

KERR-MCGEE OIL & GAS ONSHORE LP

Location: COLORADO Slot: SLOT#07 KERBS 4C-14HZ (914'FNL & 622'FEL, SEC.13)
Field: WELD COUNTY (KERR MCGEE) Well: KERBS 4C-14HZ
Facility: SEC.13-T3N-R68W Wellbore: KERBS 4C-14HZ PWB

Plot reference wellpath is KERBS 4C-14HZ (PERMIT REV-1) PWP

True vertical depths are referenced to PERMIT (17 KB) (RKB) Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
Measured depths are referenced to PERMIT (17 KB) (RKB) North Reference: True north
PERMIT (17 KB) (RKB) to Mean Sea Level: 4901 feet Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#07 KERBS 4C-14HZ (914'FNL & 622'FEL, SEC.13)): 0 feet Depths are in feet
Coordinates are in feet referenced to Slot Created by: pccain on 03Jul2013

Location Information

Facility Name				Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SEC.13-T3N-R68W				3155503.948	1323690.531	40°13'14.116"N	104°56'35.262"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	
SLOT#07 KERBS 4C-14HZ (914FNL & 622FEL SEC.13)	3858.35	-233.92	3155245.813	1327547.167	40°13'52.244"N	104°56'38.278"W	
PERMIT (17 KB) (RKB) to Mud line (At Slot: SLOT#07 KERBS 4C-14HZ (914FNL & 622FEL SEC.13))						4901ft	
Mean Sea Level to Mud line (At Slot: SLOT#07 KERBS 4C-14HZ (914FNL & 622FEL SEC.13))						0ft	
PERMIT (17 KB) (RKB) to Mean Sea Level						4901ft	

Survey Program

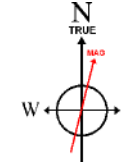
Start MD (ft)	End MD (ft)	Tool	Model	Log Name/Comment	Wellbore
17.00	7649.81	NaviTrak	NaviTrak (Standard)		KERBS 4C-14HZ PWB
7649.81	17569.81	OnTrak	OnTrak (Standard)		KERBS 4C-14HZ PWB

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	54.000	17.00	0.00	0.00	0.00	0.00
BEGIN NUDGE	1100.00	0.000	54.000	1100.00	0.00	0.00	0.00	0.00
END NUDGE	2100.00	20.000	54.000	2079.82	101.55	139.77	2.00	-140.53
BEGIN DROP	3116.49	20.000	54.000	3035.00	305.90	421.03	0.00	-423.31
END DROP	4116.49	0.000	269.571	4014.82	407.45	560.81	2.00	-563.84
KOP, BUILD @ 10°/100'	6751.72	0.000	269.571	6650.05	407.45	560.81	0.00	-563.84
LANDING POINT	7649.81	89.809	269.571	7223.00	403.17	-10.23	10.00	7.21
TOTAL DEPTH	17569.81	89.809	269.571	7256.00	328.81	-9929.89	0.00	9927.15

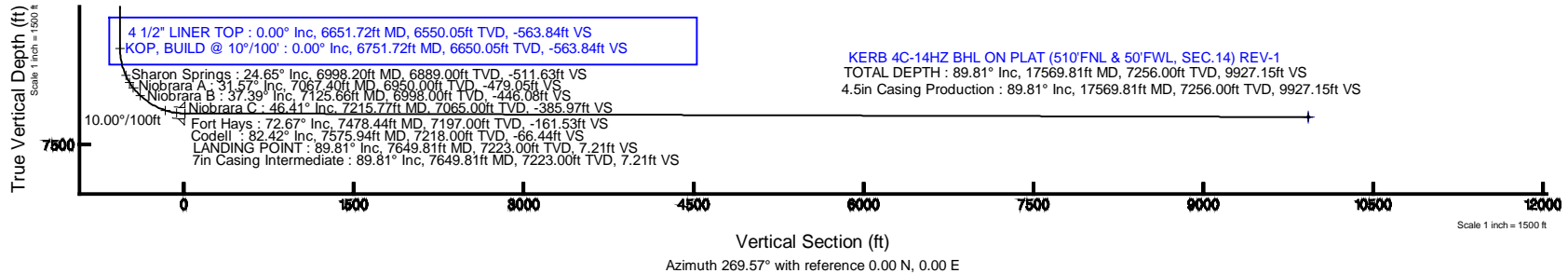
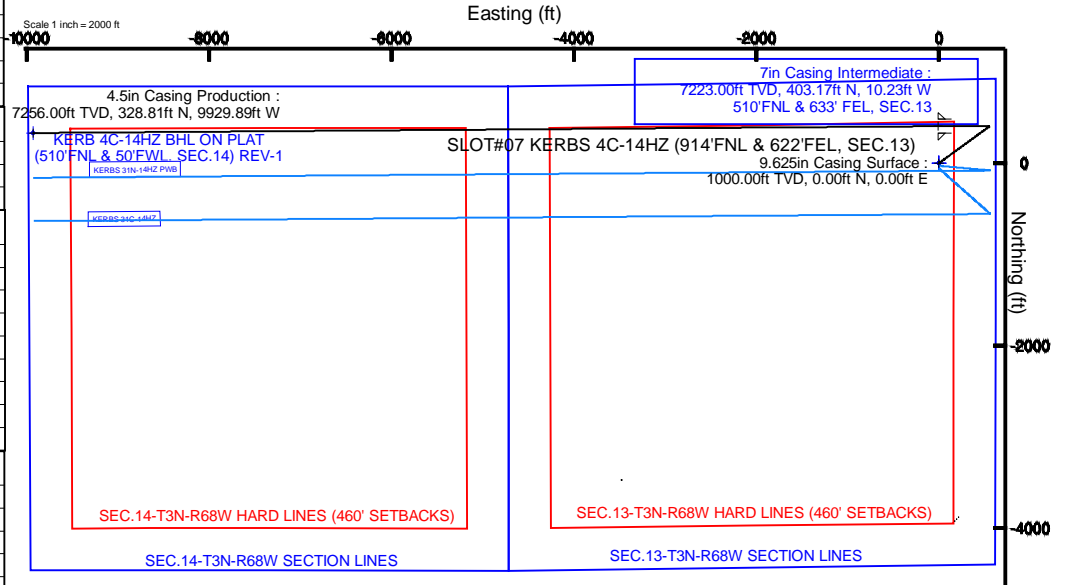
Targets

Name	MD (ft)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SEC.13-T3N-R68W HARD LINES (460' SETBACKS)		4901.00	0.00	0.00	3155245.81	1327547.17	40°13'52.244"N	104°56'38.278"W
SEC.13-T3N-R68W SECTION LINES		4901.00	0.00	0.00	3155245.81	1327547.17	40°13'52.244"N	104°56'38.278"W
SEC.14-T3N-R68W HARD LINES (460' SETBACKS)		4901.00	0.00	0.00	3155245.81	1327547.17	40°13'52.244"N	104°56'38.278"W
SEC.14-T3N-R68W SECTION LINES		4901.00	0.00	0.00	3155245.81	1327547.17	40°13'52.244"N	104°56'38.278"W
KERB 4C-14HZ BHL ON PLAT (510'FNL & 50'FWL, SEC.14) REV-1	17569.81	7256.00	328.81	-9929.89	3145314.50	1327813.69	40°13'55.474"N	104°56'46.308"W



BGGM (1945.0 to 2014.0) Dip: 66.78° Field: 52704.3 nT
Magnetic North is 8.72 degrees East of True North (at 02/Jul/2013)

To correct azimuth from Magnetic to True add 8.72 degrees





Planned Wellpath Report

KERBS 4C-14HZ (PERMIT REV-1) PWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#07 KERBS 4C-14HZ (914'FNL & 622'FEL, SEC.13)
Area	COLORADO	Well	KERBS 4C-14HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	KERBS 4C-14HZ PWB
Facility	SEC.13-T3N-R68W		

REPORT SETUP INFORMATION			
Projection System	NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	Software System	WellArchitect® 4.0.0
North Reference	True	User	Precain
Scale	0.999957	Report Generated	03/Jul/2013 at 08:31
Convergence at slot	n/a	Database/Source file	WellArchitectDB/_KERBS_4C-14HZ_PWB.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	3858.35	-233.92	3155245.81	1327547.17	40°13'52.244"N	104°56'38.278"W
Facility Reference Pt			3155503.95	1323690.53	40°13'14.116"N	104°56'35.262"W
Field Reference Pt			3197771.84	1268891.29	40°04'09.600"N	104°47'36.000"W

WELLPATH DATUM			
Calculation method	Minimum curvature	PERMIT (17' KB) (RKB) to Facility Vertical Datum	4901.00ft
Horizontal Reference Pt	Slot	PERMIT (17' KB) (RKB) to Mean Sea Level	4901.00ft
Vertical Reference Pt	PERMIT (17' KB) (RKB)	PERMIT (17' KB) (RKB) to Mud Line at Slot (SLOT#07 KERBS 4C-14HZ (914'FNL & 622'FEL, SEC.13))	4901.00ft
MD Reference Pt	PERMIT (17' KB) (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	269.57°



Planned Wellpath Report

KERBS 4C-14HZ (PERMIT REV-1) PWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#07 KERBS 4C-14HZ (914'FNL & 622'FEL, SEC.13)
Area	COLORADO	Well	KERBS 4C-14HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	KERBS 4C-14HZ PWB
Facility	SEC.13-T3N-R68W		

WELLPATH DATA (194 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	54.000	0.00	0.00	0.00	0.00	40°13'52.244"N	104°56'38.278"W	0.00	
17.00	0.000	54.000	17.00	0.00	0.00	0.00	40°13'52.244"N	104°56'38.278"W	0.00	TIE-ON
117.00†	0.000	54.000	117.00	0.00	0.00	0.00	40°13'52.244"N	104°56'38.278"W	0.00	
217.00†	0.000	54.000	217.00	0.00	0.00	0.00	40°13'52.244"N	104°56'38.278"W	0.00	
317.00†	0.000	54.000	317.00	0.00	0.00	0.00	40°13'52.244"N	104°56'38.278"W	0.00	
417.00†	0.000	54.000	417.00	0.00	0.00	0.00	40°13'52.244"N	104°56'38.278"W	0.00	
517.00†	0.000	54.000	517.00	0.00	0.00	0.00	40°13'52.244"N	104°56'38.278"W	0.00	
617.00†	0.000	54.000	617.00	0.00	0.00	0.00	40°13'52.244"N	104°56'38.278"W	0.00	
717.00†	0.000	54.000	717.00	0.00	0.00	0.00	40°13'52.244"N	104°56'38.278"W	0.00	
817.00†	0.000	54.000	817.00	0.00	0.00	0.00	40°13'52.244"N	104°56'38.278"W	0.00	
917.00†	0.000	54.000	917.00	0.00	0.00	0.00	40°13'52.244"N	104°56'38.278"W	0.00	
949.00†	0.000	54.000	949.00	0.00	0.00	0.00	40°13'52.244"N	104°56'38.278"W	0.00	Fox Hills Base
1017.00†	0.000	54.000	1017.00	0.00	0.00	0.00	40°13'52.244"N	104°56'38.278"W	0.00	
1100.00	0.000	54.000	1100.00	0.00	0.00	0.00	40°13'52.244"N	104°56'38.278"W	0.00	BEGIN NUDGE
1117.00†	0.340	54.000	1117.00	-0.04	0.03	0.04	40°13'52.244"N	104°56'38.277"W	2.00	
1217.00†	2.340	54.000	1216.97	-1.94	1.40	1.93	40°13'52.258"N	104°56'38.253"W	2.00	
1317.00†	4.340	54.000	1316.79	-6.68	4.83	6.65	40°13'52.292"N	104°56'38.192"W	2.00	
1417.00†	6.340	54.000	1416.35	-14.25	10.30	14.17	40°13'52.346"N	104°56'38.095"W	2.00	
1517.00†	8.340	54.000	1515.53	-24.64	17.81	24.51	40°13'52.420"N	104°56'37.962"W	2.00	
1617.00†	10.340	54.000	1614.20	-37.84	27.35	37.64	40°13'52.514"N	104°56'37.793"W	2.00	
1717.00†	12.340	54.000	1712.24	-53.84	38.90	53.55	40°13'52.628"N	104°56'37.588"W	2.00	
1817.00†	14.340	54.000	1809.54	-72.60	52.46	72.21	40°13'52.762"N	104°56'37.347"W	2.00	
1917.00†	16.340	54.000	1905.97	-94.12	68.01	93.61	40°13'52.916"N	104°56'37.071"W	2.00	
2017.00†	18.340	54.000	2001.42	-118.36	85.53	117.72	40°13'53.089"N	104°56'36.760"W	2.00	
2100.00	20.000	54.000	2079.82	-140.53	101.55	139.77	40°13'53.248"N	104°56'36.476"W	2.00	END NUDGE
2117.00†	20.000	54.000	2095.79	-145.26	104.97	144.48	40°13'53.281"N	104°56'36.415"W	0.00	
2217.00†	20.000	54.000	2189.76	-173.08	125.07	172.15	40°13'53.480"N	104°56'36.058"W	0.00	
2317.00†	20.000	54.000	2283.73	-200.90	145.17	199.82	40°13'53.679"N	104°56'35.702"W	0.00	
2417.00†	20.000	54.000	2377.70	-228.72	165.28	227.49	40°13'53.877"N	104°56'35.345"W	0.00	
2517.00†	20.000	54.000	2471.67	-256.54	185.38	255.16	40°13'54.076"N	104°56'34.988"W	0.00	
2617.00†	20.000	54.000	2565.64	-284.36	205.49	282.83	40°13'54.275"N	104°56'34.631"W	0.00	
2717.00†	20.000	54.000	2659.61	-312.18	225.59	310.50	40°13'54.473"N	104°56'34.275"W	0.00	
2817.00†	20.000	54.000	2753.58	-340.00	245.69	338.17	40°13'54.672"N	104°56'33.918"W	0.00	
2917.00†	20.000	54.000	2847.54	-367.82	265.80	365.84	40°13'54.871"N	104°56'33.561"W	0.00	
3017.00†	20.000	54.000	2941.51	-395.64	285.90	393.51	40°13'55.069"N	104°56'33.204"W	0.00	
3116.49	20.000	54.000	3035.00	-423.31	305.90	421.03	40°13'55.267"N	104°56'32.849"W	0.00	BEGIN DROP
3117.00†	19.990	54.000	3035.48	-423.46	306.00	421.18	40°13'55.268"N	104°56'32.848"W	2.00	
3217.00†	17.990	54.000	3130.04	-449.92	325.13	447.50	40°13'55.457"N	104°56'32.508"W	2.00	
3317.00†	15.990	54.000	3225.67	-473.69	342.30	471.14	40°13'55.627"N	104°56'32.203"W	2.00	
3417.00†	13.990	54.000	3322.26	-494.73	357.50	492.06	40°13'55.777"N	104°56'31.934"W	2.00	
3517.00†	11.990	54.000	3419.70	-513.01	370.72	510.25	40°13'55.907"N	104°56'31.699"W	2.00	
3617.00†	9.990	54.000	3517.86	-528.51	381.92	525.67	40°13'56.018"N	104°56'31.500"W	2.00	
3693.13†	8.467	54.000	3593.00	-538.44	389.10	535.54	40°13'56.089"N	104°56'31.373"W	2.00	Parkman
3717.00†	7.990	54.000	3616.62	-541.22	391.10	538.31	40°13'56.109"N	104°56'31.337"W	2.00	
3817.00†	5.990	54.000	3715.87	-551.12	398.26	548.15	40°13'56.179"N	104°56'31.210"W	2.00	



Planned Wellpath Report

KERBS 4C-14HZ (PERMIT REV-1) PWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#07 KERBS 4C-14HZ (914'FNL & 622'FEL, SEC.13)
Area	COLORADO	Well	KERBS 4C-14HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	KERBS 4C-14HZ PWB
Facility	SEC.13-T3N-R68W		

WELLPATH DATA (194 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
3917.00†	3.990	54.000	3815.49	-558.19	403.37	555.19	40°13'56.230"N	104°56'31.120"W	2.00	
4017.00†	1.990	54.000	3915.35	-562.44	406.43	559.41	40°13'56.260"N	104°56'31.065"W	2.00	
4116.49	0.000	269.571	4014.82	-563.84	407.45	560.81	40°13'56.270"N	104°56'31.047"W	2.00	END DROP
4117.00†	0.000	269.571	4015.33	-563.84	407.45	560.81	40°13'56.270"N	104°56'31.047"W	0.00	
4171.67†	0.000	269.571	4070.00	-563.84	407.45	560.81	40°13'56.270"N	104°56'31.047"W	0.00	Sussex
4217.00†	0.000	269.571	4115.33	-563.84	407.45	560.81	40°13'56.270"N	104°56'31.047"W	0.00	
4317.00†	0.000	269.571	4215.33	-563.84	407.45	560.81	40°13'56.270"N	104°56'31.047"W	0.00	
4417.00†	0.000	269.571	4315.33	-563.84	407.45	560.81	40°13'56.270"N	104°56'31.047"W	0.00	
4517.00†	0.000	269.571	4415.33	-563.84	407.45	560.81	40°13'56.270"N	104°56'31.047"W	0.00	
4617.00†	0.000	269.571	4515.33	-563.84	407.45	560.81	40°13'56.270"N	104°56'31.047"W	0.00	
4717.00†	0.000	269.571	4615.33	-563.84	407.45	560.81	40°13'56.270"N	104°56'31.047"W	0.00	
4817.00†	0.000	269.571	4715.33	-563.84	407.45	560.81	40°13'56.270"N	104°56'31.047"W	0.00	
4917.00†	0.000	269.571	4815.33	-563.84	407.45	560.81	40°13'56.270"N	104°56'31.047"W	0.00	
5017.00†	0.000	269.571	4915.33	-563.84	407.45	560.81	40°13'56.270"N	104°56'31.047"W	0.00	
5117.00†	0.000	269.571	5015.33	-563.84	407.45	560.81	40°13'56.270"N	104°56'31.047"W	0.00	
5217.00†	0.000	269.571	5115.33	-563.84	407.45	560.81	40°13'56.270"N	104°56'31.047"W	0.00	
5317.00†	0.000	269.571	5215.33	-563.84	407.45	560.81	40°13'56.270"N	104°56'31.047"W	0.00	
5417.00†	0.000	269.571	5315.33	-563.84	407.45	560.81	40°13'56.270"N	104°56'31.047"W	0.00	
5517.00†	0.000	269.571	5415.33	-563.84	407.45	560.81	40°13'56.270"N	104°56'31.047"W	0.00	
5617.00†	0.000	269.571	5515.33	-563.84	407.45	560.81	40°13'56.270"N	104°56'31.047"W	0.00	
5717.00†	0.000	269.571	5615.33	-563.84	407.45	560.81	40°13'56.270"N	104°56'31.047"W	0.00	
5817.00†	0.000	269.571	5715.33	-563.84	407.45	560.81	40°13'56.270"N	104°56'31.047"W	0.00	
5917.00†	0.000	269.571	5815.33	-563.84	407.45	560.81	40°13'56.270"N	104°56'31.047"W	0.00	
6017.00†	0.000	269.571	5915.33	-563.84	407.45	560.81	40°13'56.270"N	104°56'31.047"W	0.00	
6117.00†	0.000	269.571	6015.33	-563.84	407.45	560.81	40°13'56.270"N	104°56'31.047"W	0.00	
6217.00†	0.000	269.571	6115.33	-563.84	407.45	560.81	40°13'56.270"N	104°56'31.047"W	0.00	
6317.00†	0.000	269.571	6215.33	-563.84	407.45	560.81	40°13'56.270"N	104°56'31.047"W	0.00	
6417.00†	0.000	269.571	6315.33	-563.84	407.45	560.81	40°13'56.270"N	104°56'31.047"W	0.00	
6517.00†	0.000	269.571	6415.33	-563.84	407.45	560.81	40°13'56.270"N	104°56'31.047"W	0.00	
6617.00†	0.000	269.571	6515.33	-563.84	407.45	560.81	40°13'56.270"N	104°56'31.047"W	0.00	
6651.72†	0.000	269.571	6550.05	-563.84	407.45	560.81	40°13'56.270"N	104°56'31.047"W	0.00	4 1/2" LINER TOP
6717.00†	0.000	269.571	6615.33	-563.84	407.45	560.81	40°13'56.270"N	104°56'31.047"W	0.00	
6751.72	0.000	269.571	6650.05	-563.84	407.45	560.81	40°13'56.270"N	104°56'31.047"W	0.00	KOP, BUILD @ 10°/100'
6817.00†	6.528	269.571	6715.19	-560.13	407.42	557.09	40°13'56.270"N	104°56'31.095"W	10.00	
6917.00†	16.528	269.571	6813.05	-540.17	407.27	537.13	40°13'56.269"N	104°56'31.353"W	10.00	
6998.20†	24.649	269.571	6889.00	-511.63	407.06	508.60	40°13'56.266"N	104°56'31.720"W	10.00	Sharon Springs
7017.00†	26.528	269.571	6905.95	-503.52	407.00	500.48	40°13'56.266"N	104°56'31.825"W	10.00	
7067.40†	31.569	269.571	6950.00	-479.05	406.81	476.02	40°13'56.264"N	104°56'32.140"W	10.00	Niobrara A
7117.00†	36.528	269.571	6991.08	-451.29	406.61	448.26	40°13'56.262"N	104°56'32.498"W	10.00	
7125.66†	37.394	269.571	6998.00	-446.08	406.57	443.05	40°13'56.262"N	104°56'32.566"W	10.00	Niobrara B
7215.77†	46.405	269.571	7065.00	-385.97	406.12	382.94	40°13'56.257"N	104°56'33.341"W	10.00	Niobrara C
7217.00†	46.528	269.571	7065.85	-385.08	406.11	382.05	40°13'56.257"N	104°56'33.352"W	10.00	
7317.00†	56.528	269.571	7127.98	-306.88	405.52	303.86	40°13'56.251"N	104°56'34.360"W	10.00	
7417.00†	66.528	269.571	7175.60	-219.09	404.87	216.06	40°13'56.245"N	104°56'35.492"W	10.00	
7478.44†	72.672	269.571	7197.00	-161.53	404.43	158.51	40°13'56.241"N	104°56'36.234"W	10.00	Fort Hays



Planned Wellpath Report

KERBS 4C-14HZ (PERMIT REV-1) PWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#07 KERBS 4C-14HZ (914'FNL & 622'FEL, SEC.13)
Area	COLORADO	Well	KERBS 4C-14HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	KERBS 4C-14HZ PWB
Facility	SEC.13-T3N-R68W		

WELLPATH DATA (194 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
7517.00†	76.528	269.571	7207.24	-124.36	404.16	121.34	40°13'56.238"N	104°56'36.714"W	10.00	
7575.94†	82.423	269.571	7218.00	-66.44	403.72	63.42	40°13'56.234"N	104°56'37.460"W	10.00	Codell
7617.00†	86.528	269.571	7221.95	-25.58	403.41	22.56	40°13'56.231"N	104°56'37.987"W	10.00	
7649.81	89.809	269.571	7223.00	7.21	403.17	-10.23	40°13'56.228"N	104°56'38.410"W	10.00	LANDING POINT
7717.00†	89.809	269.571	7223.22	74.40	402.67	-77.42	40°13'56.223"N	104°56'39.276"W	0.00	
7817.00†	89.809	269.571	7223.56	174.40	401.92	-177.41	40°13'56.216"N	104°56'40.565"W	0.00	
7917.00†	89.809	269.571	7223.89	274.40	401.17	-277.41	40°13'56.208"N	104°56'41.855"W	0.00	
8017.00†	89.809	269.571	7224.22	374.40	400.42	-377.41	40°13'56.201"N	104°56'43.144"W	0.00	
8117.00†	89.809	269.571	7224.55	474.40	399.67	-477.40	40°13'56.193"N	104°56'44.433"W	0.00	
8217.00†	89.809	269.571	7224.89	574.40	398.92	-577.40	40°13'56.186"N	104°56'45.723"W	0.00	
8317.00†	89.809	269.571	7225.22	674.40	398.17	-677.40	40°13'56.179"N	104°56'47.012"W	0.00	
8417.00†	89.809	269.571	7225.55	774.40	397.42	-777.39	40°13'56.171"N	104°56'48.301"W	0.00	
8517.00†	89.809	269.571	7225.88	874.40	396.67	-877.39	40°13'56.164"N	104°56'49.591"W	0.00	
8617.00†	89.809	269.571	7226.22	974.40	395.92	-977.39	40°13'56.156"N	104°56'50.880"W	0.00	
8717.00†	89.809	269.571	7226.55	1074.39	395.17	-1077.38	40°13'56.149"N	104°56'52.169"W	0.00	
8817.00†	89.809	269.571	7226.88	1174.39	394.42	-1177.38	40°13'56.141"N	104°56'53.458"W	0.00	
8917.00†	89.809	269.571	7227.22	1274.39	393.67	-1277.38	40°13'56.134"N	104°56'54.748"W	0.00	
9017.00†	89.809	269.571	7227.55	1374.39	392.92	-1377.37	40°13'56.126"N	104°56'56.037"W	0.00	
9117.00†	89.809	269.571	7227.88	1474.39	392.17	-1477.37	40°13'56.119"N	104°56'57.326"W	0.00	
9217.00†	89.809	269.571	7228.21	1574.39	391.42	-1577.37	40°13'56.112"N	104°56'58.616"W	0.00	
9317.00†	89.809	269.571	7228.55	1674.39	390.67	-1677.36	40°13'56.104"N	104°56'59.905"W	0.00	
9417.00†	89.809	269.571	7228.88	1774.39	389.92	-1777.36	40°13'56.097"N	104°57'01.194"W	0.00	
9517.00†	89.809	269.571	7229.21	1874.39	389.17	-1877.36	40°13'56.089"N	104°57'02.484"W	0.00	
9617.00†	89.809	269.571	7229.54	1974.39	388.42	-1977.35	40°13'56.082"N	104°57'03.773"W	0.00	
9717.00†	89.809	269.571	7229.88	2074.39	387.67	-2077.35	40°13'56.074"N	104°57'05.062"W	0.00	
9817.00†	89.809	269.571	7230.21	2174.39	386.92	-2177.35	40°13'56.067"N	104°57'06.351"W	0.00	
9917.00†	89.809	269.571	7230.54	2274.39	386.17	-2277.34	40°13'56.059"N	104°57'07.641"W	0.00	
10017.00†	89.809	269.571	7230.87	2374.39	385.42	-2377.34	40°13'56.052"N	104°57'08.930"W	0.00	
10117.00†	89.809	269.571	7231.21	2474.39	384.68	-2477.34	40°13'56.044"N	104°57'10.219"W	0.00	
10217.00†	89.809	269.571	7231.54	2574.39	383.93	-2577.33	40°13'56.037"N	104°57'11.509"W	0.00	
10317.00†	89.809	269.571	7231.87	2674.39	383.18	-2677.33	40°13'56.029"N	104°57'12.798"W	0.00	
10417.00†	89.809	269.571	7232.21	2774.39	382.43	-2777.33	40°13'56.022"N	104°57'14.087"W	0.00	
10517.00†	89.809	269.571	7232.54	2874.38	381.68	-2877.32	40°13'56.014"N	104°57'15.377"W	0.00	
10617.00†	89.809	269.571	7232.87	2974.38	380.93	-2977.32	40°13'56.007"N	104°57'16.666"W	0.00	
10717.00†	89.809	269.571	7233.20	3074.38	380.18	-3077.32	40°13'55.999"N	104°57'17.955"W	0.00	
10817.00†	89.809	269.571	7233.54	3174.38	379.43	-3177.31	40°13'55.991"N	104°57'19.244"W	0.00	
10917.00†	89.809	269.571	7233.87	3274.38	378.68	-3277.31	40°13'55.984"N	104°57'20.534"W	0.00	
11017.00†	89.809	269.571	7234.20	3374.38	377.93	-3377.31	40°13'55.976"N	104°57'21.823"W	0.00	
11117.00†	89.809	269.571	7234.53	3474.38	377.18	-3477.30	40°13'55.969"N	104°57'23.112"W	0.00	
11217.00†	89.809	269.571	7234.87	3574.38	376.43	-3577.30	40°13'55.961"N	104°57'24.402"W	0.00	
11317.00†	89.809	269.571	7235.20	3674.38	375.68	-3677.30	40°13'55.954"N	104°57'25.691"W	0.00	
11417.00†	89.809	269.571	7235.53	3774.38	374.93	-3777.29	40°13'55.946"N	104°57'26.980"W	0.00	
11517.00†	89.809	269.571	7235.86	3874.38	374.18	-3877.29	40°13'55.939"N	104°57'28.270"W	0.00	
11617.00†	89.809	269.571	7236.20	3974.38	373.43	-3977.29	40°13'55.931"N	104°57'29.559"W	0.00	
11717.00†	89.809	269.571	7236.53	4074.38	372.68	-4077.28	40°13'55.923"N	104°57'30.848"W	0.00	



Planned Wellpath Report

KERBS 4C-14HZ (PERMIT REV-1) PWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#07 KERBS 4C-14HZ (914'FNL & 622'FEL, SEC.13)
Area	COLORADO	Well	KERBS 4C-14HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	KERBS 4C-14HZ PWB
Facility	SEC.13-T3N-R68W		

WELLPATH DATA (194 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
11817.00†	89.809	269.571	7236.86	4174.38	371.93	-4177.28	40°13'55.916"N	104°57'32.137"W	0.00	
11917.00†	89.809	269.571	7237.20	4274.38	371.18	-4277.28	40°13'55.908"N	104°57'33.427"W	0.00	
12017.00†	89.809	269.571	7237.53	4374.38	370.43	-4377.27	40°13'55.901"N	104°57'34.716"W	0.00	
12117.00†	89.809	269.571	7237.86	4474.38	369.68	-4477.27	40°13'55.893"N	104°57'36.005"W	0.00	
12217.00†	89.809	269.571	7238.19	4574.38	368.93	-4577.27	40°13'55.886"N	104°57'37.295"W	0.00	
12317.00†	89.809	269.571	7238.53	4674.37	368.18	-4677.26	40°13'55.878"N	104°57'38.584"W	0.00	
12417.00†	89.809	269.571	7238.86	4774.37	367.43	-4777.26	40°13'55.870"N	104°57'39.873"W	0.00	
12517.00†	89.809	269.571	7239.19	4874.37	366.69	-4877.26	40°13'55.863"N	104°57'41.162"W	0.00	
12617.00†	89.809	269.571	7239.52	4974.37	365.94	-4977.25	40°13'55.855"N	104°57'42.452"W	0.00	
12717.00†	89.809	269.571	7239.86	5074.37	365.19	-5077.25	40°13'55.848"N	104°57'43.741"W	0.00	
12817.00†	89.809	269.571	7240.19	5174.37	364.44	-5177.25	40°13'55.840"N	104°57'45.030"W	0.00	
12917.00†	89.809	269.571	7240.52	5274.37	363.69	-5277.24	40°13'55.832"N	104°57'46.320"W	0.00	
13017.00†	89.809	269.571	7240.85	5374.37	362.94	-5377.24	40°13'55.825"N	104°57'47.609"W	0.00	
13117.00†	89.809	269.571	7241.19	5474.37	362.19	-5477.24	40°13'55.817"N	104°57'48.898"W	0.00	
13217.00†	89.809	269.571	7241.52	5574.37	361.44	-5577.23	40°13'55.809"N	104°57'50.188"W	0.00	
13317.00†	89.809	269.571	7241.85	5674.37	360.69	-5677.23	40°13'55.802"N	104°57'51.477"W	0.00	
13417.00†	89.809	269.571	7242.19	5774.37	359.94	-5777.23	40°13'55.794"N	104°57'52.766"W	0.00	
13517.00†	89.809	269.571	7242.52	5874.37	359.19	-5877.22	40°13'55.787"N	104°57'54.055"W	0.00	
13617.00†	89.809	269.571	7242.85	5974.37	358.44	-5977.22	40°13'55.779"N	104°57'55.345"W	0.00	
13717.00†	89.809	269.571	7243.18	6074.37	357.69	-6077.22	40°13'55.771"N	104°57'56.634"W	0.00	
13817.00†	89.809	269.571	7243.52	6174.37	356.94	-6177.21	40°13'55.764"N	104°57'57.923"W	0.00	
13917.00†	89.809	269.571	7243.85	6274.37	356.19	-6277.21	40°13'55.756"N	104°57'59.213"W	0.00	
14017.00†	89.809	269.571	7244.18	6374.37	355.44	-6377.21	40°13'55.748"N	104°58'00.502"W	0.00	
14117.00†	89.809	269.571	7244.51	6474.36	354.69	-6477.20	40°13'55.741"N	104°58'01.791"W	0.00	
14217.00†	89.809	269.571	7244.85	6574.36	353.94	-6577.20	40°13'55.733"N	104°58'03.080"W	0.00	
14317.00†	89.809	269.571	7245.18	6674.36	353.19	-6677.20	40°13'55.725"N	104°58'04.370"W	0.00	
14417.00†	89.809	269.571	7245.51	6774.36	352.44	-6777.19	40°13'55.718"N	104°58'05.659"W	0.00	
14517.00†	89.809	269.571	7245.84	6874.36	351.69	-6877.19	40°13'55.710"N	104°58'06.948"W	0.00	
14617.00†	89.809	269.571	7246.18	6974.36	350.94	-6977.19	40°13'55.702"N	104°58'08.238"W	0.00	
14717.00†	89.809	269.571	7246.51	7074.36	350.19	-7077.18	40°13'55.695"N	104°58'09.527"W	0.00	
14817.00†	89.809	269.571	7246.84	7174.36	349.44	-7177.18	40°13'55.687"N	104°58'10.816"W	0.00	
14917.00†	89.809	269.571	7247.18	7274.36	348.70	-7277.18	40°13'55.679"N	104°58'12.106"W	0.00	
15017.00†	89.809	269.571	7247.51	7374.36	347.95	-7377.17	40°13'55.672"N	104°58'13.395"W	0.00	
15117.00†	89.809	269.571	7247.84	7474.36	347.20	-7477.17	40°13'55.664"N	104°58'14.684"W	0.00	
15217.00†	89.809	269.571	7248.17	7574.36	346.45	-7577.17	40°13'55.656"N	104°58'15.973"W	0.00	
15317.00†	89.809	269.571	7248.51	7674.36	345.70	-7677.16	40°13'55.648"N	104°58'17.263"W	0.00	
15417.00†	89.809	269.571	7248.84	7774.36	344.95	-7777.16	40°13'55.641"N	104°58'18.552"W	0.00	
15517.00†	89.809	269.571	7249.17	7874.36	344.20	-7877.15	40°13'55.633"N	104°58'19.841"W	0.00	
15617.00†	89.809	269.571	7249.50	7974.36	343.45	-7977.15	40°13'55.625"N	104°58'21.131"W	0.00	
15717.00†	89.809	269.571	7249.84	8074.36	342.70	-8077.15	40°13'55.618"N	104°58'22.420"W	0.00	
15817.00†	89.809	269.571	7250.17	8174.36	341.95	-8177.14	40°13'55.610"N	104°58'23.709"W	0.00	
15917.00†	89.809	269.571	7250.50	8274.35	341.20	-8277.14	40°13'55.602"N	104°58'24.998"W	0.00	
16017.00†	89.809	269.571	7250.83	8374.35	340.45	-8377.14	40°13'55.594"N	104°58'26.288"W	0.00	
16117.00†	89.809	269.571	7251.17	8474.35	339.70	-8477.13	40°13'55.587"N	104°58'27.577"W	0.00	
16217.00†	89.809	269.571	7251.50	8574.35	338.95	-8577.13	40°13'55.579"N	104°58'28.866"W	0.00	



Planned Wellpath Report

KERBS 4C-14HZ (PERMIT REV-1) PWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#07 KERBS 4C-14HZ (914'FNL & 622'FEL, SEC.13)
Area	COLORADO	Well	KERBS 4C-14HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	KERBS 4C-14HZ PWB
Facility	SEC.13-T3N-R68W		

WELLPATH DATA (194 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
16317.00†	89.809	269.571	7251.83	8674.35	338.20	-8677.13	40°13'55.571"N	104°58'30.156"W	0.00	
16417.00†	89.809	269.571	7252.17	8774.35	337.45	-8777.12	40°13'55.563"N	104°58'31.445"W	0.00	
16517.00†	89.809	269.571	7252.50	8874.35	336.70	-8877.12	40°13'55.556"N	104°58'32.734"W	0.00	
16617.00†	89.809	269.571	7252.83	8974.35	335.95	-8977.12	40°13'55.548"N	104°58'34.024"W	0.00	
16717.00†	89.809	269.571	7253.16	9074.35	335.20	-9077.11	40°13'55.540"N	104°58'35.313"W	0.00	
16817.00†	89.809	269.571	7253.50	9174.35	334.45	-9177.11	40°13'55.532"N	104°58'36.602"W	0.00	
16917.00†	89.809	269.571	7253.83	9274.35	333.70	-9277.11	40°13'55.524"N	104°58'37.891"W	0.00	
17017.00†	89.809	269.571	7254.16	9374.35	332.95	-9377.10	40°13'55.517"N	104°58'39.181"W	0.00	
17117.00†	89.809	269.571	7254.49	9474.35	332.20	-9477.10	40°13'55.509"N	104°58'40.470"W	0.00	
17217.00†	89.809	269.571	7254.83	9574.35	331.45	-9577.10	40°13'55.501"N	104°58'41.759"W	0.00	
17317.00†	89.809	269.571	7255.16	9674.35	330.71	-9677.09	40°13'55.493"N	104°58'43.049"W	0.00	
17417.00†	89.809	269.571	7255.49	9774.35	329.96	-9777.09	40°13'55.486"N	104°58'44.338"W	0.00	
17517.00†	89.809	269.571	7255.82	9874.35	329.21	-9877.09	40°13'55.478"N	104°58'45.627"W	0.00	
17569.81	89.809	269.571	7256.00 [†]	9927.15	328.81	-9929.89	40°13'55.474"N	104°58'46.308"W	0.00	TOTAL DEPTH

HOLE & CASING SECTIONS - Ref Wellbore: KERBS 4C-14HZ PWB Ref Wellpath: KERBS 4C-14HZ (PERMIT REV-1) PWP									
String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
13.5in Open Hole	17.00	1000.00	983.00	17.00	1000.00	0.00	0.00	0.00	0.00
9.625in Casing Surface	17.00	1000.00	983.00	17.00	1000.00	0.00	0.00	0.00	0.00
8.75in Open Hole	1000.00	7649.81	6649.81	1000.00	7223.00	0.00	0.00	403.17	-10.23
7in Casing Intermediate	17.00	7649.81	7632.81	17.00	7223.00	0.00	0.00	403.17	-10.23
6.125in Open Hole	7649.81	17569.81	9920.00	7223.00	7256.00	403.17	-10.23	328.81	-9929.89
4.5in Casing Production	17.00	17569.81	17552.81	17.00	7256.00	0.00	0.00	328.81	-9929.89



Planned Wellpath Report

KERBS 4C-14HZ (PERMIT REV-1) PWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#07 KERBS 4C-14HZ (914'FNL & 622'FEL, SEC.13)
Area	COLORADO	Well	KERBS 4C-14HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	KERBS 4C-14HZ PWB
Facility	SEC.13-T3N-R68W		

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SEC.13-T3N-R68W HARD LINES (460' SETBACKS)		4901.00	0.00	0.00	3155245.81	1327547.17	40°13'52.244"N	104°56'38.278"W	polygon
SEC.13-T3N-R68W SECTION LINES		4901.00	0.00	0.00	3155245.81	1327547.17	40°13'52.244"N	104°56'38.278"W	polygon
SEC.14-T3N-R68W HARD LINES (460' SETBACKS)		4901.00	0.00	0.00	3155245.81	1327547.17	40°13'52.244"N	104°56'38.278"W	polygon
SEC.14-T3N-R68W SECTION LINES		4901.00	0.00	0.00	3155245.81	1327547.17	40°13'52.244"N	104°56'38.278"W	polygon
1) KERB 4C-14HZ BHL ON PLAT (510'FNL & 50'FWL, SEC.14) REV-1	17569.81	7256.00	328.81	-9929.89	3145314.50	1327813.69	40°13'55.474"N	104°58'46.308"W	point

SURVEY PROGRAM - Ref Wellbore: KERBS 4C-14HZ PWB Ref Wellpath: KERBS 4C-14HZ (PERMIT REV-1) PWP

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
17.00	7649.81	NaviTrak (Standard)		KERBS 4C-14HZ PWB
7649.81	17569.81	OnTrak (Standard)		KERBS 4C-14HZ PWB



Planned Wellpath Report

KERBS 4C-14HZ (PERMIT REV-1) PWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#07 KERBS 4C-14HZ (914'FNL & 622'FEL, SEC.13)
Area	COLORADO	Well	KERBS 4C-14HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	KERBS 4C-14HZ PWB
Facility	SEC.13-T3N-R68W		

WELLPATH COMMENTS

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
949.00	0.000	54.000	949.00	Fox Hills Base
3693.13	8.467	54.000	3593.00	Parkman
4171.67	0.000	269.571	4070.00	Sussex
6651.72	0.000	269.571	6550.05	4 1/2" LINER TOP
6998.20	24.649	269.571	6889.00	Sharon Springs
7067.40	31.569	269.571	6950.00	Niobrara A
7125.66	37.394	269.571	6998.00	Niobrara B
7215.77	46.405	269.571	7065.00	Niobrara C
7478.44	72.672	269.571	7197.00	Fort Hays
7575.94	82.423	269.571	7218.00	Codell

DESIGN COMMENTS

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
17.00	0.000	54.000	17.00	TIE-ON
1100.00	0.000	54.000	1100.00	BEGIN NUDGE
2100.00	20.000	54.000	2079.82	END NUDGE
3116.49	20.000	54.000	3035.00	BEGIN DROP
4116.49	0.000	269.571	4014.82	END DROP
6751.72	0.000	269.571	6650.05	KOP, BUILD @ 10°/100'
7649.81	89.809	269.571	7223.00	LANDING POINT
17569.81	89.809	269.571	7256.00	TOTAL DEPTH