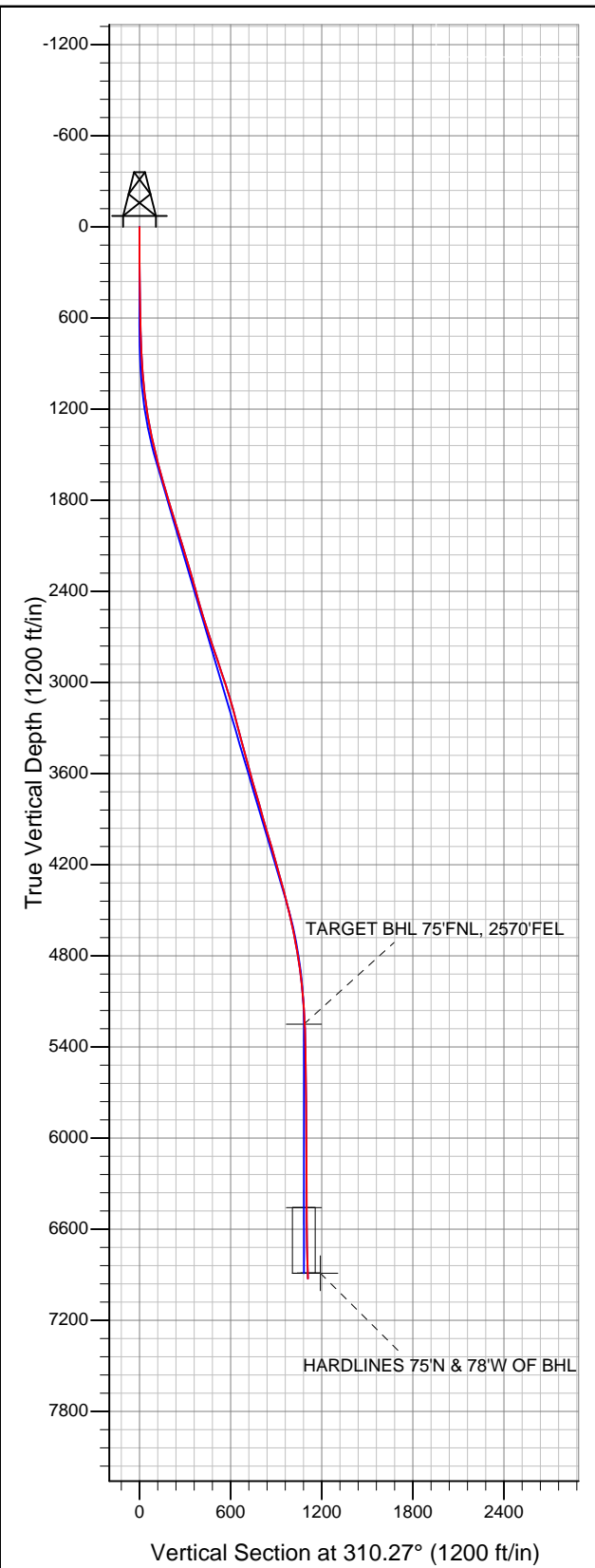
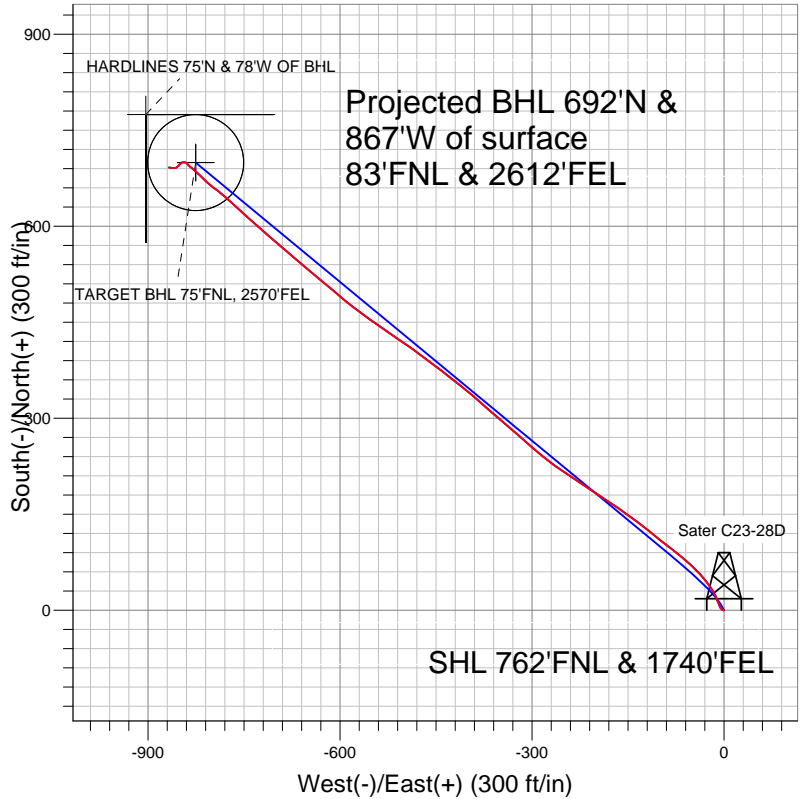


**Well Name: Sater C23-28D**

Surface Location: Sater C23-28D Pad Sec.23-T4N-R64W  
North American Datum 1983 US State Plane 1983 Colorado Northern Zone  
Ground Elevation: 4650.0  
+N/-S +E/-W Northing Easting Latitude Longitude Slot  
0.0 0.0 1354787.23 3274813.99 40.303100 -104.514660  
Original Well Elev WELL @ 4663.0ft (Original Well Elev)



**NOBLE ENERGY INC WELD COUNTY CO**



**LEGEND**

- + Sater C23-28D, Wellbore #1, Plan #2 (11-10-11) V0
- + Wellbore #1
- + Survey #1

**Final Survey Plot**

Projected Final Survey -  
7070'MD & 6926'TVD @ 1109'VS  
2.4 deg Inc 277.0 deg AZ

Project: SEC.23-T4N-R64W  
Site: Sater C23-28D Pad Sec.23-T4N-R64W  
Well: Sater C23-28D  
Plan: Wellbore #1



# **NOBLE ENERGY INC WELD COUNTY CO**

**SEC.23-T4N-R64W**

**Sater C23-28D Pad Sec.23-T4N-R64W**

**Sater C23-28D**

**Wellbore #1**

**Survey: Survey #1**

## **Standard Survey Report**

**14 November, 2011**



|                  |                                   |                                     |                                      |
|------------------|-----------------------------------|-------------------------------------|--------------------------------------|
| <b>Company:</b>  | NOBLE ENERGY INC WELD COUNTY CO   | <b>Local Co-ordinate Reference:</b> | Well Sater C23-28D                   |
| <b>Project:</b>  | SEC.23-T4N-R64W                   | <b>TVD Reference:</b>               | WELL @ 4663.0ft (Original Well Elev) |
| <b>Site:</b>     | Sater C23-28D Pad Sec.23-T4N-R64W | <b>MD Reference:</b>                | WELL @ 4663.0ft (Original Well Elev) |
| <b>Well:</b>     | Sater C23-28D                     | <b>North Reference:</b>             | True                                 |
| <b>Wellbore:</b> | Wellbore #1                       | <b>Survey Calculation Method:</b>   | Minimum Curvature                    |
| <b>Design:</b>   | Wellbore #1                       | <b>Database:</b>                    | Landmark                             |

|                    |  |                      |                             |
|--------------------|--|----------------------|-----------------------------|
| <b>Project</b>     | SEC.23-T4N-R64W, Weld County, Colorado |                      |                             |
| <b>Map System:</b> | US State Plane 1983                    | <b>System Datum:</b> | Mean Sea Level              |
| <b>Geo Datum:</b>  | North American Datum 1983              |                      |                             |
| <b>Map Zone:</b>   | Colorado Northern Zone                 |                      | Using geodetic scale factor |

|                              |                                   |                          |                 |
|------------------------------|-----------------------------------|--------------------------|-----------------|
| <b>Site</b>                  | Sater C23-28D Pad Sec.23-T4N-R64W |                          |                 |
| <b>Site Position:</b>        |                                   | <b>Northing:</b>         | 1,354,787.24 ft |
| <b>From:</b>                 | Lat/Long                          | <b>Easting:</b>          | 3,274,813.99 ft |
| <b>Position Uncertainty:</b> | 0.0 ft                            | <b>Slot Radius:</b>      | "               |
|                              |                                   | <b>Latitude:</b>         | 40.303100       |
|                              |                                   | <b>Longitude:</b>        | -104.514660     |
|                              |                                   | <b>Grid Convergence:</b> | 0.64 °          |

|                             |               |        |                                  |
|-----------------------------|---------------|--------|----------------------------------|
| <b>Well</b>                 | Sater C23-28D |        |                                  |
| <b>Well Position</b>        | <b>+N-S</b>   | 0.0 ft | <b>Northing:</b> 1,354,787.23 ft |
|                             | <b>+E-W</b>   | 0.0 ft | <b>Easting:</b> 3,274,813.99 ft  |
| <b>Position Uncertainty</b> |               | 0.0 ft | <b>Wellhead Elevation:</b> ft    |
|                             |               |        | <b>Latitude:</b> 40.303100       |
|                             |               |        | <b>Longitude:</b> -104.514660    |
|                             |               |        | <b>Ground Level:</b> 4,650.0 ft  |

|                  |                   |                    |                        |                      |                            |
|------------------|-------------------|--------------------|------------------------|----------------------|----------------------------|
| <b>Wellbore</b>  | Wellbore #1       |                    |                        |                      |                            |
| <b>Magnetics</b> | <b>Model Name</b> | <b>Sample Date</b> | <b>Declination (°)</b> | <b>Dip Angle (°)</b> | <b>Field Strength (nT)</b> |
|                  | IGRF2010          | 11/10/2011         | 8.67                   | 67.00                | 53,066                     |

|                          |                              |                  |                  |                      |     |
|--------------------------|------------------------------|------------------|------------------|----------------------|-----|
| <b>Design</b>            | Wellbore #1                  |                  |                  |                      |     |
| <b>Audit Notes:</b>      |                              |                  |                  |                      |     |
| <b>Version:</b>          | 1.0                          | <b>Phase:</b>    | ACTUAL           | <b>Tie On Depth:</b> | 0.0 |
| <b>Vertical Section:</b> | <b>Depth From (TVD) (ft)</b> | <b>+N-S (ft)</b> | <b>+E-W (ft)</b> | <b>Direction (°)</b> |     |
|                          | 5,250.0                      | 0.0              | 0.0              | 310.27               |     |

|                       |                |                          |                  |                    |  |
|-----------------------|----------------|--------------------------|------------------|--------------------|--|
| <b>Survey Program</b> | <b>Date</b>    | 11/14/2011               |                  |                    |  |
| <b>From (ft)</b>      | <b>To (ft)</b> | <b>Survey (Wellbore)</b> | <b>Tool Name</b> | <b>Description</b> |  |
| 138.0                 | 7,070.0        | Survey #1 (Wellbore #1)  | MWD              | MWD - Standard     |  |

|                            |                        |                    |                            |                  |                  |                              |                              |                             |                            |  |
|----------------------------|------------------------|--------------------|----------------------------|------------------|------------------|------------------------------|------------------------------|-----------------------------|----------------------------|--|
| <b>Survey</b>              |                        |                    |                            |                  |                  |                              |                              |                             |                            |  |
| <b>Measured Depth (ft)</b> | <b>Inclination (°)</b> | <b>Azimuth (°)</b> | <b>Vertical Depth (ft)</b> | <b>+N-S (ft)</b> | <b>+E-W (ft)</b> | <b>Vertical Section (ft)</b> | <b>Dogleg Rate (°/100ft)</b> | <b>Build Rate (°/100ft)</b> | <b>Turn Rate (°/100ft)</b> |  |
| 0.0                        | 0.00                   | 0.00               | 0.0                        | 0.0              | 0.0              | 0.0                          | 0.00                         | 0.00                        | 0.00                       |  |
| 138.0                      | 0.10                   | 174.90             | 138.0                      | -0.1             | 0.0              | -0.1                         | 0.07                         | 0.07                        | 0.00                       |  |
| 233.0                      | 0.60                   | 286.10             | 233.0                      | -0.1             | -0.5             | 0.3                          | 0.68                         | 0.53                        | 117.05                     |  |
| 328.0                      | 0.70                   | 287.50             | 328.0                      | 0.2              | -1.5             | 1.3                          | 0.11                         | 0.11                        | 1.47                       |  |
| 423.0                      | 0.50                   | 293.30             | 423.0                      | 0.6              | -2.4             | 2.2                          | 0.22                         | -0.21                       | 6.11                       |  |
| 518.0                      | 1.00                   | 309.30             | 518.0                      | 1.3              | -3.4             | 3.5                          | 0.57                         | 0.53                        | 16.84                      |  |
| 558.0                      | 1.00                   | 310.00             | 558.0                      | 1.7              | -4.0             | 4.2                          | 0.03                         | 0.00                        | 1.75                       |  |
| 650.0                      | 1.30                   | 322.60             | 650.0                      | 3.1              | -5.2             | 6.0                          | 0.42                         | 0.33                        | 13.70                      |  |
| 723.0                      | 1.70                   | 339.40             | 722.9                      | 4.7              | -6.1             | 7.7                          | 0.81                         | 0.55                        | 23.01                      |  |
| 805.0                      | 2.90                   | 340.20             | 804.9                      | 7.8              | -7.2             | 10.6                         | 1.46                         | 1.46                        | 0.98                       |  |
| 886.0                      | 3.60                   | 334.40             | 885.7                      | 12.0             | -9.0             | 14.7                         | 0.95                         | 0.86                        | -7.16                      |  |
| 968.0                      | 4.80                   | 339.00             | 967.5                      | 17.6             | -11.4            | 20.0                         | 1.52                         | 1.46                        | 5.61                       |  |
| 1,050.0                    | 6.50                   | 333.20             | 1,049.1                    | 24.9             | -14.7            | 27.3                         | 2.18                         | 2.07                        | -7.07                      |  |

|                  |                                   |                                     |                                      |
|------------------|-----------------------------------|-------------------------------------|--------------------------------------|
| <b>Company:</b>  | NOBLE ENERGY INC WELD COUNTY CO   | <b>Local Co-ordinate Reference:</b> | Well Sater C23-28D                   |
| <b>Project:</b>  | SEC.23-T4N-R64W                   | <b>TVD Reference:</b>               | WELL @ 4663.0ft (Original Well Elev) |
| <b>Site:</b>     | Sater C23-28D Pad Sec.23-T4N-R64W | <b>MD Reference:</b>                | WELL @ 4663.0ft (Original Well Elev) |
| <b>Well:</b>     | Sater C23-28D                     | <b>North Reference:</b>             | True                                 |
| <b>Wellbore:</b> | Wellbore #1                       | <b>Survey Calculation Method:</b>   | Minimum Curvature                    |
| <b>Design:</b>   | Wellbore #1                       | <b>Database:</b>                    | Landmark                             |

Survey

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
|---------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|---------------------|
| 1,131.0             | 7.70            | 328.20      | 1,129.5             | 33.6       | -19.6      | 36.7                  | 1.67                  | 1.48                 | -6.17               |
| 1,213.0             | 9.40            | 321.80      | 1,210.6             | 43.6       | -26.7      | 48.5                  | 2.37                  | 2.07                 | -7.80               |
| 1,295.0             | 10.60           | 317.50      | 1,291.3             | 54.4       | -35.9      | 62.5                  | 1.72                  | 1.46                 | -5.24               |
| 1,377.0             | 12.10           | 314.50      | 1,371.7             | 66.0       | -47.1      | 78.6                  | 1.97                  | 1.83                 | -3.66               |
| 1,458.0             | 13.00           | 310.00      | 1,450.8             | 77.8       | -60.2      | 96.2                  | 1.64                  | 1.11                 | -5.56               |
| 1,540.0             | 13.70           | 309.20      | 1,530.6             | 89.8       | -74.8      | 115.1                 | 0.88                  | 0.85                 | -0.98               |
| 1,622.0             | 15.10           | 307.40      | 1,610.0             | 102.5      | -90.8      | 135.5                 | 1.79                  | 1.71                 | -2.20               |
| 1,704.0             | 16.10           | 309.70      | 1,689.0             | 116.2      | -108.0     | 157.5                 | 1.43                  | 1.22                 | 2.80                |
| 1,786.0             | 16.90           | 307.60      | 1,767.6             | 130.7      | -126.2     | 180.8                 | 1.22                  | 0.98                 | -2.56               |
| 1,868.0             | 16.90           | 306.60      | 1,846.1             | 145.1      | -145.2     | 204.6                 | 0.35                  | 0.00                 | -1.22               |
| 1,949.0             | 17.00           | 304.30      | 1,923.5             | 158.8      | -164.4     | 228.1                 | 0.84                  | 0.12                 | -2.84               |
| 2,031.0             | 17.30           | 303.60      | 2,001.9             | 172.3      | -184.5     | 252.2                 | 0.44                  | 0.37                 | -0.85               |
| 2,113.0             | 17.50           | 304.00      | 2,080.1             | 186.0      | -204.9     | 276.5                 | 0.28                  | 0.24                 | 0.49                |
| 2,195.0             | 17.10           | 303.40      | 2,158.4             | 199.5      | -225.2     | 300.7                 | 0.53                  | -0.49                | -0.73               |
| 2,276.0             | 16.70           | 303.20      | 2,235.9             | 212.4      | -244.8     | 324.1                 | 0.50                  | -0.49                | -0.25               |
| 2,358.0             | 16.00           | 306.30      | 2,314.6             | 225.6      | -263.8     | 347.1                 | 1.36                  | -0.85                | 3.78                |
| 2,440.0             | 15.70           | 309.30      | 2,393.5             | 239.3      | -281.5     | 369.5                 | 1.06                  | -0.37                | 3.66                |
| 2,521.0             | 15.40           | 310.50      | 2,471.5             | 253.2      | -298.2     | 391.2                 | 0.54                  | -0.37                | 1.48                |
| 2,603.0             | 16.40           | 311.80      | 2,550.4             | 268.0      | -315.1     | 413.6                 | 1.29                  | 1.22                 | 1.59                |
| 2,685.0             | 17.80           | 309.40      | 2,628.8             | 283.7      | -333.4     | 437.7                 | 1.91                  | 1.71                 | -2.93               |
| 2,767.0             | 18.80           | 311.30      | 2,706.6             | 300.3      | -353.0     | 463.5                 | 1.42                  | 1.22                 | 2.32                |
| 2,848.0             | 19.20           | 312.20      | 2,783.2             | 317.9      | -372.7     | 489.8                 | 0.61                  | 0.49                 | 1.11                |
| 2,930.0             | 18.00           | 309.80      | 2,860.9             | 335.1      | -392.4     | 516.0                 | 1.74                  | -1.46                | -2.93               |
| 3,012.0             | 18.40           | 308.70      | 2,938.8             | 351.3      | -412.2     | 541.6                 | 0.64                  | 0.49                 | -1.34               |
| 3,094.0             | 17.80           | 308.20      | 3,016.8             | 367.1      | -432.2     | 567.1                 | 0.76                  | -0.73                | -0.61               |
| 3,176.0             | 16.60           | 306.40      | 3,095.1             | 381.8      | -451.5     | 591.3                 | 1.60                  | -1.46                | -2.20               |
| 3,257.0             | 15.90           | 307.40      | 3,172.9             | 395.4      | -469.6     | 613.9                 | 0.93                  | -0.86                | 1.23                |
| 3,339.0             | 15.50           | 305.90      | 3,251.8             | 408.7      | -487.4     | 636.0                 | 0.69                  | -0.49                | -1.83               |
| 3,421.0             | 14.80           | 302.30      | 3,331.0             | 420.7      | -505.1     | 657.3                 | 1.43                  | -0.85                | -4.39               |
| 3,503.0             | 14.90           | 305.70      | 3,410.2             | 432.4      | -522.5     | 678.2                 | 1.07                  | 0.12                 | 4.15                |
| 3,585.0             | 14.60           | 306.00      | 3,489.5             | 444.7      | -539.4     | 699.0                 | 0.38                  | -0.37                | 0.37                |
| 3,666.0             | 15.80           | 304.60      | 3,567.7             | 456.9      | -556.8     | 720.2                 | 1.55                  | 1.48                 | -1.73               |
| 3,748.0             | 15.80           | 306.70      | 3,646.6             | 469.9      | -574.9     | 742.4                 | 0.70                  | 0.00                 | 2.56                |
| 3,830.0             | 16.20           | 310.80      | 3,725.4             | 484.1      | -592.5     | 765.0                 | 1.46                  | 0.49                 | 5.00                |
| 3,912.0             | 16.20           | 310.00      | 3,804.2             | 498.9      | -610.0     | 787.9                 | 0.27                  | 0.00                 | -0.98               |
| 3,993.0             | 15.80           | 309.50      | 3,882.0             | 513.2      | -627.1     | 810.2                 | 0.52                  | -0.49                | -0.62               |
| 4,075.0             | 16.50           | 310.90      | 3,960.8             | 527.9      | -644.5     | 833.0                 | 0.98                  | 0.85                 | 1.71                |
| 4,157.0             | 16.40           | 309.70      | 4,039.4             | 542.9      | -662.2     | 856.2                 | 0.43                  | -0.12                | -1.46               |
| 4,239.0             | 15.60           | 309.30      | 4,118.2             | 557.3      | -679.7     | 878.8                 | 0.98                  | -0.98                | -0.49               |
| 4,320.0             | 16.10           | 312.10      | 4,196.2             | 571.7      | -696.4     | 901.0                 | 1.13                  | 0.62                 | 3.46                |
| 4,402.0             | 15.10           | 311.20      | 4,275.1             | 586.4      | -712.9     | 923.0                 | 1.25                  | -1.22                | -1.10               |
| 4,484.0             | 15.20           | 310.70      | 4,354.3             | 600.4      | -729.1     | 944.4                 | 0.20                  | 0.12                 | -0.61               |
| 4,566.0             | 14.50           | 311.80      | 4,433.6             | 614.3      | -744.9     | 965.4                 | 0.92                  | -0.85                | 1.34                |
| 4,647.0             | 13.20           | 313.30      | 4,512.2             | 627.4      | -759.2     | 984.8                 | 1.66                  | -1.60                | 1.85                |
| 4,729.0             | 12.50           | 311.50      | 4,592.1             | 639.7      | -772.7     | 1,003.0               | 0.98                  | -0.85                | -2.20               |
| 4,811.0             | 11.20           | 310.30      | 4,672.4             | 650.7      | -785.4     | 1,019.9               | 1.61                  | -1.59                | -1.46               |
| 4,893.0             | 9.40            | 307.40      | 4,753.1             | 660.0      | -796.8     | 1,034.5               | 2.28                  | -2.20                | -3.54               |
| 4,975.0             | 8.70            | 310.20      | 4,834.1             | 668.0      | -806.8     | 1,047.4               | 1.01                  | -0.85                | 3.41                |
| 5,057.0             | 7.80            | 314.20      | 4,915.2             | 675.9      | -815.6     | 1,059.2               | 1.30                  | -1.10                | 4.88                |
| 5,138.0             | 6.20            | 317.10      | 4,995.6             | 682.9      | -822.5     | 1,069.0               | 2.02                  | -1.98                | 3.58                |
| 5,220.0             | 4.70            | 307.80      | 5,077.2             | 688.2      | -828.1     | 1,076.8               | 2.12                  | -1.83                | -11.34              |
| 5,302.0             | 3.60            | 305.80      | 5,159.0             | 691.8      | -832.9     | 1,082.7               | 1.35                  | -1.34                | -2.44               |
| 5,384.0             | 2.80            | 315.90      | 5,240.9             | 694.8      | -836.4     | 1,087.2               | 1.19                  | -0.98                | 12.32               |
| 5,393.0             | 2.60            | 317.01      | 5,249.9             | 695.1      | -836.7     | 1,087.7               | 2.26                  | -2.19                | 12.25               |

|                  |                                   |                                     |                                      |
|------------------|-----------------------------------|-------------------------------------|--------------------------------------|
| <b>Company:</b>  | NOBLE ENERGY INC WELD COUNTY CO   | <b>Local Co-ordinate Reference:</b> | Well Sater C23-28D                   |
| <b>Project:</b>  | SEC.23-T4N-R64W                   | <b>TVD Reference:</b>               | WELL @ 4663.0ft (Original Well Elev) |
| <b>Site:</b>     | Sater C23-28D Pad Sec.23-T4N-R64W | <b>MD Reference:</b>                | WELL @ 4663.0ft (Original Well Elev) |
| <b>Well:</b>     | Sater C23-28D                     | <b>North Reference:</b>             | True                                 |
| <b>Wellbore:</b> | Wellbore #1                       | <b>Survey Calculation Method:</b>   | Minimum Curvature                    |
| <b>Design:</b>   | Wellbore #1                       | <b>Database:</b>                    | Landmark                             |

Survey

| Measured Depth (ft)                     | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
|---|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|---------------------|
| <b>TARGET BHL 75°FNL, 2570°FEL</b>      |                 |             |                     |            |            |                       |                       |                      |                     |
| 5,466.0                                 | 1.10            | 340.40      | 5,322.8             | 696.9      | -838.0     | 1,089.9               | 2.26                  | -2.06                | 32.06               |
| 5,547.0                                 | 0.90            | 320.20      | 5,403.8             | 698.2      | -838.7     | 1,091.2               | 0.50                  | -0.25                | -24.94              |
| 5,710.0                                 | 1.10            | 278.40      | 5,566.8             | 699.4      | -841.1     | 1,093.8               | 0.45                  | 0.12                 | -25.64              |
| 5,874.0                                 | 1.00            | 289.00      | 5,730.8             | 700.1      | -844.0     | 1,096.5               | 0.13                  | -0.06                | 6.46                |
| 6,038.0                                 | 1.20            | 246.90      | 5,894.7             | 699.9      | -846.9     | 1,098.6               | 0.50                  | 0.12                 | -25.67              |
| 6,201.0                                 | 1.60            | 219.30      | 6,057.7             | 697.4      | -849.9     | 1,099.3               | 0.47                  | 0.25                 | -16.93              |
| 6,365.0                                 | 1.50            | 221.00      | 6,221.6             | 694.0      | -852.8     | 1,099.3               | 0.07                  | -0.06                | 1.04                |
| 6,528.0                                 | 0.80            | 240.20      | 6,384.6             | 691.9      | -855.2     | 1,099.7               | 0.48                  | -0.43                | 11.78               |
| 6,601.0                                 | 0.74            | 249.25      | 6,457.6             | 691.4      | -856.0     | 1,100.1               | 0.18                  | -0.08                | 12.40               |
| <b>TARGET CIRCLE 75°FNL, 2570°FEL</b>   |                 |             |                     |            |            |                       |                       |                      |                     |
| 6,692.0                                 | 0.70            | 262.20      | 6,548.6             | 691.2      | -857.1     | 1,100.8               | 0.18                  | -0.05                | 14.23               |
| 6,855.0                                 | 1.30            | 269.70      | 6,711.6             | 691.0      | -860.0     | 1,102.8               | 0.38                  | 0.37                 | 4.60                |
| 7,024.0                                 | 2.40            | 277.00      | 6,880.5             | 691.4      | -865.4     | 1,107.2               | 0.66                  | 0.65                 | 4.32                |
| <b>HARDLINES 75°N &amp; 78°W OF BHL</b> |                 |             |                     |            |            |                       |                       |                      |                     |
| 7,070.0                                 | 2.40            | 277.00      | 6,926.4             | 691.7      | -867.3     | 1,108.9               | 0.00                  | 0.00                 | 0.00                |

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_