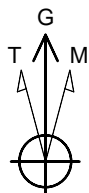


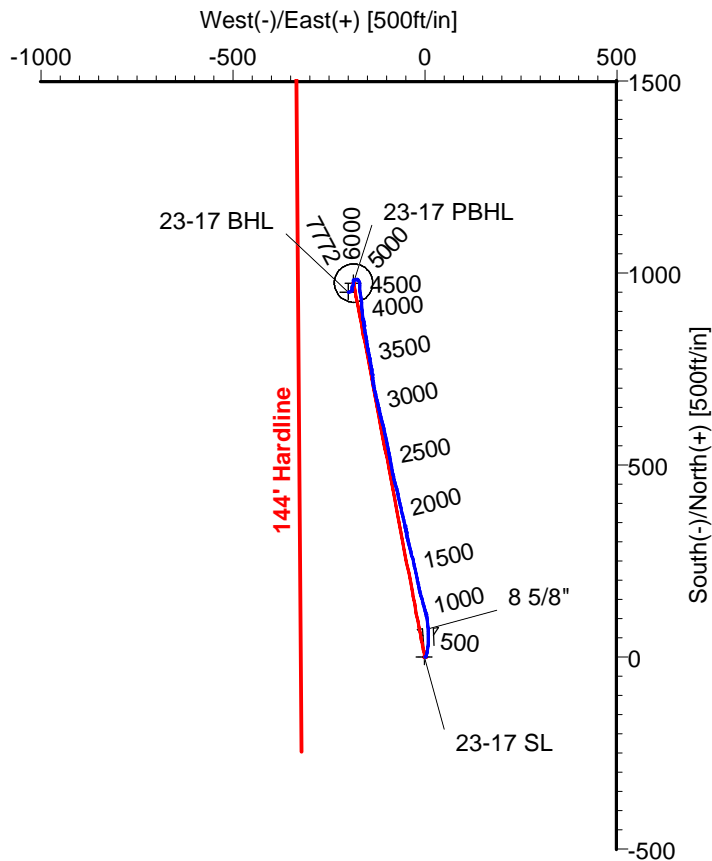
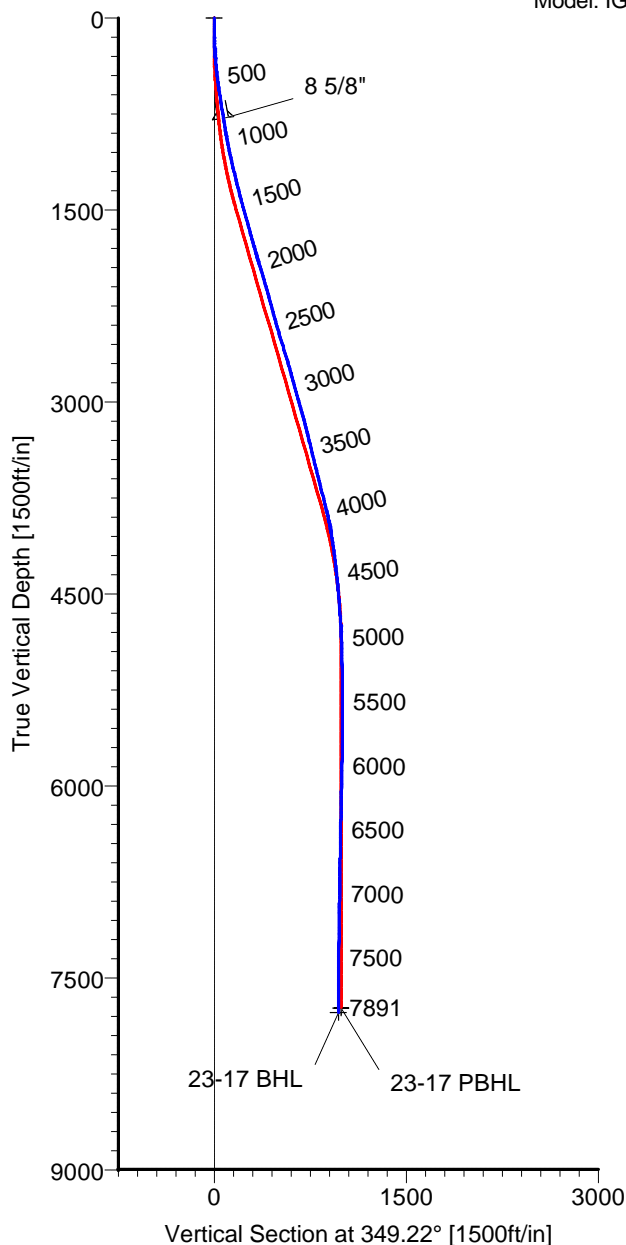
ANADARKO PETROLEUM

Field: Weld County, CO
Site: Sekich 15-17 Pad
Well: 23-17
Wellpath: Original Hole



Azimuths to Grid North
True North: -0.38°
Magnetic North: 8.59°

Magnetic Field
Strength: 53091nT
Dip Angle: 66.89°
Date: 02/28/2011
Model: IGRF2010



CASING DETAILS

| No. | TVD | MD | Name | Size |
|-----|--------|--------|--------|-------|
| 1 | 785.09 | 790.00 | 8 5/8" | 8.625 |

LEGEND

- 23-17,Original Hole,Plan #2
- Original Hole

TARGET DETAILS

| Name | TVD | +N/-S | +E/-W | Latitude | Longitude | Shape |
|------------|---------|--------|---------|---------------|----------------|---------------------|
| 23-17 SL | 0.00 | 0.00 | 0.00 | 40°13'09.524N | 104°54'46.166W | Point |
| 23-17 PBHL | 7733.00 | 973.72 | -185.39 | 40°13'19.158N | 104°54'48.473W | Circle (Radius: 50) |
| 23-17 BHL | 7771.52 | 949.35 | -199.74 | 40°13'18.919N | 104°54'48.660W | Point |

Wellpath: (23-17/Original Hole)

Created By: Ivonne Gonzalez

Date: 03/07/2011

ALLIS CHALMERS DIRECTIONAL DRILLING SERVICES
911 Regional Park Drive Houston, Texas 77060
Phone: 713-934-9600 Fax: 713-934-9067



DIRECTIONAL
DRILLING SERVICES

Allis-Chalmers Energy, Inc.

Survey Report

| | | | |
|--|---|---|-------------------------------------|
| Company: ANADARKO PETROLEUM Field: Weld County, CO Site: Sekich 15-17 Pad Well: 23-17 Wellpath: Original Hole | Date: 03/07/2011 Co-ordinate(NE) Reference: Vertical (TVD) Reference: Section (VS) Reference: Survey Calculation Method: | Time: 08:33:19 Well: 23-17, Grid North 4865'GL+13'KB 4878.0 Well (0.00N,0.00E,349.22Azi) Minimum Curvature | Page: 1 Db: Adapti |
|--|---|---|-------------------------------------|

| | |
|---|---|
| Field: Weld County, CO Map System: US State Plane Coordinate System 1983 Geo Datum: GRS 1980 Sys Datum: Mean Sea Level | Map Zone: Colorado, Northern Zone Coordinate System: Well Centre Geomagnetic Model: IGRF2010 |
|---|---|

| | |
|---|---|
| Site: Sekich 15-17 Pad Centered on 19-17 Site Position: From: Geographic Position Uncertainty: 0.00 ft Ground Level: 4865.00 ft | Northing: 1323289.54 ft Easting: 3163967.97 ft Latitude: 40 13 9.588 N Longitude: 104 54 46.264 W North Reference: Grid Grid Convergence: 0.38 deg |
|---|---|

| | |
|---|--|
| Well: 23-17 Well Position: +N/-S -6.43 ft +E/-W 7.65 ft Position Uncertainty: 0.00 ft | Slot Name: 23-17 Northing: 1323283.11 ft Easting : 3163975.62 ft Latitude: 40 13 9.524 N Longitude: 104 54 46.166 W |
|---|--|

| | |
|--|--|
| Wellpath: Original Hole Current Datum: 4865'GL+13'KB Magnetic Data: 02/28/2011 Field Strength: 53091 nT Vertical Section: Depth From (TVD) ft | Drilled From: Surface Tie-on Depth: 0.00 ft Above System Datum: Mean Sea Level Declination: 8.97 deg Mag Dip Angle: 66.89 deg +N/-S ft +E/-W ft Direction deg |
| 0.00 | 0.00 |

| | | | | |
|---|----------------------|-----------------------------|-----------------|------------------|
| Survey Program for Definitive Wellpath | | | | |
| Date: 03/07/2011 | Validated: No | Version: 0 | | |
| Actual From ft | To ft | Survey | Toolcode | Tool Name |
| 51.00 | 7846.00 | Survey #1 (51.00-7846.00) | MWD | Std MWD |
| 7891.00 | 7891.00 | Survey #2 (7891.00-7891.00) | Project | Projection |

| Survey | | | | | | | | | | |
|----------|-------------|-------------|-----------|-------------|-------------|----------|------------------|--------------------|-------------------|--------------|
| MD ft | Incl deg | Azim deg | TVD ft | +N/-S ft | +E/-W ft | VS ft | DLS deg/100ft | Build deg/100ft | Turn deg/100ft | Tool/Comment |
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | TIE LINE |
| 51.00 | 1.20 | 109.50 | 51.00 | -0.18 | 0.50 | -0.27 | 2.35 | 2.35 | 0.00 | MWD |
| 141.00 | 1.40 | 57.10 | 140.98 | 0.10 | 2.31 | -0.33 | 1.29 | 0.22 | -58.22 | MWD |
| 231.00 | 3.20 | 23.00 | 230.90 | 3.01 | 4.22 | 2.17 | 2.43 | 2.00 | -37.89 | MWD |
| 321.00 | 5.60 | 11.40 | 320.63 | 9.63 | 6.07 | 8.33 | 2.83 | 2.67 | -12.89 | MWD |
| 428.00 | 6.70 | 6.50 | 427.02 | 20.95 | 7.81 | 19.12 | 1.14 | 1.03 | -4.58 | MWD |
| 518.00 | 7.90 | 4.40 | 516.29 | 32.34 | 8.88 | 30.10 | 1.37 | 1.33 | -2.33 | MWD |
| 609.00 | 9.00 | 1.60 | 606.30 | 45.69 | 9.56 | 43.09 | 1.29 | 1.21 | -3.08 | MWD |
| 700.00 | 9.00 | 0.20 | 696.18 | 59.92 | 9.78 | 57.03 | 0.24 | 0.00 | -1.54 | MWD |
| 745.00 | 8.80 | 356.30 | 740.64 | 66.87 | 9.57 | 63.90 | 1.41 | -0.44 | -8.67 | MWD |
| 777.00 | 9.00 | 356.60 | 772.25 | 71.82 | 9.26 | 68.82 | 0.64 | 0.62 | 0.94 | MWD |
| 790.00 | 9.07 | 356.30 | 785.09 | 73.85 | 9.14 | 70.84 | 0.65 | 0.54 | -2.30 | 8 5/8" |
| 868.00 | 9.50 | 354.60 | 862.07 | 86.40 | 8.13 | 83.35 | 0.65 | 0.55 | -2.18 | MWD |
| 958.00 | 10.70 | 346.80 | 950.67 | 101.93 | 5.53 | 99.09 | 2.02 | 1.33 | -8.67 | MWD |
| 1050.00 | 12.00 | 345.80 | 1040.87 | 119.51 | 1.23 | 117.17 | 1.43 | 1.41 | -1.09 | MWD |
| 1141.00 | 13.00 | 344.40 | 1129.72 | 138.54 | -3.84 | 136.82 | 1.15 | 1.10 | -1.54 | MWD |
| 1231.00 | 13.70 | 343.70 | 1217.28 | 158.52 | -9.56 | 157.51 | 0.80 | 0.78 | -0.78 | MWD |
| 1322.00 | 13.90 | 348.60 | 1305.66 | 179.58 | -14.74 | 179.17 | 1.30 | 0.22 | 5.38 | MWD |
| 1413.00 | 14.80 | 348.20 | 1393.82 | 201.67 | -19.28 | 201.72 | 0.99 | 0.99 | -0.44 | MWD |
| 1503.00 | 15.50 | 348.20 | 1480.69 | 224.70 | -24.09 | 225.24 | 0.78 | 0.78 | 0.00 | MWD |
| 1594.00 | 15.50 | 345.40 | 1568.38 | 248.37 | -29.64 | 249.53 | 0.82 | 0.00 | -3.08 | MWD |
| 1685.00 | 15.30 | 346.10 | 1656.11 | 271.79 | -35.59 | 273.65 | 0.30 | -0.22 | 0.77 | MWD |

Allis-Chalmers Energy, Inc.

Survey Report

Company: ANADARKO PETROLEUM
Field: Weld County, CO
Site: Sekich 15-17 Pad
Well: 23-17
Wellpath: Original Hole

| | | |
|-----------------------------------|------------------------------|-------------------|
| Date: 03/07/2011 | Time: 08:33:19 | Page: 2 |
| Co-ordinate(NE) Reference: | Well: 23-17, Grid North | |
| Vertical (TVD) Reference: | 4865'GL+13'KB 4878.0 | |
| Section (VS) Reference: | Well (0.00N,0.00E,349.22Azi) | |
| Survey Calculation Method: | Minimum Curvature | Db: Adapti |

Survey

| MD ft | Incl deg | Azim deg | TVD ft | +N/-S ft | +E/-W ft | VS ft | DLS deg/100ft | Build deg/100ft | Turn deg/100ft | Tool/Comment |
|----------|-------------|-------------|-----------|-------------|-------------|----------|------------------|--------------------|-------------------|--------------|
| 1776.00 | 16.40 | 345.10 | 1743.65 | 295.86 | -41.78 | 298.45 | 1.25 | 1.21 | -1.10 | MWD |
| 1867.00 | 15.10 | 349.60 | 1831.24 | 319.93 | -47.22 | 323.12 | 1.96 | -1.43 | 4.95 | MWD |
| 1957.00 | 17.40 | 348.60 | 1917.64 | 344.66 | -52.00 | 348.30 | 2.57 | 2.56 | -1.11 | MWD |
| 2048.00 | 16.70 | 346.10 | 2004.64 | 370.69 | -57.83 | 374.96 | 1.11 | -0.77 | -2.75 | MWD |
| 2139.00 | 16.00 | 346.80 | 2091.96 | 395.59 | -63.83 | 400.55 | 0.80 | -0.77 | 0.77 | MWD |
| 2230.00 | 15.30 | 349.30 | 2179.58 | 419.60 | -68.93 | 425.09 | 1.07 | -0.77 | 2.75 | MWD |
| 2320.00 | 15.30 | 343.70 | 2266.40 | 442.67 | -74.46 | 448.78 | 1.64 | 0.00 | -6.22 | MWD |
| 2411.00 | 15.70 | 347.50 | 2354.09 | 466.21 | -80.50 | 473.04 | 1.20 | 0.44 | 4.18 | MWD |
| 2502.00 | 16.70 | 348.60 | 2441.48 | 491.05 | -85.75 | 498.42 | 1.15 | 1.10 | 1.21 | MWD |
| 2593.00 | 17.10 | 350.00 | 2528.55 | 517.04 | -90.66 | 524.87 | 0.63 | 0.44 | 1.54 | MWD |
| 2683.00 | 16.70 | 348.90 | 2614.66 | 542.76 | -95.44 | 551.04 | 0.57 | -0.44 | -1.22 | MWD |
| 2774.00 | 16.20 | 348.60 | 2701.94 | 568.04 | -100.47 | 576.80 | 0.56 | -0.55 | -0.33 | MWD |
| 2865.00 | 16.00 | 346.50 | 2789.37 | 592.67 | -105.91 | 602.02 | 0.68 | -0.22 | -2.31 | MWD |
| 2956.00 | 15.30 | 344.00 | 2876.99 | 616.41 | -112.14 | 626.51 | 1.07 | -0.77 | -2.75 | MWD |
| 3047.00 | 15.30 | 348.60 | 2964.77 | 639.72 | -117.83 | 650.47 | 1.33 | 0.00 | 5.05 | MWD |
| 3138.00 | 16.40 | 346.10 | 3052.31 | 663.96 | -123.29 | 675.31 | 1.42 | 1.21 | -2.75 | MWD |
| 3228.00 | 15.00 | 347.20 | 3138.95 | 687.66 | -128.92 | 699.63 | 1.59 | -1.56 | 1.22 | MWD |
| 3319.00 | 13.90 | 349.60 | 3227.07 | 709.89 | -133.50 | 722.33 | 1.38 | -1.21 | 2.64 | MWD |
| 3410.00 | 13.50 | 356.00 | 3315.49 | 731.24 | -136.21 | 743.81 | 1.72 | -0.44 | 7.03 | MWD |
| 3501.00 | 13.50 | 350.00 | 3403.98 | 752.30 | -138.80 | 764.98 | 1.54 | 0.00 | -6.59 | MWD |
| 3592.00 | 14.40 | 350.30 | 3492.30 | 773.91 | -142.55 | 786.92 | 0.99 | 0.99 | 0.33 | MWD |
| 3682.00 | 13.70 | 347.90 | 3579.60 | 795.36 | -146.67 | 808.76 | 1.01 | -0.78 | -2.67 | MWD |
| 3773.00 | 14.30 | 351.70 | 3667.90 | 817.02 | -150.55 | 830.76 | 1.21 | 0.66 | 4.18 | MWD |
| 3864.00 | 14.40 | 350.30 | 3756.06 | 839.30 | -154.08 | 853.30 | 0.40 | 0.11 | -1.54 | MWD |
| 3954.00 | 13.70 | 350.70 | 3843.37 | 860.84 | -157.69 | 875.15 | 0.79 | -0.78 | 0.44 | MWD |
| 4045.00 | 11.80 | 352.80 | 3932.12 | 880.71 | -160.60 | 895.21 | 2.15 | -2.09 | 2.31 | MWD |
| 4136.00 | 9.30 | 356.00 | 4021.58 | 897.28 | -162.28 | 911.80 | 2.82 | -2.75 | 3.52 | MWD |
| 4226.00 | 8.40 | 354.60 | 4110.51 | 911.08 | -163.40 | 925.57 | 1.03 | -1.00 | -1.56 | MWD |
| 4317.00 | 7.40 | 353.20 | 4200.64 | 923.52 | -164.72 | 938.03 | 1.12 | -1.10 | -1.54 | MWD |
| 4408.00 | 6.50 | 351.70 | 4290.97 | 934.43 | -166.16 | 949.02 | 1.01 | -0.99 | -1.65 | MWD |
| 4499.00 | 6.00 | 350.00 | 4381.43 | 944.21 | -167.73 | 958.92 | 0.59 | -0.55 | -1.87 | MWD |
| 4589.00 | 4.90 | 357.70 | 4471.02 | 952.69 | -168.70 | 967.43 | 1.47 | -1.22 | 8.56 | MWD |
| 4680.00 | 4.40 | 358.10 | 4561.72 | 960.06 | -168.97 | 974.72 | 0.55 | -0.55 | 0.44 | MWD |
| 4771.00 | 4.40 | 356.70 | 4652.45 | 967.03 | -169.29 | 981.63 | 0.12 | 0.00 | -1.54 | MWD |
| 4862.00 | 3.70 | 353.10 | 4743.23 | 973.43 | -169.84 | 988.02 | 0.82 | -0.77 | -3.96 | MWD |
| 4952.00 | 1.90 | 334.50 | 4833.12 | 977.66 | -170.83 | 992.36 | 2.21 | -2.00 | -20.67 | MWD |
| 5043.00 | 1.80 | 332.40 | 4924.07 | 980.29 | -172.14 | 995.19 | 0.13 | -0.11 | -2.31 | MWD |
| 5134.00 | 0.90 | 306.00 | 5015.04 | 981.98 | -173.39 | 997.08 | 1.18 | -0.99 | -29.01 | MWD |
| 5225.00 | 0.90 | 280.40 | 5106.03 | 982.53 | -174.67 | 997.86 | 0.44 | 0.00 | -28.13 | MWD |
| 5315.00 | 0.90 | 280.70 | 5196.02 | 982.79 | -176.06 | 998.37 | 0.01 | 0.00 | 0.33 | MWD |
| 5406.00 | 0.90 | 253.30 | 5287.01 | 982.71 | -177.44 | 998.56 | 0.47 | 0.00 | -30.11 | MWD |
| 5497.00 | 1.10 | 264.90 | 5378.00 | 982.43 | -179.00 | 998.57 | 0.31 | 0.22 | 12.75 | MWD |
| 5588.00 | 1.40 | 266.70 | 5468.98 | 982.29 | -180.98 | 998.80 | 0.33 | 0.33 | 1.98 | MWD |
| 5678.00 | 1.20 | 280.70 | 5558.95 | 982.40 | -183.00 | 999.29 | 0.42 | -0.22 | 15.56 | MWD |
| 5769.00 | 0.90 | 259.60 | 5649.94 | 982.45 | -184.64 | 999.65 | 0.53 | -0.33 | -23.19 | MWD |
| 5860.00 | 1.10 | 176.70 | 5740.93 | 981.45 | -185.29 | 998.78 | 1.46 | 0.22 | -91.10 | MWD |
| 5950.00 | 1.20 | 172.40 | 5830.91 | 979.65 | -185.12 | 996.99 | 0.15 | 0.11 | -4.78 | MWD |
| 6041.00 | 1.20 | 180.90 | 5921.89 | 977.75 | -185.01 | 995.10 | 0.20 | 0.00 | 9.34 | MWD |
| 6132.00 | 1.40 | 187.60 | 6012.87 | 975.70 | -185.17 | 993.11 | 0.28 | 0.22 | 7.36 | MWD |
| 6223.00 | 1.20 | 181.90 | 6103.84 | 973.64 | -185.35 | 991.13 | 0.26 | -0.22 | -6.26 | MWD |
| 6313.00 | 1.40 | 184.40 | 6193.82 | 971.61 | -185.46 | 989.15 | 0.23 | 0.22 | 2.78 | MWD |
| 6404.00 | 1.20 | 193.50 | 6284.80 | 969.57 | -185.77 | 987.21 | 0.32 | -0.22 | 10.00 | MWD |
| 6495.00 | 1.10 | 213.90 | 6375.78 | 967.92 | -186.48 | 985.72 | 0.46 | -0.11 | 22.42 | MWD |

Allis-Chalmers Energy, Inc.

Survey Report

| | |
|--|--|
| Company: ANADARKO PETROLEUM Field: Weld County, CO Site: Sekich 15-17 Pad Well: 23-17 Wellpath: Original Hole | Date: 03/07/2011 Co-ordinate(NE) Reference: Well: 23-17, Grid North Vertical (TVD) Reference: 4865'GL+13'KB 4878.0 Section (VS) Reference: Well (0.00N,0.00E,349.22Azi) Survey Calculation Method: Minimum Curvature Db: Adapti |
|--|--|

Survey

| MD ft | Incl deg | Azim deg | TVD ft | +N/-S ft | +E/-W ft | VS ft | DLS deg/100ft | Build deg/100ft | Turn deg/100ft | Tool/Comment |
|----------|-------------|-------------|-----------|-------------|-------------|----------|------------------|--------------------|-------------------|--------------|
| 6586.00 | 1.40 | 203.40 | 6466.76 | 966.17 | -187.41 | 984.18 | 0.41 | 0.33 | -11.54 | MWD |
| 6677.00 | 1.20 | 210.40 | 6557.73 | 964.33 | -188.33 | 982.54 | 0.28 | -0.22 | 7.69 | MWD |
| 6768.00 | 0.50 | 181.60 | 6648.72 | 963.11 | -188.83 | 981.43 | 0.88 | -0.77 | -31.65 | MWD |
| 6858.00 | 0.70 | 188.30 | 6738.72 | 962.18 | -188.92 | 980.53 | 0.24 | 0.22 | 7.44 | MWD |
| 6949.00 | 1.20 | 181.20 | 6829.71 | 960.67 | -189.02 | 979.07 | 0.56 | 0.55 | -7.80 | MWD |
| 7040.00 | 1.40 | 182.30 | 6920.68 | 958.61 | -189.08 | 977.06 | 0.22 | 0.22 | 1.21 | MWD |
| 7131.00 | 1.20 | 172.10 | 7011.66 | 956.56 | -189.00 | 975.02 | 0.34 | -0.22 | -11.21 | MWD |
| 7221.00 | 0.50 | 214.60 | 7101.65 | 955.30 | -189.09 | 973.81 | 1.00 | -0.78 | 47.22 | MWD |
| 7312.00 | 0.90 | 204.80 | 7192.64 | 954.32 | -189.61 | 972.95 | 0.46 | 0.44 | -10.77 | MWD |
| 7403.00 | 0.90 | 222.70 | 7283.63 | 953.15 | -190.40 | 971.94 | 0.31 | 0.00 | 19.67 | MWD |
| 7494.00 | 1.10 | 242.20 | 7374.62 | 952.22 | -191.66 | 971.26 | 0.43 | 0.22 | 21.43 | MWD |
| 7585.00 | 1.40 | 254.00 | 7465.60 | 951.50 | -193.50 | 970.90 | 0.43 | 0.33 | 12.97 | MWD |
| 7721.00 | 1.20 | 256.50 | 7601.56 | 950.71 | -196.48 | 970.68 | 0.15 | -0.15 | 1.84 | MWD |
| 7846.00 | 1.20 | 242.10 | 7726.53 | 949.80 | -198.91 | 970.24 | 0.24 | 0.00 | -11.52 | MWD |
| 7852.47 | 1.20 | 242.10 | 7733.00 | 949.73 | -199.03 | 970.20 | 0.00 | 0.00 | 0.00 | 23-17 PBHL |
| 7891.00 | 1.20 | 242.10 | 7771.52 | 949.35 | -199.74 | 969.96 | 0.00 | 0.00 | 0.00 | 23-17 BHL |

Targets

| Name | Description | Dir. | TVD ft | +N/-S ft | +E/-W ft | Map Northing ft | Map Easting ft | <--- Latitude ---> | | | <--- Longitude ---> | | | | |
|----------------------|-------------|------|-----------|-------------|-------------|-----------------------|----------------------|--------------------|-----|--------|---------------------|-----|-----|--------|---|
| | | | | | | | | Deg | Min | Sec | Deg | Min | Sec | | |
| 23-17 SL | | | 0.00 | 0.00 | 0.00 | 1323283.11 | 3163975.62 | 40 | 13 | 9.524 | N | 104 | 54 | 46.166 | W |
| 23-17 PBHL | | | 7733.00 | 973.72 | -185.39 | 1324256.83 | 3163790.23 | 40 | 13 | 19.158 | N | 104 | 54 | 48.473 | W |
| -Circle (Radius: 50) | | | | | | | | | | | | | | | |
| 23-17 BHL | | | 7771.52 | 949.35 | -199.74 | 1324232.46 | 3163775.88 | 40 | 13 | 18.919 | N | 104 | 54 | 48.660 | W |

Casing Points

| MD ft | TVD ft | Diameter in | Hole Size in | Name |
|----------|-----------|----------------|-----------------|--------|
| 790.00 | 785.09 | 8.625 | 9.875 | 8 5/8" |