3R - 92

REPORTS

DATE:

1997

ON SITE
TECHNOLOGIES, LTD.

February 1, 1998

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

RE: 1997 Annual Ground Water Report
Conoco Location: San Juan 28-7 -19
Unit G, Sec. 25, T28N, R7W, NMPM, San Juan Co., NM

FEB 27 [illegible]

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 covered the prior calendar year of 1997, 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.

SUMMARY OF 1997 ACTIVITIES:

This report will only cover the sampling events conducted during 1997. Due to non-detectable levels of contamination, New Mexico Oil Conservation Division (NMOCD) has granted an exemption to this location. The exemption allows Conoco to consider water quality monitoring complete, when four (4) consecutive quarters of sampling shows water quality levels below New Mexico Water Quality Control Commission (NMWQCC) standards. Refer to the following correspondence.

New Mexico Oil Conservation Division, January 31, 1997. letter to Mr. Neal. Goates, Senior Environmental Specialist, Conoco, Inc. Midland Division, regarding: *Ground Water Contamination Assessment San Juan Unit Wells #219, #47, #19, #126., Conoco Location, San Juan 28-7 #19, Unit G, Sec. 25, T28N, R7W, NMPM, San Juan Co., NM.*

SAMPLING:

Following the approved Conoco plan, during each sampling event, water levels were measured on all monitoring wells prior to purging and sampling. Samples were collected in laboratory supplied containers, preserved as needed, and proper chain-of-custody protocol followed. The 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 calendar year 1997, along with all laboratory QA/QC documentation and chains-of-custody, are attached with this report.

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

SUMMARY AND CONCLUSIONS:

The following conclusions are based on the 1997 ground water monitoring results and trends associated with a former production pit at the San Juan 28-1 #19 well location:

1. Except for contamination from BTEX constituents, there appears to have been no significant hydrocarbon impact to ground water above NMWQCC standards.
2. API water analysis indicates high TDS (i.e., 2,350 mg/L), with high sulfate concentrations. This water quality is typical for ground water at similar sites in the Largo Canyon area and is not suspected to have been a result of the ongoing oil and gas production at the site.
3. BTEX contamination of ground water has remained, for all constituents, above NMWQCC standards for the last three (3) sample events (i.e., June, September and December 1997).
4. If ground water contamination remains above NMWQCC standards, than other remediation methods may have to be used to bring contamination levels below NMWQCC standards.

RECOMMENDATIONS :

1. If BTEX contamination levels continue to remain above NMWQCC standards, the monitoring of ground water will have to continue until ground water contamination levels are below NMQCC standards.
2. To enhance the insitu biodegradation of the remaining BTEX contamination, it is recommended to install magnesium peroxide socks into the existing monitoring well. These socks should increase the dissolved oxygen levels and enhance the aerobic microbes, degrading BTEX compounds.

LIMITATIONS AND CLOSURE:

This annual groundwater report documents the results of ground water monitoring for the referenced Conoco well location during the calendar year 1997. This report follows the Conoco Ground Water Plan, dated October 15, 1997.

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 the annual 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 Trujillo
Project Manager

Reviewed by:

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 (Not Applicable)
Boring Logs and Monitoring Well Diagrams (Not Available)
Laboratory Results, QA/QC, Chain of Custody

Acknowledgment:
CONOCO, Inc.

Shirley K. Ebert Sheets Spec.
(Name/Title)

2/19/98
(Date)

MKL/mkl: 41358-97.doc

On Site Technologies
Table1
Ground Water Level Summary
San Juan 28-7-19
Unit G, Sec. 25, T28N, R7W

Well Number	Elevation at ground surface (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	6214.0	86.09			03/26/97	79.01	6134.99
					06/10/97	78.90	3135.10
					10/9/97	79.03	6134.97
					12/22/97	79.01	6134.99

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

On Site Technologies
Table 2
BTEX Analytical Summary
San Juan 28-7-19
Unit G, Sec. 25, T28N, R7W

Sample Date	Sample ID#	Monitor Well	Remarks	BTEX per EPA 8020 (ppb)				
				Benzene	Toluene	Ethylbenzene	Total Xylene	Total BTEX
08/11/95	G01373	MW#1	IML	65.2	973.0	33.5	124.5	1196.2
03/12/96	039600376	MW#1	IML	14.0	12.0	11.0	78.0	115.0
07/17/96	039601348	MW#1	IML	0.4	0.3	0.7	0.8	2.2
03/26/97	14046	MW#1	On Site Lab.	48.1	25.9	1.0	406	79.6
04/21/97	14293	MW#1	On Site Lab.	168.0	119.0	3.7	27.0	317.7
06/10/97	14895	MW#1	On Site Lab.	27.4	13.8	1.0	3.0	45.2
10/9/97	16562	MW#1	On Site Lab.	49.5	8.1	1.8	4.7	64.0
12/22/97	17207	MW#1	On Site Lab.	59.2	23.9	1.4	8.5	93.0
WQCC	ACTION	LEVELS		10.0	750.0	750.0	620.0	

BDL Below Detection Levels

On Site Technologies
Table 3
Other Constitutes Analytical Summary
San Juan 28-7-19
Unit G, Sec. 25, T28N, R7W

API Results

CATIONs						ANIONs				
PARAMETER		RESULTS	UNIT of MEASURE	WQCC Standards	UNIT OF MEASURE	PARAMETER		RESULTS	UNIT OF MEASURE	WQCC Standards	UNIT OF MEASURE
Sodium	Na	271.0	mg/L			Chloride	Cl	28.0	mg/L	250.0	mg/L
Calcium	Ca	312.0	mg/L			Sulfate	SO_4	1344.0	mg/L	600.0	mg/L
Magnesium	Mg	42.6	mg/L			Carbonate	CO_3	<1	mg/L		
Potassium	K	4.32	mg/L			Bicarbonate	HCO_3	348.0	mg/L		
						Hydroxide	HO	<1	mg/L		
						Sulfide	S_2	NA	mg/L		
						Iron	Fe	0.08	mg/L	1.0	mg/L
						Total Dissolved Solids		2350	mg/L	1000.0	mg/L
						pH		6.92		between 6 and 9	
						Resistivity		3.7037		ohm-m	
						Specific Gravity		1.0020			
						Total hardness of $CaCO_3$		954.0		mg/L	

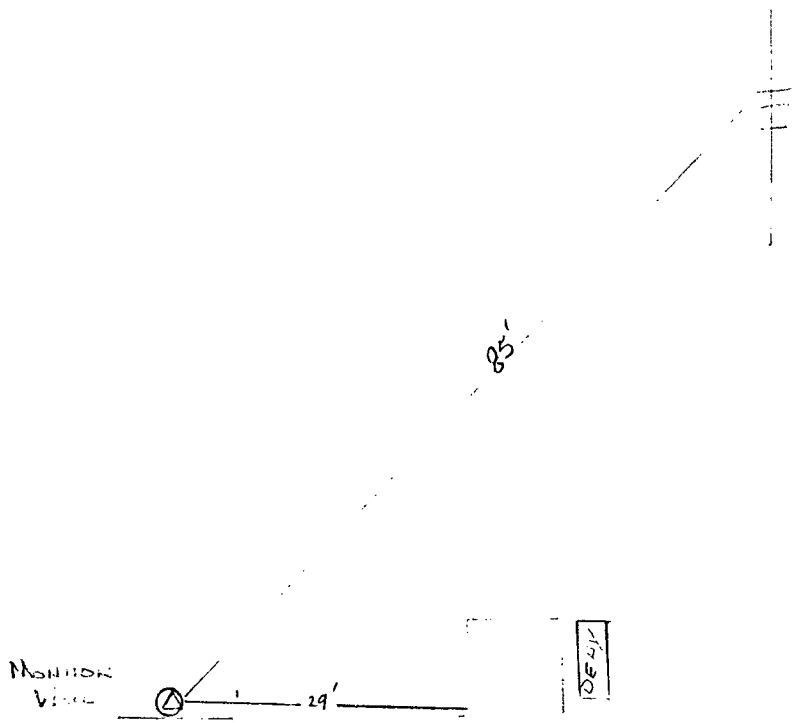
Sample Date: September 15, 1997

Cation-Anion Balance

Difference Cation-Anion me/L	3.49
Total Cation-Anion me/L	65.44
Difference Cation-Anion	5.3%

RCRA Metals
Test Method SW-846

PARAMETER	RESULTS	UNITS	WQCC	UNITS
Mercury by CVAA	<0.0005	mg/L	0.002	mg/L
Arsenic by ICP	<0.15	mg/L	0.1	mg/L
Barium by ICP	0.08	mg/L	1.0	mg/L
Cadmium by ICP	<0.020	mg/L	0.01	mg/L
Chromium by ICP	<0.050	mg/L	0.05	mg/L
Lead by ICP	<0.20	mg/L	0.05	mg/L
Selenium by ICP	<0.35	mg/L	0.05	mg/L
Silver by ICP	<0.030	mg/L	0.05	mg/L


85'
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OFF: (505) 325-5667

ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	*Larry Trujillo*	Date:	30-Dec-97
Company:	*On Site Technologies, Ltd.*	COC No.:	*6779*
Address:	*612 E. Murray Drive*	Sample No.:	*17207*
City, State:	*Farmington, NM 87401*	Job No.:	*2-1358*

Project Name:	***Conoco, Inc. - San Juan 28-7-19***				
Project Location:	***28-7-19***				
Sampled by:	LT	Date:	22-Dec-97	Time:	8:41
Analyzed by:	HR	Date:	26-Dec-97		
Sample Matrix:	*Liquid*				

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
Benzene	59.2	ug/L	0.2	ug/L
Toluene	23.9	ug/L	0.2	ug/L
Ethylbenzene	1.4	ug/L	0.2	ug/L
m,p-Xylene	5.3	ug/L	0.2	ug/L
o-Xylene	3.2	ug/L	0.2	ug/L
TOTAL	93.0	ug/L		

ND - Not Detected at Limit of Quantitation

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

Approved By:
Date: 12/30/97

OFF: (505) 325-5667

ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-1556

QUALITY ASSURANCE REPORT

for EPA Method 8020

Date Analyzed: 26-Dec-97

Internal QC No.: 0559-STD
Surrogate QC No.: 0567-STD
Reference Standard QC No.: 0529/30-QC

Method Blank

Parameter	*Result*	*Unit of Measure*
Average Amount of All Analytes In Blank	<0.2	ppb

Calibration Check

Parameter	*Unit of Measure*	*True Value*	*Analyzed Value*	*RPD*	*Limit*
Benzene	ppb	20.0	20.8	4	15%
Toluene	ppb	20.0	21.7	8	15%
Ethylbenzene	ppb	20.0	21.2	6	15%
m,p-Xylene	ppb	40.0	40.9	2	15%
o-Xylene	ppb	20.0	20.9	4	15%

Matrix Spike

Parameter	*1- Percent Recovered*	*2 - Percent Recovered*	*Limit*	*RPD*	*Limit*
Benzene	91	92	(39-150)	1	20%
Toluene	98	98	(46-148)	0	20%
Ethylbenzene	90	94	(32-160)	2	20%
m,p-Xylene	92	95	(35-145)	3	20%
o-Xylene	96	96	(35-145)	0	20%

Surrogate Recoveries

Laboratory Identification	*S1 Percent Recovered*	*S2 Percent Recovered*	*Laboratory Identification*	*S1 Percent Recovered*	*S2 Percent Recovered*
Limit Percent Recovered	(70-130)		*Limit Percent Recovered*	(70-130)	
17207-6779	88				
				12/31/97	12/30/97

S1: *Flourobenzene*

CHAIN OF CUSTODY RECORD

6179

ON SITE TECHNOLOGIES, LTD.

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

Date: 12/22-97

Page 1 of 1

Purchase Order No.:	Job No. 2-1258		
SEND INVOICE TO: Name Larry Taylor		REPORT RESULTS TO: Name Larry Taylor	Title
Company Conoco	Dept.	Company Conoco	
Address		Mailing Address	
City, State, Zip		City, State, Zip	
		Telephone No.	Telefax No.
Sampling Location: San Juan 28-7-19			
Sampler: LT			

SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	MATRIX	PRES.	Number of Containers	BTEX	LAB ID
28-7-19	12/21	2811	H2O	HCl	2	✓	12207-12209

ANALYSIS REQUESTED

Relinquished by: Larry Taylor	Date/Time 12-22-97 1247	Received by: DCG	Date/Time 12/22/97 1742
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time

Method of Shipment:			
Rush	24-48 Hours	10 Working Days	Special Instructions:

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

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

OFF: (505) 325-5667

ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	*Larry Trujillo*	Date:	22-Oct-97
Company:	*On Site Technologies, Ltd. C/o Conoco, Inc.*	COC No.:	*6517*
Address:	*612 E. Murray Drive*	Sample No.:	*16562*
City, State:	*Farmington, NM 87401*	Job No.:	*2-1358*

Project Name:	***Conoco, Inc. - 28-7-19***				
Project Location:	***28-7-19-#1***				
Sampled by:	LT	Date:	9-Oct-97	Time:	11:00
Analyzed by:	DC	Date:	20-Oct-97		
Sample Matrix:	*Liquid*				

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
Benzene	49.5	ug/L	0.2	ug/L
Toluene	8.1	ug/L	0.2	ug/L
Ethylbenzene	1.8	ug/L	0.2	ug/L
m,p-Xylene	2.7	ug/L	0.2	ug/L
o-Xylene	2.0	ug/L	0.2	ug/L
TOTAL	64.0	ug/L		

ND - Not Detected at Limit of Quantitation

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

Approved By: *Date:* 10/22/97

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

QUALITY ASSURANCE REPORT

for EPA Method 8020

Date Analyzed: 20-Oct-97

Internal QC No.: 0527-STD
Surrogate QC No.: 0528-STD
Reference Standard QC No.: 0529/30-QC

Method Blank

Parameter	*Result*	*Unit of Measure*
Average Amount of All Analytes In Blank	<0.2	ppb

Calibration Check

Parameter	*Unit of Measure*	*True Value*	*Analyzed Value*	*RPD*	*Limit*
Benzene	ppb	20.0	18.5	8	15%
Toluene	ppb	20.0	19.2	4	15%
Ethylbenzene	ppb	20.0	19.2	4	15%
m,p-Xylene	ppb	40.0	37.2	7	15%
o-Xylene	ppb	20.0	19.1	5	15%

Matrix Spike

Parameter	*1- Percent Recovered*	*2 - Percent Recovered*	*Limit*	*RPD*	*Limit*
Benzene	91	90	(39-150)	0	20%
Toluene	94	93	(46-148)	1	20%
Ethylbenzene	95	93	(32-160)	2	20%
m,p-Xylene	92	91	(35-145)	1	20%
o-Xylene	94	94	(35-145)	0	20%

Surrogate Recoveries

Laboratory Identification	*S1 Percent Recovered*	*S2 Percent Recovered*	*Laboratory Identification*	*S1 Percent Recovered*	*S2 Percent Recovered*
Limit Percent Recovered	(70-130)		*Limit Percent Recovered*	(70-130)	
16562-6517	92				
				10/22/97	10/22/97

S1: *Flourobenzene*

CHAIN OF CUSTODY RECORD

6317

ON SITE TECHNOLOGIES, LTD.

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

Date: 9-10-19

Purchase Order No.: | Job No. 3-1258

SEND INVOICE TO
Name Larry Trujillo
Company Conoco | Dept.
Address
City, State, Zip

REPORT RESULTS TO
Name Larry Trujillo | Title
Company ~~Larry~~ Conoco
Mailing Address
City, State, Zip
Telephone No. | Telefax No.

Sampling Location: 28-7-19

Sampler: LT

SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	MATRIX	PRES.	Number of Containers	ANALYSIS REQUESTED: BTEX	LAB ID
28-7-19 - #1	10-9-97	1100	H2O	HCl	2	✓	16567-1

Relinquished by: Larry Trujillo | Date/Time 10-9-97 1500
Relinquished by: | Date/Time
Relinquished by: | Date/Time

Received by: [signature] | Date/Time 10/10/97 1513
Received 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

OFF: (505) 325-5667

ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-1556

API WATER ANALYSIS

Attn:	*Larry Trujillo*	Date:	10-Oct-97
Company:	*On Site Technologies, Ltd. c/o Conoco, Inc.*	*COC No.:*	*6463*
Address:	*612 E. Murray Drive*	*Sample ID:*	*16184*
City, State:	*Farmington, NM 87401*	*Job No.:*	*4-1358*

Project Name:	***Conoco Inc. 28-7-19***				
Project Location:	***4-1358***				
Sampled by:	LT	Date:	15-Sep-97	Time:	12:46
Analyzed by:	HR	Date:	25-Sep-97		

API RP-45 Laboratory Analysis

Parameter		*Result*	*Unit of Measure*		*Result*	*Unit of Measure*	
Cations							
Sodium	*Na*	271	mg/L		11.79	me/L	
Calcium	*Ca*	312	mg/L		15.57	me/L	
Magnesium	*Mg*	42.6	mg/L		3.51	me/L	
Potassium	*K*	4.32	mg/L		0.11	me/L	
Anions							
Chloride	*Cl*	28	mg/L		0.78	me/L	
Sulfate	*SO4*	1344	mg/L		27.98	me/L	
Carbonate	*CO3*	<1	mg/L		<0.01	me/L	
Bicarbonate	*HCO3*	348	mg/L		5.70	me/L	
Hydroxide	*OH*	<1	mg/L		<0.01	me/L	
Sulfide	*S2*	NA	mg/L		NA	me/L	
Iron	*Fe*	0.08	mg/L		<0.01	me/L	
Total Dissolved Solids Calculated, Sum of Cation/Anion		2350	mg/L				
pH		6.92					
Resistivity		3.7037	ohm-m				
Specific Gravity		1.0020					
Total Hardness as CaCO3		954	mg/L				

Cation-Anion Balance

3.49 *Difference Cation-Anion, me/L*

65.44 *Total Cation-Anion, me/L*

5.3 *% Difference Cation-Anion*

Comments

NA: *Not Analyzed*

Approved by:

Date: 10/15/97

OFF: (505) 325-5667

ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-1556

QUALITY ASSURANCE REPORT

API RP-45 Water Analysis

Date: 25-Sep-97

Quality Control Sample

Parameter	*Laboratory Identification*	*True Value*	*Analyzed Value*	*Unit of Measure*	*% Diff*	*Limit % Diff*
Sodium, Na	0541-QC	2.32	2.22	mg/L	-4	10
Calcium, Ca	0465-QC	2.18	2.03	mg/L	-7	10
Magnesium, Mg	0465-QC	1.14	1.22	mg/L	7	10
Potassium, K	0541-QC	1.33	1.30	mg/L	-2	10
Chloride, Cl	0538-QC	66	68	mg/L	2	10
Sulfate, SO4	0538-QC	78	81	mg/L	4	10
Alkalinity	0538-QC	159	169	mg/L	6	10
Iron, Fe	0495-QC	1.00	0.98	mg/L	-2	10
pH	0538-QC	9.13	9.29		2	10
Conductivity	0541-QC	740	745	uS/cm	1	15

Matrix Spike

Parameter	*Laboratory Identification*	*Analyzed Value*	*Matrix Spike*	*Spike Value*	*Unit of Measure*	*Spike Recovery*
Sodium, Na	16203-6477	0.84	0.50	1.38	mg/L	103%
Calcium, Ca	16208-6478	1.28	0.50	1.75	mg/L	98%
Magnesium, Mg	16208-6478	1.95	0.50	2.45	mg/L	100%
Potassium, K	16203-6477	0.88	0.50	1.36	mg/L	99%
Iron, Fe	16308-6500	0.04	0.50	0.50	mg/L	93%

Method Blank

Parameter	*Laboratory Identification*	*Analyzed Value*	*Unit of Measure*
Sodium, Na	LF-Blank	<0.2	mg/L
Calcium, Ca	LF-Blank	<0.05	mg/L
Magnesium, Mg	LF-Blank	<0.05	mg/L
Potassium, K	LF-Blank	<0.05	mg/L
Iron, Fe	LF-Blank	<0.05	mg/L
Chloride, Cl	LF-Blank	<3 X DL	mg/L
Sulfate, SO4	LF-Blank	<1	mg/L
Sulfide, SO2	LF-Blank	NA	mg/L
Conductivity	LF-Blank	<2	uS/cm

(DC) 10/1-/97 DRC 10/15/97

Mountain States Analytical, Inc.
The Quality Solution

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

Attn: Mr. David Cox
Project: Conoco 28-7-19

Sample ID: 16185-6463
Matrix: Waste Water

MSAI Sample: 68464
MSAI Group: 17913
Date Reported: 10/03/97
Discard Date: 11/02/97
Date Submitted: 09/17/97
Date Sampled: 09/15/97
Collected by: DC
Purchase Order: 6463
Project No.:

Test	Analysis	Results as Received	Units	Limit of Quantitation
0259B	Mercury by CVAA, w/ww, 7470 Method: SW-846 7470	ND	mg/l	0.0005
0392I	Flame/ICP Prep, w/ww, 3005A Method: SW-846 3005A	Complete		
0392M	Mercury Prep CVAA, w/ww, 7470 Method: SW-846 7470	Complete		
7245	Arsenic by ICP, w/ww, 6010A Method: SW-846 6010A	ND	mg/l	0.15
7246	Barium by ICP, w/ww, 6010A Method: SW-846 6010A	0.08	mg/l	0.02
7249	Cadmium by ICP, w/ww, 6010A Method: SW-846 6010A	ND	mg/l	0.020
7251	Chromium by ICP, w/ww, 6010A Method: SW-846 6010A	ND	mg/l	0.050
7255	Lead by ICP, w/ww, 6010A Method: SW-846 6010A	ND	mg/l	0.20
7264	Selenium by ICP, w/ww, 6010A Method: SW-846 6010A	ND	mg/l	0.35
7266	Silver by ICP, w/ww, 6010A Method: SW-846 6010A	ND	mg/l	0.030

Mountain States Analytical, Inc.
The Quality Solution

On Site Technologies, Ltd.

MSAI Sample: 68464
MSAI Group: 17913

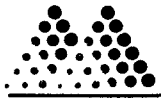
Sample ID: 16185-6463

ND - Not detected at the limit of quantitation

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



Mountain States Analytical, Inc.

October 3, 1997

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

Reference:
Project: Conoco 28-7-19
MSAI Group: 17913

Dear Mr. Cox:

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

16185-6463

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

Rolf E. Larsen
Project Manager

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

10/03/97
16:30:11
Group: 17913

Analysis Batch Number: 0259B-09/25/97-107 -2
Test Identification : 0259B-Mercury by CVAA, w/ww, 7470 Sequence : 0259B-1
Number of Samples : 27
Batch Data-Date/Time : 09/30/97 / 10:22:24

BLANK#	ANALYTE	CONC FOUND #	CONC LIMIT
17873-68371	Mercury	0.0300	0.1000
PBW2-663-2	Mercury	0.0500	0.1000
PBW1-661-3	Mercury	0.1200(Q3)	0.1000

SPIKE

SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	CONC SPIKE	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
17873-68369	Mercury	2.0000	0.0700	1.9300	93.0	80.0	120.0
17816-68144-2	Mercury	25.0000	0.1000	25.2000	100.4	80.0	120.0
17816-68144-3	Mercury	25.0000	0.1000	20.8000	82.8	80.0	120.0

SD

SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	RESULT 2	%REC2 #	QC LIMITS LOWER	QC LIMITS UPPER	RPD #	LIMIT
17873-68369	Mercury	2.0000	0.0700	1.9400	93.5	80.0	120.0	0.5	20.0
17816-68144-2	Mercury	25.0000	0.1000	25.1000	100.0	80.0	120.0	0.4	20.0

DUPLICATE

SAMPLE#	ANALYTE	RESULT 1	RESULT 2	RPD #	LIMIT	DILUTION
17873-68369	Mercury	0.0700	0.0700	0.0	20.0	1.00
17816-68144-2	Mercury	0.1000	0.1200	18.2	20.0	1.00

CONTROL

SAMPLE#	ANALYTE	CONC FOUND	CONC KNOWN	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
17873-68372	Mercury	2.0800	2.5000	83.2	80.0	120.0
CSW-661-2	Mercury	2.0300	2.5000	81.2	80.0	120.0

CCV #	ANALYTE	TRUE VALUE	BATCH READ	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
CCV-	Mercury	3.0000	3.2400	108.0	90.0	110.0
CCV--2	Mercury	5.0000	5.0500	101.0	80.0	120.0
CCV--3	Mercury	5.0000	5.0200	100.4	80.0	120.0
CCV--4	Mercury	5.0000	4.9500	99.0	80.0	120.0
CCV--5	Mercury	5.0000	4.9100	98.2	80.0	120.0
CCV--6	Mercury	5.0000	4.8200	96.4	80.0	120.0
CCV--7	Mercury	5.0000	4.8200	96.4	80.0	120.0
CCV--8	Mercury	5.0000	4.7800	95.6	80.0	120.0

CCB#	ANALYTE	CONC FOUND #	CONC LIMIT
CCB-	Mercury	0.0400	0.1000
CCB-	Mercury	0.0400	0.1000
CCB-	Mercury	0.0800	0.1000
CCB-	Mercury	0.0600	0.1000
CCB-	Mercury	0.0700	0.1000
CCB-	Mercury	0.1000	0.1000
CCB-	Mercury	0.0900	0.1000
CCB-	Mercury	0.1000	0.1000

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

(Q3) - The regulatory limit is >20x the blank concentration.

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

10/03/97
16:30:13
Group: 17913

Analysis Batch Number: 02598-09/25/97-107 -2
Test Identification : 02598-Mercury by CVAA, w/ww, 7470 Sequence : 02598-1
Number of Samples : 27
Batch Data-Date/Time : 09/30/97 / 10:22:24

Groups & Samples

17797-68094	17809-68116	17816-68142	17816-68144	17837-68250	17838-68251	17838-68252	17859-68316
17873-68367	17873-68368	17873-68369	17873-68371	17873-68372	17889-68413	17907-68442	17907-68443
17912-68462	17913-68464	17940-68560	17942-68562	17943-68563	17944-68564	17945-68565	17946-68566
17947-68567	17948-68568	17949-68569	17950-68570	17951-68571			

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

10/03/97
16:30:20
Group: 17913

Analysis Batch Number: ICPWA-09/30/97-118 -1
Test Identification : ICPWA-*Metals by ICP
Number of Samples : 17
Batch Data-Date/Time : 09/30/97 / 13:15:40

Sequence : DATA273

BLANK#	ANALYTE	CONC FOUND #	CONC LIMIT
17873-68371	Silver	0.0005	0.0060
	Arsenic	0.0048	0.0300
	Barium	0.0001	0.0030
	Calcium	0.0305	0.4000
	Cadmium	0.0001	0.0040
	Chromium	ND	0.0100
	Iron	ND	0.2000
	Potassium	0.0459	0.1000
	Magnesium	ND	0.0500
	Molybdenum	ND	0.0300
	Sodium	0.0284	0.2000
	Nickel	ND	0.0300
	Lead	ND	0.0400
	Antimony	0.0090	0.1000
	Selenium	ND	0.0700
17873-68371-2	Silver	0.0005	0.0060
	Arsenic	0.0048	0.0300
	Barium	0.0001	0.0030
	Calcium	0.0305	0.4000
	Cadmium	0.0001	0.0040
	Chromium	ND	0.0100
	Iron	ND	0.2000
	Potassium	0.0459	0.1000
	Magnesium	ND	0.0500
	Molybdenum	ND	0.0300
	Sodium	0.0284	0.2000
	Nickel	ND	0.0300
	Lead	ND	0.0400
	Antimony	0.0090	0.1000
	Selenium	ND	0.0700
[illegible]W2-653-3	Silver	ND	0.0060
	Arsenic	ND	0.0300
	Barium	0.0007	0.0030
	Calcium	0.0319	0.4000
	Cadmium	ND	0.0040
	Chromium	ND	0.0100
	Iron	0.0232	0.2000
	Potassium	ND	0.1000
	Magnesium	ND	0.0500
	Molybdenum	0.0102	0.0300
	Sodium	0.0770	0.2000
	Nickel	ND	0.0300
	Lead	ND	0.0400
	Antimony	0.0112	0.1000
	Selenium	0.0176	0.0700

SPIKE SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	CONC SPIKE	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
17873-68367	Silver	0.0500	0.0017	0.0521	100.8	80.0	120.0
	Arsenic	2.0000	0.0089	2.0135	100.2	80.0	120.0

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

10/03/97
16:30:22
Group: 17913

Analysis Batch Number: ICPWA-09/30/97-118 -1
Test Identification : ICPWA-*Metals by ICP
mber of Samples : 17
atch Data-Date/Time : 09/30/97 / 13:15:40

Sequence : DATA273

IKE

MPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	CONC SPIKE	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
17873-68367	Barium	2.0000	0.1248	2.0553	96.5	80.0	120.0
	Calcium	2.0000	121.0747	125.0031	196.4(2a)	80.0	120.0
	Cadmium	0.0500	-0.0011	0.0481	98.4	80.0	120.0
	Chromium	0.2000	0.0038	0.2011	98.6	80.0	120.0
	Iron	1.0000	0.7962	1.5954	79.9(B)	80.0	120.0
	Potassium	10.0000	30.2554	40.8598	106.0	80.0	120.0
	Magnesium	2.0000	61.8850	64.8451	148.0(2a)	80.0	120.0
	Molybdenum	0.5000	0.0141	0.5240	102.0	80.0	120.0
	Sodium	3.0000	24.4664	28.1341	122.3(2a)	80.0	120.0
	Nickel	0.5000	0.0080	0.4974	97.9	80.0	120.0
	Lead	0.5000	0.0023	0.4776	95.1	80.0	120.0
	Antimony	0.5000	0.0517	0.5399	97.6	80.0	120.0
	Selenium	2.0000	-0.0132	2.0388	102.6	80.0	120.0

MSD

MPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	RESULT 2	%REC2 #	QC LIMITS LOWER	QC LIMITS UPPER	RPD #	LIMIT
873-68367	Silver	0.0500	0.0017	0.0482	93.0	80.0	120.0	7.8	20.0
	Arsenic	2.0000	0.0089	1.9954	99.3	80.0	120.0	0.9	20.0
	Barium	2.0000	0.1248	2.0108	94.3	80.0	120.0	2.2	20.0
	Calcium	2.0000	121.0747	122.0898	50.8(2a)	80.0	120.0	2.4(2a)	20.0
	Cadmium	0.0500	-0.0011	0.0482	98.6	80.0	120.0	0.2	20.0
	Chromium	0.2000	0.0038	0.1997	97.9	80.0	120.0	0.7	20.0
	Iron	1.0000	0.7962	2.3672	157.1(B)	80.0	120.0	39.0(B)	20.0
	Potassium	10.0000	30.2554	39.4739	92.2	80.0	120.0	3.5	20.0
	Magnesium	2.0000	61.8850	62.9909	55.3(2a)	80.0	120.0	2.9(2a)	20.0
	Molybdenum	0.5000	0.0141	0.4953	96.2	80.0	120.0	5.6	20.0
	Sodium	3.0000	24.4664	27.0086	84.7	80.0	120.0	4.1(2a)	20.0
	Nickel	0.5000	0.0080	0.4850	95.4	80.0	120.0	2.5	20.0
	Lead	0.5000	0.0023	0.5114	101.8	80.0	120.0	6.8	20.0
	Antimony	0.5000	0.0517	0.6089	111.4	80.0	120.0	12.0	20.0
	Selenium	2.0000	-0.0132	1.9676	99.0	80.0	120.0	3.6	20.0

PLICATE

MPLE#	ANALYTE	RESULT 1	RESULT 2	RPD #	LIMIT	DILUTION
17873-68373	Silver	0.0017	0.0000	200.0(11)	20.0	1.00
	Arsenic	0.0089	0.0136	41.8(11)	20.0	1.00
	Barium	0.1248	0.1255	0.6	20.0	1.00
	Calcium	121.0747	121.5251	0.4	20.0	1.00
	Cadmium	-0.0011	0.0000	200.0(11)	20.0	1.00
	Chromium	0.0038	0.0000	200.0(11)	20.0	1.00
	Iron	0.7962	0.6656	17.9	20.0	1.00
	Potassium	30.2554	30.4789	0.7	20.0	1.00
	Magnesium	61.8850	62.2999	0.7	20.0	1.00
	Molybdenum	0.0141	0.0029	131.8(11)	20.0	1.00
	Sodium	24.4664	24.6815	0.9	20.0	1.00
	Nickel	0.0080	0.0070	13.3	20.0	1.00
	Lead	0.0023	0.0000	200.0(11)	20.0	1.00
	Antimony	0.0517	0.0820	45.3(11)	20.0	1.00
	Selenium	-0.0132	0.0000	200.0(11)	20.0	1.00

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

10/03/97
16:30:24
Group: 17913

Analysis Batch Number: ICPWA-09/30/97-118 -1
Test Identification : ICPWA-*Metals by ICP
umber of Samples : 17
atch Data-Date/Time : 09/30/97 / 13:15:40

Sequence : DATA273

ONTROL AMPLE#	ANALYTE	CONC FOUND	CONC KNOWN	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
17873-68372	Silver	0.0497	0.0500	99.4	80.0	120.0
	Arsenic	1.9664	2.0000	98.3	80.0	120.0
	Barium	1.9262	2.0000	96.3	80.0	120.0
	Calcium	2.0828	2.0000	104.1	80.0	120.0
	Cadmium	0.0497	0.0500	99.4	80.0	120.0
	Chromium	0.2019	0.2000	100.9	80.0	120.0
	Iron	1.1320	1.0000	113.2	80.0	120.0
	Potassium	9.7817	10.0000	97.8	80.0	120.0
	Magnesium	1.9966	2.0000	99.8	80.0	120.0
	Molybdenum	0.4942	0.5000	98.8	80.0	120.0
	Sodium	3.3291	3.0000	111.0	80.0	120.0
	Nickel	0.5092	0.5000	101.8	80.0	120.0
	Lead	0.4854	0.5000	97.1	80.0	120.0
	Antimony	0.5052	0.5000	101.0	80.0	120.0
	Selenium	1.9367	2.0000	96.8	80.0	120.0
7873-68372-2	Silver	0.0497	0.0500	99.4	80.0	120.0
	Arsenic	1.9664	2.0000	98.3	80.0	120.0
	Barium	1.9262	2.0000	96.3	80.0	120.0
	Calcium	2.0828	2.0000	104.1	80.0	120.0
	Cadmium	0.0497	0.0500	99.4	80.0	120.0
	Chromium	0.2019	0.2000	100.9	80.0	120.0
	Iron	1.1320	1.0000	113.2	80.0	120.0
	Potassium	9.7817	10.0000	97.8	80.0	120.0
	Magnesium	1.9966	2.0000	99.8	80.0	120.0
	Molybdenum	0.4942	0.5000	98.8	80.0	120.0
	Sodium	3.3291	3.0000	111.0	80.0	120.0
	Nickel	0.5092	0.5000	101.8	80.0	120.0
	Lead	0.4854	0.5000	97.1	80.0	120.0
	Antimony	0.5052	0.5000	101.0	80.0	120.0
	Selenium	1.9367	2.0000	96.8	80.0	120.0

CV #	ANALYTE	TRUE VALUE	BATCH READ	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
CV-	Silver	0.4000	0.4084	102.1	90.0	110.0
	Arsenic	1.6000	1.5920	99.5	90.0	110.0
	Barium	4.0000	3.8792	97.0	90.0	110.0
	Calcium	40.0000	40.1790	100.4	90.0	110.0
	Cadmium	4.0000	3.9010	97.5	90.0	110.0
	Chromium	4.0000	4.0676	101.7	90.0	110.0
	Iron	4.0000	3.9906	99.8	90.0	110.0
	Potassium	40.0000	40.4391	101.1	90.0	110.0
	Magnesium	20.0000	19.9911	100.0	90.0	110.0
	Molybdenum	20.0000	20.1293	100.6	90.0	110.0
	Sodium	40.0000	40.7115	101.8	90.0	110.0
	Nickel	8.0000	7.9225	99.0	90.0	110.0
	Lead	20.0000	19.8517	99.3	90.0	110.0
	Antimony	4.0000	3.9728	99.3	90.0	110.0
	Selenium	1.6000	1.6066	100.4	90.0	110.0
CCV1--2	Silver	0.4000	0.3946	98.6	90.0	110.0

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

10/03/97
16:30:26
Group: 17913

Analysis Batch Number: ICPWA-09/30/97-118 -1
Test Identification : ICPWA-*Metals by ICP
Number of Samples : 17
Batch Data-Date/Time : 09/30/97 / 13:15:40

Sequence : DATA273

CV #	ANALYTE	TRUE VALUE	BATCH READ	% REC	QC LIMITS #	LOWER	UPPER
CCV1--2	Arsenic	1.6000	1.5505	96.9		90.0	110.0
	Barium	4.0000	3.7382	93.5		90.0	110.0
	Calcium	40.0000	39.5678	98.9		90.0	110.0
	Cadmium	4.0000	3.8471	96.2		90.0	110.0
	Chromium	4.0000	3.9923	99.8		90.0	110.0
	Iron	4.0000	3.9404	98.5		90.0	110.0
	Potassium	40.0000	39.1423	97.9		90.0	110.0
	Magnesium	20.0000	19.5563	97.8		90.0	110.0
	Molybdenum	20.0000	19.6449	98.2		90.0	110.0
	Sodium	40.0000	38.7826	97.0		90.0	110.0
	Nickel	8.0000	7.7884	97.4		90.0	110.0
	Lead	20.0000	19.6067	98.0		90.0	110.0
	Antimony	4.0000	3.9268	98.2		90.0	110.0
	Selenium	1.6000	1.5653	97.8		90.0	110.0
CCV2--3	Silver	0.4000	0.3960	99.0		90.0	110.0
	Arsenic	1.6000	1.6100	100.6		90.0	110.0
	Barium	4.0000	3.6530	91.3		90.0	110.0
	Calcium	40.0000	40.9800	102.5		90.0	110.0
	Cadmium	4.0000	4.0089	100.2		90.0	110.0
	Chromium	4.0000	4.0845	102.1		90.0	110.0
	Iron	4.0000	4.0777	101.9		90.0	110.0
	Potassium	40.0000	38.4013	96.0		90.0	110.0
	Magnesium	20.0000	19.6420	98.2		90.0	110.0
	Molybdenum	20.0000	20.1056	100.5		90.0	110.0
	Sodium	40.0000	37.3168	93.3		90.0	110.0
	Nickel	8.0000	8.0271	100.3		90.0	110.0
	Lead	20.0000	20.3417	101.7		90.0	110.0
	Antimony	4.0000	4.1182	103.0		90.0	110.0
	Selenium	1.6000	1.6101	100.6		90.0	110.0
CV3--4	Silver	0.4000	0.4214	105.4		90.0	110.0
	Arsenic	1.6000	1.6813	105.1		90.0	110.0
	Barium	4.0000	3.9070	97.7		90.0	110.0
	Calcium	40.0000	42.8451	107.1		90.0	110.0
	Cadmium	4.0000	4.1982	105.0		90.0	110.0
	Chromium	4.0000	4.2918	107.3		90.0	110.0
	Iron	4.0000	4.2739	106.8		90.0	110.0
	Potassium	40.0000	40.5605	101.4		90.0	110.0
	Magnesium	20.0000	20.6703	103.4		90.0	110.0
	Molybdenum	20.0000	21.1934	106.0		90.0	110.0
	Sodium	40.0000	40.2441	100.6		90.0	110.0
	Nickel	8.0000	8.4069	105.1		90.0	110.0
	Lead	20.0000	21.3092	106.5		90.0	110.0
	Antimony	4.0000	4.1204	103.0		90.0	110.0
	Selenium	1.6000	1.7315	108.2		90.0	110.0
CCV4--5	Silver	0.4000	0.3969	99.2		90.0	110.0
	Arsenic	1.6000	1.5485	96.8		90.0	110.0
	Barium	4.0000	3.8385	96.0		90.0	110.0
	Calcium	40.0000	38.6554	96.6		90.0	110.0
	Cadmium	4.0000	3.6884	92.2		90.0	110.0

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

10/03/97
16:30:29
Group: 17913

Analysis Batch Number: ICPWA-09/30/97-118 -1
Test Identification : ICPWA-*Metals by ICP
Number of Samples : 17
Batch Data-Date/Time : 09/30/97 / 13:15:40

Sequence : DATA273

CCV #	ANALYTE	TRUE VALUE	BATCH READ	% REC	#	QC LIMITS LOWER	QC LIMITS UPPER
CCV4--5	Chromium	4.0000	3.9031	97.6		90.0	110.0
	Iron	4.0000	3.8788	97.0		90.0	110.0
	Potassium	40.0000	39.4294	98.6		90.0	110.0
	Magnesium	20.0000	19.4591	97.3		90.0	110.0
	Molybdenum	20.0000	19.2036	96.0		90.0	110.0
	Sodium	40.0000	39.9941	100.0		90.0	110.0
	Nickel	8.0000	7.5063	93.8		90.0	110.0
	Lead	20.0000	19.0487	95.2		90.0	110.0
	Antimony	4.0000	3.8296	95.7		90.0	110.0
	Selenium	1.6000	1.4715	92.0		90.0	110.0
CCV5--6	Silver	0.4000	0.3967	99.2		90.0	110.0
	Arsenic	1.6000	1.5921	99.5		90.0	110.0
	Barium	4.0000	3.6781	92.0		90.0	110.0
	Calcium	40.0000	40.2719	100.7		90.0	110.0
	Cadmium	4.0000	3.8603	96.5		90.0	110.0
	Chromium	4.0000	4.0058	100.1		90.0	110.0
	Iron	4.0000	3.9896	99.7		90.0	110.0
	Potassium	40.0000	38.1655	95.4		90.0	110.0
	Magnesium	20.0000	19.6288	98.1		90.0	110.0
	Molybdenum	20.0000	19.5825	97.9		90.0	110.0
	Sodium	40.0000	37.4663	93.7		90.0	110.0
	Nickel	8.0000	7.8215	97.8		90.0	110.0
	Lead	20.0000	19.9893	99.9		90.0	110.0
	Antimony	4.0000	3.9636	99.1		90.0	110.0
	Selenium	1.6000	1.5106	94.4		90.0	110.0
CV6--7	Silver	0.4000	0.4014	100.3		90.0	110.0
	Arsenic	1.6000	1.5786	98.7		90.0	110.0
	Barium	4.0000	3.8061	95.2		90.0	110.0
	Calcium	40.0000	39.8883	99.7		90.0	110.0
	Cadmium	4.0000	3.8145	95.4		90.0	110.0
	Chromium	4.0000	4.0193	100.5		90.0	110.0
	Iron	4.0000	4.0182	100.5		90.0	110.0
	Potassium	40.0000	39.1967	98.0		90.0	110.0
	Magnesium	20.0000	19.7641	98.8		90.0	110.0
	Molybdenum	20.0000	19.6012	98.0		90.0	110.0
	Sodium	40.0000	39.3966	98.5		90.0	110.0
	Nickel	8.0000	7.7887	97.4		90.0	110.0
	Lead	20.0000	19.8417	99.2		90.0	110.0
	Antimony	4.0000	4.0360	100.9		90.0	110.0
	Selenium	1.6000	1.5065	94.2		90.0	110.0

CCB#	ANALYTE	CONC FOUND	#	CONC LIMIT
CB-	Silver	ND		0.0060
	Arsenic	ND		0.0300
	Barium	0.0009		0.0030
	Calcium	0.0254		0.4000
	Cadmium	0.0005		0.0040
	Chromium	0.0040		0.0100
	Iron	ND		0.2000

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

10/03/97
16:30:31
Group: 17913

Analysis Batch Number: ICPWA-09/30/97-118 -1
Test Identification : ICPWA-*Metals by ICP
mber of Samples : 17
atch Data-Date/Time : 09/30/97 / 13:15:40

Sequence : DATA273

CB#	ANALYTE	CONC FOUND #	CONC LIMIT
CB-	Potassium	0.0651	0.1000
	Magnesium	0.0146	0.0500
	Molybdenum	0.0061	0.0300
	Sodium	0.0178	0.2000
	Nickel	0.0132	0.0300
	Lead	ND	0.0400
	Antimony	0.0543	0.1000
	Selenium	0.0084	0.0700
CCB1-	Silver	0.0017	0.0060
	Arsenic	ND	0.0300
	Barium	0.0011	0.0030
	Calcium	0.0254	0.4000
	Cadmium	0.0008	0.0040
	Chromium	0.0045	0.0100
	Iron	ND	0.2000
	Potassium	0.0715	0.1000
	Magnesium	0.0119	0.0500
	Molybdenum	0.0108	0.0300
	Sodium	ND	0.2000
	Nickel	0.0037	0.0300
	Lead	ND	0.0400
	Antimony	0.0427	0.1000
	Selenium	ND	0.0700
CB2-	Silver	0.0040	0.0060
	Arsenic	0.0207	0.0300
	Barium	0.0011	0.0030
	Calcium	0.0272	0.4000
	Cadmium	0.0002	0.0040
	Chromium	0.0034	0.0100
	Iron	0.0178	0.2000
	Potassium	0.0460	0.1000
	Magnesium	0.0244	0.0500
	Molybdenum	0.0047	0.0300
	Sodium	ND	0.2000
	Nickel	0.0102	0.0300
	Lead	0.0091	0.0400
	Antimony	0.0533	0.1000
	Selenium	0.0295	0.0700
CCB3-	Silver	0.0047	0.0060
	Arsenic	0.0141	0.0300
	Barium	0.0006	0.0030
	Calcium	0.0277	0.4000
	Cadmium	0.0018	0.0040
	Chromium	0.0029	0.0100
	Iron	0.0381	0.2000
	Potassium	ND	0.1000
	Magnesium	0.0174	0.0500
	Molybdenum	0.0086	0.0300
	Sodium	ND	0.2000
	Nickel	0.0068	0.0300

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

10/03/97
16:30:33
Group: 1793

Analysis Batch Number: ICPWA-09/30/97-118 -1
Test Identification : ICPWA-*Metals by ICP
Number of Samples : 17
Batch Data-Date/Time : 09/30/97 / 13:15:40

Sequence : DATA273

CB#	ANALYTE	CONC FOUND #	CONC LIMIT
CB3-	Lead	ND	0.0400
	Antimony	0.0301	0.1000
	Selenium	0.0483	0.0700
CB4-	Silver	ND	0.0060
	Arsenic	0.0073	0.0300
	Barium	0.0008	0.0030
	Calcium	0.0253	0.4000
	Cadmium	0.0023	0.0040
	Chromium	0.0003	0.0100
	Iron	0.0100	0.2000
	Potassium	ND	0.1000
	Magnesium	0.0051	0.0500
	Molybdenum	0.0048	0.0300
	Sodium	0.0534	0.2000
	Nickel	0.0102	0.0300
	Lead	0.0125	0.0400
	Antimony	ND	0.1000
	Selenium	ND	0.0700
CCB5-	Silver	ND	0.0060
	Arsenic	0.0082	0.0300
	Barium	0.0001	0.0030
	Calcium	0.0206	0.4000
	Cadmium	ND	0.0040
	Chromium	ND	0.0100
	Iron	0.0219	0.2000
	Potassium	ND	0.1000
	Magnesium	0.0068	0.0500
	Molybdenum	0.0042	0.0300
	Sodium	ND	0.2000
	Nickel	0.0067	0.0300
	Lead	0.0279	0.0400
	Antimony	0.0248	0.1000
	Selenium	ND	0.0700
CB6-	Silver	0.0013	0.0060
	Arsenic	0.0035	0.0300
	Barium	0.0013	0.0030
	Calcium	0.0236	0.4000
	Cadmium	0.0021	0.0040
	Chromium	0.0042	0.0100
	Iron	0.0298	0.2000
	Potassium	ND	0.1000
	Magnesium	ND	0.0500
	Molybdenum	ND	0.0300
	Sodium	ND	0.2000
	Nickel	0.0021	0.0300
	Lead	0.0136	0.0400
	Antimony	0.0799	0.1000
	Selenium	ND	0.0700

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

10/03/97
16:30:34
Group: 17913

Analysis Batch Number: ICPWA-09/30/97-118 -1
Test Identification : ICPWA-*Metals by ICP Sequence : DATA273
mber of Samples : 17
atch Data-Date/Time : 09/30/97 / 13:15:40

---------- Result Footnotes ----------
a) - Recovery is insignificant because sample conc. is >4x spike added.
(B) - Nonhomogeneous sample
(1) - Both Duplicate results are less than the MDL.

---------- Batch Notes ----------
Serial dilutions for calcium, magnesium, and sodium were recovered within acceptance limits of +/- 10%. A post digestion spike for iron was recovered within acceptance limits of +/- 15%.

Groups & Samples

17873-68367	17873-68368	17873-68369	17873-68371	17873-68372	17873-68373	17897-68426	17897-68427
17900-68432	17900-68433	17904-68439	17905-68440	17907-68442	17907-68443	17912-68462	17913-68464
17917-68478	17921-68492	17921-68493	17936-68547				

CHAIN OF CUSTODY RECORD

6474

ON SITE
TECHNOLOGIES, LTD.

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

Date: 9/16/97

Page 1 of 1

Purchase Order No.: 6463	Job No.		
SEND INVOICE TO: Name ACCOUNTS REC.		REPORT RESULTS TO: Name DAVID COX	Title
Company ON SITE	Dept.	Company ON SITE TECH	
Address		Mailing Address	
City, State, Zip		City, State, Zip	
		Telephone No. 505-325-2132	Telefax No. -6256

Sampling Location: CONOCO 28-7-19

Sampler:

SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	MATRIX	PRES.	Number of Containers	RCRA METALS / TOTAL	LAB ID
4-1358-MET	9/15/97	1230	WW	cool HNO3	1	✓	16105-6463 pH<2

ANALYSIS REQUESTED

Relinquished by: ~~Date/Time~~		Received by: Nicole Dirks	Date/Time 09/17/97 1730
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

ON SITE TECHNOLOGIES, LTD.

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

CHAIN OF CUSTODY RECORD

6463

Date: 9-15-97

Purchase Order No.:

Job No. 4-1358

SEND INVOICE TO
Name: Larry Trujillo
Company: Conoco
Dept.:
Address:
City, State, Zip:

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

Sampling Location: 28-7-19

Sampler: Larry Trujillo

ANALYSIS REQUESTED

SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	MATRIX	PRES.	Number of Containers	API	Total Metals								LAB ID
4-1358 - API	9/15/97	1246	H2O	NA	1	✓									
4-1358 - Met	9/15/97	1250	H2O	Acid	2		✓								

Relinquished by: Larry Trujillo — Date/Time: 9/15/97 [illegible]
Received by: [signature] — Date/Time: 9/15/97 1050
Relinquished by: — Date/Time:
Received by: — Date/Time:
Relinquished by: — Date/Time:
Received by: — Date/Time:

Method of Shipment:

Rush | 24-48 Hours | 10 Working Days | Special Instructions:

Authorized by: ____________ Date ________
(Client Signature Must Accompany Request)

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

CHAIN OF CUSTODY RECORD

6463

ON SITE TECHNOLOGIES, LTD.

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

Date: 9-15-97

Page 1 of 1

Purchase Order No.:	Job No. 4-1358		
SEND INVOICE TO: Name	Larry Trujillo	REPORT RESULTS TO: Name	Larry Trujillo / Title
Company	Conoco / Dept.	Company	Conoco
Address		Mailing Address	
City, State, Zip		City, State, Zip	
		Telephone No.	Telefax No.
Sampling Location:	28-7-19		
Sampler:	Larry Trujillo		

SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	MATRIX	PRES.	Number of Containers	API	Total Metals	LAB ID
4-1358 - API	9/15/97	1246	H2O	NA	1	✓		16184-6463
4-1358 - Met	9/15/97	~~1246~~ 1330	H2O	Nitric Acid	2		✓	16185 L

Relinquished by: Larry Trujillo	Date/Time 9/15/97 1656	Received by:	Date/Time 9/15/97 1656
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

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	*Larry Trujillo*	Date:	17-Jun-97
Company:	*On Site Technologies, Ltd. c/o Conoco*	COC No.:	*6417*
Address:	*612 E. Murray Drive*	Sample No.:	*14895*
City, State:	*Farmington, NM 87401*	Job No.:	*4-1358*

Project Name:	***Conoco - San Juan 28-7-19***				
Project Location:	***San Juan 28-7-19***				
Sampled by:	LT	Date:	10-Jun-97	Time:	13:00
Analyzed by:	DC	Date:	12-Jun-97		
Sample Matrix:	*Liquid*				

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
Benzene	27.4	ug/L	0.2	ug/L
Toluene	13.8	ug/L	0.2	ug/L
Ethylbenzene	1.0	ug/L	0.2	ug/L
m,p-Xylene	3.0	ug/L	0.2	ug/L
o-Xylene	ND	ug/L	0.2	ug/L
TOTAL	45.3	ug/L		

ND - Not Detected at Limit of Quantitation

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

Approved By:
Date: 6/17/97

CHAIN OF CUSTODY RECORD

0411

ON SITE TECHNOLOGIES, LTD.

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

Date: 6/10/1997

Page 1 of 1

Purchase Order No.:	Job No. 4-1258		
SEND INVOICE TO: Name	Larry Trujillo	REPORT RESULTS TO: Name	Larry Trujillo / Title
Company	Conoco	Company	Conoco
Dept.		Mailing Address	
Address		City, State, Zip	
City, State, Zip		Telephone No. / Telefax No.	

Sampling Location: San Juan 28-7-19

Sampler: Larry Trujillo

SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	MATRIX	PRES.	Number of Containers	ANALYSIS REQUESTED: BTEX	LAB ID
San Juan 28-7-19 Sample #1	6/10/97	1300	H_2O	HCl	1	✓	[illegible]
San Juan 28-7-19 Sample #2	6/10/97	1300	H_2O	HCl	1	✓	

Relinquished by:	Date/Time 6/10/97	Received by:	Date/Time 6/10/97 1645
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 – Samplor Goldenrod – Client

OFF: (505) 325-5667

ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	*Michael K. Lane*	Date:	28-Apr-97
Company:	*On Site Technologies, Ltd. c/o Conoco*	COC No.:	*6321*
Address:	*612 E. Murray Drive*	Sample No.:	*14293*
City, State	*Farmington, NM 87401*	Job No.:	*2-1000*

Project Name:	***Conoco - San Juan 28-7 #19***				
Project Location:	***Monitor Well***				
Sampled by:	ML	Date:	21-Apr-97	Time:	13:50
Analyzed by:	DC	Date:	26-Apr-97		
Sample Matrix:	*Liquid*				

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
Benzene	168.2	ug/L	0.2	ug/L
Toluene	119.6	ug/L	0.2	ug/L
Ethylbenzene	3.7	ug/L	0.2	ug/L
m,p-Xylene	11.4	ug/L	0.2	ug/L
o-Xylene	15.6	ug/L	0.2	ug/L
TOTAL	318.5	ug/L		

ND - Not Detected at Limit of Quantitation

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

Approved By:
Date: 4/28/97

CHAIN OF CUSTODY RECORD

6321

ON SITE TECHNOLOGIES, LTD.

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

Date: 4-21-97

Page 1 of 1

Purchase Order No.:	Job No. Z-1358		
SEND INVOICE TO: Name	c/o Michael Lane - On Site		
Company	Conoco	Dept.	
Address			
City, State, Zip			
REPORT RESULTS TO: Name	Michael Lane	Title	Sampler
Company	On Site		
Mailing Address			
City, State, Zip			
Telephone No.		Telefax No.	
Sampling Location:	San Juan 28-7 #19		
Sampler:	Michael Lane		

SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	MATRIX	PRES.	Number of Containers	8020 BTEX	LAB ID
Monitor Well	4/21	1350	Water	H_2SO_4	2	✓	121293-16321

ANALYSIS REQUESTED

Relinquished by:	Date/Time 4/21/97 : 1650	Received by: Heidi Reese	Date/Time 4/21/97 1700
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time

Method of Shipment:

Authorized by: _____ Date 4/21/97

(Client Signature Must Accompany Request)

Rush	24-48 Hours	10 Working Days	Special Instructions:

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

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	*Micheal Lane*	Date:	31-Mar-97
Company:	*On Site Technologies, Ltd. c/o Conoco*	COC No.:	*5099*
Address:	*612 E. Murray Drive*	Sample No.:	*14046*
City, State:	*Farmington, NM 87401*	Job No.:	*4-1358*

Project Name:	***Conoco - 28-7 #19***				
Project Location:	***MW-1***				
Sampled by:	HR	Date:	26-Mar-97	Time:	15:30
Analyzed by:	DC	Date:	27-Mar-97		
Sample Matrix:	*Liquid*				

Parameter	*Result*	*Unit of Measure*	*Detection Limit*	*Unit of Measure*
Benzene	48.1	ug/L	0.2	ug/L
Toluene	25.9	ug/L	0.2	ug/L
Ethylbenzene	1.0	ug/L	0.2	ug/L
m,p-Xylene	2.1	ug/L	0.2	ug/L
o-Xylene	2.5	ug/L	0.2	ug/L
TOTAL	79.6	ug/L		

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

Approved By:

Date: 3/31/97

CHAIN OF CUSTODY RECORD

5099

ON SITE TECHNOLOGIES, LTD.

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

Date: 3/26/11

Page 1 of 1

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

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
27-1 & 19, MW-1	3/26/11				2	X	

Relinquished by: Heidi Kaese	Date/Time 3/26/11	Received by:	Date/Time 3/29 1145
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time

Method of Shipment:

Authorized by: Heidi Kaese Date 3/26/11
(Client Signature Must Accompany Request)

Rush	24-48 Hours	10 Working Days	Special Instructions:

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