

KERR-MCGEE OIL & GAS ONSHORE LP

Location: COLORADO Slot: SLOT#26 BUTTERBALL 38N-10HZ (717'FNL & 1489'FEL, SEC.10)
Field: WELD COUNTY (KERR MCGEE) Well: BUTTERBALL 38N-10HZ
Facility: SEC.10-T2N-R67W Wellbore: BUTTERBALL 38N-10HZ PWB

Plot reference wellpath is BUTTERBALL 38N-10HZ (PERMIT REV-2) PWP

True vertical depths are referenced to XTREME 24 (16'KB) (RKB)	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), 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#26 BUTTERBALL 38N-10HZ (717'FNL & 1489'FEL, SEC.10): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: robaleo1 on 3/2/2015

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)
SLOT#26 BUTTERBALL 38N-10HZ (717'FNL & 1489'FEL, SEC.10)	-86.86	1805.84	3175398.525	1300986.116
XTREME 24 (16'KB) (RKB) to Mud line (At Slot: SLOT#26 BUTTERBALL 38N-10HZ (717'FNL & 1489'FEL, SEC.10)				4936ft
Mean Sea Level to Mud line (At Slot: SLOT#26 BUTTERBALL 38N-10HZ (717'FNL & 1489'FEL, SEC.10)				0ft
XTREME 24 (16'KB) (RKB) to Mean Sea Level				4936ft

Survey Program

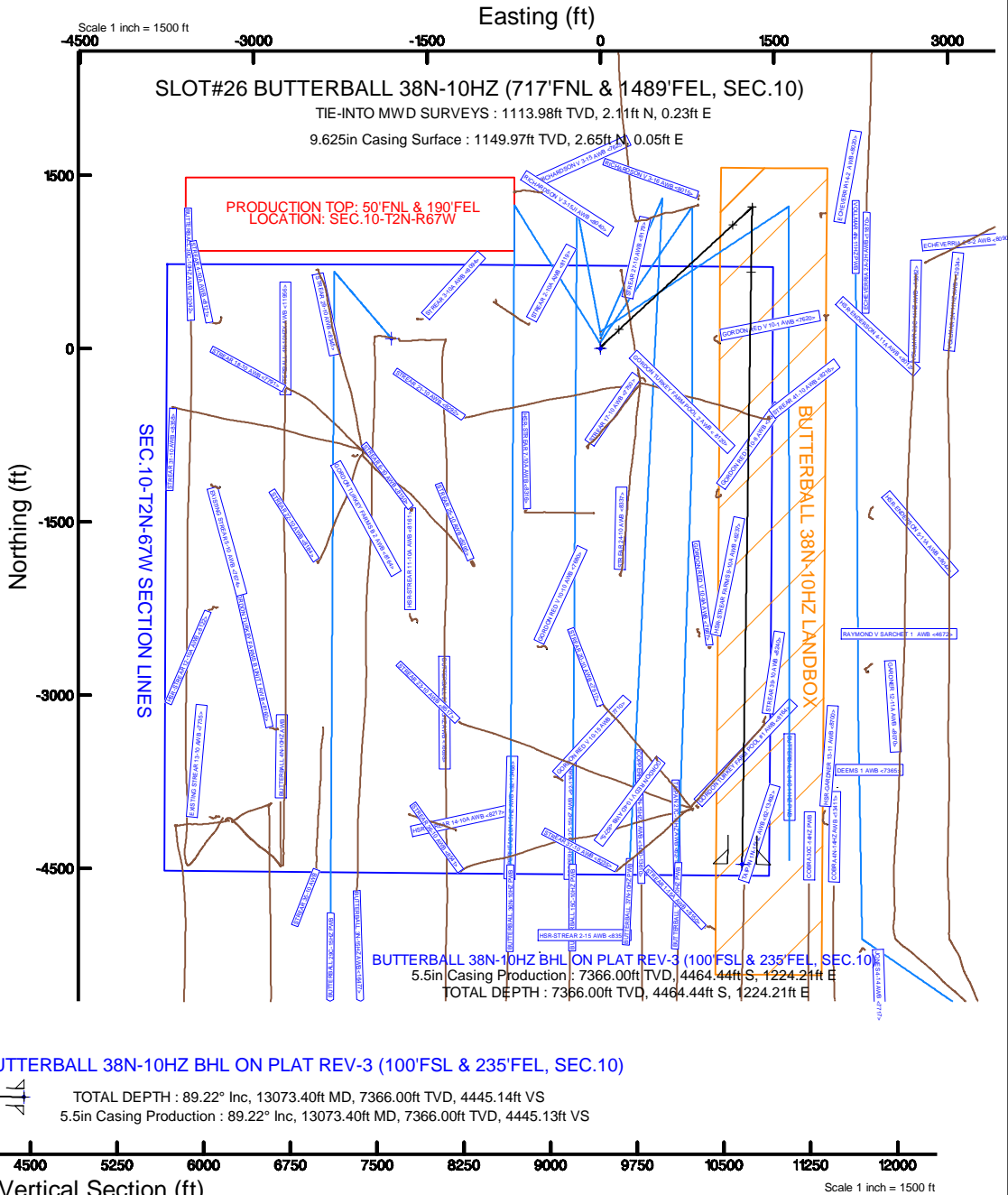
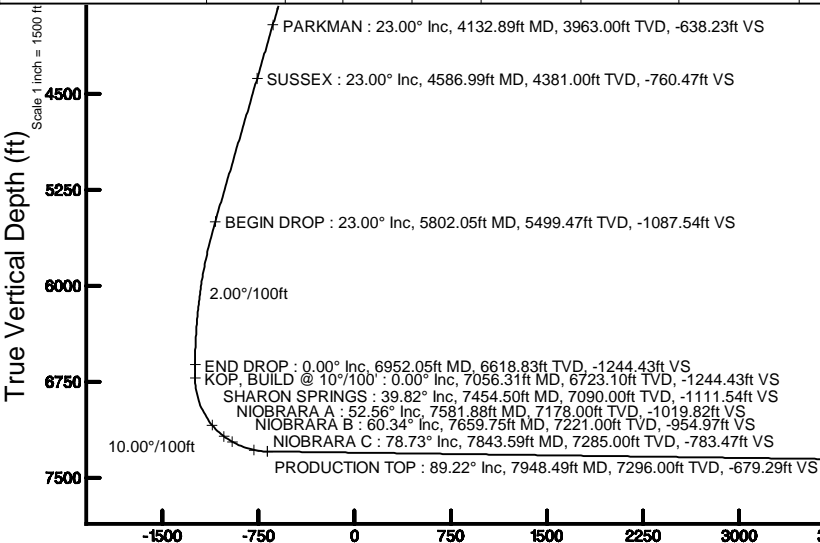
Start MD (ft)	End MD (ft)	Tool	Model	Log Name/Comment	Wellbore
16.00	1114.00	ISCWSAMWD, Rev 2	ISCWSAMWD, Rev 2 (Standard)		BUTTERBALL 38N-10HZ AWB <1114>
1114.00	7948.49	ISCWSAMWD, Rev 2, axial magnetic correction	ISCWSAMWD, Rev 2, axial magnetic correction (Standard) (MagVAR IFR Wattenberg)		BUTTERBALL 38N-10HZ PWB
7948.49	13073.40	ISCWSAMWD, Rev 2, axial magnetic correction	ISCWSAMWD, Rev 2, axial magnetic correction (Standard) (MagVAR IFR Wattenberg)		BUTTERBALL 38N-10HZ 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-67W SECTION LINES		4936.00	87.09	-1805.99	3173592.05	1301060.42	40°09'29.293"N	104°52'44.123"W
BUTTERBALL 38N-10HZ BHL ON PLAT REV-3 (100'FSL & 235'FEL, SEC.10)	13073.40	7366.00	-4464.44	1224.21	3176654.24	1296530.64	40°08'44.315"N	104°52'05.099"W

Well Profile Data

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
TIE-INTO MWD SURVEYS	1114.00	0.900	341.300	1113.98	2.11	0.23	0.58	-2.12
BEGIN NUDGE	1250.04	0.900	341.300	1250.00	4.14	-0.45	0.00	-4.13
END NUDGE	2382.47	23.000	47.334	2351.73	164.59	161.49	2.00	-167.05
BEGIN DROP	5802.05	23.000	47.334	5499.47	1070.12	1143.98	0.00	-1087.54
END DROP	6952.05	0.000	180.879	6618.83	1224.46	1311.44	2.00	-1244.43
KOP, BUILD @ 10°/100'	7056.31	0.000	180.879	6723.10	1224.46	1311.44	0.00	-1244.43
LANDING POINT	7948.49	89.217	180.879	7296.00	659.39	1302.78	10.00	-679.30
TOTAL DEPTH	13073.40	89.217	180.879	7366.00	-4464.44	1224.21	0.00	4445.14



BUTTERBALL 38N-10HZ BHL ON PLAT REV-3 (100'FSL & 235'FEL, SEC.10)

TOTAL DEPTH : 89.22° Inc, 13073.40ft MD, 7366.00ft TVD, 4445.14ft VS
5.5in Casing Production : 89.22° Inc, 13073.40ft MD, 7366.00ft TVD, 4445.13ft VS

Vertical Section (ft)

Azimuth 180.88° with reference 0.00 N, 0.00 E

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#26 BUTTERBALL 38N-10HZ (717'FNL & 1489'FEL, SEC.10)
Area	COLORADO	Well	BUTTERBALL 38N-10HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	BUTTERBALL 38N-10HZ PWB
Facility	SEC.10-T2N-R67W		

REPORT SETUP INFORMATION			
Projection System	NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	Software System	WellArchitect® 4.1.1
North Reference	True	User	Robiale01
Scale	0.999958	Report Generated	3/2/2015 at 4:03:28 PM
Convergence at slot	0.41° East	Database/Source file	WellArchitectDB3/BUTTERBALL_38N-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	-86.86	1805.84	3175398.53	1300986.12	40°09'28.433"N	104°52'20.863"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	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#26 BUTTERBALL 38N-10HZ (717'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	180.88°

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#26 BUTTERBALL 38N-10HZ (717'FNL & 1489'FEL, SEC.10)
Area	COLORADO	Well	BUTTERBALL 38N-10HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	BUTTERBALL 38N-10HZ PWB
Facility	SEC.10-T2N-R67W		

WELLPATH DATA (148 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	6.200	0.00	0.00	0.00	0.00	40°09'28.433"N	104°52'20.863"W	0.00	
16.00	0.000	6.200	16.00	0.00	0.00	0.00	40°09'28.433"N	104°52'20.863"W	0.00	
124.00	0.700	6.200	124.00	-0.66	0.66	0.07	40°09'28.439"N	104°52'20.862"W	0.65	
211.00	0.200	25.200	210.99	-1.32	1.32	0.19	40°09'28.446"N	104°52'20.861"W	0.59	
297.00	0.100	44.500	296.99	-1.52	1.51	0.31	40°09'28.448"N	104°52'20.859"W	0.13	
384.00	0.300	87.300	383.99	-1.58	1.58	0.59	40°09'28.449"N	104°52'20.855"W	0.27	
474.00	0.300	107.400	473.99	-1.53	1.52	1.05	40°09'28.448"N	104°52'20.849"W	0.12	
568.00	0.400	85.000	567.99	-1.50	1.47	1.61	40°09'28.448"N	104°52'20.842"W	0.18	
612.01†	0.120	142.810	612.00	-1.48	1.45	1.79	40°09'28.447"N	104°52'20.840"W	0.80	BASE FOX HILLS
664.00	0.400	231.500	663.99	-1.32	1.29	1.68	40°09'28.446"N	104°52'20.841"W	0.80	
760.00	0.600	219.900	759.99	-0.71	0.70	1.10	40°09'28.440"N	104°52'20.849"W	0.23	
855.00	0.200	320.200	854.98	-0.45	0.44	0.67	40°09'28.437"N	104°52'20.854"W	0.70	
948.00	0.200	3.600	947.98	-0.74	0.73	0.58	40°09'28.440"N	104°52'20.856"W	0.16	
1045.00	0.500	345.300	1044.98	-1.32	1.31	0.48	40°09'28.446"N	104°52'20.857"W	0.33	
1114.00	0.900	341.300	1113.98	-2.12	2.11	0.23	40°09'28.454"N	104°52'20.860"W	0.58	TIE-INTO MWD SURVEYS
1214.00†	0.900	341.300	1213.96	-3.60	3.60	-0.27	40°09'28.469"N	104°52'20.866"W	0.00	
1250.04	0.900	341.300	1250.00	-4.13	4.14	-0.45	40°09'28.474"N	104°52'20.869"W	0.00	BEGIN NUDGE
1314.00†	1.819	22.001	1313.94	-5.55	5.55	-0.23	40°09'28.488"N	104°52'20.866"W	2.00	
1414.00†	3.711	36.324	1413.82	-9.67	9.63	2.28	40°09'28.528"N	104°52'20.834"W	2.00	
1514.00†	5.678	40.877	1513.48	-16.09	15.98	7.43	40°09'28.591"N	104°52'20.767"W	2.00	
1614.00†	7.662	43.085	1612.80	-24.82	24.59	15.23	40°09'28.676"N	104°52'20.667"W	2.00	
1714.00†	9.652	44.388	1711.66	-35.84	35.45	25.64	40°09'28.783"N	104°52'20.533"W	2.00	
1814.00†	11.646	45.248	1809.93	-49.14	48.55	38.68	40°09'28.913"N	104°52'20.365"W	2.00	
1914.00†	13.641	45.860	1907.50	-64.70	63.87	54.31	40°09'29.064"N	104°52'20.164"W	2.00	
2014.00†	15.638	46.318	2004.25	-82.50	81.39	72.52	40°09'29.237"N	104°52'19.929"W	2.00	
2114.00†	17.635	46.675	2100.06	-102.52	101.10	93.29	40°09'29.432"N	104°52'19.661"W	2.00	
2214.00†	19.633	46.961	2194.81	-124.73	122.96	116.59	40°09'29.648"N	104°52'19.361"W	2.00	
2314.00†	21.632	47.196	2288.39	-149.12	146.95	142.40	40°09'29.885"N	104°52'19.029"W	2.00	
2382.47	23.000	47.334	2351.73	-167.05	164.59	161.49	40°09'30.060"N	104°52'18.783"W	2.00	END NUDGE
2414.00†	23.000	47.334	2380.76	-175.54	172.94	170.55	40°09'30.142"N	104°52'18.666"W	0.00	
2514.00†	23.000	47.334	2472.81	-202.46	199.42	199.28	40°09'30.404"N	104°52'18.296"W	0.00	
2614.00†	23.000	47.334	2564.86	-229.37	225.90	228.01	40°09'30.665"N	104°52'17.926"W	0.00	
2714.00†	23.000	47.334	2656.91	-256.29	252.38	256.75	40°09'30.927"N	104°52'17.556"W	0.00	
2814.00†	23.000	47.334	2748.96	-283.21	278.86	285.48	40°09'31.189"N	104°52'17.186"W	0.00	
2914.00†	23.000	47.334	2841.01	-310.13	305.34	314.21	40°09'31.450"N	104°52'16.816"W	0.00	
3014.00†	23.000	47.334	2933.06	-337.05	331.83	342.94	40°09'31.712"N	104°52'16.446"W	0.00	
3114.00†	23.000	47.334	3025.11	-363.97	358.31	371.67	40°09'31.974"N	104°52'16.076"W	0.00	
3214.00†	23.000	47.334	3117.16	-390.88	384.79	400.40	40°09'32.235"N	104°52'15.706"W	0.00	
3314.00†	23.000	47.334	3209.21	-417.80	411.27	429.13	40°09'32.497"N	104°52'15.336"W	0.00	
3414.00†	23.000	47.334	3301.26	-444.72	437.75	457.87	40°09'32.759"N	104°52'14.966"W	0.00	
3514.00†	23.000	47.334	3393.31	-471.64	464.23	486.60	40°09'33.020"N	104°52'14.596"W	0.00	
3614.00†	23.000	47.334	3485.36	-498.56	490.71	515.33	40°09'33.282"N	104°52'14.226"W	0.00	
3714.00†	23.000	47.334	3577.41	-525.47	517.19	544.06	40°09'33.544"N	104°52'13.856"W	0.00	
3814.00†	23.000	47.334	3669.46	-552.39	543.67	572.79	40°09'33.806"N	104°52'13.486"W	0.00	
3914.00†	23.000	47.334	3761.51	-579.31	570.15	601.52	40°09'34.067"N	104°52'13.116"W	0.00	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#26 BUTTERBALL 38N-10HZ (717'FNL & 1489'FEL, SEC.10)
Area	COLORADO	Well	BUTTERBALL 38N-10HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	BUTTERBALL 38N-10HZ PWB
Facility	SEC.10-T2N-R67W		

WELLPATH DATA (148 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4014.00†	23.000	47.334	3853.56	-606.23	596.63	630.25	40°09'34.329"N	104°52'12.746"W	0.00	
4114.00†	23.000	47.334	3945.61	-633.15	623.11	658.98	40°09'34.591"N	104°52'12.375"W	0.00	
4132.89†	23.000	47.334	3963.00	-638.23	628.11	664.41	40°09'34.640"N	104°52'12.306"W	0.00	PARKMAN
4214.00†	23.000	47.334	4037.66	-660.07	649.59	687.72	40°09'34.852"N	104°52'12.005"W	0.00	
4314.00†	23.000	47.334	4129.71	-686.98	676.07	716.45	40°09'35.114"N	104°52'11.635"W	0.00	
4414.00†	23.000	47.334	4221.77	-713.90	702.55	745.18	40°09'35.376"N	104°52'11.265"W	0.00	
4514.00†	23.000	47.334	4313.82	-740.82	729.03	773.91	40°09'35.637"N	104°52'10.895"W	0.00	
4586.99†	23.000	47.334	4381.00	-760.47	748.36	794.88	40°09'35.828"N	104°52'10.625"W	0.00	SUSSEX
4614.00†	23.000	47.334	4405.87	-767.74	755.51	802.64	40°09'35.899"N	104°52'10.525"W	0.00	
4714.00†	23.000	47.334	4497.92	-794.66	781.99	831.37	40°09'36.161"N	104°52'10.155"W	0.00	
4814.00†	23.000	47.334	4589.97	-821.57	808.47	860.10	40°09'36.422"N	104°52'09.785"W	0.00	
4914.00†	23.000	47.334	4682.02	-848.49	834.96	888.84	40°09'36.684"N	104°52'09.415"W	0.00	
5014.00†	23.000	47.334	4774.07	-875.41	861.44	917.57	40°09'36.946"N	104°52'09.045"W	0.00	
5114.00†	23.000	47.334	4866.12	-902.33	887.92	946.30	40°09'37.207"N	104°52'08.675"W	0.00	
5214.00†	23.000	47.334	4958.17	-929.25	914.40	975.03	40°09'37.469"N	104°52'08.305"W	0.00	
5314.00†	23.000	47.334	5050.22	-956.17	940.88	1003.76	40°09'37.731"N	104°52'07.935"W	0.00	
5414.00†	23.000	47.334	5142.27	-983.08	967.36	1032.49	40°09'37.992"N	104°52'07.565"W	0.00	
5514.00†	23.000	47.334	5234.32	-1010.00	993.84	1061.22	40°09'38.254"N	104°52'07.195"W	0.00	
5614.00†	23.000	47.334	5326.37	-1036.92	1020.32	1089.95	40°09'38.516"N	104°52'06.825"W	0.00	
5714.00†	23.000	47.334	5418.42	-1063.84	1046.80	1118.69	40°09'38.777"N	104°52'06.454"W	0.00	
5802.05	23.000	47.334	5499.47	-1087.54	1070.12	1143.98	40°09'39.008"N	104°52'06.129"W	0.00	BEGIN DROP
5814.00†	22.761	47.334	5510.48	-1090.74	1073.26	1147.40	40°09'39.039"N	104°52'06.085"W	2.00	
5914.00†	20.761	47.334	5603.35	-1116.28	1098.39	1174.66	40°09'39.287"N	104°52'05.733"W	2.00	
6014.00†	18.761	47.334	5697.46	-1139.57	1121.30	1199.52	40°09'39.513"N	104°52'05.413"W	2.00	
6114.00†	16.761	47.334	5792.69	-1160.58	1141.97	1221.95	40°09'39.718"N	104°52'05.124"W	2.00	
6214.00†	14.761	47.334	5888.92	-1179.30	1160.38	1241.92	40°09'39.900"N	104°52'04.867"W	2.00	
6314.00†	12.761	47.334	5986.05	-1195.68	1176.50	1259.41	40°09'40.059"N	104°52'04.642"W	2.00	
6414.00†	10.761	47.334	6083.94	-1209.72	1190.31	1274.40	40°09'40.195"N	104°52'04.449"W	2.00	
6514.00†	8.761	47.334	6182.49	-1221.40	1201.80	1286.87	40°09'40.309"N	104°52'04.288"W	2.00	
6614.00†	6.761	47.334	6281.57	-1230.71	1210.96	1296.79	40°09'40.399"N	104°52'04.160"W	2.00	
6714.00†	4.761	47.334	6381.06	-1237.62	1217.76	1304.18	40°09'40.467"N	104°52'04.065"W	2.00	
6814.00†	2.761	47.334	6480.84	-1242.14	1222.20	1309.00	40°09'40.511"N	104°52'04.003"W	2.00	
6914.00†	0.761	47.334	6580.79	-1244.26	1224.29	1311.26	40°09'40.531"N	104°52'03.974"W	2.00	
6952.05	0.000	180.879	6618.83	-1244.43	1224.46	1311.44	40°09'40.533"N	104°52'03.972"W	2.00	END DROP
7014.00†	0.000	180.879	6680.78	-1244.43	1224.46	1311.44	40°09'40.533"N	104°52'03.972"W	0.00	
7056.31	0.000	180.879	6723.10	-1244.43	1224.46	1311.44	40°09'40.533"N	104°52'03.972"W	0.00	KOP, BUILD @ 10°/100'
7114.00†	5.769	180.879	6780.69	-1241.53	1221.56	1311.40	40°09'40.504"N	104°52'03.972"W	10.00	
7214.00†	15.769	180.879	6878.80	-1222.87	1202.90	1311.11	40°09'40.320"N	104°52'03.976"W	10.00	
7314.00†	25.769	180.879	6972.18	-1187.45	1167.49	1310.57	40°09'39.970"N	104°52'03.983"W	10.00	
7414.00†	35.769	180.879	7058.00	-1136.36	1116.40	1309.79	40°09'39.465"N	104°52'03.993"W	10.00	
7454.50†	39.819	180.879	7090.00	-1111.54	1091.58	1309.41	40°09'39.220"N	104°52'03.998"W	10.00	SHARON SPRINGS
7514.00†	45.769	180.879	7133.64	-1071.14	1051.19	1308.79	40°09'38.821"N	104°52'04.006"W	10.00	
7581.88†	52.557	180.879	7178.00	-1019.82	999.87	1308.00	40°09'38.313"N	104°52'04.016"W	10.00	NIORARA A
7614.00†	55.769	180.879	7196.80	-993.78	973.84	1307.60	40°09'38.056"N	104°52'04.021"W	10.00	
7659.75†	60.343	180.879	7221.00	-954.97	935.03	1307.01	40°09'37.673"N	104°52'04.029"W	10.00	NIORARA B

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#26 BUTTERBALL 38N-10HZ (717'FNL & 1489'FEL, SEC.10)
Area	COLORADO	Well	BUTTERBALL 38N-10HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	BUTTERBALL 38N-10HZ PWB
Facility	SEC.10-T2N-R67W		

WELLPATH DATA (148 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
7714.00†	65.769	180.879	7245.57	-906.63	886.69	1306.26	40°09'37.195"N	104°52'04.039"W	10.00	
7814.00†	75.769	180.879	7278.47	-812.33	792.40	1304.82	40°09'36.263"N	104°52'04.057"W	10.00	
7843.59†	78.727	180.879	7285.00	-783.47	763.55	1304.38	40°09'35.978"N	104°52'04.063"W	10.00	NIOBRARA C
7914.00†	85.769	180.879	7294.49	-713.75	693.83	1303.31	40°09'35.289"N	104°52'04.077"W	10.00	
7948.49	89.217	180.879	7296.00	-679.30	659.39	1302.78	40°09'34.949"N	104°52'04.084"W	10.00	LANDING POINT
7948.49†	89.217	180.879	7296.00	-679.29	659.39	1302.78	40°09'34.949"N	104°52'04.084"W	0.00	PRODUCTION TOP
8014.00†	89.217	180.879	7296.89	-613.79	593.89	1301.78	40°09'34.302"N	104°52'04.097"W	0.00	
8114.00†	89.217	180.879	7298.26	-513.80	493.91	1300.24	40°09'33.314"N	104°52'04.116"W	0.00	
8214.00†	89.217	180.879	7299.63	-413.81	393.93	1298.71	40°09'32.326"N	104°52'04.136"W	0.00	
8314.00†	89.217	180.879	7300.99	-313.82	293.95	1297.18	40°09'31.338"N	104°52'04.156"W	0.00	
8414.00†	89.217	180.879	7302.36	-213.83	193.97	1295.64	40°09'30.350"N	104°52'04.176"W	0.00	
8514.00†	89.217	180.879	7303.72	-113.84	94.00	1294.11	40°09'29.362"N	104°52'04.196"W	0.00	
8614.00†	89.217	180.879	7305.09	-13.85	-5.98	1292.58	40°09'28.374"N	104°52'04.215"W	0.00	
8714.00†	89.217	180.879	7306.46	86.14	-105.96	1291.04	40°09'27.386"N	104°52'04.235"W	0.00	
8814.00†	89.217	180.879	7307.82	186.13	-205.94	1289.51	40°09'26.398"N	104°52'04.255"W	0.00	
8914.00†	89.217	180.879	7309.19	286.13	-305.92	1287.98	40°09'25.410"N	104°52'04.275"W	0.00	
9014.00†	89.217	180.879	7310.55	386.12	-405.90	1286.44	40°09'24.422"N	104°52'04.295"W	0.00	
9114.00†	89.217	180.879	7311.92	486.11	-505.88	1284.91	40°09'23.434"N	104°52'04.315"W	0.00	
9214.00†	89.217	180.879	7313.29	586.10	-605.86	1283.38	40°09'22.446"N	104°52'04.334"W	0.00	
9314.00†	89.217	180.879	7314.65	686.09	-705.84	1281.85	40°09'21.458"N	104°52'04.354"W	0.00	
9414.00†	89.217	180.879	7316.02	786.08	-805.81	1280.31	40°09'20.470"N	104°52'04.374"W	0.00	
9514.00†	89.217	180.879	7317.38	886.07	-905.79	1278.78	40°09'19.482"N	104°52'04.394"W	0.00	
9614.00†	89.217	180.879	7318.75	986.06	-1005.77	1277.25	40°09'18.494"N	104°52'04.414"W	0.00	
9714.00†	89.217	180.879	7320.11	1086.05	-1105.75	1275.71	40°09'17.506"N	104°52'04.433"W	0.00	
9814.00†	89.217	180.879	7321.48	1186.04	-1205.73	1274.18	40°09'16.518"N	104°52'04.453"W	0.00	
9914.00†	89.217	180.879	7322.85	1286.03	-1305.71	1272.65	40°09'15.530"N	104°52'04.473"W	0.00	
10014.00†	89.217	180.879	7324.21	1386.02	-1405.69	1271.11	40°09'14.542"N	104°52'04.493"W	0.00	
10114.00†	89.217	180.879	7325.58	1486.01	-1505.67	1269.58	40°09'13.554"N	104°52'04.513"W	0.00	
10214.00†	89.217	180.879	7326.94	1586.00	-1605.65	1268.05	40°09'12.566"N	104°52'04.532"W	0.00	
10314.00†	89.217	180.879	7328.31	1685.99	-1705.62	1266.51	40°09'11.578"N	104°52'04.552"W	0.00	
10414.00†	89.217	180.879	7329.68	1785.99	-1805.60	1264.98	40°09'10.590"N	104°52'04.572"W	0.00	
10514.00†	89.217	180.879	7331.04	1885.98	-1905.58	1263.45	40°09'09.602"N	104°52'04.592"W	0.00	
10614.00†	89.217	180.879	7332.41	1985.97	-2005.56	1261.92	40°09'08.614"N	104°52'04.612"W	0.00	
10714.00†	89.217	180.879	7333.77	2085.96	-2105.54	1260.38	40°09'07.626"N	104°52'04.631"W	0.00	
10814.00†	89.217	180.879	7335.14	2185.95	-2205.52	1258.85	40°09'06.638"N	104°52'04.651"W	0.00	
10914.00†	89.217	180.879	7336.51	2285.94	-2305.50	1257.32	40°09'05.650"N	104°52'04.671"W	0.00	
11014.00†	89.217	180.879	7337.87	2385.93	-2405.48	1255.78	40°09'04.662"N	104°52'04.691"W	0.00	
11114.00†	89.217	180.879	7339.24	2485.92	-2505.46	1254.25	40°09'03.674"N	104°52'04.711"W	0.00	
11214.00†	89.217	180.879	7340.60	2585.91	-2605.43	1252.72	40°09'02.686"N	104°52'04.731"W	0.00	
11314.00†	89.217	180.879	7341.97	2685.90	-2705.41	1251.18	40°09'01.698"N	104°52'04.750"W	0.00	
11414.00†	89.217	180.879	7343.33	2785.89	-2805.39	1249.65	40°09'00.710"N	104°52'04.770"W	0.00	
11514.00†	89.217	180.879	7344.70	2885.88	-2905.37	1248.12	40°08'59.722"N	104°52'04.790"W	0.00	
11614.00†	89.217	180.879	7346.07	2985.87	-3005.35	1246.58	40°08'58.734"N	104°52'04.810"W	0.00	
11714.00†	89.217	180.879	7347.43	3085.86	-3105.33	1245.05	40°08'57.746"N	104°52'04.830"W	0.00	
11814.00†	89.217	180.879	7348.80	3185.85	-3205.31	1243.52	40°08'56.758"N	104°52'04.849"W	0.00	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#26 BUTTERBALL 38N-10HZ (717'FNL & 1489'FEL, SEC.10)
Area	COLORADO	Well	BUTTERBALL 38N-10HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	BUTTERBALL 38N-10HZ PWB
Facility	SEC.10-T2N-R67W		

WELLPATH DATA (148 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
11914.00†	89.217	180.879	7350.16	3285.85	-3305.29	1241.99	40°08'55.770"N	104°52'04.869"W	0.00	
12014.00†	89.217	180.879	7351.53	3385.84	-3405.27	1240.45	40°08'54.782"N	104°52'04.889"W	0.00	
12114.00†	89.217	180.879	7352.90	3485.83	-3505.25	1238.92	40°08'53.794"N	104°52'04.909"W	0.00	
12214.00†	89.217	180.879	7354.26	3585.82	-3605.22	1237.39	40°08'52.806"N	104°52'04.929"W	0.00	
12314.00†	89.217	180.879	7355.63	3685.81	-3705.20	1235.85	40°08'51.818"N	104°52'04.948"W	0.00	
12414.00†	89.217	180.879	7356.99	3785.80	-3805.18	1234.32	40°08'50.830"N	104°52'04.968"W	0.00	
12514.00†	89.217	180.879	7358.36	3885.79	-3905.16	1232.79	40°08'49.842"N	104°52'04.988"W	0.00	
12614.00†	89.217	180.879	7359.73	3985.78	-4005.14	1231.25	40°08'48.854"N	104°52'05.008"W	0.00	
12714.00†	89.217	180.879	7361.09	4085.77	-4105.12	1229.72	40°08'47.866"N	104°52'05.028"W	0.00	
12814.00†	89.217	180.879	7362.46	4185.76	-4205.10	1228.19	40°08'46.878"N	104°52'05.047"W	0.00	
12914.00†	89.217	180.879	7363.82	4285.75	-4305.08	1226.65	40°08'45.890"N	104°52'05.067"W	0.00	
13014.00†	89.217	180.879	7365.19	4385.74	-4405.06	1225.12	40°08'44.902"N	104°52'05.087"W	0.00	
13073.40	89.217	180.879	7366.00†	4445.14	-4464.44	1224.21	40°08'44.315"N	104°52'05.099"W	0.00	TOTAL DEPTH

HOLE & CASING SECTIONS -									
Ref Wellbore: BUTTERBALL 38N-10HZ PWB					Ref Wellpath: BUTTERBALL 38N-10HZ (PERMIT REV-2) 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	16.00	1160.00	1144.00	16.00	1159.97	0.00	0.00	2.80	0.00
9.625in Casing Surface	16.00	1150.00	1134.00	16.00	1149.97	0.00	0.00	2.65	0.05
7.875in Open Hole	1160.00	13073.40	11913.40	1159.97	7366.00	2.80	0.00	-4464.44	1224.21
5.5in Casing Production	16.00	13073.40	13057.40	16.00	7366.00	0.00	0.00	-4464.44	1224.21

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		4936.00	87.09	-1805.99	3173592.05	1301060.42	40°09'29.293"N	104°52'44.123"W	polygon
1) BUTTERBALL 38N-10HZ BHL ON PLAT REV-3 (100'FSL & 235'FEL, SEC.10)	13073.40	7366.00	-4464.44	1224.21	3176654.24	1296530.64	40°08'44.315"N	104°52'05.099"W	point
BUTTERBALL 38N-10HZ LANDBOX		7366.00	0.00	0.00	3175398.52	1300986.12	40°09'28.433"N	104°52'20.863"W	polygon

SURVEY PROGRAM - Ref Wellbore: BUTTERBALL 38N-10HZ PWB					Ref Wellpath: BUTTERBALL 38N-10HZ (PERMIT REV-2) PWP				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model					Log Name/Comment	Wellbore	
16.00	1114.00	ISCWSA MWD, Rev. 2 (Standard)						BUTTERBALL 38N-10HZ AWB <1114>	
1114.00	7948.49	ISCWSA MWD, Rev. 2, axial magnetic correction (Standard) (MagVAR IFR Wattenberg)						BUTTERBALL 38N-10HZ PWB	
7948.49	13073.40	ISCWSA MWD, Rev. 2, axial magnetic correction (Standard) (MagVAR IFR Wattenberg)						BUTTERBALL 38N-10HZ PWB	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#26 BUTTERBALL 38N-10HZ (717'FNL & 1489'FEL, SEC.10)
Area	COLORADO	Well	BUTTERBALL 38N-10HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	BUTTERBALL 38N-10HZ PWB
Facility	SEC.10-T2N-R67W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
612.01	0.120	142.810	612.00	BASE FOX HILLS
4132.89	23.000	47.334	3963.00	PARKMAN
4586.99	23.000	47.334	4381.00	SUSSEX
7454.50	39.819	180.879	7090.00	SHARON SPRINGS
7581.88	52.557	180.879	7178.00	NIOBRARA A
7659.75	60.343	180.879	7221.00	NIOBRARA B
7843.59	78.727	180.879	7285.00	NIOBRARA C
7948.49	89.217	180.879	7296.00	PRODUCTION TOP

DESIGN COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
1114.00	0.900	341.300	1113.98	TIE-INTO MWD SURVEYS
1250.04	0.900	341.300	1250.00	BEGIN NUDGE
2382.47	23.000	47.334	2351.73	END NUDGE
5802.05	23.000	47.334	5499.47	BEGIN DROP
6952.05	0.000	180.879	6618.83	END DROP
7056.31	0.000	180.879	6723.10	KOP, BUILD @ 10°/100'
7948.49	89.217	180.879	7296.00	LANDING POINT
13073.40	89.217	180.879	7366.00	TOTAL DEPTH