

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

Plot reference wellpath is BUTTERBALL 15C-10HZ (PERMIT REV-1) PWP

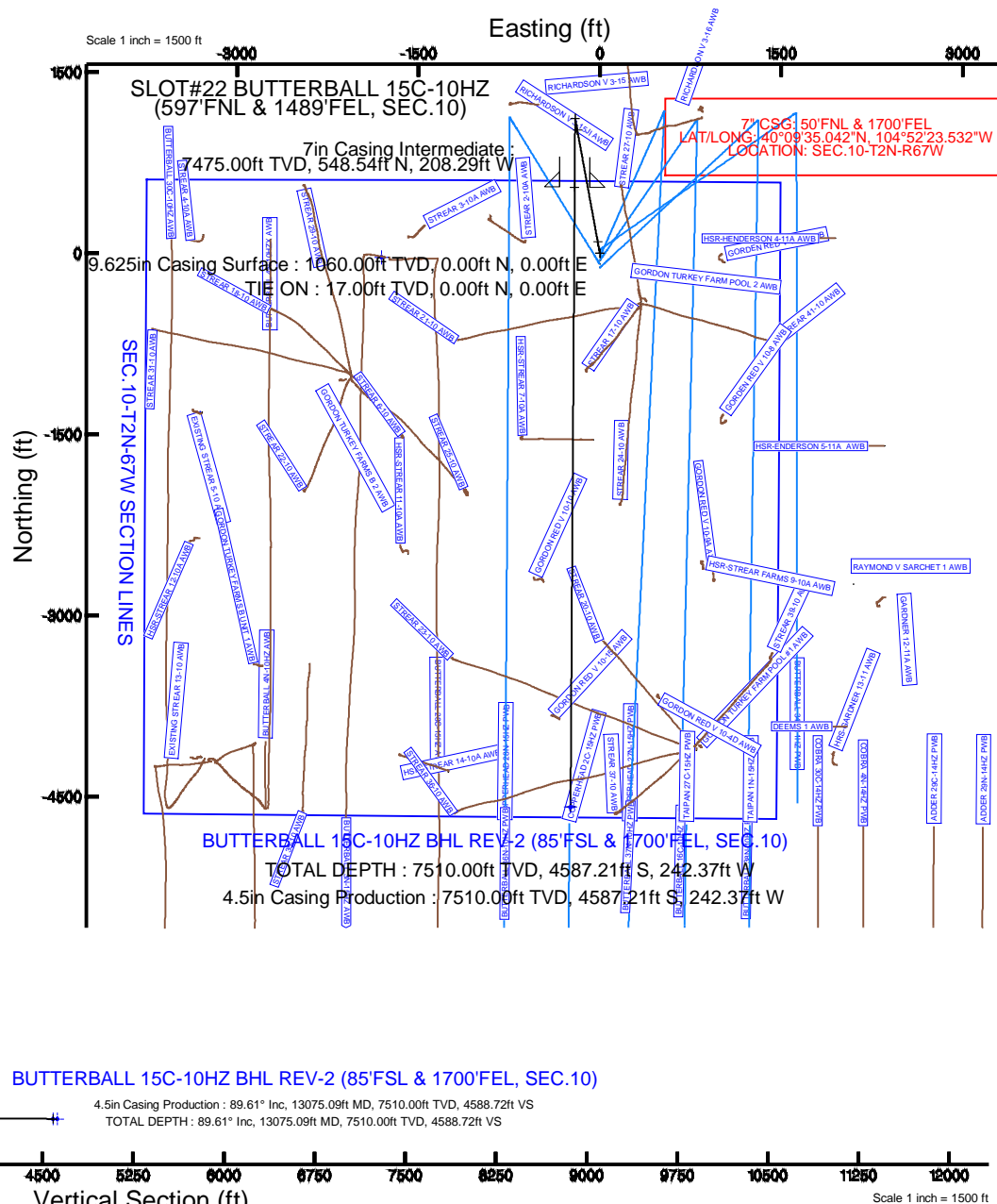
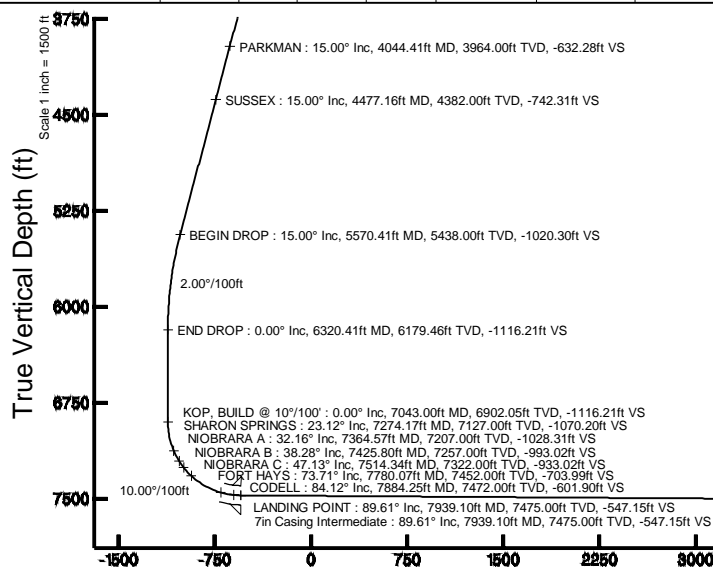
True vertical depths are referenced to PERMIT (17KB) (RKB)	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
Measured depths are referenced to PERMIT (17KB) (RKB)	North Reference: True north
PERMIT (17KB) (RKB) to Mean Sea Level: 4937 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#22 BUTTERBALL 15C-10#Z (597FNL & 1489FEL, SEC.10)): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: robale01 on 9/29/2014

Facility Name			Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SEC. 10-T2N-R67W			3173592.204	1301060.322	40°09'29.292"N	104°52'44.121"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SLOT#22 BUTTERBALL 15C-10HZ (597FNL & 1489FEL, SEC. 10)	33.36	1806.91	3173398.761	1301106.333	40°09'29.621"N	104°52'20.849"W
PERMIT (17KB) (RKB) to Mud line (A Slot: SLOT#22 BUTTERBALL 15C-10HZ (597FNL & 1489FEL, SEC. 10))					4937ft	
Mean Sea Level to Mud line (A Slot: SLOT#22 BUTTERBALL 15C-10HZ (597FNL & 1489FEL, SEC. 10))					0ft	
PERMIT (17KB) (RKB) to Mean Sea Level					4937ft	

Start MD (ft)	End MD (ft)	Tool	Model	Log Name/Comment	Wellbore
17.00	7939.10	NaviTrak	NaviTrak (MAGCORR,IFR)		BUTTERBALL 15C-10HZ PWB
7939.10	13075.09	NaviTrak	NaviTrak (MAGCORR,IFR)		BUTTERBALL 15C-10HZ PWB

Name	MD (R)	TVD (R)	Local N (R)	Local E (R)	Grid East (US F)	Grid North (US F)	Latitude	Longitude
SEC 10-T2N46W SECTION 10S		0.00	-33.13	-1807.07	3173692.05	1301060.42	40°09'29.293"N	104°52'44.123"W
BUTTERBALL 15C-104Z BHL ON PLAT REV-1 (50FSL & 1700FSL, SEC. 10)		7510.00	-4587.21	-242.37	3175189.18	1296482.72	40°08'43.944"N	104°52'23.970"W
BUTTERBALL 15C-104Z BHL REV-2 (85FSL & 1700FSL, SEC. 10)	13075.09	7510.00	-4587.21	-242.37	3175188.87	1296517.72	40°08'44.290"N	104°52'23.970"W

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
TIE ON	17.00	0.000	349.630	17.00	0.00	0.00	0.00	0.00
BEGIN NUDGE	1185.00	0.000	349.630	1185.00	0.00	0.00	0.00	0.00
END NUDGE	1935.00	15.000	349.630	1926.46	96.02	-17.57	2.00	-95.90
BEGIN DROP	5570.41	15.000	349.630	5438.00	1021.57	-186.94	0.00	-1020.30
END DROP	6320.41	0.000	180.380	6179.46	1117.59	-204.51	2.00	-1116.21
KOP, BUILD @ 10°/100'	7043.00	0.000	180.380	6902.05	1117.59	-204.51	0.00	-1116.21
LANDING POINT	7939.10	89.610	180.380	7475.00	548.55	-208.29	10.00	-547.15
TOTAL DEPTH	13075.09	89.610	180.380	7510.00	-4587.21	-242.37	0.00	4588.72



Azimuth 180.38° with reference 0.00 N, 0.00 E

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

REPORT SETUP INFORMATION			
Projection System	NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	Software System	WellArchitect® 4.0.0
North Reference	True	User	Robiale01
Scale	0.999958	Report Generated	9/29/2014 at 12:24:29 PM
Convergence at slot	n/a	Database/Source file	WellArchitectDB/BUTTERBALL_15C-10HZ_PWB.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	3175398.76	1301106.33	40°09'29.621"N	104°52'20.849"W
Facility Reference Pt			3173592.20	1301060.32	40°09'29.292"N	104°52'44.121"W
Field Reference Pt			3197771.84	1268891.29	40°04'09.600"N	104°47'36.000"W

WELLPATH DATUM			
Calculation method	Minimum curvature	PERMIT (17'KB) (RKB) to Facility Vertical Datum	4937.00ft
Horizontal Reference Pt	Slot	PERMIT (17'KB) (RKB) to Mean Sea Level	4937.00ft
Vertical Reference Pt	PERMIT (17'KB) (RKB)	PERMIT (17'KB) (RKB) to Mud Line at Slot (SLOT#22 BUTTERBALL 15C-10HZ (597'FNL & 1489'FEL, SEC.10))	4937.00ft
MD Reference Pt	PERMIT (17'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	Slot	SLOT#22 BUTTERBALL 15C-10HZ (597'FNL & 1489'FEL, SEC.10)
Area	COLORADO	Well	BUTTERBALL 15C-10HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	BUTTERBALL 15C-10HZ PWB
Facility	SEC.10-T2N-R67W		

WELLPATH DATA (149 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	349.630	0.00	0.00	0.00	0.00	40°09'29.621"N	104°52'20.849"W	0.00	
17.00	0.000	349.630	17.00	0.00	0.00	0.00	40°09'29.621"N	104°52'20.849"W	0.00	TIE ON
117.00†	0.000	349.630	117.00	0.00	0.00	0.00	40°09'29.621"N	104°52'20.849"W	0.00	
217.00†	0.000	349.630	217.00	0.00	0.00	0.00	40°09'29.621"N	104°52'20.849"W	0.00	
317.00†	0.000	349.630	317.00	0.00	0.00	0.00	40°09'29.621"N	104°52'20.849"W	0.00	
417.00†	0.000	349.630	417.00	0.00	0.00	0.00	40°09'29.621"N	104°52'20.849"W	0.00	
517.00†	0.000	349.630	517.00	0.00	0.00	0.00	40°09'29.621"N	104°52'20.849"W	0.00	
613.00†	0.000	349.630	613.00	0.00	0.00	0.00	40°09'29.621"N	104°52'20.849"W	0.00	BASE FOX HILLS
617.00†	0.000	349.630	617.00	0.00	0.00	0.00	40°09'29.621"N	104°52'20.849"W	0.00	
717.00†	0.000	349.630	717.00	0.00	0.00	0.00	40°09'29.621"N	104°52'20.849"W	0.00	
817.00†	0.000	349.630	817.00	0.00	0.00	0.00	40°09'29.621"N	104°52'20.849"W	0.00	
917.00†	0.000	349.630	917.00	0.00	0.00	0.00	40°09'29.621"N	104°52'20.849"W	0.00	
1017.00†	0.000	349.630	1017.00	0.00	0.00	0.00	40°09'29.621"N	104°52'20.849"W	0.00	
1060.00†	0.000	349.630	1060.00	0.00	0.00	0.00	40°09'29.621"N	104°52'20.849"W	0.00	SURFACE CSG SETTING DEPTH
1117.00†	0.000	349.630	1117.00	0.00	0.00	0.00	40°09'29.621"N	104°52'20.849"W	0.00	
1185.00	0.000	349.630	1185.00	0.00	0.00	0.00	40°09'29.621"N	104°52'20.849"W	0.00	BEGIN NUDGE
1217.00†	0.640	349.630	1217.00	-0.18	0.18	-0.03	40°09'29.623"N	104°52'20.849"W	2.00	
1317.00†	2.640	349.630	1316.95	-2.99	2.99	-0.55	40°09'29.651"N	104°52'20.856"W	2.00	
1417.00†	4.640	349.630	1416.75	-9.22	9.24	-1.69	40°09'29.712"N	104°52'20.871"W	2.00	
1517.00†	6.640	349.630	1516.26	-18.88	18.90	-3.46	40°09'29.808"N	104°52'20.894"W	2.00	
1617.00†	8.640	349.630	1615.36	-31.94	31.98	-5.85	40°09'29.937"N	104°52'20.924"W	2.00	
1717.00†	10.640	349.630	1713.95	-48.39	48.45	-8.87	40°09'30.100"N	104°52'20.963"W	2.00	
1817.00†	12.640	349.630	1811.89	-68.21	68.30	-12.50	40°09'30.296"N	104°52'21.010"W	2.00	
1917.00†	14.640	349.630	1909.06	-91.38	91.49	-16.74	40°09'30.525"N	104°52'21.065"W	2.00	
1935.00	15.000	349.630	1926.46	-95.90	96.02	-17.57	40°09'30.570"N	104°52'21.075"W	2.00	END NUDGE
2017.00†	15.000	349.630	2005.67	-116.75	116.90	-21.39	40°09'30.776"N	104°52'21.125"W	0.00	
2117.00†	15.000	349.630	2102.26	-142.18	142.36	-26.05	40°09'31.028"N	104°52'21.185"W	0.00	
2217.00†	15.000	349.630	2198.85	-167.61	167.82	-30.71	40°09'31.279"N	104°52'21.245"W	0.00	
2317.00†	15.000	349.630	2295.45	-193.04	193.27	-35.37	40°09'31.531"N	104°52'21.305"W	0.00	
2417.00†	15.000	349.630	2392.04	-218.46	218.73	-40.03	40°09'31.783"N	104°52'21.365"W	0.00	
2517.00†	15.000	349.630	2488.63	-243.89	244.19	-44.69	40°09'32.034"N	104°52'21.425"W	0.00	
2617.00†	15.000	349.630	2585.22	-269.32	269.65	-49.34	40°09'32.286"N	104°52'21.485"W	0.00	
2717.00†	15.000	349.630	2681.82	-294.75	295.11	-54.00	40°09'32.537"N	104°52'21.545"W	0.00	
2817.00†	15.000	349.630	2778.41	-320.17	320.57	-58.66	40°09'32.789"N	104°52'21.605"W	0.00	
2917.00†	15.000	349.630	2875.00	-345.60	346.03	-63.32	40°09'33.040"N	104°52'21.665"W	0.00	
3017.00†	15.000	349.630	2971.59	-371.03	371.49	-67.98	40°09'33.292"N	104°52'21.725"W	0.00	
3117.00†	15.000	349.630	3068.19	-396.46	396.95	-72.64	40°09'33.544"N	104°52'21.785"W	0.00	
3217.00†	15.000	349.630	3164.78	-421.89	422.41	-77.30	40°09'33.795"N	104°52'21.845"W	0.00	
3317.00†	15.000	349.630	3261.37	-447.31	447.87	-81.96	40°09'34.047"N	104°52'21.905"W	0.00	
3417.00†	15.000	349.630	3357.96	-472.74	473.33	-86.62	40°09'34.298"N	104°52'21.965"W	0.00	
3517.00†	15.000	349.630	3454.56	-498.17	498.78	-91.27	40°09'34.550"N	104°52'22.025"W	0.00	
3617.00†	15.000	349.630	3551.15	-523.60	524.24	-95.93	40°09'34.802"N	104°52'22.085"W	0.00	
3717.00†	15.000	349.630	3647.74	-549.02	549.70	-100.59	40°09'35.053"N	104°52'22.145"W	0.00	
3817.00†	15.000	349.630	3744.33	-574.45	575.16	-105.25	40°09'35.305"N	104°52'22.205"W	0.00	
3917.00†	15.000	349.630	3840.93	-599.88	600.62	-109.91	40°09'35.556"N	104°52'22.265"W	0.00	

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

WELLPATH DATA (149 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4017.00†	15.000	349.630	3937.52	-625.31	626.08	-114.57	40°09'35.808"N	104°52'22.325"W	0.00	
4044.41†	15.000	349.630	3964.00	-632.28	633.06	-115.85	40°09'35.877"N	104°52'22.341"W	0.00	PARKMAN
4117.00†	15.000	349.630	4034.11	-650.73	651.54	-119.23	40°09'36.060"N	104°52'22.385"W	0.00	
4217.00†	15.000	349.630	4130.70	-676.16	677.00	-123.89	40°09'36.311"N	104°52'22.445"W	0.00	
4317.00†	15.000	349.630	4227.30	-701.59	702.46	-128.54	40°09'36.563"N	104°52'22.505"W	0.00	
4417.00†	15.000	349.630	4323.89	-727.02	727.92	-133.20	40°09'36.814"N	104°52'22.565"W	0.00	
4477.16†	15.000	349.630	4382.00	-742.31	743.23	-136.01	40°09'36.966"N	104°52'22.601"W	0.00	SUSSEX
4517.00†	15.000	349.630	4420.48	-752.45	753.38	-137.86	40°09'37.066"N	104°52'22.625"W	0.00	
4617.00†	15.000	349.630	4517.08	-777.87	778.84	-142.52	40°09'37.317"N	104°52'22.685"W	0.00	
4717.00†	15.000	349.630	4613.67	-803.30	804.29	-147.18	40°09'37.569"N	104°52'22.745"W	0.00	
4817.00†	15.000	349.630	4710.26	-828.73	829.75	-151.84	40°09'37.821"N	104°52'22.805"W	0.00	
4917.00†	15.000	349.630	4806.85	-854.16	855.21	-156.50	40°09'38.072"N	104°52'22.865"W	0.00	
5017.00†	15.000	349.630	4903.45	-879.58	880.67	-161.16	40°09'38.324"N	104°52'22.925"W	0.00	
5117.00†	15.000	349.630	5000.04	-905.01	906.13	-165.82	40°09'38.575"N	104°52'22.985"W	0.00	
5217.00†	15.000	349.630	5096.63	-930.44	931.59	-170.47	40°09'38.827"N	104°52'23.045"W	0.00	
5317.00†	15.000	349.630	5193.22	-955.87	957.05	-175.13	40°09'39.079"N	104°52'23.105"W	0.00	
5417.00†	15.000	349.630	5289.82	-981.29	982.51	-179.79	40°09'39.330"N	104°52'23.165"W	0.00	
5517.00†	15.000	349.630	5386.41	-1006.72	1007.97	-184.45	40°09'39.582"N	104°52'23.225"W	0.00	
5570.41	15.000	349.630	5438.00	-1020.30	1021.57	-186.94	40°09'39.716"N	104°52'23.257"W	0.00	BEGIN DROP
5617.00†	14.068	349.630	5483.10	-1031.79	1033.07	-189.04	40°09'39.830"N	104°52'23.284"W	2.00	
5717.00†	12.068	349.630	5580.50	-1054.00	1055.31	-193.11	40°09'40.050"N	104°52'23.336"W	2.00	
5817.00†	10.068	349.630	5678.64	-1072.86	1074.19	-196.57	40°09'40.236"N	104°52'23.381"W	2.00	
5917.00†	8.068	349.630	5777.38	-1088.35	1089.69	-199.41	40°09'40.389"N	104°52'23.417"W	2.00	
6017.00†	6.068	349.630	5876.62	-1100.43	1101.80	-201.62	40°09'40.509"N	104°52'23.446"W	2.00	
6117.00†	4.068	349.630	5976.22	-1109.11	1110.49	-203.21	40°09'40.595"N	104°52'23.466"W	2.00	
6217.00†	2.068	349.630	6076.07	-1114.37	1115.75	-204.17	40°09'40.647"N	104°52'23.479"W	2.00	
6317.00†	0.068	349.630	6176.05	-1116.20	1117.58	-204.51	40°09'40.665"N	104°52'23.483"W	2.00	
6320.41	0.000	180.380	6179.46	-1116.21	1117.59	-204.51	40°09'40.665"N	104°52'23.483"W	2.00	END DROP
6417.00†	0.000	180.380	6276.05	-1116.21	1117.59	-204.51	40°09'40.665"N	104°52'23.483"W	0.00	
6517.00†	0.000	180.380	6376.05	-1116.21	1117.59	-204.51	40°09'40.665"N	104°52'23.483"W	0.00	
6617.00†	0.000	180.380	6476.05	-1116.21	1117.59	-204.51	40°09'40.665"N	104°52'23.483"W	0.00	
6717.00†	0.000	180.380	6576.05	-1116.21	1117.59	-204.51	40°09'40.665"N	104°52'23.483"W	0.00	
6817.00†	0.000	180.380	6676.05	-1116.21	1117.59	-204.51	40°09'40.665"N	104°52'23.483"W	0.00	
6917.00†	0.000	180.380	6776.05	-1116.21	1117.59	-204.51	40°09'40.665"N	104°52'23.483"W	0.00	
7017.00†	0.000	180.380	6876.05	-1116.21	1117.59	-204.51	40°09'40.665"N	104°52'23.483"W	0.00	
7043.00	0.000	180.380	6902.05	-1116.21	1117.59	-204.51	40°09'40.665"N	104°52'23.483"W	0.00	KOP, BUILD @ 10°/100'
7117.00†	7.400	180.380	6975.84	-1111.43	1112.81	-204.54	40°09'40.618"N	104°52'23.484"W	10.00	
7217.00†	17.400	180.380	7073.39	-1089.99	1091.37	-204.68	40°09'40.406"N	104°52'23.485"W	10.00	
7274.17†	23.117	180.380	7127.00	-1070.20	1071.58	-204.82	40°09'40.210"N	104°52'23.487"W	10.00	SHARON SPRINGS
7317.00†	27.400	180.380	7165.73	-1051.93	1053.31	-204.94	40°09'40.030"N	104°52'23.489"W	10.00	
7364.57†	32.157	180.380	7207.00	-1028.31	1029.69	-205.09	40°09'39.796"N	104°52'23.491"W	10.00	NIOBRARA A
7417.00†	37.400	180.380	7250.05	-998.41	999.80	-205.29	40°09'39.501"N	104°52'23.493"W	10.00	
7425.80†	38.280	180.380	7257.00	-993.02	994.40	-205.33	40°09'39.448"N	104°52'23.494"W	10.00	NIOBRARA B
7514.34†	47.134	180.380	7322.00	-933.02	934.41	-205.73	40°09'38.855"N	104°52'23.499"W	10.00	NIOBRARA C
7517.00†	47.400	180.380	7323.80	-931.07	932.46	-205.74	40°09'38.836"N	104°52'23.499"W	10.00	

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

WELLPATH DATA (149 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
7617.00†	57.400	180.380	7384.74	-851.94	853.33	-206.26	40°09'38.054"N	104°52'23.506"W	10.00	
7717.00†	67.400	180.380	7431.01	-763.43	764.82	-206.85	40°09'37.179"N	104°52'23.513"W	10.00	
7780.07†	73.707	180.380	7452.00	-703.99	705.38	-207.25	40°09'36.592"N	104°52'23.518"W	10.00	FORT HAYS
7817.00†	77.400	180.380	7461.21	-668.24	669.63	-207.48	40°09'36.238"N	104°52'23.521"W	10.00	
7884.25†	84.125	180.380	7472.00	-601.90	603.29	-207.92	40°09'35.583"N	104°52'23.527"W	10.00	CODELL
7917.00†	87.400	180.380	7474.42	-569.24	570.63	-208.14	40°09'35.260"N	104°52'23.530"W	10.00	
7939.10	89.610	180.380	7475.00	-547.15	548.55	-208.29	40°09'35.042"N	104°52'23.532"W	10.00	LANDING POINT
8017.00†	89.610	180.380	7475.53	-469.25	470.65	-208.80	40°09'34.272"N	104°52'23.538"W	0.00	
8117.00†	89.610	180.380	7476.21	-369.25	370.65	-209.47	40°09'33.284"N	104°52'23.547"W	0.00	
8217.00†	89.610	180.380	7476.89	-269.26	270.66	-210.13	40°09'32.296"N	104°52'23.555"W	0.00	
8317.00†	89.610	180.380	7477.57	-169.26	170.66	-210.79	40°09'31.307"N	104°52'23.564"W	0.00	
8417.00†	89.610	180.380	7478.25	-69.26	70.66	-211.46	40°09'30.319"N	104°52'23.572"W	0.00	
8517.00†	89.610	180.380	7478.94	30.74	-29.33	-212.12	40°09'29.331"N	104°52'23.581"W	0.00	
8617.00†	89.610	180.380	7479.62	130.73	-129.33	-212.79	40°09'28.343"N	104°52'23.590"W	0.00	
8717.00†	89.610	180.380	7480.30	230.73	-229.32	-213.45	40°09'27.355"N	104°52'23.598"W	0.00	
8817.00†	89.610	180.380	7480.98	330.73	-329.32	-214.11	40°09'26.367"N	104°52'23.607"W	0.00	
8917.00†	89.610	180.380	7481.66	430.73	-429.31	-214.78	40°09'25.378"N	104°52'23.615"W	0.00	
9017.00†	89.610	180.380	7482.34	530.73	-529.31	-215.44	40°09'24.390"N	104°52'23.624"W	0.00	
9117.00†	89.610	180.380	7483.02	630.72	-629.30	-216.10	40°09'23.402"N	104°52'23.632"W	0.00	
9217.00†	89.610	180.380	7483.71	730.72	-729.30	-216.77	40°09'22.414"N	104°52'23.641"W	0.00	
9317.00†	89.610	180.380	7484.39	830.72	-829.29	-217.43	40°09'21.426"N	104°52'23.649"W	0.00	
9417.00†	89.610	180.380	7485.07	930.72	-929.29	-218.09	40°09'20.438"N	104°52'23.658"W	0.00	
9517.00†	89.610	180.380	7485.75	1030.71	-1029.29	-218.76	40°09'19.450"N	104°52'23.666"W	0.00	
9617.00†	89.610	180.380	7486.43	1130.71	-1129.28	-219.42	40°09'18.461"N	104°52'23.675"W	0.00	
9717.00†	89.610	180.380	7487.11	1230.71	-1229.28	-220.09	40°09'17.473"N	104°52'23.683"W	0.00	
9817.00†	89.610	180.380	7487.80	1330.71	-1329.27	-220.75	40°09'16.485"N	104°52'23.692"W	0.00	
9917.00†	89.610	180.380	7488.48	1430.70	-1429.27	-221.41	40°09'15.497"N	104°52'23.700"W	0.00	
10017.00†	89.610	180.380	7489.16	1530.70	-1529.26	-222.08	40°09'14.509"N	104°52'23.709"W	0.00	
10117.00†	89.610	180.380	7489.84	1630.70	-1629.26	-222.74	40°09'13.521"N	104°52'23.718"W	0.00	
10217.00†	89.610	180.380	7490.52	1730.70	-1729.25	-223.40	40°09'12.532"N	104°52'23.726"W	0.00	
10317.00†	89.610	180.380	7491.20	1830.70	-1829.25	-224.07	40°09'11.544"N	104°52'23.735"W	0.00	
10417.00†	89.610	180.380	7491.88	1930.69	-1929.25	-224.73	40°09'10.556"N	104°52'23.743"W	0.00	
10517.00†	89.610	180.380	7492.57	2030.69	-2029.24	-225.39	40°09'09.568"N	104°52'23.752"W	0.00	
10617.00†	89.610	180.380	7493.25	2130.69	-2129.24	-226.06	40°09'08.580"N	104°52'23.760"W	0.00	
10717.00†	89.610	180.380	7493.93	2230.69	-2229.23	-226.72	40°09'07.592"N	104°52'23.769"W	0.00	
10817.00†	89.610	180.380	7494.61	2330.68	-2329.23	-227.39	40°09'06.603"N	104°52'23.777"W	0.00	
10917.00†	89.610	180.380	7495.29	2430.68	-2429.22	-228.05	40°09'05.615"N	104°52'23.786"W	0.00	
11017.00†	89.610	180.380	7495.97	2530.68	-2529.22	-228.71	40°09'04.627"N	104°52'23.794"W	0.00	
11117.00†	89.610	180.380	7496.65	2630.68	-2629.21	-229.38	40°09'03.639"N	104°52'23.803"W	0.00	
11217.00†	89.610	180.380	7497.34	2730.67	-2729.21	-230.04	40°09'02.651"N	104°52'23.811"W	0.00	
11317.00†	89.610	180.380	7498.02	2830.67	-2829.20	-230.70	40°09'01.663"N	104°52'23.820"W	0.00	
11417.00†	89.610	180.380	7498.70	2930.67	-2929.20	-231.37	40°09'00.674"N	104°52'23.829"W	0.00	
11517.00†	89.610	180.380	7499.38	3030.67	-3029.20	-232.03	40°08'59.686"N	104°52'23.837"W	0.00	
11617.00†	89.610	180.380	7500.06	3130.67	-3129.19	-232.69	40°08'58.698"N	104°52'23.846"W	0.00	
11717.00†	89.610	180.380	7500.74	3230.66	-3229.19	-233.36	40°08'57.710"N	104°52'23.854"W	0.00	

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

WELLPATH DATA (149 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
11817.00†	89.610	180.380	7501.43	3330.66	-3329.18	-234.02	40°08'56.722"N	104°52'23.863"W	0.00	
11917.00†	89.610	180.380	7502.11	3430.66	-3429.18	-234.68	40°08'55.734"N	104°52'23.871"W	0.00	
12017.00†	89.610	180.380	7502.79	3530.66	-3529.17	-235.35	40°08'54.745"N	104°52'23.880"W	0.00	
12117.00†	89.610	180.380	7503.47	3630.65	-3629.17	-236.01	40°08'53.757"N	104°52'23.888"W	0.00	
12217.00†	89.610	180.380	7504.15	3730.65	-3729.16	-236.68	40°08'52.769"N	104°52'23.897"W	0.00	
12317.00†	89.610	180.380	7504.83	3830.65	-3829.16	-237.34	40°08'51.781"N	104°52'23.905"W	0.00	
12417.00†	89.610	180.380	7505.51	3930.65	-3929.15	-238.00	40°08'50.793"N	104°52'23.914"W	0.00	
12517.00†	89.610	180.380	7506.20	4030.64	-4029.15	-238.67	40°08'49.805"N	104°52'23.922"W	0.00	
12617.00†	89.610	180.380	7506.88	4130.64	-4129.15	-239.33	40°08'48.817"N	104°52'23.931"W	0.00	
12717.00†	89.610	180.380	7507.56	4230.64	-4229.14	-239.99	40°08'47.828"N	104°52'23.939"W	0.00	
12817.00†	89.610	180.380	7508.24	4330.64	-4329.14	-240.66	40°08'46.840"N	104°52'23.948"W	0.00	
12917.00†	89.610	180.380	7508.92	4430.63	-4429.13	-241.32	40°08'45.852"N	104°52'23.957"W	0.00	
13017.00†	89.610	180.380	7509.60	4530.63	-4529.13	-241.98	40°08'44.864"N	104°52'23.965"W	0.00	
13075.09	89.610	180.380	7510.00 ¹	4588.72	-4587.21	-242.37	40°08'44.290"N	104°52'23.970"W	0.00	TOTAL DEPTH

HOLE & CASING SECTIONS -									
Ref Wellbore: BUTTERBALL 15C-10HZ PWB					Ref Wellpath: BUTTERBALL 15C-10HZ (PERMIT REV-1) PWP				
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	17.00	1060.00	1043.00	17.00	1060.00	0.00	0.00	0.00	0.00
9.625in Casing Surface	17.00	1060.00	1043.00	17.00	1060.00	0.00	0.00	0.00	0.00
8.75in Open Hole	1060.00	7939.10	6879.10	1060.00	7475.00	0.00	0.00	548.54	-208.29
7in Casing Intermediate	17.00	7939.10	7922.10	17.00	7475.00	0.00	0.00	548.54	-208.29
6.125in Open Hole	7939.10	13075.09	5135.99	7475.00	7510.00	548.54	-208.29	-4587.21	-242.37
4.5in Casing Production	17.00	13075.09	13058.09	17.00	7510.00	0.00	0.00	-4587.21	-242.37

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

TARGETS									
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SEC.10-T2N-67W SECTION LINES		0.00	-33.13	-1807.07	3173592.05	1301060.42	40°09'29.293"N	104°52'44.123"W	polygon
BUTTERBALL 15C-10HZ BHL ON PLAT REV-1 (50'FSL & 1700'FEL, SEC.10)		7510.00	-4622.21	-242.37	3175189.12	1296482.72	40°08'43.944"N	104°52'23.970"W	point
1) BUTTERBALL 15C-10HZ BHL REV-2 (85'FSL & 1700'FEL, SEC.10)	13075.09	7510.00	-4587.21	-242.37	3175188.87	1296517.72	40°08'44.290"N	104°52'23.970"W	point

SURVEY PROGRAM - Ref Wellbore: BUTTERBALL 15C-10HZ PWB					Ref Wellpath: BUTTERBALL 15C-10HZ (PERMIT REV-1) PWP				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model			Log Name/Comment		Wellbore		
17.00	7939.10	NaviTrak (MAGCORR,IFR)					BUTTERBALL 15C-10HZ PWB		
7939.10	13075.09	NaviTrak (MAGCORR,IFR)					BUTTERBALL 15C-10HZ PWB		

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

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
613.00	0.000	349.630	613.00	BASE FOX HILLS
1060.00	0.000	349.630	1060.00	SURFACE CSG SETTING DEPTH
4044.41	15.000	349.630	3964.00	PARKMAN
4477.16	15.000	349.630	4382.00	SUSSEX
7274.17	23.117	180.380	7127.00	SHARON SPRINGS
7364.57	32.157	180.380	7207.00	NIOBRARA A
7425.80	38.280	180.380	7257.00	NIOBRARA B
7514.34	47.134	180.380	7322.00	NIOBRARA C
7780.07	73.707	180.380	7452.00	FORT HAYS
7884.25	84.125	180.380	7472.00	CODELL

DESIGN COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
17.00	0.000	349.630	17.00	TIE ON
1185.00	0.000	349.630	1185.00	BEGIN NUDGE
1935.00	15.000	349.630	1926.46	END NUDGE
5570.41	15.000	349.630	5438.00	BEGIN DROP
6320.41	0.000	180.380	6179.46	END DROP
7043.00	0.000	180.380	6902.05	KOP, BUILD @ 10°/100'
7939.10	89.610	180.380	7475.00	LANDING POINT
13075.09	89.610	180.380	7510.00	TOTAL DEPTH