

KERR-MCGEE OIL & GAS ONSHORE LP

Location: COLORADO Slot: SLOT#10 THOMASON 11C-31HZ (275°FSL & 1509°FWL, SEC.6)
Field: WELD COUNTY (KERR MCGEE) Well: THOMASON 11C-31HZ
Facility: SEC.06-T1N-R65W Wellbore: THOMASON 11C-31HZ PWB

Plot reference wellpath is THOMASON 11C-31HZ (PERMIT) PWB

True vertical depths are referenced to Rig on SLOT#10 THOMASON 11C-31HZ (275°FSL & 1509°FWL, SEC.6) (RKB)	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
Measured depths are referenced to Rig on SLOT#10 THOMASON 11C-31HZ (275°FSL & 1509°FWL, SEC.6) (RKB)	North Reference: True north
Rig on SLOT#10 THOMASON 11C-31HZ (275°FSL & 1509°FWL, SEC.6) (RKB) to Mean Sea Level: 5017 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#10 THOMASON 11C-31HZ (275°FSL & 1509°FWL, SEC.6)): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: wileyj02 on 6/20/2012

Location Information

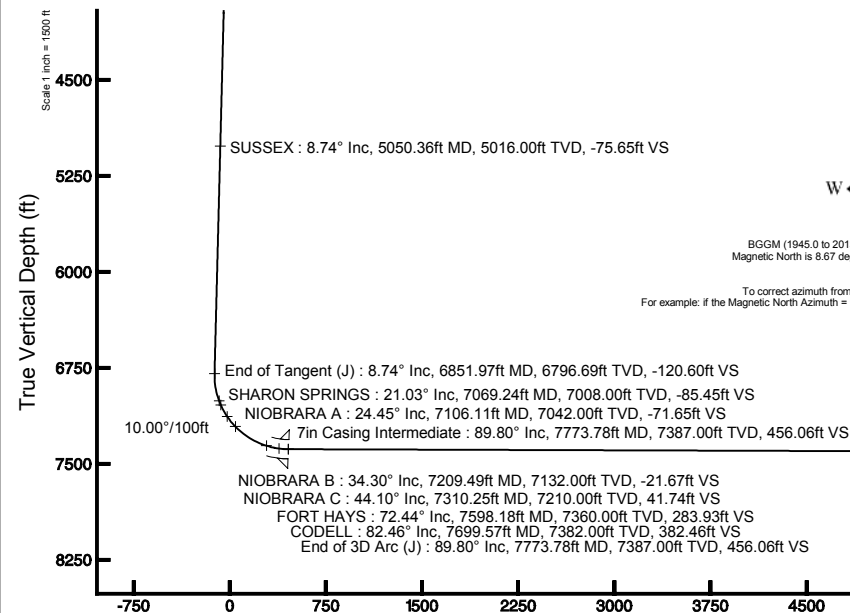
Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SEC.06-T1N-R65W	322348.719	1275208.264	40°09'09.881"N	104°42'06.282"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)
SLOT#10 THOMASON 11C-31HZ (275°FSL & 1509°FWL, SEC.6)	-4403.45	-2516.50	3220872.068	1270782.516
Rig on SLOT#10 THOMASON 11C-31HZ (275°FSL & 1509°FWL, SEC.6) (RKB) to Mud line (At Slot: SLOT#10 THOMASON 11C-31HZ (275°FSL & 1509°FWL, SEC.6))	5017ft			
Mean Sea Level to Mud line (At Slot: SLOT#10 THOMASON 11C-31HZ (275°FSL & 1509°FWL, SEC.6))	0ft			
Rig on SLOT#10 THOMASON 11C-31HZ (275°FSL & 1509°FWL, SEC.6) (RKB) to Mean Sea Level	5017ft			

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	106.200	17.00	0.00	0.00	0.00	0.00
End of Tangent	1800.00	0.000	106.200	1800.00	0.00	0.00	0.00	0.00
End of Build (J)	2237.00	8.740	106.200	2235.31	-9.28	31.94	2.00	-5.46
End of Tangent (J)	6851.97	8.740	106.200	6796.69	-204.92	705.35	0.00	-120.60
End of 3D Arc (J)	7773.78	89.804	0.379	7387.00	365.02	796.14	10.00	456.06
End of Tangent (J)	14512.65	89.804	0.379	7410.00	7103.71	840.74	0.00	7153.29

Targets

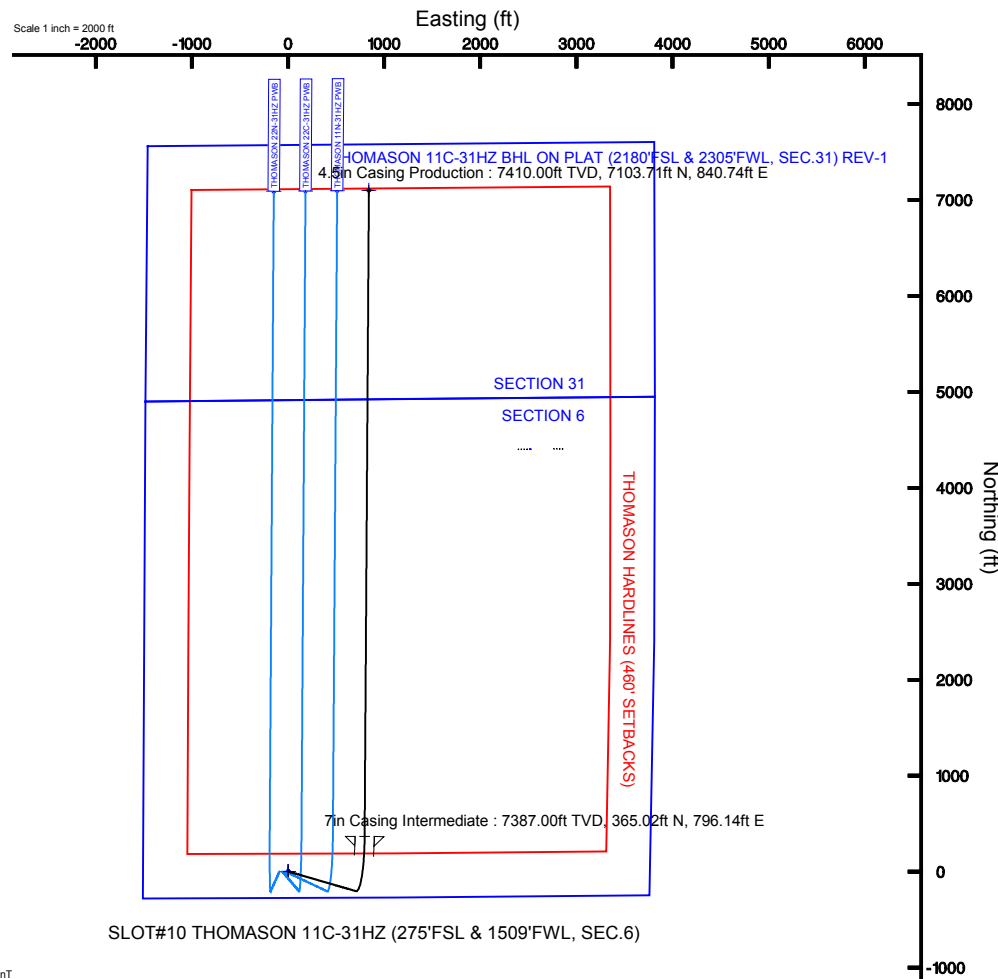
Name	MD (ft)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
THOMASON SECTION 31 LINES		0.00	0.00	0.00	3220872.07	1270782.52	40°04'26.364"N	104°42'38.653"W
PARAGON SECTION LINES		25.00	4403.71	2516.05	3223348.72	1275208.26	40°09'09.881"N	104°42'06.282"W
THOMASON 11C-31HZ BHL ON PLAT (2180°FSL & 2305°FWL, SEC.31) REV-1	14512.65	7410.00	7103.71	840.74	3221649.52	1277893.14	40°09'36.564"N	104°42'27.835"W
THOMASON HARDLINES (460' SETBACKS)		7425.00	0.00	0.00	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

Vertical Section (ft)
Azimuth 6.75° with reference 0.00 N, 0.00 E



4.5in Casing Production : 89.80° Inc, 14512.65ft MD, 7410.00ft TVD, 7153.29ft VS
End of Tangent (J) : 89.80° Inc, 14512.65ft MD, 7410.00ft TVD, 7153.29ft VS
THOMASON 11C-31HZ BHL ON PLAT (2180°FSL & 2305°FWL, SEC.31) REV-1

Scale 1 inch = 1500 ft

**Planned Wellpath Report**

THOMASON 11C-31HZ (PERMIT) PWP

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**REFERENCE WELLPATH IDENTIFICATION**

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#10 THOMASON 11C-31HZ (275'FSL & 1509'FWL, SEC.6)
Area	COLORADO	Well	THOMASON 11C-31HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	THOMASON 11C-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 09:41:02
Convergence at slot	0.51° East	Database/Source file	WellArchitectDB/THOMASON_11C-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	-4403.45	-2516.50	3220872.07	1270782.52	40°04'26.364"N	104°42'38.653"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#10 THOMASON 11C-31HZ (275'FSL & 1509'FWL, SEC.6) (RKB) to Facility Vertical Datum
Horizontal Reference Pt	Slot	Rig on SLOT#10 THOMASON 11C-31HZ (275'FSL & 1509'FWL, SEC.6) (RKB) to Mean Sea Level
Vertical Reference Pt	Rig on SLOT#10 THOMASON 11C-31HZ (275'FSL & 1509'FWL, SEC.6) (RKB)	Rig on SLOT#10 THOMASON 11C-31HZ (275'FSL & 1509'FWL, SEC.6) (RKB) to Mud Line at Slot (SLOT#10 THOMAS
MD Reference Pt	Rig on SLOT#10 THOMASON 11C-31HZ (275'FSL & 1509'FWL, SEC.6) (RKB)	Section Origin
Field Vertical Reference	Mean Sea Level	Section Azimuth



Planned Wellpath Report

THOMASON 11C-31HZ (PERMIT) PWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#10 THOMASON 11C-31HZ (275'FSL & 1509'FWL, SEC.6)
Area	COLORADO	Well	THOMASON 11C-31HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	THOMASON 11C-31HZ PWB
Facility	SEC.06-T1N-R6SW		

WELLPATH DATA (159 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	106.200	0.00	0.00	0.00	0.00	40°04'26.364"N	104°42'38.653"W	0.00	
17.00	0.000	106.200	17.00	0.00	0.00	0.00	40°04'26.364"N	104°42'38.653"W	0.00	Tie On
117.00†	0.000	106.200	117.00	0.00	0.00	0.00	40°04'26.364"N	104°42'38.653"W	0.00	
217.00†	0.000	106.200	217.00	0.00	0.00	0.00	40°04'26.364"N	104°42'38.653"W	0.00	
317.00†	0.000	106.200	317.00	0.00	0.00	0.00	40°04'26.364"N	104°42'38.653"W	0.00	
417.00†	0.000	106.200	417.00	0.00	0.00	0.00	40°04'26.364"N	104°42'38.653"W	0.00	
517.00†	0.000	106.200	517.00	0.00	0.00	0.00	40°04'26.364"N	104°42'38.653"W	0.00	
617.00†	0.000	106.200	617.00	0.00	0.00	0.00	40°04'26.364"N	104°42'38.653"W	0.00	
717.00†	0.000	106.200	717.00	0.00	0.00	0.00	40°04'26.364"N	104°42'38.653"W	0.00	
817.00†	0.000	106.200	817.00	0.00	0.00	0.00	40°04'26.364"N	104°42'38.653"W	0.00	
917.00†	0.000	106.200	917.00	0.00	0.00	0.00	40°04'26.364"N	104°42'38.653"W	0.00	
1017.00†	0.000	106.200	1017.00	0.00	0.00	0.00	40°04'26.364"N	104°42'38.653"W	0.00	
1117.00†	0.000	106.200	1117.00	0.00	0.00	0.00	40°04'26.364"N	104°42'38.653"W	0.00	
1217.00†	0.000	106.200	1217.00	0.00	0.00	0.00	40°04'26.364"N	104°42'38.653"W	0.00	
1317.00†	0.000	106.200	1317.00	0.00	0.00	0.00	40°04'26.364"N	104°42'38.653"W	0.00	
1417.00†	0.000	106.200	1417.00	0.00	0.00	0.00	40°04'26.364"N	104°42'38.653"W	0.00	
1449.00†	0.000	106.200	1449.00	0.00	0.00	0.00	40°04'26.364"N	104°42'38.653"W	0.00	FOX HILLS
1517.00†	0.000	106.200	1517.00	0.00	0.00	0.00	40°04'26.364"N	104°42'38.653"W	0.00	
1617.00†	0.000	106.200	1617.00	0.00	0.00	0.00	40°04'26.364"N	104°42'38.653"W	0.00	
1717.00†	0.000	106.200	1717.00	0.00	0.00	0.00	40°04'26.364"N	104°42'38.653"W	0.00	
1800.00	0.000	106.200	1800.00	0.00	0.00	0.00	40°04'26.364"N	104°42'38.653"W	0.00	End of Tangent
1817.00†	0.340	106.200	1817.00	-0.01	-0.01	0.05	40°04'26.364"N	104°42'38.652"W	2.00	
1917.00†	2.340	106.200	1916.97	-0.39	-0.67	2.29	40°04'26.357"N	104°42'38.623"W	2.00	
2017.00†	4.340	106.200	2016.79	-1.35	-2.29	7.89	40°04'26.341"N	104°42'38.552"W	2.00	
2117.00†	6.340	106.200	2116.35	-2.88	-4.89	16.83	40°04'26.316"N	104°42'38.437"W	2.00	
2217.00†	8.340	106.200	2215.53	-4.97	-8.45	29.09	40°04'26.280"N	104°42'38.279"W	2.00	
2237.00	8.740	106.200	2235.31	-5.46	-9.28	31.94	40°04'26.272"N	104°42'38.242"W	2.00	End of Build (J)
2317.00†	8.740	106.200	2314.38	-7.46	-12.67	43.62	40°04'26.239"N	104°42'38.092"W	0.00	
2417.00†	8.740	106.200	2413.22	-9.95	-16.91	58.21	40°04'26.197"N	104°42'37.904"W	0.00	
2517.00†	8.740	106.200	2512.06	-12.45	-21.15	72.80	40°04'26.155"N	104°42'37.717"W	0.00	
2617.00†	8.740	106.200	2610.89	-14.94	-25.39	87.39	40°04'26.113"N	104°42'37.529"W	0.00	
2717.00†	8.740	106.200	2709.73	-17.44	-29.63	101.99	40°04'26.071"N	104°42'37.341"W	0.00	
2817.00†	8.740	106.200	2808.57	-19.93	-33.87	116.58	40°04'26.029"N	104°42'37.153"W	0.00	
2917.00†	8.740	106.200	2907.41	-22.43	-38.11	131.17	40°04'25.987"N	104°42'36.966"W	0.00	
3017.00†	8.740	106.200	3006.25	-24.92	-42.35	145.76	40°04'25.946"N	104°42'36.778"W	0.00	
3117.00†	8.740	106.200	3105.09	-27.42	-46.59	160.35	40°04'25.904"N	104°42'36.590"W	0.00	
3217.00†	8.740	106.200	3203.93	-29.91	-50.83	174.94	40°04'25.862"N	104°42'36.403"W	0.00	
3317.00†	8.740	106.200	3302.77	-32.41	-55.07	189.54	40°04'25.820"N	104°42'36.215"W	0.00	
3417.00†	8.740	106.200	3401.61	-34.90	-59.30	204.13	40°04'25.778"N	104°42'36.027"W	0.00	
3517.00†	8.740	106.200	3500.44	-37.40	-63.54	218.72	40°04'25.736"N	104°42'35.840"W	0.00	
3617.00†	8.740	106.200	3599.28	-39.89	-67.78	233.31	40°04'25.694"N	104°42'35.652"W	0.00	
3717.00†	8.740	106.200	3698.12	-42.39	-72.02	247.90	40°04'25.652"N	104°42'35.464"W	0.00	
3817.00†	8.740	106.200	3796.96	-44.88	-76.26	262.49	40°04'25.610"N	104°42'35.276"W	0.00	
3917.00†	8.740	106.200	3895.80	-47.38	-80.50	277.09	40°04'25.568"N	104°42'35.089"W	0.00	
4017.00†	8.740	106.200	3994.64	-49.87	-84.74	291.68	40°04'25.527"N	104°42'34.901"W	0.00	



Planned Wellpath Report

THOMASON 11C-31HZ (PERMIT) PWP
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REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#10 THOMASON 11C-31HZ (275'FSL & 1509'FWL, SEC.6)
Area	COLORADO	Well	THOMASON 11C-31HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	THOMASON 11C-31HZ PWB
Facility	SEC.06-T1N-R6SW		

WELLPATH DATA (159 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4117.00†	8.740	106.200	4093.48	-52.37	-88.98	306.27	40°04'25.485"N	104°42'34.713"W	0.00	
4217.00†	8.740	106.200	4192.32	-54.86	-93.22	320.86	40°04'25.443"N	104°42'34.526"W	0.00	
4317.00†	8.740	106.200	4291.15	-57.36	-97.46	335.45	40°04'25.401"N	104°42'34.338"W	0.00	
4417.00†	8.740	106.200	4389.99	-59.85	-101.70	350.05	40°04'25.359"N	104°42'34.150"W	0.00	
4517.00†	8.740	106.200	4488.83	-62.35	-105.94	364.64	40°04'25.317"N	104°42'33.963"W	0.00	
4617.00†	8.740	106.200	4587.67	-64.84	-110.18	379.23	40°04'25.275"N	104°42'33.775"W	0.00	
4717.00†	8.740	106.200	4686.51	-67.34	-114.42	393.82	40°04'25.233"N	104°42'33.587"W	0.00	
4817.00†	8.740	106.200	4785.35	-69.83	-118.65	408.41	40°04'25.191"N	104°42'33.399"W	0.00	
4917.00†	8.740	106.200	4884.19	-72.33	-122.89	423.00	40°04'25.150"N	104°42'33.212"W	0.00	
5017.00†	8.740	106.200	4983.03	-74.82	-127.13	437.60	40°04'25.108"N	104°42'33.024"W	0.00	
5050.36†	8.740	106.200	5016.00	-75.65	-128.55	442.46	40°04'25.094"N	104°42'32.961"W	0.00	SUSSEX
5117.00†	8.740	106.200	5081.86	-77.32	-131.37	452.19	40°04'25.066"N	104°42'32.836"W	0.00	
5217.00†	8.740	106.200	5180.70	-79.81	-135.61	466.78	40°04'25.024"N	104°42'32.649"W	0.00	
5317.00†	8.740	106.200	5279.54	-82.31	-139.85	481.37	40°04'24.982"N	104°42'32.461"W	0.00	
5417.00†	8.740	106.200	5378.38	-84.80	-144.09	495.96	40°04'24.940"N	104°42'32.273"W	0.00	
5517.00†	8.740	106.200	5477.22	-87.30	-148.33	510.55	40°04'24.898"N	104°42'32.086"W	0.00	
5617.00†	8.740	106.200	5576.06	-89.79	-152.57	525.15	40°04'24.856"N	104°42'31.898"W	0.00	
5717.00†	8.740	106.200	5674.90	-92.28	-156.81	539.74	40°04'24.814"N	104°42'31.710"W	0.00	
5817.00†	8.740	106.200	5773.74	-94.78	-161.05	554.33	40°04'24.772"N	104°42'31.522"W	0.00	
5917.00†	8.740	106.200	5872.58	-97.27	-165.29	568.92	40°04'24.731"N	104°42'31.335"W	0.00	
6017.00†	8.740	106.200	5971.41	-99.77	-169.53	583.51	40°04'24.689"N	104°42'31.147"W	0.00	
6117.00†	8.740	106.200	6070.25	-102.26	-173.77	598.10	40°04'24.647"N	104°42'30.959"W	0.00	
6217.00†	8.740	106.200	6169.09	-104.76	-178.00	612.70	40°04'24.605"N	104°42'30.772"W	0.00	
6317.00†	8.740	106.200	6267.93	-107.25	-182.24	627.29	40°04'24.563"N	104°42'30.584"W	0.00	
6417.00†	8.740	106.200	6366.77	-109.75	-186.48	641.88	40°04'24.521"N	104°42'30.396"W	0.00	
6517.00†	8.740	106.200	6465.61	-112.24	-190.72	656.47	40°04'24.479"N	104°42'30.209"W	0.00	
6617.00†	8.740	106.200	6564.45	-114.74	-194.96	671.06	40°04'24.437"N	104°42'30.021"W	0.00	
6717.00†	8.740	106.200	6663.29	-117.23	-199.20	685.66	40°04'24.395"N	104°42'29.833"W	0.00	
6817.00†	8.740	106.200	6762.12	-119.73	-203.44	700.25	40°04'24.353"N	104°42'29.645"W	0.00	
6851.97	8.740	106.200	6796.69	-120.60	-204.92	705.35	40°04'24.339"N	104°42'29.580"W	0.00	End of Tangent (J)
6917.00†	9.363	64.112	6860.98	-118.56	-203.99	714.86	40°04'24.348"N	104°42'29.457"W	10.00	
7017.00†	16.396	30.524	6958.53	-101.21	-188.24	729.39	40°04'24.504"N	104°42'29.271"W	10.00	
7069.24†	21.034	22.968	7008.00	-85.45	-173.25	736.80	40°04'24.652"N	104°42'29.175"W	10.00	SHARON SPRINGS
7106.11†	24.445	19.337	7042.00	-71.65	-159.95	741.90	40°04'24.783"N	104°42'29.110"W	10.00	NIORARA A
7117.00†	25.466	18.442	7051.87	-67.15	-155.61	743.39	40°04'24.826"N	104°42'29.090"W	10.00	
7209.49†	34.298	12.872	7132.00	-21.67	-111.24	755.51	40°04'25.265"N	104°42'28.934"W	10.00	NIORARA B
7217.00†	35.024	12.533	7138.18	-17.43	-107.08	756.45	40°04'25.306"N	104°42'28.922"W	10.00	
7310.25†	44.096	9.130	7210.00	41.74	-48.79	767.43	40°04'25.882"N	104°42'28.781"W	10.00	NIORARA C
7317.00†	44.757	8.928	7214.82	46.47	-44.13	768.17	40°04'25.928"N	104°42'28.772"W	10.00	
7417.00†	54.569	6.390	7279.48	122.58	31.33	778.20	40°04'26.674"N	104°42'28.643"W	10.00	
7517.00†	64.423	4.409	7330.18	208.60	117.00	786.22	40°04'27.520"N	104°42'28.539"W	10.00	
7598.18†	72.440	3.033	7360.00	283.93	192.28	791.09	40°04'28.264"N	104°42'28.477"W	10.00	FORT HAYS
7617.00†	74.300	2.733	7365.38	301.92	210.29	792.00	40°04'28.442"N	104°42'28.465"W	10.00	
7699.57†	82.464	1.471	7382.00	382.46	291.04	794.95	40°04'29.240"N	104°42'28.427"W	10.00	CODELL
7717.00†	84.188	1.213	7384.03	399.69	308.35	795.35	40°04'29.411"N	104°42'28.422"W	10.00	



Planned Wellpath Report

THOMASON 11C-31HZ (PERMIT) PWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#10 THOMASON 11C-31HZ (275'FSL & 1509'FWL, SEC.6)
Area	COLORADO	Well	THOMASON 11C-31HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	THOMASON 11C-31HZ PWB
Facility	SEC.06-T1N-R6SW		

WELLPATH DATA (159 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
7773.78	89.804	0.379	7387.00	456.06	365.02	796.14	40°04'29.971"N	104°42'28.412"W	10.00	End of 3D Arc (J)
7817.00†	89.804	0.379	7387.15	499.02	408.24	796.42	40°04'30.398"N	104°42'28.408"W	0.00	
7917.00†	89.804	0.379	7387.49	598.40	508.24	797.09	40°04'31.386"N	104°42'28.399"W	0.00	
8017.00†	89.804	0.379	7387.83	697.78	608.24	797.75	40°04'32.375"N	104°42'28.391"W	0.00	
8117.00†	89.804	0.379	7388.17	797.16	708.23	798.41	40°04'33.363"N	104°42'28.382"W	0.00	
8217.00†	89.804	0.379	7388.51	896.54	808.23	799.07	40°04'34.351"N	104°42'28.374"W	0.00	
8317.00†	89.804	0.379	7388.85	995.93	908.23	799.73	40°04'35.339"N	104°42'28.365"W	0.00	
8417.00†	89.804	0.379	7389.20	1095.31	1008.22	800.40	40°04'36.327"N	104°42'28.357"W	0.00	
8517.00†	89.804	0.379	7389.54	1194.69	1108.22	801.06	40°04'37.316"N	104°42'28.348"W	0.00	
8617.00†	89.804	0.379	7389.88	1294.07	1208.22	801.72	40°04'38.304"N	104°42'28.340"W	0.00	
8717.00†	89.804	0.379	7390.22	1393.45	1308.22	802.38	40°04'39.292"N	104°42'28.331"W	0.00	
8817.00†	89.804	0.379	7390.56	1492.84	1408.21	803.04	40°04'40.280"N	104°42'28.322"W	0.00	
8917.00†	89.804	0.379	7390.90	1592.22	1508.21	803.70	40°04'41.268"N	104°42'28.314"W	0.00	
9017.00†	89.804	0.379	7391.24	1691.60	1608.21	804.37	40°04'42.256"N	104°42'28.305"W	0.00	
9117.00†	89.804	0.379	7391.58	1790.98	1708.20	805.03	40°04'43.245"N	104°42'28.297"W	0.00	
9217.00†	89.804	0.379	7391.93	1890.36	1808.20	805.69	40°04'44.233"N	104°42'28.288"W	0.00	
9317.00†	89.804	0.379	7392.27	1989.75	1908.20	806.35	40°04'45.221"N	104°42'28.280"W	0.00	
9417.00†	89.804	0.379	7392.61	2089.13	2008.20	807.01	40°04'46.209"N	104°42'28.271"W	0.00	
9517.00†	89.804	0.379	7392.95	2188.51	2108.19	807.68	40°04'47.197"N	104°42'28.263"W	0.00	
9617.00†	89.804	0.379	7393.29	2287.89	2208.19	808.34	40°04'48.186"N	104°42'28.254"W	0.00	
9717.00†	89.804	0.379	7393.63	2387.27	2308.19	809.00	40°04'49.174"N	104°42'28.245"W	0.00	
9817.00†	89.804	0.379	7393.97	2486.66	2408.19	809.66	40°04'50.162"N	104°42'28.237"W	0.00	
9917.00†	89.804	0.379	7394.31	2586.04	2508.18	810.32	40°04'51.150"N	104°42'28.228"W	0.00	
10017.00†	89.804	0.379	7394.66	2685.42	2608.18	810.99	40°04'52.138"N	104°42'28.220"W	0.00	
10117.00†	89.804	0.379	7395.00	2784.80	2708.18	811.65	40°04'53.127"N	104°42'28.211"W	0.00	
10217.00†	89.804	0.379	7395.34	2884.18	2808.17	812.31	40°04'54.115"N	104°42'28.203"W	0.00	
10317.00†	89.804	0.379	7395.68	2983.57	2908.17	812.97	40°04'55.103"N	104°42'28.194"W	0.00	
10417.00†	89.804	0.379	7396.02	3082.95	3008.17	813.63	40°04'56.091"N	104°42'28.186"W	0.00	
10517.00†	89.804	0.379	7396.36	3182.33	3108.17	814.29	40°04'57.079"N	104°42'28.177"W	0.00	
10617.00†	89.804	0.379	7396.70	3281.71	3208.16	814.96	40°04'58.068"N	104°42'28.168"W	0.00	
10717.00†	89.804	0.379	7397.05	3381.09	3308.16	815.62	40°04'59.056"N	104°42'28.160"W	0.00	
10817.00†	89.804	0.379	7397.39	3480.48	3408.16	816.28	40°05'00.044"N	104°42'28.151"W	0.00	
10917.00†	89.804	0.379	7397.73	3579.86	3508.15	816.94	40°05'01.032"N	104°42'28.143"W	0.00	
11017.00†	89.804	0.379	7398.07	3679.24	3608.15	817.60	40°05'02.020"N	104°42'28.134"W	0.00	
11117.00†	89.804	0.379	7398.41	3778.62	3708.15	818.27	40°05'03.009"N	104°42'28.126"W	0.00	
11217.00†	89.804	0.379	7398.75	3878.00	3808.15	818.93	40°05'03.997"N	104°42'28.117"W	0.00	
11317.00†	89.804	0.379	7399.09	3977.39	3908.14	819.59	40°05'04.985"N	104°42'28.109"W	0.00	
11417.00†	89.804	0.379	7399.43	4076.77	4008.14	820.25	40°05'05.973"N	104°42'28.100"W	0.00	
11517.00†	89.804	0.379	7399.78	4176.15	4108.14	820.91	40°05'06.961"N	104°42'28.091"W	0.00	
11617.00†	89.804	0.379	7400.12	4275.53	4208.14	821.58	40°05'07.949"N	104°42'28.083"W	0.00	
11717.00†	89.804	0.379	7400.46	4374.91	4308.13	822.24	40°05'08.938"N	104°42'28.074"W	0.00	
11817.00†	89.804	0.379	7400.80	4474.29	4408.13	822.90	40°05'09.926"N	104°42'28.066"W	0.00	
11917.00†	89.804	0.379	7401.14	4573.68	4508.13	823.56	40°05'10.914"N	104°42'28.057"W	0.00	
12017.00†	89.804	0.379	7401.48	4673.06	4608.12	824.22	40°05'11.902"N	104°42'28.049"W	0.00	
12117.00†	89.804	0.379	7401.82	4772.44	4708.12	824.89	40°05'12.890"N	104°42'28.040"W	0.00	



Planned Wellpath Report

THOMASON 11C-31HZ (PERMIT) PWP
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REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#10 THOMASON 11C-31HZ (275°FSL & 1509°FWL, SEC.6)
Area	COLORADO	Well	THOMASON 11C-31HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	THOMASON 11C-31HZ PWB
Facility	SEC.06-T1N-R6SW		

WELLPATH DATA (159 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
12217.00†	89.804	0.379	7402.16	4871.82	4808.12	825.55	40°05'13.879"N	104°42'28.031"W	0.00	
12317.00†	89.804	0.379	7402.51	4971.20	4908.12	826.21	40°05'14.867"N	104°42'28.023"W	0.00	
12417.00†	89.804	0.379	7402.85	5070.59	5008.11	826.87	40°05'15.855"N	104°42'28.014"W	0.00	
12517.00†	89.804	0.379	7403.19	5169.97	5108.11	827.53	40°05'16.843"N	104°42'28.006"W	0.00	
12617.00†	89.804	0.379	7403.53	5269.35	5208.11	828.19	40°05'17.831"N	104°42'27.997"W	0.00	
12717.00†	89.804	0.379	7403.87	5368.73	5308.11	828.86	40°05'18.820"N	104°42'27.989"W	0.00	
12817.00†	89.804	0.379	7404.21	5468.11	5408.10	829.52	40°05'19.808"N	104°42'27.980"W	0.00	
12917.00†	89.804	0.379	7404.55	5567.50	5508.10	830.18	40°05'20.796"N	104°42'27.972"W	0.00	
13017.00†	89.804	0.379	7404.90	5666.88	5608.10	830.84	40°05'21.784"N	104°42'27.963"W	0.00	
13117.00†	89.804	0.379	7405.24	5766.26	5708.09	831.50	40°05'22.772"N	104°42'27.954"W	0.00	
13217.00†	89.804	0.379	7405.58	5865.64	5808.09	832.17	40°05'23.760"N	104°42'27.946"W	0.00	
13317.00†	89.804	0.379	7405.92	5965.02	5908.09	832.83	40°05'24.749"N	104°42'27.937"W	0.00	
13417.00†	89.804	0.379	7406.26	6064.41	6008.09	833.49	40°05'25.737"N	104°42'27.929"W	0.00	
13517.00†	89.804	0.379	7406.60	6163.79	6108.08	834.15	40°05'26.725"N	104°42'27.920"W	0.00	
13617.00†	89.804	0.379	7406.94	6263.17	6208.08	834.81	40°05'27.713"N	104°42'27.912"W	0.00	
13717.00†	89.804	0.379	7407.28	6362.55	6308.08	835.48	40°05'28.701"N	104°42'27.903"W	0.00	
13817.00†	89.804	0.379	7407.63	6461.93	6408.07	836.14	40°05'29.690"N	104°42'27.895"W	0.00	
13917.00†	89.804	0.379	7407.97	6561.32	6508.07	836.80	40°05'30.678"N	104°42'27.886"W	0.00	
14017.00†	89.804	0.379	7408.31	6660.70	6608.07	837.46	40°05'31.666"N	104°42'27.877"W	0.00	
14117.00†	89.804	0.379	7408.65	6760.08	6708.07	838.12	40°05'32.654"N	104°42'27.869"W	0.00	
14217.00†	89.804	0.379	7408.99	6859.46	6808.06	838.78	40°05'33.642"N	104°42'27.860"W	0.00	
14317.00†	89.804	0.379	7409.33	6958.84	6908.06	839.45	40°05'34.631"N	104°42'27.852"W	0.00	
14417.00†	89.804	0.379	7409.67	7058.23	7008.06	840.11	40°05'35.619"N	104°42'27.843"W	0.00	
14512.65	89.804	0.379	7410.00†	7153.29	7103.71	840.74	40°05'36.564"N	104°42'27.835"W	0.00	End of Tangent (J)

HOLE & CASING SECTIONS - Ref Wellbore: THOMASON 11C-31HZ PWB Ref Wellpath: THOMASON 11C-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	1500.00	7773.78	6273.78	1500.00	7387.00	0.00	0.00	365.02	796.14
7in Casing Intermediate	17.00	7773.78	7756.78	17.00	7387.00	0.00	0.00	365.02	796.14
6.125in Open Hole	7773.78	14512.65	6738.87	7387.00	7410.00	365.02	796.14	7103.71	840.74
4.5in Casing Production	17.00	14512.65	14495.65	17.00	7410.00	0.00	0.00	7103.71	840.74

**Planned Wellpath Report**

THOMASON 11C-31HZ (PERMIT) PWP

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**REFERENCE WELLPATH IDENTIFICATION**

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#10 THOMASON 11C-31HZ (275'FSL & 1509'FWL, SEC.6)
Area	COLORADO	Well	THOMASON 11C-31HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	THOMASON 11C-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		0.00	0.00	0.00	3220872.07	1270782.52	40°04'26.364"N	104°42'38.653"W	polygon
PARAGON SECTION LINES		25.00	4403.71	2516.05	3223348.72	1275208.26	40°05'09.881"N	104°42'06.282"W	polygon
1) THOMASON 11C-31HZ BHL ON PLAT (2180'FSL & 2305'FWL, SEC.31) REV-1	14512.65	7410.00	7103.71	840.74	3221649.52	1277893.14	40°05'36.564"N	104°42'27.835"W	point
THOMASON HARDLINES (460' SETBACKS)		7425.00	0.00	0.00	3220872.07	1270782.52	40°04'26.364"N	104°42'38.653"W	polygon

SURVEY PROGRAM - Ref Wellbore: THOMASON 11C-31HZ PWB Ref Wellpath: THOMASON 11C-31HZ (PERMIT) PWP

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
17.00	14512.65	NaviTrak (Standard)		THOMASON 11C-31HZ PWB



Planned Wellpath Report
THOMASON 11C-31HZ (PERMIT) PWP
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REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#10 THOMASON 11C-31HZ (275'FSL & 1509'FWL, SEC.6)
Area	COLORADO	Well	THOMASON 11C-31HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	THOMASON 11C-31HZ PWB
Facility	SEC.06-T1N-R65W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
1449.00	0.000	106.200	1449.00	FOX HILLS
5050.36	8.740	106.200	5016.00	SUSSEX
7069.24	21.034	22.968	7008.00	SHARON SPRINGS
7106.11	24.445	19.337	7042.00	NIOBRARA A
7209.49	34.298	12.872	7132.00	NIOBRARA B
7310.25	44.096	9.130	7210.00	NIOBRARA C
7598.18	72.440	3.033	7360.00	FORT HAYS
7699.57	82.464	1.471	7382.00	CODELL