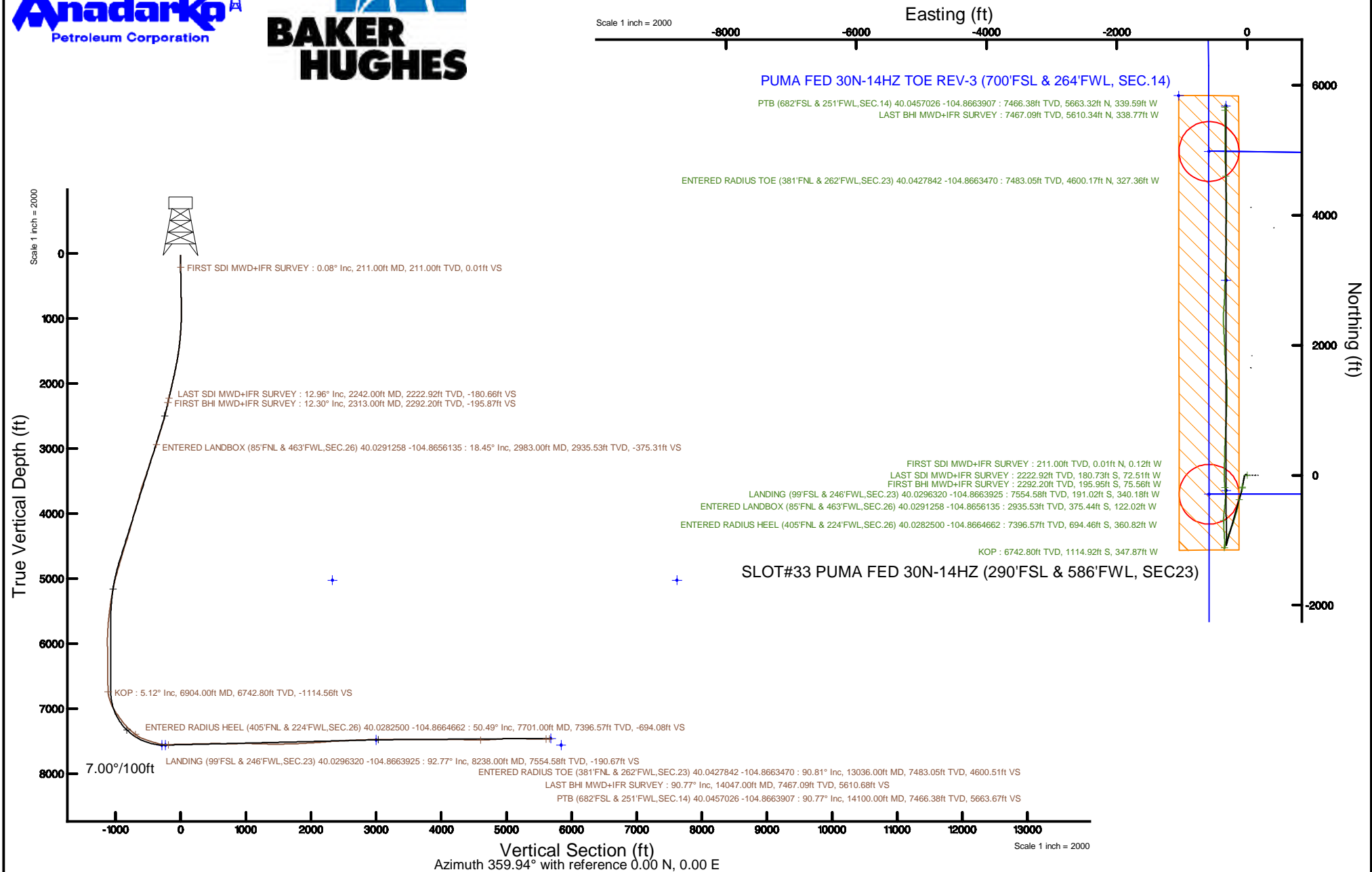


Location:	COLORADO	Slot:	SLOT#33 PUMA FED 30N-14HZ (290'FSL & 586'FWL, SEC23)
Field:	WELD COUNTY (UTM/TRUE NORTH)	Well:	PUMA FED 30N-14HZ
Facility:	SEC.23-T1N-R67W	Wellbore:	PUMA FED 30N-14HZ PWB

Plot reference wellpath is PUMA FED 30N-14HZ Rev-C.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#33 PUMA FED 30N-14HZ (290'FSL & 586'FWL, SEC23)); 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: painsetr on 2017-04-05
	Database: WA_DEN_Anadarko_Defn



REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#33 PUMA FED 30N-14HZ (290'FSL & 586'FWL, SEC23)
Area	COLORADO	Well	PUMA FED 30N-14HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	PUMA FED 30N-14HZ 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	4/5/2017 at 3:35 PM
Convergence at slot	0.09° East	Database/Source file	WA_DEN_Anadarko_Defn/PUMA_FED_30N-14HZ_AWP.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-2.09	-3958.30	1678157.15	14537743.22	40°01'48.563"N	104°51'54.640"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#33 PUMA FED 30N-14HZ (290'FSL & 586'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	356.57°

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#33 PUMA FED 30N-14HZ (290°FSL & 586°FWL, SEC23)
Area	COLORADO	Well	PUMA FED 30N-14HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	PUMA FED 30N-14HZ AWP
Facility	SEC.23-T1N-R67W		

WELLPATH DATA (156 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	272.360	0.00	0.00	0.00	0.00	1678157.15	14537743.22	40°01'48.563"N	104°51'54.640"W	0.00	
32.00	0.000	272.360	32.00	0.00	0.00	0.00	1678157.15	14537743.22	40°01'48.563"N	104°51'54.640"W	0.00	
211.00	0.080	272.360	211.00	0.01	0.01	-0.12	1678157.02	14537743.23	40°01'48.563"N	104°51'54.642"W	0.04	FIRST SDI MWD+IFR SURVEY
284.00	0.350	305.290	284.00	0.16	0.14	-0.36	1678156.79	14537743.36	40°01'48.564"N	104°51'54.645"W	0.39	
417.00	0.440	324.340	417.00	0.84	0.79	-0.99	1678156.16	14537744.01	40°01'48.571"N	104°51'54.653"W	0.12	
506.00	1.010	328.410	505.99	1.82	1.73	-1.60	1678155.55	14537744.95	40°01'48.580"N	104°51'54.661"W	0.64	
592.00	1.970	335.290	591.96	3.87	3.72	-2.61	1678154.53	14537746.94	40°01'48.600"N	104°51'54.674"W	1.13	
679.00	2.970	333.410	678.88	7.34	7.09	-4.25	1678152.89	14537750.31	40°01'48.633"N	104°51'54.695"W	1.15	
766.00	2.770	307.640	765.77	10.79	10.39	-6.92	1678150.22	14537753.60	40°01'48.666"N	104°51'54.729"W	1.49	
854.00	2.840	275.240	853.67	12.51	11.89	-10.77	1678146.36	14537755.09	40°01'48.681"N	104°51'54.779"W	1.78	
941.00	3.340	250.330	940.55	12.13	11.23	-15.31	1678141.83	14537754.43	40°01'48.674"N	104°51'54.837"W	1.63	
1030.00	4.100	235.690	1029.36	9.77	8.57	-20.38	1678136.77	14537751.76	40°01'48.648"N	104°51'54.902"W	1.36	
1117.00	4.680	225.510	1116.11	5.85	4.33	-25.48	1678131.67	14537747.51	40°01'48.606"N	104°51'54.968"W	1.11	
1205.00	5.390	219.300	1203.77	0.45	-1.39	-30.66	1678126.51	14537741.79	40°01'48.549"N	104°51'55.034"W	1.02	
1292.00	6.110	213.330	1290.33	-6.26	-8.42	-35.79	1678121.39	14537734.76	40°01'48.480"N	104°51'55.100"W	1.07	
1379.00	6.870	203.350	1376.78	-14.61	-17.06	-40.40	1678116.80	14537726.11	40°01'48.394"N	104°51'55.159"W	1.56	
1465.00	7.700	193.130	1462.08	-24.73	-27.40	-43.74	1678113.46	14537715.77	40°01'48.292"N	104°51'55.202"W	1.79	
1554.00	8.940	189.830	1550.15	-37.18	-40.02	-46.28	1678110.95	14537703.15	40°01'48.168"N	104°51'55.235"W	1.49	
1643.00	9.910	191.650	1637.94	-51.30	-54.33	-49.01	1678108.25	14537688.84	40°01'48.026"N	104°51'55.270"W	1.14	
1729.00	11.550	191.110	1722.44	-66.78	-70.03	-52.16	1678105.12	14537673.14	40°01'47.871"N	104°51'55.311"W	1.91	
1818.00	11.990	189.450	1809.57	-84.42	-87.89	-55.39	1678101.91	14537655.28	40°01'47.694"N	104°51'55.352"W	0.62	
1905.00	13.050	190.520	1894.50	-102.76	-106.46	-58.67	1678098.66	14537636.71	40°01'47.511"N	104°51'55.394"W	1.25	
1991.00	12.770	191.110	1978.32	-121.38	-125.34	-62.28	1678095.09	14537617.84	40°01'47.324"N	104°51'55.441"W	0.36	
2080.00	12.810	189.880	2065.11	-140.51	-144.71	-65.86	1678091.53	14537598.47	40°01'47.133"N	104°51'55.487"W	0.31	
2169.00	13.260	190.560	2151.82	-160.01	-164.46	-69.43	1678088.00	14537578.72	40°01'46.938"N	104°51'55.533"W	0.53	
2242.00	12.960	190.880	2222.92	-176.07	-180.73	-72.51	1678084.94	14537562.45	40°01'46.777"N	104°51'55.572"W	0.42	LAST SDI MWD+IFR SURVEY
2313.00	12.300	191.820	2292.20	-191.08	-195.95	-75.56	1678081.92	14537547.24	40°01'46.627"N	104°51'55.611"W	0.97	FIRST BHI MWD+IFR SURVEY
2407.00	13.530	187.970	2383.82	-211.52	-216.64	-79.13	1678078.37	14537526.55	40°01'46.422"N	104°51'55.657"W	1.60	
2501.00	14.340	191.150	2475.06	-233.56	-238.95	-82.91	1678074.63	14537504.24	40°01'46.202"N	104°51'55.706"W	1.19	
2595.00	15.710	195.290	2565.84	-256.88	-262.65	-88.52	1678069.06	14537480.54	40°01'45.967"N	104°51'55.778"W	1.85	
2689.00	17.800	194.670	2655.85	-282.60	-288.83	-95.51	1678062.11	14537454.36	40°01'45.709"N	104°51'55.868"W	2.23	
2783.00	18.820	198.390	2745.09	-310.33	-317.12	-103.94	1678053.73	14537426.07	40°01'45.429"N	104°51'55.976"W	1.65	
2876.00	16.980	197.120	2833.58	-336.97	-344.34	-112.67	1678045.05	14537398.86	40°01'45.160"N	104°51'56.088"W	2.02	
2970.00	18.180	196.520	2923.19	-363.61	-371.51	-120.88	1678036.88	14537371.68	40°01'44.892"N	104°51'56.194"W	1.29	
2983.00†	18.453	195.919	2935.53	-367.46	-375.44	-122.02	1678035.75	14537367.75	40°01'44.853"N	104°51'56.209"W	2.55	ENTERED LANDBOX (85°FNL & 463°FWL, SEC.26) 40.0291258 -104.8656135
3064.00	20.190	192.530	3011.97	-393.00	-401.41	-128.57	1678029.24	14537341.78	40°01'44.596"N	104°51'56.293"W	2.55	
3158.00	19.120	190.310	3100.49	-423.55	-432.39	-134.84	1678023.02	14537310.80	40°01'44.290"N	104°51'56.373"W	1.39	
3252.00	17.230	187.150	3189.80	-452.19	-461.36	-139.33	1678018.57	14537281.84	40°01'44.004"N	104°51'56.431"W	2.27	
3346.00	18.390	191.740	3279.30	-480.19	-489.69	-144.08	1678013.87	14537253.51	40°01'43.724"N	104°51'56.492"W	1.94	
3440.00	20.310	194.770	3367.99	-510.00	-519.99	-151.26	1678006.74	14537223.22	40°01'43.424"N	104°51'56.584"W	2.30	
3534.00	18.790	192.760	3456.57	-540.04	-550.53	-158.76	1677999.28	14537192.68	40°01'43.123"N	104°51'56.681"W	1.77	
3628.00	19.780	199.240	3545.30	-569.26	-580.31	-167.35	1677990.75	14537162.89	40°01'42.828"N	104°51'56.791"W	2.51	
3721.00	17.790	198.080	3633.35	-597.00	-608.68	-176.94	1677981.20	14537134.52	40°01'42.548"N	104°51'56.915"W	2.18	
3815.00	15.540	194.330	3723.39	-622.35	-634.53	-184.52	1677973.67	14537108.67	40°01'42.292"N	104°51'57.012"W	2.65	
3909.00	15.810	195.720	3813.90	-646.44	-659.06	-191.10	1677967.12	14537084.14	40°01'42.050"N	104°51'57.097"W	0.49	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#33 PUMA FED 30N-14HZ (290°FSL & 586°FWL, SEC23)
Area	COLORADO	Well	PUMA FED 30N-14HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	PUMA FED 30N-14HZ AWP
Facility	SEC.23-T1N-R67W		

WELLPATH DATA (156 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
4003.00	18.940	199.930	3903.60	-672.55	-685.74	-199.77	1677958.49	14537057.46	40°01'41.786"N	104°51'57.208"W	3.59	
4097.00	17.350	197.460	3992.93	-699.65	-713.45	-209.18	1677949.13	14537029.74	40°01'41.512"N	104°51'57.329"W	1.88	
4192.00	15.100	196.260	4084.14	-724.54	-738.84	-216.90	1677941.46	14537004.35	40°01'41.262"N	104°51'57.428"W	2.39	
4286.00	14.420	200.370	4175.04	-746.77	-761.57	-224.40	1677933.99	14536981.62	40°01'41.037"N	104°51'57.525"W	1.33	
4380.00	18.160	203.250	4265.25	-770.58	-786.01	-234.26	1677924.17	14536957.17	40°01'40.795"N	104°51'57.651"W	4.07	
4473.00	18.770	203.920	4353.46	-796.82	-813.00	-246.05	1677912.43	14536930.17	40°01'40.529"N	104°51'57.803"W	0.69	
4568.00	18.880	199.650	4443.38	-824.54	-841.45	-257.41	1677901.11	14536901.72	40°01'40.248"N	104°51'57.949"W	1.45	
4662.00	18.650	200.470	4532.39	-852.27	-869.86	-267.78	1677890.79	14536873.31	40°01'39.967"N	104°51'58.082"W	0.37	
4757.00	16.660	199.700	4622.91	-878.68	-896.91	-277.69	1677880.93	14536846.25	40°01'39.699"N	104°51'58.210"W	2.11	
4850.00	16.660	200.830	4712.00	-903.09	-921.92	-286.92	1677871.74	14536821.24	40°01'39.452"N	104°51'58.328"W	0.35	
4944.00	17.680	196.980	4801.82	-928.76	-948.17	-295.88	1677862.82	14536794.99	40°01'39.193"N	104°51'58.444"W	1.62	
5038.00	16.520	196.740	4891.66	-954.68	-974.62	-303.90	1677854.85	14536768.54	40°01'38.932"N	104°51'58.547"W	1.24	
5133.00	14.750	198.550	4983.14	-978.58	-999.02	-311.64	1677847.15	14536744.13	40°01'38.690"N	104°51'58.646"W	1.93	
5226.00	13.570	199.090	5073.31	-999.63	-1020.56	-318.97	1677839.85	14536722.59	40°01'38.478"N	104°51'58.740"W	1.28	
5321.00	12.100	196.880	5165.94	-1019.27	-1040.62	-325.51	1677833.34	14536702.53	40°01'38.279"N	104°51'58.824"W	1.63	
5439.00	9.940	195.380	5281.76	-1040.51	-1062.27	-331.80	1677827.09	14536680.87	40°01'38.065"N	104°51'58.905"W	1.85	
5532.00	8.530	192.760	5373.55	-1054.73	-1076.74	-335.46	1677823.46	14536666.41	40°01'37.922"N	104°51'58.952"W	1.58	
5626.00	7.390	190.240	5466.64	-1067.30	-1089.49	-338.07	1677820.86	14536653.66	40°01'37.796"N	104°51'58.986"W	1.27	
5720.00	6.510	188.570	5559.95	-1078.39	-1100.71	-339.94	1677819.01	14536642.44	40°01'37.685"N	104°51'59.010"W	0.96	
5814.00	5.370	183.300	5653.44	-1087.97	-1110.37	-340.99	1677817.98	14536632.78	40°01'37.590"N	104°51'59.023"W	1.34	
5908.00	3.590	184.580	5747.15	-1095.25	-1117.69	-341.47	1677817.50	14536625.46	40°01'37.518"N	104°51'59.030"W	1.90	
6003.00	2.830	178.050	5842.00	-1100.54	-1123.00	-341.63	1677817.35	14536620.15	40°01'37.465"N	104°51'59.032"W	0.89	
6097.00	0.590	242.800	5935.96	-1103.06	-1125.54	-341.98	1677817.01	14536617.61	40°01'37.440"N	104°51'59.036"W	2.80	
6191.00	0.710	325.210	6029.96	-1102.75	-1125.29	-342.75	1677816.24	14536617.87	40°01'37.443"N	104°51'59.046"W	0.92	
6286.00	0.500	354.330	6124.95	-1101.84	-1124.39	-343.12	1677815.86	14536618.76	40°01'37.451"N	104°51'59.051"W	0.39	
6380.00	0.460	5.170	6218.95	-1101.05	-1123.61	-343.13	1677815.86	14536619.55	40°01'37.459"N	104°51'59.051"W	0.11	
6474.00	0.790	337.850	6312.94	-1100.07	-1122.63	-343.34	1677815.65	14536620.52	40°01'37.469"N	104°51'59.054"W	0.46	
6567.00	0.790	342.420	6405.93	-1098.84	-1121.43	-343.78	1677815.21	14536621.73	40°01'37.481"N	104°51'59.059"W	0.07	
6661.00	1.270	308.420	6499.92	-1097.52	-1120.16	-344.79	1677814.19	14536622.99	40°01'37.493"N	104°51'59.072"W	0.81	
6755.00	0.940	309.310	6593.90	-1096.30	-1119.03	-346.20	1677812.78	14536624.12	40°01'37.504"N	104°51'59.090"W	0.35	
6849.00	1.090	326.230	6687.89	-1095.00	-1117.79	-347.29	1677811.69	14536625.35	40°01'37.517"N	104°51'59.104"W	0.35	
6904.00†	5.122	353.331	6742.80	-1092.10	-1114.92	-347.87	1677811.11	14536628.23	40°01'37.545"N	104°51'59.112"W	7.60	KOP
6944.00	8.150	355.880	6782.52	-1087.48	-1110.32	-348.28	1677810.69	14536632.83	40°01'37.591"N	104°51'59.117"W	7.60	
7037.00	18.820	6.620	6872.84	-1066.05	-1088.78	-347.02	1677811.91	14536654.36	40°01'37.803"N	104°51'59.101"W	11.74	
7131.00	25.420	3.000	6959.88	-1031.03	-1053.53	-344.21	1677814.67	14536689.60	40°01'38.152"N	104°51'59.065"W	7.17	
7222.00	33.450	356.060	7039.09	-986.46	-1008.92	-344.92	1677813.90	14536734.19	40°01'38.593"N	104°51'59.074"W	9.57	
7314.00	35.100	357.760	7115.11	-934.66	-957.19	-347.69	1677811.04	14536785.90	40°01'39.104"N	104°51'59.110"W	2.07	
7406.00	37.040	355.770	7189.48	-880.50	-903.11	-350.77	1677807.89	14536839.94	40°01'39.638"N	104°51'59.149"W	2.46	
7499.00	42.350	355.740	7261.01	-821.13	-843.90	-355.17	1677803.40	14536899.13	40°01'40.223"N	104°51'59.206"W	5.71	
7590.00	50.180	359.110	7323.88	-755.46	-778.28	-357.99	1677800.48	14536964.72	40°01'40.872"N	104°51'59.242"W	9.01	
7681.00	47.940	357.050	7383.51	-686.75	-709.59	-360.27	1677798.09	14537033.38	40°01'41.551"N	104°51'59.271"W	3.00	
7701.00†	50.491	358.744	7396.57	-671.61	-694.46	-360.82	1677797.52	14537048.50	40°01'41.700"N	104°51'59.278"W	14.27	ENTERED RADIUS HEEL (405°FNL & 224°FWL, SEC.26) 40.0282500 -104.8664662
7773.00	59.840	3.960	7437.67	-612.83	-635.48	-359.28	1677798.97	14537107.46	40°01'42.283"N	104°51'59.259"W	14.27	
7865.00	73.130	7.000	7474.31	-529.71	-551.71	-351.13	1677806.99	14537191.20	40°01'43.111"N	104°51'59.154"W	14.76	
7957.00	72.620	5.440	7501.40	-443.03	-464.31	-341.60	1677816.39	14537278.58	40°01'43.974"N	104°51'59.031"W	1.71	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#33 PUMA FED 30N-14HZ (290'FSL & 586'FWL, SEC23)
Area	COLORADO	Well	PUMA FED 30N-14HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	PUMA FED 30N-14HZ AWP
Facility	SEC.23-T1N-R67W		

WELLPATH DATA (156 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
8050.00	72.510	4.360	7529.26	-355.25	-375.91	-334.02	1677823.83	14537366.96	40°01'44.848"N	104°51'58.934"W	1.11	
8144.00	81.820	357.680	7550.14	-264.02	-284.43	-332.49	1677825.22	14537458.40	40°01'45.752"N	104°51'58.914"W	12.08	
8238.00	92.770	352.930	7554.58	-170.32	-191.02	-340.18	1677817.39	14537551.76	40°01'46.675"N	104°51'59.013"W	12.69	LANDING (99'FSL & 246'FWL, SEC.23) 40.0296320 -104.8663925
8332.00	93.080	357.470	7549.78	-76.49	-97.50	-348.04	1677809.40	14537645.24	40°01'47.599"N	104°51'59.114"W	4.83	
8426.00	91.020	359.560	7546.41	17.38	-3.60	-350.47	1677806.82	14537739.09	40°01'48.527"N	104°51'59.145"W	3.12	
8520.00	90.590	1.750	7545.09	111.13	90.38	-349.40	1677807.76	14537833.04	40°01'49.456"N	104°51'59.132"W	2.37	
8614.00	90.860	1.020	7543.90	204.79	184.34	-347.12	1677809.89	14537926.97	40°01'50.385"N	104°51'59.102"W	0.83	
8707.00	91.880	0.110	7541.68	297.53	277.31	-346.21	1677810.66	14538019.90	40°01'51.303"N	104°51'59.091"W	1.47	
8801.00	90.650	1.770	7539.60	391.23	371.27	-344.67	1677812.06	14538113.82	40°01'52.232"N	104°51'59.071"W	2.20	
8895.00	92.220	3.830	7537.25	484.64	465.12	-340.08	1677816.51	14538207.64	40°01'53.159"N	104°51'59.012"W	2.75	
8989.00	88.860	2.780	7536.36	577.97	558.94	-334.66	1677821.78	14538301.44	40°01'54.087"N	104°51'58.942"W	3.74	
9083.00	89.410	2.240	7537.78	671.46	652.84	-330.54	1677825.75	14538395.30	40°01'55.015"N	104°51'58.889"W	0.82	
9177.00	89.940	2.040	7538.32	765.01	746.77	-327.03	1677829.12	14538489.20	40°01'55.943"N	104°51'58.844"W	0.60	
9271.00	90.740	2.630	7537.76	858.53	840.69	-323.20	1677832.80	14538583.09	40°01'56.871"N	104°51'58.795"W	1.06	
9365.00	91.450	3.420	7535.96	951.92	934.54	-318.24	1677837.62	14538676.91	40°01'57.798"N	104°51'58.731"W	1.13	
9459.00	88.610	1.270	7535.91	1045.42	1028.45	-314.40	1677841.32	14538770.78	40°01'58.726"N	104°51'58.682"W	3.79	
9553.00	88.430	1.460	7538.34	1139.06	1122.39	-312.16	1677843.42	14538864.69	40°01'59.655"N	104°51'58.653"W	0.28	
9647.00	88.310	0.630	7541.02	1232.74	1216.34	-310.45	1677844.99	14538958.60	40°02'00.583"N	104°51'58.631"W	0.89	
9741.00	88.550	0.730	7543.59	1326.46	1310.30	-309.33	1677845.96	14539052.52	40°02'01.512"N	104°51'58.617"W	0.28	
9835.00	89.750	357.410	7544.99	1420.35	1404.26	-310.86	1677844.29	14539146.45	40°02'02.440"N	104°51'58.636"W	3.76	
9929.00	90.120	356.500	7545.09	1514.34	1498.12	-315.85	1677839.16	14539240.27	40°02'03.368"N	104°51'58.701"W	1.05	
10024.00	91.290	356.630	7543.92	1609.33	1592.94	-321.54	1677833.33	14539335.04	40°02'04.305"N	104°51'58.774"W	1.24	
10118.00	91.790	355.400	7541.40	1703.29	1686.68	-328.07	1677826.66	14539428.73	40°02'05.231"N	104°51'58.858"W	1.41	
10212.00	91.880	355.180	7538.39	1797.22	1780.32	-335.79	1677818.81	14539522.32	40°02'06.157"N	104°51'58.957"W	0.25	
10306.00	93.110	358.480	7534.29	1891.12	1874.07	-340.98	1677813.47	14539616.02	40°02'07.083"N	104°51'59.024"W	3.74	
10401.00	93.450	358.160	7528.86	1985.92	1968.87	-343.76	1677810.55	14539710.78	40°02'08.020"N	104°51'59.059"W	0.49	
10495.00	93.330	357.130	7523.30	2079.73	2062.63	-347.62	1677806.55	14539804.50	40°02'08.946"N	104°51'59.109"W	1.10	
10590.00	95.270	356.490	7516.18	2174.46	2157.21	-352.89	1677801.14	14539899.03	40°02'09.881"N	104°51'59.177"W	2.15	
10684.00	94.530	357.000	7508.15	2268.12	2250.71	-358.20	1677795.68	14539992.49	40°02'10.805"N	104°51'59.245"W	0.95	
10778.00	93.630	359.470	7501.46	2361.83	2344.42	-361.09	1677792.66	14540086.16	40°02'11.731"N	104°51'59.282"W	2.79	
10872.00	92.190	359.960	7496.69	2455.56	2438.30	-361.56	1677792.05	14540179.99	40°02'12.659"N	104°51'59.288"W	1.62	
10966.00	95.250	3.650	7490.59	2548.95	2532.02	-358.61	1677794.85	14540273.69	40°02'13.585"N	104°51'59.250"W	5.09	
11060.00	90.990	3.520	7485.47	2642.08	2625.68	-352.74	1677800.58	14540367.31	40°02'14.511"N	104°51'59.175"W	4.53	
11154.00	92.370	5.140	7482.72	2735.18	2719.37	-345.65	1677807.53	14540460.97	40°02'15.436"N	104°51'59.084"W	2.26	
11247.00	92.030	359.860	7479.14	2827.58	2812.18	-341.60	1677811.44	14540553.75	40°02'16.354"N	104°51'59.032"W	5.68	
11342.00	92.840	0.960	7475.11	2922.28	2907.08	-340.92	1677811.97	14540648.62	40°02'17.292"N	104°51'59.023"W	1.44	
11436.00	89.350	2.360	7473.31	3015.87	3001.01	-338.19	1677814.55	14540742.52	40°02'18.220"N	104°51'58.988"W	4.00	
11529.00	89.690	1.970	7474.09	3108.43	3093.94	-334.68	1677817.92	14540835.42	40°02'19.138"N	104°51'58.943"W	0.56	
11623.00	91.350	2.230	7473.24	3201.98	3187.87	-331.24	1677821.22	14540929.31	40°02'20.066"N	104°51'58.899"W	1.79	
11717.00	90.890	3.370	7471.40	3295.41	3281.74	-326.65	1677825.67	14541023.15	40°02'20.994"N	104°51'58.840"W	1.31	
11811.00	88.520	1.760	7471.88	3388.88	3375.63	-322.44	1677829.73	14541117.01	40°02'21.922"N	104°51'58.786"W	3.05	
11905.00	89.260	0.370	7473.70	3482.57	3469.60	-320.69	1677831.34	14541210.94	40°02'22.850"N	104°51'58.763"W	1.67	
11999.00	90.310	0.210	7474.06	3576.37	3563.59	-320.22	1677831.67	14541304.90	40°02'23.779"N	104°51'58.757"W	1.13	
12093.00	90.680	358.630	7473.25	3670.25	3657.58	-321.17	1677830.58	14541398.85	40°02'24.708"N	104°51'58.769"W	1.73	
12187.00	89.720	0.260	7472.92	3764.12	3751.57	-322.08	1677829.52	14541492.80	40°02'25.637"N	104°51'58.781"W	2.01	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#33 PUMA FED 30N-14HZ (290°FSL & 586°FWL, SEC23)
Area	COLORADO	Well	PUMA FED 30N-14HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	PUMA FED 30N-14HZ AWP
Facility	SEC.23-T1N-R67W		

WELLPATH DATA (156 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
12281.00	89.570	1.170	7473.50	3857.88	3845.56	-320.91	1677830.55	14541586.76	40°02'26.566"N	104°51'58.766"W	0.98	
12376.00	88.650	0.690	7474.98	3952.59	3940.54	-319.36	1677831.95	14541681.70	40°02'27.504"N	104°51'58.746"W	1.09	
12470.00	89.450	0.500	7476.53	4046.34	4034.52	-318.39	1677832.78	14541775.64	40°02'28.433"N	104°51'58.734"W	0.87	
12564.00	91.110	1.030	7476.07	4140.09	4128.51	-317.13	1677833.90	14541869.59	40°02'29.362"N	104°51'58.718"W	1.85	
12658.00	91.020	358.420	7474.33	4233.92	4222.48	-317.58	1677833.30	14541963.53	40°02'30.291"N	104°51'58.723"W	2.78	
12752.00	87.040	358.920	7475.92	4327.82	4316.42	-319.77	1677830.98	14542057.43	40°02'31.219"N	104°51'58.751"W	4.27	
12846.00	87.720	358.840	7480.21	4421.65	4410.31	-321.60	1677829.00	14542151.27	40°02'32.147"N	104°51'58.775"W	0.73	
12940.00	89.010	358.270	7482.90	4515.55	4504.23	-323.97	1677826.49	14542245.16	40°02'33.075"N	104°51'58.805"W	1.50	
13034.00	90.770	357.700	7483.08	4609.52	4598.17	-327.28	1677823.05	14542339.05	40°02'34.003"N	104°51'58.848"W	1.97	
13036.00†	90.807	357.697	7483.05	4611.52	4600.17	-327.36	1677822.97	14542341.05	40°02'34.023"N	104°51'58.849"W	1.88	ENTERED RADIUS TOE (381°FNL & 262°FWL, SEC.23) 40.0427842 -104.8663470
13128.00	92.530	357.540	7480.37	4703.46	4692.05	-331.18	1677819.01	14542432.89	40°02'34.931"N	104°51'58.898"W	1.88	
13222.00	93.980	359.440	7475.03	4797.25	4785.86	-333.65	1677816.39	14542526.65	40°02'35.858"N	104°51'58.930"W	2.54	
13315.00	94.350	359.200	7468.28	4889.89	4878.61	-334.75	1677815.15	14542619.36	40°02'36.775"N	104°51'58.944"W	0.47	
13408.00	91.790	0.530	7463.30	4982.60	4971.46	-334.97	1677814.79	14542712.18	40°02'37.692"N	104°51'58.947"W	3.10	
13503.00	90.590	358.030	7461.32	5077.46	5066.42	-336.16	1677813.46	14542807.10	40°02'38.631"N	104°51'58.962"W	2.92	
13596.00	88.800	359.860	7461.82	5170.37	5159.40	-337.88	1677811.60	14542900.04	40°02'39.549"N	104°51'58.984"W	2.75	
13690.00	89.570	359.940	7463.16	5264.20	5253.39	-338.04	1677811.30	14542993.99	40°02'40.478"N	104°51'58.987"W	0.82	
13784.00	88.370	0.360	7464.85	5358.00	5347.37	-337.79	1677811.40	14543087.94	40°02'41.407"N	104°51'58.983"W	1.35	
13878.00	89.110	0.010	7466.91	5451.79	5441.35	-337.49	1677811.56	14543181.88	40°02'42.336"N	104°51'58.979"W	0.87	
14047.00	90.770	359.120	7467.09	5620.55	5610.34	-338.77	1677810.02	14543350.79	40°02'44.006"N	104°51'58.996"W	1.11	LAST BHI MWD+IFR SURVEY
14100.00	90.770	359.120	7466.38	5673.50	5663.32	-339.59	1677809.13	14543403.76	40°02'44.529"N	104°51'59.006"W	0.00	PTB (682°FSL & 251°FWL, SEC.14) 40.0457026 -104.8663907

REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#33 PUMA FED 30N-14HZ (290°FSL & 586°FWL, SEC23)
Area	COLORADO	Well	PUMA FED 30N-14HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	PUMA FED 30N-14HZ AWB
Facility	SEC.23-T1N-R67W		

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	7619.80	2029.90	1680174.71	14545363.04	40°03'03.863"N	104°51'28.537"W	polygon
SEC.23-T1N-R67W LINES	5023.00	2331.21	2049.88	1680202.68	14540076.60	40°02'11.600"N	104°51'28.286"W	polygon
SEC.26-T1N-R67W LINES	5023.00	-2922.28	2065.72	1680226.46	14534825.24	40°01'19.683"N	104°51'28.088"W	polygon
PUMA FED 30N-14HZ TOE REV-3 (700°FSL & 264°FWL, SEC.14)	7458.00	5680.59	-326.88	1677821.81	14543421.03	40°02'44.700"N	104°51'58.843"W	point
PUMA FED 30N-14HZ INTERMEDIATE TARGET @3000°VS REV-1	7480.00	2999.67	-324.12	1677828.62	14540741.20	40°02'18.207"N	104°51'58.807"W	point
PUMA FED 30N-14HZ CIRCLE-1	7561.00	-292.46	-583.03	1677574.80	14537450.00	40°01'45.673"N	104°52'02.135"W	circle
PUMA FED 30N-14HZ CIRCLE-2	7561.00	4981.56	-585.85	1677564.00	14542721.90	40°02'37.792"N	104°52'02.173"W	circle
PUMA FED 30N-14HZ HEEL REV-3 (55°FSL & 265°FWL, SEC.23)	7561.00	-235.07	-320.79	1677836.85	14537507.77	40°01'46.240"N	104°51'58.764"W	point
PUMA FED 30N-14HZ LANDBOX	7561.00	5837.41	-1050.64	1677098.10	14543576.70	40°02'46.250"N	104°52'08.149"W	polygon

WELLPATH COMPOSITION - Ref Wellbore: PUMA FED 30N-14HZ AWB Ref Wellpath: PUMA FED 30N-14HZ AWP

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
32.00	2242.00	Custom APC ISCWSA REV 2 MWD+IFR1 (approximation)	SDI MWD+IFR SURVEYS <211 - 2242>	PUMA FED 30N-14HZ AWB
2242.00	14047.00	Custom APC ISCWSA REV 2 MWD+IFR1+SC (approximation)	BHI APC ISCWSA REV 2 MWD+IFR+SC <2313 - 14047>	PUMA FED 30N-14HZ AWB
14047.00	14100.00	Blind Drilling (std)	Projection to bit	PUMA FED 30N-14HZ AWB

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#33 PUMA FED 30N-14HZ (290'FSL & 586'FWL, SEC23)
Area	COLORADO	Well	PUMA FED 30N-14HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	PUMA FED 30N-14HZ AWB
Facility	SEC.23-T1N-R67W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
211.00	0.080	272.360	211.00	FIRST SDI MWD+IFR SURVEY
2242.00	12.960	190.880	2222.92	LAST SDI MWD+IFR SURVEY
2313.00	12.300	191.820	2292.20	FIRST BHI MWD+IFR SURVEY
2983.00	18.453	195.919	2935.53	ENTERED LANDBOX (85'FNL & 463'FWL, SEC.26) 40.0291258 -104.8656135
6904.00	5.122	353.331	6742.80	KOP
7701.00	50.491	358.744	7396.57	ENTERED RADIUS HEEL (405'FNL & 224'FWL, SEC.26) 40.0282500 -104.8664662
8238.00	92.770	352.930	7554.58	LANDING (99'FSL & 246'FWL, SEC.23) 40.0296320 -104.8663925
13036.00	90.807	357.697	7483.05	ENTERED RADIUS TOE (381'FNL & 262'FWL, SEC.23) 40.0427842 -104.8663470
14047.00	90.770	359.120	7467.09	LAST BHI MWD+IFR SURVEY
14100.00	90.770	359.120	7466.38	PTB (682'FSL & 251'FWL, SEC.14) 40.0457026 -104.8663907