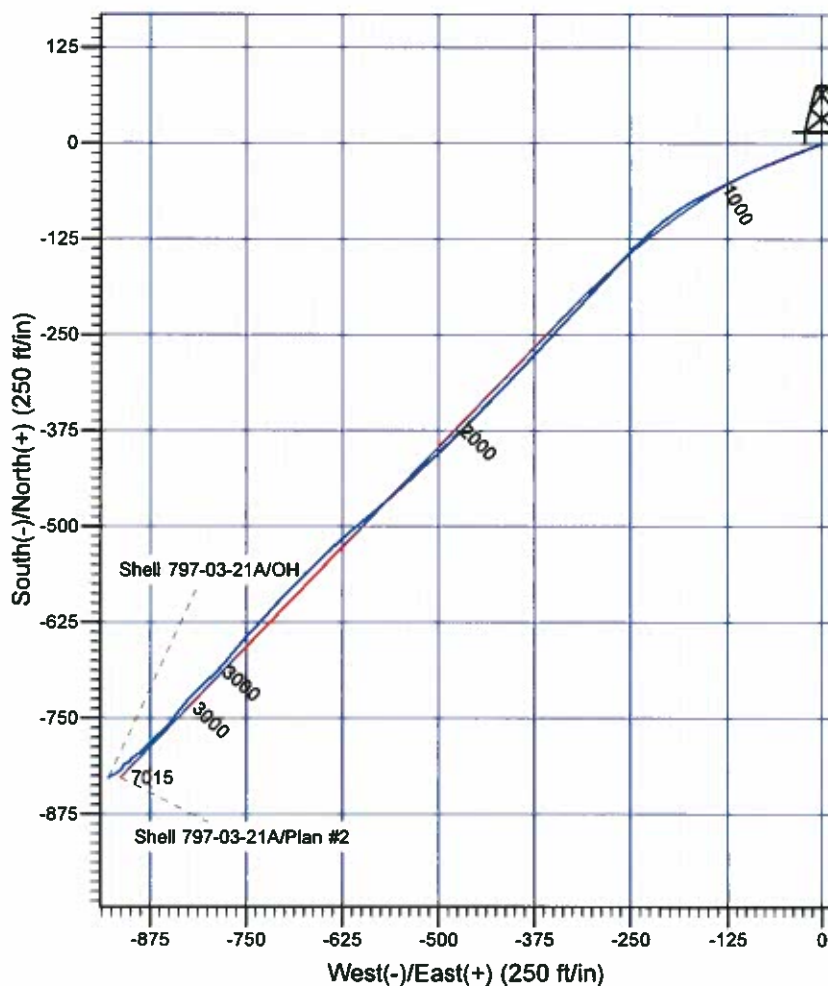
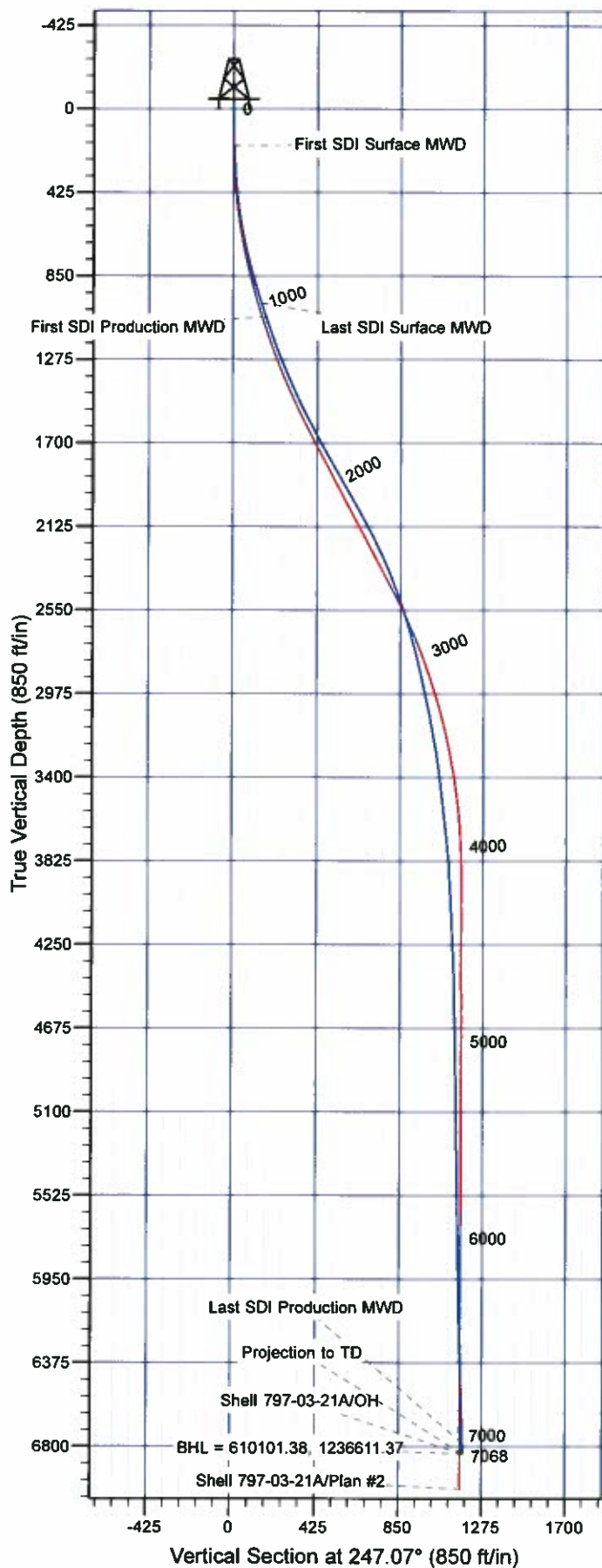




Scientific Drilling

Company: OAT USA RMAI
 Project: Garfield County, CO NAD27
 Site: Shell 797-03A Pad
 Well: Shell 797-03-21A
 Wellbore: OH
 Design: OH



Well Details: Shell 797-03-21A

| TVD Reference: GL 6485' & RKB 30' @ 6515.00ft (H&P) | | Base Level: 6485.00 | | Slot F |
|---|---------------|-----------------------|------------------------|------------------|
| +N/-S 0.00 | +E/-W 0.00 | Northing 610900.70 | Eastings 1237564.16 | |
| | | 39° 28' 46.586 N | | 108° 12' 5.225 W |

REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well Shell 797-03-21A - Slot F, True North
 Vertical (TVD) Reference: GL 6485' & RKB 30' @ 6515.00ft (H&P)
 Section (VS) Reference: Slot - F(0.00N, 0.00E)
 Measured Depth Reference: GL 6485' & RKB 30' @ 6515.00ft (H&P)
 Calculation Method: Minimum Curvature

PROJECT DETAILS: Garfield County, CO NAD27

Geodetic System: US State Plane 1927 (Exact solution)
 Datum: NAD 1927 (NADCON CONUS)
 Ellipsoid: Clarke 1866
 Zone: Colorado Central 502

System Datum: Mean Sea Level

Plan: OH

10:52, June 08 2012
 Created By: Janis Collins

OXY USA RMAT

Garfield County, CO NAD27

Shell 797-03A Pad

Shell 797-03-21A - Slot F

OH

Design: OH

Standard Survey Report

08 June, 2012

Scientific Drilling International

Survey Report

| | | | |
|------------------|---------------------------|-------------------------------------|--------------------------------------|
| Company: | OXY USA RMAT | Local Co-ordinate Reference: | Well Shell 797-03-21A - Slot F |
| Project: | Garfield County, CO NAD27 | TVD Reference: | GL 6485' & RKB 30' @ 6515.00ft (H&P) |
| Site: | Shell 797-03A Pad | MD Reference: | GL 6485' & RKB 30' @ 6515.00ft (H&P) |
| Well: | Shell 797-03-21A | North Reference: | True |
| Wellbore: | OH | Survey Calculation Method: | Minimum Curvature |
| Design: | OH | Database: | Rockies Compass Server |

| | | | |
|--------------------|--------------------------------------|----------------------|----------------|
| Project | Garfield County, CO NAD27 | | |
| Map System: | US State Plane 1927 (Exact solution) | System Datum: | Mean Sea Level |
| Geo Datum: | NAD 1927 (NADCON CONUS) | | |
| Map Zone: | Colorado Central 502 | | |

| | | | | | |
|-----------------------|-------------------|--------------|-------------------|-------------------|------------------|
| Site | Shell 797-03A Pad | | | | |
| Site Position: | | Northing: | 610,902.00 usft | Latitude: | 39° 28' 46.610 N |
| From: | Lat/Long | Easting: | 1,237,601.62 usft | Longitude: | 108° 12' 4.748 W |
| Position Uncertainty: | 0.00 ft | Slot Radius: | 13.200 in | Grid Convergence: | -1.70 ° |

| | | | | | | |
|----------------------|---------------------------|---------------------|-----------|-------------------|-------------|------------------|
| Well | Shell 797-03-21A - Slot F | | | | | |
| Well Position | +N/-S | 0.00 ft | Northing: | 610,900.70 usft | Latitude: | 39° 28' 46.586 N |
| | +E/-W | 0.00 ft | Easting: | 1,237,564.16 usft | Longitude: | 108° 12' 5.225 W |
| Position Uncertainty | 0.00 ft | Wellhead Elevation: | ft | Ground Level: | 6,485.00 ft | |

| | | | | | |
|------------------|-------------------|--------------------|------------------------|----------------------|----------------------------|
| Wellbore | OH | | | | |
| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
| | IGRF2010 | 08/19/11 | 10.42 | 65.68 | 52,192 |

| | | | | | |
|--------------------------|------------------------------|-------------------|-------------------|----------------------|------|
| Design | OH | | | | |
| Audit Notes: | | | | | |
| Version: | 1.0 | Phase: | ACTUAL | Tie On Depth: | 0.00 |
| Vertical Section: | Depth From (TVD) (ft) | +N/-S (ft) | +E/-W (ft) | Direction (°) | |
| | 0.00 | 0.00 | 0.00 | 247.07 | |

| | | | | | |
|-----------------------|----------------|---------------------------------|------------------|-----------------------|--|
| Survey Program | Date | 06/08/12 | | | |
| From (ft) | To (ft) | Survey (Wellbore) | Tool Name | Description | |
| 186.00 | 1,003.00 | Survey #1 - Surface MWD (OH) | MWD-SDI | MWD - Standard ISCWSA | |
| 1,076.00 | 7,068.00 | Survey #2 - Production MWD (OH) | MWD-SDI | MWD - Standard ISCWSA | |

| | | | | | | | | | |
|------------------------------|------------------------|--------------------|----------------------------|-------------------|-------------------|------------------------------|------------------------------|-----------------------------|----------------------------|
| 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) |
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 186.00 | 1.76 | 244.29 | 185.97 | -1.24 | -2.57 | 2.85 | 0.95 | 0.95 | 0.00 |
| First SDI Surface MWD | | | | | | | | | |
| 247.00 | 3.08 | 249.74 | 246.92 | -2.21 | -4.96 | 5.43 | 2.19 | 2.16 | 8.93 |
| 337.00 | 3.61 | 249.56 | 336.76 | -4.04 | -9.88 | 10.67 | 0.59 | 0.59 | -0.20 |
| 428.00 | 6.07 | 249.83 | 427.43 | -6.70 | -17.08 | 18.34 | 2.70 | 2.70 | 0.30 |
| 520.00 | 8.27 | 252.64 | 518.71 | -10.35 | -27.96 | 29.79 | 2.42 | 2.39 | 3.05 |
| 611.00 | 10.11 | 246.84 | 608.54 | -15.45 | -41.55 | 44.29 | 2.26 | 2.02 | -6.37 |
| 702.00 | 12.31 | 247.81 | 697.79 | -22.25 | -57.88 | 61.98 | 2.43 | 2.42 | 1.07 |
| 794.00 | 14.68 | 246.05 | 787.25 | -30.69 | -77.62 | 83.44 | 2.61 | 2.58 | -1.91 |

Scientific Drilling International

Survey Report

| | | | |
|------------------|---------------------------|-------------------------------------|--------------------------------------|
| Company: | OXY USA RMAT | Local Co-ordinate Reference: | Well Shell 797-03-21A - Slot F |
| Project: | Garfield County, CO NAD27 | TVD Reference: | GL 6485' & RKB 30' @ 6515.00ft (H&P) |
| Site: | Shell 797-03A Pad | MD Reference: | GL 6485' & RKB 30' @ 6515.00ft (H&P) |
| Well: | Shell 797-03-21A | North Reference: | True |
| Wellbore: | OH | Survey Calculation Method: | Minimum Curvature |
| Design: | OH | Database: | Rockies Compass Server |

| 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) |
| 888.00 | 16.09 | 245.70 | 877.88 | -40.89 | -100.38 | 108.37 | 1.50 | 1.50 | -0.37 |
| 983.00 | 17.76 | 243.85 | 968.76 | -52.69 | -125.38 | 136.00 | 1.85 | 1.76 | -1.95 |
| 1,003.00 | 17.94 | 244.12 | 987.80 | -55.38 | -130.89 | 142.13 | 0.99 | 0.90 | 1.35 |
| Last SDI Surface MWD | | | | | | | | | |
| 1,076.00 | 18.48 | 243.77 | 1,057.14 | -65.40 | -151.39 | 164.90 | 0.75 | 0.74 | -0.48 |
| First SDI Production MWD | | | | | | | | | |
| 1,170.00 | 19.79 | 237.61 | 1,145.95 | -80.51 | -178.19 | 195.48 | 2.56 | 1.39 | -6.55 |
| 1,265.00 | 22.25 | 231.28 | 1,234.64 | -100.38 | -205.81 | 228.66 | 3.52 | 2.59 | -6.66 |
| 1,360.00 | 23.48 | 224.87 | 1,322.18 | -125.05 | -233.20 | 263.50 | 2.92 | 1.29 | -6.75 |
| 1,455.00 | 25.68 | 223.20 | 1,408.57 | -153.47 | -260.65 | 299.85 | 2.43 | 2.32 | -1.76 |
| 1,549.00 | 27.52 | 222.32 | 1,492.62 | -184.38 | -289.21 | 338.20 | 2.00 | 1.96 | -0.94 |
| 1,644.00 | 29.02 | 223.20 | 1,576.29 | -217.40 | -319.77 | 379.20 | 1.64 | 1.58 | 0.93 |
| 1,739.00 | 31.04 | 223.11 | 1,658.53 | -252.09 | -352.28 | 422.66 | 2.13 | 2.13 | -0.09 |
| 1,834.00 | 31.39 | 223.02 | 1,739.78 | -288.06 | -385.90 | 467.64 | 0.37 | 0.37 | -0.09 |
| 1,929.00 | 31.48 | 224.87 | 1,820.83 | -323.72 | -420.28 | 513.20 | 1.02 | 0.09 | 1.95 |
| 2,023.00 | 31.74 | 223.37 | 1,900.89 | -359.09 | -454.58 | 558.57 | 0.88 | 0.28 | -1.60 |
| 2,118.00 | 31.83 | 226.27 | 1,981.65 | -394.58 | -489.84 | 604.87 | 1.61 | 0.09 | 3.05 |
| 2,213.00 | 30.43 | 226.80 | 2,062.96 | -428.36 | -525.48 | 650.86 | 1.50 | -1.47 | 0.56 |
| 2,307.00 | 28.49 | 228.03 | 2,144.81 | -459.66 | -559.51 | 694.39 | 2.16 | -2.06 | 1.31 |
| 2,402.00 | 26.20 | 230.84 | 2,229.19 | -488.06 | -592.62 | 735.95 | 2.77 | -2.41 | 2.96 |
| 2,497.00 | 24.62 | 227.86 | 2,315.00 | -514.58 | -623.56 | 774.78 | 2.14 | -1.66 | -3.14 |
| 2,591.00 | 22.69 | 225.75 | 2,401.10 | -540.37 | -651.07 | 810.16 | 2.24 | -2.05 | -2.24 |
| 2,686.00 | 20.84 | 225.04 | 2,489.32 | -565.10 | -676.15 | 842.90 | 1.97 | -1.95 | -0.75 |
| 2,781.00 | 19.87 | 223.46 | 2,578.39 | -588.76 | -699.21 | 873.36 | 1.17 | -1.02 | -1.66 |
| 2,875.00 | 17.41 | 221.79 | 2,667.45 | -610.84 | -719.58 | 900.72 | 2.68 | -2.62 | -1.78 |
| 2,970.00 | 15.30 | 223.72 | 2,758.61 | -630.50 | -737.71 | 925.08 | 2.29 | -2.22 | 2.03 |
| 3,065.00 | 14.60 | 220.82 | 2,850.39 | -648.62 | -754.20 | 947.32 | 1.08 | -0.74 | -3.05 |
| 3,160.00 | 14.68 | 217.22 | 2,942.31 | -667.27 | -769.31 | 968.50 | 0.96 | 0.08 | -3.79 |
| 3,254.00 | 13.45 | 223.64 | 3,033.49 | -684.67 | -784.06 | 988.87 | 2.11 | -1.31 | 6.83 |
| 3,349.00 | 10.73 | 226.62 | 3,126.38 | -698.74 | -798.12 | 1,007.30 | 2.94 | -2.86 | 3.14 |
| 3,444.00 | 10.99 | 226.71 | 3,219.68 | -711.02 | -811.13 | 1,024.07 | 0.27 | 0.27 | 0.09 |
| 3,538.00 | 9.23 | 222.67 | 3,312.22 | -722.71 | -822.77 | 1,039.34 | 2.02 | -1.87 | -4.30 |
| 3,633.00 | 7.74 | 218.01 | 3,406.17 | -733.35 | -831.87 | 1,051.87 | 1.73 | -1.57 | -4.91 |
| 3,728.00 | 7.65 | 217.48 | 3,500.32 | -743.41 | -839.66 | 1,062.96 | 0.12 | -0.09 | -0.56 |
| 3,822.00 | 7.65 | 215.02 | 3,593.48 | -753.50 | -847.06 | 1,073.70 | 0.35 | 0.00 | -2.62 |
| 3,917.00 | 6.68 | 224.95 | 3,687.74 | -762.59 | -854.59 | 1,084.18 | 1.65 | -1.02 | 10.45 |
| 4,012.00 | 5.45 | 231.37 | 3,782.21 | -769.32 | -862.02 | 1,093.65 | 1.48 | -1.29 | 6.76 |
| 4,106.00 | 4.22 | 225.57 | 3,875.87 | -774.52 | -867.97 | 1,101.16 | 1.41 | -1.31 | -6.17 |
| 4,201.00 | 3.08 | 225.31 | 3,970.68 | -778.77 | -872.28 | 1,106.78 | 1.20 | -1.20 | -0.27 |
| 4,296.00 | 3.08 | 224.78 | 4,065.54 | -782.37 | -875.90 | 1,111.52 | 0.03 | 0.00 | -0.56 |
| 4,391.00 | 2.90 | 222.23 | 4,160.41 | -785.96 | -879.31 | 1,116.06 | 0.24 | -0.19 | -2.68 |
| 4,485.00 | 3.17 | 226.71 | 4,254.28 | -789.51 | -882.80 | 1,120.65 | 0.38 | 0.29 | 4.77 |
| 4,580.00 | 2.11 | 224.95 | 4,349.18 | -792.55 | -885.95 | 1,124.74 | 1.12 | -1.12 | -1.85 |

Scientific Drilling International

Survey Report

| | | | |
|------------------|---------------------------|-------------------------------------|--------------------------------------|
| Company: | OXY USA RMAT | Local Co-ordinate Reference: | Well Shell 797-03-21A - Slot F |
| Project: | Garfield County, CO NAD27 | TVD Reference: | GL 6485' & RKB 30' @ 6515.00ft (H&P) |
| Site: | Shell 797-03A Pad | MD Reference: | GL 6485' & RKB 30' @ 6515.00ft (H&P) |
| Well: | Shell 797-03-21A | North Reference: | True |
| Wellbore: | OH | Survey Calculation Method: | Minimum Curvature |
| Design: | OH | Database: | Rockies Compass Server |

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) |
|---|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|---------------------|
| 4,675.00 | 0.97 | 228.03 | 4,444.14 | -794.32 | -887.78 | 1,127.12 | 1.20 | -1.20 | 3.24 |
| 4,769.00 | 1.14 | 236.56 | 4,538.13 | -795.37 | -889.15 | 1,128.79 | 0.25 | 0.18 | 9.07 |
| 4,864.00 | 1.41 | 228.12 | 4,633.10 | -796.67 | -890.81 | 1,130.82 | 0.35 | 0.28 | -8.88 |
| 4,959.00 | 1.06 | 241.30 | 4,728.08 | -797.87 | -892.45 | 1,132.80 | 0.47 | -0.37 | 13.87 |
| 5,054.00 | 1.14 | 222.05 | 4,823.07 | -799.00 | -893.86 | 1,134.53 | 0.40 | 0.08 | -20.26 |
| 5,148.00 | 1.41 | 240.78 | 4,917.04 | -800.25 | -895.49 | 1,136.53 | 0.52 | 0.29 | 19.93 |
| 5,243.00 | 0.97 | 247.02 | 5,012.02 | -801.14 | -897.25 | 1,138.50 | 0.48 | -0.46 | 6.57 |
| 5,338.00 | 0.70 | 243.32 | 5,107.01 | -801.71 | -898.51 | 1,139.88 | 0.29 | -0.28 | -3.89 |
| 5,432.00 | 1.06 | 209.57 | 5,201.00 | -802.73 | -899.45 | 1,141.14 | 0.66 | 0.38 | -35.90 |
| 5,527.00 | 0.97 | 209.22 | 5,295.99 | -804.19 | -900.28 | 1,142.47 | 0.09 | -0.09 | -0.37 |
| 5,622.00 | 0.70 | 210.37 | 5,390.98 | -805.40 | -900.97 | 1,143.57 | 0.28 | -0.28 | 1.21 |
| 5,716.00 | 0.88 | 219.42 | 5,484.97 | -806.45 | -901.71 | 1,144.67 | 0.23 | 0.19 | 9.63 |
| 5,811.00 | 0.97 | 236.38 | 5,579.95 | -807.46 | -902.85 | 1,146.11 | 0.30 | 0.09 | 17.85 |
| 5,906.00 | 1.23 | 244.82 | 5,674.94 | -808.34 | -904.44 | 1,147.92 | 0.32 | 0.27 | 8.88 |
| 6,000.00 | 0.88 | 253.43 | 5,768.92 | -808.97 | -906.04 | 1,149.65 | 0.41 | -0.37 | 9.16 |
| 6,095.00 | 1.23 | 244.82 | 5,863.91 | -809.61 | -907.67 | 1,151.39 | 0.40 | 0.37 | -9.06 |
| 6,189.00 | 1.06 | 210.37 | 5,957.89 | -810.79 | -909.02 | 1,153.09 | 0.74 | -0.18 | -36.65 |
| 6,204.45 | 1.09 | 209.29 | 5,973.33 | -811.04 | -909.16 | 1,153.33 | 0.22 | 0.17 | -7.01 |
| Rev Shell 797-03-21A Tgt | | | | | | | | | |
| 6,284.00 | 1.23 | 204.48 | 6,052.87 | -812.48 | -909.89 | 1,154.55 | 0.22 | 0.18 | -6.04 |
| 6,379.00 | 1.32 | 212.91 | 6,147.85 | -814.33 | -910.90 | 1,156.21 | 0.22 | 0.09 | 8.87 |
| 6,473.00 | 2.11 | 216.25 | 6,241.80 | -816.63 | -912.51 | 1,158.59 | 0.85 | 0.84 | 3.55 |
| 6,568.00 | 2.11 | 230.05 | 6,336.74 | -819.16 | -914.89 | 1,161.76 | 0.53 | 0.00 | 14.53 |
| 6,663.00 | 2.29 | 239.11 | 6,431.67 | -821.26 | -917.86 | 1,165.31 | 0.41 | 0.19 | 9.54 |
| 6,757.00 | 2.11 | 239.63 | 6,525.60 | -823.10 | -920.96 | 1,168.89 | 0.19 | -0.19 | 0.55 |
| 6,852.00 | 1.85 | 249.92 | 6,620.54 | -824.51 | -923.91 | 1,172.16 | 0.46 | -0.27 | 10.83 |
| 6,947.00 | 1.67 | 238.75 | 6,715.50 | -825.76 | -926.54 | 1,175.06 | 0.41 | -0.19 | -11.76 |
| 7,014.00 | 1.06 | 230.14 | 6,782.48 | -826.66 | -927.85 | 1,176.62 | 0.96 | -0.91 | -12.85 |
| Last SDI Production MWD | | | | | | | | | |
| 7,068.00 | 1.06 | 230.14 | 6,836.47 | -827.30 | -928.61 | 1,177.57 | 0.00 | 0.00 | 0.00 |
| Projection to TD - BHL = 610101.38, 1236611.37 | | | | | | | | | |

Design Annotations

| Measured Depth (ft) | Vertical Depth (ft) | Local Coordinates | | Comment |
|---------------------|---------------------|-------------------|------------|-----------------------------|
| | | +N/-S (ft) | +E/-W (ft) | |
| 186.00 | 185.97 | -1.24 | -2.57 | First SDI Surface MWD |
| 1,003.00 | 987.80 | -55.38 | -130.89 | Last SDI Surface MWD |
| 1,076.00 | 1,057.14 | -65.40 | -151.39 | First SDI Production MWD |
| 7,014.00 | 6,782.48 | -826.66 | -927.85 | Last SDI Production MWD |
| 7,068.00 | 6,836.47 | -827.30 | -928.61 | Projection to TD |
| 7,068.00 | 6,836.47 | -827.30 | -928.61 | BHL = 610101.38, 1236611.37 |

Scientific Drilling International

Survey Report

| | | | |
|------------------|---------------------------|-------------------------------------|--------------------------------------|
| Company: | OXY USA RMAT | Local Co-ordinate Reference: | Well Shell 797-03-21A - Slot F |
| Project: | Garfield County, CO NAD27 | TVD Reference: | GL 6485' & RKB 30' @ 6515.00ft (H&P) |
| Site: | Shell 797-03A Pad | MD Reference: | GL 6485' & RKB 30' @ 6515.00ft (H&P) |
| Well: | Shell 797-03-21A | North Reference: | True |
| Wellbore: | OH | Survey Calculation Method: | Minimum Curvature |
| Design: | OH | Database: | Rockies Compass Server |

Checked By: _____ Approved By: _____ Date: _____