

KERR-MCGEE OIL & GAS ONSHORE LP

Location: COLORADO Slot: SLOT#25 BUTTERBALL 36N-10HZ (687FNL & 1489FEL, SEC.10)
Field: WELD COUNTY (KERR MCGEE) Well: BUTTERBALL 36N-10HZ
Facility: SEC.10-T2N-R67W Wellbore: BUTTERBALL 36N-10HZ PWB

Plot reference wellpath is BUTTERBALL 36N-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#25 BUTTERBALL 36N-10HZ (687FNL & 1489FEL, 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#25 BUTTERBALL 36N-10HZ (687FNL & 1489FEL, SEC.10)	-56.60	1806.07	3175398.544	1301016.373	40°09'28.732"N	104°52'20.860"W
PERMIT (17KB) (RKB) to Mud line (At Slot: SLOT#25 BUTTERBALL 36N-10HZ (687FNL & 1489FEL, SEC.10))					4937ft	
Mean Sea Level to Mud line (At Slot: SLOT#25 BUTTERBALL 36N-10HZ (687FNL & 1489FEL, SEC.10))					0ft	
PERMIT (17KB) (RKB) to Mean Sea Level					4937ft	

Survey Program

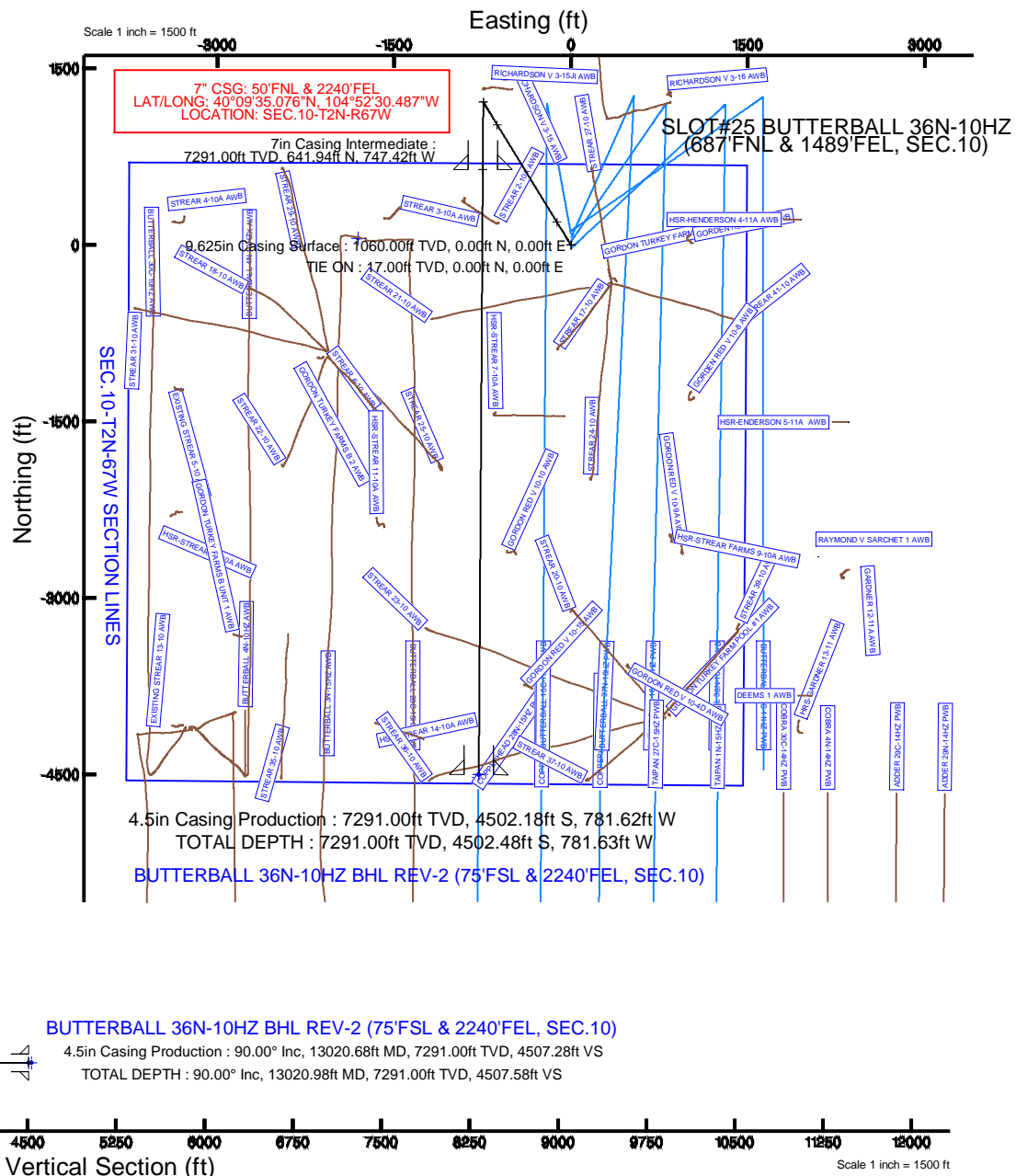
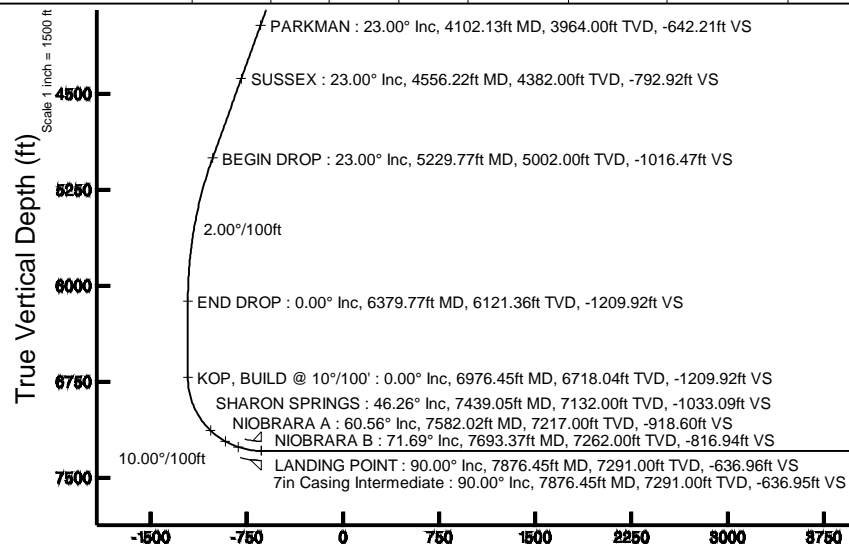
Start MD (ft)	End MD (ft)	Tool	Model	Log Name/Comment	Wellbore
17.00	7876.45	NaviTrak	NaviTrak (MAGCORR,IFR)		BUTTERBALL 36N-10HZ PWB
7876.45	13020.98	NaviTrak	NaviTrak (MAGCORR,IFR)		BUTTERBALL 36N-10HZ PWB

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-R67W SECTION LINES		0.00	56.64	-1806.22	3173592.05	1301060.42	40°09'29.293"N	104°52'44.123"W
BUTTERBALL 36N-10HZ BHL ON PLAT REV-1 (50FSL & 2240FEL, SEC.10)		7291.00	-4527.50	-781.64	3174648.00	1296483.65	40°08'43.991"N	104°52'30.925"W
BUTTERBALL 36N-10HZ BHL REV-2 (75FSL & 2240FEL, SEC.10)		13020.98	-4502.48	-781.63	3174648.83	1296508.67	40°08'44.238"N	104°52'30.925"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	328.530	17.00	0.00	0.00	0.00	0.00
BEGIN NUDGE	1600.00	0.000	328.530	1600.00	0.00	0.00	0.00	0.00
END NUDGE	2750.00	23.000	328.530	2719.36	194.24	-118.89	2.00	-193.44
BEGIN DROP	5229.77	23.000	328.530	5002.00	1020.65	-624.72	0.00	-1016.47
END DROP	6379.77	0.000	180.381	6121.36	1214.89	-743.61	2.00	-1209.92
KOP, BUILD @ 10°/100'	6976.45	0.000	180.381	6718.04	1214.89	-743.61	0.00	-1209.92
LANDING POINT	7876.45	90.000	180.381	7291.00	641.94	-747.42	10.00	-636.96
TOTAL DEPTH	13020.98	90.000	180.381	7291.00	-4502.48	-781.63	0.00	4507.58



REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#25 BUTTERBALL 36N-10HZ (687'FNL & 1489'FEL, SEC.10)
Area	COLORADO	Well	BUTTERBALL 36N-10HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	BUTTERBALL 36N-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 2:22:46 PM
Convergence at slot	n/a	Database/Source file	WellArchitectDB/BUTTERBALL_36N-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	-56.60	1806.07	3175398.54	1301016.37	40°09'28.732"N	104°52'20.860"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#25 BUTTERBALL 36N-10HZ (687'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#25 BUTTERBALL 36N-10HZ (687'FNL & 1489'FEL, SEC.10)
Area	COLORADO	Well	BUTTERBALL 36N-10HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	BUTTERBALL 36N-10HZ PWB
Facility	SEC.10-T2N-R67W		

WELLPATH DATA (146 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	328.530	0.00	0.00	0.00	0.00	40°09'28.732"N	104°52'20.860"W	0.00	
17.00	0.000	328.530	17.00	0.00	0.00	0.00	40°09'28.732"N	104°52'20.860"W	0.00	TIE ON
117.00†	0.000	328.530	117.00	0.00	0.00	0.00	40°09'28.732"N	104°52'20.860"W	0.00	
217.00†	0.000	328.530	217.00	0.00	0.00	0.00	40°09'28.732"N	104°52'20.860"W	0.00	
317.00†	0.000	328.530	317.00	0.00	0.00	0.00	40°09'28.732"N	104°52'20.860"W	0.00	
417.00†	0.000	328.530	417.00	0.00	0.00	0.00	40°09'28.732"N	104°52'20.860"W	0.00	
517.00†	0.000	328.530	517.00	0.00	0.00	0.00	40°09'28.732"N	104°52'20.860"W	0.00	
613.00†	0.000	328.530	613.00	0.00	0.00	0.00	40°09'28.732"N	104°52'20.860"W	0.00	BASE FOX HILLS
617.00†	0.000	328.530	617.00	0.00	0.00	0.00	40°09'28.732"N	104°52'20.860"W	0.00	
717.00†	0.000	328.530	717.00	0.00	0.00	0.00	40°09'28.732"N	104°52'20.860"W	0.00	
817.00†	0.000	328.530	817.00	0.00	0.00	0.00	40°09'28.732"N	104°52'20.860"W	0.00	
917.00†	0.000	328.530	917.00	0.00	0.00	0.00	40°09'28.732"N	104°52'20.860"W	0.00	
1017.00†	0.000	328.530	1017.00	0.00	0.00	0.00	40°09'28.732"N	104°52'20.860"W	0.00	
1060.00†	0.000	328.530	1060.00	0.00	0.00	0.00	40°09'28.732"N	104°52'20.860"W	0.00	SURFACE CSG SETTING DEPTH
1117.00†	0.000	328.530	1117.00	0.00	0.00	0.00	40°09'28.732"N	104°52'20.860"W	0.00	
1217.00†	0.000	328.530	1217.00	0.00	0.00	0.00	40°09'28.732"N	104°52'20.860"W	0.00	
1317.00†	0.000	328.530	1317.00	0.00	0.00	0.00	40°09'28.732"N	104°52'20.860"W	0.00	
1417.00†	0.000	328.530	1417.00	0.00	0.00	0.00	40°09'28.732"N	104°52'20.860"W	0.00	
1517.00†	0.000	328.530	1517.00	0.00	0.00	0.00	40°09'28.732"N	104°52'20.860"W	0.00	
1600.00	0.000	328.530	1600.00	0.00	0.00	0.00	40°09'28.732"N	104°52'20.860"W	0.00	BEGIN NUDGE
1617.00†	0.340	328.530	1617.00	-0.04	0.04	-0.03	40°09'28.732"N	104°52'20.860"W	2.00	
1717.00†	2.340	328.530	1716.97	-2.03	2.04	-1.25	40°09'28.752"N	104°52'20.876"W	2.00	
1817.00†	4.340	328.530	1816.79	-6.98	7.01	-4.29	40°09'28.801"N	104°52'20.915"W	2.00	
1917.00†	6.340	328.530	1916.35	-14.88	14.94	-9.15	40°09'28.880"N	104°52'20.978"W	2.00	
2017.00†	8.340	328.530	2015.53	-25.73	25.84	-15.82	40°09'28.987"N	104°52'21.064"W	2.00	
2117.00†	10.340	328.530	2114.20	-39.52	39.68	-24.29	40°09'29.124"N	104°52'21.173"W	2.00	
2217.00†	12.340	328.530	2212.24	-56.22	56.45	-34.55	40°09'29.290"N	104°52'21.305"W	2.00	
2317.00†	14.340	328.530	2309.54	-75.82	76.13	-46.60	40°09'29.484"N	104°52'21.460"W	2.00	
2417.00†	16.340	328.530	2405.97	-98.29	98.69	-60.41	40°09'29.707"N	104°52'21.638"W	2.00	
2517.00†	18.340	328.530	2501.42	-123.60	124.11	-75.97	40°09'29.958"N	104°52'21.838"W	2.00	
2617.00†	20.340	328.530	2595.77	-151.73	152.36	-93.25	40°09'30.238"N	104°52'22.061"W	2.00	
2717.00†	22.340	328.530	2688.91	-182.64	183.39	-112.25	40°09'30.544"N	104°52'22.306"W	2.00	
2750.00	23.000	328.530	2719.36	-193.44	194.24	-118.89	40°09'30.651"N	104°52'22.391"W	2.00	END NUDGE
2817.00†	23.000	328.530	2781.04	-215.68	216.57	-132.56	40°09'30.872"N	104°52'22.567"W	0.00	
2917.00†	23.000	328.530	2873.09	-248.87	249.89	-152.96	40°09'31.201"N	104°52'22.830"W	0.00	
3017.00†	23.000	328.530	2965.14	-282.06	283.22	-173.35	40°09'31.531"N	104°52'23.093"W	0.00	
3117.00†	23.000	328.530	3057.19	-315.25	316.55	-193.75	40°09'31.860"N	104°52'23.355"W	0.00	
3217.00†	23.000	328.530	3149.24	-348.44	349.87	-214.15	40°09'32.189"N	104°52'23.618"W	0.00	
3317.00†	23.000	328.530	3241.29	-381.63	383.20	-234.55	40°09'32.519"N	104°52'23.881"W	0.00	
3417.00†	23.000	328.530	3333.34	-414.82	416.52	-254.95	40°09'32.848"N	104°52'24.144"W	0.00	
3517.00†	23.000	328.530	3425.39	-448.01	449.85	-275.34	40°09'33.177"N	104°52'24.406"W	0.00	
3617.00†	23.000	328.530	3517.44	-481.20	483.18	-295.74	40°09'33.507"N	104°52'24.669"W	0.00	
3717.00†	23.000	328.530	3609.49	-514.39	516.50	-316.14	40°09'33.836"N	104°52'24.932"W	0.00	
3817.00†	23.000	328.530	3701.54	-547.58	549.83	-336.54	40°09'34.165"N	104°52'25.195"W	0.00	
3917.00†	23.000	328.530	3793.59	-580.77	583.15	-356.94	40°09'34.495"N	104°52'25.457"W	0.00	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#25 BUTTERBALL 36N-10HZ (687'FNL & 1489'FEL, SEC.10)
Area	COLORADO	Well	BUTTERBALL 36N-10HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	BUTTERBALL 36N-10HZ PWB
Facility	SEC.10-T2N-R67W		

WELLPATH DATA (146 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4017.00†	23.000	328.530	3885.64	-613.96	616.48	-377.34	40°09'34.824"N	104°52'25.720"W	0.00	
4102.13†	23.000	328.530	3964.00	-642.21	644.85	-394.70	40°09'35.104"N	104°52'25.944"W	0.00	PARKMAN
4117.00†	23.000	328.530	3977.69	-647.15	649.81	-397.73	40°09'35.153"N	104°52'25.983"W	0.00	
4217.00†	23.000	328.530	4069.74	-680.34	683.13	-418.13	40°09'35.483"N	104°52'26.245"W	0.00	
4317.00†	23.000	328.530	4161.79	-713.53	716.46	-438.53	40°09'35.812"N	104°52'26.508"W	0.00	
4417.00†	23.000	328.530	4253.84	-746.72	749.78	-458.93	40°09'36.141"N	104°52'26.771"W	0.00	
4517.00†	23.000	328.530	4345.89	-779.91	783.11	-479.33	40°09'36.471"N	104°52'27.034"W	0.00	
4556.22†	23.000	328.530	4382.00	-792.92	796.18	-487.33	40°09'36.600"N	104°52'27.137"W	0.00	SUSSEX
4617.00†	23.000	328.530	4437.94	-813.10	816.44	-499.72	40°09'36.800"N	104°52'27.296"W	0.00	
4717.00†	23.000	328.530	4530.00	-846.28	849.76	-520.12	40°09'37.129"N	104°52'27.559"W	0.00	
4817.00†	23.000	328.530	4622.05	-879.47	883.09	-540.52	40°09'37.459"N	104°52'27.822"W	0.00	
4917.00†	23.000	328.530	4714.10	-912.66	916.41	-560.92	40°09'37.788"N	104°52'28.085"W	0.00	
5017.00†	23.000	328.530	4806.15	-945.85	949.74	-581.32	40°09'38.117"N	104°52'28.347"W	0.00	
5117.00†	23.000	328.530	4898.20	-979.04	983.07	-601.72	40°09'38.447"N	104°52'28.610"W	0.00	
5217.00†	23.000	328.530	4990.25	-1012.23	1016.39	-622.11	40°09'38.776"N	104°52'28.873"W	0.00	
5229.77	23.000	328.530	5002.00	-1016.47	1020.65	-624.72	40°09'38.818"N	104°52'28.906"W	0.00	BEGIN DROP
5317.00†	21.255	328.530	5082.80	-1044.38	1048.67	-641.87	40°09'39.095"N	104°52'29.127"W	2.00	
5417.00†	19.255	328.530	5176.62	-1073.79	1078.20	-659.94	40°09'39.387"N	104°52'29.360"W	2.00	
5517.00†	17.255	328.530	5271.58	-1100.39	1104.91	-676.30	40°09'39.651"N	104°52'29.571"W	2.00	
5617.00†	15.255	328.530	5367.58	-1124.17	1128.79	-690.91	40°09'39.887"N	104°52'29.759"W	2.00	
5717.00†	13.255	328.530	5464.49	-1145.08	1149.79	-703.76	40°09'40.094"N	104°52'29.924"W	2.00	
5817.00†	11.255	328.530	5562.21	-1163.11	1167.89	-714.84	40°09'40.273"N	104°52'30.067"W	2.00	
5917.00†	9.255	328.530	5660.60	-1178.24	1183.08	-724.14	40°09'40.423"N	104°52'30.187"W	2.00	
6017.00†	7.255	328.530	5759.56	-1190.43	1195.32	-731.63	40°09'40.544"N	104°52'30.283"W	2.00	
6117.00†	5.255	328.530	5858.96	-1199.69	1204.62	-737.32	40°09'40.636"N	104°52'30.357"W	2.00	
6217.00†	3.255	328.530	5958.68	-1205.99	1210.94	-741.20	40°09'40.698"N	104°52'30.407"W	2.00	
6317.00†	1.255	328.530	6058.60	-1209.33	1214.30	-743.25	40°09'40.732"N	104°52'30.433"W	2.00	
6379.77	0.000	180.381	6121.36	-1209.92	1214.89	-743.61	40°09'40.737"N	104°52'30.438"W	2.00	END DROP
6417.00†	0.000	180.381	6158.59	-1209.92	1214.89	-743.61	40°09'40.737"N	104°52'30.438"W	0.00	
6517.00†	0.000	180.381	6258.59	-1209.92	1214.89	-743.61	40°09'40.737"N	104°52'30.438"W	0.00	
6617.00†	0.000	180.381	6358.59	-1209.92	1214.89	-743.61	40°09'40.737"N	104°52'30.438"W	0.00	
6717.00†	0.000	180.381	6458.59	-1209.92	1214.89	-743.61	40°09'40.737"N	104°52'30.438"W	0.00	
6817.00†	0.000	180.381	6558.59	-1209.92	1214.89	-743.61	40°09'40.737"N	104°52'30.438"W	0.00	
6917.00†	0.000	180.381	6658.59	-1209.92	1214.89	-743.61	40°09'40.737"N	104°52'30.438"W	0.00	
6976.45	0.000	180.381	6718.04	-1209.92	1214.89	-743.61	40°09'40.737"N	104°52'30.438"W	0.00	KOP, BUILD @ 10°/100'
7017.00†	4.055	180.381	6758.56	-1208.48	1213.45	-743.62	40°09'40.723"N	104°52'30.438"W	10.00	
7117.00†	14.055	180.381	6857.19	-1192.76	1197.73	-743.72	40°09'40.568"N	104°52'30.439"W	10.00	
7217.00†	24.055	180.381	6951.59	-1160.16	1165.13	-743.94	40°09'40.246"N	104°52'30.442"W	10.00	
7317.00†	34.055	180.381	7038.89	-1111.65	1116.63	-744.26	40°09'39.766"N	104°52'30.446"W	10.00	
7417.00†	44.055	180.381	7116.45	-1048.72	1053.70	-744.68	40°09'39.145"N	104°52'30.451"W	10.00	
7439.05†	46.261	180.381	7132.00	-1033.09	1038.06	-744.78	40°09'38.990"N	104°52'30.453"W	10.00	SHARON SPRINGS
7517.00†	54.055	180.381	7181.90	-973.29	978.26	-745.18	40°09'38.399"N	104°52'30.458"W	10.00	
7582.02†	60.557	180.381	7217.00	-918.60	923.58	-745.55	40°09'37.859"N	104°52'30.463"W	10.00	NIOBRARA A
7617.00†	64.055	180.381	7233.26	-887.63	892.61	-745.75	40°09'37.553"N	104°52'30.465"W	10.00	
7693.37†	71.692	180.381	7262.00	-816.94	821.92	-746.22	40°09'36.854"N	104°52'30.471"W	10.00	NIOBRARA B

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#25 BUTTERBALL 36N-10HZ (687'FNL & 1489'FEL, SEC.10)
Area	COLORADO	Well	BUTTERBALL 36N-10HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	BUTTERBALL 36N-10HZ PWB
Facility	SEC.10-T2N-R67W		

WELLPATH DATA (146 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
7717.00†	74.055	180.381	7268.96	-794.35	799.34	-746.37	40°09'36.631"N	104°52'30.473"W	10.00	
7817.00†	84.055	180.381	7287.92	-696.30	701.28	-747.02	40°09'35.662"N	104°52'30.481"W	10.00	
7876.45	90.000	180.381	7291.00	-636.96	641.94	-747.42	40°09'35.076"N	104°52'30.487"W	10.00	LANDING POINT
7917.00†	90.000	180.381	7291.00	-596.40	601.39	-747.69	40°09'34.675"N	104°52'30.490"W	0.00	
8017.00†	90.000	180.381	7291.00	-496.40	501.39	-748.35	40°09'33.687"N	104°52'30.499"W	0.00	
8117.00†	90.000	180.381	7291.00	-396.40	401.39	-749.02	40°09'32.698"N	104°52'30.507"W	0.00	
8217.00†	90.000	180.381	7291.00	-296.40	301.40	-749.68	40°09'31.710"N	104°52'30.516"W	0.00	
8317.00†	90.000	180.381	7291.00	-196.40	201.40	-750.35	40°09'30.722"N	104°52'30.524"W	0.00	
8417.00†	90.000	180.381	7291.00	-96.40	101.40	-751.01	40°09'29.734"N	104°52'30.533"W	0.00	
8517.00†	90.000	180.381	7291.00	3.60	1.40	-751.68	40°09'28.746"N	104°52'30.541"W	0.00	
8617.00†	90.000	180.381	7291.00	103.60	-98.59	-752.34	40°09'27.758"N	104°52'30.550"W	0.00	
8717.00†	90.000	180.381	7291.00	203.60	-198.59	-753.01	40°09'26.769"N	104°52'30.558"W	0.00	
8817.00†	90.000	180.381	7291.00	303.60	-298.59	-753.67	40°09'25.781"N	104°52'30.567"W	0.00	
8917.00†	90.000	180.381	7291.00	403.60	-398.59	-754.34	40°09'24.793"N	104°52'30.575"W	0.00	
9017.00†	90.000	180.381	7291.00	503.60	-498.59	-755.00	40°09'23.805"N	104°52'30.584"W	0.00	
9117.00†	90.000	180.381	7291.00	603.60	-598.58	-755.67	40°09'22.817"N	104°52'30.592"W	0.00	
9217.00†	90.000	180.381	7291.00	703.60	-698.58	-756.33	40°09'21.828"N	104°52'30.601"W	0.00	
9317.00†	90.000	180.381	7291.00	803.60	-798.58	-757.00	40°09'20.840"N	104°52'30.609"W	0.00	
9417.00†	90.000	180.381	7291.00	903.60	-898.58	-757.66	40°09'19.852"N	104°52'30.618"W	0.00	
9517.00†	90.000	180.381	7291.00	1003.60	-998.57	-758.33	40°09'18.864"N	104°52'30.626"W	0.00	
9617.00†	90.000	180.381	7291.00	1103.60	-1098.57	-758.99	40°09'17.876"N	104°52'30.635"W	0.00	
9717.00†	90.000	180.381	7291.00	1203.60	-1198.57	-759.66	40°09'16.888"N	104°52'30.643"W	0.00	
9817.00†	90.000	180.381	7291.00	1303.60	-1298.57	-760.32	40°09'15.899"N	104°52'30.652"W	0.00	
9917.00†	90.000	180.381	7291.00	1403.60	-1398.57	-760.99	40°09'14.911"N	104°52'30.660"W	0.00	
10017.00†	90.000	180.381	7291.00	1503.60	-1498.56	-761.65	40°09'13.923"N	104°52'30.669"W	0.00	
10117.00†	90.000	180.381	7291.00	1603.60	-1598.56	-762.32	40°09'12.935"N	104°52'30.678"W	0.00	
10217.00†	90.000	180.381	7291.00	1703.60	-1698.56	-762.98	40°09'11.947"N	104°52'30.686"W	0.00	
10317.00†	90.000	180.381	7291.00	1803.60	-1798.56	-763.65	40°09'10.958"N	104°52'30.695"W	0.00	
10417.00†	90.000	180.381	7291.00	1903.60	-1898.56	-764.31	40°09'09.970"N	104°52'30.703"W	0.00	
10517.00†	90.000	180.381	7291.00	2003.60	-1998.55	-764.98	40°09'08.982"N	104°52'30.712"W	0.00	
10617.00†	90.000	180.381	7291.00	2103.60	-2098.55	-765.64	40°09'07.994"N	104°52'30.720"W	0.00	
10717.00†	90.000	180.381	7291.00	2203.60	-2198.55	-766.31	40°09'07.006"N	104°52'30.729"W	0.00	
10817.00†	90.000	180.381	7291.00	2303.60	-2298.55	-766.97	40°09'06.018"N	104°52'30.737"W	0.00	
10917.00†	90.000	180.381	7291.00	2403.60	-2398.54	-767.64	40°09'05.029"N	104°52'30.746"W	0.00	
11017.00†	90.000	180.381	7291.00	2503.60	-2498.54	-768.30	40°09'04.041"N	104°52'30.754"W	0.00	
11117.00†	90.000	180.381	7291.00	2603.60	-2598.54	-768.97	40°09'03.053"N	104°52'30.763"W	0.00	
11217.00†	90.000	180.381	7291.00	2703.60	-2698.54	-769.63	40°09'02.065"N	104°52'30.771"W	0.00	
11317.00†	90.000	180.381	7291.00	2803.60	-2798.54	-770.30	40°09'01.077"N	104°52'30.780"W	0.00	
11417.00†	90.000	180.381	7291.00	2903.60	-2898.53	-770.96	40°09'00.088"N	104°52'30.788"W	0.00	
11517.00†	90.000	180.381	7291.00	3003.60	-2998.53	-771.63	40°08'59.100"N	104°52'30.797"W	0.00	
11617.00†	90.000	180.381	7291.00	3103.60	-3098.53	-772.29	40°08'58.112"N	104°52'30.805"W	0.00	
11717.00†	90.000	180.381	7291.00	3203.60	-3198.53	-772.95	40°08'57.124"N	104°52'30.814"W	0.00	
11817.00†	90.000	180.381	7291.00	3303.60	-3298.52	-773.62	40°08'56.136"N	104°52'30.822"W	0.00	
11917.00†	90.000	180.381	7291.00	3403.60	-3398.52	-774.28	40°08'55.147"N	104°52'30.831"W	0.00	
12017.00†	90.000	180.381	7291.00	3503.60	-3498.52	-774.95	40°08'54.159"N	104°52'30.839"W	0.00	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#25 BUTTERBALL 36N-10HZ (687'FNL & 1489'FEL, SEC.10)
Area	COLORADO	Well	BUTTERBALL 36N-10HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	BUTTERBALL 36N-10HZ PWB
Facility	SEC.10-T2N-R67W		

WELLPATH DATA (146 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
12117.00†	90.000	180.381	7291.00	3603.60	-3598.52	-775.61	40°08'53.171"N	104°52'30.848"W	0.00	
12217.00†	90.000	180.381	7291.00	3703.60	-3698.52	-776.28	40°08'52.183"N	104°52'30.856"W	0.00	
12317.00†	90.000	180.381	7291.00	3803.60	-3798.51	-776.94	40°08'51.195"N	104°52'30.865"W	0.00	
12417.00†	90.000	180.381	7291.00	3903.60	-3898.51	-777.61	40°08'50.207"N	104°52'30.874"W	0.00	
12517.00†	90.000	180.381	7291.00	4003.60	-3998.51	-778.27	40°08'49.218"N	104°52'30.882"W	0.00	
12617.00†	90.000	180.381	7291.00	4103.60	-4098.51	-778.94	40°08'48.230"N	104°52'30.891"W	0.00	
12717.00†	90.000	180.381	7291.00	4203.60	-4198.50	-779.60	40°08'47.242"N	104°52'30.899"W	0.00	
12817.00†	90.000	180.381	7291.00	4303.60	-4298.50	-780.27	40°08'46.254"N	104°52'30.908"W	0.00	
12917.00†	90.000	180.381	7291.00	4403.60	-4398.50	-780.93	40°08'45.266"N	104°52'30.916"W	0.00	
13017.00†	90.000	180.381	7291.00	4503.60	-4498.50	-781.60	40°08'44.277"N	104°52'30.925"W	0.00	
13020.98	90.000	180.381	7291.00 ¹	4507.58	-4502.48	-781.63	40°08'44.238"N	104°52'30.925"W	0.00	TOTAL DEPTH

HOLE & CASING SECTIONS -									
Ref Wellbore: BUTTERBALL 36N-10HZ PWB Ref Wellpath: BUTTERBALL 36N-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	7876.45	6816.45	1060.00	7291.00	0.00	0.00	641.94	-747.42
7in Casing Intermediate	17.00	7876.45	7859.45	17.00	7291.00	0.00	0.00	641.94	-747.42
6.125in Open Hole	7876.45	13020.68	5144.23	7291.00	7291.00	641.94	-747.42	-4502.18	-781.62
4.5in Casing Production	17.00	13020.68	13003.68	17.00	7291.00	0.00	0.00	-4502.18	-781.62

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#25 BUTTERBALL 36N-10HZ (687'FNL & 1489'FEL, SEC.10)
Area	COLORADO	Well	BUTTERBALL 36N-10HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	BUTTERBALL 36N-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	56.84	-1806.22	3173592.05	1301060.42	40°09'29.293"N	104°52'44.123"W	polygon
BUTTERBALL 36N-10HZ BHL ON PLAT REV-1 (50'FSL & 2240'FEL, SEC.10)		7291.00	-4527.50	-781.64	3174649.00	1296483.65	40°08'43.991"N	104°52'30.925"W	point
1) BUTTERBALL 36N-10HZ BHL REV-2 (75'FSL & 2240'FEL, SEC.10)	13020.98	7291.00	-4502.48	-781.63	3174648.83	1296508.67	40°08'44.238"N	104°52'30.925"W	point

SURVEY PROGRAM - Ref Wellbore: BUTTERBALL 36N-10HZ PWB					Ref Wellpath: BUTTERBALL 36N-10HZ (PERMIT REV-1) PWP				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model			Log Name/Comment		Wellbore		
17.00	7876.45	NaviTrak (MAGCORR,IFR)					BUTTERBALL 36N-10HZ PWB		
7876.45	13020.98	NaviTrak (MAGCORR,IFR)					BUTTERBALL 36N-10HZ PWB		

REFERENCE WELLPATH IDENTIFICATION				
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#25 BUTTERBALL 36N-10HZ (687'FNL & 1489'FEL, SEC.10)	
Area	COLORADO	Well	BUTTERBALL 36N-10HZ	
Field	WELD COUNTY (KERR MCGEE)	Wellbore	BUTTERBALL 36N-10HZ PWB	
Facility	SEC.10-T2N-R67W			

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
613.00	0.000	328.530	613.00	BASE FOX HILLS
1060.00	0.000	328.530	1060.00	SURFACE CSG SETTING DEPTH
4102.13	23.000	328.530	3964.00	PARKMAN
4556.22	23.000	328.530	4382.00	SUSSEX
7439.05	46.261	180.381	7132.00	SHARON SPRINGS
7582.02	60.557	180.381	7217.00	NIOBRARA A
7693.37	71.692	180.381	7262.00	NIOBRARA B

DESIGN COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
17.00	0.000	328.530	17.00	TIE ON
1600.00	0.000	328.530	1600.00	BEGIN NUDGE
2750.00	23.000	328.530	2719.36	END NUDGE
5229.77	23.000	328.530	5002.00	BEGIN DROP
6379.77	0.000	180.381	6121.36	END DROP
6976.45	0.000	180.381	6718.04	KOP, BUILD @ 10°/100'
7876.45	90.000	180.381	7291.00	LANDING POINT
13020.98	90.000	180.381	7291.00	TOTAL DEPTH