

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

Plot reference wellpath is BUTTERBALL 15C-10HZ (PERMIT REV-2) PWP

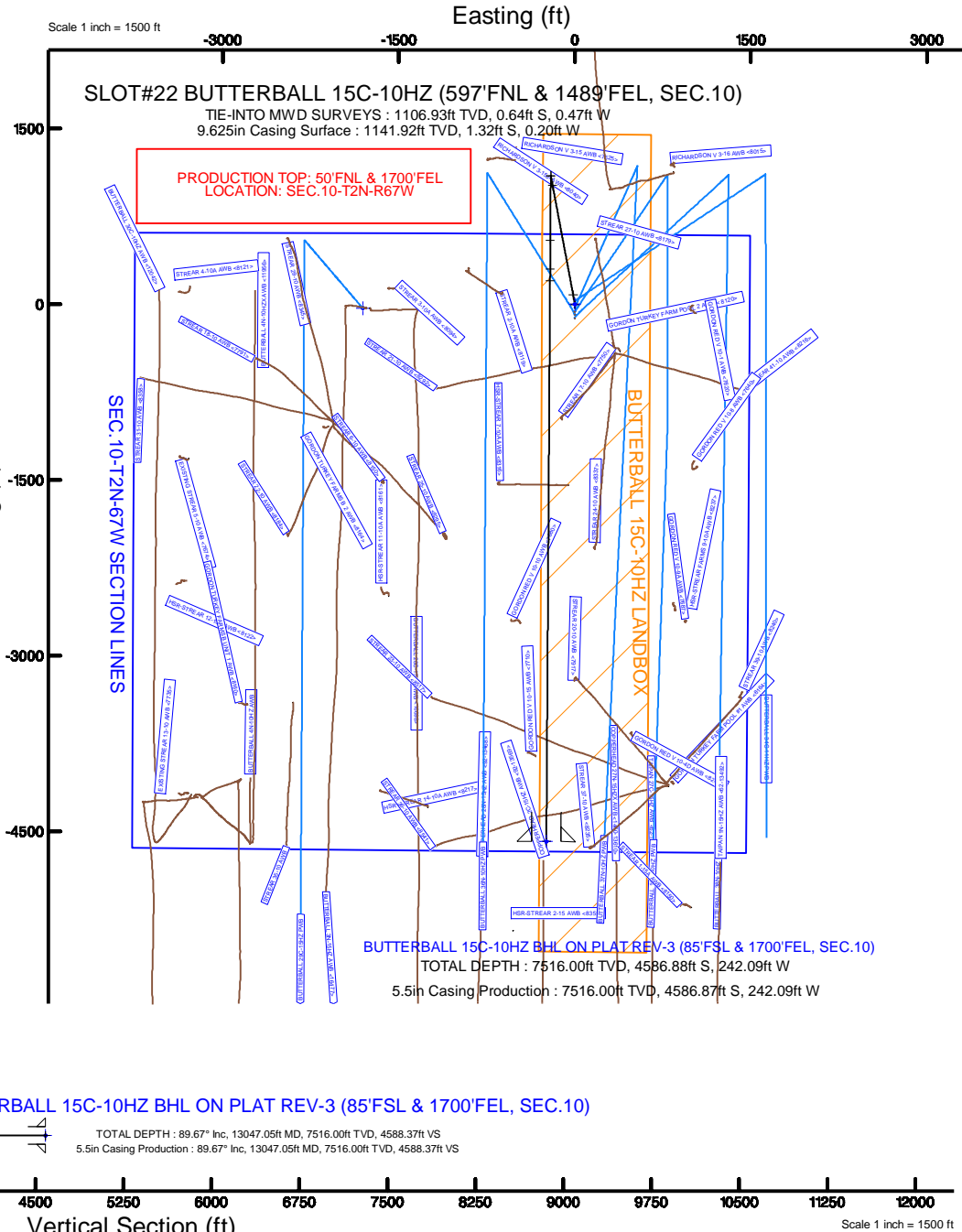
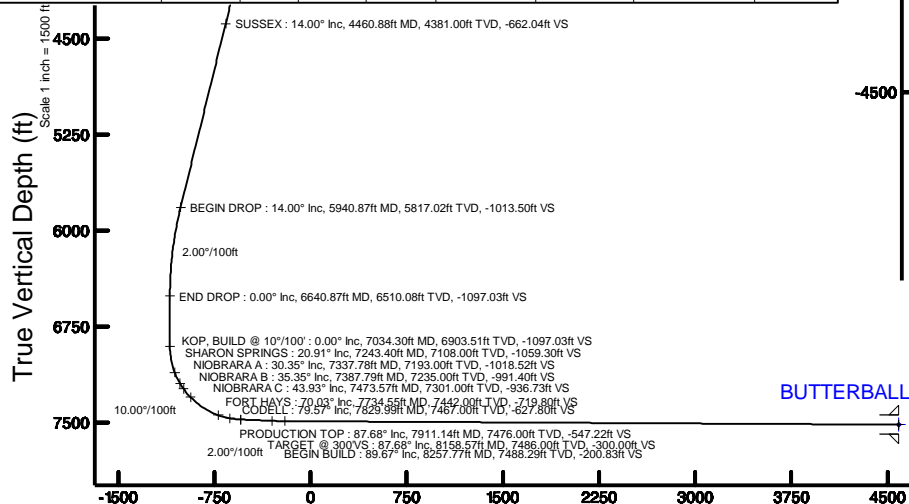
True vertical depths are referenced to XTREME 24 (16'KB) (RKB)	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
Measured depths are referenced to XTREME 24 (16'KB) (RKB)	North Reference: True north
XTREME 24 (16'KB) (RKB) to Mean Sea Level: 4936 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#22 BUTTERBALL 15C-10HZ (597'FNL & 1489'FEL, SEC.10)): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: robale01 on 3/2/2015

Facility Name			Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SEC.10-T2N-R67W			3173592.204	1301060.322	40°09'29.292"N	104°52'44.121"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SLOT#22 BUTTERBALL 15C-10HZ (597FNL & 1489FEL, SEC.10)	33.36	1806.91	3175398.761	1301106.333	40°09'29.621"N	104°52'20.849"W
XTREME 24 (16KB) (RKB) to Mud line (At Slot: SLOT#22 BUTTERBALL 15C-10HZ (597FNL & 1489FEL, SEC.10))					4936R	
Mean Sea Level to Mud line (At Slot: SLOT#22 BUTTERBALL 15C-10HZ (597FNL & 1489FEL, SEC.10))					0ft	
XTREME 24 (16KB) (RKB) to Mean Sea Level					4936R	

Start MD (H)	End MD (H)	Tool	Model	Log Name/Comment	Wellbore
16.00	1107.00	ISCVSAMWD, Rev.2	ISCVSAMWD, Rev.2 (Standard)		BUTTERBALL 15C-10HZ AWB ~1107-
1107.00	7911.14	ISCVSAMWD, Rev.2, axial magnetic correction	ISCVSAMWD, Rev.2, axial magnetic correction (Standard) (Mag/WR FR Waterberg)		BUTTERBALL 15C-10HZ PWB
7911.14	13047.05	ISCVSAMWD, Rev.2, axial magnetic correction	ISCVSAMWD, Rev.2, axial magnetic correction (Standard) (Mag/WR FR Waterberg)		BUTTERBALL 15C-10HZ PWB

Name	MD (ft)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SEC. 10-T2N47W SECTION LINES	4036.00	-33.13	-1807.07	317395.05	1301060.42	40°09'24.293"N	104°52'44.123"W	
BUTTERBALL 15C-10H4Z OHN ON PLAT REV-3 (86FSL & 1700FEL, SEC. 10)	7516.00	-4586.88	-242.09	3175189.15	1296158.18	40°08'44.293"N	104°52'23.866"W	
BUTTERBALL 15C-10H4Z LINDBOX	7516.00	0.00	0.00	3175398.76	1301106.33	40°09'29.621"N	104°52'20.849"W	

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
TIE-INTO MWD SURVEYS	1107.00	1.200	158.400	1106.93	-0.64	-0.47	1.03	0.65
BEGIN NUDGE	1250.10	1.200	158.400	1250.00	-3.43	0.63	0.00	3.42
END NUDGE	2009.09	14.000	349.371	2002.04	79.90	-13.46	2.00	-79.91
BEGIN DROP	5940.87	14.000	349.371	5817.02	1014.77	-188.90	0.00	-1013.50
END DROP	6640.87	0.000	180.378	6510.08	1098.40	-204.59	2.00	-1097.03
KOP, BUILD @ 10°/100'	7034.30	0.000	180.378	6903.51	1098.40	-204.59	0.00	-1097.03
LANDING POINT	7911.14	87.684	180.378	7476.00	548.61	-208.22	10.00	-547.23
TARGET @ 300'VS	8158.57	87.684	180.378	7486.00	301.39	-209.85	0.00	-300.00
BEGIN BUILD	8257.77	89.668	180.378	7488.29	202.22	-210.50	2.00	-200.83
TOTAL DEPTH	13047.05	89.668	180.378	7516.00	-4586.88	-242.09	0.00	4588.37



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

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 1:54:42 PM
Convergence at slot	0.41° East	Database/Source file	WellArchitectDB3/BUTTERBALL_15C-10HZ_PWB.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	33.36	1806.91	3175398.76	1301106.33	40°09'29.621"N	104°52'20.849"W
Facility Reference Pt			3173592.20	1301060.32	40°09'29.292"N	104°52'44.121"W
Field Reference Pt			3197771.84	1268891.29	40°04'09.600"N	104°47'36.000"W

WELLPATH DATUM			
Calculation method	Minimum curvature	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#22 BUTTERBALL 15C-10HZ (597'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	180.38°

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

WELLPATH DATA (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	296.100	0.00	0.00	0.00	0.00	40°09'29.621"N	104°52'20.849"W	0.00	
16.00	0.000	296.100	16.00	0.00	0.00	0.00	40°09'29.621"N	104°52'20.849"W	0.00	
125.00	0.400	296.100	125.00	-0.17	0.17	-0.34	40°09'29.623"N	104°52'20.853"W	0.37	
215.00	1.000	308.700	214.99	-0.79	0.80	-1.24	40°09'29.629"N	104°52'20.865"W	0.68	
301.00	0.500	121.500	300.99	-1.06	1.07	-1.50	40°09'29.632"N	104°52'20.868"W	1.74	
388.00	0.400	74.900	387.99	-0.94	0.95	-0.89	40°09'29.630"N	104°52'20.860"W	0.42	
478.00	0.100	153.000	477.99	-0.96	0.96	-0.55	40°09'29.631"N	104°52'20.856"W	0.44	
572.00	0.200	354.300	571.99	-1.05	1.05	-0.53	40°09'29.631"N	104°52'20.856"W	0.31	
612.01†	0.149	48.905	612.00	-1.15	1.16	-0.49	40°09'29.632"N	104°52'20.855"W	0.42	BASE FOX HILLS
668.00	0.300	98.400	667.98	-1.18	1.18	-0.29	40°09'29.633"N	104°52'20.853"W	0.42	
763.00	0.700	24.800	762.98	-1.67	1.67	0.20	40°09'29.638"N	104°52'20.846"W	0.72	
859.00	0.200	346.100	858.98	-2.37	2.37	0.40	40°09'29.644"N	104°52'20.844"W	0.58	
952.00	1.100	261.400	951.97	-2.39	2.39	-0.52	40°09'29.645"N	104°52'20.856"W	1.18	
1048.00	1.800	162.500	1047.95	-0.81	0.82	-0.98	40°09'29.629"N	104°52'20.862"W	2.34	
1107.00	1.200	158.400	1106.93	0.65	-0.64	-0.47	40°09'29.615"N	104°52'20.855"W	1.03	TIE-INTO MWD SURVEYS
1207.00†	1.200	158.400	1206.91	2.59	-2.59	0.30	40°09'29.595"N	104°52'20.845"W	0.00	
1250.10	1.200	158.400	1250.00	3.42	-3.43	0.63	40°09'29.587"N	104°52'20.841"W	0.00	BEGIN NUDGE
1307.00†	0.215	90.122	1306.90	3.98	-3.98	0.96	40°09'29.582"N	104°52'20.837"W	2.00	
1407.00†	1.968	354.677	1406.88	2.27	-2.27	0.99	40°09'29.599"N	104°52'20.836"W	2.00	
1507.00†	3.962	351.573	1506.74	-2.86	2.85	0.32	40°09'29.649"N	104°52'20.845"W	2.00	
1607.00†	5.960	350.546	1606.36	-11.39	11.39	-1.04	40°09'29.734"N	104°52'20.862"W	2.00	
1707.00†	7.959	350.034	1705.62	-23.32	23.34	-3.09	40°09'29.852"N	104°52'20.889"W	2.00	
1807.00†	9.959	349.727	1804.39	-38.63	38.67	-5.83	40°09'30.003"N	104°52'20.924"W	2.00	
1907.00†	11.959	349.521	1902.56	-57.30	57.36	-9.26	40°09'30.188"N	104°52'20.968"W	2.00	
2007.00†	13.958	349.374	2000.01	-79.32	79.41	-13.37	40°09'30.406"N	104°52'21.021"W	2.00	
2009.09	14.000	349.371	2002.04	-79.81	79.90	-13.46	40°09'30.411"N	104°52'21.022"W	2.00	END NUDGE
2107.00†	14.000	349.371	2097.04	-103.06	103.18	-17.83	40°09'30.641"N	104°52'21.079"W	0.00	
2207.00†	14.000	349.371	2194.07	-126.81	126.96	-22.29	40°09'30.876"N	104°52'21.136"W	0.00	
2307.00†	14.000	349.371	2291.10	-150.56	150.74	-26.75	40°09'31.111"N	104°52'21.194"W	0.00	
2407.00†	14.000	349.371	2388.13	-174.31	174.52	-31.21	40°09'31.346"N	104°52'21.251"W	0.00	
2507.00†	14.000	349.371	2485.16	-198.05	198.29	-35.68	40°09'31.581"N	104°52'21.308"W	0.00	
2607.00†	14.000	349.371	2582.19	-221.80	222.07	-40.14	40°09'31.816"N	104°52'21.366"W	0.00	
2707.00†	14.000	349.371	2679.22	-245.55	245.85	-44.60	40°09'32.050"N	104°52'21.423"W	0.00	
2807.00†	14.000	349.371	2776.25	-269.29	269.62	-49.06	40°09'32.285"N	104°52'21.481"W	0.00	
2907.00†	14.000	349.371	2873.28	-293.04	293.40	-53.52	40°09'32.520"N	104°52'21.538"W	0.00	
3007.00†	14.000	349.371	2970.31	-316.79	317.18	-57.99	40°09'32.755"N	104°52'21.596"W	0.00	
3107.00†	14.000	349.371	3067.34	-340.54	340.96	-62.45	40°09'32.990"N	104°52'21.653"W	0.00	
3207.00†	14.000	349.371	3164.37	-364.28	364.73	-66.91	40°09'33.225"N	104°52'21.711"W	0.00	
3307.00†	14.000	349.371	3261.40	-388.03	388.51	-71.37	40°09'33.460"N	104°52'21.768"W	0.00	
3407.00†	14.000	349.371	3358.42	-411.78	412.29	-75.83	40°09'33.695"N	104°52'21.826"W	0.00	
3507.00†	14.000	349.371	3455.45	-435.52	436.06	-80.30	40°09'33.930"N	104°52'21.883"W	0.00	
3607.00†	14.000	349.371	3552.48	-459.27	459.84	-84.76	40°09'34.165"N	104°52'21.941"W	0.00	
3707.00†	14.000	349.371	3649.51	-483.02	483.62	-89.22	40°09'34.400"N	104°52'21.998"W	0.00	
3807.00†	14.000	349.371	3746.54	-506.77	507.40	-93.68	40°09'34.635"N	104°52'22.056"W	0.00	
3907.00†	14.000	349.371	3843.57	-530.51	531.17	-98.14	40°09'34.870"N	104°52'22.113"W	0.00	

REFERENCE WELLPATH IDENTIFICATION			
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Area	COLORADO	Well	BUTTERBALL 15C-10HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	BUTTERBALL 15C-10HZ PWB
Facility	SEC.10-T2N-R67W		

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MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4007.00†	14.000	349.371	3940.60	-554.26	554.95	-102.61	40°09'35.105"N	104°52'22.171"W	0.00	
4030.08†	14.000	349.371	3963.00	-559.74	560.44	-103.64	40°09'35.159"N	104°52'22.184"W	0.00	PARKMAN
4107.00†	14.000	349.371	4037.63	-578.01	578.73	-107.07	40°09'35.340"N	104°52'22.228"W	0.00	
4207.00†	14.000	349.371	4134.66	-601.76	602.50	-111.53	40°09'35.575"N	104°52'22.285"W	0.00	
4307.00†	14.000	349.371	4231.69	-625.50	626.28	-115.99	40°09'35.810"N	104°52'22.343"W	0.00	
4407.00†	14.000	349.371	4328.72	-649.25	650.06	-120.45	40°09'36.045"N	104°52'22.400"W	0.00	
4460.88†	14.000	349.371	4381.00	-662.04	662.87	-122.86	40°09'36.172"N	104°52'22.431"W	0.00	SUSSEX
4507.00†	14.000	349.371	4425.75	-673.00	673.84	-124.92	40°09'36.280"N	104°52'22.458"W	0.00	
4607.00†	14.000	349.371	4522.78	-696.74	697.61	-129.38	40°09'36.515"N	104°52'22.515"W	0.00	
4707.00†	14.000	349.371	4619.81	-720.49	721.39	-133.84	40°09'36.750"N	104°52'22.573"W	0.00	
4807.00†	14.000	349.371	4716.84	-744.24	745.17	-138.30	40°09'36.985"N	104°52'22.630"W	0.00	
4907.00†	14.000	349.371	4813.87	-767.99	768.94	-142.77	40°09'37.220"N	104°52'22.688"W	0.00	
5007.00†	14.000	349.371	4910.90	-791.73	792.72	-147.23	40°09'37.455"N	104°52'22.745"W	0.00	
5107.00†	14.000	349.371	5007.93	-815.48	816.50	-151.69	40°09'37.690"N	104°52'22.803"W	0.00	
5207.00†	14.000	349.371	5104.96	-839.23	840.28	-156.15	40°09'37.925"N	104°52'22.860"W	0.00	
5307.00†	14.000	349.371	5201.99	-862.97	864.05	-160.61	40°09'38.160"N	104°52'22.918"W	0.00	
5407.00†	14.000	349.371	5299.02	-886.72	887.83	-165.08	40°09'38.395"N	104°52'22.975"W	0.00	
5507.00†	14.000	349.371	5396.05	-910.47	911.61	-169.54	40°09'38.630"N	104°52'23.033"W	0.00	
5607.00†	14.000	349.371	5493.08	-934.22	935.38	-174.00	40°09'38.865"N	104°52'23.090"W	0.00	
5707.00†	14.000	349.371	5590.10	-957.96	959.16	-178.46	40°09'39.099"N	104°52'23.148"W	0.00	
5807.00†	14.000	349.371	5687.13	-981.71	982.94	-182.92	40°09'39.334"N	104°52'23.205"W	0.00	
5907.00†	14.000	349.371	5784.16	-1005.46	1006.72	-187.39	40°09'39.569"N	104°52'23.263"W	0.00	
5940.87	14.000	349.371	5817.02	-1013.50	1014.77	-188.90	40°09'39.649"N	104°52'23.282"W	0.00	BEGIN DROP
6007.00†	12.677	349.371	5881.37	-1028.48	1029.76	-191.71	40°09'39.797"N	104°52'23.318"W	2.00	
6107.00†	10.677	349.371	5979.30	-1048.34	1049.65	-195.44	40°09'39.994"N	104°52'23.366"W	2.00	
6207.00†	8.677	349.371	6077.87	-1064.84	1066.18	-198.54	40°09'40.157"N	104°52'23.406"W	2.00	
6307.00†	6.677	349.371	6176.97	-1077.96	1079.30	-201.01	40°09'40.287"N	104°52'23.438"W	2.00	
6407.00†	4.677	349.371	6276.47	-1087.67	1089.03	-202.83	40°09'40.383"N	104°52'23.461"W	2.00	
6507.00†	2.677	349.371	6376.26	-1093.96	1095.33	-204.02	40°09'40.445"N	104°52'23.477"W	2.00	
6607.00†	0.677	349.371	6476.21	-1096.83	1098.21	-204.56	40°09'40.474"N	104°52'23.484"W	2.00	
6640.87	0.000	180.378	6510.08	-1097.03	1098.40	-204.59	40°09'40.475"N	104°52'23.484"W	2.00	END DROP
6707.00†	0.000	180.378	6576.21	-1097.03	1098.40	-204.59	40°09'40.475"N	104°52'23.484"W	0.00	
6807.00†	0.000	180.378	6676.21	-1097.03	1098.40	-204.59	40°09'40.475"N	104°52'23.484"W	0.00	
6907.00†	0.000	180.378	6776.21	-1097.03	1098.40	-204.59	40°09'40.475"N	104°52'23.484"W	0.00	
7007.00†	0.000	180.378	6876.21	-1097.03	1098.40	-204.59	40°09'40.475"N	104°52'23.484"W	0.00	
7034.30	0.000	180.378	6903.51	-1097.03	1098.40	-204.59	40°09'40.475"N	104°52'23.484"W	0.00	KOP, BUILD @ 10°/100'
7107.00†	7.270	180.378	6976.02	-1092.42	1093.80	-204.62	40°09'40.430"N	104°52'23.485"W	10.00	
7207.00†	17.270	180.378	7073.61	-1071.20	1072.57	-204.76	40°09'40.220"N	104°52'23.486"W	10.00	
7243.40†	20.910	180.378	7108.00	-1059.30	1060.67	-204.84	40°09'40.103"N	104°52'23.487"W	10.00	SHARON SPRINGS
7307.00†	27.270	180.378	7166.03	-1033.35	1034.72	-205.01	40°09'39.846"N	104°52'23.490"W	10.00	
7337.78†	30.348	180.378	7193.00	-1018.52	1019.89	-205.11	40°09'39.700"N	104°52'23.491"W	10.00	NIOBRARA A
7387.79†	35.349	180.378	7235.00	-991.40	992.78	-205.29	40°09'39.432"N	104°52'23.493"W	10.00	NIOBRARA B
7407.00†	37.270	180.378	7250.48	-980.03	981.40	-205.36	40°09'39.319"N	104°52'23.494"W	10.00	
7473.57†	43.928	180.378	7301.00	-936.73	938.10	-205.65	40°09'38.891"N	104°52'23.498"W	10.00	NIOBRARA C
7507.00†	47.270	180.378	7324.38	-912.85	914.23	-205.81	40°09'38.655"N	104°52'23.500"W	10.00	

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

WELLPATH DATA (152 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
7607.00†	57.270	180.378	7385.50	-833.86	835.24	-206.33	40°09'37.875"N	104°52'23.506"W	10.00	
7707.00†	67.270	180.378	7431.97	-745.45	746.84	-206.91	40°09'37.001"N	104°52'23.514"W	10.00	
7734.55†	70.025	180.378	7442.00	-719.80	721.18	-207.08	40°09'36.748"N	104°52'23.516"W	10.00	FORT HAYS
7807.00†	77.270	180.378	7462.38	-650.33	651.71	-207.54	40°09'36.061"N	104°52'23.522"W	10.00	
7829.99†	79.569	180.378	7467.00	-627.80	629.19	-207.69	40°09'35.839"N	104°52'23.524"W	10.00	CODELL
7907.00†	87.270	180.378	7475.82	-551.36	552.74	-208.19	40°09'35.083"N	104°52'23.530"W	10.00	
7911.14	87.684	180.378	7476.00	-547.23	548.61	-208.22	40°09'35.042"N	104°52'23.531"W	10.00	LANDING POINT
7911.14†	87.684	180.378	7476.00	-547.22	548.61	-208.22	40°09'35.042"N	104°52'23.531"W	0.00	PRODUCTION TOP
8007.00†	87.684	180.378	7479.87	-451.44	452.83	-208.85	40°09'34.096"N	104°52'23.539"W	0.00	
8107.00†	87.684	180.378	7483.91	-351.52	352.91	-209.51	40°09'33.108"N	104°52'23.547"W	0.00	
8158.57	87.684	180.378	7486.00	-300.00	301.39	-209.85	40°09'32.599"N	104°52'23.552"W	0.00	TARGET @ 300'VS
8207.00†	88.653	180.378	7487.55	-251.59	252.98	-210.17	40°09'32.121"N	104°52'23.556"W	2.00	
8257.77	89.668	180.378	7488.29	-200.83	202.22	-210.50	40°09'31.619"N	104°52'23.560"W	2.00	BEGIN BUILD
8307.00†	89.668	180.378	7488.57	-151.60	152.99	-210.83	40°09'31.133"N	104°52'23.564"W	0.00	
8407.00†	89.668	180.378	7489.15	-51.60	53.00	-211.49	40°09'30.145"N	104°52'23.573"W	0.00	
8507.00†	89.668	180.378	7489.73	48.40	-47.00	-212.15	40°09'29.157"N	104°52'23.581"W	0.00	
8607.00†	89.668	180.378	7490.31	148.40	-147.00	-212.81	40°09'28.168"N	104°52'23.590"W	0.00	
8707.00†	89.668	180.378	7490.89	248.40	-246.99	-213.47	40°09'27.180"N	104°52'23.598"W	0.00	
8807.00†	89.668	180.378	7491.47	348.39	-346.99	-214.13	40°09'26.192"N	104°52'23.607"W	0.00	
8907.00†	89.668	180.378	7492.05	448.39	-446.99	-214.79	40°09'25.204"N	104°52'23.615"W	0.00	
9007.00†	89.668	180.378	7492.62	548.39	-546.98	-215.45	40°09'24.216"N	104°52'23.624"W	0.00	
9107.00†	89.668	180.378	7493.20	648.39	-646.98	-216.11	40°09'23.228"N	104°52'23.632"W	0.00	
9207.00†	89.668	180.378	7493.78	748.39	-746.97	-216.76	40°09'22.239"N	104°52'23.641"W	0.00	
9307.00†	89.668	180.378	7494.36	848.39	-846.97	-217.42	40°09'21.251"N	104°52'23.649"W	0.00	
9407.00†	89.668	180.378	7494.94	948.38	-946.97	-218.08	40°09'20.263"N	104°52'23.658"W	0.00	
9507.00†	89.668	180.378	7495.52	1048.38	-1046.96	-218.74	40°09'19.275"N	104°52'23.666"W	0.00	
9607.00†	89.668	180.378	7496.10	1148.38	-1146.96	-219.40	40°09'18.287"N	104°52'23.675"W	0.00	
9707.00†	89.668	180.378	7496.67	1248.38	-1246.95	-220.06	40°09'17.299"N	104°52'23.683"W	0.00	
9807.00†	89.668	180.378	7497.25	1348.38	-1346.95	-220.72	40°09'16.310"N	104°52'23.692"W	0.00	
9907.00†	89.668	180.378	7497.83	1448.38	-1446.95	-221.38	40°09'15.322"N	104°52'23.700"W	0.00	
10007.00†	89.668	180.378	7498.41	1548.37	-1546.94	-222.04	40°09'14.334"N	104°52'23.709"W	0.00	
10107.00†	89.668	180.378	7498.99	1648.37	-1646.94	-222.70	40°09'13.346"N	104°52'23.717"W	0.00	
10207.00†	89.668	180.378	7499.57	1748.37	-1746.94	-223.36	40°09'12.358"N	104°52'23.726"W	0.00	
10307.00†	89.668	180.378	7500.15	1848.37	-1846.93	-224.02	40°09'11.370"N	104°52'23.734"W	0.00	
10407.00†	89.668	180.378	7500.72	1948.37	-1946.93	-224.68	40°09'10.381"N	104°52'23.743"W	0.00	
10507.00†	89.668	180.378	7501.30	2048.37	-2046.92	-225.34	40°09'09.393"N	104°52'23.751"W	0.00	
10607.00†	89.668	180.378	7501.88	2148.36	-2146.92	-226.00	40°09'08.405"N	104°52'23.759"W	0.00	
10707.00†	89.668	180.378	7502.46	2248.36	-2246.92	-226.66	40°09'07.417"N	104°52'23.768"W	0.00	
10807.00†	89.668	180.378	7503.04	2348.36	-2346.91	-227.32	40°09'06.429"N	104°52'23.776"W	0.00	
10907.00†	89.668	180.378	7503.62	2448.36	-2446.91	-227.98	40°09'05.441"N	104°52'23.785"W	0.00	
11007.00†	89.668	180.378	7504.20	2548.36	-2546.90	-228.64	40°09'04.452"N	104°52'23.793"W	0.00	
11107.00†	89.668	180.378	7504.77	2648.36	-2646.90	-229.30	40°09'03.464"N	104°52'23.802"W	0.00	
11207.00†	89.668	180.378	7505.35	2748.35	-2746.90	-229.95	40°09'02.476"N	104°52'23.810"W	0.00	
11307.00†	89.668	180.378	7505.93	2848.35	-2846.89	-230.61	40°09'01.488"N	104°52'23.819"W	0.00	
11407.00†	89.668	180.378	7506.51	2948.35	-2946.89	-231.27	40°09'00.500"N	104°52'23.827"W	0.00	

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

WELLPATH DATA (152 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
11507.00†	89.668	180.378	7507.09	3048.35	-3046.89	-231.93	40°08'59.511"N	104°52'23.836"W	0.00	
11607.00†	89.668	180.378	7507.67	3148.35	-3146.88	-232.59	40°08'58.523"N	104°52'23.844"W	0.00	
11707.00†	89.668	180.378	7508.25	3248.35	-3246.88	-233.25	40°08'57.535"N	104°52'23.853"W	0.00	
11807.00†	89.668	180.378	7508.83	3348.34	-3346.87	-233.91	40°08'56.547"N	104°52'23.861"W	0.00	
11907.00†	89.668	180.378	7509.40	3448.34	-3446.87	-234.57	40°08'55.559"N	104°52'23.870"W	0.00	
12007.00†	89.668	180.378	7509.98	3548.34	-3546.87	-235.23	40°08'54.571"N	104°52'23.878"W	0.00	
12107.00†	89.668	180.378	7510.56	3648.34	-3646.86	-235.89	40°08'53.582"N	104°52'23.887"W	0.00	
12207.00†	89.668	180.378	7511.14	3748.34	-3746.86	-236.55	40°08'52.594"N	104°52'23.895"W	0.00	
12307.00†	89.668	180.378	7511.72	3848.34	-3846.85	-237.21	40°08'51.606"N	104°52'23.904"W	0.00	
12407.00†	89.668	180.378	7512.30	3948.33	-3946.85	-237.87	40°08'50.618"N	104°52'23.912"W	0.00	
12507.00†	89.668	180.378	7512.88	4048.33	-4046.85	-238.53	40°08'49.630"N	104°52'23.921"W	0.00	
12607.00†	89.668	180.378	7513.45	4148.33	-4146.84	-239.19	40°08'48.642"N	104°52'23.929"W	0.00	
12707.00†	89.668	180.378	7514.03	4248.33	-4246.84	-239.85	40°08'47.653"N	104°52'23.938"W	0.00	
12807.00†	89.668	180.378	7514.61	4348.33	-4346.84	-240.51	40°08'46.665"N	104°52'23.946"W	0.00	
12907.00†	89.668	180.378	7515.19	4448.33	-4446.83	-241.17	40°08'45.677"N	104°52'23.955"W	0.00	
13007.00†	89.668	180.378	7515.77	4548.32	-4546.83	-241.83	40°08'44.689"N	104°52'23.963"W	0.00	
13047.05	89.668	180.378	7516.00†	4588.37	-4586.88	-242.09	40°08'44.293"N	104°52'23.966"W	0.00	TOTAL DEPTH

HOLE & CASING SECTIONS -										
Ref Wellbore: BUTTERBALL 15C-10HZ PWB					Ref Wellpath: BUTTERBALL 15C-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	1152.00	1136.00	16.00	1151.92	0.00	0.00	-1.52	-0.12	
9.625in Casing Surface	16.00	1142.00	1126.00	16.00	1141.92	0.00	0.00	-1.32	-0.20	
7.875in Open Hole	1152.00	13047.05	11895.05	1151.92	7516.00	-1.52	-0.12	-4586.88	-242.09	
5.5in Casing Production	16.00	13047.05	13031.05	16.00	7516.00	0.00	0.00	-4586.87	-242.09	

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	-33.13	-1807.07	3173592.05	1301060.42	40°09'29.293"N	104°52'44.123"W	polygon	
1) BUTTERBALL 15C-10HZ BHL ON PLAT REV-3 (85'FSL & 1700'FEL, SEC.10)	13047.05	7516.00	-4586.88	-242.09	3175189.15	1296518.06	40°08'44.293"N	104°52'23.966"W	point	
BUTTERBALL 15C-10HZ LANDBOX		7516.00	0.00	0.00	3175398.76	1301106.33	40°09'29.621"N	104°52'20.849"W	polygon	

SURVEY PROGRAM - Ref Wellbore: BUTTERBALL 15C-10HZ PWB					Ref Wellpath: BUTTERBALL 15C-10HZ (PERMIT REV-2) PWP				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model					Log Name/Comment	Wellbore	
16.00	1107.00	ISCWSA MWD, Rev. 2 (Standard)						BUTTERBALL 15C-10HZ AWB <1107>	
1107.00	7911.14	ISCWSA MWD, Rev. 2, axial magnetic correction (Standard) (MagVAR IFR Wattenberg)						BUTTERBALL 15C-10HZ PWB	

7911.14	13047.05	ISCWSA MWD, Rev. 2, axial magnetic correction (Standard) (MagVAR IFR Wattenberg)	BUTTERBALL 15C-10HZ PWB
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REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#22 BUTTERBALL 15C-10HZ (597'FNL & 1489'FEL, SEC.10)
Area	COLORADO	Well	BUTTERBALL 15C-10HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	BUTTERBALL 15C-10HZ PWB
Facility	SEC.10-T2N-R67W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
612.01	0.149	48.905	612.00	BASE FOX HILLS
4030.08	14.000	349.371	3963.00	PARKMAN
4460.88	14.000	349.371	4381.00	SUSSEX
7243.40	20.910	180.378	7108.00	SHARON SPRINGS
7337.78	30.348	180.378	7193.00	NIOBRARA A
7387.79	35.349	180.378	7235.00	NIOBRARA B
7473.57	43.928	180.378	7301.00	NIOBRARA C
7734.55	70.025	180.378	7442.00	FORT HAYS
7829.99	79.569	180.378	7467.00	CODELL
7911.14	87.684	180.378	7476.00	PRODUCTION TOP

DESIGN COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
1107.00	1.200	158.400	1106.93	TIE-INTO MWD SURVEYS
1250.10	1.200	158.400	1250.00	BEGIN NUDGE
2009.09	14.000	349.371	2002.04	END NUDGE
5940.87	14.000	349.371	5817.02	BEGIN DROP
6640.87	0.000	180.378	6510.08	END DROP
7034.30	0.000	180.378	6903.51	KOP, BUILD @ 10°/100'
7911.14	87.684	180.378	7476.00	LANDING POINT
8158.57	87.684	180.378	7486.00	TARGET @ 300'VS
8257.77	89.668	180.378	7488.29	BEGIN BUILD
13047.05	89.668	180.378	7516.00	TOTAL DEPTH