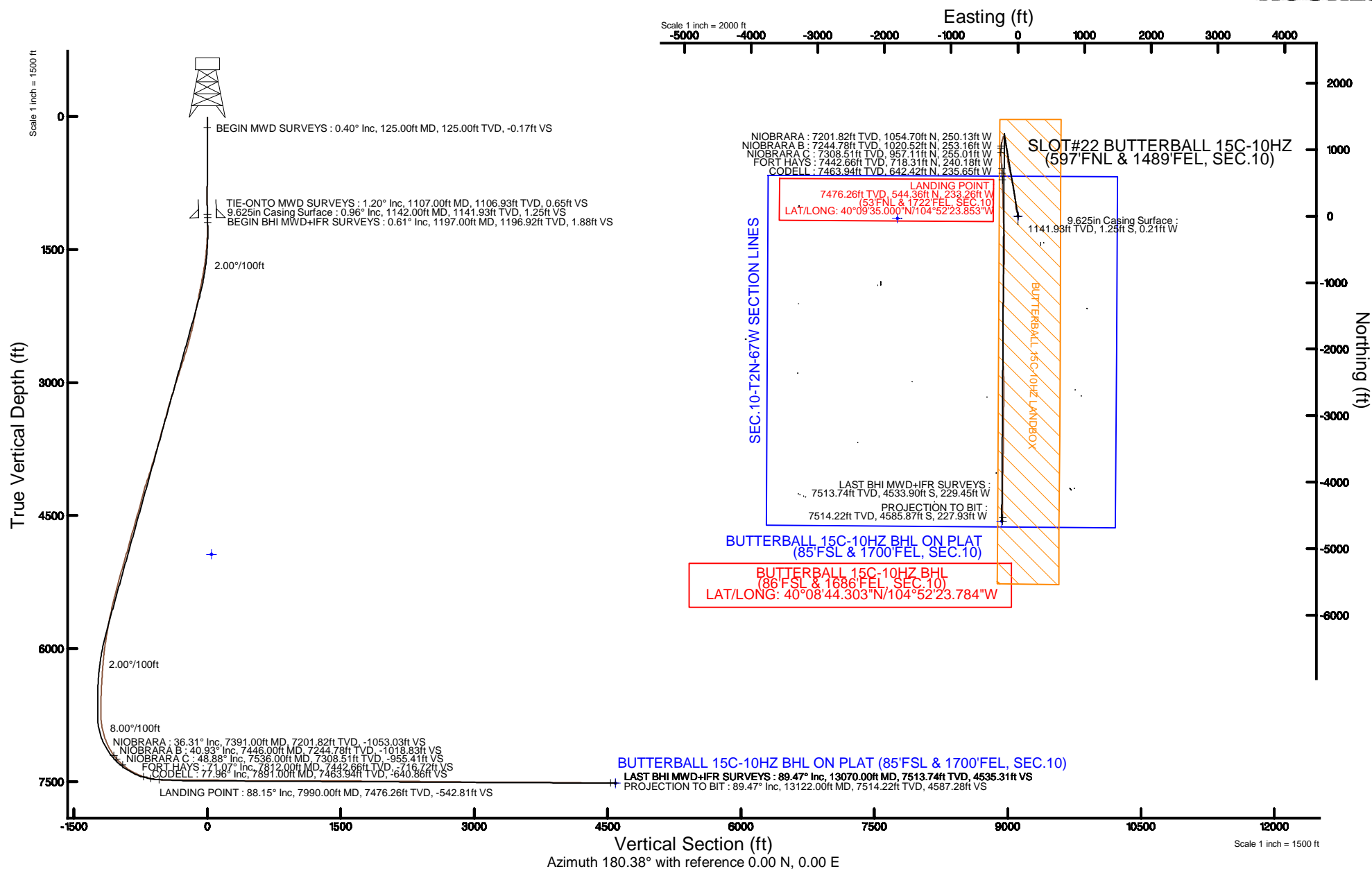


Location:	COLORADO	Slot:	SLOT#22 BUTTERBALL 15C-10HZ (597'FNL & 1489'FEL, SEC.10)
Field:	WELD COUNTY (UTM/TRUE NORTH)	Well:	BUTTERBALL 15C-10HZ
Facility:	SEC.10-T2N-R67W	Wellbore:	BUTTERBALL 15C-10HZ PWB

Plot reference wellpath is BUTTERBALL 15C-10HZ (REV-A.0) PWP	
True vertical depths are referenced to XTREME 24 (16'KB) (RKB)	Grid System: NAD83 / UTM Zone 13 North, US feet
Measured depths are referenced to XTREME 24 (16'KB) (RKB)	North Reference: True north
XTREME 24 (16'KB) (RKB) to Mean Sea Level: 4936 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#22 BUTTERBALL 15C-10HZ (597FNL & 1489FEL, SEC.10): 0 feet	Depths are in feet
Coordinates are in level referenced to Slot	Created by: amarcar on 15/May/2015



REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#22 BUTTERBALL 15C-10HZ (597'FNL & 1489'FEL, SEC.10)
Area	COLORADO	Well	BUTTERBALL 15C-10HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	BUTTERBALL 15C-10HZ AWB <13122>
Facility	SEC.10-T2N-R67W		

REPORT SETUP INFORMATION			
Projection System	NAD83 / UTM Zone 13 North, US feet	Software System	WellArchitect® 4.1.1
North Reference	True	User	Amarcar
Scale	0.999601	Report Generated	15/May/2015 at 15:28
Convergence at slot	0.08° East	Database/Source file	KERR MCGEE UTM/BUTTERBALL_15C-10HZ_AWB_13122_.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	33.36	1806.91	1676052.34	14584377.07	40°09'29.621"N	104°52'20.849"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	XTREME 24 (16'KB) (RKB) to Facility Vertical Datum	4936.00ft
Horizontal Reference Pt	Slot	XTREME 24 (16'KB) (RKB) to Mean Sea Level	4936.00ft
Vertical Reference Pt	XTREME 24 (16'KB) (RKB)	XTREME 24 (16'KB) (RKB) to Mud Line at Slot (SLOT#22 BUTTERBALL 15C-10HZ (597'FNL & 1489'FEL, SEC.10))	4936.00ft
MD Reference Pt	XTREME 24 (16'KB) (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	180.38°

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#22 BUTTERBALL 15C-10HZ (597°FNL & 1489°FEL, SEC.10)
Area	COLORADO	Well	BUTTERBALL 15C-10HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	BUTTERBALL 15C-10HZ AWB <13122>
Facility	SEC.10-T2N-R67W		

WELLPATH DATA (147 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00†	0.000	296.100	0.00	0.00	0.00	0.00	40°09'29.621"N	104°52'20.849"W	0.00	
16.00	0.000	296.100	16.00	0.00	0.00	0.00	40°09'29.621"N	104°52'20.849"W	0.00	
125.00	0.400	296.100	125.00	-0.17	0.17	-0.34	40°09'29.623"N	104°52'20.853"W	0.37	BEGIN MWD SURVEYS
215.00	1.000	308.700	214.99	-0.79	0.80	-1.24	40°09'29.629"N	104°52'20.865"W	0.68	
301.00	0.500	121.500	300.99	-1.06	1.07	-1.50	40°09'29.632"N	104°52'20.868"W	1.74	
388.00	0.400	74.900	387.99	-0.94	0.95	-0.89	40°09'29.630"N	104°52'20.860"W	0.42	
478.00	0.100	153.000	477.99	-0.96	0.96	-0.55	40°09'29.631"N	104°52'20.856"W	0.44	
572.00	0.200	354.300	571.99	-1.05	1.05	-0.53	40°09'29.631"N	104°52'20.856"W	0.31	
668.00	0.300	98.400	667.98	-1.18	1.18	-0.29	40°09'29.633"N	104°52'20.853"W	0.42	
763.00	0.700	24.800	762.98	-1.67	1.67	0.20	40°09'29.638"N	104°52'20.846"W	0.72	
859.00	0.200	346.100	858.98	-2.37	2.37	0.40	40°09'29.644"N	104°52'20.844"W	0.58	
952.00	1.100	261.400	951.97	-2.39	2.39	-0.52	40°09'29.645"N	104°52'20.856"W	1.18	
1048.00	1.800	162.500	1047.95	-0.81	0.82	-0.98	40°09'29.629"N	104°52'20.862"W	2.34	
1107.00	1.200	158.400	1106.93	0.65	-0.64	-0.47	40°09'29.615"N	104°52'20.855"W	1.03	TIE-ONTO MWD SURVEYS
1197.00	0.610	139.090	1196.92	1.88	-1.88	0.19	40°09'29.602"N	104°52'20.847"W	0.73	BEGIN BHI MWD+IFR SURVEYS
1292.00	1.430	3.210	1291.91	1.07	-1.08	0.59	40°09'29.610"N	104°52'20.841"W	2.02	
1387.00	3.180	6.570	1386.83	-2.73	2.72	0.95	40°09'29.648"N	104°52'20.837"W	1.85	
1482.00	4.520	4.070	1481.61	-9.08	9.07	1.52	40°09'29.711"N	104°52'20.829"W	1.42	
1577.00	7.020	356.090	1576.13	-18.61	18.60	1.39	40°09'29.805"N	104°52'20.831"W	2.76	
1672.00	8.600	340.930	1670.25	-31.10	31.11	-1.33	40°09'29.928"N	104°52'20.866"W	2.72	
1767.00	10.780	340.830	1763.89	-46.17	46.22	-6.56	40°09'30.078"N	104°52'20.934"W	2.29	
1862.00	11.830	341.930	1857.05	-63.78	63.87	-12.50	40°09'30.252"N	104°52'21.010"W	1.13	
1957.00	11.600	341.130	1950.07	-82.04	82.16	-18.61	40°09'30.433"N	104°52'21.089"W	0.30	
2052.00	12.330	344.820	2043.01	-100.83	100.99	-24.36	40°09'30.619"N	104°52'21.163"W	1.11	
2147.00	11.390	348.720	2135.98	-119.79	119.98	-28.85	40°09'30.807"N	104°52'21.221"W	1.30	
2242.00	10.660	355.930	2229.23	-137.73	137.94	-31.31	40°09'30.984"N	104°52'21.252"W	1.64	
2337.00	12.010	356.000	2322.37	-156.35	156.57	-32.62	40°09'31.168"N	104°52'21.269"W	1.42	
2431.00	13.030	358.830	2414.14	-176.69	176.92	-33.52	40°09'31.369"N	104°52'21.281"W	1.27	
2526.00	15.460	357.230	2506.21	-200.05	200.28	-34.35	40°09'31.600"N	104°52'21.291"W	2.59	
2621.00	16.220	353.920	2597.60	-225.87	226.12	-36.37	40°09'31.856"N	104°52'21.317"W	1.24	
2716.00	17.510	352.410	2688.52	-253.21	253.48	-39.66	40°09'32.126"N	104°52'21.360"W	1.43	
2812.00	18.650	352.180	2779.78	-282.71	283.00	-43.66	40°09'32.418"N	104°52'21.411"W	1.19	
2907.00	17.280	351.430	2870.14	-311.68	312.00	-47.83	40°09'32.704"N	104°52'21.465"W	1.46	
3001.00	18.720	349.380	2959.54	-340.28	340.64	-52.69	40°09'32.987"N	104°52'21.528"W	1.67	
3097.00	16.790	351.150	3050.96	-369.09	369.48	-57.66	40°09'33.272"N	104°52'21.592"W	2.09	
3192.00	17.420	351.940	3141.76	-396.70	397.12	-61.76	40°09'33.545"N	104°52'21.644"W	0.71	
3287.00	16.820	351.270	3232.55	-424.34	424.79	-65.84	40°09'33.819"N	104°52'21.697"W	0.66	
3382.00	15.840	350.370	3323.72	-450.68	451.15	-70.10	40°09'34.079"N	104°52'21.752"W	1.07	
3477.00	15.480	346.450	3415.19	-475.76	476.26	-75.24	40°09'34.327"N	104°52'21.818"W	1.18	
3572.00	15.330	345.310	3506.78	-500.19	500.74	-81.39	40°09'34.569"N	104°52'21.897"W	0.36	
3667.00	15.830	348.810	3598.29	-525.01	525.59	-87.09	40°09'34.815"N	104°52'21.971"W	1.12	
3762.00	16.110	348.380	3689.63	-550.60	551.22	-92.26	40°09'35.068"N	104°52'22.037"W	0.32	
3856.00	16.480	346.350	3779.85	-576.29	576.95	-98.04	40°09'35.322"N	104°52'22.112"W	0.72	
3951.00	17.250	350.160	3870.77	-603.22	603.92	-103.62	40°09'35.589"N	104°52'22.184"W	1.42	
4046.00	16.850	347.760	3961.59	-630.52	631.26	-108.95	40°09'35.859"N	104°52'22.252"W	0.85	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#22 BUTTERBALL 15C-10HZ (597°FNL & 1489°FEL, SEC.10)
Area	COLORADO	Well	BUTTERBALL 15C-10HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	BUTTERBALL 15C-10HZ AWP <13122>
Facility	SEC.10-T2N-R67W		

WELLPATH DATA (147 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4141.00	19.420	346.830	4051.87	-659.32	660.09	-115.47	40°09'36.144"N	104°52'22.336"W	2.72	
4236.00	19.070	346.170	4141.56	-689.72	690.54	-122.78	40°09'36.445"N	104°52'22.430"W	0.43	
4331.00	16.790	345.510	4231.94	-718.03	718.90	-129.92	40°09'36.725"N	104°52'22.522"W	2.41	
4426.00	13.560	350.520	4323.62	-742.27	743.18	-135.19	40°09'36.965"N	104°52'22.590"W	3.67	
4520.00	16.010	348.230	4414.50	-765.80	766.74	-139.65	40°09'37.198"N	104°52'22.648"W	2.68	
4615.00	15.320	350.230	4505.97	-790.96	791.93	-144.45	40°09'37.447"N	104°52'22.710"W	0.92	
4710.00	16.250	353.390	4597.39	-816.51	817.51	-148.11	40°09'37.700"N	104°52'22.757"W	1.33	
4805.00	17.230	355.380	4688.36	-843.72	844.73	-150.77	40°09'37.969"N	104°52'22.791"W	1.19	
4900.00	14.310	354.050	4779.78	-869.41	870.44	-153.12	40°09'38.223"N	104°52'22.821"W	3.10	
4994.00	15.670	356.180	4870.58	-893.62	894.66	-155.18	40°09'38.462"N	104°52'22.848"W	1.56	
5088.00	16.650	354.830	4960.86	-919.69	920.74	-157.23	40°09'38.720"N	104°52'22.874"W	1.12	
5183.00	16.010	347.940	5052.04	-946.03	947.11	-161.20	40°09'38.980"N	104°52'22.925"W	2.15	
5278.00	15.790	352.810	5143.41	-971.63	972.75	-165.55	40°09'39.234"N	104°52'22.981"W	1.42	
5373.00	15.180	350.110	5234.96	-996.69	997.83	-169.31	40°09'39.482"N	104°52'23.030"W	0.99	
5468.00	14.890	353.140	5326.71	-1021.03	1022.20	-172.90	40°09'39.722"N	104°52'23.076"W	0.88	
5563.00	15.570	349.750	5418.37	-1045.67	1046.86	-176.63	40°09'39.966"N	104°52'23.124"W	1.18	
5658.00	12.130	347.450	5510.60	-1067.94	1069.16	-181.07	40°09'40.186"N	104°52'23.181"W	3.67	
5753.00	12.700	351.690	5603.38	-1087.99	1089.23	-184.75	40°09'40.385"N	104°52'23.229"W	1.13	
5848.00	11.250	346.560	5696.31	-1107.32	1108.58	-188.41	40°09'40.576"N	104°52'23.276"W	1.89	
5942.00	9.970	344.780	5788.70	-1124.06	1125.35	-192.68	40°09'40.742"N	104°52'23.331"W	1.41	
6037.00	9.100	350.370	5882.39	-1139.38	1140.70	-196.09	40°09'40.893"N	104°52'23.375"W	1.34	
6132.00	7.820	350.380	5976.35	-1153.14	1154.48	-198.43	40°09'41.030"N	104°52'23.405"W	1.35	
6227.00	6.460	343.980	6070.62	-1164.63	1165.98	-200.98	40°09'41.143"N	104°52'23.438"W	1.66	
6322.00	5.150	339.690	6165.13	-1173.75	1175.12	-203.94	40°09'41.234"N	104°52'23.476"W	1.45	
6417.00	4.790	329.450	6259.77	-1181.14	1182.53	-207.44	40°09'41.307"N	104°52'23.521"W	1.01	
6512.00	4.010	332.740	6354.49	-1187.49	1188.90	-210.97	40°09'41.370"N	104°52'23.566"W	0.86	
6606.00	2.630	327.570	6448.33	-1192.21	1193.65	-213.64	40°09'41.417"N	104°52'23.601"W	1.50	
6701.00	2.210	332.210	6543.25	-1195.66	1197.11	-215.66	40°09'41.451"N	104°52'23.627"W	0.49	
6796.00	0.680	325.940	6638.21	-1197.74	1199.19	-216.83	40°09'41.471"N	104°52'23.642"W	1.62	
6891.00	0.740	351.010	6733.21	-1198.81	1200.27	-217.24	40°09'41.482"N	104°52'23.647"W	0.33	
6986.00	7.000	186.520	6827.99	-1193.65	1195.11	-217.99	40°09'41.431"N	104°52'23.657"W	8.12	
7081.00	13.710	196.970	6921.40	-1177.08	1178.57	-221.94	40°09'41.268"N	104°52'23.708"W	7.31	
7176.00	19.670	197.960	7012.36	-1151.03	1152.57	-230.17	40°09'41.011"N	104°52'23.814"W	6.28	
7271.00	26.780	192.670	7099.61	-1114.83	1116.43	-239.80	40°09'40.654"N	104°52'23.938"W	7.79	
7366.00	34.240	188.130	7181.41	-1067.36	1069.02	-248.29	40°09'40.185"N	104°52'24.047"W	8.21	
7391.00†	36.313	186.590	7201.82	-1053.03	1054.70	-250.13	40°09'40.044"N	104°52'24.071"W	9.02	NIOBRARA
7446.00†	40.933	183.684	7244.78	-1018.83	1020.52	-253.16	40°09'39.706"N	104°52'24.110"W	9.02	NIOBRARA B
7460.00	42.120	183.030	7255.26	-1009.56	1011.26	-253.71	40°09'39.614"N	104°52'24.117"W	9.02	
7536.00†	48.878	179.901	7308.51	-955.41	957.11	-255.01	40°09'39.079"N	104°52'24.133"W	9.36	NIOBRARA C
7555.00	50.580	179.220	7320.79	-940.91	942.62	-254.89	40°09'38.936"N	104°52'24.132"W	9.36	
7650.00	59.890	175.960	7374.91	-863.07	864.75	-251.49	40°09'38.167"N	104°52'24.088"W	10.20	
7745.00	65.960	175.240	7418.13	-778.82	780.45	-244.99	40°09'37.333"N	104°52'24.004"W	6.42	
7812.00†	71.073	175.898	7442.66	-716.72	718.31	-240.18	40°09'36.719"N	104°52'23.942"W	7.69	FORT HAYS
7840.00	73.210	176.160	7451.25	-690.14	691.73	-238.34	40°09'36.457"N	104°52'23.919"W	7.69	
7891.00†	77.958	177.583	7463.94	-640.86	642.42	-235.65	40°09'35.969"N	104°52'23.884"W	9.69	CODELL

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#22 BUTTERBALL 15C-10HZ (597°FNL & 1489°FEL, SEC.10)
Area	COLORADO	Well	BUTTERBALL 15C-10HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	BUTTERBALL 15C-10HZ AWB <13122>
Facility	SEC.10-T2N-R67W		

## WELLPATH DATA (147 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
7935.00	82.060	178.770	7471.57	-597.57	599.12	-234.27	40°09'35.542"N	104°52'23.866"W	9.69	
7990.00	88.150	179.120	7476.26	-542.81	544.36	-233.26	40°09'35.000"N	104°52'23.853"W	11.09	LANDING POINT
8030.00	88.740	178.580	7477.35	-502.84	504.38	-232.46	40°09'34.605"N	104°52'23.843"W	2.00	
8125.00	88.770	177.610	7479.41	-407.94	409.46	-229.30	40°09'33.667"N	104°52'23.802"W	1.02	
8220.00	89.840	178.340	7480.56	-313.03	314.53	-225.95	40°09'32.729"N	104°52'23.759"W	1.36	
8315.00	90.030	178.490	7480.67	-218.09	219.56	-223.32	40°09'31.791"N	104°52'23.725"W	0.25	
8410.00	90.340	178.230	7480.37	-123.15	124.60	-220.60	40°09'30.852"N	104°52'23.690"W	0.43	
8504.00	90.490	178.400	7479.69	-29.21	30.65	-217.84	40°09'29.924"N	104°52'23.655"W	0.24	
8599.00	88.790	178.450	7480.28	65.73	-64.31	-215.23	40°09'28.985"N	104°52'23.621"W	1.79	
8694.00	88.610	177.780	7482.44	160.63	-159.24	-212.10	40°09'28.047"N	104°52'23.581"W	0.73	
8789.00	88.520	177.090	7484.82	255.48	-254.11	-207.85	40°09'27.110"N	104°52'23.526"W	0.73	
8884.00	88.580	178.400	7487.22	350.34	-349.00	-204.11	40°09'26.172"N	104°52'23.478"W	1.38	
8979.00	89.930	179.150	7488.46	445.30	-443.97	-202.08	40°09'25.234"N	104°52'23.452"W	1.63	
9073.00	90.090	181.420	7488.44	539.29	-537.96	-202.55	40°09'24.305"N	104°52'23.458"W	2.42	
9168.00	90.090	180.960	7488.29	634.28	-632.94	-204.52	40°09'23.366"N	104°52'23.483"W	0.48	
9263.00	89.840	182.410	7488.35	729.25	-727.90	-207.32	40°09'22.428"N	104°52'23.519"W	1.55	
9357.00	90.240	182.640	7488.28	823.19	-821.81	-211.46	40°09'21.500"N	104°52'23.572"W	0.49	
9452.00	90.090	181.920	7488.01	918.13	-916.73	-215.24	40°09'20.562"N	104°52'23.621"W	0.77	
9547.00	89.930	181.480	7487.99	1013.11	-1011.69	-218.06	40°09'19.623"N	104°52'23.657"W	0.49	
9642.00	89.500	180.080	7488.46	1108.10	-1106.68	-219.35	40°09'18.685"N	104°52'23.674"W	1.54	
9737.00	89.630	179.250	7489.19	1203.09	-1201.67	-218.79	40°09'17.746"N	104°52'23.667"W	0.88	
9832.00	89.410	180.910	7489.98	1298.08	-1296.67	-218.93	40°09'16.807"N	104°52'23.669"W	1.76	
9926.00	90.030	181.520	7490.44	1392.07	-1390.64	-220.92	40°09'15.879"N	104°52'23.694"W	0.93	
10021.00	90.430	181.900	7490.06	1487.04	-1485.60	-223.76	40°09'14.940"N	104°52'23.731"W	0.58	
10115.00	89.290	180.350	7490.29	1581.03	-1579.58	-225.60	40°09'14.012"N	104°52'23.754"W	2.05	
10210.00	89.380	179.620	7491.39	1676.02	-1674.57	-225.58	40°09'13.073"N	104°52'23.754"W	0.77	
10305.00	89.810	179.570	7492.06	1771.01	-1769.56	-224.90	40°09'12.134"N	104°52'23.745"W	0.46	
10400.00	90.240	180.230	7492.02	1866.01	-1864.56	-224.74	40°09'11.195"N	104°52'23.743"W	0.83	
10495.00	89.230	180.220	7492.46	1961.00	-1959.56	-225.11	40°09'10.257"N	104°52'23.748"W	1.06	
10589.00	89.350	179.410	7493.63	2054.99	-2053.55	-224.81	40°09'09.328"N	104°52'23.744"W	0.87	
10684.00	89.750	179.220	7494.37	2149.97	-2148.54	-223.67	40°09'08.389"N	104°52'23.730"W	0.47	
10779.00	89.530	177.460	7494.97	2244.90	-2243.50	-220.92	40°09'07.451"N	104°52'23.694"W	1.87	
10874.00	89.260	177.460	7495.97	2339.78	-2338.40	-216.71	40°09'06.513"N	104°52'23.640"W	0.28	
10968.00	88.830	178.530	7497.54	2433.68	-2432.33	-213.42	40°09'05.585"N	104°52'23.597"W	1.23	
11063.00	89.880	179.860	7498.61	2528.65	-2527.31	-212.09	40°09'04.646"N	104°52'23.580"W	1.78	
11158.00	89.870	179.640	7498.82	2623.64	-2622.31	-211.67	40°09'03.707"N	104°52'23.575"W	0.23	
11253.00	89.630	179.730	7499.23	2718.64	-2717.30	-211.15	40°09'02.768"N	104°52'23.568"W	0.27	
11348.00	88.640	181.710	7500.66	2813.62	-2812.28	-212.34	40°09'01.830"N	104°52'23.584"W	2.33	
11443.00	87.970	180.750	7503.48	2908.56	-2907.21	-214.38	40°09'00.892"N	104°52'23.610"W	1.23	
11538.00	89.380	181.380	7505.67	3003.53	-3002.17	-216.15	40°08'59.953"N	104°52'23.633"W	1.63	
11633.00	90.520	179.970	7505.75	3098.52	-3097.16	-217.27	40°08'59.015"N	104°52'23.647"W	1.91	
11728.00	90.740	180.240	7504.71	3193.52	-3192.15	-217.44	40°08'58.076"N	104°52'23.649"W	0.37	
11822.00	90.990	179.910	7503.29	3287.50	-3286.14	-217.56	40°08'57.147"N	104°52'23.651"W	0.44	
11917.00	90.310	180.250	7502.21	3382.50	-3381.13	-217.70	40°08'56.208"N	104°52'23.652"W	0.80	
12012.00	89.720	181.260	7502.19	3477.49	-3476.12	-218.95	40°08'55.270"N	104°52'23.669"W	1.23	

REFERENCE WELLPATH IDENTIFICATION				
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)		Slot	SLOT#22 BUTTERBALL 15C-10HZ (597'FNL & 1489'FEL, SEC.10)
Area	COLORADO		Well	BUTTERBALL 15C-10HZ
Field	WELD COUNTY (UTM/TRUE NORTH)		Wellbore	BUTTERBALL 15C-10HZ AWB <13122>
Facility	SEC.10-T2N-R67W			

WELLPATH DATA (147 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
12106.00	89.600	180.500	7502.75	3571.49	-3570.11	-220.39	40°08'54.341"N	104°52'23.687"W	0.82	
12201.00	88.860	181.140	7504.02	3666.47	-3665.09	-221.75	40°08'53.402"N	104°52'23.705"W	1.03	
12296.00	89.260	181.900	7505.58	3761.44	-3760.04	-224.27	40°08'52.464"N	104°52'23.737"W	0.90	
12391.00	89.170	181.010	7506.88	3856.42	-3855.00	-226.68	40°08'51.526"N	104°52'23.768"W	0.94	
12486.00	89.010	181.050	7508.39	3951.40	-3949.98	-228.39	40°08'50.587"N	104°52'23.790"W	0.17	
12581.00	89.230	181.020	7509.85	4046.38	-4044.95	-230.11	40°08'49.649"N	104°52'23.812"W	0.23	
12676.00	89.290	180.500	7511.08	4141.37	-4139.93	-231.37	40°08'48.710"N	104°52'23.828"W	0.55	
12771.00	89.260	179.890	7512.28	4236.36	-4234.92	-231.69	40°08'47.771"N	104°52'23.833"W	0.64	
12866.00	90.000	180.120	7512.89	4331.36	-4329.92	-231.70	40°08'46.832"N	104°52'23.833"W	0.82	
12960.00	89.810	179.580	7513.05	4425.35	-4423.92	-231.45	40°08'45.904"N	104°52'23.829"W	0.61	
13070.00	89.470	178.330	7513.74	4535.31	-4533.90	-229.45	40°08'44.817"N	104°52'23.804"W	1.18	LAST BHI MWD+IFR SURVEYS
13122.00	89.470	178.330	7514.22	4587.28	-4585.87	-227.93	40°08'44.303"N	104°52'23.784"W	0.00	PROJECTION TO BIT

HOLE & CASING SECTIONS - Ref Wellbore: BUTTERBALL 15C-10HZ AWB <13122> Ref Wellpath: BUTTERBALL 15C-10HZ AWP									
String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
13.5in Open Hole	16.00	1152.00	1136.00	16.00	1151.92	0.00	0.00	-1.39	-0.13
9.625in Casing Surface	16.00	1142.00	1126.00	16.00	1141.93	0.00	0.00	-1.25	-0.21
7.875in Open Hole	1152.00	13122.00	11970.00	1151.92	7514.22	-1.39	-0.13	-4585.87	-227.93

TARGETS									
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape	
SEC.10-T2N-67W SECTION LINES	4936.00	-33.13	-1807.07	1674246.04	14584341.37	40°09'29.293"N	104°52'44.123"W	polygon	
BUTTERBALL 15C-10HZ BHL ON PLAT REV-3 (85'FSL & 1700'FEL, SEC.10)	7516.00	-4586.88	-242.09	1675816.92	14579791.69	40°08'44.293"N	104°52'23.966"W	point	
BUTTERBALL 15C-10HZ LANDBOX	7516.00	0.00	0.00	1676052.34	14584377.07	40°09'29.621"N	104°52'20.849"W	polygon	

WELLPATH COMPOSITION - Ref Wellbore: BUTTERBALL 15C-10HZ AWB <13122> Ref Wellpath: BUTTERBALL 15C-10HZ AWP									
Start MD [ft]	End MD [ft]	Positional Uncertainty Model		Log Name/Comment			Wellbore		
16.00	1107.00	ISCWSA MWD, Rev. 2 (Standard)		CATHEDRAL MWD SURVEYS 13.5" <125-1107>			BUTTERBALL 15C-10HZ AWB <13122>		
1107.00	13070.00	Custom APC, ISCWSA REV 2 MWD+IFR1+SC (approximation)		BHI MWD+IFR SURVEYS 7 7/8" <1197-13070>			BUTTERBALL 15C-10HZ AWB <13122>		
13070.00	13122.00	Blind Drilling (std)		Projection to bit			BUTTERBALL 15C-10HZ AWB <13122>		



# Actual Wellpath Report

BUTTERBALL 15C-10HZ AWP  
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REFERENCE WELLPATH IDENTIFICATION				
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)		Slot	SLOT#22 BUTTERBALL 15C-10HZ (597'FNL & 1489'FEL, SEC.10)
Area	COLORADO		Well	BUTTERBALL 15C-10HZ
Field	WELD COUNTY (UTM/TRUE NORTH)		Wellbore	BUTTERBALL 15C-10HZ AWB <13122>
Facility	SEC.10-T2N-R67W			

WELLPATH COMMENTS					
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment	
125.00	0.400	296.100	125.00	BEGIN MWD SURVEYS	
1107.00	1.200	158.400	1106.93	TIE-ONTO MWD SURVEYS	
1197.00	0.610	139.090	1196.92	BEGIN BHI MWD+IFR SURVEYS	
7391.00	36.313	186.590	7201.82	NIOBRARA	
7446.00	40.933	183.684	7244.78	NIOBRARA B	
7536.00	48.878	179.901	7308.51	NIOBRARA C	
7812.00	71.073	175.898	7442.66	FORT HAYS	
7891.00	77.958	177.583	7463.94	CODELL	
7990.00	88.150	179.120	7476.26	LANDING POINT	
13070.00	89.470	178.330	7513.74	LAST BHI MWD+IFR SURVEYS	
13122.00	89.470	178.330	7514.22	PROJECTION TO BIT	