3R - 84

REPORTS

DATE:

4/14/1998

On Site Technologies, Ltd.

Letter of Transmittal

ATTENTION:

DATE: April 14, 1998

Mr. Bill Olson
New Mexico Oil Conservation Division
2040 South Pacheco
Santa Fe, New Mexico 87505

RE: Initial Groundwater Monitoring Report for Farmington B Com #1E, Unit O, Sec. 15 T29N, R13W

REMARKS:

Dear Mr. Olson:

On behalf of Conoco, ***On Site Technologies Limited Partnership***, is submitting the enclosed Initial Groundwater Monitoring Report for Farmington B Com #1E, Unit O, Sec. 15 T29N, R13W.

We are sending you:

No. Originals	No. Copies	Description
1		Farmington B Com #1E, Unit O, Sec. 15 T29N, R13W

SIGNATURE:

Larry Trujillo
Sr. Environmental Technician
cc:
Denny Foust
Shirley Ebert
Bill Liess

ON SITE
TECHNOLOGIES, LTD.

April 2, 1998

Conoco, Inc., Mid-Continent Region
Attn.: Ms. Shirley Ebert, Field SHEAR Specialist
3314 Bloomfield Hwy.
Farmington, NM 87401

RE: Initial Groundwater Monitoring Report
Conoco Location: Farmington B Com #1E
Unit 0, Sec. 15, T29N, R13w, NMPM, San Juan Co., NM

Project: 4-1374

Dear Ms. Ebert:

The following report summarizes the ground water remediation and monitoring activities conducted by On Site Technologies Limited Partnership and/or others on behalf of Conoco, Inc. at the referenced oil and gas location. This report covers the installation, development and initial sampling of three (3) monitoring wells, and follows the format outlined in the *Comprehensive Ground Water Remediation and Long-Term Monitoring Plan for Conoco Locations in the San Juan Basin, New Mexico*, submitted to the New Mexico Oil Conservation Division on October 15, 1997.

MONITORING WELL INSTALLATION:

During September 1997, hydrocarbon contaminated soil was excavated from two (2) areas at the Farmington B Com #1E. The two areas of excavation involved approximately 906 cubic yards of contaminated soil. During excavation a twenty-foot section of eight (8) inch Schedule 40 PVC pipe was placed in each of the excavated sites and in one down gradient site, to act as conduit for follow up drilling to install monitoring wells

During February 1998, Western Water Well drilled, using a cable tool, and installed three (3) monitoring wells at the referenced site. Using the eight (8) inch Schedule 40 PVC as a conduit the wells were drilled to approximately thirty-five (35) feet below ground surface. Each well was constructed of two (2) inch Schedule 40 PVC casing with fifteen (15) feet of well screen. The conductor pipe was removed and the annular space backfilled with: 10-20 sand to approximately one (1) foot over the screened interval, hydrated 3/8-inch Bentonite pellets for a approximate two (2) foot seal and grouted to surface with 5% Bentonite rich concrete grout. Each well was secured with an above grade steel well protector and locking two-inch protective cap. Typical well details attached.

On February 18,1998, the three (3) wells were developed using a Grundfos Redi-Flo pump, by either being pumped dry or having approximately ten volumes of water removed. Sampling of the monitoring wells was accomplished on February 19, 1998.

Results of excavation and annual ground activity were previously documented in the following documentation.

On Site Technologies, Ltd., April 16, 1997. letter to Mr. W. L. Brignon, Senior Council Conoco, Inc. Midland Division, regarding: *Remediation Summary, Conoco Location, Farmington B Com #1E, Unit 0, Sec. 15, T29N, R13W, NMPM, San Juan Co., NM.*

On Site Technologies, Ltd., February 1, 1998. Report to Ms. Shirley Ebert, Field SHEAR Specialist, Conoco, Inc. Mid-Continent Region, regarding: *Annual Ground Water Report for 1997, Conoco Location, Farmington B Com #1E, Unit 0, Sec. 15, T29N, R13W, NMPM, San Juan Co., NM*

PO Box 2606
Farmington, NM
505-325-5667 FAX: 505-327-1496

SAMPLING:

Following the approved Conoco plan, during each sampling event, water levels were measured on all monitoring wells prior to development, purging and sampling. Wells were developed using a Grundfos Redi-Flo pump approximately ten (10) volumes of water were removed or until well was pumped dry. The wells were allowed to recover overnight and samples were taken the following day. Samples were collected in laboratory supplied containers, preserved as needed, and proper chain-of-custody protocol followed. Laboratory analyses ordered followed the Conoco Ground Water Plan.

Table 1 summarizes the monitoring well data and water levels measured during each sampling event. Table 2 summarizes the laboratory results for BTEX compounds from all water sampling completed at the referenced site, including assessment data. Table 3 summarizes the laboratory results for RCRA metals and API water quality testing, as required by NMOCD.

Copies of all laboratory reports for the initial sampling of the Farmington B Com 1E monitoring wells, along with all laboratory QA/QC documentation and chain-of-custody, are attached with this report.

SUMMARY AND CONCLUSIONS:

The following conclusions are based on the initial ground water monitoring results and trends associated with Farmington B Com 1E well location:

1. Except for contamination from BTEX constituents in MW#1, there appears to have been no significant hydrocarbon impact to ground water above the New Mexico Water Quality Control Commission (NMWQCC) standards.
2. In accordance with NMWQCC Regulation, December 1, 1995, Section 4103 Paragraph D, groundwater monitoring will be done from all sampling points for a minimum of four (4) consecutive quarters.
3. The average depth to groundwater is 28.39 feet. The groundwater flow appears to be to the Southwest with a gradient of 0.0125 to 0.01 foot/feet.
4. The lateral extent of groundwater contamination has not been defined in the area of MW#1.

RECOMMENDATIONS

Monitoring of groundwater quality should be continued until NMWQCC abatement standards and requirements are met.

LIMITATIONS AND CLOSURE:

This initial groundwater report documents the results of ground water monitoring for the referenced Conoco well location. This report following the Conoco Ground Water Plan, dated October 15, 1997, and approved by NMOCD on February 16,1998.

The scope of On Site Technologies' services consisted of project management, periodic water sampling and measurement of water levels, laboratory testing for ground water quality, and preparation of this initial report. All work has been performed in accordance with generally accepted professional practices in geotechnical, petroleum and environmental engineering, and hydrogeology.

This document has been prepared by On Site Technologies for the exclusive use of Conoco Inc. as it pertains to the referenced well location operated by Conoco.

If there are any questions regarding this status report, please contact either Myke Lane or Larry Trujillo at On Site Technologies, (505) 325-5667. Thank you for your consideration.

Respectfully submitted,

Larry J. Trujillo
Project Manager

Michael K. Lane, P.E.
Senior Engineer

On Site Technologies, Limited Partnership

Attachments:
Table 1: Monitoring Well Details and Ground Water Levels Summary
Table 2: Ground Water BTEX Analytical Summary
Table 3: Other Constituents Analytical Summary
Figure 1: Site Sketch
Figure 2: Ground Water Potentiometric Map (February, 1998)
Boring Logs and Monitoring Well Diagrams

Acknowledgment:
CONOCO, Inc.

Shirley L. Ebert - Steam Specialist
(Name/Title)

4/14/98
(Date)

MKL/mkl: 41429-96.doc.doc

On Site Technologies
Ground Water Level Summary
Farmington B Com 1E
Unit O, Sec.15, T29N, R13W

Well Number	Top of Casing Elevation* (ft)	Total Depth of Well (ft)*	Well Type	Screen Interval (ft) (BGS) *	Sample Date	Depth to Groundwater (ft) (BTOC)*	Relative Groundwater Elevation (ft)
MW #1	101.37	34.09	2" PVC	19.09 to 34.09	3/18/98	28.51	78.86
MW #2	101.57	33.72	2" PVC	18.72 to 33.72	3/18/98	27.81	72.76
MW #3	102.1	32.44	2" PVC	17.44 to 32.44	3/19/98	28.84	73.26

*
BGS - approximate measurements taken as Below Ground Surface
BTOC - Below Top of Casing
NM - Not Measured

On Site Technologies

April 7, 1998

BTEX Ground Water Analytical Summary

Farmington B Com 1E

Unit O, Sec. 15 T29N, R13W

Sample Date	Sample ID#	Monitor Well	Remarks					
				Benzene	Toluene	Ethylbenzene	Total-Xylene	Total BTEX
2/19/98	9802020-01A	MW#1	On Site Lab.	210.0	34.0	370.0	2044.0	2658.00
2/19/98	9802020-02A	MW#2	On Site Lab.	2.4	5.3	16.0	470.0	493.70
2/19/98	9802020-03A	MW#3	On Site Lab.	0.9	1.2	1.6	5.3	9.00
				10.0	750.0	750.0	620.0	N/A

On Site Technologies

March 31, 1998

Ground Water Analytical Summary
Farmington B Com 1E
Unit O, Sec. 15 T29N, R13W

API Results

Monitoring Well #1

CATIONs						ANIONs				
PARAMETER		RESULTS	UNITOF MEASURE	WQCC Standards	UNITOF MEASURE	PARAMETER		RESULTS	UNITOF MEASURE	WQCC Standards	UNITOF MEASURE
Sodium	Na	67.0	mg/L			Chloride	Cl	55.0	mg/L	250.0	mg/L
Calcium	Ca	110.0	mg/L			Sulfate	SO_4	30.0	mg/L	600.0	mg/L
Magnesium	Mg	22.0	mg/L			Carbonate	CO_3	430.0	mg/L		
Potassium	K	12.0	mg/L			Bicarbonate	HCO_3	BDL	mg/L		
						Hydroxide	HO	BDL	mg/L		
						Conductivity		869.0			
						Total Dissolved Solids		730.0	mg/L	1000.0	mg/L
						Total Naphthalene		0.18	mg/l	0.03	mg/l
						benzo-a-pyrene		BDL	mg/L	0.0007	mg/L
						pH		6.9		between 6 and 9	
						Resistively		11.5		ohm-m	

Sample Date: February 19, 1997

RCRA Metals
Test Method SW-846

PARAMETER	RESULTS	UNITS	WQCC	UNITS
Mercury by CVAA	<0.0001	mg/L	0.002	mg/L
Arsenic by ICP	<0.04	mg/L	0.1	mg/L
Barium by ICP	0.484	mg/L	1.0	mg/L
Cadmium by ICP	<0.004	mg/L	0.01	mg/L
Chromium by ICP	<0.010	mg/L	0.05	mg/L
Lead by ICP	<0.050	mg/L	0.05	mg/L
Selenium by ICP	0.018	mg/L	0.05	mg/L
Silver by ICP	<0.005	mg/L	0.05	mg/L

On Site Technologies

March 31, 1998

Ground Water Analytical Summary
Farmington B Com 1E
Unit O, Sec. 15 T29N, R13W

API Results

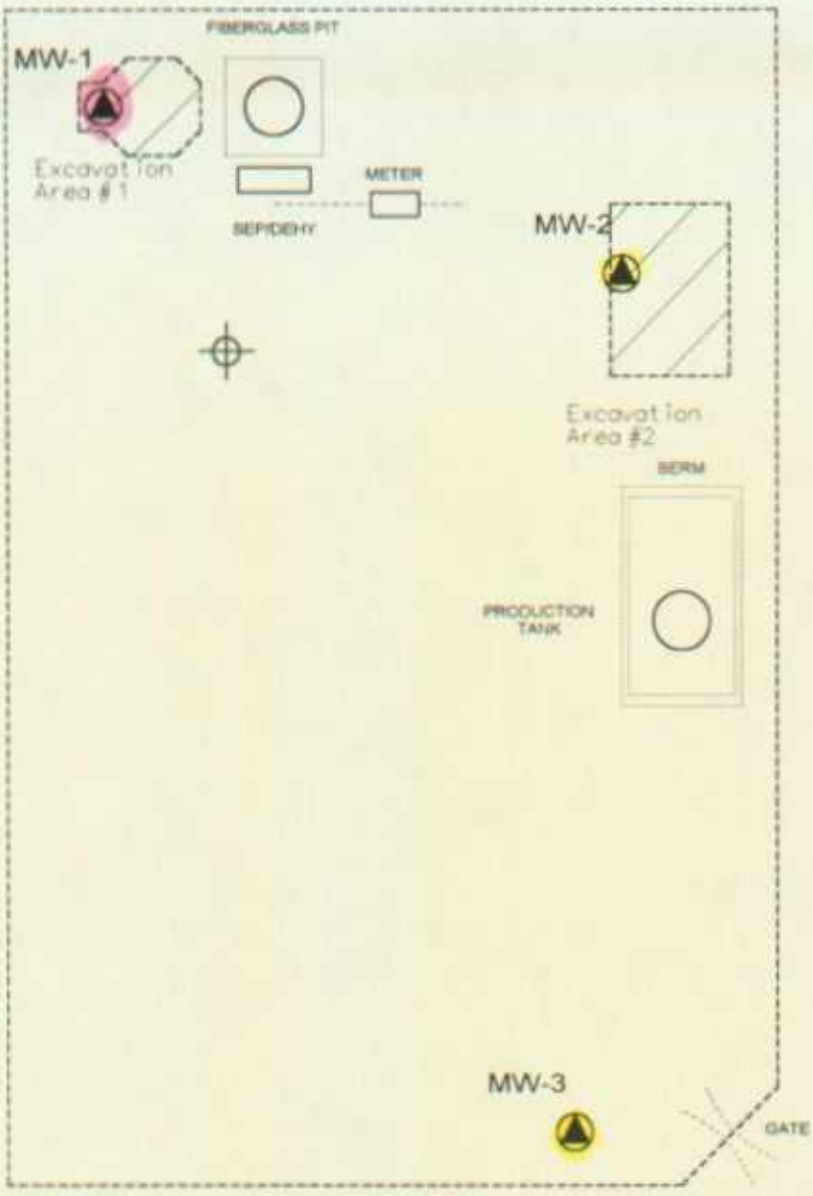
Monitoring Well #2

CATIONS						ANIONS				
PARAMETER		RESULTS	UNITOF MEASURE	WQCC Standards	UNITOF MEASURE	PARAMETER		RESULTS	UNITOF MEASURE	WQCC Standards	UNITOF MEASURE
Sodium	Na	67.0	mg/L			Chloride	Cl	30.0	mg/L	250.0	mg/L
Calcium	Ca	96.0	mg/L			Sulfate	SO_4	97.0	mg/L	600.0	mg/L
Magnesium	Mg	22.0	mg/L			Carbonate	CO_3	360.0	mg/L		
Potassium	K	23.0	mg/L			Bicarbonate	HCO_3	BDL	mg/L		
						Hydroxide	HO	BDL	mg/L		
						Conductivity		840.0			
						Total Dissolved Solids		690.0	mg/L	1000.0	mg/L
						pH		5.1		between 6 and 9	
						Resistively		12		ohm-m	

Sample Date: February 19, 1997

RCRA Metals
Test Method SW-846

PARAMETER	RESULTS	UNITS	WQCC	UNITS
Mercury by CVAA	0.0002	mg/L	0.002	mg/L
Arsenic by ICP	<0.04	mg/L	0.1	mg/L
Barium by ICP	0.317	mg/L	1.0	mg/L
Cadmium by ICP	<0.004	mg/L	0.01	mg/L
Chromium by ICP	<0.010	mg/L	0.05	mg/L
Lead by ICP	<0.050	mg/L	0.05	mg/L
Selenium by ICP	<0.002	mg/L	0.05	mg/L
Silver by ICP	<0.005	mg/L	0.05	mg/L



LEGEND

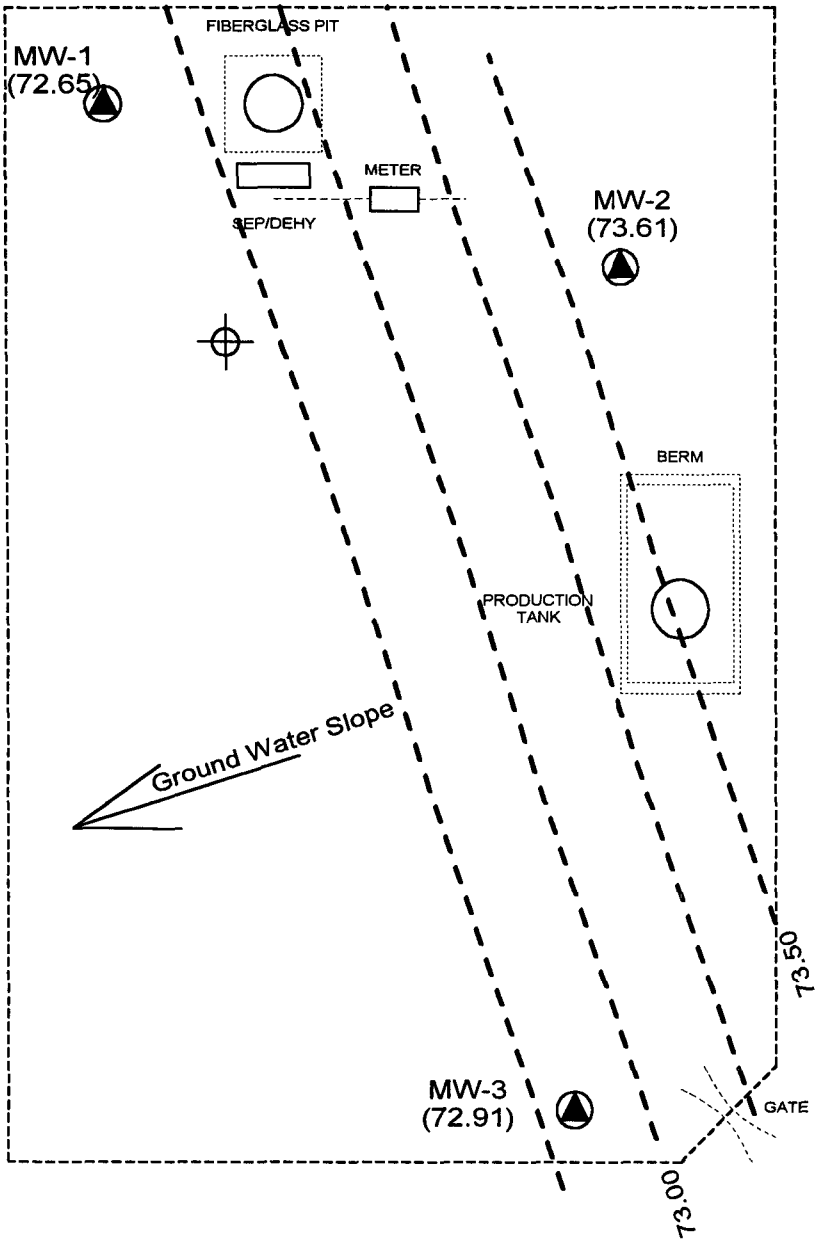
Approximate extent of excavation

MW-1 Approximate location of monitoring wells drilled Feb. 1998.

Scale: 1" = 40'

FARMINGTON "B" COM #1E Unit "O", S15, T29W, R13W SAN JUAN BASIN, NM		SITE SKETCH
		DRWN: 4-6-98
PROJECT NO: 4-1374		DRWN BY: MKL
FIGURE: A-1	FILE: 41374A1.CAD	PROJECT: Ground Water Monitoring

ON SITE TECHNOLOGIES, LTD.
P.O. BOX 2606, FARMINGTON, NM 87499
(505) 325-5667



LEGEND

Ground Water Surface Contour (0.25 ft) measured February 1998.

MW-1 Approximate location of monitoring wells drilled Feb. 1998.

Scale: 1" = 40'

FARMINGTON "B" COM #1E Unit "O", S15, T29W, R13W SAN JUAN BASIN, NM		Ground Water Potentiometric Map	ON SITE TECHNOLOGIES, LTD. P.O. BOX 2606, FARMINGTON, NM 87499 (505) 325-5667
		DRWN: 4-6-98	
PROJECT NO: 4-1374		DRWN BY: MKL	
FIGURE: A-1	FILE: 41374S2.CAD	PROJECT: Ground Water Monitoring	

On Site Technologies Ltd. Partnership
P.O. BOX 2606, FARMINGTON, NM 87499
(505) 327-1072

TEST HOLE LOG & MONITORING WELL DETAIL

Monitoring Well: MW-1

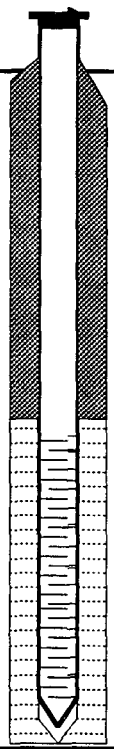
Project: CONOCO: Ground Water Assessment

Project No: 4-1374

Project Location: Farmington B COM #1E		Logged By: Myke Lane	Approved: M K Lane
Drilling Contractor: Western Water Wells		Date Started: Feb. 1998	Date Completed: Feb. 1998
Drilling Equipment: Cable Tool	Driller: Terry Hood	TD (ft): 34.09	Static Water Depth (ft): 28
Drilling Method: Cable Tool	Borehole Dia. (in): 6.0	TOC Elevation: 101.37	Ground Elevation:
Sampling Method: NA		Well Casing (Diameter & Type): 2 in. - Sch 40 PVC	
COMMENTS: Initial Sch 40 PVC conduction pipe set by trackhoe to a depth of approximately 15 feet. Cable tool rig with 6 inch drove pipe used to set monitoring well.		Slot Size (in): 0.010	Filter Material: Silica Sand 10/20
		Development Method: Submersible Pump & Bailer	

Depth (feet)	Depth to Water During Drilling (ft)	USCS	Lithology	Field Description & Remarks	Sampled Interval	Field PID Reading	Lab TPH: EPA 418.1 (ppm)
SURFACE		GW		Light brown to olive gray well graded GRAVEL, moist to saturated, dense.	No soil samples taken during drilling		
10'							
20'							
30'	▽			Static Water Level: approx. 28 ft.			
				TOTAL DEPTH: approximately 35 ft.			
40'							
50'							

Monitoring Well Construction & Remarks



Well secured with locking steel riser & 2 in. locking plug.

5% Bentonite Cement Grout to surface.

Top of Filter Pack: 18.0

Top of Screened Interval: 19.09'

BY: MKL
DATE: 4/7/98
FILE: 91374B1.CAD

On Site Technologies Ltd. Partnership
P.O. BOX 2606, FARMINGTON, NM 87499
(505) 327-1072

TEST HOLE LOG & MONITORING WELL DETAIL

Monitoring Well: MW-2

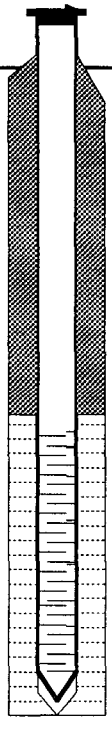
Project: CONOCO: Ground Water Assessment

Project No: 4-1374

Project Location: Farmington B COM #1E		Logged By: Myke Lane	Approved: M K Lane
Drilling Contractor: Western Water Wells		Date Started: Feb. 1998	Date Completed: Feb. 1998
Drilling Equipment: Cable Tool	Driller: Terry Hood	TD (ft): 33.72	Static Water Depth (ft): 27.5
Drilling Method: Cable Tool	Borehole Dia. (in): 6.0	TOC Elevation: 101.57	Ground Elevation:
Sampling Method: NA		Well Casing (Diameter & Type): 2 in. - Sch 40 PVC	
COMMENTS: Initial Sch 40 PVC conduction pipe set by trackhoe to a depth of approximately 15 feet. Cable tool rig with 6 inch drove pipe used to set monitoring well.		Slot Size (in): 0.010	Filter Material: Silica Sand 10/20
		Development Method: Submersible Pump & Bailer	

Depth (feet)	Depth to Water During Drilling (ft)	USCS	Lithology	Field Description & Remarks	Sampled Interval	Field PID Reading	Lab TPH: EPA 418.1 (ppm)
SURFACE		GW		Light brown to olive gray well graded GRAVEL, moist to saturated, dense.	No soil samples taken during drilling		
10'							
20'							
30'	▽			Static Water Level: approx. 27.5 ft.			
				TOTAL DEPTH: approximately 34 ft.			
40'							
50'							

Monitoring Well Construction & Remarks



Well secured with locking steel riser & 2 in. locking plug.

5% Bentonite Cement Grout to surface.

Top of Filter Pack: 17.0

Top of Screened Interval: 18.72'

Bottom of Screened Interval: 33.72 ft

Total Depth: approximately 34 ft.

BY: MKL
DATE: 4/7/98
FILE: 91374B2.CAD

On Site Technologies Ltd. Partnership
P.O. BOX 2606, FARMINGTON, NM 87499
(505) 327-1072

TEST HOLE LOG & MONITORING WELL DETAIL

Monitoring Well: MW-3

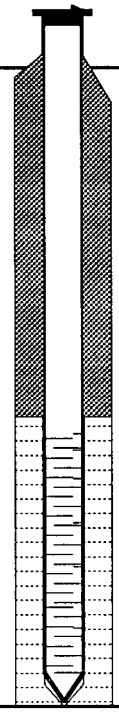
Project: CONOCO: Ground Water Assessment

Project No: 4-1374

Project Location: Farmington B COM #1E		Logged By: Myke Lane	Approved: M K Lane
Drilling Contractor: Western Water Wells		Date Started: Feb. 1998	Date Completed: Feb. 1998
Drilling Equipment: Cable Tool	Driller: Terry Hood	TD (ft): 32.44	Static Water Depth (ft): 29
Drilling Method: Cable Tool	Borehole Dia. (in): 6.0	TOC Elevation: 102.1	Ground Elevation:
Sampling Method: NA		Well Casing (Diameter & Type): 2 in. - Sch 40 PVC	
COMMENTS: Initial Sch 40 PVC conduction pipe set by trackhoe to a depth of approximately 15 feet. Cable tool rig with 6 inch drove pipe used to set monitoring well.		Slot Size (in): 0.010	Filter Material: Silica Sand 10/20
		Development Method: Submersible Pump & Bailer	

Depth (feet)	Depth to Water During Drilling (ft)	USCS	Lithology	Field Description & Remarks	Sampled Interval	Field PID Reading	Lab TPH: EPA 418.1 (ppm)
SURFACE		GW		Light brown to olive gray well graded GRAVEL, moist to saturated, dense.	No soil samples taken during drilling		
10'							
20'							
30'	▽			Static Water Level: approx. 29 ft.			
40'				TOTAL DEPTH: approximately 33 ft.			
50'							

Monitoring Well Construction & Remarks



Well secured with locking steel riser & 2 in. locking plug.

5% Bentonite Cement Grout to surface.

Top of Filter Pack: 16.0

Top of Screened Interval: 17.44'

Bottom of Screened Interval: 32.44 ft

Total Depth: approximately 33 ft.

BY: MKL
DATE: 4/7/98
FILE: 91374B3.CAD

OFF: (505) 325-5667

ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-1556

March 10, 1998

Larry Trujillo
On Site Technologies Limited Partnership
612 E. Murray Drive
P.O. Box 2606
Farmington, NM 87499
TEL: (505) 325-5667
FAX (505) 327-1496

RE: Conoco Farmington B Com 1E Order No.: 9802020

Dear Larry Trujillo,

On Site Technologies, LTD. received 3 samples on 2/19/98 for the analyses presented in the following report.

The Samples were analyzed for the following tests:

API Water (API RP-45)
Aromatic Volatiles by GC-PID (SW8021A)
ICP METALS-RCRA, Total (SW6010A)
Polynuclear Aromatic Hydrocarbons (SW8310)

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

David Cox

OFF: (505) 325-5667

ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-1556

Date: *10-Mar-98*

CLIENT: On Site Technologies Limited Partnership
Project: Conoco Farmington B Com 1E
Lab Order: 9802020

CASE NARRATIVE

Samples were analyzed using the methods outlined in the following references:

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition

All method blanks, laboratory spikes, and/or matrix spikes met quality assurance objectives.

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Date: *26-Mar-98*

Client:	On Site Technologies Limited Partnership	**Client Sample Info:**	Farmington B Com 1E
Work Order:	9802020	**Client Sample ID:**	MW #1
Lab ID:	9802020-01A **Matrix:** AQUEOUS	**Collection Date:**	2/19/98 8:35:00 AM
Project:	Conoco Farmington B Com 1E	**COC#:**	6871

Parameter	Result	Limit	Qual	Units	DF	Date Analyzed
BTEX		**SW8020A**				Analyst: **DC**
Benzene	210	10		µg/L	20	2/26/98
Toluene	34	10		µg/L	20	2/26/98
Ethylbenzene	370	10		µg/L	20	2/26/98
m,p-Xylene	2000	20		µg/L	20	2/26/98
o-Xylene	44	10		µg/L	20	2/26/98
Surr: Fluorobenzene	97.7	70-130		%REC	20	2/26/98
Surr: 1,4-Difluorobenzene	98.1	70-130		%REC	20	2/26/98
Surr: 4-Bromochlorobenzene	93.5	70-130		%REC	20	2/26/98

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

P.O. BOX 2606 • FARMINGTON, NM 87499

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Date: *11-Mar-98*

Client:	On Site Technologies Limited Partnership	**Client Sample Info:**	Farmington B Com 1E
Work Order:	9802020	**Client Sample ID:**	MW #1
Lab ID:	9802020-01B **Matrix:** AQUEOUS	**Collection Date:**	2/19/98 8:35:00 AM
Project:	Conoco Farmington B Com 1E	**COC#:**	6871

Parameter	Result	Limit	Qual	Units	DF	Date Analyzed
API WATER		**API RP-45**				Analyst: **HR**
Alkalinity, Bicarbonate (as CaCO3)	ND	5		mg/L	1	
Alkalinity, Carbonate (as CaCO3)	430	5		mg/L	1	
Alkalinity, Hydroxide (as CaCO3)	ND	5		mg/L	1	
Calcium	110	10		mg/L	1	
Chloride	55	5		mg/L	1	
Conductivity	369 ~~400~~ HR	10		uS/cm	1	
Hardness	370	10		mg/L	1	
Iron	ND	2		mg/L	1	
Magnesium	22	2		mg/L	1	
pH	6.9	1			1	
Potassium	12	1		mg/L	1	
Resistivity	11.5 ~~100~~ HR	1		ohm-m	1	
Sodium	67	5		mg/L	1	
Sulfate	30	5		mg/L	1	
Total Dissolved Solids (Residue, Filterable)	730	20		mg/L	1	

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

P.O. BOX 2606 • FARMINGTON, NM 87499

Mountain States Analytical, Inc.

The Quality Solution

March 4, 1998

Mr. David Cox
On Site Technologies, Ltd.
612 E Murray Drive
Farmington, NM 87401

Reference:
Project: WQCC Metals Analysis
MSAI Group: 21237

Dear Mr. Cox:

Enclosed are the analytical results for your project referenced above. The following samples are included in the report.

9802020-01D 9802020-02C

All holding times were met for the tests performed on these samples.

If the report is acceptable, please approve the enclosed invoice and forward it for payment.

Thank you for selecting Mountain States Analytical, Inc. to serve as your analytical laboratory on this project. If you have any questions concerning these results, please feel free to contact me at any time.

We look forward to working with you on future projects.

With Regards,

Rolf E. Larsen
Project Manager

10 Years of Quality Service

Corporate Office
1645 West 2200 South, Salt Lake City, Utah 84119
801-973-0050 • 1-800-973-6724(MSAI) • FAX 801-972-6278
e-mail: service@msailabs.com

Southwest States Region
6223 Bayonne, Spring, Texas 77389
281-320-2842 • FAX 281-320-0989
e-mail: gbrewer@msailabs.com

MEMBER

Analytical Report

Mountain States Analytical, Inc.
The Quality Solution

On Site Technologies, Ltd.
612 E Murray Drive
Farmington, NM 87401

Attn: Mr. David Cox
Project: WQCC Metals Analysis

Sample ID: 9802020-01D FARMINGTON B-COM 1E; MW#1
Matrix: Waste Water

MSAI Sample: 75674
MSAI Group: 21237
Date Reported: 03/04/98
Discard Date: 04/03/98
Date Submitted: 02/20/98
Date Sampled: 02/19/98
Collected by:
Purchase Order:
Project No.:

Test	Analysis	Results as Received	Units	Method Detection Limit
0259B	Mercury by CVAA, w/ww, 7470 Method: SW-846 7470	0.0001	mg/l	0.0001
0392I	Flame/ICP Prep, w/ww, 3005A Method: SW-846 3005A	Batch. w104		
0392M	Mercury Prep CVAA, w/ww, 7470 Method: SW-846 7470	Batch. w020		
0401	Prep for HAA, w/ww, 7062/7742 Method: SW-846 7062/7742	Batch. w105		
1451	Selenium by HAA, w/ww, 7742 Method: SW-846 7742	0.018	mg/l	0.002
7245	Arsenic by ICP, w/ww, 6010A Method: SW-846 6010A	ND	mg/l	0.04
7246	Barium by ICP, w/ww, 6010A Method: SW-846 6010A	0.484	mg/l	0.003
7249	Cadmium by ICP, w/ww, 6010A Method: SW-846 6010A	ND	mg/l	0.004
7251	Chromium by ICP, w/ww, 6010A Method: SW-846 6010A	ND	mg/l	0.010
7255	Lead by ICP, w/ww, 6010A Method: SW-846 6010A	ND	mg/l	0.050
7266	Silver by ICP, w/ww, 6010A Method: SW-846 6010A	ND	mg/l	0.005

Mountain States Analytical, Inc.
The Quality Solution

On Site Technologies, Ltd.

MSAI Sample: 75674
MSAI Group: 21237

Sample ID: 9802020-01D

Test	Analysis	Results as Received	Units	Method Detection Limit
0939	Sample Filtering, ww, MSAI Method: IN HOUSE MSAI	COMPLETE		

This report consists of the following items: A cover letter, a signed analytical report for each sample specified on the cover letter, and if applicable, an inorganic quality control summary. Organic sample reports contain footnotes which describe any quality control anomalies which may have occurred.

Respectfully Submitted,
Reviewed and Approved by:

Rolf E. Larsen
Project Manager

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9802994-01

On Site Technologies
612 East Murray
Farmington, NM 87401
ATTN: David Cox

03/05/98

PROJECT: PAH Analysis
SITE: Farmington, NM
SAMPLED BY: On Site Technologies
SAMPLE ID: 9802020-01C
(DL FARMINGTON B-COM 1E; MW #1

PROJECT NO:
MATRIX: AQUEOUS
DATE SAMPLED: 02/19/98 08:35:00
DATE RECEIVED: 02/20/98

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Naphthalene	180	20.0	ug/L
Acenaphthylene	ND	20.0	ug/L
Acenaphthene	ND	60.0	ug/L
Fluorene	ND	60.0	ug/L
Phenanthrene	44	20.0	ug/L
Anthracene	ND	20.0	ug/L
Fluoranthene	ND	20.0	ug/L
Pyrene	ND	20.0	ug/L
Chrysene	ND	20.0	ug/L
Benzo (a) anthracene	ND	20.0	ug/L
Benzo (b) fluoranthene	ND	20.0	ug/L
Benzo (k) fluoranthene	ND	20.0	ug/L
Benzo (a) pyrene	ND	20.0	ug/L
Dibenzo (a,h) anthracene	ND	20.0	ug/L
Benzo (g,h,i) perylene	ND	20.0	ug/L
Indeno (1,2,3-cd) pyrene	ND	20.0	ug/L

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
1-Fluoronaphthalene	0.20 ug/L	D	50	150
Phenanthrene d-10	0.20 ug/L	D	50	150

ANALYZED BY: KA DATE/TIME: 03/04/98 01:01:24
EXTRACTED BY: TC DATE/TIME: 02/21/98 09:00:00
METHOD: 8310 Polynuclear Aromatic Hydrocarbons
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed
D - Diluted, control limits not applicable.

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Date: *26-Mar-98*

Client:	On Site Technologies Limited Partnership	**Client Sample Info:**	Farmington B Com 1E
Work Order:	9802020	**Client Sample ID:**	MW #2
Lab ID:	9802020-02A **Matrix:** AQUEOUS	**Collection Date:**	2/19/98 9:13:00 AM
Project:	Conoco Farmington B Com 1E	**COC#:**	6871

Parameter	Result	Limit	Qual	Units	DF	Date Analyzed
BTEX		**SW8020A**				Analyst: **DC**
Benzene	2.4	0.5		µg/L	1	2/26/98
Toluene	5.3	0.5		µg/L	1	2/26/98
Ethylbenzene	16	0.5		µg/L	1	2/26/98
m,p-Xylene	350	1		µg/L	1	2/26/98
o-Xylene	120	0.5		µg/L	1	2/26/98
Surr: Fluorobenzene	98.9	70-130		%REC	1	2/26/98
Surr: 1,4-Difluorobenzene	97.7	70-130		%REC	1	2/26/98
Surr: 4-Bromochlorobenzene	93.0	70-130		%REC	1	2/26/98

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

P.O. BOX 2606 • FARMINGTON, NM 87499

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Date: *11-Mar-98*

Client:	On Site Technologies Limited Partnership	**Client Sample Info:**	Farmington B Com 1E
Work Order:	9802020	**Client Sample ID:**	MW #2
Lab ID:	9802020-02B **Matrix:** AQUEOUS	**Collection Date:**	2/19/98 9:13:00 AM
Project:	Conoco Farmington B Com 1E	**COC#:**	6871

Parameter	Result	Limit	Qual	Units	DF	Date Analyzed
API WATER		**API RP-45**				Analyst: **HR**
Alkalinity, Bicarbonate (as CaCO3)	ND	5		mg/L	1	
Alkalinity, Carbonate (as CaCO3)	360	5		mg/L	1	
Alkalinity, Hydroxide (as CaCO3)	ND	5		mg/L	1	
Calcium	96	10		mg/L	1	
Chloride	30	5		mg/L	1	
Conductivity	840	10		uS/cm	1	
Hardness	330	10		mg/L	1	
Iron	ND	2		mg/L	1	
Magnesium	22	2		mg/L	1	
pH	5.1	1			1	
Potassium	23	1		mg/L	1	
Resistivity	12	1		ohm-m	1	
Sodium	67	5		mg/L	1	
Sulfate	97	5		mg/L	1	
Total Dissolved Solids (Residue, Filterable)	690	20		mg/L	1	

Qualifiers:

ND - Not Detected at the Reporting Limit

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B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

P.O. BOX 2606 • FARMINGTON, NM 87499

Mountain States Analytical, Inc.
The Quality Solution

On Site Technologies, Ltd.
612 E Murray Drive
Farmington, NM 87401

Attn: Mr. David Cox
Project: WQCC Metals Analysis

MSAI Sample: 75675
MSAI Group: 21237
Date Reported: 03/04/98
Discard Date: 04/03/98
Date Submitted: 02/20/98
Date Sampled: 02/19/98
Collected by:
Purchase Order:
Project No.:

Sample ID: 9802020-02C FARMINGTON B-COM 1E; MW #2
Matrix: Waste Water

Test	Analysis	Results as Received	Units	Method Detection Limit
0259B	Mercury by CVAA, w/ww, 7470 Method: SW-846 7470	0.0002	mg/l	0.0001
0392I	Flame/ICP Prep, w/ww, 3005A Method: SW-846 3005A	Batch. w104		
0392M	Mercury Prep CVAA, w/ww, 7470 Method: SW-846 7470	Batch. w020		
0401	Prep for HAA, w/ww, 7062/7742 Method: SW-846 7062/7742	Batch. w105		
1451	Selenium by HAA, w/ww, 7742 Method: SW-846 7742	ND	mg/l	0.002
7245	Arsenic by ICP, w/ww, 6010A Method: SW-846 6010A	ND	mg/l	0.04
7246	Barium by ICP, w/ww, 6010A Method: SW-846 6010A	0.317	mg/l	0.003
7249	Cadmium by ICP, w/ww, 6010A Method: SW-846 6010A	ND	mg/l	0.004
7251	Chromium by ICP, w/ww, 6010A Method: SW-846 6010A	ND	mg/l	0.010
7255	Lead by ICP, w/ww, 6010A Method: SW-846 6010A	ND	mg/l	0.050
7266	Silver by ICP, w/ww, 6010A Method: SW-846 6010A	ND	mg/l	0.005

Mountain States Analytical, Inc.
The Quality Solution

On Site Technologies, Ltd.

MSAI Sample: 75675
MSAI Group: 21237

Sample ID: 9802020-02C

Test	Analysis	Results as Received	Units	Method Detection Limit
0939	Sample Filtering, ww, MSAI Method: IN HOUSE MSAI	COMPLETE		

This report consists of the following items: A cover letter, a signed analytical report for each sample specified on the cover letter, and if applicable, an inorganic quality control summary. Organic sample reports contain footnotes which describe any quality control anomalies which may have occurred.

Respectfully Submitted,
Reviewed and Approved by:

Rolf E. Larsen
Project Manager

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Date: *26-Mar-98*

Client:	On Site Technologies Limited Partnership	**Client Sample Info:**	Farmington B Com 1E
Work Order:	9802020	**Client Sample ID:**	MW #3
Lab ID:	9802020-03A **Matrix:** AQUEOUS	**Collection Date:**	2/19/98 9:22:00 AM
Project:	Conoco Farmington B Com 1E	**COC#:**	6871

Parameter	Result	Limit	Qual	Units	DF	Date Analyzed
BTEX		**SW8020A**				Analyst: **DC**
Benzene	0.9	0.5		µg/L	1	2/26/98
Toluene	1.2	0.5		µg/L	1	2/26/98
Ethylbenzene	1.6	0.5		µg/L	1	2/26/98
m,p-Xylene	3.3	1		µg/L	1	2/26/98
o-Xylene	2	0.5		µg/L	1	2/26/98
Surr: Fluorobenzene	98.9	70-130		%REC	1	2/26/98
Surr: 1,4-Difluorobenzene	100.4	70-130		%REC	1	2/26/98
Surr: 4-Bromochlorobenzene	93.7	70-130		%REC	1	2/26/98

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

P.O. BOX 2606 • FARMINGTON, NM 87499

On Site Technologies, LTD.

Date: *26-Mar-98*

CLIENT: On Site Technologies Limited Partnership
Work Order: 9802020
Project: Conoco Farmington B Com 1E

QC SUMMARY REPORT
Method Blank

Sample ID: **MB1** Batch ID: **GC-1_980226** Test Code: **SW8020A** Units: **µg/L** Analysis Date: **2/26/98** Prep Date:

Client ID: **9802020** Run ID: **GC-1_980226A** SeqNo: **130**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	.1527	0.5									J
Ethylbenzene	ND	0.5									
m,p-Xylene	.1249	1									J
o-Xylene	.1071	0.5									J
Toluene	.1015	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: *26-Mar-98*

CLIENT: On Site Technologies Limited Partnership
Work Order: 9802020
Project: Conoco Farmington B Com 1E

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: **9802020-02AMS** Batch ID: **GC-1_980226** Test Code: **SW8020A** Units: **µg/L** Analysis Date: **2/26/98** Prep Date:
Client ID: **MW #2** **9802020** Run ID: **GC-1_980226A** SeqNo: **131**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	400.7	5	400	4.221	99.1%	56	128				S ✓
Ethylbenzene	448.1	5	400	17.86	107.6%	78	107				
m,p-Xylene	1149	10	800	323.4	103.1%	67	118				
o-Xylene	543.1	5	400	127.8	103.8%	78	107				
Toluene	418.4	5	400	6.183	103.1%	74	116				

LCS CONFIRMED @ 3/26/98

Sample ID: **9802020-02AMSD** Batch ID: **GC-1_980226** Test Code: **SW8020A** Units: **µg/L** Analysis Date: **2/26/98** Prep Date:
Client ID: **MW #2** **9802020** Run ID: **GC-1_980226A** SeqNo: **132**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	387.2	5	400	4.221	95.8%	56	128	400.7	3.4%	15	
Ethylbenzene	431.9	5	400	17.86	103.5%	78	107	448.1	3.7%	15	
m,p-Xylene	1105	10	800	323.4	97.6%	67	118	1149	3.9%	15	
o-Xylene	520.5	5	400	127.8	98.2%	78	107	543.1	4.2%	15	
Toluene	404.1	5	400	6.183	99.5%	74	116	418.4	3.5%	15	

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: *26-Mar-98*

CLIENT: On Site Technologies Limited Partnership
Work Order: 9802020
Project: Conoco Farmington B Com 1E

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: **LCS WATER** Batch ID: **GC-1_980226** Test Code: **SW8020A** Units: **µg/L** Analysis Date: **2/26/98** Prep Date:

Client ID: **9802020** Run ID: **GC-1_980226A** SeqNo: **129**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	39.83	0.5	40	0.1527	99.2%	39	150				
Ethylbenzene	43.26	0.5	40	0	108.2%	32	160				
m,p-Xylene	82.61	1	80	0.1249	103.1%	35	145				
o-Xylene	42.52	0.5	40	0.1071	106.0%	35	145				
Toluene	41.41	0.5	40	0.1015	103.3%	46	148				

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: *26-Mar-98*

CLIENT: On Site Technologies Limited Partnership
Work Order: 9802020
Project: Conoco Farmington B Com 1E

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: **CCV1 QC0529/30** Batch ID: **GC-1_980226** Test Code: **SW8020A** Units: **µg/L** Analysis Date: **2/26/98** Prep Date:
Client ID: **9802020** Run ID: **GC-1_980226A** SeqNo: **125**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.68	0.5	20	0	103.4%	85	115				
Ethylbenzene	22.35	0.5	20	0	111.8%	85	115				
m,p-Xylene	42.25	1	40	0	105.6%	85	115				
o-Xylene	21.7	0.5	20	0	108.5%	85	115				
Toluene	21.35	0.5	20	0	106.8%	85	115				
1,4-Difluorobenzene	99.8	0	100	0	99.8%	70	130				
4-Bromochlorobenzene	91.98	0	100	0	92.0%	70	130				
Fluorobenzene	98.2	0	100	0	98.2%	70	130				

Sample ID: **CCV2 QC0529/30** Batch ID: **GC-1_980226** Test Code: **SW8020A** Units: **µg/L** Analysis Date: **2/26/98** Prep Date:
Client ID: **9802020** Run ID: **GC-1_980226A** SeqNo: **126**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.52	0.5	20	0	102.6%	85	115				
Ethylbenzene	21.98	0.5	20	0	109.9%	85	115				
m,p-Xylene	41.32	1	40	0	103.3%	85	115				
o-Xylene	21.55	0.5	20	0	107.7%	85	115				
Toluene	21.02	0.5	20	0	105.1%	85	115				
1,4-Difluorobenzene	100.4	0	100	0	100.4%	70	130				
4-Bromochlorobenzene	95.24	0	100	0	95.2%	70	130				
Fluorobenzene	98.3	0	100	0	98.3%	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: On Site Technologies Limited Partnership
Work Order: 9802020
Project: Conoco Farmington B Com 1E

QC SUMMARY REPORT
Continuing Calibration Verification Standard

Sample ID: **CCV3 QC0529/30** Batch ID: **GC-1_980226** Test Code: **SW8020A** Units: **µg/L** Analysis Date: **2/26/98** Prep Date:
Client ID: **9802020** Run ID: **GC-1_980226A** SeqNo: **127**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.49	0.5	20	0	102.5%	85	115				
Ethylbenzene	21.87	0.5	20	0	109.4%	85	115				
m,p-Xylene	41.1	1	40	0	102.7%	85	115				
o-Xylene	21.36	0.5	20	0	106.8%	85	115				
Toluene	20.98	0.5	20	0	104.9%	85	115				
1,4-Difluorobenzene	99.39	0	100	0	99.4%	70	130				
4-Bromochlorobenzene	89.86	0	100	0	89.9%	70	130				
Fluorobenzene	97.94	0	100	0	97.9%	70	130				

Sample ID: **CCV4 QC0529/30** Batch ID: **GC-1_980226** Test Code: **SW8020A** Units: **µg/L** Analysis Date: **2/26/98** Prep Date:
Client ID: **9802020** Run ID: **GC-1_980226A** SeqNo: **128**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	19.81	0.5	20	0	99.0%	85	115				
Ethylbenzene	21.33	0.5	20	0	106.6%	85	115				
m,p-Xylene	40.01	1	40	0	100.0%	85	115				
o-Xylene	20.84	0.5	20	0	104.2%	85	115				
Toluene	20.32	0.5	20	0	101.6%	85	115				
1,4-Difluorobenzene	99.94	0	100	0	99.9%	70	130				
4-Bromochlorobenzene	90.7	0	100	0	90.7%	70	130				
Fluorobenzene	98.25	0	100	0	98.3%	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

On Site Technologies, LTD.

Date: *09-Mar-98*

CLIENT: On Site Technologies Limited Partnership
Work Order: 9802020
Project: Conoco Farmington B Com 1E

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: **LCS** Batch ID: **API 45-RP-3/2** Test Code: **API RP-45** Units: **mg/L** Analysis Date: **3/2/98** Prep Date:

Client ID: **9802020** Run ID: **API H2O_980302A** SeqNo: **556**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Carbonate (as CaCO3)	170	1	163	0	104.3%	91	116				
Calcium	2.04	0.05	2.18	0	93.6%	89	107				
Chloride	86.1	1	85	0	101.3%	90	114				
Iron	1.95	0.1	2	0	97.5%	87	111				
Magnesium	1.16	0.05	1.14	0	101.8%	96	114				
Potassium	2	0.05	1.97	0	101.5%	84	114				
Sodium	2.72	0.05	2.6	0	104.6%	87	111				
Sulfate	95.5	5	96.3	0	99.2%	83	113				
Total Dissolved Solids (Residue, Filtera	722	10	732	0	98.6%	92	104				

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: *09-Mar-98*

CLIENT: EPA Performance Evaluation Study
Work Order: 9803001
Project: WP039

QC SUMMARY REPORT

Sample Duplicate

Sample ID: **9803001-01AD** Batch ID: **API 45-RP-3/2** Test Code: **API RP-45** Units: **mg/L** Analysis Date: **3/2/98** Prep Date:

Client ID: **Minerals** **9803001** Run ID: **API H2O_980302B** SeqNo: **572**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (as CaCO3)	7.6	1	0	0	0.0%	0	0	7.6	0.0%	3	
Alkalinity, Carbonate (as CaCO3)	30.8	1	0	0	0.0%	0	0	31.8	3.2%	3	R
Alkalinity, Hydroxide (as CaCO3)	ND	1	0	0	0.0%	0	0	0	0.0%	3	NR LOW RECOVERY
Chloride	11.1	1	0	0	0.0%	0	0	9.6	14.5%	7	R
Sulfate	57.6	5	0	0	0.0%	0	0	56	2.8%	6	
Total Dissolved Solids (Residue, Filtera	138	10	0	0	0.0%	0	0	144	4.3%	6	N 3/10/98

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: *09-Mar-98*

CLIENT: D.J. Simmons Company
Work Order: 9802034
Project: Tricentral Federal 34-32

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: **9802035-03AMS** Batch ID: **API 45-RP-3/4** Test Code: **API RP-45** Units: **mg/L** Analysis Date: **3/2/98** Prep Date:

Client ID: **9802034** Run ID: **API H2O_980302C** SeqNo: **568**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	7950	0.05	2500	5125	113.0%	69	159				
Magnesium	1650	0.05	500	1100	110.0%	78	126				
Potassium	875	0.05	250	625	100.0%	67	157				
Sodium	34600	0.05	10000	23200	114.0%	81	135				

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: *09-Mar-98*

CLIENT: On Site Technologies Limited Partnership
Work Order: 9802020
Project: Conoco Farmington B Com 1E

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: **9802020-02BMS** Batch ID: **API 45-RP-3/2** Test Code: **API RP-45** Units: **mg/L** Analysis Date: **3/2/98** Prep Date:

Client ID: **MW #2** **9802020** Run ID: **API H2O_980302A** SeqNo: **573**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	.49	0.1	0.5	0	98.0%	66	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

Mountain States Analytical, Inc.
Daily QC Batching Data
Data Released for Reporting

03/04/98
10:26:32
Group: 21237

Analysis Batch Number: 0259B-02/27/98-134 -1
Test Identification : 0259B-Mercury by CVAA, w/ww, 7470 Sequence : 0259B-1
Number of Samples : 17
Batch Data-Date/Time : 02/28/98 / 13:58:14

BLANK#	ANALYTE	CONC FOUND #	CONC LIMIT
PBW1-020	Mercury	-0.0200	0.1000
PBW2-020-2	Mercury	-0.0300	0.1000

SPIKE

SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	CONC SPIKE	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
21214-75583	Mercury	2.0000	0.0300	2.1700	107.0	80.0	120.0

MSD

SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	RESULT 2	%REC2 #	QC LIMITS LOWER	QC LIMITS UPPER	RPD #	LIMIT
21214-75583	Mercury	2.0000	0.0300	2.1400	105.5	80.0	120.0	1.4	20.0

DUPLICATE

SAMPLE#	ANALYTE	RESULT 1	RESULT 2	RPD #	LIMIT	DILUTION
21214-75583	Mercury	0.0300	-0.0200	1000.0(11)	20.0	1.00

CONTROL

SAMPLE#	ANALYTE	CONC FOUND	CONC KNOWN	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
LCSW-020	Mercury	2.4700	2.5000	98.8	80.0	120.0

CCV #	ANALYTE	TRUE VALUE	BATCH READ	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
CCV-	Mercury	3.0000	3.0100	100.3	80.0	120.0
CCV--2	Mercury	5.0000	4.9200	98.4	80.0	120.0
CCV--3	Mercury	5.0000	4.9700	99.4	80.0	120.0
CCV--4	Mercury	5.0000	4.9900	99.8	80.0	120.0
CCV--5	Mercury	5.0000	4.9800	99.6	80.0	120.0

CCB#	ANALYTE	CONC FOUND #	CONC LIMIT
CCB-	Mercury	0.0600	0.1000
CCB-	Mercury	-0.0100	0.1000
CCB-	Mercury	0.0700	0.1000
CCB-	Mercury	0.0700	0.1000
CCB-	Mercury	0.0800	0.1000

---------- Result Footnotes ----------

(11) - The duplicate results cannot be evaluated because both results are <MDL.

Groups & Samples

21214-75579 21214-75580 21214-75581 21214-75582 21214-75583 21214-75584 21232-75626 21232-75627
21232-75628 21232-75629 21232-75630 21232-75631 21237-75674 21237-75675 21240-75680 21240-75681
21286-75843

Mountain States Analytical, Inc.
Daily QC Batching Data
Data Released for Reporting

03/04/98
10:26:38
Group: 21237

Analysis Batch Number: 1451 -02/27/98-061 -1
Test Identification : 1451 -Selenium by HAA, w/ww, 7742 Sequence : DAAA058
Number of Samples : 17
Batch Data-Date/Time : 02/27/98 / 21:28:32

BLANK#	ANALYTE	CONC FOUND #	CONC LIMIT
PBW1-105	Selenium	0.0036	0.0050
PBW2-105-2	Selenium	ND	0.0050

SPIKE

SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	CONC SPIKE	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
21232-75626	Selenium	0.0800	0.0000	0.0668	83.5	75.0	125.0

MSD

SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	RESULT 2	%REC2 #	QC LIMITS LOWER	QC LIMITS UPPER	RPD #	LIMIT
21232-75626	Selenium	0.0800	0.0000	0.0683	85.4	75.0	125.0	2.2	20.0

DUPLICATE

SAMPLE#	ANALYTE	RESULT 1	RESULT 2	RPD #	LIMIT	DILUTION
21232-75626	Selenium	0.0048	0.0029	49.4(11)	20.0	2.00

CONTROL

SAMPLE#	ANALYTE	CONC FOUND	CONC KNOWN	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
LCSW-105	Selenium	0.0415	0.0400	103.8	75.0	125.0

CCV #	ANALYTE	TRUE VALUE	BATCH READ	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
ICV-	Selenium	0.0500	0.0546	109.2	80.0	120.0
CCV1--2	Selenium	0.0500	0.0480	96.0	80.0	120.0
CCV2--3	Selenium	0.0500	0.0404	80.8	80.0	120.0
CCV3--4	Selenium	0.0500	0.0479	95.8	80.0	120.0

CCB#	ANALYTE	CONC FOUND #	CONC LIMIT
ICB-	Selenium	ND	0.0050
CCB1-	Selenium	ND	0.0050
CCB2-	Selenium	ND	0.0050
CCB3-	Selenium	ND	0.0050

---------- Result Footnotes ----------
11) - The duplicate results cannot be evaluated because both results are <MDL.

Groups & Samples

21049-75010 21214-75579 21214-75580 21214-75581 21214-75582 21214-75583 21214-75584 21232-75626
21232-75627 21232-75628 21232-75629 21232-75630 21232-75631 21237-75674 21237-75675 21240-75680
21240-75681

Mountain States Analytical, Inc.
Daily QC Batching Data
Data Released for Reporting

03/04/98
10:26:43
Group: 21237

Analysis Batch Number: ICPWA-02/26/98-001 -1
Test Identification : ICPWA-*Metals by ICP
Number of Samples : 20
Batch Data-Date/Time : 02/26/98 / 12:37:51

Sequence : DATA057

BLANK#	ANALYTE	CONC FOUND #	CONC LIMIT
PBW1-104	Silver	ND	0.0060
	Arsenic	0.0115	0.0300
	Barium	ND	0.0030
	Beryllium	ND	0.0002
	Calcium	0.1145	0.3000
	Cadmium	0.0011	0.0040
	Chromium	ND	0.0100
	Copper	ND	0.0100
	Iron	0.0762	0.2000
	Manganese	ND	0.0020
	Molybdenum	ND	0.0300
	Nickel	0.0036	0.0300
	Lead	0.0023	0.0400
	Selenium	0.0104	0.0700
	Zinc	0.1086(1d)	0.0300
PBW2-104-2	Silver	ND	0.0060
	Arsenic	ND	0.0300
	Barium	ND	0.0030
	Beryllium	ND	0.0002
	Calcium	0.0767	0.3000
	Cadmium	ND	0.0040
	Chromium	ND	0.0100
	Copper	0.0009	0.0100
	Iron	0.0213	0.2000
	Manganese	ND	0.0020
	Molybdenum	0.0003	0.0300
	Nickel	0.0156	0.0300
	Lead	0.0029	0.0400
	Selenium	ND	0.0700
	Zinc	0.0041	0.0300

SPIKE SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	CONC SPIKE	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
1214-75579	Silver	0.0500	-0.0017	0.0424	88.2	80.0	120.0
	Arsenic	2.0000	0.0309	1.9471	95.8	80.0	120.0
	Barium	2.0000	0.0254	1.7088	84.2	80.0	120.0
	Beryllium	0.0500	0.0000	0.0418	83.6	80.0	120.0
	Calcium	2.0000	369.7507	363.0900	-333.0(2g)	80.0	120.0
	Cadmium	0.0500	-0.0015	0.0395	82.0	80.0	120.0
	Chromium	0.2000	-0.0013	0.1664	83.9	80.0	120.0
	Copper	0.2500	0.0001	0.2344	93.7	80.0	120.0
	Iron	1.0000	0.1009	0.9345	83.4	80.0	120.0
	Manganese	0.5000	-0.0026	0.4109	82.7	80.0	120.0
	Molybdenum	0.5000	0.2033	0.6219	83.7	80.0	120.0
	Nickel	0.5000	0.0072	0.4052	79.6(2g)	80.0	120.0
	Lead	0.5000	0.0083	0.4236	83.1	80.0	120.0
	Selenium	2.0000	0.0601	2.0132	97.7	80.0	120.0
	Zinc	0.5000	0.0111	0.4834	94.5	80.0	120.0

Mountain States Analytical, Inc.
Daily QC Batching Data
Data Released for Reporting

03/04/98
10:26:46
Group: 21237

Analysis Batch Number: ICPWA-02/26/98-001 -1
Test Identification : ICPWA-*Metals by ICP
Number of Samples : 20
Batch Data-Date/Time : 02/26/98 / 12:37:51

Sequence : DATA057

LCSD

SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	RESULT 2	%REC2 #	QC LIMITS LOWER	UPPER	RPD #	LIMIT
21214-75579	Silver	0.0500	-0.0017	0.0441	91.6	80.0	120.0	3.9	20.0
	Arsenic	2.0000	0.0309	1.9314	95.0	80.0	120.0	0.8	20.0
	Barium	2.0000	0.0254	1.7313	85.3	80.0	120.0	1.3	20.0
	Beryllium	0.0500	0.0000	0.0418	83.6	80.0	120.0	0.0	20.0
	Calcium	2.0000	369.7507	359.6544	-504.8(2g)	80.0	120.0	1.0	20.0
	Cadmium	0.0500	-0.0015	0.0401	83.2	80.0	120.0	1.5	20.0
	Chromium	0.2000	-0.0013	0.1664	83.9	80.0	120.0	0.0	20.0
	Copper	0.2500	0.0001	0.2578	103.1	80.0	120.0	9.5	20.0
	Iron	1.0000	0.1009	0.8570	75.6(2g)	80.0	120.0	8.7	20.0
	Manganese	0.5000	-0.0026	0.4127	83.1	80.0	120.0	0.4	20.0
	Molybdenum	0.5000	0.2033	0.5928	77.9(2g)	80.0	120.0	4.8	20.0
	Nickel	0.5000	0.0072	0.4085	80.3	80.0	120.0	0.8	20.0
	Lead	0.5000	0.0083	0.4237	83.1	80.0	120.0	0.0	20.0
	Selenium	2.0000	0.0601	2.0260	98.3	80.0	120.0	0.6	20.0
	Zinc	0.5000	0.0111	0.5260	103.0	80.0	120.0	8.4	20.0

DUPLICATE

SAMPLE#	ANALYTE	RESULT 1	RESULT 2	RPD #	LIMIT	DILUTION
21214-75579	Silver	-0.0017	0.0000	200.0(11)	20.0	1.00
	Arsenic	0.0309	0.0427	32.1(5a)	20.0	1.00
	Barium	0.0254	0.0236	7.3	20.0	1.00
	Beryllium	0.0000	0.0000	0.0	20.0	1.00
	Calcium	369.7507	368.2618	0.4	20.0	1.00
	Cadmium	-0.0015	0.0000	200.0(11)	20.0	1.00
	Chromium	-0.0013	0.0000	200.0(11)	20.0	1.00
	Copper	0.0001	0.0029	186.7(11)	20.0	1.00
	Iron	0.1009	0.0573	55.1(11)	20.0	1.00
	Manganese	-0.0026	0.0000	200.0(11)	20.0	1.00
	Molybdenum	0.2033	0.2036	0.1	20.0	1.00
	Nickel	0.0072	0.0236	106.5(11)	20.0	1.00
	Lead	0.0083	0.0010	157.0(11)	20.0	1.00
	Selenium	0.0601	0.0038	176.2(11)	20.0	1.00
	Zinc	0.0111	0.0119	7.0	20.0	1.00

LCONTROL

SAMPLE#	ANALYTE	CONC FOUND	CONC KNOWN	% REC #	QC LIMITS LOWER	UPPER
LCSW-104	Silver	0.0508	0.0500	101.6	80.0	120.0
	Arsenic	1.9770	2.0000	98.9	80.0	120.0
	Barium	1.9593	2.0000	98.0	80.0	120.0
	Beryllium	0.0505	0.0500	101.0	80.0	120.0
	Calcium	2.0571	2.0000	102.9	80.0	120.0
	Cadmium	0.0498	0.0500	99.6	80.0	120.0
	Chromium	0.2015	0.2000	100.8	80.0	120.0
	Copper	0.2468	0.2500	98.7	80.0	120.0
	Iron	1.0981	1.0000	109.8	80.0	120.0
	Manganese	0.4947	0.5000	98.9	80.0	120.0
	Molybdenum	0.5133	0.5000	102.7	80.0	120.0
	Nickel	0.5071	0.5000	101.4	80.0	120.0
	Lead	0.4975	0.5000	99.5	80.0	120.0

Mountain States Analytical, Inc.
Daily QC Batching Data
Data Released for Reporting

Analysis Batch Number: ICPWA-02/26/98-001 -1
Test Identification : ICPWA-*Metals by ICP
Number of Samples : 20
Batch Data-Date/Time : 02/26/98 / 12:37:51

Sequence : DATA057

CONTROL SAMPLE#	ANALYTE	CONC FOUND	CONC KNOWN	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
LCSW-104	Selenium	1.9845	2.0000	99.2	80.0	120.0
	Zinc	0.5021	0.5000	100.4	80.0	120.0

CCV #	ANALYTE	TRUE VALUE	BATCH READ	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
CCV-	Silver	0.4000	0.4140	103.5	90.0	110.0
	Arsenic	1.6000	1.5915	99.5	90.0	110.0
	Barium	4.0000	3.9537	98.8	90.0	110.0
	Beryllium	0.4000	0.4010	100.3	90.0	110.0
	Calcium	40.0000	40.4602	101.2	90.0	110.0
	Cadmium	4.0000	3.9473	98.7	90.0	110.0
	Chromium	4.0000	4.0246	100.6	90.0	110.0
	Copper	4.0000	3.9248	98.1	90.0	110.0
	Iron	4.0000	4.1119	102.8	90.0	110.0
	Manganese	4.0000	3.9293	98.2	90.0	110.0
	Molybdenum	20.0000	19.7594	98.8	90.0	110.0
	Nickel	8.0000	7.9578	99.5	90.0	110.0
	Lead	20.0000	19.6851	98.4	90.0	110.0
	Selenium	1.6000	1.6790	104.9	90.0	110.0
	Zinc	4.0000	3.8933	97.3	90.0	110.0
CCV1--2	Silver	0.4000	0.4186	104.7	90.0	110.0
	Arsenic	1.6000	1.6051	100.3	90.0	110.0
	Barium	4.0000	3.9969	99.9	90.0	110.0
	Beryllium	0.4000	0.4054	101.3	90.0	110.0
	Calcium	40.0000	40.6624	101.7	90.0	110.0
	Cadmium	4.0000	3.9596	99.0	90.0	110.0
	Chromium	4.0000	4.0446	101.1	90.0	110.0
	Copper	4.0000	3.9848	99.6	90.0	110.0
	Iron	4.0000	4.1589	104.0	90.0	110.0
	Manganese	4.0000	3.9541	98.9	90.0	110.0
	Molybdenum	20.0000	19.8357	99.2	90.0	110.0
	Nickel	8.0000	7.9365	99.2	90.0	110.0
	Lead	20.0000	19.7038	98.5	90.0	110.0
	Selenium	1.6000	1.6875	105.5	90.0	110.0
	Zinc	4.0000	3.9348	98.4	90.0	110.0
CCV2--3	Silver	0.4000	0.4280	107.0	90.0	110.0
	Arsenic	1.6000	1.6479	103.0	90.0	110.0
	Barium	4.0000	4.1025	102.6	90.0	110.0
	Beryllium	0.4000	0.4137	103.4	90.0	110.0
	Calcium	40.0000	41.8855	104.7	90.0	110.0
	Cadmium	4.0000	4.0811	102.0	90.0	110.0
	Chromium	4.0000	4.1735	104.3	90.0	110.0
	Copper	4.0000	4.0445	101.1	90.0	110.0
	Iron	4.0000	4.2179	105.4	90.0	110.0
	Manganese	4.0000	4.0732	101.8	90.0	110.0
	Molybdenum	20.0000	20.4220	102.1	90.0	110.0
	Nickel	8.0000	8.2157	102.7	90.0	110.0
	Lead	20.0000	20.3671	101.8	90.0	110.0
	Selenium	1.6000	1.7410	108.8	90.0	110.0

Mountain States Analytical, Inc.
Daily QC Batching Data
Data Released for Reporting

03/04/98
10:26:50
Group: 21237

Analysis Batch Number: ICPWA-02/26/98-001 -1
Test Identification : ICPWA-*Metals by ICP
Number of Samples : 20
Batch Data-Date/Time : 02/26/98 / 12:37:51

Sequence : DATA057

CCV #	ANALYTE	TRUE VALUE	BATCH READ	% REC	#	QC LIMITS LOWER	QC LIMITS UPPER
CCV2--3	Zinc	4.0000	4.0205	100.5		90.0	110.0
CCV3--4	Silver	0.4000	0.4283	107.1		90.0	110.0
	Arsenic	1.6000	1.6737	104.6		90.0	110.0
	Barium	4.0000	4.1322	103.3		90.0	110.0
	Beryllium	0.4000	0.4198	105.0		90.0	110.0
	Calcium	40.0000	42.3795	105.9		90.0	110.0
	Cadmium	4.0000	4.1497	103.7		90.0	110.0
	Chromium	4.0000	4.2227	105.6		90.0	110.0
	Copper	4.0000	4.0731	101.8		90.0	110.0
	Iron	4.0000	4.2793	107.0		90.0	110.0
	Manganese	4.0000	4.1244	103.1		90.0	110.0
	Molybdenum	20.0000	20.7531	103.8		90.0	110.0
	Nickel	8.0000	8.3026	103.8		90.0	110.0
	Lead	20.0000	20.6485	103.2		90.0	110.0
	Selenium	1.6000	1.7364	108.5		90.0	110.0
	Zinc	4.0000	4.0584	101.5		90.0	110.0
CCV4--5	Silver	0.4000	0.4294	107.4		90.0	110.0
	Arsenic	1.6000	1.6413	102.6		90.0	110.0
	Barium	4.0000	4.1259	103.1		90.0	110.0
	Beryllium	0.4000	0.4173	104.3		90.0	110.0
	Calcium	40.0000	42.2285	105.6		90.0	110.0
	Cadmium	4.0000	4.1514	103.8		90.0	110.0
	Chromium	4.0000	4.2092	105.2		90.0	110.0
	Copper	4.0000	4.0640	101.6		90.0	110.0
	Iron	4.0000	4.3103	107.8		90.0	110.0
	Manganese	4.0000	4.1123	102.8		90.0	110.0
	Molybdenum	20.0000	20.6532	103.3		90.0	110.0
	Nickel	8.0000	8.2599	103.2		90.0	110.0
	Lead	20.0000	20.5703	102.9		90.0	110.0
	Selenium	1.6000	1.7178	107.4		90.0	110.0
	Zinc	4.0000	4.0531	101.3		90.0	110.0
CCV5--6	Silver	0.4000	0.4309	107.7		90.0	110.0
	Arsenic	1.6000	1.6450	102.8		90.0	110.0
	Barium	4.0000	4.1257	103.1		90.0	110.0
	Beryllium	0.4000	0.4161	104.0		90.0	110.0
	Calcium	40.0000	41.9912	105.0		90.0	110.0
	Cadmium	4.0000	4.1157	102.9		90.0	110.0
	Chromium	4.0000	4.1914	104.8		90.0	110.0
	Copper	4.0000	4.0774	101.9		90.0	110.0
	Iron	4.0000	4.2567	106.4		90.0	110.0
	Manganese	4.0000	4.0942	102.4		90.0	110.0
	Molybdenum	20.0000	20.5526	102.8		90.0	110.0
	Nickel	8.0000	8.2262	102.8		90.0	110.0
	Lead	20.0000	20.5582	102.8		90.0	110.0
	Selenium	1.6000	1.7125	107.0		90.0	110.0
	Zinc	4.0000	4.0385	101.0		90.0	110.0

Mountain States Analytical, Inc.
Daily QC Batching Data
Data Released for Reporting

Analysis Batch Number: ICPWA-02/26/98-001 -1
Test Identification : ICPWA-*Metals by ICP
Number of Samples : 20
Batch Data-Date/Time : 02/26/98 / 12:37:51

Sequence : DATA057

CB#	ANALYTE	CONC FOUND #	CONC LIMIT
ICB-	Silver	0.0018	0.0060
	Arsenic	0.0009	0.0300
	Barium	0.0013	0.0030
	Beryllium	0.0001	0.0002
	Calcium	0.0109	0.3000
	Cadmium	0.0014	0.0040
	Chromium	0.0012	0.0100
	Copper	0.0012	0.0100
	Iron	ND	0.2000
	Manganese	0.0008	0.0020
	Molybdenum	0.0102	0.0300
	Nickel	0.0127	0.0300
	Lead	0.0081	0.0400
	Selenium	0.0213	0.0700
	Zinc	ND	0.0300
CB1-	Silver	0.0008	0.0060
	Arsenic	0.0013	0.0300
	Barium	0.0018	0.0030
	Beryllium	0.0002	0.0002
	Calcium	0.0455	0.3000
	Cadmium	0.0021	0.0040
	Chromium	ND	0.0100
	Copper	0.0011	0.0100
	Iron	0.0105	0.2000
	Manganese	0.0014	0.0020
	Molybdenum	0.0070	0.0300
	Nickel	0.0201	0.0300
	Lead	0.0130	0.0400
	Selenium	ND	0.0700
	Zinc	ND	0.0300
CB2-	Silver	0.0031	0.0060
	Arsenic	0.0008	0.0300
	Barium	0.0014	0.0030
	Beryllium	0.0001	0.0002
	Calcium	0.0214	0.3000
	Cadmium	0.0014	0.0040
	Chromium	0.0009	0.0100
	Copper	0.0009	0.0100
	Iron	ND	0.2000
	Manganese	0.0006	0.0020
	Molybdenum	0.0127	0.0300
	Nickel	0.0151	0.0300
	Lead	0.0122	0.0400
	Selenium	0.0252	0.0700
	Zinc	ND	0.0300
CCB3-	Silver	0.0013	0.0060
	Arsenic	ND	0.0300
	Barium	0.0011	0.0030
	Beryllium	0.0001	0.0002
	Calcium	0.0326	0.3000

Mountain States Analytical, Inc.
Daily QC Batching Data
Data Released for Reporting

Analysis Batch Number: ICPWA-02/26/98-001 -1
Test Identification : ICPWA-*Metals by ICP
Number of Samples : 20
Batch Data-Date/Time : 02/26/98 / 12:37:51

Sequence : DATA057

CB#	ANALYTE	CONC FOUND #	CONC LIMIT
CCB3-	Cadmium	0.0023	0.0040
	Chromium	0.0002	0.0100
	Copper	0.0017	0.0100
	Iron	ND	0.2000
	Manganese	0.0011	0.0020
	Molybdenum	0.0088	0.0300
	Nickel	0.0163	0.0300
	Lead	0.0069	0.0400
	Selenium	0.0424	0.0700
	Zinc	ND	0.0300
CCB4-	Silver	0.0024	0.0060
	Arsenic	0.0057	0.0300
	Barium	0.0011	0.0030
	Beryllium	0.0001	0.0002
	Calcium	0.0230	0.3000
	Cadmium	0.0023	0.0040
	Chromium	0.0010	0.0100
	Copper	0.0011	0.0100
	Iron	ND	0.2000
	Manganese	0.0002	0.0020
	Molybdenum	0.0095	0.0300
	Nickel	0.0058	0.0300
	Lead	0.0092	0.0400
	Selenium	0.0049	0.0700
	Zinc	ND	0.0300
CCB5-	Silver	0.0014	0.0060
	Arsenic	ND	0.0300
	Barium	0.0010	0.0030
	Beryllium	0.0002	0.0002
	Calcium	0.0436	0.3000
	Cadmium	0.0017	0.0040
	Chromium	ND	0.0100
	Copper	0.0003	0.0100
	Iron	ND	0.2000
	Manganese	0.0017	0.0020
	Molybdenum	0.0149	0.0300
	Nickel	0.0155	0.0300
	Lead	ND	0.0400
	Selenium	ND	0.0700
	Zinc	0.0010	0.0300

---------- Result Footnotes ----------

(1d) - The preparation blank concentration is less than 5% of the regulatory limit
(2g) - Spike result outside limits. Serial dilution is outside 10% acceptance limits.
(11) - The duplicate results cannot be evaluated because both results are <MDL.
(5a) - Duplicates not evaluated: Results are <10x detection limit

Mountain States Analytical, Inc.
Daily QC Batching Data
Data Released for Reporting

Analysis Batch Number: ICPWA-02/26/98-001 -1
Test Identification : ICPWA-*Metals by ICP Sequence : DATA057
Number of Samples : 20
Batch Data-Date/Time : 02/26/98 / 12:37:51

Groups & Samples

21206-75560	21206-75561	21206-75562	21206-75563	21214-75579	21214-75580	21214-75581	21214-75582
21214-75583	21214-75584	21232-75626	21232-75627	21232-75628	21232-75629	21232-75630	21232-75631
21237-75674	21237-75675	21240-75680	21240-75681				

On Site Technologies, LTD.
612 E. Murray Drive
Farmington, NM 87401
(505) 325-2432

CHAIN-OF-CUSTODY RECORD

Subcontractor:

Mountain States Analytical, Inc. TEL: (800) 973-6724
1645 West 2200 South FAX: (801) 972-6278

Salt Lake City, Utah 84119 Acct #:

19-Feb-98

Sample ID	Matrix	Collection Date	Bottle Type	Requested Tests						
				SW6010A						
9802020-01D	Aqueous	2/19/98 8:30:00 AM	500HDPEHNO3	1						
9802020-02C	Aqueous	2/19/98 9:13:00 AM	500HDPEHNO3	1						

WQCC METALS 2/19/98

Comments: Please analyze samples per WQCC Standards. I believe this is MSAI "G-Format". Any questions please call

	Date/Time		Date/Time
Relinquished by:	2/19/98 1600	**Received by:** Wendy Seager	02/20/98 0925
Relinquished by:		**Received by:**	

RECEIVED MAR 1 2 1998
HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

March 6, 1998

Mr. David Cox
ON SITE TECHNOLOGIES
612 East Murray
Farmington, NM 87401

The following report contains analytical results for the sample(s) received at Southern Petroleum Laboratories (SPL) on February 20, 1998. The sample(s) was assigned to Certificate of Analysis No.(s) 9802994 and analyzed for all parameters as listed on the chain of custody.

Any data flag or quality control exception associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s).

If you have any questions or comments pertaining to this data report, please do not hesitate to contact me. Please reference the above Certificate of Analysis No. during any inquiries.

Again, SPL is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

Southern Petroleum Laboratories

Sonia West
Client Services Representative

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Southern Petroleum Laboratories, Inc.

Certificate of Analysis Number: 98-02-994

Approved for Release by:

for Sonia West, Client Services Representative — 3-6-98 Date

Greg Grandits
Laboratory Director

Idelis Williams
Quality Assurance Officer

QUALITY CONTROL

DOCUMENTATION

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

** SPL BATCH QUALITY CONTROL REPORT **
Method 8310 ***

Matrix: Aqueous
Units: ug/L

Batch Id: 2980225001000

LABORATORY CONTROL SAMPLE

SPIKE COMPOUNDS	Method Blank Result <2>	Spike Added <3>	Blank Spike Result <1>	Blank Spike Recovery %	QC Limits(**) (Mandatory) % Recovery Range
Naphthalene	ND	0.50	0.46	92.0	32 - 148
Acenaphthylene	ND	0.50	0.43	86.0	42 - 138
Acenaphthene	ND	0.50	0.50	100	22 - 133
Fluorene	ND	0.50	0.44	88.0	11 - 148
Phenanthrene	ND	0.50	0.50	100	40 - 121
Anthracene	ND	0.50	0.45	90.0	32 - 121
Fluoranthene	ND	0.50	0.50	100	45 - 133
Pyrene	ND	0.50	0.47	94.0	39 - 136
Chrysene	ND	0.50	0.49	98.0	44 - 122
Benzo (a) anthracene	ND	0.50	0.48	96.0	53 - 137
Benzo (b) fluoranthene	ND	0.50	0.50	100	62 - 121
Benzo (k) fluoranthene	ND	0.50	0.49	98.0	66 - 128
Benzo (a) pyrene	ND	0.50	0.49	98.0	42 - 120
Dibenzo (a,h) anthracene	ND	0.50	0.42	84.0	59 - 129
Benzo (g,h,i) perylene	ND	0.50	0.43	86.0	67 - 124
Indeno (1,2,3-cd) pyrene	ND	0.50	0.48	96.0	65 - 125

MATRIX SPIKES

SPIKE COMPOUNDS	Sample Results <2>	Spike Added <3>	Matrix Spike Result <1>	Matrix Spike Recovery <4>	Matrix Spike Duplicate Result <1>	Matrix Spike Duplicate Recovery <5>	MS/MSD Relative % Difference	QC Limits(***) (Advisory) RPD Max.	QC Limits(***) (Advisory) Recovery Range
NAPHTHALENE	0.22	0.50	0.58	72.0	0.68	92.0	24.4	30	1 - 122
ACENAPHTHYLENE	ND	0.50	0.41	82.0	0.53	106	25.5	30	1 - 124
ACENAPHTHENE	ND	0.50	0.47	94.0	0.52	104	10.1	30	1 - 124
FLUORENE	ND	0.50	0.38	76.0	0.42	84.0	10.0	30	1 - 142
PHENANTHRENE	ND	0.50	0.48	96.0	0.53	106	9.90	30	1 - 155
ANTHRACENE	ND	0.50	0.45	90.0	0.47	94.0	4.35	30	1 - 126
FLUORANTHENE	ND	0.50	0.56	112	0.56	112	0	30	14 - 123
PYRENE	ND	0.50	0.53	106	0.54	108	1.87	30	1 - 140
CHRYSENE	ND	0.50	0.57	114	0.59	118	3.45	30	1 - 199
BENZO (A) ANTHRACENE	ND	0.50	0.55	110	0.58	116	5.31	30	12 - 135
BENZO (B) FLUORANTHENE	ND	0.50	0.58	116	0.61	122	5.04	30	6 - 150
BENZO (K) FLUORANTHENE	ND	0.50	0.57	114	0.60	120	5.13	30	1 - 159
BENZO (A) PYRENE	ND	0.50	0.57	114	0.60	120	5.13	30	1 - 128
DIBENZO (A,H) ANTHRACENE	ND	0.50	0.50	100	0.55	110	9.52	30	1 - 110
BENZO (G,H,I) PERYLENE	ND	0.50	0.49	98.0	0.51	102	4.00	30	1 - 116
INDENO (1,2,3-CD) PYRENE	ND	0.50	0.58	116	0.61	122 *	5.04	30	1 - 116

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

** SPL BATCH QUALITY CONTROL REPORT **
Method 8310 ***

Matrix: Aqueous
Batch Id: 2980225001000
Units: ug/L

Analyst: KA
Sequence Date: 02/25/98
SPL ID of sample spiked: 9802920-04C
Sample File ID: 980225A\010-1001
Method Blank File ID:
Blank Spike File ID: 980225A\009-0901
Matrix Spike File ID: 980225A\011-1101
Matrix Spike Duplicate File ID: 980225A\012-1201

* = Values outside QC Range due to Matrix Interference (except RPD)
« = Data outside Method Specification limits.
NC = Not Calculated (Sample exceeds spike by factor of 4 or more)
ND = Not Detected/Below Detection Limit
% Recovery = [(<1> - <2>) / <3>] x 100
LCS % Recovery = (<1> / <3>) x 100
Relative Percent Difference = |(<4> - <5> | / [(<4> + <5>) x 0.5] x 100
(**) = Source: SPL-Houston Historical Data (1st Q '97)
(***) = Source: Temporary Limits

SAMPLES IN BATCH(SPL ID):

9802890-13D	9802890-14D	9802908-10D	9802908-11D
9802908-12D	9802928-02D	9802928-03D	9802928-04D
9802928-01D	9802920-03C	9802908-09D	9802991-02C
9802994-01A	9802999-02B	9802999-01B	9802920-04C
9802772-02C	9802920-01C	9802920-02C	

CHAIN OF CUSTODY

AND

SAMPLE RECEIPT CHECKLIST

9802994

On Site Technologies, LTD.

612 E. Murray Drive
Farmington, NM 87401
(505) 325-2432

CHAIN-OF-CUSTODY RECORD

Subcontractor:

Southern Petroleum Laboratories
8880 Interchange Dr.
Houston, TX 77054

TEL: (713) 660-0901
FAX:
Acct #:

19-Feb-98

Sample ID	Matrix	Collection Date	Bottle Type	Requested Tests						
				SW8310						
9802020-01C	Aqueous	2/19/98 8:35:00 AM	1LAMGU	1						

Comments: JPS 12666585011000 7008 50C

	Date/Time		Date/Time
Relinquished by:	2/19/98 1600	**Received by:**	2/20/98 1000
Relinquished by:		**Received by:**	

SPL Houston Environmental Laboratory

Sample Login Checklist

Date:	Time:
2-20-98	1000

SPL Sample ID:
9802994

			Yes	No
1	Chain-of-Custody (COC) form is present.		✓	
2	COC is properly completed.		✓	
3	If no, Non-Conformance Worksheet has been completed.			
4	Custody seals are present on the shipping container.		✓	
5	If yes, custody seals are intact.		✓	
6	All samples are tagged or labeled.		✓	
7	If no, Non-Conformance Worksheet has been completed.			
8	Sample containers arrived intact		✓	
9	Temperature of samples upon arrival:		5° C	
10	Method of sample delivery to SPL:	SPL Delivery		
		Client Delivery		
		FedEx Delivery (airbill #)		
		Other: UPS	1Z6665850110007008	
11	Method of sample disposal:	SPL Disposal	✓	
		HOLD		
		Return to Client		

Name:	Date:
[signature]	2-20-98

CHAIN OF CUSTODY RECORD

ON SITE TECHNOLOGIES, LTD.

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

Date: 2011 10

Page 1 of 1

Purchase Order No.:	Job No. 4-		
SEND INVOICE TO: Name			
Company		Dept.	
Address			
City, State, Zip			
Sampling Location:			
Sampler:			

REPORT RESULTS TO: Name		Title	
Company			
Mailing Address			
City, State, Zip			
Telephone No.		Telefax No.	

SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	MATRIX	PRES.	Number of Containers	ANALYSIS REQUESTED	LAB ID

Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time

Method of Shipment:			
Authorized by: _____ Date _____ (Client Signature Must Accompany Request)	Rush	24-48 Hours	10 Working Days

Special Instructions:

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

CHAIN OF CUSTODY RECORD

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

Date: _____ Page _____ of _____

Purchase Order No.:	Job No.		
SEND INVOICE TO: Name		REPORT RESULTS TO: Name	Title
Company	Dept.	Company	
Address		Mailing Address	
City, State, Zip		City, State, Zip	
		Telephone No.	Telefax No.
Sampling Location:		Number of Containers	ANALYSIS REQUESTED
Sampler:			

SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	MATRIX	PRES.	Number of Containers										LAB ID

Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time

Method of Shipment:

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

Rush	24-48 Hours	10 Working Days	Special Instructions:

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