3R - 23

REPORTS

DATE:

Oct. 12, 1994

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

October 12, 1994

Mr. William C. Olson, Hydrologist
New Mexico Oil Conservation Division
Environmental Bureau
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Re: Quarterly Monitoring Report
Amoco Production Company
Gallegos Canyon Unit (K) #162, Sec. 36-T29N-R12W
San Juan County, New Mexico

Dear Mr. Olson:

Amoco Production Company has retained Blagg Engineering, Inc. to continue environmental monitoring of groundwater reclamation at Gallegos Canyon Unit (K) Well No. 162 (Appendix A, Figure 1). Following are quarterly monitoring results as required by the New Mexico Oil Conservation Division (NMOCD), pursuant to reclamation plan approval by the NMOCD with letter dated January 27, 1994.

The groundwater reclamation system at the site has been in continuous operation since the last quarterly reported filed on June 29, 1994. Minor modifications to the air stripper, including cleaning out scale deposits, was performed in early July, 1994. The air stripper effluent has been sampled on a monthly basis to determine water quality; BTEX analytical results have not exceeded applicable standards on any sample event following stripper cleaning. Quarterly sampling of groundwater monitor system wells was performed on September 27, 1994. Following are summary laboratory analytical results and monitoring data concerning product thickness, water table elevations, recovery volumes and infiltration volumes and a discussion of recent site investigation activities.

Summary Laboratory Analytical Results

A summary of laboratory analytical results for groundwater monitor wells and system effluent is included in Table 1 on the following page. Laboratory data reports are included in Appendix B.

TABLE 1
Summary Laboratory Analytical Results
Amoco Production Company GCU 162
(K) Sec. 36-T29N-R12W

Sample ID	Benzene ug/L	Toluene ug/L	Ethyl Benzene ug/L	Total Xylenes ug/L	Naptha-lene ug/L	Benzo(a) pyrene ug/L	Cations meq/L	Anions meq/L	As mg/L	Ba mg/L	Cd mg/L	Cr mg/L	Pb mg/L	Hg mg/L	Se mg/L	Ag mg/L
MW-3																
2/25/94	476	0.7	ND	1.9	ND	ND	15.80	15.49	ND	3.27	0.0001	ND	0.0034	ND	0.0011	ND
6/17/94	13.6	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9/27/94	20.9	3.4	0.9	10.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-4																
2/25/94	240	3.1	40.2	469	ND	ND	17.74	18.50	0.0022	5.09	0.0016	ND	0.0373	ND	0.0015	ND
6/17/94	273	2.2	34.7	113	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9/27/94	355	0.7	59.4	352	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-5																
2/25/95	ND	1.0	ND	2.2	ND	ND	34.59	33.50	0.0064	3.16	0.0034	ND	ND	ND	0.0037	ND
6/17/94	2.1	2.7	4.5	32.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9/27/94	1.3	0.5	1.0	5.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-6																
2/25/94	15.9	3.2	5.3	140	ND	ND	13.39	12.34	ND	2.68	0.0002	ND	ND	ND	0.0007	ND
6/17/94	15.3	1.9	2.6	98	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9/27/94	70.1	3.7	1.9	109	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-9																
2/25/94	ND	1.1	ND	1.4	ND	ND	13.73	13.47	ND	1.17	0.0011	ND	ND	ND	0.0012	ND
6/17/94	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9/27/94	0.8	0.4	0.6	3.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-10																
2/25/94	ND	0.7	ND	1.7	ND	ND	15.04	15.45	ND	2.64	0.0140	ND	0.0012	ND	0.0018	ND
6/17/94	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA
9/27/94	0.8	0.3	0.2	3.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Stripper Effluent																
5/11/94	710	920	116	846	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6/17/94	37.5	93	3.6	61.9	ND	ND	698.1	1,513	ND	ND	ND	ND	ND	ND	ND	ND
7/8/94	ND	ND	ND	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8/11/94	1.8	8.9	0.1	4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9/29/94	0.9	3.9	ND	2.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
WQCC LIMITS	10	750	750	620	30	0.7	------	------	0.1	1.0	0.01	0.05	0.05	0.002	0.05	0.05

ug/L = micrograms per liter, equivalent to parts per billion (ppb)
mg/L= milligrams per liter, equivalent to parts per million (ppm)
ND=not detected at laboratory detection limit
NA=not analyzed
WOL=waiting on laboratory analytical results

Water Table Elevations and Product Thickness Measurements

The depth to water and product thickness measurements in groundwater monitor wells was measured during sample events. Table 2 includes water depth measurements, surface casing relative elevations, groundwater elevations and product thickness measurements for the September 27, 1994 sample event. A contour map of relative water table elevations for this sample event is included in Appendix A, Figure 2.

TABLE 2

Relative Groundwater Elevations
Amoco Production Company GCU 162
(K) Sec. 36-T29N-R12W
June 17, 1994

Monitor Well	Total Depth (feet)	Depth to Fluid (feet)	Relative Casing Elevation (feet)	Relative Groundwater Elevation (feet)	Product Thickness (inches)
MW-1	22.6	20.58	100.00	na	9
MW-2	23.1	20.80	100.16	na	11
MW-3	24.6	21.03	99.10	78.07	0
MW-4	25.0	20.79	98.87	78.08	0
MW-5	24.8	21.42	102.50	81.08	0
MW-6	26.8	19.97	98.68	78.71	0
MW-7	25.3	19.17	97.39	na	12
MW-8	24.1	20.14	99.03	na	6.5
MW-9	19.6	11.65	88.50	76.85	0
MW-10	20.3	14.00	91.58	77.58	0

na = water table elevation not applicable due to floating product

Fluid Recovery Rates and Infiltration Volumes

Groundwater contaminated with dissolved phase and free phase hydrocarbon is pumped from monitor wells RW-2, RW-3, RW-4, RW-5 and RW-6 (Note: RW-1 is out of service). The total volume of water pumped from these wells from initial start-up on May 9, 1994 to September 21, 1994 was 142,966 gallons. Individual well pump volumes and the percent of free product is determined from periodic well tests. Based on this well test data, the average free product recovered from the reclamation system recovery wells is approximately 0.1% of the total fluid volume. Treated water is diverted to the on-site separator pit for infiltration. Table 3 summarizes the volumes of fluid recovered from the system.

TABLE 3

Recovery Well Fluid Volumes (Approximate)
Amoco Production Company GCU 162
(K) Sec. 36-T29N-R12W
May 9, 1994 through September 21, 1994

Recovery Well	Water Recovery (gallons)	Product Recovery (gallons)	Water Reinjected (gallons)
RW-2	26,893	67	26,893
RW-3	28,144	73	28,144
RW-4	29,018	64	29,018
RW-5	22,763	20	22,763
RW-6	36,148	86	36,148
System Total	142,966	310	142,966

Investigation Activities

A total of 33 test borings were advanced at the GCU 162 site from September 21 - 29, 1994 to determine the extent of soil and groundwater impacts and to isolate potential source areas not previously identified. Test borings were drilled with a mobile auger drill unit and extended to the water table, found at approximately 20 feet below ground surface. Soil lithology and potential hydrocarbon impact was determined by visual observations and by field OVM headspace measurements. Temporary slotted 2-inch diameter PVC casing was placed in the borings for determination of free product presence and thickness. Water samples were collected from several borings to determine lateral and down-gradient dissolved phase impacts.

Figure 3 is a schematic indicating the extent of both free product and hydrocarbon impacted soil.

Groundwater samples collected from temporary borings VW25, VW27, VW28 and VW29 were submitted for laboratory determination of BTEX concentration. Analytical results of these samples are summarized in Table 4:

TABLE 4

Temporary Groundwater Monitor Wells
Water Sample Laboratory Analytical Test Results
Amoco Production Company GCU 162
(K) Sec. 36-T29N-R12W
Sampled September 28, 1994

Sample Location	Benzene ug/L	Toluene ug/L	EthylBenzene ug/L	Total Xylenes ug/L
VW25	ND	1.5	0.2	3.2
VW27	0.7	0.8	0.4	3.4
VW28	1.1	1.3	ND	1.3
VW29	ND	0.8	ND	1

ug/L = micro grams per liter, equivalent to parts per billion.
ND = Non Detect at laboratory detection limits.

Groundwater analytical results from the temporary borings indicate that the extent of dissolved phase contamination in excess of water quality standards at the GCU 162 site has been identified and does not extend beyond the limits of existing permanent and temporary monitor wells.

Summary

This report has been prepared by Blagg Engineering, Inc. on behalf of Amoco Production Company. Questions or comments may be directed to Jeff Blagg at (505)632-1199.

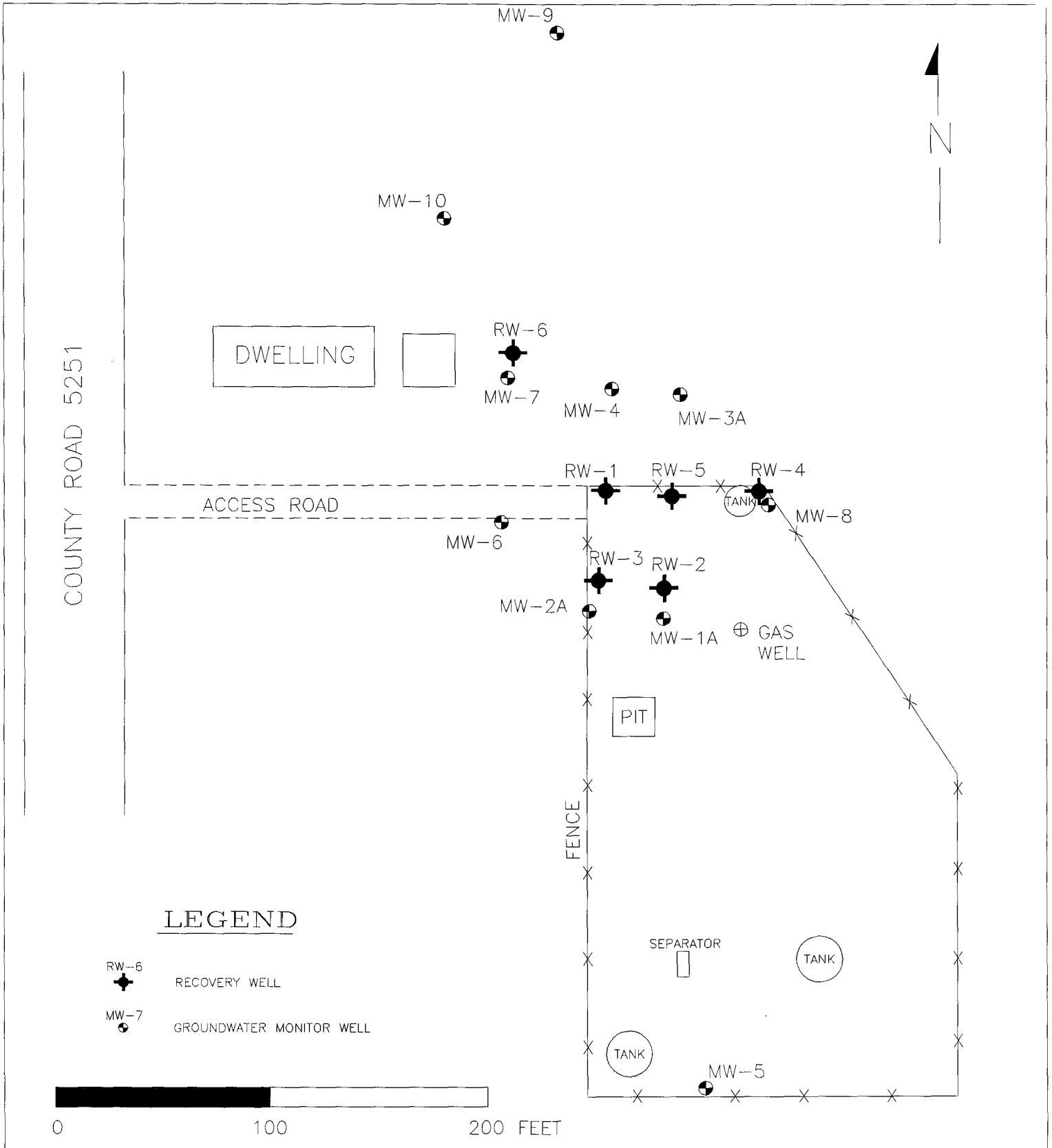
Respectfully submitted:
Blagg Engineering, Inc.

Jeffrey C. Blagg, P.E.
President

CC: Denny Foust, NMOCD
Buddy Shaw, Amoco

APPENDIX A

FIGURES



AMOCO PRODUCTION CO.
GCU 162 WELL SITE
SAN JUAN CO., NEW MEXICO

SEPTEMBER, 1994

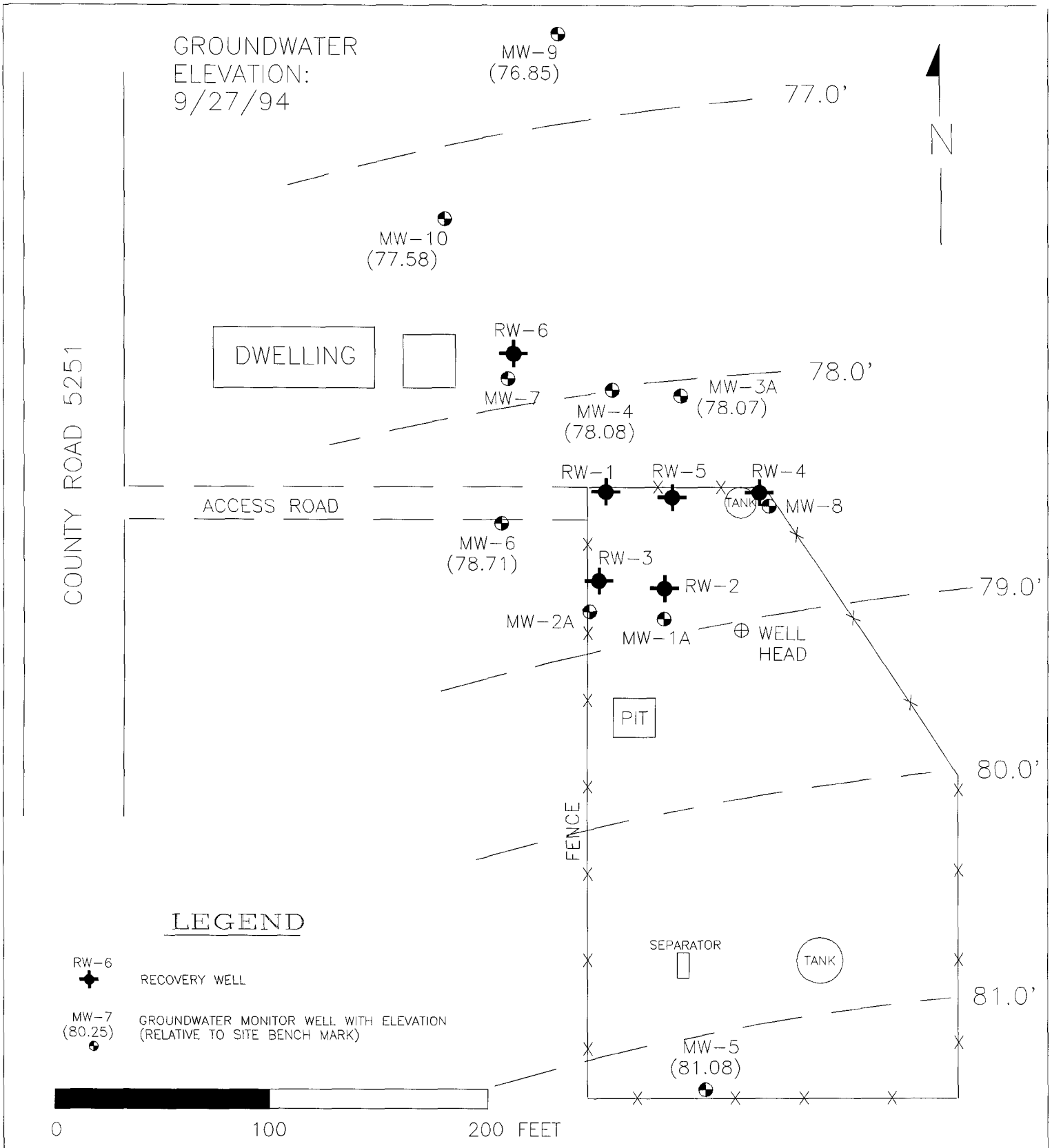
BLAGG ENGINEERING, INC.
CONSULTING PETROLEUM / RECLAMATION SERVICES

P.O. BOX 87
BLOOMFIELD, NEW MEXICO 87413

PHONE: (505) 632-1199

SITE MAP

FIGURE 1	DRWN BY: JCB
162REV2	PROJ MGR: JCB



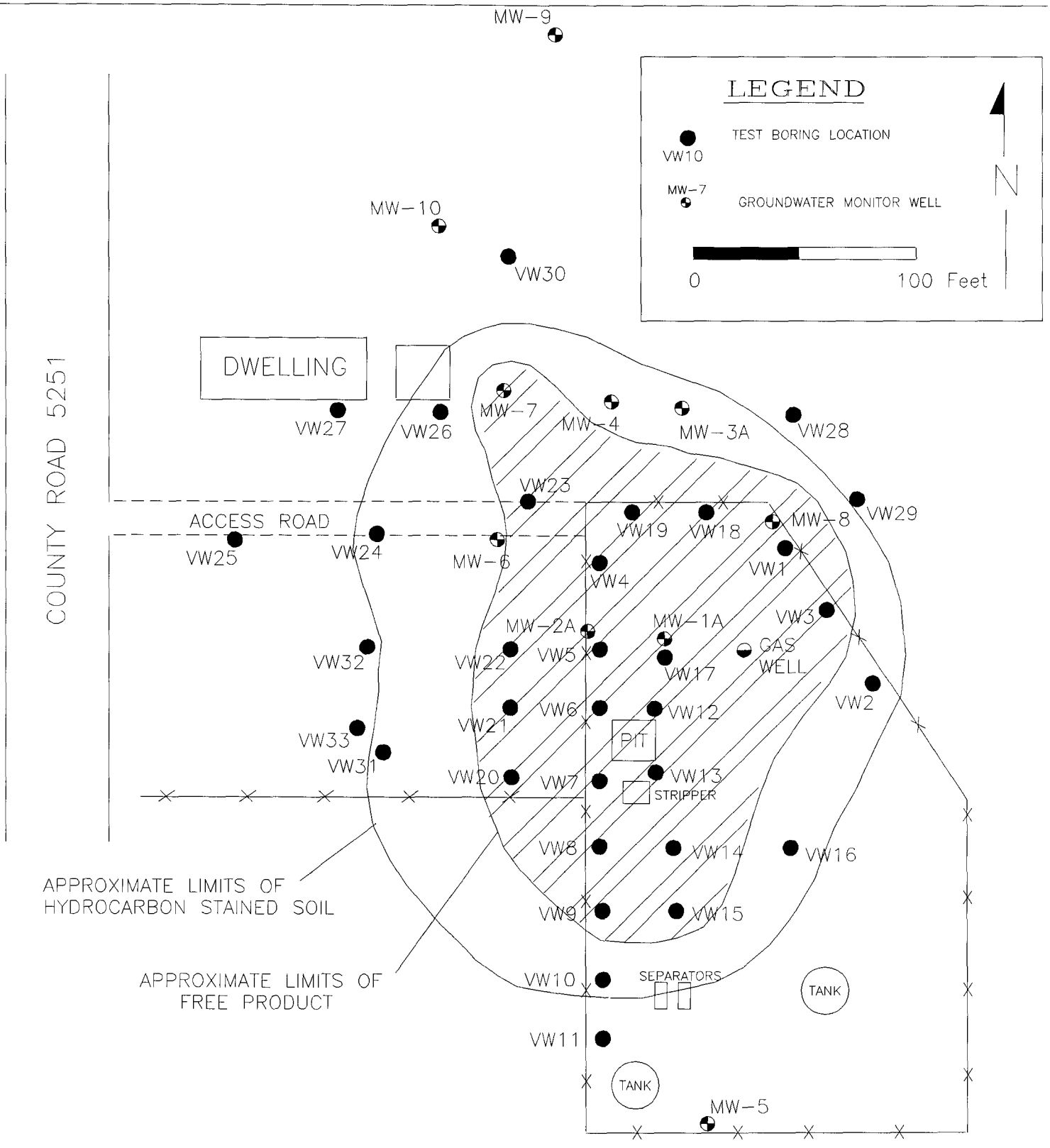
AMOCO PRODUCTION CO.
GCU 162 WELL SITE
SAN JUAN CO., NEW MEXICO

SEPTEMBER, 1994

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

GROUNDWATER CONTOUR

FIGURE 2	DRWN. BY: JCB
162GWE	PROJ. MGR: JCB



AMOCO PRODUCTION CO.
GCU 162 WELL SITE
SAN JUAN CO., NEW MEXICO
OCTOBER, 1994

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

TEST BORING LOCATIONS

FIGURE 3	DRWN BY: JCB
162BEI5	PROJ. MGR: JCB

APPENDIX B

LABORATORY DATA REPORTS

ON SITE TECHNOLOGIES LIMITED

657 W. Maple ▪ P.O. Box 2606 ▪ Farmington, NM 87499
LAB: (505) 325-5667 ▪ FAX: (505) 325-6256

CHAIN OF CUSTODY RECORD

№ 1607

Date: 7-8-94

Page 1 of 1

Purchase Order No.:	Reference No.:		
SEND INVOICE TO: Name		REPORT RESULTS TO: Name	R. E. O'NEILL / Title
Company	BLAGG ENGINEERING, INC / Dept.	Company	SAME
Address	P.O. BOX 87	Mailing Address	
City, State, Zip	BLOOMFIELD, N.M. 87413	City, State, Zip	
		Telephone No.	632-1199 / Telefax No.

Special Instructions:
604-162

Nelson 327-7927

Sampler: R. E. O'NEILL

ANALYSIS REQUESTED

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE/ GRAB	PRESERVATIVES	Number of Containers	BTEX	1910-1607	Remarks (matrix)
STRIPPER EFFLUENT 7/8	0815	GRAB	HgCl2-ICE	2	✓	✓	WATER

Relinquished by:	R E O'Neill 7-8-94	Date/Time	0915	Received by:	Date/Time 7/8/94 0915
Relinquished by:		Date/Time	7/8/94 1624	Received by:	Date/Time 7/8/94 1625
Relinquished by:		Date/Time		Received by:	Date/Time

Method of Shipment:

Authorized by: _____ Date _____
(Client Signature Must Accompany Request)

Rush	5 Working Days	10 Working Days	Sampling Location:

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

ON SITE TECHNOLOGIES, LTD.

AROMATIC VOLATILE ORGANICS

Attn:	*R. E. O'Neill*	Date:	7/9/94
Company:	*Blagg Engineering Inc.*	*Lab ID:*	*1607*
Address:	*P.O. Box 87*	*Sample ID:*	*1910*
City, State:	*Bloomfield, NM 87413*	*Job No.*	*2-1000*

Project Name:	***GCU - 162***				
Project Location:	***Stripper Effluent***				
Sampled by:	REO	Date:	7/8/94	Time:	8:15
Analyzed by:	DLA	Date:	7/9/94		
Sample Matrix:	*Liquid*				

Aromatic Volatile Organics

Component	****Measured Concentration ug/L***
Benzene	*ND*
Toluene	*ND*
Ethylbenzene	*ND*
m,p-Xylene	*0.5*
o-Xylene	*ND*
TOTAL	*0.5 ug/L*

ND - Not Detectable
*** - Method Detection Limit, 2 ug/L*

Method *- SW-846 EPA Method 8020 Aromatic Volatile Organics by Gas Chromatography*

Approved by: DLA
Date: 7/9/94

FAX: (505) 327-1496 ▪ 24 HR. – (505) 327-7105 ▪ OFF.: (505) 325-8786
3005 NORTHRIDGE DRIVE ▪ SUITE F ▪ P. O. BOX 2606 ▪ FARMINGTON, NEW MEXICO 87499

ON SITE TECHNOLOGIES, LTD.

QUALITY ASSURANCE REPORT

for EPA Method 8020

Date Analyzed: 7/9/94

Internal QC No.: 0222-STD
Surrogate QC No.: 0223-STD
Reference Standard QC No.: 0300-STD

Method Blank

Analytes in Blank	*Amount*
Average Amount of All Analytes In Blank	<1 ppb

Calibration Check

Calibration Standards	*Units of Measure*	**True Value*	*Analyzed Value*	*% Diff*	*Limit*
Benzene	ppb	20	22	11	15%
Toluene	ppb	20	21	3	15%
Ethylbenzene	ppb	20	20	1	15%
m,p-Xylene	ppb	40	39	3	15%
o-Xylene	ppb	20	20	1	15%

Spike Results

Analyte	*1- Percent Recovered*	*2 - Percent Recovered*	*Limit*	*%RSD*	*Limit*
Benzene	99	104	(39-150)	3	20%
Toluene	100	99	(46-148)	1	20%
Ethylbenzene	100	105	(32-160)	3	20%
m,p-Xylene	102	103	(35-145)	1	20%
o-Xylene	101	98	(35-145)	2	20%

Surrogate Recoveries

Laboratory Identification	*S1 Percent Recovered*	*S2 Percent Recovered*	*S3 Percent Recovered*
Limits	(70-130)		
1910-1607	100		

S1: *Flourobenzene*

FAX: (505) 327-1496 ▪ 24 HR. – (505) 327-7105 ▪ OFF.: (505) 325-8786
3005 NORTHRIDGE DRIVE ▪ SUITE F ▪ P. O. BOX 2606 ▪ FARMINGTON, NEW MEXICO 87499

ON SITE TECHNOLOGIES LIMITED

657 W. Maple ▪ P. O. Box 2606 ▪ Farmington, NM 87499
LAB: (505) 325-5667 ▪ FAX: (505) 325-6256

CHAIN OF CUSTODY RECORD

№ 1690

Date: 8-11-94

Page 1 of 1

Purchase Order No.:	Reference No.:		
SEND INVOICE TO: Name		REPORT RESULTS TO: Name	R. E O'NEILL / Title
Company	BLAGG ENGINEERING / Dept.	Company	SAME
Address	P.O. BOX 87	Mailing Address	
City, State, Zip	BLOOMFIELD, N.M. 87413	City, State, Zip	
		Telephone No.	632-1199 / Telefax No. 632-3903

Special Instructions:
GC4 162

Sampler: R E. O'NEILL

ANALYSIS REQUESTED

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE/ GRAB	PRESERVATIVES	Number of Containers	BTEX	2462-1690	Remarks (matrix)
STRIPPER EFFLUENT 8/11	1340	GRAB	H_2SO_4-ICE	2	✓		WATER

Relinquished by: R E O'Neill	8/11	Date/Time 1404	Received by: Nelson VCA	Date/Time 8/11/94 1404
Relinquished by: Nelson VCA		Date/Time 8/11/94 1521	Received by:	Date/Time
Relinquished by:		Date/Time	Received by:	Date/Time

Method of Shipment:

Authorized by: _____ Date _____
(Client Signature Must Accompany Request)

Rush	5 Working Days	10 Working Days	Sampling Location:

ON SITE TECHNOLOGIES, LTD.

AROMATIC VOLATILE ORGANICS

Attn:	*R. E. O'Neill*	Date:	8/12/94
Company:	*Blagg Engineering*	*Lab ID:*	*1690*
Address:	*P.O. Box 87*	*Sample ID:*	*2462*
City, State:	*Bloomfield, NM 87413*	*Job No.*	*2-1000*

Project Name:	***GCU 162***				
Project Location:	***Stripper Effluent***				
Sampled by:	REO	Date:	8/11/94	Time:	13:40
Analyzed by:	DLA	Date:	8/12/94		
Sample Matrix:	*Liquid*				

Aromatic Volatile Organics

Component	***Measured Concentration ug/L
Benzene	*1.8*
Toluene	*8.9*
Ethylbenzene	*0.1*
m,p-Xylene	*3.8*
o-Xylene	*0.4*
TOTAL	*15.0 ug/L*

ND - Not Detectable
*** - Method Detection Limit, 2 ug/L*

Method *- SW-846 EPA Method 8020 Aromatic Volatile Organics by Gas Chromatography*

Approved by: Bill Vorhis, PhD.
Date: 8/12/94

FAX: (505) 327-1496 ▪ 24 HR. – (505) 327-7105 ▪ OFF.: (505) 325-8786
3005 NORTHRIDGE DRIVE ▪ SUITE F ▪ P. O. BOX 2606 ▪ FARMINGTON, NEW MEXICO 87499

ON SITE TECHNOLOGIES, LTD.

QUALITY ASSURANCE REPORT

for EPA Method 8020

Date Analyzed: 8/12/94

Internal QC No.: 0222-STD
Surrogate QC No.: 0223-STD
Reference Standard QC No.: 0300-STD

Method Blank

Analytes in Blank	*Amount*
Average Amount of All Analytes In Blank	<0.5 ppb

Calibration Check

Calibration Standards	*Units of Measure*	**True Value*	*Analyzed Value*	*% Diff*	*Limit*
Benzene	ppb	20	21	7	15%
Toluene	ppb	20	20	2	15%
Ethylbenzene	ppb	20	21	5	15%
m,p-Xylene	ppb	40	42	6	15%
o-Xylene	ppb	20	19	3	15%

Spike Results

Analyte	*1- Percent Recovered*	*2 - Percent Recovered*	*Limit*	*%RSD*	*Limit*
Benzene	104	105	(39-150)	1	20%
Toluene	95	103	(46-148)	6	20%
Ethylbenzene	100	101	(32-160)	1	20%
m,p-Xylene	99	104	(35-145)	4	20%
o-Xylene	96	97	(35-145)	1	20%

Surrogate Recoveries

Laboratory Identification	*S1 Percent Recovered*	*S2 Percent Recovered*	*S3 Percent Recovered*
Limits	(70-130)		
2462-1690	97		

S1: Flourobenzene

FAX: (505) 327-1496 ▪ 24 HR. – (505) 327-7105 ▪ OFF.: (505) 325-8786
3005 NORTHRIDGE DRIVE ▪ SUITE F ▪ P. O. BOX 2606 ▪ FARMINGTON, NEW MEXICO 87499

CHAIN OF CUSTODY RECORD

2053

ON SITE TECHNOLOGIES, LTD.

657 W. Maple • P. O. Box 2606 • Farmington NM 87499
LAB: (505) 325-5667 • FAX: (505) 325-6256

Date: 9-29-94

Page 1 of 1

Purchase Order No.:	Reference No.:		
SEND INVOICE TO: Name	JEFF BLAGG	REPORT RESULTS TO: Name	JEFF BLAGG / Title
Company	BLAGG ENGINEERING, INC. / Dept.	Company	
Address	P.O. BOX 87	Mailing Address	SAME
City, State, Zip	BLOOMFIELD NM 87413	City, State, Zip	
		Telephone No. 505-632-1199	Telefax No. 632-3903

Special Instructions:

AMOCO GCU #162

Sampler: J.C. Blagg

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE/ GRAB	PRESERVATIVES	Number of Containers	ANALYSIS REQUESTED: BTEX	Remarks (matrix)
STRIPPER EFFLUENT	9-29-94 1835	GRAB	cool-HgCl2	2	X 3355-2053	WATER

Relinquished by: J.C. Blagg	Date/Time 9-30-94 1217	Received by: Tony Tintas	Date/Time 9/30/94 1217
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time

Method of Shipment:

Authorized by: J.C. Blagg Date 9-29-94
(Client Signature Must Accompany Request)

Rush	5 Working Days	10 Working Days	Sampling Location:
			AMOCO GCU #162 STRIPPER EFFLUENT

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

OFF: (505) 325-8786

ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-5667

AROMATIC VOLATILE ORGANICS

Attn:	*Jeff Blagg*	Date:	10/1/94
Company:	*Blagg Engineering, Inc.*	*Lab ID:*	*2053*
Address:	*P.O. Box 87*	*Sample ID:*	*3355*
City, State:	*Bloomfield, NM 87413*	*Job No.*	*2-1000*

Project Name:	***Amoco GCU #162***				
Project Location:	***Stripper Effluent***				
Sampled by:	JB	Date:	9/29/94	Time:	18:35
Analyzed by:	DLA	Date:	10/1/94		
Sample Matrix:	*Water*				

Aromatic Volatile Organics

Component	*Measured Concentration ug/L*	*Detection Limit Concentration ug/L*
Benzene	0.9	*0.2*
Toluene	3.9	*0.2*
Ethylbenzene	ND	*0.2*
m,p-Xylene	2.3	*0.2*
o-Xylene	0.2	*0.2*
	TOTAL *7.2 ug/L*	

ND - Not Detectable

Method *- SW-846 EPA Method 8020 Aromatic Volatile Organics by Gas Chromatography*

Approved by: JA
Date: 10/3/94

OFF: (505) 325-8786

ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-5667

QUALITY ASSURANCE REPORT

for EPA Method 8020

Date Analyzed: 10/1/94

Internal QC No.: 0222-STD
Surrogate QC No.: 0223-STD
Reference Standard QC No.: 0300-STD

Method Blank

Analytes in Blank	Amount
Average Amount of All Analytes In Blank	<0.1 ppb

Calibration Check

Calibration Standards	Units of Measure	*True Value	Analyzed Value	% Diff	Limit
Benzene	ppb	20	20	1	15%
Toluene	ppb	20	20	0	15%
Ethylbenzene	ppb	20	19	6	15%
m,p-Xylene	ppb	40	38	5	15%
o-Xylene	ppb	20	19	4	15%

Spike Results

Analyte	1- Percent Recovered	2 - Percent Recovered	Limit	%RSD	Limit
Benzene	100	102	(39-150)	2	20%
Toluene	95	96	(46-148)	0	20%
Ethylbenzene	99	98	(32-160)	0	20%
m,p-Xylene	101	102	(35-145)	1	20%
o-Xylene	99	103	(35-145)	2	20%

Surrogate Recoveries

Laboratory Identification	S1 Percent Recovered	S2 Percent Recovered	S3 Percent Recovered
Limits	(70-130)		
3355-2053	100		

S1: Flourobenzene

CHAIN OF CUSTODY RECORD

2136

ON SITE TECHNOLOGIES, LTD.

657 W. Maple • P. O. Box 2606 • Farmington NM 87499
LAB: (505) 325-5667 • FAX: (505) 325-6256

Date: 9/27/94

Page 1 of 1

Purchase Order No.:	Reference No.:		
SEND INVOICE TO: Name		REPORT RESULTS TO: Name Nelson Velez	Title PE
Company BLAGG ENGINEERING	Dept.	Company SAME	
Address P.O. BOX 87		Mailing Address SAME	
City, State, Zip BLOOMFIELD, COLO. 87413		City, State, Zip SAME	
		Telephone No.	Telefax No.

Special Instructions: GCU 162

Sampler: Nelson Velez

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE/ GRAB	PRESERVATIVES	Number of Containers	BTEX (8020)	Remarks (matrix)
MW #3	9/27/94 1120	GRAB	HgCl	2	✓	H2O
MW #4	9/27/94 1150	GRAB	HgCl	2	✓	
MW #5	9/27/94 1050	GRAB	HgCl	2	✓	
MW #6	9/27/94 1025	GRAB	HgCl	2	✓	
MW #9	9/27/94 1245	GRAB	HgCl	2	✓	
MW #10	9/27/94 1220	GRAB	HgCl	2	✓	
	NV 9/27/94					
	NV 9/27/94					

ANALYSIS REQUESTED

Relinquished by: Nelson Velez	Date/Time 9/27/94 1510	Received by:	Date/Time 9/27/94 1510
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time

Method of Shipment:	Rush	5 Working Days	10 Working Days
Authorized by: _____ Date _____ (Client Signature Must Accompany Request)			Sampling Location:

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

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AROMATIC VOLATILE ORGANICS

Attn:	*Nelson Velez*	Date:	9/28/94
Company:	*Blagg Engineering*	*Lab ID:*	*2136*
Address:	*P.O. Box 87*	*Sample ID:*	*3264*
City, State:	*Bloomfield, NM 87413*	*Job No.*	*2-1000*

Project Name:	***GCU 162***				
Project Location:	***MW #3***				
Sampled by:	NV	Date:	9/27/94	Time:	11:20
Analyzed by:	DLA	Date:	9/28/94		
Sample Matrix:	*Liquid*				

Aromatic Volatile Organics

Component	*Measured Concentration ug/L*	*Detection Limit Concentration ug/L*
Benzene	20.9	*0.2*
Toluene	3.4	*0.2*
Ethylbenzene	0.9	*0.2*
m,p-Xylene	8.1	*0.2*
o-Xylene	2.7	*0.2*
	TOTAL 35.9 ug/L	

ND - Not Detectable

Method - *SW-846 EPA Method 8020 Aromatic Volatile Organics by Gas Chromatography*

Approved by:
Date: 9/28/94

FAX: (505) 327-1496 ▪ 24 HR. – (505) 327-7105 ▪ OFF.: (505) 325-8786
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ON SITE TECHNOLOGIES, LTD.

AROMATIC VOLATILE ORGANICS

Attn:	*Nelson Velez*	Date:	9/28/94
Company:	*Blagg Engineering*	*Lab ID:*	*2136*
Address:	*P.O. Box 87*	*Sample ID:*	*3265*
City, State:	*Bloomfield, NM 87413*	*Job No.*	*2-1000*

Project Name:	***GCU 162***				
Project Location:	***MW #4***				
Sampled by:	NV	Date:	9/27/94	Time:	11:50
Analyzed by:	DLA	Date:	9/28/94		
Sample Matrix:	*Liquid*				

Aromatic Volatile Organics

Component	*Measured Concentration ug/L*	*Detection Limit Concentration ug/L*
Benzene	355.2	*0.2*
Toluene	0.7	*0.2*
Ethylbenzene	59.4	*0.2*
m,p-Xylene	271.4	*0.2*
o-Xylene	80.2	*0.2*
	TOTAL 766.9 ug/L	

ND - Not Detectable

Method *- SW-846 EPA Method 8020 Aromatic Volatile Organics by Gas Chromatography*

Approved by: DLH

Date: 9/28/94

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AROMATIC VOLATILE ORGANICS

Attn:	*Nelson Velez*	Date:	9/28/94
Company:	*Blagg Engineering*	*Lab ID:*	*2136*
Address:	*P.O. Box 87*	*Sample ID:*	*3266*
City, State:	*Bloomfield, NM 87413*	*Job No.*	*2-1000*

Project Name:	**GCU 162**				
Project Location:	**MW #5**				
Sampled by:	NV	Date:	9/27/94	Time:	10:50
Analyzed by:	DLA	Date:	9/28/94		
Sample Matrix:	*Liquid*				

Aromatic Volatile Organics

Component	*Measured Concentration ug/L*	*Detection Limit Concentration ug/L*
Benzene	1.3	*0.2*
Toluene	0.5	*0.2*
Ethylbenzene	1.0	*0.2*
m,p-Xylene	5.2	*0.2*
o-Xylene	0.2	*0.2*
	TOTAL *8.2 ug/L*	

ND - Not Detectable

Method - *SW-846 EPA Method 8020 Aromatic Volatile Organics by Gas Chromatography*

Approved by: Da4
Date: 9/28/94

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AROMATIC VOLATILE ORGANICS

Attn:	*Nelson Velez*	Date:	9/28/94
Company:	*Blagg Engineering*	*Lab ID:*	*2136*
Address:	*P.O. Box 87*	*Sample ID:*	*3267*
City, State:	*Bloomfield, NM 87413*	*Job No.*	*2-1000*

Project Name:	***GCU 162***				
Project Location:	***MW #6***				
Sampled by:	NV	Date:	9/27/94	Time:	10:25
Analyzed by:	DLA	Date:	9/28/94		
Sample Matrix:	*Liquid*				

Aromatic Volatile Organics

Component	*Measured Concentration ug/L*	*Detection Limit Concentration ug/L*
Benzene	70.1	*0.2*
Toluene	3.7	*0.2*
Ethylbenzene	1.9	*0.2*
m,p-Xylene	102.9	*0.2*
o-Xylene	6.4	*0.2*
	TOTAL *185.1 ug/L*	

ND - Not Detectable

Method *- SW-846 EPA Method 8020 Aromatic Volatile Organics by Gas Chromatography*

Approved by:
Date: 9/28/94

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ON SITE TECHNOLOGIES, LTD.

AROMATIC VOLATILE ORGANICS

Attn:	*Nelson Velez*	Date:	9/28/94
Company:	*Blagg Engineering*	*Lab ID:*	*2136*
Address:	*P.O. Box 87*	*Sample ID:*	*3268*
City, State:	*Bloomfield, NM 87413*	*Job No.*	*2-1000*

Project Name:	***GCU 162***				
Project Location:	***MW #9***				
Sampled by:	NV	Date:	9/27/94	Time:	12:45
Analyzed by:	DLA	Date:	9/28/94		
Sample Matrix:	*Liquid*				

Aromatic Volatile Organics

Component	***Measured Concentration ug/L***	***Detection Limit Concentration ug/L***
Benzene	0.8	*0.2*
Toluene	0.4	*0.2*
Ethylbenzene	0.6	*0.2*
m,p-Xylene	3.6	*0.2*
o-Xylene	ND	*0.2*
	TOTAL *5.4 ug/L*	

ND - Not Detectable

Method - *SW-846 EPA Method 8020 Aromatic Volatile Organics by Gas Chromatography*

Approved by: [signature]
Date: 9/28/94

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ON SITE TECHNOLOGIES, LTD.

AROMATIC VOLATILE ORGANICS

Attn:	*Nelson Velez*	Date:	9/28/94
Company:	*Blagg Engineering*	*Lab ID:*	*2136*
Address:	*P.O. Box 87*	*Sample ID:*	*3269*
City, State:	*Bloomfield, NM 87413*	*Job No.*	*2-1000*

Project Name:	***GCU 162***				
Project Location:	***MW 10***				
Sampled by:	NV	Date:	9/27/94	Time:	12:20
Analyzed by:	DLA	Date:	9/28/94		
Sample Matrix:	*Liquid*				

Aromatic Volatile Organics

Component	*Measured Concentration ug/L*	*Detection Limit Concentration ug/L*
Benzene	0.8	*0.2*
Toluene	0.3	*0.2*
Ethylbenzene	0.2	*0.2*
m,p-Xylene	3.0	*0.2*
o-Xylene	ND	*0.2*
	TOTAL *4.3 ug/L*	

ND - Not Detectable

Method *- SW-846 EPA Method 8020 Aromatic Volatile Organics by Gas Chromatography*

Approved by: Dale
Date: 9/28/94

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ON SITE TECHNOLOGIES, LTD.

QUALITY ASSURANCE REPORT

for EPA Method 8020

Date Analyzed: 9/28/94

Internal QC No.: 0222-STD
Surrogate QC No.: 0223-STD
Reference Standard QC No.: 0300-STD

Method Blank

Analytes in Blank	Amount
Average Amount of All Analytes In Blank	<0.1 ppb

Calibration Check

Calibration Standards	Units of Measure	*True Value	Analyzed Value	% Diff	Limit
Benzene	ppb	20	19	3	15%
Toluene	ppb	20	19	4	15%
Ethylbenzene	ppb	20	19	4	15%
m,p-Xylene	ppb	40	39	3	15%
o-Xylene	ppb	20	19	5	15%

Spike Results

Analyte	1- Percent Recovered	2 - Percent Recovered	Limit	%RSD	Limit
Benzene	102	99	(39-150)	2	20%
Toluene	98	97	(46-148)	1	20%
Ethylbenzene	95	95	(32-160)	0	20%
m,p-Xylene	99	98	(35-145)	1	20%
o-Xylene	94	94	(35-145)	0	20%

Surrogate Recoveries

Laboratory Identification	S1 Percent Recovered	S2 Percent Recovered	S3 Percent Recovered
Limits	(70-130)		
3213-2051	99		

S1: Flourobenzene

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CHAIN OF CUSTODY RECORD

№ 1577

ON SITE TECHNOLOGIES LIMITED

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LAB: (505) 325-5667 ▪ FAX: (505) 325-6256

Date: 6/17/94 Page 1 of 1

Purchase Order No.:	Reference No.:		
SEND INVOICE TO Name		**REPORT RESULTS TO** Name NELSON, LEE C	Title PE
Company KLAGG ENGINEERING	Dept.	Company SAME	
Address P.O. BOX 87		Mailing Address SAME	
City, State, Zip BLOOMFIELD, NM 87413		City, State, Zip SAME	
		Telephone No. 632-1199	Telefax No.

Special Instructions: GCU 162

Sampler: Nelson Lee

ANALYSIS REQUESTED

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE/ GRAB	PRESERVATIVES	Number of Containers	BTEX (8020)	PAH (8100)	Naphthalene	METALS						Remarks (matrix)
MW # 5	6/16/94 1420	GRAB	HgCl	2	✓				1709 - 1577					
MW # 6	6/16/94 1130	GRAB	HgCl	2	✓				1710 - 1577					
MW # 4	6/16/94 1400	GRAB	HgCl	2	✓				1711 - 1577					
MW # 3	6/16/94 1230	GRAB	HgCl	2	✓				1712 - 1577					
MW # 10	6/16/94 1345	GRAB	HgCl	2	✓				1713 - 1577					
MW # 9	6/16/94 1300	GRAB	HgCl	2	✓				1714 - 1577					
									1715 rc					
EFFLUENT	6/16/94 1355	GRAB	HgCl - ice	5	✓	✓	✓	✓	1715 - 1577					METALS: As, Ba, Cd, Cr, Pb, Hg, Se, Ag

Relinquished by: Nelson Lee	Date/Time 6/16/94 1543	Received by:	Date/Time 6/17/94 1543
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time

Method of Shipment:	Rush	5 Working Days	10 Working Days
Authorized by: _____ Date _____ (Client Signature Must Accompany Request)			Sampling Location:

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Creating the standards for industry.

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Rio Rancho, NM 87174
(505) 892-1666 (800) 237-4535

ILFC Laboratory Report

for

On Site Technologies Limited

657 West Maple
Farmington NM
(505) 325-5667

Project No:	**Not Given**	
Project Location:	Not Given Not Given	
Sampler:	David Cox	(505) 325-5667
Date Sampled:	6/20/94	
Date Received:	6/21/94	
Date Reported:	07/07/1994	
Report #:	94487	

Laboratory Manager_____

ILFC Laboratory Report

Sample Date: 6/20/94 | On Site Technologies Limited | (nc) | **1715-157**

Registered Date/Time: 06/22/1994 10:23:14 AM | Not Given | GCU 162 EFFLUENT 6/17/94 1355

Batch # 94487 | Water | **ILFC #** 12520

EPA 8100

Analyte	MDL	Concentration	Date Analyzed	Analyst
Acenaphthene	1ug/L	<1	July 6, 1994	Dean Dupree
Acenaphthylene	1ug/L	<1		
Benzo (a) anthracene	1ug/L	<1		
Benzo (a) pyrene	1ug/L	<1		
Pyrene	1ug/L	<1		
Benzo(b)fluoranthene	1ug/L	<1		
Benzo(ghi)perylene	1ug/L	<1		
Benzo(k)fluoranthene	1ug/L	<1		
Chrysene	1ug/L	<1		
Dibenzo(a,h)anthrace	1ug/L	<1		
Fluoranthene	1ug/L	<1		
Fluorene	1ug/L	<1		
Indeno(1,2,3-cd)pyre	1ug/L	<1		
Naphthalene	1ug/L	<1		
Phenanthrene	1ug/L	<1		

End of Analyses

Quality Control Summary PAH

Date: 6/16/94

Method Blank

Analytes in Blank	Amount
Acenaphthene	<1 ug/kg
Acenaphthylene	<1 ug/kg
Benzo (a) anthracene	<1 ug/kg
Benzo (a) pyrene	<1 ug/kg
Benzo (b) fluoranthene	<1 ug/kg
Benzo (ghi) perylene	<1 ug/kg
Benzo (k) fluoranthene	<1 ug/kg
Chrysene	<1 ug/kg
Dibenzo (a,h) anthrace	<1 ug/kg
Fluoranthene	<1 ug/kg
Fluorene	<1 ug/kg
Indeno (1,2,3-cd) pyre	<1 ug/kg
Naphthalene	<1 ug/kg
Phenanthrene	<1 ug/kg
Pyrene	<1 ug/kg

Calibration Check

Calibration Standards	% Diff.
Acenaphthene	11%
Acenaphthylene	13%
Benzo (a) anthracene	4%
Benzo (a) pyrene	7%
Benzo (b) fluoranthene	10%
Benzo (ghi) perylene	1%
Benzo (k) fluoranthene	2%
Chrysene	9%
Dibenzo (a,h) anthrace	3%
Fluoranthene	9%
Fluorene	18%
Indeno (1,2,3-cd) pyre	3%
Naphthalene	19%
Phenanthrene	11%
Pyrene	11%

Surrogate Recoveries

Sample #	S1	S2	S3
Limits	(70 - 130)		
12520	64%	74%	109%
12521	84%	89%	86%
12522	84%	79%	98%
12523	92%	97%	94%

Manager of Laboratory Systems

QCS001

Spike Recoveries

Compound	MS Rec.	MSD Rec.	% Diff.
1,4-Dichlorobenzene	41	42	-1
N-Nitroso-di-n-propylamine	65	68	-3
1,2,4-Trichlorobenzene	42	43	-1
Acenaphthene	62	59	3
2,4-Dinitrotoluene	78	78	0
Pyrene	87	91	-4

ON SITE TECHNOLOGIES, LTD.

API Water Analysis

Attn:	*Nelson Velez*	Date:	6/23/94
Company:	*Blagg Engineering*	*Lab ID:*	*1577*
Address:	*P.O. Box 87*	*Sample ID:*	*1715*
City, State:	*Bloomfield, NM 87413*	*Job No.:*	*2-1000*

Project Name:	***GCU 162***				
Project Location:	***Effluent***				
Sampled by:	NV	Date:	6/17/94	Time:	1355
Analyzed by:	DC/DA	Date:	6/23/94		

API RP-45 Laboratory Analysis

DISSOLVED SOLIDS			
CATIONS			
Sodium	*Na*	307	*mg/L*
Calcium	*Ca*	380.0	*mg/L*
Magnesium	*Mg*	5.5	*mg/L*
Potassium	*K*	5.6	*mg/L*
ANIONS			
Chloride	*Cl*	109	*mg/L*
Sulfate	*SO4*	1175	*mg/L*
Carbonate	*CO3*	0	*mg/L*
Bicarbonate	*HCO3*	229	*mg/L*
Hyroxide	*OH*	0	*mg/L*
Total Dissolved Solids		2211	*mg/L*
Iron	*Fe (total)*	0.3	*mg/L*
Sulfide	*H2S*	*NT*	*mg/L*

OTHER PROPERTIES	
pH	7.98
Specific Gravity 60/60 F	1.0041
Resistivity (ohm-meters) 77 F	3.13
Total Hardness as CaCO3 ppm	971

Comments:

**ND:* *Not Detectable - Positive/Negative*
***NT:* *Not Analyzed*

Approved by:
Date: 6/23/94

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WESTERN ATLAS

Core Laboratories

CORE LABORATORIES
A N A L Y T I C A L R E P O R T

Job Number: 941647
Prepared For:

ONSITE TECHNOLOGIES LIMITED
DAVE COX
657 W. MAPLE
FARMINGTON, NM 87401

Date: 07/05/94

Signature

Date: 7/7/94

Name: Chip Meador

Title: Regional Manager

CORE LABORATORIES
1733 NORTH PADRE ISLAND DRIVE
CORPUS CHRISTI, TX 78408

WESTERN ATLAS

Core Laboratories

LABORATORY TESTS RESULTS

07/05/94

JOB NUMBER: 941647 CUSTOMER: ONSITE TECHNOLOGIES LIMITED ATTN: DAVE COX

CLIENT I.D.....: 1715-1577 GCU 162 - EFFLUENT
DATE SAMPLED.....: 06/17/94
TIME SAMPLED.....: 13:55
WORK DESCRIPTION...: 1715-1577

LABORATORY I.D...: 941647-0001
DATE RECEIVED....: 06/21/94
TIME RECEIVED....: 09:00
REMARKS.....:

TEST DESCRIPTION	FINAL RESULT	LIMITS/*DILUTION	UNITS OF MEASURE	TEST METHOD	DATE	TEC
ICP scan for 23 elements		*1		23 element scan	07/01/94	JEI
Silver (Ag), total	<5	5	mg/kg	Scan		
Aluminum (Al), total	<5	5	mg/kg	Scan		
Arsenic (As), total	<5	5	mg/kg	Scan		
Barium (Ba), total	<5	5	mg/kg	Scan		
Beryllium (Be), total	<5	5	mg/kg	Scan		
Calcium (Ca), total	357	100	mg/kg	Scan		
Cadmium (Cd), total	<5	5	mg/kg	Scan		
Cobalt (Co), total	<5	5	mg/kg	Scan		
Chromium (Cr), total	<5	5	mg/kg	Scan		
Copper (Cu), total	<5	5	mg/kg	Scan		
Iron (Fe), total	<5	5	mg/kg	Scan		
Magnesium (Mg), total	45	5	mg/kg	Scan		
Manganese (Mn), total	<5	5	mg/kg	Scan		
Molybdenum (Mo), total	<5	5	mg/kg	Scan		
Sodium (Na), total	107	100	mg/kg	Scan		
Nickel (Ni), total	<5	5	mg/kg	Scan		
Lead (Pb), total	<5	5	mg/kg	Scan		
Antimony (Sb), total	<5	5	mg/kg	Scan		
Selenium (Se), total	<5	5	mg/kg	Scan		
Titanium (Ti), total	<5	5	mg/kg	Scan		
Thallium (Tl), total	<5	5	mg/kg	Scan		
Vanadium (V), total	<5	5	mg/kg	Scan		
Zinc (Zn), total	<5	5	mg/kg	Scan		
Selenium (Se), total	<0.05	0.05	mg/L	EPA SW-846 6010	06/27/94	JEM
Mercury (Hg), total	<0.002	0.002	mg/L	EPA 7470/245.1	06/22/94	JJP
Metals Digest	Completed			EPA SW-846 3010	06/22/94	EBS

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CORPUS CHRISTI, TX 78408
(512) 289-2673

WESTERN ATLAS

Core Laboratories

QUALITY ASSURANCE REPORT
07/05/94

JOB NUMBER: 941647 CUSTOMER: ONSITE TECHNOLOGIES LIMITED ATTN: DAVE COX

ANALYSIS				DUPLICATES		REFERENCE STANDARDS		MATRIX SPIKES		
ANALYSIS TYPE	ANALYSIS SUB-TYPE	ANALYSIS I.D.	ANALYZED VALUE (A)	DUPLICATE VALUE (B)	RPD or (|A-B|)	TRUE VALUE	PERCENT RECOVERY	ORIGINAL VALUE	SPIKE ADDED	PERCENT RECOVERY
PARAMETER:Mercury (Hg), total				DATE/TIME ANALYZED:06/22/94 18:14						QC BATCH NUMBER:96097
REPORTING LIMIT/DF: 0.002 UNITS:mg/L				METHOD REFERENCE :EPA 7470/245.1						TECHNICIAN:J
BLANK	MB	DI H2O	<0.002							
STANDARD	RS	WP1085	0.018			0.020	90			
SPIKE	MS	941647-1	0.049					<0.002	0.050	98
DUPLICATE	MD	941647-1	<0.002	<0.002	NC					
PARAMETER:Selenium (Se), total				DATE/TIME ANALYZED:06/27/94 13:09						QC BATCH NUMBER:96124
REPORTING LIMIT/DF: 0.05 UNITS:mg/L				METHOD REFERENCE : 6010/200.7						TECHNICIAN:JE
BLANK	MB	3010	<0.05							
BLANK	MB	200.7	<0.05							
STANDARD	CCV	0616A	4.71			5.00	94			
STANDARD	ICV	Q0694	0.90			1.00	90			
SPIKE	MS	941647-001	0.41					<0.05	0.50	82
DUPLICATE	MD	941647-001	<0.05	<0.05	NC					

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(512) 289-2673

WESTERN ATLAS

Core Laboratories

QUALITY ASSURANCE FOOTER

Cited Methods are obtained from the following documents :

EPA 600/2-79-020, Methods for the Analysis of Water and Wastes, March 1983.
USEPA SW-846 3rd. Edition, November 1990 and July 1992 Update, Test Methods for Evaluating Solid Waste.
EPA 600/2-78-054, Field and Laboratory Methods Applicable to Overburdens and Minesoils.
Federal Register, July 1,. 1992 (40 CFR Part 136).
Standard Methods for the Examination of Water and Wastewater, 18th Ed. APHA, AWWA, WPCF.

Quality control acceptance criteria are method dependent.
All data reported on sample "as received" unless noted.
Sample IDs with a "-00" at the end indicate a blank spike or blank spike duplicate associated with the numbered sample.
NC = Not Calculated due to value at or below detection limit.
NOTE: Data in QA report may differ from final results due to digestion and/or dilution of sample into analytical range.
The "TIME ANALYZED" in the QA report refers to the start time of the analytical batch which may not reflect the actual time of each analysis. The "DATE ANALYZED" is the actual date of analysis.
The data in this report are within the limits of uncertainty specified in the referenced method unless otherwise indicated.

SUBCONTRACTED LABORATORY LOCATIONS

For analyses performed by a subcontract laboratory, an "*" and the designated laboratory code is indicated in the "TECHN" column of the laboratory test results report.

Core Laboratories :

Anaheim	*AN	Lake Charles	*LC
Aurora	*AU	Long Beach	*LB
Casper	*CA	Other Laboratories	*XX
Houston	*HP		

QUALITY ASSURANCE REPORT CODES

BLANKS*	REFERENCE STANDARDS	SPIKES AND DUPLICATES
MB = Method Blank	RS = Reference Standard	MS = Matrix Spike, BS = Blank Spike
RB = Reagent Blank	CC = Continuing Calib.	SS = Surrogate Spike, MD = Matrix Dup.
SB = Storage Blank	LCS = Laboratory Control Std.	PDS= Post Digested Spike
ICB = Initial Calib. Blank	ICV = Initial Calib. Verification	MSD= Matrix Spike Duplicate
CCB = Continuing Calib. Blank	CCV = Cont. Calib. Verification	PDD= Post Digested Duplicate

*In the event that several different method blanks are analyzed, the blank type will be designated by the preparation method, i.e., ZHE, TCLP, 3010, 3050, etc.

1733 NORTH PADRE ISLAND DRIVE
CORPUS CHRISTI, TX 78408
(512) 289-2673

CHAIN OF CUSTODY RECORD

2142

ON SITE TECHNOLOGIES, LTD.

657 W. Maple • P. O. Box 2606 • Farmington NM 87499
LAB: (505) 325-5667 • FAX: (505) 325-6256

Date: 9/29/94

Page 1 of 1

Purchase Order No.:

Reference No.: GCU # 162

SEND INVOICE TO

Name JEFF BLAGG

Company BLAGG ENGINEERING INC.

Dept.

Address P.O. BOX 87

City, State, Zip BLOOMFIELD, NM 87413

REPORT RESULTS TO

Name JEFF BLAGG

Title

Company BLAGG ENGINEERING INC.

Mailing Address P.O. BOX 87

City, State, Zip BLOOMFIELD NM 87413

Telephone No. 632-1199

Telefax No.

Special Instructions:

Sampler: JEFF BLAGG

ANALYSIS REQUESTED

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE/ GRAB	PRESERVATIVES	Number of Containers	BTEX	Remarks (matrix)
VW #25 @ 20'	9/29/94 1115	GRAB	ice/HCl	2	X	water
VW #27 @ 19'	9/29/94 1125	GRAB	"	2	X	water
VW #28 @ 19'	9/29/94 1513	"	"	2	X	water
VW #29 @ 14'	9/29/94 1521	"	"	2	X	water

Relinquished by: J. C. Blagg	Date/Time 9/29/94 1611	Received by:	Date/Time 9/29/94 1611
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time

Method of Shipment:

Authorized by: J. C. Blagg (Client Signature Must Accompany Request) Date 9/28/94

Rush	5 Working Days	10 Working Days	Sampling Location:

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

OFF: (505) 325-8786

ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-5667

AROMATIC VOLATILE ORGANICS

Attn:	*Jeff Blagg*	Date:	9/29/94
Company:	*Blagg Engineering*	*Lab ID:*	*2142*
Address:	*P.O. Box 87*	*Sample ID:*	*3301*
City, State:	*Bloomfield, NM 87413*	*Job No.*	*2-1000*

Project Name:	***GCU #162***				
Project Location:	***VW #25 @ 20'***				
Sampled by:	JB	Date:	9/28/94	Time:	11:15
Analyzed by:	DLA	Date:	9/29/94		
Sample Matrix:	*Water*				

Aromatic Volatile Organics

Component	*Measured Concentration ug/L*	*Detection Limit Concentration ug/L*
Benzene	ND	*0.2*
Toluene	1.5	*0.2*
Ethylbenzene	0.2	*0.2*
m,p-Xylene	2.5	*0.2*
o-Xylene	0.8	*0.2*
	TOTAL *5.1 ug/L*	

ND - Not Detectable

Method - *SW-846 EPA Method 8020 Aromatic Volatile Organics by Gas Chromatography*

Approved by: [signature]
Date: 9/29/94

OFF: (505) 325-8786

ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-5667

AROMATIC VOLATILE ORGANICS

Attn:	*Jeff Blagg*	Date:	9/29/94
Company:	*Blagg Engineering*	*Lab ID:*	*2142*
Address:	*P.O. Box 87*	*Sample ID:*	*3302*
City, State:	*Bloomfield, NM 87413*	*Job No.*	*2-1000*

Project Name:	***GCU #162***				
Project Location:	***VW #27 @ 19'***				
Sampled by:	JB	Date:	9/28/94	Time:	11:25
Analyzed by:	DLA	Date:	9/29/94		
Sample Matrix:	*Water*				

Aromatic Volatile Organics

Component	*Measured Concentration ug/L*	*Detection Limit Concentration ug/L*
Benzene	0.7	*0.2*
Toluene	0.8	*0.2*
Ethylbenzene	0.4	*0.2*
m,p-Xylene	3.0	*0.2*
o-Xylene	0.4	*0.2*
	TOTAL *5.4 ug/L*	

ND - Not Detectable

Method *- SW-846 EPA Method 8020 Aromatic Volatile Organics by Gas Chromatography*

Approved by:
Date: 9/29/94

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AROMATIC VOLATILE ORGANICS

Attn:	*Jeff Blagg*	Date:	9/29/94
Company:	*Blagg Engineering*	*Lab ID:*	*2142*
Address:	*P.O. Box 87*	*Sample ID:*	*3303*
City, State:	*Bloomfield, NM 87413*	*Job No.*	*2-1000*

Project Name:	***GCU #162***				
Project Location:	***VW #28 @ 19'***				
Sampled by:	JB	Date:	9/28/94	Time:	15:13
Analyzed by:	DLA	Date:	9/29/94		
Sample Matrix:	*Water*				

Aromatic Volatile Organics

Component	*Measured Concentration ug/L*	*Detection Limit Concentration ug/L*
Benzene	1.1	*0.2*
Toluene	1.3	*0.2*
Ethylbenzene	ND	*0.2*
m,p-Xylene	0.9	*0.2*
o-Xylene	0.4	*0.2*
	TOTAL *3.6 ug/L*	

ND - Not Detectable

Method - *SW-846 EPA Method 8020 Aromatic Volatile Organics by Gas Chromatography*

Approved by: Jan Cx
Date: 9/29/94

OFF: (505) 325-8786

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LAB: (505) 325-5667

AROMATIC VOLATILE ORGANICS

Attn:	*Jeff Blagg*	Date:	9/29/94
Company:	*Blagg Engineering*	*Lab ID:*	*2142*
Address:	*P.O. Box 87*	*Sample ID:*	*3304*
City, State:	*Bloomfield, NM 87413*	*Job No.*	*2-1000*

Project Name:	***GCU #162***				
Project Location:	***VW #29 @ 14'***				
Sampled by:	JB	Date:	9/28/94	Time:	15:21
Analyzed by:	DLA	Date:	9/29/94		
Sample Matrix:	*Water*				

Aromatic Volatile Organics

Component	*Measured Concentration ug/L*	*Detection Limit Concentration ug/L*
Benzene	ND	*0.2*
Toluene	0.8	*0.2*
Ethylbenzene	ND	*0.2*
m,p-Xylene	0.8	*0.2*
o-Xylene	0.2	*0.2*
	TOTAL *1.8 ug/L*	

ND - Not Detectable

Method - *SW-846 EPA Method 8020 Aromatic Volatile Organics by Gas Chromatography*

Approved by:
Date: 9/29/94

OFF: (505) 325-8786

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TECHNOLOGIES, LTD.

LAB: (505) 325-5667

QUALITY ASSURANCE REPORT

for EPA Method 8020

Date Analyzed: 9/29/94

Internal QC No.: 0222-STD
Surrogate QC No.: 0223-STD
Reference Standard QC No.: 0300-STD

Method Blank

Analytes in Blank	*Amount*
Average Amount of All Analytes In Blank	<0.1 ppb

Calibration Check

Calibration Standards	*Units of Measure*	**True Value*	*Analyzed Value*	*% Diff*	*Limit*
Benzene	ppb	20	19	5	15%
Toluene	ppb	20	18	8	15%
Ethylbenzene	ppb	20	18	12	15%
m,p-Xylene	ppb	40	36	9	15%
o-Xylene	ppb	20	18	10	15%

Spike Results

Analyte	*1- Percent Recovered*	*2 - Percent Recovered*	*Limit*	*%RSD*	*Limit*
Benzene	102	99	(39-150)	2	20%
Toluene	98	97	(46-148)	1	20%
Ethylbenzene	95	95	(32-160)	0	20%
m,p-Xylene	99	98	(35-145)	1	20%
o-Xylene	94	94	(35-145)	0	20%

Surrogate Recoveries

Laboratory Identification	*S1 Percent Recovered*	*S2 Percent Recovered*	*S3 Percent Recovered*
Limits	(70-130)		
3301-2142	98		

S1: Flourobenzene