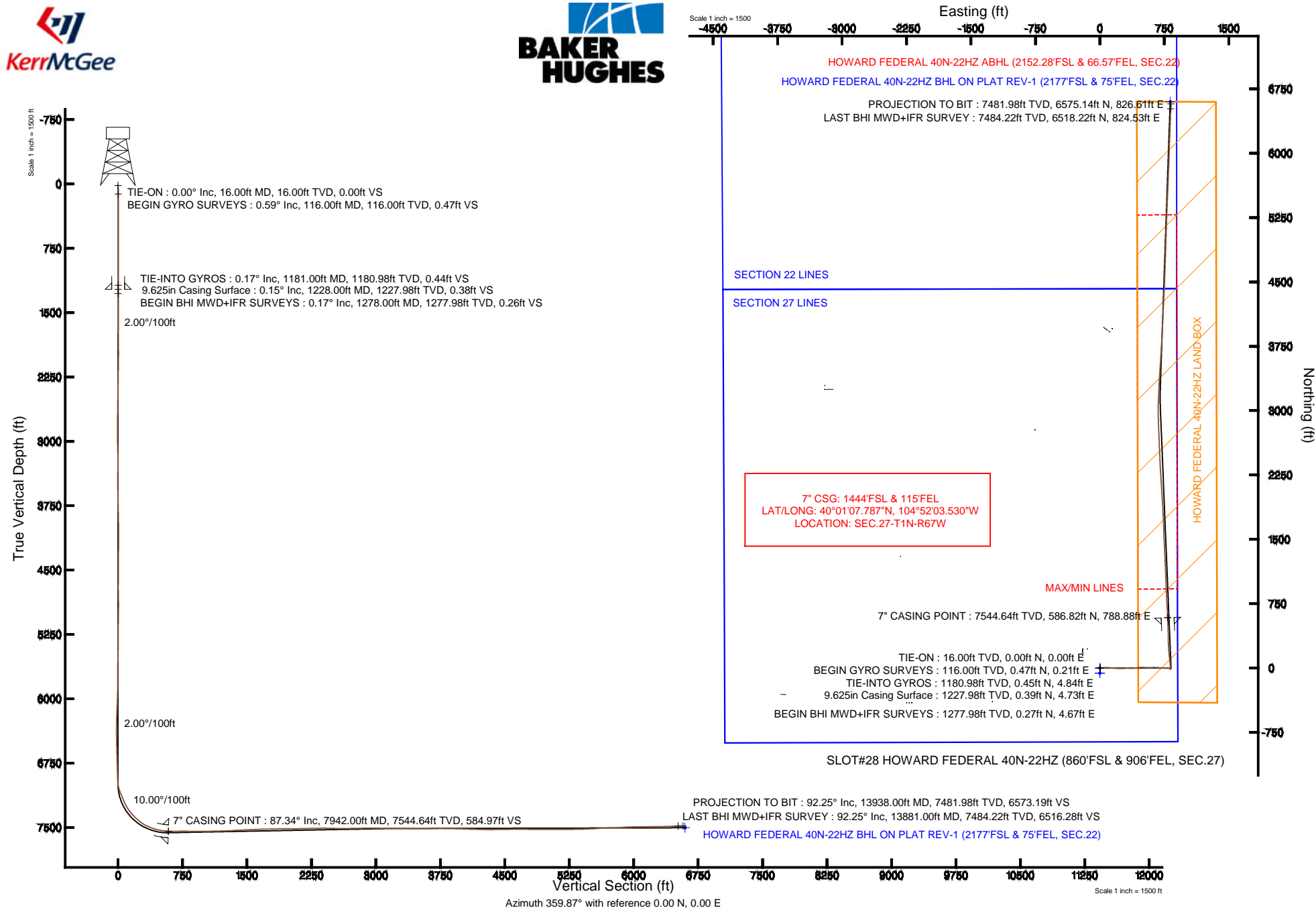


# KERR-MCGEE OIL & GAS ONSHORE LP

Location: COLORADO Slot: SLOT#28 HOWARD FEDERAL 40N-22HZ (860'FSL & 906'FEL, SEC.27)  
 Field: WELD COUNTY (KERR MCGEE) Well: HOWARD FEDERAL 40N-22HZ  
 Facility: SEC.27-T1N-R67W Wellbore: HOWARD FEDERAL 40N-22HZ PWB

Plot reference wellpath is HOWARD FEDERAL 40N-22HZ (REV-B.0) PWP

True vertical depths are referenced to XTREME 24 (RKB 16) (RKB)	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
Measured depths are referenced to XTREME 24 (RKB 16) (RKB)	North Reference: True north
XTREME 24 (RKB 16) (RKB) to Mean Sea Level: 5068 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#28 HOWARD FEDERAL 40N-22HZ (860'FSL & 906'FEL, SEC.27)): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot.	Created by: wilsjef02 on 1/28/2014





# Actual Wellpath Report

## HOWARD FEDERAL 40N-22HZ AWP

Page 1 of 7



REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#28 HOWARD FEDERAL 40N-22HZ (860'FSL & 906'FEL, SEC.27)
Area	COLORADO	Well	HOWARD FEDERAL 40N-22HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD FEDERAL 40N-22HZ AWB
Facility	SEC.27-T1N-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	Wilsjef02
Scale	0.999965	Report Generated	1/28/2014 at 14:16:24
Convergence at slot	n/a	Database/Source file	WellArchitectDB/HOWARD_FEDERAL_40N-22HZ_AWB.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-3246.01	3200.38	3176320.79	1249745.11	40°01'01.988"N	104°52'13.670"W
Facility Reference Pt			3173097.99	1252968.61	40°01'34.068"N	104°52'54.804"W
Field Reference Pt			3197771.84	1268891.29	40°04'09.600"N	104°47'36.000"W

WELLPATH DATUM			
Calculation method	Minimum curvature	XTREME 24 (RKB 16') (RKB) to Facility Vertical Datum	5068.00ft
Horizontal Reference Pt	Slot	XTREME 24 (RKB 16') (RKB) to Mean Sea Level	5068.00ft
Vertical Reference Pt	XTREME 24 (RKB 16') (RKB)	XTREME 24 (RKB 16') (RKB) to Mud Line at Slot (SLOT#28 HOWARD FEDERAL 40N-22HZ (860'FSL & 906'FEL, SEC.27))	5068.00ft
MD Reference Pt	XTREME 24 (RKB 16') (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	7.17°



# Actual Wellpath Report

HOWARD FEDERAL 40N-22HZ AWP

Page 2 of 7



## REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#28 HOWARD FEDERAL 40N-22HZ (860'FSL & 906'FEL, SEC.27)
Area	COLORADO	Well	HOWARD FEDERAL 40N-22HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD FEDERAL 40N-22HZ AWB
Facility	SEC.27-T1N-R67W		

## WELLPATH DATA (151 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	23.770	0.00	0.00	0.00	0.00	40°01'01.988"N	104°52'13.670"W	0.00	
16.00	0.000	23.770	16.00	0.00	0.00	0.00	40°01'01.988"N	104°52'13.670"W	0.00	TIE-ON
116.00	0.590	23.770	116.00	0.49	0.47	0.21	40°01'01.993"N	104°52'13.667"W	0.59	BEGIN GYRO SURVEYS
216.00	0.530	25.750	215.99	1.43	1.36	0.62	40°01'02.001"N	104°52'13.662"W	0.06	
316.00	0.410	51.690	315.99	2.12	2.00	1.10	40°01'02.008"N	104°52'13.656"W	0.24	
416.00	0.280	106.260	415.99	2.34	2.15	1.61	40°01'02.009"N	104°52'13.649"W	0.34	
516.00	0.460	134.840	515.99	2.05	1.80	2.13	40°01'02.006"N	104°52'13.643"W	0.25	
616.00	0.420	112.420	615.98	1.71	1.38	2.76	40°01'02.002"N	104°52'13.635"W	0.18	
716.00	0.320	120.860	715.98	1.50	1.09	3.33	40°01'01.999"N	104°52'13.627"W	0.11	
816.00	0.350	90.290	815.98	1.43	0.95	3.88	40°01'01.997"N	104°52'13.620"W	0.18	
916.00	0.380	131.700	915.98	1.27	0.73	4.43	40°01'01.995"N	104°52'13.613"W	0.26	
1016.00	0.060	114.850	1015.98	1.07	0.48	4.73	40°01'01.993"N	104°52'13.609"W	0.32	
1116.00	0.110	83.810	1115.98	1.08	0.47	4.87	40°01'01.993"N	104°52'13.607"W	0.07	
1181.00	0.170	252.840	1180.98	1.05	0.45	4.84	40°01'01.992"N	104°52'13.608"W	0.43	TIE-INTO GYROS
1278.00	0.170	193.190	1277.98	0.85	0.27	4.67	40°01'01.991"N	104°52'13.610"W	0.17	BEGIN BHI MWD+IFR SURVEYS
1372.00	1.740	81.170	1371.96	1.10	0.35	6.05	40°01'01.991"N	104°52'13.592"W	1.93	
1466.00	3.400	86.590	1465.86	2.01	0.74	10.24	40°01'01.995"N	104°52'13.538"W	1.78	
1560.00	5.360	91.120	1559.59	2.98	0.82	17.41	40°01'01.996"N	104°52'13.446"W	2.12	
1654.00	6.240	83.530	1653.11	4.65	1.31	26.88	40°01'02.001"N	104°52'13.325"W	1.24	
1748.00	7.540	82.320	1746.42	7.43	2.71	38.07	40°01'02.015"N	104°52'13.181"W	1.39	
1842.00	8.990	87.050	1839.45	10.30	3.91	51.52	40°01'02.027"N	104°52'13.008"W	1.70	
1937.00	10.650	85.440	1933.05	13.39	4.99	67.68	40°01'02.037"N	104°52'12.800"W	1.77	
2032.00	11.520	94.000	2026.28	15.70	5.02	85.90	40°01'02.038"N	104°52'12.566"W	1.96	
2124.00	11.000	94.030	2116.51	16.69	3.77	103.82	40°01'02.025"N	104°52'12.336"W	0.57	
2216.00	12.330	94.480	2206.61	17.63	2.38	122.36	40°01'02.012"N	104°52'12.097"W	1.45	
2308.00	11.920	94.180	2296.56	18.58	0.92	141.63	40°01'01.997"N	104°52'11.850"W	0.45	
2400.00	11.060	93.350	2386.71	19.66	-0.29	159.92	40°01'01.985"N	104°52'11.615"W	0.95	
2492.00	11.370	94.850	2476.96	20.62	-1.57	177.77	40°01'01.972"N	104°52'11.385"W	0.46	
2584.00	10.260	94.800	2567.32	21.32	-3.02	194.97	40°01'01.958"N	104°52'11.164"W	1.21	
2678.00	10.500	92.980	2659.78	22.29	-4.17	211.86	40°01'01.947"N	104°52'10.947"W	0.43	
2768.00	10.330	95.870	2748.30	23.07	-5.42	228.08	40°01'01.934"N	104°52'10.739"W	0.61	
2860.00	9.970	89.400	2838.86	24.34	-6.18	244.25	40°01'01.927"N	104°52'10.531"W	1.30	
2952.00	10.340	87.660	2929.42	26.78	-5.76	260.46	40°01'01.931"N	104°52'10.322"W	0.52	
3044.00	10.240	83.920	3019.95	30.01	-4.55	276.84	40°01'01.943"N	104°52'10.112"W	0.73	
3136.00	11.000	81.180	3110.37	34.30	-2.34	293.65	40°01'01.965"N	104°52'09.896"W	0.99	
3228.00	11.590	88.540	3200.59	38.11	-0.76	311.56	40°01'01.980"N	104°52'09.666"W	1.69	
3320.00	11.580	92.230	3290.72	40.29	-0.88	330.03	40°01'01.979"N	104°52'09.428"W	0.81	
3412.00	11.680	95.870	3380.83	41.29	-2.20	348.52	40°01'01.966"N	104°52'09.191"W	0.80	
3503.00	11.530	88.620	3469.98	42.85	-2.92	366.77	40°01'01.959"N	104°52'08.956"W	1.61	
3595.00	11.310	84.780	3560.16	46.15	-1.88	384.95	40°01'01.969"N	104°52'08.722"W	0.86	
3687.00	12.020	85.910	3650.25	49.96	-0.37	403.49	40°01'01.984"N	104°52'08.484"W	0.81	
3779.00	11.200	84.200	3740.37	53.83	1.21	421.93	40°01'02.000"N	104°52'08.247"W	0.97	
3870.00	10.810	80.080	3829.70	58.32	3.58	439.13	40°01'02.023"N	104°52'08.026"W	0.96	
3966.00	10.840	85.640	3923.99	62.77	5.81	457.00	40°01'02.045"N	104°52'07.796"W	1.09	
4060.00	11.050	84.120	4016.28	66.57	7.41	474.78	40°01'02.061"N	104°52'07.568"W	0.38	



# Actual Wellpath Report

HOWARD FEDERAL 40N-22HZ AWP

Page 3 of 7



## REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#28 HOWARD FEDERAL 40N-22HZ (860'FSL & 906'FEL, SEC.27)
Area	COLORADO	Well	HOWARD FEDERAL 40N-22HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD FEDERAL 40N-22HZ AWB
Facility	SEC.27-T1N-R67W		

## WELLPATH DATA (151 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4153.00	8.590	90.700	4107.92	69.37	8.24	490.59	40°01'02.069"N	104°52'07.365"W	2.90	
4247.00	8.650	97.100	4200.86	70.17	7.28	504.62	40°01'02.060"N	104°52'07.184"W	1.02	
4341.00	8.840	92.810	4293.77	70.72	6.05	518.85	40°01'02.048"N	104°52'07.001"W	0.72	
4436.00	9.450	93.240	4387.56	71.81	5.25	533.93	40°01'02.040"N	104°52'06.807"W	0.65	
4528.00	10.340	90.940	4478.19	73.22	4.69	549.73	40°01'02.034"N	104°52'06.604"W	1.06	
4622.00	10.770	90.100	4570.60	75.22	4.53	566.94	40°01'02.033"N	104°52'06.383"W	0.49	
4716.00	10.710	93.650	4662.95	76.83	3.96	584.44	40°01'02.027"N	104°52'06.158"W	0.71	
4801.00	9.910	83.690	4746.59	79.02	4.26	599.60	40°01'02.030"N	104°52'05.963"W	2.29	
4886.00	10.730	84.100	4830.21	82.52	5.88	614.74	40°01'02.046"N	104°52'05.769"W	0.97	
4971.00	11.220	90.450	4913.66	85.27	6.63	630.88	40°01'02.053"N	104°52'05.561"W	1.53	
5056.00	11.330	95.200	4997.02	86.53	5.81	647.46	40°01'02.045"N	104°52'05.348"W	1.10	
5141.00	11.890	93.090	5080.28	87.43	4.58	664.52	40°01'02.033"N	104°52'05.129"W	0.83	
5226.00	11.530	92.460	5163.51	88.75	3.74	681.75	40°01'02.025"N	104°52'04.908"W	0.45	
5311.00	10.580	91.810	5246.93	90.18	3.13	698.04	40°01'02.019"N	104°52'04.698"W	1.13	
5397.00	10.020	89.280	5331.55	91.94	2.98	713.41	40°01'02.017"N	104°52'04.501"W	0.84	
5482.00	10.800	96.090	5415.15	93.11	2.22	728.73	40°01'02.010"N	104°52'04.304"W	1.71	
5567.00	10.190	96.210	5498.73	93.38	0.57	744.12	40°01'01.993"N	104°52'04.106"W	0.72	
5653.00	9.660	95.270	5583.44	93.75	-0.92	758.87	40°01'01.979"N	104°52'03.916"W	0.64	
5738.00	9.440	90.510	5667.27	94.79	-1.64	772.94	40°01'01.972"N	104°52'03.735"W	0.96	
5823.00	8.560	87.710	5751.22	96.64	-1.45	786.23	40°01'01.974"N	104°52'03.565"W	1.16	
5908.00	7.880	95.340	5835.35	97.86	-1.74	798.36	40°01'01.971"N	104°52'03.409"W	1.51	
5994.00	6.660	102.630	5920.66	97.57	-3.37	809.09	40°01'01.955"N	104°52'03.271"W	1.78	
6079.00	5.090	111.280	6005.21	96.19	-5.82	817.42	40°01'01.930"N	104°52'03.164"W	2.12	
6164.00	3.270	134.510	6089.98	93.80	-8.89	822.66	40°01'01.900"N	104°52'03.096"W	2.88	
6249.00	2.250	185.480	6174.90	90.66	-12.25	824.23	40°01'01.867"N	104°52'03.076"W	3.00	
6335.00	1.050	204.000	6260.86	88.21	-14.65	823.75	40°01'01.843"N	104°52'03.082"W	1.51	
6420.00	2.090	233.170	6345.83	86.39	-16.29	822.19	40°01'01.827"N	104°52'03.103"W	1.51	
6505.00	1.450	10.150	6430.81	86.39	-16.16	821.14	40°01'01.828"N	104°52'03.116"W	3.88	
6590.00	1.500	25.570	6515.78	88.52	-14.10	821.81	40°01'01.849"N	104°52'03.107"W	0.47	
6675.00	1.700	20.000	6600.75	90.80	-11.91	822.72	40°01'01.870"N	104°52'03.096"W	0.30	
6760.00	1.230	1.410	6685.72	92.94	-9.81	823.17	40°01'01.891"N	104°52'03.090"W	0.78	
6931.00	2.190	333.250	6856.65	97.48	-5.06	821.75	40°01'01.938"N	104°52'03.108"W	0.73	
7016.00	1.030	16.340	6941.61	99.58	-2.88	821.23	40°01'01.959"N	104°52'03.115"W	1.88	
7059.00	5.310	3.070	6984.54	101.95	-0.52	821.45	40°01'01.983"N	104°52'03.112"W	10.03	
7101.00	12.610	358.330	7026.00	108.43	6.01	821.42	40°01'02.047"N	104°52'03.112"W	17.45	
7144.00	19.780	356.150	7067.26	120.22	17.98	820.79	40°01'02.166"N	104°52'03.120"W	16.73	
7186.00	22.630	355.710	7106.42	135.12	33.13	819.71	40°01'02.315"N	104°52'03.134"W	6.80	
7229.00	22.020	353.540	7146.19	151.06	49.39	818.18	40°01'02.476"N	104°52'03.154"W	2.38	
7272.00	23.670	353.590	7185.82	167.29	65.98	816.31	40°01'02.640"N	104°52'03.178"W	3.84	
7314.00	26.540	353.200	7223.85	184.59	83.68	814.26	40°01'02.815"N	104°52'03.204"W	6.84	
7357.00	29.850	354.150	7261.74	204.35	103.87	812.03	40°01'03.014"N	104°52'03.233"W	7.77	
7399.00	34.500	353.860	7297.28	226.12	126.11	809.69	40°01'03.234"N	104°52'03.263"W	11.08	
7442.00	40.610	354.090	7331.35	251.62	152.16	806.95	40°01'03.492"N	104°52'03.298"W	14.21	
7485.00	43.930	354.950	7363.17	279.84	180.94	804.19	40°01'03.776"N	104°52'03.334"W	7.84	
7527.00	46.790	355.500	7392.68	309.08	210.72	801.71	40°01'04.070"N	104°52'03.366"W	6.87	



# Actual Wellpath Report

HOWARD FEDERAL 40N-22HZ AWP

Page 4 of 7



## REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#28 HOWARD FEDERAL 40N-22HZ (860'FSL & 906'FEL, SEC.27)
Area	COLORADO	Well	HOWARD FEDERAL 40N-22HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD FEDERAL 40N-22HZ AWB
Facility	SEC.27-T1N-R67W		

## WELLPATH DATA (151 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
7570.00	50.610	357.410	7421.05	340.81	242.96	799.73	40°01'04.389"N	104°52'03.391"W	9.49	
7613.00	54.730	357.640	7447.12	374.52	277.11	798.25	40°01'04.726"N	104°52'03.410"W	9.59	
7655.00	60.420	358.590	7469.64	409.51	312.53	797.10	40°01'05.076"N	104°52'03.425"W	13.68	
7698.00	66.320	358.480	7488.90	447.50	350.94	796.11	40°01'05.456"N	104°52'03.438"W	13.72	
7740.00	69.340	359.370	7504.75	485.99	389.82	795.39	40°01'05.840"N	104°52'03.447"W	7.45	
7783.00	73.470	358.470	7518.46	526.31	430.56	794.61	40°01'06.243"N	104°52'03.457"W	9.81	
7825.00	76.520	358.090	7529.33	566.39	471.10	793.40	40°01'06.643"N	104°52'03.472"W	7.31	
7868.00	81.000	357.680	7537.71	608.00	513.24	791.84	40°01'07.060"N	104°52'03.492"W	10.46	
7896.00	84.310	357.830	7541.29	635.39	540.98	790.75	40°01'07.334"N	104°52'03.506"W	11.83	
7942.00†	87.342	357.508	7544.64	680.64	586.82	788.88	40°01'07.787"N	104°52'03.530"W	6.63	7" CASING POINT
7999.00	91.100	357.110	7545.41	736.78	643.74	786.21	40°01'08.350"N	104°52'03.565"W	6.63	
8092.00	90.400	357.050	7544.19	828.34	736.61	781.47	40°01'09.267"N	104°52'03.626"W	0.76	
8185.00	88.860	357.630	7544.79	919.97	829.51	777.16	40°01'10.185"N	104°52'03.681"W	1.77	
8372.00	90.580	357.430	7545.71	1104.32	1016.32	769.10	40°01'12.031"N	104°52'03.784"W	0.93	
8561.00	91.880	357.630	7541.65	1290.61	1205.10	760.95	40°01'13.897"N	104°52'03.889"W	0.70	
8747.00	93.110	357.320	7533.55	1473.77	1390.74	752.77	40°01'15.732"N	104°52'03.994"W	0.68	
8935.00	92.370	357.940	7524.57	1658.96	1578.36	745.00	40°01'17.586"N	104°52'04.094"W	0.51	
9021.00	91.750	357.860	7521.48	1743.78	1664.25	741.85	40°01'18.434"N	104°52'04.134"W	0.73	
9106.00	91.130	357.380	7519.34	1827.58	1749.15	738.33	40°01'19.273"N	104°52'04.180"W	0.92	
9191.00	91.600	356.920	7517.31	1911.26	1834.02	734.10	40°01'20.112"N	104°52'04.234"W	0.77	
9276.00	90.980	356.880	7515.40	1994.88	1918.87	729.50	40°01'20.951"N	104°52'04.293"W	0.73	
9362.00	89.750	356.560	7514.85	2079.45	2004.73	724.58	40°01'21.799"N	104°52'04.356"W	1.48	
9532.00	91.380	355.910	7513.18	2246.35	2174.34	713.42	40°01'23.475"N	104°52'04.500"W	1.03	
9617.00	91.140	356.510	7511.31	2329.78	2259.14	707.81	40°01'24.313"N	104°52'04.572"W	0.76	
9702.00	91.010	357.410	7509.71	2413.42	2344.00	703.30	40°01'25.152"N	104°52'04.630"W	1.07	
9788.00	89.290	357.680	7509.49	2498.21	2429.92	699.61	40°01'26.001"N	104°52'04.677"W	2.02	
9873.00	87.930	357.020	7511.55	2581.94	2514.80	695.69	40°01'26.840"N	104°52'04.728"W	1.78	
9958.00	90.240	357.800	7512.91	2665.69	2599.70	691.85	40°01'27.679"N	104°52'04.777"W	2.87	
10129.00	91.070	357.520	7510.95	2834.33	2770.54	684.86	40°01'29.367"N	104°52'04.867"W	0.51	
10214.00	91.100	358.080	7509.34	2918.18	2855.46	681.60	40°01'30.206"N	104°52'04.908"W	0.66	
10299.00	90.060	359.230	7508.48	3002.24	2940.43	679.61	40°01'31.046"N	104°52'04.934"W	1.82	
10385.00	89.070	0.470	7509.13	3087.53	3026.43	679.38	40°01'31.896"N	104°52'04.937"W	1.84	
10470.00	88.850	2.210	7510.68	3172.08	3111.39	681.37	40°01'32.736"N	104°52'04.911"W	2.06	
10640.00	90.520	2.550	7511.61	3341.48	3281.23	688.43	40°01'34.414"N	104°52'04.821"W	1.00	
10725.00	89.100	2.970	7511.89	3426.22	3366.13	692.52	40°01'35.253"N	104°52'04.768"W	1.74	
10810.00	90.330	3.630	7512.32	3511.03	3450.99	697.41	40°01'36.092"N	104°52'04.705"W	1.64	
10896.00	89.220	3.730	7512.65	3596.86	3536.81	702.93	40°01'36.940"N	104°52'04.634"W	1.30	
11066.00	91.070	3.980	7512.22	3766.57	3706.41	714.36	40°01'38.616"N	104°52'04.487"W	1.10	
11151.00	89.190	2.840	7512.03	3851.39	3791.26	719.42	40°01'39.454"N	104°52'04.422"W	2.59	
11236.00	88.890	2.870	7513.46	3936.13	3876.14	723.65	40°01'40.293"N	104°52'04.368"W	0.35	
11407.00	87.930	2.500	7518.20	4106.54	4046.88	731.66	40°01'41.980"N	104°52'04.265"W	0.60	
11577.00	88.540	2.690	7523.44	4275.92	4216.63	739.35	40°01'43.658"N	104°52'04.166"W	0.38	
11748.00	90.800	3.050	7524.42	4446.43	4387.40	747.91	40°01'45.345"N	104°52'04.055"W	1.34	
11918.00	90.830	1.620	7522.00	4615.80	4557.24	754.84	40°01'47.024"N	104°52'03.966"W	0.84	
12088.00	89.440	2.140	7521.60	4785.07	4727.14	760.42	40°01'48.703"N	104°52'03.895"W	0.87	



# Actual Wellpath Report

HOWARD FEDERAL 40N-22HZ AWP

Page 5 of 7



## REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#28 HOWARD FEDERAL 40N-22HZ (860'FSL & 906'FEL, SEC.27)
Area	COLORADO	Well	HOWARD FEDERAL 40N-22HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD FEDERAL 40N-22HZ AWB
Facility	SEC.27-T1N-R67W		

## WELLPATH DATA (151 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
12344.00	89.660	1.720	7523.61	5040.00	4982.99	769.04	40°01'51.231"N	104°52'03.784"W	0.19	
12514.00	90.860	2.000	7522.84	5209.26	5152.89	774.55	40°01'52.910"N	104°52'03.713"W	0.72	
12599.00	89.870	1.590	7522.30	5293.89	5237.85	777.22	40°01'53.750"N	104°52'03.678"W	1.26	
12684.00	90.860	2.620	7521.76	5378.55	5322.79	780.34	40°01'54.589"N	104°52'03.638"W	1.68	
12769.00	91.720	2.240	7519.85	5463.24	5407.69	783.94	40°01'55.428"N	104°52'03.592"W	1.11	
12939.00	93.290	2.430	7512.42	5632.47	5577.38	790.86	40°01'57.105"N	104°52'03.503"W	0.93	
13024.00	93.140	2.040	7507.65	5717.02	5662.18	794.17	40°01'57.943"N	104°52'03.460"W	0.49	
13109.00	91.720	1.980	7504.04	5801.60	5747.05	797.15	40°01'58.782"N	104°52'03.422"W	1.67	
13194.00	92.660	2.370	7500.80	5886.21	5831.92	800.37	40°01'59.621"N	104°52'03.381"W	1.20	
13279.00	92.620	1.850	7496.88	5970.79	5916.78	803.50	40°02'00.459"N	104°52'03.340"W	0.61	
13364.00	91.840	1.420	7493.57	6055.33	6001.68	805.92	40°02'01.298"N	104°52'03.309"W	1.05	
13449.00	89.960	2.250	7492.24	6139.95	6086.62	808.64	40°02'02.138"N	104°52'03.274"W	2.42	
13619.00	90.830	2.250	7491.07	6309.32	6256.48	815.32	40°02'03.816"N	104°52'03.188"W	0.51	
13788.00	91.660	1.840	7487.39	6477.60	6425.33	821.35	40°02'05.485"N	104°52'03.111"W	0.55	
13881.00	92.250	2.090	7484.22	6570.16	6518.22	824.53	40°02'06.403"N	104°52'03.070"W	0.69	LAST BHI MWD+IFR SURVEY
13938.00	92.250	2.090	7481.98	6626.90	6575.14	826.61	40°02'06.965"N	104°52'03.043"W	0.00	PROJECTION TO BIT

## HOLE & CASING SECTIONS - Ref Wellbore: HOWARD FEDERAL 40N-22HZ AWB Ref Wellpath: HOWARD FEDERAL 40N-22HZ AWP

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	1228.00	1212.00	16.00	1227.98	0.00	0.00	0.39	4.73
9.625in Casing Surface	16.00	1228.00	1212.00	16.00	1227.98	0.00	0.00	0.39	4.73
8.75in Open Hole	1228.00	7956.00	6728.00	1227.98	7545.17	0.39	4.73	600.79	788.26
7in Casing Intermediate	16.00	7942.00	7926.00	16.00	7544.64	0.00	0.00	586.82	788.88
6.125in Open Hole	7942.00	13938.00	5996.00	7544.64	7481.98	586.82	788.88	6575.14	826.61





# Actual Wellpath Report

## HOWARD FEDERAL 40N-22HZ AWP

Page 6 of 7



### REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#28 HOWARD FEDERAL 40N-22HZ (860'FSL & 906'FEL, SEC.27)
Area	COLORADO	Well	HOWARD FEDERAL 40N-22HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD FEDERAL 40N-22HZ AWB
Facility	SEC.27-T1N-R67W		

### TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
HOWARD SECTION 22 LINES		7500.00	-59.70	0.23	3176321.45	1249685.42	40°01'01.398"N	104°52'13.667"W	polygon
HOWARD SECTION 27 LINES		7500.00	-59.70	0.23	3176321.45	1249685.42	40°01'01.398"N	104°52'13.667"W	polygon
HOWARD FEDERAL 40N-22HZ BHL ON PLAT REV-1 (2177'FSL & 75'FEL, SEC.22)		7504.00	6599.86	818.18	3177092.07	1256350.38	40°02'07.210"N	104°52'03.151"W	point
HOWARD FEDERAL 40N-22HZ LAND BOX		7600.00	0.00	0.00	3176320.79	1249745.11	40°01'01.988"N	104°52'13.670"W	polygon
HOWARD FEDERAL 40N-22HZ MAX/MIN LINES		7600.00	0.00	0.00	3176320.79	1249745.11	40°01'01.988"N	104°52'13.670"W	polygon

### WELLPATH COMPOSITION - Ref Wellbore: HOWARD FEDERAL 40N-22HZ AWB Ref Wellpath: HOWARD FEDERAL 40N-22HZ AWP

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
16.00	1181.00	Generic gyro - continuous (Standard)	MS GYRODATA SURVEYS <116-1181>	HOWARD FEDERAL 40N-22HZ AWB
1181.00	7896.00	NaviTrak (MAGCORR,IFR)	BHI MWD+IFR SURVEYS 8 3/4" HOLE <1278-7896>	HOWARD FEDERAL 40N-22HZ AWB
7896.00	13881.00	NaviTrak (MAGCORR,IFR)	BHI MWD+IFR SURVEYS 6 1/8" HOLE <7999-13881>	HOWARD FEDERAL 40N-22HZ AWB
13881.00	13938.00	Blind Drilling (std)	Projection to bit	HOWARD FEDERAL 40N-22HZ AWB



# Actual Wellpath Report

HOWARD FEDERAL 40N-22HZ AWP

Page 7 of 7



REFERENCE WELLPATH IDENTIFICATION				
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#28 HOWARD FEDERAL 40N-22HZ (860'FSL & 906'FEL, SEC.27)	
Area	COLORADO	Well	HOWARD FEDERAL 40N-22HZ	
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD FEDERAL 40N-22HZ AWB	
Facility	SEC.27-T1N-R67W			

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
16.00	0.000	23.770	16.00	TIE-ON
116.00	0.590	23.770	116.00	BEGIN GYRO SURVEYS
1181.00	0.170	252.840	1180.98	TIE-INTO GYROS
1278.00	0.170	193.190	1277.98	BEGIN BHI MWD+IFR SURVEYS
7942.00	87.342	357.508	7544.64	7" CASING POINT
13881.00	92.250	2.090	7484.22	LAST BHI MWD+IFR SURVEY
13938.00	92.250	2.090	7481.98	PROJECTION TO BIT