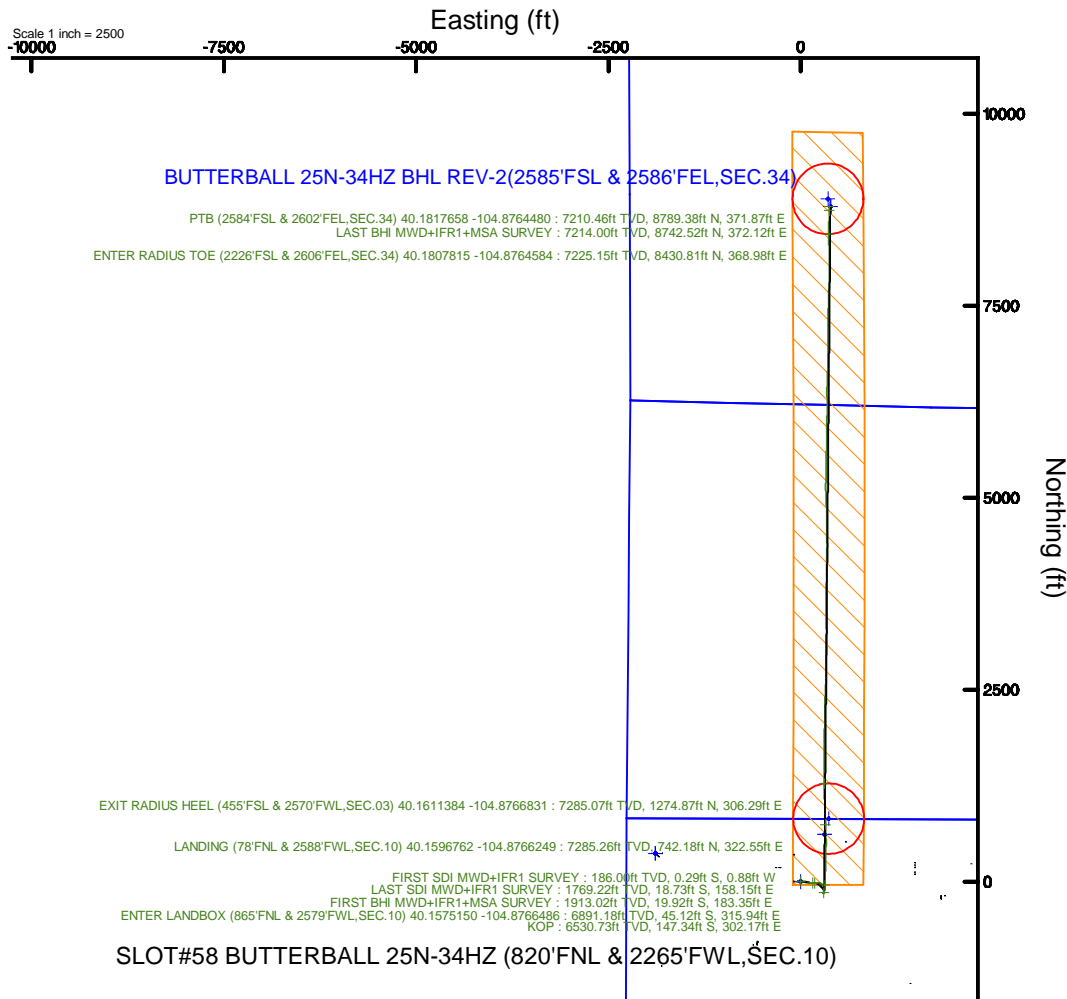
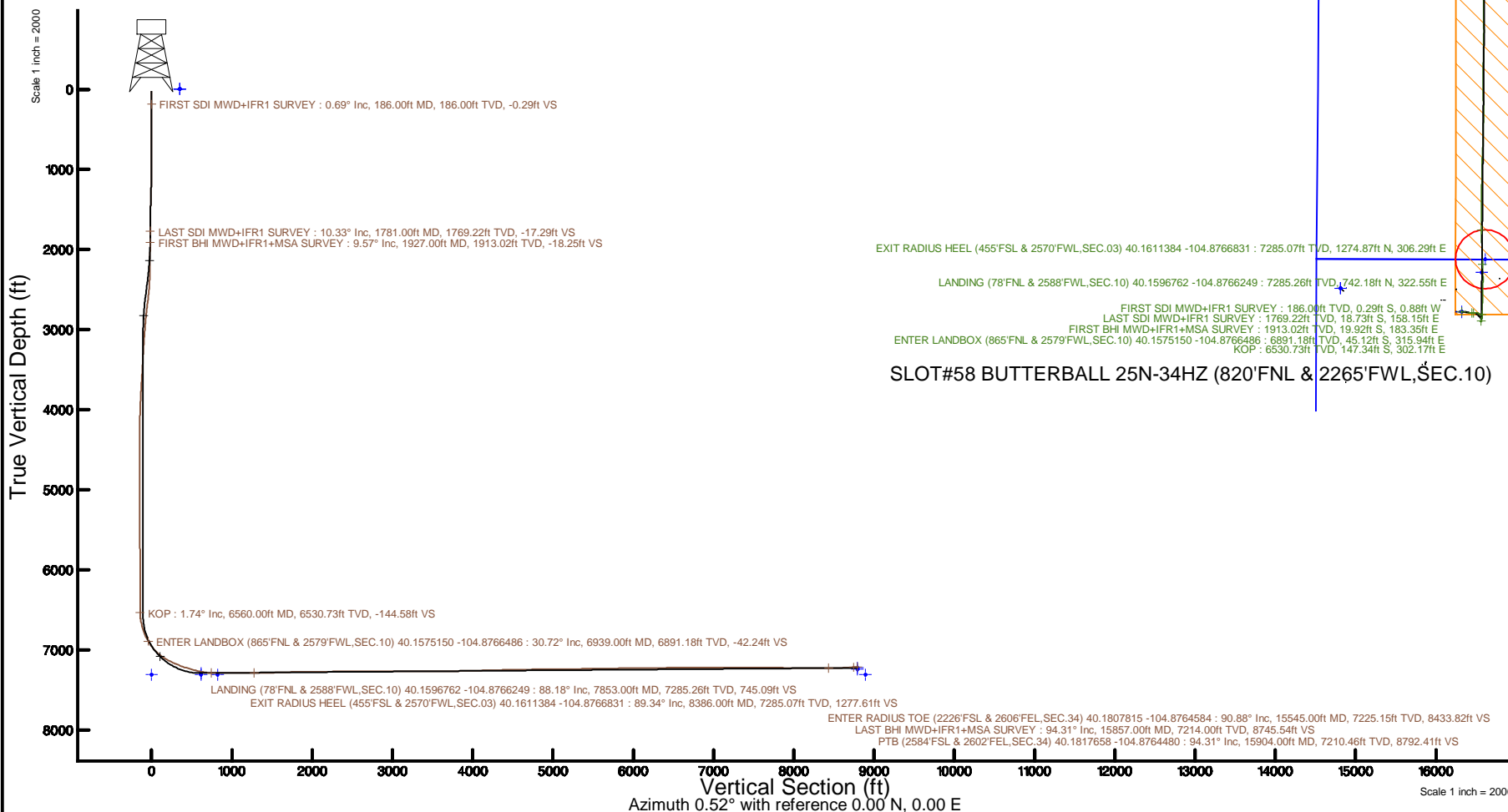


KERR-MCGEE OIL & GAS ONSHORE LP (WA)

Location: COLORADO Slot: SLOT#58 BUTTERBALL 25N-34HZ (820'FNL & 2265'FWL,SEC.10)
 Field: WELD COUNTY (UTM/TRUE NORTH) Well: BUTTERBALL 25N-34HZ
 Facility: SEC.10-T2N-R67W Wellbore: BUTTERBALL 25N-34HZ PWB

Plot reference wellpath is BUTTERBALL 25N-34HZ PWB Rev-B.0	Grid System: NAD83 / UTM Zone 13 North, US feet
True vertical depths are referenced to NABORS X22 (32') (RT)	* = Wellpath was transformed from a different geodetic datum
Measured depths are referenced to NABORS X22 (32') (RT)	North Reference: True north
NABORS X22 (32') (RT) to Mean Sea Level: 4966 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#58 BUTTERBALL 25N-34HZ (820'FNL & 2265'FWL,SEC.10)): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: painsetr on 2017-06-13
	Database: WA_DEN_Anadarko_Defn



REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#58 BUTTERBALL 25N-34HZ (820'FNL & 2265'FWL,SEC.10)
Area	COLORADO	Well	BUTTERBALL 25N-34HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	BUTTERBALL 25N-34HZ AWB
Facility	SEC.10-T2N-R67W		

REPORT SETUP INFORMATION

Projection System	NAD83 / UTM Zone 13 North, US feet	Software System	WellArchitect® 5.0
North Reference	True	User	Painsetr
Scale	0.999601	Report Generated	6/13/2017 at 11:31 AM
Convergence at slot	0.08° East	Database/Source file	WA_DEN_Anadarko_Defn/BUTTERBALL_25N-34HZ_AWP.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-181.34	319.66	1674565.97	14584160.44	40°09'27.500"N	104°52'40.004"W
Facility Reference Pt			1674246.19	14584341.27	40°09'29.292"N	104°52'44.121"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 (32') (RT) to Facility Vertical Datum	4966.00ft
Horizontal Reference Pt	Slot	NABORS X22 (32') (RT) to Mean Sea Level	4966.00ft
Vertical Reference Pt	NABORS X22 (32') (RT)	NABORS X22 (32') (RT) to Mud Line at Slot (SLOT#58 BUTTERBALL 25N-34HZ (820'FNL & 2265'FWL,SEC.10))	4966.00ft
MD Reference Pt	NABORS X22 (32') (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	0.52°

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#58 BUTTERBALL 25N-34HZ (820'FNL & 2265'FWL,SEC.10)
Area	COLORADO	Well	BUTTERBALL 25N-34HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	BUTTERBALL 25N-34HZ AWP
Facility	SEC.10-T2N-R67W		

WELLPATH DATA (177 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	251.990	0.00	0.00	0.00	0.00	1674565.97	14584160.44	40°09'27.500°N	104°52'40.004°W	0.00	
32.00	0.000	251.990	32.00	0.00	0.00	0.00	1674565.97	14584160.44	40°09'27.500°N	104°52'40.004°W	0.00	
186.00	0.690	251.990	186.00	-0.29	-0.29	-0.88	1674565.09	14584160.15	40°09'27.497°N	104°52'40.015°W	0.45	FIRST SDI MWD+IFR1 SURVEY
256.00	0.870	251.220	255.99	-0.60	-0.59	-1.79	1674564.19	14584159.85	40°09'27.494°N	104°52'40.027°W	0.26	
345.00	0.470	256.210	344.98	-0.92	-0.89	-2.78	1674563.19	14584159.54	40°09'27.491°N	104°52'40.040°W	0.45	
433.00	0.310	250.020	432.98	-1.09	-1.06	-3.35	1674562.62	14584159.37	40°09'27.490°N	104°52'40.047°W	0.19	
520.00	1.240	101.390	519.98	-1.35	-1.33	-2.65	1674563.32	14584159.11	40°09'27.487°N	104°52'40.038°W	1.74	
607.00	2.960	80.140	606.92	-1.12	-1.13	0.48	1674566.46	14584159.31	40°09'27.489°N	104°52'39.998°W	2.14	
695.00	4.090	86.790	694.75	-0.51	-0.56	5.86	1674571.82	14584159.88	40°09'27.494°N	104°52'39.929°W	1.36	
784.00	4.890	82.880	783.47	0.20	0.09	12.79	1674578.75	14584160.54	40°09'27.501°N	104°52'39.839°W	0.96	
873.00	6.500	91.160	872.03	0.65	0.45	21.59	1674587.55	14584160.92	40°09'27.504°N	104°52'39.726°W	2.03	
959.00	6.210	91.140	957.50	0.55	0.26	31.11	1674597.06	14584160.74	40°09'27.503°N	104°52'39.603°W	0.34	
1046.00	7.620	99.650	1043.87	-0.42	-0.80	41.50	1674607.45	14584159.70	40°09'27.492°N	104°52'39.470°W	2.00	
1133.00	7.970	103.510	1130.07	-2.69	-3.17	53.05	1674619.00	14584157.34	40°09'27.469°N	104°52'39.321°W	0.72	
1222.00	8.490	106.800	1218.15	-5.92	-6.51	65.34	1674631.29	14584154.01	40°09'27.436°N	104°52'39.162°W	0.79	
1308.00	9.200	99.700	1303.13	-8.80	-9.51	78.19	1674644.15	14584151.04	40°09'27.406°N	104°52'38.997°W	1.51	
1395.00	9.800	99.330	1388.94	-11.04	-11.88	92.36	1674658.31	14584148.69	40°09'27.383°N	104°52'38.815°W	0.69	
1484.00	10.160	96.530	1476.59	-13.02	-14.00	107.63	1674673.58	14584146.59	40°09'27.362°N	104°52'38.618°W	0.68	
1572.00	9.430	96.080	1563.31	-14.53	-15.65	122.51	1674688.45	14584144.96	40°09'27.345°N	104°52'38.426°W	0.83	
1659.00	9.830	96.510	1649.08	-16.00	-17.24	136.97	1674702.91	14584143.39	40°09'27.330°N	104°52'38.240°W	0.47	
1748.00	10.090	92.720	1736.74	-17.09	-18.48	152.31	1674718.24	14584142.18	40°09'27.317°N	104°52'38.042°W	0.79	
1781.00	10.330	92.340	1769.22	-17.29	-18.73	158.15	1674724.09	14584141.93	40°09'27.315°N	104°52'37.967°W	0.76	LAST SDI MWD+IFR1 SURVEY
1927.00	9.570	93.090	1913.02	-18.25	-19.92	183.35	1674749.28	14584140.77	40°09'27.303°N	104°52'37.643°W	0.53	FIRST BHI MWD+IFR1+MSA SURVEY
2021.00	10.810	93.310	2005.54	-19.03	-20.85	199.96	1674765.87	14584139.87	40°09'27.294°N	104°52'37.429°W	1.32	
2115.00	10.060	91.330	2097.98	-19.57	-21.55	216.96	1674782.88	14584139.19	40°09'27.287°N	104°52'37.210°W	0.88	
2208.00	9.100	88.120	2189.69	-19.38	-21.50	232.44	1674798.34	14584139.27	40°09'27.288°N	104°52'37.010°W	1.18	
2302.00	9.760	102.450	2282.43	-20.72	-22.97	247.65	1674813.55	14584137.81	40°09'27.273°N	104°52'36.814°W	2.59	
2396.00	9.100	115.000	2375.17	-25.44	-27.83	262.17	1674828.07	14584132.98	40°09'27.225°N	104°52'36.627°W	2.29	
2490.00	10.670	108.250	2467.77	-31.17	-33.70	277.17	1674843.07	14584127.13	40°09'27.167°N	104°52'36.434°W	2.07	
2584.00	10.460	124.580	2560.20	-38.60	-41.27	292.46	1674858.37	14584119.59	40°09'27.092°N	104°52'36.237°W	3.18	
2677.00	7.920	146.690	2652.03	-48.66	-51.42	302.94	1674868.86	14584109.45	40°09'26.992°N	104°52'36.102°W	4.63	
2771.00	7.190	168.170	2745.23	-59.79	-62.59	307.70	1674873.63	14584098.29	40°09'26.881°N	104°52'36.041°W	3.08	
2865.00	5.780	189.950	2838.64	-70.20	-73.01	308.09	1674874.04	14584087.87	40°09'26.778°N	104°52'36.036°W	2.99	
2959.00	5.430	190.470	2932.19	-79.25	-82.05	306.46	1674872.42	14584078.84	40°09'26.689°N	104°52'36.057°W	0.38	
3052.00	4.770	194.200	3024.82	-87.35	-90.13	304.71	1674870.69	14584070.77	40°09'26.609°N	104°52'36.080°W	0.79	
3146.00	4.010	194.590	3118.54	-94.33	-97.10	302.93	1674868.91	14584063.80	40°09'26.540°N	104°52'36.103°W	0.81	
3240.00	3.630	172.520	3212.34	-100.47	-103.23	302.49	1674868.48	14584057.67	40°09'26.480°N	104°52'36.108°W	1.60	
3334.00	2.950	178.330	3306.18	-105.83	-108.60	302.94	1674868.94	14584052.30	40°09'26.427°N	104°52'36.102°W	0.80	
3427.00	2.670	182.010	3399.07	-110.39	-113.15	302.94	1674868.94	14584047.75	40°09'26.382°N	104°52'36.102°W	0.36	
3521.00	3.910	181.570	3492.92	-115.78	-118.54	302.77	1674868.79	14584042.36	40°09'26.329°N	104°52'36.105°W	1.32	
3614.00	3.270	187.230	3585.73	-121.59	-124.35	302.35	1674868.37	14584036.56	40°09'26.271°N	104°52'36.110°W	0.79	
3708.00	3.720	189.200	3679.56	-127.26	-130.02	301.53	1674867.56	14584030.89	40°09'26.215°N	104°52'36.121°W	0.50	
3802.00	3.190	186.860	3773.39	-132.88	-135.62	300.73	1674866.76	14584025.28	40°09'26.160°N	104°52'36.131°W	0.58	
3896.00	2.870	191.200	3867.25	-137.79	-140.53	299.96	1674866.00	14584020.38	40°09'26.111°N	104°52'36.141°W	0.42	
4016.00	2.130	151.350	3987.15	-142.69	-145.43	300.44	1674866.49	14584015.48	40°09'26.063°N	104°52'36.135°W	1.53	

REFERENCE WELLPATH IDENTIFICATION				
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)		Slot	SLOT#58 BUTTERBALL 25N-34HZ (820'FNL & 2265'FWL,SEC.10)
Area	COLORADO		Well	BUTTERBALL 25N-34HZ
Field	WELD COUNTY (UTM/TRUE NORTH)		Wellbore	BUTTERBALL 25N-34HZ AWP
Facility	SEC.10-T2N-R67W			

WELLPATH DATA (177 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
4110.00	2.350	161.290	4081.08	-146.03	-148.79	301.90	1674867.95	14584012.12	40°09'26.030"N	104°52'36.116"W	0.47	
4203.00	2.460	160.780	4174.00	-149.71	-152.48	303.17	1674869.23	14584008.43	40°09'25.993"N	104°52'36.099"W	0.12	
4297.00	1.440	79.470	4267.95	-151.38	-154.17	304.99	1674871.05	14584006.75	40°09'25.976"N	104°52'36.076"W	2.83	
4390.00	1.420	325.900	4360.94	-150.21	-153.00	305.50	1674871.56	14584007.92	40°09'25.988"N	104°52'36.069"W	2.57	
4483.00	0.550	233.430	4453.93	-149.53	-152.31	304.49	1674870.55	14584008.60	40°09'25.995"N	104°52'36.082"W	1.66	
4577.00	0.680	263.470	4547.92	-149.87	-152.65	303.58	1674869.63	14584008.27	40°09'25.992"N	104°52'36.094"W	0.36	
4671.00	0.750	262.670	4641.91	-150.03	-152.79	302.41	1674868.47	14584008.13	40°09'25.990"N	104°52'36.109"W	0.08	
4764.00	0.430	265.800	4734.91	-150.14	-152.89	301.46	1674867.52	14584008.02	40°09'25.989"N	104°52'36.121"W	0.35	
4858.00	1.020	254.490	4828.90	-150.40	-153.14	300.30	1674866.36	14584007.77	40°09'25.987"N	104°52'36.136"W	0.64	
4951.00	0.920	313.580	4921.89	-150.12	-152.85	298.96	1674865.02	14584008.06	40°09'25.990"N	104°52'36.154"W	1.03	
5045.00	1.080	85.510	5015.88	-149.52	-152.26	299.30	1674865.36	14584008.65	40°09'25.995"N	104°52'36.149"W	1.94	
5139.00	0.870	72.120	5109.87	-149.22	-151.97	300.86	1674866.92	14584008.94	40°09'25.998"N	104°52'36.129"W	0.33	
5232.00	0.360	51.580	5202.87	-148.82	-151.57	301.76	1674867.82	14584009.34	40°09'26.002"N	104°52'36.118"W	0.59	
5327.00	0.250	36.620	5297.86	-148.46	-151.22	302.12	1674868.18	14584009.69	40°09'26.006"N	104°52'36.113"W	0.14	
5420.00	0.480	10.440	5390.86	-147.91	-150.67	302.31	1674868.37	14584010.24	40°09'26.011"N	104°52'36.110"W	0.30	
5514.00	0.220	350.370	5484.86	-147.35	-150.11	302.35	1674868.41	14584010.80	40°09'26.017"N	104°52'36.110"W	0.30	
5608.00	0.460	345.330	5578.86	-146.81	-149.57	302.23	1674868.28	14584011.35	40°09'26.022"N	104°52'36.112"W	0.26	
5702.00	0.570	314.760	5672.85	-146.12	-148.87	301.80	1674867.85	14584012.04	40°09'26.029"N	104°52'36.117"W	0.31	
5795.00	0.410	284.570	5765.85	-145.71	-148.46	301.15	1674867.20	14584012.45	40°09'26.033"N	104°52'36.125"W	0.32	
5889.00	0.810	273.970	5859.85	-145.59	-148.33	300.16	1674866.21	14584012.58	40°09'26.034"N	104°52'36.138"W	0.44	
5982.00	1.540	275.590	5952.83	-145.44	-148.16	298.26	1674864.32	14584012.74	40°09'26.036"N	104°52'36.163"W	0.79	
6076.00	1.400	269.130	6046.80	-145.36	-148.06	295.86	1674861.91	14584012.84	40°09'26.037"N	104°52'36.194"W	0.23	
6170.00	1.170	94.960	6140.79	-145.46	-148.16	295.66	1674861.72	14584012.74	40°09'26.036"N	104°52'36.196"W	2.73	
6263.00	0.870	92.340	6233.77	-145.55	-148.27	297.32	1674863.37	14584012.64	40°09'26.035"N	104°52'36.175"W	0.33	
6356.00	1.020	82.240	6326.76	-145.46	-148.19	298.84	1674864.90	14584012.72	40°09'26.036"N	104°52'36.155"W	0.24	
6450.00	1.010	79.610	6420.74	-145.18	-147.92	300.49	1674866.54	14584012.99	40°09'26.038"N	104°52'36.134"W	0.05	
6544.00	0.800	72.150	6514.73	-144.82	-147.57	301.92	1674867.98	14584013.34	40°09'26.042"N	104°52'36.115"W	0.26	
6560.00†	1.742	35.604	6530.73	-144.58	-147.34	302.17	1674868.22	14584013.57	40°09'26.044"N	104°52'36.112"W	7.49	KOP
6638.00	7.470	17.470	6608.45	-138.76	-141.54	304.39	1674870.43	14584019.38	40°09'26.101"N	104°52'36.084"W	7.49	
6732.00	15.150	12.910	6700.55	-120.89	-123.71	308.97	1674874.99	14584037.20	40°09'26.277"N	104°52'36.025"W	8.22	
6826.00	21.370	5.230	6789.79	-91.79	-94.65	313.28	1674879.26	14584066.26	40°09'26.565"N	104°52'35.969"W	7.08	
6919.00	29.130	2.070	6873.84	-52.21	-55.09	315.65	1674881.57	14584105.80	40°09'26.956"N	104°52'35.939"W	8.47	
6939.00†	30.719	1.316	6891.18	-42.24	-45.12	315.94	1674881.85	14584115.77	40°09'27.054"N	104°52'35.935"W	8.17	ENTER LANDBOX (865'FNL & 2579'FWL,SEC.10) 40.1575150 -104.8766486
7012.00	36.550	359.070	6951.93	-1.83	-4.71	316.02	1674881.87	14584156.17	40°09'27.453"N	104°52'35.934"W	8.17	
7105.00	44.640	1.740	7022.50	58.63	55.74	316.56	1674882.33	14584216.59	40°09'28.051"N	104°52'35.927"W	8.90	
7198.00	54.860	4.830	7082.51	129.41	126.49	320.77	1674886.43	14584287.32	40°09'28.750"N	104°52'35.873"W	11.28	
7292.00	63.280	1.700	7130.80	209.86	206.91	325.26	1674890.81	14584367.71	40°09'29.545"N	104°52'35.815"W	9.40	
7384.00	66.560	0.780	7169.79	293.17	290.20	327.05	1674892.49	14584450.97	40°09'30.368"N	104°52'35.792"W	3.68	
7478.00	70.260	0.940	7204.37	380.56	377.58	328.36	1674893.68	14584538.32	40°09'31.231"N	104°52'35.775"W	3.94	
7572.00	72.910	0.610	7234.06	469.74	466.75	329.57	1674894.76	14584627.46	40°09'32.112"N	104°52'35.759"W	2.84	
7665.00	77.240	358.890	7258.01	559.57	556.59	329.16	1674894.24	14584717.26	40°09'33.000"N	104°52'35.765"W	4.99	
7759.00	80.600	357.100	7276.07	651.71	648.76	325.93	1674890.87	14584809.39	40°09'33.911"N	104°52'35.806"W	4.03	
7853.00	88.180	358.750	7285.26	745.09	742.18	322.55	1674887.37	14584902.76	40°09'34.834"N	104°52'35.850"W	8.25	LANDING (78'FNL & 2588'FWL,SEC.10) 40.1596762 -104.8766249
7947.00	89.600	358.980	7287.08	839.03	836.14	320.69	1674885.38	14584996.68	40°09'35.763"N	104°52'35.874"W	1.53	
8041.00	89.750	358.230	7287.61	932.98	930.11	318.40	1674882.97	14585090.61	40°09'36.691"N	104°52'35.903"W	0.81	

REFERENCE WELLPATH IDENTIFICATION				
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)		Slot	SLOT#58 BUTTERBALL 25N-34HZ (820'FNL & 2265'FWL,SEC.10)
Area	COLORADO		Well	BUTTERBALL 25N-34HZ
Field	WELD COUNTY (UTM/TRUE NORTH)		Wellbore	BUTTERBALL 25N-34HZ AWP
Facility	SEC.10-T2N-R67W			

WELLPATH DATA (177 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
8134.00	90.430	357.680	7287.47	1025.88	1023.05	315.08	1674879.52	14585183.51	40°09'37.610"N	104°52'35.946"W	0.94	
8228.00	91.110	357.490	7286.20	1119.75	1116.96	311.12	1674875.43	14585277.38	40°09'38.538"N	104°52'35.997"W	0.75	
8322.00	90.430	358.440	7284.94	1213.64	1210.89	307.79	1674871.97	14585371.26	40°09'39.466"N	104°52'36.040"W	1.24	
8386.00†	89.341	358.876	7285.07	1277.61	1274.87	306.29	1674870.38	14585435.22	40°09'40.098"N	104°52'36.059"W	1.83	EXIT RADIUS HEEL (455'FSL & 2570'FWL,SEC.03) 40.1611384 -104.8766831
8416.00	88.830	359.080	7285.55	1307.59	1304.86	305.75	1674869.80	14585465.20	40°09'40.395"N	104°52'36.066"W	1.83	
8510.00	91.260	1.360	7285.47	1401.58	1398.85	306.11	1674870.04	14585559.15	40°09'41.323"N	104°52'36.061"W	3.54	
8604.00	91.790	0.660	7282.97	1495.54	1492.80	307.77	1674871.56	14585653.06	40°09'42.252"N	104°52'36.040"W	0.93	
8696.00	92.500	359.880	7279.53	1587.48	1584.73	308.20	1674871.87	14585744.96	40°09'43.160"N	104°52'36.034"W	1.15	
8790.00	91.170	0.890	7276.52	1681.42	1678.68	308.83	1674872.37	14585838.87	40°09'44.089"N	104°52'36.026"W	1.78	
8884.00	91.820	0.640	7274.06	1775.39	1772.64	310.09	1674873.50	14585932.79	40°09'45.017"N	104°52'36.010"W	0.74	
8977.00	88.980	0.980	7273.42	1868.38	1865.62	311.40	1674874.68	14586025.73	40°09'45.936"N	104°52'35.993"W	3.08	
9071.00	89.410	0.390	7274.74	1962.37	1959.60	312.53	1674875.68	14586119.68	40°09'46.865"N	104°52'35.979"W	0.78	
9164.00	91.200	0.170	7274.24	2055.36	2052.60	312.98	1674876.00	14586212.64	40°09'47.784"N	104°52'35.973"W	1.94	
9256.00	91.910	359.730	7271.74	2147.32	2144.56	312.90	1674875.80	14586304.57	40°09'48.693"N	104°52'35.974"W	0.91	
9348.00	91.350	2.370	7269.13	2239.27	2236.50	314.59	1674877.35	14586396.47	40°09'49.601"N	104°52'35.952"W	2.93	
9440.00	91.940	2.060	7266.49	2331.19	2328.39	318.14	1674880.78	14586488.33	40°09'50.509"N	104°52'35.906"W	0.72	
9532.00	89.450	2.600	7265.37	2423.13	2420.30	321.88	1674884.39	14586580.21	40°09'51.418"N	104°52'35.858"W	2.77	
9623.00	91.050	3.230	7264.97	2514.05	2511.18	326.51	1674888.89	14586671.06	40°09'52.316"N	104°52'35.798"W	1.89	
9715.00	89.660	1.920	7264.40	2605.98	2603.08	330.64	1674892.90	14586762.93	40°09'53.224"N	104°52'35.745"W	2.08	
9807.00	89.600	1.570	7265.00	2697.96	2695.04	333.44	1674895.57	14586854.85	40°09'54.132"N	104°52'35.709"W	0.39	
9899.00	89.350	1.070	7265.84	2789.95	2787.01	335.56	1674897.56	14586946.79	40°09'55.041"N	104°52'35.682"W	0.61	
9989.00	88.710	0.560	7267.36	2879.93	2876.98	336.84	1674898.72	14587036.73	40°09'55.930"N	104°52'35.665"W	0.91	
10081.00	90.430	0.790	7268.05	2971.93	2968.97	337.92	1674899.68	14587128.68	40°09'56.839"N	104°52'35.651"W	1.89	
10175.00	90.030	0.300	7267.68	3065.93	3062.97	338.82	1674900.44	14587222.64	40°09'57.768"N	104°52'35.640"W	0.67	
10269.00	89.850	359.770	7267.78	3159.92	3156.97	338.88	1674900.37	14587316.60	40°09'58.697"N	104°52'35.639"W	0.60	
10363.00	89.910	359.330	7267.97	3253.91	3250.96	338.14	1674899.50	14587410.56	40°09'59.626"N	104°52'35.648"W	0.47	
10456.00	89.780	358.650	7268.22	3346.87	3343.95	336.50	1674897.74	14587503.50	40°10'00.545"N	104°52'35.670"W	0.74	
10549.00	90.890	359.920	7267.68	3439.85	3436.94	335.34	1674896.45	14587596.45	40°10'01.464"N	104°52'35.684"W	1.81	
10642.00	90.520	359.030	7266.54	3532.82	3529.92	334.49	1674895.47	14587689.40	40°10'02.383"N	104°52'35.695"W	1.04	
10736.00	90.250	358.380	7265.90	3626.77	3623.90	332.36	1674893.22	14587783.33	40°10'03.311"N	104°52'35.723"W	0.75	
10830.00	91.230	1.940	7264.69	3720.75	3717.87	332.62	1674893.35	14587877.27	40°10'04.240"N	104°52'35.719"W	3.93	
10923.00	91.450	1.660	7262.51	3813.70	3810.80	335.54	1674896.14	14587970.17	40°10'05.158"N	104°52'35.682"W	0.38	
11016.00	92.090	1.080	7259.64	3906.64	3903.73	337.77	1674898.23	14588063.06	40°10'06.077"N	104°52'35.653"W	0.93	
11110.00	90.920	1.350	7257.17	4000.60	3997.67	339.76	1674900.10	14588156.97	40°10'07.005"N	104°52'35.627"W	1.28	
11204.00	90.890	1.500	7255.69	4094.58	4091.63	342.10	1674902.30	14588250.90	40°10'07.934"N	104°52'35.597"W	0.16	
11296.00	91.260	1.100	7253.96	4186.55	4183.59	344.18	1674904.26	14588342.82	40°10'08.842"N	104°52'35.570"W	0.59	
11389.00	91.660	0.570	7251.59	4279.52	4276.55	345.54	1674905.49	14588435.75	40°10'09.761"N	104°52'35.553"W	0.71	
11483.00	92.280	0.060	7248.36	4373.47	4370.49	346.06	1674905.88	14588529.65	40°10'10.689"N	104°52'35.546"W	0.85	
11577.00	89.920	359.620	7246.56	4467.43	4464.47	345.79	1674905.48	14588623.59	40°10'11.618"N	104°52'35.550"W	2.55	
11671.00	90.370	359.480	7246.32	4561.42	4558.47	345.05	1674904.62	14588717.55	40°10'12.547"N	104°52'35.559"W	0.50	
11765.00	91.570	359.290	7244.73	4655.39	4652.45	344.05	1674903.48	14588811.49	40°10'13.476"N	104°52'35.572"W	1.29	
11858.00	92.370	358.980	7241.53	4748.30	4745.38	342.64	1674901.95	14588904.38	40°10'14.394"N	104°52'35.590"W	0.92	
11951.00	89.780	357.790	7239.79	4841.21	4838.32	340.02	1674899.20	14588997.28	40°10'15.312"N	104°52'35.624"W	3.06	
12045.00	90.150	357.440	7239.84	4935.09	4932.23	336.11	1674895.16	14589091.15	40°10'16.241"N	104°52'35.674"W	0.54	
12139.00	91.080	356.950	7238.83	5028.93	5026.12	331.51	1674890.44	14589184.99	40°10'17.168"N	104°52'35.734"W	1.12	

REFERENCE WELLPATH IDENTIFICATION				
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)		Slot	SLOT#58 BUTTERBALL 25N-34HZ (820'FNL & 2265'FWL,SEC.10)
Area	COLORADO		Well	BUTTERBALL 25N-34HZ
Field	WELD COUNTY (UTM/TRUE NORTH)		Wellbore	BUTTERBALL 25N-34HZ AWP
Facility	SEC.10-T2N-R67W			

WELLPATH DATA (177 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
12233.00	90.830	359.850	7237.27	5122.84	5120.06	328.89	1674887.68	14589278.89	40°10'18.097"N	104°52'35.767"W	3.10	
12327.00	90.370	1.140	7236.28	5216.83	5214.04	329.70	1674888.37	14589372.84	40°10'19.025"N	104°52'35.757"W	1.46	
12421.00	90.280	0.730	7235.75	5310.83	5308.03	331.23	1674889.77	14589466.79	40°10'19.954"N	104°52'35.737"W	0.45	
12515.00	91.230	0.260	7234.51	5404.82	5402.02	332.04	1674890.45	14589560.74	40°10'20.883"N	104°52'35.727"W	1.13	
12609.00	89.720	1.890	7233.73	5498.80	5495.99	333.81	1674892.09	14589654.68	40°10'21.812"N	104°52'35.704"W	2.36	
12703.00	90.740	1.910	7233.35	5592.78	5589.94	336.92	1674895.07	14589748.59	40°10'22.740"N	104°52'35.664"W	1.09	
12796.00	91.970	1.700	7231.16	5685.72	5682.86	339.85	1674897.87	14589841.49	40°10'23.658"N	104°52'35.626"W	1.34	
12890.00	90.490	0.490	7229.14	5779.69	5776.82	341.65	1674899.54	14589935.41	40°10'24.587"N	104°52'35.603"W	2.03	
12983.00	91.200	0.320	7227.77	5872.68	5869.81	342.31	1674900.07	14590028.36	40°10'25.506"N	104°52'35.594"W	0.79	
13076.00	89.480	1.500	7227.21	5965.67	5962.79	343.78	1674901.42	14590121.30	40°10'26.424"N	104°52'35.575"W	2.24	
13169.00	89.850	1.190	7227.76	6058.66	6055.76	345.97	1674903.47	14590214.24	40°10'27.343"N	104°52'35.547"W	0.52	
13263.00	90.250	0.210	7227.68	6152.66	6149.75	347.11	1674904.49	14590308.20	40°10'28.272"N	104°52'35.532"W	1.13	
13356.00	90.950	359.550	7226.70	6245.65	6242.75	346.92	1674904.17	14590401.15	40°10'29.191"N	104°52'35.535"W	1.03	
13449.00	91.880	358.960	7224.41	6338.60	6335.71	345.71	1674902.83	14590494.08	40°10'30.110"N	104°52'35.550"W	1.18	
13543.00	91.390	1.240	7221.72	6432.55	6429.66	345.87	1674902.86	14590587.99	40°10'31.038"N	104°52'35.548"W	2.48	
13637.00	89.570	2.800	7220.94	6526.51	6523.60	349.19	1674906.05	14590681.89	40°10'31.966"N	104°52'35.505"W	2.55	
13731.00	89.940	2.200	7221.34	6620.45	6617.50	353.29	1674910.02	14590775.77	40°10'32.894"N	104°52'35.453"W	0.75	
13824.00	90.120	1.460	7221.29	6713.42	6710.46	356.26	1674912.86	14590868.69	40°10'33.813"N	104°52'35.414"W	0.82	
13918.00	90.340	0.870	7220.91	6807.42	6804.44	358.17	1674914.64	14590962.63	40°10'34.742"N	104°52'35.390"W	0.67	
14012.00	90.310	0.410	7220.38	6901.41	6898.43	359.22	1674915.56	14591056.59	40°10'35.670"N	104°52'35.376"W	0.49	
14106.00	90.340	359.870	7219.85	6995.41	6992.43	359.45	1674915.66	14591150.55	40°10'36.599"N	104°52'35.373"W	0.58	
14199.00	90.340	358.870	7219.29	7088.39	7085.42	358.43	1674914.51	14591243.50	40°10'37.518"N	104°52'35.386"W	1.08	
14292.00	90.680	358.470	7218.47	7181.34	7178.39	356.27	1674912.22	14591336.43	40°10'38.437"N	104°52'35.414"W	0.56	
14386.00	89.780	0.480	7218.09	7275.31	7272.38	355.41	1674911.23	14591430.38	40°10'39.366"N	104°52'35.425"W	2.34	
14480.00	89.750	3.030	7218.47	7369.28	7366.33	358.29	1674913.98	14591524.30	40°10'40.294"N	104°52'35.388"W	2.71	
14574.00	90.090	2.340	7218.61	7463.22	7460.22	362.69	1674918.25	14591618.16	40°10'41.222"N	104°52'35.331"W	0.82	
14668.00	90.550	2.080	7218.08	7557.17	7554.15	366.31	1674921.75	14591712.06	40°10'42.150"N	104°52'35.285"W	0.56	
14762.00	91.170	1.410	7216.67	7651.14	7648.09	369.18	1674924.48	14591805.97	40°10'43.079"N	104°52'35.248"W	0.97	
14857.00	88.000	1.760	7217.36	7746.11	7743.04	371.80	1674926.98	14591900.88	40°10'44.017"N	104°52'35.214"W	3.36	
14950.00	87.970	0.910	7220.63	7839.04	7835.96	373.97	1674929.01	14591993.76	40°10'44.935"N	104°52'35.186"W	0.91	
15044.00	88.310	0.220	7223.68	7932.99	7929.91	374.89	1674929.81	14592087.67	40°10'45.864"N	104°52'35.174"W	0.82	
15139.00	89.170	359.870	7225.77	8027.96	8024.88	374.97	1674929.75	14592182.61	40°10'46.802"N	104°52'35.173"W	0.98	
15233.00	89.570	359.280	7226.80	8121.95	8118.87	374.27	1674928.93	14592276.56	40°10'47.731"N	104°52'35.182"W	0.76	
15327.00	89.820	358.670	7227.30	8215.91	8212.86	372.59	1674927.12	14592370.51	40°10'48.660"N	104°52'35.204"W	0.70	
15421.00	90.550	358.870	7227.00	8309.86	8306.83	370.57	1674924.97	14592464.44	40°10'49.588"N	104°52'35.230"W	0.81	
15515.00	91.080	359.410	7225.66	8403.83	8400.81	369.16	1674923.43	14592558.38	40°10'50.517"N	104°52'35.248"W	0.80	
15545.00†	90.882	359.908	7225.15	8433.82	8430.81	368.98	1674923.21	14592588.36	40°10'50.813"N	104°52'35.250"W	1.79	ENTER RADIUS TOE (2226'FSL & 2606'FEL,SEC.34) 40.1807815 -104.8764584
15609.00	90.460	0.970	7224.40	8497.81	8494.80	369.47	1674923.61	14592652.33	40°10'51.446"N	104°52'35.244"W	1.79	
15704.00	91.940	0.750	7222.41	8592.79	8589.77	370.90	1674924.91	14592747.26	40°10'52.384"N	104°52'35.225"W	1.58	
15798.00	93.450	0.570	7217.99	8686.68	8683.65	371.98	1674925.86	14592841.11	40°10'53.312"N	104°52'35.211"W	1.62	
15857.00	94.310	359.700	7214.00	8745.54	8742.52	372.12	1674925.92	14592899.95	40°10'53.894"N	104°52'35.210"W	2.07	LAST BHI MWD+IFR1+MSA SURVEY
15904.00	94.310	359.700	7210.46	8792.41	8789.38	371.87	1674925.61	14592946.80	40°10'54.357"N	104°52'35.213"W	0.00	PTB (2584'FSL & 2602'FEL,SEC.34) 40.1817658 -104.8764480

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#58 BUTTERBALL 25N-34HZ (820'FNL & 2265'FWL,SEC.10)
Area	COLORADO	Well	BUTTERBALL 25N-34HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	BUTTERBALL 25N-34HZ AWB
Facility	SEC.10-T2N-R67W		

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SEC.03-T2N-R67W	-6.00	368.01	-1885.09	1672681.13	14584525.71	40°09'31.136"N	104°53'04.283"W	polygon
SEC.10-T2N-R67W	-6.00	368.01	-1885.09	1672681.13	14584525.71	40°09'31.136"N	104°53'04.283"W	polygon
SEC.34-T3N-R67W	-6.00	368.01	-1885.09	1672681.13	14584525.71	40°09'31.136"N	104°53'04.283"W	polygon
BUTTERBALL 25N-34HZ BHL REV-2(2585'FSL & 2586'FEL,SEC.34)	7222.00	8789.82	388.36	1674942.09	14592947.26	40°10'54.361"N	104°52'35.000"W	point
BUTTERBALL 25N-34HZ BHL REV-1(2585'FSL & 2586'FEL,SEC.34)	7242.00	8789.82	388.36	1674942.09	14592947.26	40°10'54.361"N	104°52'35.000"W	point
BUTTERBALL 25N-34HZ HEEL REV-2(207'FNL & 2576'FWL,SEC.10)	7288.00	612.06	313.86	1674878.86	14584772.68	40°09'33.548"N	104°52'35.962"W	point
BUTTERBALL 25N-34HZ HEEL REV-1(207'FNL & 2576'FWL,SEC.10)	7308.00	612.06	313.86	1674878.86	14584772.68	40°09'33.548"N	104°52'35.962"W	point
BUTTERBALL 25N-34HZ LANDBOX	7308.00	0.00	0.00	1674565.97	14584160.44	40°09'27.500"N	104°52'40.004"W	polygon
BUTTERBALL 25N-34HZ RADIUS 1	7308.00	818.89	363.90	1674928.60	14584979.50	40°09'35.592"N	104°52'35.317"W	polygon
BUTTERBALL 25N-34HZ RADIUS 2	7308.00	8890.85	355.00	1674908.60	14593048.20	40°10'55.360"N	104°52'35.430"W	polygon

WELLPATH COMPOSITION - Ref Wellbore: BUTTERBALL 25N-34HZ AWB				Ref Wellpath: BUTTERBALL 25N-34HZ AWP	
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment		Wellbore
32.00	1781.00	Custom APC ISCWSA REV 2 MWD+IFR1 (approximation)	SDI Custom APC ISCWSA Rev-2 MWD+IFR1 <186 - 1781>		BUTTERBALL 25N-34HZ AWB
1781.00	15857.00	Custom APC ISCWSA REV 2 MWD+IFR1+MSA (approximation)	BHI Custom APC ISCWSA Rev-2 MWD+IFR1+MSA <1927 - 15857>		BUTTERBALL 25N-34HZ AWB
15857.00	15904.00	Blind Drilling (std)	Projection to bit		BUTTERBALL 25N-34HZ AWB

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#58 BUTTERBALL 25N-34HZ (820'FNL & 2265'FWL,SEC.10)
Area	COLORADO	Well	BUTTERBALL 25N-34HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	BUTTERBALL 25N-34HZ AWB
Facility	SEC.10-T2N-R67W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
186.00	0.690	251.990	186.00	FIRST SDI MWD+IFR1 SURVEY
1781.00	10.330	92.340	1769.22	LAST SDI MWD+IFR1 SURVEY
1927.00	9.570	93.090	1913.02	FIRST BHI MWD+IFR1+MSA SURVEY
6560.00	1.742	35.604	6530.73	KOP
6939.00	30.719	1.316	6891.18	ENTER LANDBOX (865'FNL & 2579'FWL,SEC.10) 40.1575150 -104.8766486
7853.00	88.180	358.750	7285.26	LANDING (78'FNL & 2588'FWL,SEC.10) 40.1596762 -104.8766249
8386.00	89.341	358.876	7285.07	EXIT RADIUS HEEL (455'FSL & 2570'FWL,SEC.03) 40.1611384 -104.8766831
15545.00	90.882	359.908	7225.15	ENTER RADIUS TOE (2226'FSL & 2606'FEL,SEC.34) 40.1807815 -104.8764584
15857.00	94.310	359.700	7214.00	LAST BHI MWD+IFR1+MSA SURVEY
15904.00	94.310	359.700	7210.46	PTB (2584'FSL & 2602'FEL,SEC.34) 40.1817658 -104.8764480