

KERR-MCGEE OIL & GAS ONSHORE LP

Location: COLORADO Slot: SLOT#12 KERBS 32N-13HZ (1921' FNL & 283' FEL, SEC.13)

Field: WELD COUNTY (KERR MCGEE) Well: KERBS 32N-13HZ

Facility: SEC.13-T3N-R68W Wellbore: KERBS 32N-13HZ PWB

Plot reference wellpath is KERBS 32N-13HZ (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: 4890 feet

Scale: True distance

Mean Sea Level to Mud line (At Slot: SLOT#12 KERBS 32N-13HZ (1921' FNL & 283' FEL, SEC.13)): 0 feet

Depths are in feet

Coordinates are in feet referenced to Slot

Created by: precin on 10/Jul/2013

Location Information

FacilityName	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SEC.13-T3N-R68W	3155503.948	1322690.531	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)
SLOT#12 KERBS 32N-13HZ (1921' FNL & 283' FEL, SEC.13)	2856.93	103.70	3155589.703	1326547.927
PERMIT (17 KB) (RKB) to Mud line (At Slot: SLOT#12 KERBS 32N-13HZ (1921' FNL & 283' FEL, SEC.13))				4890ft
Mean Sea Level to Mud line (At Slot: SLOT#12 KERBS 32N-13HZ (1921' FNL & 283' FEL, SEC.13))				0ft
PERMIT (17 KB) (RKB) to Mean Sea Level				4890ft

Survey Program

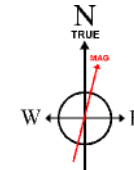
Start MD (ft)	End MD (ft)	Tool	Model	Log Name/Comment	Wellbore
17.00	7461.13	Navitrak	Navitrak (Standard)		KERBS 32N-13HZ PWB
7461.13	11707.54	OnTrak	OnTrak (Standard)		KERBS 32N-13HZ PWB

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	168.000	17.00	0.00	0.00	0.00	0.00
BEGIN NUDGE	1100.00	0.000	168.000	1100.00	0.00	0.00	0.00	0.00
END NUDGE	1850.00	15.000	168.000	1841.46	-95.48	20.30	2.00	-19.10
BEGIN DROP	5101.32	15.000	168.000	4982.00	-918.60	195.25	0.00	-183.76
END DROP	5851.32	0.000	269.284	5723.46	-1014.08	215.55	2.00	-202.86
KOP, BUILD @ 10°/100'	6566.93	0.000	269.284	6439.07	-1014.08	215.55	0.00	-202.86
LANDING POINT	7461.13	89.420	269.284	7012.00	-1021.17	-351.56	10.00	364.30
TOTAL DEPTH	11707.54	89.420	269.284	7055.00	-1074.26	-4597.42	0.00	4610.49

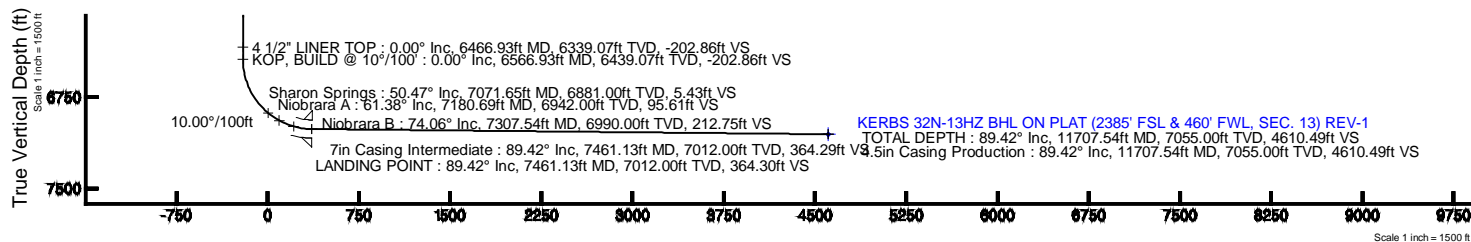
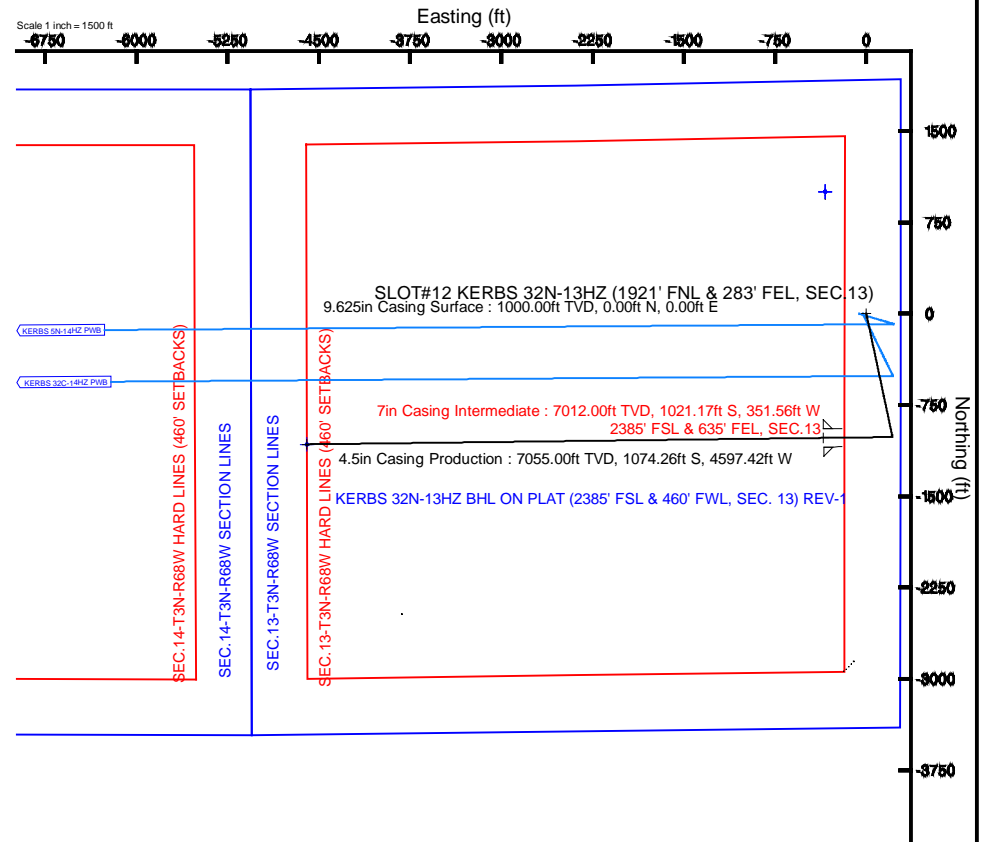
Targets

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)		4890.00	1001.43	-337.62	3155245.81	1327547.17	40°13'52.244"N	104°56'38.278"W
SEC.13-T3N-R68W SECTION LINES		4890.00	1001.43	-337.62	3155245.81	1327547.17	40°13'52.244"N	104°56'38.278"W
SEC.14-T3N-R68W HARD LINES (460' SETBACKS)		4890.00	1001.43	-337.62	3155245.81	1327547.17	40°13'52.244"N	104°56'38.278"W
SEC.14-T3N-R68W SECTION LINES		4890.00	1001.43	-337.62	3155245.81	1327547.17	40°13'52.244"N	104°56'38.278"W
KERBS 32N-13HZ BHL ON PLAT (2385' FSL & 460' FWL, SEC.13) REV-1	11707.54	7055.00	-1074.26	-4597.42	3152099.33	1325444.85	40°13'31.728"N	104°57'53.196"W



BGGM (1945.0 to 2015.0) Dip: 66.80° Field: 52738.4 nT
Magnetic North is 8.70 degrees East of True North (at 08/Jul/2013)

To correct azimuth from Magnetic to True add 8.70 degrees



Vertical Section (ft)

Azimuth 269.28° with reference 0.00 N, 0.00 E



Planned Wellpath Report

KERBS 32N-13HZ (PERMIT REV-1) PWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#12 KERBS 32N-13HZ (1921' FNL & 283' FEL, SEC.13)
Area	COLORADO	Well	KERBS 32N-13HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	KERBS 32N-13HZ 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	10/Jul/2013 at 09:39
Convergence at slot	n/a	Database/Source file	WellArchitectDB/KERBS_32N-13HZ_PWB.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	2856.93	103.70	3155589.70	1326547.93	40°13'42.348"N	104°56'33.925"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	4890.00ft
Horizontal Reference Pt	Slot	PERMIT (17' KB) (RKB) to Mean Sea Level	4890.00ft
Vertical Reference Pt	PERMIT (17' KB) (RKB)	PERMIT (17' KB) (RKB) to Mud Line at Slot (SLOT#12 KERBS 32N-13HZ (1921' FNL & 283' FEL, SEC.13))	4890.00ft
MD Reference Pt	PERMIT (17' KB) (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	269.28°



Planned Wellpath Report

KERBS 32N-13HZ (PERMIT REV-1) PWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#12 KERBS 32N-13HZ (1921' FNL & 283' FEL, SEC.13)
Area	COLORADO	Well	KERBS 32N-13HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	KERBS 32N-13HZ PWB
Facility	SEC.13-T3N-R68W		

WELLPATH DATA (132 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	168.000	0.00	0.00	0.00	0.00	40°13'42.348"N	104°56'33.925"W	0.00	
17.00	0.000	168.000	17.00	0.00	0.00	0.00	40°13'42.348"N	104°56'33.925"W	0.00	TIE-ON
117.00†	0.000	168.000	117.00	0.00	0.00	0.00	40°13'42.348"N	104°56'33.925"W	0.00	
217.00†	0.000	168.000	217.00	0.00	0.00	0.00	40°13'42.348"N	104°56'33.925"W	0.00	
317.00†	0.000	168.000	317.00	0.00	0.00	0.00	40°13'42.348"N	104°56'33.925"W	0.00	
417.00†	0.000	168.000	417.00	0.00	0.00	0.00	40°13'42.348"N	104°56'33.925"W	0.00	
517.00†	0.000	168.000	517.00	0.00	0.00	0.00	40°13'42.348"N	104°56'33.925"W	0.00	
617.00†	0.000	168.000	617.00	0.00	0.00	0.00	40°13'42.348"N	104°56'33.925"W	0.00	
717.00†	0.000	168.000	717.00	0.00	0.00	0.00	40°13'42.348"N	104°56'33.925"W	0.00	
817.00†	0.000	168.000	817.00	0.00	0.00	0.00	40°13'42.348"N	104°56'33.925"W	0.00	
917.00†	0.000	168.000	917.00	0.00	0.00	0.00	40°13'42.348"N	104°56'33.925"W	0.00	
938.00†	0.000	168.000	938.00	0.00	0.00	0.00	40°13'42.348"N	104°56'33.925"W	0.00	Fox Hills Base
1017.00†	0.000	168.000	1017.00	0.00	0.00	0.00	40°13'42.348"N	104°56'33.925"W	0.00	
1100.00	0.000	168.000	1100.00	0.00	0.00	0.00	40°13'42.348"N	104°56'33.925"W	0.00	BEGIN NUDGE
1117.00†	0.340	168.000	1117.00	-0.01	-0.05	0.01	40°13'42.348"N	104°56'33.925"W	2.00	
1217.00†	2.340	168.000	1216.97	-0.47	-2.34	0.50	40°13'42.325"N	104°56'33.919"W	2.00	
1317.00†	4.340	168.000	1316.79	-1.61	-8.04	1.71	40°13'42.269"N	104°56'33.903"W	2.00	
1417.00†	6.340	168.000	1416.35	-3.43	-17.14	3.64	40°13'42.179"N	104°56'33.878"W	2.00	
1517.00†	8.340	168.000	1515.53	-5.93	-29.63	6.30	40°13'42.055"N	104°56'33.844"W	2.00	
1617.00†	10.340	168.000	1614.20	-9.10	-45.51	9.67	40°13'41.898"N	104°56'33.800"W	2.00	
1717.00†	12.340	168.000	1712.24	-12.95	-64.74	13.76	40°13'41.708"N	104°56'33.748"W	2.00	
1817.00†	14.340	168.000	1809.54	-17.47	-87.31	18.56	40°13'41.485"N	104°56'33.686"W	2.00	
1850.00	15.000	168.000	1841.46	-19.10	-95.48	20.30	40°13'41.404"N	104°56'33.663"W	2.00	END NUDGE
1917.00†	15.000	168.000	1906.18	-22.49	-112.44	23.90	40°13'41.237"N	104°56'33.617"W	0.00	
2017.00†	15.000	168.000	2002.77	-27.56	-137.76	29.28	40°13'40.987"N	104°56'33.547"W	0.00	
2117.00†	15.000	168.000	2099.36	-32.62	-163.08	34.66	40°13'40.736"N	104°56'33.478"W	0.00	
2217.00†	15.000	168.000	2195.96	-37.69	-188.39	40.04	40°13'40.486"N	104°56'33.409"W	0.00	
2317.00†	15.000	168.000	2292.55	-42.75	-213.71	45.43	40°13'40.236"N	104°56'33.339"W	0.00	
2417.00†	15.000	168.000	2389.14	-47.82	-239.03	50.81	40°13'39.986"N	104°56'33.270"W	0.00	
2517.00†	15.000	168.000	2485.73	-52.88	-264.34	56.19	40°13'39.736"N	104°56'33.201"W	0.00	
2617.00†	15.000	168.000	2582.33	-57.94	-289.66	61.57	40°13'39.486"N	104°56'33.131"W	0.00	
2717.00†	15.000	168.000	2678.92	-63.01	-314.97	66.95	40°13'39.235"N	104°56'33.062"W	0.00	
2817.00†	15.000	168.000	2775.51	-68.07	-340.29	72.33	40°13'38.985"N	104°56'32.992"W	0.00	
2917.00†	15.000	168.000	2872.10	-73.14	-365.61	77.71	40°13'38.735"N	104°56'32.923"W	0.00	
3017.00†	15.000	168.000	2968.70	-78.20	-390.92	83.09	40°13'38.485"N	104°56'32.854"W	0.00	
3117.00†	15.000	168.000	3065.29	-83.27	-416.24	88.47	40°13'38.235"N	104°56'32.784"W	0.00	
3217.00†	15.000	168.000	3161.88	-88.33	-441.56	93.86	40°13'37.985"N	104°56'32.715"W	0.00	
3317.00†	15.000	168.000	3258.48	-93.39	-466.87	99.24	40°13'37.734"N	104°56'32.646"W	0.00	
3417.00†	15.000	168.000	3355.07	-98.46	-492.19	104.62	40°13'37.484"N	104°56'32.576"W	0.00	
3517.00†	15.000	168.000	3451.66	-103.52	-517.51	110.00	40°13'37.234"N	104°56'32.507"W	0.00	
3617.00†	15.000	168.000	3548.25	-108.59	-542.82	115.38	40°13'36.984"N	104°56'32.437"W	0.00	
3655.04†	15.000	168.000	3585.00	-110.51	-552.45	117.43	40°13'36.889"N	104°56'32.411"W	0.00	Parkman
3717.00†	15.000	168.000	3644.85	-113.65	-568.14	120.76	40°13'36.734"N	104°56'32.368"W	0.00	
3817.00†	15.000	168.000	3741.44	-118.72	-593.45	126.14	40°13'36.484"N	104°56'32.299"W	0.00	
3917.00†	15.000	168.000	3838.03	-123.78	-618.77	131.52	40°13'36.233"N	104°56'32.229"W	0.00	



Planned Wellpath Report

KERBS 32N-13HZ (PERMIT REV-1) PWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#12 KERBS 32N-13HZ (1921' FNL & 283' FEL, SEC.13)
Area	COLORADO	Well	KERBS 32N-13HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	KERBS 32N-13HZ PWB
Facility	SEC.13-T3N-R68W		

WELLPATH DATA (132 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4017.00†	15.000	168.000	3934.62	-128.85	-644.09	136.90	40°13'35.983"N	104°56'32.160"W	0.00	
4117.00†	15.000	168.000	4031.22	-133.91	-669.40	142.29	40°13'35.733"N	104°56'32.091"W	0.00	
4148.87†	15.000	168.000	4062.00	-135.52	-677.47	144.00	40°13'35.653"N	104°56'32.068"W	0.00	Sussex
4217.00†	15.000	168.000	4127.81	-138.97	-694.72	147.67	40°13'35.483"N	104°56'32.021"W	0.00	
4317.00†	15.000	168.000	4224.40	-144.04	-720.04	153.05	40°13'35.233"N	104°56'31.952"W	0.00	
4417.00†	15.000	168.000	4320.99	-149.10	-745.35	158.43	40°13'34.982"N	104°56'31.882"W	0.00	
4517.00†	15.000	168.000	4417.59	-154.17	-770.67	163.81	40°13'34.732"N	104°56'31.813"W	0.00	
4617.00†	15.000	168.000	4514.18	-159.23	-795.98	169.19	40°13'34.482"N	104°56'31.744"W	0.00	
4717.00†	15.000	168.000	4610.77	-164.30	-821.30	174.57	40°13'34.232"N	104°56'31.674"W	0.00	
4817.00†	15.000	168.000	4707.36	-169.36	-846.62	179.95	40°13'33.982"N	104°56'31.605"W	0.00	
4917.00†	15.000	168.000	4803.96	-174.42	-871.93	185.34	40°13'33.732"N	104°56'31.536"W	0.00	
5017.00†	15.000	168.000	4900.55	-179.49	-897.25	190.72	40°13'33.481"N	104°56'31.466"W	0.00	
5101.32	15.000	168.000	4982.00	-183.76	-918.60	195.25	40°13'33.270"N	104°56'31.408"W	0.00	BEGIN DROP
5117.00†	14.686	168.000	4997.15	-184.55	-922.53	196.09	40°13'33.232"N	104°56'31.397"W	2.00	
5217.00†	12.686	168.000	5094.31	-189.18	-945.67	201.01	40°13'33.003"N	104°56'31.334"W	2.00	
5317.00†	10.686	168.000	5192.23	-193.14	-965.48	205.22	40°13'32.807"N	104°56'31.279"W	2.00	
5417.00†	8.686	168.000	5290.80	-196.43	-981.94	208.72	40°13'32.645"N	104°56'31.234"W	2.00	
5517.00†	6.686	168.000	5389.90	-199.05	-995.02	211.50	40°13'32.515"N	104°56'31.198"W	2.00	
5617.00†	4.686	168.000	5489.40	-200.99	-1004.71	213.56	40°13'32.419"N	104°56'31.172"W	2.00	
5717.00†	2.686	168.000	5589.19	-202.24	-1011.00	214.89	40°13'32.357"N	104°56'31.155"W	2.00	
5817.00†	0.686	168.000	5689.14	-202.82	-1013.88	215.51	40°13'32.329"N	104°56'31.147"W	2.00	
5851.32	0.000	269.284	5723.46	-202.86	-1014.08	215.55	40°13'32.327"N	104°56'31.146"W	2.00	END DROP
5917.00†	0.000	269.284	5789.14	-202.86	-1014.08	215.55	40°13'32.327"N	104°56'31.146"W	0.00	
6017.00†	0.000	269.284	5889.14	-202.86	-1014.08	215.55	40°13'32.327"N	104°56'31.146"W	0.00	
6117.00†	0.000	269.284	5989.14	-202.86	-1014.08	215.55	40°13'32.327"N	104°56'31.146"W	0.00	
6217.00†	0.000	269.284	6089.14	-202.86	-1014.08	215.55	40°13'32.327"N	104°56'31.146"W	0.00	
6317.00†	0.000	269.284	6189.14	-202.86	-1014.08	215.55	40°13'32.327"N	104°56'31.146"W	0.00	
6417.00†	0.000	269.284	6289.14	-202.86	-1014.08	215.55	40°13'32.327"N	104°56'31.146"W	0.00	
6466.93†	0.000	269.284	6339.07	-202.86	-1014.08	215.55	40°13'32.327"N	104°56'31.146"W	0.00	4 1/2" LINER TOP
6517.00†	0.000	269.284	6389.14	-202.86	-1014.08	215.55	40°13'32.327"N	104°56'31.146"W	0.00	
6566.93	0.000	269.284	6439.07	-202.86	-1014.08	215.55	40°13'32.327"N	104°56'31.146"W	0.00	KOP, BUILD @ 10°/100'
6617.00†	5.007	269.284	6489.07	-200.67	-1014.11	213.36	40°13'32.327"N	104°56'31.174"W	10.00	
6717.00†	15.007	269.284	6587.43	-183.32	-1014.32	196.01	40°13'32.325"N	104°56'31.398"W	10.00	
6817.00†	25.007	269.284	6681.27	-149.15	-1014.75	161.84	40°13'32.320"N	104°56'31.838"W	10.00	
6917.00†	35.007	269.284	6767.76	-99.20	-1015.38	111.90	40°13'32.314"N	104°56'32.482"W	10.00	
7017.00†	45.007	269.284	6844.26	-35.00	-1016.18	47.70	40°13'32.306"N	104°56'33.310"W	10.00	
7071.65†	50.472	269.284	6881.00	5.43	-1016.68	7.27	40°13'32.301"N	104°56'33.831"W	10.00	Sharon Springs
7117.00†	55.007	269.284	6908.45	41.52	-1017.14	-28.81	40°13'32.297"N	104°56'34.296"W	10.00	
7180.69†	61.375	269.284	6942.00	95.61	-1017.81	-82.90	40°13'32.290"N	104°56'34.994"W	10.00	Niobrara A
7217.00†	65.007	269.284	6958.38	128.01	-1018.22	-115.30	40°13'32.286"N	104°56'35.411"W	10.00	
7307.54†	74.060	269.284	6990.00	212.75	-1019.28	-200.03	40°13'32.276"N	104°56'36.504"W	10.00	Niobrara B
7317.00†	75.007	269.284	6992.52	221.87	-1019.39	-209.15	40°13'32.274"N	104°56'36.621"W	10.00	
7417.00†	85.007	269.284	7009.86	320.23	-1020.62	-307.50	40°13'32.262"N	104°56'37.889"W	10.00	
7461.13	89.420	269.284	7012.00	364.30	-1021.17	-351.56	40°13'32.257"N	104°56'38.457"W	10.00	LANDING POINT
7517.00†	89.420	269.284	7012.57	420.16	-1021.87	-407.42	40°13'32.250"N	104°56'39.178"W	0.00	



Planned Wellpath Report

KERBS 32N-13HZ (PERMIT REV-1) PWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#12 KERBS 32N-13HZ (1921' FNL & 283' FEL, SEC.13)
Area	COLORADO	Well	KERBS 32N-13HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	KERBS 32N-13HZ PWB
Facility	SEC.13-T3N-R68W		

WELLPATH DATA (132 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
7617.00†	89.420	269.284	7013.58	520.16	-1023.12	-507.41	40°13'32.238"N	104°56'40.467"W	0.00	
7717.00†	89.420	269.284	7014.59	620.15	-1024.37	-607.40	40°13'32.225"N	104°56'41.756"W	0.00	
7817.00†	89.420	269.284	7015.60	720.15	-1025.62	-707.38	40°13'32.213"N	104°56'43.045"W	0.00	
7917.00†	89.420	269.284	7016.62	820.14	-1026.87	-807.37	40°13'32.200"N	104°56'44.334"W	0.00	
8017.00†	89.420	269.284	7017.63	920.13	-1028.12	-907.36	40°13'32.188"N	104°56'45.623"W	0.00	
8117.00†	89.420	269.284	7018.64	1020.13	-1029.37	-1007.35	40°13'32.176"N	104°56'46.912"W	0.00	
8217.00†	89.420	269.284	7019.65	1120.12	-1030.62	-1107.33	40°13'32.163"N	104°56'48.201"W	0.00	
8317.00†	89.420	269.284	7020.67	1220.12	-1031.87	-1207.32	40°13'32.151"N	104°56'49.490"W	0.00	
8417.00†	89.420	269.284	7021.68	1320.11	-1033.12	-1307.31	40°13'32.138"N	104°56'50.779"W	0.00	
8517.00†	89.420	269.284	7022.69	1420.11	-1034.37	-1407.29	40°13'32.126"N	104°56'52.068"W	0.00	
8617.00†	89.420	269.284	7023.70	1520.10	-1035.62	-1507.28	40°13'32.114"N	104°56'53.357"W	0.00	
8717.00†	89.420	269.284	7024.72	1620.10	-1036.87	-1607.27	40°13'32.101"N	104°56'54.646"W	0.00	
8817.00†	89.420	269.284	7025.73	1720.09	-1038.12	-1707.25	40°13'32.089"N	104°56'55.935"W	0.00	
8917.00†	89.420	269.284	7026.74	1820.09	-1039.37	-1807.24	40°13'32.076"N	104°56'57.224"W	0.00	
9017.00†	89.420	269.284	7027.76	1920.08	-1040.62	-1907.23	40°13'32.064"N	104°56'58.513"W	0.00	
9117.00†	89.420	269.284	7028.77	2020.08	-1041.87	-2007.22	40°13'32.051"N	104°56'59.802"W	0.00	
9217.00†	89.420	269.284	7029.78	2120.07	-1043.12	-2107.20	40°13'32.039"N	104°57'01.091"W	0.00	
9317.00†	89.420	269.284	7030.79	2220.07	-1044.37	-2207.19	40°13'32.027"N	104°57'02.380"W	0.00	
9417.00†	89.420	269.284	7031.81	2320.06	-1045.62	-2307.18	40°13'32.014"N	104°57'03.669"W	0.00	
9517.00†	89.420	269.284	7032.82	2420.06	-1046.87	-2407.16	40°13'32.002"N	104°57'04.959"W	0.00	
9617.00†	89.420	269.284	7033.83	2520.05	-1048.12	-2507.15	40°13'31.989"N	104°57'06.248"W	0.00	
9717.00†	89.420	269.284	7034.84	2620.05	-1049.38	-2607.14	40°13'31.977"N	104°57'07.537"W	0.00	
9817.00†	89.420	269.284	7035.86	2720.04	-1050.63	-2707.13	40°13'31.964"N	104°57'08.826"W	0.00	
9917.00†	89.420	269.284	7036.87	2820.04	-1051.88	-2807.11	40°13'31.952"N	104°57'10.115"W	0.00	
10017.00†	89.420	269.284	7037.88	2920.03	-1053.13	-2907.10	40°13'31.939"N	104°57'11.404"W	0.00	
10117.00†	89.420	269.284	7038.89	3020.03	-1054.38	-3007.09	40°13'31.927"N	104°57'12.693"W	0.00	
10217.00†	89.420	269.284	7039.91	3120.02	-1055.63	-3107.07	40°13'31.914"N	104°57'13.982"W	0.00	
10317.00†	89.420	269.284	7040.92	3220.02	-1056.88	-3207.06	40°13'31.902"N	104°57'15.271"W	0.00	
10417.00†	89.420	269.284	7041.93	3320.01	-1058.13	-3307.05	40°13'31.889"N	104°57'16.560"W	0.00	
10517.00†	89.420	269.284	7042.94	3420.01	-1059.38	-3407.03	40°13'31.877"N	104°57'17.849"W	0.00	
10617.00†	89.420	269.284	7043.96	3520.00	-1060.63	-3507.02	40°13'31.864"N	104°57'19.138"W	0.00	
10717.00†	89.420	269.284	7044.97	3620.00	-1061.88	-3607.01	40°13'31.852"N	104°57'20.427"W	0.00	
10817.00†	89.420	269.284	7045.98	3719.99	-1063.13	-3707.00	40°13'31.840"N	104°57'21.716"W	0.00	
10917.00†	89.420	269.284	7046.99	3819.99	-1064.38	-3806.98	40°13'31.827"N	104°57'23.005"W	0.00	
11017.00†	89.420	269.284	7048.01	3919.98	-1065.63	-3906.97	40°13'31.814"N	104°57'24.294"W	0.00	
11117.00†	89.420	269.284	7049.02	4019.98	-1066.88	-4006.96	40°13'31.802"N	104°57'25.583"W	0.00	
11217.00†	89.420	269.284	7050.03	4119.97	-1068.13	-4106.94	40°13'31.789"N	104°57'26.872"W	0.00	
11317.00†	89.420	269.284	7051.05	4219.97	-1069.38	-4206.93	40°13'31.777"N	104°57'28.161"W	0.00	
11417.00†	89.420	269.284	7052.06	4319.96	-1070.63	-4306.92	40°13'31.764"N	104°57'29.450"W	0.00	
11517.00†	89.420	269.284	7053.07	4419.96	-1071.88	-4406.90	40°13'31.752"N	104°57'30.739"W	0.00	
11617.00†	89.420	269.284	7054.08	4519.95	-1073.13	-4506.89	40°13'31.739"N	104°57'32.028"W	0.00	
11707.54	89.420	269.284	7055.00 ¹	4610.49	-1074.26	-4597.42	40°13'31.728"N	104°57'33.196"W	0.00	TOTAL DEPTH



Planned Wellpath Report

KERBS 32N-13HZ (PERMIT REV-1) PWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#12 KERBS 32N-13HZ (1921' FNL & 283' FEL, SEC.13)
Area	COLORADO	Well	KERBS 32N-13HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	KERBS 32N-13HZ PWB
Facility	SEC.13-T3N-R68W		

HOLE & CASING SECTIONS - Ref Wellbore: KERBS 32N-13HZ PWB Ref Wellpath: KERBS 32N-13HZ (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	7461.13	6461.13	1000.00	7012.00	0.00	0.00	-1021.17	-351.56
7in Casing Intermediate	17.00	7461.13	7444.13	17.00	7012.00	0.00	0.00	-1021.17	-351.56
6.125in Open Hole	7461.13	11707.54	4246.41	7012.00	7055.00	-1021.17	-351.56	-1074.26	-4597.42
4.5in Casing Production	17.00	11707.54	11690.54	17.00	7055.00	0.00	0.00	-1074.26	-4597.42

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)		4890.00	1001.43	-337.62	3155245.81	1327547.17	40°13'52.244"N	104°56'38.278"W	polygon
SEC.13-T3N-R68W SECTION LINES		4890.00	1001.43	-337.62	3155245.81	1327547.17	40°13'52.244"N	104°56'38.278"W	polygon
SEC.14-T3N-R68W HARD LINES (460' SETBACKS)		4890.00	1001.43	-337.62	3155245.81	1327547.17	40°13'52.244"N	104°56'38.278"W	polygon
SEC.14-T3N-R68W SECTION LINES		4890.00	1001.43	-337.62	3155245.81	1327547.17	40°13'52.244"N	104°56'38.278"W	polygon
1) KERBS 32N-13HZ BHL ON PLAT (2385' FSL & 460' FWL, SEC. 13) REV-1	11707.54	7055.00	-1074.26	-4597.42	3150999.33	1325444.85	40°13'31.728"N	104°57'33.196"W	point

SURVEY PROGRAM - Ref Wellbore: KERBS 32N-13HZ PWB Ref Wellpath: KERBS 32N-13HZ (PERMIT REV-1) PWP

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
17.00	7461.13	NaviTrak (Standard)		KERBS 32N-13HZ PWB
7461.13	11707.54	OnTrak (Standard)		KERBS 32N-13HZ PWB



Planned Wellpath Report

KERBS 32N-13HZ (PERMIT REV-1) PWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#12 KERBS 32N-13HZ (1921' FNL & 283' FEL, SEC.13)
Area	COLORADO	Well	KERBS 32N-13HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	KERBS 32N-13HZ PWB
Facility	SEC.13-T3N-R68W		

WELLPATH COMMENTS

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
938.00	0.000	168.000	938.00	Fox Hills Base
3655.04	15.000	168.000	3585.00	Parkman
4148.87	15.000	168.000	4062.00	Sussex
6466.93	0.000	269.284	6339.07	4 1/2" LINER TOP
7071.65	50.472	269.284	6881.00	Sharon Springs
7180.69	61.375	269.284	6942.00	Niobrara A
7307.54	74.060	269.284	6990.00	Niobrara B

DESIGN COMMENTS

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
17.00	0.000	168.000	17.00	TIE-ON
1100.00	0.000	168.000	1100.00	BEGIN NUDGE
1850.00	15.000	168.000	1841.46	END NUDGE
5101.32	15.000	168.000	4982.00	BEGIN DROP
5851.32	0.000	269.284	5723.46	END DROP
6566.93	0.000	269.284	6439.07	KOP, BUILD @ 10°/100'
7461.13	89.420	269.284	7012.00	LANDING POINT
11707.54	89.420	269.284	7055.00	TOTAL DEPTH