

# KERR-MCGEE OIL & GAS ONSHORE LP



Location: COLORADO Slot: SLOT#28 GREENLEAF 2N-2HZ (452' FSL & 1765' FEL, SEC.02)  
 Field: WELD COUNTY (KERR MCGEE) Well: GREENLEAF 2N-2HZ  
 Facility: SEC.02-T2N-R65W Wellbore: GREENLEAF 2N-2HZ PWB

Plot reference wellpath is GREENLEAF 2N-2HZ (REV-A.0) PWP

True vertical depths are referenced to XTREME 23 (16KB) (RKB)	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
Measured depths are referenced to XTREME 23 (16KB) (RKB)	North Reference: True north
XTREME 23 (16KB) (RKB) to Mean Sea Level: 4862 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#28 GREENLEAF 2N-2HZ (452' FSL & 1765' FEL, SEC.02)): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: precain on 1/6/2015

## Location Information

Facility Name	Grid East (US R)	Grid North (US R)	Latitude	Longitude		
SEC.02-T2N-R65W	3244904.724	1303182.744	40°09'44.316" N	104°37'25.392" W		
Slot	Local N (ft)	Local E (ft)	Grid East (US R)	Grid North (US R)	Latitude	Longitude
SLOT#28 GREENLEAF 2N-2HZ (452' FSL & 1765' FEL, SEC.02)	-231.71	-1099.30	3243807.820	1302940.194	40°09'42.026" N	104°37'39.551" W
XTREME 23 (16KB) (RKB) to Mud line (At Slot: SLOT#28 GREENLEAF 2N-2HZ (452' FSL & 1765' FEL, SEC.02))					4862ft	
Mean Sea Level to Mud line (At Slot: SLOT#28 GREENLEAF 2N-2HZ (452' FSL & 1765' FEL, SEC.02))					0ft	
XTREME 23 (16KB) (RKB) to Mean Sea Level					4862ft	

## Survey Program

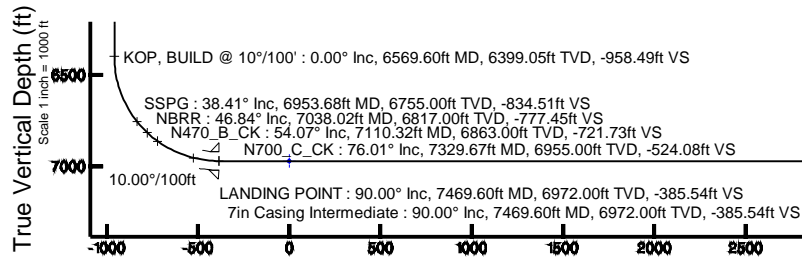
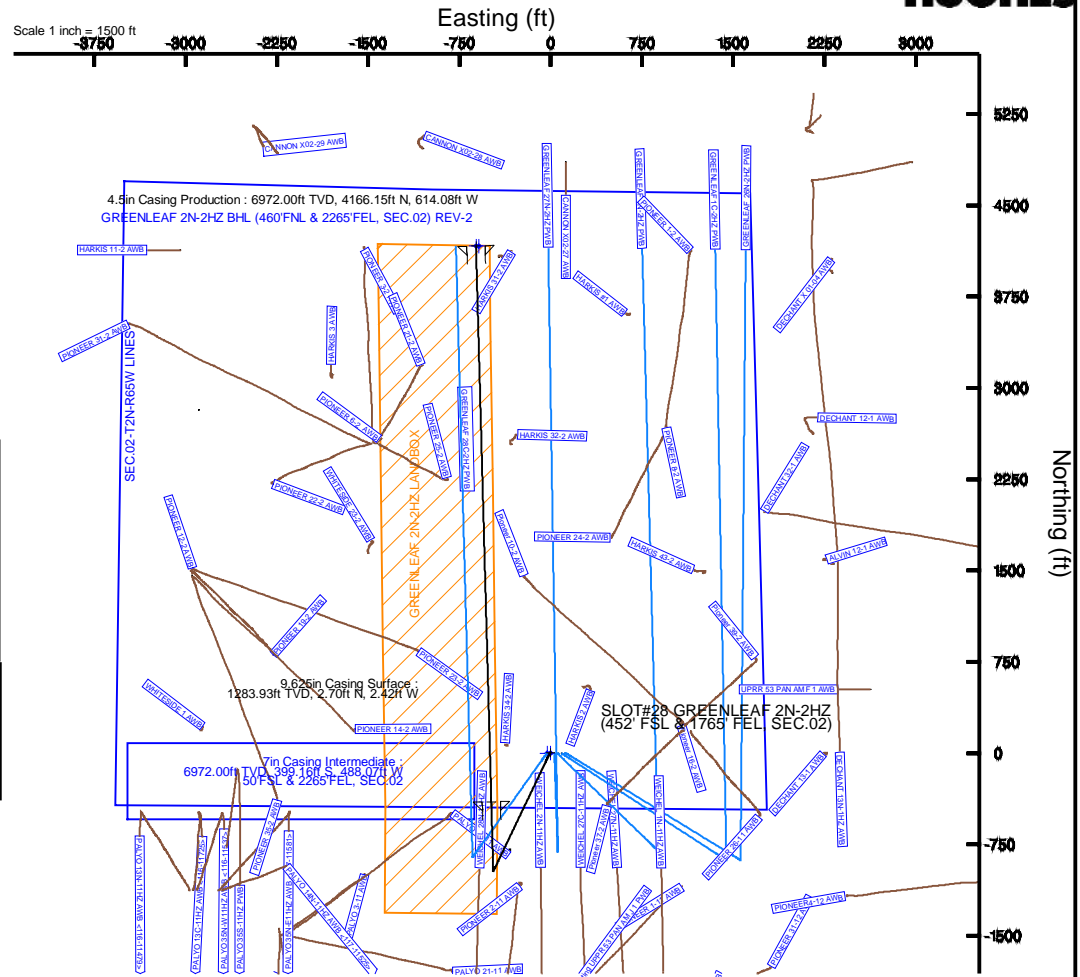
Start MD (ft)	End MD (ft)	Tool	Model	Log Name/Comment	Wellbore
16.00	1249.00	SCWSA MWD, Rev. 2	SCWSA MWD, Rev. 2 (Standard)		GREENLEAF 2N-2HZ AWB
1249.00	7469.60	NaviTrak	NaviTrak (MAGCORR, IFR)		GREENLEAF 2N-2HZ PWB
7469.60	12036.65	NaviTrak	NaviTrak (MAGCORR, IFR)		GREENLEAF 2N-2HZ PWB

## Well Profile Data

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
TIE-INTO CATHEDRAL MWD SURVEYS	1249.00	0.600	3.500	1248.94	2.34	-2.45	0.13	2.40
BEGIN NUDGE	1425.07	0.600	3.500	1425.00	4.18	-2.33	0.00	4.24
END NUDGE	2452.93	20.000	205.600	2432.67	-150.63	-78.78	2.00	-148.40
BEGIN DROP	4610.37	20.000	205.600	4460.00	-816.09	-397.61	0.00	-804.81
END DROP	5610.37	0.000	358.419	5439.82	-971.89	-472.26	2.00	-958.49
KOP, BUILD @ 10°/100'	6569.60	0.000	358.419	6399.05	-971.89	-472.26	0.00	-958.49
LANDING POINT	7469.60	90.000	358.419	6972.00	-399.15	-488.07	10.00	-385.54
TOTAL DEPTH	12036.65	90.000	358.419	6972.00	4166.15	-614.08	0.00	4181.51

## Targets

Name	MD (ft)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US R)	Grid North (US R)	Latitude	Longitude
SEC.02-T2N-R65W LINES	0.00	0.40	-29.89		3243777.93	1302940.31	40°09'42.030" N	104°37'39.936" W
GREENLEAF 2N-2HZ BHL (460'FNL & 2265'FEL, SEC.02) REV-2	12036.65	6972.00	4166.15	-614.08	3243152.81	1307099.92	40°10'23.196" N	104°37'47.462" W
GREENLEAF 2N-2HZ BHL ON PLAT (460'FNL & 2240'FEL, SEC.02) REV-1	6972.00	4166.15	-589.08		3243177.82	1307100.17	40°10'23.196" N	104°37'47.140" W
GREENLEAF 2N-2HZ L.ND.BOX	6972.00	0.00	0.00		3243807.82	1302940.19	40°09'42.026" N	104°37'39.551" W



Vertical Section (ft)  
 Azimuth 358.42° with reference 0.00 N, 0.00 E

Scale 1 inch = 1000 ft

# Planned Wellpath Report

GREENLEAF 2N-2HZ (REV-A.0) PWP

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## REFERENCE WELLPATH IDENTIFICATION

Operator	<b>KERR-MCGEE OIL &amp; GAS ONSHORE LP</b>	Slot	<b>SLOT#28 GREENLEAF 2N-2HZ (452' FSL &amp; 1765' FEL, SEC.02)</b>
Area	<b>COLORADO</b>	Well	<b>GREENLEAF 2N-2HZ</b>
Field	<b>WELD COUNTY (KERR MCGEE)</b>	Wellbore	<b>GREENLEAF 2N-2HZ PWB</b>
Facility	<b>SEC.02-T2N-R65W</b>		

## REPORT SETUP INFORMATION

Projection System	<b>NAD83 / Lambert Colorado SP, Northern Zone (501), US feet</b>	Software System	<b>WellArchitect@ 4.0.0</b>
North Reference	<b>True</b>	User	<b>Precain</b>
Scale	<b>0.999958</b>	Report Generated	<b>1/6/2015 at 12:59:41 PM</b>
Convergence at slot	<b>n/a</b>	Database/Source file	<b>WellArchitectDB/GREENLEAF_2N-2HZ_PWB.xml</b>

## WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-231.71	-1099.30	3243807.82	1302940.19	<b>40°09'42.026"N</b>	<b>104°37'39.551"W</b>
Facility Reference Pt			3244904.72	1303182.74	<b>40°09'44.316"N</b>	<b>104°37'25.392"W</b>
Field Reference Pt			<b>3197771.84</b>	<b>1268891.29</b>	40°04'09.600"N	104°47'36.000"W

## WELLPATH DATUM

Calculation method	<b>Minimum curvature</b>	XTREME 23 (16'KB) (RKB) to Facility Vertical Datum	<b>4862.00ft</b>
Horizontal Reference Pt	<b>Slot</b>	XTREME 23 (16'KB) (RKB) to Mean Sea Level	<b>4862.00ft</b>
Vertical Reference Pt	<b>XTREME 23 (16'KB) (RKB)</b>	XTREME 23 (16'KB) (RKB) to Mud Line at Slot (SLOT#28 GREENLEAF 2N-2HZ (452' FSL & 1765' FEL, SEC.02))	<b>4862.00ft</b>
MD Reference Pt	<b>XTREME 23 (16'KB) (RKB)</b>	Section Origin	<b>N 0.00, E 0.00 ft</b>
Field Vertical Reference	<b>Mean Sea Level</b>	Section Azimuth	<b>358.42°</b>

### REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#28 GREENLEAF 2N-2HZ (452' FSL & 1765' FEL, SEC.02)
Area	COLORADO	Well	GREENLEAF 2N-2HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	GREENLEAF 2N-2HZ PWB
Facility	SEC.02-T2N-R65W		

### WELLPATH DATA (138 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	86.000	0.00	0.00	0.00	0.00	40°09'42.026"N	104°37'39.551"W	0.00	
16.00	0.000	86.000	16.00	0.00	0.00	0.00	40°09'42.026"N	104°37'39.551"W	0.00	
129.00	1.000	86.000	128.99	0.04	0.07	0.98	40°09'42.027"N	104°37'39.538"W	0.88	
209.00	0.800	106.800	208.98	-0.11	-0.04	2.21	40°09'42.026"N	104°37'39.522"W	0.47	
288.00	0.500	104.500	287.98	-0.37	-0.29	3.08	40°09'42.023"N	104°37'39.511"W	0.38	
368.00	0.100	255.600	367.98	-0.49	-0.39	3.35	40°09'42.022"N	104°37'39.508"W	0.74	
448.00	0.100	239.700	447.98	-0.54	-0.45	3.22	40°09'42.022"N	104°37'39.510"W	0.03	
528.00	0.100	306.800	527.98	-0.53	-0.44	3.10	40°09'42.022"N	104°37'39.511"W	0.14	
608.00	0.300	278.300	607.98	-0.45	-0.37	2.84	40°09'42.022"N	104°37'39.514"W	0.27	
688.00	0.100	146.300	687.98	-0.47	-0.40	2.67	40°09'42.022"N	104°37'39.517"W	0.47	
768.00	0.800	277.200	767.98	-0.44	-0.38	2.16	40°09'42.022"N	104°37'39.523"W	1.09	
773.03†	0.800	277.489	773.00	-0.43	-0.38	2.09	40°09'42.022"N	104°37'39.524"W	0.08	Base Fox Hills
848.00	0.800	281.800	847.97	-0.23	-0.20	1.05	40°09'42.024"N	104°37'39.537"W	0.08	
928.00	0.800	285.400	927.96	0.06	0.06	-0.03	40°09'42.027"N	104°37'39.551"W	0.06	
1008.00	0.800	293.900	1007.95	0.47	0.44	-1.08	40°09'42.030"N	104°37'39.565"W	0.15	
1088.00	0.800	299.700	1087.94	1.00	0.94	-2.07	40°09'42.035"N	104°37'39.578"W	0.10	
1168.00	0.500	7.200	1167.94	1.63	1.56	-2.52	40°09'42.041"N	104°37'39.583"W	0.96	
1249.00	0.600	3.500	1248.94	2.40	2.34	-2.45	40°09'42.049"N	104°37'39.583"W	0.13	TIE-INTO CATHEDRAL MWD SURVEYS
1349.00†	0.600	3.500	1348.93	3.45	3.38	-2.38	40°09'42.059"N	104°37'39.582"W	0.00	
1425.07	0.600	3.500	1425.00	4.24	4.18	-2.33	40°09'42.067"N	104°37'39.581"W	0.00	BEGIN NUDGE
1449.00†	0.234	314.930	1448.93	4.40	4.34	-2.36	40°09'42.069"N	104°37'39.581"W	2.00	
1549.00†	1.933	211.525	1548.91	3.14	3.04	-3.39	40°09'42.056"N	104°37'39.595"W	2.00	
1649.00†	3.926	208.201	1648.77	-1.25	-1.41	-5.89	40°09'42.012"N	104°37'39.627"W	2.00	
1749.00†	5.924	207.115	1748.40	-8.75	-9.02	-9.86	40°09'41.937"N	104°37'39.678"W	2.00	
1849.00†	7.923	206.576	1847.66	-19.35	-19.78	-15.29	40°09'41.831"N	104°37'39.748"W	2.00	
1949.00†	9.923	206.253	1946.45	-33.05	-33.68	-22.19	40°09'41.693"N	104°37'39.837"W	2.00	
2049.00†	11.922	206.037	2044.63	-49.82	-50.68	-30.54	40°09'41.525"N	104°37'39.944"W	2.00	
2149.00†	13.922	205.883	2142.09	-69.65	-70.79	-40.32	40°09'41.326"N	104°37'40.070"W	2.00	
2249.00†	15.922	205.767	2238.72	-92.51	-93.97	-51.54	40°09'41.097"N	104°37'40.215"W	2.00	
2349.00†	17.922	205.676	2334.38	-118.37	-120.19	-64.17	40°09'40.838"N	104°37'40.377"W	2.00	
2449.00†	19.921	205.603	2428.97	-147.21	-149.42	-78.20	40°09'40.549"N	104°37'40.558"W	2.00	
2452.93	20.000	205.600	2432.67	-148.40	-150.63	-78.78	40°09'40.537"N	104°37'40.566"W	2.00	END NUDFGE
2549.00†	20.000	205.600	2522.94	-177.63	-180.27	-92.97	40°09'40.245"N	104°37'40.748"W	0.00	
2649.00†	20.000	205.600	2616.91	-208.06	-211.11	-107.75	40°09'39.940"N	104°37'40.939"W	0.00	
2749.00†	20.000	205.600	2710.88	-238.48	-241.96	-122.53	40°09'39.635"N	104°37'41.129"W	0.00	
2849.00†	20.000	205.600	2804.85	-268.91	-272.80	-137.31	40°09'39.330"N	104°37'41.320"W	0.00	
2949.00†	20.000	205.600	2898.82	-299.33	-303.64	-152.09	40°09'39.025"N	104°37'41.510"W	0.00	
3049.00†	20.000	205.600	2992.79	-329.76	-334.49	-166.86	40°09'38.721"N	104°37'41.700"W	0.00	
3149.00†	20.000	205.600	3086.76	-360.18	-365.33	-181.64	40°09'38.416"N	104°37'41.891"W	0.00	
3249.00†	20.000	205.600	3180.73	-390.61	-396.18	-196.42	40°09'38.111"N	104°37'42.081"W	0.00	
3349.00†	20.000	205.600	3274.70	-421.03	-427.02	-211.20	40°09'37.806"N	104°37'42.271"W	0.00	
3449.00†	20.000	205.600	3368.67	-451.46	-457.87	-225.98	40°09'37.501"N	104°37'42.462"W	0.00	
3549.00†	20.000	205.600	3462.64	-481.88	-488.71	-240.76	40°09'37.197"N	104°37'42.652"W	0.00	
3649.00†	20.000	205.600	3556.61	-512.31	-519.56	-255.53	40°09'36.892"N	104°37'42.842"W	0.00	
3749.00†	20.000	205.600	3650.57	-542.73	-550.40	-270.31	40°09'36.587"N	104°37'43.033"W	0.00	

### REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#28 GREENLEAF 2N-2HZ (452' FSL & 1765' FEL, SEC.02)
Area	COLORADO	Well	GREENLEAF 2N-2HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	GREENLEAF 2N-2HZ PWB
Facility	SEC.02-T2N-R65W		

### WELLPATH DATA (138 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
3849.00†	20.000	205.600	3744.54	-573.16	-581.24	-285.09	40°09'36.282"N	104°37'43.223"W	0.00	
3949.00†	20.000	205.600	3838.51	-603.58	-612.09	-299.87	40°09'35.977"N	104°37'43.413"W	0.00	
4028.27†	20.000	205.600	3913.00	-627.70	-636.54	-311.58	40°09'35.736"N	104°37'43.564"W	0.00	Parkman
4049.00†	20.000	205.600	3932.48	-634.01	-642.93	-314.65	40°09'35.672"N	104°37'43.604"W	0.00	
4149.00†	20.000	205.600	4026.45	-664.43	-673.78	-329.42	40°09'35.368"N	104°37'43.794"W	0.00	
4249.00†	20.000	205.600	4120.42	-694.86	-704.62	-344.20	40°09'35.063"N	104°37'43.984"W	0.00	
4320.92†	20.000	205.600	4188.00	-716.74	-726.80	-354.83	40°09'34.844"N	104°37'44.121"W	0.00	Sussex
4349.00†	20.000	205.600	4214.39	-725.28	-735.47	-358.98	40°09'34.758"N	104°37'44.175"W	0.00	
4449.00†	20.000	205.600	4308.36	-755.71	-766.31	-373.76	40°09'34.453"N	104°37'44.365"W	0.00	
4549.00†	20.000	205.600	4402.33	-786.13	-797.16	-388.54	40°09'34.148"N	104°37'44.555"W	0.00	
4610.37	20.000	205.600	4460.00	-804.81	-816.09	-397.61	40°09'33.961"N	104°37'44.672"W	0.00	BEGIN DROP
4649.00†	19.227	205.600	4496.39	-816.34	-827.78	-403.21	40°09'33.846"N	104°37'44.744"W	2.00	
4749.00†	17.227	205.600	4591.36	-844.16	-855.99	-416.72	40°09'33.567"N	104°37'44.918"W	2.00	
4849.00†	15.227	205.600	4687.37	-869.02	-881.19	-428.80	40°09'33.318"N	104°37'45.074"W	2.00	
4949.00†	13.227	205.600	4784.30	-890.88	-903.35	-439.42	40°09'33.099"N	104°37'45.211"W	2.00	
5049.00†	11.227	205.600	4882.03	-909.72	-922.45	-448.57	40°09'32.910"N	104°37'45.328"W	2.00	
5149.00†	9.227	205.600	4980.44	-925.52	-938.46	-456.24	40°09'32.752"N	104°37'45.427"W	2.00	
5249.00†	7.227	205.600	5079.40	-938.25	-951.37	-462.42	40°09'32.625"N	104°37'45.507"W	2.00	
5349.00†	5.227	205.600	5178.81	-947.89	-961.15	-467.11	40°09'32.528"N	104°37'45.567"W	2.00	
5449.00†	3.227	205.600	5278.53	-954.45	-967.80	-470.29	40°09'32.462"N	104°37'45.608"W	2.00	
5549.00†	1.227	205.600	5378.45	-957.91	-971.30	-471.97	40°09'32.428"N	104°37'45.630"W	2.00	
5610.37	0.000	358.419	5439.82	-958.49	-971.89	-472.26	40°09'32.422"N	104°37'45.633"W	2.00	END DROP
5649.00†	0.000	358.419	5478.44	-958.49	-971.89	-472.26	40°09'32.422"N	104°37'45.633"W	0.00	
5749.00†	0.000	358.419	5578.44	-958.49	-971.89	-472.26	40°09'32.422"N	104°37'45.633"W	0.00	
5849.00†	0.000	358.419	5678.44	-958.49	-971.89	-472.26	40°09'32.422"N	104°37'45.633"W	0.00	
5949.00†	0.000	358.419	5778.44	-958.49	-971.89	-472.26	40°09'32.422"N	104°37'45.633"W	0.00	
6049.00†	0.000	358.419	5878.44	-958.49	-971.89	-472.26	40°09'32.422"N	104°37'45.633"W	0.00	
6149.00†	0.000	358.419	5978.44	-958.49	-971.89	-472.26	40°09'32.422"N	104°37'45.633"W	0.00	
6249.00†	0.000	358.419	6078.44	-958.49	-971.89	-472.26	40°09'32.422"N	104°37'45.633"W	0.00	
6349.00†	0.000	358.419	6178.44	-958.49	-971.89	-472.26	40°09'32.422"N	104°37'45.633"W	0.00	
6449.00†	0.000	358.419	6278.44	-958.49	-971.89	-472.26	40°09'32.422"N	104°37'45.633"W	0.00	
6549.00†	0.000	358.419	6378.44	-958.49	-971.89	-472.26	40°09'32.422"N	104°37'45.633"W	0.00	
6569.60	0.000	358.419	6399.05	-958.49	-971.89	-472.26	40°09'32.422"N	104°37'45.633"W	0.00	KOP, BUILD @ 10°/100'
6649.00†	7.940	358.419	6478.19	-953.00	-966.40	-472.41	40°09'32.476"N	104°37'45.635"W	10.00	
6749.00†	17.940	358.419	6575.53	-930.64	-944.05	-473.03	40°09'32.697"N	104°37'45.643"W	10.00	
6849.00†	27.940	358.419	6667.50	-891.71	-905.14	-474.10	40°09'33.081"N	104°37'45.657"W	10.00	
6949.00†	37.940	358.419	6751.32	-837.40	-850.85	-475.60	40°09'33.618"N	104°37'45.677"W	10.00	
6953.68†	38.408	358.419	6755.00	-834.51	-847.96	-475.68	40°09'33.646"N	104°37'45.678"W	10.00	SSPG
7038.02†	46.842	358.419	6817.00	-777.45	-790.92	-477.25	40°09'34.210"N	104°37'45.698"W	10.00	NBRR
7049.00†	47.940	358.419	6824.43	-769.37	-782.84	-477.48	40°09'34.290"N	104°37'45.701"W	10.00	
7110.32†	54.072	358.419	6863.00	-721.73	-735.22	-478.79	40°09'34.760"N	104°37'45.718"W	10.00	N470_B_CK
7149.00†	57.940	358.419	6884.62	-689.67	-703.17	-479.67	40°09'35.077"N	104°37'45.729"W	10.00	
7249.00†	67.940	358.419	6930.06	-600.73	-614.26	-482.13	40°09'35.956"N	104°37'45.761"W	10.00	
7329.67†	76.007	358.419	6955.00	-524.08	-537.65	-484.24	40°09'36.713"N	104°37'45.788"W	10.00	N700_C_CK
7349.00†	77.940	358.419	6959.36	-505.25	-518.82	-484.76	40°09'36.899"N	104°37'45.795"W	10.00	

### REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#28 GREENLEAF 2N-2HZ (452' FSL & 1765' FEL, SEC.02)
Area	COLORADO	Well	GREENLEAF 2N-2HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	GREENLEAF 2N-2HZ PWB
Facility	SEC.02-T2N-R65W		

### WELLPATH DATA (138 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
7449.00†	87.940	358.419	6971.63	-406.13	-419.74	-487.50	40°09'37.878"N	104°37'45.830"W	10.00	
7469.60	90.000	358.419	6972.00	-385.54	-399.15	-488.07	40°09'38.081"N	104°37'45.837"W	10.00	LANDING POINT
7549.00†	90.000	358.419	6972.00	-306.14	-319.79	-490.26	40°09'38.866"N	104°37'45.865"W	0.00	
7649.00†	90.000	358.419	6972.00	-206.14	-219.82	-493.02	40°09'39.854"N	104°37'45.901"W	0.00	
7749.00†	90.000	358.419	6972.00	-106.14	-119.86	-495.77	40°09'40.841"N	104°37'45.937"W	0.00	
7849.00†	90.000	358.419	6972.00	-6.14	-19.90	-498.53	40°09'41.829"N	104°37'45.972"W	0.00	
7949.00†	90.000	358.419	6972.00	93.86	80.06	-501.29	40°09'42.817"N	104°37'46.008"W	0.00	
8049.00†	90.000	358.419	6972.00	193.86	180.02	-504.05	40°09'43.805"N	104°37'46.043"W	0.00	
8149.00†	90.000	358.419	6972.00	293.86	279.99	-506.81	40°09'44.793"N	104°37'46.079"W	0.00	
8249.00†	90.000	358.419	6972.00	393.86	379.95	-509.57	40°09'45.781"N	104°37'46.114"W	0.00	
8349.00†	90.000	358.419	6972.00	493.86	479.91	-512.33	40°09'46.768"N	104°37'46.150"W	0.00	
8449.00†	90.000	358.419	6972.00	593.86	579.87	-515.09	40°09'47.756"N	104°37'46.186"W	0.00	
8549.00†	90.000	358.419	6972.00	693.86	679.83	-517.85	40°09'48.744"N	104°37'46.221"W	0.00	
8649.00†	90.000	358.419	6972.00	793.86	779.79	-520.61	40°09'49.732"N	104°37'46.257"W	0.00	
8749.00†	90.000	358.419	6972.00	893.86	879.76	-523.37	40°09'50.720"N	104°37'46.292"W	0.00	
8849.00†	90.000	358.419	6972.00	993.86	979.72	-526.12	40°09'51.708"N	104°37'46.328"W	0.00	
8949.00†	90.000	358.419	6972.00	1093.86	1079.68	-528.88	40°09'52.695"N	104°37'46.363"W	0.00	
9049.00†	90.000	358.419	6972.00	1193.86	1179.64	-531.64	40°09'53.683"N	104°37'46.399"W	0.00	
9149.00†	90.000	358.419	6972.00	1293.86	1279.60	-534.40	40°09'54.671"N	104°37'46.434"W	0.00	
9249.00†	90.000	358.419	6972.00	1393.86	1379.57	-537.16	40°09'55.659"N	104°37'46.470"W	0.00	
9349.00†	90.000	358.419	6972.00	1493.86	1479.53	-539.92	40°09'56.647"N	104°37'46.506"W	0.00	
9449.00†	90.000	358.419	6972.00	1593.86	1579.49	-542.68	40°09'57.635"N	104°37'46.541"W	0.00	
9549.00†	90.000	358.419	6972.00	1693.86	1679.45	-545.44	40°09'58.622"N	104°37'46.577"W	0.00	
9649.00†	90.000	358.419	6972.00	1793.86	1779.41	-548.20	40°09'59.610"N	104°37'46.612"W	0.00	
9749.00†	90.000	358.419	6972.00	1893.86	1879.38	-550.96	40°10'00.598"N	104°37'46.648"W	0.00	
9849.00†	90.000	358.419	6972.00	1993.86	1979.34	-553.72	40°10'01.586"N	104°37'46.683"W	0.00	
9949.00†	90.000	358.419	6972.00	2093.86	2079.30	-556.48	40°10'02.574"N	104°37'46.719"W	0.00	
10049.00†	90.000	358.419	6972.00	2193.86	2179.26	-559.23	40°10'03.561"N	104°37'46.755"W	0.00	
10149.00†	90.000	358.419	6972.00	2293.86	2279.22	-561.99	40°10'04.549"N	104°37'46.790"W	0.00	
10249.00†	90.000	358.419	6972.00	2393.86	2379.19	-564.75	40°10'05.537"N	104°37'46.826"W	0.00	
10349.00†	90.000	358.419	6972.00	2493.86	2479.15	-567.51	40°10'06.525"N	104°37'46.861"W	0.00	
10449.00†	90.000	358.419	6972.00	2593.86	2579.11	-570.27	40°10'07.513"N	104°37'46.897"W	0.00	
10549.00†	90.000	358.419	6972.00	2693.86	2679.07	-573.03	40°10'08.501"N	104°37'46.932"W	0.00	
10649.00†	90.000	358.419	6972.00	2793.86	2779.03	-575.79	40°10'09.488"N	104°37'46.968"W	0.00	
10749.00†	90.000	358.419	6972.00	2893.86	2879.00	-578.55	40°10'10.476"N	104°37'47.004"W	0.00	
10849.00†	90.000	358.419	6972.00	2993.86	2978.96	-581.31	40°10'11.464"N	104°37'47.039"W	0.00	
10949.00†	90.000	358.419	6972.00	3093.86	3078.92	-584.07	40°10'12.452"N	104°37'47.075"W	0.00	
11049.00†	90.000	358.419	6972.00	3193.86	3178.88	-586.83	40°10'13.440"N	104°37'47.110"W	0.00	
11149.00†	90.000	358.419	6972.00	3293.86	3278.84	-589.59	40°10'14.428"N	104°37'47.146"W	0.00	
11249.00†	90.000	358.419	6972.00	3393.86	3378.80	-592.35	40°10'15.415"N	104°37'47.181"W	0.00	
11349.00†	90.000	358.419	6972.00	3493.86	3478.77	-595.11	40°10'16.403"N	104°37'47.217"W	0.00	
11449.00†	90.000	358.419	6972.00	3593.86	3578.73	-597.86	40°10'17.391"N	104°37'47.253"W	0.00	
11549.00†	90.000	358.419	6972.00	3693.86	3678.69	-600.62	40°10'18.379"N	104°37'47.288"W	0.00	
11649.00†	90.000	358.419	6972.00	3793.86	3778.65	-603.38	40°10'19.367"N	104°37'47.324"W	0.00	
11749.00†	90.000	358.419	6972.00	3893.86	3878.61	-606.14	40°10'20.355"N	104°37'47.359"W	0.00	

### REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#28 GREENLEAF 2N-2HZ (452' FSL & 1765' FEL, SEC.02)
Area	COLORADO	Well	GREENLEAF 2N-2HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	GREENLEAF 2N-2HZ PWB
Facility	SEC.02-T2N-R65W		

### WELLPATH DATA (138 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
11849.00†	90.000	358.419	6972.00	3993.86	3978.58	-608.90	40°10'21.342"N	104°37'47.395"W	0.00	
11949.00†	90.000	358.419	6972.00	4093.86	4078.54	-611.66	40°10'22.330"N	104°37'47.431"W	0.00	
12036.65	90.000	358.419	6972.00 <sup>1</sup>	4181.51	4166.15	-614.08	40°10'23.196"N	104°37'47.462"W	0.00	TOTAL DEPTH

### HOLE & CASING SECTIONS - Ref Wellbore: GREENLEAF 2N-2HZ PWB Ref Wellpath: GREENLEAF 2N-2HZ (REV-A.0) 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	1249.00	1233.00	16.00	1248.94	0.00	0.00	2.34	-2.45
13.5in Open Hole	1249.00	1294.00	45.00	1248.94	1293.93	2.34	-2.45	2.81	-2.42
9.625in Casing Surface	16.00	1284.00	1268.00	16.00	1283.93	0.00	0.00	2.70	-2.42
8.75in Open Hole	1294.00	7469.60	6175.60	1293.93	6972.00	2.81	-2.42	-399.16	-488.07
7in Casing Intermediate	16.00	7469.60	7453.60	16.00	6972.00	0.00	0.00	-399.16	-488.07
6.125in Open Hole	7469.60	12036.65	4567.05	6972.00	6972.00	-399.16	-488.07	4166.15	-614.08
4.5in Casing Production	16.00	12036.65	12020.65	16.00	6972.00	0.00	0.00	4166.15	-614.08

### TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SEC.02-T2N-R65W LINES		0.00	0.40	-29.89	3243777.93	1302940.31	40°09'42.030"N	104°37'39.936"W	polygon
1) GREENLEAF 2N-2HZ BHL (460'FNL & 2265'FEL, SEC.02) REV-2	12036.65	6972.00	4166.15	-614.08	3243152.81	1307099.92	40°10'23.196"N	104°37'47.462"W	point
GREENLEAF 2N-2HZ BHL ON PLAT (460'FNL & 2240'FEL, SEC.02) REV-1		6972.00	4166.15	-589.08	3243177.82	1307100.17	40°10'23.196"N	104°37'47.140"W	point
GREENLEAF 2N-2HZ LANDBOX		6972.00	0.00	0.00	3243807.82	1302940.19	40°09'42.026"N	104°37'39.551"W	polygon

### SURVEY PROGRAM - Ref Wellbore: GREENLEAF 2N-2HZ PWB Ref Wellpath: GREENLEAF 2N-2HZ (REV-A.0) PWP

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
16.00	1249.00	ISCWSA MWD, Rev. 2 (Standard)		GREENLEAF 2N-2HZ AWB
1249.00	7469.60	NaviTrak (MAGCORR,IFR)		GREENLEAF 2N-2HZ PWB
7469.60	12036.65	NaviTrak (MAGCORR,IFR)		GREENLEAF 2N-2HZ PWB

### REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#28 GREENLEAF 2N-2HZ (452' FSL & 1765' FEL, SEC.02)
Area	COLORADO	Well	GREENLEAF 2N-2HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	GREENLEAF 2N-2HZ PWB
Facility	SEC.02-T2N-R65W		

### WELLPATH COMMENTS

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
773.03	0.800	277.489	773.00	Base Fox Hills
4028.27	20.000	205.600	3913.00	Parkman
4320.92	20.000	205.600	4188.00	Sussex
6953.68	38.408	358.419	6755.00	SSPG
7038.02	46.842	358.419	6817.00	NBRR
7110.32	54.072	358.419	6863.00	N470_B_CK
7329.67	76.007	358.419	6955.00	N700_C_CK

### DESIGN COMMENTS

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
1249.00	0.600	3.500	1248.94	TIE-INTO CATHEDRAL MWD SURVEYS
1425.07	0.600	3.500	1425.00	BEGIN NUDGE
2452.93	20.000	205.600	2432.67	END NUDFGE
4610.37	20.000	205.600	4460.00	BEGIN DROP
5610.37	0.000	358.419	5439.82	END DROP
6569.60	0.000	358.419	6399.05	KOP, BUILD @ 10°/100'
7469.60	90.000	358.419	6972.00	LANDING POINT
12036.65	90.000	358.419	6972.00	TOTAL DEPTH