

Semi-Annual Ground-Water Monitoring Report — Second Half, 1996

**L-Bar Uranium Mine,
Cibola County, New Mexico**

Prepared for:

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June 1997

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1.0 INTRODUCTION

The enclosed Semi-Annual Ground-Water Monitoring Report contains results of sample analyses for the second half of 1996 for the L-Bar Uranium facility, as required by conditions 12 and 31 of NRC Materials License SUA-1472, Amendment 26, and 10 CFR 40, Section 40.65.

The laboratories used for this round of analyses were Core Laboratories of Aurora, Colorado, for most non-radiological analyses, and Core Laboratories of Casper, Wyoming, for radiological and selenium analyses.

L-BAR URANIUM MINE

SEMI-ANNUAL GROUND-WATER MONITORING REPORT
SECOND HALF — 1996L-BAR MINE
Well MW-1AGround-Water Sample
Date Sampled: 10/16/96

| CONSTITUENT | | VALUE | |
|---|-------|-----------------|-----------|
| Ground Surface Elevation (ft AMSL)Elevation Top | | 6,222.94 | |
| of Casing (TOC) (ft AMSL) | | 6,224.44 | |
| Depth to Water from TOC (ft) | | 109.49 | |
| Water Level (ft AMSL) | | 6,114.95 | |
| Temp (°C) | | 17.0 | |
| pH | | 7.65 | |
| Conductivity (µmhos/cm @ 25°C) | | 4,650 | |
| Cl (mg/l) | | 99.8 | |
| SO ₄ (mg/l) | | 1,600 | |
| NO ₃ (mg/l) | | <0.1 | |
| Ni (mg/l) | | <0.04 | |
| Sb (mg/l) | | <0.1 | |
| Se (mg/l) | | 0.005 | |
| U (mg/l) | | <0.001 | |
| | Total | Total Error +/- | Total LLD |
| Ra226 (pCi/l) | 1 | 0.3 | 0.5 |
| Ra228 (pCi/l) | 0.3 | 0.6 | 1.4 |
| Th230 (pCi/l) | 0.8 | 0.4 | 0.3 |

(<) = Result less than detection limit

L-BAR MINE
Well MW-2AGround-Water Sample
Date Sampled: 10/15/96

| CONSTITUENT | VALUE |
|---|----------|
| Ground Surface Elevation (ft AMSL) | 6,186.58 |
| Elevation Top of Casing (TOC) (ft AMSL) | 6,189.56 |
| Depth to Water from TOC (ft) | NA |
| Water Level (ft AMSL) | NA |
| Temp (°C) | 19.0 |
| pH | 6.72 |
| Conductivity (μ mhos/cm @ 25°C) | 14,100 |
| Cl (mg/l) | 781 |
| SO ₄ (mg/l) | 6,000 |
| NO ₃ (mg/l) | 280 |

NA = Not Applicable - pumpback well

L-BAR URANIUM MINE

SEMI-ANNUAL GROUND-WATER MONITORING REPORT
SECOND HALF — 1996L-BAR MINE
Well MW-3AGround-Water Sample
Date Sampled: 10/16/96

| CONSTITUENT | VALUE |
|---|----------|
| Ground Surface Elevation (ft AMSL) | 6,155.76 |
| Elevation Top of Casing (TOC) (ft AMSL) | 6,157.51 |
| Depth to Water from TOC (ft) | 25.63 |
| Water Level (ft AMSL) | 6,131.88 |
| Temp (°C) | 19.0 |
| pH | 7.2 |
| Conductivity (μ mhos/cm @ 25°C) | 17,000 |
| Cl (mg/l) | 668 |
| SO ₄ (mg/l) | 10,000 |

L-BAR MINE
Well MW-14Ground-Water Sample
Date Sampled: 10/16/96

| CONSTITUENT | VALUE |
|---|----------|
| Ground Surface Elevation (ft AMSL) | 6,154.00 |
| Elevation Top of Casing (TOC) (ft AMSL) | 6,155.70 |
| Depth to Water from TOC (ft) | 37.40 |
| Water Level (ft AMSL) | 6,118.30 |
| Temp (°C) | 20.0 |
| pH | 7.13 |
| Conductivity (μ mhos/cm @ 25°C) | 10,800 |
| Cl (mg/l) | 449 |
| SO ₄ (mg/l) | 6,000 |

L-BAR URANIUM MINE

SEMI-ANNUAL GROUND-WATER MONITORING REPORT
SECOND HALF — 1996L-BAR MINE
Well MW-17BGround-Water Sample
Date Sampled: 10/16/96

| CONSTITUENT | | VALUE | |
|---|-------|-----------------|-----------|
| Ground Surface Elevation (ft AMSL) | | 6,180.37 | |
| Elevation Top of Casing (TOC) (ft AMSL) | | 6,181.62 | |
| Depth to Water from TOC (ft) | | 43.28 | |
| Water Level (ft AMSL) | | 6,138.34 | |
| Temp (°C) | | 18.5 | |
| pH | | 6.82 | |
| Conductivity (μ mhos/cm @ 25°C) | | 11,500 | |
| Cl (mg/l) | | 373 | |
| SO ₄ (mg/l) | | 5,000 | |
| NO ₃ (mg/l) | | 360 | |
| Ni (mg/l) | | <0.04 | |
| Sb (mg/l) | | <0.1 | |
| CN (mg/l) | | 0.05 | |
| Se (mg/l) | | 0.003 | |
| U (mg/l) | | 0.032 | |
| | Total | Total Error +/- | Total LLD |
| Ra226 (pCi/l) | 10.2 | 0.9 | 0.5 |
| Ra228 (pCi/l) | 3.5 | 0.8 | 1.4 |
| Th230 (pCi/l) | 0.5 | 0.3 | 0.4 |

(<) = Result less than detection limit

L-BAR URANIUM MINE

SEMI-ANNUAL GROUND-WATER MONITORING REPORT
SECOND HALF — 1996L-BAR MINE
Well MW-29AGround-Water Sample
Date Sampled: 10/15/96

| CONSTITUENT | | VALUE | |
|---|--------------|------------------------|------------------|
| Ground Surface Elevation (ft AMSL) | | 6,194.00 | |
| Elevation Top of Casing (TOC) (ft AMSL) | | 6,194.84 | |
| Depth to Water from TOC (ft) | | 58.44 | |
| Water Level (ft AMSL) | | 6,136.40 | |
| Temp (°C) | | 17.0 | |
| pH | | 7.41 | |
| Conductivity (μ mhos/cm @ 25°C) | | 7,010 | |
| Cl (mg/l) | | 104 | |
| SO ₄ (mg/l) | | 3,000 | |
| NO ₃ (mg/l) | | <0.1 | |
| Ni (mg/l) | | <0.04 | |
| Sb (mg/l) | | <0.1 | |
| Se (mg/l) | | 0.003 | |
| U (mg/l) | | <0.001 | |
| | <u>Total</u> | <u>Total Error +/-</u> | <u>Total MLD</u> |
| Ra226 (pCi/l) | 7.2 | 1.5 | 0.6 |
| Ra228 (pCi/l) | 4.3 | 0.8 | 1.4 |
| Th230 (pCi/l) | 0.2 | 0.3 | 0.3 |

(<) = Result less than detection limit

L-BAR MINE
Well MW-50Ground-Water Sample
Date Sampled: 10/15/96

| CONSTITUENT | VALUE |
|---|----------|
| Ground Surface Elevation (ft AMSL) | 6,186.69 |
| Elevation Top of Casing (TOC) (ft AMSL) | 6,188.34 |
| Depth to Water from TOC (ft) | 49.58 |
| Water Level (ft AMSL) | 6,138.76 |
| Temp (°C) | 17.0 |
| pH | 7.27 |
| Conductivity (μ mhos/cm @ 25°C) | 11,800 |
| Cl (mg/l) | 516 |
| SO ₄ (mg/l) | 4,000 |
| NO ₃ (mg/l) | 490 |
| Ni (mg/l) | <0.04 |
| Se (mg/l) | NA |

(<) = Result less than detection limit
NA = Not Analyzed

L-BAR MINE
Well MW-57Ground-Water Sample
Date Sampled: 10/21/96

| CONSTITUENT | VALUE |
|---|----------|
| Ground Surface Elevation (ft AMSL) | 6,130.76 |
| Elevation Top of Casing (TOC) (ft AMSL) | 6,131.71 |
| Depth to Water from TOC (ft) | 25.89 |
| Water Level (ft AMSL) | 6,105.82 |
| Temp (°C) | 12.0 |
| pH | 8.00 |
| Conductivity (μ mhos/cm @ 25°C) | 4,550 |
| Cl (mg/l) | 80.4 |
| SO ₄ (mg/l) | 2,100 |

L-BAR MINE
Well MW-58Ground-Water Sample
Date Sampled: 10/21/96

| CONSTITUENT | VALUE |
|---|----------|
| Ground Surface Elevation (ft AMSL) | 6,148.29 |
| Elevation Top of Casing (TOC) (ft AMSL) | 6,149.75 |
| Depth to Water from TOC (ft) | 35.86 |
| Water Level (ft AMSL) | 6,113.89 |
| Temp (°C) | 11.0 |
| pH | 8.14 |
| Conductivity (μ mhos/cm @ 25°C) | 2,840 |
| Cl (mg/l) | 59.5 |
| SO ₄ (mg/l) | 800 |

L-BAR MINE
Well MW-61Ground-Water Sample
Date Sampled: 10/25/96

| CONSTITUENT | VALUE |
|---|----------|
| Ground Surface Elevation (ft AMSL) | 6,124.05 |
| Elevation Top of Casing (TOC) (ft AMSL) | 6,124.87 |
| Depth to Water from TOC (ft) | 36.62 |
| Water Level (ft AMSL) | 6,088.25 |
| Temp (°C) | 13.0 |
| pH | 7.67 |
| Conductivity (μ mhos/cm @ 25°C) | 6,980 |
| Cl (mg/l) | 106 |
| SO ₄ (mg/l) | 3,200 |

L-BAR MINE
Well MW-69Ground-Water Sample
Date Sampled: 10/15/96

| CONSTITUENT | | VALUE | |
|---|-------|-----------------|-----------|
| Ground Surface Elevation (ft AMSL) | | 6,158.51 | |
| Elevation Top of Casing (TOC) (ft AMSL) | | 6,159.69 | |
| Depth to Water from TOC (ft) | | NA | |
| Water Level (ft AMSL) | | NA | |
| Temp (°C) | | 15.0 | |
| pH | | 7.06 | |
| Conductivity (μ mhos/cm @ 25°C) | | 12,100 | |
| Cl (mg/l) | | 596 | |
| SO ₄ (mg/l) | | 6,000 | |
| NO ₃ (mg/l) | | 2.9 | |
| Ni (mg/l) | | <0.04 | |
| Sb (mg/l) | | <0.1 | |
| Se (mg/l) | | <0.001 | |
| U (mg/l) | | 0.91 | |
| | Total | Total Error +/- | Total LLD |
| Ra226 (pCi/l) | 7.9 | 0.8 | 0.5 |
| Ra228 (pCi/l) | 5.3 | 0.9 | 1.4 |
| Th230 (pCi/l) | 0.4 | 0.3 | 0.3 |

NA = Not Applicable - pumpback well
(<) = Result less than detection limit

L-BAR MINE
Well MW-72Ground-Water Sample
Date Sampled: 10/16/96

| CONSTITUENT | VALUE |
|---|----------|
| Ground Surface Elevation (ft AMSL) | 6,163.31 |
| Elevation Top of Casing (TOC) (ft AMSL) | 6,164.52 |
| Depth to Water from TOC (ft) | 28.55 |
| Water Level (ft AMSL) | 6,135.97 |
| Temp (°C) | 15.0 |
| pH | 7.0 |
| Conductivity (μ mhos/cm @ 25°C) | 7,670 |
| Cl (mg/l) | 179 |
| SO ₄ (mg/l) | 4,200 |

L-BAR MINE
Well MW-76Ground-Water Sample
Date Sampled: 10/18/96

| CONSTITUENT | VALUE |
|---|----------|
| Ground Surface Elevation (ft AMSL) | 6,135.50 |
| Elevation Top of Casing (TOC) (ft AMSL) | 6,136.22 |
| Depth to Water from TOC (ft) | 20.41 |
| Water Level (ft AMSL) | 6,115.81 |
| Temp (°C) | 14.0 |
| pH | 7.92 |
| Conductivity (μ mhos/cm @ 25°C) | 7,660 |
| Cl (mg/l) | 107 |
| SO ₄ (mg/l) | 3,500 |

L-BAR MINE
Well MW-77Ground-Water Sample
Date Sampled: 10/18/96

| CONSTITUENT | VALUE |
|---|----------|
| Ground Surface Elevation (ft AMSL) | 6,143.04 |
| Elevation Top of Casing (TOC) (ft AMSL) | 6,143.66 |
| Depth to Water from TOC (ft) | NA |
| Water Level (ft AMSL) | NA |
| Temp (°C) | 17.0 |
| pH | 7.48 |
| Conductivity (μ mhos/cm @ 25°C) | 8,520 |
| Cl (mg/l) | 277 |
| SO ₄ (mg/l) | 4,700 |

NA = Not Applicable - pumpback well

L-BAR MINE
Well MW-78Ground-Water Sample
Date Sampled: 10/25/96

| CONSTITUENT | VALUE |
|---|----------|
| Ground Surface Elevation (ft AMSL) | 6,149.67 |
| Elevation Top of Casing (TOC) (ft AMSL) | 6,150.73 |
| Depth to Water from TOC (ft) | 34.45 |
| Water Level (ft AMSL) | 6,116.28 |
| Temp (°C) | 14.0 |
| pH | 7.36 |
| Conductivity (μ mhos/cm @ 25°C) | 6,600 |
| Cl (mg/l) | 139 |
| SO ₄ (mg/l) | 3,400 |

L-BAR MINE
Well MW-79Ground-Water Sample
Date Sampled: 10/19/96

| CONSTITUENT | VALUE |
|---|----------|
| Ground Surface Elevation (ft AMSL) | 6,134.23 |
| Elevation Top of Casing (TOC) (ft AMSL) | 6,135.37 |
| Depth to Water from TOC (ft) | 23.33 |
| Water Level (ft AMSL) | 6,112.04 |
| Temp (°C) | 15.0 |
| pH | 7.95 |
| Conductivity (μ mhos/cm @ 25°C) | 7,470 |
| Cl (mg/l) | 105 |
| SO ₄ (mg/l) | 2,200 |

L-BAR MINE
Well MW-81Ground-Water Sample
Date Sampled: 10/18/96

| CONSTITUENT | | VALUE | |
|---|-------|-----------------|-----------|
| Ground Surface Elevation (ft AMSL) | | 6,164.40 | |
| Elevation Top of Casing (TOC) (ft AMSL) | | 6,165.26 | |
| Depth to Water from TOC (ft) | | 45.77 | |
| Water Level (ft AMSL) | | 6,119.49 | |
| Temp (°C) | | 14.0 | |
| pH | | 7.56 | |
| Conductivity (μmhos/cm @ 25°C) | | 8,660 | |
| Cl (mg/l) | | 204 | |
| SO ₄ (mg/l) | | 5,000 | |
| NO ₃ (mg/l) | | 32 | |
| Ni (mg/l) | | <0.04 | |
| Sb (mg/l) | | <0.1 | |
| Se (mg/l) | | 0.002 | |
| U (mg/l) | | 0.012 | |
| | Total | Total Error +/- | Total LLD |
| Ra226 (pCi/l) | 6.7 | 0.7 | 0.4 |
| Ra228 (pCi/l) | 4.4 | 0.7 | 1.2 |
| Th230 (pCi/l) | 0.6 | 0.4 | 0.3 |

(<) = Result less than detection limit

L-BAR MINE
Well MW-91Ground-Water Sample
Date Sampled: 10/22/96

| CONSTITUENT | | VALUE | |
|---|-------|-----------------|-----------|
| Ground Surface Elevation (ft AMSL) | | 6,188.36 | |
| Elevation Top of Casing (TOC) (ft AMSL) | | 6,190.24 | |
| Depth to Water from TOC (ft) | | 53.97 | |
| Water Level (ft AMSL) | | 6,136.27 | |
| Temp (°C) | | 15.0 | |
| pH | | 7.53 | |
| Conductivity (μ mhos/cm @ 25°C) | | 6,280 | |
| Cl (mg/l) | | 38.1 | |
| SO ₄ (mg/l) | | 3,600 | |
| NO ₃ (mg/l) | | <0.1 | |
| Ni (mg/l) | | <0.04 | |
| Sb (mg/l) | | <0.1 | |
| Se (mg/l) | | <0.001 | |
| U (mg/l) | | 0.002 | |
| | Total | Total Error +/- | Total LLD |
| Ra226 (pCi/l) | 6.7 | 0.8 | 0.4 |
| Ra228 (pCi/l) | 6.7 | 0.9 | 1.2 |
| Th230 (pCi/l) | 0.4 | 0.4 | 0.4 |

< = Result less than detection limit