

NM OIL CONSERVATION  
ARTESIA DISTRICT

OCT 10 2014

RECEIVED

30-015-42246

# A Gyrodata Directional Survey

FINAL DEFINITIVE COPY

for

**BOPCO LP**

Lease: 431H Well: POKER LAKE UNIT,  
Location: MCVAY 5, EDDY COUNTY, TEXAS

**gyrodata**

Job Number: MD0714GDM724

Run Date: 18 Jul 2014

Report Generated: 22 Jul 2014 01:39

Azimuth Correction:

Gyro: -0.24000 deg to Grid North

Depth Reference: Rotary Table

Surveyor: Charles Lee Tatum

Calculation Method: MINIMUM CURVATURE

Survey Latitude: 32.207336 deg. N Longitude: 103.854303 deg. W

Air Gap (RKB to Ground / RKB to MSL): 19.00

Vertical Section Calculated from Well Head Location

Closure Calculated from Well Head Location

Horizontal Coordinates Calculated from Well Head Location

# A Gyrodata Directional Survey

BOPCO LP

Lease: 431H Well: POKER LAKE UNIT

Location: MCVAY 5, EDDY COUNTY, TEXAS

Job Number: MD0714GDM724

| MEASURED<br>DEPTH<br>feet | INCL<br>deg. | AZIMUTH<br>deg. | DOGLE<br>SEVERITY<br>deg./<br>100 ft. | VERTICAL<br>DEPTH<br>feet | CLOSURE<br>DIST. AZIMUTH<br>feet deg. | HORIZONTAL<br>COORDINATES<br>feet |
|---------------------------|--------------|-----------------|---------------------------------------|---------------------------|---------------------------------------|-----------------------------------|
| 0.00                      | 0.00         | 0.00            | 0.00                                  | 0.00                      | 0.0 0.0                               | 0.00 N 0.00 E                     |
| 36.32                     | 0.19         | 107.25          | 0.52                                  | 36.32                     | 0.1 107.3                             | 0.02 S 0.06 E                     |
| 136.32                    | 0.10         | 43.37           | 0.17                                  | 136.32                    | 0.3 90.7                              | 0.00 S 0.28 E                     |
| 236.32                    | 0.23         | 166.17          | 0.30                                  | 236.32                    | 0.4 109.4                             | 0.14 S 0.38 E                     |
| 336.32                    | 0.81         | 147.34          | 0.60                                  | 336.31                    | 1.2 138.7                             | 0.93 S 0.81 E                     |
| 436.32                    | 1.04         | 164.55          | 0.36                                  | 436.30                    | 2.8 149.0                             | 2.39 S 1.44 E                     |
| 536.32                    | 1.62         | 162.86          | 0.58                                  | 536.27                    | 5.1 155.6                             | 4.62 S 2.09 E                     |
| 636.32                    | 2.07         | 145.55          | 0.71                                  | 636.22                    | 8.3 154.7                             | 7.46 S 3.53 E                     |
| 736.32                    | 2.27         | 142.93          | 0.22                                  | 736.15                    | 12.0 151.4                            | 10.53 S 5.75 E                    |
| 836.32                    | 1.69         | 142.13          | 0.58                                  | 836.09                    | 15.4 149.4                            | 13.27 S 7.85 E                    |
| 936.32                    | 1.51         | 137.10          | 0.23                                  | 936.05                    | 18.2 147.9                            | 15.40 S 9.65 E                    |
| 1036.32                   | 1.13         | 145.42          | 0.42                                  | 1036.03                   | 20.5 147.1                            | 17.18 S 11.11 E                   |
| 1136.32                   | 0.49         | 181.26          | 0.79                                  | 1136.02                   | 21.8 147.7                            | 18.42 S 11.66 E                   |
| 1236.32                   | 0.35         | 198.81          | 0.19                                  | 1236.01                   | 22.4 148.9                            | 19.14 S 11.55 E                   |
| 1336.32                   | 0.26         | 190.87          | 0.10                                  | 1336.01                   | 22.7 149.9                            | 19.65 S 11.41 E                   |
| 1436.32                   | 0.24         | 187.29          | 0.03                                  | 1436.01                   | 23.1 150.5                            | 20.08 S 11.34 E                   |
| 1536.32                   | 0.14         | 139.59          | 0.18                                  | 1536.01                   | 23.3 150.8                            | 20.38 S 11.39 E                   |
| 1636.32                   | 0.08         | 189.18          | 0.11                                  | 1636.01                   | 23.5 150.8                            | 20.54 S 11.46 E                   |

# A Gyrodata Directional Survey

BOPCO LP

Lease: 431H Well: POKER LAKE UNIT

Location: MCVAY 5, EDDY COUNTY, TEXAS

Job Number: MD0714GDM724

| MEASURED<br>DEPTH<br>feet | INCL<br>deg. | AZIMUTH<br>deg. | DOGLEG<br>SEVERITY<br>deg./<br>100 ft. | VERTICAL<br>DEPTH<br>feet | CLOSURE<br>DIST. AZIMUTH<br>feet deg. | HORIZONTAL<br>COORDINATES<br>feet |
|---------------------------|--------------|-----------------|----------------------------------------|---------------------------|---------------------------------------|-----------------------------------|
| 1736.32                   | 0.16         | 137.49          | 0.13                                   | 1736.01                   | 23.7 150.9                            | 20.71 S 11.54 E                   |
| 1836.32                   | 0.20         | 164.16          | 0.09                                   | 1836.01                   | 24.0 150.9                            | 20.98 S 11.68 E                   |
| 1936.32                   | 0.32         | 174.49          | 0.13                                   | 1936.01                   | 24.4 151.2                            | 21.43 S 11.76 E                   |
| 2036.32                   | 0.41         | 202.39          | 0.20                                   | 2036.01                   | 24.9 152.1                            | 22.04 S 11.65 E                   |
| 2136.32                   | 0.56         | 199.42          | 0.15                                   | 2136.00                   | 25.5 153.6                            | 22.83 S 11.35 E                   |
| 2236.32                   | 0.48         | 207.04          | 0.11                                   | 2236.00                   | 26.1 155.1                            | 23.66 S 11.00 E                   |
| 2336.32                   | 0.35         | 212.96          | 0.14                                   | 2336.00                   | 26.5 156.3                            | 24.29 S 10.64 E                   |
| 2436.32                   | 0.21         | 226.05          | 0.15                                   | 2435.99                   | 26.8 157.3                            | 24.68 S 10.34 E                   |
| 2536.32                   | 0.10         | 256.82          | 0.13                                   | 2535.99                   | 26.8 157.8                            | 24.82 S 10.13 E                   |
| 2636.32                   | 0.23         | 36.95           | 0.31                                   | 2635.99                   | 26.7 157.6                            | 24.68 S 10.16 E                   |
| 2736.32                   | 0.25         | 43.66           | 0.03                                   | 2735.99                   | 26.5 156.8                            | 24.37 S 10.43 E                   |
| 2836.32                   | 0.22         | 40.54           | 0.03                                   | 2835.99                   | 26.3 156.0                            | 24.06 S 10.71 E                   |
| 2936.32                   | 0.32         | 28.04           | 0.12                                   | 2935.99                   | 26.1 155.1                            | 23.67 S 10.96 E                   |
| 3036.32                   | 0.34         | 13.84           | 0.08                                   | 3035.99                   | 25.7 154.2                            | 23.14 S 11.17 E                   |
| 3136.32                   | 0.45         | 21.94           | 0.12                                   | 3135.99                   | 25.2 153.1                            | 22.48 S 11.38 E                   |
| 3236.32                   | 0.69         | 60.67           | 0.44                                   | 3235.98                   | 24.9 151.1                            | 21.82 S 12.06 E                   |
| 3336.32                   | 1.06         | 83.23           | 0.50                                   | 3335.97                   | 25.3 147.8                            | 21.42 S 13.50 E                   |
| 3436.32                   | 1.11         | 85.55           | 0.07                                   | 3435.95                   | 26.2 144.1                            | 21.24 S 15.38 E                   |
| 3536.32                   | 1.13         | 96.75           | 0.22                                   | 3535.93                   | 27.4 140.8                            | 21.28 S 17.33 E                   |
| 3636.32                   | 0.94         | 143.94          | 0.85                                   | 3635.92                   | 29.0 139.6                            | 22.06 S 18.79 E                   |
| 3736.32                   | 0.94         | 163.09          | 0.31                                   | 3735.91                   | 30.5 140.3                            | 23.50 S 19.51 E                   |
| 3836.32                   | 0.62         | 217.18          | 0.76                                   | 3835.90                   | 31.4 141.8                            | 24.72 S 19.42 E                   |

# A Gyrodata Directional Survey

BOPCO LP

Lease: 431H Well: POKER LAKE UNIT

Location: MCVAY 5, EDDY COUNTY, TEXAS

Job Number: MD0714GDM724

| MEASURED<br>DEPTH<br>feet | INCL<br>deg. | AZIMUTH<br>deg. | DOGLEG<br>SEVERITY<br>deg./<br>100 ft. | VERTICAL<br>DEPTH<br>feet | CLOSURE<br>DIST. AZIMUTH<br>feet deg. | HORIZONTAL<br>COORDINATES<br>feet |
|---------------------------|--------------|-----------------|----------------------------------------|---------------------------|---------------------------------------|-----------------------------------|
| 3930.57                   | 0.63         | 211.85          | 0.06                                   | 3930.14                   | 31.8 143.6                            | 25.57 S 18.84 E                   |
| 4024.82                   | 0.74         | 221.42          | 0.17                                   | 4024.39                   | 32.1 145.5                            | 26.46 S 18.17 E                   |
| 4119.07                   | 0.81         | 223.77          | 0.08                                   | 4118.63                   | 32.4 147.7                            | 27.40 S 17.30 E                   |
| 4213.32                   | 0.85         | 227.70          | 0.07                                   | 4212.87                   | 32.7 150.1                            | 28.35 S 16.32 E                   |
| 4307.57                   | 0.92         | 229.65          | 0.08                                   | 4307.11                   | 33.0 152.5                            | 29.31 S 15.23 E                   |
| 4401.82                   | 1.01         | 235.21          | 0.14                                   | 4401.34                   | 33.3 155.2                            | 30.28 S 13.97 E                   |
| 4496.07                   | 1.01         | 237.89          | 0.05                                   | 4495.58                   | 33.6 158.0                            | 31.19 S 12.59 E                   |
| 4590.32                   | 1.01         | 241.05          | 0.06                                   | 4589.81                   | 33.9 160.8                            | 32.03 S 11.16 E                   |
| 4684.57                   | 1.01         | 240.71          | 0.01                                   | 4684.05                   | 34.2 163.5                            | 32.84 S 9.70 E                    |
| 4778.82                   | 1.08         | 240.95          | 0.07                                   | 4778.28                   | 34.7 166.3                            | 33.68 S 8.20 E                    |
| 4873.07                   | 1.10         | 242.99          | 0.05                                   | 4872.52                   | 35.2 169.1                            | 34.52 S 6.62 E                    |
| 4967.32                   | 1.05         | 242.80          | 0.05                                   | 4966.75                   | 35.7 171.9                            | 35.33 S 5.05 E                    |
| 5061.57                   | 0.96         | 243.10          | 0.10                                   | 5060.98                   | 36.3 174.3                            | 36.08 S 3.57 E                    |
| 5155.82                   | 0.99         | 245.45          | 0.05                                   | 5155.22                   | 36.8 176.7                            | 36.78 S 2.13 E                    |
| 5250.07                   | 0.99         | 246.75          | 0.02                                   | 5249.46                   | 37.4 179.0                            | 37.44 S 0.64 E                    |
| 5344.32                   | 1.03         | 246.77          | 0.04                                   | 5343.69                   | 38.1 181.3                            | 38.09 S 0.89 W                    |
| 5438.57                   | 1.00         | 246.92          | 0.03                                   | 5437.93                   | 38.8 183.6                            | 38.75 S 2.42 W                    |
| 5532.82                   | 0.97         | 249.44          | 0.06                                   | 5532.16                   | 39.5 185.7                            | 39.35 S 3.92 W                    |
| 5627.07                   | 1.02         | 247.32          | 0.07                                   | 5626.40                   | 40.3 187.8                            | 39.95 S 5.45 W                    |
| 5721.32                   | 0.98         | 246.19          | 0.05                                   | 5720.64                   | 41.2 189.7                            | 40.60 S 6.96 W                    |
| 5815.57                   | 0.99         | 244.96          | 0.02                                   | 5814.87                   | 42.1 191.5                            | 41.27 S 8.43 W                    |

# A Gyrodata Directional Survey

BOPCO LP

Lease: 431H Well: POKER LAKE UNIT

Location: MCVAY 5, EDDY COUNTY, TEXAS

Job Number: MD0714GDM724

| MEASURED<br>DEPTH<br>feet | INCL<br>deg. | AZIMUTH<br>deg. | DOGLEG<br>SEVERITY<br>deg./<br>100 ft. | VERTICAL<br>DEPTH<br>feet | CLOSURE<br>DIST. AZIMUTH<br>feet deg. | HORIZONTAL<br>COORDINATES<br>feet |
|---------------------------|--------------|-----------------|----------------------------------------|---------------------------|---------------------------------------|-----------------------------------|
| 5909.82                   | 1.00         | 244.31          | 0.02                                   | 5909.11                   | 43.1 193.3                            | 41.97 S 9.91 W                    |
| 6004.07                   | 1.04         | 241.86          | 0.06                                   | 6003.34                   | 44.2 194.9                            | 42.73 S 11.41 W                   |
| 6098.32                   | 1.09         | 239.47          | 0.07                                   | 6097.58                   | 45.5 196.5                            | 43.59 S 12.93 W                   |
| 6192.57                   | 1.19         | 234.91          | 0.14                                   | 6191.81                   | 46.9 198.0                            | 44.61 S 14.51 W                   |
| 6286.82                   | 1.23         | 237.48          | 0.07                                   | 6286.04                   | 48.5 199.5                            | 45.72 S 16.16 W                   |
| 6381.07                   | 1.23         | 238.18          | 0.02                                   | 6380.26                   | 50.1 200.9                            | 46.79 S 17.87 W                   |
| 6475.32                   | 1.21         | 232.23          | 0.14                                   | 6474.49                   | 51.8 202.2                            | 47.94 S 19.52 W                   |
| 6569.57                   | 1.25         | 233.89          | 0.06                                   | 6568.72                   | 53.5 203.3                            | 49.15 S 21.14 W                   |
| 6663.82                   | 1.24         | 239.47          | 0.13                                   | 6662.95                   | 55.2 204.4                            | 50.28 S 22.84 W                   |
| 6758.07                   | 1.10         | 240.97          | 0.15                                   | 6757.18                   | 56.8 205.6                            | 51.23 S 24.51 W                   |
| 6852.32                   | 1.09         | 237.05          | 0.08                                   | 6851.41                   | 58.3 206.5                            | 52.16 S 26.06 W                   |
| 6946.57                   | 1.13         | 230.84          | 0.13                                   | 6945.64                   | 59.9 207.3                            | 53.23 S 27.53 W                   |
| 7040.82                   | 1.18         | 225.14          | 0.13                                   | 7039.88                   | 61.7 208.0                            | 54.51 S 28.94 W                   |
| 7071.38                   | 1.21         | 222.40          | 0.21                                   | 7070.43                   | 62.3 208.1                            | 54.97 S 29.38 W                   |

Final Station Closure: Distance: 62.32 ft Az: 208.12 deg.



# Weatherford

Evaluation, Drilling & Intervention

10000 West County Rd. 116

P.O. Box 61028

Midland, TX USA 79711

Tel. (432) 561-8892 Fax (432) 561-8895

BOPCO, LP  
PO Box 2760  
Midland, TX 79702

Date: August 4, 2014

30-015-42244

Attention: Todd Carpenter

Re: BOPCO, LP  
Well: Poker Lake Unit 431H  
Eddy County, New Mexico

Enclosed, please find the original survey performed on the referenced well by Precision Energy Services, Inc. (P-5 No. 676004), a Weatherford company. Other information required by your office is as follows:

| <u>Name &amp; Title<br/>Of Surveyor</u> | <u>Well<br/>Number</u> | <u>Surveyed<br/>Depths</u> | <u>Dates<br/>Performed</u> | <u>Type of<br/>Survey</u>     |
|-----------------------------------------|------------------------|----------------------------|----------------------------|-------------------------------|
| Ben Hernandez<br>MWD Supervisor         | 431H                   | 7104' MD<br>15961' MD      | 7/11/2014<br>7/30/2014     | Measurement<br>While Drilling |

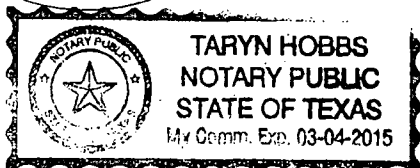
A notarized plan vs. actual is attached to the survey report. If any other information is required, please contact the undersigned at the letterhead address and phone number.

Jesse Aguilar  
MWD Ops Coordinator

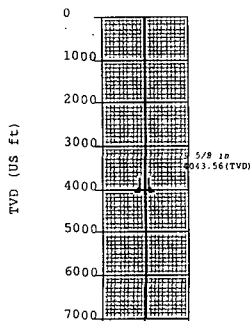
On this, the 1<sup>st</sup> day of August, 2014, before me a notary public, the undersigned officer, personally appeared Jesse Aguilar, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument, and acknowledged that he executed the same for the purposes therein contained.

In witness hereof, I hereunto set my hand and official seal.

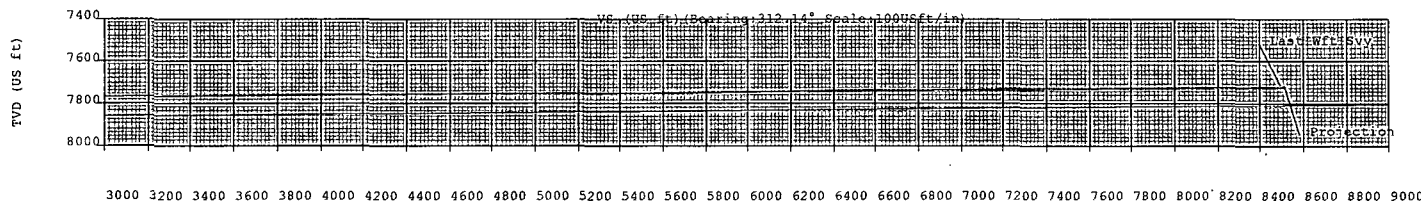
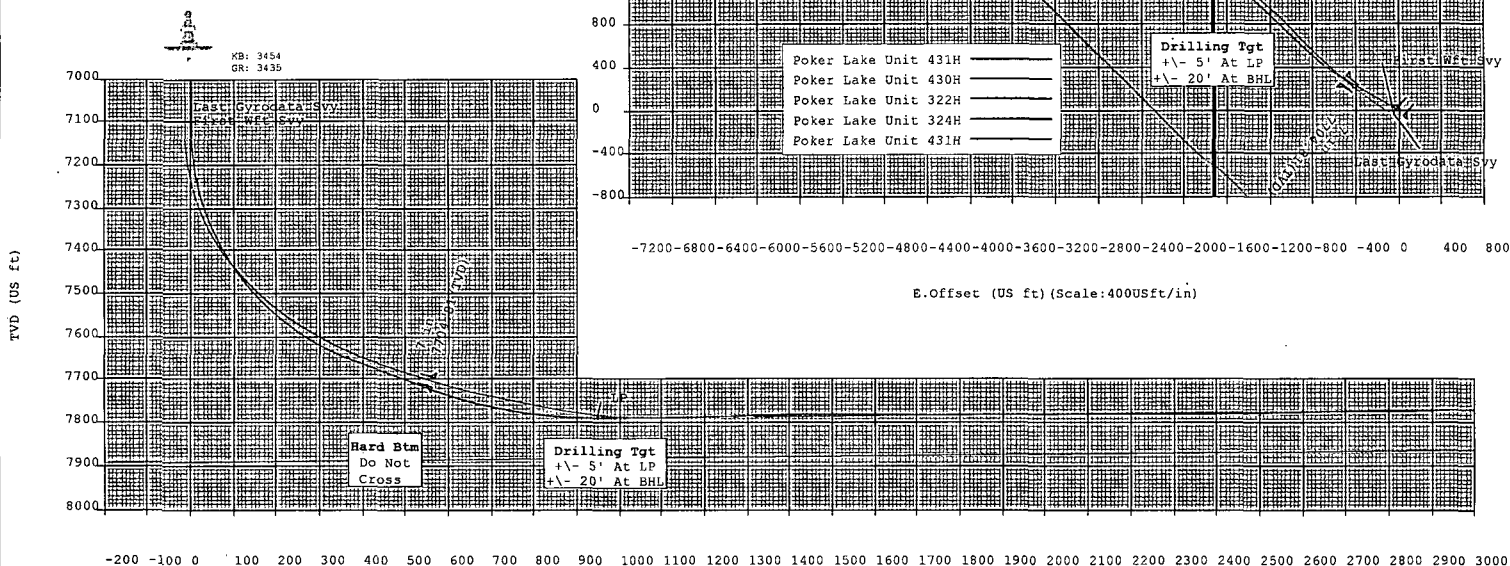
Notary Public



**BOPCO, L.P.**  
**Poker Lake Unit 431H**  
**Eddy Co, NM**

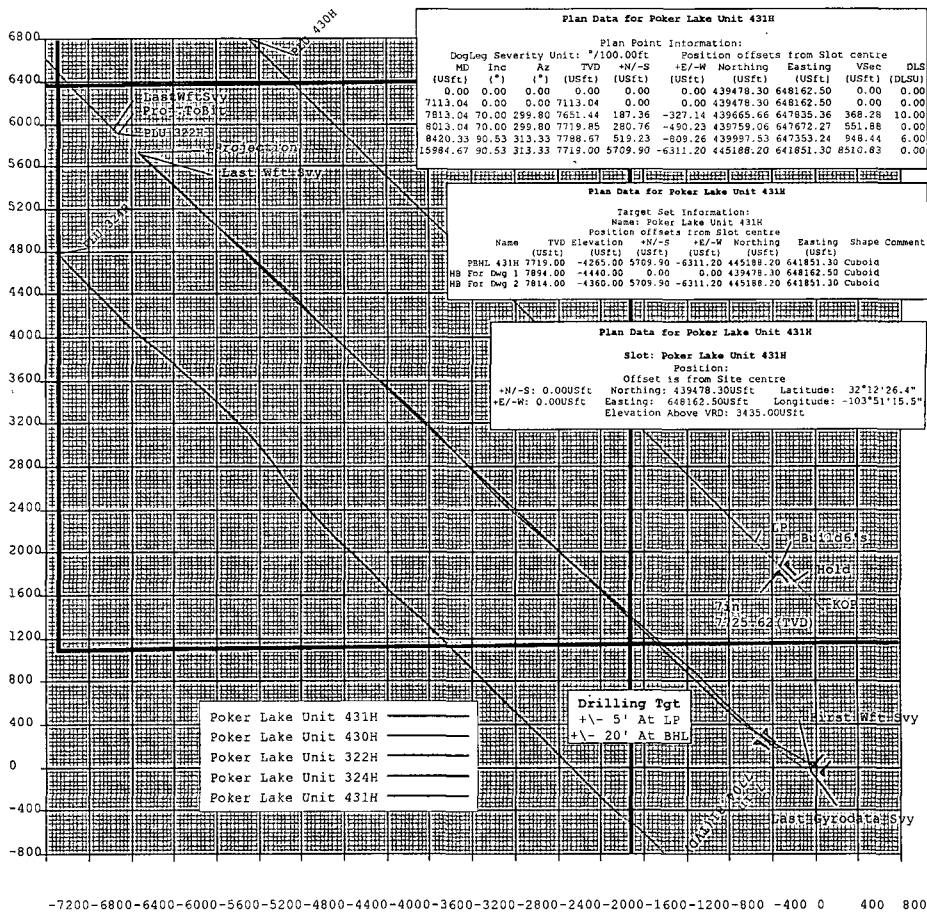


VS (US ft) (Bearing:312.14° Scale:1000USft/in)



VS (US ft) (Bearing:312.14° Scale:200USft/in)

Sign Off: Russell Joyner



Plan Data for Poker Lake Unit 431H

| Plan Point Information:          |       |        |         |         |                                   |           |           |         |       |
|----------------------------------|-------|--------|---------|---------|-----------------------------------|-----------|-----------|---------|-------|
| DogLeg Severity Unit: "/100.00ft |       |        |         |         | Position offsets from Slot centre |           |           |         |       |
| MD                               | Inc   | Az     | TVD     | +N/-S   | +E/-W                             | Northing  | Easting   | VSec    | OLS   |
| (USft)                           | (°)   | (°)    | (USft)  | (USft)  | (USft)                            | (USft)    | (USft)    | (USft)  | (DLB) |
| 0.00                             | 0.00  | 0.00   | 0.00    | 0.00    | 0.00                              | 439478.30 | 648162.50 | 0.00    | 0.00  |
| 7113.04                          | 0.00  | 0.00   | 7113.04 | 0.00    | 0.00                              | 439478.30 | 648162.50 | 0.00    | 0.00  |
| 7813.04                          | 70.00 | 299.80 | 7651.44 | 187.36  | -327.14                           | 439665.66 | 647835.36 | 368.28  | 10.00 |
| 8013.04                          | 70.00 | 299.80 | 7719.85 | 280.76  | -490.23                           | 439759.06 | 647872.27 | 551.88  | 0.00  |
| 8420.33                          | 90.53 | 313.33 | 7798.67 | 519.23  | -809.26                           | 439997.53 | 647353.24 | 948.44  | 6.00  |
| 15984.67                         | 90.53 | 313.33 | 7719.00 | 5709.90 | -6311.20                          | 445188.20 | 641851.30 | 8510.83 | 0.00  |

Plan Data for Poker Lake Unit 431H

| Target Set Information:           |         |           |         |          |           |           |        |         |  |
|-----------------------------------|---------|-----------|---------|----------|-----------|-----------|--------|---------|--|
| Name: Poker Lake Unit 431H        |         |           |         |          |           |           |        |         |  |
| Position offsets from Slot centre |         |           |         |          |           |           |        |         |  |
| Name                              | TVD     | Elevation | +N/-S   | +E/-W    | Northing  | Easting   | Shape  | Comment |  |
| (USft)                            | (USft)  | (USft)    | (USft)  | (USft)   | (USft)    | (USft)    | (USft) |         |  |
| PBL 431H                          | 7719.00 | -4265.00  | 5709.90 | -6311.20 | 445188.20 | 641851.30 | Cuboid |         |  |
| HB For Deg 1                      | 7894.00 | -4440.00  | 0.00    | 0.00     | 439478.30 | 648162.50 | Cuboid |         |  |
| HB For Deg 2                      | 7814.00 | -4360.00  | 5709.90 | -6311.20 | 445188.20 | 641851.30 | Cuboid |         |  |

Plan Data for Poker Lake Unit 431H

| Slot: Poker Lake Unit 431H  |          |           |               |           |                      |               |          |          |               |
|-----------------------------|----------|-----------|---------------|-----------|----------------------|---------------|----------|----------|---------------|
| Position:                   |          |           |               |           |                      |               |          |          |               |
| Offset 1's from Site centre |          |           |               |           |                      |               |          |          |               |
| +N/-S:                      | 0.00USft | Northing: | 439478.30USft | Latitude: | 32°12'26.4"          | +E/-W:        | 0.00USft | Easting: | 648162.50USft |
|                             |          |           |               |           | Longitude:           | -103°51'15.5" |          |          |               |
|                             |          |           |               |           | Elevation Above VED: | 3435.00USft   |          |          |               |

## Poker Lake Unit 431H

|                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                     |                                                   |                                   |                                  |                      |                                   |                                     |                      |                                  |                                     |
|---------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|---------------------------------------------------|-----------------------------------|----------------------------------|----------------------|-----------------------------------|-------------------------------------|----------------------|----------------------------------|-------------------------------------|
| <b>Field Name</b><br>Eddy Co NM<br>Nad27 NMEZ     | <b>Map Units :</b> US ft<br><b>Vertical Reference Datum (VRD) :</b> Mean Sea Level<br><b>Projected Coordinate System :</b> NAD27 / New Mexico East<br><b>Comment :</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>Company Name :</b> BOPCO, L.P.   |                                                   |                                   |                                  |                      |                                   |                                     |                      |                                  |                                     |
| <b>Site Name</b><br>Poker Lake Unit<br>431H       | <b>Units :</b> US ft <b>North Reference :</b> Grid <b>Convergence Angle :</b> 0.26<br><table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;"><b>Position</b></td> <td style="width: 33%;"><b>Northing :</b> 439478.30 US ft</td> <td style="width: 33%;"><b>Latitude :</b> 32° 12' 26.41"</td> </tr> <tr> <td></td> <td><b>Easting :</b> 648162.50 US ft</td> <td><b>Longitude :</b> -103° 51' 15.49"</td> </tr> </table> <b>Elevation above Mean Sea Level:</b> 3435.00 US ft<br><b>Comment :</b>                                                                                                   |                                     | <b>Position</b>                                   | <b>Northing :</b> 439478.30 US ft | <b>Latitude :</b> 32° 12' 26.41" |                      | <b>Easting :</b> 648162.50 US ft  | <b>Longitude :</b> -103° 51' 15.49" |                      |                                  |                                     |
| <b>Position</b>                                   | <b>Northing :</b> 439478.30 US ft                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>Latitude :</b> 32° 12' 26.41"    |                                                   |                                   |                                  |                      |                                   |                                     |                      |                                  |                                     |
|                                                   | <b>Easting :</b> 648162.50 US ft                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <b>Longitude :</b> -103° 51' 15.49" |                                                   |                                   |                                  |                      |                                   |                                     |                      |                                  |                                     |
| <b>Slot Name</b><br>Poker Lake Unit<br>431H       | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="3" style="text-align: center;"><b>Position (Offsets relative to Site Centre)</b></td> </tr> <tr> <td style="width: 33%;">+N / -S : 0.00 US ft</td> <td style="width: 33%;"><b>Northing :</b> 439478.30 US ft</td> <td style="width: 33%;"><b>Latitude :</b> 32° 12' 26.41"</td> </tr> <tr> <td>+E / -W : 0.00 US ft</td> <td><b>Easting :</b> 648162.50 US ft</td> <td><b>Longitude :</b> -103° 51' 15.49"</td> </tr> </table> <b>Slot TVD Reference :</b> Ground Elevation<br><b>Elevation above Mean Sea Level :</b> 3435.00 US ft<br><b>Comment :</b> |                                     | <b>Position (Offsets relative to Site Centre)</b> |                                   |                                  | +N / -S : 0.00 US ft | <b>Northing :</b> 439478.30 US ft | <b>Latitude :</b> 32° 12' 26.41"    | +E / -W : 0.00 US ft | <b>Easting :</b> 648162.50 US ft | <b>Longitude :</b> -103° 51' 15.49" |
| <b>Position (Offsets relative to Site Centre)</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                     |                                                   |                                   |                                  |                      |                                   |                                     |                      |                                  |                                     |
| +N / -S : 0.00 US ft                              | <b>Northing :</b> 439478.30 US ft                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>Latitude :</b> 32° 12' 26.41"    |                                                   |                                   |                                  |                      |                                   |                                     |                      |                                  |                                     |
| +E / -W : 0.00 US ft                              | <b>Easting :</b> 648162.50 US ft                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <b>Longitude :</b> -103° 51' 15.49" |                                                   |                                   |                                  |                      |                                   |                                     |                      |                                  |                                     |
| <b>Well Name</b><br>Poker Lake Unit<br>431H       | <b>Type :</b> Main well <b>UWI :</b><br><b>Rig Height Drill Floor :</b> 19.00 US ft <b>Comment :</b><br><b>Relative to Mean Sea Level:</b> 3454.00 US ft<br><b>Closure Distance :</b> 8519.92 US ft <b>Closure Azimuth :</b> 312.142°<br><b>Vertical Section (Position of Origin Relative to Slot )</b><br><div style="display: flex; justify-content: space-around;"> <span>+N / -S : 0.00 US ft</span> <span>+E / -W : 0.00 US ft</span> <span>Az : 312.14°</span> </div>                                                                                                                                                                   |                                     |                                                   |                                   |                                  |                      |                                   |                                     |                      |                                  |                                     |

### Target Set

**Name :** Poker Lake Unit      **Number of Targets :** 3  
431H

### Comment :

|                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                           |  |  |                        |                                   |                                  |                         |                                 |                                     |
|-------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--|--|------------------------|-----------------------------------|----------------------------------|-------------------------|---------------------------------|-------------------------------------|
| <b>Target Name:</b><br>PBHL431H           | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="3" style="text-align: center;"><b>Position (Relative to Slot centre)</b></td> </tr> <tr> <td style="width: 33%;">+N / -S : 5709.90US ft</td> <td style="width: 33%;"><b>Northing :</b> 445188.20 US ft</td> <td style="width: 33%;"><b>Latitude :</b> 32° 13' 23.19"</td> </tr> <tr> <td>+E / -W : 6311.20 US ft</td> <td><b>Easting :</b> 641851.30US ft</td> <td><b>Longitude :</b> -103° 52' 28.66"</td> </tr> </table> <b>Shape:</b> Cuboid<br><b>TVD (Drill Floor) :</b> 7719.00 US ft<br><b>Orientation Azimuth :</b> 0.00° <b>Inclination :</b> 0.00°<br><b>Dimensions Length :</b> 0.00 US ft <b>Breadth :</b> 0.00 US ft <b>Height :</b> 0.00 US ft | <b>Position (Relative to Slot centre)</b> |  |  | +N / -S : 5709.90US ft | <b>Northing :</b> 445188.20 US ft | <b>Latitude :</b> 32° 13' 23.19" | +E / -W : 6311.20 US ft | <b>Easting :</b> 641851.30US ft | <b>Longitude :</b> -103° 52' 28.66" |
| <b>Position (Relative to Slot centre)</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                           |  |  |                        |                                   |                                  |                         |                                 |                                     |
| +N / -S : 5709.90US ft                    | <b>Northing :</b> 445188.20 US ft                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>Latitude :</b> 32° 13' 23.19"          |  |  |                        |                                   |                                  |                         |                                 |                                     |
| +E / -W : 6311.20 US ft                   | <b>Easting :</b> 641851.30US ft                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>Longitude :</b> -103° 52' 28.66"       |  |  |                        |                                   |                                  |                         |                                 |                                     |
| <b>Target Name:</b><br>HB For Dwg 1       | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="3" style="text-align: center;"><b>Position (Relative to Slot centre)</b></td> </tr> <tr> <td style="width: 33%;">+N / -S : 0.00US ft</td> <td style="width: 33%;"><b>Northing :</b> 439478.30 US ft</td> <td style="width: 33%;"><b>Latitude :</b> 32° 12' 26.41"</td> </tr> <tr> <td>+E / -W : 0.00 US ft</td> <td><b>Easting :</b> 648162.50US ft</td> <td><b>Longitude :</b> -103° 51' 15.49"</td> </tr> </table> <b>Shape:</b> Cuboid<br><b>TVD (Drill Floor) :</b> 7894.00 US ft<br><b>Orientation Azimuth :</b> 313.33° <b>Inclination :</b> 0.53°<br><b>Dimensions Length :</b> 6000.00 US ft <b>Breadth :</b> 0.00 US ft <b>Height :</b> 2.00 US ft  | <b>Position (Relative to Slot centre)</b> |  |  | +N / -S : 0.00US ft    | <b>Northing :</b> 439478.30 US ft | <b>Latitude :</b> 32° 12' 26.41" | +E / -W : 0.00 US ft    | <b>Easting :</b> 648162.50US ft | <b>Longitude :</b> -103° 51' 15.49" |
| <b>Position (Relative to Slot centre)</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                           |  |  |                        |                                   |                                  |                         |                                 |                                     |
| +N / -S : 0.00US ft                       | <b>Northing :</b> 439478.30 US ft                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>Latitude :</b> 32° 12' 26.41"          |  |  |                        |                                   |                                  |                         |                                 |                                     |
| +E / -W : 0.00 US ft                      | <b>Easting :</b> 648162.50US ft                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>Longitude :</b> -103° 51' 15.49"       |  |  |                        |                                   |                                  |                         |                                 |                                     |

## 5D Survey Report

|                                                                                         |                                           |                                   |                                   |
|-----------------------------------------------------------------------------------------|-------------------------------------------|-----------------------------------|-----------------------------------|
| <b>Target Name:</b><br><b>HB For Dwg:</b><br><b>2</b><br><b>Shape:</b><br><b>Cuboid</b> | <b>Position (Relative to Slot centre)</b> |                                   |                                   |
|                                                                                         | <b>+N / -S : 5709.90US ft</b>             | <b>Northing : 445188.20 US ft</b> | <b>Latitude : 32°13'23.19"</b>    |
|                                                                                         | <b>+E / -W : -6311.20 US ft</b>           | <b>Easting : 641851.30US ft</b>   | <b>Longitude : -103°52'28.66"</b> |
|                                                                                         | <b>TVD (Drill Floor) : 7814.00 US ft</b>  |                                   |                                   |
| <b>Orientation Azimuth : 313.33°</b>                                                    |                                           |                                   | <b>Inclination : 0.53°</b>        |
| <b>Dimensions Length : 14000.00 US ft</b>                                               |                                           | <b>Breadth : 0.00 US ft</b>       | <b>Height : 2.00 US ft</b>        |

|                                 |                          |                                   |                                                                  |
|---------------------------------|--------------------------|-----------------------------------|------------------------------------------------------------------|
| <b>Survey Name : Wft MWD Sv</b> |                          |                                   |                                                                  |
| <b>Date : 21/Jul/2014</b>       | <b>Survey Tool : MWD</b> | <b>Comment :</b>                  | <b>Company : Wft</b>                                             |
| <b>Magnetic Model</b>           |                          |                                   |                                                                  |
| <b>Model Name: BGGM</b>         | <b>Date: 15/Aug/2014</b> | <b>Field Strength: 48243.7 nT</b> | <b>Declination: 7.49° Dip: 60.04°</b>                            |
| <b>Tie Point</b>                |                          |                                   |                                                                  |
| <b>MD: 7071.4</b>               | <b>Inclination: 1.21</b> | <b>Azimuth: 222.38</b>            | <b>TVD: 7070.45 North Offset: -54.9768 East Offset: -29.3606</b> |

| <b>Casing Points (Relative to Slot centre, TVD relative to Drill Floor)</b> |         |        |             |                   |                   |                  |                 |      |  |
|-----------------------------------------------------------------------------|---------|--------|-------------|-------------------|-------------------|------------------|-----------------|------|--|
| MD (US ft)                                                                  | Inc (°) | Az (°) | TVD (US ft) | N. Offset (US ft) | E. Offset (US ft) | Northing (US ft) | Easting (US ft) | Name |  |
| 8013.00                                                                     | 72.97   | 308.92 | 7704.81     | 283.43            | -504.53           | 439761.73        | 647657.97       | 7 in |  |

**Well path created using minimum curvature**

| <b>Survey Points (Relative to Slot centre, TVD relative to Drill Floor)</b> |         |        |             |                   |                   |            |                   |                  |                 |              |  |
|-----------------------------------------------------------------------------|---------|--------|-------------|-------------------|-------------------|------------|-------------------|------------------|-----------------|--------------|--|
| MD (US ft)                                                                  | Inc (°) | Az (°) | TVD (US ft) | N. Offset (US ft) | E. Offset (US ft) | VS (US ft) | DLS (°/100 US ft) | Northing (US ft) | Easting (US ft) | Comment      |  |
| 7104.00                                                                     | 1.41    | 229.49 | 7103.04     | -55.49            | -29.90            | -15.06     | 0.00              | 439422.81        | 648132.60       | First Wft Sv |  |
| 7135.00                                                                     | 2.80    | 287.12 | 7134.02     | -55.52            | -30.91            | -14.33     | 7.63              | 439422.78        | 648131.59       |              |  |
| 7164.00                                                                     | 6.04    | 297.81 | 7162.93     | -54.60            | -32.94            | -12.21     | 11.48             | 439423.70        | 648129.56       |              |  |
| 7195.00                                                                     | 8.82    | 299.24 | 7193.67     | -52.67            | -36.46            | -8.31      | 8.99              | 439425.63        | 648126.04       |              |  |
| 7226.00                                                                     | 12.13   | 300.26 | 7224.15     | -49.87            | -41.34            | -2.80      | 10.69             | 439428.43        | 648121.16       |              |  |
| 7257.00                                                                     | 15.45   | 300.58 | 7254.25     | -46.13            | -47.71            | 4.43       | 10.71             | 439432.17        | 648114.79       |              |  |
| 7289.00                                                                     | 18.78   | 300.84 | 7284.83     | -41.32            | -55.81            | 13.66      | 10.41             | 439436.98        | 648106.69       |              |  |
| 7321.00                                                                     | 23.25   | 301.69 | 7314.69     | -35.36            | -65.61            | 24.93      | 14.00             | 439442.94        | 648096.89       |              |  |
| 7352.00                                                                     | 26.53   | 301.19 | 7342.81     | -28.55            | -76.74            | 37.75      | 10.60             | 439449.75        | 648085.76       |              |  |
| 7383.00                                                                     | 30.14   | 300.88 | 7370.09     | -20.97            | -89.35            | 52.18      | 11.65             | 439457.33        | 648073.15       |              |  |
| 7414.00                                                                     | 34.24   | 301.28 | 7396.32     | -12.45            | -103.49           | 68.39      | 13.24             | 439465.85        | 648059.01       |              |  |
| 7445.00                                                                     | 37.99   | 302.04 | 7421.36     | -2.85             | -119.03           | 86.35      | 12.18             | 439475.45        | 648043.47       |              |  |
| 7475.00                                                                     | 40.99   | 302.79 | 7444.51     | 7.38              | -135.14           | 105.15     | 10.13             | 439485.68        | 648027.36       |              |  |
| 7506.00                                                                     | 43.24   | 303.42 | 7467.50     | 18.73             | -152.55           | 125.68     | 7.38              | 439497.03        | 648009.95       |              |  |
| 7537.00                                                                     | 45.58   | 304.24 | 7489.65     | 30.81             | -170.56           | 147.15     | 7.77              | 439509.11        | 647991.94       |              |  |
| 7569.00                                                                     | 48.07   | 304.68 | 7511.54     | 44.02             | -189.80           | 170.27     | 7.85              | 439522.32        | 647972.70       |              |  |
| 7600.00                                                                     | 51.08   | 305.20 | 7531.64     | 57.53             | -209.14           | 193.68     | 9.79              | 439535.83        | 647953.36       |              |  |
| 7631.00                                                                     | 53.83   | 305.60 | 7550.53     | 71.77             | -229.18           | 218.09     | 8.93              | 439550.07        | 647933.32       |              |  |
| 7662.00                                                                     | 56.91   | 305.44 | 7568.14     | 86.59             | -249.94           | 243.43     | 9.94              | 439564.89        | 647912.56       |              |  |
| 7693.00                                                                     | 59.36   | 305.11 | 7584.51     | 101.79            | -271.43           | 269.56     | 7.95              | 439580.09        | 647891.07       |              |  |
| 7725.00                                                                     | 61.07   | 305.75 | 7600.40     | 117.89            | -294.06           | 297.14     | 5.62              | 439596.19        | 647868.44       |              |  |
| 7756.00                                                                     | 62.84   | 306.75 | 7614.98     | 134.07            | -316.12           | 324.36     | 6.38              | 439612.37        | 647846.38       |              |  |
| 7787.00                                                                     | 64.93   | 307.18 | 7628.62     | 150.81            | -338.36           | 352.08     | 6.86              | 439629.11        | 647824.14       |              |  |
| 7819.00                                                                     | 67.53   | 308.39 | 7641.52     | 168.75            | -361.50           | 381.28     | 8.83              | 439647.05        | 647801.00       |              |  |
| 7851.00                                                                     | 69.94   | 309.01 | 7653.13     | 187.40            | -384.77           | 411.04     | 7.74              | 439665.70        | 647777.73       |              |  |
| 7881.00                                                                     | 70.66   | 308.67 | 7663.24     | 205.11            | -406.77           | 439.24     | 2.63              | 439683.41        | 647755.73       |              |  |
| 7944.00                                                                     | 71.41   | 308.60 | 7683.71     | 242.31            | -453.31           | 498.71     | 1.20              | 439720.61        | 647709.19       |              |  |
| 8013.00                                                                     | 72.97   | 308.92 | 7704.81     | 283.43            | -504.53           | 564.28     | 2.31              | 439761.73        | 647657.97       | 7 in         |  |
| 8038.00                                                                     | 73.54   | 309.03 | 7712.02     | 298.49            | -523.15           | 588.19     | 2.31              | 439776.79        | 647639.35       |              |  |
| 8069.00                                                                     | 75.01   | 310.28 | 7720.42     | 317.53            | -546.12           | 618.00     | 6.13              | 439795.83        | 647616.38       |              |  |
| 8100.00                                                                     | 76.62   | 311.28 | 7728.01     | 337.16            | -568.87           | 648.04     | 6.06              | 439815.46        | 647593.63       |              |  |
| 8132.00                                                                     | 78.20   | 312.13 | 7734.99     | 357.94            | -592.19           | 679.27     | 5.58              | 439836.24        | 647570.31       |              |  |

## 5D Survey Report

| Survey Points (Relative to Slot centre, TVD relative to Drill Floor) |            |           |                |                      |                      |               |                      |                     |                    |         |
|----------------------------------------------------------------------|------------|-----------|----------------|----------------------|----------------------|---------------|----------------------|---------------------|--------------------|---------|
| ID<br>(US ft)                                                        | Inc<br>(°) | Az<br>(°) | TVD<br>(US ft) | N. Offset<br>(US ft) | E. Offset<br>(US ft) | VS<br>(US ft) | DLS<br>(°/100 US ft) | Northing<br>(US ft) | Easting<br>(US ft) | Comment |
| 8163.00                                                              | 78.82      | 312.63    | 7741.16        | 378.42               | -614.63              | 709.65        | 2.55                 | 439856.72           | 647547.87          |         |
| 8195.00                                                              | 78.57      | 312.65    | 7747.44        | 399.67               | -637.71              | 741.03        | 0.78                 | 439877.97           | 647524.79          |         |
| 8225.00                                                              | 78.01      | 312.41    | 7753.53        | 419.53               | -659.36              | 770.40        | 2.02                 | 439897.83           | 647503.14          |         |
| 8257.00                                                              | 77.87      | 312.35    | 7760.21        | 440.62               | -682.48              | 801.70        | 0.47                 | 439918.92           | 647480.02          |         |
| 8289.00                                                              | 78.77      | 312.73    | 7766.69        | 461.81               | -705.56              | 833.03        | 3.04                 | 439940.11           | 647456.94          |         |
| 8320.00                                                              | 80.21      | 313.31    | 7772.35        | 482.61               | -727.85              | 863.51        | 5.00                 | 439960.91           | 647434.65          |         |
| 8350.00                                                              | 81.80      | 313.81    | 7777.04        | 503.02               | -749.32              | 893.13        | 5.55                 | 439981.32           | 647413.18          |         |
| 8381.00                                                              | 82.83      | 314.08    | 7781.18        | 524.34               | -771.44              | 923.83        | 3.43                 | 440002.64           | 647391.06          |         |
| 8413.00                                                              | 84.89      | 314.34    | 7784.60        | 546.53               | -794.24              | 955.63        | 6.49                 | 440024.83           | 647368.26          |         |
| 8443.00                                                              | 87.41      | 314.16    | 7786.62        | 567.41               | -815.68              | 985.54        | 8.42                 | 440045.71           | 647346.82          |         |
| 8474.00                                                              | 88.09      | 314.27    | 7787.83        | 589.01               | -837.88              | 1016.49       | 2.22                 | 440067.31           | 647324.62          |         |
| 8567.00                                                              | 90.74      | 316.79    | 7788.78        | 655.37               | -903.02              | 1109.31       | 3.93                 | 440133.67           | 647259.48          |         |
| 8661.00                                                              | 91.42      | 316.48    | 7787.01        | 723.69               | -967.55              | 1203.00       | 0.80                 | 440201.99           | 647194.95          |         |
| 8755.00                                                              | 91.98      | 315.05    | 7784.22        | 791.01               | -1033.09             | 1296.77       | 1.63                 | 440269.31           | 647129.41          |         |
| 8855.00                                                              | 91.42      | 313.95    | 7781.26        | 861.07               | -1104.39             | 1396.64       | 1.23                 | 440339.37           | 647058.11          |         |
| 8948.00                                                              | 89.81      | 311.08    | 7780.26        | 923.90               | -1172.92             | 1489.62       | 3.54                 | 440402.20           | 646989.58          |         |
| 9042.00                                                              | 89.38      | 310.48    | 7780.92        | 985.30               | -1244.10             | 1583.59       | 0.79                 | 440463.60           | 646918.40          |         |
| 9137.00                                                              | 89.69      | 310.16    | 7781.69        | 1046.77              | -1316.53             | 1678.54       | 0.47                 | 440525.07           | 646845.97          |         |
| 9230.00                                                              | 90.25      | 309.26    | 7781.74        | 1106.18              | -1388.07             | 1771.45       | 1.14                 | 440584.48           | 646774.43          |         |
| 9324.00                                                              | 90.43      | 310.98    | 7781.18        | 1166.75              | -1459.95             | 1865.39       | 1.84                 | 440645.05           | 646702.55          |         |
| 9417.00                                                              | 90.19      | 310.69    | 7780.68        | 1227.56              | -1530.31             | 1958.37       | 0.40                 | 440705.86           | 646632.19          |         |
| 9510.00                                                              | 90.37      | 311.54    | 7780.23        | 1288.72              | -1600.38             | 2051.35       | 0.93                 | 440767.02           | 646562.12          |         |
| 9604.00                                                              | 90.31      | 312.31    | 7779.67        | 1351.52              | -1670.31             | 2145.35       | 0.82                 | 440829.82           | 646492.19          |         |
| 9697.00                                                              | 89.29      | 313.28    | 7779.99        | 1414.70              | -1738.55             | 2238.34       | 1.51                 | 440893.00           | 646423.95          |         |
| 9790.00                                                              | 90.18      | 314.34    | 7780.42        | 1479.08              | -1805.66             | 2331.29       | 1.49                 | 440957.38           | 646356.84          |         |
| 9884.00                                                              | 90.86      | 311.40    | 7779.57        | 1543.02              | -1874.54             | 2425.27       | 3.21                 | 441021.32           | 646287.96          |         |
| 9977.00                                                              | 91.48      | 311.49    | 7777.67        | 1604.57              | -1944.24             | 2518.24       | 0.67                 | 441082.87           | 646218.26          |         |
| 10070.00                                                             | 91.67      | 311.00    | 7775.12        | 1665.85              | -2014.14             | 2611.20       | 0.56                 | 441144.15           | 646148.36          |         |
| 10164.00                                                             | 90.68      | 309.51    | 7773.19        | 1726.58              | -2085.86             | 2705.12       | 1.90                 | 441204.88           | 646076.64          |         |
| 10257.00                                                             | 89.88      | 309.21    | 7772.73        | 1785.56              | -2157.77             | 2798.01       | 0.92                 | 441263.86           | 646004.73          |         |
| 10351.00                                                             | 91.60      | 311.42    | 7771.52        | 1846.37              | -2229.43             | 2891.95       | 2.98                 | 441324.67           | 645933.07          |         |
| 10444.00                                                             | 90.79      | 313.28    | 7769.58        | 1909.00              | -2298.14             | 2984.92       | 2.18                 | 441387.30           | 645864.36          |         |
| 10538.00                                                             | 91.30      | 313.99    | 7767.87        | 1973.85              | -2366.16             | 3078.87       | 0.93                 | 441452.15           | 645796.34          |         |
| 10631.00                                                             | 90.99      | 312.57    | 7766.01        | 2037.60              | -2433.85             | 3171.83       | 1.56                 | 441515.90           | 645728.65          |         |
| 10724.00                                                             | 90.62      | 311.74    | 7764.70        | 2100.01              | -2502.79             | 3264.82       | 0.98                 | 441578.31           | 645659.71          |         |
| 10817.00                                                             | 90.06      | 308.92    | 7764.15        | 2160.19              | -2573.68             | 3357.77       | 3.09                 | 441638.49           | 645588.82          |         |
| 10910.00                                                             | 90.74      | 309.80    | 7763.50        | 2219.16              | -2645.58             | 3450.65       | 1.20                 | 441697.46           | 645516.92          |         |
| 11003.00                                                             | 90.62      | 310.51    | 7762.40        | 2279.13              | -2716.65             | 3543.59       | 0.77                 | 441757.43           | 645445.85          |         |
| 11096.00                                                             | 90.49      | 311.34    | 7761.49        | 2340.05              | -2786.92             | 3636.56       | 0.90                 | 441818.35           | 645375.58          |         |
| 11189.00                                                             | 90.74      | 311.97    | 7760.50        | 2401.86              | -2856.40             | 3729.55       | 0.73                 | 441880.16           | 645306.10          |         |
| 11280.00                                                             | 90.43      | 313.28    | 7759.57        | 2463.48              | -2923.35             | 3820.54       | 1.48                 | 441941.78           | 645239.15          |         |
| 11373.00                                                             | 90.71      | 317.34    | 7758.64        | 2529.58              | -2988.74             | 3913.38       | 4.38                 | 442007.88           | 645173.76          |         |
| 11466.00                                                             | 90.62      | 317.48    | 7757.56        | 2598.04              | -3051.67             | 4005.98       | 0.18                 | 442076.34           | 645110.83          |         |
| 11559.00                                                             | 90.49      | 317.10    | 7756.66        | 2666.37              | -3114.75             | 4098.60       | 0.43                 | 442144.67           | 645047.75          |         |
| 11653.00                                                             | 90.31      | 316.67    | 7756.01        | 2734.99              | -3178.99             | 4192.27       | 0.50                 | 442213.29           | 644983.51          |         |
| 11746.00                                                             | 90.25      | 316.29    | 7755.55        | 2802.43              | -3243.03             | 4285.01       | 0.41                 | 442280.73           | 644919.47          |         |
| 11839.00                                                             | 90.31      | 315.95    | 7755.10        | 2869.46              | -3307.49             | 4377.78       | 0.37                 | 442347.76           | 644855.01          |         |
| 11933.00                                                             | 90.31      | 315.61    | 7754.59        | 2936.82              | -3373.05             | 4471.59       | 0.36                 | 442415.12           | 644789.45          |         |
| 12026.00                                                             | 90.68      | 315.50    | 7753.78        | 3003.22              | -3438.17             | 4564.42       | 0.42                 | 442481.52           | 644724.33          |         |
| 12119.00                                                             | 90.43      | 315.14    | 7752.88        | 3069.34              | -3503.56             | 4657.27       | 0.47                 | 442547.64           | 644658.94          |         |
| 12212.00                                                             | 90.43      | 314.85    | 7752.19        | 3135.09              | -3569.32             | 4750.15       | 0.31                 | 442613.39           | 644593.18          |         |
| 12304.00                                                             | 90.49      | 314.17    | 7751.45        | 3199.59              | -3634.93             | 4842.07       | 0.74                 | 442677.89           | 644527.57          |         |
| 12398.00                                                             | 90.43      | 314.03    | 7750.69        | 3265.00              | -3702.43             | 4936.01       | 0.16                 | 442743.30           | 644460.07          |         |
| 12491.00                                                             | 90.56      | 313.50    | 7749.89        | 3329.32              | -3769.59             | 5028.97       | 0.59                 | 442807.62           | 644392.91          |         |
| 12584.00                                                             | 89.88      | 312.49    | 7749.53        | 3392.74              | -3837.61             | 5121.96       | 1.31                 | 442871.04           | 644324.89          |         |
| 12678.00                                                             | 90.26      | 312.05    | 7749.42        | 3455.97              | -3907.17             | 5215.96       | 0.62                 | 442934.27           | 644255.33          |         |
| 12772.00                                                             | 90.37      | 311.53    | 7748.90        | 3518.61              | -3977.25             | 5309.96       | 0.57                 | 442996.91           | 644185.25          |         |
| 12865.00                                                             | 89.69      | 309.63    | 7748.85        | 3579.10              | -4047.88             | 5402.92       | 2.17                 | 443057.40           | 644114.62          |         |
| 12959.00                                                             | 89.81      | 311.90    | 7749.26        | 3640.48              | -4119.07             | 5496.88       | 2.42                 | 443118.78           | 644043.43          |         |

## 5D Survey Report

| Survey Points (Relative to Slot centre; TVD relative to Drill Floor) |            |           |                |                     |                     |               |                      |                     |                    | Comment      |
|----------------------------------------------------------------------|------------|-----------|----------------|---------------------|---------------------|---------------|----------------------|---------------------|--------------------|--------------|
| MD<br>(US ft)                                                        | Inc<br>(°) | Az<br>(°) | TVD<br>(US ft) | N.Offset<br>(US ft) | E.Offset<br>(US ft) | VS<br>(US ft) | DLS<br>(°/100 US ft) | Northing<br>(US ft) | Easting<br>(US ft) |              |
| 13052.00                                                             | 89.94      | 313.62    | 7749.46        | 3703.62             | -4187.35            | 5589.87       | 1.85                 | 443181.92           | 643975.15          |              |
| 13145.00                                                             | 90.80      | 314.07    | 7748.86        | 3768.04             | -4254.42            | 5682.83       | 1.04                 | 443246.34           | 643908.08          |              |
| 13239.00                                                             | 90.56      | 313.50    | 7747.75        | 3833.07             | -4322.28            | 5776.78       | 0.66                 | 443311.37           | 643840.22          |              |
| 13333.00                                                             | 91.17      | 312.75    | 7746.33        | 3897.32             | -4390.88            | 5870.76       | 1.03                 | 443375.62           | 643771.62          |              |
| 13426.00                                                             | 90.86      | 313.48    | 7744.68        | 3960.88             | -4458.75            | 5963.73       | 0.85                 | 443439.18           | 643703.75          |              |
| 13518.00                                                             | 90.74      | 313.69    | 7743.40        | 4024.30             | -4525.39            | 6055.69       | 0.26                 | 443502.60           | 643637.11          |              |
| 13611.00                                                             | 91.23      | 314.05    | 7741.80        | 4088.74             | -4592.42            | 6148.63       | 0.65                 | 443567.04           | 643570.08          |              |
| 13704.00                                                             | 91.73      | 315.18    | 7739.40        | 4154.03             | -4658.60            | 6241.51       | 1.33                 | 443632.33           | 643503.90          |              |
| 13797.00                                                             | 91.79      | 317.77    | 7736.54        | 4221.43             | -4722.61            | 6334.20       | 2.78                 | 443699.73           | 643439.89          |              |
| 13890.00                                                             | 90.99      | 316.39    | 7734.28        | 4289.51             | -4785.92            | 6426.82       | 1.71                 | 443767.81           | 643376.58          |              |
| 13983.00                                                             | 90.62      | 315.06    | 7732.98        | 4356.09             | -4850.84            | 6519.63       | 1.48                 | 443834.39           | 643311.66          |              |
| 14077.00                                                             | 90.25      | 311.67    | 7732.26        | 4420.62             | -4919.16            | 6613.59       | 3.63                 | 443898.92           | 643243.34          |              |
| 14170.00                                                             | 89.51      | 311.75    | 7732.46        | 4482.50             | -4988.59            | 6706.59       | 0.80                 | 443960.80           | 643173.91          |              |
| 14264.00                                                             | 90.62      | 313.44    | 7732.35        | 4546.12             | -5057.78            | 6800.58       | 2.15                 | 444024.42           | 643104.72          |              |
| 14357.00                                                             | 90.12      | 312.83    | 7731.75        | 4609.70             | -5125.65            | 6893.56       | 0.85                 | 444088.00           | 643036.85          |              |
| 14451.00                                                             | 90.12      | 312.41    | 7731.55        | 4673.35             | -5194.82            | 6987.56       | 0.45                 | 444151.65           | 642967.68          |              |
| 14545.00                                                             | 90.68      | 312.32    | 7730.90        | 4736.69             | -5264.27            | 7081.55       | 0.60                 | 444214.99           | 642898.23          |              |
| 14639.00                                                             | 91.11      | 312.72    | 7729.43        | 4800.21             | -5333.54            | 7175.54       | 0.62                 | 444278.51           | 642828.96          |              |
| 14732.00                                                             | 90.80      | 312.26    | 7727.88        | 4863.02             | -5402.11            | 7268.52       | 0.60                 | 444341.32           | 642760.39          |              |
| 14827.00                                                             | 89.94      | 311.52    | 7727.27        | 4926.45             | -5472.83            | 7363.52       | 1.19                 | 444404.75           | 642689.67          |              |
| 14920.00                                                             | 89.32      | 310.47    | 7727.87        | 4987.46             | -5543.02            | 7456.50       | 1.31                 | 444465.76           | 642619.48          |              |
| 15014.00                                                             | 90.12      | 312.96    | 7728.33        | 5050.00             | -5613.18            | 7550.49       | 2.78                 | 444528.30           | 642549.32          |              |
| 15107.00                                                             | 90.93      | 314.08    | 7727.47        | 5114.04             | -5680.61            | 7643.45       | 1.49                 | 444592.34           | 642481.89          |              |
| 15202.00                                                             | 91.17      | 316.16    | 7725.73        | 5181.34             | -5747.63            | 7738.30       | 2.20                 | 444659.64           | 642414.87          |              |
| 15295.00                                                             | 91.17      | 315.31    | 7723.83        | 5247.92             | -5812.53            | 7831.10       | 0.91                 | 444726.22           | 642349.97          |              |
| 15388.00                                                             | 90.99      | 313.33    | 7722.08        | 5312.88             | -5879.05            | 7924.01       | 2.14                 | 444791.18           | 642283.45          |              |
| 15479.00                                                             | 90.43      | 312.55    | 7720.95        | 5374.87             | -5945.67            | 8014.99       | 1.06                 | 444853.17           | 642216.83          |              |
| 15570.00                                                             | 90.74      | 312.62    | 7720.02        | 5436.44             | -6012.66            | 8105.99       | 0.35                 | 444914.74           | 642149.84          |              |
| 15661.00                                                             | 90.06      | 312.65    | 7719.39        | 5498.08             | -6079.61            | 8196.98       | 0.75                 | 444976.38           | 642082.89          |              |
| 15752.00                                                             | 89.82      | 312.09    | 7719.48        | 5559.40             | -6146.84            | 8287.98       | 0.67                 | 445037.70           | 642015.66          |              |
| 15843.00                                                             | 91.98      | 313.70    | 7718.05        | 5621.33             | -6213.49            | 8378.95       | 2.96                 | 445099.63           | 641949.01          |              |
| 15961.00                                                             | 88.95      | 311.67    | 7717.10        | 5701.31             | -6300.22            | 8496.92       | 3.09                 | 445179.61           | 641862.28          | Last Wft Svy |
| 15984.00                                                             | 88.95      | 311.67    | 7717.52        | 5716.60             | -6317.39            | 8519.92       | 0.00                 | 445194.90           | 641845.11          | Projection   |