

KERR-MCGEE OIL & GAS ONSHORE LP

Location: COLORADO Slot: SLOT#21 BUTTERBALL 34C-11HZ (567°FNL & 1489°FEL, SEC.10)
Field: WELD COUNTY (KERR MCGEE) Well: BUTTERBALL 34C-11HZ
Facility: SEC.10-T2N-R67W Wellbore: BUTTERBALL 34C-11HZ PWB

Plot reference wellpath is BUTTERBALL 34C-11HZ (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#21 BUTTERBALL 34C-11HZ (567°FNL & 1489°FEL, SEC.10)): 0 feet Depths are in feet
Coordinates are in feet referenced to Slot Created by: robale01 on 9/29/2014

Location Information

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#21 BUTTERBALL 34C-11HZ (567°FNL & 1489°FEL, SEC.10)	63.21	1806.91	3175398.550	1301136.184	40°09'29.916"N	104°52'20.849"W
PERMIT (17KB) (RKB) to Mud line (A Slot: SLOT#21 BUTTERBALL 34C-11HZ (567°FNL & 1489°FEL, SEC.10))					4937ft	
Mean Sea Level to Mud line (A Slot: SLOT#21 BUTTERBALL 34C-11HZ (567°FNL & 1489°FEL, SEC.10))					0ft	
PERMIT (17KB) (RKB) to Mean Sea Level					4937ft	

Survey Program

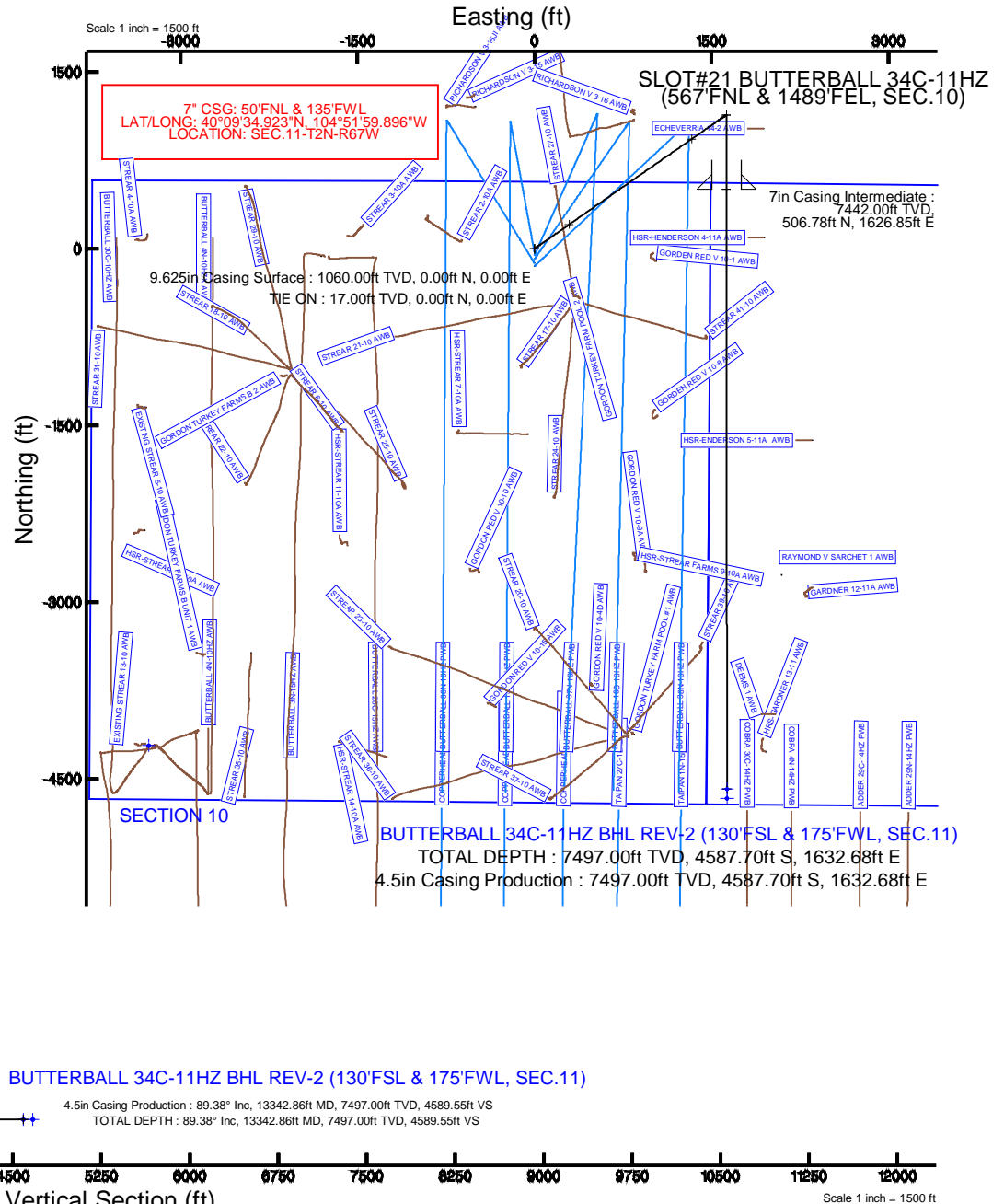
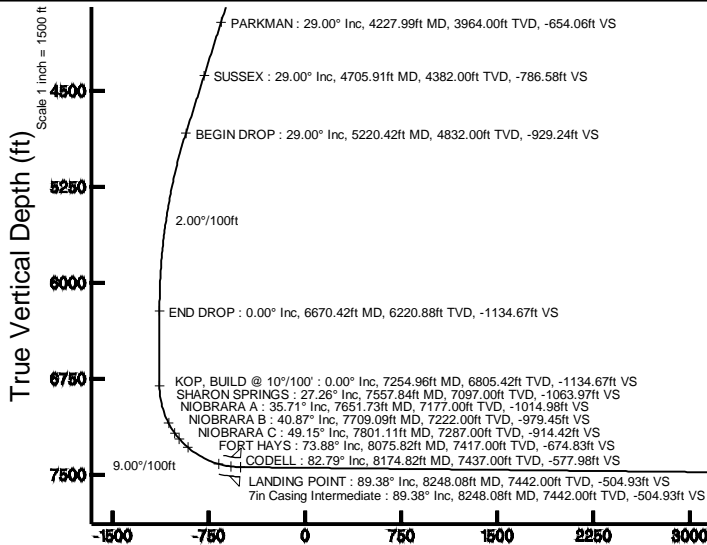
Start MD (ft)	End MD (ft)	Tool	Model	Log Name/Comment	Wellbore
17.00	8248.08	NaviTrak	NaviTrak (MAGCORR,IFR)		BUTTERBALL 34C-11HZ PWB
8248.08	13342.86	NaviTrak	NaviTrak (MAGCORR,IFR)		BUTTERBALL 34C-11HZ PWB

Targets

Name	MD (ft)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SEC.10-T2N-R67W SECTION LINES		0.00	-4217.63	-3268.33	3172160.30	1296895.72	40°08'48.235"N	104°53'02.936"W
SEC.11-T2N-R67W SECTION LINES		0.00	-9436.68	4509.45	3179974.47	1291732.06	40°07'56.658"N	104°51'22.782"W
BUTTERBALL 34C-11HZ BHL ON PLAT REV-1 (50FSL & 175FWL, SEC.11)		7497.00	-4667.68	1632.69	3177064.16	1296480.38	40°08'43.789"N	104°51'59.825"W
BUTTERBALL 34C-11HZ BHL REV-2 (130FSL & 175FWL, SEC.11)	13342.86	7497.00	-4587.70	1632.68	3177063.58	1296560.35	40°08'44.580"N	104°51'59.825"W

Well Profile Data

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
TIE ON	17.00	0.000	55.050	17.00	0.00	0.00	0.00	0.00
BEGIN NUDGE	1160.00	0.000	55.050	1160.00	0.00	0.00	0.00	0.00
END NUDGE	2610.00	29.000	55.050	2548.88	205.76	294.41	2.00	-205.43
BEGIN DROP	5220.42	29.000	55.050	4832.00	930.75	1331.72	0.00	-929.24
END DROP	6670.42	0.000	179.935	6220.88	1136.52	1626.13	2.00	-1134.67
KOP, BUILD @ 10°/100'	7254.96	0.000	179.935	6805.42	1136.52	1626.13	0.00	-1134.67
LANDING POINT	8248.08	89.381	179.935	7442.00	506.77	1626.85	9.00	-504.93
TOTAL DEPTH	13342.86	89.381	179.935	7497.00	-4587.70	1632.68	0.00	4589.55



Azimuth 179.94° with reference 0.00 N, 0.00 E

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#21 BUTTERBALL 34C-11HZ (567'FNL & 1489'FEL, SEC.10)
Area	COLORADO	Well	BUTTERBALL 34C-11HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	BUTTERBALL 34C-11HZ 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 12:09:03 PM
Convergence at slot	n/a	Database/Source file	WellArchitectDB/BUTTERBALL_34C-11HZ_PWB.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	63.21	1806.91	3175398.55	1301136.18	40°09'29.916"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#21 BUTTERBALL 34C-11HZ (567'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	179.94°

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#21 BUTTERBALL 34C-11HZ (567'FNL & 1489'FEL, SEC.10)
Area	COLORADO	Well	BUTTERBALL 34C-11HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	BUTTERBALL 34C-11HZ PWB
Facility	SEC.10-T2N-R67W		

WELLPATH DATA (152 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	55.050	0.00	0.00	0.00	0.00	40°09'29.916"N	104°52'20.849"W	0.00	
17.00	0.000	55.050	17.00	0.00	0.00	0.00	40°09'29.916"N	104°52'20.849"W	0.00	TIE ON
117.00†	0.000	55.050	117.00	0.00	0.00	0.00	40°09'29.916"N	104°52'20.849"W	0.00	
217.00†	0.000	55.050	217.00	0.00	0.00	0.00	40°09'29.916"N	104°52'20.849"W	0.00	
317.00†	0.000	55.050	317.00	0.00	0.00	0.00	40°09'29.916"N	104°52'20.849"W	0.00	
417.00†	0.000	55.050	417.00	0.00	0.00	0.00	40°09'29.916"N	104°52'20.849"W	0.00	
517.00†	0.000	55.050	517.00	0.00	0.00	0.00	40°09'29.916"N	104°52'20.849"W	0.00	
613.00†	0.000	55.050	613.00	0.00	0.00	0.00	40°09'29.916"N	104°52'20.849"W	0.00	BASE FOX HILLS
617.00†	0.000	55.050	617.00	0.00	0.00	0.00	40°09'29.916"N	104°52'20.849"W	0.00	
717.00†	0.000	55.050	717.00	0.00	0.00	0.00	40°09'29.916"N	104°52'20.849"W	0.00	
817.00†	0.000	55.050	817.00	0.00	0.00	0.00	40°09'29.916"N	104°52'20.849"W	0.00	
917.00†	0.000	55.050	917.00	0.00	0.00	0.00	40°09'29.916"N	104°52'20.849"W	0.00	
1017.00†	0.000	55.050	1017.00	0.00	0.00	0.00	40°09'29.916"N	104°52'20.849"W	0.00	
1060.00†	0.000	55.050	1060.00	0.00	0.00	0.00	40°09'29.916"N	104°52'20.849"W	0.00	SURFACE CSG SETTING DEPTH
1117.00†	0.000	55.050	1117.00	0.00	0.00	0.00	40°09'29.916"N	104°52'20.849"W	0.00	
1160.00	0.000	55.050	1160.00	0.00	0.00	0.00	40°09'29.916"N	104°52'20.849"W	0.00	BEGIN NUDGE
1217.00†	1.140	55.050	1217.00	-0.32	0.32	0.46	40°09'29.919"N	104°52'20.843"W	2.00	
1317.00†	3.140	55.050	1316.92	-2.46	2.46	3.53	40°09'29.940"N	104°52'20.804"W	2.00	
1417.00†	5.140	55.050	1416.66	-6.59	6.60	9.44	40°09'29.981"N	104°52'20.727"W	2.00	
1517.00†	7.140	55.050	1516.08	-12.71	12.73	18.21	40°09'30.042"N	104°52'20.614"W	2.00	
1617.00†	9.140	55.050	1615.06	-20.80	20.84	29.81	40°09'30.122"N	104°52'20.465"W	2.00	
1717.00†	11.140	55.050	1713.50	-30.87	30.92	44.24	40°09'30.222"N	104°52'20.279"W	2.00	
1817.00†	13.140	55.050	1811.26	-42.90	42.97	61.48	40°09'30.341"N	104°52'20.057"W	2.00	
1917.00†	15.140	55.050	1908.22	-56.87	56.96	81.50	40°09'30.479"N	104°52'19.799"W	2.00	
2017.00†	17.140	55.050	2004.27	-72.77	72.89	104.29	40°09'30.636"N	104°52'19.506"W	2.00	
2117.00†	19.140	55.050	2099.30	-90.57	90.72	129.80	40°09'30.813"N	104°52'19.177"W	2.00	
2217.00†	21.140	55.050	2193.18	-110.27	110.44	158.02	40°09'31.007"N	104°52'18.814"W	2.00	
2317.00†	23.140	55.050	2285.80	-131.82	132.03	188.91	40°09'31.221"N	104°52'18.416"W	2.00	
2417.00†	25.140	55.050	2377.05	-155.21	155.46	222.43	40°09'31.452"N	104°52'17.984"W	2.00	
2517.00†	27.140	55.050	2466.82	-180.40	180.70	258.54	40°09'31.702"N	104°52'17.519"W	2.00	
2610.00	29.000	55.050	2548.88	-205.43	205.76	294.41	40°09'31.949"N	104°52'17.057"W	2.00	END NUDGE
2617.00†	29.000	55.050	2555.00	-207.37	207.71	297.19	40°09'31.969"N	104°52'17.021"W	0.00	
2717.00†	29.000	55.050	2642.46	-235.10	235.48	336.93	40°09'32.243"N	104°52'16.510"W	0.00	
2817.00†	29.000	55.050	2729.92	-262.83	263.25	376.67	40°09'32.517"N	104°52'15.998"W	0.00	
2917.00†	29.000	55.050	2817.39	-290.56	291.03	416.40	40°09'32.792"N	104°52'15.486"W	0.00	
3017.00†	29.000	55.050	2904.85	-318.28	318.80	456.14	40°09'33.066"N	104°52'14.974"W	0.00	
3117.00†	29.000	55.050	2992.31	-346.01	346.57	495.88	40°09'33.341"N	104°52'14.462"W	0.00	
3217.00†	29.000	55.050	3079.77	-373.74	374.35	535.62	40°09'33.615"N	104°52'13.950"W	0.00	
3317.00†	29.000	55.050	3167.23	-401.47	402.12	575.35	40°09'33.890"N	104°52'13.439"W	0.00	
3417.00†	29.000	55.050	3254.70	-429.19	429.89	615.09	40°09'34.164"N	104°52'12.927"W	0.00	
3517.00†	29.000	55.050	3342.16	-456.92	457.66	654.83	40°09'34.439"N	104°52'12.415"W	0.00	
3617.00†	29.000	55.050	3429.62	-484.65	485.44	694.57	40°09'34.713"N	104°52'11.903"W	0.00	
3717.00†	29.000	55.050	3517.08	-512.38	513.21	734.30	40°09'34.987"N	104°52'11.391"W	0.00	
3817.00†	29.000	55.050	3604.54	-540.11	540.98	774.04	40°09'35.262"N	104°52'10.880"W	0.00	
3917.00†	29.000	55.050	3692.01	-567.83	568.76	813.78	40°09'35.536"N	104°52'10.368"W	0.00	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#21 BUTTERBALL 34C-11HZ (567'FNL & 1489'FEL, SEC.10)
Area	COLORADO	Well	BUTTERBALL 34C-11HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	BUTTERBALL 34C-11HZ PWB
Facility	SEC.10-T2N-R67W		

WELLPATH DATA (152 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4017.00†	29.000	55.050	3779.47	-595.56	596.53	853.52	40°09'35.811"N	104°52'09.856"W	0.00	
4117.00†	29.000	55.050	3866.93	-623.29	624.30	893.25	40°09'36.085"N	104°52'09.344"W	0.00	
4217.00†	29.000	55.050	3954.39	-651.02	652.08	932.99	40°09'36.360"N	104°52'08.832"W	0.00	
4227.99†	29.000	55.050	3964.00	-654.06	655.13	937.36	40°09'36.390"N	104°52'08.776"W	0.00	PARKMAN
4317.00†	29.000	55.050	4041.85	-678.74	679.85	972.73	40°09'36.634"N	104°52'08.320"W	0.00	
4417.00†	29.000	55.050	4129.32	-706.47	707.62	1012.47	40°09'36.909"N	104°52'07.809"W	0.00	
4517.00†	29.000	55.050	4216.78	-734.20	735.39	1052.20	40°09'37.183"N	104°52'07.297"W	0.00	
4617.00†	29.000	55.050	4304.24	-761.93	763.17	1091.94	40°09'37.457"N	104°52'06.785"W	0.00	
4705.91†	29.000	55.050	4382.00	-786.58	787.86	1127.27	40°09'37.701"N	104°52'06.330"W	0.00	SUSSEX
4717.00†	29.000	55.050	4391.70	-789.66	790.94	1131.68	40°09'37.732"N	104°52'06.273"W	0.00	
4817.00†	29.000	55.050	4479.16	-817.38	818.71	1171.42	40°09'38.006"N	104°52'05.761"W	0.00	
4917.00†	29.000	55.050	4566.62	-845.11	846.49	1211.15	40°09'38.281"N	104°52'05.249"W	0.00	
5017.00†	29.000	55.050	4654.09	-872.84	874.26	1250.89	40°09'38.555"N	104°52'04.738"W	0.00	
5117.00†	29.000	55.050	4741.55	-900.57	902.03	1290.63	40°09'38.830"N	104°52'04.226"W	0.00	
5217.00†	29.000	55.050	4829.01	-928.29	929.80	1330.37	40°09'39.104"N	104°52'03.714"W	0.00	
5220.42	29.000	55.050	4832.00	-929.24	930.75	1331.72	40°09'39.113"N	104°52'03.697"W	0.00	BEGIN DROP
5317.00†	27.068	55.050	4917.25	-955.20	956.76	1368.93	40°09'39.370"N	104°52'03.217"W	2.00	
5417.00†	25.068	55.050	5007.07	-980.33	981.93	1404.95	40°09'39.619"N	104°52'02.753"W	2.00	
5517.00†	23.068	55.050	5098.37	-1003.66	1005.29	1438.37	40°09'39.850"N	104°52'02.323"W	2.00	
5617.00†	21.068	55.050	5191.04	-1025.14	1026.81	1469.17	40°09'40.063"N	104°52'01.926"W	2.00	
5717.00†	19.068	55.050	5284.96	-1044.77	1046.47	1497.29	40°09'40.257"N	104°52'01.564"W	2.00	
5817.00†	17.068	55.050	5380.03	-1062.51	1064.23	1522.71	40°09'40.432"N	104°52'01.237"W	2.00	
5917.00†	15.068	55.050	5476.11	-1078.34	1080.09	1545.40	40°09'40.589"N	104°52'00.944"W	2.00	
6017.00†	13.068	55.050	5573.11	-1092.24	1094.01	1565.32	40°09'40.727"N	104°52'00.688"W	2.00	
6117.00†	11.068	55.050	5670.90	-1104.20	1105.99	1582.46	40°09'40.845"N	104°52'00.467"W	2.00	
6217.00†	9.068	55.050	5769.35	-1114.19	1116.01	1596.78	40°09'40.944"N	104°52'00.282"W	2.00	
6317.00†	7.068	55.050	5868.36	-1122.22	1124.05	1608.29	40°09'41.023"N	104°52'00.134"W	2.00	
6417.00†	5.068	55.050	5967.79	-1128.27	1130.10	1616.95	40°09'41.083"N	104°52'00.023"W	2.00	
6517.00†	3.068	55.050	6067.53	-1132.32	1134.17	1622.77	40°09'41.123"N	104°51'59.948"W	2.00	
6617.00†	1.068	55.050	6167.46	-1134.39	1136.23	1625.73	40°09'41.144"N	104°51'59.910"W	2.00	
6670.42	0.000	179.935	6220.88	-1134.67	1136.52	1626.13	40°09'41.147"N	104°51'59.904"W	2.00	END DROP
6717.00†	0.000	179.935	6267.46	-1134.67	1136.52	1626.13	40°09'41.147"N	104°51'59.904"W	0.00	
6817.00†	0.000	179.935	6367.46	-1134.67	1136.52	1626.13	40°09'41.147"N	104°51'59.904"W	0.00	
6917.00†	0.000	179.935	6467.46	-1134.67	1136.52	1626.13	40°09'41.147"N	104°51'59.904"W	0.00	
7017.00†	0.000	179.935	6567.46	-1134.67	1136.52	1626.13	40°09'41.147"N	104°51'59.904"W	0.00	
7117.00†	0.000	179.935	6667.46	-1134.67	1136.52	1626.13	40°09'41.147"N	104°51'59.904"W	0.00	
7217.00†	0.000	179.935	6767.46	-1134.67	1136.52	1626.13	40°09'41.147"N	104°51'59.904"W	0.00	
7254.96	0.000	179.935	6805.42	-1134.67	1136.52	1626.13	40°09'41.147"N	104°51'59.904"W	0.00	KOP, BUILD @ 10°/100'
7317.00†	5.584	179.935	6867.36	-1131.65	1133.50	1626.14	40°09'41.117"N	104°51'59.904"W	9.00	
7417.00†	14.584	179.935	6965.72	-1114.16	1116.01	1626.16	40°09'40.944"N	104°51'59.904"W	9.00	
7517.00†	23.584	179.935	7060.12	-1081.50	1083.34	1626.19	40°09'40.621"N	104°51'59.904"W	9.00	
7557.84†	27.259	179.935	7097.00	-1063.97	1065.82	1626.22	40°09'40.448"N	104°51'59.903"W	9.00	SHARON SPRINGS
7617.00†	32.584	179.935	7148.26	-1034.47	1036.32	1626.25	40°09'40.156"N	104°51'59.903"W	9.00	
7651.73†	35.710	179.935	7177.00	-1014.98	1016.82	1626.27	40°09'39.964"N	104°51'59.903"W	9.00	NIOBRARA A
7709.09†	40.872	179.935	7222.00	-979.45	981.30	1626.31	40°09'39.613"N	104°51'59.902"W	9.00	NIOBRARA B

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#21 BUTTERBALL 34C-11HZ (567'FNL & 1489'FEL, SEC.10)
Area	COLORADO	Well	BUTTERBALL 34C-11HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	BUTTERBALL 34C-11HZ PWB
Facility	SEC.10-T2N-R67W		

WELLPATH DATA (152 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
7717.00†	41.584	179.935	7227.95	-974.24	976.08	1626.32	40°09'39.561"N	104°51'59.902"W	9.00	
7801.11†	49.154	179.935	7287.00	-914.42	916.27	1626.39	40°09'38.970"N	104°51'59.901"W	9.00	NIOBRARA C
7817.00†	50.584	179.935	7297.24	-902.27	904.12	1626.40	40°09'38.850"N	104°51'59.901"W	9.00	
7917.00†	59.584	179.935	7354.42	-820.36	822.20	1626.49	40°09'38.041"N	104°51'59.900"W	9.00	
8017.00†	68.584	179.935	7398.08	-730.51	732.35	1626.60	40°09'37.153"N	104°51'59.899"W	9.00	
8075.82†	73.878	179.935	7417.00	-674.83	676.68	1626.66	40°09'36.602"N	104°51'59.898"W	9.00	FORT HAYS
8117.00†	77.584	179.935	7427.15	-634.93	636.78	1626.71	40°09'36.208"N	104°51'59.897"W	9.00	
8174.82†	82.788	179.935	7437.00	-577.98	579.82	1626.77	40°09'35.645"N	104°51'59.897"W	9.00	CODELL
8217.00†	86.584	179.935	7440.91	-535.99	537.83	1626.82	40°09'35.230"N	104°51'59.896"W	9.00	
8248.08	89.381	179.935	7442.00	-504.93	506.77	1626.85	40°09'34.923"N	104°51'59.896"W	9.00	LANDING POINT
8317.00†	89.381	179.935	7442.74	-436.01	437.86	1626.93	40°09'34.242"N	104°51'59.895"W	0.00	
8417.00†	89.381	179.935	7443.82	-336.02	337.87	1627.05	40°09'33.254"N	104°51'59.893"W	0.00	
8517.00†	89.381	179.935	7444.90	-236.03	237.87	1627.16	40°09'32.266"N	104°51'59.892"W	0.00	
8617.00†	89.381	179.935	7445.98	-136.03	137.88	1627.28	40°09'31.278"N	104°51'59.891"W	0.00	
8717.00†	89.381	179.935	7447.06	-36.04	37.88	1627.39	40°09'30.290"N	104°51'59.889"W	0.00	
8817.00†	89.381	179.935	7448.14	63.96	-62.11	1627.50	40°09'29.302"N	104°51'59.888"W	0.00	
8917.00†	89.381	179.935	7449.22	163.95	-162.10	1627.62	40°09'28.314"N	104°51'59.886"W	0.00	
9017.00†	89.381	179.935	7450.30	263.95	-262.10	1627.73	40°09'27.325"N	104°51'59.885"W	0.00	
9117.00†	89.381	179.935	7451.38	363.94	-362.09	1627.85	40°09'26.337"N	104°51'59.884"W	0.00	
9217.00†	89.381	179.935	7452.46	463.93	-462.09	1627.96	40°09'25.349"N	104°51'59.882"W	0.00	
9317.00†	89.381	179.935	7453.54	563.93	-562.08	1628.08	40°09'24.361"N	104°51'59.881"W	0.00	
9417.00†	89.381	179.935	7454.62	663.92	-662.08	1628.19	40°09'23.373"N	104°51'59.879"W	0.00	
9517.00†	89.381	179.935	7455.70	763.92	-762.07	1628.30	40°09'22.385"N	104°51'59.878"W	0.00	
9617.00†	89.381	179.935	7456.78	863.91	-862.06	1628.42	40°09'21.397"N	104°51'59.877"W	0.00	
9717.00†	89.381	179.935	7457.86	963.90	-962.06	1628.53	40°09'20.408"N	104°51'59.875"W	0.00	
9817.00†	89.381	179.935	7458.94	1063.90	-1062.05	1628.65	40°09'19.420"N	104°51'59.874"W	0.00	
9917.00†	89.381	179.935	7460.02	1163.89	-1162.05	1628.76	40°09'18.432"N	104°51'59.872"W	0.00	
10017.00†	89.381	179.935	7461.10	1263.89	-1262.04	1628.88	40°09'17.444"N	104°51'59.871"W	0.00	
10117.00†	89.381	179.935	7462.18	1363.88	-1362.03	1628.99	40°09'16.456"N	104°51'59.870"W	0.00	
10217.00†	89.381	179.935	7463.26	1463.88	-1462.03	1629.10	40°09'15.468"N	104°51'59.868"W	0.00	
10317.00†	89.381	179.935	7464.33	1563.87	-1562.02	1629.22	40°09'14.479"N	104°51'59.867"W	0.00	
10417.00†	89.381	179.935	7465.41	1663.86	-1662.02	1629.33	40°09'13.491"N	104°51'59.866"W	0.00	
10517.00†	89.381	179.935	7466.49	1763.86	-1762.01	1629.45	40°09'12.503"N	104°51'59.864"W	0.00	
10617.00†	89.381	179.935	7467.57	1863.85	-1862.00	1629.56	40°09'11.515"N	104°51'59.863"W	0.00	
10717.00†	89.381	179.935	7468.65	1963.85	-1962.00	1629.68	40°09'10.527"N	104°51'59.861"W	0.00	
10817.00†	89.381	179.935	7469.73	2063.84	-2061.99	1629.79	40°09'09.539"N	104°51'59.860"W	0.00	
10917.00†	89.381	179.935	7470.81	2163.83	-2161.99	1629.90	40°09'08.551"N	104°51'59.859"W	0.00	
11017.00†	89.381	179.935	7471.89	2263.83	-2261.98	1630.02	40°09'07.562"N	104°51'59.857"W	0.00	
11117.00†	89.381	179.935	7472.97	2363.82	-2361.97	1630.13	40°09'06.574"N	104°51'59.856"W	0.00	
11217.00†	89.381	179.935	7474.05	2463.82	-2461.97	1630.25	40°09'05.586"N	104°51'59.854"W	0.00	
11317.00†	89.381	179.935	7475.13	2563.81	-2561.96	1630.36	40°09'04.598"N	104°51'59.853"W	0.00	
11417.00†	89.381	179.935	7476.21	2663.81	-2661.96	1630.48	40°09'03.610"N	104°51'59.852"W	0.00	
11517.00†	89.381	179.935	7477.29	2763.80	-2761.95	1630.59	40°09'02.622"N	104°51'59.850"W	0.00	
11617.00†	89.381	179.935	7478.37	2863.79	-2861.95	1630.71	40°09'01.634"N	104°51'59.849"W	0.00	
11717.00†	89.381	179.935	7479.45	2963.79	-2961.94	1630.82	40°09'00.645"N	104°51'59.847"W	0.00	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#21 BUTTERBALL 34C-11HZ (567'FNL & 1489'FEL, SEC.10)
Area	COLORADO	Well	BUTTERBALL 34C-11HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	BUTTERBALL 34C-11HZ PWB
Facility	SEC.10-T2N-R67W		

WELLPATH DATA (152 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
11817.00†	89.381	179.935	7480.53	3063.78	-3061.93	1630.93	40°08'59.657"N	104°51'59.846"W	0.00	
11917.00†	89.381	179.935	7481.61	3163.78	-3161.93	1631.05	40°08'58.669"N	104°51'59.845"W	0.00	
12017.00†	89.381	179.935	7482.69	3263.77	-3261.92	1631.16	40°08'57.681"N	104°51'59.843"W	0.00	
12117.00†	89.381	179.935	7483.77	3363.76	-3361.92	1631.28	40°08'56.693"N	104°51'59.842"W	0.00	
12217.00†	89.381	179.935	7484.85	3463.76	-3461.91	1631.39	40°08'55.705"N	104°51'59.841"W	0.00	
12317.00†	89.381	179.935	7485.93	3563.75	-3561.90	1631.51	40°08'54.717"N	104°51'59.839"W	0.00	
12417.00†	89.381	179.935	7487.01	3663.75	-3661.90	1631.62	40°08'53.728"N	104°51'59.838"W	0.00	
12517.00†	89.381	179.935	7488.08	3763.74	-3761.89	1631.73	40°08'52.740"N	104°51'59.836"W	0.00	
12617.00†	89.381	179.935	7489.16	3863.74	-3861.89	1631.85	40°08'51.752"N	104°51'59.835"W	0.00	
12717.00†	89.381	179.935	7490.24	3963.73	-3961.88	1631.96	40°08'50.764"N	104°51'59.834"W	0.00	
12817.00†	89.381	179.935	7491.32	4063.72	-4061.87	1632.08	40°08'49.776"N	104°51'59.832"W	0.00	
12917.00†	89.381	179.935	7492.40	4163.72	-4161.87	1632.19	40°08'48.788"N	104°51'59.831"W	0.00	
13017.00†	89.381	179.935	7493.48	4263.71	-4261.86	1632.31	40°08'47.799"N	104°51'59.829"W	0.00	
13117.00†	89.381	179.935	7494.56	4363.71	-4361.86	1632.42	40°08'46.811"N	104°51'59.828"W	0.00	
13217.00†	89.381	179.935	7495.64	4463.70	-4461.85	1632.53	40°08'45.823"N	104°51'59.827"W	0.00	
13317.00†	89.381	179.935	7496.72	4563.69	-4561.85	1632.65	40°08'44.835"N	104°51'59.825"W	0.00	
13342.86	89.381	179.935	7497.00 ¹	4589.55	-4587.70	1632.68	40°08'44.580"N	104°51'59.825"W	0.00	TOTAL DEPTH

HOLE & CASING SECTIONS -									
Ref Wellbore: BUTTERBALL 34C-11HZ PWB					Ref Wellpath: BUTTERBALL 34C-11HZ (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	8248.08	7188.08	1060.00	7442.00	0.00	0.00	506.78	1626.85
7in Casing Intermediate	17.00	8248.08	8231.08	17.00	7442.00	0.00	0.00	506.78	1626.85
6.125in Open Hole	8248.08	13342.86	5094.78	7442.00	7497.00	506.78	1626.85	-4587.70	1632.68
4.5in Casing Production	17.00	13342.86	13325.86	17.00	7497.00	0.00	0.00	-4587.70	1632.68

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#21 BUTTERBALL 34C-11HZ (567'FNL & 1489'FEL, SEC.10)
Area	COLORADO	Well	BUTTERBALL 34C-11HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	BUTTERBALL 34C-11HZ 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-R67W SECTION LINES		0.00	-4217.63	-3268.33	3172160.30	1296895.72	40°08'48.235"N	104°53'02.936"W	polygon
SEC.11-T2N-R67W SECTION LINES		0.00	-9436.68	4509.45	3179974.47	1291732.06	40°07'56.658"N	104°51'22.792"W	polygon
BUTTERBALL 34C-11HZ BHL ON PLAT REV-1 (50'FSL & 175'FWL, SEC.11)		7497.00	-4667.68	1632.69	3177064.16	1296480.38	40°08'43.789"N	104°51'59.825"W	point
1) BUTTERBALL 34C-11HZ BHL REV-2 (130'FSL & 175'FWL, SEC.11)	13342.86	7497.00	-4587.70	1632.68	3177063.58	1296560.35	40°08'44.580"N	104°51'59.825"W	point

SURVEY PROGRAM - Ref Wellbore: BUTTERBALL 34C-11HZ PWB					Ref Wellpath: BUTTERBALL 34C-11HZ (PERMIT REV-1) PWP	
Start MD [ft]	End MD [ft]	Positional Uncertainty Model		Log Name/Comment		Wellbore
17.00	8248.08	NaviTrak (MAGCORR,IFR)				BUTTERBALL 34C-11HZ PWB
8248.08	13342.86	NaviTrak (MAGCORR,IFR)				BUTTERBALL 34C-11HZ PWB

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#21 BUTTERBALL 34C-11HZ (567'FNL & 1489'FEL, SEC.10)
Area	COLORADO	Well	BUTTERBALL 34C-11HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	BUTTERBALL 34C-11HZ PWB
Facility	SEC.10-T2N-R67W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
613.00	0.000	55.050	613.00	BASE FOX HILLS
1060.00	0.000	55.050	1060.00	SURFACE CSG SETTING DEPTH
4227.99	29.000	55.050	3964.00	PARKMAN
4705.91	29.000	55.050	4382.00	SUSSEX
7557.84	27.259	179.935	7097.00	SHARON SPRINGS
7651.73	35.710	179.935	7177.00	NIOBRARA A
7709.09	40.872	179.935	7222.00	NIOBRARA B
7801.11	49.154	179.935	7287.00	NIOBRARA C
8075.82	73.878	179.935	7417.00	FORT HAYS
8174.82	82.788	179.935	7437.00	CODELL

DESIGN COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
17.00	0.000	55.050	17.00	TIE ON
1160.00	0.000	55.050	1160.00	BEGIN NUDGE
2610.00	29.000	55.050	2548.88	END NUDGE
5220.42	29.000	55.050	4832.00	BEGIN DROP
6670.42	0.000	179.935	6220.88	END DROP
7254.96	0.000	179.935	6805.42	KOP, BUILD @ 10°/100'
8248.08	89.381	179.935	7442.00	LANDING POINT
13342.86	89.381	179.935	7497.00	TOTAL DEPTH