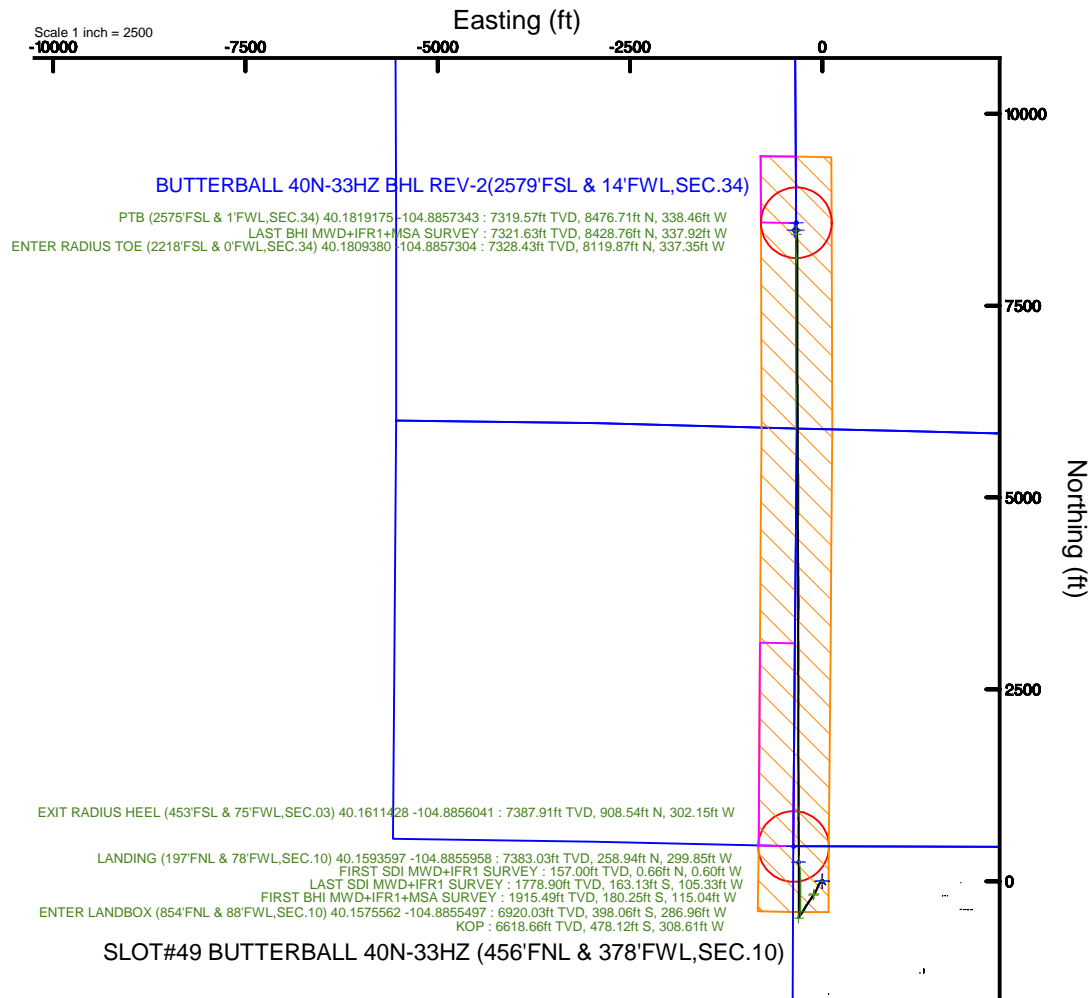
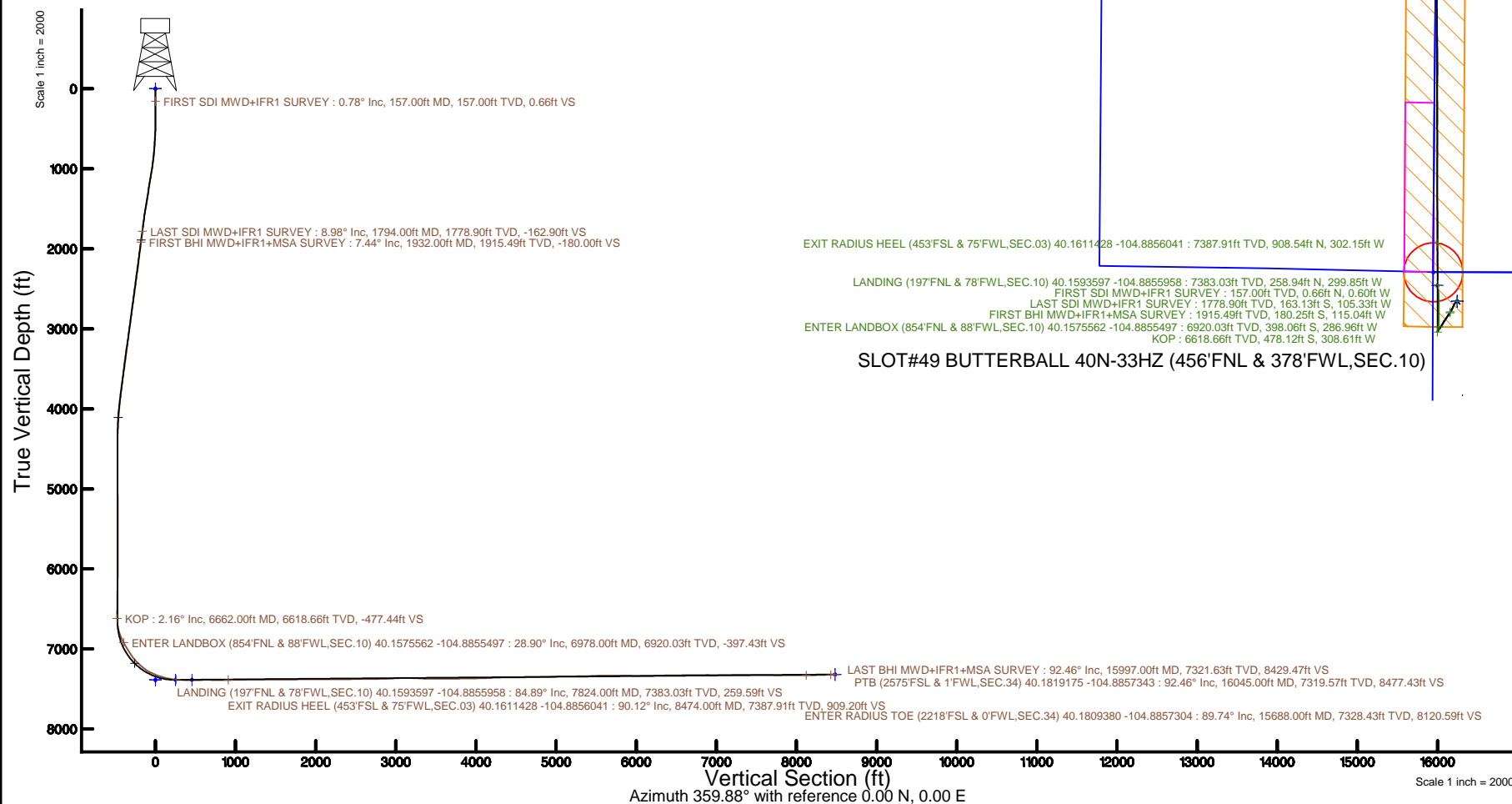


KERR-MCGEE OIL & GAS ONSHORE LP (WA)

Location: COLORADO Slot: SLOT#49 BUTTERBALL 40N-33HZ (456'FNL & 378'FWL,SEC.10)
 Field: WELD COUNTY (UTM/TRUE NORTH) Well: BUTTERBALL 40N-33HZ
 Facility: SEC.10-T2N-R67W Wellbore: BUTTERBALL 40N-33HZ PWB

Plot reference wellpath is BUTTERBALL 40N-33HZ PWB Rev-A.2	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#49 BUTTERBALL 40N-33HZ (456'FNL & 378'FWL,SEC.10)): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: painsetr on 2017-06-23
	Database: WA_DEN_Anadarko_Defn



REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#49 BUTTERBALL 40N-33HZ (456'FNL & 378'FWL,SEC.10)
Area	COLORADO	Well	BUTTERBALL 40N-33HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	BUTTERBALL 40N-33HZ 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	6/23/2017 at 11:14 AM
Convergence at slot	0.08° East	Database/Source file	WA_DEN_Anadarko_Defn/BUTTERBALL_40N-33HZ_AWP.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	186.65	-1565.43	1672681.13	14584525.71	40°09'31.136"N	104°53'04.283"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#49 BUTTERBALL 40N-33HZ (456'FNL & 378'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	359.88°

REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#49 BUTTERBALL 40N-33HZ (456'FNL & 378'FWL, SEC.10)
Area	COLORADO	Well	BUTTERBALL 40N-33HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	BUTTERBALL 40N-33HZ AWB
Facility	SEC.10-T2N-R67W		

WELLPATH DATA (186 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	317.440	0.00	0.00	0.00	0.00	1672681.13	14584525.71	40°09'31.136"N	104°53'04.283"W	0.00	
26.00	0.000	317.440	26.00	0.00	0.00	0.00	1672681.13	14584525.71	40°09'31.136"N	104°53'04.283"W	0.00	
157.00	0.780	317.440	157.00	0.66	0.66	-0.60	1672680.53	14584526.36	40°09'31.142"N	104°53'04.291"W	0.60	FIRST SDI MWD+IFR1 SURVEY
243.00	1.010	286.700	242.99	1.31	1.31	-1.73	1672679.41	14584527.01	40°09'31.149"N	104°53'04.305"W	0.61	
330.00	1.220	271.450	329.97	1.56	1.55	-3.39	1672677.75	14584527.25	40°09'31.151"N	104°53'04.327"W	0.42	
417.00	2.030	253.370	416.93	1.14	1.13	-5.79	1672675.34	14584526.83	40°09'31.147"N	104°53'04.358"W	1.09	
503.00	3.250	235.190	502.84	-0.68	-0.70	-9.25	1672671.89	14584525.00	40°09'31.129"N	104°53'04.402"W	1.70	
590.00	4.710	235.480	589.63	-4.10	-4.13	-14.22	1672666.93	14584521.56	40°09'31.095"N	104°53'04.466"W	1.68	
679.00	5.520	226.140	678.28	-9.12	-9.16	-20.31	1672660.84	14584516.52	40°09'31.045"N	104°53'04.545"W	1.30	
767.00	6.480	220.750	765.79	-15.80	-15.86	-26.61	1672654.56	14584509.82	40°09'30.979"N	104°53'04.626"W	1.26	
852.00	7.300	213.450	850.18	-23.93	-24.00	-32.72	1672648.46	14584501.68	40°09'30.899"N	104°53'04.704"W	1.41	
939.00	9.040	210.860	936.30	-34.39	-34.48	-39.27	1672641.92	14584491.19	40°09'30.795"N	104°53'04.789"W	2.04	
1027.00	10.250	207.470	1023.05	-47.26	-47.36	-46.43	1672634.78	14584478.31	40°09'30.668"N	104°53'04.881"W	1.52	
1116.00	9.520	205.950	1110.73	-60.89	-61.00	-53.30	1672627.93	14584464.66	40°09'30.533"N	104°53'04.969"W	0.87	
1205.00	10.250	202.310	1198.41	-74.82	-74.95	-59.53	1672621.73	14584450.71	40°09'30.395"N	104°53'05.050"W	1.08	
1294.00	10.190	204.730	1286.00	-89.28	-89.43	-65.83	1672615.45	14584436.23	40°09'30.252"N	104°53'05.131"W	0.49	
1382.00	10.440	203.570	1372.57	-103.65	-103.80	-72.27	1672609.02	14584421.85	40°09'30.110"N	104°53'05.214"W	0.37	
1471.00	10.220	207.860	1460.13	-118.00	-118.17	-79.19	1672602.13	14584407.48	40°09'29.968"N	104°53'05.303"W	0.90	
1558.00	9.710	207.390	1545.82	-131.32	-131.51	-86.17	1672595.17	14584394.14	40°09'29.836"N	104°53'05.393"W	0.59	
1646.00	8.760	212.090	1632.68	-143.58	-143.78	-93.14	1672588.21	14584381.86	40°09'29.715"N	104°53'05.483"W	1.38	
1735.00	8.930	212.260	1720.62	-155.14	-155.36	-100.43	1672580.94	14584370.28	40°09'29.601"N	104°53'05.576"W	0.19	
1794.00	8.980	212.210	1778.90	-162.90	-163.13	-105.33	1672576.06	14584362.51	40°09'29.524"N	104°53'05.640"W	0.09	LAST SDI MWD+IFR1 SURVEY
1932.00	7.440	206.410	1915.49	-180.00	-180.25	-115.04	1672566.37	14584345.38	40°09'29.355"N	104°53'05.765"W	1.27	FIRST BHI MWD+IFR1+MSA SURVEY
2022.00	8.360	208.020	2004.63	-190.98	-191.24	-120.71	1672560.72	14584334.39	40°09'29.246"N	104°53'05.838"W	1.05	
2111.00	8.090	216.870	2092.72	-201.69	-201.96	-127.51	1672553.94	14584323.66	40°09'29.140"N	104°53'05.925"W	1.45	
2201.00	8.980	219.280	2181.72	-212.17	-212.47	-135.75	1672545.71	14584313.15	40°09'29.036"N	104°53'06.031"W	1.07	
2291.00	10.030	216.000	2270.49	-223.93	-224.25	-144.81	1672536.67	14584301.36	40°09'28.920"N	104°53'06.148"W	1.31	
2380.00	10.080	217.500	2358.12	-236.36	-236.69	-154.10	1672527.40	14584288.91	40°09'28.797"N	104°53'06.268"W	0.30	
2470.00	8.970	215.580	2446.88	-248.29	-248.65	-162.98	1672518.54	14584276.95	40°09'28.679"N	104°53'06.382"W	1.28	
2559.00	9.560	219.650	2534.72	-259.61	-259.98	-171.73	1672509.80	14584265.61	40°09'28.567"N	104°53'06.495"W	0.99	
2649.00	10.580	216.500	2623.33	-271.98	-272.38	-181.42	1672500.14	14584253.20	40°09'28.444"N	104°53'06.620"W	1.29	
2738.00	10.160	217.140	2710.88	-284.79	-285.21	-191.02	1672490.56	14584240.37	40°09'28.318"N	104°53'06.743"W	0.49	
2828.00	9.550	215.290	2799.55	-297.19	-297.63	-200.12	1672481.48	14584227.94	40°09'28.195"N	104°53'06.860"W	0.76	
2917.00	8.870	215.500	2887.40	-308.78	-309.24	-208.37	1672473.24	14584216.32	40°09'28.080"N	104°53'06.967"W	0.76	
3007.00	9.620	207.150	2976.23	-321.11	-321.58	-215.83	1672465.80	14584203.98	40°09'27.958"N	104°53'07.063"W	1.71	
3096.00	8.420	205.540	3064.13	-333.59	-334.08	-222.04	1672459.62	14584191.48	40°09'27.835"N	104°53'07.143"W	1.38	
3186.00	9.640	205.960	3153.01	-346.30	-346.80	-228.18	1672453.50	14584178.75	40°09'27.709"N	104°53'07.222"W	1.36	
3275.00	10.180	207.030	3240.69	-359.99	-360.51	-235.01	1672446.68	14584165.04	40°09'27.573"N	104°53'07.310"W	0.64	
3365.00	8.640	206.470	3329.47	-373.11	-373.64	-241.64	1672440.07	14584151.90	40°09'27.444"N	104°53'07.395"W	1.71	
3454.00	8.830	214.030	3417.44	-384.74	-385.29	-248.44	1672433.29	14584140.25	40°09'27.329"N	104°53'07.483"W	1.31	
3544.00	8.900	219.170	3506.37	-395.85	-396.41	-256.71	1672425.04	14584129.12	40°09'27.219"N	104°53'07.589"W	0.88	
3634.00	9.250	218.990	3595.24	-406.85	-407.43	-265.66	1672416.11	14584118.10	40°09'27.110"N	104°53'07.704"W	0.39	
3723.00	9.060	211.250	3683.11	-418.38	-418.98	-273.79	1672407.99	14584106.54	40°09'26.996"N	104°53'07.809"W	1.40	
3813.00	7.550	209.830	3772.17	-429.56	-430.17	-280.41	1672401.39	14584095.35	40°09'26.885"N	104°53'07.894"W	1.69	
3902.00	6.930	213.800	3860.46	-439.08	-439.70	-286.30	1672395.51	14584085.81	40°09'26.791"N	104°53'07.970"W	0.89	

REFERENCE WELLPATH IDENTIFICATION				
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)			Slot
Area	COLORADO			Well
Field	WELD COUNTY (UTM/TRUE NORTH)			Wellbore
Facility	SEC.10-T2N-R67W			BUTTERBALL 40N-33HZ AWP

WELLPATH DATA (186 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
3992.00	5.880	213.830	3949.89	-447.41	-448.04	-291.89	1672389.94	14584077.46	40°09'26.708"N	104°53'08.042"W	1.17	
4081.00	5.180	212.820	4038.48	-454.56	-455.21	-296.61	1672385.23	14584070.30	40°09'26.638"N	104°53'08.103"W	0.79	
4171.00	4.910	211.780	4128.13	-461.24	-461.90	-300.84	1672381.01	14584063.61	40°09'26.572"N	104°53'08.158"W	0.32	
4260.00	3.580	198.620	4216.89	-467.10	-467.77	-303.73	1672378.13	14584057.73	40°09'26.513"N	104°53'08.195"W	1.84	
4350.00	1.410	201.750	4306.80	-470.79	-471.46	-305.04	1672376.83	14584054.04	40°09'26.477"N	104°53'08.212"W	2.41	
4439.00	0.320	196.140	4395.78	-472.05	-472.71	-305.51	1672376.35	14584052.79	40°09'26.465"N	104°53'08.218"W	1.23	
4554.00	0.280	283.370	4510.78	-472.29	-472.96	-305.88	1672375.99	14584052.54	40°09'26.462"N	104°53'08.222"W	0.36	
4644.00	0.490	291.980	4600.78	-472.09	-472.76	-306.45	1672375.42	14584052.74	40°09'26.464"N	104°53'08.230"W	0.24	
4733.00	0.570	291.590	4689.78	-471.79	-472.46	-307.21	1672374.66	14584053.04	40°09'26.467"N	104°53'08.240"W	0.09	
4823.00	0.320	284.480	4779.77	-471.56	-472.23	-307.87	1672374.00	14584053.27	40°09'26.469"N	104°53'08.248"W	0.28	
4912.00	0.150	344.700	4868.77	-471.38	-472.06	-308.14	1672373.73	14584053.44	40°09'26.471"N	104°53'08.252"W	0.31	
5002.00	0.250	295.650	4958.77	-471.18	-471.86	-308.35	1672373.52	14584053.64	40°09'26.473"N	104°53'08.254"W	0.21	
5091.00	0.220	343.540	5047.77	-470.94	-471.61	-308.57	1672373.29	14584053.89	40°09'26.476"N	104°53'08.257"W	0.22	
5181.00	0.100	46.200	5137.77	-470.72	-471.39	-308.57	1672373.30	14584054.11	40°09'26.478"N	104°53'08.257"W	0.22	
5271.00	0.100	340.220	5227.77	-470.59	-471.26	-308.54	1672373.33	14584054.23	40°09'26.479"N	104°53'08.257"W	0.12	
5360.00	0.260	311.760	5316.77	-470.38	-471.05	-308.71	1672373.15	14584054.44	40°09'26.481"N	104°53'08.259"W	0.20	
5450.00	0.280	265.490	5406.77	-470.26	-470.94	-309.09	1672372.78	14584054.56	40°09'26.482"N	104°53'08.264"W	0.24	
5539.00	0.370	265.320	5495.77	-470.30	-470.98	-309.59	1672372.28	14584054.52	40°09'26.482"N	104°53'08.270"W	0.10	
5629.00	0.310	286.250	5585.77	-470.25	-470.93	-310.11	1672371.76	14584054.56	40°09'26.482"N	104°53'08.277"W	0.15	
5718.00	0.260	322.500	5674.77	-470.03	-470.70	-310.47	1672371.40	14584054.79	40°09'26.484"N	104°53'08.282"W	0.21	
5808.00	0.290	300.200	5764.77	-469.75	-470.43	-310.79	1672371.08	14584055.07	40°09'26.487"N	104°53'08.286"W	0.12	
5898.00	0.330	309.650	5854.76	-469.47	-470.15	-311.18	1672370.68	14584055.35	40°09'26.490"N	104°53'08.291"W	0.07	
5987.00	0.620	265.360	5943.76	-469.34	-470.02	-311.86	1672370.01	14584055.47	40°09'26.491"N	104°53'08.300"W	0.50	
6077.00	0.220	247.680	6033.76	-469.44	-470.13	-312.51	1672369.36	14584055.36	40°09'26.490"N	104°53'08.308"W	0.46	
6166.00	1.590	161.730	6122.75	-470.68	-471.36	-312.28	1672369.59	14584054.13	40°09'26.478"N	104°53'08.305"W	1.79	
6256.00	1.280	160.490	6212.72	-472.82	-473.50	-311.55	1672370.32	14584052.00	40°09'26.457"N	104°53'08.296"W	0.35	
6346.00	1.200	152.100	6302.70	-474.60	-475.28	-310.77	1672371.10	14584050.22	40°09'26.439"N	104°53'08.286"W	0.22	
6435.00	0.890	154.950	6391.68	-476.05	-476.73	-310.04	1672371.83	14584048.77	40°09'26.425"N	104°53'08.276"W	0.35	
6525.00	0.620	161.220	6481.68	-477.15	-477.82	-309.59	1672372.28	14584047.67	40°09'26.414"N	104°53'08.270"W	0.31	
6614.00	0.530	153.030	6570.67	-477.97	-478.65	-309.25	1672372.63	14584046.85	40°09'26.406"N	104°53'08.266"W	0.14	
6662.00†	2.162	36.541	6618.66	-477.44	-478.12	-308.61	1672373.27	14584047.38	40°09'26.411"N	104°53'08.258"W	5.09	KOP
6704.00	4.280	30.970	6660.59	-475.46	-476.14	-307.33	1672374.54	14584049.36	40°09'26.431"N	104°53'08.241"W	5.09	
6794.00	13.350	21.780	6749.44	-462.92	-463.58	-301.74	1672380.12	14584061.92	40°09'26.555"N	104°53'08.169"W	10.17	
6883.00	21.660	15.000	6834.25	-437.48	-438.13	-293.66	1672388.16	14584087.38	40°09'26.806"N	104°53'08.065"W	9.60	
6973.00	28.780	5.710	6915.65	-399.83	-400.46	-287.19	1672394.57	14584125.03	40°09'27.179"N	104°53'07.982"W	9.03	
6978.00†	28.900	5.325	6920.03	-397.43	-398.06	-286.96	1672394.80	14584127.43	40°09'27.202"N	104°53'07.979"W	4.43	ENTER LANDBOX (854°FNL & 88°FWL, SEC.10) 40.1575562 -104.8855497
7062.00	31.070	359.280	6992.80	-355.54	-356.16	-285.35	1672396.36	14584169.32	40°09'27.616"N	104°53'07.958"W	4.43	
7152.00	33.070	357.910	7069.06	-307.77	-308.40	-286.54	1672395.11	14584217.06	40°09'28.088"N	104°53'07.973"W	2.36	
7242.00	42.030	0.030	7140.35	-252.99	-253.62	-287.42	1672394.16	14584271.82	40°09'28.630"N	104°53'07.985"W	10.06	
7331.00	48.500	2.470	7202.96	-189.83	-190.45	-285.96	1672395.53	14584334.96	40°09'29.254"N	104°53'07.966"W	7.52	
7421.00	55.200	359.820	7258.53	-119.12	-119.74	-284.63	1672396.77	14584405.65	40°09'29.953"N	104°53'07.949"W	7.80	
7510.00	65.140	358.260	7302.75	-42.02	-42.65	-285.97	1672395.33	14584482.71	40°09'30.715"N	104°53'07.966"W	11.27	
7600.00	71.300	359.540	7336.13	41.50	40.87	-287.55	1672393.64	14584566.19	40°09'31.540"N	104°53'07.987"W	6.97	
7689.00	75.960	355.880	7361.21	126.79	126.16	-291.00	1672390.09	14584651.43	40°09'32.383"N	104°53'08.031"W	6.56	
7779.00	82.440	356.040	7378.07	214.94	214.29	-297.22	1672383.75	14584739.53	40°09'33.254"N	104°53'08.111"W	7.20	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#49 BUTTERBALL 40N-33HZ (456'FNL & 378'FWL, SEC.10)
Area	COLORADO	Well	BUTTERBALL 40N-33HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	BUTTERBALL 40N-33HZ AWP
Facility	SEC.10-T2N-R67W		

WELLPATH DATA (186 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
7824.00†	84.894	357.204	7383.03	259.59	258.94	-299.85	1672381.06	14584784.15	40°09'33.695"N	104°53'08.145"W	6.03	LANDING (197'FNL & 78'FWL, SEC.10) 40.1593597 -104.8855958
7869.00	87.350	358.360	7386.07	304.45	303.80	-301.59	1672379.27	14584828.99	40°09'34.138"N	104°53'08.167"W	6.03	
7958.00	89.450	358.990	7388.56	393.39	392.73	-303.65	1672377.09	14584917.89	40°09'35.017"N	104°53'08.194"W	2.46	
8048.00	90.550	358.670	7388.56	483.38	482.71	-305.49	1672375.14	14585007.83	40°09'35.906"N	104°53'08.218"W	1.27	
8137.00	90.340	358.100	7387.87	572.34	571.67	-307.99	1672372.52	14585096.75	40°09'36.785"N	104°53'08.250"W	0.68	
8227.00	89.880	0.450	7387.69	662.33	661.66	-309.13	1672371.26	14585186.70	40°09'37.675"N	104°53'08.265"W	2.66	
8316.00	89.850	1.100	7387.90	751.32	750.65	-307.93	1672372.35	14585275.66	40°09'38.554"N	104°53'08.249"W	0.73	
8406.00	90.030	2.780	7388.00	841.26	840.60	-304.88	1672375.28	14585365.57	40°09'39.443"N	104°53'08.210"W	1.88	
8474.00†	90.122	1.833	7387.91	909.20	908.54	-302.15	1672377.93	14585433.49	40°09'40.114"N	104°53'08.175"W	1.40	EXIT RADIUS HEEL (453'FSL & 75'FWL, SEC.03) 40.1611428 -104.8856041
8495.00	90.150	1.540	7387.86	930.19	929.53	-301.53	1672378.52	14585454.47	40°09'40.322"N	104°53'08.167"W	1.40	
8585.00	90.890	359.740	7387.04	1020.17	1019.52	-300.52	1672379.40	14585544.43	40°09'41.211"N	104°53'08.154"W	2.16	
8675.00	91.720	359.610	7384.99	1110.15	1109.49	-301.03	1672378.78	14585634.36	40°09'42.100"N	104°53'08.160"W	0.93	
8764.00	89.910	358.300	7383.73	1199.12	1198.46	-302.66	1672377.04	14585723.30	40°09'42.979"N	104°53'08.181"W	2.51	
8854.00	90.220	358.960	7383.62	1289.10	1288.44	-304.81	1672374.77	14585813.23	40°09'43.868"N	104°53'08.209"W	0.81	
8943.00	89.880	358.710	7383.55	1378.08	1377.42	-306.62	1672372.85	14585902.17	40°09'44.748"N	104°53'08.232"W	0.47	
9033.00	90.250	357.860	7383.44	1468.05	1467.38	-309.31	1672370.04	14585992.09	40°09'45.637"N	104°53'08.267"W	1.03	
9122.00	90.180	358.360	7383.11	1557.00	1556.33	-312.25	1672366.99	14586081.00	40°09'46.516"N	104°53'08.305"W	0.57	
9212.00	90.590	0.350	7382.51	1646.99	1646.31	-313.26	1672365.86	14586170.95	40°09'47.405"N	104°53'08.318"W	2.26	
9302.00	90.550	359.560	7381.61	1736.99	1736.31	-313.33	1672365.67	14586260.91	40°09'48.294"N	104°53'08.319"W	0.88	
9391.00	91.820	359.480	7379.77	1825.97	1825.29	-314.08	1672364.81	14586349.85	40°09'49.174"N	104°53'08.328"W	1.43	
9481.00	90.150	0.460	7378.22	1915.95	1915.27	-314.12	1672364.65	14586439.80	40°09'50.063"N	104°53'08.329"W	2.15	
9571.00	89.600	359.760	7378.42	2005.95	2005.27	-313.95	1672364.70	14586529.76	40°09'50.952"N	104°53'08.327"W	0.99	
9660.00	89.910	359.310	7378.80	2094.94	2094.26	-314.67	1672363.86	14586618.72	40°09'51.832"N	104°53'08.336"W	0.61	
9750.00	90.120	1.630	7378.78	2184.93	2184.25	-313.93	1672364.49	14586708.68	40°09'52.721"N	104°53'08.327"W	2.59	
9839.00	90.620	0.450	7378.20	2273.91	2273.23	-312.32	1672365.98	14586797.62	40°09'53.600"N	104°53'08.306"W	1.44	
9929.00	89.880	359.400	7377.81	2363.91	2363.23	-312.44	1672365.75	14586887.58	40°09'54.490"N	104°53'08.307"W	1.43	
10019.00	90.220	1.060	7377.73	2453.90	2453.23	-312.08	1672365.99	14586977.55	40°09'55.379"N	104°53'08.303"W	1.88	
10108.00	90.430	359.250	7377.23	2542.90	2542.22	-311.83	1672366.12	14587066.50	40°09'56.258"N	104°53'08.300"W	2.05	
10198.00	90.090	1.010	7376.82	2632.89	2632.22	-311.63	1672366.21	14587156.46	40°09'57.148"N	104°53'08.297"W	1.99	
10287.00	90.890	1.950	7376.06	2721.85	2721.18	-309.33	1672368.39	14587245.40	40°09'58.027"N	104°53'08.267"W	1.39	
10376.00	91.630	1.440	7374.10	2810.78	2810.12	-306.70	1672370.90	14587334.30	40°09'58.906"N	104°53'08.234"W	1.01	
10466.00	92.060	0.610	7371.20	2900.72	2900.06	-305.09	1672372.40	14587424.21	40°09'59.794"N	104°53'08.213"W	1.04	
10556.00	93.140	359.870	7367.12	2990.62	2989.96	-304.71	1672372.66	14587514.08	40°10'00.683"N	104°53'08.208"W	1.45	
10645.00	92.000	357.950	7363.13	3079.51	3078.85	-306.41	1672370.85	14587602.93	40°10'01.561"N	104°53'08.230"W	2.51	
10735.00	88.370	357.690	7362.84	3169.44	3168.77	-309.83	1672367.31	14587692.80	40°10'02.450"N	104°53'08.274"W	4.04	
10824.00	86.890	359.450	7366.52	3258.34	3257.66	-312.05	1672364.98	14587781.66	40°10'03.328"N	104°53'08.303"W	2.58	
10914.00	87.100	2.030	7371.24	3348.19	3347.52	-310.89	1672366.02	14587871.48	40°10'04.216"N	104°53'08.288"W	2.87	
11003.00	89.660	2.660	7373.75	3437.07	3436.41	-307.25	1672369.54	14587960.33	40°10'05.095"N	104°53'08.241"W	2.96	
11092.00	90.030	1.300	7373.99	3526.01	3525.35	-304.17	1672372.50	14588049.25	40°10'05.974"N	104°53'08.201"W	1.58	
11182.00	90.620	0.140	7373.48	3615.99	3615.34	-303.04	1672373.51	14588139.20	40°10'06.863"N	104°53'08.187"W	1.45	
11271.00	90.490	358.220	7372.62	3704.98	3704.32	-304.31	1672372.13	14588228.15	40°10'07.742"N	104°53'08.203"W	2.16	
11361.00	91.320	359.830	7371.20	3794.95	3794.29	-305.85	1672370.48	14588318.08	40°10'08.631"N	104°53'08.223"W	2.01	
11450.00	90.220	358.970	7370.00	3883.94	3883.28	-306.78	1672369.43	14588407.03	40°10'09.511"N	104°53'08.235"W	1.57	
11540.00	91.260	358.890	7368.84	3973.92	3973.25	-308.46	1672367.63	14588496.97	40°10'10.400"N	104°53'08.256"W	1.16	
11629.00	91.630	358.540	7366.60	4062.87	4062.20	-310.45	1672365.52	14588585.88	40°10'11.279"N	104°53'08.282"W	0.57	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#49 BUTTERBALL 40N-33HZ (456'FNL & 378'FWL, SEC.10)
Area	COLORADO	Well	BUTTERBALL 40N-33HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	BUTTERBALL 40N-33HZ AWP
Facility	SEC.10-T2N-R67W		

WELLPATH DATA (186 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
11719.00	92.090	358.480	7363.67	4152.80	4152.13	-312.79	1672363.07	14588675.76	40°10'12.167°N	104°53'08.312°W	0.52	
11808.00	92.550	358.480	7360.07	4241.70	4241.02	-315.15	1672360.60	14588764.62	40°10'13.046°N	104°53'08.343°W	0.52	
11898.00	91.320	359.600	7357.03	4331.63	4330.95	-316.66	1672358.97	14588854.51	40°10'13.935°N	104°53'08.362°W	1.85	
11987.00	89.850	357.950	7356.12	4420.61	4419.92	-318.56	1672356.96	14588943.44	40°10'14.814°N	104°53'08.387°W	2.48	
12077.00	90.280	0.940	7356.02	4510.59	4509.91	-319.43	1672355.97	14589033.39	40°10'15.703°N	104°53'08.398°W	3.36	
12167.00	91.110	1.670	7354.93	4600.56	4599.88	-317.38	1672357.90	14589123.33	40°10'16.592°N	104°53'08.371°W	1.23	
12256.00	90.950	1.870	7353.33	4689.50	4688.82	-314.63	1672360.53	14589212.24	40°10'17.471°N	104°53'08.336°W	0.29	
12346.00	90.950	1.380	7351.84	4779.44	4778.77	-312.08	1672362.97	14589302.15	40°10'18.360°N	104°53'08.303°W	0.54	
12435.00	91.820	0.730	7349.69	4868.39	4867.73	-310.44	1672364.49	14589391.08	40°10'19.239°N	104°53'08.282°W	1.22	
12525.00	91.690	0.120	7346.93	4958.35	4957.68	-309.78	1672365.04	14589481.00	40°10'20.128°N	104°53'08.274°W	0.69	
12614.00	92.370	359.750	7343.78	5047.29	5046.63	-309.88	1672364.82	14589569.91	40°10'21.007°N	104°53'08.275°W	0.87	
12704.00	90.400	359.690	7341.60	5137.26	5136.60	-310.32	1672364.26	14589659.84	40°10'21.896°N	104°53'08.281°W	2.19	
12794.00	90.180	359.120	7341.15	5227.26	5226.59	-311.25	1672363.21	14589749.79	40°10'22.785°N	104°53'08.293°W	0.68	
12883.00	90.620	359.200	7340.53	5316.25	5315.58	-312.56	1672361.79	14589838.74	40°10'23.665°N	104°53'08.309°W	0.50	
12972.00	91.720	359.090	7338.71	5405.22	5404.55	-313.88	1672360.35	14589927.68	40°10'24.544°N	104°53'08.327°W	1.24	
13062.00	92.770	358.670	7335.18	5495.14	5494.46	-315.64	1672358.48	14590017.55	40°10'25.432°N	104°53'08.349°W	1.26	
13151.00	90.400	358.950	7332.72	5584.08	5583.40	-317.49	1672356.51	14590106.45	40°10'26.311°N	104°53'08.373°W	2.68	
13241.00	89.690	359.920	7332.65	5674.07	5673.39	-318.38	1672355.51	14590196.41	40°10'27.201°N	104°53'08.384°W	1.34	
13330.00	90.620	359.520	7332.41	5763.07	5762.39	-318.81	1672354.96	14590285.37	40°10'28.080°N	104°53'08.390°W	1.14	
13420.00	88.620	358.800	7333.01	5853.06	5852.37	-320.13	1672353.52	14590375.32	40°10'28.969°N	104°53'08.407°W	2.36	
13509.00	89.660	359.410	7334.34	5942.04	5941.35	-321.52	1672352.02	14590464.26	40°10'29.849°N	104°53'08.425°W	1.35	
13599.00	90.220	359.300	7334.44	6032.04	6031.35	-322.53	1672350.89	14590554.21	40°10'30.738°N	104°53'08.438°W	0.63	
13688.00	89.970	358.800	7334.29	6121.03	6120.33	-324.01	1672349.30	14590643.16	40°10'31.617°N	104°53'08.457°W	0.63	
13778.00	90.710	359.220	7333.76	6211.01	6210.32	-325.57	1672347.63	14590733.11	40°10'32.507°N	104°53'08.477°W	0.95	
13867.00	91.450	358.860	7332.08	6299.99	6299.29	-327.06	1672346.02	14590822.04	40°10'33.386°N	104°53'08.496°W	0.92	
13957.00	90.030	0.150	7330.92	6389.97	6389.27	-327.83	1672345.13	14590911.99	40°10'34.275°N	104°53'08.506°W	2.13	
14047.00	90.990	0.460	7330.11	6479.97	6479.27	-327.35	1672345.49	14591001.95	40°10'35.164°N	104°53'08.500°W	1.12	
14136.00	91.910	0.430	7327.86	6568.93	6568.24	-326.66	1672346.07	14591090.88	40°10'36.044°N	104°53'08.491°W	1.03	
14226.00	89.290	0.060	7326.92	6658.92	6658.22	-326.28	1672346.33	14591180.83	40°10'36.933°N	104°53'08.486°W	2.94	
14315.00	90.680	0.020	7326.94	6747.91	6747.22	-326.22	1672346.28	14591269.79	40°10'37.812°N	104°53'08.486°W	1.56	
14405.00	91.660	359.850	7325.11	6837.89	6837.20	-326.32	1672346.06	14591359.74	40°10'38.701°N	104°53'08.487°W	1.11	
14495.00	88.980	358.270	7324.60	6927.87	6927.17	-327.80	1672344.47	14591449.67	40°10'39.591°N	104°53'08.506°W	3.46	
14584.00	89.910	358.350	7325.47	7016.83	7016.13	-330.42	1672341.73	14591538.59	40°10'40.470°N	104°53'08.540°W	1.05	
14674.00	90.060	358.220	7325.49	7106.80	7106.09	-333.11	1672338.92	14591628.51	40°10'41.359°N	104°53'08.575°W	0.22	
14763.00	91.320	358.620	7324.42	7195.76	7195.05	-335.57	1672336.35	14591717.43	40°10'42.238°N	104°53'08.606°W	1.49	
14853.00	90.250	358.820	7323.18	7285.73	7285.02	-337.58	1672334.22	14591807.36	40°10'43.127°N	104°53'08.632°W	1.21	
14943.00	88.800	0.810	7323.93	7375.72	7375.01	-337.87	1672333.82	14591897.31	40°10'44.016°N	104°53'08.636°W	2.74	
15032.00	89.510	0.890	7325.24	7464.70	7463.99	-336.55	1672335.02	14591986.26	40°10'44.895°N	104°53'08.619°W	0.80	
15121.00	90.250	0.900	7325.43	7553.69	7552.97	-335.16	1672336.30	14592075.21	40°10'45.775°N	104°53'08.601°W	0.83	
15211.00	88.710	0.770	7326.25	7643.67	7642.96	-333.85	1672337.49	14592165.16	40°10'46.664°N	104°53'08.584°W	1.72	
15300.00	89.010	0.550	7328.02	7732.64	7731.93	-332.82	1672338.40	14592254.10	40°10'47.543°N	104°53'08.571°W	0.42	
15390.00	89.850	359.770	7328.91	7822.63	7821.93	-332.57	1672338.53	14592344.06	40°10'48.433°N	104°53'08.568°W	1.27	
15479.00	90.150	358.860	7328.91	7911.63	7910.92	-333.63	1672337.35	14592433.02	40°10'49.312°N	104°53'08.581°W	1.08	
15569.00	90.620	358.170	7328.31	8001.60	8000.89	-335.97	1672334.91	14592522.94	40°10'50.201°N	104°53'08.611°W	0.93	
15658.00	89.480	0.040	7328.23	8090.59	8089.87	-337.36	1672333.40	14592611.89	40°10'51.080°N	104°53'08.629°W	2.46	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#49 BUTTERBALL 40N-33HZ (456'FNL & 378'FWL, SEC.10)
Area	COLORADO	Well	BUTTERBALL 40N-33HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	BUTTERBALL 40N-33HZ AWB
Facility	SEC.10-T2N-R67W		

WELLPATH DATA (186 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
15688.00†	89.737	359.973	7328.43	8120.59	8119.87	-337.35	1672333.36	14592641.88	40°10'51.377"N	104°53'08.629"W	0.88	ENTER RADIUS TOE (2218'FSL & 0'FWL, SEC.34) 40.1809380 -104.8857304
15748.00	90.250	359.840	7328.44	8180.59	8179.87	-337.45	1672333.19	14592701.85	40°10'51.970"N	104°53'08.631"W	0.88	
15837.00	91.320	0.250	7327.22	8269.58	8268.86	-337.38	1672333.14	14592790.81	40°10'52.849"N	104°53'08.630"W	1.29	
15927.00	92.190	359.750	7324.47	8359.53	8358.82	-337.38	1672333.03	14592880.73	40°10'53.738"N	104°53'08.630"W	1.11	
15997.00	92.460	359.360	7321.63	8429.47	8428.76	-337.92	1672332.39	14592950.64	40°10'54.429"N	104°53'08.637"W	0.68	LAST BHI MWD+IFR1+MSA SURVEY
16045.00	92.460	359.360	7319.57	8477.43	8476.71	-338.46	1672331.79	14592998.57	40°10'54.903"N	104°53'08.644"W	0.00	PTB (2575'FSL & 1'FWL, SEC.34) 40.1819175 -104.8857343

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	0.00	0.00	1672681.13	14584525.71	40°09'31.136"N	104°53'04.283"W	polygon
SEC.04-T2N-R67W	0.00	0.00	0.00	1672681.13	14584525.71	40°09'31.136"N	104°53'04.283"W	polygon
SEC.10-T2N-R67W	0.00	0.00	0.00	1672681.13	14584525.71	40°09'31.136"N	104°53'04.283"W	polygon
SEC.33-T3N-R67W	0.00	0.00	0.00	1672681.13	14584525.71	40°09'31.136"N	104°53'04.283"W	polygon
SEC.34-T3N-R67W	0.00	0.00	0.00	1672681.13	14584525.71	40°09'31.136"N	104°53'04.283"W	polygon
BUTTERBALL 40N-33HZ BHL REV-1(2579'FSL & 26'FEL, SEC.33)	7319.00	8481.26	-365.19	1672305.07	14593003.08	40°10'54.948"N	104°53'08.988"W	point
BUTTERBALL 40N-33HZ BHL REV-2(2579'FSL & 14'FWL, SEC.34)	7319.00	8481.26	-325.19	1672345.06	14593003.13	40°10'54.948"N	104°53'08.473"W	point
BUTTERBALL 40N-33HZ HARDLINE SEC.04-T2N-R67W	7387.00	0.00	0.00	1672681.13	14584525.71	40°09'31.136"N	104°53'04.283"W	polygon
BUTTERBALL 40N-33HZ HARDLINE SEC.33-T3N-R67W	7387.00	0.00	0.00	1672681.13	14584525.71	40°09'31.136"N	104°53'04.283"W	polygon
BUTTERBALL 40N-33HZ HEEL REV-1(207'FNL & 70'FWL, SEC.10)	7387.00	249.59	-307.17	1672373.76	14584774.79	40°09'33.602"N	104°53'08.239"W	point
BUTTERBALL 40N-33HZ LANDBOX	7387.00	0.00	0.00	1672681.13	14584525.71	40°09'31.136"N	104°53'04.283"W	polygon
BUTTERBALL 40N-33HZ RADIUS 1	7387.00	454.16	-373.39	1672307.30	14584979.20	40°09'35.624"N	104°53'09.092"W	polygon
BUTTERBALL 40N-33HZ RADIUS 2	7387.00	8580.28	-337.12	1672333.00	14593102.10	40°10'55.927"N	104°53'08.626"W	polygon

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#49 BUTTERBALL 40N-33HZ (456'FNL & 378'FWL, SEC.10)
Area	COLORADO	Well	BUTTERBALL 40N-33HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	BUTTERBALL 40N-33HZ AWB
Facility	SEC.10-T2N-R67W		

WELLPATH COMPOSITION - Ref Wellbore: BUTTERBALL 40N-33HZ AWB				Ref Wellpath: BUTTERBALL 40N-33HZ AWP	
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment		Wellbore
26.00	1794.00	Custom APC ISCWSA REV 2 MWD+IFR1 (approximation)	SDI Custom APC ISCWSA Rev-2 MWD+IFR1 <157 - 1794>		BUTTERBALL 40N-33HZ AWB
1794.00	15997.00	Custom APC ISCWSA REV 2 MWD+IFR1+MSA (approximation)	BHI Custom APC ISCWSA Rev-2 MWD+IFR1+MSA <1932 - 15997>		BUTTERBALL 40N-33HZ AWB
15997.00	16045.00	Blind Drilling (std)	Projection to bit		BUTTERBALL 40N-33HZ AWB

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#49 BUTTERBALL 40N-33HZ (456'FNL & 378'FWL, SEC.10)
Area	COLORADO	Well	BUTTERBALL 40N-33HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	BUTTERBALL 40N-33HZ AWP
Facility	SEC.10-T2N-R67W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
157.00	0.780	317.440	157.00	FIRST SDI MWD+IFR1 SURVEY
1794.00	8.980	212.210	1778.90	LAST SDI MWD+IFR1 SURVEY
1932.00	7.440	206.410	1915.49	FIRST BHI MWD+IFR1+MSA SURVEY
6662.00	2.162	36.541	6618.66	KOP
6978.00	28.900	5.325	6920.03	ENTER LANDBOX (854'FNL & 88'FWL, SEC.10) 40.1575562 -104.8855497
7824.00	84.894	357.204	7383.03	LANDING (197'FNL & 78'FWL, SEC.10) 40.1593597 -104.8855958
8474.00	90.122	1.833	7387.91	EXIT RADIUS HEEL (453'FSL & 75'FWL, SEC.03) 40.1611428 -104.8856041
15688.00	89.737	359.973	7328.43	ENTER RADIUS TOE (2218'FSL & 0'FWL, SEC.34) 40.1809380 -104.8857304
15997.00	92.460	359.360	7321.63	LAST BHI MWD+IFR1+MSA SURVEY
16045.00	92.460	359.360	7319.57	PTB (2575'FSL & 1'FWL, SEC.34) 40.1819175 -104.8857343