

# KERR-MCGEE OIL & GAS ONSHORE LP

Location: COLORADO Slot: SLOT#02 BUTTERBALL 3N-15HZ (639' FNL & 1974' FWL, SEC. 10)  
Field: WELD COUNTY (KERR MCGEE) Well: BUTTERBALL 3N-15HZ  
Facility: SEC.10-T2N-R67W Wellbore: BUTTERBALL 3N-15HZ PWB

Plot reference wellpath is BUTTERBALL 3N-15HZ (PERMIT REV-1) PWB

True vertical depths are referenced to PERMIT (17 KB) (RKB)	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
Measured depths are referenced to PERMIT (17 KB) (RKB)	North Reference: True north
PERMIT (17 KB) (RKB) to Mean Sea Level: 4952 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#02 BUTTERBALL 3N-15HZ (639' FNL & 1974' FWL, SEC. 10): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: precin on 19/Jul/2013

## 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#02 BUTTERBALL 3N-15HZ (639' FNL & 1974' FWL, SEC. 10)	0.10	30.05	3173622.249	1301060.634	40°09'29.293"N	104°52'43.734"W
PERMIT (17 KB) (RKB) to Mud line (At Slot: SLOT#02 BUTTERBALL 3N-15HZ (639' FNL & 1974' FWL, SEC. 10))					4952ft	
Mean Sea Level to Mud line (At Slot: SLOT#02 BUTTERBALL 3N-15HZ (639' FNL & 1974' FWL, SEC. 10))					0ft	
PERMIT (17 KB) (RKB) to Mean Sea Level					4952ft	

## Survey Program

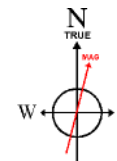
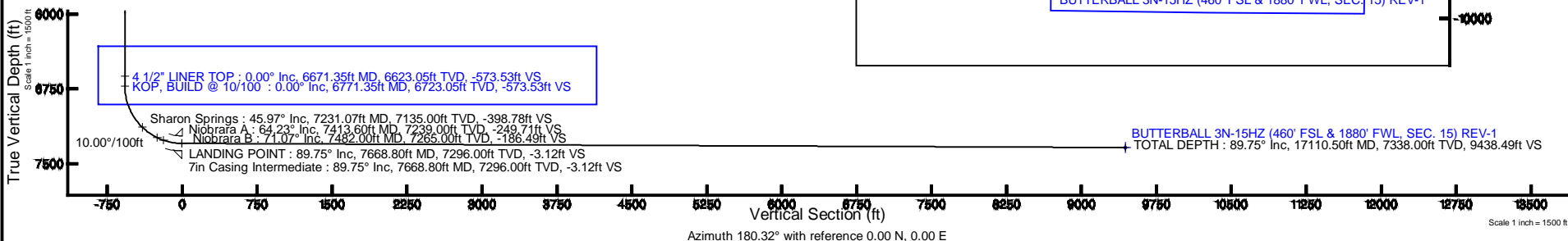
Start MD (ft)	End MD (ft)	Tool	Model	Log Name/Comment	Wellbore
17.00	17110.50	NaviTrak	NaviTrak (Standard)		BUTTERBALL 3N-15HZ PWB

## 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	4952.00	0.00	-30.20	3173592.05	1301060.42	40°09'29.293"N	104°52'44.123"W	
SEC.15-T2N-R67W SECTION LINES	4952.00	0.00	-30.20	3173592.05	1301060.42	40°09'29.293"N	104°52'44.123"W	
BUTTERBALL 3N-15HZ (460' FSL & 1880' FWL, SEC. 15) REV-1	17110.50	7338.00	-9437.80	-147.64	3173540.73	1291622.45	40°07'56.028"N	104°52'45.636"W
BUTTERBALL 3N-15HZ LAND BOX		7338.00	0.00	0.00	3173622.25	1301060.63	40°09'29.293"N	104°52'43.734"W

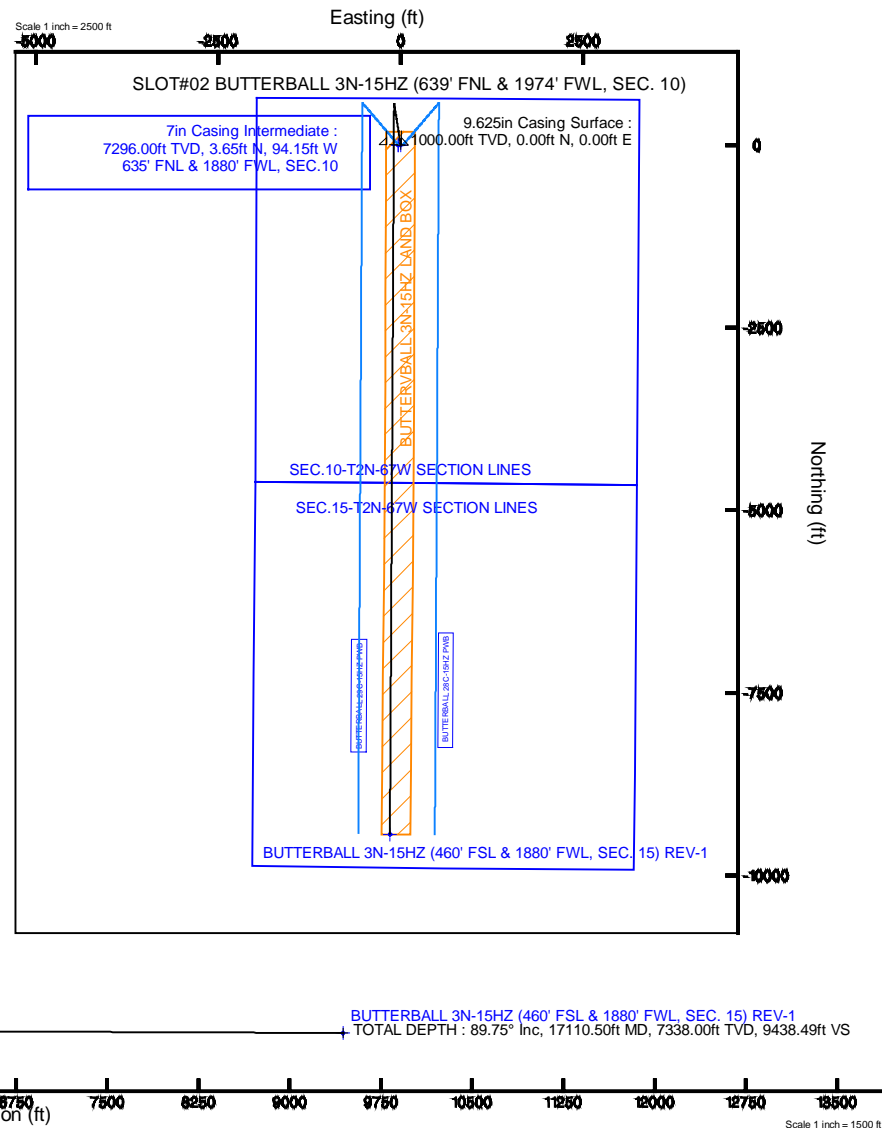
## Well Profile Data

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
TIE-ON	17.00	0.000	351.000	17.00	0.00	0.00	0.00	0.00
BEGIN NUDGE	1100.00	0.000	351.000	1100.00	0.00	0.00	0.00	0.00
END NUDGE	1600.00	10.000	351.000	1597.47	42.99	-6.81	2.00	-42.95
BEGIN DROP	4445.77	10.000	351.000	4400.00	531.07	-84.11	0.00	-530.58
END DROP	4945.77	0.000	180.325	4897.47	574.05	-90.92	2.00	-573.53
KOP, BUILD @ 10/100	6771.35	0.000	180.325	6723.05	574.05	-90.92	0.00	-573.53
LANDING POINT	7668.80	89.745	180.325	7296.00	3.65	-94.15	10.00	-3.12
TOTAL DEPTH	17110.50	89.745	180.325	7338.00	-9437.80	-147.64	0.00	9438.49



BGGM (1945.0 to 2015.0) Dip: 66.76° Field: 52744.4 nT  
Magnetic North is 8.66 degrees East of True North (at 15/Jul/2013)

To correct azimuth from Magnetic to True add 8.66 degrees





# Planned Wellpath Report

BUTTERBALL 3N-15HZ (PERMIT REV-1) PWP

Page 1 of 7



REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#02 BUTTERBALL 3N-15HZ (639' FNL & 1974' FWL, SEC. 10)
Area	COLORADO	Well	BUTTERBALL 3N-15HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	BUTTERBALL 3N-15HZ 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	Precain
Scale	0.999958	Report Generated	19/Jul/2013 at 05:29
Convergence at slot	n/a	Database/Source file	WellArchitectDB/_BUTTERBALL_3N-15HZ_PWB.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	0.10	30.05	3173622.25	1301060.63	40°09'29.293"N	104°52'43.734"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	4952.00ft
Horizontal Reference Pt	Slot	PERMIT (17' KB) (RKB) to Mean Sea Level	4952.00ft
Vertical Reference Pt	PERMIT (17' KB) (RKB)	PERMIT (17' KB) (RKB) to Mud Line at Slot (SLOT#02 BUTTERBALL 3N-15HZ (639' FNL & 1974' FWL, SEC. 10))	4952.00ft
MD Reference Pt	PERMIT (17' KB) (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	180.32°



# Planned Wellpath Report

## BUTTERBALL 3N-15HZ (PERMIT REV-1) PWP

Page 2 of 7



### REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#02 BUTTERBALL 3N-15HZ (639' FNL & 1974' FWL, SEC. 10)
Area	COLORADO	Well	BUTTERBALL 3N-15HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	BUTTERBALL 3N-15HZ PWB
Facility	SEC.10-T2N-R67W		

### WELLPATH DATA (186 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	351.000	0.00	0.00	0.00	0.00	40°09'29.293"N	104°52'43.734"W	0.00	
17.00	0.000	351.000	17.00	0.00	0.00	0.00	40°09'29.293"N	104°52'43.734"W	0.00	TIE-ON
117.00†	0.000	351.000	117.00	0.00	0.00	0.00	40°09'29.293"N	104°52'43.734"W	0.00	
217.00†	0.000	351.000	217.00	0.00	0.00	0.00	40°09'29.293"N	104°52'43.734"W	0.00	
317.00†	0.000	351.000	317.00	0.00	0.00	0.00	40°09'29.293"N	104°52'43.734"W	0.00	
417.00†	0.000	351.000	417.00	0.00	0.00	0.00	40°09'29.293"N	104°52'43.734"W	0.00	
517.00†	0.000	351.000	517.00	0.00	0.00	0.00	40°09'29.293"N	104°52'43.734"W	0.00	
617.00†	0.000	351.000	617.00	0.00	0.00	0.00	40°09'29.293"N	104°52'43.734"W	0.00	
717.00†	0.000	351.000	717.00	0.00	0.00	0.00	40°09'29.293"N	104°52'43.734"W	0.00	
756.00†	0.000	351.000	756.00	0.00	0.00	0.00	40°09'29.293"N	104°52'43.734"W	0.00	Fox Hills Base
817.00†	0.000	351.000	817.00	0.00	0.00	0.00	40°09'29.293"N	104°52'43.734"W	0.00	
917.00†	0.000	351.000	917.00	0.00	0.00	0.00	40°09'29.293"N	104°52'43.734"W	0.00	
1017.00†	0.000	351.000	1017.00	0.00	0.00	0.00	40°09'29.293"N	104°52'43.734"W	0.00	
1100.00	0.000	351.000	1100.00	0.00	0.00	0.00	40°09'29.293"N	104°52'43.734"W	0.00	BEGIN NUDGE
1117.00†	0.340	351.000	1117.00	-0.05	0.05	-0.01	40°09'29.293"N	104°52'43.734"W	2.00	
1217.00†	2.340	351.000	1216.97	-2.36	2.36	-0.37	40°09'29.316"N	104°52'43.739"W	2.00	
1317.00†	4.340	351.000	1316.79	-8.11	8.11	-1.29	40°09'29.373"N	104°52'43.751"W	2.00	
1417.00†	6.340	351.000	1416.35	-17.29	17.31	-2.74	40°09'29.464"N	104°52'43.769"W	2.00	
1517.00†	8.340	351.000	1515.53	-29.90	29.92	-4.74	40°09'29.589"N	104°52'43.795"W	2.00	
1600.00	10.000	351.000	1597.47	-42.95	42.99	-6.81	40°09'29.718"N	104°52'43.822"W	2.00	END NUDGE
1617.00†	10.000	351.000	1614.21	-45.86	45.90	-7.27	40°09'29.747"N	104°52'43.828"W	0.00	
1717.00†	10.000	351.000	1712.69	-63.00	63.05	-9.99	40°09'29.916"N	104°52'43.863"W	0.00	
1817.00†	10.000	351.000	1811.17	-80.13	80.20	-12.70	40°09'30.086"N	104°52'43.898"W	0.00	
1917.00†	10.000	351.000	1909.65	-97.27	97.36	-15.42	40°09'30.255"N	104°52'43.933"W	0.00	
2017.00†	10.000	351.000	2008.13	-114.40	114.51	-18.14	40°09'30.425"N	104°52'43.968"W	0.00	
2117.00†	10.000	351.000	2106.61	-131.54	131.66	-20.85	40°09'30.594"N	104°52'44.003"W	0.00	
2217.00†	10.000	351.000	2205.09	-148.67	148.81	-23.57	40°09'30.764"N	104°52'44.038"W	0.00	
2317.00†	10.000	351.000	2303.57	-165.81	165.96	-26.29	40°09'30.933"N	104°52'44.073"W	0.00	
2417.00†	10.000	351.000	2402.05	-182.94	183.11	-29.00	40°09'31.103"N	104°52'44.108"W	0.00	
2517.00†	10.000	351.000	2500.53	-200.08	200.26	-31.72	40°09'31.272"N	104°52'44.143"W	0.00	
2617.00†	10.000	351.000	2599.01	-217.21	217.41	-34.43	40°09'31.441"N	104°52'44.178"W	0.00	
2717.00†	10.000	351.000	2697.50	-234.35	234.56	-37.15	40°09'31.611"N	104°52'44.212"W	0.00	
2817.00†	10.000	351.000	2795.98	-251.48	251.71	-39.87	40°09'31.780"N	104°52'44.247"W	0.00	
2917.00†	10.000	351.000	2894.46	-268.62	268.87	-42.58	40°09'31.950"N	104°52'44.282"W	0.00	
3017.00†	10.000	351.000	2992.94	-285.76	286.02	-45.30	40°09'32.119"N	104°52'44.317"W	0.00	
3117.00†	10.000	351.000	3091.42	-302.89	303.17	-48.02	40°09'32.289"N	104°52'44.352"W	0.00	
3217.00†	10.000	351.000	3189.90	-320.03	320.32	-50.73	40°09'32.458"N	104°52'44.387"W	0.00	
3317.00†	10.000	351.000	3288.38	-337.16	337.47	-53.45	40°09'32.628"N	104°52'44.422"W	0.00	
3417.00†	10.000	351.000	3386.86	-354.30	354.62	-56.17	40°09'32.797"N	104°52'44.457"W	0.00	
3517.00†	10.000	351.000	3485.34	-371.43	371.77	-58.88	40°09'32.967"N	104°52'44.492"W	0.00	
3617.00†	10.000	351.000	3583.82	-388.57	388.92	-61.60	40°09'33.136"N	104°52'44.527"W	0.00	
3717.00†	10.000	351.000	3682.30	-405.70	406.07	-64.32	40°09'33.306"N	104°52'44.562"W	0.00	
3817.00†	10.000	351.000	3780.78	-422.84	423.23	-67.03	40°09'33.475"N	104°52'44.597"W	0.00	
3917.00†	10.000	351.000	3879.26	-439.97	440.38	-69.75	40°09'33.645"N	104°52'44.632"W	0.00	
3976.64†	10.000	351.000	3938.00	-450.19	450.61	-71.37	40°09'33.746"N	104°52'44.653"W	0.00	Parkman



# Planned Wellpath Report

## BUTTERBALL 3N-15HZ (PERMIT REV-1) PWP

Page 3 of 7



### REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#02 BUTTERBALL 3N-15HZ (639' FNL & 1974' FWL, SEC. 10)
Area	COLORADO	Well	BUTTERBALL 3N-15HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	BUTTERBALL 3N-15HZ PWB
Facility	SEC.10-T2N-R67W		

### WELLPATH DATA (186 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4017.00†	10.000	351.000	3977.75	-457.11	457.53	-72.47	40°09'33.814"N	104°52'44.667"W	0.00	
4117.00†	10.000	351.000	4076.23	-474.24	474.68	-75.18	40°09'33.984"N	104°52'44.702"W	0.00	
4217.00†	10.000	351.000	4174.71	-491.38	491.83	-77.90	40°09'34.153"N	104°52'44.737"W	0.00	
4317.00†	10.000	351.000	4273.19	-508.51	508.98	-80.61	40°09'34.323"N	104°52'44.772"W	0.00	
4409.21†	10.000	351.000	4364.00	-524.32	524.80	-83.12	40°09'34.479"N	104°52'44.805"W	0.00	Sussex
4417.00†	10.000	351.000	4371.67	-525.65	526.13	-83.33	40°09'34.492"N	104°52'44.807"W	0.00	
4445.77	10.000	351.000	4400.00	-530.58	531.07	-84.11	40°09'34.541"N	104°52'44.817"W	0.00	BEGIN DROP
4517.00†	8.575	351.000	4470.30	-541.92	542.42	-85.91	40°09'34.653"N	104°52'44.841"W	2.00	
4617.00†	6.575	351.000	4569.42	-554.93	555.44	-87.97	40°09'34.782"N	104°52'44.867"W	2.00	
4717.00†	4.575	351.000	4668.94	-564.52	565.04	-89.49	40°09'34.877"N	104°52'44.887"W	2.00	
4817.00†	2.575	351.000	4768.74	-570.67	571.19	-90.47	40°09'34.938"N	104°52'44.899"W	2.00	
4917.00†	0.575	351.000	4868.70	-573.38	573.91	-90.90	40°09'34.964"N	104°52'44.905"W	2.00	
4945.77	0.000	180.325	4897.47	-573.53	574.05	-90.92	40°09'34.966"N	104°52'44.905"W	2.00	END DROP
5017.00†	0.000	180.325	4968.70	-573.53	574.05	-90.92	40°09'34.966"N	104°52'44.905"W	0.00	
5117.00†	0.000	180.325	5068.70	-573.53	574.05	-90.92	40°09'34.966"N	104°52'44.905"W	0.00	
5217.00†	0.000	180.325	5168.70	-573.53	574.05	-90.92	40°09'34.966"N	104°52'44.905"W	0.00	
5317.00†	0.000	180.325	5268.70	-573.53	574.05	-90.92	40°09'34.966"N	104°52'44.905"W	0.00	
5417.00†	0.000	180.325	5368.70	-573.53	574.05	-90.92	40°09'34.966"N	104°52'44.905"W	0.00	
5517.00†	0.000	180.325	5468.70	-573.53	574.05	-90.92	40°09'34.966"N	104°52'44.905"W	0.00	
5617.00†	0.000	180.325	5568.70	-573.53	574.05	-90.92	40°09'34.966"N	104°52'44.905"W	0.00	
5717.00†	0.000	180.325	5668.70	-573.53	574.05	-90.92	40°09'34.966"N	104°52'44.905"W	0.00	
5817.00†	0.000	180.325	5768.70	-573.53	574.05	-90.92	40°09'34.966"N	104°52'44.905"W	0.00	
5917.00†	0.000	180.325	5868.70	-573.53	574.05	-90.92	40°09'34.966"N	104°52'44.905"W	0.00	
6017.00†	0.000	180.325	5968.70	-573.53	574.05	-90.92	40°09'34.966"N	104°52'44.905"W	0.00	
6117.00†	0.000	180.325	6068.70	-573.53	574.05	-90.92	40°09'34.966"N	104°52'44.905"W	0.00	
6217.00†	0.000	180.325	6168.70	-573.53	574.05	-90.92	40°09'34.966"N	104°52'44.905"W	0.00	
6317.00†	0.000	180.325	6268.70	-573.53	574.05	-90.92	40°09'34.966"N	104°52'44.905"W	0.00	
6417.00†	0.000	180.325	6368.70	-573.53	574.05	-90.92	40°09'34.966"N	104°52'44.905"W	0.00	
6517.00†	0.000	180.325	6468.70	-573.53	574.05	-90.92	40°09'34.966"N	104°52'44.905"W	0.00	
6617.00†	0.000	180.325	6568.70	-573.53	574.05	-90.92	40°09'34.966"N	104°52'44.905"W	0.00	
6671.35†	0.000	180.325	6623.05	-573.53	574.05	-90.92	40°09'34.966"N	104°52'44.905"W	0.00	4 1/2" LINER TOP
6717.00†	0.000	180.325	6668.70	-573.53	574.05	-90.92	40°09'34.966"N	104°52'44.905"W	0.00	
6771.35	0.000	180.325	6723.05	-573.53	574.05	-90.92	40°09'34.966"N	104°52'44.905"W	0.00	KOP, BUILD @ 10/100
6817.00†	4.565	180.325	6768.65	-571.71	572.23	-90.93	40°09'34.948"N	104°52'44.905"W	10.00	
6917.00†	14.565	180.325	6867.13	-555.11	555.64	-91.03	40°09'34.784"N	104°52'44.906"W	10.00	
7017.00†	24.565	180.325	6961.24	-521.67	522.19	-91.21	40°09'34.453"N	104°52'44.909"W	10.00	
7117.00†	34.565	180.325	7048.11	-472.39	472.92	-91.49	40°09'33.966"N	104°52'44.912"W	10.00	
7217.00†	44.565	180.325	7125.10	-408.77	409.30	-91.85	40°09'33.338"N	104°52'44.917"W	10.00	
7231.07†	45.972	180.325	7135.00	-398.78	399.31	-91.91	40°09'33.239"N	104°52'44.918"W	10.00	Sharon Springs
7317.00†	54.565	180.325	7189.88	-332.76	333.29	-92.28	40°09'32.587"N	104°52'44.923"W	10.00	
7413.60†	64.225	180.325	7239.00	-249.71	250.24	-92.76	40°09'31.766"N	104°52'44.929"W	10.00	Niobrara A
7417.00†	64.565	180.325	7240.47	-246.65	247.18	-92.77	40°09'31.736"N	104°52'44.929"W	10.00	
7482.00†	71.065	180.325	7265.00	-186.49	187.02	-93.11	40°09'31.141"N	104°52'44.933"W	10.00	Niobrara B
7517.00†	74.565	180.325	7275.34	-153.06	153.59	-93.30	40°09'30.811"N	104°52'44.936"W	10.00	
7617.00†	84.565	180.325	7293.43	-54.84	55.37	-93.86	40°09'29.840"N	104°52'44.943"W	10.00	



# Planned Wellpath Report

## BUTTERBALL 3N-15HZ (PERMIT REV-1) PWP

Page 4 of 7



### REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#02 BUTTERBALL 3N-15HZ (639' FNL & 1974' FWL, SEC. 10)
Area	COLORADO	Well	BUTTERBALL 3N-15HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	BUTTERBALL 3N-15HZ PWB
Facility	SEC.10-T2N-R67W		

### WELLPATH DATA (186 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
7668.80	89.745	180.325	7296.00	-3.12	3.65	-94.15	40°09'29.329"N	104°52'44.947"W	10.00	LANDING POINT
7717.00†	89.745	180.325	7296.21	45.08	-44.55	-94.43	40°09'28.853"N	104°52'44.950"W	0.00	
7817.00†	89.745	180.325	7296.66	145.08	-144.54	-94.99	40°09'27.865"N	104°52'44.957"W	0.00	
7917.00†	89.745	180.325	7297.10	245.08	-244.54	-95.56	40°09'26.876"N	104°52'44.965"W	0.00	
8017.00†	89.745	180.325	7297.55	345.08	-344.54	-96.12	40°09'25.888"N	104°52'44.972"W	0.00	
8117.00†	89.745	180.325	7297.99	445.08	-444.54	-96.69	40°09'24.900"N	104°52'44.979"W	0.00	
8217.00†	89.745	180.325	7298.44	545.08	-544.53	-97.26	40°09'23.912"N	104°52'44.987"W	0.00	
8317.00†	89.745	180.325	7298.88	645.08	-644.53	-97.82	40°09'22.924"N	104°52'44.994"W	0.00	
8417.00†	89.745	180.325	7299.33	745.08	-744.53	-98.39	40°09'21.936"N	104°52'45.001"W	0.00	
8517.00†	89.745	180.325	7299.77	845.07	-844.53	-98.96	40°09'20.947"N	104°52'45.008"W	0.00	
8617.00†	89.745	180.325	7300.22	945.07	-944.52	-99.52	40°09'19.959"N	104°52'45.016"W	0.00	
8717.00†	89.745	180.325	7300.66	1045.07	-1044.52	-100.09	40°09'18.971"N	104°52'45.023"W	0.00	
8817.00†	89.745	180.325	7301.11	1145.07	-1144.52	-100.66	40°09'17.983"N	104°52'45.030"W	0.00	
8917.00†	89.745	180.325	7301.55	1245.07	-1244.52	-101.22	40°09'16.995"N	104°52'45.038"W	0.00	
9017.00†	89.745	180.325	7302.00	1345.07	-1344.51	-101.79	40°09'16.006"N	104°52'45.045"W	0.00	
9117.00†	89.745	180.325	7302.44	1445.07	-1444.51	-102.36	40°09'15.018"N	104°52'45.052"W	0.00	
9217.00†	89.745	180.325	7302.88	1545.07	-1544.51	-102.92	40°09'14.030"N	104°52'45.060"W	0.00	
9317.00†	89.745	180.325	7303.33	1645.07	-1644.51	-103.49	40°09'13.042"N	104°52'45.067"W	0.00	
9417.00†	89.745	180.325	7303.77	1745.07	-1744.50	-104.06	40°09'12.054"N	104°52'45.074"W	0.00	
9517.00†	89.745	180.325	7304.22	1845.06	-1844.50	-104.62	40°09'11.066"N	104°52'45.081"W	0.00	
9617.00†	89.745	180.325	7304.66	1945.06	-1944.50	-105.19	40°09'10.077"N	104°52'45.089"W	0.00	
9717.00†	89.745	180.325	7305.11	2045.06	-2044.50	-105.76	40°09'09.089"N	104°52'45.096"W	0.00	
9817.00†	89.745	180.325	7305.55	2145.06	-2144.49	-106.32	40°09'08.101"N	104°52'45.103"W	0.00	
9917.00†	89.745	180.325	7306.00	2245.06	-2244.49	-106.89	40°09'07.113"N	104°52'45.111"W	0.00	
10017.00†	89.745	180.325	7306.44	2345.06	-2344.49	-107.46	40°09'06.125"N	104°52'45.118"W	0.00	
10117.00†	89.745	180.325	7306.89	2445.06	-2444.48	-108.02	40°09'05.136"N	104°52'45.125"W	0.00	
10217.00†	89.745	180.325	7307.33	2545.06	-2544.48	-108.59	40°09'04.148"N	104°52'45.132"W	0.00	
10317.00†	89.745	180.325	7307.78	2645.06	-2644.48	-109.15	40°09'03.160"N	104°52'45.140"W	0.00	
10417.00†	89.745	180.325	7308.22	2745.06	-2744.48	-109.72	40°09'02.172"N	104°52'45.147"W	0.00	
10517.00†	89.745	180.325	7308.67	2845.05	-2844.47	-110.29	40°09'01.184"N	104°52'45.154"W	0.00	
10617.00†	89.745	180.325	7309.11	2945.05	-2944.47	-110.85	40°09'00.196"N	104°52'45.162"W	0.00	
10717.00†	89.745	180.325	7309.56	3045.05	-3044.47	-111.42	40°08'59.207"N	104°52'45.169"W	0.00	
10817.00†	89.745	180.325	7310.00	3145.05	-3144.47	-111.99	40°08'58.219"N	104°52'45.176"W	0.00	
10917.00†	89.745	180.325	7310.45	3245.05	-3244.46	-112.55	40°08'57.231"N	104°52'45.183"W	0.00	
11017.00†	89.745	180.325	7310.89	3345.05	-3344.46	-113.12	40°08'56.243"N	104°52'45.191"W	0.00	
11117.00†	89.745	180.325	7311.34	3445.05	-3444.46	-113.69	40°08'55.255"N	104°52'45.198"W	0.00	
11217.00†	89.745	180.325	7311.78	3545.05	-3544.46	-114.25	40°08'54.266"N	104°52'45.205"W	0.00	
11317.00†	89.745	180.325	7312.23	3645.05	-3644.45	-114.82	40°08'53.278"N	104°52'45.213"W	0.00	
11417.00†	89.745	180.325	7312.67	3745.05	-3744.45	-115.39	40°08'52.290"N	104°52'45.220"W	0.00	
11517.00†	89.745	180.325	7313.12	3845.04	-3844.45	-115.95	40°08'51.302"N	104°52'45.227"W	0.00	
11617.00†	89.745	180.325	7313.56	3945.04	-3944.45	-116.52	40°08'50.314"N	104°52'45.234"W	0.00	
11717.00†	89.745	180.325	7314.01	4045.04	-4044.44	-117.09	40°08'49.326"N	104°52'45.242"W	0.00	
11817.00†	89.745	180.325	7314.45	4145.04	-4144.44	-117.65	40°08'48.337"N	104°52'45.249"W	0.00	
11917.00†	89.745	180.325	7314.90	4245.04	-4244.44	-118.22	40°08'47.349"N	104°52'45.256"W	0.00	
12017.00†	89.745	180.325	7315.34	4345.04	-4344.44	-118.79	40°08'46.361"N	104°52'45.264"W	0.00	





# Planned Wellpath Report

## BUTTERBALL 3N-15HZ (PERMIT REV-1) PWP

Page 5 of 7



### REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#02 BUTTERBALL 3N-15HZ (639' FNL & 1974' FWL, SEC. 10)
Area	COLORADO	Well	BUTTERBALL 3N-15HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	BUTTERBALL 3N-15HZ PWB
Facility	SEC.10-T2N-R67W		

### WELLPATH DATA (186 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
12117.00†	89.745	180.325	7315.79	4445.04	-4444.43	-119.35	40°08'45.373"N	104°52'45.271"W	0.00	
12217.00†	89.745	180.325	7316.23	4545.04	-4544.43	-119.92	40°08'44.385"N	104°52'45.278"W	0.00	
12317.00†	89.745	180.325	7316.68	4645.04	-4644.43	-120.49	40°08'43.396"N	104°52'45.285"W	0.00	
12417.00†	89.745	180.325	7317.12	4745.04	-4744.43	-121.05	40°08'42.408"N	104°52'45.293"W	0.00	
12517.00†	89.745	180.325	7317.57	4845.03	-4844.42	-121.62	40°08'41.420"N	104°52'45.300"W	0.00	
12617.00†	89.745	180.325	7318.01	4945.03	-4944.42	-122.18	40°08'40.432"N	104°52'45.307"W	0.00	
12717.00†	89.745	180.325	7318.46	5045.03	-5044.42	-122.75	40°08'39.444"N	104°52'45.315"W	0.00	
12817.00†	89.745	180.325	7318.90	5145.03	-5144.41	-123.32	40°08'38.456"N	104°52'45.322"W	0.00	
12917.00†	89.745	180.325	7319.34	5245.03	-5244.41	-123.88	40°08'37.467"N	104°52'45.329"W	0.00	
13017.00†	89.745	180.325	7319.79	5345.03	-5344.41	-124.45	40°08'36.479"N	104°52'45.337"W	0.00	
13117.00†	89.745	180.325	7320.23	5445.03	-5444.41	-125.02	40°08'35.491"N	104°52'45.344"W	0.00	
13217.00†	89.745	180.325	7320.68	5545.03	-5544.40	-125.58	40°08'34.503"N	104°52'45.351"W	0.00	
13317.00†	89.745	180.325	7321.12	5645.03	-5644.40	-126.15	40°08'33.515"N	104°52'45.358"W	0.00	
13417.00†	89.745	180.325	7321.57	5745.03	-5744.40	-126.72	40°08'32.526"N	104°52'45.366"W	0.00	
13517.00†	89.745	180.325	7322.01	5845.02	-5844.40	-127.28	40°08'31.538"N	104°52'45.373"W	0.00	
13617.00†	89.745	180.325	7322.46	5945.02	-5944.39	-127.85	40°08'30.550"N	104°52'45.380"W	0.00	
13717.00†	89.745	180.325	7322.90	6045.02	-6044.39	-128.42	40°08'29.562"N	104°52'45.388"W	0.00	
13817.00†	89.745	180.325	7323.35	6145.02	-6144.39	-128.98	40°08'28.574"N	104°52'45.395"W	0.00	
13917.00†	89.745	180.325	7323.79	6245.02	-6244.39	-129.55	40°08'27.586"N	104°52'45.402"W	0.00	
14017.00†	89.745	180.325	7324.24	6345.02	-6344.38	-130.12	40°08'26.597"N	104°52'45.409"W	0.00	
14117.00†	89.745	180.325	7324.68	6445.02	-6444.38	-130.68	40°08'25.609"N	104°52'45.417"W	0.00	
14217.00†	89.745	180.325	7325.13	6545.02	-6544.38	-131.25	40°08'24.621"N	104°52'45.424"W	0.00	
14317.00†	89.745	180.325	7325.57	6645.02	-6644.38	-131.82	40°08'23.633"N	104°52'45.431"W	0.00	
14417.00†	89.745	180.325	7326.02	6745.02	-6744.37	-132.38	40°08'22.645"N	104°52'45.439"W	0.00	
14517.00†	89.745	180.325	7326.46	6845.01	-6844.37	-132.95	40°08'21.656"N	104°52'45.446"W	0.00	
14617.00†	89.745	180.325	7326.91	6945.01	-6944.37	-133.51	40°08'20.668"N	104°52'45.453"W	0.00	
14717.00†	89.745	180.325	7327.35	7045.01	-7044.37	-134.08	40°08'19.680"N	104°52'45.460"W	0.00	
14817.00†	89.745	180.325	7327.80	7145.01	-7144.36	-134.65	40°08'18.692"N	104°52'45.468"W	0.00	
14917.00†	89.745	180.325	7328.24	7245.01	-7244.36	-135.21	40°08'17.704"N	104°52'45.475"W	0.00	
15017.00†	89.745	180.325	7328.69	7345.01	-7344.36	-135.78	40°08'16.716"N	104°52'45.482"W	0.00	
15117.00†	89.745	180.325	7329.13	7445.01	-7444.36	-136.35	40°08'15.727"N	104°52'45.490"W	0.00	
15217.00†	89.745	180.325	7329.58	7545.01	-7544.35	-136.91	40°08'14.739"N	104°52'45.497"W	0.00	
15317.00†	89.745	180.325	7330.02	7645.01	-7644.35	-137.48	40°08'13.751"N	104°52'45.504"W	0.00	
15417.00†	89.745	180.325	7330.47	7745.01	-7744.35	-138.05	40°08'12.763"N	104°52'45.511"W	0.00	
15517.00†	89.745	180.325	7330.91	7845.00	-7844.34	-138.61	40°08'11.775"N	104°52'45.519"W	0.00	
15617.00†	89.745	180.325	7331.36	7945.00	-7944.34	-139.18	40°08'10.786"N	104°52'45.526"W	0.00	
15717.00†	89.745	180.325	7331.80	8045.00	-8044.34	-139.75	40°08'09.798"N	104°52'45.533"W	0.00	
15817.00†	89.745	180.325	7332.25	8145.00	-8144.34	-140.31	40°08'08.810"N	104°52'45.541"W	0.00	
15917.00†	89.745	180.325	7332.69	8245.00	-8244.33	-140.88	40°08'07.822"N	104°52'45.548"W	0.00	
16017.00†	89.745	180.325	7333.14	8345.00	-8344.33	-141.45	40°08'06.834"N	104°52'45.555"W	0.00	
16117.00†	89.745	180.325	7333.58	8445.00	-8444.33	-142.01	40°08'05.846"N	104°52'45.562"W	0.00	
16217.00†	89.745	180.325	7334.03	8545.00	-8544.33	-142.58	40°08'04.857"N	104°52'45.570"W	0.00	
16317.00†	89.745	180.325	7334.47	8645.00	-8644.32	-143.15	40°08'03.869"N	104°52'45.577"W	0.00	
16417.00†	89.745	180.325	7334.91	8745.00	-8744.32	-143.71	40°08'02.881"N	104°52'45.584"W	0.00	
16517.00†	89.745	180.325	7335.36	8844.99	-8844.32	-144.28	40°08'01.893"N	104°52'45.592"W	0.00	



# Planned Wellpath Report

BUTTERBALL 3N-15HZ (PERMIT REV-1) PWP

Page 6 of 7



## REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#02 BUTTERBALL 3N-15HZ (639' FNL & 1974' FWL, SEC. 10)
Area	COLORADO	Well	BUTTERBALL 3N-15HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	BUTTERBALL 3N-15HZ PWB
Facility	SEC.10-T2N-R67W		

## WELLPATH DATA (186 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
16617.00†	89.745	180.325	7335.80	8944.99	-8944.32	-144.85	40°08'00.905"N	104°52'45.599"W	0.00	
16717.00†	89.745	180.325	7336.25	9044.99	-9044.31	-145.41	40°07'59.916"N	104°52'45.606"W	0.00	
16817.00†	89.745	180.325	7336.69	9144.99	-9144.31	-145.98	40°07'58.928"N	104°52'45.613"W	0.00	
16917.00†	89.745	180.325	7337.14	9244.99	-9244.31	-146.54	40°07'57.940"N	104°52'45.621"W	0.00	
17017.00†	89.745	180.325	7337.58	9344.99	-9344.31	-147.11	40°07'56.952"N	104°52'45.628"W	0.00	
17110.50	89.745	180.325	7338.00 <sup>1</sup>	9438.49	-9437.80	-147.64	40°07'56.028"N	104°52'45.635"W	0.00	TOTAL DEPTH

## HOLE & CASING SECTIONS - Ref Wellbore: BUTTERBALL 3N-15HZ PWB Ref Wellpath: BUTTERBALL 3N-15HZ (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	1000.00	983.00	17.00	1000.00	0.00	0.00	0.00	0.00
9.625in Casing Surface	17.00	1000.00	983.00	17.00	1000.00	0.00	0.00	0.00	0.00
8.75in Open Hole	1000.00	7668.80	6668.80	1000.00	7296.00	0.00	0.00	3.65	-94.15
7in Casing Intermediate	17.00	7668.80	7651.80	17.00	7296.00	0.00	0.00	3.65	-94.15
6.125in Open Hole	7668.80	17110.50	9441.70	7296.00	NA	3.65	-94.15	NA	NA
4.5in Casing Production	17.00	17110.50	17093.50	17.00	NA	0.00	0.00	NA	NA

## 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		4952.00	0.00	-30.20	3173592.05	1301060.42	40°09'29.293"N	104°52'44.123"W	polygon
SEC.15-T2N-67W SECTION LINES		4952.00	0.00	-30.20	3173592.05	1301060.42	40°09'29.293"N	104°52'44.123"W	polygon
1) BUTTERBALL 3N-15HZ (460' FSL & 1880' FWL, SEC. 15) REV-1	17110.50	7338.00	-9437.80	-147.64	3173540.73	1291622.45	40°07'56.028"N	104°52'45.635"W	point
BUTTERBALL 3N-15HZ LAND BOX		7338.00	0.00	0.00	3173622.25	1301060.63	40°09'29.293"N	104°52'43.734"W	polygon

## SURVEY PROGRAM - Ref Wellbore: BUTTERBALL 3N-15HZ PWB Ref Wellpath: BUTTERBALL 3N-15HZ (PERMIT REV-1) PWP

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
17.00	17110.50	NaviTrak (Standard)		BUTTERBALL 3N-15HZ PWB



# Planned Wellpath Report

BUTTERBALL 3N-15HZ (PERMIT REV-1) PWP

Page 7 of 7



REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#02 BUTTERBALL 3N-15HZ (639' FNL & 1974' FWL, SEC. 10)
Area	COLORADO	Well	BUTTERBALL 3N-15HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	BUTTERBALL 3N-15HZ PWB
Facility	SEC.10-T2N-R67W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
756.00	0.000	351.000	756.00	Fox Hills Base
3976.64	10.000	351.000	3938.00	Parkman
4409.21	10.000	351.000	4364.00	Sussex
6671.35	0.000	180.325	6623.05	4 1/2" LINER TOP
7231.07	45.972	180.325	7135.00	Sharon Springs
7413.60	64.225	180.325	7239.00	Niobrara A
7482.00	71.065	180.325	7265.00	Niobrara B

DESIGN COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
17.00	0.000	351.000	17.00	TIE-ON
1100.00	0.000	351.000	1100.00	BEGIN NUDGE
1600.00	10.000	351.000	1597.47	END NUDGE
4445.77	10.000	351.000	4400.00	BEGIN DROP
4945.77	0.000	180.325	4897.47	END DROP
6771.35	0.000	180.325	6723.05	KOP, BUILD @ 10/100
7668.80	89.745	180.325	7296.00	LANDING POINT
17110.50	89.745	180.325	7338.00	TOTAL DEPTH