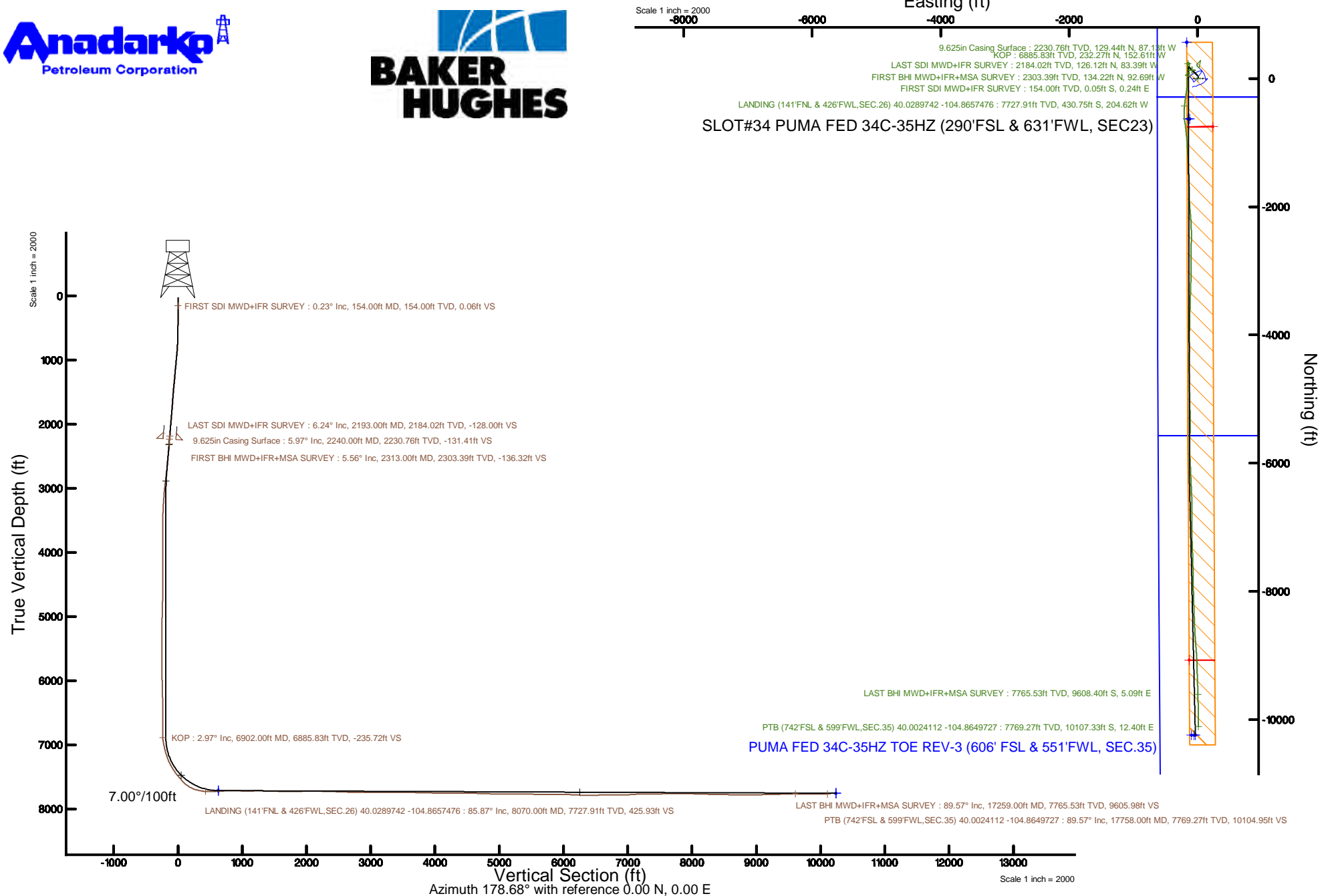


# KERR-MCGEE OIL & GAS ONSHORE LP (WA)

Location: COLORADO Slot: SLOT#34 PUMA FED 34C-35HZ (290'FSL & 631'FWL, SEC23)  
Field: WELD COUNTY (UTM/TRUE NORTH) Well: PUMA FED 34C-35HZ  
Facility: SEC.23-T1N-R67W Wellbore: PUMA FED 34C-35HZ PWB

Plot reference wellpath is PUMA FED 34C-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#34 PUMA FED 34C-35HZ (290'FSL & 631'FWL, SEC23)): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: painsetr on 2017-03-22
	Database: WA_DEN_Anadarko_Defn



## REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#34 PUMA FED 34C-35HZ (290'FSL & 631'FWL, SEC23)
Area	COLORADO	Well	PUMA FED 34C-35HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	PUMA FED 34C-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	3/22/2017 at 3:48 PM
Convergence at slot	0.09° East	Database/Source file	WA_DEN_Anadarko_Defn/PUMA_FED_34C-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	-2.00	-3913.26	1678202.17	14537743.39	40°01'48.564"N	104°51'54.061"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#34 PUMA FED 34C-35HZ (290'FSL & 631'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	179.93°

REFERENCE WELLPATH IDENTIFICATION				
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)		Slot	SLOT#34 PUMA FED 34C-35HZ (290'FSL & 631'FWL, SEC23)
Area	COLORADO		Well	PUMA FED 34C-35HZ
Field	WELD COUNTY (UTM/TRUE NORTH)		Wellbore	PUMA FED 34C-35HZ AWB
Facility	SEC.23-T1N-R67W			

WELLPATH DATA (189 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
0.00†	0.000	102.730	0.00	0.00	0.00	0.00	1678202.17	14537743.39	40°01'48.564"N	104°51'54.061"W	0.00	
32.00	0.000	102.730	32.00	0.00	0.00	0.00	1678202.17	14537743.39	40°01'48.564"N	104°51'54.061"W	0.00	
154.00	0.230	102.730	154.00	0.05	-0.05	0.24	1678202.41	14537743.34	40°01'48.563"N	104°51'54.058"W	0.19	FIRST SDI MWD+IFR SURVEY
239.00	0.290	84.910	239.00	0.07	-0.07	0.62	1678202.79	14537743.32	40°01'48.563"N	104°51'54.053"W	0.12	
417.00	0.860	74.770	416.99	-0.32	0.32	2.36	1678204.53	14537743.71	40°01'48.567"N	104°51'54.031"W	0.32	
506.00	0.990	74.530	505.98	-0.69	0.70	3.74	1678205.91	14537744.10	40°01'48.571"N	104°51'54.013"W	0.15	
592.00	1.110	44.660	591.96	-1.48	1.49	5.04	1678207.21	14537744.89	40°01'48.579"N	104°51'53.996"W	0.64	
679.00	2.280	32.410	678.92	-3.54	3.55	6.56	1678208.73	14537746.95	40°01'48.599"N	104°51'53.977"W	1.40	
766.00	3.730	20.070	765.80	-7.66	7.67	8.46	1678210.62	14537751.07	40°01'48.640"N	104°51'53.952"W	1.82	
854.00	4.640	9.500	853.57	-13.86	13.87	10.03	1678212.18	14537757.27	40°01'48.701"N	104°51'53.932"W	1.35	
941.00	5.410	357.560	940.24	-21.42	21.44	10.44	1678212.57	14537764.84	40°01'48.776"N	104°51'53.927"W	1.49	
1030.00	5.500	341.560	1028.84	-29.66	29.68	8.91	1678211.03	14537773.07	40°01'48.857"N	104°51'53.946"W	1.71	
1117.00	5.810	330.230	1115.42	-37.45	37.45	5.41	1678207.52	14537780.84	40°01'48.934"N	104°51'53.992"W	1.33	
1205.00	6.230	320.760	1202.93	-45.02	45.02	0.17	1678202.28	14537788.39	40°01'49.009"N	104°51'54.059"W	1.22	
1292.00	7.040	317.290	1289.35	-52.60	52.59	-6.43	1678195.66	14537795.95	40°01'49.084"N	104°51'54.144"W	1.04	
1379.00	7.230	316.840	1375.68	-60.52	60.50	-13.79	1678188.29	14537803.85	40°01'49.162"N	104°51'54.238"W	0.23	
1465.00	6.880	313.280	1461.03	-68.01	67.98	-21.24	1678180.83	14537811.31	40°01'49.236"N	104°51'54.334"W	0.65	
1554.00	6.690	311.400	1549.40	-75.10	75.06	-29.01	1678173.06	14537818.38	40°01'49.306"N	104°51'54.434"W	0.33	
1643.00	6.690	313.490	1637.80	-82.11	82.06	-36.66	1678165.40	14537825.36	40°01'49.375"N	104°51'54.532"W	0.27	
1729.00	6.200	310.530	1723.25	-88.85	88.79	-43.58	1678158.48	14537832.08	40°01'49.441"N	104°51'54.621"W	0.60	
1818.00	6.960	311.080	1811.67	-95.80	95.74	-51.04	1678151.01	14537839.01	40°01'49.510"N	104°51'54.717"W	0.99	
1905.00	6.660	310.560	1898.05	-102.55	102.48	-58.85	1678143.19	14537845.74	40°01'49.577"N	104°51'54.817"W	0.35	
1991.00	7.240	314.120	1983.42	-109.58	109.50	-66.52	1678135.51	14537852.75	40°01'49.646"N	104°51'54.916"W	0.84	
2080.00	6.910	316.330	2071.74	-117.37	117.27	-74.25	1678127.78	14537860.51	40°01'49.723"N	104°51'55.015"W	0.48	
2169.00	6.170	312.470	2160.16	-124.48	124.38	-81.47	1678120.54	14537867.60	40°01'49.793"N	104°51'55.108"W	0.97	
2193.00	6.240	311.980	2184.02	-126.22	126.12	-83.39	1678118.62	14537869.34	40°01'49.810"N	104°51'55.133"W	0.37	LAST SDI MWD+IFR SURVEY
2313.00	5.560	310.050	2303.39	-134.34	134.22	-92.69	1678109.31	14537877.42	40°01'49.890"N	104°51'55.253"W	0.59	FIRST BHI MWD+IFR+MSA SURVEY
2407.00	7.450	321.510	2396.78	-142.05	141.92	-99.97	1678102.03	14537885.11	40°01'49.967"N	104°51'55.346"W	2.43	
2501.00	7.090	318.000	2490.03	-151.14	151.00	-107.65	1678094.34	14537894.17	40°01'50.056"N	104°51'55.445"W	0.61	
2595.00	6.620	316.160	2583.35	-159.37	159.22	-115.28	1678086.70	14537902.38	40°01'50.137"N	104°51'55.543"W	0.55	
2689.00	7.400	324.820	2676.65	-168.23	168.08	-122.52	1678079.44	14537911.22	40°01'50.225"N	104°51'55.636"W	1.40	
2783.00	6.030	342.560	2770.02	-177.90	177.74	-127.49	1678074.46	14537920.87	40°01'50.320"N	104°51'55.700"W	2.63	
2877.00	7.390	356.700	2863.38	-188.64	188.49	-129.32	1678072.62	14537931.61	40°01'50.427"N	104°51'55.723"W	2.27	
2970.00	6.960	354.080	2955.65	-200.22	200.06	-130.24	1678071.68	14537943.18	40°01'50.541"N	104°51'55.735"W	0.58	
3064.00	5.240	347.400	3049.11	-210.08	209.92	-131.77	1678070.14	14537953.03	40°01'50.638"N	104°51'55.755"W	1.98	
3158.00	3.540	6.010	3142.84	-217.16	216.99	-132.40	1678069.50	14537960.10	40°01'50.708"N	104°51'55.763"W	2.34	
3252.00	3.450	358.160	3236.67	-222.87	222.71	-132.19	1678069.70	14537965.81	40°01'50.765"N	104°51'55.760"W	0.52	
3346.00	3.200	353.710	3330.51	-228.30	228.14	-132.56	1678069.31	14537971.24	40°01'50.819"N	104°51'55.765"W	0.38	
3440.00	1.070	62.940	3424.45	-231.31	231.15	-132.07	1678069.80	14537974.25	40°01'50.848"N	104°51'55.759"W	3.18	
3534.00	0.890	43.440	3518.43	-232.24	232.08	-130.79	1678071.09	14537975.18	40°01'50.857"N	104°51'55.742"W	0.40	
3628.00	0.900	22.700	3612.42	-233.45	233.29	-130.00	1678071.87	14537976.39	40°01'50.869"N	104°51'55.732"W	0.34	
3721.00	0.970	344.170	3705.41	-234.88	234.72	-129.93	1678071.93	14537977.82	40°01'50.884"N	104°51'55.731"W	0.67	
3815.00	1.260	314.660	3799.39	-236.37	236.21	-130.88	1678070.98	14537979.31	40°01'50.898"N	104°51'55.744"W	0.67	
3909.00	0.950	212.300	3893.38	-236.44	236.28	-132.04	1678069.83	14537979.38	40°01'50.899"N	104°51'55.758"W	1.84	
4003.00	0.660	198.250	3987.37	-235.27	235.11	-132.62	1678069.25	14537978.20	40°01'50.887"N	104°51'55.766"W	0.37	

## REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#34 PUMA FED 34C-35HZ (290'FSL & 631'FWL, SEC23)
Area	COLORADO	Well	PUMA FED 34C-35HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	PUMA FED 34C-35HZ AWP
Facility	SEC.23-T1N-R67W		

## WELLPATH DATA (189 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
4097.00	0.330	255.880	4081.37	234.69	234.53	-133.05	1678068.81	14537977.62	40°01'50.882"N	104°51'55.771"W	0.59	
4192.00	0.360	285.820	4176.37	234.71	234.54	-133.61	1678068.26	14537977.64	40°01'50.882"N	104°51'55.779"W	0.19	
4286.00	0.650	265.880	4270.37	234.75	234.58	-134.42	1678067.45	14537977.68	40°01'50.882"N	104°51'55.789"W	0.36	
4380.00	1.240	273.240	4364.35	234.77	234.60	-135.97	1678065.90	14537977.70	40°01'50.882"N	104°51'55.809"W	0.64	
4474.00	2.170	195.260	4458.32	233.11	232.94	-137.45	1678064.42	14537976.03	40°01'50.866"N	104°51'55.828"W	2.41	
4568.00	0.980	332.930	4552.30	232.11	231.94	-138.29	1678063.59	14537975.03	40°01'50.856"N	104°51'55.839"W	3.16	
4662.00	1.450	339.010	4646.28	233.94	233.77	-139.08	1678062.79	14537976.86	40°01'50.874"N	104°51'55.849"W	0.52	
4757.00	1.630	343.310	4741.24	236.36	236.18	-139.90	1678061.97	14537979.27	40°01'50.898"N	104°51'55.859"W	0.23	
4850.00	1.850	332.170	4834.20	238.95	238.78	-140.98	1678060.89	14537981.86	40°01'50.924"N	104°51'55.873"W	0.43	
4944.00	1.680	324.810	4928.16	241.42	241.25	-142.48	1678059.38	14537984.33	40°01'50.948"N	104°51'55.893"W	0.30	
5038.00	1.630	329.230	5022.12	243.70	243.52	-143.96	1678057.90	14537986.60	40°01'50.971"N	104°51'55.912"W	0.15	
5133.00	1.490	324.280	5117.08	245.86	245.69	-145.37	1678056.48	14537988.76	40°01'50.992"N	104°51'55.930"W	0.20	
5250.00	1.110	323.310	5234.05	248.01	247.83	-146.94	1678054.92	14537990.90	40°01'51.013"N	104°51'55.950"W	0.33	
5345.00	0.710	312.740	5329.04	249.15	248.97	-147.92	1678053.93	14537992.03	40°01'51.024"N	104°51'55.963"W	0.45	
5439.00	1.080	225.640	5423.03	248.92	248.74	-148.98	1678052.87	14537991.81	40°01'51.022"N	104°51'55.976"W	1.34	
5532.00	1.090	223.350	5516.02	247.67	247.49	-150.21	1678051.64	14537990.55	40°01'51.010"N	104°51'55.992"W	0.05	
5626.00	0.870	232.740	5610.00	246.59	246.40	-151.40	1678050.46	14537989.47	40°01'50.999"N	104°51'56.007"W	0.29	
5720.00	0.740	248.330	5703.99	245.93	245.75	-152.53	1678049.33	14537988.81	40°01'50.993"N	104°51'56.022"W	0.27	
5814.00	0.580	251.760	5797.99	245.56	245.37	-153.54	1678048.32	14537988.44	40°01'50.989"N	104°51'56.035"W	0.18	
5908.00	0.620	250.200	5891.98	245.24	245.05	-154.47	1678047.39	14537988.11	40°01'50.986"N	104°51'56.047"W	0.05	
6003.00	1.760	184.650	5986.96	243.62	243.43	-155.08	1678046.79	14537986.49	40°01'50.970"N	104°51'56.055"W	1.69	
6097.00	1.630	171.320	6080.92	240.86	240.67	-154.99	1678046.88	14537983.73	40°01'50.942"N	104°51'56.053"W	0.44	
6191.00	1.280	174.590	6174.89	238.49	238.30	-154.69	1678047.18	14537981.36	40°01'50.919"N	104°51'56.050"W	0.38	
6286.00	0.910	179.210	6269.87	236.68	236.49	-154.58	1678047.29	14537979.55	40°01'50.901"N	104°51'56.048"W	0.40	
6380.00	0.720	175.930	6363.86	235.34	235.15	-154.53	1678047.35	14537978.22	40°01'50.888"N	104°51'56.048"W	0.21	
6474.00	0.550	161.850	6457.86	234.32	234.13	-154.35	1678047.53	14537977.20	40°01'50.878"N	104°51'56.045"W	0.24	
6567.00	0.400	119.800	6550.86	233.74	233.55	-153.93	1678047.95	14537976.61	40°01'50.872"N	104°51'56.040"W	0.40	
6661.00	0.390	122.570	6644.85	233.40	233.21	-153.37	1678048.51	14537976.28	40°01'50.869"N	104°51'56.033"W	0.02	
6755.00	0.150	79.130	6738.85	233.25	233.06	-152.98	1678048.90	14537976.13	40°01'50.867"N	104°51'56.028"W	0.32	
6849.00	0.440	12.130	6832.85	233.63	233.44	-152.78	1678049.09	14537976.51	40°01'50.871"N	104°51'56.025"W	0.43	
6902.00†	2.972	174.456	6885.83	232.46	232.27	-152.61	1678049.27	14537975.34	40°01'50.859"N	104°51'56.023"W	6.40	KOP
6944.00	5.660	175.530	6927.71	229.31	229.12	-152.34	1678049.54	14537972.19	40°01'50.828"N	104°51'56.019"W	6.40	
7037.00	13.970	188.120	7019.27	213.60	213.41	-153.57	1678048.34	14537956.48	40°01'50.673"N	104°51'56.035"W	9.18	
7131.00	14.340	181.490	7110.43	190.73	190.54	-155.48	1678046.47	14537933.62	40°01'50.447"N	104°51'56.060"W	1.77	
7225.00	20.730	180.730	7200.01	162.43	162.24	-155.99	1678045.99	14537905.33	40°01'50.167"N	104°51'56.066"W	6.80	
7319.00	24.890	181.800	7286.64	126.01	125.81	-156.83	1678045.22	14537868.92	40°01'49.807"N	104°51'56.077"W	4.45	
7413.00	31.830	179.990	7369.31	-81.39	81.20	-157.44	1678044.67	14537824.32	40°01'49.366"N	104°51'56.085"W	7.44	
7507.00	37.180	182.510	7446.75	-28.19	27.99	-158.68	1678043.51	14537771.13	40°01'48.841"N	104°51'56.101"W	5.89	
7602.00	39.410	180.900	7521.31	30.65	-30.85	-160.42	1678041.87	14537712.32	40°01'48.259"N	104°51'56.123"W	2.57	
7665.00	42.740	181.990	7568.79	72.02	-72.22	-161.47	1678040.87	14537670.96	40°01'47.850"N	104°51'56.137"W	5.41	
7696.00	46.710	183.260	7590.81	93.81	-94.01	-162.48	1678039.90	14537649.18	40°01'47.635"N	104°51'56.150"W	13.13	
7789.00	57.300	187.920	7648.00	166.58	-166.79	-169.82	1678032.67	14537576.42	40°01'46.916"N	104°51'56.244"W	12.05	
7882.00	69.070	188.070	7689.88	248.61	-248.83	-181.35	1678021.27	14537494.38	40°01'46.105"N	104°51'56.392"W	12.66	
7977.00	79.190	187.810	7715.83	338.98	-339.22	-193.95	1678008.81	14537404.02	40°01'45.212"N	104°51'56.554"W	10.66	
8070.00	85.870	185.510	7727.91	430.50	-430.75	-204.62	1677998.28	14537312.50	40°01'44.307"N	104°51'56.691"W	7.59	LANDING (141'FNL & 426'FWL, SEC.26) 40.0289742 -104.8657476

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#34 PUMA FED 34C-35HZ (290'FSL & 631'FWL, SEC23)
Area	COLORADO	Well	PUMA FED 34C-35HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	PUMA FED 34C-35HZ AWB
Facility	SEC.23-T1N-R67W		

## WELLPATH DATA (189 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
8164.00	92.370	182.340	7729.36	524.20	-524.46	-211.05	1677992.00	14537218.83	40°01'43.381"N	104°51'56.774"W	7.69	
8258.00	93.970	173.100	7724.15	617.88	-618.13	-207.33	1677995.86	14537125.19	40°01'42.455"N	104°51'56.726"W	9.96	
8352.00	92.120	171.970	7719.15	710.96	-711.20	-195.13	1678008.19	14537032.18	40°01'41.536"N	104°51'56.569"W	2.31	
8446.00	89.230	173.550	7718.05	804.21	-804.43	-183.29	1678020.17	14536939.01	40°01'40.614"N	104°51'56.417"W	3.50	
8540.00	90.220	174.150	7718.50	897.68	-897.89	-173.22	1678030.38	14536845.60	40°01'39.691"N	104°51'56.288"W	1.23	
8635.00	88.980	176.060	7719.16	992.33	-992.53	-165.11	1678038.63	14536751.01	40°01'38.756"N	104°51'56.183"W	2.40	
8729.00	90.000	176.680	7720.00	1086.14	-1086.34	-159.16	1678044.72	14536657.25	40°01'37.828"N	104°51'56.107"W	1.27	
8822.00	91.170	176.900	7719.05	1179.00	-1179.19	-153.95	1678050.06	14536564.45	40°01'36.911"N	104°51'56.040"W	1.28	
8917.00	90.030	177.030	7718.05	1273.86	-1274.05	-148.92	1678055.24	14536469.63	40°01'35.974"N	104°51'55.975"W	1.21	
9011.00	87.170	177.520	7720.35	1367.72	-1367.90	-144.46	1678059.84	14536375.82	40°01'35.046"N	104°51'55.918"W	3.09	
9105.00	88.340	177.650	7724.03	1461.57	-1461.75	-140.50	1678063.94	14536282.02	40°01'34.119"N	104°51'55.867"W	1.25	
9199.00	89.750	177.730	7725.60	1555.48	-1555.65	-136.71	1678067.87	14536188.16	40°01'33.191"N	104°51'55.818"W	1.50	
9293.00	87.940	178.640	7727.49	1649.42	-1649.58	-133.73	1678070.99	14536094.27	40°01'32.262"N	104°51'55.780"W	2.16	
9388.00	89.350	178.790	7729.74	1744.37	-1744.53	-131.60	1678073.26	14535999.36	40°01'31.324"N	104°51'55.753"W	1.49	
9482.00	91.170	179.460	7729.31	1838.35	-1838.51	-130.17	1678074.84	14535905.42	40°01'30.395"N	104°51'55.734"W	2.06	
9576.00	92.960	176.780	7725.92	1932.23	-1932.39	-127.09	1678078.06	14535811.59	40°01'29.468"N	104°51'55.695"W	3.43	
9671.00	90.830	175.130	7722.78	2026.94	-2027.09	-120.39	1678084.90	14535716.93	40°01'28.532"N	104°51'55.609"W	2.84	
9765.00	88.280	175.670	7723.51	2120.64	-2120.78	-112.85	1678092.57	14535623.29	40°01'27.606"N	104°51'55.512"W	2.77	
9860.00	89.450	175.300	7725.40	2215.33	-2215.46	-105.38	1678100.19	14535528.66	40°01'26.670"N	104°51'55.416"W	1.29	
9954.00	88.950	178.710	7726.71	2309.19	-2309.31	-100.47	1678105.24	14535434.86	40°01'25.743"N	104°51'55.352"W	3.67	
10048.00	87.200	179.900	7729.87	2403.12	-2403.25	-99.33	1678106.52	14535340.96	40°01'24.814"N	104°51'55.338"W	2.25	
10142.00	88.460	180.150	7733.42	2497.05	-2497.18	-99.37	1678106.63	14535247.07	40°01'23.886"N	104°51'55.338"W	1.37	
10235.00	87.040	180.720	7737.08	2589.97	-2590.10	-100.07	1678106.06	14535154.18	40°01'22.968"N	104°51'55.347"W	1.65	
10329.00	88.150	180.900	7741.02	2683.88	-2684.01	-101.40	1678104.88	14535060.31	40°01'22.040"N	104°51'55.364"W	1.20	
10423.00	89.320	180.760	7743.10	2777.84	-2777.97	-102.76	1678103.66	14534966.38	40°01'21.111"N	104°51'55.382"W	1.25	
10517.00	90.950	181.030	7742.87	2871.83	-2871.96	-104.23	1678102.33	14534872.43	40°01'20.183"N	104°51'55.401"W	1.76	
10610.00	88.580	180.100	7743.26	2964.81	-2964.94	-105.15	1678101.56	14534779.48	40°01'19.264"N	104°51'55.413"W	2.74	
10704.00	89.540	180.290	7744.80	3058.80	-3058.93	-105.47	1678101.38	14534685.53	40°01'18.335"N	104°51'55.417"W	1.04	
10798.00	91.320	180.400	7744.09	3152.79	-3152.92	-106.03	1678100.96	14534591.58	40°01'17.406"N	104°51'55.424"W	1.90	
10892.00	89.020	182.110	7743.81	3246.75	-3246.89	-108.09	1678099.04	14534497.64	40°01'16.477"N	104°51'55.450"W	3.05	
10983.00	89.880	182.290	7744.69	3337.68	-3337.82	-111.58	1678095.69	14534406.75	40°01'15.579"N	104°51'55.495"W	0.97	
11075.00	91.690	182.380	7743.43	3429.58	-3429.73	-115.33	1678092.08	14534314.87	40°01'14.670"N	104°51'55.543"W	1.97	
11167.00	90.650	180.850	7741.55	3521.62	-3521.67	-117.92	1678089.63	14534222.96	40°01'13.762"N	104°51'55.577"W	2.01	
11260.00	87.930	181.480	7742.70	3614.48	-3614.63	-119.81	1678087.88	14534130.03	40°01'12.843"N	104°51'55.601"W	3.00	
11351.00	88.090	181.220	7745.86	3705.40	-3705.55	-121.96	1678085.88	14534039.14	40°01'11.945"N	104°51'55.629"W	0.34	
11442.00	89.410	181.040	7747.84	3796.36	-3796.51	-123.75	1678084.22	14533948.22	40°01'11.046"N	104°51'55.652"W	1.46	
11535.00	87.630	181.070	7750.25	3889.30	-3889.46	-125.46	1678082.65	14533855.30	40°01'10.127"N	104°51'55.674"W	1.91	
11626.00	88.860	181.140	7753.03	3980.24	-3980.40	-127.22	1678081.03	14533764.40	40°01'09.229"N	104°51'55.696"W	1.35	
11718.00	90.250	181.210	7753.75	4072.21	-4072.37	-129.10	1678079.29	14533672.46	40°01'08.320"N	104°51'55.720"W	1.51	
11811.00	89.320	181.050	7754.10	4165.19	-4165.35	-130.94	1678077.59	14533579.51	40°01'07.401"N	104°51'55.744"W	1.01	
11903.00	90.460	181.170	7754.27	4257.17	-4257.34	-132.72	1678075.95	14533487.57	40°01'06.492"N	104°51'55.767"W	1.25	
11996.00	88.430	180.120	7755.17	4350.15	-4350.32	-133.77	1678075.05	14533394.62	40°01'05.573"N	104°51'55.780"W	2.46	
12088.00	88.950	179.520	7757.28	4442.13	-4442.29	-133.48	1678075.48	14533302.68	40°01'04.664"N	104°51'55.777"W	0.86	
12180.00	90.580	180.270	7757.66	4534.12	-4534.29	-133.31	1678075.78	14533210.72	40°01'03.755"N	104°51'55.774"W	1.95	
12271.00	88.490	178.660	7758.39	4625.11	-4625.27	-132.46	1678076.77	14533119.77	40°01'02.856"N	104°51'55.763"W	2.90	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#34 PUMA FED 34C-35HZ (290'FSL & 631'FWL, SEC23)
Area	COLORADO	Well	PUMA FED 34C-35HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	PUMA FED 34C-35HZ AWB
Facility	SEC.23-T1N-R67W		

## WELLPATH DATA (189 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
12365.00	89.380	178.780	7760.14	4719.07	-4719.23	-130.36	1678079.01	14533025.86	40°01'01.927"N	104°51'55.736"W	0.96	
12459.00	86.830	178.760	7763.25	4812.99	-4813.15	-128.34	1678081.17	14532931.98	40°01'00.999"N	104°51'55.711"W	2.71	
12554.00	88.060	178.520	7767.48	4907.87	-4908.03	-126.09	1678083.56	14532837.14	40°01'00.061"N	104°51'55.682"W	1.32	
12648.00	89.690	179.250	7769.33	5001.83	-5001.99	-124.26	1678085.53	14532743.22	40°00'59.133"N	104°51'55.658"W	1.90	
12742.00	89.780	178.450	7769.76	5095.82	-5095.97	-122.38	1678087.56	14532649.28	40°00'58.204"N	104°51'55.634"W	0.86	
12836.00	90.920	177.810	7769.19	5189.76	-5189.92	-119.31	1678090.77	14532555.38	40°00'57.276"N	104°51'55.594"W	1.39	
12930.00	88.650	179.610	7769.54	5283.73	-5283.88	-117.19	1678093.03	14532461.46	40°00'56.347"N	104°51'55.567"W	3.08	
13024.00	90.150	180.080	7770.53	5377.72	-5377.87	-116.94	1678093.42	14532367.50	40°00'55.418"N	104°51'55.564"W	1.67	
13118.00	89.320	181.510	7770.96	5471.71	-5471.86	-118.24	1678092.26	14532273.55	40°00'54.490"N	104°51'55.581"W	1.76	
13212.00	88.090	181.640	7773.09	5565.65	-5565.80	-120.83	1678089.82	14532179.65	40°00'53.561"N	104°51'55.614"W	1.32	
13306.00	88.950	182.400	7775.51	5659.55	-5659.71	-124.14	1678086.66	14532085.77	40°00'52.633"N	104°51'55.656"W	1.22	
13401.00	89.690	178.720	7776.64	5754.52	-5754.68	-125.07	1678085.87	14531990.84	40°00'51.695"N	104°51'55.668"W	3.95	
13495.00	91.380	178.550	7775.76	5848.49	-5848.64	-122.83	1678088.25	14531896.91	40°00'50.766"N	104°51'55.640"W	1.81	
13589.00	89.290	176.310	7775.21	5942.39	-5942.54	-118.61	1678092.61	14531803.06	40°00'49.838"N	104°51'55.585"W	3.26	
13682.00	89.170	177.730	7776.46	6035.26	-6035.40	-113.78	1678097.58	14531710.24	40°00'48.920"N	104°51'55.523"W	1.53	
13776.00	86.770	177.580	7779.79	6129.12	-6129.26	-109.93	1678101.56	14531616.43	40°00'47.993"N	104°51'55.474"W	2.56	
13869.00	87.350	177.200	7784.56	6221.90	-6222.04	-105.71	1678105.93	14531523.69	40°00'47.076"N	104°51'55.420"W	0.75	
13964.00	89.080	177.250	7787.52	6316.75	-6316.88	-101.11	1678110.67	14531428.90	40°00'46.139"N	104°51'55.360"W	1.82	
14057.00	90.580	177.500	7787.80	6409.65	-6409.77	-96.85	1678115.07	14531336.04	40°00'45.221"N	104°51'55.306"W	1.64	
14151.00	90.620	178.280	7786.81	6503.59	-6503.70	-93.39	1678118.67	14531242.16	40°00'44.293"N	104°51'55.261"W	0.83	
14245.00	92.090	178.350	7784.59	6597.52	-6597.64	-90.63	1678121.57	14531148.27	40°00'43.364"N	104°51'55.226"W	1.57	
14339.00	89.200	179.860	7783.53	6691.49	-6691.61	-89.16	1678123.18	14531054.34	40°00'42.436"N	104°51'55.207"W	3.47	
14433.00	89.660	179.560	7784.47	6785.49	-6785.60	-88.68	1678123.80	14530960.38	40°00'41.507"N	104°51'55.201"W	0.58	
14527.00	91.360	179.990	7783.63	6879.48	-6879.59	-88.31	1678124.31	14530866.43	40°00'40.578"N	104°51'55.196"W	1.87	
14621.00	91.820	179.890	7781.02	6973.44	-6973.55	-88.21	1678124.55	14530772.50	40°00'39.649"N	104°51'55.195"W	0.50	
14716.00	93.450	180.170	7776.66	7068.34	-7068.45	-88.26	1678124.65	14530677.65	40°00'38.712"N	104°51'55.195"W	1.74	
14810.00	93.050	178.860	7771.33	7162.18	-7162.29	-87.47	1678125.58	14530583.84	40°00'37.784"N	104°51'55.185"W	1.45	
14904.00	91.450	177.930	7767.64	7256.07	-7256.18	-84.84	1678128.36	14530490.00	40°00'36.856"N	104°51'55.151"W	1.97	
14998.00	89.050	177.950	7767.23	7350.01	-7350.11	-81.46	1678131.88	14530396.11	40°00'35.928"N	104°51'55.108"W	2.55	
15092.00	90.340	178.020	7767.73	7443.95	-7444.05	-78.15	1678135.32	14530302.21	40°00'35.000"N	104°51'55.065"W	1.37	
15186.00	92.060	178.250	7765.76	7537.88	-7537.98	-75.10	1678138.52	14530208.33	40°00'34.072"N	104°51'55.026"W	1.85	
15280.00	90.950	179.030	7763.29	7631.82	-7631.92	-72.87	1678140.89	14530114.43	40°00'33.143"N	104°51'54.997"W	1.44	
15375.00	89.230	179.320	7763.14	7726.81	-7726.90	-71.50	1678142.40	14530019.48	40°00'32.205"N	104°51'54.980"W	1.84	
15469.00	90.770	179.850	7763.14	7820.80	-7820.90	-70.82	1678143.23	14529925.53	40°00'31.276"N	104°51'54.971"W	1.73	
15563.00	90.120	178.140	7762.41	7914.78	-7914.87	-69.17	1678145.02	14529831.59	40°00'30.347"N	104°51'54.950"W	1.95	
15657.00	87.040	178.290	7764.74	8008.70	-8008.79	-66.24	1678148.09	14529737.72	40°00'29.419"N	104°51'54.912"W	3.28	
15751.00	88.430	178.630	7768.45	8102.59	-8102.68	-63.72	1678150.75	14529643.87	40°00'28.491"N	104°51'54.880"W	1.52	
15846.00	88.280	177.770	7771.18	8197.51	-8197.59	-60.74	1678153.88	14529549.00	40°00'27.553"N	104°51'54.841"W	0.92	
15940.00	89.750	177.440	7772.80	8291.42	-8291.49	-56.81	1678157.94	14529455.14	40°00'26.625"N	104°51'54.791"W	1.60	
16034.00	87.970	178.320	7774.67	8385.33	-8385.41	-53.33	1678161.56	14529361.27	40°00'25.697"N	104°51'54.746"W	2.11	
16129.00	89.290	178.090	7776.94	8480.26	-8480.33	-50.36	1678164.68	14529266.39	40°00'24.759"N	104°51'54.708"W	1.41	
16223.00	88.180	177.080	7779.01	8574.16	-8574.22	-46.40	1678168.78	14529172.54	40°00'23.831"N	104°51'54.657"W	1.60	
16317.00	89.540	176.560	7780.88	8668.00	-8668.06	-41.18	1678174.13	14529078.76	40°00'22.904"N	104°51'54.590"W	1.55	
16411.00	88.490	175.430	7782.50	8761.76	-8761.81	-34.62	1678180.84	14528985.05	40°00'21.977"N	104°51'54.506"W	1.64	
16505.00	89.940	175.430	7783.79	8855.46	-8855.50	-27.13	1678188.46	14528891.41	40°00'21.051"N	104°51'54.410"W	1.54	

# Actual Wellpath Report

PUMA FED 34C-35HZ AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#34 PUMA FED 34C-35HZ (290°FSL & 631°FWL, SEC23)
Area	COLORADO	Well	PUMA FED 34C-35HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	PUMA FED 34C-35HZ AWB
Facility	SEC.23-T1N-R67W		

WELLPATH DATA (189 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
16600.00	91.850	176.070	7782.30	8950.19	-8950.22	-20.09	1678195.64	14528796.73	40°00'20.115"N	104°51'54.319"W	2.12	
16694.00	91.320	176.700	7779.70	9043.97	-9044.00	-14.17	1678201.71	14528703.00	40°00'19.189"N	104°51'54.243"W	0.88	
16788.00	90.030	178.590	7778.60	9137.89	-9137.91	-10.30	1678205.71	14528609.14	40°00'18.261"N	104°51'54.193"W	2.43	
16883.00	91.260	178.820	7777.53	9232.86	-9232.87	-8.16	1678208.00	14528514.21	40°00'17.322"N	104°51'54.166"W	1.32	
16977.00	92.560	178.300	7774.39	9326.77	-9326.79	-5.80	1678210.50	14528420.34	40°00'16.394"N	104°51'54.135"W	1.49	
17071.00	92.250	177.510	7770.45	9420.63	-9420.64	-2.36	1678214.08	14528326.53	40°00'15.466"N	104°51'54.091"W	0.90	
17165.00	92.090	177.120	7766.89	9514.47	-9514.47	2.04	1678218.62	14528232.74	40°00'14.539"N	104°51'54.035"W	0.45	
17259.00	89.570	179.160	7765.53	9608.40	-9608.40	5.09	1678221.81	14528138.86	40°00'13.611"N	104°51'53.996"W	3.45	LAST BHI MWD+IFR+MSA SURVEY
17758.00	89.570	179.160	7769.27	10107.34	-10107.33	12.40	1678229.88	14527640.14	40°00'08.680"N	104°51'53.902"W	0.00	PTB (742°FSL & 599°FWL, SEC.35) 40.0024112 - 104.8649727

HOLE & CASING SECTIONS - Ref Wellbore: PUMA FED 34C-35HZ AWB Ref Wellpath: PUMA FED 34C-35HZ AWP									
String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
9.625in Casing Surface	32.00	2240.00	2208.00	32.00	2230.76	0.00	0.00	129.44	-87.13

WELLPATH COMPOSITION - Ref Wellbore: PUMA FED 34C-35HZ AWB Ref Wellpath: PUMA FED 34C-35HZ AWP				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
32.00	2193.00	Custom APC_ISCWSA REV 2 MWD+IFR1 (approximation)	SDI MWD+IFR SURVEYS <154 - 2193>	PUMA FED 34C-35HZ AWB
2193.00	17259.00	Custom APC_ISCWSA REV 2 MWD+IFR1+MSA (approximation)	BHI APC_ISCWSA REV 2 MWD+IFR1+MSA <2313 - 17259>	PUMA FED 34C-35HZ AWB
17259.00	17758.00	Blind Drilling (std)	Projection to bit	PUMA FED 34C-35HZ AWB



REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#34 PUMA FED 34C-35HZ (290'FSL & 631'FWL, SEC23)
Area	COLORADO	Well	PUMA FED 34C-35HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	PUMA FED 34C-35HZ AWP
Facility	SEC.23-T1N-R67W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
154.00	0.230	102.730	154.00	FIRST SDI MWD+IFR SURVEY
2193.00	6.240	311.980	2184.02	LAST SDI MWD+IFR SURVEY
2313.00	5.560	310.050	2303.39	FIRST BHI MWD+IFR+MSA SURVEY
6902.00	2.972	174.456	6885.83	KOP
8070.00	85.870	185.510	7727.91	LANDING (141'FNL & 426'FWL,SEC.26) 40.0289742 -104.8657476
17259.00	89.570	179.160	7765.53	LAST BHI MWD+IFR+MSA SURVEY
17758.00	89.570	179.160	7769.27	PTB (742'FSL & 599'FWL,SEC.35) 40.0024112 -104.8649727