

**Scientific  
Drilling**

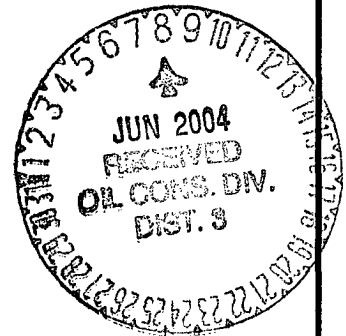
**DIRECTIONAL SURVEY REPORT**

**Prepared For**

30-039-27556

**D.J. SIMMONS**  
**Byrne Federal 24-1X<sup>R</sup>**  
**Rio Arriba County, NM**

Surface 1623/N, 956/W  
BNL 1902/N, 2160/W



**Prepared By:**  
**Judi Moore, Well Planner**  
**Scientific Drilling International**  
**Rocky Mountain District**

Scientific Drilling International  
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COPY



# Scientific Drilling Survey Completion Report

|                                     |                                   |                                              |                   |
|-------------------------------------|-----------------------------------|----------------------------------------------|-------------------|
| <b>Company:</b> D.J. SIMMONS        | <b>Date:</b> 5/13/2004            | <b>Time:</b> 11:20:56                        | <b>Page:</b> 1    |
| <b>Field:</b> Rio Arriba County, NM | <b>Co-ordinate(NE) Reference:</b> | <b>Site:</b> Byrne Federal 24-1X, True North |                   |
| <b>Site:</b> Byrne Federal 24-1X    | <b>Vertical (TVD) Reference:</b>  | <b>SITE</b> 0.0                              |                   |
| <b>Well:</b> #24-1X                 | <b>Section (VS) Reference:</b>    | <b>Well</b> (0.00N,0.00E,102.48Azi)          |                   |
| <b>Wellpath:</b> OH                 | <b>Survey Calculation Method:</b> | <b>Minimum Curvature</b>                     | <b>Db:</b> Sybase |

**Survey:** Survey #1 **Start Date:** 3/2/2004

**Company:** Scientific Drilling **Engineer:** J.J.Bayert/Wrobleske  
**Tool:** MWD,E-Field **Tied-to:** From Surface

**Field:** Rio Arriba County, NM

**Map System:** US State Plane Coordinate System 1927 **Map Zone:** New Mexico, Western Zone  
**Geo Datum:** NAD27 (Clarke 1866) **Coordinate System:** Site Centre  
**Sys Datum:** Mean Sea Level **Geomagnetic Model:** igrf2000

**Site:** Byrne Federal 24-1X  
SHL SEC.24,T25N,R3W 1624'FNL & 956'FWL  
PBHL 1910'FNL & 2250'FWL

|                                      |                  |           |                                   |
|--------------------------------------|------------------|-----------|-----------------------------------|
| <b>Site Position:</b>                | <b>Northing:</b> | <b>ft</b> | <b>Latitude:</b>                  |
| <b>From:</b> Lease Line              | <b>Easting:</b>  | <b>ft</b> | <b>Longitude:</b>                 |
| <b>Position Uncertainty:</b> 0.00 ft |                  |           | <b>North Reference:</b> True      |
| <b>Ground Level:</b> 7206.00 ft      |                  |           | <b>Grid Convergence:</b> 0.47 deg |

**Well:** #24-1X **Slot Name:**

|                                      |                      |                                |                                  |
|--------------------------------------|----------------------|--------------------------------|----------------------------------|
| <b>Well Position:</b>                | <b>+N/-S</b> 0.00 ft | <b>Northing:</b> 1930805.81 ft | <b>Latitude:</b> 36 18 14.000 N  |
|                                      | <b>+E/-W</b> 0.00 ft | <b>Easting :</b> 732452.64 ft  | <b>Longitude:</b> 107 2 40.000 W |
| <b>Position Uncertainty:</b> 0.00 ft |                      |                                |                                  |

**Wellpath:** OH

|                                           |                       |                                           |
|-------------------------------------------|-----------------------|-------------------------------------------|
| <b>Current Datum:</b> SITE                | <b>Height</b> 0.00 ft | <b>Drilled From:</b> Surface              |
| <b>Magnetic Data:</b> 10/28/2003          |                       | <b>Tie-on Depth:</b> 0.00 ft              |
| <b>Field Strength:</b> 51518 nT           |                       | <b>Above System Datum:</b> Mean Sea Level |
| <b>Vertical Section:</b> Depth From (TVD) | <b>+N/-S</b> ft       | <b>Declination:</b> 10.64 deg             |
|                                           |                       | <b>Mag Dip Angle:</b> 63.46 deg           |
|                                           |                       | <b>+E/-W</b> ft                           |
|                                           |                       | <b>Direction</b> deg                      |
| 8243.00                                   | 0.00                  | 0.00 102.48                               |

## Survey

| Meas Depth<br>ft | Inclination<br>deg | Azimuth<br>deg | TVD<br>ft | Vert Sect<br>ft | N/S<br>ft | E/W<br>ft | DLS<br>deg/100ft | CLen<br>ft | CLSD<br>ft | CLSA<br>deg |
|------------------|--------------------|----------------|-----------|-----------------|-----------|-----------|------------------|------------|------------|-------------|
| 0.00             | 25.86              | 122.75         | 0.00      | 0.00            | 0.00      | 0.00      | 0.00             | 0.00       | 0.00       | 0.00        |
| 100.00           | 0.17               | 100.40         | 96.62     | 20.96           | -12.03    | 18.80     | FmtE             | 100.00     | 22.32      | 122.60      |
| 200.00           | 0.26               | 215.04         | 196.62    | 21.02           | -12.24    | 18.82     | 0.37             | 100.00     | 22.45      | 123.04      |
| 300.00           | 0.40               | 170.91         | 296.62    | 21.06           | -12.77    | 18.74     | 0.28             | 100.00     | 22.68      | 124.27      |
| 400.00           | 0.25               | 153.09         | 396.62    | 21.33           | -13.31    | 18.90     | 0.18             | 100.00     | 23.11      | 125.15      |
| 500.00           | 0.24               | 140.15         | 496.61    | 21.63           | -13.66    | 19.13     | 0.06             | 100.00     | 23.51      | 125.54      |
| 600.00           | 0.32               | 143.41         | 596.61    | 22.01           | -14.05    | 19.43     | 0.08             | 100.00     | 23.98      | 125.87      |
| 700.00           | 0.47               | 127.55         | 696.61    | 22.59           | -14.52    | 19.92     | 0.18             | 100.00     | 24.66      | 126.09      |
| 800.00           | 0.58               | 122.89         | 796.61    | 23.44           | -15.05    | 20.67     | 0.12             | 100.00     | 25.57      | 126.05      |
| 900.00           | 0.58               | 127.14         | 896.60    | 24.37           | -15.63    | 21.50     | 0.04             | 100.00     | 26.58      | 126.01      |
| 1000.00          | 0.59               | 143.98         | 996.60    | 25.22           | -16.35    | 22.21     | 0.17             | 100.00     | 27.58      | 126.36      |
| 1100.00          | 0.48               | 138.82         | 1096.59   | 25.94           | -17.08    | 22.79     | 0.12             | 100.00     | 28.48      | 126.86      |
| 1200.00          | 0.57               | 137.07         | 1196.59   | 26.69           | -17.76    | 23.40     | 0.09             | 100.00     | 29.38      | 127.20      |
| 1300.00          | 0.58               | 138.88         | 1296.58   | 27.50           | -18.51    | 24.07     | 0.02             | 100.00     | 30.37      | 127.55      |
| 1400.00          | 0.43               | 148.56         | 1396.58   | 28.17           | -19.21    | 24.60     | 0.17             | 100.00     | 31.21      | 127.98      |
| 1500.00          | 0.55               | 124.01         | 1496.58   | 28.88           | -19.80    | 25.20     | 0.24             | 100.00     | 32.04      | 128.16      |
| 1600.00          | 0.61               | 110.11         | 1596.57   | 29.85           | -20.25    | 26.09     | 0.15             | 100.00     | 33.03      | 127.81      |
| 1700.00          | 0.58               | 104.73         | 1696.56   | 30.89           | -20.56    | 27.08     | 0.06             | 100.00     | 34.00      | 127.21      |
| 1800.00          | 0.66               | 100.65         | 1796.56   | 31.97           | -20.80    | 28.14     | 0.09             | 100.00     | 34.99      | 126.47      |
| 1900.00          | 0.64               | 80.37          | 1896.55   | 33.06           | -20.81    | 29.26     | 0.23             | 100.00     | 35.90      | 125.42      |
| 2000.00          | 0.71               | 77.95          | 1996.55   | 34.14           | -20.59    | 30.41     | 0.08             | 100.00     | 36.72      | 124.10      |
| 2100.00          | 0.94               | 71.45          | 2096.54   | 35.41           | -20.20    | 31.80     | 0.25             | 100.00     | 37.67      | 122.42      |
| 2200.00          | 1.02               | 68.31          | 2196.52   | 36.85           | -19.61    | 33.40     | 0.10             | 100.00     | 38.73      | 120.41      |
| 2300.00          | 1.46               | 73.81          | 2296.50   | 38.70           | -18.92    | 35.45     | 0.46             | 100.00     | 40.18      | 118.09      |



Scientific  
Drilling

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Company: D.J. SIMMONS  
Field: Rio Arriba County, NM  
Site: Byrne Federal 24-1X  
Well: #24-1X  
Wellpath: OH

Date: 5/13/2004 Time: 11:20:56 Page: 2  
Co-ordinate(NE) Reference: Site: Byrne Federal 24-1X, True North  
Vertical (TVD) Reference: SITE 0.0  
Section (VS) Reference: Well (0.00N,0.00E,102.48Azi)  
Survey Calculation Method: Minimum Curvature Db: Sybase

## Survey

| Meas Depth<br>ft | Inclination<br>deg | Azimuth<br>deg | TVD<br>ft | Vert Sect<br>ft | N/S<br>ft | E/W<br>ft | DLS<br>deg/100ft | CLen<br>ft | ClSD<br>ft | ClSA<br>deg |
|------------------|--------------------|----------------|-----------|-----------------|-----------|-----------|------------------|------------|------------|-------------|
| 2400.00          | 1.58               | 72.13          | 2396.46   | 41.01           | -18.14    | 37.99     | 0.13             | 100.00     | 42.10      | 115.53      |
| 2500.00          | 2.09               | 68.58          | 2496.41   | 43.71           | -17.05    | 41.00     | 0.52             | 100.00     | 44.40      | 112.59      |
| 2600.00          | 2.48               | 76.84          | 2596.33   | 47.18           | -15.90    | 44.80     | 0.51             | 100.00     | 47.54      | 109.54      |
| 2700.00          | 2.55               | 71.14          | 2696.23   | 51.03           | -14.68    | 49.01     | 0.26             | 100.00     | 51.16      | 106.68      |
| 2800.00          | 2.30               | 74.72          | 2796.14   | 54.70           | -13.44    | 53.05     | 0.29             | 100.00     | 54.73      | 104.21      |
| 2900.00          | 2.00               | 79.08          | 2896.07   | 58.08           | -12.58    | 56.70     | 0.34             | 100.00     | 58.08      | 102.51      |
| 3000.00          | 1.73               | 83.53          | 2996.02   | 61.11           | -12.08    | 59.91     | 0.31             | 100.00     | 61.12      | 101.40      |
| 3100.00          | 1.79               | 87.61          | 3095.97   | 64.05           | -11.84    | 62.98     | 0.14             | 100.00     | 64.08      | 100.65      |
| 3200.00          | 1.76               | 96.27          | 3195.93   | 67.08           | -11.94    | 66.06     | 0.27             | 100.00     | 67.13      | 100.25      |
| 3300.00          | 1.64               | 98.30          | 3295.88   | 70.04           | -12.32    | 69.00     | 0.13             | 100.00     | 70.10      | 100.12      |
| 3400.00          | 1.53               | 99.40          | 3395.84   | 72.80           | -12.74    | 71.74     | 0.11             | 100.00     | 72.86      | 100.07      |
| 3500.00          | 1.46               | 110.17         | 3495.81   | 75.39           | -13.40    | 74.25     | 0.29             | 100.00     | 75.45      | 100.23      |
| 3600.00          | 1.73               | 110.47         | 3595.77   | 78.15           | -14.37    | 76.86     | 0.27             | 100.00     | 78.19      | 100.59      |
| 3700.00          | 1.97               | 121.53         | 3695.72   | 81.27           | -15.79    | 79.74     | 0.43             | 100.00     | 81.29      | 101.20      |
| 3800.00          | 1.98               | 124.83         | 3795.66   | 84.49           | -17.68    | 82.62     | 0.11             | 100.00     | 84.49      | 102.08      |
| 3900.00          | 2.44               | 139.71         | 3895.59   | 87.78           | -20.29    | 85.42     | 0.73             | 100.00     | 87.79      | 103.36      |
| 4000.00          | 3.07               | 158.56         | 3995.47   | 90.97           | -24.41    | 87.77     | 1.10             | 100.00     | 91.10      | 105.54      |
| 4100.00          | 3.71               | 172.79         | 4095.30   | 93.56           | -30.11    | 89.16     | 1.05             | 100.00     | 94.10      | 108.66      |
| 4200.00          | 4.16               | 189.28         | 4195.07   | 94.85           | -36.90    | 88.98     | 1.21             | 100.00     | 96.33      | 112.52      |
| 4300.00          | 4.26               | 188.05         | 4294.80   | 95.34           | -44.16    | 87.87     | 0.13             | 100.00     | 98.34      | 116.68      |
| 4400.00          | 3.88               | 189.41         | 4394.54   | 95.81           | -51.17    | 86.80     | 0.39             | 100.00     | 100.76     | 120.52      |
| 4500.00          | 3.59               | 192.14         | 4494.33   | 96.01           | -57.57    | 85.59     | 0.34             | 100.00     | 103.15     | 123.93      |
| 4600.00          | 3.11               | 193.15         | 4594.16   | 95.99           | -63.27    | 84.31     | 0.48             | 100.00     | 105.41     | 126.89      |
| 4700.00          | 2.52               | 195.78         | 4694.04   | 95.84           | -68.03    | 83.10     | 0.60             | 100.00     | 107.39     | 129.31      |
| 4800.00          | 2.05               | 202.82         | 4793.96   | 95.39           | -71.79    | 81.81     | 0.55             | 100.00     | 108.84     | 131.27      |
| 4900.00          | 1.88               | 202.22         | 4893.90   | 94.79           | -74.96    | 80.49     | 0.17             | 100.00     | 109.99     | 132.96      |
| 5000.00          | 1.40               | 207.21         | 4993.86   | 94.20           | -77.57    | 79.31     | 0.50             | 100.00     | 110.94     | 134.36      |
| 5100.00          | 1.32               | 212.45         | 5093.83   | 93.50           | -79.62    | 78.14     | 0.15             | 100.00     | 111.56     | 135.54      |
| 5200.00          | 1.08               | 217.50         | 5193.81   | 92.71           | -81.34    | 76.95     | 0.26             | 100.00     | 111.97     | 136.59      |
| 5300.00          | 0.69               | 223.04         | 5293.80   | 92.00           | -82.53    | 75.96     | 0.40             | 100.00     | 112.17     | 137.37      |
| 5400.00          | 0.40               | 235.24         | 5393.79   | 91.46           | -83.17    | 75.26     | 0.31             | 100.00     | 112.17     | 137.86      |
| 5500.00          | 0.66               | 280.37         | 5493.79   | 90.65           | -83.27    | 74.41     | 0.47             | 100.00     | 111.67     | 138.21      |
| 5600.00          | 0.32               | 267.86         | 5593.78   | 89.80           | -83.17    | 73.56     | 0.35             | 100.00     | 111.04     | 138.51      |
| 5700.00          | 0.78               | 97.66          | 5693.78   | 90.21           | -83.27    | 73.96     | 1.10             | 100.00     | 111.38     | 138.39      |
| 5800.00          | 0.73               | 59.55          | 5793.77   | 91.35           | -83.04    | 75.18     | 0.50             | 100.00     | 112.02     | 137.84      |
| 5900.00          | 0.75               | 74.29          | 5893.77   | 92.40           | -82.54    | 76.36     | 0.19             | 100.00     | 112.45     | 137.23      |
| 6000.00          | 1.03               | 75.89          | 5993.75   | 93.78           | -82.14    | 77.86     | 0.28             | 100.00     | 113.18     | 136.53      |
| 6100.00          | 0.94               | 92.25          | 6093.74   | 95.39           | -81.96    | 79.56     | 0.29             | 100.00     | 114.22     | 135.85      |
| 6200.00          | 1.10               | 102.67         | 6193.72   | 97.15           | -82.20    | 81.31     | 0.24             | 100.00     | 115.62     | 135.31      |
| 6300.00          | 1.09               | 109.19         | 6293.71   | 99.06           | -82.72    | 83.15     | 0.12             | 100.00     | 117.29     | 134.85      |
| 6395.00          | 1.33               | 120.71         | 6388.68   | 101.00          | -83.58    | 84.95     | 0.36             | 95.00      | 119.17     | 134.54      |
| 6425.00          | 1.06               | 111.00         | 6418.68   | 101.61          | -83.86    | 85.51     | 1.12             | 30.00      | 119.77     | 134.44      |
| 6489.00          | 1.70               | 95.10          | 6482.66   | 103.14          | -84.16    | 87.00     | 1.16             | 64.00      | 121.05     | 134.05      |
| 6520.00          | 2.99               | 74.70          | 6513.63   | 104.31          | -83.99    | 88.24     | 4.89             | 31.00      | 121.82     | 133.58      |
| 6551.00          | 4.30               | 68.20          | 6544.57   | 105.98          | -83.34    | 90.10     | 4.42             | 31.00      | 122.74     | 132.77      |
| 6582.00          | 5.40               | 66.70          | 6575.46   | 108.13          | -82.33    | 92.52     | 3.57             | 31.00      | 123.85     | 131.67      |
| 6613.00          | 7.30               | 69.20          | 6606.27   | 110.96          | -81.06    | 95.70     | 6.19             | 31.00      | 125.41     | 130.26      |
| 6645.00          | 9.60               | 71.70          | 6637.92   | 114.95          | -79.50    | 100.14    | 7.28             | 32.00      | 127.85     | 128.45      |
| 6675.00          | 12.40              | 70.30          | 6667.36   | 119.83          | -77.62    | 105.54    | 9.38             | 30.00      | 131.02     | 126.33      |
| 6707.00          | 14.60              | 72.50          | 6698.48   | 126.23          | -75.25    | 112.63    | 7.06             | 32.00      | 135.45     | 123.75      |
| 6745.00          | 16.80              | 75.80          | 6735.06   | 135.28          | -72.46    | 122.52    | 6.25             | 38.00      | 142.35     | 120.60      |
| 6776.00          | 19.43              | 81.30          | 6764.52   | 144.10          | -70.59    | 131.96    | FmtE             | 31.00      | 149.65     | 118.14      |



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Well: #24-1X  
Wellpath: OH

Date: 5/13/2004 Time: 11:20:56 Page: 3  
Co-ordinate(N/E) Reference: Site: Byrne Federal 24-1X, True North  
Vertical (TVD) Reference: SITE 0.0  
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Survey Calculation Method: Minimum Curvature Db: Sybase

## Survey

| Meas Depth<br>ft | Inclination<br>deg | Azimuth<br>deg | TVD<br>ft | Vert Sect<br>ft | N/S<br>ft | E/W<br>ft | DLS<br>deg/100ft | CLen<br>ft | ClsD<br>ft | ClsA<br>deg |
|------------------|--------------------|----------------|-----------|-----------------|-----------|-----------|------------------|------------|------------|-------------|
| 6807.00          | 21.20              | 87.70          | 6793.60   | 154.33          | -69.58    | 142.66    | 9.16             | 31.00      | 158.73     | 116.00      |
| 6831.00          | 22.77              | 92.10          | 6815.85   | 163.09          | -69.58    | 151.64    | 9.48             | 24.00      | 166.84     | 114.65      |
| 6862.00          | 24.00              | 96.60          | 6844.31   | 175.27          | -70.52    | 163.90    | 6.99             | 31.00      | 178.43     | 113.28      |
| 6893.00          | 25.60              | 98.00          | 6872.45   | 188.22          | -72.18    | 176.79    | 5.50             | 31.00      | 190.96     | 112.21      |
| 6924.00          | 27.00              | 99.90          | 6900.24   | 201.92          | -74.32    | 190.36    | 5.27             | 31.00      | 204.35     | 111.33      |
| 6955.00          | 28.40              | 102.30         | 6927.69   | 216.33          | -77.10    | 204.50    | 5.77             | 31.00      | 218.55     | 110.66      |
| 6985.00          | 30.90              | 102.40         | 6953.75   | 231.17          | -80.27    | 218.99    | 8.33             | 30.00      | 233.24     | 110.13      |
| 7016.00          | 33.94              | 102.50         | 6979.92   | 247.78          | -83.86    | 235.22    | 9.81             | 31.00      | 249.72     | 109.62      |
| 7078.00          | 38.20              | 103.10         | 7030.02   | 284.28          | -91.95    | 270.81    | 6.89             | 62.00      | 285.99     | 108.76      |
| 7140.00          | 37.20              | 102.00         | 7079.08   | 322.19          | -100.19   | 307.81    | 1.94             | 62.00      | 323.71     | 108.03      |
| 7170.00          | 38.10              | 101.50         | 7102.83   | 340.51          | -103.93   | 325.75    | 3.17             | 30.00      | 341.93     | 107.69      |
| 7201.00          | 38.20              | 102.50         | 7127.21   | 359.66          | -107.91   | 344.48    | 2.02             | 31.00      | 360.99     | 107.39      |
| 7232.00          | 38.90              | 103.00         | 7151.45   | 378.98          | -112.17   | 363.33    | 2.47             | 31.00      | 380.25     | 107.16      |
| 7263.00          | 41.20              | 102.30         | 7175.18   | 398.93          | -116.54   | 382.79    | 7.56             | 31.00      | 400.13     | 106.93      |
| 7294.00          | 40.40              | 102.70         | 7198.65   | 419.18          | -120.92   | 402.56    | 2.71             | 31.00      | 420.33     | 106.72      |
| 7322.00          | 40.30              | 102.40         | 7219.99   | 437.31          | -124.86   | 420.26    | 0.78             | 28.00      | 438.41     | 106.55      |
| 7356.00          | 40.50              | 103.10         | 7245.88   | 459.35          | -129.72   | 441.75    | 1.46             | 34.00      | 460.40     | 106.37      |
| 7387.00          | 42.20              | 103.10         | 7269.15   | 479.82          | -134.36   | 461.70    | 5.48             | 31.00      | 480.85     | 106.23      |
| 7418.00          | 42.30              | 103.10         | 7292.10   | 500.67          | -139.09   | 482.00    | 0.32             | 31.00      | 501.67     | 106.10      |
| 7450.00          | 43.30              | 103.10         | 7315.58   | 522.41          | -144.02   | 503.17    | 3.12             | 32.00      | 523.38     | 105.97      |
| 7480.00          | 43.60              | 102.60         | 7337.36   | 543.04          | -148.60   | 523.29    | 1.52             | 30.00      | 543.98     | 105.85      |
| 7511.00          | 42.60              | 102.10         | 7359.99   | 564.22          | -153.14   | 543.98    | 3.41             | 31.00      | 565.12     | 105.72      |
| 7541.00          | 41.33              | 101.20         | 7382.30   | 584.28          | -157.19   | 563.63    | 4.68             | 30.00      | 585.13     | 105.58      |
| 7573.00          | 40.00              | 99.50          | 7406.57   | 605.11          | -160.94   | 584.14    | 5.41             | 32.00      | 605.90     | 105.40      |
| 7604.00          | 38.80              | 99.90          | 7430.53   | 624.77          | -164.25   | 603.53    | 3.96             | 31.00      | 625.48     | 105.22      |
| 7634.00          | 36.70              | 100.10         | 7454.24   | 643.11          | -167.44   | 621.62    | 7.01             | 30.00      | 643.77     | 105.08      |
| 7666.00          | 36.70              | 99.50          | 7479.90   | 662.22          | -170.70   | 640.46    | 1.12             | 32.00      | 662.82     | 104.92      |
| 7697.00          | 36.90              | 99.50          | 7504.72   | 680.76          | -173.76   | 658.78    | 0.65             | 31.00      | 681.31     | 104.78      |
| 7729.00          | 37.10              | 100.10         | 7530.28   | 700.00          | -177.04   | 677.75    | 1.29             | 32.00      | 700.50     | 104.64      |
| 7758.00          | 38.20              | 105.40         | 7553.25   | 717.70          | -180.96   | 695.02    | FmtE             | 29.00      | 718.19     | 104.59      |
| 7789.00          | 37.70              | 109.20         | 7577.70   | 736.69          | -186.62   | 713.21    | 7.71             | 31.00      | 737.22     | 104.66      |
| 7820.00          | 37.20              | 108.40         | 7602.31   | 755.42          | -192.69   | 731.05    | 2.25             | 31.00      | 756.02     | 104.77      |
| 7851.00          | 36.00              | 110.30         | 7627.19   | 773.77          | -198.81   | 748.49    | 5.32             | 31.00      | 774.45     | 104.88      |
| 7882.00          | 35.80              | 111.30         | 7652.31   | 791.76          | -205.27   | 765.49    | 2.00             | 31.00      | 792.53     | 105.01      |
| 7913.00          | 35.60              | 111.40         | 7677.48   | 809.63          | -211.85   | 782.33    | 0.67             | 31.00      | 810.51     | 105.15      |
| 7944.00          | 36.40              | 110.10         | 7702.56   | 827.66          | -218.31   | 799.37    | 3.57             | 31.00      | 828.65     | 105.27      |
| 7975.00          | 40.10              | 106.90         | 7726.90   | 846.74          | -224.37   | 817.57    | FmtE             | 31.00      | 847.80     | 105.35      |
| 8007.00          | 44.05              | 104.40         | 7750.65   | 868.14          | -230.14   | 838.22    | FmtE             | 32.00      | 869.24     | 105.35      |
| 8038.00          | 46.30              | 103.10         | 7772.50   | 890.12          | -235.36   | 859.57    | 7.84             | 31.00      | 891.21     | 105.31      |
| 8069.00          | 47.10              | 104.30         | 7793.76   | 912.68          | -240.70   | 881.49    | 3.82             | 31.00      | 913.76     | 105.27      |
| 8099.00          | 47.20              | 106.70         | 7814.17   | 934.64          | -246.58   | 902.68    | 5.87             | 30.00      | 935.75     | 105.28      |
| 8132.00          | 46.00              | 107.10         | 7836.84   | 958.54          | -253.55   | 925.62    | 3.74             | 33.00      | 959.72     | 105.32      |
| 8161.00          | 43.50              | 105.20         | 7857.44   | 978.91          | -259.24   | 945.23    | 9.78             | 29.00      | 980.13     | 105.34      |
| 8192.00          | 41.20              | 101.60         | 7880.35   | 999.79          | -264.09   | 965.53    | FmtE             | 31.00      | 1001.00    | 105.30      |
| 8224.00          | 39.70              | 99.10          | 7904.70   | 1020.53         | -267.82   | 985.95    | 6.90             | 32.00      | 1021.68    | 105.20      |
| 8256.00          | 40.27              | 98.70          | 7929.22   | 1041.05         | -271.00   | 1006.26   | 1.95             | 32.00      | 1042.12    | 105.07      |
| 8287.00          | 40.80              | 97.80          | 7952.78   | 1061.14         | -273.89   | 1026.20   | 2.55             | 31.00      | 1062.13    | 104.94      |
| 8318.00          | 41.80              | 96.90          | 7976.07   | 1081.52         | -276.51   | 1046.49   | 3.75             | 31.00      | 1082.41    | 104.80      |
| 8347.00          | 42.20              | 95.20          | 7997.62   | 1100.80         | -278.55   | 1065.79   | 4.16             | 29.00      | 1101.59    | 104.65      |
| 8379.00          | 42.10              | 95.20          | 8021.35   | 1122.10         | -280.50   | 1087.18   | 0.31             | 32.00      | 1122.78    | 104.47      |
| 8410.00          | 42.50              | 93.50          | 8044.28   | 1142.75         | -282.08   | 1107.98   | 3.91             | 31.00      | 1143.32    | 104.28      |
| 8441.00          | 42.40              | 89.10          | 8067.15   | 1163.27         | -282.56   | 1128.88   | 9.58             | 31.00      | 1163.71    | 104.05      |
| 8472.00          | 41.50              | 87.20          | 8090.21   | 1183.35         | -281.89   | 1149.59   | 5.02             | 31.00      | 1183.65    | 103.78      |



# Scientific Drilling Survey Completion Report

Company: D.J. SIMMONS  
Field: Rio Arriba County, NM  
Site: Byrne Federal 24-1X  
Well: #24-1X  
Wellpath: OH

Date: 5/13/2004 Time: 11:20:56 Page: 4  
Co-ordinate(NE) Reference: Site: Byrne Federal 24-1X, True North  
Vertical (TVD) Reference: SITE 0.0  
Section (VS) Reference: Well (0.00N,0.00E,102.48Azi)  
Survey Calculation Method: Minimum Curvature Db: Sybase

## Survey

| Meas Depth<br>ft | Inclination<br>deg | Azimuth<br>deg | TVD<br>ft | Vert Sect<br>ft | N/S<br>ft | E/W<br>ft | DLS<br>deg/100ft | CLen<br>ft | ClsD<br>ft | ClsA<br>deg |
|------------------|--------------------|----------------|-----------|-----------------|-----------|-----------|------------------|------------|------------|-------------|
| 8503.00          | 41.00              | 86.40          | 8113.52   | 1203.03         | -280.75   | 1170.00   | 2.34             | 31.00      | 1203.21    | 103.49      |
| 8555.00          | 41.00              | 86.40          | 8152.76   | 1235.81         | -278.61   | 1204.05   | 0.00             | 52.00      | 1235.86    | 103.03      |

## Annotation

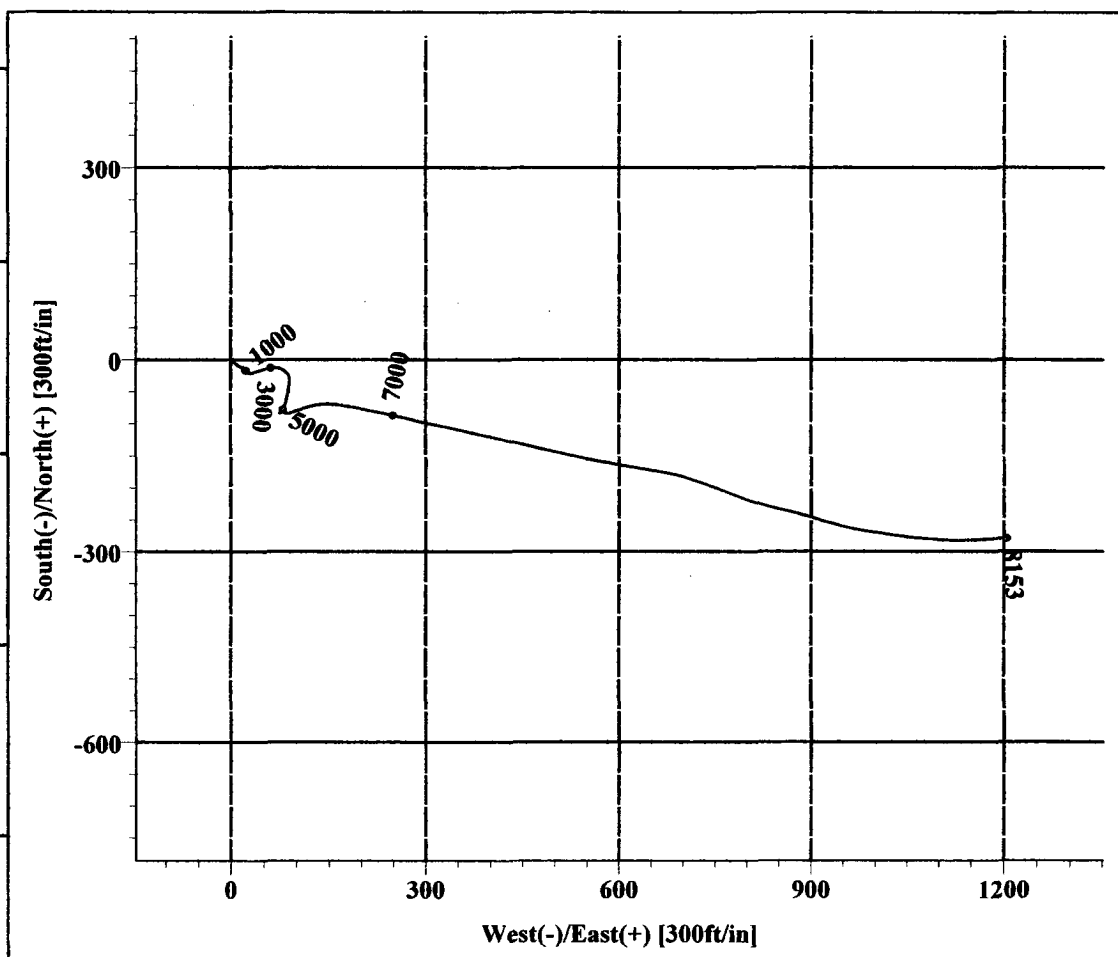
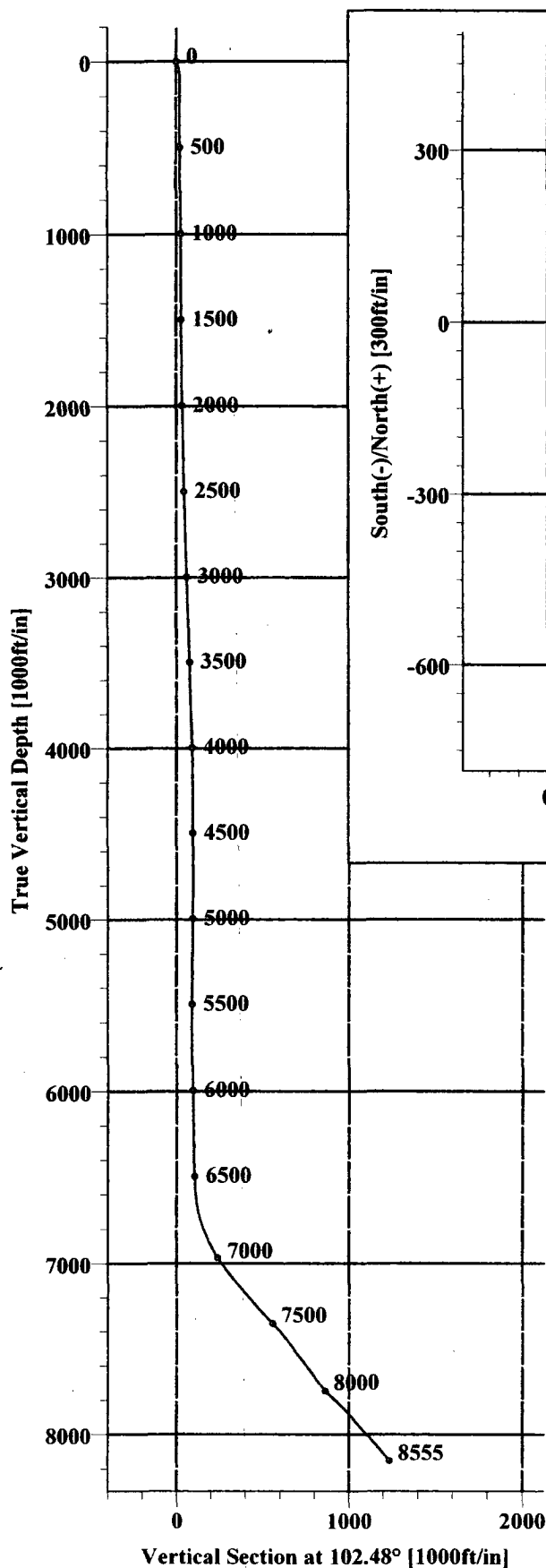
| MD<br>ft | TVD<br>ft |                              |
|----------|-----------|------------------------------|
| 6395.00  | 6388.68   | End Gyro Surveys             |
| 6425.00  | 6418.68   | Begin MWD Surveys            |
| 8555.00  | 8152.76   | Survey is a projection to TD |



Scientific  
Drilling

D.J. SIMMONS

Field: Rio Arriba County, NM  
Site: Byrne Federal 24-1X  
Well: #24-1X  
Wellpath: OH  
Survey: Survey #1



#### ANNOTATIONS

| No. | TVD     | MD      | Annotation                   |
|-----|---------|---------|------------------------------|
| 1   | 6388.68 | 6395.00 | End Gyro Surveys             |
| 2   | 6418.68 | 6425.00 | Begin MWD Surveys            |
| 3   | 8152.76 | 8555.00 | Survey is a projection to TD |

### BOTTOM HOLE CLOSURE

1235.86 ft. 103.03° Azimuth

Survey: Survey #1 (#24-1X/OH)

Created By: Judi Moore

Date: 5/13/2004