

Location:	COLORADO	Slot:	SLOT#44 COPPERHEAD 2C-15HZ (2368'FSL & 2195'FEL, SEC.22)
Field:	WELD COUNTY (KERR MCGEE)	Well:	COPPERHEAD 2C-15HZ
Facility:	SEC.22-T2N-R67W	Wellbore:	COPPERHEAD 2C-15HZ PWB

Plot reference wellpath is COPPERHEAD 2C-15HZ (PERMIT REV-1) PWP

Slot: SLOT#44 COPPERHEAD 2C-15HZ (2368'FSL & 2195'FEL, SEC.22)

Field: WELD COUNTY (KERR MCGEE)

Well: COPPERHEAD 2C-15HZ

Facility: SEC.22-T2N-R67W

Wellbore: COPPERHEAD 2C-15HZ PWB

Plot reference wellpath is COPPERHEAD 2C-15HZ (PERMIT REV-1) PWP

These vertical depths are referenced to DERIST (17VD) (DVS

Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet

10. *Journal of the American Statistical Association*, 1997, 92, 1013-1027.

100

Measured depths are referenced to PERMIT (17RB)

North Reference: True

PERMIT (17KB) (RKB) to Mean Sea Level: 50.46 feet

Scale: True distance

Mean Sea Level to Mud line (At Slot: SLOT)

Depths are in feet

Coordinates are in feet referenced to Slot

Created by: precain on 08/Sep/2014

Facility Name				Grid East (US Ft)	Grid North (US Ft)	Latitude	Longitude
SEC-22-TJN-RB7W				3173770.270	1290929.950	40°07'46.204"N	104°52'42.769"W
Shot	Local N (ft)	Local E (ft)	Grid East (US Ft)	Grid North (US Ft)	Latitude	Longitude	
SLOT044 COPPERHEAD ZC-154Z (2368FSL, 2195FSL, SEC-22)	-2388.34	912.24	3174669.188	1288248.164	40°07'52.602"N	104°52'31.026"W	
PERMIT 17(X)6 (R958) to Mut (At Slot: SLOT044 COPPERHEAD ZC-154Z (2368FSL & 2195FSL, SEC-22))							034691
Mean Sea Level to Mut line (At Slot: SLOT044 COPPERHEAD ZC-154Z (2368FSL & 2195FSL, SEC-22))							011
PERMIT 17(X)6 (R958) to Mean Sea Level							034691

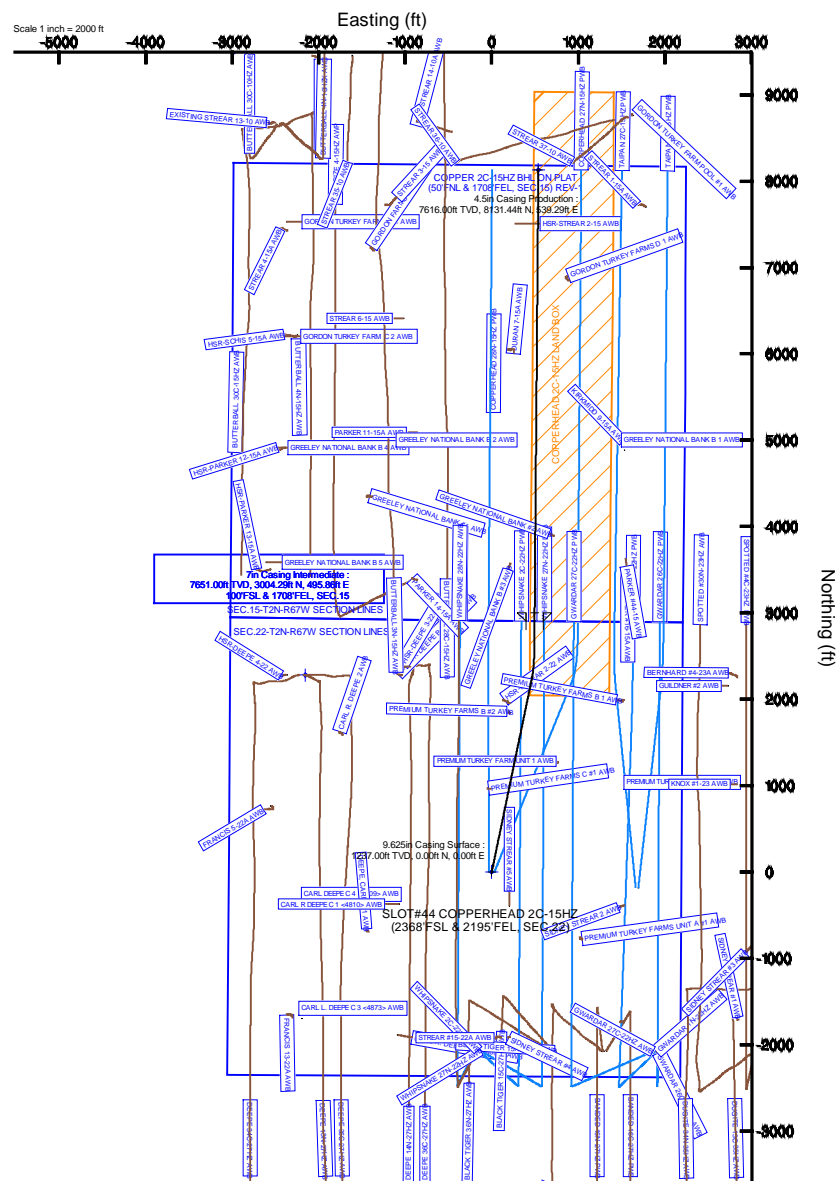
Start MD (ft)	End MD (ft)	Tool	Model	Log Name/Comment	Wellbore
17.00	13691.11	NavTrak	NavTrak (MAGCORR.IFR)		COPPERHEAD 2C-15HZ PWB

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
TIE-ON	17.00	0.000	11.700	17.00	0.00	0.00	0.00	0.00
BEGIN NUDGE	1340.00	0.000	11.700	1340.00	0.00	0.00	0.00	0.00
END NUDGE	2540.00	24.000	11.700	2505.21	242.53	50.23	2.00	242.94
BUILD @ 6°/100	7585.03	24.000	11.700	7114.08	2251.89	466.34	0.00	2255.76
BUILD @ 8°/100	8146.27	57.000	0.523	7535.48	2609.35	492.39	6.00	2613.42
LANDING POINT	8563.66	90.391	0.485	7651.00	3004.29	495.86	8.00	3008.38
TOTAL DEPTH	13691.11	90.391	0.485	7616.00	8131.44	539.29	0.00	8135.71

Name	MD (ft)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SEC 15-12N-67W SECTION LINES		31.00	12820.29	-1916.89	31735692.05	1301060.42	40°09'29.230"N	104°52'44.123"W
SEC 22-72N-REVI SECTION LINES		31.00	2209.17	-2152.64	3172530.63	1290513.02	40°07'45.134"N	104°52'58.739"W
COPPER 20-15N-67W ON PLAT (507N & 1708EFL SEC 15) REV-1	13691.11	7616.00	8131.44	539.29	3175181.16	1296382.85	40°08'42.558"N	104°52'54.082"W
COPPERHEAD 20-15N-LOCAL BOK		7616.00	0.00	0.00	3174699.19	1288248.16	40°07'22.632"N	104°52'31.026"W



**BAKER
HUGHES**



REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#44 COPPERHEAD 2C-15HZ (2368'FSL & 2195'FEL, SEC.22)
Area	COLORADO	Well	COPPERHEAD 2C-15HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	COPPERHEAD 2C-15HZ PWB
Facility	SEC.22-T2N-R67W		

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	0.999959	Report Generated	08/Sep/2014 at 14:24
Convergence at slot	n/a	Database/Source file	WellArchitectDB/COPPERHEAD_2C-15HZ_PWB.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-2388.34	912.24	3174699.19	1288248.16	40°07'22.602"N	104°52'31.026"W
Facility Reference Pt			3173770.27	1290629.95	40°07'46.204"N	104°52'42.769"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	5046.00ft
Horizontal Reference Pt	Slot	PERMIT (17'KB) (RKB) to Mean Sea Level	5046.00ft
Vertical Reference Pt	PERMIT (17'KB) (RKB)	PERMIT (17'KB) (RKB) to Mud Line at Slot (SLOT#44 COPPERHEAD 2C-15HZ (2368'FSL & 2195'FEL, SEC.22))	5046.00ft
MD Reference Pt	PERMIT (17'KB) (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	0.49°

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Area	COLORADO	Well	COPPERHEAD 2C-15HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	COPPERHEAD 2C-15HZ PWB
Facility	SEC.22-T2N-R67W		

WELLPATH DATA (153 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	11.700	0.00	0.00	0.00	0.00	40°07'22.602"N	104°52'31.026"W	0.00	
17.00	0.000	11.700	17.00	0.00	0.00	0.00	40°07'22.602"N	104°52'31.026"W	0.00	TIE-ON
117.00†	0.000	11.700	117.00	0.00	0.00	0.00	40°07'22.602"N	104°52'31.026"W	0.00	
217.00†	0.000	11.700	217.00	0.00	0.00	0.00	40°07'22.602"N	104°52'31.026"W	0.00	
317.00†	0.000	11.700	317.00	0.00	0.00	0.00	40°07'22.602"N	104°52'31.026"W	0.00	
417.00†	0.000	11.700	417.00	0.00	0.00	0.00	40°07'22.602"N	104°52'31.026"W	0.00	
517.00†	0.000	11.700	517.00	0.00	0.00	0.00	40°07'22.602"N	104°52'31.026"W	0.00	
617.00†	0.000	11.700	617.00	0.00	0.00	0.00	40°07'22.602"N	104°52'31.026"W	0.00	
717.00†	0.000	11.700	717.00	0.00	0.00	0.00	40°07'22.602"N	104°52'31.026"W	0.00	
718.00†	0.000	11.700	718.00	0.00	0.00	0.00	40°07'22.602"N	104°52'31.026"W	0.00	Base Fox Hills
817.00†	0.000	11.700	817.00	0.00	0.00	0.00	40°07'22.602"N	104°52'31.026"W	0.00	
917.00†	0.000	11.700	917.00	0.00	0.00	0.00	40°07'22.602"N	104°52'31.026"W	0.00	
1017.00†	0.000	11.700	1017.00	0.00	0.00	0.00	40°07'22.602"N	104°52'31.026"W	0.00	
1117.00†	0.000	11.700	1117.00	0.00	0.00	0.00	40°07'22.602"N	104°52'31.026"W	0.00	
1217.00†	0.000	11.700	1217.00	0.00	0.00	0.00	40°07'22.602"N	104°52'31.026"W	0.00	
1317.00†	0.000	11.700	1317.00	0.00	0.00	0.00	40°07'22.602"N	104°52'31.026"W	0.00	
1340.00	0.000	11.700	1340.00	0.00	0.00	0.00	40°07'22.602"N	104°52'31.026"W	0.00	BEGIN NUDGE
1417.00†	1.540	11.700	1416.99	1.01	1.01	0.21	40°07'22.612"N	104°52'31.023"W	2.00	
1517.00†	3.540	11.700	1516.89	5.36	5.35	1.11	40°07'22.655"N	104°52'31.012"W	2.00	
1617.00†	5.540	11.700	1616.57	13.13	13.10	2.71	40°07'22.731"N	104°52'30.991"W	2.00	
1717.00†	7.540	11.700	1715.91	24.30	24.26	5.02	40°07'22.842"N	104°52'30.961"W	2.00	
1817.00†	9.540	11.700	1814.80	38.86	38.80	8.03	40°07'22.985"N	104°52'30.923"W	2.00	
1917.00†	11.540	11.700	1913.11	56.81	56.71	11.74	40°07'23.162"N	104°52'30.875"W	2.00	
2017.00†	13.540	11.700	2010.72	78.10	77.97	16.15	40°07'23.372"N	104°52'30.818"W	2.00	
2117.00†	15.540	11.700	2107.51	102.73	102.55	21.24	40°07'23.615"N	104°52'30.753"W	2.00	
2217.00†	17.540	11.700	2203.37	130.65	130.43	27.01	40°07'23.891"N	104°52'30.678"W	2.00	
2317.00†	19.540	11.700	2298.17	161.84	161.56	33.46	40°07'24.199"N	104°52'30.595"W	2.00	
2417.00†	21.540	11.700	2391.81	196.25	195.92	40.57	40°07'24.538"N	104°52'30.504"W	2.00	
2517.00†	23.540	11.700	2484.17	233.85	233.45	48.35	40°07'24.909"N	104°52'30.404"W	2.00	
2540.00	24.000	11.700	2505.21	242.94	242.53	50.23	40°07'24.999"N	104°52'30.379"W	2.00	END NUDGE
2617.00†	24.000	11.700	2575.56	273.67	273.20	56.58	40°07'25.302"N	104°52'30.298"W	0.00	
2717.00†	24.000	11.700	2666.91	313.56	313.02	64.82	40°07'25.695"N	104°52'30.192"W	0.00	
2817.00†	24.000	11.700	2758.27	353.46	352.85	73.07	40°07'26.089"N	104°52'30.085"W	0.00	
2917.00†	24.000	11.700	2849.62	393.36	392.68	81.32	40°07'26.483"N	104°52'29.979"W	0.00	
3017.00†	24.000	11.700	2940.98	433.25	432.51	89.57	40°07'26.876"N	104°52'29.873"W	0.00	
3117.00†	24.000	11.700	3032.33	473.15	472.34	97.82	40°07'27.270"N	104°52'29.767"W	0.00	
3217.00†	24.000	11.700	3123.68	513.05	512.17	106.06	40°07'27.663"N	104°52'29.661"W	0.00	
3317.00†	24.000	11.700	3215.04	552.94	552.00	114.31	40°07'28.057"N	104°52'29.554"W	0.00	
3417.00†	24.000	11.700	3306.39	592.84	591.82	122.56	40°07'28.450"N	104°52'29.448"W	0.00	
3517.00†	24.000	11.700	3397.75	632.74	631.65	130.81	40°07'28.844"N	104°52'29.342"W	0.00	
3617.00†	24.000	11.700	3489.10	672.63	671.48	139.06	40°07'29.238"N	104°52'29.236"W	0.00	
3717.00†	24.000	11.700	3580.46	712.53	711.31	147.31	40°07'29.631"N	104°52'29.130"W	0.00	
3817.00†	24.000	11.700	3671.81	752.43	751.14	155.55	40°07'30.025"N	104°52'29.024"W	0.00	
3917.00†	24.000	11.700	3763.17	792.33	790.97	163.80	40°07'30.418"N	104°52'28.917"W	0.00	
4017.00†	24.000	11.700	3854.52	832.22	830.80	172.05	40°07'30.812"N	104°52'28.811"W	0.00	

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Area	COLORADO	Well	COPPERHEAD 2C-15HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	COPPERHEAD 2C-15HZ PWB
Facility	SEC.22-T2N-R67W		

WELLPATH DATA (153 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4117.00†	24.000	11.700	3945.88	872.12	870.62	180.30	40°07'31.206"N	104°52'28.705"W	0.00	
4217.00†	24.000	11.700	4037.23	912.02	910.45	188.55	40°07'31.599"N	104°52'28.599"W	0.00	
4317.00†	24.000	11.700	4128.58	951.91	950.28	196.79	40°07'31.993"N	104°52'28.493"W	0.00	
4330.59†	24.000	11.700	4141.00	957.34	955.69	197.91	40°07'32.046"N	104°52'28.478"W	0.00	Parkman
4417.00†	24.000	11.700	4219.94	991.81	990.11	205.04	40°07'32.386"N	104°52'28.386"W	0.00	
4517.00†	24.000	11.700	4311.29	1031.71	1029.94	213.29	40°07'32.780"N	104°52'28.280"W	0.00	
4617.00†	24.000	11.700	4402.65	1071.60	1069.77	221.54	40°07'33.174"N	104°52'28.174"W	0.00	
4717.00†	24.000	11.700	4494.00	1111.50	1109.60	229.79	40°07'33.567"N	104°52'28.068"W	0.00	
4795.81†	24.000	11.700	4566.00	1142.94	1140.99	236.29	40°07'33.877"N	104°52'27.984"W	0.00	Sussex
4817.00†	24.000	11.700	4585.36	1151.40	1149.42	238.03	40°07'33.961"N	104°52'27.962"W	0.00	
4917.00†	24.000	11.700	4676.71	1191.30	1189.25	246.28	40°07'34.354"N	104°52'27.856"W	0.00	
5017.00†	24.000	11.700	4768.07	1231.19	1229.08	254.53	40°07'34.748"N	104°52'27.749"W	0.00	
5117.00†	24.000	11.700	4859.42	1271.09	1268.91	262.78	40°07'35.141"N	104°52'27.643"W	0.00	
5217.00†	24.000	11.700	4950.78	1310.99	1308.74	271.03	40°07'35.535"N	104°52'27.537"W	0.00	
5317.00†	24.000	11.700	5042.13	1350.88	1348.57	279.27	40°07'35.929"N	104°52'27.431"W	0.00	
5417.00†	24.000	11.700	5133.48	1390.78	1388.40	287.52	40°07'36.322"N	104°52'27.325"W	0.00	
5517.00†	24.000	11.700	5224.84	1430.68	1428.22	295.77	40°07'36.716"N	104°52'27.218"W	0.00	
5617.00†	24.000	11.700	5316.19	1470.57	1468.05	304.02	40°07'37.109"N	104°52'27.112"W	0.00	
5717.00†	24.000	11.700	5407.55	1510.47	1507.88	312.27	40°07'37.503"N	104°52'27.006"W	0.00	
5817.00†	24.000	11.700	5498.90	1550.37	1547.71	320.52	40°07'37.897"N	104°52'26.900"W	0.00	
5917.00†	24.000	11.700	5590.26	1590.27	1587.54	328.76	40°07'38.290"N	104°52'26.794"W	0.00	
6017.00†	24.000	11.700	5681.61	1630.16	1627.37	337.01	40°07'38.684"N	104°52'26.687"W	0.00	
6117.00†	24.000	11.700	5772.97	1670.06	1667.20	345.26	40°07'39.077"N	104°52'26.581"W	0.00	
6217.00†	24.000	11.700	5864.32	1709.96	1707.02	353.51	40°07'39.471"N	104°52'26.475"W	0.00	
6317.00†	24.000	11.700	5955.68	1749.85	1746.85	361.76	40°07'39.865"N	104°52'26.369"W	0.00	
6417.00†	24.000	11.700	6047.03	1789.75	1786.68	370.00	40°07'40.258"N	104°52'26.263"W	0.00	
6517.00†	24.000	11.700	6138.38	1829.65	1826.51	378.25	40°07'40.652"N	104°52'26.156"W	0.00	
6617.00†	24.000	11.700	6229.74	1869.54	1866.34	386.50	40°07'41.045"N	104°52'26.050"W	0.00	
6717.00†	24.000	11.700	6321.09	1909.44	1906.17	394.75	40°07'41.439"N	104°52'25.944"W	0.00	
6817.00†	24.000	11.700	6412.45	1949.34	1946.00	403.00	40°07'41.833"N	104°52'25.838"W	0.00	
6917.00†	24.000	11.700	6503.80	1989.23	1985.82	411.24	40°07'42.226"N	104°52'25.732"W	0.00	
7017.00†	24.000	11.700	6595.16	2029.13	2025.65	419.49	40°07'42.620"N	104°52'25.626"W	0.00	
7117.00†	24.000	11.700	6686.51	2069.03	2065.48	427.74	40°07'43.013"N	104°52'25.519"W	0.00	
7217.00†	24.000	11.700	6777.87	2108.93	2105.31	435.99	40°07'43.407"N	104°52'25.413"W	0.00	
7317.00†	24.000	11.700	6869.22	2148.82	2145.14	444.24	40°07'43.800"N	104°52'25.307"W	0.00	
7417.00†	24.000	11.700	6960.58	2188.72	2184.97	452.49	40°07'44.194"N	104°52'25.201"W	0.00	
7517.00†	24.000	11.700	7051.93	2228.62	2224.80	460.73	40°07'44.588"N	104°52'25.095"W	0.00	
7585.03	24.000	11.700	7114.08	2255.76	2251.89	466.34	40°07'44.855"N	104°52'25.022"W	0.00	BUILD @ 6°/100
7617.00†	25.840	10.410	7143.07	2269.00	2265.11	468.92	40°07'44.986"N	104°52'24.989"W	6.00	
7717.00†	31.650	7.285	7230.72	2316.56	2312.61	476.19	40°07'45.455"N	104°52'24.896"W	6.00	
7795.73†	36.265	5.472	7296.00	2360.29	2356.31	481.04	40°07'45.887"N	104°52'24.833"W	6.00	SSPG
7817.00†	37.516	5.050	7313.01	2373.02	2369.02	482.21	40°07'46.013"N	104°52'24.818"W	6.00	
7892.43†	41.961	3.726	7371.00	2421.11	2417.09	485.87	40°07'46.488"N	104°52'24.771"W	6.00	NBRR
7917.00†	43.413	3.343	7389.06	2437.75	2433.72	486.89	40°07'46.652"N	104°52'24.758"W	6.00	
7969.20†	46.500	2.594	7426.00	2474.59	2470.55	488.80	40°07'47.016"N	104°52'24.733"W	6.00	N470_B_CK

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#44 COPPERHEAD 2C-15HZ (2368'FSL & 2195'FEL, SEC.22)
Area	COLORADO	Well	COPPERHEAD 2C-15HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	COPPERHEAD 2C-15HZ PWB
Facility	SEC.22-T2N-R67W		

WELLPATH DATA (153 stations) † = interpolated/extrapolated station										
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8017.00†	49.331	1.973	7458.03	2510.05	2505.99	490.21	40°07'47.366"N	104°52'24.715"W	6.00	
8069.26†	52.429	1.351	7491.00	2550.58	2546.51	491.38	40°07'47.767"N	104°52'24.700"W	6.00	N700_C_CK
8117.00†	55.262	0.827	7519.16	2589.12	2585.04	492.11	40°07'48.148"N	104°52'24.691"W	6.00	
8146.27	57.000	0.523	7535.48	2613.42	2609.35	492.39	40°07'48.388"N	104°52'24.687"W	6.00	BUILD @ 8°/100
8217.00†	62.658	0.515	7571.01	2674.54	2670.47	492.95	40°07'48.992"N	104°52'24.680"W	8.00	
8317.00†	70.658	0.506	7610.60	2766.28	2762.20	493.76	40°07'49.898"N	104°52'24.669"W	8.00	
8350.67†	73.352	0.503	7621.00	2798.30	2794.22	494.05	40°07'50.215"N	104°52'24.666"W	8.00	FRHS
8417.00†	78.658	0.497	7637.03	2862.64	2858.56	494.61	40°07'50.851"N	104°52'24.658"W	8.00	
8438.83†	80.405	0.495	7641.00	2884.11	2880.02	494.79	40°07'51.063"N	104°52'24.656"W	8.00	CDLL
8517.00†	86.658	0.489	7649.80	2961.74	2957.65	495.46	40°07'51.830"N	104°52'24.647"W	8.00	
8563.66	90.391	0.485	7651.00	3008.38	3004.29	495.86	40°07'52.291"N	104°52'24.642"W	8.00	LANDING POINT
8617.00†	90.391	0.485	7650.64	3061.72	3057.63	496.31	40°07'52.818"N	104°52'24.636"W	0.00	
8717.00†	90.391	0.485	7649.96	3161.72	3157.62	497.16	40°07'53.806"N	104°52'24.625"W	0.00	
8817.00†	90.391	0.485	7649.27	3261.71	3257.61	498.00	40°07'54.794"N	104°52'24.614"W	0.00	
8917.00†	90.391	0.485	7648.59	3361.71	3357.61	498.85	40°07'55.782"N	104°52'24.604"W	0.00	
9017.00†	90.391	0.485	7647.91	3461.71	3457.60	499.70	40°07'56.770"N	104°52'24.593"W	0.00	
9117.00†	90.391	0.485	7647.23	3561.71	3557.60	500.54	40°07'57.758"N	104°52'24.582"W	0.00	
9217.00†	90.391	0.485	7646.54	3661.70	3657.59	501.39	40°07'58.747"N	104°52'24.571"W	0.00	
9317.00†	90.391	0.485	7645.86	3761.70	3757.58	502.24	40°07'59.735"N	104°52'24.560"W	0.00	
9417.00†	90.391	0.485	7645.18	3861.70	3857.58	503.08	40°08'00.723"N	104°52'24.549"W	0.00	
9517.00†	90.391	0.485	7644.50	3961.70	3957.57	503.93	40°08'01.711"N	104°52'24.538"W	0.00	
9617.00†	90.391	0.485	7643.81	4061.69	4057.57	504.78	40°08'02.699"N	104°52'24.527"W	0.00	
9717.00†	90.391	0.485	7643.13	4161.69	4157.56	505.63	40°08'03.687"N	104°52'24.516"W	0.00	
9817.00†	90.391	0.485	7642.45	4261.69	4257.55	506.47	40°08'04.676"N	104°52'24.505"W	0.00	
9917.00†	90.391	0.485	7641.77	4361.69	4357.55	507.32	40°08'05.664"N	104°52'24.494"W	0.00	
10017.00†	90.391	0.485	7641.08	4461.68	4457.54	508.17	40°08'06.652"N	104°52'24.483"W	0.00	
10117.00†	90.391	0.485	7640.40	4561.68	4557.54	509.01	40°08'07.640"N	104°52'24.472"W	0.00	
10217.00†	90.391	0.485	7639.72	4661.68	4657.53	509.86	40°08'08.628"N	104°52'24.461"W	0.00	
10317.00†	90.391	0.485	7639.03	4761.68	4757.53	510.71	40°08'09.616"N	104°52'24.451"W	0.00	
10417.00†	90.391	0.485	7638.35	4861.68	4857.52	511.56	40°08'10.604"N	104°52'24.440"W	0.00	
10517.00†	90.391	0.485	7637.67	4961.67	4957.51	512.40	40°08'11.593"N	104°52'24.429"W	0.00	
10617.00†	90.391	0.485	7636.99	5061.67	5057.51	513.25	40°08'12.581"N	104°52'24.418"W	0.00	
10717.00†	90.391	0.485	7636.30	5161.67	5157.50	514.10	40°08'13.569"N	104°52'24.407"W	0.00	
10817.00†	90.391	0.485	7635.62	5261.67	5257.50	514.94	40°08'14.557"N	104°52'24.396"W	0.00	
10917.00†	90.391	0.485	7634.94	5361.66	5357.49	515.79	40°08'15.545"N	104°52'24.385"W	0.00	
11017.00†	90.391	0.485	7634.26	5461.66	5457.48	516.64	40°08'16.533"N	104°52'24.374"W	0.00	
11117.00†	90.391	0.485	7633.57	5561.66	5557.48	517.48	40°08'17.522"N	104°52'24.363"W	0.00	
11217.00†	90.391	0.485	7632.89	5661.66	5657.47	518.33	40°08'18.510"N	104°52'24.352"W	0.00	
11317.00†	90.391	0.485	7632.21	5761.65	5757.47	519.18	40°08'19.498"N	104°52'24.341"W	0.00	
11417.00†	90.391	0.485	7631.52	5861.65	5857.46	520.03	40°08'20.486"N	104°52'24.330"W	0.00	
11517.00†	90.391	0.485	7630.84	5961.65	5957.45	520.87	40°08'21.474"N	104°52'24.319"W	0.00	
11617.00†	90.391	0.485	7630.16	6061.65	6057.45	521.72	40°08'22.462"N	104°52'24.308"W	0.00	
11717.00†	90.391	0.485	7629.48	6161.65	6157.44	522.57	40°08'23.450"N	104°52'24.297"W	0.00	
11817.00†	90.391	0.485	7628.79	6261.64	6257.44	523.41	40°08'24.439"N	104°52'24.287"W	0.00	
11917.00†	90.391	0.485	7628.11	6361.64	6357.43	524.26	40°08'25.427"N	104°52'24.276"W	0.00	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#44 COPPERHEAD 2C-15HZ (2368'FSL & 2195'FEL, SEC.22)
Area	COLORADO	Well	COPPERHEAD 2C-15HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	COPPERHEAD 2C-15HZ PWB
Facility	SEC.22-T2N-R67W		

WELLPATH DATA (153 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
12017.00†	90.391	0.485	7627.43	6461.64	6457.42	525.11	40°08'26.415"N	104°52'24.265"W	0.00	
12117.00†	90.391	0.485	7626.75	6561.64	6557.42	525.95	40°08'27.403"N	104°52'24.254"W	0.00	
12217.00†	90.391	0.485	7626.06	6661.63	6657.41	526.80	40°08'28.391"N	104°52'24.243"W	0.00	
12317.00†	90.391	0.485	7625.38	6761.63	6757.41	527.65	40°08'29.379"N	104°52'24.232"W	0.00	
12417.00†	90.391	0.485	7624.70	6861.63	6857.40	528.50	40°08'30.367"N	104°52'24.221"W	0.00	
12517.00†	90.391	0.485	7624.02	6961.63	6957.39	529.34	40°08'31.356"N	104°52'24.210"W	0.00	
12617.00†	90.391	0.485	7623.33	7061.62	7057.39	530.19	40°08'32.344"N	104°52'24.199"W	0.00	
12717.00†	90.391	0.485	7622.65	7161.62	7157.38	531.04	40°08'33.332"N	104°52'24.188"W	0.00	
12817.00†	90.391	0.485	7621.97	7261.62	7257.38	531.88	40°08'34.320"N	104°52'24.177"W	0.00	
12917.00†	90.391	0.485	7621.28	7361.62	7357.37	532.73	40°08'35.308"N	104°52'24.166"W	0.00	
13017.00†	90.391	0.485	7620.60	7461.61	7457.37	533.58	40°08'36.296"N	104°52'24.155"W	0.00	
13117.00†	90.391	0.485	7619.92	7561.61	7557.36	534.43	40°08'37.285"N	104°52'24.144"W	0.00	
13217.00†	90.391	0.485	7619.24	7661.61	7657.35	535.27	40°08'38.273"N	104°52'24.133"W	0.00	
13317.00†	90.391	0.485	7618.55	7761.61	7757.35	536.12	40°08'39.261"N	104°52'24.123"W	0.00	
13417.00†	90.391	0.485	7617.87	7861.61	7857.34	536.97	40°08'40.249"N	104°52'24.112"W	0.00	
13517.00†	90.391	0.485	7617.19	7961.60	7957.34	537.81	40°08'41.237"N	104°52'24.101"W	0.00	
13617.00†	90.391	0.485	7616.51	8061.60	8057.33	538.66	40°08'42.225"N	104°52'24.090"W	0.00	
13691.11	90.391	0.485	7616.00 ¹	8135.71	8131.44	539.29	40°08'42.958"N	104°52'24.082"W	0.00	TOTAL DEPTH

HOLE & CASING SECTIONS - Ref Wellbore: COPPERHEAD 2C-15HZ PWB Ref Wellpath: COPPERHEAD 2C-15HZ (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	1237.00	1220.00	17.00	1237.00	0.00	0.00	0.00	0.00
9.625in Casing Surface	17.00	1237.00	1220.00	17.00	1237.00	0.00	0.00	0.00	0.00
8.75in Open Hole	1237.00	8563.66	7326.66	1237.00	7651.00	0.00	0.00	3004.29	495.86
7in Casing Intermediate	17.00	8563.66	8546.66	17.00	7651.00	0.00	0.00	3004.29	495.86
6.125in Open Hole	8563.66	13691.11	5127.45	7651.00	7616.00	3004.29	495.86	8131.44	539.29
4.5in Casing Production	17.00	13691.11	13674.11	17.00	7616.00	0.00	0.00	8131.44	539.29

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#44 COPPERHEAD 2C-15HZ (2368'FSL & 2195'FEL, SEC.22)
Area	COLORADO	Well	COPPERHEAD 2C-15HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	COPPERHEAD 2C-15HZ PWB
Facility	SEC.22-T2N-R67W		

TARGETS									
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SEC.15-T2N-67W SECTION LINES		31.00	12820.29	-1016.89	3173592.05	1301060.42	40°09'29.293"N	104°52'44.123"W	polygon
SEC.22-T2N-R67W SECTION LINES		31.00	2280.17	-2152.64	3172530.63	1290513.02	40°07'45.134"N	104°52'58.739"W	polygon
1) COPPER 2C-15HZ BHL ON PLAT (50'FNL & 1708'FEL, SEC.15) REV-1	13691.11	7616.00	8131.44	539.29	3175181.16	1296382.85	40°08'42.958"N	104°52'24.082"W	point
COPPERHEAD 2C-15HZ LAND BOX		7616.00	0.00	0.00	3174699.19	1288248.16	40°07'22.602"N	104°52'31.026"W	polygon

SURVEY PROGRAM - Ref Wellbore: COPPERHEAD 2C-15HZ PWB					Ref Wellpath: COPPERHEAD 2C-15HZ (PERMIT REV-1) PWP	
Start MD [ft]	End MD [ft]	Positional Uncertainty Model		Log Name/Comment		Wellbore
17.00	13691.11	NaviTrak (MAGCORR,IFR)				COPPERHEAD 2C-15HZ PWB

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#44 COPPERHEAD 2C-15HZ (2368'FSL & 2195'FEL, SEC.22)
Area	COLORADO	Well	COPPERHEAD 2C-15HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	COPPERHEAD 2C-15HZ PWB
Facility	SEC.22-T2N-R67W		

WELLPATH COMMENTS					
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment	
718.00	0.000	11.700	718.00	Base Fox Hills	
4330.59	24.000	11.700	4141.00	Parkman	
4795.81	24.000	11.700	4566.00	Sussex	
7795.73	36.265	5.472	7296.00	SSPG	
7892.43	41.961	3.726	7371.00	NBRR	
7969.20	46.500	2.594	7426.00	N470_B_CK	
8069.26	52.429	1.351	7491.00	N700_C_CK	
8350.67	73.352	0.503	7621.00	FRHS	
8438.83	80.405	0.495	7641.00	CDLL	

DESIGN COMMENTS					
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment	
17.00	0.000	11.700	17.00	TIE-ON	
1340.00	0.000	11.700	1340.00	BEGIN NUDGE	
2540.00	24.000	11.700	2505.21	END NUDGE	
7585.03	24.000	11.700	7114.08	BUILD @ 6°/100	
8146.27	57.000	0.523	7535.48	BUILD @ 8°/100	
8563.66	90.391	0.485	7651.00	LANDING POINT	
13691.11	90.391	0.485	7616.00	TOTAL DEPTH	