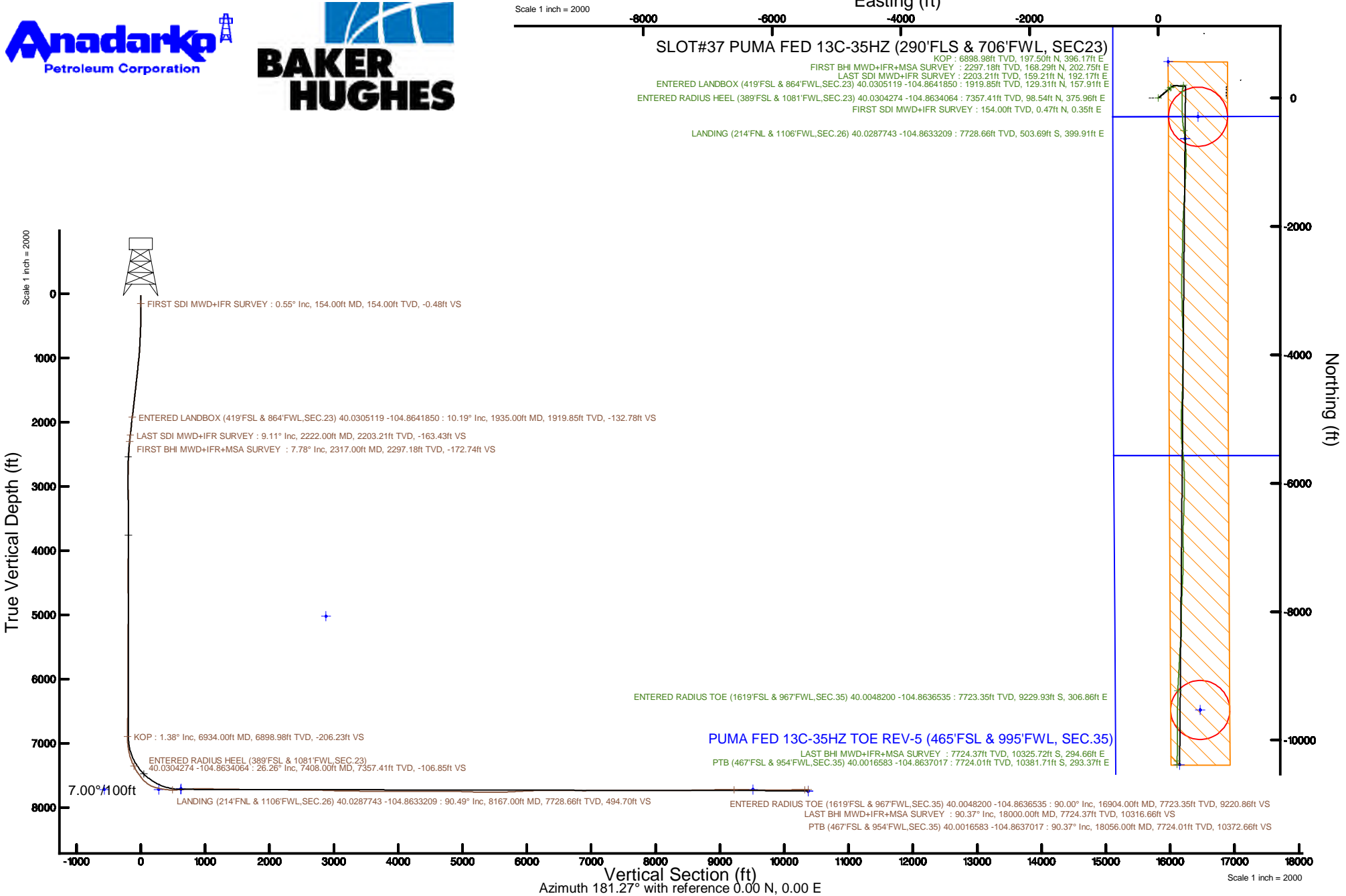


KERR-MCGEE OIL & GAS ONSHORE LP (WA)

Location: COLORADO Slot: SLOT#37 PUMA FED 13C-35HZ (290'FLS & 706'FWL, SEC23)
Field: WELD COUNTY (UTM/TRUE NORTH) Well: PUMA FED 13C-35HZ
Facility: SEC.23-T1N-R67W Wellbore: PUMA FED 13C-35HZ PWB

| | |
|--|--|
| Plot reference wellpath is PUMA FED 13C-35HZ REV D.0 PWP | Grid System: NAD83 / UTM Zone 13 North, US feet |
| True vertical depths are referenced to NABORS X22 (RKB 32') (RKB) | * = Wellpath was transformed from a different geodetic datum |
| Measured depths are referenced to NABORS X22 (RKB 32') (RKB) | North Reference: True north |
| NABORS X22 (RKB 32') (RKB) to Mean Sea Level: 5023 feet | Scale: True distance |
| Mean Sea Level to Mud line (At Slot: SLOT#37 PUMA FED 13C-35HZ (290'FLS & 706'FWL, SEC23)): 0 feet | Depths are in feet |
| Coordinates are in feet referenced to Slot | Created by: painsetr on 2017-04-11 |
| | Database: WA_DEN_Anadarko_Defn |



Actual Wellpath Report

PUMA FED 13C-35HZ AWP

Page 1 of 8

REFERENCE WELLPATH IDENTIFICATION

| | | | |
|----------|--------------------------------------|----------|--|
| Operator | KERR-MCGEE OIL & GAS ONSHORE LP (WA) | Slot | SLOT#37 PUMA FED 13C-35HZ (290'FLS & 706'FWL, SEC23) |
| Area | COLORADO | Well | PUMA FED 13C-35HZ |
| Field | WELD COUNTY (UTM/TRUE NORTH) | Wellbore | PUMA FED 13C-35HZ AWB |
| Facility | SEC.23-T1N-R67W | | |

REPORT SETUP INFORMATION

| | | | |
|---------------------|------------------------------------|----------------------|--|
| Projection System | NAD83 / UTM Zone 13 North, US feet | Software System | WellArchitect® 5.0 |
| North Reference | True | User | Painsetr |
| Scale | 0.999602 | Report Generated | 4/11/2017 at 3:28 PM |
| Convergence at slot | 0.09° East | Database/Source file | WA_DEN_Anadarko_Defn/PUMA_FED_13C-35HZ_AWP.xml |

WELLPATH LOCATION

| | Local coordinates | | Grid coordinates | | Geographic coordinates | |
|-----------------------|-------------------|----------|------------------|-----------------|------------------------|-----------------|
| | North[ft] | East[ft] | Easting[US ft] | Northing[US ft] | Latitude | Longitude |
| Slot Location | -1.91 | -3838.20 | 1678277.21 | 14537743.61 | 40°01'48.565"N | 104°51'53.096"W |
| Facility Reference Pt | | | 1682113.86 | 14537751.93 | 40°01'48.587"N | 104°51'03.755"W |
| Field Reference Pt | | | 1698235.31 | 14552047.82 | 40°04'09.600"N | 104°47'36.000"W |

WELLPATH DATUM

| | | | |
|--------------------------|----------------------------|---|-------------------|
| Calculation method | Minimum curvature | NABORS X22 (RKB 32') (RKB) to Facility Vertical Datum | 5023.00ft |
| Horizontal Reference Pt | Slot | NABORS X22 (RKB 32') (RKB) to Mean Sea Level | 5023.00ft |
| Vertical Reference Pt | NABORS X22 (RKB 32') (RKB) | NABORS X22 (RKB 32') (RKB) to Mud Line at Slot (SLOT#37 PUMA FED 13C-35HZ (290'FLS & 706'FWL, SEC23)) | 5023.00ft |
| MD Reference Pt | NABORS X22 (RKB 32') (RKB) | Section Origin | N 0.00, E 0.00 ft |
| Field Vertical Reference | Mean Sea Level | Section Azimuth | 181.27° |

| REFERENCE WELLPATH IDENTIFICATION | | | |
|-----------------------------------|--------------------------------------|----------|--|
| Operator | KERR-MCGEE OIL & GAS ONSHORE LP (WA) | Slot | SLOT#37 PUMA FED 13C-35HZ (290'FLS & 706'FWL, SEC23) |
| Area | COLORADO | Well | PUMA FED 13C-35HZ |
| Field | WELD COUNTY (UTM/TRUE NORTH) | Wellbore | PUMA FED 13C-35HZ AWP |
| Facility | SEC.23-T1N-R67W | | |

| WELLPATH DATA (188 stations) † = interpolated/extrapolated station | | | | | | | | | | | | Comments |
|--|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|-----------------|---------------|---|
| MD [ft] | Inclination [°] | Azimuth [°] | TVD [ft] | Vert Sect [ft] | North [ft] | East [ft] | Grid East [US ft] | Grid North [US ft] | Latitude | Longitude | DLS [°/100ft] | |
| 0.00† | 0.000 | 36.920 | 0.00 | 0.00 | 0.00 | 0.00 | 1678277.21 | 14537743.61 | 40°01'48.565"N | 104°51'53.096"W | 0.00 | |
| 32.00 | 0.000 | 36.920 | 32.00 | 0.00 | 0.00 | 0.00 | 1678277.21 | 14537743.61 | 40°01'48.565"N | 104°51'53.096"W | 0.00 | |
| 154.00 | 0.550 | 36.920 | 154.00 | -0.48 | 0.47 | 0.35 | 1678277.56 | 14537744.08 | 40°01'48.570"N | 104°51'53.091"W | 0.45 | FIRST SDI MWD+IFR SURVEY |
| 240.00 | 0.610 | 62.300 | 239.99 | -1.03 | 1.01 | 1.01 | 1678278.21 | 14537744.62 | 40°01'48.575"N | 104°51'53.083"W | 0.30 | |
| 372.00 | 0.680 | 98.100 | 371.99 | -1.28 | 1.23 | 2.40 | 1678279.61 | 14537744.84 | 40°01'48.577"N | 104°51'53.065"W | 0.30 | |
| 461.00 | 1.780 | 61.120 | 460.97 | -1.91 | 1.82 | 4.14 | 1678281.34 | 14537745.43 | 40°01'48.583"N | 104°51'53.043"W | 1.46 | |
| 550.00 | 2.700 | 44.970 | 549.90 | -4.12 | 3.97 | 6.83 | 1678284.03 | 14537747.59 | 40°01'48.604"N | 104°51'53.008"W | 1.24 | |
| 637.00 | 3.660 | 46.600 | 636.76 | -7.56 | 7.33 | 10.29 | 1678287.49 | 14537750.95 | 40°01'48.637"N | 104°51'52.964"W | 1.11 | |
| 721.00 | 4.720 | 55.040 | 720.54 | -11.48 | 11.15 | 15.07 | 1678292.26 | 14537754.78 | 40°01'48.675"N | 104°51'52.902"W | 1.46 | |
| 854.00 | 6.720 | 58.300 | 852.87 | -18.95 | 18.38 | 26.18 | 1678303.35 | 14537762.02 | 40°01'48.747"N | 104°51'52.759"W | 1.52 | |
| 941.00 | 6.860 | 48.790 | 939.26 | -25.23 | 24.47 | 34.42 | 1678311.58 | 14537768.12 | 40°01'48.807"N | 104°51'52.654"W | 1.30 | |
| 1030.00 | 8.040 | 45.220 | 1027.51 | -33.30 | 32.36 | 42.84 | 1678319.98 | 14537776.02 | 40°01'48.885"N | 104°51'52.545"W | 1.42 | |
| 1117.00 | 8.550 | 47.840 | 1113.60 | -42.13 | 40.99 | 51.95 | 1678329.07 | 14537784.66 | 40°01'48.970"N | 104°51'52.428"W | 0.73 | |
| 1205.00 | 8.830 | 50.970 | 1200.59 | -50.99 | 49.63 | 62.05 | 1678339.15 | 14537793.31 | 40°01'49.055"N | 104°51'52.298"W | 0.62 | |
| 1292.00 | 9.670 | 49.830 | 1286.46 | -60.15 | 58.55 | 72.82 | 1678349.91 | 14537802.24 | 40°01'49.144"N | 104°51'52.160"W | 0.99 | |
| 1379.00 | 10.050 | 50.450 | 1372.17 | -69.95 | 68.10 | 84.25 | 1678361.32 | 14537811.80 | 40°01'49.238"N | 104°51'52.013"W | 0.45 | |
| 1465.00 | 9.840 | 50.850 | 1456.88 | -79.62 | 77.51 | 95.74 | 1678372.79 | 14537821.24 | 40°01'49.331"N | 104°51'51.865"W | 0.26 | |
| 1554.00 | 9.700 | 51.020 | 1544.59 | -89.39 | 87.03 | 107.46 | 1678384.50 | 14537830.77 | 40°01'49.425"N | 104°51'51.715"W | 0.16 | |
| 1643.00 | 9.190 | 47.830 | 1632.38 | -99.12 | 96.52 | 118.56 | 1678395.57 | 14537840.27 | 40°01'49.519"N | 104°51'51.572"W | 0.82 | |
| 1729.00 | 9.840 | 49.930 | 1717.20 | -108.70 | 105.86 | 129.27 | 1678406.27 | 14537849.62 | 40°01'49.611"N | 104°51'51.434"W | 0.86 | |
| 1818.00 | 10.590 | 51.480 | 1804.79 | -118.96 | 115.85 | 141.49 | 1678418.47 | 14537859.63 | 40°01'49.710"N | 104°51'51.277"W | 0.90 | |
| 1905.00 | 10.420 | 50.170 | 1890.33 | -129.25 | 125.87 | 153.79 | 1678430.74 | 14537869.66 | 40°01'49.809"N | 104°51'51.119"W | 0.34 | |
| 1935.00† | 10.185 | 50.018 | 1919.85 | -132.78 | 129.31 | 157.91 | 1678434.85 | 14537873.11 | 40°01'49.843"N | 104°51'51.066"W | 0.79 | ENTERED LANDBOX (419'FSL & 864'FWL, SEC.23) 40.0305119 -104.8641850 |
| 1992.00 | 9.740 | 49.710 | 1975.99 | -139.30 | 135.67 | 165.44 | 1678442.38 | 14537879.47 | 40°01'49.906"N | 104°51'50.969"W | 0.79 | |
| 2080.00 | 8.550 | 49.670 | 2062.87 | -148.58 | 144.71 | 176.11 | 1678453.03 | 14537888.53 | 40°01'49.995"N | 104°51'50.832"W | 1.35 | |
| 2169.00 | 8.770 | 46.860 | 2150.85 | -157.72 | 153.64 | 186.10 | 1678463.00 | 14537897.46 | 40°01'50.083"N | 104°51'50.704"W | 0.54 | |
| 2222.00 | 9.110 | 47.920 | 2203.21 | -163.43 | 159.21 | 192.17 | 1678469.05 | 14537903.05 | 40°01'50.138"N | 104°51'50.626"W | 0.71 | LAST SDI MWD+IFR SURVEY |
| 2317.00 | 7.780 | 51.070 | 2297.18 | -172.74 | 168.29 | 202.75 | 1678479.62 | 14537912.14 | 40°01'50.228"N | 104°51'50.490"W | 1.48 | Begin Run 1; FIRST BHI MWD+IFR+MSA SURVEY |
| 2411.00 | 7.600 | 60.300 | 2390.33 | -180.05 | 175.37 | 213.10 | 1678489.96 | 14537919.23 | 40°01'50.298"N | 104°51'50.357"W | 1.33 | |
| 2505.00 | 8.030 | 68.070 | 2483.46 | -185.83 | 180.90 | 224.59 | 1678501.43 | 14537924.78 | 40°01'50.353"N | 104°51'50.209"W | 1.21 | |
| 2599.00 | 8.300 | 75.750 | 2576.51 | -190.24 | 185.02 | 237.26 | 1678514.09 | 14537928.92 | 40°01'50.393"N | 104°51'50.046"W | 1.19 | |
| 2693.00 | 8.610 | 80.290 | 2669.49 | -193.39 | 187.88 | 250.77 | 1678527.59 | 14537931.79 | 40°01'50.422"N | 104°51'49.872"W | 0.78 | |
| 2786.00 | 9.060 | 84.160 | 2761.39 | -195.62 | 189.80 | 264.92 | 1678541.73 | 14537933.73 | 40°01'50.441"N | 104°51'49.690"W | 0.80 | |
| 2880.00 | 8.900 | 88.060 | 2854.24 | -196.95 | 190.80 | 279.55 | 1678556.35 | 14537934.75 | 40°01'50.451"N | 104°51'49.502"W | 0.67 | |
| 2974.00 | 9.030 | 90.300 | 2947.09 | -197.48 | 191.01 | 294.19 | 1678570.99 | 14537934.98 | 40°01'50.453"N | 104°51'49.314"W | 0.40 | |
| 3068.00 | 9.030 | 98.260 | 3039.93 | -196.71 | 189.91 | 308.87 | 1678585.66 | 14537933.91 | 40°01'50.442"N | 104°51'49.125"W | 1.33 | |
| 3162.00 | 9.880 | 98.190 | 3132.65 | -194.84 | 187.70 | 324.15 | 1678600.94 | 14537931.72 | 40°01'50.420"N | 104°51'48.929"W | 0.90 | |
| 3256.00 | 9.580 | 99.630 | 3225.30 | -192.73 | 185.24 | 339.84 | 1678616.63 | 14537929.29 | 40°01'50.396"N | 104°51'48.727"W | 0.41 | |
| 3350.00 | 9.840 | 95.850 | 3317.95 | -190.95 | 183.11 | 355.55 | 1678632.33 | 14537927.19 | 40°01'50.375"N | 104°51'48.525"W | 0.73 | |
| 3444.00 | 8.160 | 93.240 | 3410.79 | -190.08 | 181.92 | 370.20 | 1678646.98 | 14537926.01 | 40°01'50.363"N | 104°51'48.337"W | 1.84 | |
| 3538.00 | 6.070 | 91.640 | 3504.06 | -189.82 | 181.40 | 381.83 | 1678658.61 | 14537925.51 | 40°01'50.358"N | 104°51'48.187"W | 2.23 | |
| 3632.00 | 4.330 | 88.520 | 3597.67 | -189.96 | 181.35 | 390.34 | 1678667.12 | 14537925.48 | 40°01'50.357"N | 104°51'48.078"W | 1.87 | |
| 3725.00 | 3.060 | 83.090 | 3690.48 | -190.48 | 181.74 | 396.32 | 1678673.09 | 14537925.87 | 40°01'50.361"N | 104°51'48.001"W | 1.41 | |
| 3818.00 | 1.780 | 74.980 | 3783.39 | -191.24 | 182.41 | 400.18 | 1678676.95 | 14537926.55 | 40°01'50.368"N | 104°51'47.952"W | 1.42 | |
| 4196.00 | 1.530 | 333.700 | 4161.30 | -197.36 | 188.46 | 403.61 | 1678680.37 | 14537932.60 | 40°01'50.427"N | 104°51'47.907"W | 0.68 | |

| REFERENCE WELLPATH IDENTIFICATION | | | |
|-----------------------------------|--------------------------------------|----------|--|
| Operator | KERR-MCGEE OIL & GAS ONSHORE LP (WA) | Slot | SLOT#37 PUMA FED 13C-35HZ (290'FLS & 706'FWL, SEC23) |
| Area | COLORADO | Well | PUMA FED 13C-35HZ |
| Field | WELD COUNTY (UTM/TRUE NORTH) | Wellbore | PUMA FED 13C-35HZ AWP |
| Facility | SEC.23-T1N-R67W | | |

| WELLPATH DATA (188 stations) † = interpolated/extrapolated station | | | | | | | | | | | | |
|--|--------------------|----------------|-------------|-------------------|---------------|--------------|----------------------|-----------------------|----------------|-----------------|----------------|---|
| MD [ft] | Inclination [°] | Azimuth [°] | TVD [ft] | Vert Sect [ft] | North [ft] | East [ft] | Grid East [US ft] | Grid North [US ft] | Latitude | Longitude | DLS °/100ft | Comments |
| 4290.00 | 1.570 | 326.100 | 4255.26 | -199.52 | 190.65 | 402.34 | 1678679.09 | 14537934.79 | 40°01'50.449"N | 104°51'47.924"W | 0.22 | |
| 4384.00 | 2.110 | 267.260 | 4349.22 | -200.45 | 191.64 | 399.89 | 1678676.65 | 14537935.77 | 40°01'50.459"N | 104°51'47.955"W | 1.99 | |
| 4477.00 | 0.490 | 210.570 | 4442.20 | -199.99 | 191.21 | 397.98 | 1678674.73 | 14537935.35 | 40°01'50.455"N | 104°51'47.980"W | 2.03 | |
| 4572.00 | 2.120 | 123.460 | 4537.18 | -198.70 | 189.89 | 399.24 | 1678676.00 | 14537934.03 | 40°01'50.442"N | 104°51'47.964"W | 2.26 | |
| 4761.00 | 0.660 | 158.960 | 4726.12 | -195.83 | 186.95 | 402.54 | 1678679.31 | 14537931.09 | 40°01'50.412"N | 104°51'47.921"W | 0.86 | |
| 4877.00 | 0.500 | 159.010 | 4842.11 | -194.74 | 185.85 | 402.97 | 1678679.73 | 14537930.00 | 40°01'50.402"N | 104°51'47.916"W | 0.14 | |
| 4971.00 | 0.740 | 40.840 | 4936.11 | -194.83 | 185.93 | 403.51 | 1678680.27 | 14537930.08 | 40°01'50.402"N | 104°51'47.909"W | 1.14 | |
| 5347.00 | 0.520 | 83.350 | 5312.09 | -196.94 | 187.97 | 406.79 | 1678683.55 | 14537932.11 | 40°01'50.422"N | 104°51'47.867"W | 0.13 | |
| 5723.00 | 0.410 | 341.800 | 5688.08 | -198.44 | 189.44 | 408.07 | 1678684.82 | 14537933.59 | 40°01'50.437"N | 104°51'47.850"W | 0.19 | |
| 6006.00 | 0.530 | 294.470 | 5971.07 | -199.91 | 190.95 | 406.56 | 1678683.31 | 14537935.09 | 40°01'50.452"N | 104°51'47.870"W | 0.14 | |
| 6289.00 | 0.460 | 293.360 | 6254.06 | -200.85 | 191.94 | 404.33 | 1678681.08 | 14537936.08 | 40°01'50.462"N | 104°51'47.898"W | 0.02 | |
| 6477.00 | 1.060 | 293.790 | 6442.04 | -201.80 | 192.94 | 402.04 | 1678678.79 | 14537937.08 | 40°01'50.472"N | 104°51'47.928"W | 0.32 | |
| 6570.00 | 0.840 | 300.680 | 6535.03 | -202.47 | 193.63 | 400.67 | 1678677.42 | 14537937.77 | 40°01'50.479"N | 104°51'47.945"W | 0.27 | |
| 6758.00 | 1.000 | 319.170 | 6723.01 | -204.36 | 195.58 | 398.41 | 1678675.16 | 14537939.71 | 40°01'50.498"N | 104°51'47.974"W | 0.18 | |
| 6852.00 | 0.810 | 321.490 | 6817.00 | -205.48 | 196.72 | 397.46 | 1678674.21 | 14537940.85 | 40°01'50.509"N | 104°51'47.986"W | 0.21 | |
| 6934.00† | 1.378 | 289.539 | 6898.98 | -206.23 | 197.50 | 396.17 | 1678672.92 | 14537941.63 | 40°01'50.517"N | 104°51'48.003"W | 0.99 | KOP |
| 6946.00 | 1.480 | 287.110 | 6910.98 | -206.32 | 197.60 | 395.89 | 1678672.63 | 14537941.72 | 40°01'50.518"N | 104°51'48.007"W | 0.99 | |
| 7040.00 | 5.100 | 203.550 | 7004.84 | -202.78 | 194.12 | 393.05 | 1678669.81 | 14537938.25 | 40°01'50.483"N | 104°51'48.043"W | 5.48 | |
| 7134.00 | 9.940 | 194.330 | 7098.01 | -191.01 | 182.42 | 389.37 | 1678666.15 | 14537926.55 | 40°01'50.368"N | 104°51'48.090"W | 5.29 | |
| 7228.00 | 15.350 | 194.640 | 7189.69 | -170.99 | 162.51 | 384.22 | 1678661.02 | 14537906.63 | 40°01'50.171"N | 104°51'48.157"W | 5.76 | |
| 7322.00 | 21.590 | 186.790 | 7278.82 | -141.63 | 133.27 | 379.02 | 1678655.88 | 14537877.39 | 40°01'49.882"N | 104°51'48.224"W | 7.13 | |
| 7408.00† | 26.262 | 183.584 | 7357.41 | -106.85 | 98.54 | 375.96 | 1678652.87 | 14537842.68 | 40°01'49.539"N | 104°51'48.263"W | 5.64 | ENTERED RADIUS HEEL (389'FSL & 1081'FWL,SEC.23) 40.0304274 -104.8634064 |
| 7416.00 | 26.700 | 183.340 | 7364.57 | -103.29 | 94.98 | 375.75 | 1678652.66 | 14537839.12 | 40°01'49.504"N | 104°51'48.266"W | 5.64 | |
| 7479.00 | 30.380 | 182.480 | 7419.91 | -73.21 | 64.93 | 374.23 | 1678651.19 | 14537809.08 | 40°01'49.207"N | 104°51'48.285"W | 5.88 | |
| 7510.00 | 32.300 | 182.370 | 7446.38 | -57.09 | 48.82 | 373.55 | 1678650.53 | 14537792.97 | 40°01'49.047"N | 104°51'48.294"W | 6.20 | |
| 7573.00 | 36.720 | 182.230 | 7498.28 | -21.41 | 13.16 | 372.12 | 1678649.16 | 14537757.33 | 40°01'48.695"N | 104°51'48.312"W | 7.02 | |
| 7605.00 | 38.770 | 182.430 | 7523.58 | -1.82 | -6.41 | 371.32 | 1678648.39 | 14537737.77 | 40°01'48.502"N | 104°51'48.323"W | 6.42 | |
| 7636.00 | 40.420 | 180.710 | 7547.47 | 17.93 | -26.16 | 370.79 | 1678647.88 | 14537718.02 | 40°01'48.306"N | 104°51'48.329"W | 6.39 | |
| 7698.00 | 45.170 | 180.450 | 7592.95 | 60.04 | -68.26 | 370.36 | 1678647.53 | 14537675.93 | 40°01'47.890"N | 104°51'48.335"W | 7.67 | |
| 7792.00 | 58.060 | 176.520 | 7651.21 | 133.44 | -141.73 | 372.53 | 1678649.81 | 14537602.50 | 40°01'47.164"N | 104°51'48.307"W | 14.09 | Begin Run 2 |
| 7886.00 | 75.340 | 179.270 | 7688.26 | 219.30 | -227.68 | 375.56 | 1678652.96 | 14537516.59 | 40°01'46.315"N | 104°51'48.268"W | 18.58 | Begin Run 3 |
| 7980.00 | 79.980 | 176.920 | 7708.35 | 310.95 | -319.42 | 378.63 | 1678656.17 | 14537424.89 | 40°01'45.408"N | 104°51'48.229"W | 5.51 | |
| 8073.00 | 82.250 | 173.410 | 7722.71 | 402.29 | -410.96 | 386.38 | 1678664.05 | 14537333.40 | 40°01'44.504"N | 104°51'48.129"W | 4.46 | |
| 8167.00 | 90.490 | 170.000 | 7728.66 | 494.70 | -503.69 | 399.91 | 1678677.72 | 14537240.73 | 40°01'43.587"N | 104°51'47.955"W | 9.48 | LANDING (214'FNL & 1106'FWL,SEC.26) 40.0287743 -104.8633209 |
| 8261.00 | 94.100 | 172.590 | 7724.90 | 587.18 | -596.51 | 414.12 | 1678692.07 | 14537147.97 | 40°01'42.670"N | 104°51'47.772"W | 4.73 | |
| 8355.00 | 93.670 | 175.870 | 7718.53 | 680.25 | -689.81 | 423.55 | 1678701.63 | 14537054.72 | 40°01'41.748"N | 104°51'47.651"W | 3.51 | |
| 8449.00 | 91.880 | 177.240 | 7713.98 | 773.81 | -783.52 | 429.19 | 1678707.42 | 14536961.05 | 40°01'40.822"N | 104°51'47.579"W | 2.40 | |
| 8544.00 | 90.680 | 179.550 | 7711.85 | 868.66 | -878.45 | 431.85 | 1678710.22 | 14536866.16 | 40°01'39.884"N | 104°51'47.545"W | 2.74 | |
| 8638.00 | 90.620 | 180.720 | 7710.79 | 962.64 | -972.44 | 431.63 | 1678710.14 | 14536772.21 | 40°01'38.955"N | 104°51'47.547"W | 1.25 | |
| 8732.00 | 88.800 | 181.560 | 7711.26 | 1056.63 | -1066.42 | 429.76 | 1678708.41 | 14536678.27 | 40°01'38.026"N | 104°51'47.572"W | 2.13 | |
| 8826.00 | 89.010 | 182.120 | 7713.06 | 1150.61 | -1160.35 | 426.74 | 1678705.54 | 14536584.37 | 40°01'37.098"N | 104°51'47.610"W | 0.64 | |
| 8920.00 | 89.320 | 182.360 | 7714.43 | 1244.59 | -1254.27 | 423.07 | 1678702.01 | 14536490.48 | 40°01'36.170"N | 104°51'47.658"W | 0.42 | |
| 9014.00 | 89.880 | 182.990 | 7715.09 | 1338.55 | -1348.16 | 418.68 | 1678697.77 | 14536396.62 | 40°01'35.242"N | 104°51'47.714"W | 0.90 | |
| 9108.00 | 88.210 | 183.360 | 7716.65 | 1432.49 | -1442.00 | 413.48 | 1678692.71 | 14536302.81 | 40°01'34.315"N | 104°51'47.781"W | 1.82 | |
| 9202.00 | 88.550 | 183.260 | 7719.31 | 1526.39 | -1535.81 | 408.05 | 1678687.42 | 14536209.03 | 40°01'33.388"N | 104°51'47.851"W | 0.38 | |

REFERENCE WELLPATH IDENTIFICATION

| | | | |
|----------|--------------------------------------|----------|--|
| Operator | KERR-MCGEE OIL & GAS ONSHORE LP (WA) | Slot | SLOT#37 PUMA FED 13C-35HZ (290'FLS & 706'FWL, SEC23) |
| Area | COLORADO | Well | PUMA FED 13C-35HZ |
| Field | WELD COUNTY (UTM/TRUE NORTH) | Wellbore | PUMA FED 13C-35HZ AWP |
| Facility | SEC.23-T1N-R67W | | |

WELLPATH DATA (188 stations)

| MD [ft] | Inclination [°] | Azimuth [°] | TVD [ft] | Vert Sect [ft] | North [ft] | East [ft] | Grid East [US ft] | Grid North [US ft] | Latitude | Longitude | DLS [°/100ft] | Comments |
|------------|--------------------|----------------|-------------|-------------------|---------------|--------------|----------------------|-----------------------|----------------|-----------------|------------------|----------|
| 9297.00 | 88.950 | 183.060 | 7721.38 | 1621.31 | -1630.64 | 402.82 | 1678682.34 | 14536114.23 | 40°01'32.451"N | 104°51'47.918"W | 0.47 | |
| 9391.00 | 90.150 | 183.180 | 7722.12 | 1715.26 | -1724.50 | 397.70 | 1678677.36 | 14536020.41 | 40°01'31.523"N | 104°51'47.984"W | 1.28 | |
| 9485.00 | 90.680 | 183.370 | 7721.44 | 1809.20 | -1818.34 | 392.33 | 1678672.14 | 14535926.59 | 40°01'30.596"N | 104°51'48.053"W | 0.60 | |
| 9580.00 | 89.420 | 182.000 | 7721.36 | 1904.17 | -1913.23 | 387.88 | 1678667.83 | 14535831.73 | 40°01'29.658"N | 104°51'48.110"W | 1.96 | |
| 9674.00 | 90.250 | 181.820 | 7721.63 | 1998.16 | -2007.18 | 384.75 | 1678664.85 | 14535737.82 | 40°01'28.729"N | 104°51'48.150"W | 0.90 | |
| 9768.00 | 88.800 | 182.050 | 7722.41 | 2092.15 | -2101.12 | 381.57 | 1678661.82 | 14535643.91 | 40°01'27.801"N | 104°51'48.191"W | 1.56 | |
| 9863.00 | 88.950 | 181.290 | 7724.27 | 2187.13 | -2196.06 | 378.81 | 1678659.19 | 14535549.00 | 40°01'26.863"N | 104°51'48.227"W | 0.82 | |
| 9957.00 | 88.920 | 180.270 | 7726.02 | 2281.10 | -2290.03 | 377.53 | 1678658.06 | 14535455.07 | 40°01'25.934"N | 104°51'48.243"W | 1.09 | |
| 10051.00 | 89.290 | 180.610 | 7727.49 | 2375.08 | -2384.02 | 376.80 | 1678657.48 | 14535361.12 | 40°01'25.005"N | 104°51'48.253"W | 0.53 | |
| 10145.00 | 89.940 | 180.990 | 7728.12 | 2469.08 | -2478.01 | 375.49 | 1678656.31 | 14535267.16 | 40°01'24.077"N | 104°51'48.269"W | 0.80 | |
| 10238.00 | 89.970 | 181.580 | 7728.19 | 2562.08 | -2570.98 | 373.41 | 1678654.36 | 14535174.22 | 40°01'23.158"N | 104°51'48.296"W | 0.64 | |
| 10332.00 | 88.920 | 181.110 | 7729.10 | 2656.07 | -2664.95 | 371.20 | 1678652.30 | 14535080.29 | 40°01'22.229"N | 104°51'48.325"W | 1.22 | |
| 10426.00 | 88.740 | 181.450 | 7731.02 | 2750.05 | -2758.91 | 369.10 | 1678650.35 | 14534986.37 | 40°01'21.301"N | 104°51'48.352"W | 0.41 | |
| 10520.00 | 88.090 | 180.940 | 7733.62 | 2844.01 | -2852.85 | 367.14 | 1678648.53 | 14534892.46 | 40°01'20.372"N | 104°51'48.377"W | 0.88 | |
| 10613.00 | 87.780 | 179.050 | 7736.97 | 2936.93 | -2945.79 | 367.15 | 1678648.68 | 14534799.56 | 40°01'19.454"N | 104°51'48.377"W | 2.06 | |
| 10708.00 | 88.340 | 179.330 | 7740.19 | 3031.81 | -3040.72 | 368.49 | 1678650.16 | 14534704.66 | 40°01'18.516"N | 104°51'48.360"W | 0.66 | |
| 10739.00 | 88.950 | 178.960 | 7740.92 | 3062.78 | -3071.71 | 368.95 | 1678650.67 | 14534673.69 | 40°01'18.209"N | 104°51'48.354"W | 2.30 | |
| 10801.00 | 89.200 | 178.840 | 7741.92 | 3124.72 | -3133.69 | 370.14 | 1678651.96 | 14534611.74 | 40°01'17.597"N | 104°51'48.338"W | 0.45 | |
| 10895.00 | 88.830 | 179.000 | 7743.54 | 3218.62 | -3227.66 | 371.91 | 1678653.87 | 14534517.81 | 40°01'16.668"N | 104°51'48.316"W | 0.43 | |
| 10989.00 | 89.720 | 178.380 | 7744.73 | 3312.52 | -3321.63 | 374.06 | 1678656.16 | 14534423.88 | 40°01'15.740"N | 104°51'48.288"W | 1.15 | |
| 11081.00 | 88.430 | 177.800 | 7746.21 | 3404.36 | -3413.56 | 377.13 | 1678659.37 | 14534331.99 | 40°01'14.831"N | 104°51'48.249"W | 1.54 | |
| 11173.00 | 90.520 | 178.020 | 7747.06 | 3496.20 | -3505.49 | 380.48 | 1678662.86 | 14534240.10 | 40°01'13.923"N | 104°51'48.205"W | 2.28 | |
| 11264.00 | 89.880 | 178.130 | 7746.74 | 3587.05 | -3596.44 | 383.54 | 1678666.05 | 14534149.19 | 40°01'13.024"N | 104°51'48.166"W | 0.71 | |
| 11357.00 | 89.600 | 178.970 | 7747.16 | 3679.95 | -3689.41 | 385.89 | 1678668.55 | 14534056.27 | 40°01'12.105"N | 104°51'48.136"W | 0.95 | |
| 11449.00 | 88.980 | 179.750 | 7748.30 | 3771.89 | -3781.39 | 386.92 | 1678669.71 | 14533964.32 | 40°01'11.196"N | 104°51'48.123"W | 1.08 | |
| 11543.00 | 88.980 | 179.810 | 7749.97 | 3865.84 | -3875.38 | 387.28 | 1678670.22 | 14533870.37 | 40°01'10.267"N | 104°51'48.118"W | 0.06 | |
| 11638.00 | 90.800 | 179.860 | 7750.16 | 3960.81 | -3970.37 | 387.56 | 1678670.63 | 14533775.42 | 40°01'09.329"N | 104°51'48.115"W | 1.92 | |
| 11732.00 | 90.250 | 180.580 | 7749.30 | 4054.79 | -4064.37 | 387.20 | 1678670.42 | 14533681.46 | 40°01'08.400"N | 104°51'48.119"W | 0.96 | |
| 11826.00 | 90.400 | 181.060 | 7748.76 | 4148.78 | -4158.36 | 385.85 | 1678669.21 | 14533587.51 | 40°01'07.471"N | 104°51'48.137"W | 0.53 | |
| 11920.00 | 89.510 | 181.170 | 7748.84 | 4242.78 | -4252.34 | 384.02 | 1678667.53 | 14533493.56 | 40°01'06.542"N | 104°51'48.160"W | 0.95 | |
| 12014.00 | 88.650 | 181.850 | 7750.35 | 4336.77 | -4346.29 | 381.54 | 1678665.19 | 14533399.64 | 40°01'05.614"N | 104°51'48.192"W | 1.17 | |
| 12108.00 | 89.570 | 180.750 | 7751.81 | 4430.75 | -4440.25 | 379.41 | 1678663.21 | 14533305.71 | 40°01'04.685"N | 104°51'48.219"W | 1.53 | |
| 12202.00 | 91.230 | 181.430 | 7751.15 | 4524.75 | -4534.23 | 377.62 | 1678661.56 | 14533211.77 | 40°01'03.756"N | 104°51'48.242"W | 1.91 | |
| 12296.00 | 90.550 | 182.070 | 7749.69 | 4618.73 | -4628.17 | 374.75 | 1678658.83 | 14533117.86 | 40°01'02.828"N | 104°51'48.279"W | 0.99 | |
| 12390.00 | 90.220 | 182.790 | 7749.06 | 4712.71 | -4722.09 | 370.77 | 1678654.99 | 14533023.98 | 40°01'01.900"N | 104°51'48.331"W | 0.84 | |
| 12485.00 | 89.850 | 183.770 | 7749.00 | 4807.65 | -4816.93 | 365.33 | 1678649.70 | 14532929.17 | 40°01'00.963"N | 104°51'48.400"W | 1.10 | |
| 12579.00 | 88.980 | 182.830 | 7749.96 | 4901.58 | -4910.77 | 359.92 | 1678644.44 | 14532835.36 | 40°01'00.035"N | 104°51'48.470"W | 1.36 | |
| 12673.00 | 87.130 | 180.920 | 7753.15 | 4995.52 | -5004.65 | 356.85 | 1678641.51 | 14532741.50 | 40°00'59.108"N | 104°51'48.510"W | 2.83 | |
| 12766.00 | 88.490 | 179.260 | 7756.70 | 5088.42 | -5097.58 | 356.70 | 1678641.50 | 14532648.62 | 40°00'58.189"N | 104°51'48.511"W | 2.31 | |
| 12860.00 | 87.160 | 179.640 | 7760.27 | 5182.30 | -5191.51 | 357.60 | 1678642.55 | 14532554.73 | 40°00'57.261"N | 104°51'48.500"W | 1.47 | |
| 12953.00 | 88.090 | 176.020 | 7764.13 | 5275.04 | -5284.34 | 361.12 | 1678646.20 | 14532461.93 | 40°00'56.344"N | 104°51'48.455"W | 4.02 | |
| 13048.00 | 90.520 | 174.060 | 7765.28 | 5369.46 | -5378.97 | 369.34 | 1678654.56 | 14532367.36 | 40°00'55.408"N | 104°51'48.349"W | 3.29 | |
| 13141.00 | 89.080 | 173.740 | 7765.60 | 5461.69 | -5471.44 | 379.22 | 1678664.58 | 14532274.94 | 40°00'54.495"N | 104°51'48.222"W | 1.59 | |
| 13235.00 | 90.950 | 174.640 | 7765.58 | 5554.97 | -5564.95 | 388.73 | 1678674.23 | 14532181.48 | 40°00'53.571"N | 104°51'48.100"W | 2.21 | |
| 13329.00 | 92.710 | 175.620 | 7762.58 | 5648.38 | -5658.56 | 396.71 | 1678682.34 | 14532087.92 | 40°00'52.645"N | 104°51'47.997"W | 2.14 | |

| REFERENCE WELLPATH IDENTIFICATION | | | |
|-----------------------------------|--------------------------------------|----------|--|
| Operator | KERR-MCGEE OIL & GAS ONSHORE LP (WA) | Slot | SLOT#37 PUMA FED 13C-35HZ (290'FLS & 706'FWL, SEC23) |
| Area | COLORADO | Well | PUMA FED 13C-35HZ |
| Field | WELD COUNTY (UTM/TRUE NORTH) | Wellbore | PUMA FED 13C-35HZ AWP |
| Facility | SEC.23-T1N-R67W | | |

| WELLPATH DATA (188 stations) † = interpolated/extrapolated station | | | | | | | | | | | | |
|--|--------------------|----------------|-------------|-------------------|---------------|--------------|----------------------|-----------------------|----------------|-----------------|------------------|---|
| MD (ft) | Inclination [°] | Azimuth [°] | TVD (ft) | Vert Sect (ft) | North (ft) | East (ft) | Grid East [US ft] | Grid North [US ft] | Latitude | Longitude | DLS [°/100ft] | Comments |
| 13423.00 | 93.600 | 178.400 | 7757.40 | 5741.96 | -5752.28 | 401.61 | 1678687.38 | 14531994.25 | 40°00'51.719"N | 104°51'47.934"W | 3.10 | |
| 13517.00 | 93.480 | 179.210 | 7751.60 | 5835.70 | -5846.08 | 403.56 | 1678689.48 | 14531900.49 | 40°00'50.792"N | 104°51'47.909"W | 0.87 | |
| 13611.00 | 92.900 | 178.830 | 7746.37 | 5929.48 | -5939.92 | 405.17 | 1678691.23 | 14531806.69 | 40°00'49.865"N | 104°51'47.889"W | 0.74 | |
| 13705.00 | 92.470 | 179.740 | 7741.96 | 6023.32 | -6033.81 | 406.34 | 1678692.54 | 14531712.84 | 40°00'48.937"N | 104°51'47.874"W | 1.07 | |
| 13800.00 | 90.800 | 180.510 | 7739.25 | 6118.26 | -6128.76 | 406.13 | 1678692.48 | 14531617.92 | 40°00'47.999"N | 104°51'47.876"W | 1.94 | |
| 13894.00 | 91.230 | 181.540 | 7737.59 | 6212.24 | -6222.73 | 404.45 | 1678690.94 | 14531523.99 | 40°00'47.070"N | 104°51'47.898"W | 1.19 | |
| 13988.00 | 91.690 | 182.250 | 7735.19 | 6306.20 | -6316.65 | 401.34 | 1678687.98 | 14531430.10 | 40°00'46.142"N | 104°51'47.938"W | 0.90 | |
| 14082.00 | 89.450 | 181.090 | 7734.26 | 6400.19 | -6410.60 | 398.60 | 1678685.38 | 14531336.19 | 40°00'45.214"N | 104°51'47.973"W | 2.68 | |
| 14176.00 | 89.140 | 182.120 | 7735.42 | 6494.18 | -6504.55 | 395.97 | 1678682.89 | 14531242.27 | 40°00'44.285"N | 104°51'48.007"W | 1.14 | |
| 14270.00 | 89.050 | 182.590 | 7736.90 | 6588.15 | -6598.46 | 392.11 | 1678679.17 | 14531148.39 | 40°00'43.357"N | 104°51'48.057"W | 0.51 | |
| 14364.00 | 89.850 | 181.670 | 7737.80 | 6682.13 | -6692.39 | 388.62 | 1678675.82 | 14531054.50 | 40°00'42.429"N | 104°51'48.102"W | 1.30 | |
| 14459.00 | 89.140 | 180.460 | 7738.64 | 6777.13 | -6787.37 | 386.85 | 1678674.20 | 14530959.55 | 40°00'41.490"N | 104°51'48.124"W | 1.48 | |
| 14553.00 | 89.820 | 178.880 | 7739.49 | 6871.08 | -6881.36 | 387.39 | 1678674.89 | 14530865.60 | 40°00'40.561"N | 104°51'48.117"W | 1.83 | |
| 14647.00 | 90.710 | 178.760 | 7739.06 | 6964.99 | -6975.34 | 389.33 | 1678676.96 | 14530771.66 | 40°00'39.633"N | 104°51'48.092"W | 0.96 | |
| 14741.00 | 89.540 | 180.880 | 7738.85 | 7058.96 | -7069.33 | 389.62 | 1678677.40 | 14530677.71 | 40°00'38.704"N | 104°51'48.089"W | 2.58 | |
| 14835.00 | 90.920 | 180.930 | 7738.48 | 7152.95 | -7163.31 | 388.14 | 1678676.06 | 14530583.76 | 40°00'37.775"N | 104°51'48.108"W | 1.47 | |
| 14930.00 | 90.370 | 180.660 | 7737.41 | 7247.94 | -7258.30 | 386.82 | 1678674.89 | 14530488.81 | 40°00'36.836"N | 104°51'48.125"W | 0.64 | |
| 15024.00 | 89.780 | 181.160 | 7737.28 | 7341.94 | -7352.28 | 385.33 | 1678673.54 | 14530394.86 | 40°00'35.908"N | 104°51'48.144"W | 0.82 | |
| 15118.00 | 89.780 | 182.320 | 7737.64 | 7435.93 | -7446.24 | 382.47 | 1678670.83 | 14530300.94 | 40°00'34.979"N | 104°51'48.181"W | 1.23 | |
| 15213.00 | 89.780 | 183.080 | 7738.01 | 7530.90 | -7541.13 | 378.00 | 1678666.50 | 14530206.08 | 40°00'34.041"N | 104°51'48.238"W | 0.80 | |
| 15307.00 | 89.940 | 181.830 | 7738.24 | 7624.88 | -7635.04 | 373.97 | 1678662.62 | 14530112.20 | 40°00'33.113"N | 104°51'48.290"W | 1.34 | |
| 15401.00 | 90.340 | 182.470 | 7738.01 | 7718.87 | -7728.98 | 370.45 | 1678659.23 | 14530018.30 | 40°00'32.185"N | 104°51'48.335"W | 0.80 | |
| 15495.00 | 90.030 | 183.130 | 7737.71 | 7812.83 | -7822.86 | 365.85 | 1678654.79 | 14529924.44 | 40°00'31.257"N | 104°51'48.394"W | 0.78 | |
| 15589.00 | 90.370 | 181.790 | 7737.38 | 7906.81 | -7916.77 | 361.82 | 1678650.90 | 14529830.56 | 40°00'30.329"N | 104°51'48.446"W | 1.47 | |
| 15684.00 | 89.910 | 179.770 | 7737.14 | 8001.80 | -8011.76 | 360.53 | 1678649.75 | 14529735.61 | 40°00'29.390"N | 104°51'48.463"W | 2.18 | |
| 15778.00 | 89.570 | 179.170 | 7737.57 | 8095.75 | -8105.75 | 361.39 | 1678650.76 | 14529641.66 | 40°00'28.462"N | 104°51'48.452"W | 0.73 | |
| 15872.00 | 90.920 | 180.390 | 7737.17 | 8189.72 | -8199.75 | 361.76 | 1678651.26 | 14529547.70 | 40°00'27.533"N | 104°51'48.447"W | 1.94 | |
| 15967.00 | 88.770 | 180.850 | 7737.43 | 8284.70 | -8294.74 | 360.73 | 1678650.38 | 14529452.75 | 40°00'26.594"N | 104°51'48.460"W | 2.31 | |
| 16061.00 | 91.080 | 184.050 | 7737.55 | 8378.67 | -8388.63 | 356.71 | 1678646.51 | 14529358.88 | 40°00'25.666"N | 104°51'48.512"W | 4.20 | |
| 16092.00 | 91.140 | 184.710 | 7736.95 | 8409.61 | -8419.54 | 354.34 | 1678644.19 | 14529327.99 | 40°00'25.361"N | 104°51'48.542"W | 2.14 | End Run 3 |
| 16155.00 | 91.600 | 184.360 | 7735.44 | 8472.49 | -8482.32 | 349.36 | 1678639.30 | 14529265.22 | 40°00'24.740"N | 104°51'48.606"W | 0.92 | Begin Run 4 |
| 16249.00 | 92.190 | 184.510 | 7732.33 | 8566.30 | -8575.99 | 342.10 | 1678632.18 | 14529171.58 | 40°00'23.815"N | 104°51'48.700"W | 0.65 | |
| 16343.00 | 90.830 | 183.000 | 7729.86 | 8660.17 | -8669.75 | 335.95 | 1678626.18 | 14529077.85 | 40°00'22.888"N | 104°51'48.779"W | 2.16 | |
| 16437.00 | 90.800 | 182.920 | 7728.52 | 8754.12 | -8763.61 | 331.09 | 1678621.47 | 14528984.02 | 40°00'21.960"N | 104°51'48.841"W | 0.09 | |
| 16530.00 | 90.860 | 183.190 | 7727.17 | 8847.07 | -8856.47 | 326.14 | 1678616.65 | 14528891.19 | 40°00'21.043"N | 104°51'48.905"W | 0.30 | |
| 16624.00 | 90.710 | 183.370 | 7725.89 | 8941.00 | -8950.31 | 320.76 | 1678611.42 | 14528797.38 | 40°00'20.115"N | 104°51'48.974"W | 0.25 | |
| 16718.00 | 90.430 | 183.460 | 7724.95 | 9034.93 | -9044.14 | 315.16 | 1678605.97 | 14528703.58 | 40°00'19.188"N | 104°51'49.046"W | 0.31 | |
| 16813.00 | 90.770 | 182.740 | 7723.96 | 9129.88 | -9138.99 | 310.02 | 1678600.97 | 14528608.76 | 40°00'18.251"N | 104°51'49.112"W | 0.84 | |
| 16904.00† | 89.996 | 181.239 | 7723.35 | 9220.86 | -9229.93 | 306.86 | 1678597.95 | 14528517.85 | 40°00'17.352"N | 104°51'49.153"W | 1.86 | ENTERED RADIUS TOE (1619'FSL & 967'FWL, SEC.35) 40.0048200 -104.8636535 |
| 16907.00 | 89.970 | 181.190 | 7723.35 | 9223.86 | -9232.93 | 306.80 | 1678597.90 | 14528514.85 | 40°00'17.322"N | 104°51'49.153"W | 1.86 | |
| 17001.00 | 89.350 | 180.920 | 7723.91 | 9317.86 | -9326.91 | 305.07 | 1678596.31 | 14528420.90 | 40°00'16.394"N | 104°51'49.176"W | 0.72 | |
| 17095.00 | 89.010 | 180.760 | 7725.25 | 9411.85 | -9420.89 | 303.69 | 1678595.07 | 14528326.96 | 40°00'15.465"N | 104°51'49.193"W | 0.40 | |
| 17189.00 | 88.740 | 181.270 | 7727.10 | 9505.83 | -9514.86 | 302.03 | 1678593.55 | 14528233.03 | 40°00'14.536"N | 104°51'49.215"W | 0.61 | |
| 17283.00 | 88.310 | 181.410 | 7729.52 | 9599.80 | -9608.80 | 299.83 | 1678591.50 | 14528139.12 | 40°00'13.608"N | 104°51'49.243"W | 0.48 | |
| 17377.00 | 90.430 | 180.050 | 7730.55 | 9693.78 | -9702.78 | 298.63 | 1678590.44 | 14528045.17 | 40°00'12.679"N | 104°51'49.258"W | 2.68 | |

REFERENCE WELLPATH IDENTIFICATION

| | | | |
|----------|--------------------------------------|----------|--|
| Operator | KERR-MCGEE OIL & GAS ONSHORE LP (WA) | Slot | SLOT#37 PUMA FED 13C-35HZ (290'FLS & 706'FWL, SEC23) |
| Area | COLORADO | Well | PUMA FED 13C-35HZ |
| Field | WELD COUNTY (UTM/TRUE NORTH) | Wellbore | PUMA FED 13C-35HZ AWP |
| Facility | SEC.23-T1N-R67W | | |

WELLPATH DATA (188 stations)

| MD (ft) | Inclination [°] | Azimuth [°] | TVD (ft) | Vert Sect (ft) | North (ft) | East (ft) | Grid East (US ft) | Grid North (US ft) | Latitude | Longitude | DLS (°/100ft) | Comments |
|------------|--------------------|----------------|-------------|-------------------|---------------|--------------|----------------------|-----------------------|----------------|-----------------|------------------|---|
| 17471.00 | 90.520 | 180.030 | 7729.77 | 9787.75 | -9796.78 | 298.57 | 1678590.52 | 14527951.22 | 40°00'11.750"N | 104°51'49.259"W | 0.10 | |
| 17565.00 | 90.650 | 180.170 | 7728.81 | 9881.73 | -9890.77 | 298.40 | 1678590.50 | 14527857.26 | 40°00'10.821"N | 104°51'49.261"W | 0.20 | |
| 17660.00 | 90.770 | 180.340 | 7727.63 | 9976.71 | -9985.76 | 297.98 | 1678590.22 | 14527762.30 | 40°00'09.883"N | 104°51'49.267"W | 0.22 | |
| 17753.00 | 90.550 | 180.050 | 7726.56 | 10069.68 | -10078.76 | 297.66 | 1678590.05 | 14527669.35 | 40°00'08.964"N | 104°51'49.271"W | 0.39 | |
| 17847.00 | 90.520 | 180.480 | 7725.68 | 10163.67 | -10172.75 | 297.23 | 1678589.75 | 14527575.39 | 40°00'08.035"N | 104°51'49.277"W | 0.46 | |
| 17941.00 | 90.520 | 181.120 | 7724.83 | 10257.66 | -10266.74 | 295.92 | 1678588.58 | 14527481.44 | 40°00'07.106"N | 104°51'49.293"W | 0.68 | |
| 18000.00 | 90.370 | 181.320 | 7724.37 | 10316.66 | -10325.72 | 294.66 | 1678587.42 | 14527422.48 | 40°00'06.523"N | 104°51'49.310"W | 0.42 | End Run 4; LAST BHI MWD+IFR+MSA SURVEY |
| 18056.00 | 90.370 | 181.320 | 7724.01 | 10372.66 | -10381.71 | 293.37 | 1678586.21 | 14527366.51 | 40°00'05.970"N | 104°51'49.326"W | 0.00 | PTB (467'FSL & 954'FWL, SEC.35) 40.0016583 -104.8637017 |

TARGETS

| Name | TVD (ft) | North (ft) | East (ft) | Grid East (US ft) | Grid North (US ft) | Latitude | Longitude | Shape |
|---|-------------|---------------|--------------|----------------------|-----------------------|----------------|-----------------|---------|
| SEC.14-T1N-R67W LINES | 5023.00 | 7619.59 | 1909.83 | 1680174.71 | 14545363.04 | 40°03'03.863"N | 104°51'28.537"W | polygon |
| SEC.23-T1N-R67W LINES | 5023.00 | 2331.00 | 1929.79 | 1680202.68 | 14540076.60 | 40°02'11.600"N | 104°51'28.286"W | polygon |
| SEC.26-T1N-R67W LINES | 5023.00 | -2922.49 | 1945.60 | 1680226.46 | 14534825.24 | 40°01'19.683"N | 104°51'28.088"W | polygon |
| SEC.35-T1N-R67W LINES | 5023.00 | -8209.36 | 1962.39 | 1680251.27 | 14529540.52 | 40°00'27.437"N | 104°51'27.877"W | polygon |
| PUMA FED 13C-35HZ HEEL REV-1 (343'FNL & 1123'FWL, SEC.26) | 7710.00 | -633.11 | 418.08 | 1678696.08 | 14537111.39 | 40°01'42.308"N | 104°51'47.722"W | point |
| PUMA FED 13C-35HZ HEEL REV-3 (343'FNL & 1255'FWL, SEC.26) | 7719.00 | -633.11 | 550.00 | 1678827.95 | 14537111.59 | 40°01'42.308"N | 104°51'46.026"W | point |
| PUMA FED 13C-35HZ HEEL REV-4 (343'FNL & 1123'FWL, SEC.26) | 7719.00 | -633.11 | 418.08 | 1678696.08 | 14537111.39 | 40°01'42.308"N | 104°51'47.722"W | point |
| PUMA FED 13C-35HZ CIRCLE-1 | 7721.00 | -9531.23 | 653.69 | 1678945.10 | 14528217.20 | 40°00'14.375"N | 104°51'44.696"W | circle |
| PUMA FED 13C-35HZ CIRCLE-2 | 7721.00 | -290.96 | 618.70 | 1678896.10 | 14537453.70 | 40°01'45.690"N | 104°51'45.143"W | circle |
| PUMA FED 13C-35HZ LANDBOX | 7721.00 | 564.78 | 156.11 | 1678432.40 | 14538308.40 | 40°01'54.146"N | 104°51'51.089"W | polygon |
| PUMA FED 13C-35HZ TOE REV-5 (465'FSL & 995'FWL, SEC.35) | 7741.00 | -10383.64 | 333.88 | 1678626.72 | 14527364.65 | 40°00'05.951"N | 104°51'48.806"W | point |
| PUMA FED 13C-35HZ TOE REV-1 (465'FSL & 1090'FWL, SEC.35) | 7751.00 | -10383.64 | 428.88 | 1678721.68 | 14527364.79 | 40°00'05.951"N | 104°51'47.585"W | point |

| REFERENCE WELLPATH IDENTIFICATION | | | |
|-----------------------------------|--------------------------------------|----------|--|
| Operator | KERR-MCGEE OIL & GAS ONSHORE LP (WA) | Slot | SLOT#37 PUMA FED 13C-35HZ (290'FLS & 706'FWL, SEC23) |
| Area | COLORADO | Well | PUMA FED 13C-35HZ |
| Field | WELD COUNTY (UTM/TRUE NORTH) | Wellbore | PUMA FED 13C-35HZ AWB |
| Facility | SEC.23-T1N-R67W | | |

| WELLPATH COMPOSITION - Ref Wellbore: PUMA FED 13C-35HZ AWB | | | | | Ref Wellpath: PUMA FED 13C-35HZ AWP | |
|--|----------------|--|--|---|-------------------------------------|--|
| Start MD [ft] | End MD [ft] | Positional Uncertainty Model | | Log Name/Comment | Wellbore | |
| 32.00 | 2222.00 | Custom APC_ISCWSA REV 2 MWD+IFR1 (approximation) | | SDI MWD+IFR SURVEYS <154 - 2222> | PUMA FED 13C-35HZ AWB | |
| 2222.00 | 16092.00 | Custom APC_ISCWSA REV 2 MWD+IFR1+MSA (approximation) | | BHI APC_ISCWSA REV 2 MWD+IFR1+MSA <2317 - 16092> | PUMA FED 13C-35HZ AWB | |
| 16092.00 | 18000.00 | Custom APC_ISCWSA REV 2 MWD+IFR1+MSA (approximation) | | BHI APC_ISCWSA REV 2 MWD+IFR1+MSA <16155 - 18000> | PUMA FED 13C-35HZ AWB | |
| 18000.00 | 18056.00 | Blind Drilling (std) | | Projection to bit | PUMA FED 13C-35HZ AWB | |

| REFERENCE WELLPATH IDENTIFICATION | | | |
|-----------------------------------|--------------------------------------|----------|--|
| Operator | KERR-MCGEE OIL & GAS ONSHORE LP (WA) | Slot | SLOT#37 PUMA FED 13C-35HZ (290'FLS & 706'FWL, SEC23) |
| Area | COLORADO | Well | PUMA FED 13C-35HZ |
| Field | WELD COUNTY (UTM/TRUE NORTH) | Wellbore | PUMA FED 13C-35HZ AWB |
| Facility | SEC.23-T1N-R67W | | |

| WELLPATH COMMENTS | | | | |
|-------------------|-----------------|-------------|----------|---|
| MD [ft] | Inclination [°] | Azimuth [°] | TVD [ft] | Comment |
| 154.00 | 0.550 | 36.920 | 154.00 | FIRST SDI MWD+IFR SURVEY |
| 1935.00 | 10.185 | 50.018 | 1919.85 | ENTERED LANDBOX (419'FSL & 864'FWL,SEC.23) 40.0305119 -104.8641850 |
| 2222.00 | 9.110 | 47.920 | 2203.21 | LAST SDI MWD+IFR SURVEY |
| 2317.00 | 7.780 | 51.070 | 2297.18 | FIRST BHI MWD+IFR+MSA SURVEY |
| 6934.00 | 1.378 | 289.539 | 6898.98 | KOP |
| 7408.00 | 26.262 | 183.584 | 7357.41 | ENTERED RADIUS HEEL (389'FSL & 1081'FWL,SEC.23) 40.0304274 -104.8634064 |
| 8167.00 | 90.490 | 170.000 | 7728.66 | LANDING (214'FNL & 1106'FWL,SEC.26) 40.0287743 -104.8633209 |
| 16904.00 | 89.996 | 181.239 | 7723.35 | ENTERED RADIUS TOE (1619'FSL & 967'FWL,SEC.35) 40.0048200 -104.8636535 |
| 18000.00 | 90.370 | 181.320 | 7724.37 | LAST BHI MWD+IFR+MSA SURVEY |
| 18056.00 | 90.370 | 181.320 | 7724.01 | PTB (467'FSL & 954'FWL,SEC.35) 40.0016583 -104.8637017 |

| SURVEY LOG COMMENTS | | | | |
|---------------------|-----------------|-------------|----------|-------------|
| MD [ft] | Inclination [°] | Azimuth [°] | TVD [ft] | Comment |
| 2317.00 | 7.780 | 51.070 | 2297.18 | Begin Run 1 |
| 7792.00 | 58.060 | 176.520 | 7651.21 | Begin Run 2 |
| 7886.00 | 75.340 | 179.270 | 7688.26 | Begin Run 3 |
| 16092.00 | 91.140 | 184.710 | 7736.95 | End Run 3 |
| 16155.00 | 91.600 | 184.360 | 7735.44 | Begin Run 4 |
| 18000.00 | 90.370 | 181.320 | 7724.37 | End Run 4 |