3R - 108

REPORTS

DATE:

JAN 2000

BLAGG ENGINEERING, INC.
P.O. Box 87, Bloomfield, New Mexico 87413
Phone: (505) 632-1199 Fax: (505) 632-3903

January 31, 2000

Mr. Denny G. Foust -Environmental Geologist
New Mexico Oil Conservation Division - (NMOCD)
1000 Rio Brazos Road
Aztec, New Mexico 87410

RE: Cross Timbers Oil Co. Duff GC C # 1 Spill Cleanup Report
Unit M, SEC. 27, T30N, R12W, San Juan County, New Mexico

Dear Mr. Foust:

On behalf of Cross Timbers Oil Company, Blagg Engineering, Inc. (BEI) respectfully submits the attached report affiliated with the Duff GC C # 1 spill release (approximately 95 barrels) which occurred on October 21, 1999.

In briefly summarizing the cleanup effort which took place between November 2nd and 3rd, 1999, approximately 350 cubic yards of impacted soil was removed and landfarmed on-site. The excavation perimeter was arbitrarily and judgmentally sampled during and upon completion of the excavation activity (refer to Figure 1 for sample locations). In reviewing the field and analytical results, it appears that vertical extent has been established on the west side of the excavation (surface gradient direction) where the majority of the release settled (utilizing test hole boring: TH-1 @ 13 ft. information). In addition, sandstone bedrock was encountered during the investigation at varying depths primarily on the west side (refer to Figure 1). The following table discloses the significant field and laboratory results:

SAMPLE ID	OVM (ppm)	TPH (ppm)	BENZENE (ppb)	TOTAL BTEX (ppb)
TH-1 @ 13 ft.	803	958	645	49,380
PBE @ 13 ft.	337	3,000	417	15,390
SSWC @ 7 ft.	386	1,230	104	11,190
closure standards	100 ppm	1,000 ppm	10,000 ppb	50,000 ppb

OVM = organic vapor meter; TPH = total petroleum hydrocarbons; BTEX = benzene, toluene, ethylbenzene, total xylenes.
ppm = parts per million; ppb = parts per billion; PBE = pit bottom east side; SSWC = south sidewall 5 point composite.

Based upon the attached information given, Cross Timbers Oil Company is requesting closure based on risk assessment. Any remaining soil contamination does not appear to pose a present or future threat to groundwater (estimated at a depth greater than 50 feet), health, or the environment.

If you have any questions or comments concerning this report, please contact myself or Jeff Blagg at the address or phone number listed above. Thank you for your cooperation.

Respectfully submitted,
Blagg Engineering, Inc.

Nelson J. Velez
Staff Geologist

Attachments: Spill Cleanup Report

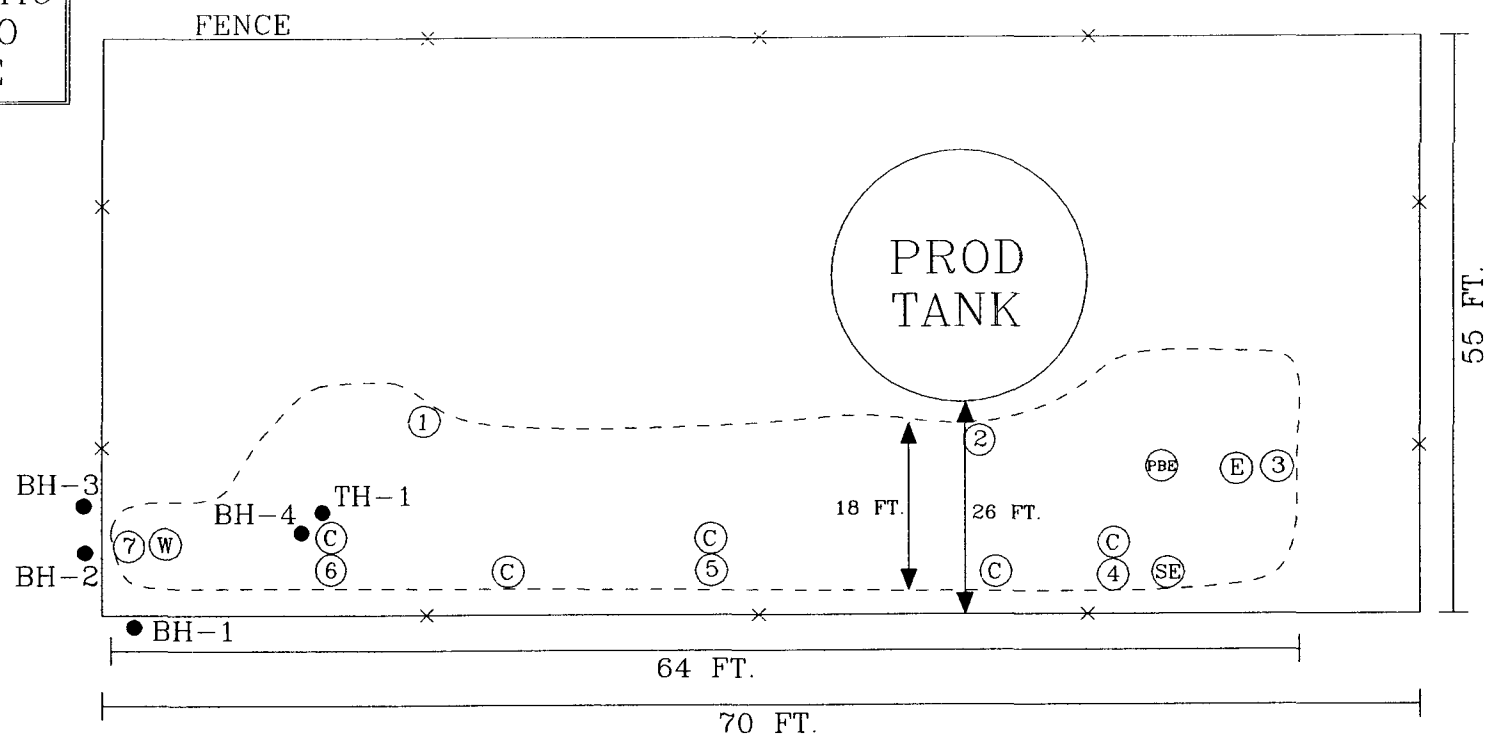
xc: Bill Olson, Hydrologist, NMOCD, Santa Fe Office, NM
Terry Matthews, Regional Supervisor, Cross Timbers Oil Co., Farmington, NM

NJV/njv

DUFF-C1.CVL

FIGURE 1

SCHEMATIC NOT TO SCALE



BH-1, BH-2, & BH-3 ALL ENCOUNTERED BEDROCK @ 6 FT. BELOW GRADE.

BH-4 ENCOUNTERED BED-ROCK @ 12 FT. BELOW GRADE.

TH-1 SEE ATTACHED SITE ASSESSMENT SHEET.

TO WELL HEAD

NOV. 2, 1999

SAMP. PT. ID	OVM READING (ppm)
E @ 7 FT.	296
SE @ 9 FT.	245
W @ 8 FT.	192

NOTES : © DENOTES SAMPLE AREA FOR SSWC 5 PT. COMPOSITE OVM AND LAB ANALYSIS [TPH (8015) & BTEX (8021)].

SSWC = SOUTH SIDEWALL COMPOSITE.
PBE = PIT BOTTOM AT EAST SIDE.

NOV. 3, 1999

SAMP. PT. ID	OVM READING (ppm)
1 @ 7 FT.	86.5
2 @ 8 FT.	320
3 @ 7 FT.	290
4 @ 7 FT.	269
5 @ 7 FT.	8.0
6 @ 7 FT.	290
7 @ 7 FT.	64.9
PBE @ 13 FT.	337
SSWC @ 7 FT.	386

CROSS TIMBERS OIL COMPANY

DUFF GC C #1

SW/4 SW/4 SEC. 27, T30N, R12W

SAN JUAN COUNTY, NEW MEXICO

BLAGG ENGINEERING, INC.
CONSULTING PETROLEUM / RECLAMATION SERVICES
P.O. BOX 87
BLOOMFIELD, NEW MEXICO 87413
PHONE: (505) 632-1199

PROJECT: SPILL CLEAN UP

DRAWN BY: NJV

FILENAME: DUFF-MAP.SKD

SITE MAP

11/99

CLIENT: CROSS TIMBERS

BLAGG ENGINEERING, INC.

P.O. BOX 87, BLOOMFIELD, NM 87413
(505) 632-1199

PIT NO: 7513
C.O.C. NO: 7442

FIELD REPORT: SITE ASSESSMENT

JOB No: _____
PAGE No: 1 of _____

PROJECT: ~~PIT~~ ASSESSMENT SPILL
CONTRACTOR: _____
EQUIPMENT USED: HAND AUGER

DATE STARTED: 10/26/99
DATE FINISHED: _____
ENVIRO. SPCLT: JCB
OPERATOR: REP

LOCATION: DUFF GC C #1 SPILL ~~PIT~~ TYPE: ~~STOCK~~ PROD. TANK
QUAD/UNIT: M SEC: 27 TWP: 30N RNG: 12W PM: NM CNTY: SJ ST: NM
QTR/FOOTAGES: SW/4 SW/4 LEASE #: _____
LAND USE: FEE - PRIVATE SURFACE CONDITIONS: STAINED

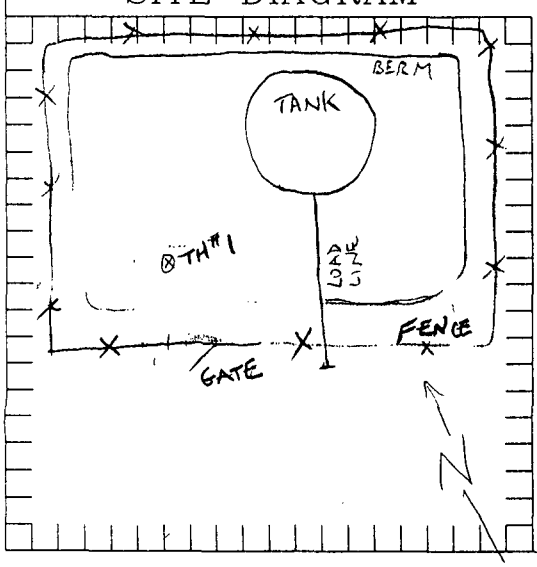
FIELD NOTES & REMARKS: PIT IS LOCATED APPROXIMATELY ____ FEET _____ OF WELLHEAD.
DEPTH TO G.W: <100' NEAREST WATER SOURCE: >1000' NEAREST SURFACE WATER >1000'
RANKING SCORE: 10 CLOSURE STD: 1000

SAMPLE INVENTORY		
SMPL ID:	SMPL TYPE:	LABORATORY ANALYSIS:
TH1@13'	SOIL	8015/8021

TH#1: SILTY SAND 0'-11'. YELLOW TAN, NON COHESIVE, DRY TO MOIST STRONG HC ODOR, NO STAIN. LITH CHANGE @ 11' TO BROWN TAN CLAYEY SILT, LIGHTLY COHESIVE, MOIST. STRONG HC ODOR, NO STAIN.

SCALE
0 FEET

SITE DIAGRAM



TEST HOLE LOGS:

TH#: 1

	SOIL TYPE:	SMPL TYPE:	OVM/TPH
1	SN		
2			452
3			
4			704
5			
6			1075
7			
8			714
9			
10			843
11			
12	SC		
13	TD 13'		803
14			
15			

TH#: _____ SOIL TYPE: SMPL TYPE: OVM/TPH

TH#: _____ SOIL TYPE: SMPL TYPE: OVM/TPH

TH#: _____ SOIL TYPE: SMPL TYPE: OVM/TPH

SOIL TYPE: C - Clay, M - Silt, S - Sand, G - Gravel Plasticity: L - None, H - Plastic Grading: P - Poorly, W - Well

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Client:	Blagg / Cross Timbers	Project #:	403410
Sample ID:	TH #1 @ 13'	Date Reported:	10-27-99
Laboratory Number:	G241	Date Sampled:	10-26-99
Chain of Custody No:	7513	Date Received:	10-26-99
Sample Matrix:	Soil	Date Extracted:	10-27-99
Preservative:	Cool	Date Analyzed:	10-27-99
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	**881**	**0.2**
Diesel Range (C10 - C28)	**76.9**	**0.1**
Total Petroleum Hydrocarbons	**958**	**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: **Duff GC C #1.**

Analyst

Review

5796 U.S. Highway 64 • Farmington, NM 87401 • Tel 505 • 632 • 0615 • Fax 505 • 632 • 1865

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Client:	Blagg / Cross Timbers	Project #:	403410
Sample ID:	PBE @ 13'	Date Reported:	11-07-99
Laboratory Number:	G368	Date Sampled:	11-03-99
Chain of Custody No:	7442	Date Received:	11-03-99
Sample Matrix:	Soil	Date Extracted:	11-03-99
Preservative:	Cool	Date Analyzed:	11-04-99
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	**2,770**	**0.2**
Diesel Range (C10 - C28)	**227**	**0.1**
Total Petroleum Hydrocarbons	**3,000**	**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: **Duff GC C #1 Tank Spill.**

Analyst

Review

5796 U.S. Highway 64 • Farmington, NM 87401 • Tel 505 • 632 • 0615 • Fax 505 • 632 • 1865

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Client:	Blagg / Cross Timbers	Project #:	403410
Sample ID:	SSWC @ 7'	Date Reported:	11-07-99
Laboratory Number:	G369	Date Sampled:	11-03-99
Chain of Custody No:	7442	Date Received:	11-03-99
Sample Matrix:	Soil	Date Extracted:	11-03-99
Preservative:	Cool	Date Analyzed:	11-04-99
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	**1,100**	**0.2**
Diesel Range (C10 - C28)	**132**	**0.1**
Total Petroleum Hydrocarbons	**1,230**	**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: **Duff GC C #1 Tank Spill.**

Analyst

Review

5796 U.S. Highway 64 • Farmington, NM 87401 • Tel 505 • 632 • 0615 • Fax 505 • 632 • 1865

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Blagg / Cross Timbers	Project #:	403410
Sample ID:	TH #1 @ 13'	Date Reported:	10-27-99
Laboratory Number:	G241	Date Sampled:	10-26-99
Chain of Custody:	7513	Date Received:	10-26-99
Sample Matrix:	Soil	Date Analyzed:	10-27-99
Preservative:	Cool	Date Extracted:	10-27-99
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	**645**	**8.8**
Toluene	**1,530**	**8.4**
Ethylbenzene	**5,980**	**7.6**
p,m-Xylene	**25,790**	**10.8**
o-Xylene	**15,440**	**5.2**
Total BTEX	**49,380**	

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: **Duff GC C #1.**

Analyst

Review

5796 U.S. Highway 64 • Farmington, NM 87401 • Tel 505 • 632 • 0615 • Fax 505 • 632 • 1865

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Blagg / Cross Timbers	Project #:	403410
Sample ID:	PBE @ 13'	Date Reported:	11-07-99
Laboratory Number:	G368	Date Sampled:	11-03-99
Chain of Custody:	7442	Date Received:	11-03-99
Sample Matrix:	Soil	Date Analyzed:	11-04-99
Preservative:	Cool	Date Extracted:	11-03-99
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	**417**	**8.8**
Toluene	**830**	**8.4**
Ethylbenzene	**1,470**	**7.6**
p,m-Xylene	**8,540**	**10.8**
o-Xylene	**4,130**	**5.2**
Total BTEX	**15,390**	

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: **Duff GC C #1 Tank Spill.**

Analyst

Review

5796 U.S. Highway 64 • Farmington, NM 87401 • Tel 505 • 632 • 0615 • Fax 505 • 632 • 1865

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Blagg / Cross Timbers	Project #:	403410
Sample ID:	SSWC @ 7'	Date Reported:	11-07-99
Laboratory Number:	G369	Date Sampled:	11-03-99
Chain of Custody:	7442	Date Received:	11-03-99
Sample Matrix:	Soil	Date Analyzed:	11-04-99
Preservative:	Cool	Date Extracted:	11-03-99
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	**104**	**8.8**
Toluene	**1,040**	**8.4**
Ethylbenzene	**171**	**7.6**
p,m-Xylene	**9,430**	**10.8**
o-Xylene	**443**	**5.2**
Total BTEX	**11,190**	

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: **Duff GC C #1 Tank Spill.**

Analyst

Review

5796 U.S. Highway 64 • Farmington, NM 87401 • Tel 505 • 632 • 0615 • Fax 505 • 632 • 1865

CHAIN OF CUSTODY RECORD

7513

Client / Project Name	Project Location	ANALYSIS / PARAMETERS
BLAGG/CROSS TIMBER	DUFF GC C #1	
Sampler: J-C. Blagg	Client No. 403410	

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	TPH 8015	BTEX 8021					Remarks
TH #1 @ 13'	10/24/99	1145	G2441	Soil	1	X	X					

	Date	Time		Date	Time
Relinquished by: (Signature) J-C. Blagg	10/24/99	1240	Received by: (Signature) Dena L. Aguirre	10.26.99	1240
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	✓		

CHAIN OF CUSTODY RECORD

7442

Client / Project Name	Project Location	ANALYSIS / PARAMETERS
BLAGG / CROSS TIMBERS	DUFF GC C #1 TANK SPILL	
Sampler: NJV	Client No. 403410	

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	TPH (8015)	BTEX (8021)					Remarks
PBE @ 13'	11/3/99	1330	G3568	SOIL	1	✓	✓					PRESERV. - COOL
SSWC @ 7'	11/3/99	1230	G3569	SOIL	1	✓	✓					PRESERV. - COOL
												5 PT. COMPOSITE

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Nelson Velez	11/3/99	1353	Dawn R. Quinn	11.3.99	1515
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	✓		

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:	10-27-TPH QA/QC	Date Reported:	10-27-99
Laboratory Number:	G237	Date Sampled:	N/A
Sample Matrix:	Methylene Chloride	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	10-27-99
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	4.4386E-002	4.4342E-002	0.10%	0 - 15%
Diesel Range C10 - C28	06-17-99	3.9052E-002	3.8974E-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	1,210	1,210	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	1,210	250	1,460	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 G237 - G242.**

Analyst

Review

5796 U.S. Highway 64 • Farmington, NM 87401 • Tel 505 • 632 • 0615 • Fax 505 • 632 • 1865

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:	11-04-TPH QA/QC	Date Reported:	11-07-99
Laboratory Number:	G368	Date Sampled:	N/A
Sample Matrix:	Methylene Chloride	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	11-04-99
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	**2,770**	**2,760**	**0.4%**	**0 - 30%**
Diesel Range C10 - C28	**227**	**226**	**0.3%**	**0 - 30%**

Spike Conc. (mg/Kg)	Sample	Spike Added	Spike Result	% Recovery	Accept. Range
Gasoline Range C5 - C10	**2,770**	**250**	**3,010**	**100%**	**75 - 125%**
Diesel Range C10 - C28	**227**	**250**	**476**	**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 G368 - G369.**

Analyst

Review

5796 U.S. Highway 64 • Farmington, NM 87401 • Tel 505 • 632 • 0615 • Fax 505 • 632 • 1865

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	N/A	Project #:	N/A
Sample ID:	10-27-BTEX QA/QC	Date Reported:	10-27-99
Laboratory Number:	G241	Date Sampled:	N/A
Sample Matrix:	Soil	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	10-27-99
Condition:	N/A	Analysis:	BTEX

Calibration and Detection Limits (ug/L)	I-Cal RF:	C-Cal RF:	%Diff. Accept. Range 0 - 15%	Blank Conc	Detect. Limit
Benzene	4.2244E-001	4.2346E-001	0.2%	ND	0.2
Toluene	5.8968E-001	5.9075E-001	0.2%	ND	0.2
Ethylbenzene	4.7629E-001	4.7729E-001	0.2%	ND	0.2
p,m-Xylene	1.1026E-001	1.1053E-001	0.3%	ND	0.2
o-Xylene	9.6974E-002	9.7139E-002	0.2%	ND	0.1

Duplicate Conc. (ug/Kg)	Sample	Duplicate	%Diff.	Accept Range	Detect. Limit
Benzene	645	627	2.8%	0 - 30%	8.8
Toluene	1,530	1,480	3.3%	0 - 30%	8.4
Ethylbenzene	5,980	5,790	3.2%	0 - 30%	7.6
p,m-Xylene	25,790	24,990	3.1%	0 - 30%	10.8
o-Xylene	15,440	15,040	2.6%	0 - 30%	5.2

Spike Conc. (ug/Kg)	Sample	Amount Spiked	Spiked Sample	% Recovery	Accept Range
Benzene	645	50.0	693	100%	39 - 150
Toluene	1,530	50.0	1,580	100%	46 - 148
Ethylbenzene	5,980	50.0	6,020	100%	32 - 160
p,m-Xylene	25,790	100.0	25,840	100%	46 - 148
o-Xylene	15,440	50.0	15,460	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 G241.**

Analyst

Review

5796 U.S. Highway 64 • Farmington, NM 87401 • Tel 505 • 632 • 0615 • Fax 505 • 632 • 1865

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	N/A	Project #:	N/A
Sample ID:	11-04-BTEX-PM QA/QC	Date Reported:	11-07-99
Laboratory Number:	G368	Date Sampled:	N/A
Sample Matrix:	Soil	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	11-04-99
Condition:	N/A	Analysis:	BTEX

Calibration and Detection Limits (ug/L)	I-Cal RF:	C-Cal RF:	%Diff. Accept. Range 0 - 15%	Blank Conc	Detect. Limit
Benzene	1.5053E-001	1.5090E-001	0.2%	ND	0.2
Toluene	3.0995E-001	3.1051E-001	0.2%	ND	0.2
Ethylbenzene	8.9920E-002	9.0109E-002	0.2%	ND	0.2
p,m-Xylene	2.7841E-001	2.7911E-001	0.3%	ND	0.2
o-Xylene	2.6467E-002	2.6512E-002	0.2%	ND	0.1

Duplicate Conc. (ug/Kg)	Sample	Duplicate	%Diff.	Accept Range	Detect. Limit
Benzene	417	405	2.7%	0 - 30%	8.8
Toluene	830	803	3.2%	0 - 30%	8.4
Ethylbenzene	1,470	1,430	2.7%	0 - 30%	7.6
p,m-Xylene	8,540	8,290	2.9%	0 - 30%	10.8
o-Xylene	4,130	4,030	2.4%	0 - 30%	5.2

Spike Conc. (ug/Kg)	Sample	Amount Spiked	Spiked Sample	% Recovery	Accept Range
Benzene	417	50.0	466	100%	39 - 150
Toluene	830	50.0	878	100%	46 - 148
Ethylbenzene	1,470	50.0	1,520	100%	32 - 160
p,m-Xylene	8,540	100.0	8,620	100%	46 - 148
o-Xylene	4,130	50.0	4,170	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 G368 - G369.**

Analyst

Review

5796 U.S. Highway 64 • Farmington, NM 87401 • Tel 505 • 632 • 0615 • Fax 505 • 632 • 1865