

KERR-MCGEE OIL & GAS ONSHORE LP

Location: COLORADO Slot: SLOT#13 THOMASON 22N-31HZ (275'FSL & 1419'FWL, SEC.6)
 Field: WELD COUNTY (KERR MCGEE) Well: THOMASON 22N-31HZ
 Facility: SEC.06-T1N-R65W Wellbore: THOMASON 22N-31HZ PWB

Plot reference wellpath is THOMASON 22N-31HZ (PERMIT) PWP

True vertical depths are referenced to Rig on SLOT#13 THOMASON 22N-31HZ (275'FSL & 1419'FWL, SEC.6) (RKB)	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
Measured depths are referenced to Rig on SLOT#13 THOMASON 22N-31HZ (275'FSL & 1419'FWL, SEC.6) (RKB)	North Reference: True north
Rig on SLOT#13 THOMASON 22N-31HZ (275'FSL & 1419'FWL, SEC.6) to Mean Sea Level: 5018 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#13 THOMASON 22N-31HZ (275'FSL & 1419'FWL, SEC.6)): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: wjlsf02 on 6/20/2012

Location Information

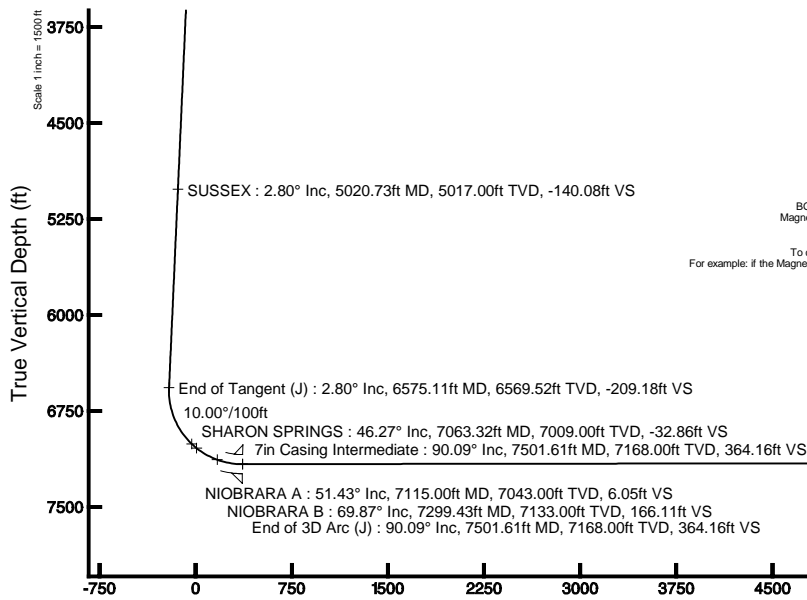
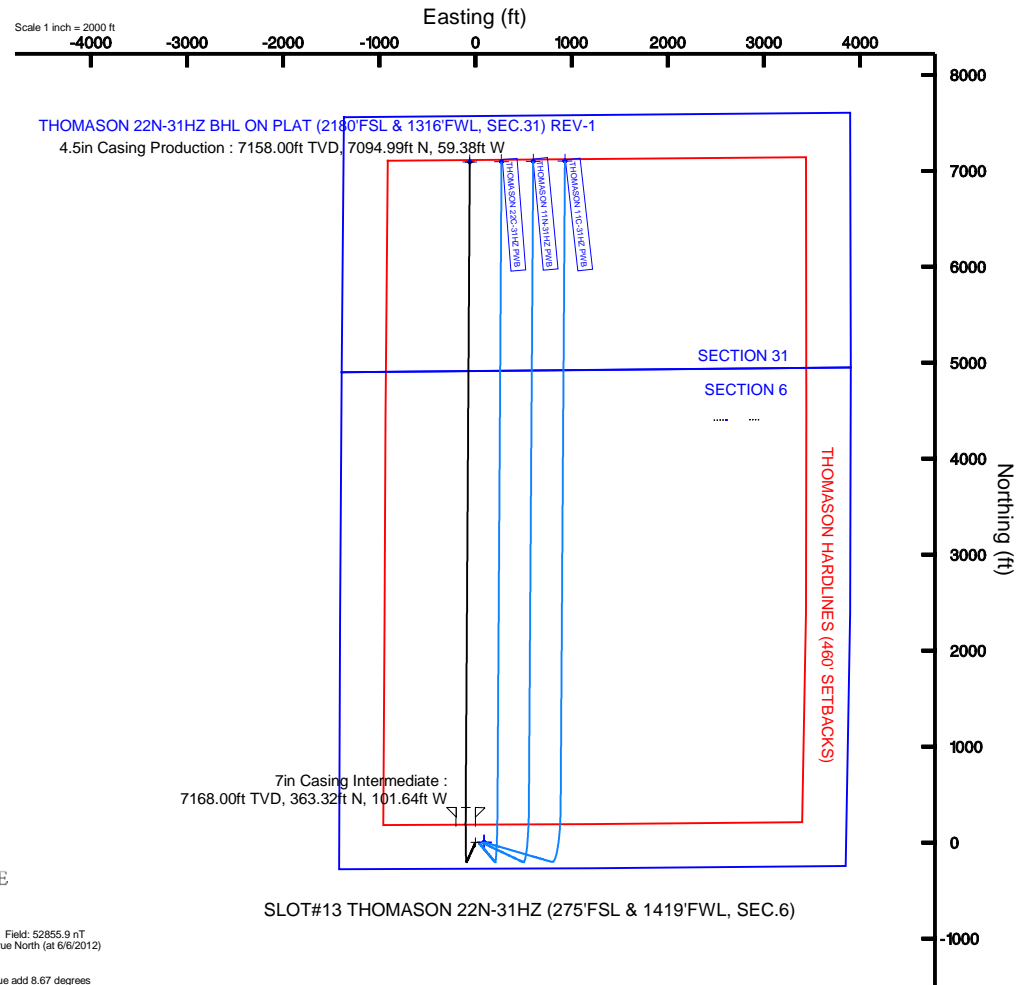
Facility Name				Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SEC.06-T1N-R65W				322348.719	1275208.264	40°05'09.881"N	104°42'06.282"W
Slot				Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SLOT#13 THOMASON 22N-31HZ (275'FSL & 1419'FWL, SEC.6)				3220781.977	1270781.309	40°04'28.360"N	104°42'59.812"W
Rig on SLOT#13 THOMASON 22N-31HZ (275'FSL & 1419'FWL, SEC.6) (RKB) to Mud line (At Slot: SLOT#13 THOMASON 22N-31HZ (275'FSL & 1419'FWL, SEC.6))				5018ft			
Mean Sea Level to Mud line (At Slot: SLOT#13 THOMASON 22N-31HZ (275'FSL & 1419'FWL, SEC.6))				0ft			
Rig on SLOT#13 THOMASON 22N-31HZ (275'FSL & 1419'FWL, SEC.6) (RKB) to Mean Sea Level				5018ft			

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	204.000	17.00	0.00	0.00	0.00	0.00
End of Tangent	1800.00	0.000	204.000	1800.00	0.00	0.00	0.00	0.00
End of Build (J)	1940.00	2.800	204.000	1939.94	-3.12	-1.39	2.00	-3.11
End of Tangent (J)	6575.11	2.800	204.000	6569.52	-209.97	-93.49	0.00	-209.18
End of 3D Arc (J)	7501.61	90.085	0.360	7168.00	363.32	-101.64	10.00	364.16
End of Tangent (J)	14233.42	90.085	0.360	7158.00	7094.99	-59.38	0.00	7095.24

Targets

Name	MD (ft)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
THOMASON SECTION 31 LINES		1.00	0.40	90.10	3220872.07	1270782.52	40°04'26.364"N	104°42'38.653"W
PARAGON SECTION LINES		26.00	4404.12	2806.13	3223348.72	1275208.26	40°05'09.881"N	104°42'06.282"W
THOMASON 22N-31HZ BHL ON PLAT (2180'FSL & 1316'FWL, SEC.31) REV-1	14233.42	7158.00	7094.99	-59.38	3220869.49	1277875.20	40°05'36.474"N	104°42'40.576"W
THOMASON HARDLINES (460' SETBACKS)		7426.00	0.40	90.10	3220872.07	1270782.52	40°04'26.364"N	104°42'38.653"W



BGGM (1945.0 to 2013.0) Dip: 66.75° Field: 52855.9 nT
 Magnetic North is 8.67 degrees East of True North (at 6/6/2012)

To correct azimuth from Magnetic to True add 8.67 degrees
 For example: if the Magnetic North Azimuth = 90 degs, then the True North Azimuth = 90 + 8.67 = 98.67

Azimuth 359.52° with reference 0.00 N, 0.00 E

Scale 1 inch = 1500 ft



Planned Wellpath Report
 THOMASON 22N-31HZ (PERMIT) PWP
 Page 1 of 7



REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#13 THOMASON 22N-31HZ (275'FSL & 1419'FWL, SEC.6)
Area	COLORADO	Well	THOMASON 22N-31HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	THOMASON 22N-31HZ PWB
Facility	SEC.06-T1N-R65W		

REPORT SETUP INFORMATION

Projection System	NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	Software System	WellArchitect® 3.0.2
North Reference	True	User	Wilsje02
Scale	0.999962	Report Generated	6/20/2012 at 10:09:43
Convergence at slot	0.51° East	Database/Source file	WellArchitectDB/THOMASON_22N-31HZ_PWB.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-4403.85	-2606.60	3220781.98	1270781.31	40°04'26.360"N	104°42'39.812"W
Facility Reference Pt			3223348.72	1275208.26	40°05'09.881"N	104°42'06.282"W
Field Reference Pt			3197771.84	1268891.29	40°04'09.600"N	104°47'36.000"W

WELLPATH DATUM

Calculation method	Minimum curvature	Rig on SLOT#13 THOMASON 22N-31HZ (275'FSL & 1419'FWL, SEC.6) (RKB) to Facility Vertical Datum
Horizontal Reference Pt	Slot	Rig on SLOT#13 THOMASON 22N-31HZ (275'FSL & 1419'FWL, SEC.6) (RKB) to Mean Sea Level
Vertical Reference Pt	Rig on SLOT#13 THOMASON 22N-31HZ (275'FSL & 1419'FWL, SEC.6) (RKB)	Rig on SLOT#13 THOMASON 22N-31HZ (275'FSL & 1419'FWL, SEC.6) (RKB) to Mud Line at Slot (SLOT#13 THOMAS
MD Reference Pt	Rig on SLOT#13 THOMASON 22N-31HZ (275'FSL & 1419'FWL, SEC.6) (RKB)	Section Origin
Field Vertical Reference	Mean Sea Level	Section Azimuth



Planned Wellpath Report

THOMASON 22N-31HZ (PERMIT) PWP
Page 2 of 7



REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#13 THOMASON 22N-31HZ (275'FSL & 1419'FWL, SEC.6)
Area	COLORADO	Well	THOMASON 22N-31HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	THOMASON 22N-31HZ PWB
Facility	SEC.06-T1N-R65W		

WELLPATH DATA (154 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	204.000	0.00	0.00	0.00	0.00	40°04'26.360"N	104°42'39.812"W	0.00	
17.00	0.000	204.000	17.00	0.00	0.00	0.00	40°04'26.360"N	104°42'39.812"W	0.00	Tie On
117.00†	0.000	204.000	117.00	0.00	0.00	0.00	40°04'26.360"N	104°42'39.812"W	0.00	
217.00†	0.000	204.000	217.00	0.00	0.00	0.00	40°04'26.360"N	104°42'39.812"W	0.00	
317.00†	0.000	204.000	317.00	0.00	0.00	0.00	40°04'26.360"N	104°42'39.812"W	0.00	
417.00†	0.000	204.000	417.00	0.00	0.00	0.00	40°04'26.360"N	104°42'39.812"W	0.00	
517.00†	0.000	204.000	517.00	0.00	0.00	0.00	40°04'26.360"N	104°42'39.812"W	0.00	
617.00†	0.000	204.000	617.00	0.00	0.00	0.00	40°04'26.360"N	104°42'39.812"W	0.00	
717.00†	0.000	204.000	717.00	0.00	0.00	0.00	40°04'26.360"N	104°42'39.812"W	0.00	
817.00†	0.000	204.000	817.00	0.00	0.00	0.00	40°04'26.360"N	104°42'39.812"W	0.00	
917.00†	0.000	204.000	917.00	0.00	0.00	0.00	40°04'26.360"N	104°42'39.812"W	0.00	
1017.00†	0.000	204.000	1017.00	0.00	0.00	0.00	40°04'26.360"N	104°42'39.812"W	0.00	
1117.00†	0.000	204.000	1117.00	0.00	0.00	0.00	40°04'26.360"N	104°42'39.812"W	0.00	
1217.00†	0.000	204.000	1217.00	0.00	0.00	0.00	40°04'26.360"N	104°42'39.812"W	0.00	
1317.00†	0.000	204.000	1317.00	0.00	0.00	0.00	40°04'26.360"N	104°42'39.812"W	0.00	
1417.00†	0.000	204.000	1417.00	0.00	0.00	0.00	40°04'26.360"N	104°42'39.812"W	0.00	
1450.00†	0.000	204.000	1450.00	0.00	0.00	0.00	40°04'26.360"N	104°42'39.812"W	0.00	FOX HILLS
1517.00†	0.000	204.000	1517.00	0.00	0.00	0.00	40°04'26.360"N	104°42'39.812"W	0.00	
1617.00†	0.000	204.000	1617.00	0.00	0.00	0.00	40°04'26.360"N	104°42'39.812"W	0.00	
1717.00†	0.000	204.000	1717.00	0.00	0.00	0.00	40°04'26.360"N	104°42'39.812"W	0.00	
1800.00	0.000	204.000	1800.00	0.00	0.00	0.00	40°04'26.360"N	104°42'39.812"W	0.00	End of Tangent
1817.00†	0.340	204.000	1817.00	-0.05	-0.05	-0.02	40°04'26.360"N	104°42'39.812"W	2.00	
1917.00†	2.340	204.000	1916.97	-2.17	-2.18	-0.97	40°04'26.338"N	104°42'39.824"W	2.00	
1940.00	2.800	204.000	1939.94	-3.11	-3.12	-1.39	40°04'26.329"N	104°42'39.830"W	2.00	End of Build (J)
2017.00†	2.800	204.000	2016.85	-6.54	-6.56	-2.92	40°04'26.295"N	104°42'39.850"W	0.00	
2117.00†	2.800	204.000	2116.73	-10.98	-11.02	-4.91	40°04'26.251"N	104°42'39.875"W	0.00	
2217.00†	2.800	204.000	2216.61	-15.43	-15.49	-6.89	40°04'26.207"N	104°42'39.901"W	0.00	
2317.00†	2.800	204.000	2316.49	-19.87	-19.95	-8.88	40°04'26.163"N	104°42'39.926"W	0.00	
2417.00†	2.800	204.000	2416.37	-24.32	-24.41	-10.87	40°04'26.119"N	104°42'39.952"W	0.00	
2517.00†	2.800	204.000	2516.26	-28.77	-28.87	-12.86	40°04'26.075"N	104°42'39.977"W	0.00	
2617.00†	2.800	204.000	2616.14	-33.21	-33.34	-14.84	40°04'26.031"N	104°42'40.003"W	0.00	
2717.00†	2.800	204.000	2716.02	-37.66	-37.80	-16.83	40°04'25.986"N	104°42'40.028"W	0.00	
2817.00†	2.800	204.000	2815.90	-42.10	-42.26	-18.82	40°04'25.942"N	104°42'40.054"W	0.00	
2917.00†	2.800	204.000	2915.78	-46.55	-46.72	-20.80	40°04'25.898"N	104°42'40.080"W	0.00	
3017.00†	2.800	204.000	3015.66	-50.99	-51.19	-22.79	40°04'25.854"N	104°42'40.105"W	0.00	
3117.00†	2.800	204.000	3115.54	-55.44	-55.65	-24.78	40°04'25.810"N	104°42'40.131"W	0.00	
3217.00†	2.800	204.000	3215.42	-59.89	-60.11	-26.76	40°04'25.766"N	104°42'40.156"W	0.00	
3317.00†	2.800	204.000	3315.30	-64.33	-64.58	-28.75	40°04'25.722"N	104°42'40.182"W	0.00	
3417.00†	2.800	204.000	3415.18	-68.78	-69.04	-30.74	40°04'25.678"N	104°42'40.207"W	0.00	
3517.00†	2.800	204.000	3515.06	-73.22	-73.50	-32.72	40°04'25.634"N	104°42'40.233"W	0.00	
3617.00†	2.800	204.000	3614.94	-77.67	-77.96	-34.71	40°04'25.590"N	104°42'40.259"W	0.00	
3717.00†	2.800	204.000	3714.82	-82.12	-82.43	-36.70	40°04'25.545"N	104°42'40.284"W	0.00	
3817.00†	2.800	204.000	3814.70	-86.56	-86.89	-38.69	40°04'25.501"N	104°42'40.310"W	0.00	
3917.00†	2.800	204.000	3914.58	-91.01	-91.35	-40.67	40°04'25.457"N	104°42'40.335"W	0.00	
4017.00†	2.800	204.000	4014.46	-95.45	-95.81	-42.66	40°04'25.413"N	104°42'40.361"W	0.00	



Planned Wellpath Report

THOMASON 22N-31HZ (PERMIT) PWP
Page 3 of 7



REFERENCE WELLPATH IDENTIFICATION			
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Area	COLORADO	Well	THOMASON 22N-31HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	THOMASON 22N-31HZ PWB
Facility	SEC.06-T1N-R6SW		

WELLPATH DATA (154 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4117.00†	2.800	204.000	4114.35	-99.90	-100.28	-44.65	40°04'25.369"N	104°42'40.386"W	0.00	
4217.00†	2.800	204.000	4214.23	-104.35	-104.74	-46.63	40°04'25.325"N	104°42'40.412"W	0.00	
4317.00†	2.800	204.000	4314.11	-108.79	-109.20	-48.62	40°04'25.281"N	104°42'40.437"W	0.00	
4417.00†	2.800	204.000	4413.99	-113.24	-113.66	-50.61	40°04'25.237"N	104°42'40.463"W	0.00	
4517.00†	2.800	204.000	4513.87	-117.68	-118.13	-52.59	40°04'25.193"N	104°42'40.489"W	0.00	
4617.00†	2.800	204.000	4613.75	-122.13	-122.59	-54.58	40°04'25.149"N	104°42'40.514"W	0.00	
4717.00†	2.800	204.000	4713.63	-126.57	-127.05	-56.57	40°04'25.104"N	104°42'40.540"W	0.00	
4817.00†	2.800	204.000	4813.51	-131.02	-131.51	-58.55	40°04'25.060"N	104°42'40.565"W	0.00	
4917.00†	2.800	204.000	4913.39	-135.47	-135.98	-60.54	40°04'25.016"N	104°42'40.591"W	0.00	
5017.00†	2.800	204.000	5013.27	-139.91	-140.44	-62.53	40°04'24.972"N	104°42'40.616"W	0.00	
5020.73†	2.800	204.000	5017.00	-140.08	-140.61	-62.60	40°04'24.970"N	104°42'40.617"W	0.00	SUSSEX
5117.00†	2.800	204.000	5113.15	-144.36	-144.90	-64.51	40°04'24.928"N	104°42'40.642"W	0.00	
5217.00†	2.800	204.000	5213.03	-148.80	-149.37	-66.50	40°04'24.884"N	104°42'40.667"W	0.00	
5317.00†	2.800	204.000	5312.91	-153.25	-153.83	-68.49	40°04'24.840"N	104°42'40.693"W	0.00	
5417.00†	2.800	204.000	5412.79	-157.70	-158.29	-70.48	40°04'24.796"N	104°42'40.719"W	0.00	
5517.00†	2.800	204.000	5512.67	-162.14	-162.75	-72.46	40°04'24.752"N	104°42'40.744"W	0.00	
5617.00†	2.800	204.000	5612.55	-166.59	-167.22	-74.45	40°04'24.708"N	104°42'40.770"W	0.00	
5717.00†	2.800	204.000	5712.44	-171.03	-171.68	-76.44	40°04'24.663"N	104°42'40.795"W	0.00	
5817.00†	2.800	204.000	5812.32	-175.48	-176.14	-78.42	40°04'24.619"N	104°42'40.821"W	0.00	
5917.00†	2.800	204.000	5912.20	-179.92	-180.60	-80.41	40°04'24.575"N	104°42'40.846"W	0.00	
6017.00†	2.800	204.000	6012.08	-184.37	-185.07	-82.40	40°04'24.531"N	104°42'40.872"W	0.00	
6117.00†	2.800	204.000	6111.96	-188.82	-189.53	-84.38	40°04'24.487"N	104°42'40.897"W	0.00	
6217.00†	2.800	204.000	6211.84	-193.26	-193.99	-86.37	40°04'24.443"N	104°42'40.923"W	0.00	
6317.00†	2.800	204.000	6311.72	-197.71	-198.45	-88.36	40°04'24.399"N	104°42'40.949"W	0.00	
6417.00†	2.800	204.000	6411.60	-202.15	-202.92	-90.34	40°04'24.355"N	104°42'40.974"W	0.00	
6517.00†	2.800	204.000	6511.48	-206.60	-207.38	-92.33	40°04'24.311"N	104°42'41.000"W	0.00	
6575.11	2.800	204.000	6569.52	-209.18	-209.97	-93.49	40°04'24.285"N	104°42'41.015"W	0.00	End of Tangent (I)
6617.00†	1.975	325.691	6611.39	-209.52	-210.31	-94.31	40°04'24.282"N	104°42'41.025"W	10.00	
6717.00†	11.678	354.913	6710.58	-197.97	-198.78	-96.18	40°04'24.396"N	104°42'41.049"W	10.00	
6817.00†	21.652	357.526	6806.26	-169.37	-170.19	-97.88	40°04'24.678"N	104°42'41.071"W	10.00	
6917.00†	31.642	358.534	6895.53	-124.59	-125.43	-99.35	40°04'25.120"N	104°42'41.090"W	10.00	
7017.00†	41.637	359.094	6975.66	-64.99	-65.84	-100.55	40°04'25.709"N	104°42'41.105"W	10.00	
7063.32†	46.266	359.283	7009.00	-32.86	-33.70	-101.00	40°04'26.027"N	104°42'41.111"W	10.00	
7115.00†	51.433	359.462	7043.00	6.05	5.20	-101.43	40°04'26.411"N	104°42'41.117"W	10.00	SHARON SPRINGS
7117.00†	51.633	359.468	7044.24	7.61	6.76	-101.44	40°04'26.427"N	104°42'41.117"W	10.00	NIOBRARA A
7217.00†	61.630	359.751	7099.17	91.02	90.17	-102.00	40°04'27.251"N	104°42'41.124"W	10.00	
7299.43†	69.871	359.946	7133.00	166.11	165.26	-102.19	40°04'27.993"N	104°42'41.127"W	10.00	NIOBRARA B
7317.00†	71.628	359.985	7138.79	182.70	181.85	-102.20	40°04'28.157"N	104°42'41.127"W	10.00	
7417.00†	81.626	0.193	7161.89	279.86	279.01	-102.05	40°04'29.117"N	104°42'41.125"W	10.00	
7501.61	90.085	0.360	7168.00	364.16	363.32	-101.64	40°04'29.950"N	104°42'41.119"W	10.00	End of 3D Arc (J)
7517.00†	90.085	0.360	7167.98	379.55	378.71	-101.54	40°04'30.103"N	104°42'41.118"W	0.00	
7617.00†	90.085	0.360	7167.83	479.54	478.71	-100.92	40°04'31.091"N	104°42'41.110"W	0.00	
7717.00†	90.085	0.360	7167.68	579.53	578.71	-100.29	40°04'32.079"N	104°42'41.102"W	0.00	
7817.00†	90.085	0.360	7167.53	679.52	678.71	-99.66	40°04'33.067"N	104°42'41.094"W	0.00	
7917.00†	90.085	0.360	7167.39	779.51	778.71	-99.03	40°04'34.055"N	104°42'41.086"W	0.00	



Planned Wellpath Report

THOMASON 22N-31HZ (PERMIT) PWP
Page 4 of 7



REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#13 THOMASON 22N-31HZ (275'FSL & 1419'FWL, SEC.6)
Area	COLORADO	Well	THOMASON 22N-31HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	THOMASON 22N-31HZ PWB
Facility	SEC.06-T1N-R65W		

WELLPATH DATA (154 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
8017.00†	90.085	0.360	7167.24	879.50	878.70	-98.41	40°04'35.044"N	104°42'41.078"W	0.00	
8117.00†	90.085	0.360	7167.09	979.49	978.70	-97.78	40°04'36.032"N	104°42'41.070"W	0.00	
8217.00†	90.085	0.360	7166.94	1079.47	1078.70	-97.15	40°04'37.020"N	104°42'41.062"W	0.00	
8317.00†	90.085	0.360	7166.79	1179.46	1178.70	-96.52	40°04'38.008"N	104°42'41.054"W	0.00	
8417.00†	90.085	0.360	7166.64	1279.45	1278.70	-95.89	40°04'38.996"N	104°42'41.046"W	0.00	
8517.00†	90.085	0.360	7166.49	1379.44	1378.69	-95.27	40°04'39.985"N	104°42'41.038"W	0.00	
8617.00†	90.085	0.360	7166.35	1479.43	1478.69	-94.64	40°04'40.973"N	104°42'41.029"W	0.00	
8717.00†	90.085	0.360	7166.20	1579.42	1578.69	-94.01	40°04'41.961"N	104°42'41.021"W	0.00	
8817.00†	90.085	0.360	7166.05	1679.41	1678.69	-93.38	40°04'42.949"N	104°42'41.013"W	0.00	
8917.00†	90.085	0.360	7165.90	1779.40	1778.69	-92.75	40°04'43.937"N	104°42'41.005"W	0.00	
9017.00†	90.085	0.360	7165.75	1879.39	1878.68	-92.13	40°04'44.926"N	104°42'40.997"W	0.00	
9117.00†	90.085	0.360	7165.60	1979.38	1978.68	-91.50	40°04'45.914"N	104°42'40.989"W	0.00	
9217.00†	90.085	0.360	7165.45	2079.37	2078.68	-90.87	40°04'46.902"N	104°42'40.981"W	0.00	
9317.00†	90.085	0.360	7165.31	2179.36	2178.68	-90.24	40°04'47.890"N	104°42'40.973"W	0.00	
9417.00†	90.085	0.360	7165.16	2279.34	2278.67	-89.62	40°04'48.878"N	104°42'40.965"W	0.00	
9517.00†	90.085	0.360	7165.01	2379.33	2378.67	-88.99	40°04'49.866"N	104°42'40.957"W	0.00	
9617.00†	90.085	0.360	7164.86	2479.32	2478.67	-88.36	40°04'50.855"N	104°42'40.949"W	0.00	
9717.00†	90.085	0.360	7164.71	2579.31	2578.67	-87.73	40°04'51.843"N	104°42'40.941"W	0.00	
9817.00†	90.085	0.360	7164.56	2679.30	2678.67	-87.10	40°04'52.831"N	104°42'40.933"W	0.00	
9917.00†	90.085	0.360	7164.41	2779.29	2778.66	-86.48	40°04'53.819"N	104°42'40.925"W	0.00	
10017.00†	90.085	0.360	7164.26	2879.28	2878.66	-85.85	40°04'54.807"N	104°42'40.916"W	0.00	
10117.00†	90.085	0.360	7164.12	2979.27	2978.66	-85.22	40°04'55.796"N	104°42'40.908"W	0.00	
10217.00†	90.085	0.360	7163.97	3079.26	3078.66	-84.59	40°04'56.784"N	104°42'40.900"W	0.00	
10317.00†	90.085	0.360	7163.82	3179.25	3178.66	-83.97	40°04'57.772"N	104°42'40.892"W	0.00	
10417.00†	90.085	0.360	7163.67	3279.24	3278.65	-83.34	40°04'58.760"N	104°42'40.884"W	0.00	
10517.00†	90.085	0.360	7163.52	3379.23	3378.65	-82.71	40°04'59.748"N	104°42'40.876"W	0.00	
10617.00†	90.085	0.360	7163.37	3479.21	3478.65	-82.08	40°05'00.737"N	104°42'40.868"W	0.00	
10717.00†	90.085	0.360	7163.22	3579.20	3578.65	-81.45	40°05'01.725"N	104°42'40.860"W	0.00	
10817.00†	90.085	0.360	7163.08	3679.19	3678.65	-80.83	40°05'02.713"N	104°42'40.852"W	0.00	
10917.00†	90.085	0.360	7162.93	3779.18	3778.64	-80.20	40°05'03.701"N	104°42'40.844"W	0.00	
11017.00†	90.085	0.360	7162.78	3879.17	3878.64	-79.57	40°05'04.689"N	104°42'40.836"W	0.00	
11117.00†	90.085	0.360	7162.63	3979.16	3978.64	-78.94	40°05'05.678"N	104°42'40.828"W	0.00	
11217.00†	90.085	0.360	7162.48	4079.15	4078.64	-78.31	40°05'06.666"N	104°42'40.820"W	0.00	
11317.00†	90.085	0.360	7162.33	4179.14	4178.64	-77.69	40°05'07.654"N	104°42'40.811"W	0.00	
11417.00†	90.085	0.360	7162.18	4279.13	4278.63	-77.06	40°05'08.642"N	104°42'40.803"W	0.00	
11517.00†	90.085	0.360	7162.04	4379.12	4378.63	-76.43	40°05'09.630"N	104°42'40.795"W	0.00	
11617.00†	90.085	0.360	7161.89	4479.11	4478.63	-75.80	40°05'10.619"N	104°42'40.787"W	0.00	
11717.00†	90.085	0.360	7161.74	4579.10	4578.63	-75.18	40°05'11.607"N	104°42'40.779"W	0.00	
11817.00†	90.085	0.360	7161.59	4679.08	4678.62	-74.55	40°05'12.595"N	104°42'40.771"W	0.00	
11917.00†	90.085	0.360	7161.44	4779.07	4778.62	-73.92	40°05'13.583"N	104°42'40.763"W	0.00	
12017.00†	90.085	0.360	7161.29	4879.06	4878.62	-73.29	40°05'14.571"N	104°42'40.755"W	0.00	
12117.00†	90.085	0.360	7161.14	4979.05	4978.62	-72.66	40°05'15.560"N	104°42'40.747"W	0.00	
12217.00†	90.085	0.360	7161.00	5079.04	5078.62	-72.04	40°05'16.548"N	104°42'40.739"W	0.00	
12317.00†	90.085	0.360	7160.85	5179.03	5178.61	-71.41	40°05'17.536"N	104°42'40.731"W	0.00	
12417.00†	90.085	0.360	7160.70	5279.02	5278.61	-70.78	40°05'18.524"N	104°42'40.723"W	0.00	



Planned Wellpath Report

THOMASON 22N-31HZ (PERMIT) PWP
Page 5 of 7



REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#13 THOMASON 22N-31HZ (275'FSL & 1419'FWL, SEC.6)
Area	COLORADO	Well	THOMASON 22N-31HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	THOMASON 22N-31HZ PWB
Facility	SEC.06-T1N-R65W		

WELLPATH DATA (154 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
12517.00†	90.085	0.360	7160.55	5379.01	5378.61	-70.15	40°05'19.512"N	104°42'40.715"W	0.00	
12617.00†	90.085	0.360	7160.40	5479.00	5478.61	-69.52	40°05'20.501"N	104°42'40.707"W	0.00	
12717.00†	90.085	0.360	7160.25	5578.99	5578.61	-68.90	40°05'21.489"N	104°42'40.698"W	0.00	
12817.00†	90.085	0.360	7160.10	5678.98	5678.60	-68.27	40°05'22.477"N	104°42'40.690"W	0.00	
12917.00†	90.085	0.360	7159.96	5778.97	5778.60	-67.64	40°05'23.465"N	104°42'40.682"W	0.00	
13017.00†	90.085	0.360	7159.81	5878.95	5878.60	-67.01	40°05'24.453"N	104°42'40.674"W	0.00	
13117.00†	90.085	0.360	7159.66	5978.94	5978.60	-66.39	40°05'25.442"N	104°42'40.666"W	0.00	
13217.00†	90.085	0.360	7159.51	6078.93	6078.60	-65.76	40°05'26.430"N	104°42'40.658"W	0.00	
13317.00†	90.085	0.360	7159.36	6178.92	6178.59	-65.13	40°05'27.418"N	104°42'40.650"W	0.00	
13417.00†	90.085	0.360	7159.21	6278.91	6278.59	-64.50	40°05'28.406"N	104°42'40.642"W	0.00	
13517.00†	90.085	0.360	7159.06	6378.90	6378.59	-63.87	40°05'29.394"N	104°42'40.634"W	0.00	
13617.00†	90.085	0.360	7158.92	6478.89	6478.59	-63.25	40°05'30.383"N	104°42'40.626"W	0.00	
13717.00†	90.085	0.360	7158.77	6578.88	6578.59	-62.62	40°05'31.371"N	104°42'40.618"W	0.00	
13817.00†	90.085	0.360	7158.62	6678.87	6678.58	-61.99	40°05'32.359"N	104°42'40.610"W	0.00	
13917.00†	90.085	0.360	7158.47	6778.86	6778.58	-61.36	40°05'33.347"N	104°42'40.602"W	0.00	
14017.00†	90.085	0.360	7158.32	6878.85	6878.58	-60.73	40°05'34.335"N	104°42'40.593"W	0.00	
14117.00†	90.085	0.360	7158.17	6978.84	6978.58	-60.11	40°05'35.324"N	104°42'40.585"W	0.00	
14217.00†	90.085	0.360	7158.02	7078.82	7078.57	-59.48	40°05'36.312"N	104°42'40.577"W	0.00	
14233.42	90.085	0.360	7158.00†	7095.24	7094.99	-59.38	40°05'36.474"N	104°42'40.576"W	0.00	End of Tangent (J)

HOLE & CASING SECTIONS - Ref Wellbore: THOMASON 22N-31HZ PWB Ref Wellpath: THOMASON 22N-31HZ (PERMIT) 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]	
12.25in Open Hole	17.00	1500.00	1483.00	17.00	1500.00	0.00	0.00	0.00	0.00	
9.625in Casing Surface	17.00	1500.00	1483.00	17.00	1500.00	0.00	0.00	0.00	0.00	
8.75in Open Hole	17.00	7501.61	7484.61	17.00	7168.00	0.00	0.00	363.32	-101.64	
7in Casing Intermediate	17.00	7501.61	7484.61	17.00	7168.00	0.00	0.00	363.32	-101.64	
6.125in Open Hole	7501.61	14233.42	6731.81	7168.00	7158.00	363.32	-101.64	7094.99	-59.38	
4.5in Casing Production	17.00	14233.42	14216.42	17.00	7158.00	0.00	0.00	7094.99	-59.38	



Planned Wellpath Report

THOMASON 22N-31HZ (PERMIT) PWP
Page 6 of 7



REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#13 THOMASON 22N-31HZ (275'FSL & 1419'FWL, SEC.6)
Area	COLORADO	Well	THOMASON 22N-31HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	THOMASON 22N-31HZ PWB
Facility	SEC.06-T1N-R65W		

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
THOMASON SECTION 31 LINES		1.00	0.40	90.10	3220872.07	1270782.52	40°04'26.364"N	104°42'38.653"W	polygon
PARAGON SECTION LINES		26.00	4404.12	2606.13	3223348.72	1275208.26	40°05'09.881"N	104°42'06.282"W	polygon
1) THOMASON 22N-31HZ BHL ON PLAT (2180'FSL & 1316'FWL, SEC.31) REV-1	14233.42	7158.00	7094.99	-59.38	3220659.49	1277875.20	40°05'36.474"N	104°42'40.576"W	point
THOMASON HARDLINES (460' SETBACKS)		7426.00	0.40	90.10	3220872.07	1270782.52	40°04'26.364"N	104°42'38.653"W	polygon

SURVEY PROGRAM - Ref Wellbore: THOMASON 22N-31HZ PWB Ref Wellpath: THOMASON 22N-31HZ (PERMIT) PWP

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
17.00	14233.42	NaviTrak (Standard)		THOMASON 22N-31HZ PWB



Planned Wellpath Report
 THOMASON 22N-31HZ (PERMIT) PWP
 Page 7 of 7



REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#13 THOMASON 22N-31HZ (275'FSL & 1419'FWL, SEC.6)
Area	COLORADO	Well	THOMASON 22N-31HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	THOMASON 22N-31HZ PWB
Facility	SEC.06-T1N-R65W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
1450.00	0.000	204.000	1450.00	FOX HILLS
5020.73	2.800	204.000	5017.00	SUSSEX
7063.32	46.266	359.283	7009.00	SHARON SPRINGS
7115.00	51.433	359.462	7043.00	NIOBRARA A
7299.43	69.871	359.946	7133.00	NIOBRARA B