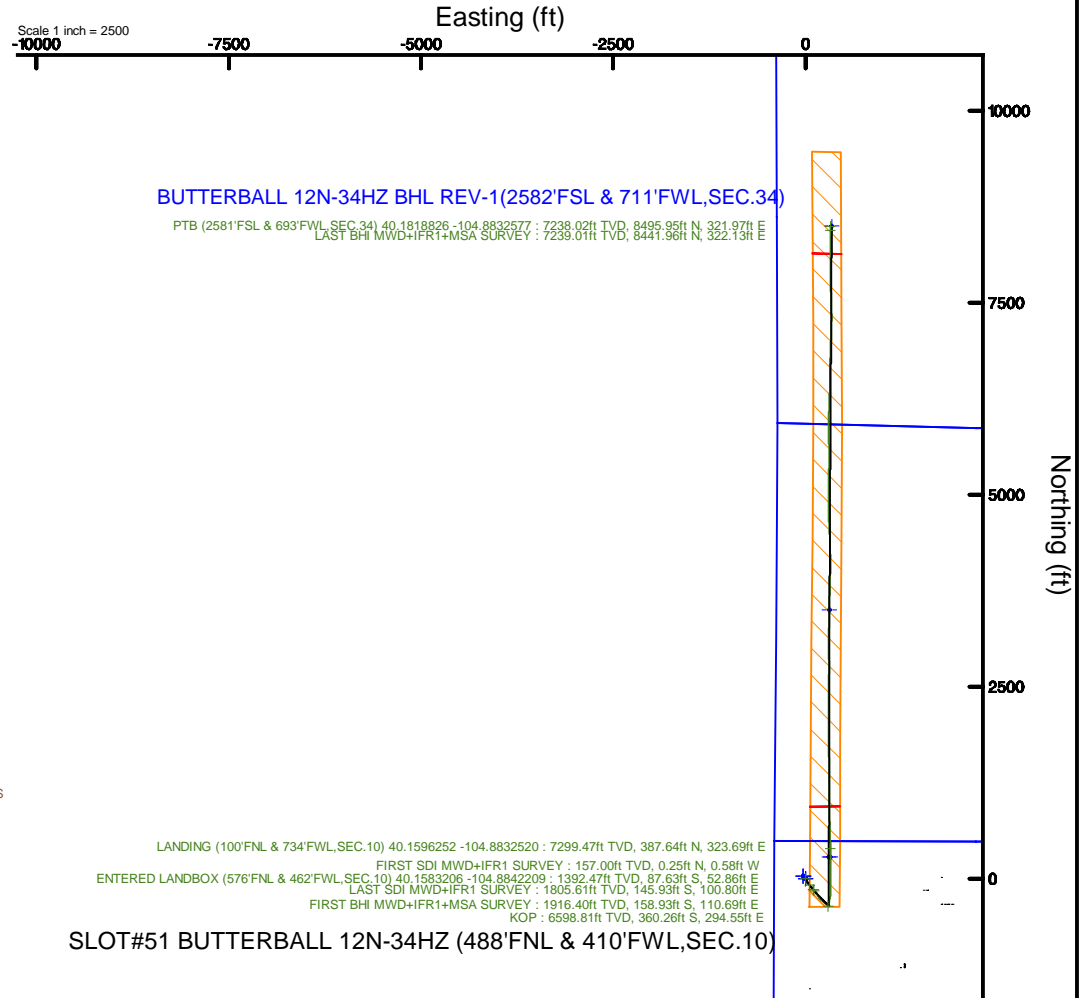
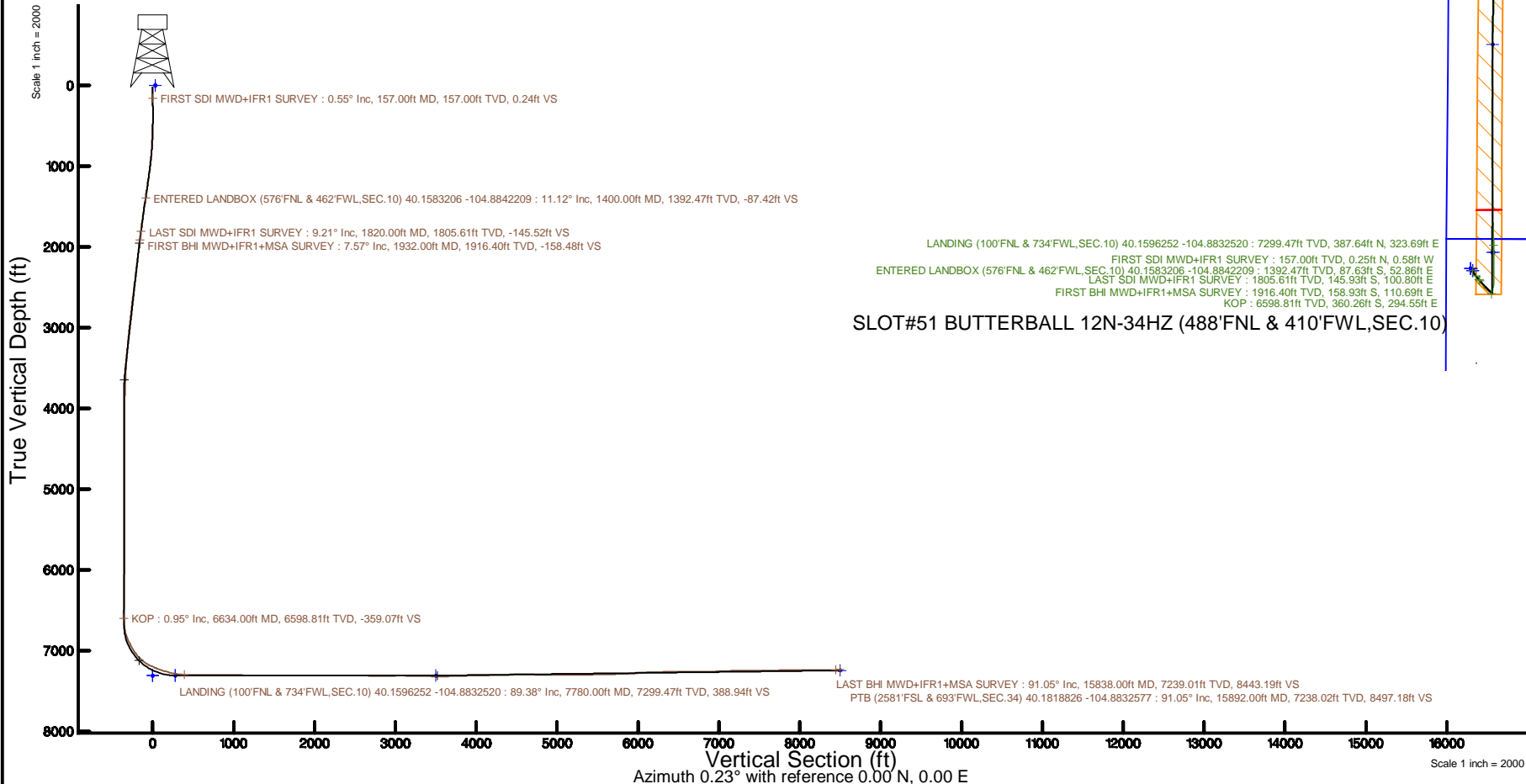


KERR-MCGEE OIL & GAS ONSHORE LP (WA)

Location: COLORADO Slot: SLOT#51 BUTTERBALL 12N-34HZ (488'FNL & 410'FWL,SEC.10)
Field: WELD COUNTY (UTM/TRUE NORTH) Well: BUTTERBALL 12N-34HZ
Facility: SEC.10-T2N-R67W Wellbore: BUTTERBALL 12N-34HZ PWB

Plot reference wellpath is BUTTERBALL 12N-34HZ PWP Rev-A.0	Grid System: NAD83 / UTM Zone 13 North, US feet
True vertical depths are referenced to PD564 (26) (RT)	* = Wellpath was transformed from a different geodetic datum
Measured depths are referenced to PD564 (26) (RT)	North Reference: True north
PD564 (26) (RT) to Mean Sea Level: 4972 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#51 BUTTERBALL 12N-34HZ (488'FNL & 410'FWL,SEC.10)): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: painsetr on 2017-06-09
	Database: WA_DEN_Anadarko_Defn



Actual Wellpath Report

BUTTERBALL 12N-34HZ AWP

Page 1 of 7

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#51 BUTTERBALL 12N-34HZ (488'FNL & 410'FWL,SEC.10)
Area	COLORADO	Well	BUTTERBALL 12N-34HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	BUTTERBALL 12N-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	6/9/2017 at 10:57 AM
Convergence at slot	0.08° East	Database/Source file	WA_DEN_Anadarko_Defn/BUTTERBALL_12N-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	154.67	-1533.84	1672712.76	14584493.79	40°09'30.820"N	104°53'03.876"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	PD564 (26') (RT) to Facility Vertical Datum	4972.00ft
Horizontal Reference Pt	Slot	PD564 (26') (RT) to Mean Sea Level	4972.00ft
Vertical Reference Pt	PD564 (26') (RT)	PD564 (26') (RT) to Mud Line at Slot (SLOT#51 BUTTERBALL 12N-34HZ (488'FNL & 410'FWL,SEC.10))	4972.00ft
MD Reference Pt	PD564 (26') (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	0.23°

REFERENCE WELLPATH IDENTIFICATION				
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)		Slot	SLOT#51 BUTTERBALL 12N-34HZ (488'FNL & 410'FWL, SEC.10)
Area	COLORADO		Well	BUTTERBALL 12N-34HZ
Field	WELD COUNTY (UTM/TRUE NORTH)		Wellbore	BUTTERBALL 12N-34HZ AWB
Facility	SEC.10-T2N-R67W			

WELLPATH DATA (180 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	293.150	0.00	0.00	0.00	0.00	1672712.76	14584493.78	40°09'30.820"N	104°53'03.876"W	0.00	
26.00	0.000	293.150	26.00	0.00	0.00	0.00	1672712.76	14584493.78	40°09'30.820"N	104°53'03.876"W	0.00	
157.00	0.550	293.150	157.00	0.24	0.25	-0.58	1672712.18	14584494.03	40°09'30.822"N	104°53'03.883"W	0.42	FIRST SDI MWD+IFR1 SURVEY
243.00	0.780	308.680	242.99	0.77	0.78	-1.41	1672711.35	14584494.56	40°09'30.828"N	104°53'03.894"W	0.34	
330.00	0.670	312.930	329.99	1.48	1.49	-2.25	1672710.51	14584495.27	40°09'30.835"N	104°53'03.905"W	0.14	
417.00	0.540	220.510	416.98	1.51	1.53	-2.89	1672709.87	14584495.31	40°09'30.835"N	104°53'03.913"W	1.01	
503.00	1.260	184.750	502.97	0.26	0.28	-3.23	1672709.53	14584494.06	40°09'30.823"N	104°53'03.918"W	1.02	
590.00	2.460	161.040	589.93	-2.45	-2.44	-2.70	1672710.06	14584491.34	40°09'30.796"N	104°53'03.911"W	1.61	
679.00	3.060	138.310	678.82	-6.03	-6.02	-0.50	1672712.27	14584487.76	40°09'30.760"N	104°53'03.882"W	1.39	
767.00	4.320	147.560	766.64	-10.56	-10.57	2.84	1672715.61	14584483.22	40°09'30.715"N	104°53'03.839"W	1.58	
852.00	5.870	155.800	851.30	-17.22	-17.24	6.34	1672719.12	14584476.56	40°09'30.650"N	104°53'03.794"W	2.01	
939.00	6.630	152.500	937.79	-25.71	-25.75	10.48	1672723.27	14584468.05	40°09'30.565"N	104°53'03.741"W	0.97	
1027.00	8.090	155.150	1025.06	-35.82	-35.88	15.43	1672728.23	14584457.94	40°09'30.465"N	104°53'03.677"W	1.70	
1116.00	9.100	148.750	1113.06	-47.49	-47.58	21.71	1672734.53	14584446.25	40°09'30.350"N	104°53'03.596"W	1.56	
1205.00	9.900	142.030	1200.84	-59.51	-59.63	30.07	1672742.90	14584434.22	40°09'30.231"N	104°53'03.489"W	1.54	
1294.00	10.720	140.510	1288.40	-71.89	-72.05	40.04	1672752.88	14584421.82	40°09'30.108"N	104°53'03.360"W	0.97	
1382.00	11.160	140.650	1374.80	-84.75	-84.95	50.65	1672763.50	14584408.93	40°09'29.981"N	104°53'03.224"W	0.50	
1400.00†	11.119	140.353	1392.47	-87.42	-87.63	52.86	1672765.71	14584406.25	40°09'29.954"N	104°53'03.195"W	0.39	ENTERED LANDBOX (576'FNL & 462'FWL, SEC.10) 40.1583206 -104.8842209
1471.00	10.960	139.160	1462.15	-97.76	-98.01	61.64	1672774.50	14584395.89	40°09'29.851"N	104°53'03.082"W	0.39	
1558.00	10.800	141.510	1547.59	-110.36	-110.65	72.12	1672785.00	14584383.27	40°09'29.727"N	104°53'02.947"W	0.54	
1646.00	10.100	141.170	1634.13	-122.78	-123.11	82.09	1672794.98	14584370.83	40°09'29.603"N	104°53'02.819"W	0.80	
1735.00	9.870	138.960	1721.78	-134.57	-134.95	91.99	1672804.89	14584359.01	40°09'29.486"N	104°53'02.691"W	0.50	
1820.00	9.210	143.750	1805.61	-145.52	-145.93	100.80	1672813.71	14584348.05	40°09'29.378"N	104°53'02.578"W	1.21	LAST SDI MWD+IFR1 SURVEY
1932.00	7.570	141.510	1916.40	-158.48	-158.93	110.69	1672823.61	14584335.06	40°09'29.249"N	104°53'02.450"W	1.49	FIRST BHI MWD+IFR1+MSA SURVEY
2022.00	8.670	141.360	2005.50	-168.39	-168.87	118.62	1672831.55	14584325.14	40°09'29.151"N	104°53'02.348"W	1.22	
2111.00	9.740	143.330	2093.35	-179.63	-180.15	127.30	1672840.25	14584313.88	40°09'29.040"N	104°53'02.236"W	1.25	
2201.00	9.450	140.590	2182.09	-191.41	-191.96	136.54	1672849.49	14584302.08	40°09'28.923"N	104°53'02.117"W	0.60	
2291.00	9.010	140.140	2270.93	-202.49	-203.08	145.75	1672858.71	14584290.98	40°09'28.813"N	104°53'01.999"W	0.50	
2380.00	8.700	142.510	2358.87	-213.15	-213.77	154.31	1672867.29	14584280.30	40°09'28.708"N	104°53'01.889"W	0.54	
2470.00	8.550	147.650	2447.85	-224.17	-224.82	162.03	1672875.02	14584269.26	40°09'28.598"N	104°53'01.789"W	0.87	
2559.00	8.430	143.520	2535.88	-234.97	-235.66	169.45	1672882.45	14584258.44	40°09'28.491"N	104°53'01.694"W	0.70	
2649.00	8.600	141.130	2624.89	-245.48	-246.20	177.60	1672890.61	14584247.91	40°09'28.387"N	104°53'01.589"W	0.44	
2738.00	9.560	144.390	2712.77	-256.64	-257.39	186.08	1672899.10	14584236.74	40°09'28.276"N	104°53'01.479"W	1.22	
2828.00	9.420	131.710	2801.55	-267.58	-268.37	195.93	1672908.96	14584225.78	40°09'28.168"N	104°53'01.353"W	2.32	
2917.00	8.710	134.350	2889.44	-277.09	-277.93	206.18	1672919.22	14584216.24	40°09'28.074"N	104°53'01.221"W	0.92	
3007.00	9.290	128.710	2978.33	-286.36	-287.23	216.72	1672929.77	14584206.95	40°09'27.982"N	104°53'01.085"W	1.17	
3096.00	8.430	128.960	3066.27	-294.91	-295.83	227.40	1672940.46	14584198.37	40°09'27.897"N	104°53'00.947"W	0.97	
3186.00	9.000	128.660	3155.23	-303.41	-304.37	238.03	1672951.09	14584189.84	40°09'27.812"N	104°53'00.810"W	0.64	
3275.00	8.280	128.090	3243.22	-311.67	-312.68	248.51	1672961.58	14584181.56	40°09'27.730"N	104°53'00.675"W	0.81	
3365.00	7.120	127.570	3332.40	-319.03	-320.07	258.03	1672971.11	14584174.17	40°09'27.657"N	104°53'00.553"W	1.29	
3455.00	6.400	126.820	3421.78	-325.40	-326.48	266.47	1672979.55	14584167.78	40°09'27.594"N	104°53'00.444"W	0.81	
3544.00	5.380	126.510	3510.31	-330.83	-331.94	273.79	1672986.88	14584162.34	40°09'27.540"N	104°53'00.350"W	1.15	
3633.00	4.420	124.930	3598.98	-335.25	-336.38	279.96	1672993.04	14584157.90	40°09'27.496"N	104°53'00.270"W	1.09	
3723.00	4.520	128.240	3688.71	-339.41	-340.56	285.59	1672998.68	14584153.73	40°09'27.455"N	104°53'00.198"W	0.31	
3812.00	3.950	123.080	3777.46	-343.23	-344.41	290.91	1673004.00	14584149.89	40°09'27.417"N	104°53'00.129"W	0.77	

REFERENCE WELLPATH IDENTIFICATION				
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)		Slot	SLOT#51 BUTTERBALL 12N-34HZ (488'FNL & 410'FWL, SEC.10)
Area	COLORADO		Well	BUTTERBALL 12N-34HZ
Field	WELD COUNTY (UTM/TRUE NORTH)		Wellbore	BUTTERBALL 12N-34HZ AWB
Facility	SEC.10-T2N-R67W			

WELLPATH DATA (180 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
3902.00	3.260	117.730	3867.28	-346.09	-347.29	295.77	1673008.87	14584147.02	40°09'27.388"N	104°53'00.067"W	0.85	
3992.00	2.740	106.970	3957.16	-347.90	-349.11	300.09	1673013.19	14584145.21	40°09'27.370"N	104°53'00.011"W	0.85	
4081.00	2.160	129.490	4046.08	-349.57	-350.80	303.42	1673016.52	14584143.52	40°09'27.353"N	104°52'59.968"W	1.25	
4171.00	0.860	86.310	4136.05	-350.60	-351.83	305.41	1673018.50	14584142.49	40°09'27.343"N	104°52'59.943"W	1.82	
4260.00	0.840	75.800	4225.04	-350.39	-351.63	306.71	1673019.80	14584142.70	40°09'27.345"N	104°52'59.926"W	0.18	
4350.00	0.580	65.760	4315.03	-350.04	-351.28	307.76	1673020.86	14584143.05	40°09'27.349"N	104°52'59.912"W	0.32	
4439.00	0.440	70.110	4404.03	-349.73	-350.98	308.49	1673021.59	14584143.35	40°09'27.352"N	104°52'59.903"W	0.16	
4529.00	0.370	42.900	4494.03	-349.40	-350.65	309.02	1673022.11	14584143.68	40°09'27.355"N	104°52'59.896"W	0.22	
4619.00	0.220	359.730	4584.03	-349.01	-350.26	309.21	1673022.31	14584144.07	40°09'27.359"N	104°52'59.894"W	0.29	
4708.00	0.310	320.430	4673.03	-348.66	-349.91	309.06	1673022.15	14584144.42	40°09'27.362"N	104°52'59.896"W	0.22	
4798.00	0.290	294.250	4763.03	-348.38	-349.62	308.70	1673021.79	14584144.70	40°09'27.365"N	104°52'59.900"W	0.15	
4887.00	0.400	295.750	4852.02	-348.15	-349.40	308.21	1673021.30	14584144.93	40°09'27.367"N	104°52'59.906"W	0.12	
5092.00	0.760	289.790	5057.01	-347.39	-348.63	306.29	1673019.38	14584145.70	40°09'27.375"N	104°52'59.931"W	0.18	
5182.00	0.960	309.930	5147.00	-346.71	-347.94	305.15	1673018.24	14584146.38	40°09'27.382"N	104°52'59.946"W	0.40	
5271.00	1.000	295.780	5235.99	-345.90	-347.12	303.88	1673016.97	14584147.20	40°09'27.390"N	104°52'59.962"W	0.27	
5361.00	0.340	223.890	5325.98	-345.75	-346.97	302.98	1673016.07	14584147.34	40°09'27.391"N	104°52'59.974"W	1.06	
5451.00	0.790	240.840	5415.98	-346.25	-347.47	302.26	1673015.35	14584146.85	40°09'27.386"N	104°52'59.983"W	0.53	
5540.00	1.120	254.860	5504.97	-346.78	-348.00	300.88	1673013.97	14584146.32	40°09'27.381"N	104°53'00.001"W	0.45	
5630.00	1.260	253.740	5594.95	-347.29	-348.50	299.08	1673012.18	14584145.81	40°09'27.376"N	104°53'00.024"W	0.16	
5719.00	1.140	264.570	5683.93	-347.66	-348.86	297.26	1673010.36	14584145.45	40°09'27.373"N	104°53'00.047"W	0.29	
5809.00	0.970	221.620	5773.91	-348.32	-349.51	295.86	1673008.96	14584144.80	40°09'27.366"N	104°53'00.065"W	0.88	
5898.00	1.130	235.130	5862.90	-349.39	-350.58	294.64	1673007.74	14584143.73	40°09'27.356"N	104°53'00.081"W	0.33	
5988.00	0.730	234.400	5952.89	-350.23	-351.42	293.45	1673006.55	14584142.89	40°09'27.347"N	104°53'00.097"W	0.44	
6078.00	1.120	186.590	6042.88	-351.44	-352.63	292.88	1673005.98	14584141.68	40°09'27.335"N	104°53'00.104"W	0.92	
6167.00	1.300	182.920	6131.86	-353.32	-354.50	292.73	1673005.84	14584139.81	40°09'27.317"N	104°53'00.106"W	0.22	
6257.00	0.880	163.440	6221.84	-355.00	-356.18	292.88	1673005.98	14584138.13	40°09'27.300"N	104°53'00.104"W	0.62	
6346.00	1.000	168.080	6310.83	-356.41	-357.60	293.23	1673006.34	14584136.71	40°09'27.286"N	104°53'00.099"W	0.16	
6436.00	0.630	171.010	6400.82	-357.67	-358.85	293.47	1673006.58	14584135.46	40°09'27.274"N	104°53'00.096"W	0.41	
6526.00	0.530	132.960	6490.82	-358.44	-359.63	293.85	1673006.96	14584134.68	40°09'27.266"N	104°53'00.091"W	0.43	
6615.00	0.570	148.120	6579.81	-359.09	-360.28	294.39	1673007.50	14584134.03	40°09'27.260"N	104°53'00.084"W	0.17	
6634.00†	0.950	47.925	6598.81	-359.07	-360.26	294.55	1673007.67	14584134.05	40°09'27.260"N	104°53'00.082"W	6.27	KOP
6705.00	5.310	24.660	6669.69	-355.68	-356.88	296.36	1673009.47	14584137.44	40°09'27.293"N	104°53'00.059"W	6.27	
6794.00	13.200	7.980	6757.47	-341.84	-343.05	299.50	1673012.58	14584151.27	40°09'27.430"N	104°53'00.019"W	9.27	
6884.00	20.930	9.950	6843.45	-315.77	-317.00	303.71	1673016.76	14584177.31	40°09'27.687"N	104°52'59.964"W	8.61	
6974.00	29.180	11.610	6924.91	-278.35	-279.61	310.91	1673023.91	14584214.69	40°09'28.057"N	104°52'59.872"W	9.20	
7063.00	31.610	10.020	7001.67	-234.09	-235.38	319.34	1673032.28	14584258.92	40°09'28.494"N	104°52'59.763"W	2.88	
7153.00	41.090	2.330	7074.11	-181.14	-182.45	324.66	1673037.53	14584311.83	40°09'29.017"N	104°52'59.695"W	11.67	
7242.00	52.340	356.540	7135.06	-116.52	-117.83	323.72	1673036.50	14584376.42	40°09'29.656"N	104°52'59.707"W	13.49	
7332.00	63.740	1.460	7182.65	-40.34	-41.64	322.59	1673035.28	14584452.58	40°09'30.408"N	104°52'59.721"W	13.48	
7422.00	70.460	0.800	7217.65	42.51	41.20	324.22	1673036.79	14584535.39	40°09'31.227"N	104°52'59.700"W	7.50	
7511.00	70.460	1.950	7247.42	126.36	125.05	326.23	1673038.70	14584619.21	40°09'32.056"N	104°52'59.674"W	1.22	
7601.00	75.050	359.780	7274.09	212.28	210.96	327.51	1673039.86	14584705.09	40°09'32.905"N	104°52'59.658"W	5.60	
7690.00	81.400	358.450	7292.25	299.35	298.03	326.15	1673038.39	14584792.12	40°09'33.765"N	104°52'59.675"W	7.28	
7780.00	89.380	358.400	7299.47	388.94	387.64	323.69	1673035.81	14584881.69	40°09'34.651"N	104°52'59.707"W	8.87	LANDING (100'FNL & 734'FWL, SEC.10) 40.1596252 -104.8832520
7869.00	90.250	357.870	7299.76	477.88	476.59	320.79	1673032.80	14584970.60	40°09'35.530"N	104°52'59.744"W	1.14	

REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#51 BUTTERBALL 12N-34HZ (488'FNL & 410'FWL, SEC.10)
Area	COLORADO	Well	BUTTERBALL 12N-34HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	BUTTERBALL 12N-34HZ AWB
Facility	SEC.10-T2N-R67W		

WELLPATH DATA (180 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
7959.00	89.690	357.580	7299.81	567.79	566.52	317.22	1673029.11	14585060.49	40°09'36.418"N	104°52'59.790"W	0.70	
8048.00	89.410	358.710	7300.51	656.73	655.47	314.34	1673026.12	14585149.40	40°09'37.297"N	104°52'59.827"W	1.31	
8138.00	91.050	358.900	7300.15	746.70	745.44	312.46	1673024.13	14585239.33	40°09'38.186"N	104°52'59.852"W	1.83	
8228.00	89.970	359.280	7299.35	836.67	835.43	311.03	1673022.58	14585329.28	40°09'39.076"N	104°52'59.870"W	1.27	
8317.00	89.630	359.870	7299.66	925.67	924.42	310.37	1673021.80	14585418.24	40°09'39.955"N	104°52'59.878"W	0.77	
8407.00	87.660	359.670	7301.78	1015.63	1014.39	310.01	1673021.33	14585508.17	40°09'40.844"N	104°52'59.883"W	2.20	
8496.00	87.940	359.970	7305.20	1104.57	1103.33	309.73	1673020.93	14585597.07	40°09'41.723"N	104°52'59.887"W	0.46	
8586.00	88.610	359.500	7307.91	1194.52	1193.28	309.31	1673020.40	14585686.99	40°09'42.612"N	104°52'59.892"W	0.91	
8675.00	89.450	359.430	7309.42	1283.50	1282.27	308.48	1673019.45	14585775.94	40°09'43.491"N	104°52'59.903"W	0.95	
8765.00	90.370	359.840	7309.56	1373.49	1372.26	307.91	1673018.76	14585865.90	40°09'44.381"N	104°52'59.910"W	1.12	
8854.00	91.140	359.180	7308.39	1462.48	1461.25	307.15	1673017.89	14585954.85	40°09'45.260"N	104°52'59.920"W	1.14	
8944.00	90.370	358.130	7307.20	1552.43	1551.22	305.04	1673015.66	14586044.77	40°09'46.149"N	104°52'59.947"W	1.45	
9034.00	89.290	359.880	7307.47	1642.41	1641.20	303.47	1673013.98	14586134.72	40°09'47.038"N	104°52'59.967"W	2.28	
9124.00	89.820	359.970	7308.17	1732.40	1731.19	303.35	1673013.74	14586224.68	40°09'47.928"N	104°52'59.969"W	0.60	
9213.00	90.680	359.780	7307.78	1821.40	1820.19	303.16	1673013.43	14586313.64	40°09'48.807"N	104°52'59.971"W	0.99	
9303.00	88.640	359.180	7308.31	1911.39	1910.18	302.34	1673012.50	14586403.59	40°09'49.696"N	104°52'59.982"W	2.36	
9392.00	89.230	359.700	7309.97	2000.36	1999.16	301.47	1673011.51	14586492.54	40°09'50.576"N	104°52'59.993"W	0.88	
9482.00	89.170	0.120	7311.22	2090.35	2089.15	301.33	1673011.26	14586582.49	40°09'51.465"N	104°52'59.995"W	0.47	
9571.00	89.910	0.630	7311.94	2179.35	2178.15	301.92	1673011.72	14586671.45	40°09'52.345"N	104°52'59.987"W	1.01	
9661.00	90.150	0.380	7311.89	2269.35	2268.14	302.71	1673012.40	14586761.41	40°09'53.234"N	104°52'59.977"W	0.39	
9751.00	90.830	0.260	7311.12	2359.34	2358.14	303.21	1673012.78	14586851.37	40°09'54.123"N	104°52'59.970"W	0.77	
9840.00	89.570	0.560	7310.81	2448.34	2447.13	303.85	1673013.30	14586940.33	40°09'55.003"N	104°52'59.962"W	1.46	
9930.00	90.430	359.780	7310.81	2538.34	2537.13	304.12	1673013.45	14587030.29	40°09'55.892"N	104°52'59.959"W	1.29	
10019.00	88.950	0.240	7311.29	2627.33	2626.13	304.13	1673013.35	14587119.25	40°09'56.771"N	104°52'59.959"W	1.74	
10109.00	89.510	0.070	7312.50	2717.32	2716.12	304.37	1673013.48	14587209.21	40°09'57.661"N	104°52'59.955"W	0.65	
10198.00	90.120	359.940	7312.79	2806.32	2805.12	304.38	1673013.37	14587298.17	40°09'58.540"N	104°52'59.955"W	0.70	
10288.00	89.940	359.210	7312.74	2896.32	2895.11	303.71	1673012.59	14587388.13	40°09'59.430"N	104°52'59.964"W	0.84	
10377.00	90.770	359.220	7312.19	2985.30	2984.10	302.50	1673011.25	14587477.08	40°10'00.309"N	104°52'59.980"W	0.93	
10467.00	89.970	359.960	7311.61	3075.29	3074.10	301.85	1673010.49	14587567.04	40°10'01.198"N	104°52'59.988"W	1.21	
10556.00	88.770	0.720	7312.59	3164.28	3163.09	302.38	1673010.91	14587656.00	40°10'02.078"N	104°52'59.981"W	1.60	
10646.00	88.890	1.220	7314.42	3254.26	3253.06	303.90	1673012.31	14587745.93	40°10'02.967"N	104°52'59.961"W	0.57	
10735.00	88.830	1.360	7316.19	3343.22	3342.02	305.91	1673014.20	14587834.86	40°10'03.846"N	104°52'59.936"W	0.17	
10825.00	88.610	0.690	7318.20	3433.19	3431.98	307.52	1673015.69	14587924.79	40°10'04.735"N	104°52'59.915"W	0.78	
10914.00	88.640	0.730	7320.34	3522.16	3520.95	308.62	1673016.68	14588013.72	40°10'05.614"N	104°52'59.901"W	0.06	
11003.00	91.600	1.840	7320.15	3611.14	3609.91	310.61	1673018.55	14588102.65	40°10'06.493"N	104°52'59.875"W	3.55	
11093.00	91.720	1.240	7317.55	3701.07	3699.84	313.03	1673020.85	14588192.55	40°10'07.382"N	104°52'59.844"W	0.68	
11182.00	92.060	0.970	7314.61	3790.02	3788.78	314.75	1673022.45	14588281.45	40°10'08.261"N	104°52'59.822"W	0.49	
11272.00	91.020	2.190	7312.19	3879.96	3878.71	317.23	1673024.82	14588371.35	40°10'09.150"N	104°52'59.790"W	1.78	
11361.00	91.880	2.370	7309.94	3968.87	3967.61	320.77	1673028.24	14588460.22	40°10'10.028"N	104°52'59.744"W	0.99	
11451.00	91.230	359.920	7307.50	4058.82	4057.55	322.56	1673029.92	14588550.12	40°10'10.917"N	104°52'59.721"W	2.82	
11540.00	91.080	359.230	7305.70	4147.79	4146.53	321.90	1673029.14	14588639.07	40°10'11.796"N	104°52'59.729"W	0.79	
11630.00	92.000	359.370	7303.29	4237.75	4236.49	320.80	1673027.93	14588728.99	40°10'12.685"N	104°52'59.743"W	1.03	
11720.00	90.860	358.070	7301.04	4327.68	4326.43	318.79	1673025.80	14588818.90	40°10'13.574"N	104°52'59.769"W	1.92	
11809.00	91.140	357.480	7299.49	4416.59	4415.35	315.34	1673022.23	14588907.77	40°10'14.453"N	104°52'59.814"W	0.73	
11899.00	91.720	357.230	7297.24	4506.45	4505.23	311.19	1673017.97	14588997.61	40°10'15.341"N	104°52'59.867"W	0.70	

REFERENCE WELLPATH IDENTIFICATION				
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)		Slot	SLOT#51 BUTTERBALL 12N-34HZ (488'FNL & 410'FWL, SEC.10)
Area	COLORADO		Well	BUTTERBALL 12N-34HZ
Field	WELD COUNTY (UTM/TRUE NORTH)		Wellbore	BUTTERBALL 12N-34HZ AWB
Facility	SEC.10-T2N-R67W			

WELLPATH DATA (180 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
11988.00	89.170	356.760	7296.55	4595.29	4594.10	306.52	1673013.19	14589086.43	40°10'16.219"N	104°52'59.927"W	2.91	
12078.00	89.080	359.250	7297.92	4685.21	4684.02	303.39	1673009.94	14589176.32	40°10'17.108"N	104°52'59.968"W	2.77	
12167.00	89.010	359.490	7299.41	4774.19	4773.01	302.41	1673008.84	14589265.27	40°10'17.987"N	104°52'59.980"W	0.28	
12257.00	89.290	359.330	7300.74	4864.17	4862.99	301.49	1673007.80	14589355.21	40°10'18.876"N	104°52'59.992"W	0.36	
12346.00	88.980	359.230	7302.09	4953.14	4951.97	300.37	1673006.57	14589444.16	40°10'19.756"N	104°53'00.007"W	0.37	
12436.00	90.550	0.250	7302.45	5043.14	5041.97	299.96	1673006.04	14589534.12	40°10'20.645"N	104°53'00.012"W	2.08	
12526.00	90.740	0.820	7301.44	5133.13	5131.96	300.80	1673006.77	14589624.07	40°10'21.534"N	104°53'00.001"W	0.67	
12615.00	90.090	0.960	7300.80	5222.12	5220.94	302.18	1673008.03	14589713.03	40°10'22.414"N	104°52'59.983"W	0.75	
12705.00	89.940	0.920	7300.77	5312.11	5310.93	303.66	1673009.39	14589802.98	40°10'23.303"N	104°52'59.964"W	0.17	
12794.00	91.600	0.560	7299.58	5401.10	5399.91	304.81	1673010.42	14589891.93	40°10'24.182"N	104°52'59.949"W	1.91	
12884.00	91.600	0.520	7297.06	5491.06	5489.87	305.66	1673011.15	14589981.85	40°10'25.071"N	104°52'59.938"W	0.04	
12973.00	91.200	359.670	7294.89	5580.03	5578.85	305.80	1673011.19	14590070.79	40°10'25.950"N	104°52'59.937"W	1.06	
13063.00	90.920	358.150	7293.22	5669.99	5668.81	304.09	1673009.36	14590160.72	40°10'26.839"N	104°52'59.959"W	1.72	
13152.00	92.100	357.650	7290.88	5758.89	5757.72	300.83	1673005.98	14590249.58	40°10'27.718"N	104°53'00.001"W	1.44	
13241.00	92.590	359.660	7287.24	5847.77	5846.62	298.74	1673003.78	14590338.44	40°10'28.596"N	104°53'00.027"W	2.32	
13331.00	93.330	1.720	7282.59	5937.64	5936.48	299.83	1673004.75	14590428.27	40°10'29.485"N	104°53'00.013"W	2.43	
13421.00	94.040	1.380	7276.81	6027.43	6026.26	302.25	1673007.06	14590518.02	40°10'30.372"N	104°52'59.982"W	0.87	
13510.00	92.530	2.420	7271.71	6116.25	6115.07	305.20	1673009.89	14590606.79	40°10'31.249"N	104°52'59.944"W	2.06	
13600.00	91.420	1.810	7268.60	6206.14	6204.95	308.52	1673013.09	14590696.64	40°10'32.138"N	104°52'59.901"W	1.41	
13689.00	92.280	1.930	7265.73	6295.06	6293.85	311.42	1673015.87	14590785.52	40°10'33.016"N	104°52'59.864"W	0.98	
13779.00	91.020	1.310	7263.14	6384.99	6383.78	313.97	1673018.30	14590875.41	40°10'33.905"N	104°52'59.831"W	1.56	
13868.00	89.410	1.380	7262.81	6473.97	6472.75	316.06	1673020.27	14590964.35	40°10'34.784"N	104°52'59.804"W	1.81	
13958.00	89.720	0.880	7263.49	6563.96	6562.73	317.83	1673021.93	14591054.29	40°10'35.673"N	104°52'59.781"W	0.65	
14047.00	90.370	0.710	7263.42	6652.95	6651.72	319.06	1673023.05	14591143.25	40°10'36.553"N	104°52'59.765"W	0.75	
14137.00	91.290	0.640	7262.11	6742.94	6741.70	320.13	1673023.99	14591233.20	40°10'37.442"N	104°52'59.752"W	1.03	
14227.00	90.520	2.180	7260.69	6832.91	6831.66	322.34	1673026.09	14591323.12	40°10'38.331"N	104°52'59.723"W	1.91	
14316.00	90.990	2.370	7259.52	6921.84	6920.58	325.87	1673029.50	14591412.01	40°10'39.209"N	104°52'59.678"W	0.57	
14406.00	91.820	2.030	7257.31	7011.76	7010.49	329.33	1673032.84	14591501.89	40°10'40.098"N	104°52'59.633"W	1.00	
14495.00	92.710	2.050	7253.80	7100.65	7099.36	332.49	1673035.89	14591590.73	40°10'40.976"N	104°52'59.592"W	1.00	
14585.00	91.170	1.900	7250.75	7190.55	7189.26	335.59	1673038.87	14591680.59	40°10'41.864"N	104°52'59.552"W	1.72	
14675.00	90.340	0.770	7249.56	7280.52	7279.22	337.69	1673040.85	14591770.52	40°10'42.753"N	104°52'59.525"W	1.56	
14764.00	90.490	358.950	7248.92	7369.52	7368.21	337.47	1673040.51	14591859.48	40°10'43.633"N	104°52'59.528"W	2.05	
14854.00	90.890	357.410	7247.84	7459.45	7458.16	334.61	1673037.54	14591949.38	40°10'44.522"N	104°52'59.565"W	1.77	
14943.00	90.120	358.610	7247.05	7548.38	7547.10	331.52	1673034.33	14592038.29	40°10'45.401"N	104°52'59.605"W	1.60	
15032.00	90.310	358.750	7246.72	7637.34	7636.08	329.47	1673032.17	14592127.22	40°10'46.280"N	104°52'59.631"W	0.27	
15122.00	91.170	358.050	7245.55	7727.29	7726.03	326.96	1673029.54	14592217.14	40°10'47.169"N	104°52'59.664"W	1.23	
15212.00	90.740	0.040	7244.05	7817.25	7816.00	325.46	1673027.92	14592307.07	40°10'48.058"N	104°52'59.683"W	2.26	
15301.00	90.650	359.990	7242.97	7906.24	7905.00	325.48	1673027.83	14592396.03	40°10'48.937"N	104°52'59.683"W	0.12	
15391.00	90.090	359.280	7242.39	7996.24	7994.99	324.91	1673027.14	14592485.99	40°10'49.827"N	104°52'59.690"W	1.00	
15480.00	90.920	359.240	7241.61	8085.22	8083.98	323.76	1673025.88	14592574.94	40°10'50.706"N	104°52'59.705"W	0.93	
15569.00	89.820	359.780	7241.03	8174.21	8172.97	323.00	1673025.00	14592663.89	40°10'51.586"N	104°52'59.715"W	1.38	
15659.00	90.090	359.800	7241.11	8264.21	8262.97	322.67	1673024.55	14592753.86	40°10'52.475"N	104°52'59.719"W	0.30	
15748.00	90.770	359.840	7240.44	8353.20	8351.97	322.39	1673024.16	14592842.82	40°10'53.354"N	104°52'59.722"W	0.77	
15838.00	91.050	359.830	7239.01	8443.19	8441.96	322.13	1673023.78	14592932.77	40°10'54.244"N	104°52'59.726"W	0.31	LAST BHI MWD+IFR1+MSA SURVEY
15892.00	91.050	359.830	7238.02	8497.18	8495.95	321.97	1673023.55	14592986.74	40°10'54.777"N	104°52'59.728"W	0.00	PTB (2581'FSL & 693'FWL, SEC.34) 40.1818826 -104.8832577

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#51 BUTTERBALL 12N-34HZ (488'FNL & 410'FWL,SEC.10)
Area	COLORADO	Well	BUTTERBALL 12N-34HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	BUTTERBALL 12N-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	0.00	31.98	-31.60	1672681.13	14584525.71	40°09'31.136"N	104°53'04.283"W	polygon
SEC.10-T2N-R67W	0.00	31.98	-31.60	1672681.13	14584525.71	40°09'31.136"N	104°53'04.283"W	polygon
SEC.34-T3N-R67W	0.00	31.98	-31.60	1672681.13	14584525.71	40°09'31.136"N	104°53'04.283"W	polygon
BUTTERBALL 12N-34HZ BHL REV-1(2582'FSL & 711'FWL,SEC.34)	7246.00	8497.20	340.05	1673041.62	14592988.02	40°10'54.790"N	104°52'59.495"W	point
BUTTERBALL 12N-34HZ LANDBOX	7310.00	0.00	0.00	1672712.76	14584493.78	40°09'30.820"N	104°53'03.876"W	polygon
BUTTERBALL 12N-34HZ 460' SETBACK 1	7310.00	0.00	0.00	1672712.76	14584493.78	40°09'30.820"N	104°53'03.876"W	polygon
BUTTERBALL 12N-34HZ 460' SETBACK 2	7310.00	0.00	0.00	1672712.76	14584493.78	40°09'30.820"N	104°53'03.876"W	polygon
BUTTERBALL 12N-34HZ HEEL REV-1(208'FNL & 732'FWL,SEC.10)	7310.00	279.01	323.39	1673035.66	14584773.11	40°09'33.577"N	104°52'59.711"W	point
BUTTERBALL 12N-34HZ HEEL REV-2(208'FNL & 712'FWL,SEC.10)	7310.00	279.01	303.40	1673015.67	14584773.08	40°09'33.577"N	104°52'59.968"W	point
BUTTERBALL 12N-34HZ INT. TARGET@3500'VS	7310.00	3498.78	309.92	1673018.01	14587991.56	40°10'05.395"N	104°52'59.884"W	point

WELLPATH COMPOSITION - Ref Wellbore: BUTTERBALL 12N-34HZ AWB				Ref Wellpath: BUTTERBALL 12N-34HZ AWP	
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment		Wellbore
26.00	1820.00	Custom APC ISCWSA REV 2 MWD+IFR1 (approximation)	SDI Custom APC ISCWSA Rev-2 MWD+IFR1 <157 - 1820>		BUTTERBALL 12N-34HZ AWB
1820.00	15838.00	Custom APC ISCWSA REV 2 MWD+IFR1+MSA (approximation)	BHI Custom APC ISCWSA Rev-2 MWD+IFR1+MSA <1932 - 15838>		BUTTERBALL 12N-34HZ AWB
15838.00	15892.00	Blind Drilling (std)	Projection to bit		BUTTERBALL 12N-34HZ AWB

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#51 BUTTERBALL 12N-34HZ (488'FNL & 410'FWL,SEC.10)
Area	COLORADO	Well	BUTTERBALL 12N-34HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	BUTTERBALL 12N-34HZ AWB
Facility	SEC.10-T2N-R67W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
157.00	0.550	293.150	157.00	FIRST SDI MWD+IFR1 SURVEY
1400.00	11.119	140.353	1392.47	ENTERED LANDBOX (576'FNL & 462'FWL,SEC.10) 40.1583206 -104.8842209
1820.00	9.210	143.750	1805.61	LAST SDI MWD+IFR1 SURVEY
1932.00	7.570	141.510	1916.40	FIRST BHI MWD+IFR1+MSA SURVEY
6634.00	0.950	47.925	6598.81	KOP
7780.00	89.380	358.400	7299.47	LANDING (100'FNL & 734'FWL,SEC.10) 40.1596252 -104.8832520
15838.00	91.050	359.830	7239.01	LAST BHI MWD+IFR1+MSA SURVEY
15892.00	91.050	359.830	7238.02	PTB (2581'FSL & 693'FWL,SEC.34) 40.1818826 -104.8832577