

**3R - 325**

# **REPORTS**

**DATE:**

1999

Public Service Company  
of New Mexico  
Alvarado Square MS 0408  
Albuquerque, NM 87158

RECEIVED

April 5, 1999

APR 07 1999

Mr. William Olson  
Hydrogeologist  
Oil Conservation Division  
2040 So. Pacheco  
Santa Fe, New Mexico 87505

ENVIRONMENTAL BUREAU  
OIL CONSERVATION DIVISION



**RE: 1999 SAN JUAN BASIN ANNUAL GROUNDWATER REPORT**

Dear Bill:

PNM is pleased to submit the 1999 Annual Groundwater Report on Unlined Surface Impoundments in the San Juan Basin. Pursuant to PNM's Groundwater Management Program for Unlined Surface Impoundment Closures, the report details the ongoing investigation/remedial activities at unlined surface impoundments having groundwater contamination as identified by PNM. A list of groundwater sites reported in this document is provided below.

|                          |                       |
|--------------------------|-----------------------|
| Blanco Wash Drip         | Mangum 1E             |
| Davis 1                  | McClanahan 22         |
| Dogie East Pit           | McClanahan A 2E       |
| Dogie North Pit          | McCoy Gas Com A1      |
| Florance 124             | Miles Federal 1E Drip |
| Florance 32A             | O' Shea 1M            |
| Florance 40              | Patterson A Com A1    |
| Florance 44              | Pritchard 2           |
| Florance M 47X           | Randleman 1           |
| Hampton 4M               | Reid 16 Drip          |
| Honolulu Drip            | Turner 1A             |
| Ice Canyon Drip          | Wilmerding 1M         |
| Jacques 2A               | Zachry 18E            |
| Jicarilla Contract 147-6 |                       |
| Linda 1A                 |                       |

Consistent with PNM's San Juan Basin Groundwater Management Plan, PNM will request closure of four of the above sites, the Florance 32A, Jacques 2A, Mangum 1E and the McClanahan A2E, with the submittal of the 1<sup>st</sup> Quarter 1999 Pit Closures Report. This request is based upon the analytical data collected over the last two years at each of the sites. BTEX concentrations have been consistently below WQCC standards for four consecutive quarters.

Upon approval of the groundwater closure report, PNM will plug and abandon all of the groundwater monitoring wells at each of the locations. The concrete pad and metal vault surrounding each well will be removed. The well casing will be cut to ground surface and each well will be plugged to the surface

Bill Olson  
04/05/99  
Page 2

with cement containing 5% bentonite. If you have any questions regarding the contents of the report, please contact me at (505) 241-2974.

Sincerely,

A handwritten signature in cursive script, appearing to read "Maureen Gannon", with a horizontal line extending to the right.

Maureen Gannon  
Project Manager

Enclosure

cc: Colin Adams, Esq.  
Ingrid Deklau, WFS  
Denny Foust, OCD-Aztec Office  
Ron Johnson  
Mark Sikelianos  
Bill VonDrehle, WFS



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APR 07 1999

ENVIRONMENTAL BUREAU  
OIL CONSERVATION DIVISION

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# Annual Groundwater Report 1999

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Volume II

***Unlined Surface Impoundments  
San Juan Basin***



## **Groundwater Site Summary Report**

Quarter/Year: 2<sup>nd</sup>/98, 3<sup>rd</sup>/98, 4<sup>th</sup>/98 & 1<sup>st</sup>/99

Copies: WFS(1)  
Operator (1)  
NMOCD District Office (1)  
NMOCD Santa Fe (1)

Operator: Amoco  
Sec: 6 Twn: 25N R: 5W Unit: C  
Canyon: Tapecito

Vulnerable Class: Expanded  
OCD Ranking: 40  
Lead Agency: NMOCD

Topo Map: previously submitted  
Site Map with Analytical Results: Figure 1  
Well Completion Diagram: Figure 2  
Groundwater Contour Map: Figure 3  
Hydrograph: NA  
Full-suite of Groundwater Sampling Results: Table 1  
Analytical Results: attached

### **Site Hydrology:**

The Jicarilla 147-6 site is located in a side drainage off Tapecito Wash. Tapecito is tributary to Largo Canyon, in the far southeast part of its drainage area. The tributary wash runs northwest, and the site lies on the southern edge of the wash. Tapecito is about one-half mile to the northwest. The site lies at an elevation of about 6430 ft. amsl.

The upgradient well (MW-1) encountered uniformly sandy materials to a depth of about 20 feet. Subsurface materials become finer-grained towards the northwest (downgradient), as well MW-3 encountered very silty sands with traces of clay.

Depth to water is about 18 to 22 feet below land surface. Groundwater flow in January, 1999 was towards the northwest, parallel to the topographic gradient and flow direction in the unnamed wash (see Figure 1). As the site has only recently been investigated, only one quarter of data are available and therefore a hydrograph was not prepared for the site.

### **Activities for Previous Year:**

PNM installed four groundwater monitoring wells at the site on January 27, 1999. All well installations were conducted pursuant to the PNM San Juan Basin Groundwater Management Plan. Figure 2 presents a typical well completion diagram for the monitoring well installation. On January 28, 1999, water levels were measured in each of the four wells and groundwater was sampled for benzene, toluene, ethylbenzene, and xylenes (BTEX). Sampling was performed in strict compliance with EPA protocol. In all instances, PNM delivered the samples to OnSite Technologies, Farmington, New Mexico for analysis of BTEX using EPA Method 8020.

### **Results:**

Figure 1 presents the Jicarilla Contract 147-6 site map with BTEX analytical results to date. With the exception of MW-1, all wells at the site show BTEX concentrations above WQCC standards. Manganese in MW-2 is above the WQCC secondary aesthetics standard of 0.2 mg/l. Since this standard is not a health-based standard, PNM is reporting this result but will not conduct further sampling for manganese.

### **Future Actions:**

At the time of pit remediation in July 1998, PNM removed over 12,000 cubic yards of contaminated soil. PNM will continue to monitor the Jicarilla Contract 147-6 to determine if the extensive remediation at the site was effective and whether or not natural attenuation is presently occurring.

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### **Public Service Company of New Mexico - Gas Services**

Environmental Services Division - Alvarado Square, MS-0408  
Albuquerque, NM 87158

**Contact: Maureen Gannon**

**Telephone: 505-241-2974**

Figure 1.  
Jicarilla 147-6 Site Map and Analytical Results  
Groundwater Concentrations in (ppb)

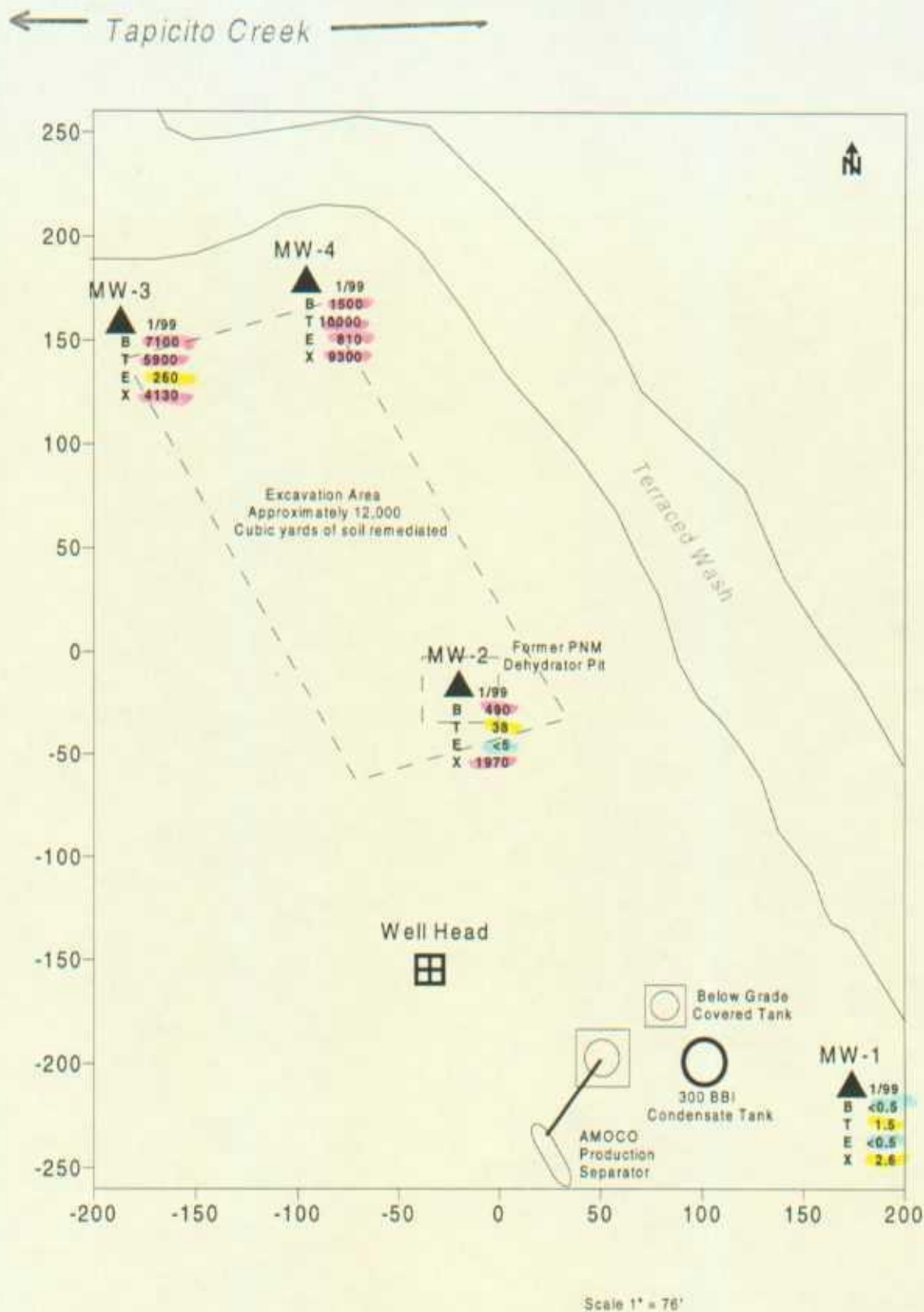


Figure 2.

ABOVE GROUND STEEL VAULT  
WITH LOCKING CAP

3'

GL TO TOC DISTANCE

TOC MEASUREMENT POINT 0'

CONCRETE SLAB

0' GL

NEAT CEMENT SLURRY W/5% BENTONITE

PVC PIPE

2"

9.60

11.60

BENTONITE PLUG (1/4" PELLETS)

2' plug

12.60

SAND (-FILTER PACK-)

10/20

20.49

TOP of SCREEN

STATIC WATER LEVEL

PVC SCREEN

15' of 0.01"

27.60

27.90

BOTTOM of SCREEN

END CAP TD

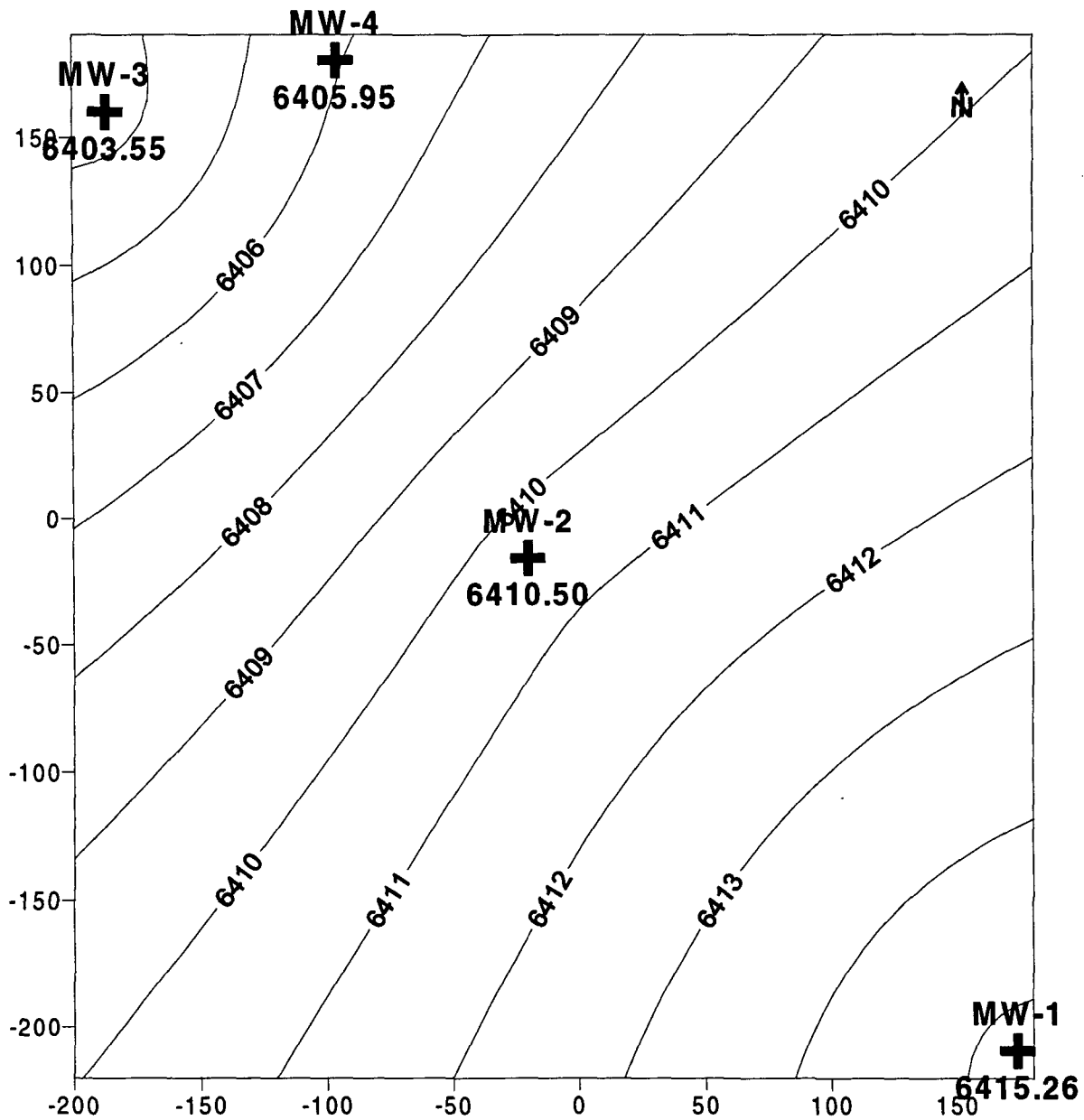
TOTAL DEPTH OF BORE HOLE



### Well Completion Diagram

|             |                 |
|-------------|-----------------|
| SITE NAME   | Jicarilla 147-6 |
| WELL NUMBER | MW-1            |
| DATE        | 1/27/99         |
| RECORDER    | M.S.            |

**Figure 3.**  
**Jicarilla 147-6 Groundwater Contour Map**  
**(January, 1999)**



S/Surfer/147-6/12899.srf

SCALE IN FEET  
(X-axis = Easting, Y-axis = Northing)

**Table 1. Jicarilla 7-6 Groundwater Sampling Results, January 28, 1999**  
(mg/L unless otherwise specified)

| Constituent                                  | WQCC Stds. | MW-1                                                  | MW-2            | MW-3 | MW-4 | MW-5<br>(Duplicate<br>of MW-4) |
|----------------------------------------------|------------|-------------------------------------------------------|-----------------|------|------|--------------------------------|
| Benzene                                      | 0.01       | <0.0005                                               | 0.49            | 7.1  | 1.5  | 1.6                            |
| Toluene                                      | 0.75       | 0.0015                                                | 0.038           | 5.9  | 10   | 10                             |
| Ethylbenzene                                 | 0.75       | <0.0005                                               | <0.005          | 0.26 | 0.81 | 0.82                           |
| Xylenes m,p,o                                | 0.62       | 0.0026                                                | 1.97            | 4.13 | 9.3  | 9.5                            |
| PAHs                                         | 0.03       | NA                                                    | NA              | NA   | NA   | NA                             |
| Metals                                       |            |                                                       |                 |      |      |                                |
| As                                           | 0.1        | <0.03                                                 | <0.03           | NS   | NS   | NS                             |
| Ba                                           | 1          | 0.064                                                 | 0.513           | NS   | NS   | NS                             |
| Cd                                           | 0.01       | <0.002                                                | <0.002          | NS   | NS   | NS                             |
| Cr                                           | 0.05       | <0.010                                                | <0.01           | NS   | NS   | NS                             |
| Fe                                           | *1         | 0.3                                                   | <0.20           | NS   | NS   | NS                             |
| Pb                                           | 0.05       | <0.03                                                 | <0.03           | NS   | NS   | NS                             |
| Mn                                           | *0.2       | 0.005                                                 | <b>3.68</b>     | NS   | NS   | NS                             |
| Se                                           | 0.05       | <0.02                                                 | <0.02           | NS   | NS   | NS                             |
| Ag                                           | 0.05       | <0.006                                                | <0.006          | NS   | NS   | NS                             |
| Hg                                           | 0.002      | <0.00010                                              | <0.00010        | NS   | NS   | NS                             |
| Cations/Anions                               |            |                                                       |                 |      |      |                                |
| Ca                                           | NA         | 16                                                    | 92              | NS   | NS   | NS                             |
| K                                            | NA         | 3                                                     | 8.1             | NS   | NS   | NS                             |
| Mg                                           | NA         | 2.4                                                   | 16              | NS   | NS   | NS                             |
| Na                                           | NA         | 160                                                   | 340             | NS   | NS   | NS                             |
| Alkalinity                                   |            |                                                       |                 |      |      |                                |
| Alkalinity, Bicarbonate (CaCO <sub>3</sub> ) | NA         | 400                                                   | 1100            | NS   | NS   | NS                             |
| Alkalinity, Carbonate (CaCO <sub>3</sub> )   | NA         | <5                                                    | <5              | NS   | NS   | NS                             |
| Alkalinity, Hydroxide                        | NA         | <5                                                    | <5              | NS   | NS   | NS                             |
| Alkalinity, Total (CaCO <sub>3</sub> )       | NA         | 400                                                   | 1100            | NS   | NS   | NS                             |
| Chloride (Cl)                                | *250       | <10                                                   | 57              | NS   | NS   | NS                             |
| Specific Conductance                         | NA         | 970 $\mu$ S/cm                                        | 2200 $\mu$ S/cm | NS   | NS   | NS                             |
| Hardness (CaCO <sub>3</sub> )                | NA         | 51                                                    | 296             | NS   | NS   | NS                             |
| pH                                           | NA         | 7.92 pH units                                         | 7.07 pH units   | NS   | NS   | NS                             |
| Sulfate (SO <sub>4</sub> )                   | *600       | 130                                                   | 140             | NS   | NS   | NS                             |
| Total Dissolved Solids (TDS)                 | *1000      | 717                                                   | <b>1720</b>     | NS   | NS   | NS                             |
| Total Cation-Anion                           | NA         | 17.59 me/L                                            | 42.92 me/L      | NS   | NS   | NS                             |
| Difference Cation-Anion                      | NA         | 1.04 me/L                                             | 0.90 me/L       | NS   | NS   | NS                             |
| % Difference                                 | NA         | 5.9                                                   | 2.1             | NS   | NS   | NS                             |
|                                              | *          | Other Standards for Domestic Water Supply (aesthetic) |                 |      |      |                                |
|                                              | **         | Out of Acceptable Range, % Diff. +/-5                 |                 |      |      |                                |
|                                              | NA:        | Not Applicable                                        |                 |      |      |                                |
|                                              | NS:        | Not Sampled                                           |                 |      |      |                                |
|                                              | Bold:      | Concentration Above WQCC Standard                     |                 |      |      |                                |

OFF: (505) 325-5667



LAB: (505) 325-1556

March 03, 1999

**RECEIVED**

**MAR 15 1999**

Maureen Gannon  
PNM - Public Service Company of NM  
Alvarado Square Mail Stop 0408  
Albuquerque, NM 87158  
TEL: (505) 241-2974  
FAX (505) 241-2340

*15+ samples  
15+ Q+R. 1999*

RE: Jicarilla 147-6

Order No.: 9902001

Dear Maureen Gannon,

On Site Technologies, LTD. received 5 samples on 2/1/99 for the analyses presented in the following report.

The Samples were analyzed for the following tests:

- Alkalinity, Total (M2320 B)
- Arsenic, Dissolved (SW6010A)
- Barium, Dissolved (SW6010A)
- BTEX (SW8021B)
- Cadmium, Dissolved (SW6010A)
- Calcium, Dissolved (E215.1)
- Chloride (E325.3)
- Chromium, Dissolved (SW6010A)
- Conductivity (E120.1)
- Hardness, Total (M2340 B)
- Iron, Dissolved (SW6010A)
- Lead, Dissolved (SW6010A)
- Magnesium, Dissolved (E242.1)
- Manganese, Dissolved (SW6010A)
- Mercury, Dissolved (SW7470)
- pH (E150.1)
- Potassium, Dissolved (E258.1)
- Selenium, Dissolved (SW7742)
- Silver, Dissolved (SW6010A)
- Sodium, Dissolved (E273.1)
- Sulfate (M4500-SO4 D)
- Total Dissolved Solids (E160.1)

OFF: (505) 325-5667



LAB: (505) 325-1556

March 03, 1999

Maureen Gannon  
PNM - Public Service Company of NM  
Alvarado Square Mail Stop 0408  
Albuquerque, NM 87158  
TEL: (505) 241-2974  
FAX (505) 241-2340

RE: Jicarilla 147-6

Order No.: 9902001

Dear Maureen Gannon,

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

**On Site Technologies, LTD.**

Date: 03-Mar-99

**CLIENT:** PNM - Public Service Company of NM**Project:** Jicarilla 147-6**Lab Order:** 9902001**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. Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, March 1983. Standard Methods for the Examination of Water and Wastewater, 18th Edition.

All method blanks, laboratory spikes, and/or matrix spikes met quality assurance objectives, except as noted: Analytical Comments for METHOD BTEX\_W, SAMPLE 9902001-02A, Jicarilla 147-6 MW-2: The reported value for Benzene should be considered an estimated value. Problems were encountered in the analytical batch that affected the recovery of Benzene in Continuing Calibration Verification, CCV2. The reported value for Benzene is supported by the acceptable recoveries in Continuing Calibration Verifications (CCV1) and (CCV3) as well as the Matrix Spike (MS), Matrix Spike Duplicate (MSD) and Laboratory Control Spike (LCS). The observed recovery, %R= 37.6, for Benzene in Continuing Calibration Verification (CCV2) is attributed to contamination of the chromatography system prior to the analysis of CCV2. Confirmation of the reported value for Benzene was not possible due to lack of sample quantity.

Cation-Anion Balance 9902001-01A; Jicarilla 147-6 MW-1

Total Cation-Anion = 17.59 me/L  
Difference Cation-Anion = 1.04 me/L  
% Difference = 5.9%

Cation-Anion Balance 9902001-02A; Jicarilla 147-6 MW-2

Total Cation-Anion = 42.92 me/L  
Difference Cation-Anion = 0.90 me/L  
% Difference = 2.1%

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## ANALYTICAL REPORT

Date: 03-Mar-99

|                    |                                    |                            |                     |
|--------------------|------------------------------------|----------------------------|---------------------|
| <b>Client:</b>     | PNM - Public Service Company of NM | <b>Client Sample Info:</b> | Jicarilla 147-6     |
| <b>Work Order:</b> | 9902001                            | <b>Client Sample ID:</b>   | 9901281250; MW-1    |
| <b>Lab ID:</b>     | 9902001-01A                        | <b>Matrix:</b>             | AQUEOUS             |
| <b>Project:</b>    | Jicarilla 147-6                    | <b>Collection Date:</b>    | 1/28/99 12:50:00 PM |
|                    |                                    | <b>COC Record:</b>         | 7545                |

| Parameter    | Result | PQL            | Qual | Units | DF | Date Analyzed      |
|--------------|--------|----------------|------|-------|----|--------------------|
| <b>BTEX</b>  |        | <b>SW8021B</b> |      |       |    | <b>Analyst: HR</b> |
| Benzene      | ND     | 0.5            |      | µg/L  | 1  | 2/3/99             |
| Toluene      | 1.5    | 0.5            |      | µg/L  | 1  | 2/3/99             |
| Ethylbenzene | ND     | 0.5            |      | µg/L  | 1  | 2/3/99             |
| m,p-Xylene   | 2.6    | 1              |      | µg/L  | 1  | 2/3/99             |
| o-Xylene     | ND     | 0.5            |      | µg/L  | 1  | 2/3/99             |

**Qualifiers:**

PQL - Practical Quantitation Limit

S - Spike Recovery outside accepted recovery limits

ND - Not Detected at Practical Quantitation Limit

R - RPD outside accepted recovery limits

J - Analyte detected below Practical Quantitation Limit

E - Value above quantitation range

B - Analyte detected in the associated Method Blank

Surr: - Surrogate

1 of 1

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OFF: (505) 325-5667



LAB: (505) 325-1556

## ANALYTICAL REPORT

Date: 03-Mar-99

|                    |                                    |                            |                     |
|--------------------|------------------------------------|----------------------------|---------------------|
| <b>Client:</b>     | PNM - Public Service Company of NM | <b>Client Sample Info:</b> | Jicarilla 147-6     |
| <b>Work Order:</b> | 9902001                            | <b>Client Sample ID:</b>   | 9901281250; MW-1    |
| <b>Lab ID:</b>     | 9902001-01B                        | <b>Matrix:</b>             | AQUEOUS             |
| <b>Project:</b>    | Jicarilla 147-6                    | <b>Collection Date:</b>    | 1/28/99 12:50:00 PM |
|                    |                                    | <b>COC Record:</b>         | 7545                |

| Parameter                                       | Result             | PQL  | Qual | Units                  | DF  | Date Analyzed |
|-------------------------------------------------|--------------------|------|------|------------------------|-----|---------------|
| <b>CALCIUM, DISSOLVED</b>                       | <b>E215.1</b>      |      |      |                        |     | Analyst: DM   |
| Calcium                                         | 16                 | 2.5  |      | mg/L                   | 10  | 2/12/99       |
| <b>POTASSIUM, DISSOLVED</b>                     | <b>E258.1</b>      |      |      |                        |     | Analyst: DM   |
| Potassium                                       | 3                  | 0.25 |      | mg/L                   | 1   | 2/10/99       |
| <b>MAGNESIUM, DISSOLVED</b>                     | <b>E242.1</b>      |      |      |                        |     | Analyst: DM   |
| Magnesium                                       | 2.4                | 0.25 |      | mg/L                   | 1   | 2/11/99       |
| <b>SODIUM, DISSOLVED</b>                        | <b>E273.1</b>      |      |      |                        |     | Analyst: DM   |
| Sodium                                          | 160                | 25   |      | mg/L                   | 100 | 2/16/99       |
| <b>ALKALINITY, TOTAL</b>                        | <b>M2320 B</b>     |      |      |                        |     | Analyst: DM   |
| Alkalinity, Bicarbonate (As CaCO <sub>3</sub> ) | 400                | 5    |      | mg/L CaCO <sub>3</sub> | 1   | 2/5/99        |
| Alkalinity, Carbonate (As CaCO <sub>3</sub> )   | ND                 | 5    |      | mg/L CaCO <sub>3</sub> | 1   | 2/5/99        |
| Alkalinity, Hydroxide                           | ND                 | 5    |      | mg/L CaCO <sub>3</sub> | 1   | 2/5/99        |
| Alkalinity, Total (As CaCO <sub>3</sub> )       | 400                | 5    |      | mg/L CaCO <sub>3</sub> | 1   | 2/5/99        |
| <b>CHLORIDE</b>                                 | <b>E325.3</b>      |      |      |                        |     | Analyst: DM   |
| Chloride                                        | ND                 | 10   |      | mg/L                   | 1   | 2/8/99        |
| <b>CONDUCTIVITY</b>                             | <b>E120.1</b>      |      |      |                        |     | Analyst: DM   |
| Specific Conductance                            | 970                | 2    |      | uS/cm                  | 1   | 2/5/99        |
| <b>HARDNESS, TOTAL</b>                          | <b>M2340 B</b>     |      |      |                        |     | Analyst: DM   |
| Hardness (As CaCO <sub>3</sub> )                | 51                 | 1    |      | mg/L                   | 1   | 2/12/99       |
| <b>PH</b>                                       | <b>E150.1</b>      |      |      |                        |     | Analyst: DM   |
| pH                                              | 7.92               | 2    |      | pH units               | 1   | 2/1/99        |
| <b>SULFATE</b>                                  | <b>M4500-SO4 D</b> |      |      |                        |     | Analyst: DM   |
| Sulfate                                         | 130                | 5    |      | mg/L                   | 1   | 2/8/99        |
| <b>TOTAL DISSOLVED SOLIDS</b>                   | <b>E160.1</b>      |      |      |                        |     | Analyst: DM   |
| Total Dissolved Solids (Residue, Filterable)    | 717                | 40   |      | mg/L                   | 1   | 2/12/99       |

**Qualifiers:**

PQL - Practical Quantitation Limit

ND - Not Detected at Practical Quantitation Limit

J - Analyte detected below Practical Quantitation Limit

B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Surr - Surrogate

1 of 1

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OFF: (505) 325-5667



LAB: (505) 325-1556

## ANALYTICAL REPORT

Date: 03-Mar-99

|                    |                                    |                            |                    |
|--------------------|------------------------------------|----------------------------|--------------------|
| <b>Client:</b>     | PNM - Public Service Company of NM | <b>Client Sample Info:</b> | Jicarilla 147-6    |
| <b>Work Order:</b> | 9902001                            | <b>Client Sample ID:</b>   | 9901281350; MW-2   |
| <b>Lab ID:</b>     | 9902001-02A                        | <b>Matrix:</b>             | AQUEOUS            |
| <b>Project:</b>    | Jicarilla 147-6                    | <b>Collection Date:</b>    | 1/28/99 1:50:00 PM |
|                    |                                    | <b>COC Record:</b>         | 7545               |

| Parameter    | Result | PQL            | Qual | Units | DF | Date Analyzed      |
|--------------|--------|----------------|------|-------|----|--------------------|
| <b>BTEX</b>  |        | <b>SW8021B</b> |      |       |    | <b>Analyst: HR</b> |
| Benzene      | 490    | 5              |      | µg/L  | 10 | 2/5/99             |
| Toluene      | 38     | 5              |      | µg/L  | 10 | 2/5/99             |
| Ethylbenzene | ND     | 5              |      | µg/L  | 10 | 2/5/99             |
| m,p-Xylene   | 1700   | 10             |      | µg/L  | 10 | 2/5/99             |
| o-Xylene     | 270    | 5              |      | µg/L  | 10 | 2/5/99             |

**Qualifiers:**

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

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

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- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

1 of 1



## ANALYTICAL REPORT

Date: 03-Mar-99

|                    |                                    |                            |                    |
|--------------------|------------------------------------|----------------------------|--------------------|
| <b>Client:</b>     | PNM - Public Service Company of NM | <b>Client Sample Info:</b> | Jicarilla 147-6    |
| <b>Work Order:</b> | 9902001                            | <b>Client Sample ID:</b>   | 9901281350; MW-2   |
| <b>Lab ID:</b>     | 9902001-02B                        | <b>Matrix:</b>             | AQUEOUS            |
| <b>Project:</b>    | Jicarilla 147-6                    | <b>Collection Date:</b>    | 1/28/99 1:50:00 PM |
|                    |                                    | <b>COC Record:</b>         | 7545               |

| Parameter                                       | Result             | PQL | Qual | Units                  | DF  | Date Analyzed |
|-------------------------------------------------|--------------------|-----|------|------------------------|-----|---------------|
| <b>CALCIUM, DISSOLVED</b>                       | <b>E215.1</b>      |     |      |                        |     | Analyst: DM   |
| Calcium                                         | 92                 | 12  |      | mg/L                   | 50  | 2/12/99       |
| <b>POTASSIUM, DISSOLVED</b>                     | <b>E258.1</b>      |     |      |                        |     | Analyst: DM   |
| Potassium                                       | 8.1                | 1   |      | mg/L                   | 4   | 2/10/99       |
| <b>MAGNESIUM, DISSOLVED</b>                     | <b>E242.1</b>      |     |      |                        |     | Analyst: DM   |
| Magnesium                                       | 16                 | 2.5 |      | mg/L                   | 10  | 2/11/99       |
| <b>SODIUM, DISSOLVED</b>                        | <b>E273.1</b>      |     |      |                        |     | Analyst: DM   |
| Sodium                                          | 340                | 50  |      | mg/L                   | 200 | 2/16/99       |
| <b>ALKALINITY, TOTAL</b>                        | <b>M2320 B</b>     |     |      |                        |     | Analyst: DM   |
| Alkalinity, Bicarbonate (As CaCO <sub>3</sub> ) | 1100               | 5   |      | mg/L CaCO <sub>3</sub> | 1   | 2/5/99        |
| Alkalinity, Carbonate (As CaCO <sub>3</sub> )   | ND                 | 5   |      | mg/L CaCO <sub>3</sub> | 1   | 2/5/99        |
| Alkalinity, Hydroxide                           | ND                 | 5   |      | mg/L CaCO <sub>3</sub> | 1   | 2/5/99        |
| Alkalinity, Total (As CaCO <sub>3</sub> )       | 1100               | 5   |      | mg/L CaCO <sub>3</sub> | 1   | 2/5/99        |
| <b>CHLORIDE</b>                                 | <b>E325.3</b>      |     |      |                        |     | Analyst: DM   |
| Chloride                                        | 57                 | 10  |      | mg/L                   | 1   | 2/8/99        |
| <b>CONDUCTIVITY</b>                             | <b>E120.1</b>      |     |      |                        |     | Analyst: DM   |
| Specific Conductance                            | 2200               | 2   |      | uS/cm                  | 1   | 2/5/99        |
| <b>HARDNESS, TOTAL</b>                          | <b>M2340 B</b>     |     |      |                        |     | Analyst: DM   |
| Hardness (As CaCO <sub>3</sub> )                | 296                | 1   |      | mg/L                   | 1   | 2/12/99       |
| <b>PH</b>                                       | <b>E150.1</b>      |     |      |                        |     | Analyst: DM   |
| pH                                              | 7.07               | 2   |      | pH units               | 1   | 2/1/99        |
| <b>SULFATE</b>                                  | <b>M4500-SO4 D</b> |     |      |                        |     | Analyst: DM   |
| Sulfate                                         | 140                | 5   |      | mg/L                   | 1   | 2/8/99        |
| <b>TOTAL DISSOLVED SOLIDS</b>                   | <b>E160.1</b>      |     |      |                        |     | Analyst: DM   |
| Total Dissolved Solids (Residue, Filterable)    | 1720               | 40  |      | mg/L                   | 1   | 2/12/99       |

**Qualifiers:**

PQL - Practical Quantitation Limit

ND - Not Detected at Practical Quantitation Limit

J - Analyte detected below Practical Quantitation Limit

B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Surr: - Surrogate

1 of 1

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

## ANALYTICAL REPORT

Date: 03-Mar-99

|                    |                                    |                            |                    |
|--------------------|------------------------------------|----------------------------|--------------------|
| <b>Client:</b>     | PNM - Public Service Company of NM | <b>Client Sample Info:</b> | Jicarilla 147-6    |
| <b>Work Order:</b> | 9902001                            | <b>Client Sample ID:</b>   | 9901281430; MW-3   |
| <b>Lab ID:</b>     | 9902001-03A                        | <b>Matrix:</b>             | AQUEOUS            |
| <b>Project:</b>    | Jicarilla 147-6                    | <b>Collection Date:</b>    | 1/28/99 2:30:00 PM |
|                    |                                    | <b>COC Record:</b>         | 7545               |

| Parameter    | Result | PQL            | Qual | Units | DF | Date Analyzed |
|--------------|--------|----------------|------|-------|----|---------------|
| <b>BTEX</b>  |        | <b>SW8021B</b> |      |       |    | Analyst: HR   |
| Benzene      | 7100   | 25             |      | µg/L  | 50 | 2/9/99        |
| Toluene      | 5900   | 25             |      | µg/L  | 50 | 2/9/99        |
| Ethylbenzene | 260    | 25             |      | µg/L  | 50 | 2/9/99        |
| m,p-Xylene   | 3400   | 50             |      | µg/L  | 50 | 2/9/99        |
| o-Xylene     | 730    | 25             |      | µg/L  | 50 | 2/9/99        |

**Qualifiers:**

PQL - Practical Quantitation Limit

ND - Not Detected at Practical Quantitation Limit

J - Analyte detected below Practical Quantitation Limit

B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Surr: - Surrogate

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

1 of 1

OFF: (505) 325-5667



LAB: (505) 325-1556

## ANALYTICAL REPORT

Date: 03-Mar-99

**Client:** PNM - Public Service Company of NM  
**Work Order:** 9902001  
**Lab ID:** 9902001-04A    **Matrix:** AQUEOUS  
**Project:** Jicarilla 147-6

**Client Sample Info:** Jicarilla 147-6  
**Client Sample ID:** 9901281500; MW-4  
**Collection Date:** 1/28/99 3:00:00 PM  
**COC Record:** 7545

| Parameter    | Result | PQL            | Qual | Units | DF  | Date Analyzed |
|--------------|--------|----------------|------|-------|-----|---------------|
| <b>BTEX</b>  |        | <b>SW8021B</b> |      |       |     | Analyst: HR   |
| Benzene      | 1500   | 50             |      | µg/L  | 100 | 2/9/99        |
| Toluene      | 10000  | 50             |      | µg/L  | 100 | 2/9/99        |
| Ethylbenzene | 810    | 50             |      | µg/L  | 100 | 2/9/99        |
| m,p-Xylene   | 7700   | 100            |      | µg/L  | 100 | 2/9/99        |
| o-Xylene     | 1600   | 50             |      | µg/L  | 100 | 2/9/99        |

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

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

1 of 1

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

## ANALYTICAL REPORT

Date: 03-Mar-99

**Client:** PNM - Public Service Company of NM  
**Work Order:** 9902001  
**Lab ID:** 9902001-05A      **Matrix:** AQUEOUS  
**Project:** Jicarilla 147-6

**Client Sample Info:** Jicarilla 147-6  
**Client Sample ID:** 9901281530; MW-5  
**Collection Date:** 1/28/99 3:30:00 PM  
**COC Record:** 7545

*Duplicate  
of  
MW-4*

| Parameter    | Result | PQL            | Qual | Units | DF  | Date Analyzed      |
|--------------|--------|----------------|------|-------|-----|--------------------|
| <b>BTEX</b>  |        | <b>SW8021B</b> |      |       |     | <b>Analyst: HR</b> |
| Benzene      | 1600   | 50             |      | µg/L  | 100 | 2/9/99             |
| Toluene      | 10000  | 50             |      | µg/L  | 100 | 2/9/99             |
| Ethylbenzene | 820    | 50             |      | µg/L  | 100 | 2/9/99             |
| m,p-Xylene   | 7800   | 100            |      | µg/L  | 100 | 2/9/99             |
| o-Xylene     | 1700   | 50             |      | µg/L  | 100 | 2/9/99             |

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

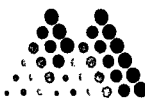
S - Spike Recovery outside accepted recovery limits  
R - RPD outside accepted recovery limits  
E - Value above quantitation range  
Surr: - Surrogate

1 of 1

**P.O. BOX 2606 • FARMINGTON, NM 87499**

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

RECEIVED MAR 2 1 1999



**Mountain States Analytical, Inc.**

*The Quality Solution*

February 25, 1999

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

Reference:

Project: WQCC Metals Analysis  
Project No.: 9902001  
MSAI Group: 25695

Dear Mr. Cox:

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

9902001-01C

9902001-02C

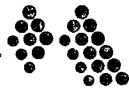
All holding times were met for the tests performed on these samples.

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



## Mountain States Analytical, Inc.

The Quality Solution

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

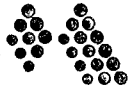
Attn: Mr. David Cox  
Project: WQCC Metals Analysis

Sample ID: 9902001-01C  
Matrix: Water

MSAI Sample: 92526  
MSAI Group: 25695  
Date Reported: 02/19/99  
Discard Date: 03/21/99  
Date Submitted: 02/02/99  
Date Sampled: 01/28/99  
Collected by:  
Purchase Order:  
Project No.: 9902001

Jicarilla 147-6 9901281250; MW-1

| Test  | Analysis                                             | Results<br>as Received | Units | Method<br>Detection<br>Limit |
|-------|------------------------------------------------------|------------------------|-------|------------------------------|
| 03921 | Flame/ICP Prep, w/ww, 3005A<br>Method: SW-846 3005A  | Batch. w972            |       |                              |
| 0407  | Mercury Prep CVAA, ww, 7470A<br>Method: SW-846 7470A | Batch. w351            |       |                              |
| 13001 | Metals by ICP, 6010A, w/ww<br>Method: SW-846 6010A   |                        |       |                              |
|       | Arsenic                                              | ND                     | mg/l  | 0.03                         |
|       | Barium                                               | 0.064                  | mg/l  | 0.002                        |
|       | Cadmium                                              | ND                     | mg/l  | 0.002                        |
|       | Chromium                                             | ND                     | mg/l  | 0.01                         |
|       | Iron                                                 | 0.30                   | mg/l  | 0.20                         |
|       | Lead                                                 | ND                     | mg/l  | 0.03                         |
|       | Manganese                                            | 0.005                  | mg/l  | 0.002                        |
|       | Silver                                               | ND                     | mg/l  | 0.006                        |
| 13007 | Metals by hrICP, 6010A, w/ww<br>Method: SW-846 6010A |                        |       |                              |
|       | Selenium                                             | ND                     | mg/l  | 0.02                         |
| 1521  | Mercury by CVAA, w/ww, 7470A<br>Method: SW-846 7470A | ND                     | mg/l  | 0.00010                      |
| 0939  | Sample Filtering, ww, MSAI<br>Method: IN HOUSE MSAI  | Complete               |       |                              |

**Mountain States Analytical, Inc.***The Quality Solution*

Page 2

On Site Technologies, Ltd.

MSAI Sample: 92526

Sample ID: 9902001-01C

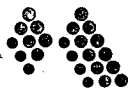
MSAI Group: 25695

ND - Not detected at the Method Detection Limit.

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.

The Quality Solution

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

Attn: Mr. David Cox  
Project: WQCC Metals Analysis

Sample ID: 9902001-02C

Matrix: Water

Jicarilla 147-6 9901281350; MW-2

MSAI Sample: 92527  
MSAI Group: 25695  
Date Reported: 02/19/99  
Discard Date: 03/21/99  
Date Submitted: 02/02/99  
Date Sampled: 01/28/99  
Collected by:  
Purchase Order:  
Project No.: 9902001

| Test  | Analysis                                             | Results<br>as Received | Units | Method<br>Detection<br>Limit |
|-------|------------------------------------------------------|------------------------|-------|------------------------------|
| 03921 | Flame/ICP Prep, w/ww, 3005A<br>Method: SW-846 3005A  | Batch. w972            |       |                              |
| 0407  | Mercury Prep CVAA, ww, 7470A<br>Method: SW-846 7470A | Batch. w351            |       |                              |
| 13001 | Metals by ICP, 6010A, w/ww<br>Method: SW-846 6010A   |                        |       |                              |
|       | Arsenic                                              | ND                     | mg/l  | 0.03                         |
|       | Barium                                               | 0.513                  | mg/l  | 0.002                        |
|       | Cadmium                                              | ND                     | mg/l  | 0.002                        |
|       | Chromium                                             | ND                     | mg/l  | 0.01                         |
|       | Iron                                                 | ND                     | mg/l  | 0.20                         |
|       | Lead                                                 | ND                     | mg/l  | 0.03                         |
|       | Manganese                                            | 3.68                   | mg/l  | 0.002                        |
|       | Silver                                               | ND                     | mg/l  | 0.006                        |
| 13007 | Metals by hrICP, 6010A, w/ww<br>Method: SW-846 6010A |                        |       |                              |
|       | Selenium                                             | ND                     | mg/l  | 0.02                         |
| 1521  | Mercury by CVAA, w/ww, 7470A<br>Method: SW-846 7470A | ND                     | mg/l  | 0.00010                      |
| 0939  | Sample Filtering, ww, MSAI<br>Method: IN HOUSE MSAI  | Complete               |       |                              |

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



**Mountain States Analytical, Inc.***The Quality Solution*

Page 2

On Site Technologies, Ltd.

MSAI Sample: 92527

Sample ID: 9902001-02C

MSAI Group: 25695

ND - Not detected at the Method Detection Limit.

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.  
Daily QC Batching Data  
Data Released for Reporting

02/18/99  
16:10:54  
Group: 25695

Analysis Batch Number: ICPWA-02/17/99-061 -2  
Test Identification : ICPWA-\*Metals by ICP  
Number of Samples : 4  
Batch Date-Time : 02/18/99 / 12:21:55

Sequence : DATC048

| BLANK# | ANALYTE   | CONC FOUND # | CONC LIMIT |
|--------|-----------|--------------|------------|
| BW-972 | Arsenic   | 0.0047       | 0.0350     |
|        | Manganese | 0.0028       | 0.0030     |

| SAMPLE#    | ANALYTE   | CONC ADDED | CONC SAMPLE | CONC SPIKE | % REC # | QC LIMITS |       |
|------------|-----------|------------|-------------|------------|---------|-----------|-------|
|            |           |            |             |            |         | LOWER     | UPPER |
| 5714-92591 | Arsenic   | 2.0000     | 0.0101      | 2.1119     | 105.1   | 80.0      | 120.0 |
|            | Manganese | 0.5000     | 0.0745      | 0.5737     | 99.8    | 80.0      | 120.0 |

| SAMPLE#    | ANALYTE   | CONC ADDED | CONC SAMPLE | RESULT 2 | %REC2 # | QC LIMITS |       |       |       |
|------------|-----------|------------|-------------|----------|---------|-----------|-------|-------|-------|
|            |           |            |             |          |         | LOWER     | UPPER | RPD # | LIMIT |
| 5714-92591 | Arsenic   | 2.0000     | 0.0101      | 2.1031   | 104.7   | 80.0      | 120.0 | 0.4   | 20.0  |
|            | Manganese | 0.5000     | 0.0745      | 0.5691   | 98.9    | 80.0      | 120.0 | 0.8   | 20.0  |

| SAMPLE# | ANALYTE   | RESULT 1 | RESULT 2 | RPD # | LIMIT | DILUTION |
|---------|-----------|----------|----------|-------|-------|----------|
|         |           |          |          |       |       |          |
|         | Manganese | 0.0745   | 0.0743   | 0.3   | 20.0  | 1.00     |

| SAMPLE#  | ANALYTE   | CONC FOUND | CONC KNOWN | % REC # | QC LIMITS |       |
|----------|-----------|------------|------------|---------|-----------|-------|
|          |           |            |            |         | LOWER     | UPPER |
| 5714-972 | Arsenic   | 2.0531     | 2.0000     | 102.7   | 80.0      | 120.0 |
|          | Manganese | 0.5007     | 0.5000     | 100.1   | 80.0      | 120.0 |

| CCV #   | ANALYTE   | TRUE VALUE | BATCH READ | % REC # | QC LIMITS |       |
|---------|-----------|------------|------------|---------|-----------|-------|
|         |           |            |            |         | LOWER     | UPPER |
| ICV-    | Arsenic   | 1.6000     | 1.6206     | 101.3   | 90.0      | 110.0 |
|         | Manganese | 4.0000     | 3.9067     | 97.7    | 90.0      | 110.0 |
| CCV1--2 | Arsenic   | 1.6000     | 1.5979     | 99.9    | 90.0      | 110.0 |
|         | Manganese | 4.0000     | 3.9028     | 97.6    | 90.0      | 110.0 |
| CCV2--3 | Arsenic   | 1.6000     | 1.5945     | 99.7    | 90.0      | 110.0 |
|         | Manganese | 4.0000     | 3.8783     | 97.0    | 90.0      | 110.0 |
| CCV3--4 | Arsenic   | 1.6000     | 1.6059     | 100.4   | 90.0      | 110.0 |
|         | Manganese | 4.0000     | 3.8827     | 97.1    | 90.0      | 110.0 |

| CCB#  | ANALYTE   | CONC FOUND # | CONC LIMIT |
|-------|-----------|--------------|------------|
| ICB-  | Arsenic   | ND           | 0.0350     |
|       | Manganese | 0.0005       | 0.0030     |
| CCB1- | Arsenic   | ND           | 0.0350     |
|       | Manganese | 0.0001       | 0.0030     |
| CCB2- | Arsenic   | 0.0081       | 0.0350     |
|       | Manganese | 0.0005       | 0.0030     |
| CCB3- | Arsenic   | 0.0010       | 0.0350     |
|       | Manganese | 0.0007       | 0.0030     |

## ----- Result Footnotes -----

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

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

02/18/99  
16:10:55  
Group: 25695

Analysis Batch Number: ICPWA-02/17/99-061 -2  
Identification : ICPWA-\*Metals by ICP  
Number of Samples : 4  
Batch Data-Date/Time : 02/18/99 / 12:21:55

Sequence : DATC048

Groups & Samples

-----  
25695-92526    25695-92527    25714-92591    25760-92748

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

02/18/99  
16:10:46  
Group: 25695

ysis Batch Number: 1521 -02/11/99-147 -1

Sequence : 1521 -1

Identification : 1521 -Mercury by CVAA, w/ww, 7470A

umber of Samples : 4

atch Data-Date/Time : 02/11/99 / 12:49:27

| BLANK# | ANALYTE | CONC FOUND # | CONC LIMIT |
|--------|---------|--------------|------------|
| BW-351 | Mercury | -0.0210      | 0.1000     |

|            |         |            |             |            |         | QC LIMITS |       |
|------------|---------|------------|-------------|------------|---------|-----------|-------|
| SAMPLE#    | ANALYTE | CONC ADDED | CONC SAMPLE | CONC SPIKE | % REC # | LOWER     | UPPER |
| 5760-92748 | Mercury | 2.5000     | 0.2210      | 2.7550     | 101.4   | 80.0      | 120.0 |

|            |         |            |             |          |         | QC LIMITS |       |       |       |
|------------|---------|------------|-------------|----------|---------|-----------|-------|-------|-------|
| SAMPLE#    | ANALYTE | CONC ADDED | CONC SAMPLE | RESULT 2 | %REC2 # | LOWER     | UPPER | RPD # | LIMIT |
| 5760-92748 | Mercury | 2.5000     | 0.2210      | 2.7870   | 102.6   | 80.0      | 120.0 | 1.2   | 20.0  |

| DUPLICATE  |         |          |          |       |       |          |
|------------|---------|----------|----------|-------|-------|----------|
| SAMPLE#    | ANALYTE | RESULT 1 | RESULT 2 | RPD # | LIMIT | DILUTION |
| 5760-92748 | Mercury | 0.2210   | 0.2250   | 1.8   | 20.0  | 1.00     |

|         |         |            |            |         | QC LIMITS |       |
|---------|---------|------------|------------|---------|-----------|-------|
| SAMPLE# | ANALYTE | CONC FOUND | CONC KNOWN | % REC # | LOWER     | UPPER |
| CSW-351 | Mercury | 2.4280     | 2.5000     | 97.1    | 80.0      | 115.0 |

| QC LIMITS |         |            |            |         |       |       |
|-----------|---------|------------|------------|---------|-------|-------|
| CV#       | ANALYTE | TRUE VALUE | BATCH READ | % REC # | LOWER | UPPER |
|           | Mercury | 3.0000     | 3.2770     | 109.2   | 90.0  | 110.0 |
| CCV--2    | Mercury | 5.0000     | 5.1260     | 102.5   | 80.0  | 120.0 |
| CCV--3    | Mercury | 5.0000     | 5.0710     | 101.4   | 80.0  | 120.0 |
| CCV--4    | Mercury | 5.0000     | 4.9860     | 99.7    | 80.0  | 120.0 |
| CCV--5    | Mercury | 5.0000     | 4.9890     | 99.8    | 80.0  | 120.0 |
| CCV--6    | Mercury | 5.0000     | 5.0940     | 101.9   | 80.0  | 120.0 |

| CCB# | ANALYTE | CONC FOUND # | CONC LIMIT |
|------|---------|--------------|------------|
| ICB- | Mercury | 0.0250       | 0.1000     |
| CCB- | Mercury | 0.0410       | 0.1000     |
| CCB- | Mercury | 0.0110       | 0.1000     |
| CCB- | Mercury | 0.0190       | 0.1000     |
| CCB- | Mercury | -0.0020      | 0.1000     |
| CCB- | Mercury | -0.0410      | 0.1000     |

Groups & Samples

-----  
25695-92526    25695-92527    25760-92748    25780-92840

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

02/18/99  
16:10:51  
Group: 25695

Analysis Batch Number: ICPWA-02/17/99-061 -1  
Test Identification : ICPWA-\*Metals by ICP  
Number of Samples : 7  
Batch Date-Time : 02/18/99 / 12:20:20

Sequence : DATB048

| BLANK#  | ANALYTE  | CONC FOUND # | CONC LIMIT |
|---------|----------|--------------|------------|
| DBW-972 | Silver   | ND           | 0.0060     |
|         | Barium   | 0.0002       | 0.0030     |
|         | Cadmium  | ND           | 0.0040     |
|         | Chromium | 0.0001       | 0.0100     |
|         | Iron     | 0.0768       | 0.2000     |
|         | Lead     | 0.0112       | 0.0500     |
|         | Selenium | 0.0197       | 0.1000     |
|         | Zinc     | 0.0041       | 0.1000     |

|             |          |            |             |            |         | QC LIMITS |       |
|-------------|----------|------------|-------------|------------|---------|-----------|-------|
| SAMPLE#     | ANALYTE  | CONC ADDED | CONC SAMPLE | CONC SPIKE | % REC # | LOWER     | UPPER |
| 25714-92591 | Silver   | 0.0500     | -0.0059     | 0.0472     | 106.1   | 80.0      | 120.0 |
|             | Barium   | 2.0000     | 0.1332      | 2.1199     | 99.3    | 80.0      | 120.0 |
|             | Cadmium  | 0.0500     | -0.0023     | 0.0527     | 110.0   | 80.0      | 120.0 |
|             | Chromium | 0.2000     | 0.0008      | 0.2063     | 102.7   | 80.0      | 120.0 |
|             | Iron     | 1.0000     | 0.1534      | 1.2542     | 110.1   | 80.0      | 120.0 |
|             | Lead     | 0.5000     | -0.0148     | 0.5269     | 108.4   | 80.0      | 120.0 |
|             | Selenium | 2.0000     | 0.0030      | 2.0718     | 103.4   | 80.0      | 120.0 |
|             | Zinc     | 0.5000     | 0.0174      | 0.5505     | 106.6   | 80.0      | 120.0 |

|             |          |            |             |          |         | QC LIMITS |       |       |       |
|-------------|----------|------------|-------------|----------|---------|-----------|-------|-------|-------|
| SAMPLE#     | ANALYTE  | CONC ADDED | CONC SAMPLE | RESULT 2 | %REC2 # | LOWER     | UPPER | RPD # | LIMIT |
| 25714-92591 | Silver   | 0.0500     | -0.0059     | 0.0475   | 106.7   | 80.0      | 120.0 | 0.6   | 20.0  |
|             | Barium   | 2.0000     | 0.1332      | 2.1210   | 99.4    | 80.0      | 120.0 | 0.1   | 20.0  |
|             | Cadmium  | 0.0500     | -0.0023     | 0.0511   | 106.8   | 80.0      | 120.0 | 3.1   | 20.0  |
|             | Chromium | 0.2000     | 0.0008      | 0.2074   | 103.3   | 80.0      | 120.0 | 0.5   | 20.0  |
|             | Iron     | 1.0000     | 0.1534      | 1.2626   | 110.9   | 80.0      | 120.0 | 0.7   | 20.0  |
|             | Lead     | 0.5000     | -0.0148     | 0.5391   | 110.8   | 80.0      | 120.0 | 2.3   | 20.0  |
|             | Selenium | 2.0000     | 0.0030      | 2.0951   | 104.6   | 80.0      | 120.0 | 1.1   | 20.0  |
|             | Zinc     | 0.5000     | 0.0174      | 0.5448   | 105.5   | 80.0      | 120.0 | 1.0   | 20.0  |

| DUPLICATE   |          |          |          |           |       |          |
|-------------|----------|----------|----------|-----------|-------|----------|
| SAMPLE#     | ANALYTE  | RESULT 1 | RESULT 2 | RPD #     | LIMIT | DILUTION |
| 25714-92591 | Silver   | -0.0059  | 0.0000   | 200.0(11) | 20.0  | 1.00     |
|             | Barium   | 0.1332   | 0.1336   | 0.3       | 20.0  | 1.00     |
|             | Cadmium  | -0.0023  | 0.0000   | 200.0(11) | 20.0  | 1.00     |
|             | Chromium | 0.0008   | 0.0058   | 149.5(11) | 20.0  | 1.00     |
|             | Iron     | 0.1534   | 0.1868   | 19.6      | 20.0  | 1.00     |
|             | Lead     | -0.0148  | 0.0096   | 932.8(11) | 20.0  | 1.00     |
|             | Selenium | 0.0030   | 0.0000   | 200.0(11) | 20.0  | 1.00     |
|             | Zinc     | 0.0174   | 0.0225   | 25.6(11)  | 20.0  | 1.00     |

| CONTROL  |          |            |            |         | QC LIMITS |       |
|----------|----------|------------|------------|---------|-----------|-------|
| SAMPLE#  | ANALYTE  | CONC FOUND | CONC KNOWN | % REC # | LOWER     | UPPER |
| ICSW-972 | Silver   | 0.0484     | 0.0500     | 96.8    | 80.0      | 120.0 |
|          | Barium   | 2.0129     | 2.0000     | 100.6   | 80.0      | 120.0 |
|          | Cadmium  | 0.0515     | 0.0500     | 103.1   | 80.0      | 120.0 |
|          | Chromium | 0.2085     | 0.2000     | 104.3   | 80.0      | 120.0 |
|          | Iron     | 1.0719     | 1.0000     | 107.2   | 80.0      | 120.0 |
|          | Lead     | 0.5265     | 0.5000     | 105.3   | 80.0      | 120.0 |

Analysis Batch Number: ICPWA-02/17/99-061 -1  
Identification : ICPWA-\*Metals by ICP  
Number of Samples : 7  
Batch Date/Time : 02/18/99 / 12:20:20

Sequence : DATB048

| CONTROL |          | QC LIMITS  |            |         |             |
|---------|----------|------------|------------|---------|-------------|
| SAMPLE# | ANALYTE  | CONC FOUND | CONC KNOWN | % REC # | LOWER UPPER |
| CSW-972 | Selenium | 2.1137     | 2.0000     | 105.7   | 80.0 120.0  |
|         | Zinc     | 0.5264     | 0.5000     | 105.3   | 80.0 120.0  |

|         |          | QC LIMITS  |            |         |             |
|---------|----------|------------|------------|---------|-------------|
| CCV #   | ANALYTE  | TRUE VALUE | BATCH READ | % REC # | LOWER UPPER |
| CCV-    | Silver   | 0.4000     | 0.4107     | 102.7   | 90.0 110.0  |
|         | Barium   | 4.0000     | 3.9212     | 98.0    | 90.0 110.0  |
|         | Cadmium  | 4.0000     | 3.9579     | 98.9    | 90.0 110.0  |
|         | Chromium | 4.0000     | 3.9422     | 98.6    | 90.0 110.0  |
|         | Iron     | 4.0000     | 4.0110     | 100.3   | 90.0 110.0  |
|         | Lead     | 20.0000    | 20.0734    | 100.4   | 90.0 110.0  |
|         | Selenium | 1.6000     | 1.6168     | 101.1   | 90.0 110.0  |
|         | Zinc     | 4.0000     | 4.0034     | 100.1   | 90.0 110.0  |
| CCV1--2 | Silver   | 0.4000     | 0.4089     | 102.2   | 90.0 110.0  |
|         | Barium   | 4.0000     | 3.9082     | 97.7    | 90.0 110.0  |
|         | Cadmium  | 4.0000     | 3.9812     | 99.5    | 90.0 110.0  |
|         | Chromium | 4.0000     | 3.9387     | 98.5    | 90.0 110.0  |
|         | Iron     | 4.0000     | 3.9999     | 100.0   | 90.0 110.0  |
|         | Lead     | 20.0000    | 20.0793    | 100.4   | 90.0 110.0  |
|         | Selenium | 1.6000     | 1.5768     | 98.5    | 90.0 110.0  |
|         | Zinc     | 4.0000     | 3.9983     | 100.0   | 90.0 110.0  |
| CCV2--3 | Silver   | 0.4000     | 0.4106     | 102.6   | 90.0 110.0  |
|         | Barium   | 4.0000     | 3.9438     | 98.6    | 90.0 110.0  |
|         | Cadmium  | 4.0000     | 3.9992     | 100.0   | 90.0 110.0  |
|         | Chromium | 4.0000     | 3.9459     | 98.6    | 90.0 110.0  |
|         | Iron     | 4.0000     | 4.0529     | 101.3   | 90.0 110.0  |
|         | Lead     | 20.0000    | 20.1628    | 100.8   | 90.0 110.0  |
|         | Selenium | 1.6000     | 1.6337     | 102.1   | 90.0 110.0  |
|         | Zinc     | 4.0000     | 4.0265     | 100.7   | 90.0 110.0  |
| CCV3--4 | Silver   | 0.4000     | 0.4047     | 101.2   | 90.0 110.0  |
|         | Barium   | 4.0000     | 3.9114     | 97.8    | 90.0 110.0  |
|         | Cadmium  | 4.0000     | 4.0331     | 100.8   | 90.0 110.0  |
|         | Chromium | 4.0000     | 3.9573     | 98.9    | 90.0 110.0  |
|         | Iron     | 4.0000     | 4.0394     | 101.0   | 90.0 110.0  |
|         | Lead     | 20.0000    | 20.1067    | 100.5   | 90.0 110.0  |
|         | Selenium | 1.6000     | 1.5923     | 99.5    | 90.0 110.0  |
|         | Zinc     | 4.0000     | 4.0127     | 100.3   | 90.0 110.0  |

| CCB#  | ANALYTE  | CONC FOUND # | CONC LIMIT |
|-------|----------|--------------|------------|
| ICB-  | Silver   | ND           | 0.0060     |
|       | Barium   | ND           | 0.0030     |
|       | Cadmium  | 0.0000       | 0.0040     |
|       | Chromium | ND           | 0.0100     |
|       | Iron     | ND           | 0.2000     |
|       | Lead     | ND           | 0.0500     |
|       | Selenium | ND           | 0.1000     |
|       | Zinc     | ND           | 0.1000     |
| CCB1- | Silver   | ND           | 0.0060     |
|       | Barium   | 0.0002       | 0.0030     |

Analysis Batch Number: ICPWA-02/17/99-061 -1  
Identification : ICPWA-\*Metals by ICP  
Number of Samples : 7  
Batch Date-Time : 02/18/99 / 12:20:20

Sequence : DATB048

| CB#  | ANALYTE  | CONC FOUND # | CONC LIMIT |
|------|----------|--------------|------------|
| CB1- | Cadmium  | 0.0018       | 0.0040     |
|      | Chromium | 0.0017       | 0.0100     |
|      | Iron     | ND           | 0.2000     |
|      | Lead     | 0.0191       | 0.0500     |
|      | Selenium | 0.0300       | 0.1000     |
|      | Zinc     | ND           | 0.1000     |
|      | Silver   | ND           | 0.0060     |
| CB2- | Barium   | ND           | 0.0030     |
|      | Cadmium  | ND           | 0.0040     |
|      | Chromium | ND           | 0.0100     |
|      | Iron     | ND           | 0.2000     |
|      | Lead     | 0.0013       | 0.0500     |
|      | Selenium | ND           | 0.1000     |
|      | Zinc     | ND           | 0.1000     |
| CB3- | Silver   | ND           | 0.0060     |
|      | Barium   | 0.0005       | 0.0030     |
|      | Cadmium  | 0.0014       | 0.0040     |
|      | Chromium | 0.0038       | 0.0100     |
|      | Iron     | 0.0497       | 0.2000     |
|      | Lead     | 0.0067       | 0.0500     |
|      | Selenium | ND           | 0.1000     |
|      | Zinc     | ND           | 0.1000     |

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

Groups & Samples

-----  
25695-92526    25695-92527    25714-92591    25715-92592    25730-92660    25760-92748    25789-92855

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

02/25/99  
10:20:50  
Group: 25695

Analysis Batch Number: HREXT-02/19/99-061 -2

Lot Identification : HREXT-Metals for hr TCLP, by ICP

Sequence : DATQ050

Number of Samples : 10

Batch Data-Date/Time : 02/22/99 / 12:33:37

| LANC#    | ANALYTE  | CONC FOUND # | CONC LIMIT |
|----------|----------|--------------|------------|
| BW-972   | Selenium | 0.0002       | 0.0400     |
| BW-981-2 | Selenium | 0.0230       | 0.0400     |

|              |          |            |             |            |         | QC LIMITS |       |
|--------------|----------|------------|-------------|------------|---------|-----------|-------|
| AMPLE#       | ANALYTE  | CONC ADDED | CONC SAMPLE | CONC SPIKE | % REC # | LOWER     | UPPER |
| 5714-92591   | Selenium | 2.0000     | 0.0108      | 2.1544     | 107.2   | 80.0      | 120.0 |
| 5809-92912-2 | Selenium | 5.0000     | 0.0197      | 5.4545     | 108.7   | 80.0      | 120.0 |
| 5809-92912-3 | Selenium | 5.0000     | 0.0197      | 5.3762     | 107.1   | 80.0      | 120.0 |

|              |          |            |             |          |         | QC LIMITS |       |       |       |
|--------------|----------|------------|-------------|----------|---------|-----------|-------|-------|-------|
| AMPLE#       | ANALYTE  | CONC ADDED | CONC SAMPLE | RESULT 2 | %REC2 # | LOWER     | UPPER | RPD # | LIMIT |
| 5714-92591   | Selenium | 2.0000     | 0.0108      | 2.1233   | 105.6   | 80.0      | 120.0 | 1.5   | 20.0  |
| 5809-92912-2 | Selenium | 5.0000     | 0.0197      | 5.5314   | 110.2   | 80.0      | 120.0 | 1.4   | 20.0  |

| DUPLICATE    |          |          |          |          |       |          |
|--------------|----------|----------|----------|----------|-------|----------|
| AMPLE#       | ANALYTE  | RESULT 1 | RESULT 2 | RPD #    | LIMIT | DILUTION |
| 5714-92591   | Selenium | 0.0108   | 0.0108   | 0.4      | 20.0  | 1.00     |
| 5809-92912-2 | Selenium | 0.0197   | 0.0312   | 45.1(11) | 20.0  | 1.00     |

|           |          |            |            |         | QC LIMITS |       |
|-----------|----------|------------|------------|---------|-----------|-------|
| AMPLE#    | ANALYTE  | CONC FOUND | CONC KNOWN | % REC # | LOWER     | UPPER |
| CSW-972   | Selenium | 2.1809     | 2.0000     | 109.0   | 80.0      | 120.0 |
| CSW-981-2 | Selenium | 5.3269     | 5.0000     | 106.5   | 80.0      | 120.0 |

| QC LIMITS |          |            |            |         |       |       |
|-----------|----------|------------|------------|---------|-------|-------|
| CCV #     | ANALYTE  | TRUE VALUE | BATCH READ | % REC # | LOWER | UPPER |
| ICV-      | Selenium | 0.4000     | 0.3649     | 91.2    | 90.0  | 110.0 |
| CCV1--2   | Selenium | 0.4000     | 0.3801     | 95.0    | 90.0  | 110.0 |
| CCV2--4   | Selenium | 0.4000     | 0.3878     | 96.9    | 90.0  | 110.0 |
| CCV3--5   | Selenium | 0.4000     | 0.3797     | 94.9    | 90.0  | 110.0 |
| CCV4--6   | Selenium | 0.4000     | 0.3879     | 97.0    | 90.0  | 110.0 |

| CCB#  | ANALYTE  | CONC FOUND # | CONC LIMIT |
|-------|----------|--------------|------------|
| ICB-  | Selenium | ND           | 0.0400     |
| CCB1- | Selenium | 0.0054       | 0.0400     |
| CCB3- | Selenium | ND           | 0.0400     |
| CCB4- | Selenium | ND           | 0.0400     |

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

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

Groups & Samples

|             |             |             |             |             |             |             |             |
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 25695-92526 | 25695-92527 | 25714-92591 | 25809-92905 | 25809-92909 | 25809-92911 | 25809-92912 | 25809-92913 |
| 25809-92914 | 25844-93074 |             |             |             |             |             |             |

# On Site Technologies, LTD.

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

# CHAIN-OF-CUSTODY RECORD

Page 1 of 1

## Subcontractor:

Mountain States Analytical, Inc.  
1645 West 2200 South

TEL: (800) 973-6724  
FAX: (801) 972-6278

Salt Lake City, UT 84119

Acct #:

01-Feb-99

| Sample ID   | Matrix  | Collection Date     | Bottle Type | WQCC    |        | Requested Tests |  |
|-------------|---------|---------------------|-------------|---------|--------|-----------------|--|
|             |         |                     |             | SW6019A | SW7470 | SW7742          |  |
| 9902001-01C | Aqueous | 1/28/99 12:50:00 PM |             | 8       | 1      | 1               |  |
| 9902001-02C | Aqueous | 1/28/99 1:50:00 PM  |             | 8       | 1      | 1               |  |

Comments: Please analyze two (2) samples for WQCC Metals.

| Relinquished by: | Date/Time   | Received by:           | Date/Time        |
|------------------|-------------|------------------------|------------------|
| Heidi Reese      | 2/1/99 1530 | <i>Pat A. Anderson</i> | 02/02/99 1000 am |
| Relinquished by: |             | Received by:           |                  |

# On Site Technologies, LTD.

Date: 03-Mar-99

CLIENT: PNM - Public Service Company of NM

Work Order: 9902001

Project: Jicarilla 147-6

## QC SUMMARY REPORT

Method Blank

|                         |                       |                      |             |                      |                                                        |
|-------------------------|-----------------------|----------------------|-------------|----------------------|--------------------------------------------------------|
| Sample ID: MB1          | Batch ID: GC-1_990203 | Test Code: SW8021B   | Units: µg/L | Analysis Date 2/3/99 | Prep Date:                                             |
| Client ID:              | 9902001               | Run ID: GC-1_990203A |             | SeqNo: 10651         |                                                        |
| Analyte                 | Result                | PQL                  | SPK value   | SPK Ref Val          | %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual |
| Benzene                 | .623                  | 0.5                  |             |                      |                                                        |
| Ethylbenzene            | ND                    | 0.5                  |             |                      |                                                        |
| m,p-Xylene              | .2082                 | 1                    |             |                      | J                                                      |
| Methyl tert-Butyl Ether | ND                    | 1                    |             |                      |                                                        |
| o-Xylene                | .0674                 | 0.5                  |             |                      | J                                                      |
| Toluene                 | .3913                 | 0.5                  |             |                      | J                                                      |

|                         |                       |                      |             |                      |                                                        |
|-------------------------|-----------------------|----------------------|-------------|----------------------|--------------------------------------------------------|
| Sample ID: MB1          | Batch ID: GC-1_990205 | Test Code: SW8021B   | Units: µg/L | Analysis Date 2/5/99 | Prep Date:                                             |
| Client ID:              | 9902001               | Run ID: GC-1_990205A |             | SeqNo: 10714         |                                                        |
| Analyte                 | Result                | PQL                  | SPK value   | SPK Ref Val          | %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual |
| Benzene                 | .1899                 | 0.5                  |             |                      | J                                                      |
| Ethylbenzene            | .091                  | 0.5                  |             |                      | J                                                      |
| m,p-Xylene              | .3251                 | 1                    |             |                      | J                                                      |
| Methyl tert-Butyl Ether | ND                    | 1                    |             |                      |                                                        |
| o-Xylene                | .0894                 | 0.5                  |             |                      | J                                                      |
| Toluene                 | .3167                 | 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

CLIENT: PNM - Public Service Company of NM

Work Order: 9902001

Project: Jicarilla 147-6

## QC SUMMARY REPORT

Method Blank

|                         |                       |                    |             |                       |            |
|-------------------------|-----------------------|--------------------|-------------|-----------------------|------------|
| Sample ID: MB2          | Batch ID: GC-1_990209 | Test Code: SW8021B | Units: µg/L | Analysis Date: 2/9/99 | Prep Date: |
| Client ID: 9902001      | Run ID: GC-1_990209A  | PQL                | SPK value   | SeqNo: 10738          |            |
| Analyte                 | Result                | PQL                | SPK Ref Val | LowLimit              | HighLimit  |
| Benzene                 | .0529                 | 0.5                |             | %REC                  | RPD Limit  |
| Ethylbenzene            | .0477                 | 0.5                |             | %RPD                  | Qual       |
| m,p-Xylene              | .1069                 | 1                  |             |                       |            |
| Methyl tert-Butyl Ether | ND                    | 1                  |             |                       |            |
| o-Xylene                | .0442                 | 0.5                |             |                       |            |
| Toluene                 | .1182                 | 0.5                |             |                       |            |

Qualifiers:

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

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

B - Analyte detected in the associated Method Blank

# On Site Technologies, LTD.

Date: 03-Mar-99

**CLIENT:** PNM - Public Service Company of NM  
**Work Order:** 9902001  
**Project:** Jicarilla 147-6

## QC SUMMARY REPORT

Sample Matrix Spike

| Sample ID: 9901030-04AMS |        | Batch ID: GC-1_990203 | Test Code: SW8021B | Units: µg/L | Analysis Date 2/3/99 |       | Prep Date: |           |
|--------------------------|--------|-----------------------|--------------------|-------------|----------------------|-------|------------|-----------|
| Client ID: 9902001       |        | Run ID: GC-1_990203A  | PQL                | SPK value   | SPK Ref Val          | %REC  | LowLimit   | HighLimit |
| Analyte                  | Result |                       |                    |             |                      |       |            |           |
| Benzene                  | 2884   |                       | 10                 | 800         | 2145                 | 92.4% | 73         | 115       |
| Ethylbenzene             | 958.3  |                       | 10                 | 800         | 173                  | 98.2% | 74         | 117       |
| m,p-Xylene               | 2355   |                       | 20                 | 1600        | 793.6                | 97.6% | 76         | 112       |
| Methyl tert-Butyl Ether  | 695.8  |                       | 20                 | 800         | 27.46                | 83.5% | 62         | 122       |
| o-Xylene                 | 1104   |                       | 10                 | 800         | 332.1                | 96.5% | 83         | 112       |
| Toluene                  | 1908   |                       | 10                 | 800         | 1125                 | 97.9% | 71         | 120       |

| Sample ID: 9901030-04AMSD |        | Batch ID: GC-1_990203 | Test Code: SW8021B | Units: µg/L | Analysis Date 2/3/99 |        | Prep Date: |           |
|---------------------------|--------|-----------------------|--------------------|-------------|----------------------|--------|------------|-----------|
| Client ID: 9902001        |        | Run ID: GC-1_990203A  | PQL                | SPK value   | SPK Ref Val          | %REC   | LowLimit   | HighLimit |
| Analyte                   | Result |                       |                    |             |                      |        |            |           |
| Benzene                   | 2976   |                       | 10                 | 800         | 2145                 | 104.0% | 73         | 115       |
| Ethylbenzene              | 1002   |                       | 10                 | 800         | 173                  | 103.6% | 74         | 117       |
| m,p-Xylene                | 2454   |                       | 20                 | 1600        | 793.6                | 103.8% | 76         | 112       |
| Methyl tert-Butyl Ether   | 735.3  |                       | 20                 | 800         | 27.46                | 88.5%  | 62         | 122       |
| o-Xylene                  | 1132   |                       | 10                 | 800         | 332.1                | 100.0% | 83         | 112       |
| Toluene                   | 1964   |                       | 10                 | 800         | 1125                 | 104.9% | 71         | 120       |

### 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: PNM - Public Service Company of NM

Work Order: 9902001

Project: Jicarilla 147-6

## QC SUMMARY REPORT

Sample Matrix Spike

|                            |        |                       |                    |             |                      |          |            |             |      |          |      |
|----------------------------|--------|-----------------------|--------------------|-------------|----------------------|----------|------------|-------------|------|----------|------|
| Sample ID: 9902001-03AMS   |        | Batch ID: GC-1_990205 | Test Code: SW8021B | Units: µg/L | Analysis Date 2/5/99 |          | Prep Date: |             |      |          |      |
| Client ID: 9901281430; MW- |        | Run ID: GC-1_990205A  |                    |             | SeqNo: 10715         |          |            |             |      |          |      |
| Analyte                    | Result | PQL                   | SPK value          | SPK Ref Val | %REC                 | LowLimit | HighLimit  | RPD Ref Val | %RPD | RPDLimit | Qual |
| Benzene                    | 9371   | 25                    | 2000               | 7270        | 105.1%               | 73       | 115        |             |      |          | E    |
| Ethylbenzene               | 2224   | 25                    | 2000               | 248.7       | 98.8%                | 74       | 117        |             |      |          |      |
| m,p-Xylene                 | 7297   | 50                    | 4000               | 3402        | 97.4%                | 76       | 112        |             |      |          |      |
| Methyl tert-Butyl Ether    | 1278   | 50                    | 2000               | 0           | 63.9%                | 62       | 122        |             |      |          |      |
| o-Xylene                   | 2679   | 25                    | 2000               | 714         | 98.3%                | 83       | 112        |             |      |          |      |
| Toluene                    | 7905   | 25                    | 2000               | 5927        | 98.9%                | 71       | 120        |             |      |          |      |

|                            |  |                       |     |                      |             |             |          |                      |             |            |          |      |
|----------------------------|--|-----------------------|-----|----------------------|-------------|-------------|----------|----------------------|-------------|------------|----------|------|
| Sample ID: 9902001-03AMSD  |  | Batch ID: GC-1_990205 |     | Test Code: SW8021B   |             | Units: µg/L |          | Analysis Date 2/5/99 |             | Prep Date: |          |      |
| Client ID: 9901281430; MW- |  | Run ID: 9902001       |     | Run ID: GC-1_990205A |             |             |          | SeqNo: 10716         |             |            |          |      |
| Analyte                    |  | Result                | PQL | SPK value            | SPK Ref Val | %REC        | LowLimit | HighLimit            | RPD Ref Val | %RPD       | RPDLimit | Qual |
| Benzene                    |  | 9677                  | 25  | 2000                 | 7270        | 120.4%      | 73       | 115                  | 9371        | 3.2%       | 8        | ES ✓ |
| Ethylbenzene               |  | 2292                  | 25  | 2000                 | 248.7       | 102.2%      | 74       | 117                  | 2224        | 3.0%       | 9        | ✓    |
| m,p-Xylene                 |  | 7512                  | 50  | 4000                 | 3402        | 102.7%      | 76       | 112                  | 7297        | 2.9%       | 9        | ✓    |
| Methyl tert-Butyl Ether    |  | 1292                  | 50  | 2000                 | 0           | 64.6%       | 62       | 122                  | 1278        | 1.1%       | 7        | ✓    |
| o-Xylene                   |  | 2753                  | 25  | 2000                 | 714         | 101.9%      | 83       | 112                  | 2679        | 2.7%       | 9        | ✓    |
| Toluene                    |  | 8150                  | 25  | 2000                 | 5927        | 111.1%      | 71       | 120                  | 7905        | 3.1%       | 9        | ✓    |

|                          |        |                       |           |                      |        |             |           |                      |      |            |      |
|--------------------------|--------|-----------------------|-----------|----------------------|--------|-------------|-----------|----------------------|------|------------|------|
| Sample ID: 9902028-01AMS |        | Batch ID: GC-1_990209 |           | Test Code: SW8021B   |        | Units: µg/L |           | Analysis Date 2/9/99 |      | Prep Date: |      |
| Client ID:               |        | 9902001               |           | Run ID: GC-1_990209A |        |             |           | SeqNo: 10739         |      |            |      |
| Analyte                  | Result | PQL                   | SPK value | SPK Ref Val          | %REC   | LowLimit    | HighLimit | RPD Ref Val          | %RPD | RPDLimit   | Qual |
| Benzene                  | 17660  | 120                   | 10000     | 8608                 | 90.6%  | 73          | 115       |                      |      |            |      |
| Ethylbenzene             | 10900  | 120                   | 10000     | 1158                 | 97.4%  | 74          | 117       |                      |      |            |      |
| m,p-Xylene               | 27980  | 250                   | 20000     | 9713                 | 91.3%  | 76          | 112       |                      |      |            |      |
| Methyl tert-Butyl Ether  | 11150  | 250                   | 10000     | 94.95                | 110.6% | 62          | 122       |                      |      |            |      |
| o-Xylene                 | 11980  | 120                   | 10000     | 2402                 | 95.8%  | 83          | 112       |                      |      |            |      |
| Toluene                  | 33050  | 120                   | 10000     | 24340                | 87.2%  | 71          | 120       |                      |      |            |      |

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

3 of 3

# On Site Technologies, LTD.

Date: 03-Mar-99

CLIENT: PNM - Public Service Company of NM  
 Work Order: 9902001  
 Project: Jicarilla 147-6

## QC SUMMARY REPORT

Laboratory Control Spike - generic

| Sample ID: LCS WATER    |         | Batch ID: GC-1_990203 | Test Code: SW8021B | Units: µg/L | Analysis Date 2/3/99 |          | Prep Date: |             |      |          |      |
|-------------------------|---------|-----------------------|--------------------|-------------|----------------------|----------|------------|-------------|------|----------|------|
| Client ID:              | 9902001 | Run ID:               | GC-1_990203A       |             | SeqNo:               | 10650    |            |             |      |          |      |
| Analyte                 | Result  | PQL                   | SPK value          | SPK Ref Val | %REC                 | LowLimit | HighLimit  | RPD Ref Val | %RPD | RPDLimit | Qual |
| Benzene                 | 41.97   | 0.5                   | 40                 | 0.623       | 103.4%               | 84       | 110        |             |      |          | B    |
| Ethylbenzene            | 41.95   | 0.5                   | 40                 | 0           | 104.9%               | 86       | 113        |             |      |          |      |
| m,p-Xylene              | 81.76   | 1                     | 80                 | 0.2082      | 101.9%               | 81       | 114        |             |      |          |      |
| Methyl tert-Butyl Ether | 37.91   | 1                     | 40                 | 0           | 94.8%                | 69       | 129        |             |      |          |      |
| o-Xylene                | 41.14   | 0.5                   | 40                 | 0.0674      | 102.7%               | 86       | 112        |             |      |          |      |
| Toluene                 | 41.3    | 0.5                   | 40                 | 0.3913      | 102.3%               | 85       | 111        |             |      |          |      |

| Sample ID: LCS WATER    | Batch ID: GC-1_990205 | Test Code: SW8021B   | Units: µg/L | Analysis Date 2/5/99 |        | Prep Date: |           |             |      |          |      |
|-------------------------|-----------------------|----------------------|-------------|----------------------|--------|------------|-----------|-------------|------|----------|------|
| Client ID:              | 9902001               | Run ID: GC-1_990205A |             | SeqNo: 10713         |        |            |           |             |      |          |      |
| Analyte                 | Result                | PQL                  | SPK value   | SPK Ref Val          | %REC   | LowLimit   | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Benzene                 | 40.28                 | 0.5                  | 40          | 0.1899               | 100.2% | 84         | 110       |             |      |          |      |
| Ethylbenzene            | 38.51                 | 0.5                  | 40          | 0.091                | 96.0%  | 86         | 113       |             |      |          |      |
| m,p-Xylene              | 74.97                 | 1                    | 80          | 0.3251               | 93.3%  | 81         | 114       |             |      |          |      |
| Methyl tert-Butyl Ether | 40.93                 | 1                    | 40          | 0                    | 102.3% | 69         | 129       |             |      |          |      |
| o-Xylene                | 37.99                 | 0.5                  | 40          | 0.0894               | 94.8%  | 86         | 112       |             |      |          |      |
| Toluene                 | 39.73                 | 0.5                  | 40          | 0.3167               | 98.5%  | 85         | 111       |             |      |          |      |

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

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

B - Analyte detected in the associated Method Blank

CLIENT: PNM - Public Service Company of NM

Work Order: 9902001

Project: Jicarilla 147-6

## QC SUMMARY REPORT

Laboratory Control Spike - generic

|                         |        |                       |           |                    |        |              |           |                      |      |            |      |
|-------------------------|--------|-----------------------|-----------|--------------------|--------|--------------|-----------|----------------------|------|------------|------|
| Sample ID: LCS WATER    |        | Batch ID: GC-1_990209 |           | Test Code: SW8021B |        | Units: µg/L  |           | Analysis Date 2/9/99 |      | Prep Date: |      |
| Client ID:              |        | 9902001               |           | Run ID:            |        | GC-1_990209A |           | SeqNo: 10737         |      |            |      |
| Analyte                 | Result | PQL                   | SPK value | SPK Ref Val        | %REC   | LowLimit     | HighLimit | RPD Ref Val          | %RPD | RPDLimit   | Qual |
| Benzene                 | 40.08  | 0.5                   | 40        | 0.0529             | 100.1% | 84           | 110       |                      |      |            |      |
| Ethylbenzene            | 41.07  | 0.5                   | 40        | 0.0477             | 102.6% | 86           | 113       |                      |      |            |      |
| m,p-Xylene              | 78.32  | 1                     | 80        | 0.1069             | 97.8%  | 81           | 114       |                      |      |            |      |
| Methyl tert-Butyl Ether | 44.15  | 1                     | 40        | 0                  | 110.4% | 69           | 129       |                      |      |            |      |
| o-Xylene                | 40.35  | 0.5                   | 40        | 0.0442             | 100.8% | 86           | 112       |                      |      |            |      |
| Toluene                 | 40.66  | 0.5                   | 40        | 0.1182             | 101.4% | 85           | 111       |                      |      |            |      |

Qualifiers:

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

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

B - Analyte detected in the associated Method Blank

# On Site Technologies, LTD.

Date: 03-Mar-99

CLIENT: PNM - Public Service Company of NM

Work Order: 9902001

Project: Jicarilla 147-6

## QC SUMMARY REPORT

Continuing Calibration Verification Standard

| Sample ID: CCV1 QC0606/07 |        | Batch ID: GC-1_990203 | Test Code: SW8021B | Units: µg/L |             | Analysis Date 2/3/99 |          | Prep Date: |              |
|---------------------------|--------|-----------------------|--------------------|-------------|-------------|----------------------|----------|------------|--------------|
| Client ID: 9902001        |        | Run ID: GC-1_990203A  | PQL                | SPK value   | SPK Ref Val | %REC                 | LowLimit | HighLimit  | SeqNo: 10647 |
| Analyte                   | Result |                       |                    |             |             |                      |          |            |              |
| Benzene                   | 21.21  |                       | 0.5                | 20          | 0           | 106.1%               | 85       | 115        |              |
| Ethylbenzene              | 20.93  |                       | 0.5                | 20          | 0           | 104.7%               | 85       | 115        |              |
| m,p-Xylene                | 40.26  |                       | 1                  | 40          | 0           | 100.6%               | 85       | 115        |              |
| Methyl tert-Butyl Ether   | 19.2   |                       | 1                  | 20          | 0           | 96.0%                | 85       | 115        |              |
| o-Xylene                  | 20.39  |                       | 0.5                | 20          | 0           | 102.0%               | 85       | 115        |              |
| Toluene                   | 20.69  |                       | 0.5                | 20          | 0           | 103.4%               | 85       | 115        |              |
| 1,4-Difluorobenzene       | 96.63  |                       | 0                  | 100         | 0           | 96.6%                | 90       | 102        |              |
| 4-Bromochlorobenzene      | 98.17  |                       | 0                  | 100         | 0           | 98.2%                | 93       | 102        |              |
| Fluorobenzene             | 96.15  |                       | 0                  | 100         | 0           | 96.2%                | 84       | 103        |              |

B

| Sample ID: CCV2 QC0606/07 |        | Batch ID: GC-1_990203 | Test Code: SW8021B | Units: µg/L |             | Analysis Date 2/3/99 |          | Prep Date: |              |
|---------------------------|--------|-----------------------|--------------------|-------------|-------------|----------------------|----------|------------|--------------|
| Client ID: 9902001        |        | Run ID: GC-1_990203A  | PQL                | SPK value   | SPK Ref Val | %REC                 | LowLimit | HighLimit  | SeqNo: 10648 |
| Analyte                   | Result |                       |                    |             |             |                      |          |            |              |
| Benzene                   | 21.51  |                       | 0.5                | 20          | 0           | 107.6%               | 85       | 115        |              |
| Ethylbenzene              | 21.08  |                       | 0.5                | 20          | 0           | 105.4%               | 85       | 115        |              |
| m,p-Xylene                | 40.5   |                       | 1                  | 40          | 0           | 101.2%               | 85       | 115        |              |
| Methyl tert-Butyl Ether   | 19.94  |                       | 1                  | 20          | 0           | 99.7%                | 85       | 115        |              |
| o-Xylene                  | 20.71  |                       | 0.5                | 20          | 0           | 103.6%               | 85       | 115        |              |
| Toluene                   | 20.96  |                       | 0.5                | 20          | 0           | 104.8%               | 85       | 115        |              |
| 1,4-Difluorobenzene       | 97.04  |                       | 0                  | 100         | 0           | 97.0%                | 90       | 102        |              |
| 4-Bromochlorobenzene      | 98.55  |                       | 0                  | 100         | 0           | 98.6%                | 93       | 102        |              |
| Fluorobenzene             | 95.94  |                       | 0                  | 100         | 0           | 95.9%                | 84       | 103        |              |

B

### Qualifiers:

NID - 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: PNM - Public Service Company of NM

Work Order: 9902001

Project: Jicarilla 147-6

## QC SUMMARY REPORT

Continuing Calibration Verification Standard

| Sample ID: CCV3 QC0606/07 |        | Batch ID: GC-1_990203 |           | Test Code: SW8021B |        | Units: µg/L |           | Analysis Date 2/3/99 |      | Prep Date:   |      |
|---------------------------|--------|-----------------------|-----------|--------------------|--------|-------------|-----------|----------------------|------|--------------|------|
| Client ID: 9902001        |        | Run ID: GC-1_990203A  |           | SeqNo: 10649       |        | HighLimit   |           | LowLimit             |      | SeqNo: 10649 |      |
| Analyte                   | Result | PQL                   | SPK value | SPK Ref Val        | %REC   | LowLimit    | HighLimit | RPD Ref Val          | %RPD | RPDLimit     | Qual |
| Benzene                   | 41.93  | 0.5                   | 40        | 0                  | 104.8% | 85          | 115       |                      |      |              | B    |
| Ethylbenzene              | 41.64  | 0.5                   | 40        | 0                  | 104.1% | 85          | 115       |                      |      |              |      |
| m,p-Xylene                | 81.38  | 1                     | 80        | 0                  | 101.7% | 85          | 115       |                      |      |              |      |
| Methyl tert-Butyl Ether   | 39.89  | 1                     | 40        | 0                  | 99.7%  | 85          | 115       |                      |      |              |      |
| o-Xylene                  | 41.3   | 0.5                   | 40        | 0                  | 103.3% | 85          | 115       |                      |      |              |      |
| Toluene                   | 41.27  | 0.5                   | 40        | 0                  | 103.2% | 85          | 115       |                      |      |              |      |
| 1,4-Difluorobenzene       | 96.42  | 0                     | 100       | 0                  | 96.4%  | 90          | 102       |                      |      |              |      |
| 4-Bromochlorobenzene      | 98.18  | 0                     | 100       | 0                  | 98.2%  | 93          | 102       |                      |      |              |      |
| Fluorobenzene             | 95.92  | 0                     | 100       | 0                  | 95.9%  | 84          | 103       |                      |      |              |      |

| Sample ID: CCV1 QC0606/07 |        | Batch ID: GC-1_990205 |           | Test Code: SW8021B |        | Units: µg/L |           | Analysis Date 2/5/99 |      | Prep Date:   |      |
|---------------------------|--------|-----------------------|-----------|--------------------|--------|-------------|-----------|----------------------|------|--------------|------|
| Client ID: 9902001        |        | Run ID: GC-1_990205A  |           | SeqNo: 10710       |        | HighLimit   |           | LowLimit             |      | SeqNo: 10710 |      |
| Analyte                   | Result | PQL                   | SPK value | SPK Ref Val        | %REC   | LowLimit    | HighLimit | RPD Ref Val          | %RPD | RPDLimit     | Qual |
| Benzene                   | 20.93  | 0.5                   | 20        | 0                  | 104.6% | 85          | 115       |                      |      |              |      |
| Ethylbenzene              | 20.93  | 0.5                   | 20        | 0                  | 104.6% | 85          | 115       |                      |      |              |      |
| m,p-Xylene                | 40.28  | 1                     | 40        | 0                  | 100.7% | 85          | 115       |                      |      |              |      |
| Methyl tert-Butyl Ether   | 21.22  | 1                     | 20        | 0                  | 106.1% | 85          | 115       |                      |      |              |      |
| o-Xylene                  | 20.59  | 0.5                   | 20        | 0                  | 102.9% | 85          | 115       |                      |      |              |      |
| Toluene                   | 20.7   | 0.5                   | 20        | 0                  | 103.5% | 85          | 115       |                      |      |              |      |
| 1,4-Difluorobenzene       | 96.85  | 0                     | 100       | 0                  | 96.9%  | 90          | 102       |                      |      |              |      |
| 4-Bromochlorobenzene      | 100.4  | 0                     | 100       | 0                  | 100.4% | 93          | 102       |                      |      |              |      |
| Fluorobenzene             | 95.75  | 0                     | 100       | 0                  | 95.8%  | 84          | 103       |                      |      |              |      |

### Qualifiers:

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S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: PNM - Public Service Company of NM

Work Order: 9902001

Project: Jicarilla 147-6

## QC SUMMARY REPORT

Continuing Calibration Verification Standard

| Sample ID: CCV2 QC0606/07 |        | Batch ID: GC-1_990205 |           | Test Code: SW8021B |        | Units: µg/L  |           | Analysis Date 2/5/99 |      | Prep Date: |      |
|---------------------------|--------|-----------------------|-----------|--------------------|--------|--------------|-----------|----------------------|------|------------|------|
| Client ID:                |        | 9902001               |           | Run ID:            |        | GC-1_990205A |           | SeqNo: 10711         |      |            |      |
| Analyte                   | Result | PQL                   | SPK value | SPK Ref Val        | %REC   | LowLimit     | HighLimit | RPD Ref Val          | %RPD | RPDLimit   | Qual |
| Benzene                   | 7.529  | 0.5                   | 20        | 0                  | 37.6%  | 85           | 115       |                      |      |            | S    |
| Ethylbenzene              | 20.93  | 0.5                   | 20        | 0                  | 104.6% | 85           | 115       |                      |      |            | CA   |
| m,p-Xylene                | 39.29  | 1                     | 40        | 0                  | 98.2%  | 85           | 115       |                      |      |            |      |
| Methyl tert-Butyl Ether   | 13     | 1                     | 20        | 0                  | 65.0%  | 85           | 115       |                      |      |            | S    |
| o-Xylene                  | 19.51  | 0.5                   | 20        | 0                  | 97.6%  | 85           | 115       |                      |      |            |      |
| Toluene                   | 21.06  | 0.5                   | 20        | 0                  | 105.3% | 85           | 115       |                      |      |            |      |
| 1,4-Difluorobenzene       | 101.3  | 0                     | 100       | 0                  | 101.3% | 90           | 102       |                      |      |            |      |
| 4-Bromochlorobenzene      | 95.74  | 0                     | 100       | 0                  | 95.7%  | 93           | 102       |                      |      |            |      |
| Fluorobenzene             | 70.14  | 0                     | 100       | 0                  | 70.1%  | 84           | 103       |                      |      |            | S    |

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CASE 147-6  
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S

S

| Sample ID: CCV3 QC0606/07 |        | Batch ID: GC-1_990205 |           | Test Code: SW8021B   |       | Units: µg/L |           | Analysis Date 2/5/99 |      | Prep Date: |      |
|---------------------------|--------|-----------------------|-----------|----------------------|-------|-------------|-----------|----------------------|------|------------|------|
| Client ID:                |        | 9902001               |           | Run ID: GC-1_990205A |       |             |           | SeqNo: 10712         |      |            |      |
| Analyte                   | Result | PQL                   | SPK value | SPK Ref Val          | %REC  | LowLimit    | HighLimit | RPD Ref Val          | %RPD | RPDLimit   | Qual |
| Benzene                   | 38.35  | 0.5                   | 40        | 0                    | 95.9% | 85          | 115       |                      |      |            |      |
| Ethylbenzene              | 38.75  | 0.5                   | 40        | 0                    | 96.9% | 85          | 115       |                      |      |            |      |
| m,p-Xylene                | 74.56  | 1                     | 80        | 0                    | 93.2% | 85          | 115       |                      |      |            |      |
| Methyl tert-Butyl Ether   | 26.4   | 1                     | 40        | 0                    | 66.0% | 85          | 115       |                      |      |            |      |
| o-Xylene                  | 38.6   | 0.5                   | 40        | 0                    | 96.5% | 85          | 115       |                      |      |            | S    |
| Toluene                   | 38.64  | 0.5                   | 40        | 0                    | 96.6% | 85          | 115       |                      |      |            |      |
| 1,4-Difluorobenzene       | 97.31  | 0                     | 100       | 0                    | 97.3% | 90          | 102       |                      |      |            |      |
| 4-Bromochlorobenzene      | 99.15  | 0                     | 100       | 0                    | 99.1% | 93          | 102       |                      |      |            |      |
| Fluorobenzene             | 94.29  | 0                     | 100       | 0                    | 94.3% | 84          | 103       |                      |      |            |      |

S

### 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:** PNM - Public Service Company of NM  
**Work Order:** 9902001  
**Project:** Jicarilla 147-6

# QC SUMMARY REPORT

Continuing Calibration Verification Standard

| Sample ID: CCV1 QC0606/07 |        | Batch ID: GC-1_990209 | Test Code: SW8021B | Units: µg/L | Analysis Date 2/9/99 |        | Prep Date:                                        |
|---------------------------|--------|-----------------------|--------------------|-------------|----------------------|--------|---------------------------------------------------|
| Client ID: 9902001        |        | Run ID: GC-1_990209A  | PQL                | SPK value   | SPK Ref Val          | %REC   | SeqNo: 10733                                      |
| Analyte                   | Result |                       |                    |             |                      |        | LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual |
| Benzene                   | 21.18  |                       | 0.5                | 20          | 0                    | 105.9% | 85 115                                            |
| Ethylbenzene              | 21.42  |                       | 0.5                | 20          | 0                    | 107.1% | 85 115                                            |
| m,p-Xylene                | 40.51  |                       | 1                  | 40          | 0                    | 101.3% | 85 115                                            |
| Methyl tert-Butyl Ether   | 22.49  |                       | 1                  | 20          | 0                    | 112.5% | 85 115                                            |
| o-Xylene                  | 20.91  |                       | 0.5                | 20          | 0                    | 104.6% | 85 115                                            |
| Toluene                   | 21.35  |                       | 0.5                | 20          | 0                    | 106.8% | 85 115                                            |
| 1,4-Difluorobenzene       | 96     |                       | 0                  | 100         | 0                    | 96.0%  | 90 102                                            |
| 4-Bromochlorobenzene      | 98.32  |                       | 0                  | 100         | 0                    | 98.3%  | 93 102                                            |
| Fluorobenzene             | 94.02  |                       | 0                  | 100         | 0                    | 94.0%  | 84 103                                            |

| Sample ID: CCV2 QC0606/07 |        | Batch ID: GC-1_990209 | Test Code: SW8021B | Units: µg/L | Analysis Date 2/9/99 |        | Prep Date:                                        |
|---------------------------|--------|-----------------------|--------------------|-------------|----------------------|--------|---------------------------------------------------|
| Client ID: 9902001        |        | Run ID: GC-1_990209A  | PQL                | SPK value   | SPK Ref Val          | %REC   | SeqNo: 10734                                      |
| Analyte                   | Result |                       |                    |             |                      |        | LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual |
| Benzene                   | 22.12  |                       | 0.5                | 20          | 0                    | 110.6% | 85 115                                            |
| Ethylbenzene              | 22.48  |                       | 0.5                | 20          | 0                    | 112.4% | 85 115                                            |
| m,p-Xylene                | 42.44  |                       | 1                  | 40          | 0                    | 106.1% | 85 115                                            |
| Methyl tert-Butyl Ether   | 24.44  |                       | 1                  | 20          | 0                    | 122.2% | 85 115                                            |
| o-Xylene                  | 22.04  |                       | 0.5                | 20          | 0                    | 110.2% | 85 115                                            |
| Toluene                   | 22.43  |                       | 0.5                | 20          | 0                    | 112.2% | 85 115                                            |
| 1,4-Difluorobenzene       | 96.61  |                       | 0                  | 100         | 0                    | 96.6%  | 90 102                                            |
| 4-Bromochlorobenzene      | 98.37  |                       | 0                  | 100         | 0                    | 98.4%  | 93 102                                            |
| Fluorobenzene             | 93.45  |                       | 0                  | 100         | 0                    | 93.4%  | 84 103                                            |

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

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

B - Analyte detected in the associated Method Blank

CLIENT: PNM - Public Service Company of NM

Work Order: 9902001

Project: Jicarilla 147-6

# QC SUMMARY REPORT

Continuing Calibration Verification Standard

| Sample ID: CCV3 QC0606/07 |        | Batch ID: GC-1_990209 | Test Code: SW8021B | Units: µg/L  |        | Analysis Date 2/9/99 |           |             | Prep Date: |          |      |
|---------------------------|--------|-----------------------|--------------------|--------------|--------|----------------------|-----------|-------------|------------|----------|------|
| Client ID:                |        | Run ID: GC-1_990209A  |                    | SeqNo: 10735 |        |                      |           |             |            |          |      |
| Analyte                   | Result | PQL                   | SPK value          | SPK Ref Val  | %REC   | LowLimit             | HighLimit | RPD Ref Val | %RPD       | RPDLimit | Qual |
| Benzene                   | 41.03  | 0.5                   | 40                 | 0            | 102.6% | 85                   | 115       |             |            |          |      |
| Ethylbenzene              | 41.78  | 0.5                   | 40                 | 0            | 104.4% | 85                   | 115       |             |            |          |      |
| m,p-Xylene                | 79.16  | 1                     | 80                 | 0            | 98.9%  | 85                   | 115       |             |            |          |      |
| Methyl tert-Butyl Ether   | 46.34  | 1                     | 40                 | 0            | 115.8% | 85                   | 115       |             |            |          | S    |
| o-Xylene                  | 40.89  | 0.5                   | 40                 | 0            | 102.2% | 85                   | 115       |             |            |          |      |
| Toluene                   | 41.48  | 0.5                   | 40                 | 0            | 103.7% | 85                   | 115       |             |            |          |      |
| 1,4-Difluorobenzene       | 96     | 0                     | 100                | 0            | 96.0%  | 90                   | 102       |             |            |          |      |
| 4-Bromochlorobenzene      | 96.15  | 0                     | 100                | 0            | 96.2%  | 93                   | 102       |             |            |          |      |
| Fluorobenzene             | 92.72  | 0                     | 100                | 0            | 92.7%  | 84                   | 103       |             |            |          |      |

| Sample ID: CCV4 QC0606/07 |        | Batch ID: GC-1_990209 | Test Code: SW8021B | Units: µg/L |           | Analysis Date 2/9/99 |        | Prep Date: |           |             |      |          |      |
|---------------------------|--------|-----------------------|--------------------|-------------|-----------|----------------------|--------|------------|-----------|-------------|------|----------|------|
| Client ID:                |        | Run ID:               | GC-1_990209A       | PQL         | SPK value | SPK Ref Val          | %REC   | LowLimit   | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Analyte                   | Result |                       |                    |             |           |                      |        |            |           |             |      |          |      |
| Benzene                   | 21.18  |                       | 0.5                | 20          | 0         |                      | 105.9% | 85         | 115       |             |      |          |      |
| Ethylbenzene              | 21.76  |                       | 0.5                | 20          | 0         |                      | 108.8% | 85         | 115       |             |      |          |      |
| m,p-Xylene                | 41     |                       | 1                  | 40          | 0         |                      | 102.5% | 85         | 115       |             |      |          |      |
| Methyl tert-Butyl Ether   | 23.28  |                       | 1                  | 20          | 0         |                      | 116.4% | 85         | 115       |             |      |          | S    |
| o-Xylene                  | 21.24  |                       | 0.5                | 20          | 0         |                      | 106.2% | 85         | 115       |             |      |          |      |
| Toluene                   | 21.43  |                       | 0.5                | 20          | 0         |                      | 107.1% | 85         | 115       |             |      |          |      |
| 1,4-Difluorobenzene       | 95.68  |                       | 0                  | 100         | 0         |                      | 95.7%  | 90         | 102       |             |      |          |      |
| 4-Bromochlorobenzene      | 96.32  |                       | 0                  | 100         | 0         |                      | 96.3%  | 93         | 102       |             |      |          |      |
| Fluorobenzene             | 93.51  |                       | 0                  | 100         | 0         |                      | 93.5%  | 84         | 103       |             |      |          |      |

Qualifiers: NID - 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: PNM - Public Service Company of NM

Work Order: 9902001

Project: Jicarilla 147-6

Test No: SW8021B

**QC SUMMARY REPORT  
SURROGATE RECOVERIES****BTEX**

| Sample ID      | 14FBZ | 4BCBZ | FLBZ   |
|----------------|-------|-------|--------|
| 9901024-03A    | 93.4  | 96.2  | 91.3   |
| 9901024-04A    | 97.1  | 97.9  | 96.2   |
| 9901030-04A    | 94.6  | 98.6  | 95     |
| 9901030-04AMS  | 93.2  | 98    | 93.6   |
| 9901030-04AMSD | 94.5  | 99.8  | 95.3   |
| 9902001-01A    | 96.8  | 96.2  | 96     |
| 9902001-02A    | 95.7  | 97.4  | 93.9   |
| 9902001-03A    | 94.2  | 98.3  | 91.6   |
| 9902001-03AMS  | 95    | 97.8  | 93.6   |
| 9902001-03AMSD | 95.2  | 97.5  | 93.3   |
| 9902001-04A    | 95.4  | 98    | 92.9   |
| 9902001-05A    | 95.6  | 97.2  | 94.3   |
| 9902002-01A    | 97.2  | 99    | 96.5   |
| 9902002-02A    | 97.9  | 97.9  | 97.1   |
| 9902002-03A    | 97.5  | 98.8  | 96.4   |
| 9902002-04A    | 96.5  | 98.3  | 96.6   |
| 9902002-05A    | 97.3  | 98.3  | 96.4   |
| 9902002-06A    | 97.5  | 98.3  | 96.4   |
| 9902002-07A    | 95.1  | 95.7  | 94.2   |
| 9902002-10A    | 96.1  | 97.2  | 95.6   |
| 9902002-11A    | 92.7  | 97.5  | 75.4 * |
| 9902002-12A    | 90.7  | 98.5  | 63.7 * |
| 9902002-13A    | 97.5  | 97.6  | 96.2   |
| 9902002-14A    | 97.5  | 97.8  | 96.4   |
| 9902002-15A    | 97.5  | 97.4  | 96.4   |
| 9902004-01A    | 93.8  | 96.3  | 92.5   |
| 9902005-01A    | 97.1  | 99.6  | 95.1   |

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

14FBZ

= 1,4-Difluorobenzene

90-102

4BCBZ

= 4-Bromochlorobenzene

93-102

FLBZ

= Fluorobenzene

84-103

\* Surrogate recovery outside acceptance limits

**CLIENT:** PNM - Public Service Company of NM  
**Work Order:** 9902001  
**Project:** Jicarilla 147-6  
**Test No:** SW8021B

## QC SUMMARY REPORT SURROGATE RECOVERIES

**BTEX**

| Sample ID      | 14FBZ | 4BCBZ  | FLBZ |
|----------------|-------|--------|------|
| 9902006-01A    | 95.2  | 97.5   | 92.1 |
| 9902007-01A    | 91    | 92.7 * | 88.8 |
| 9902008-01A    | 99.5  | 93.6   | 96.9 |
| 9902009-01A    | 93.5  | 96.1   | 91.8 |
| 9902010-01A    | 94.7  | 97.3   | 94.7 |
| 9902015-01A    | 93.9  | 94.2   | 92.6 |
| 9902027-01A    | 96.6  | 97.2   | 94   |
| 9902027-02A    | 97    | 97.4   | 94.8 |
| 9902028-01A    | 94.7  | 95.8   | 92.4 |
| 9902028-01AMS  | 94    | 95.9   | 91.8 |
| 9902028-01AMSD | 94.5  | 96     | 91.6 |
| CCV1 QC0606/07 | 96    | 98.3   | 94   |
| CCV2 QC0606/07 | 96.6  | 98.4   | 93.4 |
| CCV3 QC0606/07 | 96    | 96.2   | 92.7 |
| CCV4 QC0606/07 | 95.7  | 96.3   | 93.5 |
| LCS WATER      | 95.2  | 97.9   | 93.2 |
| MB1            | 97.4  | 100    | 95.5 |
| MB2            | 96.2  | 96.8   | 93.8 |

| Acronym | Surrogate              | QC Limits |
|---------|------------------------|-----------|
| 14FBZ   | = 1,4-Difluorobenzene  | 90-102    |
| 4BCBZ   | = 4-Bromochlorobenzene | 93-102    |
| FLBZ    | = Fluorobenzene        | 84-103    |

\* Surrogate recovery outside acceptance limits

# On Site Technologies, LTD.

Date: 03-Mar-99

CLIENT: PNM - Public Service Company of NM  
 Work Order: 9902001  
 Project: Jicarilla 147-6

## QC SUMMARY REPORT

Method Blank

|                          |                              |                                |                    |                               |                                                        |
|--------------------------|------------------------------|--------------------------------|--------------------|-------------------------------|--------------------------------------------------------|
| Sample ID: <b>MBLank</b> | Batch ID: <b>API H2O_990</b> | Test Code: <b>E215.1</b>       | Units: <b>mg/L</b> | Analysis Date: <b>2/12/99</b> | Prep Date:                                             |
| Client ID:               | <b>9902001</b>               | Run ID: <b>API H2O_990212A</b> |                    | SeqNo: <b>10814</b>           |                                                        |
| Analyte                  | Result                       | PQL                            | SPK value          | SPK Ref Val                   | %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual |
| Calcium                  | ND                           | 0.25                           |                    |                               |                                                        |
| Sample ID: <b>MBLank</b> | Batch ID: <b>API H2O_990</b> | Test Code: <b>E242.1</b>       | Units: <b>mg/L</b> | Analysis Date: <b>2/11/99</b> | Prep Date:                                             |
| Client ID:               | <b>9902001</b>               | Run ID: <b>API H2O_990212A</b> |                    | SeqNo: <b>10842</b>           |                                                        |
| Analyte                  | Result                       | PQL                            | SPK value          | SPK Ref Val                   | %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual |
| Magnesium                | ND                           | 0.25                           |                    |                               |                                                        |
| Sample ID: <b>MBLank</b> | Batch ID: <b>API H2O_990</b> | Test Code: <b>E258.1</b>       | Units: <b>mg/L</b> | Analysis Date: <b>2/10/99</b> | Prep Date:                                             |
| Client ID:               | <b>9902001</b>               | Run ID: <b>API H2O_990212A</b> |                    | SeqNo: <b>10856</b>           |                                                        |
| Analyte                  | Result                       | PQL                            | SPK value          | SPK Ref Val                   | %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual |
| Potassium                | ND                           | 0.25                           |                    |                               |                                                        |
| Sample ID: <b>MBLank</b> | Batch ID: <b>API H2O_990</b> | Test Code: <b>E273.1</b>       | Units: <b>mg/L</b> | Analysis Date: <b>2/16/99</b> | Prep Date:                                             |
| Client ID:               | <b>9902001</b>               | Run ID: <b>API H2O_990212A</b> |                    | SeqNo: <b>10870</b>           |                                                        |
| Analyte                  | Result                       | PQL                            | SPK value          | SPK Ref Val                   | %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual |
| Sodium                   | ND                           | 0.25                           |                    |                               |                                                        |

**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: PNM - Public Service Company of NM  
Work Order: 9902001  
Project: Jicarilla 147-6

# QC SUMMARY REPORT

Method Blank

|                                    |                       |                         |                   |                       |                                                        |
|------------------------------------|-----------------------|-------------------------|-------------------|-----------------------|--------------------------------------------------------|
| Sample ID: MBlank                  | Batch ID: API H2O_990 | Test Code: M2320 B      | Units: mg/L CaCO3 | Analysis Date: 2/5/99 | Prep Date:                                             |
| Client ID:                         | 9902001               | Run ID: API H2O_990212A |                   | SeqNo: 10884          |                                                        |
| Analyte                            | Result                | PQL                     | SPK value         | SPK Ref Val           | %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual |
| Alkalinity, Bicarbonate (As CaCO3) | ND                    | 5                       |                   |                       |                                                        |
| Alkalinity, Carbonate (As CaCO3)   | ND                    | 5                       |                   |                       |                                                        |
| Alkalinity, Hydroxide              | ND                    | 5                       |                   |                       |                                                        |
| Alkalinity, Total (As CaCO3)       | ND                    | 5                       |                   |                       |                                                        |

|                   |                       |                         |             |                       |                                                        |
|-------------------|-----------------------|-------------------------|-------------|-----------------------|--------------------------------------------------------|
| Sample ID: MBlank | Batch ID: API H2O_990 | Test Code: E325.3       | Units: mg/L | Analysis Date: 2/8/99 | Prep Date:                                             |
| Client ID:        | 9902001               | Run ID: API H2O_990212A |             | SeqNo: 10897          |                                                        |
| Analyte           | Result                | PQL                     | SPK value   | SPK Ref Val           | %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual |
| Chloride          | ND                    | 10                      |             |                       |                                                        |

|                   |                       |                         |             |                       |                                                        |
|-------------------|-----------------------|-------------------------|-------------|-----------------------|--------------------------------------------------------|
| Sample ID: MBlank | Batch ID: API H2O_990 | Test Code: M4500-SO4 D  | Units: mg/L | Analysis Date: 2/8/99 | Prep Date:                                             |
| Client ID:        | 9902001               | Run ID: API H2O_990212A |             | SeqNo: 10933          |                                                        |
| Analyte           | Result                | PQL                     | SPK value   | SPK Ref Val           | %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual |
| Sulfate           | ND                    | 5                       |             |                       |                                                        |

|                                          |                       |                         |             |                        |                                                        |
|------------------------------------------|-----------------------|-------------------------|-------------|------------------------|--------------------------------------------------------|
| Sample ID: MBlank                        | Batch ID: API H2O_990 | Test Code: E160.1       | Units: mg/L | Analysis Date: 2/12/99 | Prep Date:                                             |
| Client ID:                               | 9902001               | Run ID: API H2O_990212A |             | SeqNo: 10946           |                                                        |
| Analyte                                  | Result                | PQL                     | SPK value   | SPK Ref Val            | %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual |
| Total Dissolved Solids (Residue, Filter) | 24                    | 40                      |             |                        | J                                                      |

|                   |                       |                         |             |                        |                                                        |
|-------------------|-----------------------|-------------------------|-------------|------------------------|--------------------------------------------------------|
| Sample ID: MBlank | Batch ID: API H2O_990 | Test Code: E236.1       | Units: mg/L | Analysis Date: 2/16/99 | Prep Date:                                             |
| Client ID:        | 9902001               | Run ID: API H2O_990212A |             | SeqNo: 10976           |                                                        |
| Analyte           | Result                | PQL                     | SPK value   | SPK Ref Val            | %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual |
| Iron              | ND                    | 0.1                     |             |                        |                                                        |

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: PNM - Public Service Company of NM

Work Order: 9902001

Project: Jicarilla 147-6

## QC SUMMARY REPORT

Method Blank

Sample ID: **MBLANK** Batch ID: **API H2O\_990** Test Code: **M2710 F** Units: Analysis Date: **2/16/99** Prep Date:

Client ID: **9902001** Run ID: **API H2O\_990212A** SeqNo: **10988**

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Specific Gravity 1 1

Sample ID: **MBLK** Batch ID: **API H2O\_990** Test Code: **E325.3** Units: mg/L Analysis Date: **2/8/99** Prep Date:

Client ID: **9902001** Run ID: **API H2O\_990212A** SeqNo: **10907**

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride ND 10

Sample ID: **MBLK** Batch ID: **API H2O\_990** Test Code: **E120.1** Units: uS/cm Analysis Date: **2/5/99** Prep Date:

Client ID: **9902001** Run ID: **API H2O\_990212A** SeqNo: **10972**

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Specific Conductance ND 2

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: 03-Mar-99

CLIENT: PNM - Public Service Company of NM  
 Work Order: 9902001  
 Project: Jicarilla 147-6

## QC SUMMARY REPORT

Sample Duplicate

|                         |                         |                   |             |                       |                                                        |
|-------------------------|-------------------------|-------------------|-------------|-----------------------|--------------------------------------------------------|
| Sample ID: 9902024-01AD | Batch ID: API H2O_990   | Test Code: E325.3 | Units: mg/L | Analysis Date: 2/8/99 | Prep Date:                                             |
| Client ID: 9902001      | Run ID: API H2O_990212A |                   |             | SeqNo: 10912          |                                                        |
| Analyte                 | Result                  | PQL               | SPK value   | SPK Ref Val           | %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual |
| Chloride                | 15                      | 10                | 0           | 0                     | 0 0 14 6.9% 15                                         |

|                         |                         |                        |             |                       |                                                        |
|-------------------------|-------------------------|------------------------|-------------|-----------------------|--------------------------------------------------------|
| Sample ID: 9902024-01AD | Batch ID: API H2O_990   | Test Code: M4500-SO4 D | Units: mg/L | Analysis Date: 2/8/99 | Prep Date:                                             |
| Client ID: 9902001      | Run ID: API H2O_990212A |                        |             | SeqNo: 10945          |                                                        |
| Analyte                 | Result                  | PQL                    | SPK value   | SPK Ref Val           | %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual |
| Sulfate                 | 203                     | 5                      | 0           | 0                     | 0 0 202 0.5% 4                                         |

|                                    |                         |                    |                   |                       |                                                        |
|------------------------------------|-------------------------|--------------------|-------------------|-----------------------|--------------------------------------------------------|
| Sample ID: 9902026-03AD            | Batch ID: API H2O_990   | Test Code: M2320 B | Units: mg/L CaCO3 | Analysis Date: 2/5/99 | Prep Date:                                             |
| Client ID: 9902001                 | Run ID: API H2O_990212A |                    |                   | SeqNo: 10896          |                                                        |
| Analyte                            | Result                  | PQL                | SPK value         | SPK Ref Val           | %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual |
| Alkalinity, Bicarbonate (As CaCO3) | 486                     | 5                  | 0                 | 0                     | 0 0 481 1.0% 5                                         |
| Alkalinity, Carbonate (As CaCO3)   | ND                      | 5                  | 0                 | 0                     | 0 0 0 0.0% 5                                           |
| Alkalinity, Hydroxide              | ND                      | 5                  | 0                 | 0                     | 0 0 0 0.0% 5                                           |
| Alkalinity, Total (As CaCO3)       | 486                     | 5                  | 0                 | 0                     | 0 0 481 1.0% 5                                         |

|                         |                         |                   |             |                       |                                                        |
|-------------------------|-------------------------|-------------------|-------------|-----------------------|--------------------------------------------------------|
| Sample ID: 9902026-07AD | Batch ID: API H2O_990   | Test Code: E325.3 | Units: mg/L | Analysis Date: 2/8/99 | Prep Date:                                             |
| Client ID: 9902001      | Run ID: API H2O_990212A |                   |             | SeqNo: 10906          |                                                        |
| Analyte                 | Result                  | PQL               | SPK value   | SPK Ref Val           | %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual |
| Chloride                | 20100                   | 10                | 0           | 0                     | 0 0 19280 4.2% 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: 03-Mar-99

CLIENT: PNM - Public Service Company of NM  
 Work Order: 9902001  
 Project: Jicarilla 147-6

## QC SUMMARY REPORT

Sample Matrix Spike

|                            |                       |                         |             |                        |                                                        |
|----------------------------|-----------------------|-------------------------|-------------|------------------------|--------------------------------------------------------|
| Sample ID: 9902001-01BMS   | Batch ID: API H2O_990 | Test Code: E242.1       | Units: mg/L | Analysis Date: 2/11/99 | Prep Date:                                             |
| Client ID: 9901281250; MW- | 9902001               | Run ID: API H2O_990212A |             | SeqNo: 10854           |                                                        |
| Analyte                    | Result                | PQL                     | SPK value   | SPK Ref Val            | %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual |
| Magnesium                  | 3.08                  | 0.25                    | 1           | 2.4                    | 68.0% 68 144                                           |
| Sample ID: 9902001-01BMS   | Batch ID: API H2O_990 | Test Code: E258.1       | Units: mg/L | Analysis Date: 2/10/99 | Prep Date:                                             |
| Client ID: 9901281250; MW- | 9902001               | Run ID: API H2O_990212A |             | SeqNo: 10868           |                                                        |
| Analyte                    | Result                | PQL                     | SPK value   | SPK Ref Val            | %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual |
| Potassium                  | 4.4                   | 0.25                    | 1           | 3.04                   | 136.0% 52 163                                          |
| Sample ID: 9902024-01AMS   | Batch ID: API H2O_990 | Test Code: E273.1       | Units: mg/L | Analysis Date: 2/16/99 | Prep Date:                                             |
| Client ID: 9902001         | 9902001               | Run ID: API H2O_990212A |             | SeqNo: 10882           |                                                        |
| Analyte                    | Result                | PQL                     | SPK value   | SPK Ref Val            | %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual |
| Sodium                     | 57.6                  | 5                       | 20          | 35                     | 113.0% 80 126                                          |
| Sample ID: 9902024-01AMS   | Batch ID: API H2O_990 | Test Code: E236.1       | Units: mg/L | Analysis Date: 2/16/99 | Prep Date:                                             |
| Client ID: 9902001         | 9902001               | Run ID: API H2O_990212A |             | SeqNo: 10986           |                                                        |
| Analyte                    | Result                | PQL                     | SPK value   | SPK Ref Val            | %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual |
| Iron                       | 1.28                  | 0.1                     | 1           | 0.12                   | 116.0% 70 129                                          |
| Sample ID: 9902026-07AMS   | Batch ID: API H2O_990 | Test Code: E215.1       | Units: mg/L | Analysis Date: 2/12/99 | Prep Date:                                             |
| Client ID: 9902001         | 9902001               | Run ID: API H2O_990212A |             | SeqNo: 10826           |                                                        |
| Analyte                    | Result                | PQL                     | SPK value   | SPK Ref Val            | %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual |
| Calcium                    | 226                   | 25                      | 100         | 100                    | 126.0% 69 147                                          |

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

# On Site Technologies, LTD.

**CLIENT:** PNM - Public Service Company of NM  
**Work Order:** 9902001  
**Project:** Jicarilla 147-6

**Date:** 03-Mar-99

## QC SUMMARY REPORT

Laboratory Control Spike - generic

|                        |                              |                                |                    |                               |                                                   |
|------------------------|------------------------------|--------------------------------|--------------------|-------------------------------|---------------------------------------------------|
| Sample ID: <b>CCV1</b> | Batch ID: <b>API H2O_990</b> | Test Code: <b>E258.1</b>       | Units: <b>mg/L</b> | Analysis Date: <b>2/10/99</b> | Prep Date:                                        |
| Client ID:             | <b>9902001</b>               | Run ID: <b>API H2O_990212A</b> |                    | SeqNo: <b>10857</b>           |                                                   |
| Analyte                | Result                       | PQL                            | SPK value          | %REC                          | LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual |
| Potassium              | 2.7                          | 0.25                           | 2.68               | 0                             | 100.7% 84 114                                     |

|                              |                              |                                |                          |                              |                                                   |
|------------------------------|------------------------------|--------------------------------|--------------------------|------------------------------|---------------------------------------------------|
| Sample ID: <b>LCS</b>        | Batch ID: <b>API H2O_990</b> | Test Code: <b>M2320 B</b>      | Units: <b>mg/L CaCO3</b> | Analysis Date: <b>2/5/99</b> | Prep Date:                                        |
| Client ID:                   | <b>9902001</b>               | Run ID: <b>API H2O_990212A</b> |                          | SeqNo: <b>10885</b>          |                                                   |
| Analyte                      | Result                       | PQL                            | SPK value                | %REC                         | LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual |
| Alkalinity, Total (As CaCO3) | 118                          | 5                              | 116                      | 0                            | 101.7% 93 116                                     |

|                       |                              |                                |                    |                              |                                                   |
|-----------------------|------------------------------|--------------------------------|--------------------|------------------------------|---------------------------------------------------|
| Sample ID: <b>LCS</b> | Batch ID: <b>API H2O_990</b> | Test Code: <b>E325.3</b>       | Units: <b>mg/L</b> | Analysis Date: <b>2/8/99</b> | Prep Date:                                        |
| Client ID:            | <b>9902001</b>               | Run ID: <b>API H2O_990212A</b> |                    | SeqNo: <b>10898</b>          |                                                   |
| Analyte               | Result                       | PQL                            | SPK value          | %REC                         | LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual |
| Chloride              | 137                          | 10                             | 122                | 0                            | 112.3% 91 113                                     |

|                       |                              |                                |                    |                              |                                                   |
|-----------------------|------------------------------|--------------------------------|--------------------|------------------------------|---------------------------------------------------|
| Sample ID: <b>LCS</b> | Batch ID: <b>API H2O_990</b> | Test Code: <b>E325.3</b>       | Units: <b>mg/L</b> | Analysis Date: <b>2/8/99</b> | Prep Date:                                        |
| Client ID:            | <b>9902001</b>               | Run ID: <b>API H2O_990212A</b> |                    | SeqNo: <b>10908</b>          |                                                   |
| Analyte               | Result                       | PQL                            | SPK value          | %REC                         | LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual |
| Chloride              | 119                          | 10                             | 122                | 0                            | 97.5% 91 113                                      |

|                       |                              |                                |                     |                              |                                                   |
|-----------------------|------------------------------|--------------------------------|---------------------|------------------------------|---------------------------------------------------|
| Sample ID: <b>LCS</b> | Batch ID: <b>API H2O_990</b> | Test Code: <b>M2510 C</b>      | Units: <b>ohm-m</b> | Analysis Date: <b>2/5/99</b> | Prep Date:                                        |
| Client ID:            | <b>9902001</b>               | Run ID: <b>API H2O_990212A</b> |                     | SeqNo: <b>10914</b>          |                                                   |
| Analyte               | Result                       | PQL                            | SPK value           | %REC                         | LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual |
| Resistivity           | 9.569                        | 0.01                           | 9.615               | 0                            | 99.5% 80 120                                      |

**Qualifiers:** ND - Not Detected at the Reporting Limit  
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S - Spike Recovery outside accepted recovery limits  
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

**CLIENT:** PNM - Public Service Company of NM  
**Work Order:** 9902001  
**Project:** Jicarilla 147-6

# QC SUMMARY REPORT

## Laboratory Control Spike - generic

|                |                       |                         |              |                       |            |          |           |             |      |          |      |
|----------------|-----------------------|-------------------------|--------------|-----------------------|------------|----------|-----------|-------------|------|----------|------|
| Sample ID: LCS | Batch ID: API H2O_990 | Test Code: M4500-SO4 D  | Units: mg/L  | Analysis Date: 2/8/99 | Prep Date: |          |           |             |      |          |      |
| Client ID:     | 9902001               | Run ID: API H2O_990212A | SeqNo: 10934 |                       |            |          |           |             |      |          |      |
| Analyte        | Result                | PQL                     | SPK value    | SPK Ref Val           | %REC       | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Sulfate        | 120                   | 5                       | 122          | 0                     | 98.4%      | 82       | 113       |             |      |          |      |

| Sample ID: LCS                          | Batch ID: API H2O_990 | Test Code: E160.1       | Units: mg/L | Analysis Date: 2/12/99 | Prep Date: |
|-----------------------------------------|-----------------------|-------------------------|-------------|------------------------|------------|
| Client ID:                              | 9902001               | Run ID: API H2O_990212A |             | SeqNo: 10947           |            |
| Analyte                                 | Result                | PQL                     | SPK value   | SPK Ref Val            | %REC       |
| Total Dissolved Solids (Residue, Filtra | 772                   | 40                      | 750         | 24                     | 99.7%      |
|                                         |                       |                         |             | LowLimit               | HighLimit  |
|                                         |                       |                         |             | RPD Ref Val            | RPD Limit  |
|                                         |                       |                         |             |                        | Qual       |

|                |                       |                         |                 |                       |            |          |           |             |      |          |      |
|----------------|-----------------------|-------------------------|-----------------|-----------------------|------------|----------|-----------|-------------|------|----------|------|
| Sample ID: LCS | Batch ID: API H2O_990 | Test Code: E150.1       | Units: pH units | Analysis Date: 2/1/99 | Prep Date: |          |           |             |      |          |      |
| Client ID:     | 9902001               | Run ID: API H2O_990212A | SeqNo: 10958    |                       |            |          |           |             |      |          |      |
| Analyte        | Result                | PQL                     | SPK value       | SPK Ref Val           | %REC       | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| pH             | 9.062                 | 2                       | 9.07            | 0                     | 99.9%      | 98       | 102       |             |      |          |      |

|                      |                       |                   |              |                       |            |          |           |             |      |          |      |
|----------------------|-----------------------|-------------------|--------------|-----------------------|------------|----------|-----------|-------------|------|----------|------|
| Sample ID: LCS       | Batch ID: API H2O_990 | Test Code: E120.1 | Units: uS/cm | Analysis Date: 2/5/99 | Prep Date: |          |           |             |      |          |      |
| Client ID:           | Run ID: 9902001       | SeqNo: 10973      |              |                       |            |          |           |             |      |          |      |
| Analyte              | Result                | PQL               | SPK value    | SPK Ref Val           | %REC       | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Specific Conductance | 1045                  | 2                 | 1040         | 0                     | 100.5%     | 97       | 103       |             |      |          |      |

|                  |        |                       |           |                   |       |                 |           |                       |      |            |      |
|------------------|--------|-----------------------|-----------|-------------------|-------|-----------------|-----------|-----------------------|------|------------|------|
| Sample ID: LCS 2 |        | Batch ID: API H2O_990 |           | Test Code: E150.1 |       | Units: pH units |           | Analysis Date: 2/1/99 |      | Prep Date: |      |
| Client ID:       |        | Run ID: 9902001       |           | API H2O_990212A   |       | SeqNo: 10969    |           |                       |      |            |      |
| Analyte          | Result | PQL                   | SPK value | SPK Ref Val       | %REC  | LowLimit        | HighLimit | RPD Ref Val           | %RPD | RPDLimit   | Qual |
| pH               | 8.909  | 2                     | 9.07      | 0                 | 98.2% | 98              | 102       |                       |      |            |      |

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# On Site Technologies, LTD.

**CLIENT:** PNM - Public Service Company of NM  
**Work Order:** 9902001  
**Project:** Jicarilla 147-6

**Date:** 03-Mar-99

## QC SUMMARY REPORT

Continuing Calibration Verification Standard

|                        |                              |                                |                    |                               |                    |
|------------------------|------------------------------|--------------------------------|--------------------|-------------------------------|--------------------|
| Sample ID: <b>CCV1</b> | Batch ID: <b>API H2O_990</b> | Test Code: <b>E215.1</b>       | Units: <b>mg/L</b> | Analysis Date: <b>2/12/99</b> | Prep Date:         |
| Client ID:             | <b>9902001</b>               | Run ID: <b>API H2O_990212A</b> |                    | SeqNo: <b>10815</b>           |                    |
| Analyte                | Result                       | PQL                            | SPK value          | LowLimit                      | HighLimit          |
| Calcium                | 2.02                         | 0.25                           | 1.95               | 85                            | 115                |
|                        |                              |                                |                    | %REC                          | RPD Ref Val        |
|                        |                              |                                |                    | 103.6%                        |                    |
|                        |                              |                                |                    |                               | %RPD RPDLimit Qual |
| Sample ID: <b>CCV1</b> | Batch ID: <b>API H2O_990</b> | Test Code: <b>E242.1</b>       | Units: <b>mg/L</b> | Analysis Date: <b>2/11/99</b> | Prep Date:         |
| Client ID:             | <b>9902001</b>               | Run ID: <b>API H2O_990212A</b> |                    | SeqNo: <b>10843</b>           |                    |
| Analyte                | Result                       | PQL                            | SPK value          | LowLimit                      | HighLimit          |
| Magnesium              | 1.77                         | 0.25                           | 1.71               | 85                            | 115                |
|                        |                              |                                |                    | %REC                          | RPD Ref Val        |
|                        |                              |                                |                    | 103.5%                        |                    |
|                        |                              |                                |                    |                               | %RPD RPDLimit Qual |
| Sample ID: <b>CCV1</b> | Batch ID: <b>API H2O_990</b> | Test Code: <b>E236.1</b>       | Units: <b>mg/L</b> | Analysis Date: <b>2/16/99</b> | Prep Date:         |
| Client ID:             | <b>9902001</b>               | Run ID: <b>API H2O_990212A</b> |                    | SeqNo: <b>10977</b>           |                    |
| Analyte                | Result                       | PQL                            | SPK value          | LowLimit                      | HighLimit          |
| Iron                   | 2                            | 0.1                            | 2                  | 85                            | 115                |
|                        |                              |                                |                    | %REC                          | RPD Ref Val        |
|                        |                              |                                |                    | 100.0%                        |                    |
|                        |                              |                                |                    |                               | %RPD RPDLimit Qual |
| Sample ID: <b>CCV2</b> | Batch ID: <b>API H2O_990</b> | Test Code: <b>E215.1</b>       | Units: <b>mg/L</b> | Analysis Date: <b>2/12/99</b> | Prep Date:         |
| Client ID:             | <b>9902001</b>               | Run ID: <b>API H2O_990212A</b> |                    | SeqNo: <b>10827</b>           |                    |
| Analyte                | Result                       | PQL                            | SPK value          | LowLimit                      | HighLimit          |
| Calcium                | 2.02                         | 0.25                           | 1.95               | 85                            | 115                |
|                        |                              |                                |                    | %REC                          | RPD Ref Val        |
|                        |                              |                                |                    | 103.6%                        |                    |
|                        |                              |                                |                    |                               | %RPD RPDLimit Qual |
| Sample ID: <b>CCV2</b> | Batch ID: <b>API H2O_990</b> | Test Code: <b>E242.1</b>       | Units: <b>mg/L</b> | Analysis Date: <b>2/11/99</b> | Prep Date:         |
| Client ID:             | <b>9902001</b>               | Run ID: <b>API H2O_990212A</b> |                    | SeqNo: <b>10855</b>           |                    |
| Analyte                | Result                       | PQL                            | SPK value          | LowLimit                      | HighLimit          |
| Magnesium              | 1.91                         | 0.25                           | 1.71               | 85                            | 115                |
|                        |                              |                                |                    | %REC                          | RPD Ref Val        |
|                        |                              |                                |                    | 111.7%                        |                    |
|                        |                              |                                |                    |                               | %RPD RPDLimit Qual |

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CLIENT: PNM - Public Service Company of NM

Work Order: 9902001

Project: Jicarilla 147-6

## QC SUMMARY REPORT

Continuing Calibration Verification Standard

|                 |                       |                         |             |                        |                                                        |
|-----------------|-----------------------|-------------------------|-------------|------------------------|--------------------------------------------------------|
| Sample ID: CCV2 | Batch ID: API H2O_990 | Test Code: E258.1       | Units: mg/L | Analysis Date: 2/10/99 | Prep Date:                                             |
| Client ID:      | 9902001               | Run ID: API H2O_990212A |             | SeqNo: 10869           |                                                        |
| Analyte         | Result                | PQL                     | SPK value   | SPK Ref Val            | %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual |
| Potassium       | 2.75                  | 0.25                    | 2.68        | 0                      | 102.6% 85 115                                          |
| Sample ID: CCV2 | Batch ID: API H2O_990 | Test Code: E273.1       | Units: mg/L | Analysis Date: 2/16/99 | Prep Date:                                             |
| Client ID:      | 9902001               | Run ID: API H2O_990212A |             | SeqNo: 10871           |                                                        |
| Analyte         | Result                | PQL                     | SPK value   | SPK Ref Val            | %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual |
| Sodium          | 2.5                   | 0.25                    | 2.64        | 0                      | 94.7% 85 115                                           |
| Sample ID: CCV2 | Batch ID: API H2O_990 | Test Code: E273.1       | Units: mg/L | Analysis Date: 2/16/99 | Prep Date:                                             |
| Client ID:      | 9902001               | Run ID: API H2O_990212A |             | SeqNo: 10883           |                                                        |
| Analyte         | Result                | PQL                     | SPK value   | SPK Ref Val            | %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual |
| Sodium          | 2.52                  | 0.25                    | 2.64        | 0                      | 95.5% 85 115                                           |
| Sample ID: CCV2 | Batch ID: API H2O_990 | Test Code: E236.1       | Units: mg/L | Analysis Date: 2/16/99 | Prep Date:                                             |
| Client ID:      | 9902001               | Run ID: API H2O_990212A |             | SeqNo: 10987           |                                                        |
| Analyte         | Result                | PQL                     | SPK value   | SPK Ref Val            | %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual |
| Iron            | 1.96                  | 0.1                     | 2           | 0                      | 98.0% 85 115                                           |

Qualifiers: ND - Not Detected at the Reporting Limit  
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# ON SITE

**TECHNOLOGIES, LTD.**

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