

**SEMI-ANNUAL
GROUND WATER MONITORING
REPORT**

**JULY 1, 1999 - DECEMBER 31, 1999
THIRD & FOURTH QUARTERS**

UNITED NUCLEAR CORPORATION



P.O. Box 3077
Gallup, New Mexico 87305-3077

Telephone: (505) 722-6651
Fax: (505) 722-6654

CERTIFIED - RETURN RECEIPT REQUESTED

February 25, 2000

Branch Chief
U.S. Nuclear Regulatory Commission
Division of Waste Management (MST-7J9)
11555 Rockville Pike
Rockville, MD 20850

40-8907

Dear Sir:

In compliance with our Nuclear Regulatory Commission Radioactive Materials License No. SUA-1475, Condition 30, the enclosed Semi-Annual Ground Water Monitoring Report for the period of July 1, 1999 through December 31, 1999 is being submitted.

Sincerely,

A handwritten signature in black ink, appearing to read "Larry Bush".

Larry Bush
Manager

LB:r

Enclosure

cc: Division of Radiation Safety, Region IV
Greg Lyssy, USEPA
Suzie du Pont, Earth Tech
Steve Cline, GE
Roy Blickwedel, GE

NMSSOI Public

UNITED NUCLEAR CORPORATION



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CERTIFIED - RETURN RECEIPT REQUESTED

February 25, 2000

Mr. Greg Lyssy
U.S. Environmental Protection Agency
OK/NM Superfund Enforcement Section (6H-E0)
Region VI
1445 Ross Avenue
Dallas, TX 75202-2733

Re: Semi-Annual Ground Water Compliance Monitoring Report

Dear Mr. Lyssy:

I have enclosed the Semi-Annual Ground Water Compliance Monitoring Report in Accordance with Paragraph V.A. 5 of the Administrative Order issued to United Nuclear on July 3, 1989.

This report covers July 1, 1999, through December 31, 1999.

Sincerely,

A handwritten signature in black ink, appearing to read "Larry Bush", written over a horizontal line.

Larry Bush
Manager

LB:r

Enclosures

**SEMI-ANNUAL GROUND WATER MONITORING REPORT
JULY 1, 1999 THROUGH DECEMBER 31, 1999**

**FIELD DATA SHEETS
THIRD AND SECOND QUARTERS
CONTROLS
ZONE 1
ZONE 2**

**GROUNDWATER MONITORING
WATER ELEVATIONS AND FIELD PH**

3rd QUARTER, 1999

| <u>WELL NO.</u> | <u>DATE</u> | <u>WATER DEPT</u> | <u>REFERENCE ELEVATION</u> | <u>WATER ELEVATION</u> | <u>SAMPLE DATE</u> | <u>FIELD pH</u> |
|-----------------|-------------|-------------------|----------------------------|------------------------|--------------------|-----------------|
| GW-1 | 7/12/99 | 59.4 | 6916.5 | 6857.1 | 7/13/99 | 6.7 |
| GW-2 | 7/12/99 | 54.9 | 6912.9 | 6858.0 | 7/13/99 | 6.6 |
| GW-3 | 7/12/99 | 51.7 | 6910.0 | 6858.3 | 7/13/99 | 6.7 |
| GW-4 | 7/12/99 | 49.9 | 6959.2 | 6909.3 | 7/13/99 | 7.2 |
| EPA-1 | No Water | 0.0 | 7035.5 | 7035.5 | 7/20/99 | - |
| EPA-2 | 7/19/99 | 170.3 | 7019.5 | 6849.2 | 7/20/99 | 6.7 |
| EPA-4 | 7/19/99 | 200.3 | 7069.8 | 6869.5 | 7/20/99 | 6.5 |
| EPA-5 | 7/19/99 | 119.5 | 7011.4 | 6891.9 | 7/20/99 | 6.5 |
| EPA-7 | 7/19/99 | 108.6 | 7011.7 | 6903.1 | 7/20/99 | 6.06 |
| EPA-8 | 7/19/99 | 213.4 | 7076.4 | 6863.0 | 7/20/99 | 6.36 |
| EPA-9 | 7/19/99 | 169.1 | 7076.6 | 6907.5 | 7/20/99 | 3.8 |
| EPA-13 | 7/19/99 | 164.9 | 7032.9 | 6868.0 | 7/20/99 | 6.2 |
| EPA-14 | 7/19/99 | 108.2 | 6965.6 | 6857.4 | 7/20/99 | 6.2 |
| EPA-22A | No Water | 0.0 | 6954.5 | 6954.5 | - | - |
| EPA-23 | 7/19/99 | 46.4 | 6926.3 | 6879.9 | 7/20/99 | 6.7 |
| EPA-25 | 7/19/99 | 50.7 | 6903.4 | 6852.7 | 7/20/99 | 6.8 |
| EPA-27 | No Water | 0.0 | 6910.9 | 6910.9 | - | - |
| EPA-28 | 7/19/99 | 61.5 | 6917.9 | 6856.4 | 7/20/99 | 6.9 |
| 411 | | 0.0 | 6980.4 | 6980.4 | | - |
| 420 | 7/12/99 | 134.8 | 6982.5 | 6847.7 | 7/13/99 | 6.4 |

**GROUNDWATER MONITORING
WATER ELEVATIONS AND FIELD PH**

4th QUARTER, 1999

| <u>WELL NO.</u> | <u>DATE</u> | <u>WATER DEPT</u> | <u>REFERENCE ELEVATION</u> | <u>WATER ELEVATION</u> | <u>SAMPLE DATE</u> | <u>FIELD pH</u> |
|-----------------|-------------|-------------------|----------------------------|------------------------|--------------------|-----------------|
| GW-1 | 10/04/99 | 58.9 | 6916.5 | 6857.6 | 10/05/99 | 6.8 |
| GW-2 | 10/04/99 | 53.6 | 6912.9 | 6859.3 | 10/05/99 | 6.5 |
| GW-3 | 10/04/99 | 50.7 | 6910.0 | 6859.3 | 10/05/99 | 6.7 |
| GW-4 | 10/04/99 | 49.3 | 6959.2 | 6909.9 | 10/05/99 | - |
| EPA-1 | No Water | 0.0 | 7035.5 | 7035.5 | - | - |
| EPA-2 | 10/11/99 | 170.2 | 7019.5 | 6849.3 | 10/12/99 | 6.6 |
| EPA-4 | 10/11/99 | 200.6 | 7069.8 | 6869.2 | 10/12/99 | 6.6 |
| EPA-5 | 10/11/99 | 119.6 | 7011.4 | 6891.8 | 10/12/99 | 6.5 |
| EPA-7 | 10/11/99 | 108.5 | 7011.7 | 6903.2 | 10/12/99 | 6.01 |
| EPA-8 | 10/11/99 | 213.5 | 7076.4 | 6862.9 | 10/12/99 | 6.5 |
| EPA-9 | 10/11/99 | 169.2 | 7076.6 | 6907.4 | 10/12/99 | 4.9 |
| EPA-13 | 10/11/99 | 165.0 | 7032.9 | 6867.9 | 10/12/99 | 6.1 |
| EPA-14 | 10/11/99 | 108.2 | 6965.6 | 6857.4 | 10/12/99 | 6.5 |
| EPA-22A | No Water | 0.0 | 6954.5 | 6954.5 | - | - |
| EPA-23 | 10/11/99 | 46.2 | 6926.3 | 6880.1 | 10/12/99 | 6.6 |
| EPA-25 | 10/11/99 | 51.0 | 6903.4 | 6852.4 | 10/12/99 | 6.8 |
| EPA-27 | No Water | 0.0 | 6910.9 | 6910.9 | - | - |
| EPA-28 | 10/11/99 | 60.6 | 6917.9 | 6857.3 | 10/12/99 | 6.9 |
| 411 | | 0.0 | 6980.4 | 6980.4 | | - |
| 420 | 10/04/99 | 135.3 | 6982.5 | 6847.2 | 10/05/99 | 6.7 |

**GROUNDWATER MONITORING
WATER ELEVATIONS AND FIELD PH**

3rd QUARTER, 1999

| <u>WELL NO.</u> | <u>DATE</u> | <u>WATER DEPT</u> | <u>REFERENCE ELEVATION</u> | <u>WATER ELEVATION</u> | <u>SAMPLE DATE</u> | <u>FIELD pH</u> |
|-----------------|-------------|-------------------|----------------------------|------------------------|--------------------|-----------------|
| 502-B | 7/12/99 | 162.4 | 7025.7 | 6863.3 | 7/13/99 | 4.7 |
| 504-B | 7/12/99 | 160.9 | 7001.7 | 6840.8 | 7/13/99 | 6.5 |
| 509-D | 7/12/99 | 64.6 | 6949.4 | 6884.8 | 7/13/99 | 6.5 |
| 515-A | 7/12/99 | 98.8 | 7008.7 | 6909.9 | 7/13/99 | 5.7 |
| 516-A | 7/12/99 | 101.4 | 7002.4 | 6901.0 | 7/13/99 | 6.5 |
| 517 | 7/12/99 | 100.3 | 6971.6 | 6871.3 | 7/13/99 | 4.6 |
| 518 | 7/12/99 | 132.4 | 6971.6 | 6839.2 | 7/13/99 | 3.5 |
| 604 | 7/12/99 | 98.6 | 7006.4 | 6907.8 | 7/13/99 | 4.6 |
| 614 | 7/12/99 | 96.4 | 7011.9 | 6915.5 | 7/13/99 | 7.0 |
| 619 | 7/12/99 | 127.3 | 7013 | 6885.7 | 7/13/99 | 6.6 |
| 624 | 7/12/99 | 47.8 | 6898.6 | 6850.8 | 7/13/99 | 6.7 |
| 627 | 7/12/99 | 53.0 | 6892.2 | 6839.2 | 7/13/99 | 7.0 |
| 632 | 7/12/99 | 46.4 | 6903.5 | 6857.1 | 7/13/99 | 6.3 |
| TWQ-141 | 7/12/99 | 194.9 | 6978.5 | 6783.6 | 7/13/99 | 6.8 |
| TWQ-142 | 7/12/99 | 204.1 | 6978.5 | 6774.4 | 7/13/99 | 6.8 |
| TWQ-143 | 7/12/99 | 210.8 | 6989.6 | 6778.8 | 7/13/99 | 6.8 |
| 801 | | | | | 7/20/99 | 6.5 |
| 802 | | | | | 7/20/99 | 6.5 |
| 803 | | | | | | |
| 804 | 7/21/99 | 49.5 | 6959.3 | 6909.8 | | |
| 805 | 7/21/99 | 51.0 | 6865.9 | 6814.9 | | |
| 806 | 7/21/99 | 50.8 | 6866.1 | 6815.3 | | |
| 807 | 7/21/99 | 53.6 | 6871.6 | 6818 | | |
| Field Blank | | | | | 7/13/99 | 7.7 |
| Rinsate | | | | | 7/13/99 | 7.4 |

**GROUNDWATER MONITORING
WATER ELEVATIONS AND FIELD PH**

4th QUARTER, 1999

| <u>WELL NO.</u> | <u>DATE</u> | <u>WATER DEPT</u> | <u>REFERENCE ELEVATION</u> | <u>WATER ELEVATION</u> | <u>SAMPLE DATE</u> | <u>FIELD pH</u> |
|-----------------|-------------|-------------------|----------------------------|------------------------|--------------------|-----------------|
| 502-B | 10/04/99 | 162.0 | 7025.7 | 6863.7 | 10/05/99 | 4.3 |
| 504-B | 10/04/99 | 160.3 | 7001.7 | 6841.4 | 10/05/99 | 5.7 |
| 509-D | 10/04/99 | 64.8 | 6949.4 | 6884.6 | 10/05/99 | 6.6 |
| 515-A | 10/04/99 | 98.7 | 7008.7 | 6910.0 | 10/05/99 | 5.4 |
| 516-A | 10/04/99 | 102.4 | 7002.4 | 6900.0 | 10/05/99 | 6.4 |
| 517 | 10/04/99 | 102.5 | 6971.6 | 6869.1 | 10/05/99 | 4.5 |
| 518 | 10/04/99 | 132.4 | 6971.6 | 6839.2 | 10/05/99 | 3.5 |
| 604 | 10/04/99 | 97.8 | 7006.4 | 6908.6 | 10/05/99 | 4.4 |
| 614 | 10/04/99 | 96.6 | 7011.9 | 6915.3 | 10/05/99 | 6.8 |
| 619 | 10/04/99 | 127.4 | 7013 | 6885.6 | 10/05/99 | 6.9 |
| 624 | 10/04/99 | 46.8 | 6898.6 | 6851.8 | 10/05/99 | 6.8 |
| 627 | 10/04/99 | 53.0 | 6892.2 | 6839.2 | 10/05/99 | 7.1 |
| 632 | 10/04/99 | 45.4 | 6903.5 | 6858.1 | 10/05/99 | 6.6 |
| TWQ-141 | 10/04/99 | 45.2 | 6978.5 | 6933.3 | 10/05/99 | - |
| TWQ-142 | 10/04/99 | 203.5 | 6978.5 | 6775.0 | 10/05/99 | 7.6 |
| TWQ-143 | 10/04/99 | 210.6 | 6989.6 | 6779.0 | 10/05/99 | 7.5 |
| 801 | | | | | 10/05/99 | 6.4 |
| 802 | | | | | 10/11/99 | 6.6 |
| 803 | | | | | 10/11/99 | 6.6 |
| 804 | 10/13/99 | 49.4 | 6959.3 | 6909.9 | | |
| 805 | 10/13/99 | 51.1 | 6865.9 | 6814.8 | | |
| 806 | 10/13/99 | 50.8 | 6866.1 | 6815.3 | | |
| 807 | 10/13/99 | 53.5 | 6871.6 | 6818.1 | | |
| Field Blank | | | | | 10/05/99 | 7.69 |
| Rinsate | | | | | 10/05/99 | 7.44 |

QUARTERLY WATER LEVELS

3rd Quarter 1999

| <u>Well No.</u> | <u>Date</u> | <u>Time</u> | <u>Depth to Water</u> | <u>Reference Elevation</u> | <u>Top of Water Elevation</u> |
|-----------------|-------------|----------------|-----------------------|----------------------------|-------------------------------|
| 608 | <u>7-21</u> | <u>1415</u> | <u>93.5</u> | 6972.2 | <u>6878.7</u> |
| 702 | <u>7-21</u> | <u>1255</u> | <u>79.7</u> | 6974.2 | <u>6894.5</u> |
| 703 | <u>7-21</u> | <u>1305</u> | <u>88.4</u> | 6978.9 | <u>6890.5</u> |
| 710 | <u>7-21</u> | <u>1320</u> | <u>158.0</u> | 7016.5 | <u>6858.5</u> |
| 712 | <u>7-21</u> | <u>1326</u> | <u>169.7</u> | 7022.2 | <u>6852.5</u> |
| 713 | <u>7-21</u> | <u>Pumping</u> | | 7024.5 | |
| 714 | <u>7-21</u> | <u>1338</u> | <u>92.9</u> | 6962.9 | <u>6870.0</u> |
| 715 | <u>7-21</u> | <u>1335</u> | <u>106.5</u> | 6964.5 | <u>6858.0</u> |

QUARTERLY WATER LEVELS

4th Quarter 1999

| <u>Well No.</u> | <u>Date</u> | <u>Time</u> | <u>Depth to Water</u> | <u>Reference Elevation</u> | <u>Top of Water Elevation</u> |
|-----------------|--------------|----------------|-----------------------|----------------------------|-------------------------------|
| 608 | <u>10-13</u> | <u>1127</u> | <u>98.9</u> | 6972.2 | <u>6879.3</u> |
| 702 | <u>10-13</u> | <u>1115</u> | <u>79.6</u> | 6974.2 | <u>6894.6</u> |
| 703 | <u>10-13</u> | <u>1120</u> | <u>88.4</u> | 6978.9 | <u>6890.5</u> |
| 710 | <u>10-13</u> | <u>1134</u> | <u>158.2</u> | 7016.5 | <u>6858.3</u> |
| 712 | <u>10-13</u> | <u>1138</u> | <u>169.6</u> | 7022.2 | <u>6852.6</u> |
| 713 | <u>10-13</u> | <u>Pumping</u> | | 7024.5 | |
| 714 | <u>10-13</u> | <u>1140</u> | <u>92.9</u> | 6962.9 | <u>6870.0</u> |
| 715 | <u>10-13</u> | <u>1150</u> | <u>106.6</u> | 6964.5 | <u>6857.9</u> |

SEMI-ANNUAL GROUND WATER MONITORING REPORT
JULY 1, 1999 THROUGH DECEMBER 31, 1999

CONTROLS
FIELD BLANK
RINSATE



ENERGY LABORATORIES, INC.

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UNC MINING AND MILLING: CHURCHROCK OPERATIONS GROUNDWATER MONITORING PROGRAM

WELL ID:
LABORATORY ID:
SAMPLE DATE/TIME:
REPORT DATE:
QUARTER REPRESENTED:
UNC SUBMITTAL #:

| Field Blank | Field Blank | Field Blank |
|-------------|-----------------|------------------|
| 99-24249 | 99-35527 | 99-33596-009 |
| 04-06-99 | 07-13-99 | 10-05-99 @ 12:30 |
| May 6, 1999 | August 30, 1999 | December 1, 1999 |
| Second '99 | Third '99 | Fourth '99 |
| TE-3-4-99 | TE-5-7-99 | TE-7-10-99 |

| Major Ions | | Method | Units | Reporting Limit | Results | Results | Results |
|------------------------|-----------------------------------|----------------------------|-------|-----------------|---------|---------|---------|
| Calcium | Ca | EPA 200.7 | mg/L | 0.05 | 0.40 | 1.2 | < 0.05 |
| Magnesium | Mg | EPA 200.7 | mg/L | 0.01 | 0.31 | 1.1 | < 0.01 |
| Sodium | Na | EPA 200.7 | mg/L | 0.05 | 4.0 | 5.4 | 4.0 |
| Potassium | K | EPA 200.7 | mg/L | 0.10 | 0.46 | 0.80 | < 0.10 |
| Bicarbonate | HCO ₃ | SM 2320 B. | mg/L | 0.10 | 23.0 | 9.0 | 8.00 |
| Sulfate | SO ₄ | EPA 200.7 | mg/L | 1.0 | 4.1 | 1.1 | 3.5 |
| Chloride | Cl | EPA 200.7 | mg/L | 1.0 | 8.6 | 1.1 | 4.2 |
| Ammonium as N | NH ₄ | SM 4500-NH ₃ G. | mg/L | 0.05 | 0.16 | 0.10 | 0.05 |
| Nitrate + Nitrite as N | NO ₃ + NO ₂ | EPA 353.2 | mg/L | 0.10 | 0.15 | < 0.10 | < 0.10 |

| Non-Metals | | | | | | | |
|--------------------------------|-----|-----------------|------------|------|------|------|------|
| Total Dissolved Solids @ 180°C | TDS | SM 2540 C. Mod. | mg/L | 2.0 | 11.0 | 22.0 | 41.0 |
| pH | | SM 4500-H B. | std. units | 0.10 | 7.00 | 6.83 | 6.67 |

| Trace Metals | | | | | | | |
|--------------|----|-----------|------|-------|---------|---------|---------|
| Aluminum | Al | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Arsenic III | As | EPA 206.3 | mg/L | 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Beryllium | Be | EPA 200.7 | mg/L | 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Cadmium | Cd | EPA 200.8 | mg/L | 0.005 | < 0.005 | < 0.005 | < 0.005 |
| Cobalt | Co | EPA 200.7 | mg/L | 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Lead | Pb | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Manganese | Mn | EPA 200.7 | mg/L | 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Molybdenum | Mo | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Nickel | Ni | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Selenium IV | Se | EPA 270.3 | mg/L | 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Vanadium | V | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |

| Radiometrics | | | | | | | |
|---------------------------|-------------------|------------|-------|--------|----------|----------|----------|
| Uranium | ²³⁸ U | EPA 200.8 | mg/L | 0.0003 | < 0.0003 | < 0.0003 | < 0.0003 |
| Radium 226 | ²²⁶ Ra | EPA 903.0 | pCi/L | 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Radium Error Estimate ± | | | | | | | |
| Radium 228 | ²²⁸ Ra | EPA 904.0 | pCi/L | 1.0 | 2.4 | < 1.0 | < 1.0 |
| Radium Error Estimate ± | | | | | 0.3 | | |
| Thorium 230 | ²³⁰ Th | EPA 907.0 | pCi/L | 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Thorium Error Estimate ± | | | | | | | |
| Lead 210 | ²¹⁰ Pb | NERHL-65-4 | pCi/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Lead Error Estimate ± | | | | | | | |
| Gross Alpha | | EPA 900.1 | pCi/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |
| G. Alpha Error Estimate ± | | | | | | | |

| Trace Organics | | | | | | | |
|----------------|--|---------|------|-----|-------|-------|-------|
| Chloroform | | EPA 601 | µg/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |

| Quality Assurance Data | | | Target Range | | | |
|------------------------|--------|-------------|--------------|----------|---------|----------|
| Anion | meq | | | 0.72 | 0.21 | 0.33 |
| Cation | meq | | | 0.25 | 0.43 | 0.20 |
| WYDEQ A/C Balance | % | -5 - +5 | | * -47.50 | * 34.24 | * -25.64 |
| Calc TDS | mg/L | | | 30 | 16 | 16 |
| TDS A/C Balance | dec. % | 0.80 - 1.20 | | * 0.36 | * 1.39 | * 2.50 |

*Balances inappropriate for "blank" samples.

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UNC MINING AND MILLING: CHURCHROCK OPERATIONS GROUNDWATER MONITORING PROGRAM

WELL ID:
LABORATORY ID:
SAMPLE DATE/TIME:
REPORT DATE:
QUARTER REPRESENTED:
UNC SUBMITTAL #:

| Rinsate | Rinsate | Rinsate |
|-------------|-----------------|------------------|
| 99-24250 | 99-35526 | 99-33596-008 |
| 04-06-99 | 07-13-99 | 10-05-99 @ 12:27 |
| May 6, 1999 | August 23, 1999 | December 1, 1999 |
| Second '99 | Third '99 | Fourth '99 |
| TE-3-4-99 | TE-5-7-99 | TE-7-10-99 |

| Major Ions | | Method | Units | Reporting Limit | Results | Results | Results |
|------------------------|-----------------------------------|----------------------------|-------|-----------------|---------|---------|---------|
| Calcium | Ca | EPA 200.7 | mg/L | 0.05 | 13.0 | 3.5 | 2.50 |
| Magnesium | Mg | EPA 200.7 | mg/L | 0.01 | 5.4 | 2.7 | 2.00 |
| Sodium | Na | EPA 200.7 | mg/L | 0.05 | 10.8 | 6.5 | 6.00 |
| Potassium | K | EPA 200.7 | mg/L | 0.10 | 0.71 | 1.0 | < 0.10 |
| Bicarbonate | HCO ₃ | SM 2320 B. | mg/L | 0.10 | 5.0 | 13.0 | 14.0 |
| Sulfate | SO ₄ | EPA 200.7 | mg/L | 1.0 | 41.2 | 9.6 | 14.1 |
| Chloride | Cl | EPA 200.7 | mg/L | 1.0 | 8.4 | 2.3 | 6.40 |
| Ammonium as N | NH ₄ | SM 4500-NH ₃ G. | mg/L | 0.05 | 0.61 | 0.13 | 0.11 |
| Nitrate + Nitrite as N | NO ₃ + NO ₂ | EPA 353.2 | mg/L | 0.10 | 5.14 | 0.11 | 0.15 |

| Non-Metals | | | | | | | |
|--------------------------------|-----|-----------------|------------|------|------|------|------|
| Total Dissolved Solids @ 180°C | TDS | SM 2540 C. Mod. | mg/L | 2.0 | 119 | 19.0 | 46.0 |
| pH | | SM 4500-H B. | std. units | 0.10 | 6.31 | 7.12 | 6.85 |

| Trace Metals | | | | | | | |
|--------------|----|-----------|------|-------|---------|---------|---------|
| Aluminum | Al | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Arsenic III | As | EPA 206.3 | mg/L | 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Beryllium | Be | EPA 200.7 | mg/L | 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Cadmium | Cd | EPA 200.8 | mg/L | 0.005 | 0.006 | < 0.005 | < 0.005 |
| Cobalt | Co | EPA 200.7 | mg/L | 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Lead | Pb | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Manganese | Mn | EPA 200.7 | mg/L | 0.01 | 0.02 | < 0.01 | < 0.01 |
| Molybdenum | Mo | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Nickel | Ni | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Selenium IV | Se | EPA 270.3 | mg/L | 0.001 | < 0.001 | < 0.001 | 0.001 |
| Vanadium | V | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |

| Radiometrics | | | | | | | |
|---------------------------|-------------------|------------|-------|--------|--------|----------|----------|
| Uranium | ²³⁸ U | EPA 200.8 | mg/L | 0.0003 | 0.0004 | < 0.0003 | < 0.0003 |
| Radium 226 | ²²⁶ Ra | EPA 903.0 | pCi/L | 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Radium Error Estimate ± | | | | | | | |
| Radium 228 | ²²⁸ Ra | EPA 904.0 | pCi/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Radium Error Estimate ± | | | | | | | |
| Thorium 230 | ²³⁰ Th | EPA 907.0 | pCi/L | 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Thorium Error Estimate ± | | | | | | | |
| Lead 210 | ²¹⁰ Pb | NERHL-65-4 | pCi/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Lead Error Estimate ± | | | | | | | |
| Gross Alpha | | EPA 900.1 | pCi/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |
| G. Alpha Error Estimate ± | | | | | | | |

| Trace Organics | | | | | | | |
|----------------|--|---------|------|-----|-------|-------|-------|
| Chloroform | | EPA 601 | µg/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |

| Quality Assurance Data | | | Target Range | | | |
|------------------------|--|--------|--------------|------|-------|----------|
| Anion | | meq | | 1.54 | 0.49 | 0.71 |
| Cation | | meq | | 1.64 | 0.73 | 0.57 |
| WYDEQ A/C Balance | | % | -5 - +5 | 3.12 | 20.04 | * -10.83 |
| Calc TDS | | mg/L | | 106 | 33 | 39 |
| TDS A/C Balance | | dec. % | 0.80 - 1.20 | 1.13 | 0.58 | * 1.18 |

*Balances inappropriate for "blank" samples.

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SEMI-ANNUAL GROUND WATER MONITORING REPORT

JULY 1, 1999 THROUGH DECEMBER 31, 1999

ALLUVIUM

GW-1

GW-2

509-D

632

EPA-23

EPA-28

GW-3

EPA-25

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627

SAMPLES ONLY

801

802

803

LEVELS ONLY

804

805

806

807



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**UNC MINING AND MILLING: CHURCHROCK OPERATIONS
GROUNDWATER MONITORING PROGRAM: SOUTHWEST ALLUVIUM MONITOR WELLS**

WELL ID:
LABORATORY ID:
SAMPLE DATE:
REPORT DATE:
QUARTER REPRESENTED:
UNC SUBMITTAL #:

| GW-1 | GW-1 | GW-1 |
|----------------|-----------------|-------------------|
| 99-24258 | 99-35511 | 99-33595-005 |
| 04-06-99 | 07-13-99 | 10-05-99 @ 11:17 |
| April 30, 1999 | August 17, 1999 | November 16, 1999 |
| Second '99 | Third '99 | Fourth '99 |
| TE-3-4-99 | TE-5-7-99 | TE-7-10-99 |

| Major Ions | Method | Units | Reporting Limit | Results | Results | Results | |
|------------------------|-----------------------------------|------------|-----------------|---------|---------|---------|------|
| Calcium | Ca | EPA 200.7 | mg/L | 0.05 | 610 | 611 | 562 |
| Magnesium | Mg | EPA 200.7 | mg/L | 0.01 | 264 | 304 | 270 |
| Sodium | Na | EPA 200.7 | mg/L | 0.05 | 209 | 183 | 205 |
| Potassium | K | EPA 200.7 | mg/L | 0.10 | 5.1 | 9.7 | 5.1 |
| Bicarbonate | HCO ₃ | SM 2320 B. | mg/L | 0.10 | 738 | 770 | 788 |
| Sulfate | SO ₄ | EPA 200.7 | mg/L | 1.0 | 1820 | 1900 | 1670 |
| Chloride | Cl | EPA 200.7 | mg/L | 1.0 | 115 | 125 | 120 |
| Ammonium as N | NH ₄ | EPA 350.1 | mg/L | 0.05 | 0.43 | 0.47 | 0.10 |
| Nitrate + Nitrite as N | NO ₃ + NO ₂ | EPA 353.2 | mg/L | 0.10 | 91.8 | 82.4 | 91.0 |

| Non-Metals | | Method | Units | Reporting Limit | Results | Results | Results |
|--------------------------------|-----|-----------------|------------|-----------------|---------|---------|---------|
| Total Dissolved Solids @ 180°C | TDS | SM 2540 C. Mod. | mg/L | 1.0 | 4300 | 4190 | 4230 |
| pH | | SM 4500-H B. | std. units | 0.10 | 7.65 | 7.80 | 7.53 |

| Trace Metals | | Method | Units | Reporting Limit | Results | Results | Results |
|--------------|----|-----------|-------|-----------------|---------|---------|---------|
| Aluminum | Al | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Arsenic III | As | EPA 206.3 | mg/L | 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Beryllium | Be | EPA 200.7 | mg/L | 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Cadmium | Cd | EPA 200.8 | mg/L | 0.005 | < 0.005 | < 0.005 | < 0.005 |
| Cobalt | Co | EPA 200.7 | mg/L | 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Lead | Pb | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Manganese | Mn | EPA 200.7 | mg/L | 0.01 | 0.02 | 0.02 | 0.02 |
| Molybdenum | Mo | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Nickel | Ni | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Selenium IV | Se | EPA 270.3 | mg/L | 0.001 | < 0.001 | 0.001 | < 0.001 |
| Vanadium | V | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |

| Radiometrics | | Method | Units | Reporting Limit | Results | Results | Results |
|---------------------------|-------------------|------------|-------|-----------------|---------|---------|---------|
| Uranium | ²³⁸ U | EPA 200.8 | mg/L | 0.0003 | 0.0461 | 0.0460 | 0.0507 |
| Radium 226 | ²²⁶ Ra | EPA 903.0 | pCi/L | 0.2 | 1.2 | < 0.2 | 0.4 |
| Radium Error Estimate ± | | | | | 0.3 | | 0.3 |
| Radium 228 | ²²⁸ Ra | EPA 904.0 | pCi/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Radium Error Estimate ± | | | | | | | |
| Thorium 230 | ²³⁰ Th | EPA 907.0 | pCi/L | 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Thorium Error Estimate ± | | | | | | | |
| Lead 210 | ²¹⁰ Pb | NERHL-65-4 | pCi/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Lead Error Estimate ± | | | | | | | |
| Gross Alpha | | EPA 900.1 | pCi/L | 1.0 | 1.2 | < 1.0 | < 1.0 |
| G. Alpha Error Estimate ± | | | | | 0.2 | | |

| Trace Organics | | Method | Units | Reporting Limit | Results | Results | Results |
|----------------|--|---------|-------|-----------------|---------|---------|---------|
| Chloroform | | EPA 601 | µg/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |

| Quality Assurance Data | Units | Target Range | Results | Results | Results |
|------------------------|--------|--------------|---------|---------|---------|
| Anion | meq | | 59.81 | 61.61 | 57.59 |
| Cation | meq | | 61.76 | 64.13 | 59.66 |
| WYDEQ A/C Balance | % | -5 - +5 | 1.60 | 2.00 | 1.77 |
| Calc TDS | mg/L | | 3799 | 3883 | 3629 |
| TDS A/C Balance | dec. % | 0.80 - 1.20 | 1.13 | 1.08 | 1.17 |

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**UNC MINING AND MILLING: CHURCHROCK OPERATIONS
GROUNDWATER MONITORING PROGRAM: SOUTHWEST ALLUVIUM MONITOR WELLS**

WELL ID:
LABORATORY ID:
SAMPLE DATE:
REPORT DATE:
QUARTER REPRESENTED:
UNC SUBMITTAL #:

| GW-2 | GW-2 | GW-2 |
|----------------|-----------------|-------------------|
| 99-24260 | 99-35513 | 99-33595-006 |
| 04-06-99 | 07-13-99 | 10-05-99 @ 11:38 |
| April 30, 1999 | August 17, 1999 | November 16, 1999 |
| Second '99 | Third '99 | Fourth '99 |
| TE-3-4-99 | TE-5-7-99 | TE-7-10-99 |

| Major Ions | | Method | Units | Reporting Limit | Results | Results | Results |
|------------------------|-----------------------------------|------------|-------|-----------------|---------|---------|---------|
| Calcium | Ca | EPA 200.7 | mg/L | 0.05 | 580 | 594 | 537 |
| Magnesium | Mg | EPA 200.7 | mg/L | 0.01 | 582 | 562 | 512 |
| Sodium | Na | EPA 200.7 | mg/L | 0.05 | 221 | 223 | 229 |
| Potassium | K | EPA 200.7 | mg/L | 0.10 | 9.6 | 14.5 | 10.1 |
| Bicarbonate | HCO ₃ | SM 2320 B. | mg/L | 0.10 | 1410 | 1350 | 1420 |
| Sulfate | SO ₄ | EPA 200.7 | mg/L | 1.0 | 2500 | 2660 | 2380 |
| Chloride | Cl | EPA 200.7 | mg/L | 1.0 | 162 | 166 | 164 |
| Ammonium as N | NH ₄ | EPA 350.1 | mg/L | 0.05 | 0.07 | 0.06 | 0.24 |
| Nitrate + Nitrite as N | NO ₃ + NO ₂ | EPA 353.2 | mg/L | 0.10 | 6.12 | 5.95 | 5.50 |

| Non-Metals | | | | | | | |
|--------------------------------|-----|-----------------|------------|------|------|------|------|
| Total Dissolved Solids @ 180°C | TDS | SM 2540 C. Mod. | mg/L | 1.0 | 5710 | 5530 | 5510 |
| pH | | SM 4500-H B. | std. units | 0.10 | 7.57 | 7.90 | 7.39 |

| Trace Metals | | | | | | | |
|--------------|----|-----------|------|-------|---------|---------|---------|
| Aluminum | Al | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Arsenic III | As | EPA 206.3 | mg/L | 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Beryllium | Be | EPA 200.7 | mg/L | 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Cadmium | Cd | EPA 200.8 | mg/L | 0.005 | < 0.005 | < 0.005 | < 0.005 |
| Cobalt | Co | EPA 200.7 | mg/L | 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Lead | Pb | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Manganese | Mn | EPA 200.7 | mg/L | 0.01 | 0.34 | 0.40 | 0.49 |
| Molybdenum | Mo | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Nickel | Ni | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Selenium IV | Se | EPA 270.3 | mg/L | 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Vanadium | V | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |

| Radiometrics | | | | | | | |
|---------------------------|-------------------|------------|-------|--------|--------|--------|--------|
| Uranium | ²³⁸ U | EPA 200.8 | mg/L | 0.0003 | 0.0594 | 0.0057 | 0.0705 |
| Radium 226 | ²²⁶ Ra | EPA 903.0 | pCi/L | 0.2 | < 0.2 | < 0.2 | 0.3 |
| Radium Error Estimate ± | | | | | | | 0.2 |
| Radium 228 | ²²⁸ Ra | EPA 904.0 | pCi/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Radium Error Estimate ± | | | | | | | |
| Thorium 230 | ²³⁰ Th | EPA 907.0 | pCi/L | 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Thorium Error Estimate ± | | | | | | | |
| Lead 210 | ²¹⁰ Pb | NERHL-65-4 | pCi/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Lead Error Estimate ± | | | | | | | |
| Gross Alpha | | EPA 900.1 | pCi/L | 1.0 | < 1.0 | 2.3 | < 1.0 |
| G. Alpha Error Estimate ± | | | | | | 0.7 | |

| Trace Organics | | | | | | | |
|----------------|--|---------|------|-----|-------|-------|-------|
| Chloroform | | EPA 601 | µg/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |

| Quality Assurance Data | | Target Range | | | |
|------------------------|--------|--------------|-------|-------|-------|
| Anion | meq | | 80.20 | 82.65 | 77.87 |
| Cation | meq | | 87.39 | 86.64 | 79.79 |
| WYDEQ A/C Balance | % | -5 - +5 | 4.29 | 2.36 | 1.21 |
| Calc TDS | mg/L | | 4787 | 4921 | 4567 |
| TDS A/C Balance | dec. % | 0.80 - 1.20 | 1.19 | 1.12 | 1.21 |



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**UNC MINING AND MILLING: CHURCHROCK OPERATIONS
GROUNDWATER MONITORING PROGRAM: SOUTHWEST ALLUVIUM MONITOR WELLS**

WELL ID:
LABORATORY ID:
SAMPLE DATE:
REPORT DATE:
QUARTER REPRESENTED:
UNC SUBMITTAL #:

| 509D | 509D | 509D |
|----------------|-----------------|-------------------|
| 99-24257 | 99-35510 | 99-33595-001 |
| 04-06-99 | 07-13-99 | 10-05-99 @ 10:57 |
| April 30, 1999 | August 17, 1999 | November 16, 1999 |
| Second '99 | Third '99 | Fourth '99 |
| TE-3-4-99 | TE-5-7-99 | TE-7-10-99 |

| Major Ions | | Method | Units | Reporting Limit | Results | Results | Results |
|------------------------|-----------------------------------|------------|-------|-----------------|---------|---------|---------|
| Calcium | Ca | EPA 200.7 | mg/L | 0.05 | 805 | 762 | 847 |
| Magnesium | Mg | EPA 200.7 | mg/L | 0.01 | 630 | 644 | 664 |
| Sodium | Na | EPA 200.7 | mg/L | 0.05 | 289 | 314 | 307 |
| Potassium | K | EPA 200.7 | mg/L | 0.10 | 17.6 | 25.1 | 18.6 |
| Bicarbonate | HCO ₃ | SM 2320 B. | mg/L | 0.10 | 1950 | 1540 | 1990 |
| Sulfate | SO ₄ | EPA 200.7 | mg/L | 1.0 | 2830 | 3000 | 3070 |
| Chloride | Cl | EPA 200.7 | mg/L | 1.0 | 345 | 312 | 317 |
| Ammonium as N | NH ₄ | EPA 350.1 | mg/L | 0.05 | 13.1 | 17.6 | 0.05 |
| Nitrate + Nitrite as N | NO ₃ + NO ₂ | EPA 353.2 | mg/L | 0.10 | 9.53 | 36.6 | 35.4 |

| Non-Metals | | | | | | | |
|--------------------------------|-----|-----------------|------------|------|------|------|------|
| Total Dissolved Solids @ 180°C | TDS | SM 2540 C. Mod. | mg/L | 1.0 | 6780 | 6620 | 6290 |
| pH | | SM 4500-H B. | std. units | 0.10 | 7.60 | 7.72 | 7.40 |

| Trace Metals | | | | | | | |
|--------------|----|-----------|------|-------|---------|---------|---------|
| Aluminum | Al | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Arsenic III | As | EPA 206.3 | mg/L | 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Beryllium | Be | EPA 200.7 | mg/L | 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Cadmium | Cd | EPA 200.8 | mg/L | 0.005 | < 0.005 | < 0.005 | 0.008 |
| Cobalt | Co | EPA 200.7 | mg/L | 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Lead | Pb | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Manganese | Mn | EPA 200.7 | mg/L | 0.01 | 0.89 | 0.56 | 1.05 |
| Molybdenum | Mo | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Nickel | Ni | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Selenium IV | Se | EPA 270.3 | mg/L | 0.001 | < 0.001 | 0.003 | < 0.001 |
| Vanadium | V | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |

| Radiometrics | | | | | | | |
|---------------------------|-------------------|------------|-------|--------|-------|-------|-------|
| Uranium | ²³⁸ U | EPA 200.8 | mg/L | 0.0003 | 0.104 | 0.104 | 0.108 |
| Radium 226 | ²²⁶ Ra | EPA 903.0 | pCi/L | 0.2 | 1.1 | 1.9 | 0.5 |
| Radium Error Estimate ± | | | | | 0.4 | 0.4 | 0.2 |
| Radium 228 | ²²⁸ Ra | EPA 904.0 | pCi/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Radium Error Estimate ± | | | | | | | |
| Thorium 230 | ²³⁰ Th | EPA 907.0 | pCi/L | 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Thorium Error Estimate ± | | | | | | | |
| Lead 210 | ²¹⁰ Pb | NERHL-65-4 | pCi/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Lead Error Estimate ± | | | | | | | |
| Gross Alpha | | EPA 900.1 | pCi/L | 1.0 | < 1.0 | 9.3 | < 1.0 |
| G. Alpha Error Estimate ± | | | | | | 1.1 | |

| Trace Organics | | | | | | | |
|----------------|--|---------|------|-----|-------|-------|-------|
| Chloroform | | EPA 601 | µg/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |

| Quality Assurance Data | | | Target Range | | | |
|------------------------|--|--------|--------------|--------|--------|--------|
| Anion | | meq | | 101.32 | 99.15 | 108.04 |
| Cation | | meq | | 106.76 | 107.36 | 111.58 |
| WYDEQ A/C Balance | | % | -5 - +5 | 2.61 | 3.98 | 1.61 |
| Calc TDS | | mg/L | | 5952 | 6013 | 6377 |
| TDS A/C Balance | | dec. % | 0.80 - 1.20 | 1.14 | 1.10 | 0.99 |

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COMPLETE ANALYTICAL SERVICES

33595R00001



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UNC MINING AND MILLING: CHURCHROCK OPERATIONS
GROUNDWATER MONITORING PROGRAM: SOUTHWEST ALLUVIUM MONITOR WELLS

WELL ID:
LABORATORY ID:
SAMPLE DATE:
REPORT DATE:
QUARTER REPRESENTED:
UNC SUBMITTAL #:

| 632 | 632 | 632 |
|----------------|-----------------|-------------------|
| 99-24261 | 99-35514 | 99-33595-003 |
| 04-06-99 | 07-13-99 | 10-05-99 @ 11:47 |
| April 30, 1999 | August 17, 1999 | November 16, 1999 |
| Second '99 | Third '99 | Fourth '99 |
| TE-3-4-99 | TE-5-7-99 | TE-7-10-99 |

| Major Ions | | Method | Units | Reporting Limit | Results | Results | Results |
|------------------------|-----------------------------------|------------|-------|-----------------|---------|---------|---------|
| Calcium | Ca | EPA 200.7 | mg/L | 0.05 | 662 | 651 | 691 |
| Magnesium | Mg | EPA 200.7 | mg/L | 0.01 | 594 | 602 | 667 |
| Sodium | Na | EPA 200.7 | mg/L | 0.05 | 354 | 336 | 375 |
| Potassium | K | EPA 200.7 | mg/L | 0.10 | 8.1 | 14.3 | 8.3 |
| Bicarbonate | HCO ₃ | SM 2320 B. | mg/L | 0.10 | 1890 | 1910 | 1850 |
| Sulfate | SO ₄ | EPA 200.7 | mg/L | 1.0 | 2720 | 2830 | 3140 |
| Chloride | Cl | EPA 200.7 | mg/L | 1.0 | 251 | 244 | 235 |
| Ammonium as N | NH ₄ | EPA 350.1 | mg/L | 0.05 | 0.21 | 0.21 | 0.16 |
| Nitrate + Nitrite as N | NO ₃ + NO ₂ | EPA 353.2 | mg/L | 0.10 | 6.37 | 5.72 | 6.03 |

| Non-Metals | | | | | | | |
|--------------------------------|-----|-----------------|------------|------|------|------|------|
| Total Dissolved Solids @ 180°C | TDS | SM 2540 C. Mod. | mg/L | 1.0 | 6320 | 6140 | 6060 |
| pH | | SM 4500-H B. | std. units | 0.10 | 7.90 | 7.78 | 7.75 |

| Trace Metals | | | | | | | |
|--------------|----|-----------|------|-------|---------|---------|---------|
| Aluminum | Al | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Arsenic III | As | EPA 206.3 | mg/L | 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Beryllium | Be | EPA 200.7 | mg/L | 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Cadmium | Cd | EPA 200.8 | mg/L | 0.005 | 0.008 | < 0.005 | 0.006 |
| Cobalt | Co | EPA 200.7 | mg/L | 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Lead | Pb | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Manganese | Mn | EPA 200.7 | mg/L | 0.01 | 0.70 | 0.72 | 0.85 |
| Molybdenum | Mo | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Nickel | Ni | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Selenium IV | Se | EPA 270.3 | mg/L | 0.001 | < 0.001 | < 0.001 | 0.001 |
| Vanadium | V | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |

| Radiometrics | | | | | | | |
|---------------------------|-------------------|------------|-------|--------|-------|--------|--------|
| Uranium | ²³⁸ U | EPA 200.8 | mg/L | 0.0003 | 0.124 | 0.0775 | 0.0795 |
| Radium 226 | ²²⁶ Ra | EPA 903.0 | pCi/L | 0.2 | 1.7 | 0.5 | 2.1 |
| Radium Error Estimate ± | | | | | 0.4 | 0.2 | 0.2 |
| Radium 228 | ²²⁸ Ra | EPA 904.0 | pCi/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Radium Error Estimate ± | | | | | | | |
| Thorium 230 | ²³⁰ Th | EPA 907.0 | pCi/L | 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Thorium Error Estimate ± | | | | | | | |
| Lead 210 | ²¹⁰ Pb | NERHL-65-4 | pCi/L | 1.0 | < 1.0 | 2.9 | < 1.0 |
| Lead Error Estimate ± | | | | | | 0.4 | |
| Gross Alpha | | EPA 900.1 | pCi/L | 1.0 | < 1.0 | 3.5 | 1.6 |
| G. Alpha Error Estimate ± | | | | | | 0.8 | 0.6 |

| Trace Organics | | | | | | | |
|----------------|--|---------|------|-----|-----|-----|-----|
| Chloroform | | EPA 601 | µg/L | 1.0 | 1.5 | 1.8 | 2.1 |

| Quality Assurance Data | | Target Range | | | |
|------------------------|--------|--------------|-------|-------|--------|
| Anion | meq | | 95.18 | 97.55 | 102.79 |
| Cation | meq | | 98.26 | 97.76 | 106.72 |
| WYDEQ A/C Balance | % | -5 - +5 | 1.60 | 0.11 | 1.87 |
| Calc TDS | mg/L | | 5563 | 5659 | 6069 |
| TDS A/C Balance | dec. % | 0.80 - 1.20 | 1.14 | 1.09 | 1.00 |



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**UNC MINING AND MILLING: CHURCHROCK OPERATIONS
GROUNDWATER MONITORING PROGRAM: SOUTHWEST ALLUVIUM MONITOR WELLS**

WELL ID:
LABORATORY ID:
SAMPLE DATE:
REPORT DATE:
QUARTER REPRESENTED:
UNC SUBMITTAL #:

| EPA 28 | EPA 28 | EPA 28 |
|--------------|-----------------|-------------------|
| 99-24822 | 99-35981 | 99-33757-003 |
| 04-13-99 | 07-20-99 | 10-12-99 @ 13:38 |
| May 16, 1999 | August 26, 1999 | November 29, 1999 |
| Second '99 | Third '99 | Fourth '99 |
| TE-4-4-99 | TE-6-7-99 | TE-8-10-99 |

| Major Ions | | Method | Units | Reporting Limit | Results | Results | Results |
|------------------------|-----------------------------------|----------------------------|-------|-----------------|---------|---------|---------|
| Calcium | Ca | EPA 200.7 | mg/L | 0.05 | 544 | 528 | 532 |
| Magnesium | Mg | EPA 200.7 | mg/L | 0.01 | 550 | 556 | 518 |
| Sodium | Na | EPA 200.7 | mg/L | 0.05 | 214 | 235 | 190 |
| Potassium | K | EPA 200.7 | mg/L | 0.10 | 11.9 | 15.0 | 11.3 |
| Bicarbonate | HCO ₃ | SM 2320 B. | mg/L | 0.10 | 533 | 557 | 542 |
| Sulfate | SO ₄ | EPA 200.7 | mg/L | 1.0 | 2930 | 3010 | 2930 |
| Chloride | Cl | EPA 200.7 | mg/L | 1.0 | 106 | 106 | 108 |
| Ammonium as N | NH ₄ | SM 4500-NH ₃ G. | mg/L | 0.05 | 0.08 | 0.05 | < 0.05 |
| Nitrate + Nitrite as N | NO ₃ + NO ₂ | EPA 353.2 | mg/L | 0.10 | 45.1 | 40.0 | 40.4 |

| Non-Metals | | | | | | | |
|--------------------------------|-----|-----------------|------------|------|------|------|------|
| Total Dissolved Solids @ 180°C | TDS | SM 2540 C. Mod. | mg/L | 1.0 | 5360 | 5390 | 5210 |
| pH | | SM 4500-H B. | std. units | 0.10 | 8.05 | 7.94 | 7.98 |

| Trace Metals | | | | | | | |
|--------------|----|-----------|------|-------|---------|---------|---------|
| Aluminum | Al | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Arsenic III | As | EPA 206.3 | mg/L | 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Beryllium | Be | EPA 200.7 | mg/L | 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Cadmium | Cd | EPA 200.8 | mg/L | 0.005 | < 0.005 | < 0.005 | < 0.005 |
| Cobalt | Co | EPA 200.7 | mg/L | 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Lead | Pb | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Manganese | Mn | EPA 200.7 | mg/L | 0.01 | 0.32 | 0.26 | 0.17 |
| Molybdenum | Mo | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Nickel | Ni | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Selenium IV | Se | EPA 270.3 | mg/L | 0.001 | < 0.001 | 0.001 | < 0.001 |
| Vanadium | V | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |

| Radiometric | | | | | | | |
|---------------------------|-------------------|------------|-------|--------|--------|--------|--------|
| Uranium | ²³⁵ U | EPA 200.8 | mg/L | 0.0003 | 0.0251 | 0.0282 | 0.0300 |
| Radium 226 | ²²⁶ Ra | EPA 903.0 | pCi/L | 0.2 | < 0.2 | 0.6 | 0.7 |
| Radium Error Estimate ± | | | | | | 0.2 | 0.2 |
| Radium 228 | ²²⁸ Ra | EPA 904.0 | pCi/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Radium Error Estimate ± | | | | | | | |
| Thorium 230 | ²³⁰ Th | EPA 907.0 | pCi/L | 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Thorium Error Estimate ± | | | | | | | |
| Lead 210 | ²¹⁰ Pb | NERHL-65-4 | pCi/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Lead Error Estimate ± | | | | | | | |
| Gross Alpha | | EPA 900.1 | pCi/L | 1.0 | < 1.0 | 1.6 | < 1.0 |
| G. Alpha Error Estimate ± | | | | | | 0.4 | |

| Trace Organics | | | | | | | |
|----------------|--|---------|------|-----|-------|-------|-------|
| Chloroform | | EPA 601 | µg/l | 1.0 | < 1.0 | < 1.0 | < 1.0 |

| Quality Assurance Data | | | Target Range | | | |
|------------------------|--|--------|--------------|-------|-------|-------|
| Anion | | meq | | 75.99 | 77.68 | 75.85 |
| Cation | | meq | | 82.68 | 83.36 | 78.34 |
| WYDEQ A/C Balance | | % | -5 - +5 | 4.22 | 3.53 | 1.61 |
| Calc TDS | | mg/L | | 4823 | 4906 | 4740 |
| TDS A/C Balance | | dec. % | 0.80 - 1.20 | 1.11 | 1.10 | 1.10 |

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**UNC MINING AND MILLING - CHURCHROCK OPERATIONS
GROUNDWATER MONITORING PROGRAM - SOUTHWEST ALLUVIUM MONITOR WELLS**

WELL ID:
LABORATORY ID:
SAMPLE DATE:
REPORT DATE:
QUARTER REPRESENTED:
UNC SUBMITTAL #:

| EPA 23 | EPA 23 | EPA 23 |
|--------------|-----------------|-------------------|
| 99-24823 | 99-35982 | 99-33757-004 |
| 04-13-99 | 07-20-99 | 10-12-99 @ 13:53 |
| May 16, 1999 | August 26, 1999 | November 29, 1999 |
| Second '99 | Third '99 | Fourth '99 |
| TE-4-4-99 | TE-6-7-99 | TE-8-10-99 |

| Major Ions | | Method | Units | Reporting Limit | Results | Results | Results |
|------------------------|-----------------------------------|----------------------------|-------|-----------------|---------|---------|---------|
| Calcium | Ca | EPA 200.7 | mg/L | 0.05 | 684 | 690 | 687 |
| Magnesium | Mg | EPA 200.7 | mg/L | 0.01 | 375 | 402 | 424 |
| Sodium | Na | EPA 200.7 | mg/L | 0.05 | 145 | 134 | 152 |
| Potassium | K | EPA 200.7 | mg/L | 0.10 | 9.6 | 12.0 | 10.2 |
| Bicarbonate | HCO ₃ | SM 2320 B. | mg/L | 0.10 | 1140 | 1120 | 1240 |
| Sulfate | SO ₄ | EPA 200.7 | mg/L | 1.0 | 2290 | 2300 | 2270 |
| Chloride | Cl | EPA 200.7 | mg/L | 1.0 | 92.2 | 86.0 | 111 |
| Ammonium as N | NH ₄ | SM 4500-NH ₃ G. | mg/L | 0.05 | 2.09 | 2.65 | 3.61 |
| Nitrate + Nitrite as N | NO ₃ + NO ₂ | EPA 353.2 | mg/L | 0.10 | 29.2 | 56.5 | 63.4 |

| Non-Metals | | | | | | | |
|--------------------------------|-----|-----------------|------------|------|------|------|------|
| Total Dissolved Solids @ 180°C | TDS | SM 2540 C. Mod. | mg/L | 1.0 | 4670 | 4640 | 4910 |
| pH | | SM 4500-H B. | std. units | 0.10 | 7.68 | 7.67 | 7.69 |

| Trace Metals | | | | | | | |
|--------------|----|-----------|------|-------|---------|---------|---------|
| Aluminum | Al | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Arsenic III | As | EPA 206.3 | mg/L | 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Beryllium | Be | EPA 200.7 | mg/L | 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Cadmium | Cd | EPA 200.8 | mg/L | 0.005 | 0.005 | < 0.005 | < 0.005 |
| Cobalt | Co | EPA 200.7 | mg/L | 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Lead | Pb | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Manganese | Mn | EPA 200.7 | mg/L | 0.01 | 2.96 | 2.33 | 3.23 |
| Molybdenum | Mo | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Nickel | Ni | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Selenium IV | Se | EPA 270.3 | mg/L | 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Vanadium | V | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |

| Radiometrics | | | | | | | |
|---------------------------|-------------------|------------|-------|--------|--------|--------|--------|
| Uranium | ²³⁵ U | EPA 200.8 | mg/L | 0.0003 | 0.0313 | 0.0286 | 0.0452 |
| Radium 226 | ²²⁶ Ra | EPA 903.0 | pCi/L | 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Radium Error Estimate ± | | | | | | | |
| Radium 228 | ²²⁸ Ra | EPA 904.0 | pCi/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Radium Error Estimate ± | | | | | | | |
| Thorium 230 | ²³⁰ Th | EPA 907.0 | pCi/L | 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Thorium Error Estimate ± | | | | | | | |
| Lead 210 | ²¹⁰ Pb | NERHL-65-4 | pCi/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Lead Error Estimate ± | | | | | | | |
| Gross Alpha | | EPA 900.1 | pCi/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |
| G. Alpha Error Estimate ± | | | | | | | |

| Trace Organics | | | | | | | |
|----------------|--|---------|------|-----|-------|-------|-------|
| Chloroform | | EPA 601 | µg/l | 1.0 | < 1.0 | < 1.0 | < 1.0 |

| Quality Assurance Data | | | Target Range | | | |
|------------------------|--|--------|--------------|-------|-------|-------|
| Anion | | meq | | 71.08 | 72.74 | 75.27 |
| Cation | | meq | | 72.32 | 74.46 | 77.00 |
| WYDEQ A/C Balance | | % | -5 - +5 | 0.87 | 1.17 | 1.13 |
| Calc TDS | | mg/L | | 4301 | 4440 | 4563 |
| TDS A/C Balance | | dec. % | 0.80 - 1.20 | 1.09 | 1.05 | 1.08 |

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**UNC MINING AND MILLING: CHURCHROCK OPERATIONS
GROUNDWATER MONITORING PROGRAM: SOUTHWEST ALLUVIUM MONITOR WELLS**

WELL ID:
LABORATORY ID:
SAMPLE DATE:
REPORT DATE:
QUARTER REPRESENTED:
UNC SUBMITTAL #:

| GW-3 | GW-3 | GW-3 |
|----------------|-----------------|-------------------|
| 99-24262 | 99-35515 | 99-33595-007 |
| 04-06-99 | 07-13-99 | 10-05-99 @ 12:05 |
| April 30, 1999 | August 17, 1999 | November 16, 1999 |
| Second '99 | Third '99 | Fourth '99 |
| TE-3-4-99 | TE-5-7-99 | TE-7-10-99 |

| Major Ions | | Method | Units | Reporting Limit | Results | Results | Results |
|------------------------|-----------------------------------|------------|-------|-----------------|---------|---------|---------|
| Calcium | Ca | EPA 200.7 | mg/L | 0.05 | 811 | 824 | 702 |
| Magnesium | Mg | EPA 200.7 | mg/L | 0.01 | 218 | 259 | 219 |
| Sodium | Na | EPA 200.7 | mg/L | 0.05 | 202 | 205 | 217 |
| Potassium | K | EPA 200.7 | mg/L | 0.10 | 8.4 | 12.3 | 7.5 |
| Bicarbonate | HCO ₃ | SM 2320 B. | mg/L | 0.10 | 1170 | 1170 | 1170 |
| Sulfate | SO ₄ | EPA 200.7 | mg/L | 1.0 | 1710 | 1830 | 1680 |
| Chloride | Cl | EPA 200.7 | mg/L | 1.0 | 131 | 126 | 123 |
| Ammonium as N | NH ₄ | EPA 350.1 | mg/L | 0.05 | 0.11 | 0.09 | 14.8 |
| Nitrate + Nitrite as N | NO ₃ + NO ₂ | EPA 353.2 | mg/L | 0.10 | 103 | 119 | 99.0 |

| Non-Metals | | | | | | | |
|--------------------------------|-----|-----------------|------------|------|------|------|------|
| Total Dissolved Solids @ 180°C | TDS | SM 2540 C. Mod. | mg/L | 1.0 | 4600 | 4610 | 4660 |
| pH | | SM 4500-H B. | std. units | 0.10 | 7.64 | 7.90 | 7.34 |

| Trace Metals | | | | | | | |
|--------------|----|-----------|------|-------|---------|---------|---------|
| Aluminum | Al | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Arsenic III | As | EPA 206.3 | mg/L | 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Beryllium | Be | EPA 200.7 | mg/L | 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Cadmium | Cd | EPA 200.8 | mg/L | 0.005 | < 0.005 | < 0.005 | < 0.005 |
| Cobalt | Co | EPA 200.7 | mg/L | 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Lead | Pb | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Manganese | Mn | EPA 200.7 | mg/L | 0.01 | 1.82 | 1.69 | 2.03 |
| Molybdenum | Mo | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Nickel | Ni | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Selenium IV | Se | EPA 270.3 | mg/L | 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Vanadium | V | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |

| Radiometrics | | | | | | | |
|---------------------------|-------------------|-----------------|-------|--------|--------|--------|--------|
| Uranium | ²³⁸ U | EPA 200.8 | mg/L | 0.0003 | 0.0518 | 0.0047 | 0.0569 |
| Radium 226 | ²²⁶ Ra | EPA 903.0 | pCi/L | 0.2 | 0.7 | < 0.2 | 0.6 |
| Radium Error Estimate ± | | | | | 0.1 | | 0.2 |
| Radium 228 | ²²⁸ Ra | EPA 904.0 | pCi/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Radium Error Estimate ± | | | | | | | |
| Thorium 230 | ²³⁰ Th | EPA 907.0 | pCi/L | 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Thorium Error Estimate ± | | | | | | | |
| Lead 210 | ²¹⁰ Pb | NERHL-65-4 | pCi/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Lead Error Estimate ± | | | | | | | |
| Polonium 210 | ²¹⁰ Po | RMO-3008, USAEC | pCi/L | 1.0 | < 1.0 | < 1.0 | N/R |
| Polonium Error Estimate ± | | | | | | | |
| Gross Alpha | | EPA 900.1 | pCi/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |
| G. Alpha Error Estimate ± | | | | | | | |

| Trace Organics | | | | | | | |
|----------------|--|---------|------|-----|-------|-------|-------|
| Chloroform | | EPA 601 | µg/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |

| Quality Assurance Data | | | Target Range | | | |
|------------------------|--|--------|--------------|-------|-------|-------|
| Anion | | meq | | 65.85 | 69.35 | 64.72 |
| Cation | | meq | | 67.83 | 72.12 | 64.16 |
| WYDEQ A/C Balance | | % | -5 - +5 | 1.48 | 1.96 | -0.43 |
| Calc TDS | | mg/L | | 4124 | 4370 | 3993 |
| TDS A/C Balance | | dec. % | 0.80 - 1.20 | 1.12 | 1.05 | 1.17 |



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UNC MINING AND MILLING - CHURCHROCK OPERATIONS
GROUNDWATER MONITORING PROGRAM: SOUTHWEST ALLUVIUM MONITOR WELLS

WELL ID:
LABORATORY ID:
SAMPLE DATE:
REPORT DATE:
QUARTER REPRESENTED:
UNC SUBMITTAL #:

| EPA 25 | EPA 25 | EPA 25 |
|--------------|-----------------|-------------------|
| 99-24824 | 99-35983 | 99-33757-005 |
| 04-13-99 | 07-20-99 | 10-12-99 @ 15:16 |
| May 16, 1999 | August 26, 1999 | November 29, 1999 |
| Second '99 | Third '99 | Fourth '99 |
| TE-4-4-99 | TE-6-7-99 | TE-8-10-99 |

| Major Ions | | Method | Units | Reporting Limit | Results | Results | Results |
|------------------------|-----------------------------------|----------------------------|-------|-----------------|---------|---------|---------|
| Calcium | Ca | EPA 200.7 | mg/L | 0.05 | 813 | 762 | 736 |
| Magnesium | Mg | EPA 200.7 | mg/L | 0.01 | 196 | 226 | 201 |
| Sodium | Na | EPA 200.7 | mg/L | 0.05 | 146 | 140 | 139 |
| Potassium | K | EPA 200.7 | mg/L | 0.10 | 7.8 | 9.0 | 8.0 |
| Bicarbonate | HCO ₃ | SM 2320 B. | mg/L | 0.10 | 969 | 941 | 959 |
| Sulfate | SO ₄ | EPA 200.7 | mg/L | 1.0 | 1620 | 1740 | 1520 |
| Chloride | Cl | EPA 200.7 | mg/L | 1.0 | 93.6 | 84.0 | 87.7 |
| Ammonium as N | NH ₄ | SM 4500-NH ₃ G. | mg/L | 0.05 | 0.05 | 0.07 | 0.06 |
| Nitrate + Nitrite as N | NO ₃ + NO ₂ | EPA 353.2 | mg/L | 0.10 | 75.0 | 72.4 | 85.7 |

| Non-Metals | | | | | | | |
|--------------------------------|-----|-----------------|------------|------|------|------|------|
| Total Dissolved Solids @ 180°C | TDS | SM 2540 C. Mod. | mg/L | 1.0 | 4040 | 4040 | 4090 |
| pH | | SM 4500-H B. | std. units | 0.10 | 7.97 | 7.85 | 7.75 |

| Trace Metals | | | | | | | |
|--------------|----|-----------|------|-------|---------|---------|---------|
| Aluminum | Al | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Arsenic III | As | EPA 206.3 | mg/L | 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Beryllium | Be | EPA 200.7 | mg/L | 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Cadmium | Cd | EPA 200.8 | mg/L | 0.005 | < 0.005 | < 0.005 | < 0.005 |
| Cobalt | Co | EPA 200.7 | mg/L | 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Lead | Pb | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Manganese | Mn | EPA 200.7 | mg/L | 0.01 | 0.55 | 0.30 | 0.33 |
| Molybdenum | Mo | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Nickel | Ni | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Selenium IV | Se | EPA 270.3 | mg/L | 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Vanadium | V | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |

| Radiometrics | | | | | | | |
|---------------------------|-------------------|------------|-------|--------|--------|-------|-------|
| Uranium | ²³⁸ U | EPA 200.8 | mg/L | 0.0003 | 0.0996 | 0.103 | 0.104 |
| Radium 226 | ²²⁶ Ra | EPA 903.0 | pCi/L | 0.2 | < 0.2 | 1.5 | < 0.2 |
| Radium Error Estimate ± | | | | | | 0.2 | |
| Radium 228 | ²²⁸ Ra | EPA 904.0 | pCi/L | 1.0 | 1.6 | 1.4 | < 1.0 |
| Radium Error Estimate ± | | | | | | 0.2 | |
| Thorium 230 | ²³⁰ Th | EPA 907.0 | pCi/L | 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Thorium Error Estimate ± | | | | | | | |
| Lead 210 | ²¹⁰ Pb | NERHL-65-4 | pCi/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Lead Error Estimate ± | | | | | | | |
| Gross Alpha | | EPA 900.1 | pCi/L | 1.0 | < 1.0 | 2.2 | < 1.0 |
| G. Alpha Error Estimate ± | | | | | | 0.5 | |

| Trace Organics | | | | | | | |
|----------------|--|---------|------|-----|-------|-------|-------|
| Chloroform | | EPA 601 | µg/l | 1.0 | < 1.0 | < 1.0 | < 1.0 |

| Quality Assurance Data | | | Target Range | | | |
|------------------------|--|--------|--------------|-------|-------|-------|
| Anion | | meq | | 57.63 | 59.21 | 55.98 |
| Cation | | meq | | 63.58 | 63.28 | 59.83 |
| WYDEQ A/C Balance | | % | -5 - +5 | 4.91 | 3.32 | 3.33 |
| Calc TDS | | mg/L | | 3694 | 3753 | 3551 |
| TDS A/C Balance | | dec. % | 0.80 - 1.20 | 1.09 | 1.08 | 1.15 |

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UNC MINING AND MILLING: CHURCHROCK OPERATIONS GROUNDWATER MONITORING PROGRAM: SOUTHWEST ALLUVIUM MONITOR WELLS

WELL ID:
LABORATORY ID:
SAMPLE DATE:
REPORT DATE:
QUARTER REPRESENTED:
UNC SUBMITTAL #:

| 624 | 624 | 624 |
|----------------|-----------------|-------------------|
| 99-24259 | 99-35512 | 99-33595-002 |
| 04-06-99 | 07-13-99 | 10-05-99 @ 11:27 |
| April 30, 1999 | August 17, 1999 | November 16, 1999 |
| Second '99 | Third '99 | Fourth '99 |
| TE-3-4-99 | TE-5-7-99 | TE-7-10-99 |

| Major Ions | Method | Units | Reporting Limit | Results | Results | Results | |
|------------------------|-----------------------------------|------------|-----------------|---------|---------|---------|------|
| Calcium | Ca | EPA 200.7 | mg/L | 0.05 | 692 | 646 | 618 |
| Magnesium | Mg | EPA 200.7 | mg/L | 0.01 | 451 | 452 | 411 |
| Sodium | Na | EPA 200.7 | mg/L | 0.05 | 188 | 191 | 199 |
| Potassium | K | EPA 200.7 | mg/L | 0.10 | 5.4 | 10.8 | 6.1 |
| Bicarbonate | HCO ₃ | SM 2320 B. | mg/L | 0.10 | 1230 | 1070 | 1350 |
| Sulfate | SO ₄ | EPA 200.7 | mg/L | 1.0 | 2000 | 2070 | 1860 |
| Chloride | Cl | EPA 200.7 | mg/L | 1.0 | 180 | 181 | 179 |
| Ammonium as N | NH ₄ | EPA 350.1 | mg/L | 0.05 | 0.08 | 0.18 | 0.09 |
| Nitrate + Nitrite as N | NO ₃ + NO ₂ | EPA 353.2 | mg/L | 0.10 | 94.5 | 88.7 | 88.3 |

| Non-Metals | | Method | Units | Reporting Limit | Results | Results | Results |
|--------------------------------|-----|-----------------|------------|-----------------|---------|---------|---------|
| Total Dissolved Solids @ 180°C | TDS | SM 2540 C. Mod. | mg/L | 1.0 | 5150 | 5020 | 4900 |
| pH | | SM 4500-H B. | std. units | 0.10 | 7.89 | 7.85 | 7.59 |

| Trace Metals | | Method | Units | Reporting Limit | Results | Results | Results |
|--------------|----|-----------|-------|-----------------|---------|---------|---------|
| Aluminum | Al | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Arsenic III | As | EPA 206.3 | mg/L | 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Beryllium | Be | EPA 200.7 | mg/L | 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Cadmium | Cd | EPA 200.8 | mg/L | 0.005 | < 0.005 | < 0.005 | < 0.005 |
| Cobalt | Co | EPA 200.7 | mg/L | 0.01 | < 0.01 | 0.02 | < 0.01 |
| Lead | Pb | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Manganese | Mn | EPA 200.7 | mg/L | 0.01 | 0.03 | 0.02 | 0.02 |
| Molybdenum | Mo | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Nickel | Ni | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Selenium IV | Se | EPA 270.3 | mg/L | 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Vanadium | V | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |

| Radiometrics | | Method | Units | Reporting Limit | Results | Results | Results |
|----------------------------------|-------------------|------------|-------|-----------------|---------|---------|---------|
| Uranium (U ^{Nat}) | ²³⁸ U | EPA 200.8 | mg/L | 0.0003 | 0.0366 | 0.0339 | 0.0366 |
| Radium 226 (Ra ²²⁶) | ²²⁶ Ra | EPA 903.0 | pCi/L | 0.2 | 0.7 | < 0.2 | 0.5 |
| Radium Error Estimate ± | | | | | 0.1 | | 0.3 |
| Radium 228 (Ra ²²⁸) | ²²⁸ Ra | EPA 904.0 | pCi/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Radium Error Estimate ± | | | | | | | |
| Thorium 230 (Th ²³⁰) | ²³⁰ Th | EPA 907.0 | pCi/L | 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Thorium Error Estimate ± | | | | | | | |
| Lead 210 (Pb ²¹⁰) | ²¹⁰ Pb | NERHL-65-4 | pCi/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Lead Error Estimate ± | | | | | | | |
| Gross Alpha | | EPA 900.1 | pCi/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |
| G. Alpha Error Estimate ± | | | | | | | |

| Trace Organics | | Method | Units | Reporting Limit | Results | Results | Results |
|----------------|--|---------|-------|-----------------|---------|---------|---------|
| Chloroform | | EPA 601 | µg/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |

| Quality Assurance Data | Units | Target Range | Results | Results | Results |
|------------------------|--------|--------------|---------|---------|---------|
| Anion | meq | | 73.65 | 72.10 | 72.23 |
| Cation | meq | | 80.51 | 78.57 | 73.98 |
| WYDEQ A/C Balance | % | -5 - +5 | 4.45 | 4.30 | 1.19 |
| Calc TDS | mg/L | | 4550 | 4479 | 4339 |
| TDS A/C Balance | dec. % | 0.80 - 1.20 | 1.13 | 1.12 | 1.13 |



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**UNC MINING AND MILLING: CHURCHROCK OPERATIONS
GROUNDWATER MONITORING PROGRAM: SOUTHWEST ALLUVIUM MONITOR WELLS**

WELL ID:
LABORATORY ID:
SAMPLE DATE:
REPORT DATE:
QUARTER REPRESENTED:
UNC SUBMITTAL #:

| 627 | 627 | 627 |
|----------------|-----------------|-------------------|
| 99-24263 | 99-35516 | 99-33595-008 |
| 04-06-99 | 07-13-99 | 10-05-99 @ 12:36 |
| April 30, 1999 | August 17, 1999 | November 16, 1999 |
| Second '99 | Third '99 | Fourth '99 |
| TE-3-4-99 | TE-5-7-99 | TE-7-10-99 |

| Major Ions | | Method | Units | Reporting Limit | Results | Results | Results |
|------------------------|-----------------------------------|------------|-------|-----------------|---------|---------|---------|
| Calcium | Ca | EPA 200.7 | mg/L | 0.05 | 580 | 579 | 521 |
| Magnesium | Mg | EPA 200.7 | mg/L | 0.01 | 309 | 308 | 274 |
| Sodium | Na | EPA 200.7 | mg/L | 0.05 | 504 | 498 | 512 |
| Potassium | K | EPA 200.7 | mg/L | 0.10 | 4.7 | 10.6 | 5.1 |
| Bicarbonate | HCO ₃ | SM 2320 B. | mg/L | 0.10 | 580 | 594 | 594 |
| Sulfate | SO ₄ | EPA 200.7 | mg/L | 1.0 | 2660 | 2620 | 2320 |
| Chloride | Cl | EPA 200.7 | mg/L | 1.0 | 68.0 | 67.7 | 58.5 |
| Ammonium as N | NH ₄ | EPA 350.1 | mg/L | 0.05 | 0.27 | 0.17 | 0.38 |
| Nitrate + Nitrite as N | NO ₃ + NO ₂ | EPA 353.2 | mg/L | 0.10 | 131 | 126 | 127 |

| Non-Metals | | | | | | | |
|--------------------------------|-----|-----------------|------------|------|------|------|------|
| Total Dissolved Solids @ 180°C | TDS | SM 2540 C. Mod. | mg/L | 1.0 | 5650 | 5320 | 5320 |
| pH | | SM 4500-H B. | std. units | 0.10 | 7.84 | 8.21 | 7.70 |

| Trace Metals | | | | | | | |
|--------------|----|-----------|------|-------|---------|---------|---------|
| Aluminum | Al | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Arsenic III | As | EPA 206.3 | mg/L | 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Beryllium | Be | EPA 200.7 | mg/L | 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Cadmium | Cd | EPA 200.8 | mg/L | 0.005 | < 0.005 | < 0.005 | < 0.005 |
| Cobalt | Co | EPA 200.7 | mg/L | 0.01 | < 0.01 | < 0.02 | < 0.01 |
| Lead | Pb | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Manganese | Mn | EPA 200.7 | mg/L | 0.01 | 0.18 | 0.08 | 0.73 |
| Molybdenum | Mo | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Nickel | Ni | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Selenium IV | Se | EPA 270.3 | mg/L | 0.001 | 0.002 | < 0.001 | 0.002 |
| Vanadium | V | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |

| Radiometrics | | | | | | | |
|---------------------------|-------------------|------------|-------|--------|--------|--------|--------|
| Uranium | ²³⁸ U | EPA 200.8 | mg/L | 0.0003 | 0.0233 | 0.0020 | 0.0247 |
| Radium 226 | ²²⁶ Ra | EPA 903.0 | pCi/L | 0.2 | 1.0 | 0.8 | 1.3 |
| Radium Error Estimate ± | | | | | 0.3 | 0.2 | 0.2 |
| Radium 228 | ²²⁸ Ra | EPA 904.0 | pCi/L | 1.0 | 2.5 | < 1.0 | < 1.0 |
| Radium Error Estimate ± | | | | | 0.3 | | |
| Thorium 230 | ²³⁰ Th | EPA 907.0 | pCi/L | 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Thorium Error Estimate ± | | | | | | | |
| Lead 210 | ²¹⁰ Pb | NERHL-65-4 | pCi/L | 1.0 | < 1.0 | 3.0 | < 1.0 |
| Lead Error Estimate ± | | | | | | 0.4 | |
| Gross Alpha | | EPA 900.1 | pCi/L | 1.0 | < 1.0 | 2.9 | < 1.0 |
| G. Alpha Error Estimate ± | | | | | | 0.8 | |

| Trace Organics | | | | | | | |
|----------------|--|---------|------|-----|-------|-------|-------|
| Chloroform | | EPA 601 | µg/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |

| Quality Assurance Data | | | Target Range | | | |
|------------------------|--|--------|--------------|-------|-------|-------|
| Anion | | meq | | 76.20 | 75.23 | 68.79 |
| Cation | | meq | | 76.82 | 76.57 | 71.35 |
| WYDEQ A/C Balance | | % | -5 - +5 | 0.41 | 0.88 | 1.83 |
| Calc TDS | | mg/L | | 4997 | 4939 | 4551 |
| TDS A/C Balance | | dec. % | 0.80 - 1.20 | 1.13 | 1.08 | 1.17 |



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UNC MINING AND MILLING: CHURCHROCK OPERATIONS
GROUNDWATER MONITORING PROGRAM: SOUTHWEST ALLUVIUM MONITOR WELLS

WELL ID:
LABORATORY ID:
SAMPLE DATE:
REPORT DATE:
QUARTER REPRESENTED:
UNC SUBMITTAL #:

| 801 | 801 | 801 |
|--------------|-----------------|-------------------|
| 99-24819 | 99-35979 | 99-33595-004 |
| 04-13-99 | 07-20-99 | 10-05-99 @ 14:15 |
| May 16, 1999 | August 26, 1999 | November 16, 1999 |
| Second '99 | Third '99 | Fourth '99 |
| TE-4-4-99 | TE-6-7-99 | TE-7-10-99 |

| Major Ions | | Method | Units | Reporting Limit | Results | Results | Results |
|------------------------|-----------------------------------|----------------------------|-------|-----------------|---------|---------|---------|
| Calcium | Ca | EPA 200.7 | mg/L | 0.05 | 534 | 545 | 594 |
| Magnesium | Mg | EPA 200.7 | mg/L | 0.01 | 902 | 932 | 936 |
| Sodium | Na | EPA 200.7 | mg/L | 0.05 | 357 | 414 | 352 |
| Potassium | K | EPA 200.7 | mg/L | 0.10 | 13.0 | 15.5 | 14.7 |
| Bicarbonate | HCO ₃ | SM 2320 B. | mg/L | 0.10 | 1410 | 1420 | 1450 |
| Sulfate | SO ₄ | EPA 200.7 | mg/L | 1.0 | 4060 | 4240 | 4300 |
| Chloride | Cl | EPA 200.7 | mg/L | 1.0 | 221 | 220 | 227 |
| Ammonium as N | NH ₄ | SM 4500-NH ₃ G. | mg/L | 0.05 | 19.8 | 19.7 | 16.2 |
| Nitrate + Nitrite as N | NO ₃ + NO ₂ | EPA 353.2 | mg/L | 0.10 | 6.37 | 5.51 | 25.1 |

| Non-Metals | | Method | Units | Reporting Limit | Results | Results | Results |
|--------------------------------|-----|-----------------|------------|-----------------|---------|---------|---------|
| Total Dissolved Solids @ 180°C | TDS | SM 2540 C. Mod. | mg/L | 1.0 | 7940 | 7950 | 7500 |
| pH | | SM 4500-H B. | std. units | 0.10 | 7.65 | 7.63 | 7.53 |

| Trace Metals | | Method | Units | Reporting Limit | Results | Results | Results |
|--------------|----|-----------|-------|-----------------|---------|---------|---------|
| Aluminum | Al | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Arsenic III | As | EPA 206.3 | mg/L | 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Beryllium | Be | EPA 200.7 | mg/L | 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Cadmium | Cd | EPA 200.8 | mg/L | 0.005 | 0.006 | < 0.005 | 0.006 |
| Cobalt | Co | EPA 200.7 | mg/L | 0.01 | < 0.01 | 0.02 | < 0.01 |
| Lead | Pb | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Manganese | Mn | EPA 200.7 | mg/L | 0.01 | 17.0 | 12.6 | 16.1 |
| Molybdenum | Mo | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Nickel | Ni | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Selenium IV | Se | EPA 270.3 | mg/L | 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Vanadium | V | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |

| Radiometrics | | Method | Units | Reporting Limit | Results | Results | Results |
|---------------------------|-------------------|------------|-------|-----------------|---------|---------|---------|
| Uranium | ²³⁸ U | EPA 200.8 | mg/L | 0.0003 | 0.0389 | 0.0405 | 0.0527 |
| Radium 226 | ²²⁶ Ra | EPA 903.0 | pCi/L | 0.2 | < 0.2 | 0.9 | 1.1 |
| Radium Error Estimate ± | | | | | | 0.2 | 0.2 |
| Radium 228 | ²²⁸ Ra | EPA 904.0 | pCi/L | 1.0 | 2.5 | 3.7 | < 1.0 |
| Radium Error Estimate ± | | | | | | 0.2 | |
| Thorium 230 | ²³⁰ Th | EPA 907.0 | pCi/L | 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Thorium Error Estimate ± | | | | | | | |
| Lead 210 | ²¹⁰ Pb | NERHL-65-4 | pCi/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Lead Error Estimate ± | | | | | | | |
| Gross Alpha | | EPA 900.1 | pCi/L | 1.0 | < 1.0 | 1.0 | 1.4 |
| G. Alpha Error Estimate ± | | | | | | 0.4 | 0.5 |

| Trace Organics | | Method | Units | Reporting Limit | Results | Results | Results |
|----------------|--|---------|-------|-----------------|---------|---------|---------|
| Chloroform | | EPA 601 | µg/l | 1.0 | 3.9 | 3.5 | 2.3 |

| Quality Assurance Data | | Target Range | Results | Results | Results |
|------------------------|--------|--------------|---------|---------|---------|
| Anion | meq | | 114.38 | 118.20 | 121.54 |
| Cation | meq | | 120.08 | 125.42 | 125.43 |
| WYDEQ A/C Balance | % | -5 - +5 | 2.43 | 2.96 | 1.57 |
| Calc TDS | mg/L | | 6863 | 7139 | 7297 |
| TDS A/C Balance | dec. % | 0.80 - 1.20 | 1.16 | 1.11 | 1.03 |

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COMPLETE ANALYTICAL SERVICES

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UNC MINING AND MILLING: CHURCHROCK OPERATIONS
 GROUNDWATER MONITORING PROGRAM: SOUTHWEST ALLUVIUM MONITOR WELLS

WELL ID:
 LABORATORY ID:
 SAMPLE DATE:
 REPORT DATE:
 QUARTER REPRESENTED:
 UNC SUBMITTAL #:

| 802 | 802 | 802 |
|--------------|-----------------|-------------------|
| 99-24820 | 99-35980 | 99-33757-001 |
| 04-13-99 | 07-20-99 | 10-12-99 @ 08:50 |
| May 16, 1999 | August 26, 1999 | November 29, 1999 |
| Second '99 | Third '99 | Fourth '99 |
| TE-4-4-99 | TE-6-7-99 | TE-8-10-99 |

| Major Ions | | Method | Units | Reporting Limit | Results | Results | Results |
|------------------------|-----------------------------------|----------------------------|-------|-----------------|---------|---------|---------|
| Calcium | Ca | EPA 200.7 | mg/L | 0.05 | 783 | 760 | 703 |
| Magnesium | Mg | EPA 200.7 | mg/L | 0.01 | 732 | 743 | 695 |
| Sodium | Na | EPA 200.7 | mg/L | 0.05 | 323 | 370 | 311 |
| Potassium | K | EPA 200.7 | mg/L | 0.10 | 6.8 | 9.8 | 6.4 |
| Bicarbonate | HCO ₃ | SM 2320 B. | mg/L | 0.10 | 2090 | 2120 | 2120 |
| Sulfate | SO ₄ | EPA 200.7 | mg/L | 1.0 | 3060 | 3160 | 2920 |
| Chloride | Cl | EPA 200.7 | mg/L | 1.0 | 205 | 207 | 194 |
| Ammonium as N | NH ₄ | SM 4500-NH ₃ G. | mg/L | 0.05 | 1.23 | 1.18 | 1.09 |
| Nitrate + Nitrite as N | NO ₃ + NO ₂ | EPA 353.2 | mg/L | 0.10 | 86.2 | 76.2 | 76.9 |

| Non-Metals | | | | | | | |
|--------------------------------|-----|-----------------|------------|------|------|------|------|
| Total Dissolved Solids @ 180°C | TDS | SM 2540 C. Mod. | mg/L | 1.0 | 7320 | 7350 | 7360 |
| pH | | SM 4500-H B. | std. units | 0.10 | 7.65 | 7.58 | 7.66 |

| Trace Metals | | | | | | | |
|--------------|----|-----------|------|-------|---------|---------|---------|
| Aluminum | Al | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Arsenic III | As | EPA 206.3 | mg/L | 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Beryllium | Be | EPA 200.7 | mg/L | 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Cadmium | Cd | EPA 200.8 | mg/L | 0.005 | < 0.005 | < 0.005 | < 0.005 |
| Cobalt | Co | EPA 200.7 | mg/L | 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Lead | Pb | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Manganese | Mn | EPA 200.7 | mg/L | 0.01 | 1.48 | 1.13 | 1.37 |
| Molybdenum | Mo | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Nickel | Ni | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Selenium IV | Se | EPA 270.3 | mg/L | 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Vanadium | V | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |

| Radiometrics | | | | | | | |
|---------------------------|-------------------|------------|-------|--------|-------|-------|-------|
| Uranium | ²³⁸ U | EPA 200.8 | mg/L | 0.0003 | 0.190 | 0.196 | 0.203 |
| Radium 226 | ²²⁶ Ra | EPA 903.0 | pCi/L | 0.2 | < 0.2 | 0.5 | < 0.2 |
| Radium Error Estimate ± | | | | | | 0.2 | |
| Radium 228 | ²²⁸ Ra | EPA 904.0 | pCi/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Radium Error Estimate ± | | | | | | | |
| Thorium 230 | ²³⁰ Th | EPA 907.0 | pCi/L | 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Thorium Error Estimate ± | | | | | | | |
| Lead 210 | ²¹⁰ Pb | NERHL-65-4 | pCi/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Lead Error Estimate ± | | | | | | | |
| Gross Alpha | | EPA 900.1 | pCi/L | 1.0 | < 1.0 | 1.0 | < 1.0 |
| G. Alpha Error Estimate ± | | | | | | 0.4 | |

| Trace Organics | | | | | | | |
|----------------|--|---------|------|-----|-----|-----|-----|
| Chloroform | | EPA 601 | µg/l | 1.0 | 1.5 | 1.4 | 1.4 |

| Quality Assurance Data | | Target Range | | | |
|------------------------|--------|--------------|--------|--------|--------|
| Anion | meq | | 109.94 | 111.86 | 106.55 |
| Cation | meq | | 114.55 | 116.41 | 106.92 |
| WYDEQ A/C Balance | % | -5 - +5 | 2.05 | 1.99 | 0.17 |
| Calc TDS | mg/L | | 6540 | 6650 | 6233 |
| TDS A/C Balance | dec. % | 0.80 - 1.20 | 1.12 | 1.11 | 1.18 |

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COMPLETE ANALYTICAL SERVICES

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UNC MINING AND MILLING: CHURCHROCK OPERATIONS
GROUNDWATER MONITORING PROGRAM: SOUTHWEST ALLUVIUM MONITOR WELLS

WELL ID:
LABORATORY ID:
SAMPLE DATE:
REPORT DATE:
QUARTER REPRESENTED:
UNC SUBMITTAL #:

| 803 | 803 | 803 |
|-------------------|--------------|-------------------|
| 99-10950 | 99-24821 | 99-33757-002 |
| 01-12-99 | 04-13-99 | 10-12-99 @ 09:00 |
| February 26, 1999 | May 16, 1999 | November 29, 1999 |
| First '99 | Second '99 | Fourth '99 |
| TE-2-1-99 | TE-4-4-99 | TE-8-10-99 |

| Major Ions | | Method | Units | Reporting Limit | Results | Results | Results |
|------------------------|-----------------------------------|----------------------------|-------|-----------------|---------|---------|---------|
| Calcium | Ca | EPA 200.7 | mg/L | 0.05 | 745 | 801 | 731 |
| Magnesium | Mg | EPA 200.7 | mg/L | 0.01 | 642 | 692 | 671 |
| Sodium | Na | EPA 200.7 | mg/L | 0.05 | 272 | 280 | 260 |
| Potassium | K | EPA 200.7 | mg/L | 0.10 | 11.9 | 11.5 | 11.5 |
| Bicarbonate | HCO ₃ | SM 2320 B. | mg/L | 0.10 | 1990 | 1960 | 2000 |
| Sulfate | SO ₄ | EPA 200.7 | mg/L | 1.0 | 3300 | 3100 | 3040 |
| Chloride | Cl | EPA 200.7 | mg/L | 1.0 | 184 | 178 | 175 |
| Ammonium as N | NH ₄ | SM 4500-NH ₃ G. | mg/L | 0.05 | 0.71 | 0.77 | 0.78 |
| Nitrate + Nitrite as N | NO ₃ + NO ₂ | EPA 353.2 | mg/L | 0.10 | 39.1 | 40.9 | 37.5 |

| Non-Metals | | | | | | | |
|--------------------------------|-----|-----------------|------------|------|------|------|------|
| Total Dissolved Solids @ 180°C | TDS | SM 2540 C. Mod. | mg/L | 1.0 | 6980 | 6910 | 6990 |
| pH | | SM 4500-H B. | std. units | 0.10 | 7.63 | 7.65 | 7.78 |

| Trace Metals | | | | | | | |
|--------------|----|-----------|------|-------|---------|---------|---------|
| Aluminum | Al | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Arsenic III | As | EPA 206.3 | mg/L | 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Beryllium | Be | EPA 200.7 | mg/L | 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Cadmium | Cd | EPA 200.8 | mg/L | 0.005 | < 0.005 | < 0.005 | < 0.005 |
| Cobalt | Co | EPA 200.7 | mg/L | 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Lead | Pb | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Manganese | Mn | EPA 200.7 | mg/L | 0.01 | 1.47 | 1.55 | 1.62 |
| Molybdenum | Mo | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Nickel | Ni | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Selenium IV | Se | EPA 270.3 | mg/L | 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Vanadium | V | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |

| Radiometrics | | | | | | | |
|---------------------------|-------------------|------------|-------|--------|--------|--------|--------|
| Uranium | ²³⁸ U | EPA 200.8 | mg/L | 0.0003 | 0.0984 | 0.0889 | 0.0919 |
| Radium 226 | ²²⁶ Ra | EPA 903.0 | pCi/L | 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Radium Error Estimate ± | | | | | | | |
| Radium 228 | ²²⁸ Ra | EPA 904.0 | pCi/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Radium Error Estimate ± | | | | | | | |
| Thorium 230 | ²³⁰ Th | EPA 907.0 | pCi/L | 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Thorium Error Estimate ± | | | | | | | |
| Lead 210 | ²¹⁰ Pb | NERHL-65-4 | pCi/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Lead Error Estimate ± | | | | | | | |
| Gross Alpha | | EPA 900.1 | pCi/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |
| G. Alpha Error Estimate ± | | | | | | | |

| Trace Organics | | | | | | | |
|----------------|--|---------|------|-----|-------|-------|-------|
| Chloroform | | EPA 601 | µg/l | 1.0 | < 1.0 | < 1.0 | < 1.0 |

| Quality Assurance Data | | | Target Range | | | |
|------------------------|--|--------|--------------|--------|--------|--------|
| Anion | | meq | | 109.35 | 104.65 | 103.73 |
| Cation | | meq | | 103.02 | 110.34 | 104.22 |
| WYDEQ A/C Balance | | % | -5 - +5 | -2.98 | 2.64 | 0.24 |
| Calc TDS | | mg/L | | 6325 | 6226 | 6057 |
| TDS A/C Balance | | dec. % | 0.80 - 1.20 | 1.10 | 1.11 | 1.15 |

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COMPLETE ANALYTICAL SERVICES 33757R00002

SEMI-ANNUAL GROUND WATER MONITORING REPORT
JULY 1, 1999 THROUGH DECEMBER 31, 1999

ZONE 1

516-A

604

614

EPA-4

EPA-7

TWQ-141

TWQ-142

TWQ-143

515-A

619

EPA-2

EPA-5

EPA-8



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UNC MINING AND MILLING: CHURCHROCK OPERATIONS
GROUNDWATER MONITORING PROGRAM: ZONE 1 MONITOR WELLS

WELL ID:
LABORATORY ID:
SAMPLE DATE/TIME:
REPORT DATE:
QUARTER REPRESENTED:
UNC SUBMITTAL #:

| 516-A | 516-A | 516-A |
|-------------|-----------------|------------------|
| 99-24247 | 99-35525 | 99-33596-007 |
| 04-06-99 | 07-13-99 | 10-05-99 @ 10:30 |
| May 6, 1999 | August 23, 1999 | December 1, 1999 |
| Second '99 | Third '99 | Fourth '99 |
| TE-3-4-99 | TE-5-7-99 | TE-7-10-99 |

| Major Ions | | Method | Units | Reporting Limit | Results | Results | Results |
|------------------------|-----------------------------------|----------------------------|-------|-----------------|---------|---------|---------|
| Calcium | Ca | EPA 200.7 | mg/L | 0.05 | 456 | 485 | 553 |
| Magnesium | Mg | EPA 200.7 | mg/L | 0.01 | 1480 | 1540 | 1770 |
| Sodium | Na | EPA 200.7 | mg/L | 0.05 | 461 | 518 | 458 |
| Potassium | K | EPA 200.7 | mg/L | 0.10 | 17.7 | 24.9 | 18.5 |
| Bicarbonate | HCO ₃ | SM 2320 B. | mg/L | 0.10 | 1350 | 1370 | 1387 |
| Sulfate | SO ₄ | EPA 200.7 | mg/L | 1.0 | 6840 | 6920 | 8030 |
| Chloride | Cl | EPA 200.7 | mg/L | 1.0 | 246 | 254 | 261 |
| Ammonium as N | NH ₄ | SM 4500-NH ₃ G. | mg/L | 0.05 | 137 | 137 | 143 |
| Nitrate + Nitrite as N | NO ₃ + NO ₂ | EPA 353.2 | mg/L | 0.10 | 118 | 106 | 111 |

| Non-Metals | | | | | | | |
|--------------------------------|-----|-----------------|------------|------|-------|-------|-------|
| Total Dissolved Solids @ 180°C | TDS | SM 2540 C. Mod. | mg/L | 1.0 | 11900 | 11900 | 11900 |
| pH | | SM 4500-H B. | std. units | 0.10 | 7.28 | 7.78 | 7.71 |

| Trace Metals | | | | | | | |
|--------------|----|-----------|------|-------|---------|---------|---------|
| Aluminum | Al | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Arsenic III | As | EPA 206.3 | mg/L | 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Beryllium | Be | EPA 200.7 | mg/L | 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Cadmium | Cd | EPA 200.8 | mg/L | 0.005 | < 0.005 | < 0.005 | < 0.005 |
| Cobalt | Co | EPA 200.7 | mg/L | 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Lead | Pb | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Manganese | Mn | EPA 200.7 | mg/L | 0.01 | 1.59 | 1.67 | 2.11 |
| Molybdenum | Mo | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Nickel | Ni | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Selenium IV | Se | EPA 270.3 | mg/L | 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Vanadium | V | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |

| Radiometrics | | | | | | | |
|---------------------------|-------------------|------------|-------|--------|--------|--------|--------|
| Uranium | ²³⁸ U | EPA 200.8 | mg/L | 0.0003 | 0.0197 | 0.0199 | 0.0218 |
| Radium 226 | ²²⁶ Ra | EPA 903.0 | pCi/L | 0.2 | 0.7 | 0.7 | 0.7 |
| Radium Error Estimate ± | | | | | 0.2 | 0.2 | 0.2 |
| Radium 228 | ²²⁸ Ra | EPA 904.0 | pCi/L | 1.0 | 3.4 | < 1.0 | < 1.0 |
| Radium Error Estimate ± | | | | | 0.3 | | |
| Thorium 230 | ²³⁰ Th | EPA 907.0 | pCi/L | 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Thorium Error Estimate ± | | | | | | | |
| Lead 210 | ²¹⁰ Pb | NERHL-65-4 | pCi/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Lead Error Estimate ± | | | | | | | |
| Gross Alpha | | EPA 900.1 | pCi/L | 1.0 | < 1.0 | < 1.0 | 1.4 |
| G. Alpha Error Estimate ± | | | | | | | 1.0 |

| Trace Organics | | | | | | | |
|----------------|--|---------|------|-----|-----|-----|-----|
| Chloroform | | EPA 601 | µg/L | 1.0 | 1.8 | 2.6 | 2.7 |

| Quality Assurance Data | | | Target Range | | | |
|------------------------|--------|--|--------------|--------|--------|--------|
| Anion | meq | | | 179.99 | 181.35 | 205.31 |
| Cation | meq | | | 176.51 | 185.63 | 205.88 |
| WYDEQ A/C Balance | % | | -5 - +5 | -0.97 | 1.17 | 0.14 |
| Calc TDS | mg/L | | | 10877 | 11075 | 12462 |
| TDS A/C Balance | dec. % | | 0.80 - 1.20 | 1.09 | 1.07 | 0.95 |

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**UNC MINING AND MILLING: CHURCHROCK OPERATIONS
GROUNDWATER MONITORING PROGRAM: ZONE 1 MONITOR WELLS**

WELL ID:
LABORATORY ID:
SAMPLE DATE/TIME:
REPORT DATE:
QUARTER REPRESENTED:
UNC SUBMITTAL #:

| 604 | 604 | 604 |
|-------------|-----------------|------------------|
| 99-24248 | 99-35523 | 99-33596-005 |
| 04-06-99 | 07-13-99 | 10-05-99 @ 10:01 |
| May 6, 1999 | August 23, 1999 | December 1, 1999 |
| Second '99 | Third '99 | Fourth '99 |
| TE-3-4-99 | TE-5-7-99 | TE-7-10-99 |

| Major Ions | | Method | Units | Reporting Limit | Results | Results | Results |
|------------------------|-----------------------------------|----------------------------|-------|-----------------|---------|---------|---------|
| Calcium | Ca | EPA 200.7 | mg/L | 0.05 | 446 | 479 | 523 |
| Magnesium | Mg | EPA 200.7 | mg/L | 0.01 | 893 | 964 | 1120 |
| Sodium | Na | EPA 200.7 | mg/L | 0.05 | 259 | 292 | 280 |
| Potassium | K | EPA 200.7 | mg/L | 0.10 | 12.2 | 16.3 | 12.5 |
| Bicarbonate | HCO ₃ | SM 2320 B. | mg/L | 0.10 | 5.0 | 3.0 | 4.00 |
| Sulfate | SO ₄ | EPA 200.7 | mg/L | 1.0 | 4740 | 5120 | 6000 |
| Chloride | Cl | EPA 200.7 | mg/L | 1.0 | 62.7 | 55.3 | 50.9 |
| Ammonium as N | NH ₄ | SM 4500-NH ₃ G. | mg/L | 0.05 | 0.83 | 0.57 | 0.53 |
| Nitrate + Nitrite as N | NO ₃ + NO ₂ | EPA 353.2 | mg/L | 0.10 | 92.4 | 73.2 | 58.6 |

| Non-Metals | | | | | | | |
|--------------------------------|-----|-----------------|------------|------|------|------|------|
| Total Dissolved Solids @ 180°C | TDS | SM 2540 C. Mod. | mg/L | 1.0 | 7980 | 8030 | 8150 |
| pH | | SM 4500-H B. | std. units | 0.10 | 4.69 | 4.61 | 4.64 |

| Trace Metals | | | | | | | |
|--------------|----|-----------|------|-------|---------|---------|---------|
| Aluminum | Al | EPA 200.7 | mg/L | 0.10 | 20.4 | 15.7 | 27.0 |
| Arsenic III | As | EPA 206.3 | mg/L | 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Beryllium | Be | EPA 200.7 | mg/L | 0.01 | 0.01 | 0.01 | < 0.01 |
| Cadmium | Cd | EPA 200.8 | mg/L | 0.005 | 0.015 | 0.009 | 0.015 |
| Cobalt | Co | EPA 200.7 | mg/L | 0.01 | 0.41 | 0.42 | 0.53 |
| Lead | Pb | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Manganese | Mn | EPA 200.7 | mg/L | 0.01 | 12.6 | 14.0 | 16.1 |
| Molybdenum | Mo | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Nickel | Ni | EPA 200.7 | mg/L | 0.05 | 0.44 | 0.62 | 0.46 |
| Selenium IV | Se | EPA 270.3 | mg/L | 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Vanadium | V | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |

| Radiometrics | | | | | | | |
|---------------------------|-------------------|------------|-------|--------|--------|--------|--------|
| Uranium | ²³⁸ U | EPA 200.8 | mg/L | 0.0003 | 0.0034 | 0.0071 | 0.0033 |
| Radium 226 | ²²⁶ Ra | EPA 903.0 | pCi/L | 0.2 | 4.0 | 3.0 | 2.5 |
| Radium Error Estimate ± | | | | | 0.4 | 0.3 | 0.3 |
| Radium 228 | ²²⁸ Ra | EPA 904.0 | pCi/L | 1.0 | 7.8 | 5.2 | 2.9 |
| Radium Error Estimate ± | | | | | 0.3 | 0.2 | 0.3 |
| Thorium 230 | ²³⁰ Th | EPA 907.0 | pCi/L | 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Thorium Error Estimate ± | | | | | | | |
| Lead 210 | ²¹⁰ Pb | NERHL-65-4 | pCi/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Lead Error Estimate ± | | | | | | | |
| Gross Alpha | | EPA 900.1 | pCi/L | 1.0 | 3.2 | 3.7 | 4.3 |
| G. Alpha Error Estimate ± | | | | | 0.6 | 1.2 | 1.2 |

| Trace Organics | | | | | | | |
|----------------|--|---------|------|-----|-------|-------|-------|
| Chloroform | | EPA 601 | µg/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |

| Quality Assurance Data | | Target Range | | | |
|------------------------|--------|--------------|--------|--------|--------|
| Anion | meq | | 107.20 | 113.50 | 130.69 |
| Cation | meq | | 111.30 | 119.95 | 135.90 |
| WYDEQ A/C Balance | % | -5 - +5 | 1.88 | 2.76 | 1.95 |
| Calc TDS | mg/L | | 6838 | 7267 | 8265 |
| TDS A/C Balance | dec. % | 0.80 - 1.20 | 1.17 | 1.10 | 0.99 |



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UNC MINING AND MILLING: CHURCHROCK OPERATIONS
GROUNDWATER MONITORING PROGRAM: ZONE 1 MONITOR WELLS

WELL ID:
LABORATORY ID:
SAMPLE DATE/TIME:
REPORT DATE:
QUARTER REPRESENTED:
UNC SUBMITTAL #:

| 614 | 614 | 614 |
|-------------|-----------------|-------------------|
| 99-24244 | 99-35521 | 99-33596-003 |
| 04-06-99 | 07-13-99 | 10-05-99/09:44 |
| May 6, 1999 | August 23, 1999 | November 30, 1999 |
| Second '99 | Third '99 | Fourth '99 |
| TE-3-4-99 | TE-5-7-99 | TE-7-10-99 |

| Major Ions | | Method | Units | Reporting Limit | Results | Results | Results |
|------------------------|-----------------------------------|----------------------------|-------|-----------------|---------|---------|---------|
| Calcium | Ca | EPA 200.7 | mg/L | 0.05 | 552 | 605 | 632 |
| Magnesium | Mg | EPA 200.7 | mg/L | 0.01 | 844 | 891 | 961 |
| Sodium | Na | EPA 200.7 | mg/L | 0.05 | 436 | 439 | 430 |
| Potassium | K | EPA 200.7 | mg/L | 0.10 | 10.2 | 12.7 | 10.8 |
| Bicarbonate | HCO ₃ | SM 2320 B. | mg/L | 0.10 | 1590 | 1280 | 1362 |
| Sulfate | SO ₄ | EPA 200.7 | mg/L | 1.0 | 3780 | 4000 | 4410 |
| Chloride | Cl | EPA 200.7 | mg/L | 1.0 | 261 | 239 | 248.0 |
| Ammonium as N | NH ₄ | SM 4500-NH ₄ G. | mg/L | 0.05 | 71.5 | 58.1 | 58.0 |
| Nitrate + Nitrite as N | NO ₃ + NO ₂ | EPA 353.2 | mg/L | 0.10 | 81.3 | 90.7 | 83.0 |

| Non-Metals | | | | | | | |
|--------------------------------|-----|-----------------|------------|------|------|------|------|
| Total Dissolved Solids @ 180°C | TDS | SM 2540 C. Mod. | mg/L | 1.0 | 7910 | 7680 | 7710 |
| pH | | SM 4500-H B. | std. units | 0.10 | 7.90 | 7.73 | 7.84 |

| Trace Metals | | | | | | | |
|--------------|----|-----------|------|-------|---------|---------|---------|
| Aluminum | Al | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.1 |
| Arsenic III | As | EPA 206.3 | mg/L | 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Beryllium | Be | EPA 200.7 | mg/L | 0.01 | < 0.01 | < 0.01 | < 0.001 |
| Cadmium | Cd | EPA 200.8 | mg/L | 0.005 | < 0.005 | < 0.005 | < 0.005 |
| Cobalt | Co | EPA 200.7 | mg/L | 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Lead | Pb | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Manganese | Mn | EPA 200.7 | mg/L | 0.01 | 0.26 | 0.23 | 0.25 |
| Molybdenum | Mo | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.1 |
| Nickel | Ni | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Selenium IV | Se | EPA 270.3 | mg/L | 0.001 | < 0.001 | 0.001 | < 0.001 |
| Vanadium | V | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.1 |

| Radiometrics | | | | | | | |
|---------------------------|-------------------|------------|-------|--------|--------|--------|-------|
| Uranium | ²³⁸ U | EPA 200.8 | mg/L | 0.0003 | 0.0641 | 0.0672 | 0.001 |
| Radium 226 | ²²⁶ Ra | EPA 903.0 | pCi/L | 0.2 | 2.9 | 0.9 | 4.8 |
| Radium Error Estimate ± | | | | | 0.4 | 0.2 | 0.4 |
| Radium 228 | ²²⁸ Ra | EPA 904.0 | pCi/L | 1.0 | 3.6 | 1.2 | < 1.0 |
| Radium Error Estimate ± | | | | | 0.3 | 0.2 | |
| Thorium 230 | ²³⁰ Th | EPA 907.0 | pCi/L | 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Thorium Error Estimate ± | | | | | | | |
| Lead 210 | ²¹⁰ Pb | NERHL-65-4 | pCi/L | 1.0 | 5.2 | < 1.0 | < 1.0 |
| Lead Error Estimate ± | | | | | 1.8 | | |
| Gross Alpha | | EPA 900.1 | pCi/L | 1.0 | 3.3 | < 1.0 | 6.8 |
| G. Alpha Error Estimate ± | | | | | 0.6 | | 1.5 |

| Trace Organics | | | | | | | |
|----------------|--|---------|------|-----|-----|-----|-----|
| Chloroform | | EPA 601 | µg/L | 1.0 | 258 | 188 | 278 |

| Quality Assurance Data | | | Target Range | | | |
|------------------------|--|--------|--------------|--------|--------|--------|
| Anion | | meq | | 117.97 | 117.53 | 127.12 |
| Cation | | meq | | 122.28 | 128.09 | 134.82 |
| WYDEQ A/C Balance | | % | -5 - +5 | 1.79 | 4.30 | 2.94 |
| Calc TDS | | mg/L | | 7131 | 7304 | 7816 |
| TDS A/C Balance | | dec. % | 0.80 - 1.20 | 1.11 | 1.05 | 0.99 |

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UNC MINING AND MILLING: CHURCHROCK OPERATIONS
 GROUNDWATER MONITORING PROGRAM: ZONE 1 MONITOR WELLS

WELL ID:
 LABORATORY ID:
 SAMPLE DATE:
 REPORT DATE:
 QUARTER REPRESENTED:
 UNC SUBMITTAL #:

| EPA 4 | EPA 4 | EPA 4 |
|--------------|-----------------|-------------------|
| 99-24815 | 99-35997 | 99-33759-002 |
| 04-13-99 | 07-20-99 | 10-12-99 @ 10:05 |
| May 15, 1999 | August 31, 1999 | November 18, 1999 |
| Second '99 | Third '99 | Fourth '99 |
| TE-4-4-99 | TE-6-7-99 | TE-8-10-99 |

| Major Ions | | Method | Units | Reporting Limit | Results | Results | Results |
|------------------------|-----------------------------------|----------------------------|-------|-----------------|---------|---------|---------|
| Calcium | Ca | EPA 200.7 | mg/L | 0.05 | 582 | 555 | 556 |
| Magnesium | Mg | EPA 200.7 | mg/L | 0.01 | 343 | 323 | 332 |
| Sodium | Na | EPA 200.7 | mg/L | 0.05 | 206 | 193 | 193 |
| Potassium | K | EPA 200.7 | mg/L | 0.10 | 8.2 | 10.4 | 8.4 |
| Bicarbonate | HCO ₃ | SM 2320 B. | mg/L | 0.10 | 208 | 207 | 641 |
| Sulfate | SO ₄ | EPA 200.7 | mg/L | 1.0 | 2860 | 2550 | 2780 |
| Chloride | Cl | EPA 200.7 | mg/L | 1.0 | 43.8 | 40.0 | 39.0 |
| Ammonium as N | NH ₄ | SM 4500-NH ₃ G. | mg/L | 0.05 | 0.97 | 0.85 | 0.87 |
| Nitrate + Nitrite as N | NO ₃ + NO ₂ | EPA 353.2 | mg/L | 0.10 | 0.11 | < 0.10 | < 0.10 |

| Non-Metals | | | | | | | |
|--------------------------------|-----|-----------------|------------|------|------|------|------|
| Total Dissolved Solids @ 180°C | TDS | SM 2540 C. Mod. | mg/L | 1.0 | 4590 | 4790 | 4830 |
| pH | | SM 4500-H B. | std. units | 0.10 | 7.46 | 7.11 | 7.94 |

| Trace Metals | | | | | | | |
|--------------|----|-----------|------|-------|---------|---------|---------|
| Aluminum | Al | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Arsenic III | As | EPA 206.3 | mg/L | 0.001 | < 0.001 | < 0.001 | 0.001 |
| Beryllium | Be | EPA 200.7 | mg/L | 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Cadmium | Cd | EPA 200.8 | mg/L | 0.005 | < 0.005 | < 0.005 | < 0.005 |
| Cobalt | Co | EPA 200.7 | mg/L | 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Lead | Pb | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Manganese | Mn | EPA 200.7 | mg/L | 0.01 | 3.00 | 2.33 | 2.93 |
| Molybdenum | Mo | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Nickel | Ni | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Selenium IV | Se | EPA 270.3 | mg/L | 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Vanadium | V | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |

| Radiometrics | | | | | | | |
|---------------------------|-------------------|------------|-------|--------|--------|--------|----------|
| Uranium | ²³⁸ U | EPA 200.8 | mg/L | 0.0003 | 0.0017 | 0.0013 | < 0.0003 |
| Radium 226 | ²²⁶ Ra | EPA 903.0 | pCi/L | 0.2 | 2.2 | 0.9 | 1.2 |
| Radium Error Estimate ± | | | | | 0.3 | 0.2 | 0.3 |
| Radium 228 | ²²⁸ Ra | EPA 904.0 | pCi/L | 1.0 | 3.5 | 1.5 | 3.3 |
| Radium Error Estimate ± | | | | | 0.2 | 0.2 | 0.9 |
| Thorium 230 | ²³⁰ Th | EPA 907.0 | pCi/L | 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Thorium Error Estimate ± | | | | | | | |
| Lead 210 | ²¹⁰ Pb | NERHL-65-4 | pCi/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Lead Error Estimate ± | | | | | | | |
| Gross Alpha | | EPA 900.1 | pCi/L | 1.0 | 2.2 | 1.5 | 1.4 |
| G. Alpha Error Estimate ± | | | | | 0.5 | 0.4 | 0.5 |

| Trace Organics | | | | | | | |
|----------------|--|---------|------|-----|-------|-------|-------|
| Chloroform | | EPA 601 | µg/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |

| Quality Assurance Data | | Target Range: | | | |
|------------------------|--------|---------------|-------|-------|-------|
| Anion | meq | | 64.23 | 57.65 | 69.53 |
| Cation | meq | | 67.09 | 63.52 | 64.31 |
| WYDEQ A/C Balance | % | -5 - +5 | 2.18 | 4.85 | -3.90 |
| Calc TDS | mg/L | | 4152 | 3779 | 4233 |
| TDS A/C Balance | dec. % | 0.80-1.20 | 1.11 | 1.27 | 1.14 |

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COMPLETE ANALYTICAL SERVICES 33759R00002



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UNC MINING AND MILLING: CHURCHROCK OPERATIONS
GROUNDWATER MONITORING PROGRAM: ZONE 1 MONITOR WELLS

WELL ID:
LABORATORY ID:
SAMPLE DATE:
REPORT DATE:
QUARTER REPRESENTED:
UNC SUBMITTAL #:

| EPA 7 | EPA 7 | EPA 7 |
|--------------|-----------------|-------------------|
| 99-24816 | 99-35998 | 99-33759-003 |
| 04-13-99 | 07-20-99 | 10-12-99 @ 10:25 |
| May 15, 1999 | August 31, 1999 | November 18, 1999 |
| Second '99 | Third '99 | Fourth '99 |
| TE-4-4-99 | TE-6-7-99 | TE-8-10-99 |

| Major Ions | | Method | Units | Reporting Limit | Results | Results | Results |
|------------------------|-----------------------------------|----------------------------|-------|-----------------|---------|---------|---------|
| Calcium | Ca | EPA 200.7 | mg/L | 0.05 | 468 | 491 | 476 |
| Magnesium | Mg | EPA 200.7 | mg/L | 0.01 | 926 | 880 | 903 |
| Sodium | Na | EPA 200.7 | mg/L | 0.05 | 308 | 307 | 300 |
| Potassium | K | EPA 200.7 | mg/L | 0.10 | 7.9 | 9.5 | 8.4 |
| Bicarbonate | HCO ₃ | SM 2320 B. | mg/L | 0.10 | 355 | 361 | 366 |
| Sulfate | SO ₄ | EPA 200.7 | mg/L | 1.0 | 4320 | 4500 | 4370 |
| Chloride | Cl | EPA 200.7 | mg/L | 1.0 | 186 | 166 | 187 |
| Ammonium as N | NH ₄ | SM 4500-NH ₃ G. | mg/L | 0.05 | 1.31 | 1.11 | 1.15 |
| Nitrate + Nitrite as N | NO ₃ + NO ₂ | EPA 353.2 | mg/L | 0.10 | 140 | 130 | 134 |

| Non-Metals | | | | | | | |
|--------------------------------|-----|-----------------|------------|------|------|------|------|
| Total Dissolved Solids @ 180°C | TDS | SM 2540 C. Mod. | mg/L | 1.0 | 8020 | 8120 | 7940 |
| pH | | SM 4500-H B. | std. units | 0.10 | 7.26 | 7.20 | 7.50 |

| Trace Metals | | | | | | | |
|--------------|----|-----------|------|-------|---------|---------|---------|
| Aluminum | Al | EPA 200.7 | mg/L | 0.10 | 0.29 | < 0.10 | 0.18 |
| Arsenic III | As | EPA 206.3 | mg/L | 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Beryllium | Be | EPA 200.7 | mg/L | 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Cadmium | Cd | EPA 200.8 | mg/L | 0.005 | < 0.005 | < 0.005 | < 0.005 |
| Cobalt | Co | EPA 200.7 | mg/L | 0.01 | 0.09 | < 0.01 | 0.07 |
| Lead | Pb | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Manganese | Mn | EPA 200.7 | mg/L | 0.01 | 12.5 | 9.30 | 11.8 |
| Molybdenum | Mo | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Nickel | Ni | EPA 200.7 | mg/L | 0.05 | 0.11 | < 0.05 | 0.08 |
| Selenium IV | Se | EPA 270.3 | mg/L | 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Vanadium | V | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |

| Radiometrics | | | | | | | |
|---------------------------|-------------------|------------|-------|--------|--------|--------|--------|
| Uranium | ²³⁸ U | EPA 200.8 | mg/L | 0.0003 | 0.0017 | 0.0019 | 0.0009 |
| Radium 226 | ²²⁶ Ra | EPA 903.0 | pCi/L | 0.2 | 1.2 | 3.0 | < 0.2 |
| Radium Error Estimate ± | | | | | 0.2 | 0.3 | |
| Radium 228 | ²²⁸ Ra | EPA 904.0 | pCi/L | 1.0 | 2.1 | < 1.0 | 3.3 |
| Radium Error Estimate ± | | | | | 0.2 | | 0.9 |
| Thorium 230 | ²³⁰ Th | EPA 907.0 | pCi/L | 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Thorium Error Estimate ± | | | | | | | |
| Lead 210 | ²¹⁰ Pb | NERHL-65-4 | pCi/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Lead Error Estimate ± | | | | | | | |
| Gross Alpha | | EPA 900.1 | pCi/L | 1.0 | 3.8 | 5.2 | 1.1 |
| G. Alpha Error Estimate ± | | | | | 0.6 | 0.7 | 0.5 |

| Trace Organics | | | | | | | |
|----------------|--|---------|------|-----|-------|-------|-----|
| Chloroform | | EPA 601 | µg/L | 1.0 | < 1.0 | < 1.0 | 1.4 |

| Quality Assurance Data | | | Target Range | | | |
|------------------------|--|--------|--------------|--------|--------|--------|
| Anion | | meq | | 111.06 | 113.63 | 111.88 |
| Cation | | meq | | 114.97 | 112.07 | 113.06 |
| WYDEQ A/C Balance | | % | -5 - +5 | 1.73 | -0.69 | 0.52 |
| Calc TDS | | mg/L | | 7028 | 7121 | 7034 |
| TDS A/C Balance | | dec. % | 0.80-1.20 | 1.14 | 1.14 | 1.13 |

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33759R00003



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UNC MINING AND MILLING: CHURCHROCK OPERATIONS GROUNDWATER MONITORING PROGRAM: ZONE 1 MONITOR WELLS

WELL ID:
LABORATORY ID:
SAMPLE DATE:
REPORT DATE:
QUARTER REPRESENTED:
UNC SUBMITTAL #:

| TWQ 141 | TWQ 141 | TWQ 141 |
|-------------------|-------------|-----------------|
| 99-10577 | 99-24241 | 99-35518 |
| 01-05-99 | 04-06-99 | 07-13-99 |
| February 13, 1999 | May 6, 1999 | August 23, 1999 |
| First '99 | Second '99 | Third '99 |
| TE-1-1-99 | TE-3-4-99 | TE-5-7-99 |

| Major Ions | | Method | Units | Reporting Limit | Results | Results | Results |
|------------------------|-----------------------------------|----------------------------|-------|-----------------|---------|---------|---------|
| Calcium | Ca | EPA 200.7 | mg/L | 0.05 | 30.5 | 31.9 | 29.7 |
| Magnesium | Mg | EPA 200.7 | mg/L | 0.01 | 13.1 | 16.3 | 14.2 |
| Sodium | Na | EPA 200.7 | mg/L | 0.05 | 273 | 299 | 285 |
| Potassium | K | EPA 200.7 | mg/L | 0.10 | 3.7 | 3.4 | 7.5 |
| Bicarbonate | HCO ₃ | SM 2320 B. | mg/L | 0.10 | 253 | 249 | 258 |
| Sulfate | SO ₄ | EPA 200.7 | mg/L | 1.0 | 514 | 516 | 507 |
| Chloride | Cl | EPA 200.7 | mg/L | 1.0 | 25.2 | 25.2 | 30.2 |
| Ammonium as N | NH ₄ | SM 4500-NH ₃ G. | mg/L | 0.05 | 0.07 | 0.23 | 0.37 |
| Nitrate + Nitrite as N | NO ₃ + NO ₂ | EPA 353.2 | mg/L | 0.10 | < 0.10 | 0.21 | < 0.10 |

| Non-Metals | | | | | | | |
|--------------------------------|-----|-----------------|------------|------|------|------|------|
| Total Dissolved Solids @ 180°C | TDS | SM 2540 C. Mod. | mg/L | 1.0 | 1070 | 1070 | 968 |
| pH | | SM 4500-H B. | std. units | 0.10 | 8.06 | 8.13 | 8.28 |

| Trace Metals | | | | | | | |
|--------------|----|-----------|------|-------|---------|---------|---------|
| Aluminum | Al | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Arsenic III | As | EPA 206.3 | mg/L | 0.001 | 0.007 | 0.002 | 0.004 |
| Beryllium | Be | EPA 200.7 | mg/L | 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Cadmium | Cd | EPA 200.8 | mg/L | 0.005 | < 0.005 | < 0.005 | < 0.005 |
| Cobalt | Co | EPA 200.7 | mg/L | 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Lead | Pb | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Manganese | Mn | EPA 200.7 | mg/L | 0.01 | 0.43 | 0.24 | 0.27 |
| Molybdenum | Mo | EPA 200.7 | mg/L | 0.10 | 0.14 | < 0.10 | < 0.10 |
| Nickel | Ni | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Selenium IV | Se | EPA 270.3 | mg/L | 0.001 | < 0.001 | 0.001 | < 0.001 |
| Vanadium | V | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |

| Radiometrics | | | | | | | |
|---------------------------|-------------------|------------|-------|--------|--------|--------|--------|
| Uranium | ²³⁵ U | EPA 200.8 | mg/L | 0.0003 | 0.0140 | 0.0059 | 0.0541 |
| Radium 226 | ²²⁶ Ra | EPA 903.0 | pCi/L | 0.2 | 1.5 | 1.0 | 1.1 |
| Radium Error Estimate ± | | | | | 0.1 | 0.3 | 0.3 |
| Radium 228 | ²²⁸ Ra | EPA 904.0 | pCi/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Radium Error Estimate ± | | | | | | | |
| Thorium 230 | ²³⁰ Th | EPA 907.0 | pCi/L | 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Thorium Error Estimate ± | | | | | | | |
| Lead 210 | ²¹⁰ Pb | NERHL-65-4 | pCi/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Lead Error Estimate ± | | | | | | | |
| Gross Alpha | | EPA 900.1 | pCi/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |
| G. Alpha Error Estimate ± | | | | | | | |

| Trace Organics | | | | | | | |
|----------------|--|---------|------|-----|-------|-------|-------|
| Chloroform | | EPA 601 | µg/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |

| Quality Assurance Data | | Target Range | | | |
|------------------------|--------|--------------|-------|-------|-------|
| Anion | meq | | 15.57 | 15.56 | 15.65 |
| Cation | meq | | 14.62 | 16.08 | 15.30 |
| WYDEQ A/C Balance | % | -5 - +5 | -3.15 | 1.66 | -1.12 |
| Calc TDS | mg/L | | 987 | 1018 | 1004 |
| TDS A/C Balance | dec. % | 0.80 - 1.20 | 1.08 | 1.05 | 0.96 |

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**UNC MINING AND MILLING: CHURCHROCK OPERATIONS
GROUNDWATER MONITORING PROGRAM: ZONE 1 MONITOR WELLS**

WELL ID:
LABORATORY ID:
SAMPLE DATE/TIME:
REPORT DATE:
QUARTER REPRESENTED:
UNC SUBMITTAL #:

| TWQ 142 | TWQ 142 | TWQ 142 |
|-------------|-----------------|-------------------|
| 99-24242 | 99-35519 | 99-33596-001 |
| 04-06-99 | 07-13-99 | 10-05-99 @ 08:33 |
| May 6, 1999 | August 23, 1999 | November 30, 1999 |
| Second '99 | Third '99 | Fourth '99 |
| TE-3-4-99 | TE-5-7-99 | TE-7-10-99 |

| Major Ions | | Method | Units | Reporting Limit | Results | Results | Results |
|------------------------|-----------------------------------|----------------------------|-------|-----------------|---------|---------|---------|
| Calcium | Ca | EPA 200.7 | mg/L | 0.05 | 33.0 | 32.4 | 29.6 |
| Magnesium | Mg | EPA 200.7 | mg/L | 0.01 | 15.8 | 15.8 | 14.6 |
| Sodium | Na | EPA 200.7 | mg/L | 0.05 | 313 | 299 | 308 |
| Potassium | K | EPA 200.7 | mg/L | 0.10 | 3.5 | 6.7 | 3.70 |
| Bicarbonate | HCO ₃ | SM 2320 B. | mg/L | 0.10 | 250 | 262 | 251 |
| Sulfate | SO ₄ | EPA 200.7 | mg/L | 1.0 | 562 | 498 | 557 |
| Chloride | Cl | EPA 200.7 | mg/L | 1.0 | 22.7 | 24.5 | 21.4 |
| Ammonium as N | NH ₄ | SM 4500-NH ₃ G. | mg/L | 0.05 | 0.21 | 0.26 | 0.26 |
| Nitrate + Nitrite as N | NO ₃ + NO ₂ | EPA 353.2 | mg/L | 0.10 | 0.25 | 0.16 | 0.13 |

| Non-Metals | | | | | | | |
|--------------------------------|-----|-----------------|------------|------|------|------|------|
| Total Dissolved Solids @ 180°C | TDS | SM 2540 C. Mod. | mg/L | 1.0 | 1120 | 1030 | 1130 |
| pH | | SM 4500-H B. | std. units | 0.10 | 8.15 | 8.27 | 8.11 |

| Trace Metals | | | | | | | |
|--------------|----|-----------|------|-------|---------|---------|---------|
| Aluminum | Al | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Arsenic III | As | EPA 206.3 | mg/L | 0.001 | < 0.001 | 0.001 | < 0.001 |
| Beryllium | Be | EPA 200.7 | mg/L | 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Cadmium | Cd | EPA 200.8 | mg/L | 0.005 | < 0.005 | < 0.005 | < 0.005 |
| Cobalt | Co | EPA 200.7 | mg/L | 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Lead | Pb | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Manganese | Mn | EPA 200.7 | mg/L | 0.01 | 0.01 | 0.01 | 0.03 |
| Molybdenum | Mo | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Nickel | Ni | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Selenium IV | Se | EPA 270.3 | mg/L | 0.001 | < 0.001 | 0.001 | < 0.001 |
| Vanadium | V | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |

| Radiometrics | | | | | | | |
|---------------------------|-------------------|------------|-------|--------|--------|--------|--------|
| Uranium | ²³⁸ U | EPA 200.8 | mg/L | 0.0003 | 0.0012 | 0.0009 | 0.0008 |
| Radium 226 | ²²⁶ Ra | EPA 903.0 | pCi/L | 0.2 | < 0.2 | < 0.2 | 0.7 |
| Radium Error Estimate ± | | | | | | | 0.2 |
| Radium 228 | ²²⁸ Ra | EPA 904.0 | pCi/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Radium Error Estimate ± | | | | | | | |
| Thorium 230 | ²³⁰ Th | EPA 907.0 | pCi/L | 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Thorium Error Estimate ± | | | | | | | |
| Lead 210 | ²¹⁰ Pb | NERHL-65-4 | pCi/L | 1.0 | 4.9 | < 1.0 | < 1.0 |
| Lead Error Estimate ± | | | | | 1.8 | | |
| Gross Alpha | | EPA 900.1 | pCi/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |
| G. Alpha Error Estimate ± | | | | | | | |

| Trace Organics | | | | | | | |
|----------------|--|---------|------|-----|-------|-------|-------|
| Chloroform | | EPA 601 | µg/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |

| Quality Assurance Data | | | Target Range | | | |
|------------------------|--|--------|--------------|-------|-------|-------|
| Anion | | meq | | 16.46 | 15.37 | 16.33 |
| Cation | | meq | | 16.69 | 16.14 | 16.21 |
| WYDEQ A/C Balance | | % | -5 - +5 | 0.69 | 2.43 | -0.36 |
| Calc TDS | | mg/L | | 1076 | 1008 | 1061 |
| TDS A/C Balance | | dec. % | 0.80 - 1.20 | 1.04 | 1.02 | 1.07 |



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UNC MINING AND MILLING: CHURCHROCK OPERATIONS GROUNDWATER MONITORING PROGRAM: ZONE 1 MONITOR WELLS

WELL ID:
LABORATORY ID:
SAMPLE DATE/TIME:
REPORT DATE:
QUARTER REPRESENTED:
UNC SUBMITTAL #:

| TWQ 143 | TWQ 143 | TWQ 143 |
|-------------|-----------------|-------------------|
| 99-24243 | 99-35520 | 99-33596-001 |
| 04-06-99 | 07-13-99 | 10-05-99 @ 08:45 |
| May 6, 1999 | August 23, 1999 | November 30, 1999 |
| Second '99 | Third '99 | Fourth '99 |
| TE-3-4-99 | TE-5-7-99 | TE-7-10-99 |

| Major Ions | | Method | Units | Reporting Limit | Results | Results | Results |
|------------------------|-----------------------------------|----------------------------|-------|-----------------|---------|---------|---------|
| Calcium | Ca | EPA 200.7 | mg/L | 0.05 | 31.4 | 33.3 | 28.1 |
| Magnesium | Mg | EPA 200.7 | mg/L | 0.01 | 16.5 | 18.0 | 15.6 |
| Sodium | Na | EPA 200.7 | mg/L | 0.05 | 267 | 284 | 257 |
| Potassium | K | EPA 200.7 | mg/L | 0.10 | 3.3 | 4.0 | 3.00 |
| Bicarbonate | HCO ₃ | SM 2320 B. | mg/L | 0.10 | 240 | 247 | 235 |
| Sulfate | SO ₄ | EPA 200.7 | mg/L | 1.0 | 477 | 517 | 457 |
| Chloride | Cl | EPA 200.7 | mg/L | 1.0 | 18.5 | 13.9 | 16.4 |
| Ammonium as N | NH ₄ | SM 4500-NH ₃ G. | mg/L | 0.05 | 0.28 | 0.33 | 0.32 |
| Nitrate + Nitrite as N | NO ₃ + NO ₂ | EPA 353.2 | mg/L | 0.10 | 0.15 | < 0.10 | < 0.10 |

| Non-Metals | | | | | | | |
|--------------------------------|-----|-----------------|------------|------|------|------|------|
| Total Dissolved Solids @ 180°C | TDS | SM 2540 C. Mod. | mg/L | 1.0 | 975 | 857 | 953 |
| pH | | SM 4500-H B. | std. units | 0.10 | 8.09 | 8.24 | 8.08 |

| Trace Metals | | | | | | | |
|--------------|----|-----------|------|-------|---------|---------|---------|
| Aluminum | Al | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Arsenic III | As | EPA 206.3 | mg/L | 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Beryllium | Be | EPA 200.7 | mg/L | 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Cadmium | Cd | EPA 200.8 | mg/L | 0.005 | < 0.005 | < 0.005 | < 0.005 |
| Cobalt | Co | EPA 200.7 | mg/L | 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Lead | Pb | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Manganese | Mn | EPA 200.7 | mg/L | 0.01 | 0.02 | 0.02 | 0.03 |
| Molybdenum | Mo | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Nickel | Ni | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Selenium IV | Se | EPA 270.3 | mg/L | 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Vanadium | V | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |

| Radiometrics | | | | | | | |
|---------------------------|-------------------|------------|-------|--------|--------|--------|--------|
| Uranium | ²³⁸ U | EPA 200.8 | mg/L | 0.0003 | 0.0014 | 0.0011 | 0.0010 |
| Radium 226 | ²²⁶ Ra | EPA 903.0 | pCi/L | 0.2 | < 0.2 | < 0.2 | 0.3 |
| Radium Error Estimate ± | | | | | | | 0.2 |
| Radium 228 | ²²⁸ Ra | EPA 904.0 | pCi/L | 1.0 | 1.7 | < 1.0 | < 1.0 |
| Radium Error Estimate ± | | | | | 0.2 | | |
| Thorium 230 | ²³⁰ Th | EPA 907.0 | pCi/L | 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Thorium Error Estimate ± | | | | | | | |
| Lead 210 | ²¹⁰ Pb | NERHL-65-4 | pCi/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Lead Error Estimate ± | | | | | | | |
| Gross Alpha | | EPA 900.1 | pCi/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |
| G. Alpha Error Estimate ± | | | | | | | |

| Trace Organics | | | | | | | |
|----------------|--|---------|------|-----|-------|-------|-------|
| Chloroform | | EPA 601 | µg/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |

| Quality Assurance Data | | Target Range | | | | |
|------------------------|--------|--------------|--|-------|-------|-------|
| Anion | meq | | | 14.40 | 15.22 | 13.84 |
| Cation | meq | | | 14.67 | 15.65 | 13.99 |
| WYDEQ A/C Balance | % | -5 - +5 | | 0.92 | 1.40 | 0.54 |
| Calc TDS | mg/L | | | 935 | 995 | 895 |
| TDS A/C Balance | dec. % | 0.80 - 1.20 | | 1.04 | 0.86 | 1.06 |



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MAILING: P.O. BOX 3258 • CASPER, WY 82602

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UNC MINING AND MILLING: CHURCHROCK OPERATIONS
GROUNDWATER MONITORING PROGRAM: ZONE 1 MONITOR WELLS

WELL ID:
LABORATORY ID:
SAMPLE DATE/TIME:
REPORT DATE:
QUARTER REPRESENTED:
UNC SUBMITTAL #:

| 515-A | 515-A | 515-A |
|-------------|-----------------|-------------------|
| 99-24245 | 99-35522 | 99-33596-004 |
| 04-06-99 | 07-13-99 | 10-05-99 @ 09:49 |
| May 6, 1999 | August 23, 1999 | November 30, 1999 |
| Second '99 | Third '99 | Fourth '99 |
| TE-3-4-99 | TE-5-7-99 | TE-7-10-99 |

| Major Ions | | Method | Units | Reporting Limit | Results | Results | Results |
|------------------------|-----------------------------------|----------------------------|-------|-----------------|---------|---------|---------|
| Calcium | Ca | EPA 200.7 | mg/L | 0.05 | 444 | 486 | 526 |
| Magnesium | Mg | EPA 200.7 | mg/L | 0.01 | 889 | 938 | 1040 |
| Sodium | Na | EPA 200.7 | mg/L | 0.05 | 404 | 440 | 423 |
| Potassium | K | EPA 200.7 | mg/L | 0.10 | 13.7 | 18.0 | 14.6 |
| Bicarbonate | HCO ₃ | SM 2320 B. | mg/L | 0.10 | 292 | 272 | 253 |
| Sulfate | SO ₄ | EPA 200.7 | mg/L | 1.0 | 4600 | 4800 | 5440 |
| Chloride | Cl | EPA 200.7 | mg/L | 1.0 | 286 | 254 | 272 |
| Ammonium as N | NH ₄ | SM 4500-NH ₃ G. | mg/L | 0.05 | 6.52 | 4.52 | 6.64 |
| Nitrate + Nitrite as N | NO ₃ + NO ₂ | EPA 353.2 | mg/L | 0.10 | 57.8 | 62.6 | 55.6 |

| Non-Metals | | | | | | | |
|--------------------------------|-----|-----------------|------------|------|------|------|------|
| Total Dissolved Solids @ 180°C | TDS | SM 2540 C. Mod. | mg/L | 1.0 | 8130 | 7930 | 7950 |
| pH | | SM 4500-H B. | std. units | 0.10 | 6.59 | 7.42 | 7.27 |

| Trace Metals | | | | | | | |
|--------------|----|-----------|------|-------|---------|---------|---------|
| Aluminum | Al | EPA 200.7 | mg/L | 0.10 | 0.86 | 0.40 | 1.02 |
| Arsenic III | As | EPA 206.3 | mg/L | 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Beryllium | Be | EPA 200.7 | mg/L | 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Cadmium | Cd | EPA 200.8 | mg/L | 0.005 | 0.006 | 0.006 | 0.008 |
| Cobalt | Co | EPA 200.7 | mg/L | 0.01 | 0.07 | 0.05 | 0.07 |
| Lead | Pb | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Manganese | Mn | EPA 200.7 | mg/L | 0.01 | 13.6 | 13.6 | 16.6 |
| Molybdenum | Mo | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Nickel | Ni | EPA 200.7 | mg/L | 0.05 | 0.15 | 0.13 | 0.15 |
| Selenium IV | Se | EPA 270.3 | mg/L | 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Vanadium | V | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |

| Radiometric | | | | | | | |
|---------------------------|-------------------|------------|-------|--------|--------|--------|--------|
| Uranium | ²³⁸ U | EPA 200.8 | mg/L | 0.0003 | 0.0029 | 0.0036 | 0.0023 |
| Radium 226 | ²²⁶ Ra | EPA 903.0 | pCi/L | 0.2 | 3.4 | 2.3 | 2.4 |
| Radium Error Estimate ± | | | | | 0.4 | 0.3 | 0.3 |
| Radium 228 | ²²⁸ Ra | EPA 904.0 | pCi/L | 1.0 | 4.8 | 2.9 | < 1.0 |
| Radium Error Estimate ± | | | | | 0.3 | 0.2 | |
| Thorium 230 | ²³⁰ Th | EPA 907.0 | pCi/L | 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Thorium Error Estimate ± | | | | | | | |
| Lead 210 | ²¹⁰ Pb | NERHL-65-4 | pCi/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Lead Error Estimate ± | | | | | | | |
| Gross Alpha | | EPA 900.1 | pCi/L | 1.0 | 3.1 | 2.0 | 4.7 |
| G. Alpha Error Estimate ± | | | | | 0.6 | 1.0 | 1.3 |

| Trace Organics | | | | | | | |
|----------------|--|---------|------|-----|-----|-----|-----|
| Chloroform | | EPA 601 | µg/L | 1.0 | 190 | 172 | 183 |

| Quality Assurance Data | | | | Target Range | | | |
|------------------------|--|--------|-------------|--------------|--------|--------|--------|
| Anion | | meq | | | 112.81 | 116.09 | 129.11 |
| Cation | | meq | | | 115.50 | 123.17 | 133.23 |
| WYDEQ A/C Balance | | % | -5 - +5 | | 1.18 | 2.96 | 1.57 |
| Calc TDS | | mg/L | | | 7061 | 7369 | 8114 |
| TDS A/C Balance | | dec. % | 0.80 - 1.20 | | 1.15 | 1.08 | 0.98 |



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**UNC MINING AND MILLING: CHURCHROCK OPERATIONS
GROUNDWATER MONITORING PROGRAM: ZONE 1 MONITOR WELLS**

WELL ID:
LABORATORY ID:
SAMPLE DATE/TIME:
REPORT DATE:
QUARTER REPRESENTED:
UNC SUBMITTAL #:

| 619 | 619 | 619 |
|-------------|-----------------|------------------|
| 99-24246 | 99-35524 | 99-33596-006 |
| 04-06-99 | 07-13-99 | 10-05-99 @ 10:13 |
| May 6, 1999 | August 23, 1999 | December 1, 1999 |
| Second '99 | Third '99 | Fourth '99 |
| TE-3-4-99 | TE-5-7-99 | TE-7-10-99 |

| Major Ions | | Method | Units | Reporting Limit | Results | Results | Results |
|------------------------|-----------------------------------|----------------------------|-------|-----------------|---------|---------|---------|
| Calcium | Ca | EPA 200.7 | mg/L | 0.05 | 528 | 551 | 581 |
| Magnesium | Mg | EPA 200.7 | mg/L | 0.01 | 534 | 565 | 606 |
| Sodium | Na | EPA 200.7 | mg/L | 0.05 | 167 | 195 | 169 |
| Potassium | K | EPA 200.7 | mg/L | 0.10 | 8.1 | 11.4 | 8.40 |
| Bicarbonate | HCO ₃ | SM 2320 B. | mg/L | 0.10 | 181 | 194 | 188 |
| Sulfate | SO ₄ | EPA 200.7 | mg/L | 1.0 | 3440 | 3460 | 3790 |
| Chloride | Cl | EPA 200.7 | mg/L | 1.0 | 54.4 | 50.3 | 48.3 |
| Ammonium as N | NH ₄ | SM 4500-NH ₃ G. | mg/L | 0.05 | 0.57 | 0.49 | 0.51 |
| Nitrate + Nitrite as N | NO ₃ + NO ₂ | EPA 353.2 | mg/L | 0.10 | 0.21 | 0.29 | 0.28 |

| Non-Metals | | | | | | | |
|--------------------------------|-----|-----------------|------------|------|------|------|------|
| Total Dissolved Solids @ 180°C | TDS | SM 2540 C. Mod. | mg/L | 1.0 | 5430 | 5400 | 5220 |
| pH | | SM 4500-H B. | std. units | 0.10 | 7.79 | 7.96 | 7.86 |

| Trace Metals | | | | | | | |
|--------------|----|-----------|------|-------|---------|---------|---------|
| Aluminum | Al | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Arsenic III | As | EPA 206.3 | mg/L | 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Beryllium | Be | EPA 200.7 | mg/L | 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Cadmium | Cd | EPA 200.8 | mg/L | 0.005 | 0.005 | < 0.005 | < 0.005 |
| Cobalt | Co | EPA 200.7 | mg/L | 0.01 | < 0.01 | < 0.01 | 0.01 |
| Lead | Pb | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Manganese | Mn | EPA 200.7 | mg/L | 0.01 | 2.19 | 2.34 | 2.77 |
| Molybdenum | Mo | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Nickel | Ni | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Selenium IV | Se | EPA 270.3 | mg/L | 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Vanadium | V | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |

| Radiometrics | | | | | | | |
|---------------------------|-------------------|------------|-------|--------|--------|--------|--------|
| Uranium | ²³⁵ U | EPA 200.8 | mg/L | 0.0003 | 0.0053 | 0.0072 | 0.0066 |
| Radium 226 | ²²⁶ Ra | EPA 903.0 | pCi/L | 0.2 | 2.5 | 1.4 | 1.7 |
| Radium Error Estimate ± | | | | | 0.4 | 0.3 | 0.2 |
| Radium 228 | ²²⁸ Ra | EPA 904.0 | pCi/L | 1.0 | 4.8 | 3.0 | 3.0 |
| Radium Error Estimate ± | | | | | 0.3 | 0.2 | 0.3 |
| Thorium 230 | ²³⁰ Th | EPA 907.0 | pCi/L | 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Thorium Error Estimate ± | | | | | | | |
| Lead 210 | ²¹⁰ Pb | NERHL-65-4 | pCi/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Lead Error Estimate ± | | | | | | | |
| Gross Alpha | | EPA 900.1 | pCi/L | 1.0 | 2.0 | < 1.0 | 3.9 |
| G. Alpha Error Estimate ± | | | | | 0.5 | | 1.2 |

| Trace Organics | | | | | | | |
|----------------|--|---------|------|-----|-------|-------|-------|
| Chloroform | | EPA 601 | µg/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |

| Quality Assurance Data | | Target Range | | | |
|------------------------|--------|--------------|-------|-------|-------|
| Anion | meq | | 76.18 | 76.70 | 83.42 |
| Cation | meq | | 78.54 | 83.58 | 87.31 |
| WYDEQ A/C Balance | % | -5 - +5 | 1.52 | 4.29 | 2.28 |
| Calc TDS | mg/L | | 4826 | 4934 | 5301 |
| TDS A/C Balance | dec. % | 0.80 - 1.20 | 1.13 | 1.09 | 0.98 |

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UNC MINING AND MILLING: CHURCHROCK OPERATIONS
GROUNDWATER MONITORING PROGRAM: ZONE 1 MONITOR WELLS

WELL ID:
LABORATORY ID:
SAMPLE DATE:
REPORT DATE:
QUARTER REPRESENTED:
UNC SUBMITTAL #:

| EPA 2 | EPA 2 | EPA 2 |
|--------------|-----------------|-------------------|
| 99-24818 | 99-36000 | 99-33759-005 |
| 04-13-99 | 07-20-99 | 10-12-99 @ 13:16 |
| May 15, 1999 | August 31, 1999 | November 19, 1999 |
| Second '99 | Third '99 | Fourth '99 |
| TE-4-4-99 | TE-6-7-99 | TE-8-10-99 |

| Major Ions | | Method | Units | Reporting Limit | Results | Results | Results |
|------------------------|-----------------------------------|----------------------------|-------|-----------------|---------|---------|---------|
| Calcium | Ca | EPA 200.7 | mg/L | 0.05 | 420 | 385 | 478 |
| Magnesium | Mg | EPA 200.7 | mg/L | 0.01 | 182 | 186 | 244 |
| Sodium | Na | EPA 200.7 | mg/L | 0.05 | 198 | 187 | 186 |
| Potassium | K | EPA 200.7 | mg/L | 0.10 | 6.8 | 8.8 | 7.6 |
| Bicarbonate | HCO ₃ | SM 2320 B. | mg/L | 0.10 | 304 | 307 | 268 |
| Sulfate | SO ₄ | EPA 200.7 | mg/L | 1.0 | 1800 | 1650 | 1970 |
| Chloride | Cl | EPA 200.7 | mg/L | 1.0 | 31.3 | 29.0 | 45.7 |
| Ammonium as N | NH ₄ | SM 4500-NH ₃ G. | mg/L | 0.05 | 0.64 | 0.59 | 0.70 |
| Nitrate + Nitrite as N | NO ₃ + NO ₂ | EPA 353.2 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |

| Non-Metals | | Method | Units | Reporting Limit | Results | Results | Results |
|--------------------------------|-----|-----------------|------------|-----------------|---------|---------|---------|
| Total Dissolved Solids @ 180°C | TDS | SM 2540 C. Mod. | mg/L | 1.0 | 3110 | 3080 | 3640 |
| pH | | SM 4500-H B. | std. units | 0.10 | 7.69 | 7.67 | 7.65 |

| Trace Metals | | Method | Units | Reporting Limit | Results | Results | Results |
|--------------|----|-----------|-------|-----------------|---------|---------|---------|
| Aluminum | Al | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Arsenic III | As | EPA 206.3 | mg/L | 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Beryllium | Be | EPA 200.7 | mg/L | 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Cadmium | Cd | EPA 200.8 | mg/L | 0.005 | < 0.005 | < 0.005 | < 0.005 |
| Cobalt | Co | EPA 200.7 | mg/L | 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Lead | Pb | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Manganese | Mn | EPA 200.7 | mg/L | 0.01 | 1.64 | 1.35 | 2.21 |
| Molybdenum | Mo | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Nickel | Ni | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Selenium IV | Se | EPA 270.3 | mg/L | 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Vanadium | V | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |

| Radiometrics | | Method | Units | Reporting Limit | Results | Results | Results |
|---------------------------|-------------------|------------|-------|-----------------|---------|---------|----------|
| Uranium | ²³⁵ U | EPA 200.8 | mg/L | 0.0003 | 0.0009 | 0.0012 | < 0.0003 |
| Radium 226 | ²²⁶ Ra | EPA 903.0 | pCi/L | 0.2 | 1.1 | 1.2 | 0.6 |
| Radium Error Estimate ± | | | | | 0.2 | 0.2 | 0.2 |
| Radium 228 | ²²⁸ Ra | EPA 904.0 | pCi/L | 1.0 | < 1.0 | 2.1 | 2.2 |
| Radium Error Estimate ± | | | | | | 0.2 | 0.9 |
| Thorium 230 | ²³⁰ Th | EPA 907.0 | pCi/L | 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Thorium Error Estimate ± | | | | | | | |
| Lead 210 | ²¹⁰ Pb | NERHL-65-4 | pCi/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Lead Error Estimate ± | | | | | | | |
| Gross Alpha | | EPA 900.1 | pCi/L | 1.0 | 1.8 | 2.1 | 1.8 |
| G. Alpha Error Estimate ± | | | | | 0.5 | 0.5 | 0.5 |

| Trace Organics | | Method | Units | Reporting Limit | Results | Results | Results |
|----------------|--|---------|-------|-----------------|---------|---------|---------|
| Chloroform | | EPA 601 | µg/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |

| Quality Assurance Data | | Method | Units | Target Range | Results | Results | Results |
|------------------------|--|--------|--------|--------------|---------|---------|---------|
| Anion | | | meq | | 43.37 | 40.23 | 46.73 |
| Cation | | | meq | | 45.10 | 43.23 | 52.70 |
| WYDEQ A/C Balance | | | % | -5 - +5 | 1.95 | 3.60 | 6.00 |
| Calc TDS | | | mg/L | | 2793 | 2602 | 3069 |
| TDS A/C Balance | | | dec. % | 0.80-1.20 | 1.11 | 1.18 | 1.19 |

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UNC MINING AND MILLING: CHURCHROCK OPERATIONS
GROUNDWATER MONITORING PROGRAM: ZONE 1 MONITOR WELLS

WELL ID:
LABORATORY ID:
SAMPLE DATE:
REPORT DATE:
QUARTER REPRESENTED:
UNC SUBMITTAL #:

| EPA 5 | EPA 5 | EPA 5 |
|--------------|-----------------|-------------------|
| 99-24817 | 99-35999 | 99-33759-004 |
| 04-13-99 | 07-20-99 | 10-12-99 @ 10:36 |
| May 15, 1999 | August 31, 1999 | November 19, 1999 |
| Second '99 | Third '99 | Fourth '99 |
| TE-4-4-99 | TE-6-7-99 | TE-8-10-99 |

| Major Ions | | Method | Units | Reporting Limit | Results | Results | Results |
|------------------------|-----------------------------------|----------------------------|-------|-----------------|---------|---------|---------|
| Calcium | Ca | EPA 200.7 | mg/L | 0.05 | 522 | 567 | 523 |
| Magnesium | Mg | EPA 200.7 | mg/L | 0.01 | 934 | 949 | 899 |
| Sodium | Na | EPA 200.7 | mg/L | 0.05 | 322 | 82.0 | 306 |
| Potassium | K | EPA 200.7 | mg/L | 0.10 | 12.7 | 16.6 | 15.0 |
| Bicarbonate | HCO ₃ | SM 2320 B. | mg/L | 0.10 | 1100 | 1090 | 1086 |
| Sulfate | SO ₄ | EPA 200.7 | mg/L | 1.0 | 4160 | 4580 | 4180 |
| Chloride | Cl | EPA 200.7 | mg/L | 1.0 | 191 | 198 | 191 |
| Ammonium as N | NH ₄ | SM 4500-NH ₃ G. | mg/L | 0.05 | 12.9 | 15.0 | 19.4 |
| Nitrate + Nitrite as N | NO ₃ + NO ₂ | EPA 353.2 | mg/L | 0.10 | 76.4 | 73.9 | 64.2 |

| Non-Metals | | | | | | | |
|--------------------------------|-----|-----------------|------------|------|------|------|------|
| Total Dissolved Solids @ 180°C | TDS | SM 2540 C. Mod. | mg/L | 1.0 | 8100 | 8130 | 7960 |
| pH | | SM 4500-H B. | std. units | 0.10 | 7.71 | 7.55 | 7.75 |

| Trace Metals | | | | | | | |
|--------------|----|-----------|------|-------|---------|---------|---------|
| Aluminum | Al | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Arsenic III | As | EPA 206.3 | mg/L | 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Beryllium | Be | EPA 200.7 | mg/L | 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Cadmium | Cd | EPA 200.8 | mg/L | 0.005 | < 0.005 | < 0.005 | < 0.005 |
| Cobalt | Co | EPA 200.7 | mg/L | 0.01 | 0.06 | 0.05 | 0.04 |
| Lead | Pb | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Manganese | Mn | EPA 200.7 | mg/L | 0.01 | 0.53 | 0.49 | 0.59 |
| Molybdenum | Mo | EPA 200.7 | mg/L | 0.10 | 0.44 | 0.36 | 0.35 |
| Nickel | Ni | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Selenium IV | Se | EPA 270.3 | mg/L | 0.001 | 0.004 | 0.004 | 0.001 |
| Vanadium | V | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |

| Radiometrics | | | | | | | |
|---------------------------|-------------------|------------|-------|--------|-------|-------|-------|
| Uranium | ²³⁵ U | EPA 200.8 | mg/L | 0.0003 | 0.130 | 0.127 | 0.124 |
| Radium 226 | ²²⁶ Ra | EPA 903.0 | pCi/L | 0.2 | 1.0 | 1.6 | 1.2 |
| Radium Error Estimate ± | | | | | 0.2 | 0.2 | 0.3 |
| Radium 228 | ²²⁸ Ra | EPA 904.0 | pCi/L | 1.0 | 2.1 | < 1.0 | < 1.0 |
| Radium Error Estimate ± | | | | | 0.2 | | |
| Thorium 230 | ²³⁰ Th | EPA 907.0 | pCi/L | 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Thorium Error Estimate ± | | | | | | | |
| Lead 210 | ²¹⁰ Pb | NERHL-65-4 | pCi/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Lead Error Estimate ± | | | | | | | |
| Gross Alpha | | EPA 900.1 | pCi/L | 1.0 | 3.5 | 2.2 | < 1.0 |
| G. Alpha Error Estimate ± | | | | | 0.6 | 0.5 | |

| Trace Organics | | | | | | | |
|----------------|--|---------|------|-----|-------|-------|-------|
| Chloroform | | EPA 601 | µg/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |

| Quality Assurance Data | | | Target Range | | | |
|------------------------|--|--------|--------------|--------|--------|--------|
| Anion | | meq | | 115.54 | 124.14 | 114.85 |
| Cation | | meq | | 119.22 | 112.53 | 116.18 |
| WYDEQ A/C Balance | | % | -5 - +5 | 1.57 | -4.90 | 0.58 |
| Calc TDS | | mg/L | | 7047 | 7285 | 6967 |
| TDS A/C Balance | | dec. % | 0.80-1.20 | 1.15 | 1.12 | 1.14 |

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COMPLETE ANALYTICAL SERVICES 33759R00004



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MAILING: P.O. BOX 3258 • CASPER, WY 82602
E-mail: energy@trib.com • FAX: (307) 234-1639
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UNC MINING AND MILLING: CHURCHROCK OPERATIONS
GROUNDWATER MONITORING PROGRAM: ZONE 1 MONITOR WELLS

WELL ID:
LABORATORY ID:
SAMPLE DATE:
REPORT DATE:
QUARTER REPRESENTED:
UNC SUBMITTAL #:

| EPA 8 | EPA 8 | EPA 8 |
|--------------|-----------------|-------------------|
| 99-24814 | 99-35996 | 99-33759-001 |
| 04-13-99 | 07-20-99 | 10-12-99 @ 09:38 |
| May 15, 1999 | August 31, 1999 | November 18, 1999 |
| Second '99 | Third '99 | Fourth '99 |
| TE-4-4-99 | TE-6-7-99 | TE-8-10-99 |

| Major Ions | | Method | Units | Reporting Limit | Results | Results | Results |
|------------------------|-----------------------------------|----------------------------|-------|-----------------|---------|---------|---------|
| Calcium | Ca | EPA 200.7 | mg/L | 0.05 | 558 | 514 | 552 |
| Magnesium | Mg | EPA 200.7 | mg/L | 0.01 | 420 | 379 | 414 |
| Sodium | Na | EPA 200.7 | mg/L | 0.05 | 136 | 169 | 133 |
| Potassium | K | EPA 200.7 | mg/L | 0.10 | 7.7 | 10.3 | 7.7 |
| Bicarbonate | HCO ₃ | SM 2320 B. | mg/L | 0.10 | 131 | 119 | 121 |
| Sulfate | SO ₄ | EPA 200.7 | mg/L | 1.0 | 3000 | 2710 | 3000 |
| Chloride | Cl | EPA 200.7 | mg/L | 1.0 | 45.7 | 47.0 | 42.9 |
| Ammonium as N | NH ₄ | SM 4500-NH ₃ G. | mg/L | 0.05 | 0.91 | 0.76 | 0.71 |
| Nitrate + Nitrite as N | NO ₃ + NO ₂ | EPA 353.2 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |

| Non-Metals | | | | | | | |
|--------------------------------|-----|-----------------|------------|------|------|------|------|
| Total Dissolved Solids @ 180°C | TDS | SM 2540 C. Mod. | mg/L | 1.0 | 4630 | 4780 | 4790 |
| pH | | SM 4500-H B. | std. units | 0.10 | 7.35 | 7.18 | 7.44 |

| Trace Metals | | | | | | | |
|--------------|----|-----------|------|-------|---------|---------|---------|
| Aluminum | Al | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Arsenic III | As | EPA 206.3 | mg/L | 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Beryllium | Be | EPA 200.7 | mg/L | 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Cadmium | Cd | EPA 200.8 | mg/L | 0.005 | < 0.005 | < 0.005 | < 0.005 |
| Cobalt | Co | EPA 200.7 | mg/L | 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Lead | Pb | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Manganese | Mn | EPA 200.7 | mg/L | 0.01 | 2.98 | 2.40 | 3.08 |
| Molybdenum | Mo | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Nickel | Ni | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Selenium IV | Se | EPA 270.3 | mg/L | 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Vanadium | V | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |

| Radiometrics | | | | | | | |
|---------------------------|-------------------|------------|-------|--------|--------|--------|----------|
| Uranium | ²³⁸ U | EPA 200.8 | mg/L | 0.0003 | 0.0011 | 0.0016 | < 0.0003 |
| Radium 226 | ²²⁶ Ra | EPA 903.0 | pCi/L | 0.2 | 2.0 | 1.4 | 0.9 |
| Radium Error Estimate ± | | | | | 0.3 | 0.2 | 0.3 |
| Radium 228 | ²²⁸ Ra | EPA 904.0 | pCi/L | 1.0 | 3.4 | 1.5 | 4.2 |
| Radium Error Estimate ± | | | | | 0.2 | 0.2 | 1.0 |
| Thorium 230 | ²³⁰ Th | EPA 907.0 | pCi/L | 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Thorium Error Estimate ± | | | | | | | |
| Lead 210 | ²¹⁰ Pb | NERHL-65-4 | pCi/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Lead Error Estimate ± | | | | | | | |
| Gross Alpha | | EPA 900.1 | pCi/L | 1.0 | 3.0 | 1.8 | 1.6 |
| G. Alpha Error Estimate ± | | | | | 0.6 | 0.4 | 0.8 |

| Trace Organics | | | | | | | |
|----------------|--|---------|------|-----|-------|-------|-------|
| Chloroform | | EPA 601 | µg/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |

| Quality Assurance Data | | | Target Range | | | |
|------------------------|--|--------|--------------|-------|-------|-------|
| Anion | | meq | | 65.94 | 59.74 | 65.70 |
| Cation | | meq | | 69.25 | 65.09 | 68.31 |
| WYDEQ A/C Balance | | % | -5 - +5 | 2.45 | 4.29 | 1.95 |
| Calc TDS | | mg/L | | 4237 | 3893 | 4215 |
| TDS A/C Balance | | dec. % | 0.80-1.20 | 1.09 | 1.23 | 1.14 |

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TRACKING NO. PAGE NO.
33759R00001

COMPLETE ANALYTICAL SERVICES

SEMI-ANNUAL GROUND WATER MONITORING REPORT
JULY 1, 1999 THROUGH DECEMBER 31, 1999

ZONE 3

***517**

***518**

420

502-B

504-B

EPA-9

EPA-13

EPA-14

***POINT OF COMPLIANCE WELLS**



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UNC MINING AND MILLING: CHURCHROCK OPERATIONS GROUNDWATER MONITORING PROGRAM: ZONE 3 MONITOR WELLS

WELL ID:
LABORATORY ID:
SAMPLE DATE:
REPORT DATE:
QUARTER REPRESENTED:
UNC SUBMITTAL #:

| 517 | 517 | 517 |
|----------------|-----------------|-------------------|
| 99-24252 | 99-35529 | 99-33594-001 |
| 04-06-99 | 07-13-99 | 10-05-99 @ 09:16 |
| April 30, 1999 | August 26, 1999 | November 12, 1999 |
| Second '99 | Third '99 | Fourth '99 |
| TE-3-4-99 | TE-5-7-99 | TE-7-10-99 |

| Major Ions | | Method | Units | Reporting Limit | Results | Results | Results |
|------------------------|-----------------------------------|----------------------------|-------|-----------------|---------|---------|---------|
| Calcium | Ca | EPA 200.7 | mg/L | 0.05 | 472 | 392 | 515 |
| Magnesium | Mg | EPA 200.7 | mg/L | 0.01 | 478 | 493 | 520 |
| Sodium | Na | EPA 200.7 | mg/L | 0.05 | 156 | 149 | 164 |
| Potassium | K | EPA 200.7 | mg/L | 0.10 | 9.4 | 10.0 | 8.9 |
| Bicarbonate | HCO ₃ | SM 2320 B. | mg/L | 0.10 | 4.0 | < 0.10 | < 0.10 |
| Sulfate | SO ₄ | EPA 200.7 | mg/L | 1.0 | 3260 | 3300 | 3510 |
| Chloride | Cl | EPA 200.7 | mg/L | 1.0 | 62.5 | 52.6 | 54.7 |
| Ammonium as N | NH ₄ | SM 4500-NH ₃ G. | mg/L | 0.05 | 15.3 | 14.4 | 13.7 |
| Nitrate + Nitrite as N | NO ₃ + NO ₂ | EPA 353.2 | mg/L | 0.10 | 4.45 | 4.19 | 4.42 |

| Non-Metals | | | | | | | |
|--------------------------------|-----|-----------------|------------|------|------|------|------|
| Total Dissolved Solids @ 180°C | TDS | SM 2540 C. Mod. | mg/L | 1.0 | 5110 | 5010 | 4970 |
| pH | | SM 4500-H B. | std. units | 0.10 | 4.72 | 4.09 | 4.40 |

| Trace Metals | | | | | | | |
|--------------|----|-----------|------|-------|---------|---------|---------|
| Aluminum | Al | EPA 200.7 | mg/L | 0.10 | 12.3 | 9.96 | 11.2 |
| Arsenic III | As | EPA 206.3 | mg/L | 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Beryllium | Be | EPA 200.7 | mg/L | 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Cadmium | Cd | EPA 200.8 | mg/L | 0.005 | 0.010 | 0.010 | 0.011 |
| Cobalt | Co | EPA 200.7 | mg/L | 0.01 | 0.59 | 0.62 | 0.61 |
| Lead | Pb | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Manganese | Mn | EPA 200.7 | mg/L | 0.01 | 8.20 | 8.00 | 8.82 |
| Molybdenum | Mo | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Nickel | Ni | EPA 200.7 | mg/L | 0.05 | 0.46 | 0.50 | 0.44 |
| Selenium IV | Se | EPA 270.3 | mg/L | 0.001 | < 0.001 | < 0.001 | 0.002 |
| Vanadium | V | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |

| Radiometrics | | | | | | | |
|----------------------|-------------------|------------|-------|--------|--------|--------|--------|
| Uranium | ²³⁸ U | EPA 200.8 | mg/L | 0.0003 | 0.0851 | 0.0758 | 0.0731 |
| Radium 226 | ²²⁶ Ra | EPA 903.0 | pCi/L | 0.2 | 20.6 | 9.9 | 9.8 |
| Radium Precision ± | | | | | 1.8 | 0.9 | 0.9 |
| Radium 228 | ²²⁸ Ra | EPA 904.0 | pCi/L | 1.0 | 20.3 | 10.2 | 13.2 |
| Radium Precision ± | | | | | 1.3 | 0.7 | 1.4 |
| Thorium 230 | ²³⁰ Th | EPA 907.0 | pCi/L | 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Thorium Precision ± | | | | | | | |
| Lead 210 | ²¹⁰ Pb | NERHL-65-4 | pCi/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Lead Precision ± | | | | | | | |
| Gross Alpha | | EPA 900.1 | pCi/L | 1.0 | 61.8 | 18.8 | 10.0 |
| G. Alpha Precision ± | | | | | 4.9 | 1.3 | 1.0 |

| Trace Organics | | | | | | | |
|----------------|--|---------|------|-----|-----|-----|-----|
| Chloroform | | EPA 601 | µg/L | 1.0 | 3.6 | 4.4 | 5.0 |

| Quality Assurance Data | Target Range | | | |
|------------------------|--------------|-------|-------|-------|
| Anion | | 70.06 | 70.53 | 74.98 |
| Cation | | 73.36 | 69.99 | 79.15 |
| WYDEQ A/C Balance | -5 - +5 | 2.30 | -0.39 | 2.70 |
| Calc TDS | | 4488 | 4442 | 4819 |
| TDS A/C Balance | 0.80 - 1.20 | 1.14 | 1.13 | 1.03 |



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UNC MINING AND MILLING: CHURCHROCK OPERATIONS GROUNDWATER MONITORING PROGRAM: ZONE 3 MONITOR WELLS

WELL ID:
LABORATORY ID:
SAMPLE DATE:
REPORT DATE:
QUARTER REPRESENTED:
UNC SUBMITTAL #:

| 518 | 518 | 518 |
|----------------|-----------------|-------------------|
| 99-24255 | 99-35528 | 99-33594-004 |
| 04-06-99 | 07-13-99 | 10-05-99 @ 14:00 |
| April 30, 1999 | August 23, 1999 | November 12, 1999 |
| Second '99 | Third '99 | Fourth '99 |
| TE-3-4-99 | TE-5-7-99 | TE-7-10-99 |

| Major Ions | | Method | Units | Reporting Limit | Results | Results | Results |
|------------------------|-----------------------------------|----------------------------|-------|-----------------|---------|---------|---------|
| Calcium | Ca | EPA 200.7 | mg/L | 0.05 | 436 | 464 | 478 |
| Magnesium | Mg | EPA 200.7 | mg/L | 0.01 | 699 | 737 | 772 |
| Sodium | Na | EPA 200.7 | mg/L | 0.05 | 125 | 129 | 139 |
| Potassium | K | EPA 200.7 | mg/L | 0.10 | 14.4 | 16.1 | 14.7 |
| Bicarbonate | HCO ₃ | SM 2320 B. | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Sulfate | SO ₄ | EPA 200.7 | mg/L | 1.0 | 4800 | 5000 | 5300 |
| Chloride | Cl | EPA 200.7 | mg/L | 1.0 | 43.5 | 31.7 | 35.4 |
| Ammonium as N | NH ₄ | SM 4500-NH ₃ G. | mg/L | 0.05 | 7.28 | 7.17 | 8.36 |
| Nitrate + Nitrite as N | NO ₃ + NO ₂ | EPA 353.2 | mg/L | 0.10 | 1.37 | 0.62 | 0.98 |

| Non-Metals | | | | | | | |
|--------------------------------|-----|-----------------|------------|------|------|------|------|
| Total Dissolved Solids @ 180°C | TDS | SM 2540 C. Mod. | mg/L | 1.0 | 7380 | 7690 | 7660 |
| pH | | SM 4500-H B. | std. units | 0.10 | 3.75 | 3.62 | 3.61 |

| Trace Metals | | | | | | | |
|--------------|----|-----------|------|-------|---------|---------|---------|
| Aluminum | Al | EPA 200.7 | mg/L | 0.10 | 76.6 | 69.5 | 86.5 |
| Arsenic III | As | EPA 206.3 | mg/L | 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Beryllium | Be | EPA 200.7 | mg/L | 0.01 | 0.06 | 0.05 | 0.06 |
| Cadmium | Cd | EPA 200.8 | mg/L | 0.005 | 0.010 | < 0.005 | 0.010 |
| Cobalt | Co | EPA 200.7 | mg/L | 0.01 | 1.15 | 1.11 | 1.17 |
| Lead | Pb | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Manganese | Mn | EPA 200.7 | mg/L | 0.01 | 16.6 | 16.2 | 18.4 |
| Molybdenum | Mo | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Nickel | Ni | EPA 200.7 | mg/L | 0.05 | 1.15 | 1.10 | 1.18 |
| Selenium IV | Se | EPA 270.3 | mg/L | 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Vanadium | V | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |

| Radiometrics | | | | | | | |
|----------------------|-------------------|------------|-------|--------|-------|--------|-------|
| Uranium | ²³⁸ U | EPA 200.8 | mg/L | 0.0003 | 0.328 | 0.0198 | 0.327 |
| Radium 226 | ²²⁶ Ra | EPA 903.0 | pCi/L | 0.2 | 6.4 | 3.5 | 6.1 |
| Radium Precision ± | | | | | 0.5 | 0.3 | 0.7 |
| Radium 228 | ²²⁸ Ra | EPA 904.0 | pCi/L | 1.0 | 1.7 | < 1.0 | 4.6 |
| Radium Precision ± | | | | | 0.3 | | 0.2 |
| Thorium 230 | ²³⁰ Th | EPA 907.0 | pCi/L | 0.2 | 4.1 | 7.8 | 7.1 |
| Thorium Precision ± | | | | | 0.8 | 1.4 | 0.5 |
| Lead 210 | ²¹⁰ Pb | NERHL-65-4 | pCi/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Lead Precision ± | | | | | | | |
| Gross Alpha | | EPA 900.1 | pCi/L | 1.0 | 15.3 | 14.0 | 13.6 |
| G. Alpha Precision ± | | | | | 1.4 | 1.0 | 1.1 |

| Trace Organics | | | | | | | |
|----------------|--|---------|------|-----|-----|-----|-----|
| Chloroform | | EPA 601 | µg/L | 1.0 | 8.3 | 8.3 | 8.3 |

| Quality Assurance Data | | | Target Range | | | |
|------------------------|--|--------|--------------|--------|--------|--------|
| Anion | | meq | | 101.32 | 105.11 | 111.49 |
| Cation | | meq | | 95.79 | 99.76 | 105.87 |
| WYDEQ A/C Balance | | % | -5 - +5 | -2.81 | -2.61 | -2.58 |
| Calc TDS | | mg/L | | 6150 | 6406 | 6773 |
| TDS A/C Balance | | dec. % | 0.80 - 1.20 | 1.20 | 1.20 | 1.13 |



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UNC MINING AND MILLING: CHURCHROCK OPERATIONS
GROUNDWATER MONITORING PROGRAM: ZONE 3 MONITOR WELLS

WELL ID:
LABORATORY ID:
SAMPLE DATE:
REPORT DATE:
QUARTER REPRESENTED:
UNC SUBMITTAL #:

| 420 | 420 | 420 |
|----------------|-----------------|-------------------|
| 99-24251 | 99-35530 | 99-33594-005 |
| 04-06-99 | 07-13-99 | 10-05-99 @ 09:00 |
| April 30, 1999 | August 27, 1999 | November 12, 1999 |
| Second '99 | Third '99 | Fourth '99 |
| TE-3-4-99 | TE-5-7-99 | TE-7-10-99 |

| Major Ions | | Method | Units | Reporting Limit | Results | Results | Results |
|------------------------|-----------------------------------|----------------------------|-------|-----------------|---------|---------|---------|
| Calcium | Ca | EPA 200.7 | mg/L | 0.05 | 672 | 708 | 731 |
| Magnesium | Mg | EPA 200.7 | mg/L | 0.01 | 144 | 111 | 130 |
| Sodium | Na | EPA 200.7 | mg/L | 0.05 | 137 | 123 | 146 |
| Potassium | K | EPA 200.7 | mg/L | 0.10 | 6.4 | 7.0 | 6.1 |
| Bicarbonate | HCO ₃ | SM 2320 B. | mg/L | 0.10 | 388 | 411 | 392 |
| Sulfate | SO ₄ | EPA 200.7 | mg/L | 1.0 | 1870 | 1840 | 2100 |
| Chloride | Cl | EPA 200.7 | mg/L | 1.0 | 39.5 | 34.6 | 38.9 |
| Ammonium as N | NH ₄ | SM 4500-NH ₃ G. | mg/L | 0.05 | 0.11 | 0.09 | 0.07 |
| Nitrate + Nitrite as N | NO ₃ + NO ₂ | EPA 353.2 | mg/L | 0.10 | 28.5 | 39.8 | 47.7 |

| Non-Metals | | | | | | | |
|--------------------------------|-----|-----------------|------------|------|------|------|------|
| Total Dissolved Solids @ 180°C | TDS | SM 2540 C. Mod. | mg/L | 1.0 | 3640 | 3560 | 3630 |
| pH | | SM 4500-H B. | std. units | 0.10 | 7.96 | 8.07 | 7.63 |

| Trace Metals | | | | | | | |
|--------------|----|-----------|------|-------|---------|---------|---------|
| Aluminum | Al | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Arsenic III | As | EPA 206.3 | mg/L | 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Beryllium | Be | EPA 200.7 | mg/L | 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Cadmium | Cd | EPA 200.8 | mg/L | 0.005 | < 0.005 | < 0.005 | < 0.005 |
| Cobalt | Co | EPA 200.7 | mg/L | 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Lead | Pb | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Manganese | Mn | EPA 200.7 | mg/L | 0.01 | 2.01 | 1.98 | 2.23 |
| Molybdenum | Mo | EPA 200.7 | mg/L | 0.10 | 0.56 | 0.37 | 0.34 |
| Nickel | Ni | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Selenium IV | Se | EPA 270.3 | mg/L | 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Vanadium | V | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |

| Radiometrics | | | | | | | |
|----------------------|-------------------|------------|-------|--------|--------|--------|--------|
| Uranium | ²³⁸ U | EPA 200.8 | mg/L | 0.0003 | 0.0556 | 0.0578 | 0.0540 |
| Radium 226 | ²²⁶ Ra | EPA 903.0 | pCi/L | 0.2 | 3.2 | 2.2 | 2.4 |
| Radium Precision ± | | | | | 0.4 | 0.3 | 0.3 |
| Radium 228 | ²²⁸ Ra | EPA 904.0 | pCi/L | 1.0 | 2.1 | 2.0 | 4.4 |
| Radium Precision ± | | | | | 0.3 | 0.2 | 0.2 |
| Thorium 230 | ²³⁰ Th | EPA 907.0 | pCi/L | 0.2 | 0.8 | < 0.2 | < 0.2 |
| Thorium Precision ± | | | | | 0.3 | | |
| Lead 210 | ²¹⁰ Pb | NERHL-65-4 | pCi/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Lead Precision ± | | | | | | | |
| Gross Alpha | | EPA 900.1 | pCi/L | 1.0 | 4.7 | 2.7 | 1.9 |
| G. Alpha Precision ± | | | | | 1.6 | 0.5 | 0.6 |

| Trace Organics | | | | | | | |
|----------------|--|---------|------|-----|-------|-------|-------|
| Chloroform | | EPA 601 | µg/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |

| Quality Assurance Data | | | Target Range | | | |
|------------------------|--|--------|--------------|-------|-------|-------|
| Anion | | meq | | 48.47 | 48.89 | 54.68 |
| Cation | | meq | | 51.85 | 50.30 | 54.03 |
| WYDEQ A/C Balance | | % | -5 - +5 | 3.37 | 1.43 | -0.60 |
| Calc TDS | | mg/L | | 3191 | 3208 | 3562 |
| TDS A/C Balance | | dec. % | 0.80 - 1.20 | 1.14 | 1.11 | 1.02 |



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UNC MINING AND MILLING: CHURCHROCK OPERATIONS GROUNDWATER MONITORING PROGRAM: ZONE 3 MONITOR WELLS

WELL ID:
LABORATORY ID:
SAMPLE DATE:
REPORT DATE:
QUARTER REPRESENTED:
UNC SUBMITTAL #:

| 502-B | 502-B | 502-B |
|----------------|-----------------|-------------------|
| 99-24254 | 99-35532 | 99-33594-003 |
| 04-06-99 | 07-13-99 | 10-05-99 @ 13:50 |
| April 30, 1999 | August 26, 1999 | November 12, 1999 |
| Second '99 | Third '99 | Fourth '99 |
| TE-3-4-99 | TE-5-7-99 | TE-7-10-99 |

| Major Ions | | Method | Units | Reporting Limit | Results | Results | Results |
|------------------------|-----------------------------------|----------------------------|-------|-----------------|---------|---------|---------|
| Calcium | Ca | EPA 200.7 | mg/L | 0.05 | 472 | 487 | 503 |
| Magnesium | Mg | EPA 200.7 | mg/L | 0.01 | 545 | 580 | 612 |
| Sodium | Na | EPA 200.7 | mg/L | 0.05 | 108 | 109 | 114 |
| Potassium | K | EPA 200.7 | mg/L | 0.10 | 13.2 | 14.2 | 13.6 |
| Bicarbonate | HCO ₃ | SM 2320 B. | mg/L | 0.10 | 4.0 | < 0.10 | < 0.10 |
| Sulfate | SO ₄ | EPA 200.7 | mg/L | 1.0 | 3730 | 3800 | 4050 |
| Chloride | Cl | EPA 200.7 | mg/L | 1.0 | 34.7 | 24.9 | 31.2 |
| Ammonium as N | NH ₄ | SM 4500-NH ₃ G. | mg/L | 0.05 | 3.54 | 3.25 | 3.87 |
| Nitrate + Nitrite as N | NO ₃ + NO ₂ | EPA 353.2 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |

| Non-Metals | | | | | | | |
|--------------------------------|-----|-----------------|------------|------|------|------|------|
| Total Dissolved Solids @ 180°C | TDS | SM 2540 C. Mod. | mg/L | 1.0 | 5880 | 5820 | 5830 |
| pH | | SM 4500-H B. | std. units | 0.10 | 4.79 | 3.90 | 3.78 |

| Trace Metals | | | | | | | |
|--------------|----|-----------|------|-------|---------|---------|---------|
| Aluminum | Al | EPA 200.7 | mg/L | 0.10 | 6.86 | 6.14 | 8.31 |
| Arsenic III | As | EPA 206.3 | mg/L | 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Beryllium | Be | EPA 200.7 | mg/L | 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Cadmium | Cd | EPA 200.8 | mg/L | 0.005 | 0.009 | 0.006 | 0.008 |
| Cobalt | Co | EPA 200.7 | mg/L | 0.01 | 0.55 | 0.42 | 0.57 |
| Lead | Pb | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Manganese | Mn | EPA 200.7 | mg/L | 0.01 | 10.5 | 10.6 | 12.0 |
| Molybdenum | Mo | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | 0.14 |
| Nickel | Ni | EPA 200.7 | mg/L | 0.05 | 0.54 | 0.42 | 0.49 |
| Selenium IV | Se | EPA 270.3 | mg/L | 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Vanadium | V | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |

| Radiometrics | | | | | | | |
|----------------------|-------------------|------------|-------|--------|-------|-------|-------|
| Uranium | ²³⁸ U | EPA 200.8 | mg/L | 0.0003 | 0.125 | 0.120 | 0.132 |
| Radium 226 | ²²⁶ Ra | EPA 903.0 | pCi/L | 0.2 | 8.7 | 7.4 | 9.9 |
| Radium Precision ± | | | | | 0.6 | 0.4 | 1.0 |
| Radium 228 | ²²⁸ Ra | EPA 904.0 | pCi/L | 1.0 | 20.9 | 18.3 | 26.1 |
| Radium Precision ± | | | | | 1.3 | 0.8 | 1.8 |
| Thorium 230 | ²³⁰ Th | EPA 907.0 | pCi/L | 0.2 | 1.4 | < 0.2 | < 0.2 |
| Thorium Precision ± | | | | | 0.6 | | |
| Lead 210 | ²¹⁰ Pb | NERHL-65-4 | pCi/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Lead Precision ± | | | | | | | |
| Gross Alpha | | EPA 900.1 | pCi/L | 1.0 | 27.1 | 14.4 | 13.1 |
| G. Alpha Precision ± | | | | | 1.8 | 1.1 | 1.1 |

| Trace Organics | | | | | | | |
|----------------|--|---------|------|-----|-------|-------|-------|
| Chloroform | | EPA 601 | µg/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |

| Quality Assurance Data | | Target Range | | | |
|------------------------|--------|--------------|-------|-------|-------|
| Anion | meq | | 78.76 | 79.88 | 85.26 |
| Cation | meq | | 75.64 | 78.89 | 83.31 |
| WYDEQ A/C Balance | % | -5 - +5 | -2.02 | -0.62 | -1.16 |
| Calc TDS | mg/L | | 4920 | 5021 | 5341 |
| TDS A/C Balance | dec. % | 0.80 - 1.20 | 1.20 | 1.16 | 1.09 |



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UNC MINING AND MILLING: CHURCHROCK OPERATIONS GROUNDWATER MONITORING PROGRAM: ZONE 3 MONITOR WELLS

WELL ID:
 LABORATORY ID:
 SAMPLE DATE:
 REPORT DATE:
 QUARTER REPRESENTED:
 UNC SUBMITTAL #:

| 504-B | 504-B | 504-B |
|----------------|-----------------|-------------------|
| 99-24253 | 99-35531 | 99-33594-002 |
| 04-06-99 | 07-13-99 | 10-05-99 @ 13:35 |
| April 30, 1999 | August 26, 1999 | November 12, 1999 |
| Second '99 | Third '99 | Fourth '99 |
| TE-3-4-99 | TE-5-7-99 | TE-7-10-99 |

| Major Ions | | Method | Units | Reporting Limit | Results | Results | Results |
|------------------------|-----------------------------------|----------------------------|-------|-----------------|---------|---------|---------|
| Calcium | Ca | EPA 200.7 | mg/L | 0.05 | 508 | 522 | 540 |
| Magnesium | Mg | EPA 200.7 | mg/L | 0.01 | 542 | 558 | 583 |
| Sodium | Na | EPA 200.7 | mg/L | 0.05 | 140 | 132 | 152 |
| Potassium | K | EPA 200.7 | mg/L | 0.10 | 12.4 | 13.3 | 12.5 |
| Bicarbonate | HCO ₃ | SM 2320 B. | mg/L | 0.10 | 31.0 | 28.0 | 9.0 |
| Sulfate | SO ₄ | EPA 200.7 | mg/L | 1.0 | 3440 | 3500 | 3740 |
| Chloride | Cl | EPA 200.7 | mg/L | 1.0 | 38.6 | 32.0 | 34.0 |
| Ammonium as N | NH ₄ | SM 4500-NH ₃ G. | mg/L | 0.05 | 0.80 | 0.75 | 0.96 |
| Nitrate + Nitrite as N | NO ₃ + NO ₂ | EPA 353.2 | mg/L | 0.10 | < 0.10 | 0.38 | 0.26 |

| Non-Metals | | | | | | | |
|--------------------------------|-----|-----------------|------------|------|------|------|------|
| Total Dissolved Solids @ 180°C | TDS | SM 2540 C. Mod. | mg/L | 1.0 | 5370 | 5350 | 5260 |
| pH | | SM 4500-H B. | std. units | 0.10 | 6.53 | 6.51 | 5.53 |

| Trace Metals | | | | | | | |
|--------------|----|-----------|------|-------|---------|---------|--------|
| Aluminum | Al | EPA 200.7 | mg/L | 0.10 | 0.37 | 0.17 | < 0.10 |
| Arsenic III | As | EPA 206.3 | mg/L | 0.001 | 0.015 | 0.020 | 0.022 |
| Beryllium | Be | EPA 200.7 | mg/L | 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Cadmium | Cd | EPA 200.8 | mg/L | 0.005 | < 0.005 | < 0.005 | 0.007 |
| Cobalt | Co | EPA 200.7 | mg/L | 0.01 | 0.33 | 0.24 | 0.33 |
| Lead | Pb | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Manganese | Mn | EPA 200.7 | mg/L | 0.01 | 5.80 | 5.70 | 6.27 |
| Molybdenum | Mo | EPA 200.7 | mg/L | 0.10 | 9.48 | 14.6 | 16.3 |
| Nickel | Ni | EPA 200.7 | mg/L | 0.05 | 0.43 | 0.35 | 0.40 |
| Selenium IV | Se | EPA 270.3 | mg/L | 0.001 | < 0.001 | < 0.001 | 0.001 |
| Vanadium | V | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |

| Radiometrics | | | | | | | |
|----------------------|-------------------|------------|-------|--------|--------|--------|--------|
| Uranium | ²³⁸ U | EPA 200.8 | mg/L | 0.0003 | 0.0531 | 0.0288 | 0.0392 |
| Radium 226 | ²²⁶ Ra | EPA 903.0 | pCi/L | 0.2 | 18.8 | 11.1 | 13.5 |
| Radium Precision ± | | | | | 1.7 | 1.0 | 1.1 |
| Radium 228 | ²²⁸ Ra | EPA 904.0 | pCi/L | 1.0 | 17.5 | 14.6 | 16.4 |
| Radium Precision ± | | | | | 1.2 | 1.4 | 1.5 |
| Thorium 230 | ²³⁰ Th | EPA 907.0 | pCi/L | 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Thorium Precision ± | | | | | | | |
| Lead 210 | ²¹⁰ Pb | NERHL-65-4 | pCi/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Lead Precision ± | | | | | | | |
| Gross Alpha | | EPA 900.1 | pCi/L | 1.0 | 50.0 | 17.3 | 12.6 |
| G. Alpha Precision ± | | | | | 4.5 | 1.3 | 1.1 |

| Trace Organics | | | | | | | |
|----------------|--|---------|------|-----|-------|-------|-------|
| Chloroform | | EPA 601 | µg/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |

| Quality Assurance Data | | Target Range | | | | |
|------------------------|--------|--------------|--|-------|-------|-------|
| Anion | meq | | | 73.27 | 74.30 | 79.04 |
| Cation | meq | | | 77.39 | 79.06 | 82.93 |
| WYDEQ A/C Balance | % | -5 - +5 | | 2.73 | 3.10 | 2.40 |
| Calc TDS | mg/L | | | 4704 | 4780 | 5075 |
| TDS A/C Balance | dec. % | 0.80 - 1.20 | | 1.14 | 1.12 | 1.04 |



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**UNC MINING AND MILLING: CHURCHROCK OPERATIONS
GROUNDWATER MONITORING PROGRAM: ZONE 3 MONITOR WELLS**

WELL ID:
LABORATORY ID:
SAMPLE DATE:
REPORT DATE:
QUARTER REPRESENTED:
UNC SUBMITTAL #:

| EPA 9 | EPA 9 | EPA 9 |
|--------------|-----------------|-------------------|
| 99-24808 | 99-35991 | 99-33758-002 |
| 04-13-99 | 07-20-99 | 10-12-99 @ 09:50 |
| May 13, 1999 | August 26, 1999 | November 24, 1999 |
| Second '99 | Third '99 | Fourth '99 |
| TE-4-4-99 | TE-6-7-99 | TE-8-10-99 |

| Major Ions | | Method | Units | Reporting Limit | Results | Results | Results |
|------------------------|-----------------------------------|----------------------------|-------|-----------------|---------|---------|---------|
| Calcium | Ca | EPA 200.7 | mg/L | 0.05 | 472 | 492 | 459 |
| Magnesium | Mg | EPA 200.7 | mg/L | 0.01 | 624 | 634 | 591 |
| Sodium | Na | EPA 200.7 | mg/L | 0.05 | 105 | 104 | 108 |
| Potassium | K | EPA 200.7 | mg/L | 0.10 | 11.8 | 13.1 | 11.6 |
| Bicarbonate | HCO ₃ | SM 2320 B. | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Sulfate | SO ₄ | EPA 200.7 | mg/L | 1.0 | 3750 | 3860 | 3680 |
| Chloride | Cl | EPA 200.7 | mg/L | 1.0 | 38.9 | 32.9 | 32.6 |
| Ammonium as N | NH ₄ | SM 4500-NH ₃ G. | mg/L | 0.05 | 0.66 | 0.48 | 0.57 |
| Nitrate + Nitrite as N | NO ₃ + NO ₂ | EPA 353.2 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |

| Non-Metals | | | | | | | |
|--------------------------------|-----|-----------------|------------|------|------|------|------|
| Total Dissolved Solids @ 180°C | TDS | SM 2540 C. Mod. | mg/L | 1.0 | 5860 | 5930 | 5860 |
| pH | | SM 4500-H B. | std. units | 0.10 | 4.45 | 4.18 | 4.47 |

| Trace Metals | | | | | | | |
|--------------|----|-----------|------|-------|---------|---------|---------|
| Aluminum | Al | EPA 200.7 | mg/L | 0.10 | 3.42 | 2.80 | 3.44 |
| Arsenic III | As | EPA 206.3 | mg/L | 0.001 | < 0.001 | 0.002 | 0.014 |
| Beryllium | Be | EPA 200.7 | mg/L | 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Cadmium | Cd | EPA 200.8 | mg/L | 0.005 | < 0.005 | < 0.005 | < 0.005 |
| Cobalt | Co | EPA 200.7 | mg/L | 0.01 | 0.22 | 0.17 | 0.17 |
| Lead | Pb | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Manganese | Mn | EPA 200.7 | mg/L | 0.01 | 6.28 | 4.90 | 5.84 |
| Molybdenum | Mo | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Nickel | Ni | EPA 200.7 | mg/L | 0.05 | 0.16 | 0.13 | 0.12 |
| Selenium IV | Se | EPA 270.3 | mg/L | 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Vanadium | V | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |

| Radiometric | | | | | | | |
|---------------------------|-------------------|------------|-------|--------|--------|--------|----------|
| Uranium | ²³⁸ U | EPA 200.8 | mg/L | 0.0003 | 0.0015 | 0.0013 | < 0.0003 |
| Radium 226 | ²²⁶ Ra | EPA 903.0 | pCi/L | 0.2 | 11.9 | 12.7 | 12.7 |
| Radium Error Estimate ± | | | | | 1.4 | 1.0 | 1.5 |
| Radium 228 | ²²⁸ Ra | EPA 904.0 | pCi/L | 1.0 | 12.2 | 8.4 | 10.4 |
| Radium Error Estimate ± | | | | | 0.4 | 0.6 | 1.1 |
| Thorium 230 | ²³⁰ Th | EPA 907.0 | pCi/L | 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Thorium Error Estimate ± | | | | | | | |
| Lead 210 | ²¹⁰ Pb | NERHL-65-4 | pCi/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Lead Error Estimate ± | | | | | | | |
| Gross Alpha | | EPA 900.1 | pCi/L | 1.0 | 17.4 | 13.5 | 17.4 |
| G. Alpha Error Estimate ± | | | | | 1.2 | 1.1 | 2.0 |

| Trace Organics | | | | | | | |
|----------------|--|---------|------|-----|-------|-------|-------|
| Chloroform | | EPA 601 | µg/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |

| Quality Assurance Data | | Target Range | | | |
|------------------------|--------|--------------|-------|-------|-------|
| Anion | meq | | 79.23 | 81.35 | 77.59 |
| Cation | meq | | 81.24 | 82.90 | 77.94 |
| WYDEQ A/C Balance | % | -5 - +5 | 1.25 | 0.94 | 0.22 |
| Calc TDS | mg/L | | 5009 | 5142 | 4889 |
| TDS A/C Balance | dec. % | 0.80 - 1.20 | 1.17 | 1.15 | 1.20 |



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**UNC MINING AND MILLING: CHURCHROCK OPERATIONS
GROUNDWATER MONITORING PROGRAM: ZONE 3 MONITOR WELLS**

WELL ID:
LABORATORY ID:
SAMPLE DATE:
REPORT DATE:
QUARTER REPRESENTED:
UNC SUBMITTAL #:

| EPA 13 | EPA 13 | EPA 13 |
|--------------|-----------------|-------------------|
| 99-24807 | 99-35992 | 99-33758-001 |
| 04-13-99 | 07-20-99 | 10-12-99 @ 09:20 |
| May 13, 1999 | August 26, 1999 | November 24, 1999 |
| Second '99 | Third '99 | Fourth '99 |
| TE-4-4-99 | TE-6-7-99 | TE-8-10-99 |

| Major Ions | | Method | Units | Reporting Limit | Results | Results | Results |
|------------------------|-----------------------------------|----------------------------|-------|-----------------|---------|---------|---------|
| Calcium | Ca | EPA 200.7 | mg/L | 0.05 | 456 | 476 | 430 |
| Magnesium | Mg | EPA 200.7 | mg/L | 0.01 | 776 | 791 | 726 |
| Sodium | Na | EPA 200.7 | mg/L | 0.05 | 136 | 134 | 133 |
| Potassium | K | EPA 200.7 | mg/L | 0.10 | 11.1 | 12.8 | 11.4 |
| Bicarbonate | HCO ₃ | SM 2320 B. | mg/L | 0.10 | 86.0 | 77.0 | 100 |
| Sulfate | SO ₄ | EPA 200.7 | mg/L | 1.0 | 4200 | 4260 | 3890 |
| Chloride | Cl | EPA 200.7 | mg/L | 1.0 | 46.0 | 42.0 | 40.7 |
| Ammonium as N | NH ₄ | SM 4500-NH ₃ G. | mg/L | 0.05 | 0.69 | 0.53 | 0.53 |
| Nitrate + Nitrite as N | NO ₃ + NO ₂ | EPA 353.2 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |

| Non-Metals | | | | | | | |
|--------------------------------|-----|-----------------|------------|------|------|------|------|
| Total Dissolved Solids @ 180°C | TDS | SM 2540 C. Mod. | mg/L | 1.0 | 6520 | 6510 | 6520 |
| pH | | SM 4500-H B. | std. units | 0.10 | 6.93 | 6.94 | 7.16 |

| Trace Metals | | | | | | | |
|--------------|----|-----------|------|-------|---------|---------|---------|
| Aluminum | Al | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Arsenic III | As | EPA 206.3 | mg/L | 0.001 | < 0.717 | < 0.001 | < 0.443 |
| Beryllium | Be | EPA 200.7 | mg/L | 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Cadmium | Cd | EPA 200.8 | mg/L | 0.005 | < 0.005 | < 0.005 | < 0.005 |
| Cobalt | Co | EPA 200.7 | mg/L | 0.01 | 0.06 | 0.06 | 0.04 |
| Lead | Pb | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Manganese | Mn | EPA 200.7 | mg/L | 0.01 | 5.96 | 4.60 | 5.63 |
| Molybdenum | Mo | EPA 200.7 | mg/L | 0.10 | 0.33 | 0.26 | 0.30 |
| Nickel | Ni | EPA 200.7 | mg/L | 0.05 | 0.10 | 0.10 | < 0.05 |
| Selenium IV | Se | EPA 270.3 | mg/L | 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Vanadium | V | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |

| Radiometric | | | | | | | |
|---------------------------|-------------------|------------|-------|--------|--------|--------|--------|
| Uranium | ²³⁵ U | EPA 200.8 | mg/L | 0.0003 | 0.0284 | 0.0242 | 0.0237 |
| Radium 226 | ²²⁶ Ra | EPA 903.0 | pCi/L | 0.2 | 5.3 | 4.3 | 4.5 |
| Radium Error Estimate ± | | | | | 0.5 | 0.3 | 0.9 |
| Radium 228 | ²²⁸ Ra | EPA 904.0 | pCi/L | 1.0 | 6.8 | 6.8 | 6.9 |
| Radium Error Estimate ± | | | | | 0.4 | 0.6 | 1.0 |
| Thorium 230 | ²³⁰ Th | EPA 907.0 | pCi/L | 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Thorium Error Estimate ± | | | | | | | |
| Lead 210 | ²¹⁰ Pb | NERHL-65-4 | pCi/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Lead Error Estimate ± | | | | | | | |
| Gross Alpha | | EPA 900.1 | pCi/L | 1.0 | 8.4 | 8.6 | 5.1 |
| G. Alpha Error Estimate ± | | | | | 0.9 | 0.9 | 0.7 |

| Trace Organics | | | | | | | |
|----------------|--|---------|------|-----|-------|-------|-------|
| Chloroform | | EPA 601 | µg/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |

| Quality Assurance Data | | Target Range | | | | |
|------------------------|--|--------------|-------------|-------|-------|-------|
| Anion | | meq | | 90.21 | 91.20 | 83.83 |
| Cation | | meq | | 94.05 | 96.17 | 88.43 |
| WYDEQ A/C Balance | | % | -5 - +5 | 2.08 | 2.65 | 2.67 |
| Calc TDS | | mg/L | | 5675 | 5760 | 5288 |
| TDS A/C Balance | | dec. % | 0.80 - 1.20 | 1.15 | 1.13 | 1.23 |

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UNC MINING AND MILLING: CHURCHROCK OPERATIONS
GROUNDWATER MONITORING PROGRAM: ZONE 3 MONITOR WELLS

WELL ID:
LABORATORY ID:
SAMPLE DATE:
REPORT DATE:
QUARTER REPRESENTED:
UNC SUBMITTAL #:

| EPA 14 | EPA 14 | EPA 14 |
|--------------|-----------------|-------------------|
| 99-24809 | 99-35993 | 99-33758-003 |
| 04-13-99 | 07-20-99 | 10-12-99 @ 14:55 |
| May 13, 1999 | August 26, 1999 | November 24, 1999 |
| Second '99 | Third '99 | Fourth '99 |
| TE-4-4-99 | TE-6-7-99 | TE-8-10-99 |

| Major Ions | | Method | Units | Reporting Limit | Results | Results | Results |
|------------------------|-----------------------------------|----------------------------|-------|-----------------|---------|---------|---------|
| Calcium | Ca | EPA 200.7 | mg/L | 0.05 | 656 | 683 | 669 |
| Magnesium | Mg | EPA 200.7 | mg/L | 0.01 | 191 | 217 | 191 |
| Sodium | Na | EPA 200.7 | mg/L | 0.05 | 130 | 124 | 122 |
| Potassium | K | EPA 200.7 | mg/L | 0.10 | 7.7 | 9.6 | 7.9 |
| Bicarbonate | HCO ₃ | SM 2320 B. | mg/L | 0.10 | 647 | 667 | 746 |
| Sulfate | SO ₄ | EPA 200.7 | mg/L | 1.0 | 1820 | 1900 | 1630 |
| Chloride | Cl | EPA 200.7 | mg/L | 1.0 | 70.2 | 70.0 | 71.2 |
| Ammonium as N | NH ₄ | SM 4500-NH ₃ G. | mg/L | 0.05 | 1.08 | 2.07 | 2.01 |
| Nitrate + Nitrite as N | NO ₃ + NO ₂ | EPA 353.2 | mg/L | 0.10 | 33.9 | 31.3 | 32.3 |

| Non-Metals | | | | | | | |
|--------------------------------|-----|-----------------|------------|------|------|------|------|
| Total Dissolved Solids @ 180°C | TDS | SM 2540 C. Mod. | mg/L | 1.0 | 3690 | 3730 | 3700 |
| pH | | SM 4500-H B. | std. units | 0.10 | 7.93 | 7.94 | 7.68 |

| Trace Metals | | | | | | | |
|--------------|----|-----------|------|-------|---------|---------|---------|
| Aluminum | Al | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Arsenic III | As | EPA 206.3 | mg/L | 0.001 | 0.002 | 0.004 | < 0.001 |
| Beryllium | Be | EPA 200.7 | mg/L | 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Cadmium | Cd | EPA 200.8 | mg/L | 0.005 | 0.005 | < 0.005 | < 0.005 |
| Cobalt | Co | EPA 200.7 | mg/L | 0.01 | 0.03 | 0.03 | 0.02 |
| Lead | Pb | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Manganese | Mn | EPA 200.7 | mg/L | 0.01 | 2.83 | 2.24 | 2.86 |
| Molybdenum | Mo | EPA 200.7 | mg/L | 0.10 | 0.15 | 0.14 | 0.15 |
| Nickel | Ni | EPA 200.7 | mg/L | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Selenium IV | Se | EPA 270.3 | mg/L | 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Vanadium | V | EPA 200.7 | mg/L | 0.10 | < 0.10 | < 0.10 | < 0.10 |

| Radiometric | | | | | | | |
|---------------------------|-------------------|------------|-------|--------|-------|-------|-------|
| Uranium | ²³⁸ U | EPA 200.8 | mg/L | 0.0003 | 0.110 | 0.114 | 0.127 |
| Radium 226 | ²²⁶ Ra | EPA 903.0 | pCi/L | 0.2 | 7.8 | 5.1 | 3.5 |
| Radium Error Estimate ± | | | | | 0.6 | 0.4 | 0.4 |
| Radium 228 | ²²⁸ Ra | EPA 904.0 | pCi/L | 1.0 | 9.4 | 6.8 | 7.1 |
| Radium Error Estimate ± | | | | | 0.4 | 0.6 | 1.0 |
| Thorium 230 | ²³⁰ Th | EPA 907.0 | pCi/L | 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Thorium Error Estimate ± | | | | | | | |
| Lead 210 | ²¹⁰ Pb | NERHL-65-4 | pCi/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Lead Error Estimate ± | | | | | | | |
| Gross Alpha | | EPA 900.1 | pCi/L | 1.0 | 10.8 | 6.7 | 5.2 |
| G. Alpha Error Estimate ± | | | | | 1.8 | 0.8 | 0.7 |

| Trace Organics | | | | | | | |
|----------------|--|---------|------|-----|-------|-------|-------|
| Chloroform | | EPA 601 | µg/L | 1.0 | < 1.0 | < 1.0 | < 1.0 |

| Quality Assurance Data | | | Target Range | | | |
|------------------------|--|--------|--------------|-------|-------|-------|
| Anion | | meq | | 52.92 | 54.73 | 50.50 |
| Cation | | meq | | 54.81 | 58.15 | 55.18 |
| WYDEQ A/C Balance | | % | -5 - +5 | 1.75 | 3.04 | 4.43 |
| Calc TDS | | mg/L | | 3353 | 3481 | 3213 |
| TDS A/C Balance | | dec. % | 0.80 - 1.20 | 1.10 | 1.07 | 1.15 |