

3R - 382

REPORTS

DATE:

2001-1991

CROSS TIMBERS OPERATING COMPANY

GROUNDWATER REMEDIATION REPORT

1999-2001

McCOY GC C #1
(A) SECTION 28, T30N, R12W, NMPM
SAN JUAN COUNTY, NEW MEXICO

PREPARED FOR:
MR. WILLIAM C. OLSON
NEW MEXICO OIL CONSERVATION DIVISION

MAY 2001

PREPARED BY:
BLAGG ENGINEERING, INC.

Consulting Petroleum / Reclamation Services
P.O. Box 87
Bloomfield, New Mexico 87413

Cross Timbers Operating Company (CTOC)
McCoy GC C # 1 - Blow Pit
Ne/4 Ne/4 Sec. 28, T30N, R12W

<u>Site Assessment Date:</u>	April 28, 1992 (Documentation Included)
<u>Pit closure Date:</u>	Mar. - Apr. 1994 (Documentation Included)
<u>Monitor Well Installation Date:</u>	November 12, 1999
<u>Monitor Well Sampling Dates:</u>	11/29/99, 2/21/00, 3/15/00, 6/19/00, 11/30/00, 3/19/01

Groundwater Monitor Well Sampling Procedures:

Groundwater samples were collected from site monitor wells (MW's) following US EPA: SW-846 protocol. The samples were collected using new disposable bailers and placed in new laboratory supplied 40 ml glass vials with teflon septa caps. Samples were analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX) per US EPA Method 8021. Additional groundwater was collected and placed in laboratory supplied 500 ml plastic containers and analyzed for general water quality per US EPA Method 600/4-79-020. The samples were preserved cool (BTEX samples also preserved with mercuric chloride) and hand delivered to a qualified laboratory for testing. Waste generated during monitor well sampling and development was disposed of utilizing the separator tank pit located at the nearby McCoy GC D #1 well site.

Water Quality Information:

BTEX and general chemistry results for the five (5) quarterly sampling events are summarized in the following tables. All MW BTEX constituents satisfactorily meet the New Mexico Water Quality Control Commission's (NMWQCC) allowable concentrations for groundwater. The general water quality results also met NMWQCC standards for groundwater or was less than/statistically equal to the apparent background levels derived from MW #1.

Summary:

Based on the determined groundwater gradient (figures 2 through 6), MW #3 appears to be positioned down gradient, but slightly lateral of the source area. Blagg Engineering, Inc. (BEI) believes that MW #3's location sufficiently substantiates and delineates the source area.

In accordance with the attached correspondence (refer to letter dated May 11, 2001 - RE: CTOC, 2000 Annual Groundwater Reports, San Juan County, NM, Permanent Closure Requested) and the NMOCD previously approved groundwater management plan (GMP), specifically Section 2.0, CTOC respectfully request permanent closure for the site separator pit.

It should be recognized that CTOC, in this specific case, went beyond the recommendation made by NMOCD in the above noted correspondence by establishing four (4) consecutive quarterly sampling events below the NMWQCC's standards for BTEX in order to add more credibility to the suggestions made by NMOCD.

This document contains all pertinent information detailed in section 5.0 (Reporting) of the GMP. Upon receiving permanent closure notification from NMOCD, CTOC will conduct plug and abandonment of all sampling points as addressed in Section 6.0 of the GMP.

CROSS TIMBERS GROUNDWATER MONITOR WELL LAB RESULTS
SUBMITTED BY BLAGG ENGINEERING, INC.

MCCOY GC C #1 - BLOW PIT
UNIT A, SEC. 28, T30N, R12W

REVISED : MARCH 28, 2001

FILENAME: (C1-1Q-01.WK4) NJV

SAMPLE DATE	MONITOR WELL No:	D.T.W. (ft)	T.D. (ft)	TDS mg/L	COND. umhos	pH	PRODUCT (in)	BTEX EPA METHOD 8021 (PPB)			
								Benzene	Toluene	Ethyl Benzene	Total Xylene
29-Nov-99	MW #1	5.85	15.00	1,360	2,735	7.0		8.5	3.4	35.0	68.7
21-Feb-00		5.74			2,000	7.2		ND	ND	ND	ND
19-Jun-00		5.87			2,000	7.2		ND	ND	ND	ND
19-Mar-01		5.88			1,800	7.3		ND	ND	ND	ND
29-Nov-99	MW #2	5.44	15.00	1,200	2,430	7.0		3.9	8.2	ND	73.5
21-Feb-00		5.36			1,700	7.2		ND	ND	ND	ND
19-Jun-00		5.50			1,800	7.2		ND	ND	ND	ND
19-Mar-01		5.48			1,800	7.2		ND	ND	ND	ND
29-Nov-99	MW #3	6.07	15.00	1,420	2,850	7.0		79.2	117.0	16.8	456.2
15-Mar-00		6.01			2,000	7.3		ND	ND	83	348
19-Jun-00		6.26			2,000	7.2		ND	ND	16	15
30-Nov-00		6.19			2,000	7.7		ND	ND	7.5	16.6
19-Mar-01		6.13			2,200	7.4		ND	ND	29	67

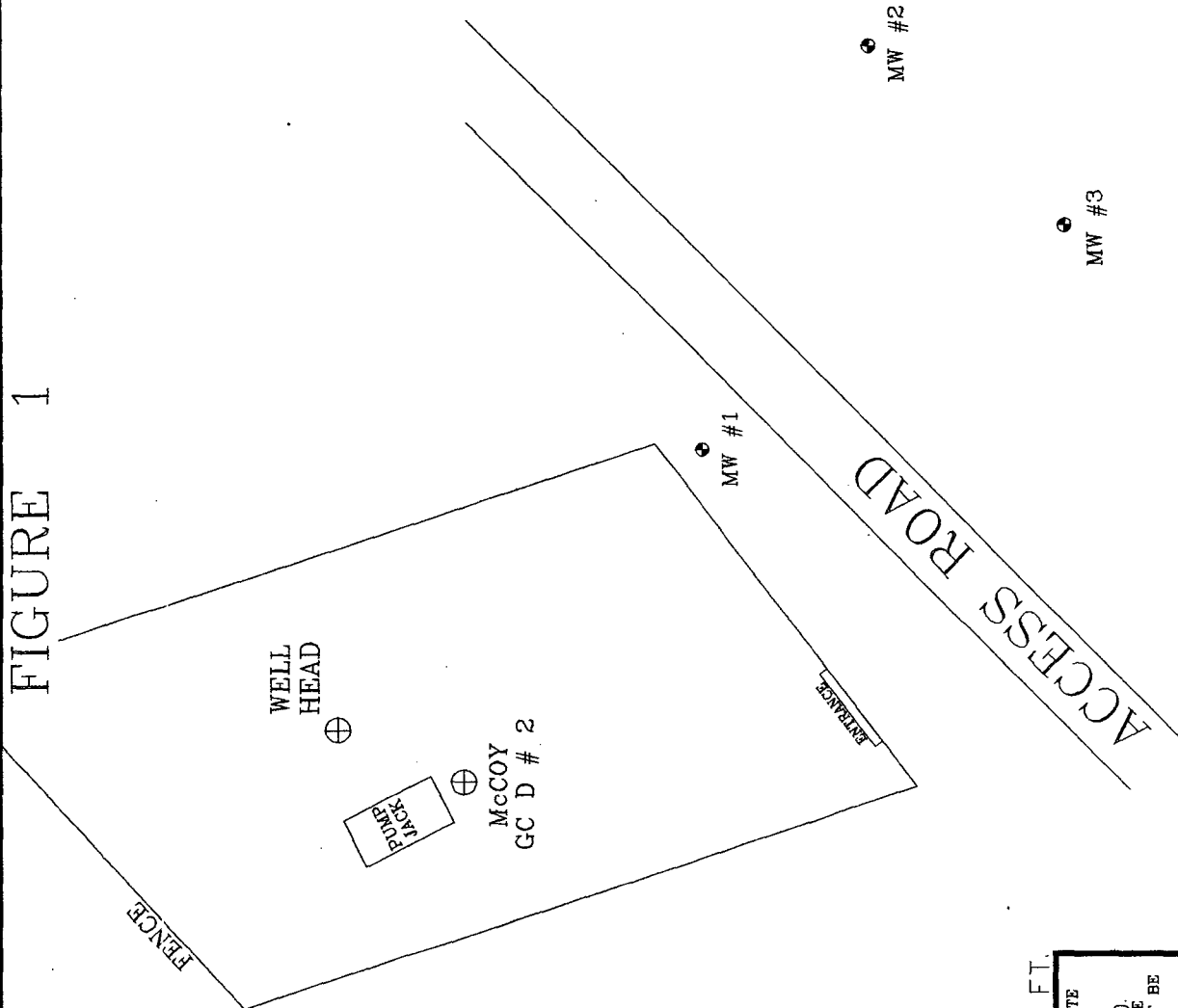
GENERAL WATER QUALITY
CROSS TIMBERS OPERATING COMPANY

McCOY GC C # 1

SAMPLE DATE : November 29 , 1999

PARAMETERS	MW # 1	MW # 2	MW # 3	Units
LAB pH	6.95	6.97	6.98	s. u.
LAB CONDUCTIVITY @ 25 C	2,735	2,430	2,850	umhos / cm
TOTAL DISSOLVED SOLIDS @ 180 C	1,360	1,200	1,420	mg / L
TOTAL DISSOLVED SOLIDS (Calc)	1,340	1,090	1,380	mg / L
SODIUM ABSORPTION RATIO	0.4	0.1	1.2	ratio
TOTAL ALKALINITY AS CaCO ₃	248	268	296	mg / L
TOTAL HARDNESS AS CaCO ₃	964	860	872	mg / L
BICARBONATE as HCO ₃	248	268	296	mg / L
CARBONATE AS CO ₃	< 0.01	< 0.01	< 0.01	mg / L
HYDROXIDE AS OH	< 0.1	< 0.1	< 0.1	mg / L
NITRATE NITROGEN	0.1	0.1	0.1	mg / L
NITRITE NITROGEN	0.001	0.002	0.001	mg / L
CHLORIDE	49.2	54.0	52.4	mg / L
FLUORIDE	0.98	0.90	0.92	mg / L
PHOSPHATE	0.5	1.0	2.0	mg / L
SULFATE	730	555	730	mg / L
IRON	0.852	0.643	0.524	mg / L
CALCIUM	347	254	253	mg / L
MAGNESIUM	23.4	54.7	58.6	mg / L
POTASSIUM	3.6	2.8	23.5	mg / L
SODIUM	32.0	7.0	82.0	mg / L
CATION / ANION DIFFERENCE	0.02	0.00	0.12	%

FIGURE 1



1 INCH = 50 FT.



MONITOR WELL LOCATIONS ARE ONLY AS ACCURATE AS THE INSTRUMENTS USED IN OBTAINING THE FOOTAGE AND BEARING FROM THE WELL HEAD (BRUNTON COMPASS AND LASER RANGE FINDER). ALL OTHER STRUCTURES DISPLAYED ON THE SITE MAP ARE SOLELY FOR REFERENCE AND MAY NOT BE TO SCALE.

CROSS TIMBERS OPERATING CO.

McCOY GC C #1

NE/4 NE/4 SEC. 28, 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: MW INSTALL.

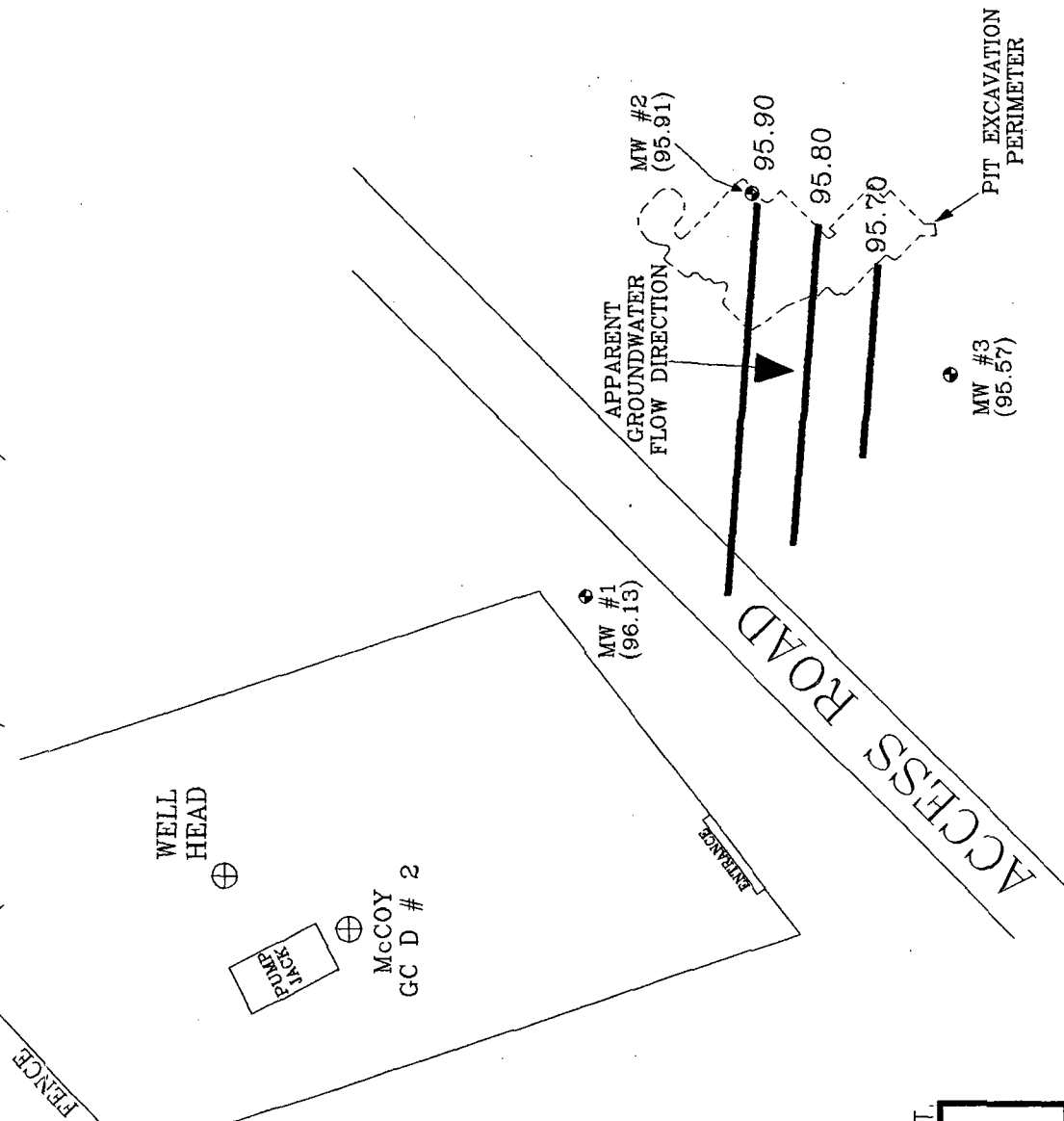
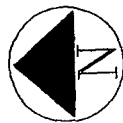
DRAWN BY: NJV

FILENAME: MC-C1-SM.SKD

SITE
MAP

11/99

FIGURE 2
(4th 1/4, 1999)



Top of Well Elevation	
MW #1	(101.98)
MW #2	(101.35)
MW #3	(101.64)
MW #1 Groundwater Elevation as of 11/29/99.	
●	(96.13)

1 INCH = 50 FT.

0 50 100 FT.

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CROSS TIMBERS OPERATING CO.

McCoy GC C #1

NE/4 NE/4 SEC. 28, 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

GROUNDWATER
GRADIENT
MAP

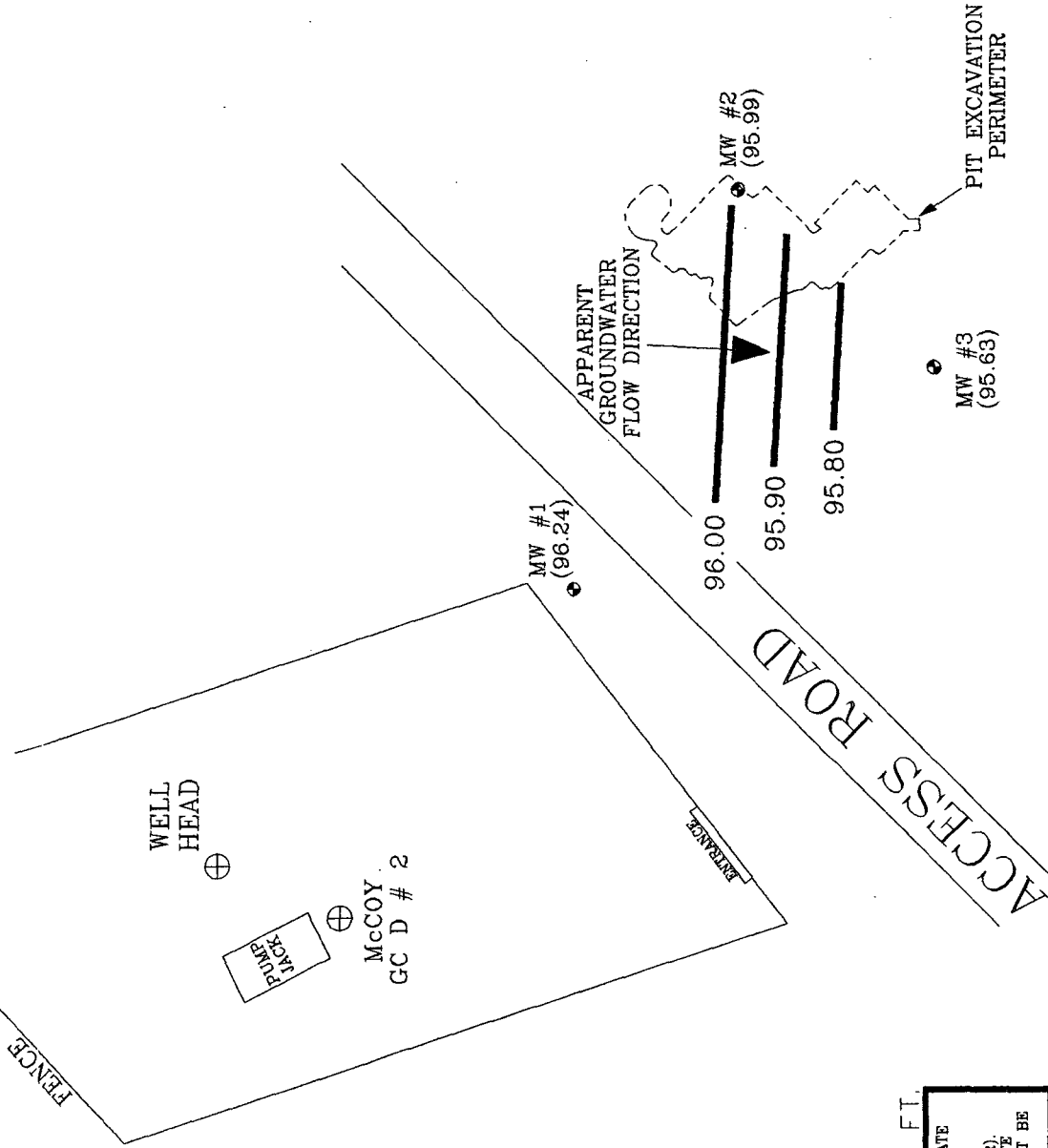
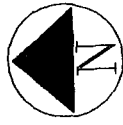
11/99

PROJECT: MW SAMPLING

DRAWN BY: NJV

FILENAME: 11-29-GW.SKD

FIGURE 3
(1st 1/4, 2000)



Top of Well Elevation	
MW #1	(101.98)
MW #2	(101.35)
MW #3	(101.64)
● MW #1 Groundwater Elevation (96.24) as of 2/21/00.	

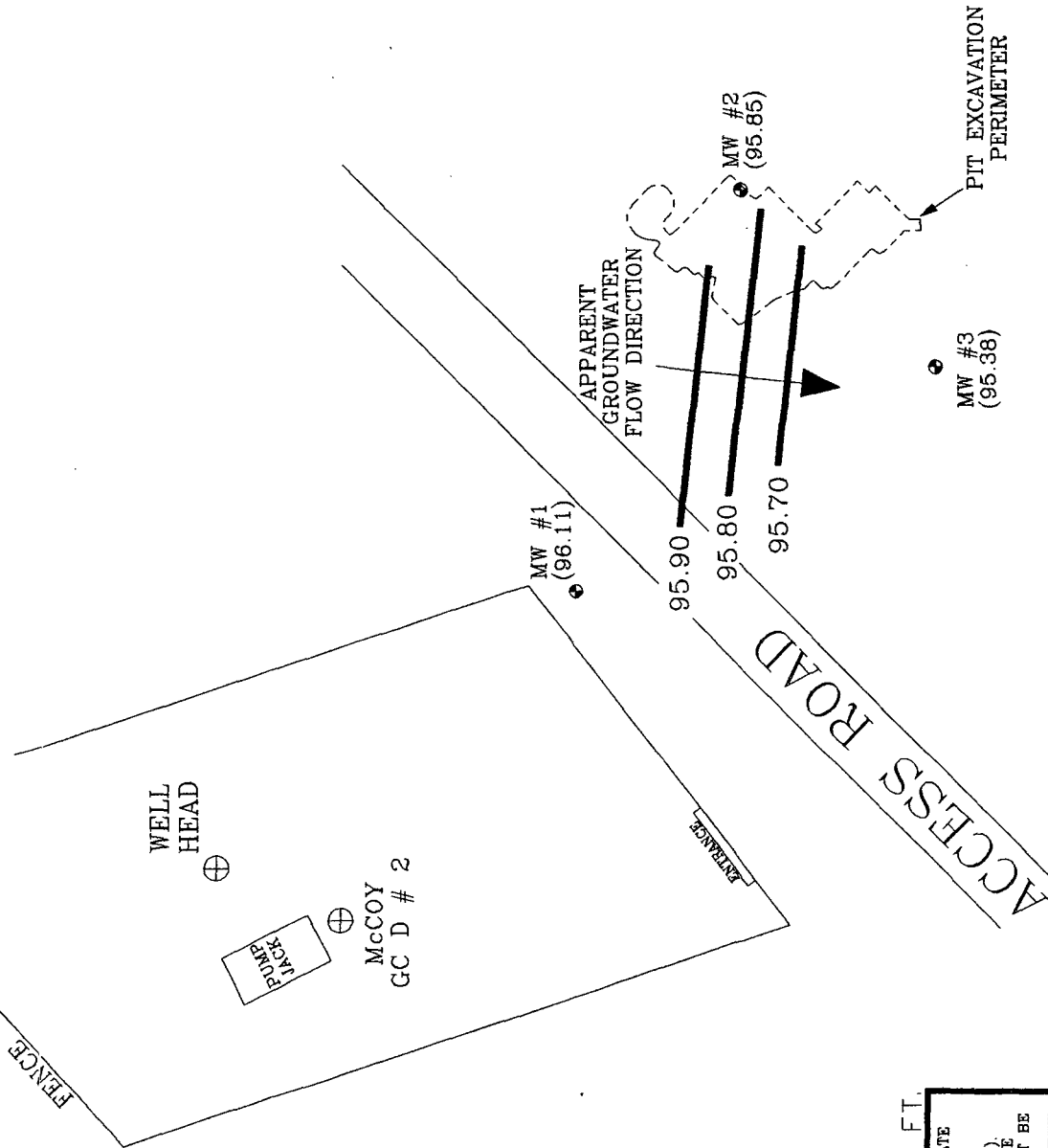
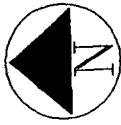
1 INCH = 50 FT.



MONITOR WELL LOCATIONS ARE ONLY AS ACCURATE AS THE INSTRUMENTS USED IN OBTAINING THE FOOTAGE AND BEARING FROM THE WELL HEAD (BRUNTON COMPASS AND LASER RANGE FINDER). ALL OTHER STRUCTURES DISPLAYED ON THE SITE MAP ARE SOLELY FOR REFERENCE AND MAY NOT BE TO SCALE.

CROSS TIMBERS OPERATING CO. McCOY GC C #1 NE/4 NE/4 SEC. 28, 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: MW SAMPLING DRAWN BY: NJV FILENAME: 02-21-GW.SKD	GROUNDWATER GRADIENT MAP 02/00
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FIGURE 4
(2nd 1/4, 2000)



Top of Well Elevation	
MW #1	(101.98)
MW #2	(101.35)
MW #3	(101.64)
MW #1 Groundwater Elevation as of 6/19/00.	
●	(96.11)

1 INCH = 50 FT.



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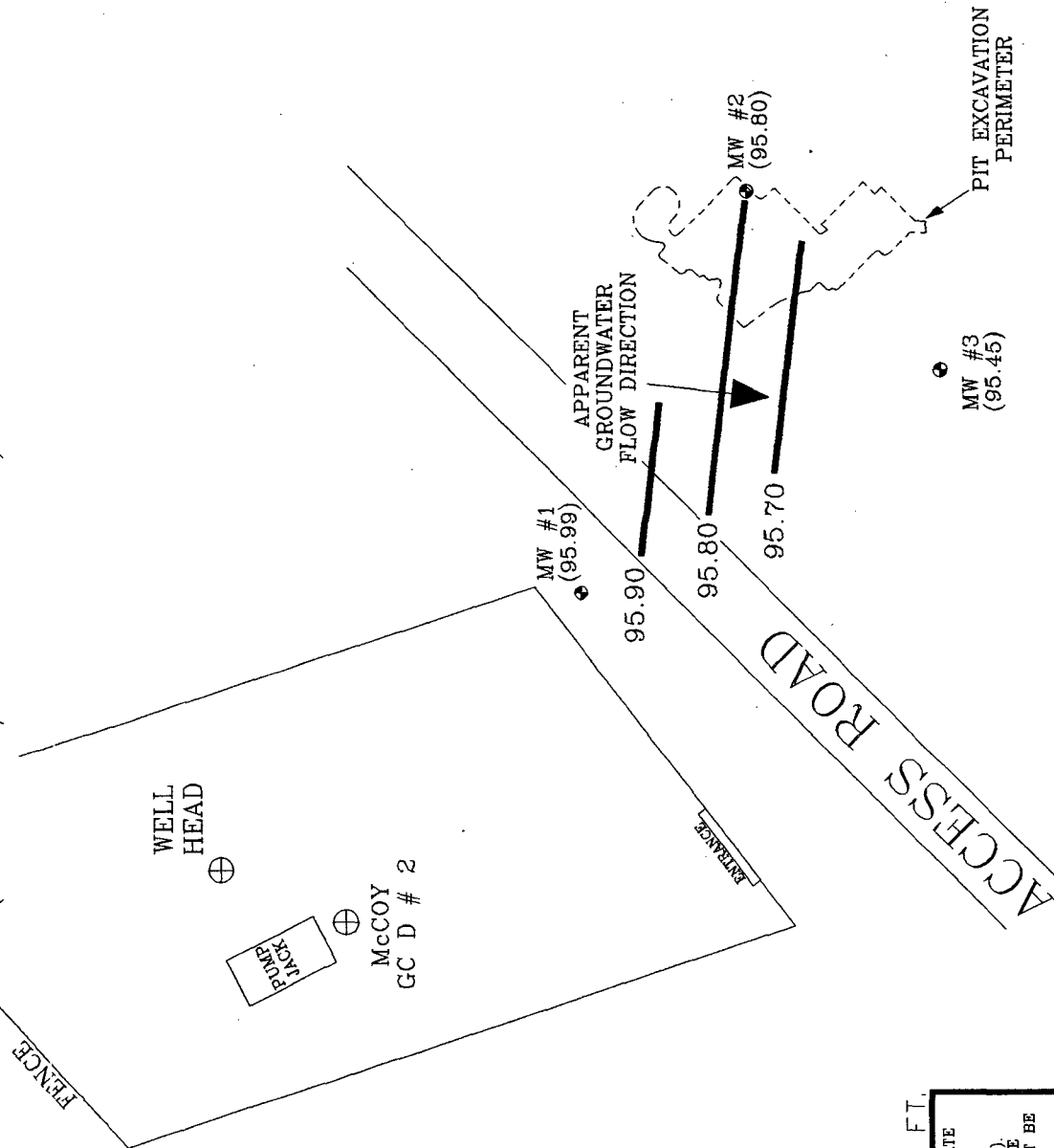
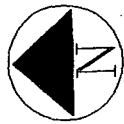
CROSS TIMBERS OPERATING CO.
McCOY GC C #1
NE/4 NE/4 SEC. 28, T30N, R12W
SAN JUAN COUNTY, NEW MEXICO

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

PROJECT: MW SAMPLING
DRAWN BY: NJV
FILENAME: 06-19-GW.SKD

GROUNDWATER
GRADIENT
MAP
06/00

FIGURE 5
(4th 1/4, 2000)

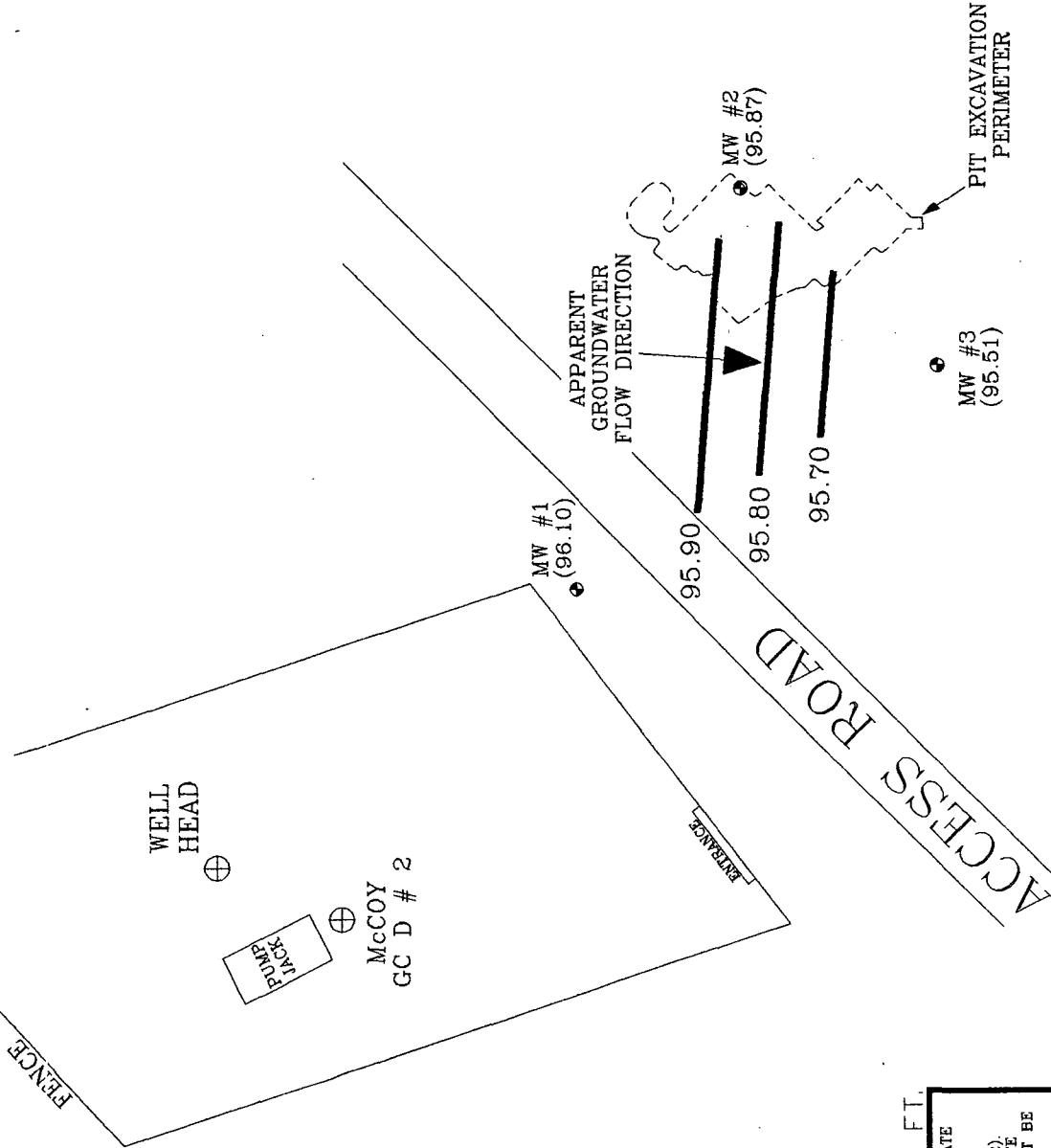
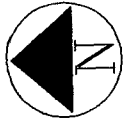


Top of Well Elevation	
MW #1	(101.98)
MW #2	(101.35)
MW #3	(101.64)
MW #1 Groundwater Elevation	(95.99)
as of 11/30/00.	

MONITOR WELL LOCATIONS ARE ONLY AS ACCURATE AS THE INSTRUMENTS USED IN OBTAINING THE FOOTAGE AND BEARING FROM THE WELL HEAD (BRUNTON COMPASS AND LASER RANGE FINDER). ALL OTHER STRUCTURES DISPLAYED ON THE SITE MAP ARE SOLELY FOR REFERENCE AND MAY NOT BE TO SCALE.

CROSS TIMBERS OPERATING CO. McCoy GC C #1 NE/4 NE/4 SEC. 28, 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: MW SAMPLING DRAWN BY: NJV FILENAME: 11-30-GW.SKD	GROUNDWATER GRADIENT MAP 11/00

FIGURE 6
(1st 1/4, 2001)



Top of Well Elevation	
MW #1	(101.98)
MW #2	(101.35)
MW #3	(101.64)
MW #1 Groundwater Elevation as of 3/19/01.	
•	(96.10)

1 INCH = 50 FT.



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CROSS TIMBERS OPERATING CO.

McCOY GC C #1

NE/4 NE/4 SEC. 28, 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

GROUNDWATER
GRADIENT
MAP

03/01

PROJECT: MW SAMPLING

DRAWN BY: NJV

FILENAME: 03-19-GW.SKD

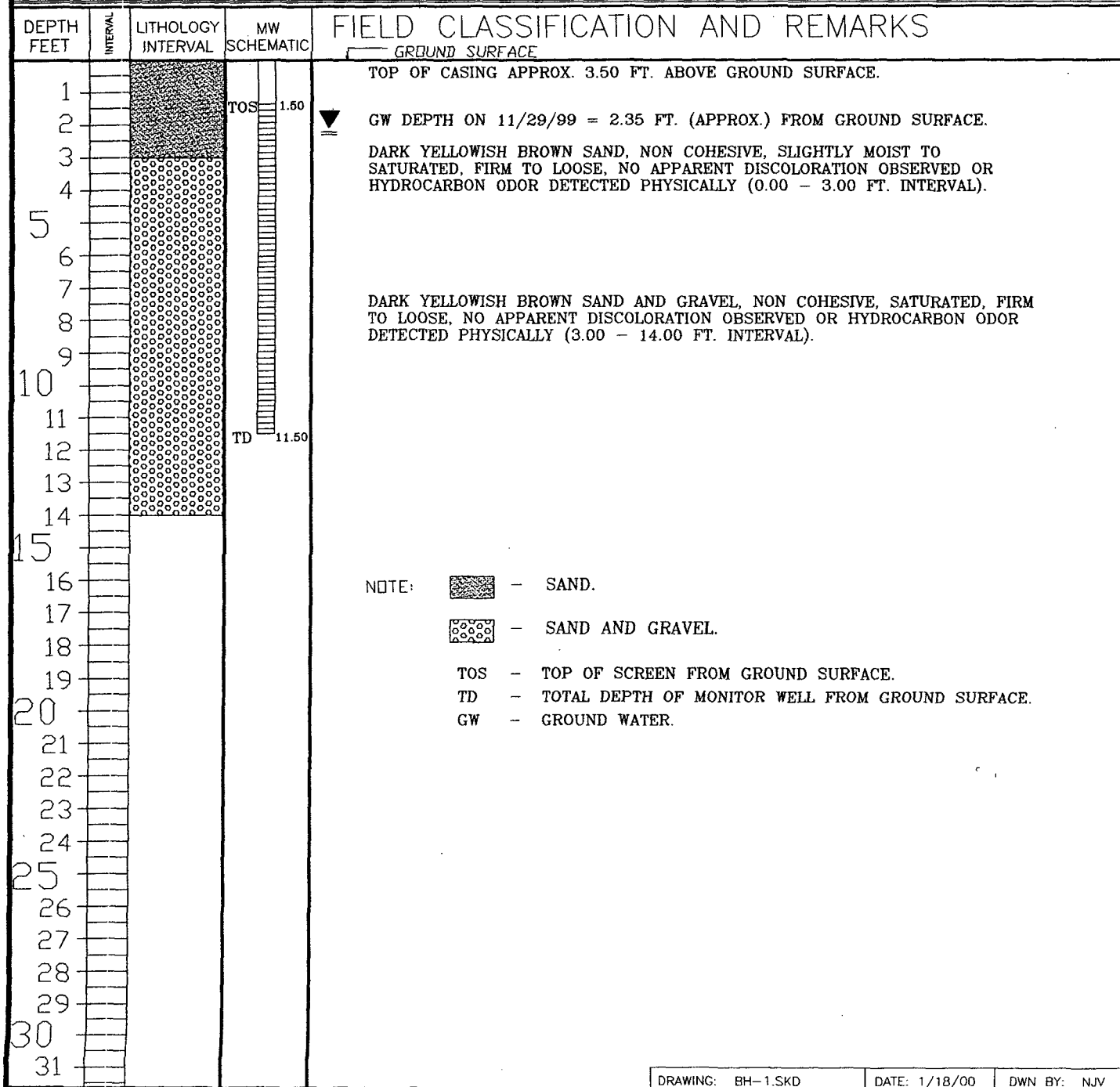
BLAGG ENGINEERING, Inc.

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

BORE / TEST HOLE REPORT

CLIENT: CROSS TIMBERS OPERATING COMPANY
LOCATION NAME: McCOY GC C #1
CONTRACTOR: BLAGG ENGINEERING, INC.
EQUIPMENT USED: MOBILE DRILL RIG (ENVIROTECH CME61)
BORING LOCATION: 126 FT., S37.5E FEET FROM WELL HEAD.

BORING #..... BH - 1
MW #..... 1
PAGE #..... 1
DATE STARTED 11/12/99
DATE FINISHED 11/12/99
OPERATOR..... DE
PREPARED BY NJV



DRAWING: BH-1.SKD

DATE: 1/18/00

DWN BY: NJV

BLAGG ENGINEERING, Inc.

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

BORE / TEST HOLE REPORT

CLIENT: CROSS TIMBERS OPERATING COMPANY
LOCATION NAME: McCOY GC C #1
CONTRACTOR: BLAGG ENGINEERING, INC.
EQUIPMENT USED: MOBILE DRILL RIG (ENVIROTECH CME61)
BORING LOCATION: 237 FT., S52E FEET FROM WELL HEAD.

BORING #..... BH - 2
MW #..... 2
PAGE #..... 2
DATE STARTED 11/12/99
DATE FINISHED 11/12/99
OPERATOR..... DE
PREPARED BY NJV

DEPTH FEET	INTERVAL	LITHOLOGY INTERVAL	MW SCHEMATIC	FIELD CLASSIFICATION AND REMARKS
				GROUND SURFACE
1				TOP OF CASING APPROX. 0.80 FT. ABOVE GROUND SURFACE.
2				DARK YELLOWISH BROWN SAND, NON COHESIVE, SLIGHTLY MOIST TO SATURATED, FIRM TO LOOSE, NO APPARENT DISCOLORATION OBSERVED OR HYDROCARBON ODOR DETECTED PHYSICALLY (0.00 - 4.00 FT. INTERVAL).
3				
4			TOS 4.20	GW DEPTH ON 11/29/99 = 4.64 FT. (APPROX.) FROM GROUND SURFACE.
5				LIGHT TO MEDIUM GRAY SAND AND GRAVEL, NON COHESIVE, SATURATED, FIRM TO LOOSE, NO APPARENT HYDROCARBON ODOR DETECTED PHYSICALLY (4.00 - 8.00 FT. INTERVAL).
6				
7				
8				
9				
10				DARK YELLOWISH BROWN SAND AND GRAVEL, NON COHESIVE, SATURATED, FIRM TO LOOSE, NO APPARENT DISCOLORATION OBSERVED OR HYDROCARBON ODOR DETECTED PHYSICALLY (8.00 - 14.50 FT. INTERVAL).
11				
12				
13				
14			TD 14.20	
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				
31				

NOTE:  - SAND.

 - SAND AND GRAVEL.

TOS - TOP OF SCREEN FROM GROUND SURFACE.

TD - TOTAL DEPTH OF MONITOR WELL FROM GROUND SURFACE.

GW - GROUND WATER.

DRAWING: BH-2.SKD

DATE: 1/18/00

DWN BY: NJV

BLAGG ENGINEERING, Inc.

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

BORE / TEST HOLE REPORT

BORING #..... BH - 3
MW #..... 3
PAGE #..... 3
DATE STARTED 11/12/99
DATE FINISHED 11/12/99
OPERATOR..... DE
PREPARED BY NJV

CLIENT: CROSS TIMBERS OPERATING COMPANY
LOCATION NAME: McCOY GC C #1
CONTRACTOR: BLAGG ENGINEERING, INC.
EQUIPMENT USED: MOBILE DRILL RIG (ENVIROTECH CME61)
BORING LOCATION: 243 FT., S34.5E FEET FROM WELL HEAD.

DEPTH FEET	INTERVAL	LITHOLOGY INTERVAL	MW SCHEMATIC	FIELD CLASSIFICATION AND REMARKS
				GROUND SURFACE
1				TOP OF CASING APPROX. 3.35 FT. ABOVE GROUND SURFACE.
2			TOS 1.85	▼ GW DEPTH ON 11/29/99 = 2.72 FT. (APPROX.) FROM GROUND SURFACE.
3				DARK YELLOWISH BROWN SAND, NON COHESIVE, SLIGHTLY MOIST, FIRM TO LOOSE,
4				NO APPARENT DISCOLORATION OBSERVED OR HYDROCARBON ODOR DETECTED
5				PHYSICALLY (0.00 - 2.00 FT. INTERVAL).
6				DARK GRAY TO BLACK SAND AND GRAVEL, NON COHESIVE, SATURATED, FIRM
7				TO LOOSE, HYDROCARBON ODOR DETECTED PHYSICALLY (2.00 - 6.50 FT. INTERVAL).
8				
9				
10				DARK YELLOWISH BROWN SAND AND GRAVEL, NON COHESIVE, SATURATED, FIRM
11				TO LOOSE, NO APPARENT DISCOLORATION OBSERVED OR HYDROCARBON ODOR
12			TD 11.85	DETECTED PHYSICALLY (6.50 - 14.00 FT. INTERVAL).
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				
31				

NOTE:  - SAND.

 - SAND AND GRAVEL.

TOS - TOP OF SCREEN FROM GROUND SURFACE.

TD - TOTAL DEPTH OF MONITOR WELL FROM GROUND SURFACE.

GW - GROUND WATER.

DRAWING: BH-3.SKD

DATE: 1/18/00

DWN BY: NJV

MONITOR WELL #1

CROSS TIMBERS OPERATING CO.

HARE GC B # 1E

MONITOR WELL CONSTRUCTION & COMPLETION

INSTALLED WITH MOBILE RIG

BLAGG ENGINEERING, INC.

CONSULTING PETROLEUM / RECLAMATION SERVICES

P.O. BOX 87

BLOOMFIELD, NEW MEXICO 87413

PHONE: (505) 632-1199

MONITOR WELL SCHEMATIC

DRAFTED BY: NJV

DATE: JAN. '00

FILENAME: MW-1

2" DIA. SCH. 40 PVC
WELL CASING WITH SLIP
CAP (approx. 3.50 ft.
above ground surface)

TOTAL CASING
LENGTH = 1.50 ft.
FROM GROUND SURFACE
TO TOP OF SCREEN

0.01 INCH SLOTTED
SCREEN SCH 40
(approx. 0.85 ft.
above water table)

0.01 INCH SLOTTED
SCREEN SCH 40 WITH
POINTED END CAP
(10 ft. total length;
approx. 9.15 ft. below
water table)

TOTAL DEPTH = 11.50 ft.
FROM GROUND SURFACE

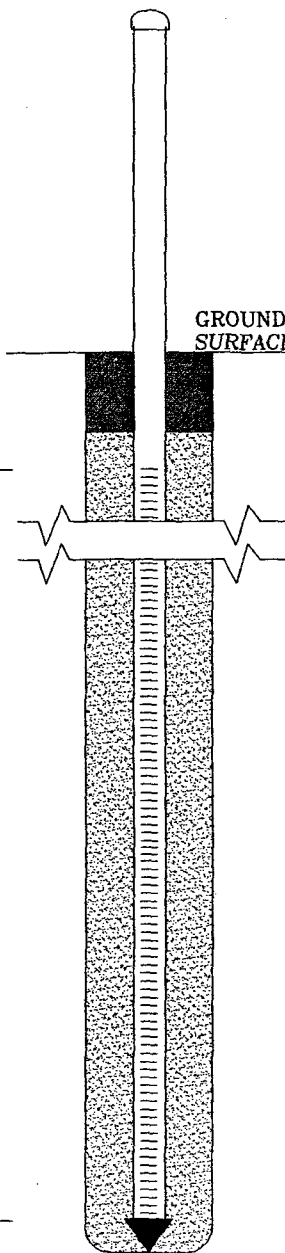
GROUND
SURFACE

1.00 ft. INTERVAL COMPLETED
WITH BENTONITE PLUG

1.35 ft. ANNULAR ABOVE
WATER TABLE COMPLETED
WITH COLORADO SILICA SAND
(approx. 0.50 ft. above
top of screen)

WATER TABLE
APPROX. 2.35 ft. FROM
GROUND SURFACE
(measured 11/29/99)

11.65 ft. ANNULAR BELOW
WATER TABLE COMPLETED
WITH COLORADO SILICA SAND

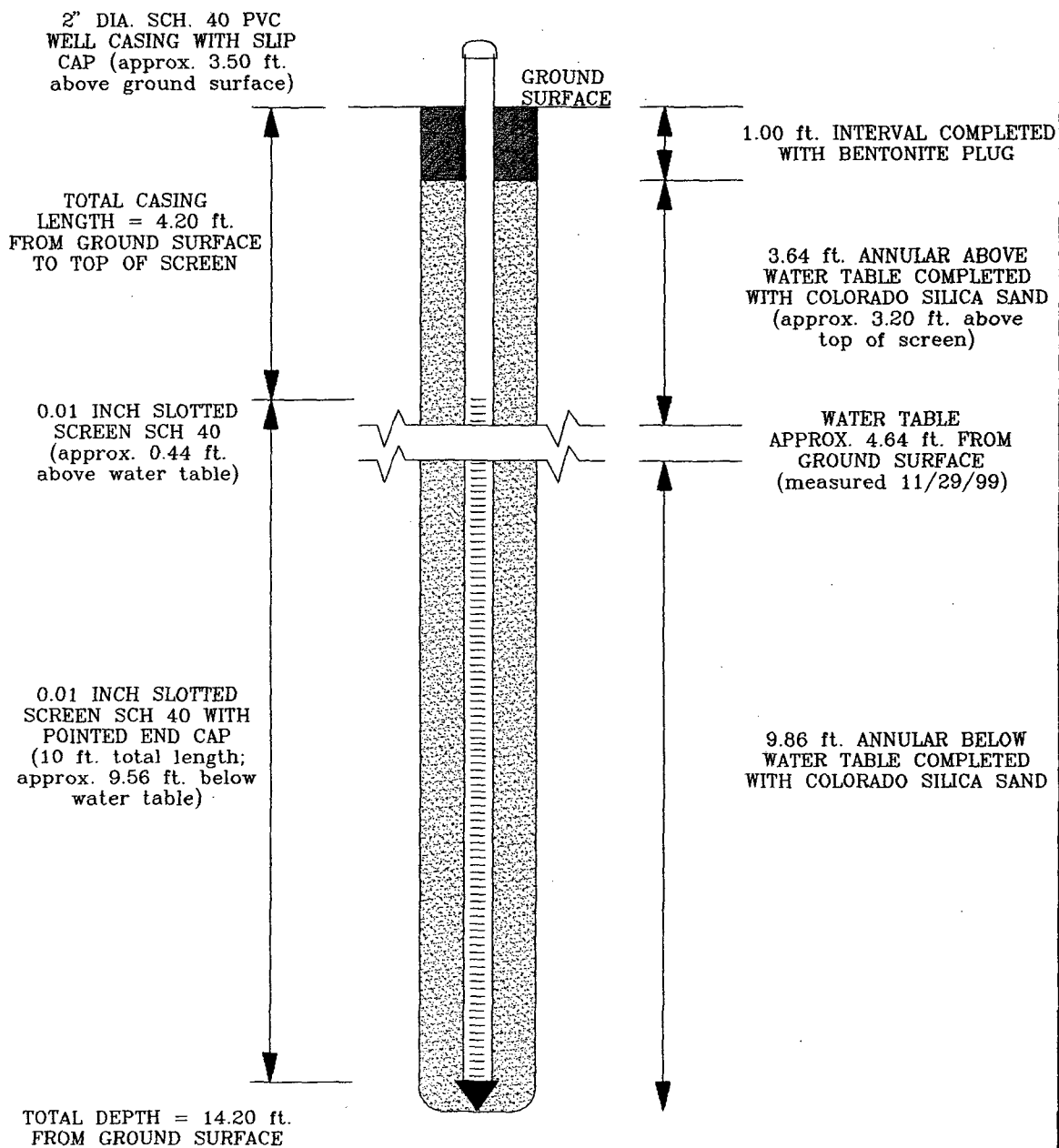


MONITOR WELL #2

CROSS TIMBERS OPERATING CO.
HARE GC B # 1E
MONITOR WELL CONSTRUCTION & COMPLETION
INSTALLED WITH MOBILE RIG

BLAGG ENGINEERING, INC.
CONSULTING PETROLEUM / RECLAMATION SERVICES
P.O. BOX 87
BLOOMFIELD, NEW MEXICO 87413
PHONE: (505) 632-1189

MONITOR WELL SCHEMATIC
DRAFTED BY: NJV
DATE: JAN. '00
FILENAME: MW-2



MONITOR WELL #3

CROSS TIMBERS OPERATING CO.
HARE GC B # 1E
MONITOR WELL CONSTRUCTION & COMPLETION
INSTALLED WITH MOBILE RIG

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

MONITOR WELL SCHEMATIC
DRAFTED BY: NJV
DATE: JAN. '00
FILENAME: MW-3

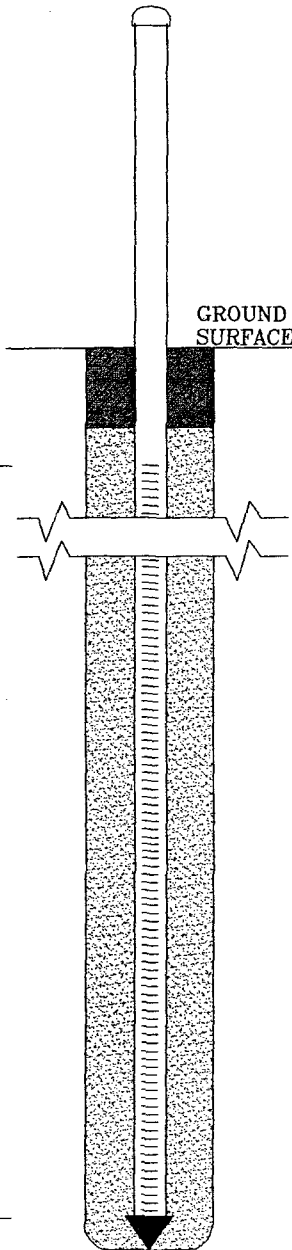
2" DIA. SCH. 40 PVC
WELL CASING WITH SLIP
CAP (approx. 3.35 ft.
above ground surface)

TOTAL CASING
LENGTH = 1.65 ft.
FROM GROUND SURFACE
TO TOP OF SCREEN

0.01 INCH SLOTTED
SCREEN SCH 40
(approx. 1.07 ft.
above water table)

0.01 INCH SLOTTED
SCREEN SCH 40 WITH
POINTED END CAP
(10 ft. total length;
approx. 8.93 ft. below
water table)

TOTAL DEPTH = 11.65 ft.
FROM GROUND SURFACE



1.00 ft. INTERVAL COMPLETED
WITH BENTONITE PLUG

1.72 ft. ANNULAR ABOVE
WATER TABLE COMPLETED
WITH COLORADO SILICA SAND
(approx. 0.65 ft. above
top of screen)

WATER TABLE
APPROX. 2.72 ft. FROM
GROUND SURFACE
(measured 11/29/99)

11.28 ft. ANNULAR BELOW
WATER TABLE COMPLETED
WITH COLORADO SILICA SAND

BLAGG ENGINEERING, INC.
MONITOR WELL SAMPLING DATA

CLIENT : CROSS TIMBERS OPER. CO.

CHAIN-OF-CUSTODY # : 7314

LOCATION : McCOY GC C # 1

LABORATORY (S) USED : ENVIROTECH, INC.

Date : November 29, 1999

SAMPLER : REP

Filename : 11-29-99.WK4

PROJECT MANAGER : N J V

WELL #	WELL ELEV. (ft)	WATER ELEV. (ft)	DEPTH TO WATER (ft)	TOTAL DEPTH (ft)	SAMPLING TIME	pH	CONDUCT (umhos)	VOLUME PURGED (gal.)	FREE PRODUCT (ft)
1	101.98	96.13	5.85	15.00	1000	7.2	1,900	4.50	-
2	101.35	95.91	5.44	15.00	1035	7.2	2,000	4.75	-
3	101.64	95.57	6.07	15.00	1100	7.4	2,000	4.50	-

NOTES : Volume of water purged from well prior to sampling: $V = \pi \times r^2 \times h \times 7.48 \text{ gal./ft}^3 \times 3 \text{ (wellbores)}$
(i.e. 2" MW $r = (1/12) \text{ ft. } h = 1 \text{ ft.}$) (i.e. 4" MW $r = (2/12) \text{ ft. } h = 1 \text{ ft.}$)

Ideally a minimum of three (3) wellbore volumes:

1.25 " well diameter = 0.19 gallons per foot of water (or 24 oz.).

2 bails per foot - small teflon bailer.

3 bails per foot - 3 / 4 " teflon bailer.

2.00 " well diameter = 0.49 gallons per foot of water.

4.00 " well diameter = 1.95 gallons per foot of water.

Comments or note well diameter if not standard 2 "

Collected BTEX and anion / cation samples for all MW 's listed above .

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	Blagg / Cross Timbers	Project #:	403410
Sample ID:	MW # 1	Date Reported:	11-30-99
Chain of Custody:	7314	Date Sampled:	11-29-99
Laboratory Number:	G506	Date Received:	11-29-99
Sample Matrix:	Water	Date Analyzed:	11-30-99
Preservative:	HgCl ₂ & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	8.5	1	0.2
Toluene	3.4	1	0.2
Ethylbenzene	35.0	1	0.2
p,m-Xylene	62.4	1	0.2
o-Xylene	6.3	1	0.1
Total Xylene	68.7		
Total BTEX	116		

ND - Parameter not detected at the stated detection limit.

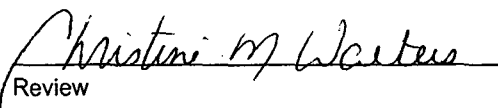
Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	99 %
	Bromofluorobenzene	99 %

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

Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: McCoy GC C #1.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	Blagg / Cross Timbers	Project #:	403410
Sample ID:	MW # 2	Date Reported:	11-30-99
Chain of Custody:	7314	Date Sampled:	11-29-99
Laboratory Number:	G507	Date Received:	11-29-99
Sample Matrix:	Water	Date Analyzed:	11-30-99
Preservative:	HgCl2 & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	3.9	1	0.2
Toluene	8.2	1	0.2
Ethylbenzene	ND	1	0.2
p,m-Xylene	67.6	1	0.2
o-Xylene	5.9	1	0.1
Total Xylene	73.5		
Total BTEX	85.6		

ND - Parameter not detected at the stated detection limit.

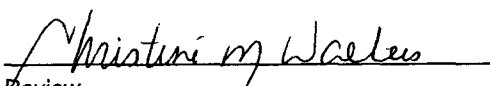
Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	101 %
	Bromofluorobenzene	101 %

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

Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: McCoy GC C #1.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	Blagg / Cross Timbers	Project #:	403410
Sample ID:	MW # 3	Date Reported:	11-30-99
Chain of Custody:	7314	Date Sampled:	11-29-99
Laboratory Number:	G508	Date Received:	11-29-99
Sample Matrix:	Water	Date Analyzed:	11-30-99
Preservative:	HgCl ₂ & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	79.2	1	0.2
Toluene	117	1	0.2
Ethylbenzene	16.8	1	0.2
p,m-Xylene	407	1	0.2
o-Xylene	49.2	1	0.1
Total Xylene	456		
Total BTEX	669		

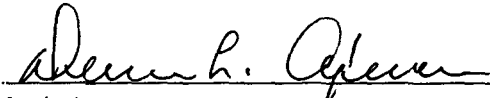
ND - Parameter not detected at the stated detection limit.

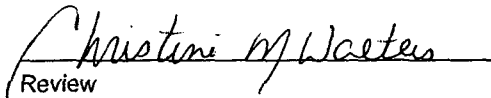
Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	97 %
	Bromofluorobenzene	97 %

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

Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: McCoy GC C #1.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

CATION / ANION ANALYSIS

Client: Blagg / Cross Timbers
Sample ID: MW #1
Laboratory Number: G506
Chain of Custody: 7314
Sample Matrix: Water
Preservative: Cool
Condition: Cool & Intact

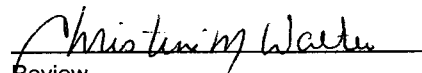
Project #: 403410
Date Reported: 12-01-99
Date Sampled: 11-29-99
Date Received: 11-29-99
Date Extracted: N/A
Date Analyzed: 11-30-99

Parameter	Analytical Result	Units	Units
pH	6.95	s.u.	
Conductivity @ 25° C	2,735	umhos/cm	
Total Dissolved Solids @ 180C	1,360	mg/L	
Total Dissolved Solids (Calc)	1,340	mg/L	
SAR	0.4	ratio	
Total Alkalinity as CaCO ₃	248	mg/L	
Total Hardness as CaCO ₃	964	mg/L	
Bicarbonate as HCO ₃	248	mg/L	4.06 meq/L
Carbonate as CO ₃	<.01	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	49.2	mg/L	1.39 meq/L
Fluoride	0.98	mg/L	0.05 meq/L
Phosphate	0.5	mg/L	0.02 meq/L
Sulfate	730	mg/L	15.20 meq/L
Iron	0.852	mg/L	
Calcium	347	mg/L	17.32 meq/L
Magnesium	23.4	mg/L	1.93 meq/L
Potassium	3.6	mg/L	0.09 meq/L
Sodium	32.0	mg/L	1.39 meq/L
Cations			20.72 meq/L
Anions			20.72 meq/L
Cation/Anion Difference			0.02%

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: McCoy GC C #1.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

CATION / ANION ANALYSIS

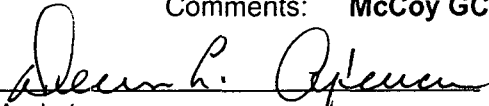
Client: Blagg / Cross Timbers
Sample ID: MW #2
Laboratory Number: G507
Chain of Custody: 7314
Sample Matrix: Water
Preservative: Cool
Condition: Cool & Intact

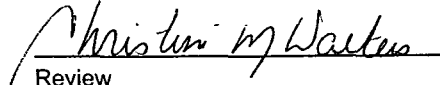
Project #: 403410
Date Reported: 12-01-99
Date Sampled: 11-29-99
Date Received: 11-29-99
Date Extracted: N/A
Date Analyzed: 11-30-99

Parameter	Analytical Result	Units	Units
pH	6.97	s.u.	
Conductivity @ 25° C	2,430	umhos/cm	
Total Dissolved Solids @ 180C	1,200	mg/L	
Total Dissolved Solids (Calc)	1,090	mg/L	
SAR	0.1	ratio	
Total Alkalinity as CaCO3	268	mg/L	
Total Hardness as CaCO3	860	mg/L	
Bicarbonate as HCO3	268	mg/L	4.39 meq/L
Carbonate as CO3	<.01	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	0.002	mg/L	0.00 meq/L
Chloride	54.0	mg/L	1.52 meq/L
Fluoride	0.90	mg/L	0.05 meq/L
Phosphate	1.0	mg/L	0.03 meq/L
Sulfate	555	mg/L	11.56 meq/L
Iron	0.643	mg/L	
Calcium	254	mg/L	12.67 meq/L
Magnesium	54.7	mg/L	4.50 meq/L
Potassium	2.8	mg/L	0.07 meq/L
Sodium	7.0	mg/L	0.30 meq/L
Cations			17.55 meq/L
Anions			17.55 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: McCoy GC C #1.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

CATION / ANION ANALYSIS

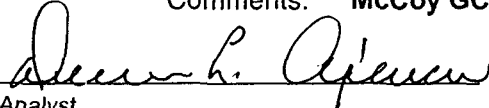
Client: Blagg / Cross Timbers
Sample ID: MW #3
Laboratory Number: G508
Chain of Custody: 7314
Sample Matrix: Water
Preservative: Cool
Condition: Cool & Intact

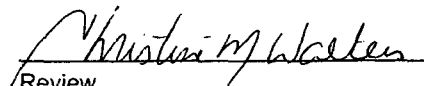
Project #: 403410
Date Reported: 12-01-99
Date Sampled: 11-29-99
Date Received: 11-29-99
Date Extracted: N/A
Date Analyzed: 11-30-99

Parameter	Analytical Result	Units	Units
pH	6.98	s.u.	
Conductivity @ 25° C	2,850	umhos/cm	
Total Dissolved Solids @ 180C	1,420	mg/L	
Total Dissolved Solids (Calc)	1,380	mg/L	
SAR	1.2	ratio	
Total Alkalinity as CaCO3	296	mg/L	
Total Hardness as CaCO3	872	mg/L	
Bicarbonate as HCO3	296	mg/L	4.85 meq/L
Carbonate as CO3	<.01	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	52.4	mg/L	1.48 meq/L
Fluoride	0.92	mg/L	0.05 meq/L
Phosphate	2.0	mg/L	0.06 meq/L
Sulfate	730	mg/L	15.20 meq/L
Iron	0.524	mg/L	
Calcium	253	mg/L	12.62 meq/L
Magnesium	58.6	mg/L	4.82 meq/L
Potassium	23.5	mg/L	0.60 meq/L
Sodium	82.0	mg/L	3.57 meq/L
Cations			21.62 meq/L
Anions			21.64 meq/L
Cation/Anion Difference			0.12%

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: McCoy GC C #1.


Analyst


Review

7314

ENVIROTECH INC.

5796 U.S. Highway 64
Farmington, New Mexico 87401
(505) 622-0615

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:	11-30-BTEX QA/QC	Date Reported:	11-30-99
Laboratory Number:	G503	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	11-30-99
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	7.0291E-002	7.0516E-002	0.32%	ND	0.2
Toluene	6.3951E-002	6.3963E-002	0.02%	ND	0.2
Ethylbenzene	5.2614E-002	5.2677E-002	0.12%	ND	0.2
p,m-Xylene	3.9700E-002	3.9708E-002	0.02%	ND	0.2
o-Xylene	6.5791E-003	6.5989E-003	0.30%	ND	0.1

Duplicate Conc. (ug/L)	Sample	Duplicate	%Diff.	Accept Limit
Benzene	ND	ND	0.0%	0 - 30%
Toluene	ND	ND	0.0%	0 - 30%
Ethylbenzene	ND	ND	0.0%	0 - 30%
p,m-Xylene	ND	ND	0.0%	0 - 30%
o-Xylene	ND	ND	0.0%	0 - 30%

Spike Conc. (ug/L)	Sample	Amount Spiked	Spiked Sample	% Recovery	Accept Limits
Benzene	ND	50.0	50.1	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.

* - Administrative level set at 80 - 120.

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 G503 - G508 and G510 - G511.

Analyst

Review

BLAGG ENGINEERING, INC.
MONITOR WELL SAMPLING DATA

CLIENT : CROSS TIMBERS OPER. CO.

CHAIN-OF-CUSTODY # : 10356

LOCATION : McCOY GC C # 1

LABORATORY (S) USED : ON - SITE TECH.

Date : February 21, 2000

SAMPLER : N J V

Filename : 02-21-00.WK4

PROJECT MANAGER : N J V

WELL #	WELL ELEV. (ft)	WATER ELEV. (ft)	DEPTH TO WATER (ft)	TOTAL DEPTH (ft)	SAMPLING TIME	pH	CONDUCT (umhos)	VOLUME PURGED (gal.)	FREE PRODUCT (ft)
1	101.98	96.24	5.74	15.00	1320	7.2	2,000	4.50	-
2	101.35	95.99	5.36	15.00	1340	7.2	1,700	4.75	-
3	101.64	95.63	6.01	15.00	-	-	-	-	-

NOTES : Volume of water purged from well prior to sampling: $V = \pi \times r^2 \times h \times 7.48 \text{ gal./ft}^3 \times 3 \text{ (wellbores)}$
(i.e. 2" MW $r = (1/12) \text{ ft}$. $h = 1 \text{ ft}$.) (i.e. 4" MW $r = (2/12) \text{ ft}$. $h = 1 \text{ ft}$.)

Ideally a minimum of three (3) wellbore volumes:

1.25 " well diameter = 0.19 gallons per foot of water (or 24 oz.).

2 bails per foot - small teflon bailer.

3 bails per foot - 3 / 4 " teflon bailer.

2.00 " well diameter = 0.49 gallons per foot of water.

4.00 " well diameter = 1.95 gallons per foot of water.

Comments or note well diameter if not standard 2 ".

Excellent recovery in both MW #'s 1 & 2 . Collected BTEX samples from MW's 1 & 2 .

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 01-Mar-00

Client:	Blagg Engineering	Client Sample Info:	CTOC - McCoy GC C #1
Work Order:	0002048	Client Sample ID:	MW #1
Lab ID:	0002048-01A	Matrix:	AQUEOUS
Project:	CTOC - McCoy GC C #1	Collection Date:	2/21/2000 1:20:00 PM
		COC Record:	10356

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: DM		
Benzene	ND	0.5		µg/L	1	2/28/2000
Toluene	ND	0.5		µg/L	1	2/28/2000
Ethylbenzene	ND	0.5		µg/L	1	2/28/2000
m,p-Xylene	ND	1		µg/L	1	2/28/2000
o-Xylene	ND	0.5		µg/L	1	2/28/2000

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
Surr: - Surrogate

1 of 1

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 01-Mar-00

Client:	Blagg Engineering	Client Sample Info:	CTOC - McCoy GC C #1
Work Order:	0002048	Client Sample ID:	MW #2
Lab ID:	0002048-02A	Matrix:	AQUEOUS
Project:	CTOC - McCoy GC C #1	Collection Date:	2/21/2000 1:40:00 PM
		COC Record:	10356

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B				Analyst: DM
Benzene	ND	0.5		µg/L	1	2/28/2000
Toluene	ND	0.5		µg/L	1	2/28/2000
Ethylbenzene	ND	0.5		µg/L	1	2/28/2000
m,p-Xylene	ND	1		µg/L	1	2/28/2000
o-Xylene	ND	0.5		µg/L	1	2/28/2000

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
Surr: - Surrogate

1 of 1

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

CHAIN OF CUSTODY RECORD

Date: 2/22/00

Page: 1 of 1



612 E. Murray Dr. • P.O. Box 2606 • Farmington, NM 87499
 LAB: (505) 325-5667 • FAX: (505) 327-1496

Purchase Order No.:

Project No.:

SEND
INVOICE
TO

Name: Nelson Velaz

Dept.:

Company: BUGG ENGINEERING, INC.

Address: P.O. Box 87

City, State, Zip: Bloomfield, NM 87413

RESULTS TO

Name: SAME

Company:

Mailing Address:

City, State, Zip:

Telephone No.: 632-1199

Telefax No.: 632-3903

ANALYSIS REQUESTED

PROJECT LOCATION:

CTOC - McCoy GC C #1

SAMPLER'S SIGNATURE: Nelson Velaz

SAMPLE IDENTIFICATION

DATE TIME MATRIX PRES.

2/21/00 1320 WATER & HCL

MW #1

2/21/00 1340 WATER & HCL

MW #2

Number of Containers

2

2

LAB ID

0002048-01A

-01A

Date/Time: 2/22/00 1330

Date/Time

Date/Time

Date/Time

Received by:

Received by:

Received by:

Rush

24-48 Hours

10 Working Days

By Date

2/28/00

Special Instructions / Remarks:

Please fax results upon Analytical Completion.

Date

Authorized by: (Client Signature Must Accompany Request)

Distribution: White - On Site Yellow - LAB Pink - Sampler Goldenrod - Client

To Reorder Call 325-9600 or Fax 325-9704. <http://www.on-site.com> FORM #01

On Site Technologies, LTD.

Date: 01-Mar-00

CLIENT: Blagg Engineering
Work Order: 0002048
Project: CTOC - McCoy GC C #1

QC SUMMARY REPORT

Method Blank

Sample ID: MB1	Batch ID: GC-1_000228	Test Code: SW8021B	Units: µg/L	Analysis Date: 2/28/2000	Prep Date:
Client ID:	0002048	Run ID: GC-1_000228A		SeqNo: 24562	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Benzene	ND	0.5			
Ethylbenzene	ND	0.5			
m,p-Xylene	ND	1			
Methyl tert-Butyl Ether	ND	1			
o-Xylene	ND	0.5			
Toluene	.0832	0.5			J

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 01-Mar-00

CLIENT: Blagg Engineering
Work Order: 0002048
Project: CTOC - McCoy GC C #1

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 0002039-02AMS		Batch ID: GC-1_000228		Test Code: SW8021B		Units: µg/L		Analysis Date 2/28/2000		Prep Date:	
Client ID: 0002048		Run ID: GC-1_000228A		SeqNo: 24563							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	893.8	10	800	119.1	96.8%	73	126				
Ethylbenzene	1399	10	800	637.1	95.3%	88	113				
m,p-Xylene	6044	20	1600	4542	93.8%	83	112				
Methyl tert-Butyl Ether	812.5	20	800	35.51	97.1%	81	125				
o-Xylene	1389	10	800	617.7	96.5%	93	110				
Toluene	2642	10	800	1861	97.7%	76	126				

Sample ID: 0002039-02AMSD		Batch ID: GC-1_000228		Test Code: SW8021B		Units: µg/L		Analysis Date 2/28/2000		Prep Date:	
Client ID: 0002048		Run ID: GC-1_000228A		SeqNo: 24564							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	891.7	10	800	119.1	96.6%	73	126	893.8	0.2%	6	
Ethylbenzene	1394	10	800	637.1	94.6%	88	113	1399	0.4%	5	
m,p-Xylene	6019	20	1600	4542	92.3%	83	112	6044	0.4%	7	
Methyl tert-Butyl Ether	819.4	20	800	35.51	98.0%	81	125	812.5	0.8%	9	
o-Xylene	1390	10	800	617.7	96.6%	93	110	1389	0.0%	6	
Toluene	2634	10	800	1861	96.7%	76	126	2642	0.3%	6	

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 01-Mar-00

CLIENT: Blagg Engineering
Work Order: 0002048
Project: CTOC - McCoy GC C #1

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS WATER	Batch ID: GC-1_000228	Test Code: SW8021B	Units: µg/L	Analysis Date 2/28/2000	Prep Date:						
Client ID:	0002048	Run ID: GC-1_000228A		SeqNo: 24561							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	40.38	0.5	40	0	100.9%	89	112				
Ethylbenzene	41.28	0.5	40	0	103.2%	93	112				
m,p-Xylene	78.41	1	80	0	98.0%	88	108				
Methyl tert-Butyl Ether	40.59	1	40	0	101.5%	87	115				
o-Xylene	41.17	0.5	40	0	102.9%	93	112				
Toluene	40.9	0.5	40	0.0832	102.0%	92	111				

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 01-Mar-00

QC SUMMARY REPORT

Continuing Calibration Verification Standard

CLIENT: Blagg Engineering
 Work Order: 0002048
 Project: CTOC - McCoy GC C #1

Sample ID: CCV1 BTEX_0001	Batch ID: GC-1_000228	Test Code: SW8021B	Units: µg/L	Analysis Date: 2/28/2000	Prep Date:
Client ID: 0002048	Run ID: GC-1_000228A	PQL	SPK value	SPK Ref Val	SeqNo: 24558
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Benzene	20.18	0.5	20	0	100.9% 85 115
Ethylbenzene	20.93	0.5	20	0	104.7% 85 115
m,p-Xylene	39.52	1	40	0	98.8% 85 115
Methyl tert-Butyl Ether	19.8	1	20	0	99.0% 85 115
o-Xylene	20.84	0.5	20	0	104.2% 85 115
Toluene	20.44	0.5	20	0	102.2% 85 115
1,4-Difluorobenzene	89.71	0	100	0	89.7% 80 105
4-Bromochlorobenzene	89.1	0	100	0	89.1% 78 108
Fluorobenzene	88.62	0	100	0	88.6% 78 108

Sample ID: CCV2 BTEX_0001	Batch ID: GC-1_000228	Test Code: SW8021B	Units: µg/L	Analysis Date: 2/28/2000	Prep Date:
Client ID: 0002048	Run ID: GC-1_000228A	PQL	SPK value	SPK Ref Val	SeqNo: 24559
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Benzene	19.4	0.5	20	0	97.0% 85 115
Ethylbenzene	20.04	0.5	20	0	100.2% 85 115
m,p-Xylene	37.84	1	40	0	94.6% 85 115
Methyl tert-Butyl Ether	20.64	1	20	0	103.2% 85 115
o-Xylene	20.14	0.5	20	0	100.7% 85 115
Toluene	19.68	0.5	20	0	98.4% 85 115
1,4-Difluorobenzene	89.28	0	100	0	89.3% 80 105
4-Bromochlorobenzene	89.66	0	100	0	89.7% 78 108
Fluorobenzene	88.78	0	100	0	88.8% 78 108

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Blagg Engineering
Work Order: 0002048
Project: CTOC - McCoy GCC #1

QC SUMMARY REPORT
 Continuing Calibration Verification Standard

Sample ID: CCV3 BTEX_0001		Batch ID: GC-1_000228		Test Code: SW8021B		Units: µg/L		Analysis Date 2/28/2000		Prep Date:	
Client ID:		0002048		Run ID: GC-1_000228A		SeqNo: 24560					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	38.89	0.5	40	0	97.2%	85	115				
Ethylbenzene	39.58	0.5	40	0	99.0%	85	115				
m,p-Xylene	75.31	1	80	0	94.1%	85	115				
Methyl tert-Butyl Ether	41.12	1	40	0	102.8%	85	115				
o-Xylene	40.19	0.5	40	0	100.5%	85	115				
Toluene	39.55	0.5	40	0	98.9%	85	115				
1,4-Difluorobenzene	89.13	0	100	0	89.1%	80	105				
4-Bromochlorobenzene	92.77	0	100	0	92.8%	78	108				
Fluorobenzene	87.92	0	100	0	87.9%	78	108				

Qualifiers:
 ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 01-Mar-00

CLIENT: Blagg Engineering
Work Order: 0002048
Project: CTOC - McCoy GC C #1
Test No: SW8021B

QC SUMMARY REPORT SURROGATE RECOVERIES

Aromatic Volatiles by GC/PID

Sample ID	14FBZ	4BCBZ	FLBZ					
0002039-02A	87.2	88	87.8					
0002039-02AMS	87.3	89.3	86					
0002039-02AMSD	87.1	89.6	86.4					
0002039-03A	84.8	89.3	86.2					
0002039-05A	86.3	87.9	86.5					
0002039-06A	84.6	86	84.8					
0002042-04A	88.4	89.7	86.8					
0002043-02A	85.4	89.5	85.3					
0002044-02A	91.2	90	90.4					
0002048-01A	90	89.6	89					
0002048-02A	91.4	91.1	90					
0002050-01A	90.1	90.4	89					
0002050-02A	90.4	89.4	89.2					
0002050-03A	89.8	89.5	89.7					
0002050-04A	90.7	89.9	89					
0002051-01A	89.5	89.9	89.5					
0002053-01A	89.1	88.1	89.6					
0002053-02A	89.6	89.5	88.4					
0002053-03A	89.6	88.6	89.7					
0002053-04A	89.5	89.7	89.4					
CCV1 BTEX_00010	89.7	89.1	88.6					
CCV2 BTEX_00010	89.3	89.6	88.8					
CCV3 BTEX_00010	89.1	92.8	87.9					
LCS WATER	88.9	89.1	87.8					
MB1	90.2	88.3	89.7					

Acronym	Surrogate	QC Limits
14FBZ	= 1,4-Difluorobenzene	80-105
4BCBZ	= 4-Bromochlorobenzene	78-108
FLBZ	= Fluorobenzene	78-108

* Surrogate recovery outside acceptance limits

BLAGG ENGINEERING, INC.
MONITOR WELL SAMPLING DATA

CLIENT : CROSS TIMBERS OPER. CO.

CHAIN-OF-CUSTODY # : 10369

LOCATION : McCOY GC C # 1

LABORATORY (S) USED : ON - SITE TECH.

Date : March 15, 2000

SAMPLER : N J V

Filename : 03-15-00.WK4

PROJECT MANAGER : N J V

WELL #	WELL ELEV. (ft)	WATER ELEV. (ft)	DEPTH TO WATER (ft)	TOTAL DEPTH (ft)	SAMPLING TIME	pH	CONDUCT (umhos)	VOLUME PURGED (gal.)	FREE PRODUCT (ft)
1	101.98	96.23	5.75	15.00	-	-	-	-	-
2	101.35	95.98	5.37	15.00	-	-	-	-	-
3	101.64	95.63	6.01	15.00	0840	7.3	2,000	4.50	-

NOTES : Volume of water purged from well prior to sampling: $V = \pi \times r^2 \times h \times 7.48 \text{ gal./ft}^3 \times 3 \text{ (wellbores)}$
(i.e. 2" MW $r = (1/12) \text{ ft. } h = 1 \text{ ft.}$ (i.e. 4" MW $r = (2/12) \text{ ft. } h = 1 \text{ ft.}$)

Ideally a minimum of three (3) wellbore volumes:

1.25 " well diameter = 0.19 gallons per foot of water (or 24 oz.).

2 bails per foot - small teflon bailer.

3 bails per foot - 3 / 4 " teflon bailer.

2.00 " well diameter = 0.49 gallons per foot of water.

4.00 " well diameter = 1.95 gallons per foot of water.

Comments or note well diameter if not standard 2 ".

Excellent recovery in MW # 3 . Collected BTEX sample from MW 3 only .

Water appeared blackish with slight HC odor .

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 17-Mar-00

Client:	Blagg Engineering	Client Sample Info:	McCoy GC C #1
Work Order:	0003025	Client Sample ID:	MW #3
Lab ID:	0003025-01A	Matrix:	AQUEOUS
Project:	Cross Timbers; McCoy GC C #1	Collection Date:	3/15/2000 8:40:00 AM
		COC Record:	10369

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: DM		
Benzene	ND	5		µg/L	10	3/15/2000
Toluene	ND	5		µg/L	10	3/15/2000
Ethylbenzene	83	5		µg/L	10	3/15/2000
m,p-Xylene	300	10		µg/L	10	3/15/2000
o-Xylene	48	5		µg/L	10	3/15/2000

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
Surr: - Surrogate

1 of 1

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

On Site Technologies, LTD.

Date: 17-Mar-00

CLIENT: Blagg Engineering
Work Order: 0003025
Project: Cross Timbers; McCoy GC C #1

QC SUMMARY REPORT

Method Blank

Sample ID: MB1	Batch ID: GC-1_000315										Test Code: SW8021B		Units: µg/L		Analysis Date 3/15/2000		Prep Date:	
Client ID:	0003025										Run ID:		GC-1_000315A		SeqNo: 25733			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual							
Benzene	.0611	0.5									J							
Ethylbenzene	.0557	0.5									J							
m,p-Xylene	.1324	1									J							
Methyl tert-Butyl Ether	ND	1																
o-Xylene	.0613	0.5									J							
Toluene	.1425	0.5									J							

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 17-Mar-00

CLIENT:

Blagg Engineering

Work Order:

0003025

Project:

Cross Timbers; McCoy GC C #1

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 0003009-02AMS		Batch ID: GC-1_000315	Test Code: SW8021B	Units: µg/L	Analysis Date 3/15/2000		SeqNo: 25734	Prep Date:
Client ID: 0003025		Run ID: GC-1_000315A	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit
Analyte	Result							
Benzene	764.2		5	400	412.6	87.9%	73	126
Ethylbenzene	411.4		5	400	23.29	97.0%	88	113
m,p-Xylene	896.4		10	800	159.8	92.1%	83	112
Methyl tert-Butyl Ether	391.6		10	400	11.9	94.9%	81	125
o-Xylene	442.2		5	400	54.56	96.9%	93	110
Toluene	1031		5	400	697.8	83.3%	76	126

Sample ID: 0003009-02AMSD		Batch ID: GC-1_000315	Test Code: SW8021B	Units: µg/L	Analysis Date 3/15/2000		SeqNo: 25735	Prep Date:
Client ID: 0003025		Run ID: GC-1_000315A	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit
Analyte	Result							
Benzene	761.6		5	400	412.6	87.3%	73	126
Ethylbenzene	410.4		5	400	23.29	96.8%	88	113
m,p-Xylene	894.4		10	800	159.8	91.8%	83	112
Methyl tert-Butyl Ether	389.2		10	400	11.9	94.3%	81	125
o-Xylene	448		5	400	54.56	98.4%	93	110
Toluene	1027		5	400	697.8	82.4%	76	126

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 17-Mar-00

CLIENT: Blagg Engineering
Work Order: 0003025
Project: Cross Timbers; McCoy GC C #1

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS WATER	Batch ID: GC-1_000315	Test Code: SW8021B	Units: µg/L	Analysis Date 3/15/2000	Prep Date:
Client ID: 0003025	Run ID: GC-1_000315A	PQL	SPK value	SeqNo: 25732	
Analyte	Result	PQL	SPK value	LowLimit	HighLimit
Benzene	38.46	0.5	40	89	112
Ethylbenzene	39.74	0.5	40	93	112
m,p-Xylene	75.1	1	80	88	108
Methyl tert-Butyl Ether	37.77	1	40	87	115
o-Xylene	39.52	0.5	40	93	112
Toluene	39.26	0.5	40	92	111
				%REC	RPD Ref Val
				96.0%	
				99.2%	
				93.7%	
				94.4%	
				98.6%	
				97.8%	
				%RPD	RPDLimit
					Qual

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 17-Mar-00

CLIENT: Blagg Engineering
Work Order: 0003025
Project: Cross Timbers; McCoy GC C #1

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV1 BTEX_0001		Batch ID: GC-1_000315	Test Code: SW8021B	Units: µg/L	Analysis Date 3/15/2000		Prep Date:				
Client ID:	0003025	Run ID:	GC-1_000315A		SeqNo:	25729					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	19.42	0.5	20	0	97.1%	85	115				
Ethylbenzene	20.16	0.5	20	0	100.8%	85	115				
m,p-Xylene	37.92	1	40	0	94.8%	85	115				
Methyl tert-Butyl Ether	19.31	1	20	0	96.6%	85	115				
o-Xylene	20.01	0.5	20	0	100.1%	85	115				
Toluene	19.72	0.5	20	0	98.6%	85	115				
1,4-Difluorobenzene	89.27	0	100	0	89.3%	80	105				
4-Bromochlorobenzene	91.42	0	100	0	91.4%	78	108				
Fluorobenzene	86.52	0	100	0	86.5%	78	108				

Sample ID: CCV2 BTEX_0001		Batch ID: GC-1_000315	Test Code: SW8021B	Units: µg/L	Analysis Date 3/15/2000		Prep Date:				
Client ID:		0003025	Run ID:	GC-1_000315A	SeqNo:	25730					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	18.91	0.5	20	0	94.5%	85	115				
Ethylbenzene	19.64	0.5	20	0	98.2%	85	115				
m,p-Xylene	36.87	1	40	0	92.2%	85	115				
Methyl tert-Butyl Ether	19.99	1	20	0	99.9%	85	115				
o-Xylene	19.64	0.5	20	0	98.2%	85	115				
Toluene	19.31	0.5	20	0	96.6%	85	115				
1,4-Difluorobenzene	89.22	0	100	0	89.2%	80	105				
4-Bromochlorobenzene	91.78	0	100	0	91.8%	78	108				
Fluorobenzene	86.88	0	100	0	86.9%	78	108				

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Biagg Engineering

Work Order: 0003025

Project: Cross Timbers; McCoy GC C #1

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV3 BTEX_0001		Batch ID: GC-1_000315		Test Code: SW8021B		Units: µg/L		Analysis Date 3/15/2000		Prep Date:	
Client ID: 0003025		Run ID: GC-1_000315A		SeqNo: 25731							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	37.02	0.5	40	0	92.5%	85	115				
Ethylbenzene	38.27	0.5	40	0	95.7%	85	115				
m,p-Xylene	72.29	1	80	0	90.4%	85	115				
Methyl tert-Butyl Ether	38.56	1	40	0	96.4%	85	115				
o-Xylene	38.34	0.5	40	0	95.8%	85	115				
Toluene	37.93	0.5	40	0	94.8%	85	115				
1,4-Difluorobenzene	88.56	0	100	0	88.6%	80	105				
4-Bromochlorobenzene	90.53	0	100	0	90.5%	78	108				
Fluorobenzene	86.39	0	100	0	86.4%	78	108				

Sample ID: CCV4 BTEX_0001		Batch ID: GC-1_000315		Test Code: SW8021B		Units: µg/L		Analysis Date 3/15/2000		Prep Date:	
Client ID: 0003025		Run ID: GC-1_000315A		SeqNo: 25737							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	19.22	0.5	20	0	96.1%	85	115				
Ethylbenzene	20.19	0.5	20	0	100.9%	85	115				
m,p-Xylene	38.17	1	40	0	95.4%	85	115				
Methyl tert-Butyl Ether	21.83	1	20	0	109.1%	85	115				
o-Xylene	20.06	0.5	20	0	100.3%	85	115				
Toluene	19.79	0.5	20	0	98.9%	85	115				
1,4-Difluorobenzene	88.47	0	100	0	88.5%	80	105				
4-Bromochlorobenzene	92.94	0	100	0	92.9%	78	108				
Fluorobenzene	85.3	0	100	0	85.3%	78	108				

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT
Continuing Calibration Verification Standard

CLIENT: Blagg Engineering
Work Order: 0003025
Project: Cross Timbers; McCoy GC C #1

Sample ID: CCV5 BTEX_0001		Batch ID: GC-1_000315	Test Code: SW8021B	Units: µg/L	Analysis Date 3/15/2000		Prep Date:	
Client ID: 0003025		Run ID: GC-1_000315A	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit
Analyte	Result							
Benzene	18.57	0.5	0.5	20	0	92.9%	85	115
Ethylbenzene	19.4	0.5	0.5	20	0	97.0%	85	115
m,p-Xylene	36.65	1	1	40	0	91.6%	85	115
Methyl tert-Butyl Ether	19.18	1	1	20	0	95.9%	85	115
o-Xylene	19.34	0.5	0.5	20	0	96.7%	85	115
Toluene	19.12	0.5	0.5	20	0	95.6%	85	115
1,4-Difluorobenzene	87.98	0	0	100	0	88.0%	80	105
4-Bromochlorobenzene	93	0	0	100	0	93.0%	78	108
Fluorobenzene	85.08	0	0	100	0	85.1%	78	108

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 17-Mar-00

CLIENT: Blagg Engineering
 Work Order: 0003025
 Project: Cross Timbers; McCoy GC C #1
 Test No: SW8021B

QC SUMMARY REPORT SURROGATE RECOVERIES

Aromatic Volatiles by GC/PID

Sample ID	14FBZ	4BCBZ	FLBZ					
0003009-02A	86.5	89.8	84.6					
0003009-02AMS	85	89.9	83.7					
0003009-02AMSD	87.5	92	85.2					
0003012-02A	89.2	90.4	86.7					
0003013-07A	89.9	90.9	86.8					
0003023-01A	85	85.7	92					
0003023-02A	88.3	90	85.2					
0003023-03A	90.2	90.3	87.4					
0003024-01A	90	91	87.3					
0003024-02A	90	91.6	87.3					
0003024-03A	89.8	91.6	87.4					
0003024-04A	89.3	90.8	87.6					
0003024-05A	90.1	91.4	87.4					
0003024-06A	88.4	91.6	87.5					
0003024-07A	90.1	91.1	87.6					
0003025-01A	88.6	89.6	86.6					
0003026-01A	90	90.5	87.6					
CCV1 BTEX_00010	89.3	91.4	86.5					
CCV2 BTEX_00010	89.2	91.8	86.9					
CCV3 BTEX_00010	88.6	90.5	86.4					
CCV4 BTEX_00010	88.5	92.9	85.3					
CCV5 BTEX_00010	88	93	85.1					
LCS WATER	88.4	91.5	86.2					
MB1	90.3	90.4	87.5					

Acronym

Surrogate

QC Limits

14FBZ	=	1,4-Difluorobenzene	80-105
4BCBZ	=	4-Bromochlorobenzene	78-108
FLBZ	=	Fluorobenzene	78-108

* Surrogate recovery outside acceptance limits

BLAGG ENGINEERING, INC.
MONITOR WELL SAMPLING DATA

CLIENT : CROSS TIMBERS OPER. CO.

CHAIN-OF-CUSTODY # : 10598

LOCATION : McCOY GC C # 1

LABORATORY (S) USED : ON - SITE TECH.

Date : June 19, 2000

SAMPLER : N J V

Filename : 06-19-00.WK4

PROJECT MANAGER : N J V

WELL #	WELL ELEV. (ft)	WATER ELEV. (ft)	DEPTH TO WATER (ft)	TOTAL DEPTH (ft)	SAMPLING TIME	pH	CONDUCT (umhos)	VOLUME PURGED (gal.)	FREE PRODUCT (ft)
1	101.98	96.11	5.87	15.00	1250	7.2	2,000	4.50	-
2	101.35	95.85	5.50	15.00	1310	7.2	1,800	4.75	-
3	101.64	95.38	6.26	15.00	1330	7.2	2,000	4.25	-

NOTES : Volume of water purged from well prior to sampling: $V = \pi \times r^2 \times h \times 7.48 \text{ gal./ft}^3 \times 3 \text{ (wellbores)}$
(i.e. 2" MW $r = (1/12) \text{ ft}$. $h = 1 \text{ ft}$.) (i.e. 4" MW $r = (2/12) \text{ ft}$. $h = 1 \text{ ft}$.)

Ideally a minimum of three (3) wellbore volumes:

1.25 " well diameter = 0.19 gallons per foot of water (or 24 oz.).

2 bails per foot - small teflon bailer.

3 bails per foot - 3 / 4 " teflon bailer.

2.00 " well diameter = 0.49 gallons per foot of water.

4.00 " well diameter = 1.95 gallons per foot of water.

Comments or note well diameter if not standard 2 "

Excellent recovery in all MW 's . Collected BTEX sample from all MW 's .

OFF: (505) 325-5667
FAX: (505) 327-1496



LAB: (505) 325-1556
FAX: (505) 327-1496

ANALYTICAL REPORT

Date: 30-Jun-00

Client:	Blagg Engineering	Client Sample Info:	McCoy GC C #1
Work Order:	0006047	Client Sample ID:	MW #1
Lab ID:	0006047-01A	Matrix:	AQUEOUS
Project:	Cross Timbers - McCoy GC C #1	Collection Date:	6/19/2000 12:50:00 PM
		COC Record:	10598

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: DM		
Benzene	ND	0.5		µg/L	1	6/28/2000
Toluene	ND	0.5		µg/L	1	6/28/2000
Ethylbenzene	ND	0.5		µg/L	1	6/28/2000
m,p-Xylene	ND	1		µg/L	1	6/28/2000
o-Xylene	ND	0.5		µg/L	1	6/28/2000

Qualifiers:	PQL - Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
	ND - Not Detected at Practical Quantitation Limit	R - RPD outside accepted recovery limits
	J - Analyte detected below Practical Quantitation Limit	E - Value above quantitation range
	B - Analyte detected in the associated Method Blank	Surr: - Surrogate

1 of 3

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667
FAX: (505) 327-1496



LAB: (505) 325-1556
FAX: (505) 327-1496

ANALYTICAL REPORT

Date: 30-Jun-00

Client:	Blagg Engineering	Client Sample Info:	McCoy GC C #1
Work Order:	0006047	Client Sample ID:	MW #2
Lab ID:	0006047-02A	Matrix:	AQUEOUS
Project:	Cross Timbers - McCoy GC C #1	Collection Date:	6/19/2000 1:10:00 PM
		COC Record:	10598

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: DM		
Benzene	ND	0.5		µg/L	1	6/28/2000
Toluene	ND	0.5		µg/L	1	6/28/2000
Ethylbenzene	ND	0.5		µg/L	1	6/28/2000
m,p-Xylene	ND	1		µg/L	1	6/28/2000
o-Xylene	ND	0.5		µg/L	1	6/28/2000

Qualifiers:	PQL - Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
	ND - Not Detected at Practical Quantitation Limit	R - RPD outside accepted recovery limits
	J - Analyte detected below Practical Quantitation Limit	E - Value above quantitation range
	B - Analyte detected in the associated Method Blank	Surr: - Surrogate

2 of 3

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- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667
FAX: (505) 327-1496



LAB: (505) 325-1556
FAX: (505) 327-1496

ANALYTICAL REPORT

Date: 30-Jun-00

Client:	Blagg Engineering	Client Sample Info:	McCoy GC C #1
Work Order:	0006047	Client Sample ID:	MW #3
Lab ID:	0006047-03A	Matrix:	AQUEOUS
Project:	Cross Timbers - McCoy GC C #1	Collection Date:	6/19/2000 1:30:00 PM
		COC Record:	10598

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: DM		
Benzene	ND	0.5		µg/L	1	6/27/2000
Toluene	ND	0.5		µg/L	1	6/27/2000
Ethylbenzene	16	0.5		µg/L	1	6/27/2000
m,p-Xylene	13	1		µg/L	1	6/27/2000
o-Xylene	2.4	0.5		µg/L	1	6/27/2000

Qualifiers:

- PQL - Practical Quantitation Limit
- ND - Not Detected at Practical Quantitation Limit
- J - Analyte detected below Practical Quantitation Limit
- B - Analyte detected in the associated Method Blank

- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range
- Surr: - Surrogate

3 of 3

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -



CHAIN OF CUSTODY RECORD

10598

612 E. Murray Dr. • P.O. Box 2606 • Farmington, NM 87499
LAB: (505) 325-5667 • FAX: (505) 327-1496

Date: 6/19/00
Page: 1 of 1

Purchase Order No.:		Project No.		Name <u>Nelson Velez</u>		Title							
SEND INVOICE TO		Company <u>BLAKE ENGINEERING, INC.</u>		Company <u>SOORE</u>									
Address <u>P.O. BOX 87</u>		Dept.		Mailing Address									
City, State, Zip <u>Farmington, NM 87499</u>				City, State, Zip									
PROJECT LOCATION:				Telephone No. <u>632-1199</u>		Telefax No. <u>632-3903</u>							
SAMPLER'S SIGNATURE: <u>Nelson Velez</u>				ANALYSIS REQUESTED									
SAMPLE IDENTIFICATION		DATE		TIME		MATRIX		PRES.		Number of Containers		LAB ID	
MW #1		6/16/00		1250		WATER		HELD & COOL		2		0000017 01A	
MW #2		6/16/00		1310		WATER		HELD & COOL		2		02A	
MW #3		6/16/00		1330		WATER		HELD & COOL		2		03A	
Relinquished by: <u>Nelson Velez</u>		Date/Time <u>6/16/00 1426</u>		Received by: <u>Heidi Rose</u>		Date/Time <u>6/16/00 1426</u>							
Relinquished by:		Date/Time		Received by:		Date/Time							
Relinquished by:		Date/Time		Received by:		Date/Time							
Method of Shipment:		Rush		24-48 Hours		10 Working Days		By Date					
Authorized by: _____		Date _____		Special Instructions / Remarks									
(Client Signature Must Accompany Request)													

On Site Technologies, LTD.

Date: 30-Jun-00

QC SUMMARY REPORT

Method Blank

CLIENT: Blagg Engineering
 Work Order: 0006047
 Project: Cross Timbers - McCoy GC C #1

Sample ID: MB1	Batch ID: GC-1_000627	Test Code: SW8021B	Units: µg/L	Analysis Date: 6/27/2000	Prep Date:
Client ID:	0006047	Run ID: GC-1_000627A		SeqNo: 29412	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Benzene	.0393	0.5			J
Ethylbenzene	.0995	0.5			J
m,p-Xylene	.1968	1			J
Methyl tert-Butyl Ether	ND	1			
o-Xylene	.2037	0.5			J
Toluene	.2611	0.5			J

Sample ID: MB1	Batch ID: GC-1_000628	Test Code: SW8021B	Units: µg/L	Analysis Date: 6/28/2000	Prep Date:
Client ID:	0006047	Run ID: GC-1_000628A		SeqNo: 29475	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Benzene	ND	0.5			
Ethylbenzene	ND	0.5			
m,p-Xylene	ND	1			
Methyl tert-Butyl Ether	ND	1			
o-Xylene	ND	0.5			
Toluene	.0854	0.5			J

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 30-Jun-00

QC SUMMARY REPORT

Sample Matrix Spike

CLIENT: Blagg Engineering
 Work Order: 0006047
 Project: Cross Timbers - McCoy GC C #1

Sample ID: 0006050-17AMS	Batch ID: GC-1_000627	Test Code: SW8021B	Units: µg/L	Analysis Date: 6/27/2000	Prep Date:						
Client ID: 0006047	Run ID: GC-1_000627A	SeqNo: 29413									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	223.5	2.5	200	21.68	100.9%	73	126				
Ethylbenzene	409.5	2.5	200	215.8	96.9%	88	113				
m,p-Xylene	378.7	5	400	0	94.7%	83	112				
Methyl tert-Butyl Ether	228.3	5	200	22.43	103.0%	81	125				
o-Xylene	204.2	2.5	200	2.268	101.0%	93	110				
Toluene	210.7	2.5	200	4.871	102.9%	76	126				

Sample ID: 0006050-17AMSD	Batch ID: GC-1_000627	Test Code: SW8021B	Units: µg/L	Analysis Date: 6/27/2000	Prep Date:						
Client ID: 0006047	Run ID: GC-1_000627A	SeqNo: 29414									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPLimit	Qual
Benzene	223.9	2.5	200	21.68	101.1%	73	126	223.5	0.2%	6	
Ethylbenzene	412.8	2.5	200	215.8	98.5%	88	113	409.5	0.8%	5	
m,p-Xylene	381.6	5	400	0	95.4%	83	112	378.7	0.8%	7	
Methyl tert-Butyl Ether	231.7	5	200	22.43	104.6%	81	125	228.3	1.5%	9	
o-Xylene	205.9	2.5	200	2.268	101.8%	93	110	204.2	0.9%	6	
Toluene	210.2	2.5	200	4.871	102.7%	76	126	210.7	0.2%	6	

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Blagg Engineering
Work Order: 0006047
Project: Cross Timbers - McCoy GC C #1

QC SUMMARY REPORT
 Sample Matrix Spike

Sample ID: 0006057-01AMS	Batch ID: GC-1_000628	Test Code: SW8021B	Units: µg/L	Analysis Date: 6/28/2000	Prep Date:
Client ID: 0006047	Run ID: GC-1_000628A	PQL	SPK value	SeqNo: 29476	
Analyte	Result		SPK Ref Val	LowLimit	HighLimit
Benzene	207.6	2.5	200	73	126
Ethylbenzene	218.2	2.5	200	88	113
m,p-Xylene	534.5	5	400	83	112
Methyl tert-Butyl Ether	206	5	200	81	125
o-Xylene	220.3	2.5	200	93	110
Toluene	226.6	2.5	200	76	126

Sample ID: 0006057-01AMS	Batch ID: GC-1_000628	Test Code: SW8021B	Units: µg/L	Analysis Date: 6/28/2000	Prep Date:
Client ID: 0006047	Run ID: GC-1_000628A	PQL	SPK value	SeqNo: 29477	
Analyte	Result		SPK Ref Val	LowLimit	HighLimit
Benzene	216.4	2.5	200	73	126
Ethylbenzene	227.7	2.5	200	88	113
m,p-Xylene	558.3	5	400	83	112
Methyl tert-Butyl Ether	218.3	5	200	81	125
o-Xylene	230.4	2.5	200	93	110
Toluene	236.2	2.5	200	76	126

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 30-Jun-00

CLIENT: Blagg Engineering
Work Order: 0006047
Project: Cross Timbers - McCoy GC C #1

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS WATER		Batch ID: GC-1_000627	Test Code: SW8021B	Units: µg/L	Analysis Date: 6/27/2000		Prep Date:				
Client ID:	0006047	Run ID:	GC-1_000627A		SeqNo:	29411					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	43.46	0.5	40	0.0393	108.6%	89	112				
Ethylbenzene	43.38	0.5	40	0.0995	108.2%	93	112				
m,p-Xylene	82.31	1	80	0.1968	102.6%	88	108				
Methyl tert-Butyl Ether	42.71	1	40	0	106.8%	87	115				
o-Xylene	43.53	0.5	40	0.2037	108.3%	93	112				
Toluene	43.75	0.5	40	0.2611	108.7%	92	111				

Sample ID: LCS WATER	Batch ID: GC-1_000628	Test Code: SW8021B	Units: µg/L	Analysis Date: 6/28/2000	Prep Date:						
Client ID: 0006047	Run ID: GC-1_000628A			SeqNo: 29474							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	41.54	0.5	40	0	103.8%	89	112				
Ethylbenzene	41.58	0.5	40	0	104.0%	93	112				
m,p-Xylene	79	1	80	0	98.7%	88	108				
Methyl tert-Butyl Ether	40.92	1	40	0	102.3%	87	115				
o-Xylene	41.88	0.5	40	0	104.7%	93	112				
Toluene	41.8	0.5	40	0.0854	104.3%	92	111				

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

CLIENT: Blagg Engineering
 Work Order: 0006047
 Project: Cross Timbers - McCoy GC C #1

Date: 30-Jun-00

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV1 BTEX_0004		Batch ID: GC-1_000627		Test Code: SW8021B		Units: µg/L		Analysis Date: 6/27/2000		Prep Date:	
Client ID: 0006047		Run ID: GC-1_000627A		PQL		SPK value		SeqNo: 29408			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	21.53	0.5	20	0	107.7%	85	115				
Ethylbenzene	21.6	0.5	20	0	108.0%	85	115				
m,p-Xylene	41.25	1	40	0	103.1%	85	115				
Methyl tert-Butyl Ether	20.97	1	20	0	104.9%	85	115				
o-Xylene	21.82	0.5	20	0	109.1%	85	115				
Toluene	21.82	0.5	20	0	109.1%	85	115				
1,4-Difluorobenzene	90	0	100	0	90.0%	80	105				
4-Bromochlorobenzene	84.74	0	100	0	84.7%	78	108				
Fluorobenzene	88.88	0	100	0	88.9%	78	108				

Sample ID: CCV2 BTEX_0004		Batch ID: GC-1_000627		Test Code: SW8021B		Units: µg/L		Analysis Date: 6/27/2000		Prep Date:	
Client ID: 0006047		Run ID: GC-1_000627A		PQL		SPK value		SeqNo: 29409			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.93	0.5	20	0	104.7%	85	115				
Ethylbenzene	20.83	0.5	20	0	104.1%	85	115				
m,p-Xylene	39.71	1	40	0	99.3%	85	115				
Methyl tert-Butyl Ether	21.37	1	20	0	106.8%	85	115				
o-Xylene	21.04	0.5	20	0	105.2%	85	115				
Toluene	21.03	0.5	20	0	105.2%	85	115				
1,4-Difluorobenzene	90.94	0	100	0	90.9%	80	105				
4-Bromochlorobenzene	84.85	0	100	0	84.8%	78	108				
Fluorobenzene	89.38	0	100	0	89.4%	78	108				

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT
Continuing Calibration Verification Standard

CLIENT: Biagg Engineering
Work Order: 0006047
Project: Cross Timbers - McCoy GC C #1

Sample ID: CCV3 BTEX_0004			Batch ID: GC-1_000627		Test Code: SW8021B		Units: µg/L		Analysis Date: 6/27/2000			Prep Date:				
Client ID: 0006047			Run ID: GC-1_000627A		PQL		SPK value		SPK Ref Val		%REC		SeqNo: 29410			
Analyte	Result										LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	41.25		0.5	40	0						85	115				
Ethylbenzene	40.94		0.5	40	0						85	115				
m,p-Xylene	77.72		1	80	0						85	115				
Methyl tert-Butyl Ether	43.03		1	40	0						85	115				
o-Xylene	41.38		0.5	40	0						85	115				
Toluene	41.45		0.5	40	0						85	115				
1,4-Difluorobenzene	89.97		0	100	0						80	105				
4-Bromochlorobenzene	85.27		0	100	0						78	108				
Fluorobenzene	88.73		0	100	0						78	108				

Sample ID: CCV1 BTEX_0004		Batch ID: GC-1_000628	Test Code: SW8021B	Units: µg/L		Analysis Date: 6/28/2000			Prep Date:					
Client ID:		0006047	Run ID:	GC-1_000628A	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Analyte	Result													
Benzene	20.7		0.5	20		0		103.5%	85	115				
Ethylbenzene	20.82		0.5	20		0		104.1%	85	115				
m,p-Xylene	39.73		1	40		0		99.3%	85	115				
Methyl tert-Butyl Ether	20.08		1	20		0		100.4%	85	115				
o-Xylene	21.02		0.5	20		0		105.1%	85	115				
Toluene	20.9		0.5	20		0		104.5%	85	115				
1,4-Difluorobenzene	90.48		0	100		0		90.5%	80	105				
4-Bromochlorobenzene	85.19		0	100		0		85.2%	78	108				
Fluorobenzene	89.23		0	100		0		89.2%	78	108				

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT
Continuing Calibration Verification Standard

CLIENT: Blagg Engineering
Work Order: 0006047
Project: Cross Timbers - McCoy GC C #1

Sample ID: CCV2 BTEX_0004		Batch ID: GC-1_000628		Test Code: SW8021B		Units: µg/L		Analysis Date: 6/28/2000		Prep Date:	
Client ID: 0006047		Run ID: GC-1_000628A		SeqNo: 29472							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	21.05	0.5	20	0	105.3%	85	115				
Ethylbenzene	21.14	0.5	20	0	105.7%	85	115				
m,p-Xylene	40.05	1	40	0	100.1%	85	115				
Methyl tert-Butyl Ether	21.43	1	20	0	107.2%	85	115				
o-Xylene	21.34	0.5	20	0	106.7%	85	115				
Toluene	21.14	0.5	20	0	105.7%	85	115				
1,4-Difluorobenzene	90.55	0	100	0	90.6%	80	105				
4-Bromochlorobenzene	85.7	0	100	0	85.7%	78	108				
Fluorobenzene	89.26	0	100	0	89.3%	78	108				

Sample ID: CCV3 BTEX_0004		Batch ID: GC-1_000628		Test Code: SW8021B		Units: µg/L		Analysis Date: 6/28/2000		Prep Date:	
Client ID: 0006047		Run ID: GC-1_000628A		SeqNo: 29473							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	43.44	0.5	40	0	108.6%	85	115				
Ethylbenzene	43.09	0.5	40	0	107.7%	85	115				
m,p-Xylene	81.55	1	80	0	101.9%	85	115				
Methyl tert-Butyl Ether	44.65	1	40	0	111.6%	85	115				
o-Xylene	43.62	0.5	40	0	109.1%	85	115				
Toluene	43.59	0.5	40	0	109.0%	85	115				
1,4-Difluorobenzene	90.19	0	100	0	90.2%	80	105				
4-Bromochlorobenzene	85.16	0	100	0	85.2%	78	108				
Fluorobenzene	89.08	0	100	0	89.1%	78	108				

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Blagg Engineering
Work Order: 0006047
Project: Cross Timbers - McCoy GC C #1
Test No: SW8021B

QC SUMMARY REPORT SURROGATE RECOVERIES

Aromatic Volatiles by GC/PID

Sample ID	14FBZ	4BCBZ	FLBZ				
0006046-01A	90.5	83.4	89.3				
0006046-02A	90.8	84.1	89.7				
0006047-01A	90.8	84.6	89.8				
0006047-02A	90.6	84.5	89.5				
0006047-03A	87	80.1	92.4				
0006048-01A	91	85.2	90				
0006048-02A	90.2	83.6	89.1				
0006048-03A	91	85.1	90				
0006049-01A	90	83.2	88.6				
0006049-02A	84.4	82.3	83.1				
0006049-03A	90.8	84.9	89.9				
0006050-01A	90.3	83.7	89.6				
0006050-02A	91	84.9	89.8				
0006050-03A	91.1	84.4	89.8				
0006050-04A	91	84.6	90				
0006050-05A	90.8	83.4	89.6				
0006050-06A	91.7	82.6	98				
0006050-07A	89.9	85.3	89.1				
0006050-08A	91.4	85.1	90.1				
0006050-09A	91.2	85.1	90.2				
0006050-10A	91	85.1	89.9				
0006050-11A	91.6	85	90.2				
0006050-12A	91.2	85	90.1				
0006050-13A	90.9	85.4	90.2				
0006050-14A	91.2	85	89.7				
0006050-15A	90.7	84.3	89.6				
0006050-16A	90.8	84.5	89.7				

Acronym**Surrogate****QC Limits**

14FBZ

= 1,4-Difluorobenzene

80-105

4BCBZ

= 4-Bromochlorobenzene

78-108

FLBZ

= Fluorobenzene

78-108

* Surrogate recovery outside acceptance limits

CLIENT: Blagg Engineering
Work Order: 0006047
Project: Cross Timbers - McCoy GC C #1
Test No: SW8021B

QC SUMMARY REPORT SURROGATE RECOVERIES

Aromatic Volatiles by GC/PID

Sample ID	14FBZ	4BCBZ	FLBZ					
0006050-17A	92.8	86.9	97.8					
0006050-17AMS	89.7	84.6	90.2					
0006050-17AMSD	89.5	85.1	90.3					
0006050-19A	90.6	84.7	89.8					
0006054-01A	90.8	85.2	90					
0006054-03A	91.3	85.8	96.9					
0006054-04A	89.4	79.3	93.8					
0006057-01A	89.4	83.1	91.2					
0006057-01AMS	85.9	84.6	86.7					
0006057-01AMSD	86.8	83.8	86.9					
CCV1 BTEX_00040	90.5	85.2	89.2					
CCV2 BTEX_00040	90.6	85.7	89.2					
CCV3 BTEX_00040	90.2	85.2	89.1					
LCS WATER	90.1	86.1	88.8					
MBI	91.1	84.3	89.9					

Acronym	Surrogate	QC Limits
14FBZ	= 1,4-Difluorobenzene	80-105
4BCBZ	= 4-Bromochlorobenzene	78-108
FLBZ	= Fluorobenzene	78-108

* Surrogate recovery outside acceptance limits

BLAGG ENGINEERING, INC.
MONITOR WELL SAMPLING DATA

CLIENT: CROSS TIMBERS OPER. CO.

CHAIN-OF-CUSTODY #: 10775

LOCATION: McCOY GC C # 1

LABORATORY (S) USED: ON - SITE TECH.

Date: November 30, 2000

SAMPLER: N J V

Filename: 11-30-00.WK4

PROJECT MANAGER: N J V

WELL #	WELL ELEV. (ft)	WATER ELEV. (ft)	DEPTH TO WATER (ft)	TOTAL DEPTH (ft)	SAMPLING TIME	pH	CONDUCT (umhos)	VOLUME PURGED (gal.)	FREE PRODUCT (ft)
1	101.98	95.99	5.99	15.00	-	-	-	-	-
2	101.35	95.80	5.55	15.00	-	-	-	-	-
3	101.64	95.45	6.19	15.00	0800	7.7	2,000	4.25	-

NOTES: Volume of water purged from well prior to sampling: $V = \pi \times r^2 \times h \times 7.48 \text{ gal./ft}^3 \times 3 \text{ (wellbores)}$.
(i.e. 2" MW $r = (1/12) \text{ ft}$. $h = 1 \text{ ft}$.) (i.e. 4" MW $r = (2/12) \text{ ft}$. $h = 1 \text{ ft}$.)

Ideally a minimum of three (3) wellbore volumes:

1.25 " well diameter = 0.19 gallons per foot of water (or 24 oz.).

2 bails per foot - small teflon bailer.

3 bails per foot - 3 / 4 " teflon bailer.

2.00 " well diameter = 0.49 gallons per foot of water.

4.00 " well diameter = 1.95 gallons per foot of water.

Comments or note well diameter if not standard 2 "

Excellent recovery in MW # 3 . Collected BTEX sample from MW # 3 only .

OFF: (505) 325-5667
FAX: (505) 327-1496



LAB: (505) 325-1556
FAX: (505) 327-1496

ANALYTICAL REPORT

Date: 15-Dec-00

Client:	Blagg Engineering	Client Sample Info:	McCoy GC C #1
Work Order:	0012001	Client Sample ID:	MW #3
Lab ID:	0012001-01A	Matrix:	AQUEOUS
Project:	Cross Timbers; McCoy GC C #1	Collection Date:	11/30/2000 8:00:00 AM
		COC Record:	10775

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: DC		
Benzene	ND	0.5		µg/L	1	12/5/2000
Toluene	ND	0.5		µg/L	1	12/5/2000
Ethylbenzene	7.5	0.5		µg/L	1	12/5/2000
m,p-Xylene	12	1		µg/L	1	12/5/2000
o-Xylene	4.6	0.5		µg/L	1	12/5/2000

Qualifiers:	PQL - Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
	ND - Not Detected at Practical Quantitation Limit	R - RPD outside accepted recovery limits
	J - Analyte detected below Practical Quantitation Limit	E - Value above quantitation range
	B - Analyte detected in the associated Method Blank	Surr: - Surrogate

1 of 1

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EMAIL: ONSITE@ONSITELTD.COM

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

On Site Technologies, LTD.

Date: 15-Dec-00

CLIENT: Blagg Engineering
 Work Order: 0012001
 Project: Cross Timbers; McCoy GC C #1

QC SUMMARY REPORT

Method Blank

Sample ID: MB1	Batch ID: GC-1_001205	Test Code: SW8021B	Units: µg/L	Analysis Date 12/5/2000	Prep Date:
Client ID:	0012001	Run ID: GC-1_001205A		SeqNo: 33206	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Benzene	ND	0.5			
Ethylbenzene	.0771	0.5			J
m,p-Xylene	.2174	1			J
Methyl tert-Butyl Ether	ND	1			
o-Xylene	.2053	0.5			J
Toluene	ND	0.5			

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 15-Dec-00

QC SUMMARY REPORT

Sample Matrix Spike

CLIENT: Blagg Engineering
 Work Order: 0012001
 Project: Cross Timbers; McCoy GC C #1

Sample ID: 0012002-03AMS		Batch ID: GC-1_001205		Test Code: SW8021B		Units: µg/L		Analysis Date 12/5/2000		Prep Date:	
Client ID:		0012001		Run ID: GC-1_001205A		SeqNo: 33207					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	1939	25	2000	0	97.0%	88	112				
Ethylbenzene	1968	25	2000	41.32	96.4%	86	113				
m,p-Xylene	4855	50	4000	1051	95.1%	85	108				
Methyl tert-Butyl Ether	1964	50	2000	0	98.2%	86	117				
o-Xylene	2031	25	2000	75.36	97.8%	92	110				
Toluene	1974	25	2000	0	98.7%	88	116				

Sample ID: 0012002-03AMSD		Batch ID: GC-1_001205		Test Code: SW8021B		Units: µg/L		Analysis Date 12/5/2000		Prep Date:	
Client ID:		0012001		Run ID: GC-1_001205A				SeqNo: 33208			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	1950	25	2000	0	97.5%	88	112	1939	0.5%	6	
Ethylbenzene	1980	25	2000	41.32	96.9%	86	113	1968	0.6%	6	
m,p-Xylene	4890	50	4000	1051	96.0%	85	108	4855	0.7%	6	
Methyl tert-Butyl Ether	1998	50	2000	0	99.9%	86	117	1964	1.7%	7	
o-Xylene	2051	25	2000	75.36	98.8%	92	110	2031	1.0%	6	
Toluene	1989	25	2000	0	99.5%	88	116	1974	0.8%	6	

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits	B - Analyte detected in the associated Method Blank
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits	

On Site Technologies, LTD.

Date: 15-Dec-00

CLIENT: Blagg Engineering
Work Order: 0012001
Project: Cross Timbers; McCoy GC C #1

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS WATER		Batch ID: GC-1_001205		Test Code: SW8021B		Units: µg/L		Analysis Date 12/5/2000		Prep Date:	
Client ID:		0012001		Run ID: GC-1_001205A		PQL		SeqNo: 33205			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	38.45	0.5	40	0	96.1%	96	111				
Ethylbenzene	38.65	0.5	40	0.0771	96.4%	96	111				
m,p-Xylene	77.64	1	80	0.2174	96.8%	92	105				
Methyl tert-Butyl Ether	38.91	1	40	0	97.3%	93	113				
o-Xylene	39.21	0.5	40	0.2053	97.5%	97	110				
Toluene	39.05	0.5	40	0	97.6%	97	109				

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 15-Dec-00

CLIENT: Blagg Engineering
 Work Order: 0012001
 Project: Cross Timbers; McCoy GC C #1

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV1 BTEX_0010				Batch ID: GC-1_001205		Test Code: SW8021B		Units: µg/L		Analysis Date 12/5/2000		Prep Date:	
Client ID:		0012001		Run ID:		GC-1_001205A				SeqNo:		33202	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Benzene	20.34	0.5	20	0	101.7%	85	115						
Ethylbenzene	21.73	0.5	20	0	108.7%	85	115						
m,p-Xylene	42.14	1	40	0	105.3%	85	115						
Methyl tert-Butyl Ether	20.24	1	20	0	101.2%	85	115						
o-Xylene	20.94	0.5	20	0	104.7%	85	115						
Toluene	20.71	0.5	20	0	103.5%	85	115						
1,4-Difluorobenzene	73.54	0	80	0	91.9%	70	130						
4-Bromochlorobenzene	80.05	0	80	0	100.1%	70	130						
Fluorobenzene	73.2	0	80	0	91.5%	70	130						

Sample ID: CCV2 BTEX_0010				Batch ID: GC-1_001205		Test Code: SW8021B		Units: µg/L		Analysis Date 12/5/2000		Prep Date:	
Client ID:		0012001		Run ID:		GC-1_001205A				SeqNo: 33203			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Benzene	19.51	0.5	20	0	97.6%	85	115						
Ethylbenzene	19.8	0.5	20	0	99.0%	85	115						
m,p-Xylene	39.72	1	40	0	99.3%	85	115						
Methyl tert-Butyl Ether	19.93	1	20	0	99.7%	85	115						
o-Xylene	20.17	0.5	20	0	100.9%	85	115						
Toluene	19.77	0.5	20	0	98.9%	85	115						
1,4-Difluorobenzene	73.34	0	80	0	91.7%	70	130						
4-Bromochlorobenzene	82.12	0	80	0	102.7%	70	130						
Fluorobenzene	73.54	0	80	0	91.9%	70	130						

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

CLIENT: Blagg Engineering
Work Order: 0012001
Project: Cross Timbers; McCoy GC C #1

QC SUMMARY REPORT
 Continuing Calibration Verification Standard

Sample ID: CCV3 BTEX_0010		Batch ID: GC-1_001205		Test Code: SW8021B		Units: µg/L		Analysis Date 12/5/2000		Prep Date:	
Client ID:		Run ID:		GC-1_001205A				SeqNo: 33204			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	40.45	0.5	40	0	101.1%	85	115				
Ethylbenzene	40.3	0.5	40	0	100.8%	85	115				
m,p-Xylene	80.27	1	80	0	100.3%	85	115				
Methyl tert-Butyl Ether	41.06	1	40	0	102.7%	85	115				
o-Xylene	40.79	0.5	40	0	102.0%	85	115				
Toluene	40.68	0.5	40	0	101.7%	85	115				
1,4-Difluorobenzene	72.99	0	80	0	91.2%	70	130				
4-Bromochlorobenzene	82.48	0	80	0	103.1%	70	130				
Fluorobenzene	73.06	0	80	0	91.3%	70	130				

CLIENT: Blagg Engineering
Work Order: 0012001
Project: Cross Timbers; McCoy GC C #1
Test No: SW8021B

QC SUMMARY REPORT SURROGATE RECOVERIES

Aromatic Volatiles by GC/PID

Sample ID	14FBZ	4BCBZ	FLBZ					
0011047-01A	91.1	102	90.4					
0011048-01A	90.2	98.1	89.6					
0011048-02A	92.4	99.9	92.4					
0011048-03A	92.3	101	94.2					
0011048-04A	91.3	100	91.8					
0011049-01A	93.7	103	92.6					
0011049-02A	92	100	92.3					
0011049-03A	91.5	99.6	91.8					
0011049-04A	91.9	100	91					
0011050-01A	88.1	96	87.6					
0011050-02A	91.9	101	91.2					
0011050-03A	89.2	99.6	92.3					
0011050-04A	93.4	103	92.3					
0012001-01A	91.2	101	91.6					
0012002-01A	92.5	102	92.4					
0012002-02A	92.8	102	93.1					
0012002-03AMS	90.9	104	91.2					
0012002-03AMSD	91	104	91					
CCV1 BTEX_00100	91.9	100	91.5					
CCV2 BTEX_00100	91.7	103	91.9					
CCV3 BTEX_00100	91.2	103	91.3					
LCS WATER	91	96.4	91.2					
MB1	92.5	95.4	92.2					

Acronym

Surrogate

QC Limits

14FBZ	=	1,4-Difluorobenzene	70-130
4BCBZ	=	4-Bromochlorobenzene	70-130
FLBZ	=	Fluorobenzene	70-130

* Surrogate recovery outside acceptance limits

BLAGG ENGINEERING, INC.
MONITOR WELL SAMPLING DATA

CLIENT : CROSS TIMBERS OPER. CO.

CHAIN-OF-CUSTODY # : 11041

LOCATION : McCOY GC C # 1

LABORATORY (S) USED : ON - SITE TECH.

Date : March 19, 2001

SAMPLER : N J V

Filename : 03-19-01.WK4

PROJECT MANAGER : N J V

WELL #	WELL ELEV. (ft)	WATER ELEV. (ft)	DEPTH TO WATER (ft)	TOTAL DEPTH (ft)	SAMPLING TIME	pH	CONDUCT (umhos)	VOLUME PURGED (gal.)	FREE PRODUCT (ft)
1	101.98	96.10	5.88	15.00	1255	7.33	1,800	4.50	-
2	101.35	95.87	5.48	15.00	1315	7.23	1,800	4.75	-
3	101.64	95.51	6.13	15.00	1335	7.35	2,200	4.50	-

NOTES : Volume of water purged from well prior to sampling: $V = \pi \times r^2 \times h \times 7.48 \text{ gal./ft}^3 \times 3 \text{ (wellbores)}$
(i.e. 2" MW $r = (1/12) \text{ ft. } h = 1 \text{ ft.}$ (i.e. 4" MW $r = (2/12) \text{ ft. } h = 1 \text{ ft.}$)

Ideally a minimum of three (3) wellbore volumes:

1.25 " well diameter = 0.19 gallons per foot of water (or 24 oz.).

2 bails per foot - small teflon bailer.

3 bails per foot - 3 / 4 " teflon bailer.

2.00 " well diameter = 0.49 gallons per foot of water.

4.00 " well diameter = 1.95 gallons per foot of water.

Comments or note well diameter if not standard 2 "

Excellent recovery in all MW's . Collected BTEX sample from all MW's listed above .

OFF: (505) 325-5667
FAX: (505) 327-1496



LAB: (505) 325-1556
FAX: (505) 327-1496

ANALYTICAL REPORT

Date: 23-Mar-01

Client:	Blagg Engineering	Client Sample Info:	McCoy GC C #1
Work Order:	0103022	Client Sample ID:	MW #1
Lab ID:	0103022-01A	Matrix:	AQUEOUS
Project:	Cross Timbeers - McCoy GC C #1	Collection Date:	3/19/2001 12:55:00 PM
		COC Record:	11041

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: DM		
Benzene	ND	0.5		µg/L	1	3/21/2001
Toluene	ND	0.5		µg/L	1	3/21/2001
Ethylbenzene	ND	0.5		µg/L	1	3/21/2001
m,p-Xylene	ND	1		µg/L	1	3/21/2001
o-Xylene	ND	0.5		µg/L	1	3/21/2001

Qualifiers:	PQL - Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
	ND - Not Detected at Practical Quantitation Limit	R - RPD outside accepted recovery limits
	J - Analyte detected below Practical Quantitation Limit	E - Value above quantitation range
	B - Analyte detected in the associated Method Blank	Surr: - Surrogate

1 of 1

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- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667
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LAB: (505) 325-1556
FAX: (505) 327-1496

ANALYTICAL REPORT

Date: 23-Mar-01

Client:	Blagg Engineering	Client Sample Info:	McCoy GC C #1
Work Order:	0103022	Client Sample ID:	MW #2
Lab ID:	0103022-02A	Matrix:	AQUEOUS
Project:	Cross Timbeers - McCoy GC C #1	Collection Date:	3/19/2001 1:15:00 PM
		COC Record:	11041

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B				Analyst: DM
Benzene	ND	0.5		µg/L	1	3/21/2001
Toluene	ND	0.5		µg/L	1	3/21/2001
Ethylbenzene	ND	0.5		µg/L	1	3/21/2001
m,p-Xylene	ND	1		µg/L	1	3/21/2001
o-Xylene	ND	0.5		µg/L	1	3/21/2001

Qualifiers:	PQL - Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
	ND - Not Detected at Practical Quantitation Limit	R - RPD outside accepted recovery limits
	J - Analyte detected below Practical Quantitation Limit	E - Value above quantitation range
	B - Analyte detected in the associated Method Blank	Surr: - Surrogate

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- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667
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LAB: (505) 325-1556
FAX: (505) 327-1496

ANALYTICAL REPORT

Date: 23-Mar-01

Client:	Blagg Engineering	Client Sample Info:	McCoy GC C #1
Work Order:	0103022	Client Sample ID:	MW #3
Lab ID:	0103022-03A	Matrix:	AQUEOUS
Project:	Cross Timbeers - McCoy GC C #1	Collection Date:	3/19/2001 1:35:00 PM
		COC Record:	11041

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: DM		
Benzene	ND	0.5		µg/L	1	3/21/2001
Toluene	ND	0.5		µg/L	1	3/21/2001
Ethylbenzene	29	0.5		µg/L	1	3/21/2001
m,p-Xylene	48	1		µg/L	1	3/21/2001
o-Xylene	19	0.5		µg/L	1	3/21/2001

Qualifiers:	PQL - Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
	ND - Not Detected at Practical Quantitation Limit	R - RPD outside accepted recovery limits
	J - Analyte detected below Practical Quantitation Limit	E - Value above quantitation range
	B - Analyte detected in the associated Method Blank	Surr: - Surrogate

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- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

On Site Technologies, LTD.

Date: 23-Mar-01

CLIENT: Blagg Engineering
Work Order: 0103022
Project: Cross Timbeers - McCoy GC C #1

QC SUMMARY REPORT

Method Blank

Sample ID: MB1	Batch ID: GC-1_010321	Test Code: SW8021B	Units: µg/L	Analysis Date: 3/21/2001	Prep Date:
Client ID:	0103022	Run ID: GC-1_010321A		SeqNo: 35873	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Benzene	ND	0.5			
Ethylbenzene	.0794	0.5			J
m,p-Xylene	.5522	1			J
Methyl tert-Butyl Ether	ND	1			
o-Xylene	.1977	0.5			J
Toluene	.154	0.5			J

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits	B - Analyte detected in the associated Method Blank
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits	

On Site Technologies, LTD.

Date: 23-Mar-01

CLIENT: Blagg Engineering
Work Order: 0103022
Project: Cross Timbeers - McCoy GC C #1

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 0103008-01AMS	Batch ID: GC-1_010321	Test Code: SW8021B	Units: µg/L	Analysis Date 3/21/2001	Prep Date:
Client ID: 0103022	Run ID: GC-1_010321A	PQL	SPK value	SeqNo: 35874	
Analyte	Result	PQL	SPK Ref Val	LowLimit	HighLimit
Benzene	1070	5	400	84	111
Ethylbenzene	733.1	5	320	84	111
m,p-Xylene	1386	10	800	84	108
Methyl tert-Butyl Ether	444.8	10	400	80	117
o-Xylene	517.8	5	400	89	107
Toluene	468.4	5	400	90	107

Sample ID: 0103008-01AMSD	Batch ID: GC-1_010321	Test Code: SW8021B	Units: µg/L	Analysis Date 3/21/2001	Prep Date:
Client ID: 0103022	Run ID: GC-1_010321A	PQL	SPK value	SeqNo: 35875	
Analyte	Result	PQL	SPK Ref Val	LowLimit	HighLimit
Benzene	1064	5	400	84	111
Ethylbenzene	709.4	5	320	84	111
m,p-Xylene	1343	10	800	84	108
Methyl tert-Butyl Ether	449.2	10	400	80	117
o-Xylene	502.9	5	400	89	107
Toluene	449.4	5	400	90	107

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 23-Mar-01

CLIENT: Blagg Engineering
Work Order: 0103022
Project: Cross Timbeers - McCoy GC C #1

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS WATER	Batch ID: GC-1_010321	Test Code: SW8021B	Units: µg/L	Analysis Date 3/21/2001	Prep Date:
Client ID: 0103022	Run ID: GC-1_010321A	PQL	SPK value	SeqNo: 35872	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Benzene	39.67	0.5	40	0	99.2% 92 109
Ethylbenzene	41.4	0.5	40	0.0794	103.3% 92 112
m,p-Xylene	82.98	1	80	0.5522	103.0% 91 108
Methyl tert-Butyl Ether	40.98	1	40	0	102.4% 89 116
o-Xylene	41.51	0.5	40	0.1977	103.3% 93 109
Toluene	40.7	0.5	40	0.154	101.4% 93 108

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits	B - Analyte detected in the associated Method Blank
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits	

On Site Technologies, LTD.

Date: 23-Mar-01

CLIENT: Blagg Engineering
Work Order: 0103022
Project: Cross Timbeers - McCoy GC C #1

QC SUMMARY REPORT
 Continuing Calibration Verification Standard

Sample ID: CCV1 BTEX_0103		Batch ID: GC-1_010321	Test Code: SW8021B	Units: µg/L		Analysis Date 3/21/2001		Prep Date:					
Client ID: 0103022		Run ID: GC-1_010321A	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	SeqNo: 35869	RPD Ref Val	%RPD	RPDLimit	Qual
Analyte	Result												
Benzene	20.15		0.5	20	0	100.7%	85	115					
Ethylbenzene	21.03		0.5	20	0	105.2%	85	115					
m,p-Xylene	42.36		1	40	0	105.9%	85	115					
Methyl tert-Butyl Ether	19.21		1	20	0	96.1%	85	115					
o-Xylene	21.15		0.5	20	0	105.8%	85	115					
Toluene	20.66		0.5	20	0	103.3%	85	115					
1,4-Difluorobenzene	78.38		0	80	0	98.0%	85	103					
4-Bromochlorobenzene	77.29		0	80	0	96.6%	93	108					
Fluorobenzene	78.25		0	80	0	97.8%	88	103					

Sample ID: CCV2 BTEX_0103		Batch ID: GC-1_010321	Test Code: SW8021B	Units: µg/L		Analysis Date 3/21/2001		Prep Date:					
Client ID: 0103022		Run ID: GC-1_010321A	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	SeqNo: 35870	RPD Ref Val	%RPD	RPDLimit	Qual
Analyte	Result												
Benzene	19.36		0.5	20	0	96.8%	85	115					
Ethylbenzene	20.17		0.5	20	0	100.8%	85	115					
m,p-Xylene	40.64		1	40	0	101.6%	85	115					
Methyl tert-Butyl Ether	17.97		1	20	0	89.8%	85	115					
o-Xylene	20.4		0.5	20	0	102.0%	85	115					
Toluene	19.89		0.5	20	0	99.5%	85	115					
1,4-Difluorobenzene	78.33		0	80	0	97.9%	85	103					
4-Bromochlorobenzene	76.34		0	80	0	95.4%	93	108					
Fluorobenzene	78.14		0	80	0	97.7%	88	103					

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

CLIENT: Blagg Engineering

Work Order: 0103022

Project: Cross Timbeers - McCoy GC C #1

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV3 BTEX_0103 Batch ID: GC-1_010321 Test Code: SW8021B Units: µg/L Analysis Date 3/21/2001 Prep Date:

Client ID: 0103022 Run ID: GC-1_010321A SeqNo: 35871

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	38.51	0.5	40	0	96.3%	85	115				
Ethylbenzene	39.82	0.5	40	0	99.5%	85	115				
m,p-Xylene	79.8	1	80	0	99.7%	85	115				
Methyl tert-Butyl Ether	38.07	1	40	0	95.2%	85	115				
o-Xylene	40.31	0.5	40	0	100.8%	85	115				
Toluene	39.43	0.5	40	0	98.6%	85	115				
1,4-Difluorobenzene	78.66	0	80	0	98.3%	85	103				
4-Bromochlorobenzene	75.38	0	80	0	94.2%	93	108				
Fluorobenzene	77.44	0	80	0	96.8%	88	103				

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Blagg Engineering
Work Order: 0103022
Project: Cross Timbeers - McCoy GC C #1
Test No: SW8021B

QC SUMMARY REPORT SURROGATE RECOVERIES

Aromatic Volatiles by GC/PID

Sample ID	14FBZ	4BCBZ	FLBZ					
0103008-01A	95.3	96.8	95.2					
0103008-01AMS	95.3	99.7	95					
0103008-01AMSD	95.4	97.3	94.6					
0103011-01A	97.9	99.2	96.6					
0103015-01A	88.2	87.7 *	95.6					
0103015-02A	98.5	97.7	98.5					
0103017-01A	93.4	92.3 *	94					
0103018-01A	96.7	95.6	95.8					
0103019-01A	99.2	97.3	98.2					
0103020-01A	96.4	91.7 *	96.4					
0103020-02A	94.7	93.7	93.8					
0103020-03A	98.9	96.6	97.8					
0103021-01A	99	98.4	97.9					
0103022-01A	99.3	97.7	98					
0103022-02A	98.4	95.8	97.8					
0103022-03A	96.1	93.4	99.2					
0103023-06A	107 *	96.2	101					
0103028-01A	98.3	95.6	98.8					
CCV1 BTEX_01030	98	96.6	97.8					
CCV2 BTEX_01030	97.9	95.4	97.7					
CCV3 BTEX_01030	98.3	94.2	96.8					
LCS WATER	97.3	97.4	97					
MB1	98.7	96.7	98.3					

Acronym	Surrogate	QC Limits
14FBZ	= 1,4-Difluorobenzene	85-103
4BCBZ	= 4-Bromochlorobenzene	93-108
FLBZ	= Fluorobenzene	88-103

* Surrogate recovery outside acceptance limits

94023

5796 US HWY. 64, FARMINGTON, NM 87401
(505) 632-0615

JOB No: 92140
PAGE No: 1 of 1

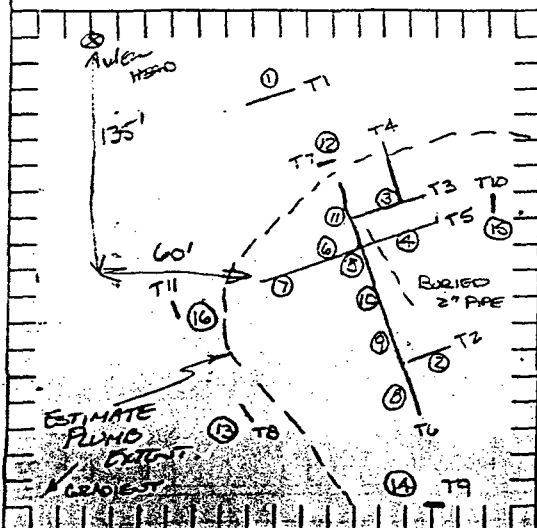
DATE STARTED: 4-23-92
DATE FINISHED: 4-28-92
ENVIRO. SPCLT: MKL
OPERATOR: MS
ASSISTANT: PI

LAND USE: RECREATIONAL AREA (PEACE BRIGADE FIELD)
SURFACE CONDITIONS: WET TALL GRASS. NO SURFACE EVIDENCE OF PIT.

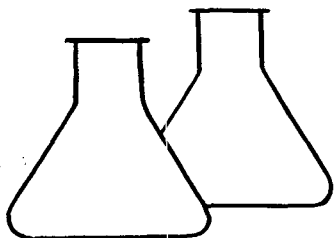
SAMPLE INVENTORY:

CUMULATIVE SOIL MATRIX IS RELATIVELY SHALLOW DEPTH
INSITU TREATMENT BY PUMP & TREAT FEASIBLY NOT
BE POSSIBLE AS EXCAVATION & REMOVAL FOR
TREATMENT.

SITE DIAGRAM

[illegible]

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



ENVIROTECH LABS

5796 US HIGHWAY 64-3014 • FARMINGTON, NEW MEXICO 87401

PHONE: (505) 632-0615 • FAX: (505) 632-1865

EPA METHOD 418.1 TOTAL PETROLEUM HYDROCARBONS

Client:	AMOCO	Project #:	92140
Sample ID:	Loc. #5 @ 2.5'	Date Reported:	09-02-92
Laboratory Number:	0211 Ammended	Date Sampled:	04-28-92
Sample Matrix:	Soil	Date Received:	04-28-92
Preservative:	Cool	Date Analyzed:	06-04-92
Condition:	Cool & Intact	Analysis Needed:	TPH

Parameter -----	Concentration (mg/kg) -----	Det. Limit (mg/kg) -----
Total Petroleum Hydrocarbons	ND	5.0

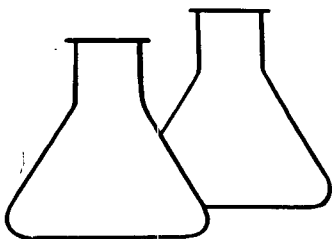
Method: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No.4551, 1978

ND - Parameter not detected at the stated detection limit.

Comments: McCoy GC C1---Separator Pit---94023
The original results were inadvertantly filed under
McCoy GD D1---Separator Pit---94043

CA Jurendt
Analyst

Morris D. Young
Review



ENVIROTECH LABS

5796 US HIGHWAY 64-3014 • FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615 • FAX: (505) 632-1865

EPA METHOD 8020 AROMATIC VOLATILE ORGANICS

Client:	Amoco	Project #:	92140
Sample ID:	loc #5 @ 2.5'	Date Reported:	09-24-92
Laboratory Number:	0211	Date Sampled:	04-28-92
Sample Matrix:	Soil	Date Received:	04-28-92
Preservative:	Cool	Date Extracted:	06-04-92
Condition:	Cool & Intact	Date Analyzed:	09-20-92
		Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	9,090	79
Toluene	63,900	148
Ethylbenzene	37,200	19.7
p,m-Xylene	205,900	207
o-Xylene	65,800	285

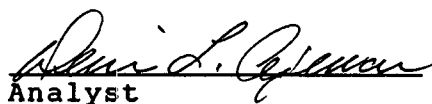
SURROGATE RECOVERIES:	Parameter	Percent Recovery
	Trifluorotoluene	122 %
	Bromfluorobenzene	109 %

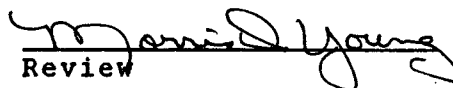
Method: Method 5030, Purge-and-Trap, Test Methods for
Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

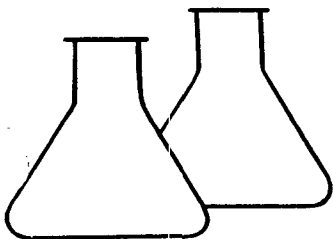
Method 8020, Aromatic Volatile Organics, Test Methods
for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

ND - Parameter not detected at the stated detection limit.

Comments: McCoy GC C 1 Separator Pit 94023


Analyst


Review



ENVIROTECH LABS

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PHONE: (505) 632-0615 • FAX: (505) 632-1865

EPA METHOD 8020 AROMATIC VOLATILE ORGANICS HEADSPACE EXTRACTION

Client:	Amoco	Project #:	92140
Sample ID:	Loc. #5 (Soil)	Date Reported:	09-02-92
Laboratory Number:	0216 Ammended	Date Sampled:	04-28-92
Sample Matrix:	Soil	Date Received:	04-28-92
Preservative:	NA	Date Analyzed:	06-11-92
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	36.2	13.6
Toluene	276	5.6
Ethylbenzene	830	1.6
p,m-Xylene	18,100	1.6
o-Xylene	1,410	1.6

Method: Method 3810, Headspace, Test Methods for Evaluating
Solid Waste, SW-846, USEPA, Sept. 1986

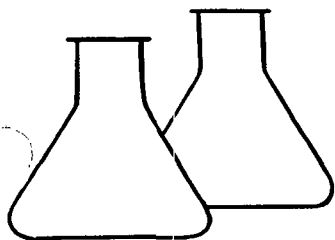
Method 8020, Aromatic Volatile Organics, Test Methods for
Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: McCoy G.C. Cl---Separator Pit---94023.
Original analytical results were inadvertently filed
under McCoy G.C. Dl--Separator Pit--94043.

Robert M Young
Analyst

Morris D Young
Review



ENVIROTECH LABS

5796 US HIGHWAY 64-3014 • FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615 • FAX: (505) 632-1865

EPA METHOD 418.1 TOTAL PETROLEUM HYDROCARBONS

Client:	Amoco	Project #:	92140
Sample ID:	Loc #5 @ GW	Date Reported:	09-02-92
Laboratory Number:	0214 Amended	Date Sampled:	04-28-92
Sample Matrix:	Water	Date Received:	04-28-92
Preservative:	NA	Date Analyzed:	04-30-92
Condition:	Cool & Intact	Analysis Needed:	TPH

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
-----	-----	-----
TPH	36.5	10.0

Method: Method 418.1, Total Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No.4551, 1978

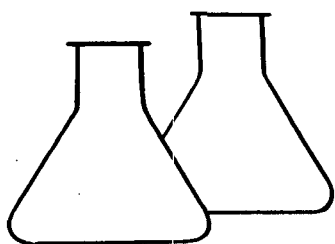
ND - Parameter not detected at the stated detection limit.

Comments: McCoy GC Cl---Separator Pit---94023
Original analytical results were inadvertently filed
under McCoy G.C. Cl - Separator Pit

CA Fernandez
Analyst

Marion D. Young
Review

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PHONE: (505) 632-0615 • FAX: (505) 632-1865

EPA METHOD 8020 AROMATIC VOLATILE ORGANICS

Client:	Amoco	Project #:	92140
Sample ID:	Loc. #5 @ GW	Date Reported:	09-02-92
Laboratory Number:	0215 Ammended	Date Sampled:	04-28-92
Sample Matrix:	Water	Date Received:	04-28-92
Preservative:	HgCl & Cool	Date Analyzed:	05-27-92
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	500	10.0
Toluene	3,590	30.0
Ethylbenzene	1,450	15.0
p,m-Xylene	16,600	30.0
o-Xylene	2,260	20.0

SURROGATE RECOVERIES:	Parameter	Percent Recovery
	Trifluorotoluene	111.6 %
	Bromfluorobenzene	88.6 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

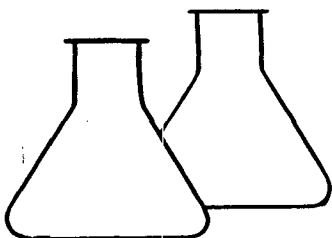
Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: McCoy G.C. Cl---Separator Pit---94023
Original analytical results were inadvertently filed
under McCoy G.C. D1--Separator Pit--94043.

Robert M Young
Analyst

Morris D Young
Review



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5796 US HIGHWAY 64-3014 • FARMINGTON, NEW MEXICO 87401

PHONE: (505) 632-0615 • FAX: (505) 632-1865

EPA METHOD 418.1 TOTAL PETROLEUM HYDROCARBONS

Client:	AMOCO	Project #:	92140
Sample ID:	Loc. #12	Date Reported:	09-02-92
Laboratory Number:	0212 Ammended	Date Sampled:	04-28-92
Sample Matrix:	Soil	Date Received:	04-28-92
Preservative:	Cool	Date Analyzed:	06-02-92
Condition:	Cool & Intact	Analysis Needed:	TPH

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	50.1	5.0

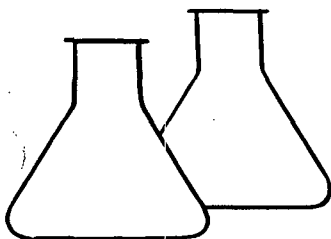
Method: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No.4551, 1978

ND - Parameter not detected at the stated detection limit.

Comments: McCoy GC C1---Separator Pit---94023
Original analytical results were inadvertently filed
under McCoy GC D1---Separator Pit---94043.

CA Jurendak
Analyst
:

Morris D Young
Review



ENVIROTECH LABS

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PHONE: (505) 632-0615 • FAX: (505) 632-1865

EPA METHOD 8020 AROMATIC VOLATILE ORGANICS

Client:	Amoco	Project #:	92140
Sample ID:	Loc #12	Date Reported:	09-24-92
Laboratory Number:	0212	Date Sampled:	04-28-92
Sample Matrix:	Soil	Date Received:	04-28-92
Preservative:	Cool	Date Extracted:	06-04-92
Condition:	Cool & Intact	Date Analyzed:	09-20-92
		Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	123	82
Toluene	226	154
Ethylbenzene	98	20.5
p,m-Xylene	399	215
o-Xylene	ND	297

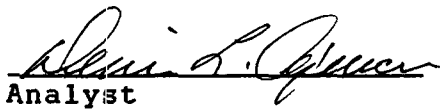
SURROGATE RECOVERIES:	Parameter	Percent Recovery
	Trifluorotoluene	107 %
	Bromfluorobenzene	105 %

Method: Method 5030, Purge-and-Trap, Test Methods for
Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

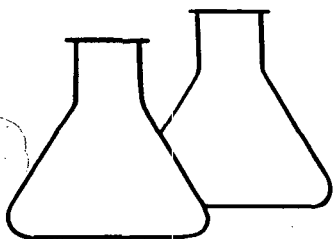
Method 8020, Aromatic Volatile Organics, Test Methods
for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

ND - Parameter not detected at the stated detection limit.

Comments: McCoy GC C 1 Separator Pit 94023


Analyst


Review



ENVIROTECH LABS

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PHONE: (505) 632-0615 • FAX: (505) 632-1865

EPA METHOD 418.1 TOTAL PETROLEUM HYDROCARBONS

Client:	AMOCO	Project #:	92140
Sample ID:	Loc. # 13	Date Reported:	09-02-92
Laboratory Number:	0213 Ammended	Date Sampled:	04-28-92
Sample Matrix:	Soil	Date Received:	04-28-92
Preservative:	Cool	Date Analyzed:	06-04-92
Condition:	Cool & Intact	Analysis Needed:	TPH

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
-----	-----	-----
Total Petroleum Hydrocarbons	42.7	5.0

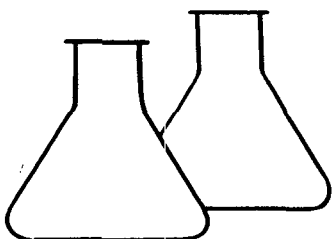
Method: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No.4551, 1978

ND - Parameter not detected at the stated detection limit.

Comments: McCoy GC C1---Separator Pit---94023
The original results were inadvertantly filed under
McCoy GC D1---Separator Pit---94043

CA Jurendel
Analyst

Maris D Young
Review



ENVIROTECH LABS

5796 US HIGHWAY 64-3014 • FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615 • FAX: (505) 632-1865

EPA METHOD 8020 AROMATIC VOLATILE ORGANICS

Client:	Amoco	Project #:	92140
Sample ID:	Loc # 13	Date Reported:	09-24-92
Laboratory Number:	0213	Date Sampled:	04-28-92
Sample Matrix:	Soil	Date Received:	04-28-92
Preservative:	Cool	Date Extracted:	06-04-92
Condition:	Cool & Intact	Date Analyzed:	09-20-92
		Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	176	80
Toluene	188	150
Ethylbenzene	75	20.0
p,m-Xylene	ND	210
o-Xylene	ND	290

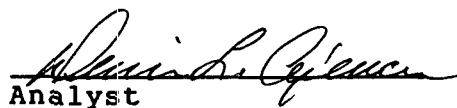
SURROGATE RECOVERIES:	Parameter	Percent Recovery
	Trifluorotoluene	86 %
	Bromfluorobenzene	105 %

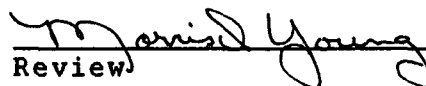
Method: Method 5030, Purge-and-Trap, Test Methods for
Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

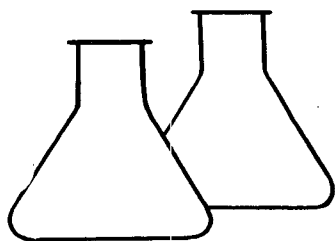
Method 8020, Aromatic Volatile Organics, Test Methods
for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

ND - Parameter not detected at the stated detection limit.

Comments: McCoy GC C 1 Separator Pit 94023


Analyst


Review



ENVIROTECH LABS

5796 US HIGHWAY 64-3014 • FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615 • FAX: (505) 632-1865

EPA METHOD 8020 AROMATIC VOLATILE ORGANICS HEADSPACE EXTRACTION

Client:	Amoco	Project #:	92140
Sample ID:	Loc. #16	Date Reported:	09-02-92
Laboratory Number:	0217 Ammended	Date Sampled:	04-28-92
Sample Matrix:	Water	Date Received:	04-28-92
Preservative:	NA	Date Analyzed:	06-11-92
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	ND	10.0
Toluene	126	5.6
Ethylbenzene	80	1.6
p,m-Xylene	690	1.6
o-Xylene	70	1.6

Method: Method 3810, Headspace, Test Methods for Evaluating
Solid Waste, SW-846, USEPA, Sept. 1986

Method 8020, Aromatic Volatile Organics, Test Methods for
Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: McCoy G.C. C1---Separator Pit---94023.
Original analytical results were inadvertently filed
under McCoy G.C. D1--Separator Pit--94043.

Robert M Young
Analyst

Morris D Young
Review

1730

CHAIN OF CUSTODY RECORD

Client/Project Name		Project Location		ANALYSIS/PARAMETERS		Remarks	
AMOCO 92140		HSCay G.C. DET-94023		TPH, BTEX, EPA 418.1, EPA 8210, BTEX			
Sampler: (Signature)		Chain of Custody Tape No.		No. of Containers			
Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix			
Loc. #5 Q2.5' 4/28/92	1005		0211	Soil	1	✓	
Loc. #12	1105		0212	Soil	1	✓	
Loc. #13	1110		0213	Soil	1	✓	
Loc. #5 Q3W	1130		0214	Water	1	✓	
Loc. #5 Q3W	1000		0215	Water	2	✓	
Loc. #5 (Soil)	1005		0216	Soil	1	✓	
Loc. #16	1150		0217	Water	1	✓	
Relinquished by: (Signature)		Date	Time	Received by: (Signature)		Date	Time
		4/28/92	1635			4-28-92	1635
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

District I
P.O. Box 1980, Hobbs, NM
District II
P.O. Drawer DD, Artesia, NM 88211
District III
10 Rio Brazos Rd, Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

SUBMIT 1 COPY TO
APPROPRIATE
DISTRICT OFFICE
AND 1 COPY TO
SANTA FE OFFICE

PIT REMEDIATION AND CLOSURE REPORT

C4023

Operator: AMOCO PRODUCTION Co. Telephone: 326-9200
Address: 200 AMOCO CT., FARMINGTON, NM
Facility Or: MSC04 GC C No. 1
Well Name _____
Location: Unit or Qtr/Qtr Sec A Sec 28 T 30N R 12W County SJ
Pit Type: Separator ☒ Dehydrator _____ other BLOW
Land Type: BLM _____, State _____, Fee ☒, Other _____

Pit Location: Pit dimensions: length ~ 80', width ~ 30', depth 7'
(Attach diagram) *Refer to Site Sketch*
Reference: wellhead ☒, other _____
Footage from reference: 230'
Direction from reference: 50 Degrees ☒ East North _____
of _____ West South ☒

Depth To Ground Water:	Less than 50 feet	(20 points)
(Vertical distance from	50 feet to 99 feet	(10 points)
contaminants to seasonal	Greater than 100 feet	(0 Points) <u>20</u>
high water elevation of		
ground water)		

Wellhead Protection Area:	Yes (20 points)
(Less than 200 feet from a private	No (0 points) <u>20</u>
domestic water source, or; less than	
1000 feet from all other water sources)	

Distance To Surface Water:	Less than 200 feet	(20 points)
(Horizontal distance to perennial	200 feet to 1000 feet	(10 points)
lakes, ponds, rivers, streams, creeks,	Greater than 1000 feet	(0 points) <u>10</u>
irrigation canals and ditches)		

RANKING SCORE (TOTAL POINTS): 50

Date Remediation Started: 3/15/94 Dated Completed: 4/22/94

Remediation Method: Excavation X Approx. cubic yards 7139
(Check all appropriate sections) Landfarmed X Insitu Bioremediation

Other LANDFARM REMEDIATION OF EXCAVATED MATERIALS AT
AMOCO'S CROUCH MESA LANDFARM

Remediation Location: Onsite Offsite AMOCO CROUCH MESA LANDFARM
(ie. landfarmed onsite, name and location of offsite facility)

General Description Of Remedial Action: PIT EXCAVATED

Ground Water Encountered: No Yes X Depth 2.5'-7'

Final Pit: Sample location Refer to Attached Site Sketch

Closure Sampling: (if multiple samples, attach sample results and diagram of sample locations and depths) Sample depth

Sample date Sample time

Sample Results

Benzene (ppm)

Total BTEX (ppm)

Field headspace (ppm)

TPH

Ground Water Sample: Yes X No (If yes, attach sample results)

I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF

DATE 5/16/94

SIGNATURE Robert M. Young

PRINTED NAME ROBERT M. YOUNG
AND TITLE ENVIRONMENTAL BIOLOGIST

Amoco McCoy GC Co. Sept 4/94
Sample location / Field Sample Results (ovm)

ENVIRONMENTAL INC
R. Young
5/16/94
C4023

3/15/94

ppm-ovm
ND

B 269
C 140 LAA
D 1.9
E 4.3
F 569 LAA

G 989 LAA

H 20.1

I 17.3 LAA

J 997 LAA

K 561 (UNKNOWN LOCATION)

L 14.9

M 599 LAA

3/16/94

N 1004

O 17.4

P 596

Q 56.4

3/17/94

R 523

S ND LAA

T ND

3/18/94

U 50.5

V 15.3

W 20.4

X 1.0

Y 484

Z 909

AA 591

3/31/94

102.5' 5.1

202.5' 10.1 LAA

302.5' 304

402.5' 654

4/4/94

ppm

102.5' 3.4

202.5' 672

302.5' 0.8

402.5' 730

502.5' 654

4/6/94

ppm

AK 1012 LAA

AL 646

AM 10

AN 7

AO 6

AP 2.4

AQ 6.7

4/7/94

ppm-ovm

AR ND

AS 725

AT 815

AU 210

AV 409

AW 2.8

AY 18.0 (UNKNOWN LOCATION)

AZ 3.2

BA 3.9

4/19/94

105' 329

205' 512

307' 48/182

405' 334

4/21/94

ppm

104' 6.1 LAA

204' 5.3

304' 3.1

404' 901

504' 776

604' 6.2 LAA

704' 704

804' 371

904' 488

4/22/94

ppm

1004' 23.1

1104' 2.7

1204' 3.1

1304' 100.4 LAA

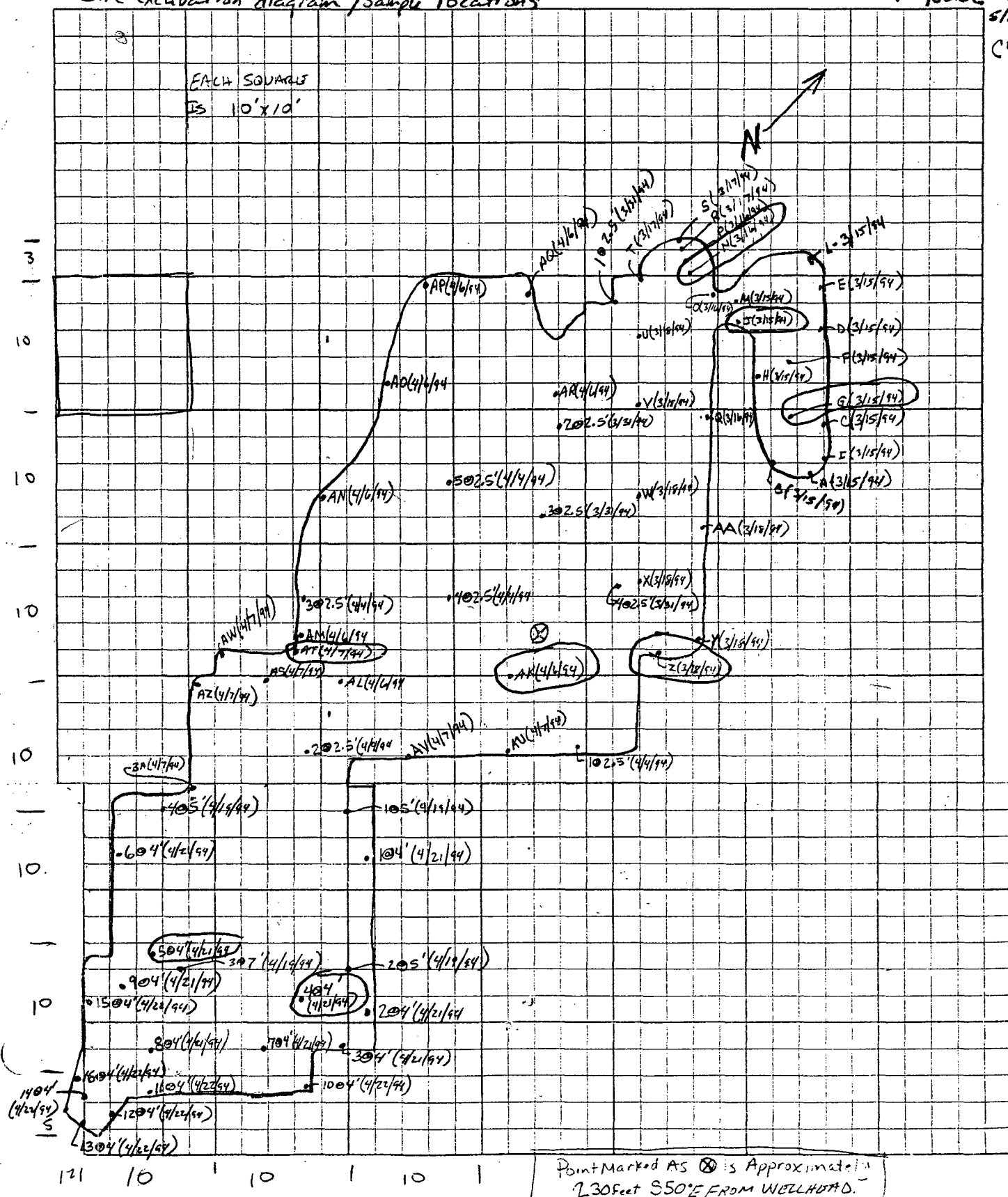
1404' 150

1504' 22.0

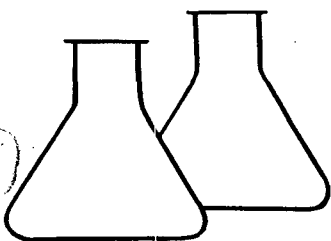
1604' 6.4

ENVIROTECH IN
R. YOUNG

					5/16/92
					C402



60



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EPA METHOD 8020 AROMATIC VOLATILE ORGANICS

Client:	Amoco	Project #:	92140
Sample ID:	#5 @ GW	Date Reported:	04-20-94
Laboratory Number:	7242	Date Sampled:	04-19-94
Sample Matrix:	Water	Date Received:	04-19-94
Preservative:	HgCl and Cool	Date Analyzed:	04-20-94
Condition:	Cool and Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	25.5	0.2
Toluene	22.6	0.5
Ethylbenzene	ND	0.2
p,m-Xylene	319	0.3
o-Xylene	211	0.2

SURROGATE RECOVERIES:	Parameter	Percent Recovery
	Trifluorotoluene	98 %
	Bromofluorobenzene	97 %

Method: Method 5030A, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992

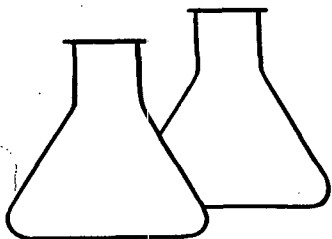
Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: McCoy GC C-1 Separator Pit C4023-S

Kevin L. Reilman
Analyst

Morris D. Young
Review



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FIELD MODIFIED EPA METHOD 418.1 TOTAL PETROLEUM HYDROCARBONS

Client: Amoco
Sample ID: C
Project Location: McCoy GC C-1
Laboratory Number: GAC0402

Project #: 92140
Date Analyzed: 3-15-94
Date Reported: 4-04-94
Sample Matrix: Soil

Parameter -----	Result, mg/kg -----	Detection Limit, mg/kg -----
Total Recoverable Petroleum Hydrocarbons	17	10

ND = Not Detectable at stated detection limits.

QA/QC:	QA/QC Sample TPH mg/kg -----	Duplicate TPH mg/kg -----	% *Diff. -----
	71,800	69,800	3

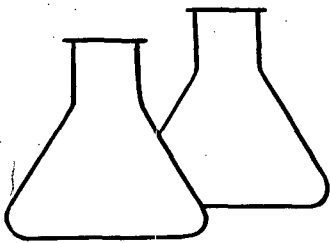
*Administrative Acceptance limits set at 30%.

Method: Modified Method 418.1, Petroleum Hydrocarbons, Total
Recoverable, Chemical Analysis of Water and Waste,
USEPA Storet No.4551, 1978

Comments: C4023 Separator Pit Clean-Up

MICHAEL K. LANE
Analyst

Merris D. Young
Review



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FIELD MODIFIED EPA METHOD 418.1 TOTAL PETROLEUM HYDROCARBONS

Client: Amoco
Sample ID: F
Project Location: McCoy GC C-1
Laboratory Number: GAC0403

Project #: 92140
Date Analyzed: 3-15-94
Date Reported: 4-04-94
Sample Matrix: Soil

Parameter	Result, mg/kg	Detection Limit, mg/kg
Total Recoverable Petroleum Hydrocarbons	9	9

ND = Not Detectable at stated detection limits.

QA/QC:	QA/QC Sample TPH mg/kg	Duplicate TPH mg/kg	% *Diff.
	71,800	69,800	3

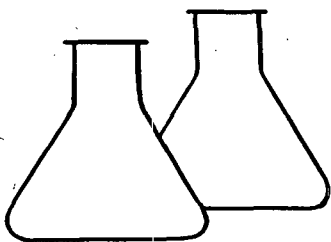
*Administrative Acceptance limits set at 30%.

Method: Modified Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No.4551, 1978

Comments: C4023 Separator Pit Clean-Up

Michael K. Lane
Analyst

Marissa D. Young
Review



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FIELD MODIFIED EPA METHOD 418.1 TOTAL PETROLEUM HYDROCARBONS

Client: Amoco
Sample ID: G
Project Location: McCoy GC C-1
Laboratory Number: GAC0404

Project #: 92140
Date Analyzed: 3-15-94
Date Reported: 4-04-94
Sample Matrix: Soil

Parameter	Result, mg/kg	Detection Limit, mg/kg
Total Recoverable Petroleum Hydrocarbons	30	10

ND = Not Detectable at stated detection limits.

QA/QC:	QA/QC Sample TPH mg/kg	Duplicate TPH mg/kg	% *Diff.
	71,800	69,800	3

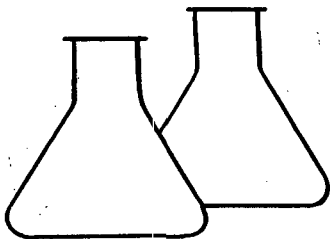
*Administrative Acceptance limits set at 30%.

Method: Modified Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No.4551, 1978

Comments: C4023 Separator Pit Clean-Up

Michael K. Lane
Analyst

Maris D. Young
Review



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FIELD MODIFIED EPA METHOD 418.1 TOTAL PETROLEUM HYDROCARBONS

Client:	Amoco	Project #:	92140
Sample ID:	I	Date Analyzed:	3-15-94
Project Location:	McCoy GC C-1	Date Reported:	4-04-94
Laboratory Number:	GAC0405	Sample Matrix:	Soil

Parameter -----	Result, mg/kg -----	Detection Limit, mg/kg -----
Total Recoverable Petroleum Hydrocarbons	ND	10

ND = Not Detectable at stated detection limits.

QA/QC:	QA/QC Sample TPH mg/kg -----	Duplicate TPH mg/kg -----	% *Diff. -----
	71,800	69,800	3

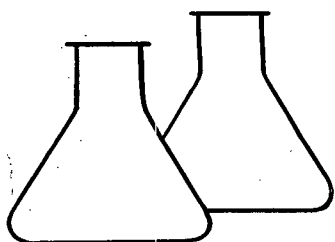
*Administrative Acceptance limits set at 30%.

Method: Modified Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No.4551, 1978

Comments: C4023 Separator Pit Clean-Up

Michael K. Lane
Analyst

Marvin D. Young
Review



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FIELD MODIFIED EPA METHOD 418.1 TOTAL PETROLEUM HYDROCARBONS

Client:	Amoco	Project #:	92140
Sample ID:	J	Date Analyzed:	3-15-94
Project Location:	McCoy GC C-1	Date Reported:	4-04-94
Laboratory Number:	GAC0406	Sample Matrix:	Soil

Parameter	Result, mg/kg	Detection Limit, mg/kg
Total Recoverable Petroleum Hydrocarbons	80	10

ND = Not Detectable at stated detection limits.

QA/QC:	QA/QC Sample TPH mg/kg	Duplicate TPH mg/kg	% *Diff.
	71,800	69,800	3

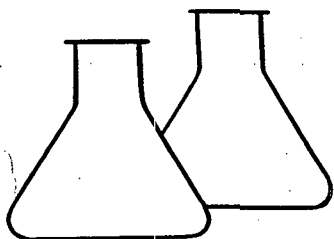
*Administrative Acceptance limits set at 30%.

Method: Modified Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No.4551, 1978

Comments: C4023 Separator Pit Clean-Up

MICHAEL K. LANE
Analyst

Morris D. Young
Review



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FIELD MODIFIED EPA METHOD 418.1 TOTAL PETROLEUM HYDROCARBONS

Client: Amoco
Sample ID: M
Project Location: McCoy GC C-1
Laboratory Number: GAC0407

Project #: 92140
Date Analyzed: 3-15-94
Date Reported: 4-04-94
Sample Matrix: Soil

Parameter -----	Result, mg/kg -----	Detection Limit, mg/kg -----
Total Recoverable Petroleum Hydrocarbons	790	10

ND = Not Detectable at stated detection limits.

QA/QC:	QA/QC Sample TPH mg/kg -----	Duplicate TPH mg/kg -----	% *Diff. -----
	790	770	3

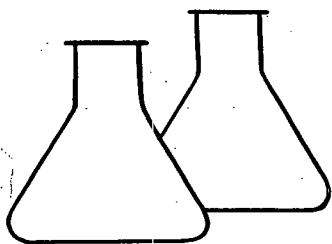
*Administrative Acceptance limits set at 30%.

Method: Modified Method 418.1, Petroleum Hydrocarbons, Total
Recoverable, Chemical Analysis of Water and Waste,
USEPA Storet No.4551, 1978

Comments: C4023 Separator Pit Clean-Up

MICHAEL K. LANE
Analyst

Mona D. Young
Review



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FIELD MODIFIED EPA METHOD 418.1 TOTAL PETROLEUM HYDROCARBONS

Client: Amoco
Sample ID: S
Project Location: McCoy GC C-1
Laboratory Number: GAC0409

Project #: 92140
Date Analyzed: 3-17-94
Date Reported: 4-04-94
Sample Matrix: Soil

Parameter -----	Result, mg/kg -----	Detection Limit, mg/kg -----
Total Recoverable Petroleum Hydrocarbons	16	10

ND = Not Detectable at stated detection limits.

QA/QC:	QA/QC Sample TPH mg/kg -----	Duplicate TPH mg/kg -----	% *Diff. -----
	790	770	3

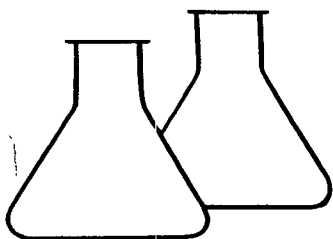
*Administrative Acceptance limits set at 30%.

Method: Modified Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No.4551, 1978

Comments: C4023 Separator Pit Clean-Up

MICHAEL K. LANE
Analyst

Review



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EPA METHOD 8020 AROMATIC VOLATILE ORGANICS

Client:	Amoco	Project #:	92140
Sample ID:	Open Excavation	Date Reported:	03-18-94
Laboratory Number:	7070	Date Sampled:	03-17-94
Sample Matrix:	Water	Date Received:	03-18-94
Preservative:	HgCl and Cool	Date Analyzed:	03-18-94
Condition:	Cool and Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	ND	0.2
Toluene	3.1	0.5
Ethylbenzene	6.4	0.2
p,m-Xylene	29.6	0.3
o-Xylene	5.1	0.2

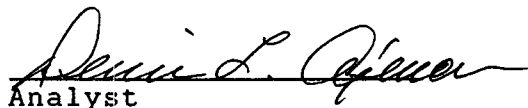
SURROGATE RECOVERIES:	Parameter	Percent Recovery
	Trifluorotoluene	99 %
	Bromofluorobenzene	98 %

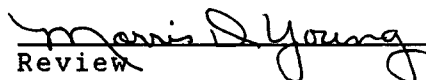
Method: Method 5030A, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992

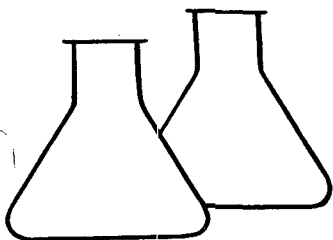
Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: McCoy C1 Pit Closure C4023


Analyst


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EPA METHOD 418.1 TOTAL PETROLEUM HYDROCARBONS

Client:	Amoco	Project #:	92140
Sample ID:	#2 @ 2.5' bgs	Date Sampled:	03-31-94
Laboratory Number:	7127	Date Received:	03-31-94
Sample Matrix:	Soil	Date Analyzed:	04-08-94
Preservative:	Cool	Date Reported:	04-08-94
Condition:	Cool & Intact	Analysis Needed:	TPH

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
-----	-----	-----
Total Petroleum Hydrocarbons	ND	20.0

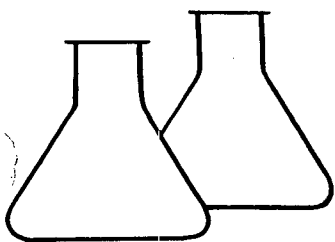
ND = Parameter not detected at the stated detection limit.
N/A = Not applicable

Method: Method 418.1, Petroleum Hydrocarbons, Total
Recoverable, Chemical Analysis of Water and
Waste, USEPA Storet No.4551, 1978

Comments: McCoy GC C1 Sep Pit C4023-5

Tony Tristano
Analyst

Marisa Young
Review



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EPA METHOD 418.1 TOTAL PETROLEUM HYDROCARBONS

Client:	Amoco	Project #:	92140
Sample ID:	Sample Pt. "AK"	Date Sampled:	04-06-94
Laboratory Number:	7158	Date Received:	04-06-94
Sample Matrix:	Soil	Date Analyzed:	04-08-94
Preservative:	Cool	Date Reported:	04-08-94
Condition:	Cool & Intact	Analysis Needed:	TPH

Parameter -----	Concentration (mg/kg) -----	Det. Limit (mg/kg) -----
Total Petroleum Hydrocarbons	190	20.0

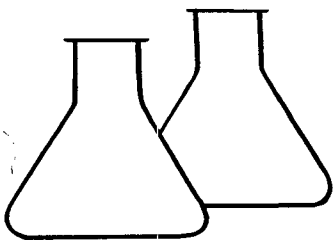
ND = Parameter not detected at the stated detection limit.
N/A = Not applicable

Method: Method 418.1, Petroleum Hydrocarbons, Total
Recoverable, Chemical Analysis of Water and
Waste, USEPA Storet No.4551, 1978

Comments: McCoy #C1 Sep Pit C4023

Tony Tistano
Analyst

Mari D. Young
Review



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EPA METHOD 418.1 TOTAL PETROLEUM HYDROCARBONS

Client:	Amoco	Project #:	92140
Sample ID:	#1 @ 4' bgs	Date Sampled:	04-21-94
Laboratory Number:	7260	Date Received:	04-21-94
Sample Matrix:	Soil	Date Analyzed:	04-22-94
Preservative:	Cool	Date Reported:	04-22-94
Condition:	Cool & Intact	Analysis Needed:	TPH

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
-----	-----	-----
Total Petroleum Hydrocarbons	ND	20.0

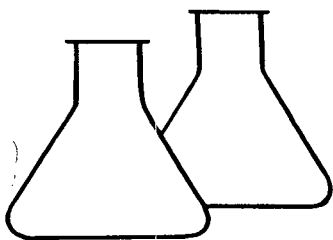
ND = Parameter not detected at the stated detection limit.
N/A = Not applicable

Method: Method 418.1, Petroleum Hydrocarbons, Total
Recoverable, Chemical Analysis of Water and
Waste, USEPA Storet No.4551, 1978

Comments: McCoy GC C-1 Sep Pit C4023-5

Tony Tristano
Analyst

Maris D. Young
Review



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EPA METHOD 418.1 TOTAL PETROLEUM HYDROCARBONS

Client:	Amoco	Project #:	92140
Sample ID:	#6 @ 4' bgs	Date Sampled:	04-21-94
Laboratory Number:	7261	Date Received:	04-21-94
Sample Matrix:	Soil	Date Analyzed:	04-22-94
Preservative:	Cool	Date Reported:	04-22-94
Condition:	Cool & Intact	Analysis Needed:	TPH

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
-----	-----	-----
Total Petroleum Hydrocarbons	ND	20.0

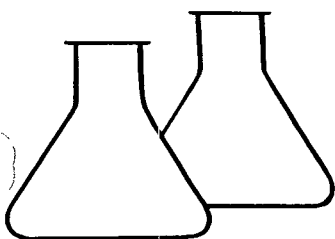
ND = Parameter not detected at the stated detection limit.
N/A = Not applicable

Method: Method 418.1, Petroleum Hydrocarbons, Total
Recoverable, Chemical Analysis of Water and
Waste, USEPA Storet No.4551, 1978

Comments: McCoy GC C-1 Sep Pit C4023-5

Tony Tristano
Analyst

Maris D. Young
Review



ENVIROTECH LABS

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EPA METHOD 8020 AROMATIC VOLATILE ORGANICS

Client:	Amoco	Project #:	92140
Sample ID:	#13 @ 4' bgs	Date Reported:	04-26-94
Laboratory Number:	7262	Date Sampled:	04-22-94
Sample Matrix:	Soil	Date Received:	04-22-94
Preservative:	Cool	Date Extracted:	04-26-94
Condition:	Cool & Intact	Date Analyzed:	04-26-94
		Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	62	13.0
Toluene	182	32.6
Ethylbenzene	ND	13.0
p,m-Xylene	116	19.6
o-Xylene	65	13.0

SURROGATE RECOVERIES:	Parameter	Percent Recovery
	Trifluorotoluene	99 %
	Bromofluorobenzene	99 %

Method: Method 5030, Purge-and-Trap, Test Methods for
Evaluating Solid Waste, SW-846, USEPA, July 1992

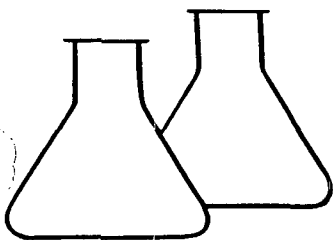
Method 8020, Aromatic Volatile Organics, Test Methods
for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

ND - Parameter not detected at the stated detection limit.

Comments: McCoy GC C-1 Separator Pit C4023-5

Dennis L. Jensen
Analyst

Mavis D. Young
Review



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EPA METHOD 418.1 TOTAL PETROLEUM HYDROCARBONS

Client:	Amoco	Project #:	92140
Sample ID:	#13 @ 4' bgs	Date Sampled:	04-22-94
Laboratory Number:	7262	Date Received:	04-22-94
Sample Matrix:	Soil	Date Analyzed:	05-02-94
Preservative:	Cool	Date Reported:	05-02-94
Condition:	Cool & Intact	Analysis Needed:	TPH

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	ND	15.0

ND = Parameter not detected at the stated detection limit.
N/A = Not applicable

Method: Method 418.1, Petroleum Hydrocarbons, Total
Recoverable, Chemical Analysis of Water and
Waste, USEPA Storet No.4551, 1978

Comments: McCoy GC C-1 Sep Pit C4023-5

Tony Triano
Analyst

Marion D. Young
Review

[illegible]

ENVIROTECH INC.

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CHAIN OF CUSTODY RECORD

[illegible]

Juan | Juan negro Form 878-91

San Juan rezero Form 570-91

San Juan repro Form 578-61