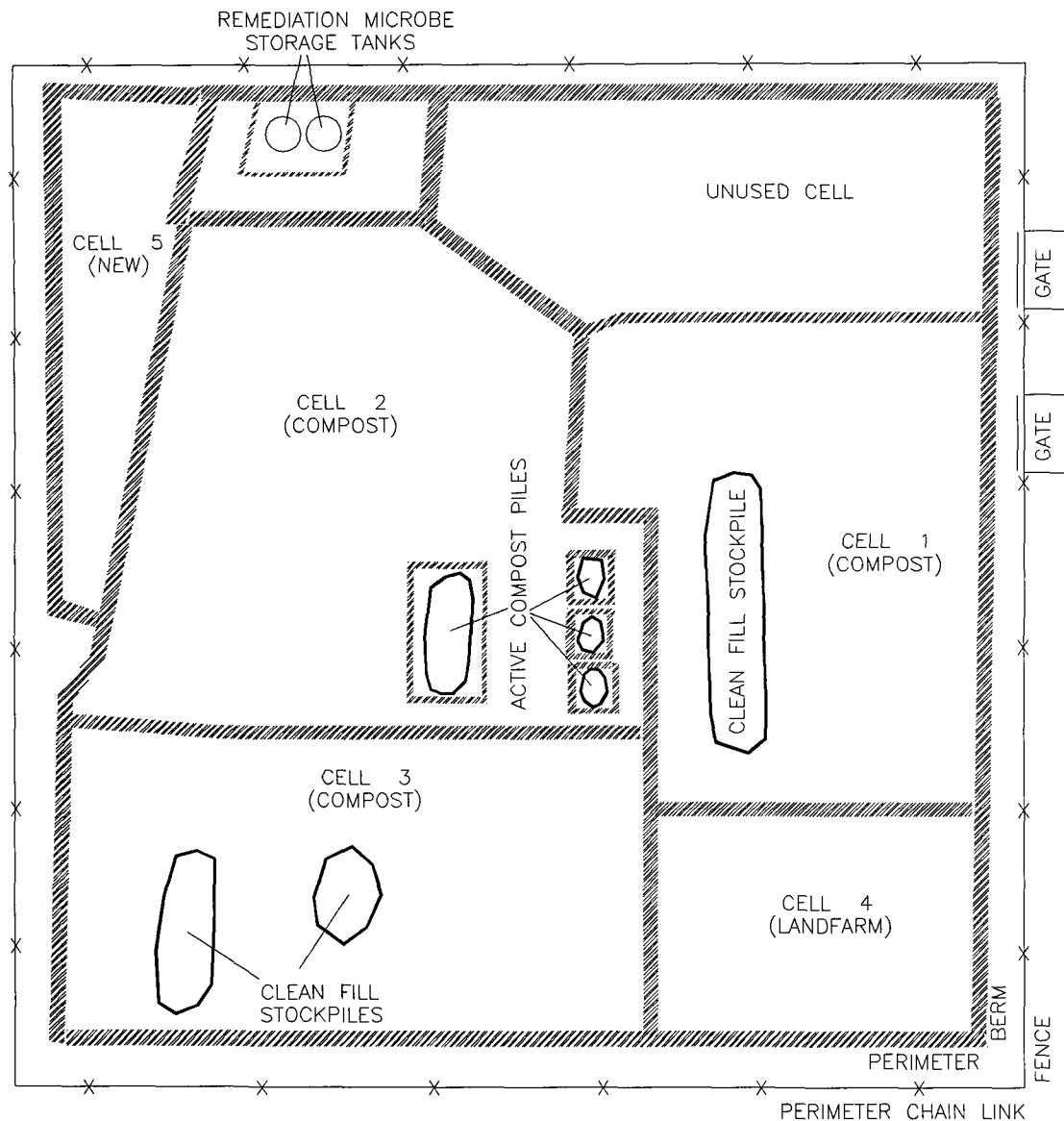


Jeffrey C. Blagg, P.E.

President

Attachments: Soil Treatment Zone Monitoring Reports

cc: Denny Foust, NMOCD Aztec District Office
B.D. Shaw, Amoco San Juan Operations Center



AMOCO PRODUCTION CO.
CROUCH MESA WASTE MGMT FAC
SW/4 SE/4 SEC 2 T29N R12W
SAN JUAN CO., NEW MEXICO

NOVEMBER 1999

BLAGG ENGINEERING, INC.
CONSULTING ENGINEERING SERVICES

P.O. BOX 87
BLOOMFIELD, NEW MEXICO 87413

PHONE: (505) 632-1199

SITE SCHEMATIC

FIGURE 1

DRWN BY:
JCB

CRMESA1

PROJ MGR:
JCB

CHAIN OF CUSTODY RECORD

6491

Client / Project Name		Project Location		ANALYSIS / PARAMETERS									
BAGG / ANOCO		CROUCH MESA											
Sampler: J. C. Stagg		Client No. 040341-10											
Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	TPH	BTEX	8020	CATION / ANION	RCPA	Metals	Remarks	
PILE 64	1-5-99	0830	E461	SOI	1	X	X	X					
5-FT. Composite	"	0845	E462	"	1	X	X	X					
5-FT. Composite	"	0900	E463	"	1	X	X	X					
5-FT. Composite	"	0915	E464	"	1	X	X	X					
CEU 1	"	0930	E465	"	1	X	X	X	X	X			
CEU 2	"	0940	E466	"	1	X	X	X	X	X			
CEU 3	"	0950	E467	"	1	X	X	X	X	X			
CEU 4	"	1000	E468	"	1	X	X	X	X	X			
Relinquished by: (Signature) J. C. Stagg		Date	1/5/99	Time	1030	Received by: (Signature)	Marta Wozniak						
Relinquished by: (Signature)		Date		Time		Received by: (Signature)							
Relinquished by: (Signature)		Date		Time		Received by: (Signature)							

Sample Receipt			
Y	N	N/A	
	Received Intact		
	Cool - Ice/Blue Ice		

ENVIROTECH INC.

5796 U.S. Highway 64
Farmington, New Mexico 87401
(505) 632-0615

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified Nonhalogenated Volatile Organics Total Petroleum Hydrocarbons

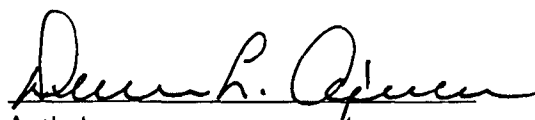
Client:	Blagg / AMOCO	Project #:	01-034-10
Sample ID:	Cell 1 2' - 3'	Date Reported:	01-07-99
Laboratory Number:	E465	Date Sampled:	01-05-99
Chain of Custody No:	6491	Date Received:	01-05-99
Sample Matrix:	Soil	Date Extracted:	01-05-99
Preservative:	Cool	Date Analyzed:	01-07-99
Condition:	Cool and Intact	Analysis Requested:	0.15 TPH

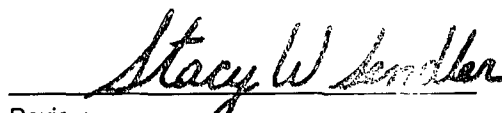
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	2.2	0.2
Diesel Range (C10 - C28)	0.2	0.1
Total Petroleum Hydrocarbons	2.4	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

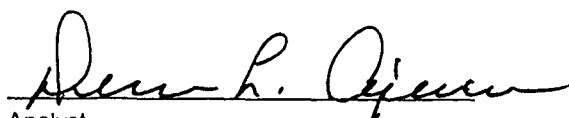
Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	Cell 2 2' - 3'	Date Reported:	01-07-99
Laboratory Number:	E466	Date Sampled:	01-05-99
Chain of Custody No:	6491	Date Received:	01-05-99
Sample Matrix:	Soil	Date Extracted:	01-05-99
Preservative:	Cool	Date Analyzed:	01-07-99
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

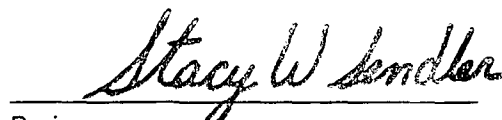
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	1.4	0.2
Diesel Range (C10 - C28)	0.4	0.1
Total Petroleum Hydrocarbons	1.8	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified Nonhalogenated Volatile Organics Total Petroleum Hydrocarbons

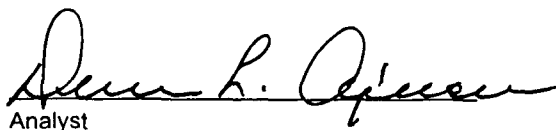
Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	Cell 3 2' - 3'	Date Reported:	01-07-99
Laboratory Number:	E467	Date Sampled:	01-05-99
Chain of Custody No:	6491	Date Received:	01-05-99
Sample Matrix:	Soil	Date Extracted:	01-05-99
Preservative:	Cool	Date Analyzed:	01-07-99
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

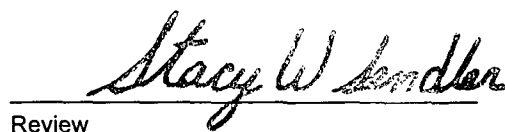
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	1.1	0.2
Diesel Range (C10 - C28)	ND	0.1
Total Petroleum Hydrocarbons	1.1	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified Nonhalogenated Volatile Organics Total Petroleum Hydrocarbons

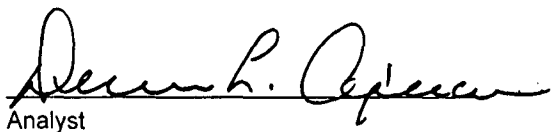
Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	Cell 4 2' - 3'	Date Reported:	01-07-99
Laboratory Number:	E468	Date Sampled:	01-05-99
Chain of Custody No:	6491	Date Received:	01-05-99
Sample Matrix:	Soil	Date Extracted:	01-05-99
Preservative:	Cool	Date Analyzed:	01-07-99
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

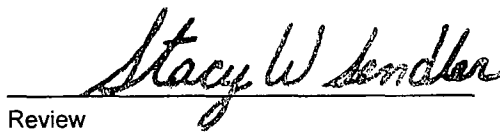
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	4.5	0.2
Diesel Range (C10 - C28)	ND	0.1
Total Petroleum Hydrocarbons	4.5	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA Method 8015 Modified Nonhalogenated Volatile Organics Total Petroleum Hydrocarbons

Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	01-07-TPH QA/QC	Date Reported:	01-07-99
Laboratory Number:	E461	Date Sampled:	N/A
Sample Matrix:	Methylene Chloride	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	01-07-99
Condition:	N/A	Analysis Requested:	TPH

	I-Cal Date	I-Cal RF	C-Cal RF	% Difference	Accept. Range
Gasoline Range C5 - C10	12-21-98	4.9499E-002	4.9479E-002	0.04%	0 - 15%
Diesel Range C10 - C28	12-21-98	3.5640E-002	3.5630E-002	0.03%	0 - 15%

Blank Conc. (mg/L - mg/Kg)	Concentration	Detection Limit
Gasoline Range C5 - C10	ND	0.2
Diesel Range C10 - C28	ND	0.1
Total Petroleum Hydrocarbons	ND	0.2

Duplicate Conc. (mg/Kg)	Sample	Duplicate	% Difference	Accept. Range
Gasoline Range C5 - C10	1.0	1.0	0.0%	0 - 30%
Diesel Range C10 - C28	7.2	7.2	0.0%	0 - 30%

Spike Conc. (mg/Kg)	Sample	Spike Added	Spike Result	% Recovery	Accept. Range
Gasoline Range C5 - C10	1.0	250	251	100%	75 - 125%
Diesel Range C10 - C28	7.2	250	257	100%	75 - 125%

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: QA/QC for samples E461 - E468.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	Cell 1 2' - 3'	Date Reported:	01-06-99
Laboratory Number:	E465	Date Sampled:	01-05-99
Chain of Custody:	6491	Date Received:	01-05-99
Sample Matrix:	Soil	Date Analyzed:	01-06-99
Preservative:	Cool	Date Extracted:	01-05-99
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	8.8
Toluene	10.5	8.4
Ethylbenzene	ND	7.6
p,m-Xylene	50.1	10.8
o-Xylene	19.7	5.2
Total BTEX	80.3	

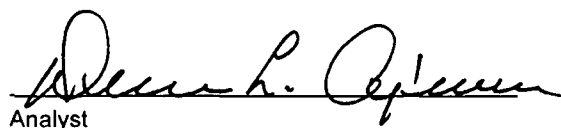
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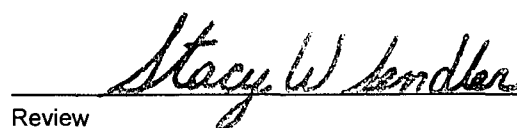
Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	95 %
	Bromofluorobenzene	95 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	Cell 2 2' - 3'	Date Reported:	01-06-99
Laboratory Number:	E466	Date Sampled:	01-05-99
Chain of Custody:	6491	Date Received:	01-05-99
Sample Matrix:	Soil	Date Analyzed:	01-06-99
Preservative:	Cool	Date Extracted:	01-05-99
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	8.8
Toluene	12.6	8.4
Ethylbenzene	ND	7.6
p,m-Xylene	21.0	10.8
o-Xylene	15.7	5.2
Total BTEX	49.3	

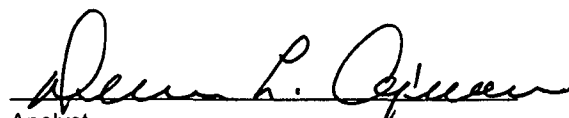
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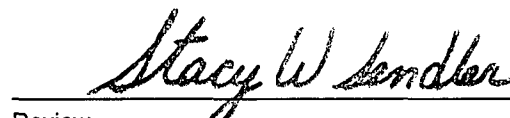
Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	98 %
	Bromofluorobenzene	98 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	Cell 3 2' - 3'	Date Reported:	01-06-99
Laboratory Number:	E467	Date Sampled:	01-05-99
Chain of Custody:	6491	Date Received:	01-05-99
Sample Matrix:	Soil	Date Analyzed:	01-06-99
Preservative:	Cool	Date Extracted:	01-05-99
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	8.8
Toluene	9.5	8.4
Ethylbenzene	ND	7.6
p,m-Xylene	25.2	10.8
o-Xylene	22.9	5.2
Total BTEX	57.6	

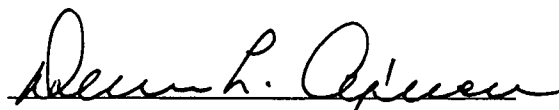
ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	101 %
	Bromofluorobenzene	101 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	Cell 4 2' - 3'	Date Reported:	01-06-99
Laboratory Number:	E468	Date Sampled:	01-05-99
Chain of Custody:	6491	Date Received:	01-05-99
Sample Matrix:	Soil	Date Analyzed:	01-06-99
Preservative:	Cool	Date Extracted:	01-05-99
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	8.8
Toluene	22.0	8.4
Ethylbenzene	ND	7.6
p,m-Xylene	17.7	10.8
o-Xylene	15.0	5.2
Total BTEX	54.7	

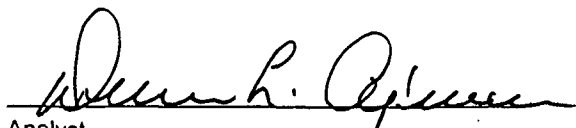
ND - Parameter not detected at the stated detection limit.

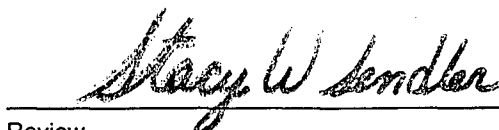
Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	98 %
	Bromofluorobenzene	98 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	N/A	Project #:	N/A
Sample ID:	01-06-BTEX QA/QC	Date Reported:	01-06-99
Laboratory Number:	E461	Date Sampled:	N/A
Sample Matrix:	Soil	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	01-06-99
Condition:	N/A	Analysis:	BTEX

Calibration and Detection Limits (ug/L)	I-Cal RF	C-Cal RF	%Diff	Blank Conc	Detect Limit
		Accept Range 0 - 15%			
Benzene	3.3006E-002	3.3138E-002	0.4%	ND	0.2
Toluene	1.3687E-002	1.3715E-002	0.2%	ND	0.2
Ethylbenzene	1.7638E-002	1.7708E-002	0.4%	ND	0.2
p,m-Xylene	1.5312E-002	1.5365E-002	0.4%	ND	0.2
o-Xylene	1.5548E-002	1.5590E-002	0.3%	ND	0.1

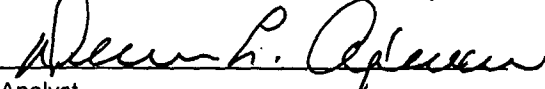
Duplicate Conc. (ug/Kg)	Sample	Duplicate	%Diff	Accept Range	Detect Limit
Benzene	ND	ND	0.0%	0 - 30%	8.8
Toluene	ND	ND	0.0%	0 - 30%	8.4
Ethylbenzene	ND	ND	0.0%	0 - 30%	7.6
p,m-Xylene	30.4	30.4	0.0%	0 - 30%	10.8
o-Xylene	18.5	18.6	0.5%	0 - 30%	5.2

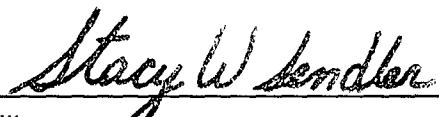
Spike Conc. (ug/Kg)	Sample	Amount Spiked	Spiked Sample	% Recovery	Accept Range
Benzene	ND	50.0	50.0	100%	39 - 150
Toluene	ND	50.0	50.0	100%	46 - 148
Ethylbenzene	ND	50.0	50.0	100%	32 - 160
p,m-Xylene	30.4	100.0	130.4	100%	46 - 148
o-Xylene	18.5	50.0	68.5	100%	46 - 148

ND - Parameter not detected at the stated detection limit.

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.
Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: QA/QC for sample E461 - E468.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

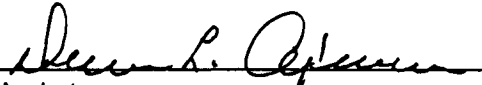
CATION / ANION ANALYSIS

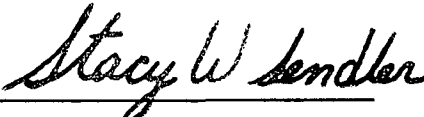
Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	Cell 1 2' - 3'	Date Reported:	01-12-99
Laboratory Number:	E465	Date Sampled:	01-05-99
Chain of Custody:	6491	Date Received:	01-05-99
Sample Matrix:	Soil	Date Extracted:	01-11-99
Preservative:	Cool	Date Analyzed:	01-11-99
Condition:	Cool & Intact		

Parameter	Analytical Result	Units		Units
pH	6.92	s.u.		
Conductivity @ 25° C	243	umhos/cm		
Total Dissolved Solids @ 180C	122	mg/L		
Total Dissolved Solids (Calc)	121	mg/L		
SAR	0.7	ratio		
Total Alkalinity as CaCO3	24.2	mg/L		
Total Hardness as CaCO3	65.0	mg/L		
Bicarbonate as HCO3	24.0	mg/L	0.39	meq/L
Carbonate as CO3	<1	mg/L	0.00	meq/L
Hydroxide as OH	<1	mg/L	0.00	meq/L
Nitrate Nitrogen	0.8	mg/L	0.01	meq/L
Nitrite Nitrogen	0.004	mg/L	0.00	meq/L
Chloride	14.0	mg/L	0.39	meq/L
Fluoride	1.13	mg/L	0.06	meq/L
Phosphate	<0.1	mg/L	0.00	meq/L
Sulfate	50.7	mg/L	1.06	meq/L
Iron	0.010	mg/L		
Calcium	23.8	mg/L	1.19	meq/L
Magnesium	1.40	mg/L	0.12	meq/L
Potassium	1.5	mg/L	0.04	meq/L
Sodium	13.2	mg/L	0.57	meq/L
Cations			1.92	meq/L
Anions			1.92	meq/L
Cation/Anion Difference			0.05%	

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
Water And Waste Water", 18th ed., 1992.

Comments: Crouch Mesa.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

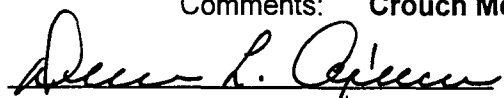
CATION / ANION ANALYSIS

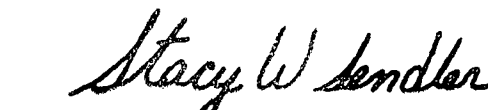
Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	Cell 2 2' - 3'	Date Reported:	01-12-99
Laboratory Number:	E466	Date Sampled:	01-05-99
Chain of Custody:	6491	Date Received:	01-05-99
Sample Matrix:	Soil	Date Extracted:	01-11-99
Preservative:	Cool	Date Analyzed:	01-11-99
Condition:	Cool & Intact		

Parameter	Analytical Result	Units	Units
pH	6.87	s.u.	
Conductivity @ 25° C	724	umhos/cm	
Total Dissolved Solids @ 180C	325	mg/L	
Total Dissolved Solids (Calc)	315	mg/L	
SAR	0.0	ratio	
Total Alkalinity as CaCO3	9.4	mg/L	
Total Hardness as CaCO3	241	mg/L	
Bicarbonate as HCO3	9.4	mg/L	0.15 meq/L
Carbonate as CO3	<1	mg/L	0.00 meq/L
Hydroxide as OH	<1	mg/L	0.00 meq/L
Nitrate Nitrogen	0.5	mg/L	0.01 meq/L
Nitrite Nitrogen	0.003	mg/L	0.00 meq/L
Chloride	31.4	mg/L	0.89 meq/L
Fluoride	1.38	mg/L	0.07 meq/L
Phosphate	0.1	mg/L	0.00 meq/L
Sulfate	181	mg/L	3.77 meq/L
Iron	0.011	mg/L	
Calcium	84.7	mg/L	4.23 meq/L
Magnesium	7.00	mg/L	0.58 meq/L
Potassium	3.7	mg/L	0.09 meq/L
Sodium	<0.1	mg/L	0.00 meq/L
Cations			4.90 meq/L
Anions			4.89 meq/L
Cation/Anion Difference			0.10%

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
Water And Waste Water", 18th ed., 1992.

Comments: Crouch Mesa.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

CATION / ANION ANALYSIS

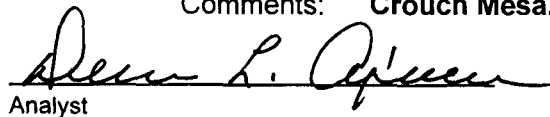
Client: Blagg / AMOCO
Sample ID: Cell 3 2' - 3'
Laboratory Number: E467
Chain of Custody: 6491
Sample Matrix: Soil
Preservative: Cool
Condition: Cool & Intact

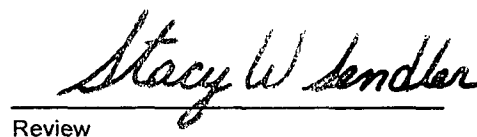
Project #: 04034-10
Date Reported: 01-12-99
Date Sampled: 01-05-99
Date Received: 01-05-99
Date Extracted: 01-11-99
Date Analyzed: 01-11-99

Parameter	Analytical Result	Units		Units
pH	7.22	s.u.		
Conductivity @ 25° C	150	umhos/cm		
Total Dissolved Solids @ 180C	75.0	mg/L		
Total Dissolved Solids (Calc)	74.0	mg/L		
SAR	0.5	ratio		
Total Alkalinity as CaCO3	13.8	mg/L		
Total Hardness as CaCO3	41.8	mg/L		
Bicarbonate as HCO3	13.8	mg/L	0.23	meq/L
Carbonate as CO3	<1	mg/L	0.00	meq/L
Hydroxide as OH	<1	mg/L	0.00	meq/L
Nitrate Nitrogen	0.4	mg/L	0.01	meq/L
Nitrite Nitrogen	0.003	mg/L	0.00	meq/L
Chloride	8.0	mg/L	0.23	meq/L
Fluoride	1.20	mg/L	0.06	meq/L
Phosphate	0.3	mg/L	0.01	meq/L
Sulfate	31.5	mg/L	0.66	meq/L
Iron	0.049	mg/L		
Calcium	14.6	mg/L	0.73	meq/L
Magnesium	1.30	mg/L	0.11	meq/L
Potassium	0.6	mg/L	0.02	meq/L
Sodium	7.7	mg/L	0.33	meq/L
Cations			1.19	meq/L
Anions			1.19	meq/L
Cation/Anion Difference			0.09%	

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
Water And Waste Water", 18th ed., 1992.

Comments: Crouch Mesa.


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Review

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PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

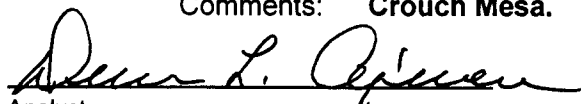
CATION / ANION ANALYSIS

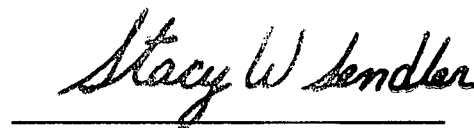
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Sample ID:	Cell 4 2' - 3'	Date Reported:	01-12-99
Laboratory Number:	E468	Date Sampled:	01-05-99
Chain of Custody:	6491	Date Received:	01-05-99
Sample Matrix:	Soil	Date Extracted:	01-11-99
Preservative:	Cool	Date Analyzed:	01-11-99
Condition:	Cool & Intact		

Parameter	Analytical Result	Units	Units
pH	7.42	s.u.	
Conductivity @ 25° C	199	umhos/cm	
Total Dissolved Solids @ 180C	98.0	mg/L	
Total Dissolved Solids (Calc)	95.0	mg/L	
SAR	1.5	ratio	
Total Alkalinity as CaCO3	19.0	mg/L	
Total Hardness as CaCO3	30.2	mg/L	
Bicarbonate as HCO3	19.0	mg/L	0.31 meq/L
Carbonate as CO3	<1	mg/L	0.00 meq/L
Hydroxide as OH	<1	mg/L	0.00 meq/L
Nitrate Nitrogen	0.2	mg/L	0.00 meq/L
Nitrite Nitrogen	0.005	mg/L	0.00 meq/L
Chloride	3.6	mg/L	0.10 meq/L
Fluoride	1.35	mg/L	0.07 meq/L
Phosphate	<0.1	mg/L	0.00 meq/L
Sulfate	46.6	mg/L	0.97 meq/L
Iron	0.004	mg/L	
Calcium	11.2	mg/L	0.56 meq/L
Magnesium	0.50	mg/L	0.04 meq/L
Potassium	0.7	mg/L	0.02 meq/L
Sodium	19.3	mg/L	0.84 meq/L
Cations			1.46 meq/L
Anions			1.46 meq/L
Cation/Anion Difference			0.01%

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
Water And Waste Water", 18th ed., 1992.

Comments: Crouch Mesa.


Analyst


Review

Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	Cell 1 2' - 3'	Date Reported:	01-12-99
Laboratory Number:	E465	Date Sampled:	01-05-99
Chain of Custody:	6491	Date Received:	01-05-99
Sample Matrix:	Soil	Date Analyzed:	01-11-99
Preservative:	Cool	Date Digested:	01-07-99
Condition:	Cool & Intact	Analysis Needed:	Trace Metals

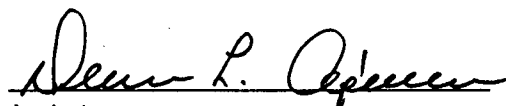
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Arsenic	ND	0.0025
Barium	187	0.0025
Cadmium	0.163	0.0025
Chromium	5.11	0.0025
Lead	3.92	0.0025
Mercury	ND	0.0025
Selenium	ND	0.0025
Silver	ND	0.0025

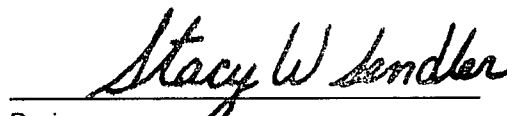
ND - Parameter not detected at the stated detection limit.

References: Method 3050B, Acid Digestion of Sediments, Sludges and Soils.
SW-846, USEPA, December 1996.

Methods 7060B, 7081, 7131A, 7191, 7470A, 7421, 7740, 7761 Analysis of Metals by
GFAA and Cold Vapor Techniques, SW-846, USEPA, December 1996.

Comments: Crouch Mesa.


Analyst


Review

Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	Cell 2 2' - 3'	Date Reported:	01-12-99
Laboratory Number:	E466	Date Sampled:	01-05-99
Chain of Custody:	6491	Date Received:	01-05-99
Sample Matrix:	Soil	Date Analyzed:	01-11-99
Preservative:	Cool	Date Digested:	01-07-99
Condition:	Cool & Intact	Analysis Needed:	Trace Metals

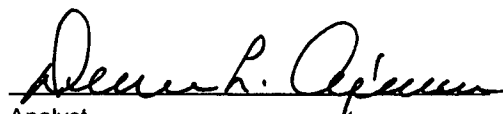
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Arsenic	ND	0.0025
Barium	207	0.0025
Cadmium	0.0125	0.0025
Chromium	3.25	0.0025
Lead	3.76	0.0025
Mercury	ND	0.0025
Selenium	ND	0.0025
Silver	ND	0.0025

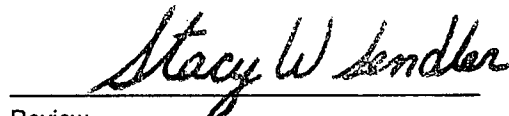
ND - Parameter not detected at the stated detection limit.

References: Method 3050B, Acid Digestion of Sediments, Sludges and Soils.
SW-846, USEPA, December 1996.

Methods 7060B, 7081, 7131A, 7191, 7470A, 7421, 7740, 7761 Analysis of Metals by
GFAA and Cold Vapor Techniques, SW-846, USEPA, December 1996.

Comments: Crouch Mesa.


Analyst


Review

Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	Cell 3 2' - 3'	Date Reported:	01-12-99
Laboratory Number:	E467	Date Sampled:	01-05-99
Chain of Custody:	6491	Date Received:	01-05-99
Sample Matrix:	Soil	Date Analyzed:	01-11-99
Preservative:	Cool	Date Digested:	01-07-99
Condition:	Cool & Intact	Analysis Needed:	Trace Metals

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Arsenic	ND	0.0025
Barium	129	0.0025
Cadmium	0.260	0.0025
Chromium	4.42	0.0025
Lead	4.72	0.0025
Mercury	ND	0.0025
Selenium	ND	0.0025
Silver	ND	0.0025

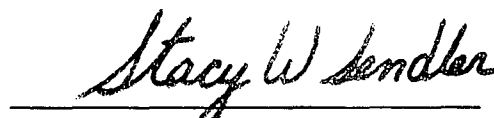
ND - Parameter not detected at the stated detection limit.

References: Method 3050B, Acid Digestion of Sediments, Sludges and Soils.
SW-846, USEPA, December 1996.

Methods 7060B, 7081, 7131A, 7191, 7470A, 7421, 7740, 7761 Analysis of Metals by
GFAA and Cold Vapor Techniques, SW-846, USEPA, December 1996.

Comments: Crouch Mesa.


Analyst


Review

Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	Cell 4 2' - 3'	Date Reported:	01-12-99
Laboratory Number:	E468	Date Sampled:	01-05-99
Chain of Custody:	6491	Date Received:	01-05-99
Sample Matrix:	Soil	Date Analyzed:	01-11-99
Preservative:	Cool	Date Digested:	01-07-99
Condition:	Cool & Intact	Analysis Needed:	Trace Metals

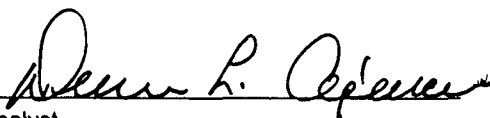
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Arsenic	ND	0.0025
Barium	203	0.0025
Cadmium	0.105	0.0025
Chromium	3.23	0.0025
Lead	4.44	0.0025
Mercury	ND	0.0025
Selenium	ND	0.0025
Silver	ND	0.0025

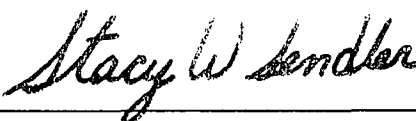
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References: Method 3050B, Acid Digestion of Sediments, Sludges and Soils.
SW-846, USEPA, December 1996.

Methods 7060B, 7081, 7131A, 7191, 7470A, 7421, 7740, 7761 Analysis of Metals by
GFAA and Cold Vapor Techniques, SW-846, USEPA, December 1996.

Comments: Crouch Mesa.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

TRACE METAL ANALYSIS Quality Control / Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	01-11-TM QA/QC	Date Reported:	01-12-99
Laboratory Number:	E426	Date Sampled:	N/A
Sample Matrix:	Soil	Date Received:	N/A
Analysis Requested:	Trace Metals	Date Analyzed:	01-11-99
Condition:	N/A	Date Digested:	01-07-99

Blank Conc. (mg/Kg)	Duplicate Blank (mg/Kg)	Instrument Blank	Method Blank	Detection Limit	Sample	Duplicate	% Diff.	Acceptance Range
Arsenic	ND	ND	ND	0.0025	ND	ND	0.0%	0% - 30%
Barium	ND	ND	ND	0.0025	182	182	0.0%	0% - 30%
Cadmium	ND	ND	ND	0.0025	0.150	0.148	1.3%	0% - 30%
Chromium	ND	ND	ND	0.0025	0.662	0.660	0.3%	0% - 30%
Lead	ND	ND	ND	0.0025	3.37	3.35	0.6%	0% - 30%
Mercury	ND	ND	ND	0.0025	ND	ND	0.0%	0% - 30%
Selenium	ND	ND	ND	0.0025	ND	ND	0.0%	0% - 30%
Silver	ND	ND	ND	0.0025	ND	ND	0.0%	0% - 30%

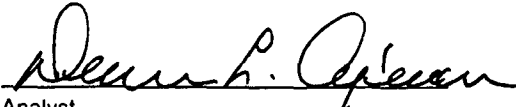
Spike Conc. (mg/Kg)	Spike Added	Sample	Spiked Sample	Percent Recovery	Acceptance Range
Arsenic	2.500	ND	2.50	100%	80% - 120%
Barium	25.0	182	207	100%	80% - 120%
Cadmium	1.250	0.150	1.40	100%	80% - 120%
Chromium	1.250	0.662	1.92	100%	80% - 120%
Lead	2.500	3.37	5.86	100%	80% - 120%
Mercury	0.625	ND	0.625	100%	80% - 120%
Selenium	2.500	ND	2.50	100%	80% - 120%
Silver	1.250	ND	1.25	100%	80% - 120%

ND - Parameter not detected at the stated detection limit.

References: Method 3050B, Acid Digestion of Sediments, Sludges and Soils.
SW-846, USEPA, December 1996.

Methods 7060B, 7081, 7131A, 7191, 7470A, 7421, 7740, 7761 Analysis of Metals by
GFAA and Cold Vapor Techniques, SW-846, USEPA, December 1996.

Comments: QA/QC for samples E426 - E431 and E465 - E468.


Analyst


Review

6508

ENVIROTECH INC.

5796 U.S. Highway 64
Farmington, New Mexico 87401
(505) 632-0615

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	Cell 5 2' - 3'	Date Reported:	01-20-99
Laboratory Number:	E541	Date Sampled:	01-18-99
Chain of Custody:	6508	Date Received:	01-20-99
Sample Matrix:	Soil	Date Analyzed:	01-20-99
Preservative:	Cool	Date Extracted:	01-20-99
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	8.8
Toluene	ND	8.4
Ethylbenzene	ND	7.6
p,m-Xylene	12.5	10.8
o-Xylene	8.6	5.2
Total BTEX	21.1	

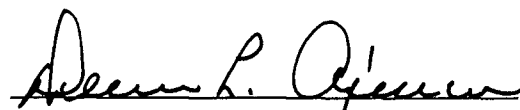
ND - Parameter not detected at the stated detection limit.

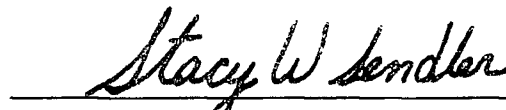
Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	99 %
	Bromofluorobenzene	99 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L.F.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	N/A	Project #:	N/A
Sample ID:	01-20-BTEX QA/QC	Date Reported:	01-20-99
Laboratory Number:	E541	Date Sampled:	N/A
Sample Matrix:	Soil	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	01-20-99
Condition:	N/A	Analysis:	BTEX

Calibration and Detection Limits (ug/L)	I-Cal RF	C-Cal RF	%Diff	Blank Conc	Detect Limit
		Accept Range	0 - 15%		
Benzene	3.3006E-002	3.3085E-002	0.2%	ND	0.2
Toluene	1.3687E-002	1.3712E-002	0.2%	ND	0.2
Ethylbenzene	1.7638E-002	1.7692E-002	0.3%	ND	0.2
p,m-Xylene	1.5312E-002	1.5381E-002	0.5%	ND	0.2
o-Xylene	1.5548E-002	1.5559E-002	0.1%	ND	0.1

Duplicate Conc. (ug/Kg)	Sample	Duplicate	%Diff	Accept Range	Detect Limit
Benzene	ND	ND	0.0%	0 - 30%	8.8
Toluene	ND	ND	0.0%	0 - 30%	8.4
Ethylbenzene	ND	ND	0.0%	0 - 30%	7.6
p,m-Xylene	12.5	12.1	3.2%	0 - 30%	10.8
o-Xylene	8.6	8.3	3.5%	0 - 30%	5.2

Spike Conc. (ug/Kg)	Sample	Amount Spiked	Spiked Sample	% Recovery	Accept Range
Benzene	ND	50.0	50.0	100%	39 - 150
Toluene	ND	50.0	50.0	100%	46 - 148
Ethylbenzene	ND	50.0	50.0	100%	32 - 160
p,m-Xylene	12.5	100.0	113	100%	46 - 148
o-Xylene	8.6	50.0	58.6	100%	46 - 148

ND - Parameter not detected at the stated detection limit.

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.
Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: QA/QC for sample E541.


Analyst


Review

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PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified Nonhalogenated Volatile Organics Total Petroleum Hydrocarbons

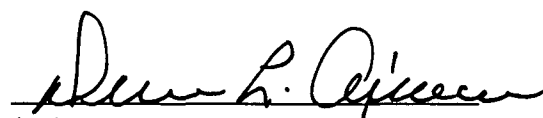
Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	Cell 5 2' - 3'	Date Reported:	01-20-99
Laboratory Number:	E541	Date Sampled:	01-18-99
Chain of Custody No:	6508	Date Received:	01-20-99
Sample Matrix:	Soil	Date Extracted:	01-20-99
Preservative:	Cool	Date Analyzed:	01-20-99
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

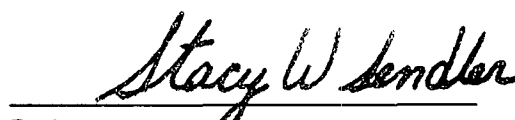
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	ND	0.1
Total Petroleum Hydrocarbons	ND	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L.F.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA Method 8015 Modified Nonhalogenated Volatile Organics Total Petroleum Hydrocarbons

Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	01-20-TPH QA/QC	Date Reported:	01-20-99
Laboratory Number:	E535	Date Sampled:	N/A
Sample Matrix:	Methylene Chloride	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	01-20-99
Condition:	N/A	Analysis Requested:	TPH

	I-Cal Date	I-Cal RF	C-Cal RF	% Difference	Accept. Range
Gasoline Range C5 - C10	01-11-99	1.3319E-002	1.3296E-002	0.18%	0 - 15%
Diesel Range C10 - C28	01-11-99	1.0256E-002	1.0239E-002	0.16%	0 - 15%

Blank Conc. (mg/L - mg/Kg)	Concentration	Detection Limit
Gasoline Range C5 - C10	ND	0.2
Diesel Range C10 - C28	ND	0.1
Total Petroleum Hydrocarbons	ND	0.2

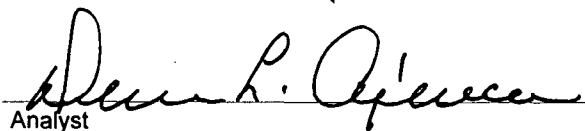
Duplicate Conc. (mg/Kg)	Sample	Duplicate	% Difference	Accept. Range
Gasoline Range C5 - C10	ND	ND	0.0%	0 - 30%
Diesel Range C10 - C28	0.6	0.6	0.0%	0 - 30%

Spike Conc. (mg/Kg)	Sample	Spike Added	Spike Result	% Recovery	Accept. Range
Gasoline Range C5 - C10	ND	250	250	100%	75 - 125%
Diesel Range C10 - C28	0.6	250	250	100%	75 - 125%

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: QA/QC for samples E535 - E541.


Analyst


Review

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PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

CATION / ANION ANALYSIS

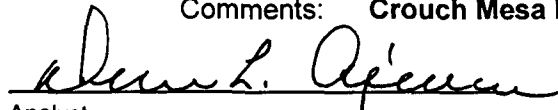
Client: Blagg / AMOCO
Sample ID: Cell 5 2' - 3'
Laboratory Number: E541
Chain of Custody: 6508
Sample Matrix: Soil
Preservative: Cool
Condition: Cool & Intact

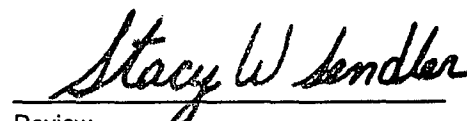
Project #: 04034-10
Date Reported: 01-22-99
Date Sampled: 01-18-99
Date Received: 01-20-99
Date Extracted: 01-21-99
Date Analyzed: 01-22-99

Parameter	Analytical Result	Units	Units
pH	6.01	s.u.	
Conductivity @ 25° C	220	umhos/cm	
Total Dissolved Solids @ 180C	110	mg/L	
Total Dissolved Solids (Calc)	107	mg/L	
SAR	0.0	ratio	
Total Alkalinity as CaCO3	7.8	mg/L	
Total Hardness as CaCO3	75.3	mg/L	
Bicarbonate as HCO3	7.8	mg/L	0.13 meq/L
Carbonate as CO3	<1	mg/L	0.00 meq/L
Hydroxide as OH	<1	mg/L	0.00 meq/L
Nitrate Nitrogen	0.3	mg/L	0.00 meq/L
Nitrite Nitrogen	0.008	mg/L	0.00 meq/L
Chloride	1.6	mg/L	0.05 meq/L
Fluoride	0.26	mg/L	0.01 meq/L
Phosphate	1.0	mg/L	0.03 meq/L
Sulfate	66.4	mg/L	1.38 meq/L
Iron	0.005	mg/L	
Calcium	28.9	mg/L	1.44 meq/L
Magnesium	1.5	mg/L	0.12 meq/L
Potassium	1.9	mg/L	0.05 meq/L
Sodium	<0.1	mg/L	0.00 meq/L
Cations			1.61 meq/L
Anions			1.61 meq/L
Cation/Anion Difference			0.53%

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
Water And Waste Water", 18th ed., 1992.

Comments: Crouch Mesa L.F.


Analyst


Review

Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	Cell 5 2' - 3'	Date Reported:	01-23-99
Laboratory Number:	E541	Date Sampled:	01-18-99
Chain of Custody:	6508	Date Received:	01-20-99
Sample Matrix:	Soil	Date Analyzed:	01-23-99
Preservative:	Cool	Date Digested:	01-21-99
Condition:	Cool & Intact	Analysis Needed:	Trace Metals

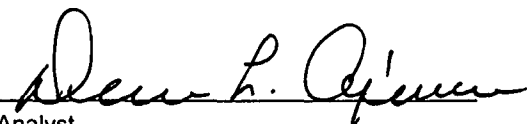
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Arsenic	ND	0.0025
Barium	71.4	0.0025
Cadmium	0.0825	0.0025
Chromium	0.925	0.0025
Lead	2.55	0.0025
Mercury	ND	0.0025
Selenium	ND	0.0025
Silver	ND	0.0025

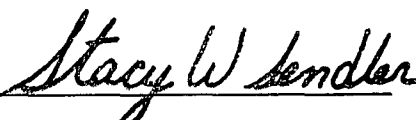
ND - Parameter not detected at the stated detection limit.

References: Method 3050B, Acid Digestion of Sediments, Sludges and Soils.
SW-846, USEPA, December 1996.

Methods 7060B, 7081, 7131A, 7191, 7470A, 7421, 7740, 7761 Analysis of Metals by
GFAA and Cold Vapor Techniques, SW-846, USEPA, December 1996.

Comments: Crouch Mesa L.F.


Analyst


Review

9889

ENVIROTECH INC.

5796 U.S. Highway 64
Farmington, New Mexico 87401
(505) 632-0615

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

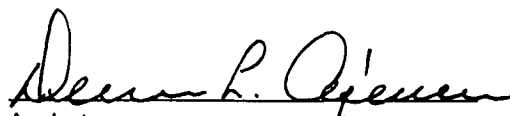
Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	Cell - 1	Date Reported:	04-13-99
Laboratory Number:	F007	Date Sampled:	04-12-99
Chain of Custody No:	6886	Date Received:	04-12-99
Sample Matrix:	Soil	Date Extracted:	04-12-99
Preservative:	Cool	Date Analyzed:	04-13-99
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	3.8	0.2
Diesel Range (C10 - C28)	ND	0.1
Total Petroleum Hydrocarbons	3.8	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa Landfarm.


Analyst


Review

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

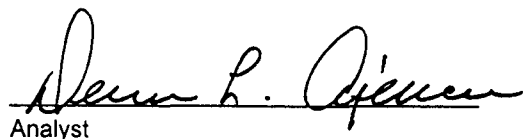
Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	Cell - 2	Date Reported:	04-13-99
Laboratory Number:	F008	Date Sampled:	04-12-99
Chain of Custody No:	6886	Date Received:	04-12-99
Sample Matrix:	Soil	Date Extracted:	04-12-99
Preservative:	Cool	Date Analyzed:	04-13-99
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

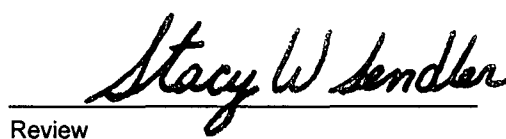
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	12.2	0.2
Diesel Range (C10 - C28)	92.2	0.1
Total Petroleum Hydrocarbons	104	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa Landfarm.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

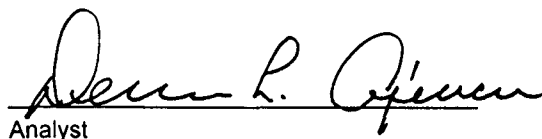
Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	Cell - 3	Date Reported:	04-13-99
Laboratory Number:	F009	Date Sampled:	04-12-99
Chain of Custody No:	6886	Date Received:	04-12-99
Sample Matrix:	Soil	Date Extracted:	04-12-99
Preservative:	Cool	Date Analyzed:	04-13-99
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	2.3	0.2
Diesel Range (C10 - C28)	ND	0.1
Total Petroleum Hydrocarbons	2.3	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa Landfarm.


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Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified Nonhalogenated Volatile Organics Total Petroleum Hydrocarbons

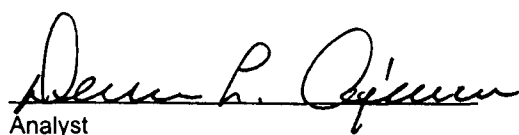
Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	Cell - 4	Date Reported:	04-13-99
Laboratory Number:	F010	Date Sampled:	04-12-99
Chain of Custody No:	6886	Date Received:	04-12-99
Sample Matrix:	Soil	Date Extracted:	04-12-99
Preservative:	Cool	Date Analyzed:	04-13-99
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	1.0	0.2
Diesel Range (C10 - C28)	ND	0.1
Total Petroleum Hydrocarbons	1.0	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa Landfarm.


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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified Nonhalogenated Volatile Organics Total Petroleum Hydrocarbons

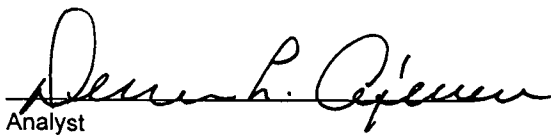
Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	Cell - 5	Date Reported:	04-13-99
Laboratory Number:	F011	Date Sampled:	04-12-99
Chain of Custody No:	6886	Date Received:	04-12-99
Sample Matrix:	Soil	Date Extracted:	04-12-99
Preservative:	Cool	Date Analyzed:	04-13-99
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	0.7	0.2
Diesel Range (C10 - C28)	0.2	0.1
Total Petroleum Hydrocarbons	0.9	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa Landfarm.


Analyst


Review

EPA Method 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	04-13-TPH QA/QC	Date Reported:	04-12-99
Laboratory Number:	F007	Date Sampled:	N/A
Sample Matrix:	Methylene Chloride	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	04-13-99
Condition:	N/A	Analysis Requested:	TPH

	I-Cal Date	I-Cal RF	C-Cal RF	% Difference	Accept. Range
Gasoline Range C5 - C10	03-15-99	7.6679E-002	7.6541E-002	0.18%	0 - 15%
Diesel Range C10 - C28	03-15-99	7.2197E-002	7.2081E-002	0.16%	0 - 15%

Blank Conc. (mg/L - mg/Kg)	Concentration	Detection Limit
Gasoline Range C5 - C10	ND	0.2
Diesel Range C10 - C28	ND	0.1
Total Petroleum Hydrocarbons	ND	0.2

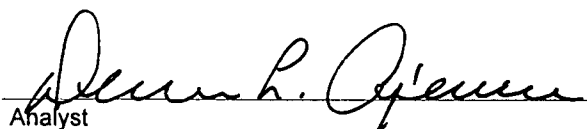
Duplicate Conc. (mg/Kg)	Sample	Duplicate	% Difference	Accept. Range
Gasoline Range C5 - C10	3.8	3.8	0.0%	0 - 30%
Diesel Range C10 - C28	ND	ND	0.0%	0 - 30%

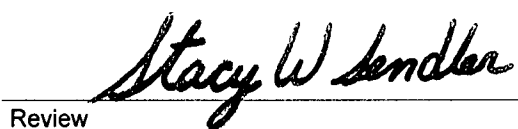
Spike Conc. (mg/Kg)	Sample	Spike Added	Spike Result	% Recovery	Accept. Range
Gasoline Range C5 - C10	3.8	250	250	99%	75 - 125%
Diesel Range C10 - C28	ND	250	250	100%	75 - 125%

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: QA/QC for samples F007 - F013.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	Cell - 1	Date Reported:	04-13-99
Laboratory Number:	F007	Date Sampled:	04-12-99
Chain of Custody:	6886	Date Received:	04-12-99
Sample Matrix:	Soil	Date Analyzed:	04-13-99
Preservative:	Cool	Date Extracted:	04-12-99
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	41.7	8.8
Toluene	33.5	8.4
Ethylbenzene	543	7.6
p,m-Xylene	812	10.8
o-Xylene	592	5.2
Total BTEX	2,020	

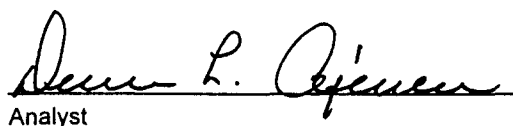
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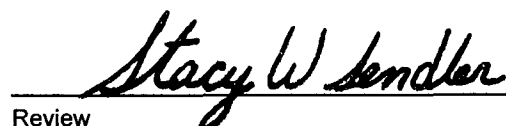
Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	98 %
	Bromofluorobenzene	98 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa Landfarm.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	Cell - 2	Date Reported:	04-13-99
Laboratory Number:	F008	Date Sampled:	04-12-99
Chain of Custody:	6886	Date Received:	04-12-99
Sample Matrix:	Soil	Date Analyzed:	04-13-99
Preservative:	Cool	Date Extracted:	04-12-99
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	231	8.8
Toluene	2,260	8.4
Ethylbenzene	899	7.6
p,m-Xylene	5,750	10.8
o-Xylene	2,310	5.2
Total BTEX	11,450	

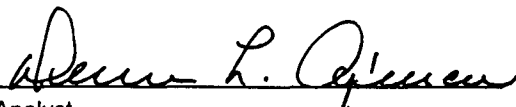
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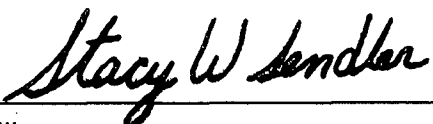
Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	100 %
	Bromofluorobenzene	100 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa Landfarm.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	Cell - 3	Date Reported:	04-13-99
Laboratory Number:	F009	Date Sampled:	04-12-99
Chain of Custody:	6886	Date Received:	04-12-99
Sample Matrix:	Soil	Date Analyzed:	04-13-99
Preservative:	Cool	Date Extracted:	04-12-99
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	39.6	8.8
Toluene	525	8.4
Ethylbenzene	247	7.6
p,m-Xylene	567	10.8
o-Xylene	177	5.2
Total BTEX	1,560	

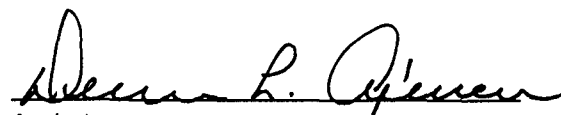
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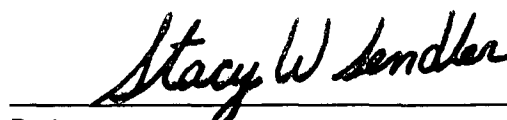
Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	97 %
	Bromofluorobenzene	97 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa Landfarm.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	Cell - 4	Date Reported:	04-13-99
Laboratory Number:	F010	Date Sampled:	04-12-99
Chain of Custody:	6886	Date Received:	04-12-99
Sample Matrix:	Soil	Date Analyzed:	04-13-99
Preservative:	Cool	Date Extracted:	04-12-99
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	17.0	8.8
Toluene	135	8.4
Ethylbenzene	85.0	7.6
p,m-Xylene	353	10.8
o-Xylene	84.3	5.2
Total BTEX	674	

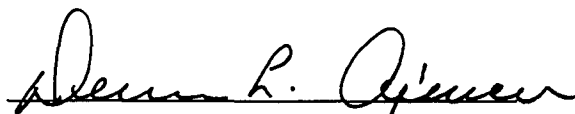
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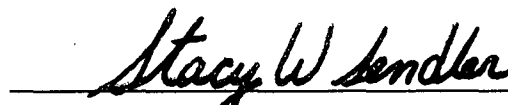
Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	100 %
	Bromofluorobenzene	100 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa Landfarm.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	Cell - 5	Date Reported:	04-13-99
Laboratory Number:	F011	Date Sampled:	04-12-99
Chain of Custody:	6886	Date Received:	04-12-99
Sample Matrix:	Soil	Date Analyzed:	04-13-99
Preservative:	Cool	Date Extracted:	04-12-99
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	28.3	8.8
Toluene	38.1	8.4
Ethylbenzene	28.3	7.6
p,m-Xylene	156	10.8
o-Xylene	53.0	5.2
Total BTEX	304	

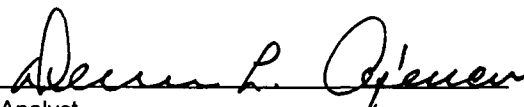
ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	97 %
	Bromofluorobenzene	97 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa Landfarm.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	N/A	Project #:	N/A
Sample ID:	04-13-BTEX QA/QC	Date Reported:	04-13-99
Laboratory Number:	F007	Date Sampled:	N/A
Sample Matrix:	Soil	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	04-13-99
Condition:	N/A	Analysis:	BTEX

Calibration and Detection Limits (ug/L)	1-Cal RE	2-Cal RE	%Diff	Blank Conc	Detect Limit
			Accept Range 0 - 15%		
Benzene	3.2346E-002	3.2381E-002	0.1%	ND	0.2
Toluene	2.0462E-002	2.0478E-002	0.1%	ND	0.2
Ethylbenzene	2.7225E-002	2.7255E-002	0.1%	ND	0.2
p,m-Xylene	2.7416E-002	2.7457E-002	0.2%	ND	0.2
o-Xylene	2.4585E-002	2.4602E-002	0.1%	ND	0.1

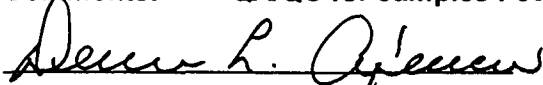
Duplicate Conc. (ug/Kg)	Sample	Duplicate	%Diff	Accept Range	Detect Limit
Benzene	41.7	42.4	1.7%	0 - 30%	8.8
Toluene	33.5	33.9	1.2%	0 - 30%	8.4
Ethylbenzene	543	549	1.2%	0 - 30%	7.6
p,m-Xylene	812	822	1.3%	0 - 30%	10.8
o-Xylene	592	603	1.8%	0 - 30%	5.2

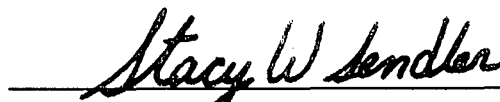
Spike Conc. (ug/Kg)	Sample	Amount Spiked	Spiked Sample	% Recovery	Accept Range
Benzene	41.7	50.0	91.7	100%	39 - 150
Toluene	33.5	50.0	83.5	100%	46 - 148
Ethylbenzene	543	50.0	592	100%	32 - 160
p,m-Xylene	812	100.0	911	100%	46 - 148
o-Xylene	592	50.0	642	100%	46 - 148

ND - Parameter not detected at the stated detection limit.

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.
Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: QA/QC for samples F007 - F013.


Analyst


Review

CHAIN OF CUSTODY RECORD

7158

Client / Project Name		Project Location		ANALYSIS / PARAMETERS										
BLAGG/AMCO		CROUCH MESA LANDFARM												
Sampler: REP		Client No. 0403410												
Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	TPH (8015)	BTEX (8021)							Remarks
CELL - 1	7-9-99	0700	F633	SOIL	1	✓	✓							
CELL - 2	7-9-99	0720	F634	SOIL	1	✓	✓							
CELL - 3	7-9-99	0750	F635	SOIL	1	✓	✓							
CELL - 4	7-9-99	0810	F636	SOIL	1	✓	✓							
CELL - 5	7-9-99	0835	F637	SOIL	1	✓	✓							SAMPLES PRESERVE - COOL
Relinquished by: (Signature)		Date 7-9-99		Time 8:45		Received by: (Signature)		Date 7-9-99		Time 8:45				
Relinquished by: (Signature)						Received by: (Signature)								
Relinquished by: (Signature)						Received by: (Signature)								
ENVIROTECH INC. 5796 U.S. Highway 64 Farmington, New Mexico 87401 (505) 632-0615														
Sample Receipt Y ☒ N ☐ N/A ☐ Received Intact ☒ Cool - Ice/Blue Ice ☒														

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

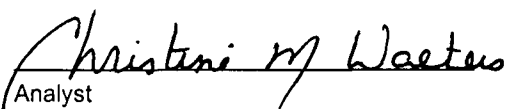
Client:	Blagg / Amoco	Project #:	0403410
Sample ID:	Cell - 1	Date Reported:	07-12-99
Laboratory Number:	F633	Date Sampled:	07-09-99
Chain of Custody No:	7158	Date Received:	07-09-99
Sample Matrix:	Soil	Date Extracted:	07-09-99
Preservative:	Cool	Date Analyzed:	07-09-99
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	0.8	0.2
Diesel Range (C10 - C28)	1.6	0.1
Total Petroleum Hydrocarbons	2.4	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Crouch Mesa Landfarm.**


Analyst


Review

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Client:	Blagg / Amoco	Project #:	0403410
Sample ID:	Cell - 2	Date Reported:	07-12-99
Laboratory Number:	F634	Date Sampled:	07-09-99
Chain of Custody No:	7158	Date Received:	07-09-99
Sample Matrix:	Soil	Date Extracted:	07-09-99
Preservative:	Cool	Date Analyzed:	07-09-99
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	0.5	0.2
Diesel Range (C10 - C28)	0.6	0.1
Total Petroleum Hydrocarbons	1.1	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa Landfarm.

Analyst

Christine M. Warden

Review

Stacy W. Bender

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

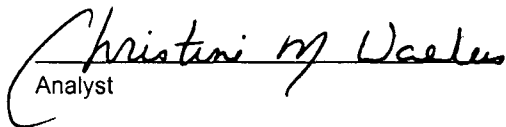
Client:	Blagg / Amoco	Project #:	0403410
Sample ID:	Cell - 3	Date Reported:	07-12-99
Laboratory Number:	F635	Date Sampled:	07-09-99
Chain of Custody No:	7158	Date Received:	07-09-99
Sample Matrix:	Soil	Date Extracted:	07-09-99
Preservative:	Cool	Date Analyzed:	07-09-99
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	0.4	0.2
Diesel Range (C10 - C28)	0.4	0.1
Total Petroleum Hydrocarbons	0.8	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa Landfarm.


Analyst


Review

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Client:	Blagg / Amoco	Project #:	0403410
Sample ID:	Cell - 4	Date Reported:	07-12-99
Laboratory Number:	F636	Date Sampled:	07-09-99
Chain of Custody No:	7158	Date Received:	07-09-99
Sample Matrix:	Soil	Date Extracted:	07-09-99
Preservative:	Cool	Date Analyzed:	07-09-99
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	1.4	0.2
Diesel Range (C10 - C28)	0.5	0.1
Total Petroleum Hydrocarbons	1.9	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa Landfarm.

Analyst

Christine M. Wacker

Review

Stacy W. Sandler

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Client:	Blagg / Amoco	Project #:	0403410
Sample ID:	Cell - 5	Date Reported:	07-12-99
Laboratory Number:	F637	Date Sampled:	07-09-99
Chain of Custody No:	7158	Date Received:	07-09-99
Sample Matrix:	Soil	Date Extracted:	07-09-99
Preservative:	Cool	Date Analyzed:	07-09-99
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	3.5	0.1
Total Petroleum Hydrocarbons	3.5	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste,
SW-846, USEPA, December 1996.

Comments: Crouch Mesa Landfarm.

Analyst

Christy M. Wadsworth

Review

Stacy W. Sandler

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA Method 8015 Modified Nonhalogenated Volatile Organics Total Petroleum Hydrocarbons

Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	07-09-TPH QA/QC	Date Reported:	07-12-99
Laboratory Number:	F633	Date Sampled:	N/A
Sample Matrix:	Methylene Chloride	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	07-09-99
Condition:	N/A	Analysis Requested:	TPH

	I-Cal Date	I-Cal RF	C-Cal RF	% Difference	Accept. Range
Gasoline Range C5 - C10	06-17-99	1.1457E-001	1.1448E-001	0.08%	0 - 15%
Diesel Range C10 - C28	06-17-99	7.9565E-002	7.9438E-002	0.16%	0 - 15%

Blank Conc. (mg/L - mg/Kg)	Concentration	Detection Limit
Gasoline Range C5 - C10	ND	0.2
Diesel Range C10 - C28	ND	0.1
Total Petroleum Hydrocarbons	ND	0.2

Duplicate Conc. (mg/Kg)	Sample	Duplicate	% Difference	Accept. Range
Gasoline Range C5 - C10	0.8	0.8	0.0%	0 - 30%
Diesel Range C10 - C28	1.6	1.6	0.0%	0 - 30%

Spike Conc. (mg/Kg)	Sample	Spike Added	Spike Result	% Recovery	Accept. Range
Gasoline Range C5 - C10	0.8	250	250	100%	75 - 125%
Diesel Range C10 - C28	1.6	250	251	100%	75 - 125%

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: QA/QC for samples F633 - F637.

Christy M. Watten
Analyst

Stacy W. Bender
Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	CELL - 1	Date Reported:	07-22-99
Laboratory Number:	F633	Date Sampled:	07-09-99
Chain of Custody:	7158	Date Received:	07-09-99
Sample Matrix:	Soil	Date Analyzed:	07-21-99
Preservative:	Cool	Date Extracted:	07-09-99
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	294	8.8
Toluene	72.4	8.4
Ethylbenzene	ND	7.6
p,m-Xylene	34.4	10.8
o-Xylene	9.4	5.2
Total BTEX	410	

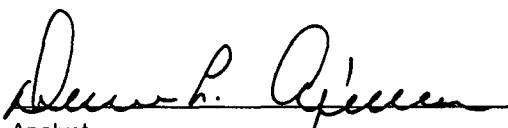
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Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	95 %
	Bromofluorobenzene	95 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa Landfarm.


Analyst


Review

Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	CELL - 2	Date Reported:	07-22-99
Laboratory Number:	F634	Date Sampled:	07-09-99
Chain of Custody:	7158	Date Received:	07-09-99
Sample Matrix:	Soil	Date Analyzed:	07-21-99
Preservative:	Cool	Date Extracted:	07-09-99
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	241	8.8
Toluene	85.3	8.4
Ethylbenzene	ND	7.6
p,m-Xylene	29.9	10.8
o-Xylene	10.2	5.2
Total BTEX	366	

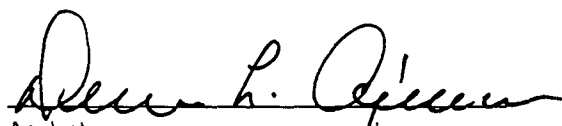
ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	96 %
	Bromofluorobenzene	96 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa Landfarm.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	CELL - 3	Date Reported:	07-22-99
Laboratory Number:	F635	Date Sampled:	07-09-99
Chain of Custody:	7158	Date Received:	07-09-99
Sample Matrix:	Soil	Date Analyzed:	07-21-99
Preservative:	Cool	Date Extracted:	07-09-99
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	268	8.8
Toluene	86.6	8.4
Ethylbenzene	ND	7.6
p,m-Xylene	28.9	10.8
o-Xylene	8.0	5.2
Total BTEX	392	

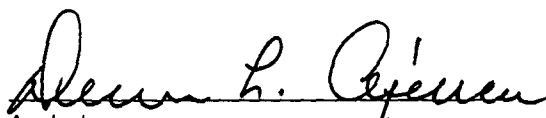
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Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	98 %
	Bromofluorobenzene	98 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa Landfarm.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	CELL - 4	Date Reported:	07-22-99
Laboratory Number:	F636	Date Sampled:	07-09-99
Chain of Custody:	7158	Date Received:	07-09-99
Sample Matrix:	Soil	Date Analyzed:	07-21-99
Preservative:	Cool	Date Extracted:	07-09-99
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	227	8.8
Toluene	273	8.4
Ethylbenzene	56.7	7.6
p,m-Xylene	559	10.8
o-Xylene	112	5.2
Total BTEX	1,230	

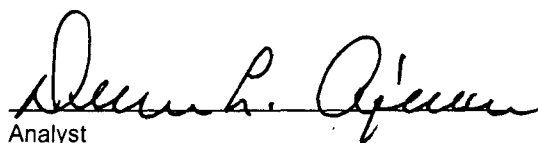
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Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	100 %
	Bromofluorobenzene	100 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa Landfarm.


Analyst


Review

Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	CELL - 5	Date Reported:	07-22-99
Laboratory Number:	F637	Date Sampled:	07-09-99
Chain of Custody:	7158	Date Received:	07-09-99
Sample Matrix:	Soil	Date Analyzed:	07-21-99
Preservative:	Cool	Date Extracted:	07-09-99
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	78.4	8.8
Toluene	40.4	8.4
Ethylbenzene	ND	7.6
p,m-Xylene	56.5	10.8
o-Xylene	21.3	5.2
Total BTEX	197	

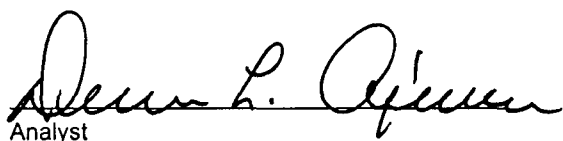
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Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	97 %
	Bromofluorobenzene	97 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa Landfarm.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client: N/A
Sample ID: 07-21-PM-BTEX QA/QC
Laboratory Number: F633
Sample Matrix: Soil
Preservative: N/A
Condition: N/A

Project #: N/A
Date Reported: 07-22-99
Date Sampled: N/A
Date Received: N/A
Date Analyzed: 07-21-99
Analysis: BTEX

Calibration and Detection Limits (ug/L)	I-Cal RF:	C-Cal RF:	%Diff.	Blank Conc	Detect. Limit
		Accept. Range 0 - 15%			
Benzene	1.7888E+000	1.7931E+000	0.2%	ND	0.2
Toluene	1.0333E+000	1.0352E+000	0.2%	ND	0.2
Ethylbenzene	1.0495E+000	1.0517E+000	0.2%	ND	0.2
p,m-Xylene	1.0438E+000	1.0464E+000	0.3%	ND	0.2
o-Xylene	7.9103E-001	7.9238E-001	0.2%	ND	0.1

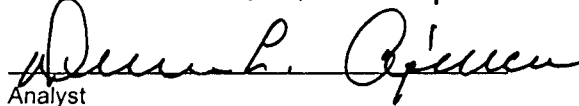
Duplicate Conc. (ug/Kg)	Sample	Duplicate	%Diff.	Accept Range	Detect. Limit
Benzene	294	290	1.4%	0 - 30%	8.8
Toluene	72.4	71.1	1.8%	0 - 30%	8.4
Ethylbenzene	ND	ND	0.0%	0 - 30%	7.6
p,m-Xylene	34.4	33.9	1.5%	0 - 30%	10.8
o-Xylene	9.4	9.3	1.1%	0 - 30%	5.2

Spike Conc. (ug/Kg)	Sample	Amount Spiked	Spiked Sample	% Recovery	Accept Range
Benzene	294	50.0	343	100%	39 - 150
Toluene	72.4	50.0	122	100%	46 - 148
Ethylbenzene	ND	50.0	50.0	100%	32 - 160
p,m-Xylene	34.4	100.0	134	100%	46 - 148
o-Xylene	9.4	50.0	59.4	100%	46 - 148

ND - Parameter not detected at the stated detection limit.

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.
Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: QA/QC for samples F633 - F637.


Analyst


Review

7304

ENVIROTECH INC.

5796 U.S. Highway 64
Farmington, New Mexico 87401
(505) 632-0615

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

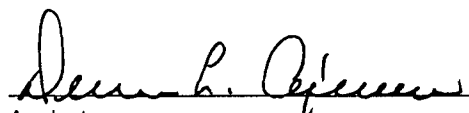
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Sample ID:	Cell # 1	Date Reported:	10-15-99
Laboratory Number:	G196	Date Sampled:	10-14-99
Chain of Custody No:	7304	Date Received:	10-14-99
Sample Matrix:	Soil	Date Extracted:	10-15-99
Preservative:	Cool	Date Analyzed:	10-15-99
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	0.2	0.2
Diesel Range (C10 - C28)	3.1	0.1
Total Petroleum Hydrocarbons	3.3	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa Landfarm.


Analyst


Review

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

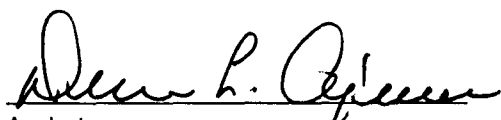
Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	Cell # 2	Date Reported:	10-15-99
Laboratory Number:	G197	Date Sampled:	10-14-99
Chain of Custody No:	7304	Date Received:	10-14-99
Sample Matrix:	Soil	Date Extracted:	10-15-99
Preservative:	Cool	Date Analyzed:	10-15-99
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

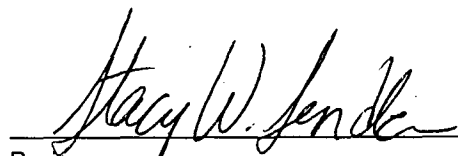
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	1.3	0.2
Diesel Range (C10 - C28)	2.4	0.1
Total Petroleum Hydrocarbons	3.7	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa Landfarm.


Analyst


Review

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

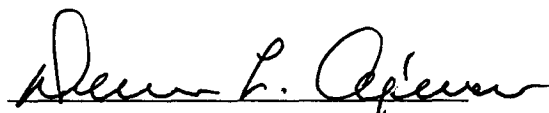
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Sample ID:	Cell # 3	Date Reported:	10-15-99
Laboratory Number:	G198	Date Sampled:	10-14-99
Chain of Custody No:	7304	Date Received:	10-14-99
Sample Matrix:	Soil	Date Extracted:	10-15-99
Preservative:	Cool	Date Analyzed:	10-15-99
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

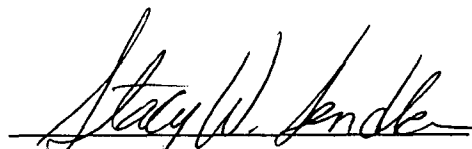
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	1.9	0.1
Total Petroleum Hydrocarbons	1.9	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa Landfarm.


Analyst


Review

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

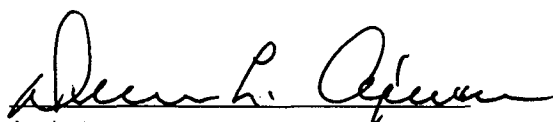
Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	Cell # 4	Date Reported:	10-15-99
Laboratory Number:	G199	Date Sampled:	10-14-99
Chain of Custody No:	7304	Date Received:	10-14-99
Sample Matrix:	Soil	Date Extracted:	10-15-99
Preservative:	Cool	Date Analyzed:	10-15-99
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

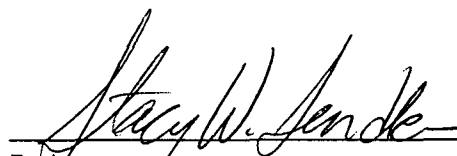
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	2.0	0.1
Total Petroleum Hydrocarbons	2.0	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste,
SW-846, USEPA, December 1996.

Comments: **Crouch Mesa Landfarm.**


Analyst


Review

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

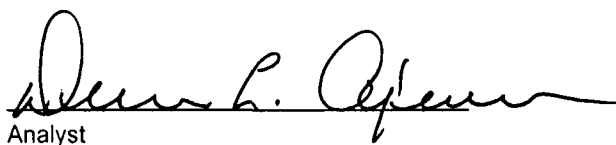
Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	Cell # 5	Date Reported:	10-15-99
Laboratory Number:	G200	Date Sampled:	10-14-99
Chain of Custody No:	7304	Date Received:	10-14-99
Sample Matrix:	Soil	Date Extracted:	10-15-99
Preservative:	Cool	Date Analyzed:	10-15-99
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

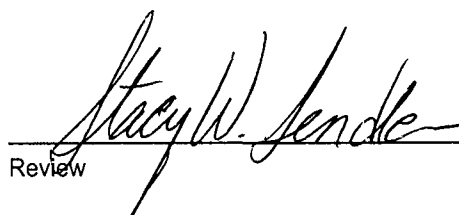
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	1.0	0.1
Total Petroleum Hydrocarbons	1.0	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste,
SW-846, USEPA, December 1996.

Comments: Crouch Mesa Landfarm.


Analyst


Review

EPA Method 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	10-15-TPH QA/QC	Date Reported:	10-15-99
Laboratory Number:	G196	Date Sampled:	N/A
Sample Matrix:	Methylene Chloride	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	10-15-99
Condition:	N/A	Analysis Requested:	TPH

	I-Cal Date	I-Cal RF	C-Cal RF	% Difference	Accept. Range
Gasoline Range C5 - C10	06-17-99	2.6200E-002	2.6173E-002	0.10%	0 - 15%
Diesel Range C10 - C28	06-17-99	2.7356E-002	2.7301E-002	0.20%	0 - 15%

Blank Conc. (mg/L - mg/Kg)	Concentration	Detection Limit
Gasoline Range C5 - C10	ND	0.2
Diesel Range C10 - C28	ND	0.1
Total Petroleum Hydrocarbons	ND	0.2

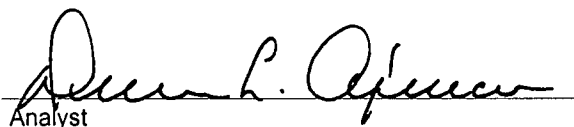
Duplicate Conc. (mg/Kg)	Sample	Duplicate	% Difference	Accept. Range
Gasoline Range C5 - C10	0.2	0.2	0.0%	0 - 30%
Diesel Range C10 - C28	3.1	3.1	0.0%	0 - 30%

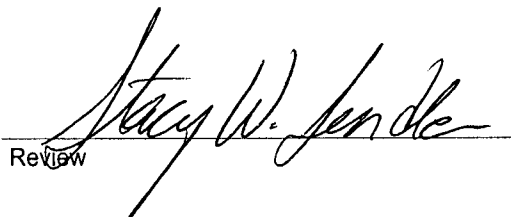
Spike Conc. (mg/Kg)	Sample	Spike Added	Spike Result	% Recovery	Accept. Range
Gasoline Range C5 - C10	0.2	250	250	100%	75 - 125%
Diesel Range C10 - C28	3.1	250	253	100%	75 - 125%

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: QA/QC for samples G196 - G203.


Analyst


Review

Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	Cell # 1	Date Reported:	10-15-99
Laboratory Number:	G196	Date Sampled:	10-14-99
Chain of Custody:	7304	Date Received:	10-14-99
Sample Matrix:	Soil	Date Analyzed:	10-15-99
Preservative:	Cool	Date Extracted:	10-15-99
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	30.9	0.9
Toluene	2.9	0.8
Ethylbenzene	30.0	0.8
p,m-Xylene	199	1.1
o-Xylene	89.4	0.5
Total BTEX	352	

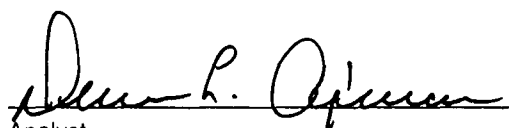
ND - Parameter not detected at the stated detection limit.

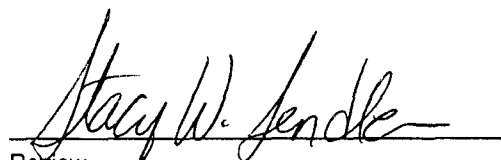
Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	100 %
	Bromofluorobenzene	100 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa Landfarm.


Analyst


Review

Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	Cell # 2	Date Reported:	10-15-99
Laboratory Number:	G197	Date Sampled:	10-14-99
Chain of Custody:	7304	Date Received:	10-14-99
Sample Matrix:	Soil	Date Analyzed:	10-15-99
Preservative:	Cool	Date Extracted:	10-15-99
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	19.9	0.9
Toluene	1.2	0.8
Ethylbenzene	61.9	0.8
p,m-Xylene	840	1.1
o-Xylene	276	0.5
Total BTEX	1,200	

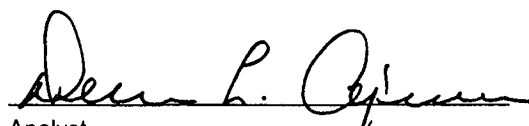
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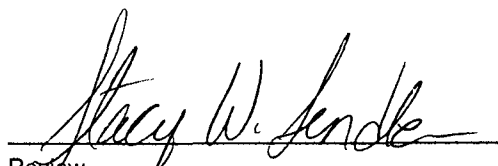
Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	100 %
	Bromofluorobenzene	100 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa Landfarm.


Analyst


Review

Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	Cell # 3	Date Reported:	10-15-99
Laboratory Number:	G198	Date Sampled:	10-14-99
Chain of Custody:	7304	Date Received:	10-14-99
Sample Matrix:	Soil	Date Analyzed:	10-15-99
Preservative:	Cool	Date Extracted:	10-15-99
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	16.0	0.9
Toluene	1.7	0.8
Ethylbenzene	1.6	0.8
p,m-Xylene	20.0	1.1
o-Xylene	9.5	0.5
Total BTEX	48.8	

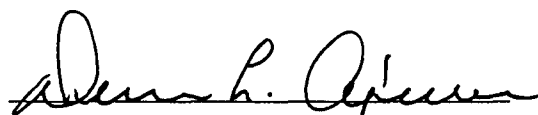
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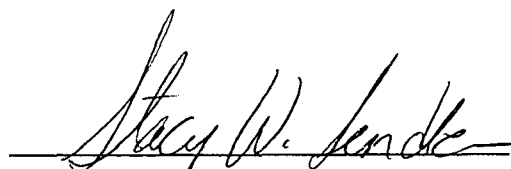
Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	100 %
	Bromofluorobenzene	100 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa Landfarm.


Analyst


Review

Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	Cell # 4	Date Reported:	10-15-99
Laboratory Number:	G199	Date Sampled:	10-14-99
Chain of Custody:	7304	Date Received:	10-14-99
Sample Matrix:	Soil	Date Analyzed:	10-15-99
Preservative:	Cool	Date Extracted:	10-15-99
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	23.3	0.9
Toluene	1.4	0.8
Ethylbenzene	1.4	0.8
p,m-Xylene	13.5	1.1
o-Xylene	8.2	0.5
Total BTEX	47.8	

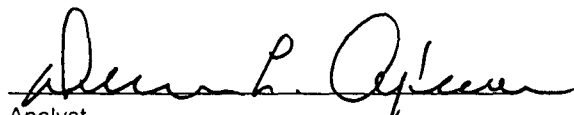
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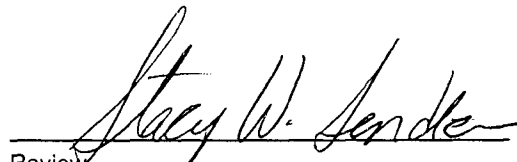
Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	100 %
	Bromofluorobenzene	100 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa Landfarm.


Analyst


Review

Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	Cell # 5	Date Reported:	10-15-99
Laboratory Number:	G200	Date Sampled:	10-14-99
Chain of Custody:	7304	Date Received:	10-14-99
Sample Matrix:	Soil	Date Analyzed:	10-15-99
Preservative:	Cool	Date Extracted:	10-15-99
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	4.4	0.9
Toluene	1.8	0.8
Ethylbenzene	4.6	0.8
p,m-Xylene	48.9	1.1
o-Xylene	22.0	0.5
Total BTEX	81.7	

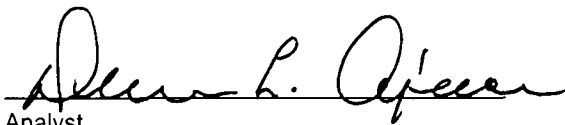
ND - Parameter not detected at the stated detection limit.

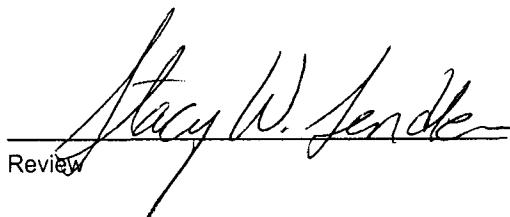
Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	100 %
	Bromofluorobenzene	100 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa Landfarm.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	N/A	Project #:	N/A
Sample ID:	10-15-BTEX QA/QC	Date Reported:	10-15-99
Laboratory Number:	G196	Date Sampled:	N/A
Sample Matrix:	Soil	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	10-15-99
Condition:	N/A	Analysis:	BTEX

Calibration and Detection Limits (ug/L)	I-Cal RF:	C-Cal RF:	%Diff.	Blank Conc	Detect. Limit
		Accept. Range 0 - 15%			
Benzene	3.6219E-001	3.6306E-001	0.2%	ND	0.2
Toluene	2.7867E-002	2.7917E-002	0.2%	ND	0.2
Ethylbenzene	4.1931E-002	4.2019E-002	0.2%	ND	0.2
p,m-Xylene	3.6569E-002	3.6661E-002	0.3%	ND	0.2
o-Xylene	3.1955E-002	3.2010E-002	0.2%	ND	0.1

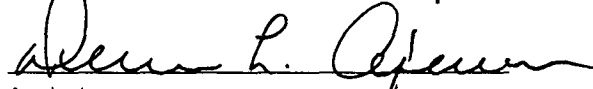
Duplicate Conc. (ug/Kg)	Sample	Duplicate	%Diff.	Accept Range	Detect. Limit
Benzene	30.9	30.2	2.3%	0 - 30%	0.9
Toluene	2.9	2.9	0.0%	0 - 30%	0.8
Ethylbenzene	30.0	29.2	2.7%	0 - 30%	0.8
p,m-Xylene	199	194	2.6%	0 - 30%	1.1
o-Xylene	89.4	87.6	2.0%	0 - 30%	0.5

Spike Conc. (ug/Kg)	Sample	Amount Spiked	Spiked Sample	% Recovery	Accept Range
Benzene	30.9	50.0	80.8	100%	39 - 150
Toluene	2.9	50.0	52.9	100%	46 - 148
Ethylbenzene	30.0	50.0	79.9	100%	32 - 160
p,m-Xylene	199	100.0	299	100%	46 - 148
o-Xylene	89.4	50.0	139.2	100%	46 - 148

ND - Parameter not detected at the stated detection limit.

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.
Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: QA/QC for samples G196 - G200.

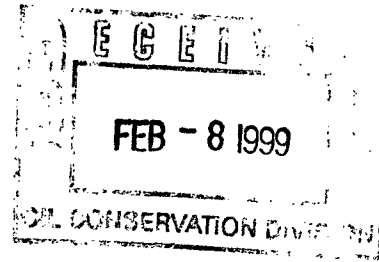

Analyst


Review

BLAGG ENGINEERING, INC.

P.O. Box 87, Bloomfield, New Mexico 87413

Phone: (505)632-1199 Fax: (505)632-3903



February 4, 1999

Ms. Martyne J. Kieling
New Mexico Oil Conservation Division
2040 South Pacheco Street
Santa Fe, New Mexico 87505

Re: Amoco Production Company
Crouch Mesa Waste Management Facility, SW/4 SE/4 Sec. 2 - T29N - R12W
NMOCD Rule 711 Annual Reporting Requirement

Dear Ms. Kieling:

On behalf of Amoco Production Company, Blagg Engineering, Inc. (BEI) is submitting an annual report with respect to the Crouch Mesa Waste Management Facility, San Juan County, New Mexico. Pursuant to NMOCD Permit NM-02-003 dated November 25, 1998, analytical results from treatment zone monitoring are to be submitted annually. Attached, please find laboratory analytical results for the 1998 treatment zone monitoring.

Note that the permit outlines quarterly treatment zone monitoring but since the permit was issued in November, 1998 only one quarterly treatment zone sampling event was conducted for the reporting year. No subsurface hydrocarbon impacts exceeding NMOCD regulatory standards were identified with this sampling. Beginning in 1999, quarterly monitoring is scheduled and has been initiated.

Questions or comments concerning the this transmittal may be directed to Jeff Blagg of Blagg Engineering at (505)632-1199 or to Buddy Shaw with Amoco at (505)326-9200.

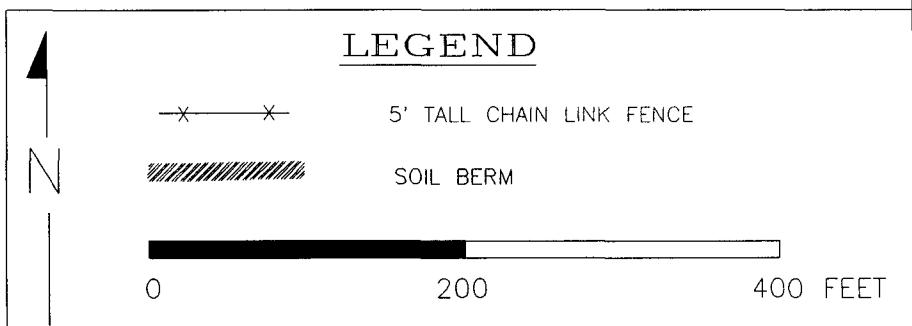
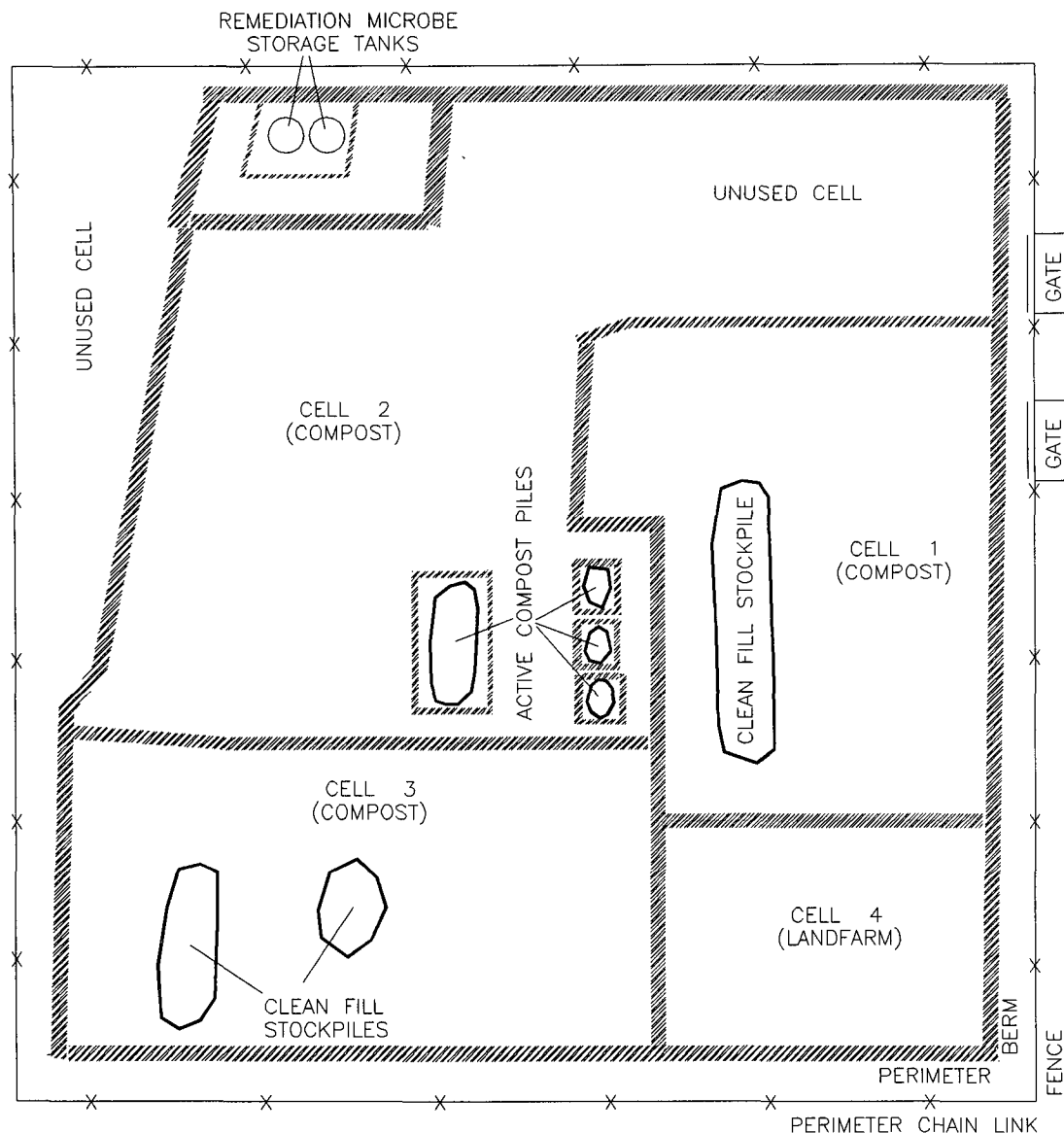
Respectfully submitted:
Blagg Engineering, Inc.


Jeffrey C. Blagg, P.E.
President

Attachments: Treatment Zone Monitoring Reports
Site Figure

cc: Denny Foust, NMOCD Aztec District Office
B.D. Shaw, Amoco San Juan Operations Center

MJF
2-15-99



AMOCO PRODUCTION CO.
CROUCH MESA WASTE MGMT FAC
SAN JUAN CO., NEW MEXICO

DECEMBER 1998

BLAGG ENGINEERING, INC.
CONSULTING ENGINEERING SERVICES

P.O. BOX 87
BLOOMFIELD, NEW MEXICO 87413

PHONE: (505) 632-1199

**SITE
SCHEMATIC**

FIGURE 1

DRWN BY:
JCB

CRMESA1

PROJ MGR:
JCB

6170

ENVIROTECH INC.

**EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons**

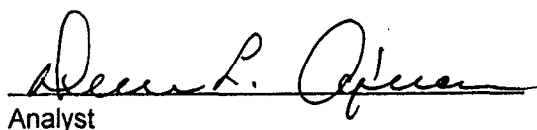
Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	Cell 1 @ 3'	Date Reported:	07-17-98
Laboratory Number:	D648	Date Sampled:	07-16-98
Chain of Custody No:	6170	Date Received:	07-16-98
Sample Matrix:	Soil	Date Extracted:	07-17-98
Preservative:	Cool	Date Analyzed:	07-17-98
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

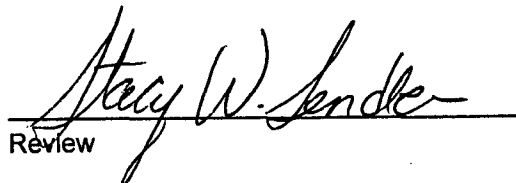
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	ND	0.1
Total Petroleum Hydrocarbons	ND	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Crouch Mesa.**


Analyst


Review

**EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons**

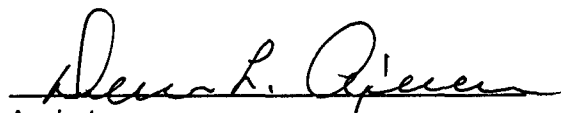
Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	Cell 2 @ 3'	Date Reported:	07-17-98
Laboratory Number:	D649	Date Sampled:	07-16-98
Chain of Custody No:	6170	Date Received:	07-16-98
Sample Matrix:	Soil	Date Extracted:	07-17-98
Preservative:	Cool	Date Analyzed:	07-17-98
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	ND	0.1
Total Petroleum Hydrocarbons	ND	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Crouch Mesa.**


Analyst


Review

**EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons**

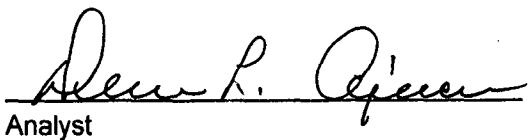
Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	Cell 3 @ 3'	Date Reported:	07-17-98
Laboratory Number:	D650	Date Sampled:	07-16-98
Chain of Custody No:	6170	Date Received:	07-16-98
Sample Matrix:	Soil	Date Extracted:	07-17-98
Preservative:	Cool	Date Analyzed:	07-17-98
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

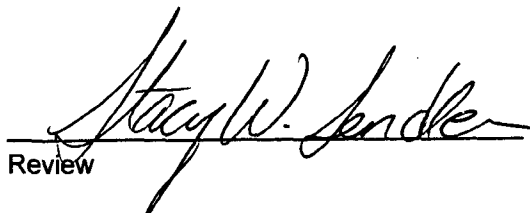
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	ND	0.1
Total Petroleum Hydrocarbons	ND	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Crouch Mesa.**


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified Nonhalogenated Volatile Organics Total Petroleum Hydrocarbons

Client: Blagg / AMOCO
Sample ID: Cell 4 @ 3'
Laboratory Number: D651
Chain of Custody No: 6170
Sample Matrix: Soil
Preservative: Cool
Condition: Cool and Intact

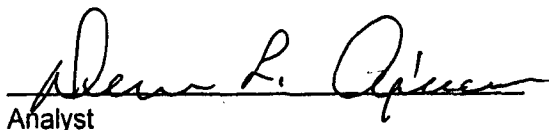
Project #: 04034-10
Date Reported: 07-17-98
Date Sampled: 07-16-98
Date Received: 07-16-98
Date Extracted: 07-17-98
Date Analyzed: 07-17-98
Analysis Requested: 8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	ND	0.1
Total Petroleum Hydrocarbons	ND	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa.


Analyst


Review

EPA Method 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	07-17-TPH QA/QC	Date Reported:	07-17-98
Laboratory Number:	D645	Date Sampled:	N/A
Sample Matrix:	Methylene Chloride	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	07-17-98
Condition:	N/A	Analysis Requested:	TPH

Calibration	I-Cal Date	I-Cal RF	C-Cal RF	% Difference	Accept. Range
Gasoline Range C5 - C10	04-28-98	4.2821E-02	4.0735E-02	4.87%	0 - 15%
Diesel Range C10 - C28	04-28-98	4.9964E-02	4.7521E-02	4.89%	0 - 15%

Blank Conc. (mg/L - mg/Kg)	Concentration	Detection Limit
Gasoline Range C5 - C10	ND	0.2
Diesel Range C10 - C28	ND	0.1
Total Petroleum Hydrocarbons	ND	0.2

Duplicate Conc. (mg/Kg)	Sample	Duplicate	% Difference	Accept. Range
Gasoline Range C5 - C10	377	374	0.8%	0 - 30%
Diesel Range C10 - C28	86.7	85.1	1.8%	0 - 30%

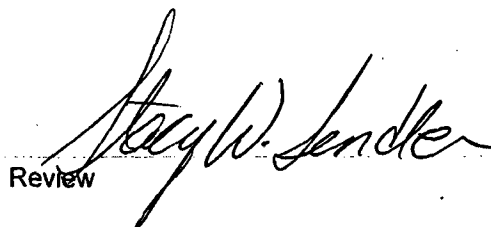
Spike Conc. (mg/Kg)	Sample	Spike Added	Spike Result	% Recovery	Accept. Range
Gasoline Range C5 - C10	377	250	626	100%	75 - 125%
Diesel Range C10 - C28	86.7	250	336	100%	75 - 125%

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Wast
SW-846, USEPA, December 1996.

Comments: QA/QC for samples D645 - D652, D654 and D656.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	Cell 1 @ 3'	Date Reported:	07-17-98
Laboratory Number:	D648	Date Sampled:	07-16-98
Chain of Custody:	6170	Date Received:	07-16-98
Sample Matrix:	Soil	Date Analyzed:	07-17-98
Preservative:	Cool	Date Extracted:	07-17-98
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	8.8
Toluene	ND	8.4
Ethylbenzene	ND	7.6
p,m-Xylene	ND	10.8
o-Xylene	ND	5.2
Total BTEX	ND	

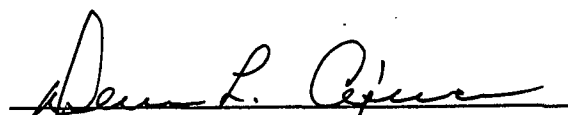
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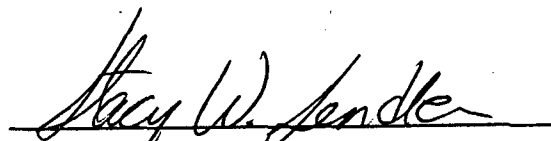
Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	101 %
	Bromofluorobenzene	101 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	Cell 2 @ 3'	Date Reported:	07-17-98
Laboratory Number:	D649	Date Sampled:	07-16-98
Chain of Custody:	6170	Date Received:	07-16-98
Sample Matrix:	Soil	Date Analyzed:	07-17-98
Preservative:	Cool	Date Extracted:	07-17-98
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	8.8
Toluene	ND	8.4
Ethylbenzene	ND	7.6
p,m-Xylene	ND	10.8
o-Xylene	ND	5.2
Total BTEX	ND	

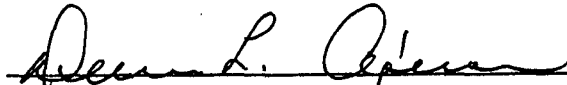
ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	98 %
	Bromofluorobenzene	98 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	Cell 3 @ 3'	Date Reported:	07-17-98
Laboratory Number:	D650	Date Sampled:	07-16-98
Chain of Custody:	6170	Date Received:	07-16-98
Sample Matrix:	Soil	Date Analyzed:	07-17-98
Preservative:	Cool	Date Extracted:	07-17-98
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	8.8
Toluene	ND	8.4
Ethylbenzene	ND	7.6
p,m-Xylene	ND	10.8
o-Xylene	ND	5.2
Total BTEX	ND	

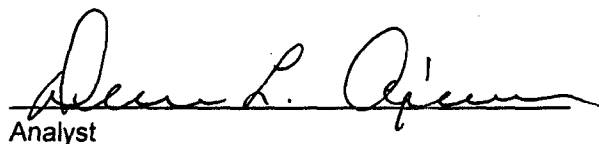
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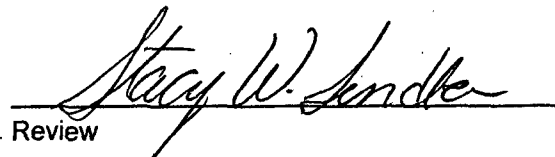
Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	101 %
	Bromofluorobenzene	101 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa.


Analyst


Review

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	Cell 4 @ 3'	Date Reported:	07-17-98
Laboratory Number:	D651	Date Sampled:	07-16-98
Chain of Custody:	6170	Date Received:	07-16-98
Sample Matrix:	Soil	Date Analyzed:	07-17-98
Preservative:	Cool	Date Extracted:	07-17-98
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	8.8
Toluene	ND	8.4
Ethylbenzene	ND	7.6
p,m-Xylene	ND	10.8
o-Xylene	ND	5.2
Total BTEX	ND	

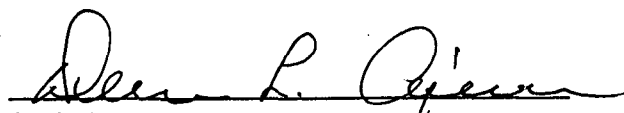
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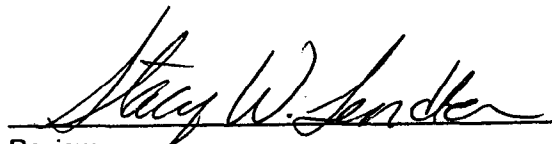
Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	97 %
	Bromofluorobenzene	97 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Crouch Mesa.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS QUALITY ASSURANCE REPORT

Client:	N/A	Project #:	N/A
Sample ID:	07-17-BTEX QA/QC	Date Reported:	07-17-98
Laboratory Number:	D645	Date Sampled:	N/A
Sample Matrix:	Soil	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	07-17-98
Condition:	N/A	Analysis:	BTEX

Calibration and Detection Limits (ug/L)	I-Cal RF:	C-Cal RF:	%Diff.	Blank Conc	Detect Limit
		Accept. Range 0 - 15%			
Benzene	2.4176E-01	2.4224E-01	0.2%	ND	0.2
Toluene	4.9646E-02	4.9795E-02	0.3%	ND	0.2
Ethylbenzene	4.1020E-02	4.1259E-02	0.6%	ND	0.2
p,m-Xylene	2.6433E-02	2.6620E-02	0.7%	ND	0.2
o-Xylene	3.0648E-02	3.0771E-02	0.4%	ND	0.1

Duplicate Conc. (ug/Kg)	Sample	Duplicate	%Diff	Accept Range	Detect Limit
Benzene	368	354	3.8%	0 - 30%	8.8
Toluene	4,970	4,750	4.4%	0 - 30%	8.4
Ethylbenzene	818	783	4.2%	0 - 30%	7.6
p,m-Xylene	20,160	19,340	4.1%	0 - 30%	10.8
o-Xylene	6,370	6,140	3.6%	0 - 30%	5.2

Spike Conc. (ug/Kg)	Sample	Amount Spiked	Spiked Sample	% Recovery	Accept Range
Benzene	368	50.0	416	99%	39 - 150
Toluene	4,970	50.0	5,020	100%	46 - 148
Ethylbenzene	818	50.0	866	100%	32 - 160
p,m-Xylene	20,160	100.0	20,260	100%	46 - 148
o-Xylene	6,370	50.0	6,420	100%	46 - 148

ND - Parameter not detected at the stated detection limit.

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.
Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: QA/QC for samples D645 - D651.

Analyst

Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

CATION / ANION ANALYSIS

Client: Blagg / AMOCO
Sample ID: Cell 1 @ 3'
Laboratory Number: D648
Chain of Custody: 6170
Sample Matrix: Soil
Preservative: Cool
Condition: Cool & Intact

Project #: 04034-10
Date Reported: 07-20-98
Date Sampled: 07-16-98
Date Received: 07-16-98
Date Extracted: 07-20-98
Date Analyzed: 07-20-98

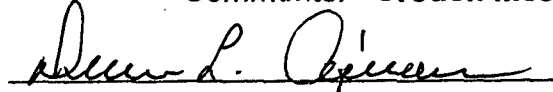
Parameter	Analytical Result	Units		Units
pH	7.39	s.u.		
Conductivity @ 25° C	782	umhos/cm		
Total Dissolved Solids @ 180C	390	mg/L		
Total Dissolved Solids (Calc)	289	mg/L		
SAR	3.1	ratio		
Total Alkalinity as CaCO3	15.6	mg/L		
Total Hardness as CaCO3	71.8	mg/L		
Bicarbonate as HCO3	15.6	mg/L	0.26	meq/L
Carbonate as CO3	<1	mg/L	0.00	meq/L
Hydroxide as OH	<1	mg/L	0.00	meq/L
Nitrate Nitrogen	1.0	mg/L	0.02	meq/L
Nitrite Nitrogen	0.029	mg/L	0.00	meq/L
Chloride	32.8	mg/L	0.93	meq/L
Fluoride	0.45	mg/L	0.02	meq/L
Phosphate	1.7	mg/L	0.05	meq/L
Sulfate	146	mg/L	3.04	meq/L
Calcium	24.0	mg/L	1.20	meq/L
Magnesium	2.88	mg/L	0.24	meq/L
Potassium	10.0	mg/L	0.26	meq/L
Sodium	60.2	mg/L	2.62	meq/L
Cations			4.31	meq/L
Anions			4.31	meq/L

Cation/Anion Difference

0.13%

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983
Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments: Crouch Mesa.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

CATION / ANION ANALYSIS

Client: Blagg / AMOCO
Sample ID: Cell 2 @ 3'
Laboratory Number: D649
Chain of Custody: 6170
Sample Matrix: Soil
Preservative: Cool
Condition: Cool & Intact

Project #: 04034-10
Date Reported: 07-20-98
Date Sampled: 07-16-98
Date Received: 07-16-98
Date Extracted: 07-20-98
Date Analyzed: 07-20-98

Parameter	Analytical Result	Units		Units
pH	6.77	s.u.		
Conductivity @ 25° C	2,210	umhos/cm		
Total Dissolved Solids @ 180C	1,100	mg/L		
Total Dissolved Solids (Calc)	910	mg/L		
SAR	2.2	ratio		
Total Alkalinity as CaCO3	17.2	mg/L		
Total Hardness as CaCO3	410	mg/L		
Bicarbonate as HCO3	17.2	mg/L	0.28	meq/L
Carbonate as CO3	<1	mg/L	0.00	meq/L
Hydroxide as OH	<1	mg/L	0.00	meq/L
Nitrate Nitrogen	10.0	mg/L	0.16	meq/L
Nitrite Nitrogen	0.234	mg/L	0.01	meq/L
Chloride	40.0	mg/L	1.13	meq/L
Fluoride	0.89	mg/L	0.05	meq/L
Phosphate	1.7	mg/L	0.05	meq/L
Sulfate	560	mg/L	11.66	meq/L
Calcium	145	mg/L	7.24	meq/L
Magnesium	11.6	mg/L	0.95	meq/L
Potassium	28.5	mg/L	0.73	meq/L
Sodium	102	mg/L	4.44	meq/L
Cations			13.36	meq/L
Anions			13.34	meq/L
Cation/Anion Difference			0.15%	

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983
Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments: Crouch Mesa.

Analyst

Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

CATION / ANION ANALYSIS

Client: Blagg / AMOCO
Sample ID: Cell 3 @ 3'
Laboratory Number: D650
Chain of Custody: 6170
Sample Matrix: Soil
Preservative: Cool
Condition: Cool & Intact

Project #: 04034-10
Date Reported: 07-20-98
Date Sampled: 07-16-98
Date Received: 07-16-98
Date Extracted: 07-20-98
Date Analyzed: 07-20-98

Parameter	Analytical Result	Units	Units
pH	6.71	s.u.	
Conductivity @ 25° C	2,085	umhos/cm	
Total Dissolved Solids @ 180C	1,040	mg/L	
Total Dissolved Solids (Calc)	901	mg/L	
SAR	2.3	ratio	
Total Alkalinity as CaCO3	10.8	mg/L	
Total Hardness as CaCO3	550	mg/L	
Bicarbonate as HCO3	10.8	mg/L	0.18 meq/L
Carbonate as CO3	<1	mg/L	0.00 meq/L
Hydroxide as OH	<1	mg/L	0.00 meq/L
Nitrate Nitrogen	1.3	mg/L	0.02 meq/L
Nitrite Nitrogen	0.031	mg/L	0.00 meq/L
Chloride	18.8	mg/L	0.53 meq/L
Fluoride	1.18	mg/L	0.06 meq/L
Phosphate	0.8	mg/L	0.03 meq/L
Sulfate	602	mg/L	12.53 meq/L
Calcium	138	mg/L	6.89 meq/L
Magnesium	19.9	mg/L	1.64 meq/L
Potassium	4.5	mg/L	0.12 meq/L
Sodium	108	mg/L	4.70 meq/L
Cations			13.34 meq/L
Anions			13.35 meq/L
Cation/Anion Difference			0.10%

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983
Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments: Crouch Mesa.

Analyst

Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

CATION / ANION ANALYSIS

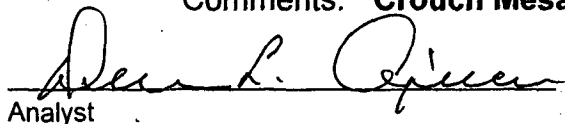
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Sample ID: Cell 4 @ 3'
Laboratory Number: D651
Chain of Custody: 6170
Sample Matrix: Soil
Preservative: Cool
Condition: Cool & Intact

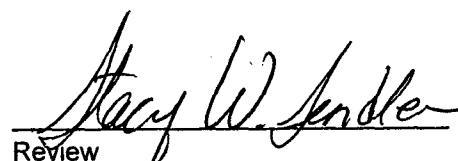
Project #: 04034-10
Date Reported: 07-20-98
Date Sampled: 07-16-98
Date Received: 07-16-98
Date Extracted: 07-20-98
Date Analyzed: 07-20-98

Parameter	Analytical Result	Units		Units
pH	6.67	s.u.		
Conductivity @ 25° C	2,130	umhos/cm		
Total Dissolved Solids @ 180C	1,065	mg/L		
Total Dissolved Solids (Calc)	853	mg/L		
SAR	2.8	ratio		
Total Alkalinity as CaCO3	15.8	mg/L		
Total Hardness as CaCO3	374	mg/L		
Bicarbonate as HCO3	15.8	mg/L	0.26	meq/L
Carbonate as CO3	<1	mg/L	0.00	meq/L
Hydroxide as OH	<1	mg/L	0.00	meq/L
Nitrate Nitrogen	2.4	mg/L	0.04	meq/L
Nitrite Nitrogen	0.232	mg/L	0.01	meq/L
Chloride	98.0	mg/L	2.76	meq/L
Fluoride	0.94	mg/L	0.05	meq/L
Phosphate	0.6	mg/L	0.02	meq/L
Sulfate	472	mg/L	9.83	meq/L
Calcium	127	mg/L	6.34	meq/L
Magnesium	14.0	mg/L	1.15	meq/L
Potassium	4.0	mg/L	0.10	meq/L
Sodium	124	mg/L	5.39	meq/L
Cations			12.99	meq/L
Anions			12.96	meq/L
Cation/Anion Difference			0.18%	

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983
Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments: Crouch Mesa.


Analyst


Review

Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	Cell 1 @ 3'	Date Reported:	07-20-98
Laboratory Number:	D648	Date Sampled:	07-16-98
Chain of Custody:	6170	Date Received:	07-16-98
Sample Matrix:	Soil	Date Analyzed:	07-20-98
Preservative:	Cool	Date Digested:	07-20-98
Condition:	Cool & Intact	Analysis Needed:	Trace Metals

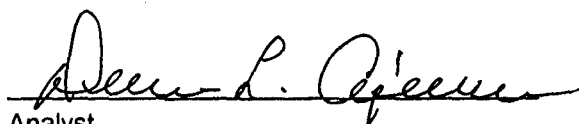
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Arsenic	ND	0.0025
Barium	44.1	0.0025
Cadmium	0.630	0.0025
Chromium	4.60	0.0025
Lead	1.36	0.0025
Mercury	ND	0.0025
Selenium	ND	0.0025
Silver	ND	0.0025

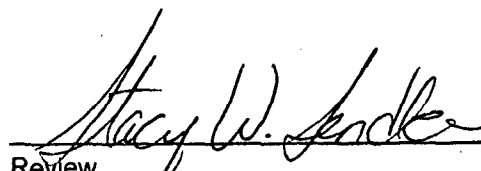
ND - Parameter not detected at the stated detection limit.

References: Method 3050B, Acid Digestion of Sediments, Sludges and Soils.
SW-846, USEPA, December 1996.

Methods 7060B, 7081, 7131A, 7191, 7470A, 7421, 7740, 7761 Analysis of Metals by
GFAA and Cold Vapor Techniques, SW-846, USEPA, December 1996.

Comments: **Crouch Mesa.**


Analyst


Review

Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	Cell 2 @ 3'	Date Reported:	07-20-98
Laboratory Number:	D649	Date Sampled:	07-16-98
Chain of Custody:	6170	Date Received:	07-16-98
Sample Matrix:	Soil	Date Analyzed:	07-20-98
Preservative:	Cool	Date Digested:	07-20-98
Condition:	Cool & Intact	Analysis Needed:	Trace Metals

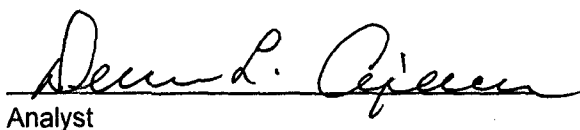
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Arsenic	ND	0.0025
Barium	89.1	0.0025
Cadmium	0.822	0.0025
Chromium	1.76	0.0025
Lead	1.16	0.0025
Mercury	ND	0.0025
Selenium	ND	0.0025
Silver	ND	0.0025

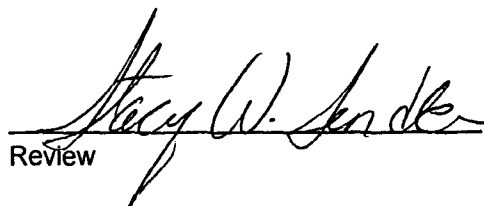
ND - Parameter not detected at the stated detection limit.

References: Method 3050B, Acid Digestion of Sediments, Sludges and Soils.
SW-846, USEPA, December 1996.

Methods 7060B, 7081, 7131A, 7191, 7470A, 7421, 7740, 7761 Analysis of Metals by
GFAA and Cold Vapor Techniques, SW-846, USEPA, December 1996.

Comments: **Crouch Mesa.**


Analyst


Review

Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	Cell 3 @ 3'	Date Reported:	07-20-98
Laboratory Number:	D650	Date Sampled:	07-16-98
Chain of Custody:	6170	Date Received:	07-16-98
Sample Matrix:	Soil	Date Analyzed:	07-20-98
Preservative:	Cool	Date Digested:	07-20-98
Condition:	Cool & Intact	Analysis Needed:	Trace Metals

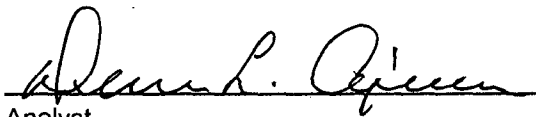
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Arsenic	ND	0.0025
Barium	61.0	0.0025
Cadmium	0.282	0.0025
Chromium	4.44	0.0025
Lead	2.69	0.0025
Mercury	ND	0.0025
Selenium	ND	0.0025
Silver	ND	0.0025

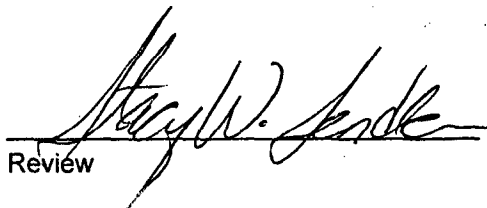
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References: Method 3050B, Acid Digestion of Sediments, Sludges and Soils.
SW-846, USEPA, December 1996.

Methods 7060B, 7081, 7131A, 7191, 7470A, 7421, 7740, 7761 Analysis of Metals by
GFAA and Cold Vapor Techniques, SW-846, USEPA, December 1996.

Comments: **Crouch Mesa.**


Analyst


Review

Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	Cell 4 @ 3'	Date Reported:	07-20-98
Laboratory Number:	D651	Date Sampled:	07-16-98
Chain of Custody:	6170	Date Received:	07-16-98
Sample Matrix:	Soil	Date Analyzed:	07-20-98
Preservative:	Cool	Date Digested:	07-20-98
Condition:	Cool & Intact	Analysis Needed:	Trace Metals

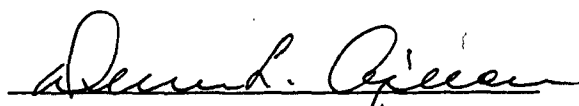
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Arsenic	ND	0.0025
Barium	101	0.0025
Cadmium	0.030	0.0025
Chromium	2.17	0.0025
Lead	1.97	0.0025
Mercury	ND	0.0025
Selenium	ND	0.0025
Silver	ND	0.0025

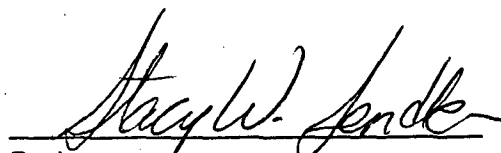
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References: Method 3050B, Acid Digestion of Sediments, Sludges and Soils.
SW-846, USEPA, December 1996.

Methods 7060B, 7081, 7131A, 7191, 7470A, 7421, 7740, 7761 Analysis of Metals by
GFAA and Cold Vapor Techniques, SW-846, USEPA, December 1996.

Comments: **Crouch Mesa.**


Analyst


Review

TRACE METAL ANALYSIS Quality Control / Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	07-20-TM QA/QC	Date Reported:	07-20-98
Laboratory Number:	D648	Date Sampled:	N/A
Sample Matrix:	Soil	Date Received:	N/A
Analysis Requested:	Trace Metals	Date Analyzed:	07-20-98
Condition:	N/A	Date Digested:	07-20-98

Blank & Duplicate Conc. (mg/Kg)	Instrument Blank (mg/Kg)	Method Blank	Detection Limit	Sample	Duplicate	% Diff	Acceptance Range
Arsenic	ND	ND	0.0025	ND	ND	0.0%	0% - 30%
Barium	ND	ND	0.0025	44.1	44.2	0.2%	0% - 30%
Cadmium	ND	ND	0.0025	0.630	0.628	0.3%	0% - 30%
Chromium	ND	ND	0.0025	4.60	4.61	0.2%	0% - 30%
Lead	ND	ND	0.0025	1.36	1.36	0.0%	0% - 30%
Mercury	ND	ND	0.0025	ND	ND	0.0%	0% - 30%
Selenium	ND	ND	0.0025	ND	ND	0.0%	0% - 30%
Silver	ND	ND	0.0025	ND	ND	0.0%	0% - 30%

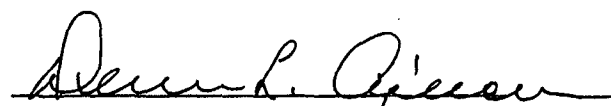
Spike Conc. (mg/Kg)	Spike Added	Sample	Spiked Sample	Percent Recovery	Acceptance Range
Arsenic	2.500	ND	2.49	100%	80% - 120%
Barium	25.0	44.1	69.0	100%	80% - 120%
Cadmium	1.250	0.630	1.88	100%	80% - 120%
Chromium	1.250	4.60	5.84	100%	80% - 120%
Lead	2.500	1.36	3.85	100%	80% - 120%
Mercury	0.625	ND	0.622	100%	80% - 120%
Selenium	2.500	ND	2.50	100%	80% - 120%
Silver	1.250	ND	1.25	100%	80% - 120%

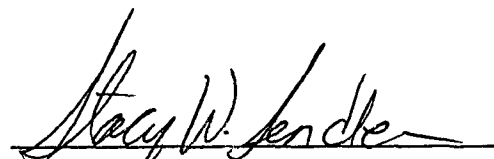
ND - Parameter not detected at the stated detection limit.

References: Method 3050B, Acid Digestion of Sediments, Sludges and Soils.
SW-846, USEPA, December 1996.

Methods 7060B, 7081, 7131A, 7191, 7470A, 7421, 7740, 7761 Analysis of Metals by
GFAA and Cold Vapor Techniques, SW-846, USEPA, December 1996.

Comments: QA/QC for samples D648 - D651.


Analyst


Review

Memo to file

Date: January 8, 1999
Request: Jeff Blagg, Blagg Engineering for Amoco
Approved: Martyne Kieling, OCD Environmental Bureau *Martyne Kieling*
Copy: Denny Foust, OCD Aztec Office

Crouch Mesa Permit NM-02-0003

Treatment Zone Monitoring for BTEX

Amoco may use PID vapor head space measurements for treatment zone monitoring of BTEX for three (3) of the four (4) quarters. The fourth quarter BTEX samples will be sent for laboratory analysis. If a PID reading of 100 ppm is recorded a second sample will be sent for laboratory conformation. TPH and BTEX will be measured quarterly and major cation/anion and heavy metals annually. If leaching or movement of contaminant occurred to the subsurface the contaminated material will be removed.

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8020 AROMATIC VOLATILE ORGANICS

Client:	Blagg / Amoco	Project #:	04034-10
Sample ID:	DMA - 1	Date Reported:	05-20-97
Laboratory Number:	B215	Date Sampled:	05-13-97
Chain of Custody:	5092	Date Received:	05-13-97
Sample Matrix:	Soil	Date Analyzed:	05-20-97
Preservative:	Cool	Date Extracted:	05-20-97
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	8.8
Toluene	ND	8.4
Ethylbenzene	13.6	7.6
p,m-Xylene	112	10.8
o-Xylene	24.2	5.2
Total BTEX	150	

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EPA 9

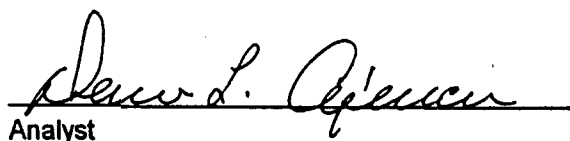
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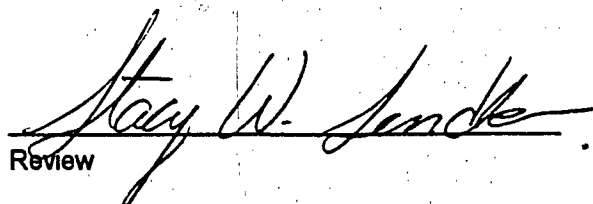
Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	98 %
	Bromofluorobenzene	99 %

References: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1994.

Comments: Amoco Compost Facility. Grab Sample.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8020 AROMATIC VOLATILE ORGANICS

Client:	Blagg / Amoco	Project #:	04034-10
Sample ID:	SPA - 1	Date Reported:	05-20-97
Laboratory Number:	B216	Date Sampled:	05-13-97
Chain of Custody:	5092	Date Received:	05-13-97
Sample Matrix:	Soil	Date Analyzed:	05-20-97
Preservative:	Cool	Date Extracted:	05-20-97
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	8.8
Toluene	ND	8.4
Ethylbenzene	12.5	7.6
p,m-Xylene	124	10.8
o-Xylene	31.9	5.2
Total BTEX	168	

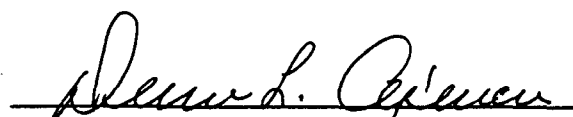
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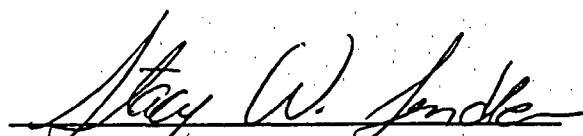
Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	99 %
	Bromofluorobenzene	99 %

References: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1994.

Comments: Amoco Compost Facility. 5 Pt. Composite.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

QUALITY ASSURANCE / QUALITY CONTROL DOCUMENTATION

Client:	QA/QC	Project #:	N/A
Sample ID:	Laboratory Blank	Date Reported:	05-20-97
Laboratory Number:	05-20-BTEX.BLANK	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	05-20-97
Condition:	N/A	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	ND	0.2
Toluene	ND	0.2
Ethylbenzene	ND	0.2
p,m-Xylene	ND	0.2
o-Xylene	ND	0.1

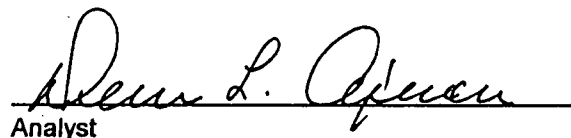
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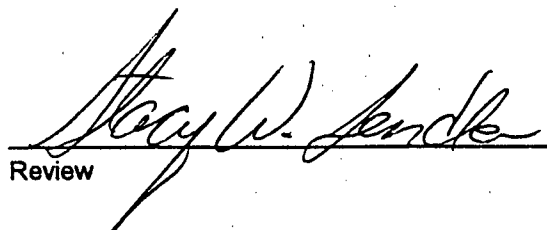
Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	98 %
	Bromofluorobenzene	100 %

References: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1994.

Comments: QA/QC for samples B215 - B216 and B258 - B260.


Analyst


Review

Client:	QA/QC	Project #:	N/A
Sample ID:	Matrix Duplicate	Date Reported:	05-20-97
Laboratory Number:	B258	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Preservative:	HgCl and Cool	Date Analyzed:	05-20-97
Condition:	Cool and Intact	Analysis Requested:	BTEX-MTBE

Parameter	Sample Result (ug/L)	Duplicate Result (ug/L)	Percent Diff.	Det. Limit (ug/L)	Dilution Factor
Benzene	ND	ND	0.0%	0.2	1
Toluene	ND	ND	0.0%	0.2	1
Ethylbenzene	ND	ND	0.0%	0.2	1
p,m-Xylene	0.6	0.6	0.0%	0.2	1
o-Xylene	0.1	0.1	0.0%	0.1	1

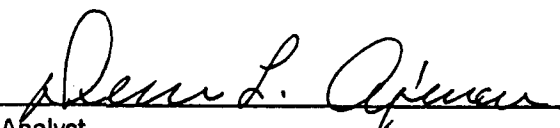
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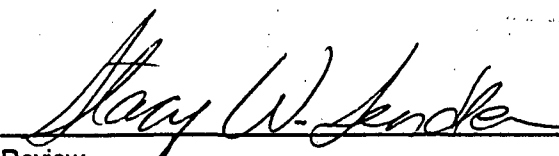
QA/QC Acceptance Criteria:	Parameter	Maximum Difference
	8020 Compounds	30 %

References: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1994.

Comments: QA/QC for samples B215 - B216 and B258 - B260.


Analyst


Review

Client: QA/QC
Sample ID: Matrix Spike
Laboratory Number: B258
Sample Matrix: Water
Preservative: Cool
Condition: Cool and Intact

Project #: N/A
Date Reported: 05-20-97
Date Sampled: N/A
Date Received: N/A
Date Analyzed: 05-20-97

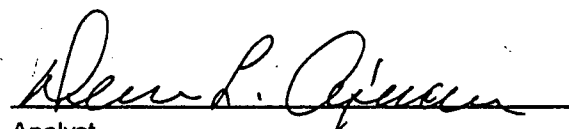
Parameter	Sample Result (ug/L)	Spike Added (ug/L)	Spiked Sample Result (ug/L)	Det. Limit (ug/L)	Percent Recovery	SW-846 % Rec. Accept. Range
Benzene	ND	50.0	50.3	0.2	101%	39-150
Toluene	ND	50.0	50.4	0.2	101%	46-148
Ethylbenzene	ND	50.0	50.3	0.2	101%	32-160
p,m-Xylene	0.6	100	101	0.2	100%	46-148
o-Xylene	0.1	50.0	50.4	0.1	100%	46-148

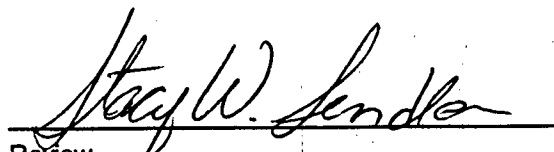
ND - Parameter not detected at the stated detection limit.

References: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1994.

Comments: QA/QC for samples B215 - B216 and B258 - B260.


Analyst


Review

Client/Project Name		Project Location		ANALYSIS/PARAMETERS							
Sampler: (Signature)		Chain of Custody Tape No.						Remarks			
Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers						
DMA-1	5/13/97	1115	B215	S012	1	✓	✓				PRESERV. - COOL
SPA-1	5/13/97	1130	B216	S012	1	✓	✓				DMA-1 GRAB SPA-1 5 PT. COMPOSITE
Relinquished by: (Signature)		Date	Time	Received by: (Signature)							
Sharon Vitz		5/13/97	1213	Robert J. O'Brien							
Relinquished by: (Signature)				Received by: (Signature)							
Relinquished by: (Signature)				Received by: (Signature)							

ENVIROTECH INC.
5796 U.S. Highway 64-3014
Farmington, New Mexico 87401
(505) 632-0615

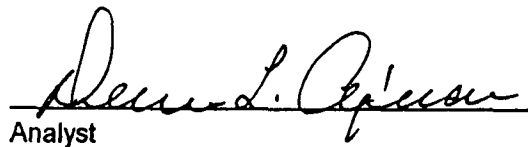
Client:	Blagg / Amoco	Project #:	04034
Sample ID:	DMA - 1	Date Reported:	05-14-97
Laboratory Number:	B215	Date Sampled:	05-13-97
Chain of Custody No:	5092	Date Received:	05-13-97
Sample Matrix:	Soil	Date Extracted:	05-13-97
Preservative:	Cool	Date Analyzed:	05-13-97
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	ND	0.1
Total Petroleum Hydrocarbons	ND	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.

Comments: Amoco Compost Facility. Grab Sample.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified Nonhalogenated Volatile Organics Total Petroleum Hydrocarbons

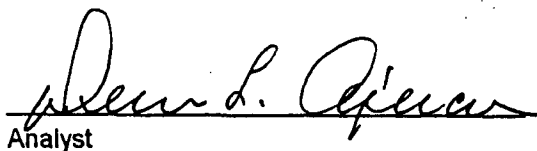
Client:	Blagg / Amoco	Project #:	04034
Sample ID:	SPA - 1	Date Reported:	05-14-97
Laboratory Number:	B216	Date Sampled:	05-13-97
Chain of Custody No:	5092	Date Received:	05-13-97
Sample Matrix:	Soil	Date Extracted:	05-13-97
Preservative:	Cool	Date Analyzed:	05-13-97
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	34.9	0.1
Total Petroleum Hydrocarbons	34.9	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.

Comments: Amoco Compost Facility. 5 Pt. Composite.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

QUALITY ASSURANCE / QUALITY CONTROL DOCUMENTATION

EPA Method 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Quality Assurance Report

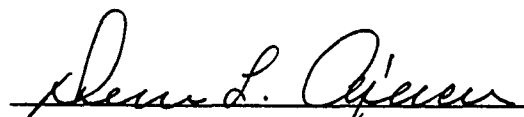
Client:	QA/QC	Project #:	N/A
Sample ID:	Laboratory Blank	Date Reported:	05-14-97
Laboratory Number:	05-13-TPH.BLANK	Date Sampled:	N/A
Sample Matrix:	Methylene Chloride	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	05-13-97
Condition:	N/A	Analysis Requested:	TPH

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Gasoline Range C5 - C10	ND	0.2
Diesel Range C10 - C28	ND	0.1
Total Petroleum Hydrocarbons	ND	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.

Comments: QA/QC for sample B208 - B216.


Analyst


Review

Client:	QA/QC	Project #:	N/A
Sample ID:	Matrix Duplicate	Date Reported:	05-14-97
Laboratory Number:	8015	Date Sampled:	N/A
Sample Matrix:	Soil	Date Received:	N/A
Preservative:	Cool	Date Analyzed:	05-13-97
Condition:	Cool and Intact	Analysis Requested:	TPH

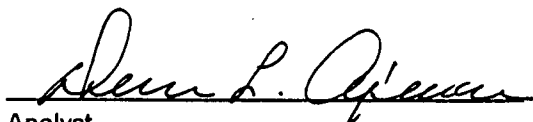
Parameter	Sample Result (mg/Kg)	Duplicate Result (mg/Kg)	Percent Difference
Gasoline Range (C5 - C10)	2.9	2.9	0.0%
Diesel Range (C10 - C28)	ND	ND	0.0%
Total Petroleum Hydrocarbons	2.9	2.9	0.0%

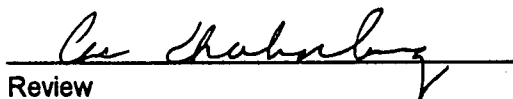
ND - Parameter not detected at the stated detection limit.

QA/QC Acceptance Criteria:	Parameter	Max Difference
	Petroleum Hydrocarbons	30%

References: Method 8015, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.

Comments: QA/QC for sample B208 - B216.


Analyst


Review

EPA METHOD 8015 Modified
Nonhalogenated Volatile Hydrocarbons
Total Petroleum Hydrocarbons
Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	Matrix Spike	Date Reported:	05-14-97
Laboratory Number:	8015	Date Sampled:	N/A
Sample Matrix:	Soil	Date Received:	N/A
Analysis Requested:	TPH	Date Analyzed:	05-13-97
Condition:	N/A		

Parameter	Sample Result (mg/kg)	Spike Added (mg/kg)	Spiked Sample Result (mg/kg)	Det. Limit (mg/kg)	Percent Recovery
Gasoline Range (C5 - C10)	2.9	250	250	0.2	99%
Diesel Range (C10 - C28)	ND	250	250	0.1	100%
Total Petroleum Hydrocarbons	2.9	500	500	0.2	99%

ND - Parameter not detected at the stated detection limit.

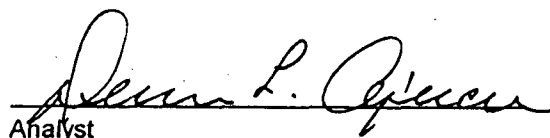
QA/QC Acceptance Criteria:	Parameter	Acceptance Range
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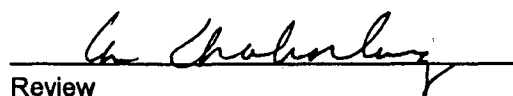
Petroleum Hydrocarbons

75 - 125%

References: Method 8015, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.

Comments: QA/QC for sample B208 - B216.


Analyst


Review