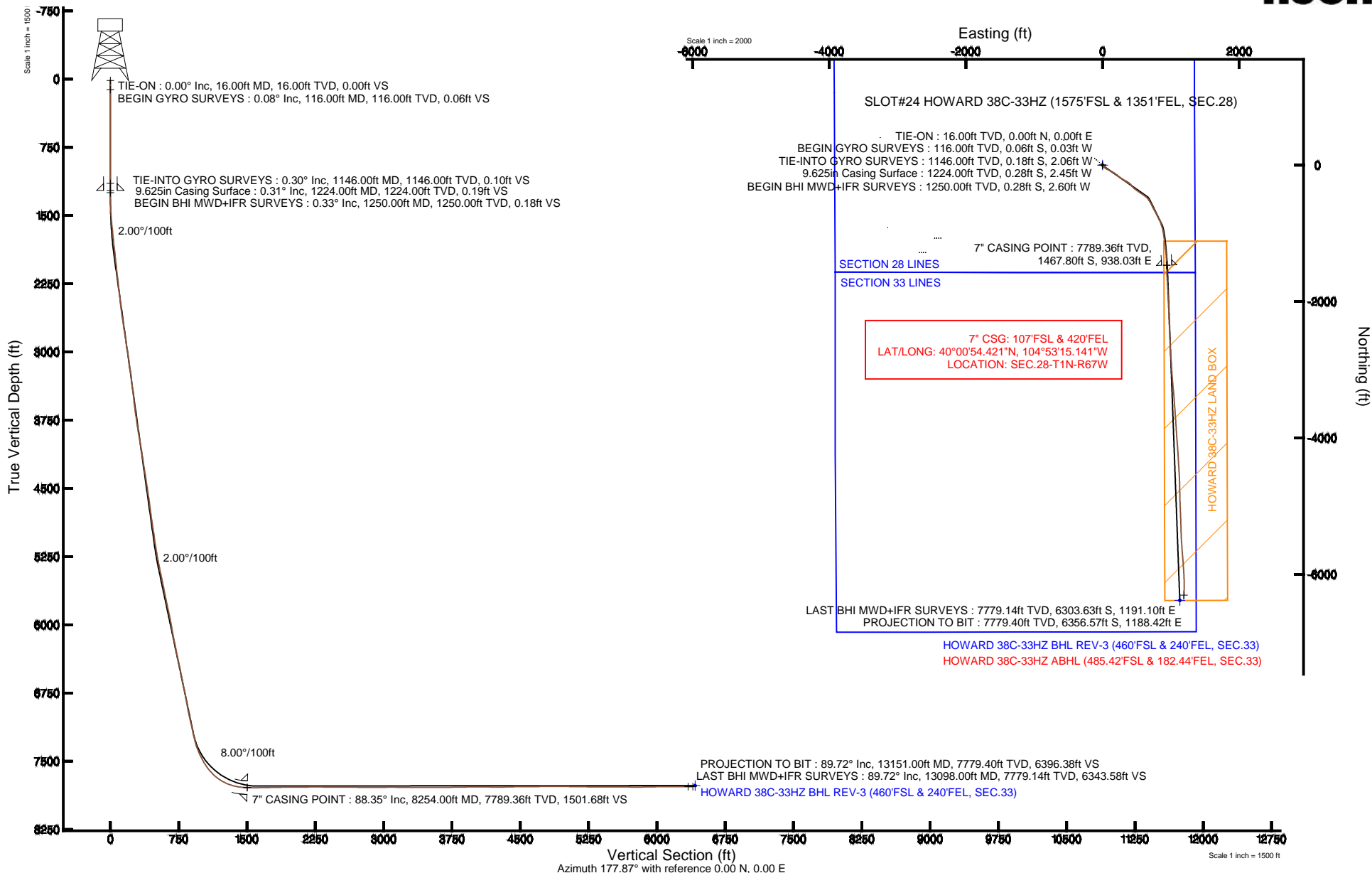


KERR-MCGEE OIL & GAS ONSHORE LP

Location: COLORADO Slot: SLOT#24 HOWARD 38C-33HZ (1575'FSL & 1351'FEL, SEC.28)
 Field: WELD COUNTY (KERR MCGEE) Well: HOWARD 38C-33HZ
 Facility: SEC.28-T1N-R67W Wellbore: HOWARD 38C-33HZ PWB

Plot reference wellpath is HOWARD 38C-33HZ (REV-B.0) PWP

True vertical depths are referenced to XTREME 6 (16' RKB) (RKB)	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
Measured depths are referenced to XTREME 6 (16' RKB) (RKB)	North Reference: True north
XTREME 6 (16' RKB) (RKB) to Mean Sea Level: 5037 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#24 HOWARD 38C-33HZ (1575'FSL & 1351'FEL, SEC.28): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: wilsje02 on 2/19/2014





Actual Wellpath Report

HOWARD 38C-33HZ AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#24 HOWARD 38C-33HZ (1575'FSL & 1351'FEL, SEC.28)
Area	COLORADO	Well	HOWARD 38C-33HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 38C-33HZ AWB
Facility	SEC.28-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	2/19/2014 at 09:09:53
Convergence at slot	n/a	Database/Source file	WellArchitectDB/HOWARD_38C-33HZ_AWB.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	1413460.22	2717059.84	3170595.65	1250407.18	40°01'08.926"N	104°53'27.197"W
Facility Reference Pt			316923.76	121463.46	36°32'36.656"N	114°37'52.006"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 6 (16' RKB) (RKB) to Facility Vertical Datum	5037.00ft
Horizontal Reference Pt	Slot	XTREME 6 (16' RKB) (RKB) to Mean Sea Level	5037.00ft
Vertical Reference Pt	XTREME 6 (16' RKB) (RKB)	XTREME 6 (16' RKB) (RKB) to Mud Line at Slot (SLOT#24 HOWARD 38C-33HZ (1575'FSL & 1351'FEL, SEC.28))	5037.00ft
MD Reference Pt	XTREME 6 (16' RKB) (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	169.41°



Actual Wellpath Report

HOWARD 38C-33HZ AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#24 HOWARD 38C-33HZ (1575'FSL & 1351'FEL, SEC.28)
Area	COLORADO	Well	HOWARD 38C-33HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 38C-33HZ AWB
Facility	SEC.28-T1N-R67W		

WELLPATH DATA (141 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	208.070	0.00	0.00	0.00	0.00	40°01'08.926"N	104°53'27.197"W	0.00	
16.00	0.000	208.070	16.00	0.00	0.00	0.00	40°01'08.926"N	104°53'27.197"W	0.00	TIE-ON
116.00	0.080	208.070	116.00	0.05	-0.06	-0.03	40°01'08.925"N	104°53'27.197"W	0.08	BEGIN GYRO SURVEYS
216.00	0.060	289.370	216.00	0.08	-0.11	-0.12	40°01'08.925"N	104°53'27.198"W	0.09	
316.00	0.080	281.620	316.00	0.03	-0.07	-0.23	40°01'08.925"N	104°53'27.200"W	0.02	
416.00	0.240	261.000	416.00	0.00	-0.09	-0.51	40°01'08.925"N	104°53'27.204"W	0.17	
516.00	0.090	269.810	516.00	-0.02	-0.13	-0.79	40°01'08.925"N	104°53'27.207"W	0.15	
616.00	0.250	242.900	616.00	0.03	-0.23	-1.07	40°01'08.924"N	104°53'27.211"W	0.17	
716.00	0.070	303.790	716.00	0.05	-0.29	-1.31	40°01'08.923"N	104°53'27.214"W	0.22	
816.00	0.150	302.680	816.00	-0.09	-0.19	-1.47	40°01'08.924"N	104°53'27.216"W	0.08	
916.00	0.070	298.910	916.00	-0.22	-0.09	-1.64	40°01'08.925"N	104°53'27.218"W	0.08	
1016.00	0.030	288.970	1016.00	-0.27	-0.05	-1.71	40°01'08.926"N	104°53'27.219"W	0.04	
1116.00	0.240	247.610	1116.00	-0.24	-0.12	-1.93	40°01'08.925"N	104°53'27.222"W	0.22	
1146.00	0.300	241.310	1146.00	-0.20	-0.18	-2.06	40°01'08.924"N	104°53'27.223"W	0.22	TIE-INTO GYRO SURVEYS
1250.00	0.330	276.810	1250.00	-0.21	-0.28	-2.60	40°01'08.923"N	104°53'27.230"W	0.19	BEGIN BHI MWD+IFR SURVEYS
1341.00	1.850	135.540	1340.98	0.94	-1.29	-1.83	40°01'08.913"N	104°53'27.220"W	2.33	
1434.00	3.870	132.480	1433.86	4.69	-4.49	1.54	40°01'08.882"N	104°53'27.177"W	2.18	
1526.00	5.350	140.870	1525.56	10.94	-9.91	6.54	40°01'08.828"N	104°53'27.113"W	1.76	
1617.00	6.730	142.810	1616.05	19.44	-17.45	12.44	40°01'08.754"N	104°53'27.037"W	1.53	
1709.00	7.690	136.070	1707.33	29.40	-26.18	19.97	40°01'08.667"N	104°53'26.940"W	1.39	
1799.00	9.080	127.730	1796.37	39.74	-34.86	29.76	40°01'08.582"N	104°53'26.814"W	2.05	
1891.00	10.390	128.250	1887.04	51.40	-44.44	42.02	40°01'08.487"N	104°53'26.657"W	1.43	
1982.00	11.200	122.090	1976.43	63.57	-54.21	55.95	40°01'08.390"N	104°53'26.478"W	1.55	
2074.00	11.670	118.270	2066.61	75.47	-63.37	71.72	40°01'08.300"N	104°53'26.275"W	0.97	
2165.00	12.510	118.580	2155.59	87.47	-72.44	88.48	40°01'08.210"N	104°53'26.060"W	0.93	
2257.00	13.300	117.750	2245.26	100.33	-82.14	106.59	40°01'08.114"N	104°53'25.827"W	0.88	
2348.00	13.560	117.990	2333.77	113.47	-92.02	125.28	40°01'08.017"N	104°53'25.587"W	0.29	
2439.00	12.010	116.990	2422.52	125.90	-101.32	143.13	40°01'07.925"N	104°53'25.357"W	1.72	
2530.00	12.380	120.940	2511.46	138.14	-110.63	159.94	40°01'07.833"N	104°53'25.141"W	1.00	
2622.00	13.280	124.720	2601.17	152.19	-121.72	177.08	40°01'07.723"N	104°53'24.921"W	1.34	
2714.00	13.660	127.330	2690.64	167.77	-134.33	194.41	40°01'07.599"N	104°53'24.698"W	0.78	
2804.00	13.510	127.900	2778.12	183.53	-147.23	211.15	40°01'07.471"N	104°53'24.483"W	0.22	
2895.00	12.900	129.600	2866.71	199.29	-160.23	227.37	40°01'07.343"N	104°53'24.275"W	0.79	
2987.00	12.830	129.970	2956.40	215.07	-173.34	243.11	40°01'07.213"N	104°53'24.072"W	0.12	
3073.00	13.720	124.790	3040.11	229.70	-185.30	258.80	40°01'07.095"N	104°53'23.871"W	1.73	
3157.00	14.430	124.090	3121.59	244.15	-196.85	275.65	40°01'06.981"N	104°53'23.654"W	0.87	
3243.00	12.990	124.410	3205.13	258.52	-208.32	292.50	40°01'06.867"N	104°53'23.437"W	1.68	
3328.00	12.890	120.210	3287.98	271.47	-218.48	308.57	40°01'06.767"N	104°53'23.231"W	1.11	
3414.00	12.980	115.530	3371.80	283.43	-227.47	325.58	40°01'06.678"N	104°53'23.012"W	1.22	
3499.00	13.580	119.660	3454.53	295.51	-236.53	342.87	40°01'06.589"N	104°53'22.790"W	1.32	
3585.00	12.080	120.010	3538.38	307.89	-246.02	359.43	40°01'06.495"N	104°53'22.577"W	1.75	
3669.00	12.500	125.160	3620.45	320.12	-255.66	374.48	40°01'06.400"N	104°53'22.384"W	1.40	
3754.00	12.410	124.420	3703.45	333.17	-266.12	389.53	40°01'06.296"N	104°53'22.190"W	0.22	
3840.00	11.570	134.800	3787.59	346.80	-277.42	403.28	40°01'06.184"N	104°53'22.014"W	2.69	
3925.00	12.280	136.930	3870.75	361.45	-290.03	415.50	40°01'06.060"N	104°53'21.857"W	0.98	



Actual Wellpath Report

HOWARD 38C-33HZ AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#24 HOWARD 38C-33HZ (1575'FSL & 1351'FEL, SEC.28)
Area	COLORADO	Well	HOWARD 38C-33HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 38C-33HZ AWB
Facility	SEC.28-T1N-R67W		

WELLPATH DATA (141 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4010.00	12.800	143.510	3953.73	377.54	-304.20	427.27	40°01'05.920"N	104°53'21.705"W	1.79	
4094.00	11.990	139.510	4035.77	393.48	-318.32	438.47	40°01'05.780"N	104°53'21.561"W	1.40	
4180.00	12.260	132.020	4119.86	408.48	-331.23	451.05	40°01'05.653"N	104°53'21.400"W	1.85	
4266.00	12.770	127.800	4203.81	422.84	-343.16	465.35	40°01'05.535"N	104°53'21.216"W	1.22	
4351.00	14.090	129.540	4286.49	437.80	-355.51	480.75	40°01'05.413"N	104°53'21.018"W	1.62	
4437.00	13.290	126.920	4370.05	453.13	-368.11	496.73	40°01'05.288"N	104°53'20.813"W	1.18	
4522.00	13.630	123.880	4452.71	467.35	-379.56	512.85	40°01'05.175"N	104°53'20.605"W	0.92	
4608.00	14.510	124.870	4536.13	482.13	-391.37	530.10	40°01'05.058"N	104°53'20.384"W	1.06	
4694.00	12.890	126.860	4619.68	496.87	-403.29	546.62	40°01'04.941"N	104°53'20.171"W	1.96	
4779.00	11.980	125.280	4702.69	510.19	-414.07	561.41	40°01'04.834"N	104°53'19.981"W	1.14	
4865.00	13.380	122.550	4786.59	523.40	-424.58	577.08	40°01'04.730"N	104°53'19.780"W	1.77	
4950.00	14.340	123.530	4869.11	537.45	-435.68	594.15	40°01'04.620"N	104°53'19.560"W	1.16	
5035.00	13.690	125.450	4951.58	552.02	-447.33	611.12	40°01'04.505"N	104°53'19.342"W	0.94	
5120.00	12.690	126.660	5034.34	566.12	-458.74	626.80	40°01'04.393"N	104°53'19.141"W	1.22	
5205.00	12.890	129.150	5117.23	580.21	-470.30	641.64	40°01'04.278"N	104°53'18.950"W	0.69	
5289.00	12.870	137.310	5199.12	595.28	-483.09	655.25	40°01'04.152"N	104°53'18.775"W	2.16	
5375.00	13.100	141.750	5282.93	612.03	-497.79	667.78	40°01'04.007"N	104°53'18.614"W	1.19	
5460.00	13.270	143.670	5365.69	629.35	-513.21	679.52	40°01'03.854"N	104°53'18.463"W	0.55	
5546.00	14.030	150.640	5449.26	648.11	-530.25	690.48	40°01'03.686"N	104°53'18.322"W	2.11	
5631.00	12.130	152.180	5532.05	666.40	-547.13	699.70	40°01'03.519"N	104°53'18.204"W	2.27	
5716.00	12.480	152.510	5615.10	683.72	-563.18	708.11	40°01'03.360"N	104°53'18.096"W	0.42	
5801.00	12.750	152.750	5698.05	701.49	-579.66	716.64	40°01'03.198"N	104°53'17.986"W	0.32	
5887.00	13.110	154.030	5781.87	719.99	-596.87	725.26	40°01'03.027"N	104°53'17.875"W	0.53	
5972.00	13.780	154.210	5864.54	739.05	-614.65	733.89	40°01'02.852"N	104°53'17.764"W	0.79	
6057.00	11.790	153.920	5947.43	757.19	-631.56	742.11	40°01'02.685"N	104°53'17.659"W	2.34	
6142.00	11.450	148.770	6030.69	773.45	-646.58	750.30	40°01'02.536"N	104°53'17.553"W	1.28	
6228.00	11.990	149.840	6114.89	789.86	-661.60	759.21	40°01'02.388"N	104°53'17.439"W	0.68	
6312.00	12.880	152.040	6196.92	807.02	-677.42	767.99	40°01'02.231"N	104°53'17.326"W	1.20	
6398.00	12.140	154.320	6280.88	824.89	-694.03	776.40	40°01'02.067"N	104°53'17.218"W	1.03	
6482.00	13.090	151.710	6362.85	842.49	-710.37	784.74	40°01'01.906"N	104°53'17.111"W	1.32	
6568.00	13.430	154.730	6446.56	861.42	-727.98	793.62	40°01'01.732"N	104°53'16.997"W	0.90	
6653.00	12.320	152.290	6529.42	879.64	-744.93	802.05	40°01'01.564"N	104°53'16.888"W	1.45	
6736.00	11.900	153.850	6610.58	896.35	-760.45	809.94	40°01'01.411"N	104°53'16.787"W	0.64	
6821.00	13.900	153.380	6693.43	914.60	-777.45	818.37	40°01'01.243"N	104°53'16.679"W	2.36	
6907.00	11.690	151.630	6777.29	932.83	-794.35	827.14	40°01'01.076"N	104°53'16.566"W	2.61	
6992.00	10.590	151.620	6860.68	948.47	-808.80	834.95	40°01'00.933"N	104°53'16.466"W	1.29	
7077.00	11.920	154.850	6944.05	964.40	-823.62	842.39	40°01'00.787"N	104°53'16.370"W	1.73	
7163.00	13.230	162.680	7027.99	982.77	-841.06	849.10	40°01'00.614"N	104°53'16.284"W	2.50	
7247.00	13.970	163.120	7109.63	1002.40	-859.93	854.90	40°01'00.428"N	104°53'16.209"W	0.89	
7332.00	11.330	162.020	7192.56	1020.88	-877.70	860.46	40°01'00.252"N	104°53'16.138"W	3.12	
7375.00	12.930	161.050	7234.60	1029.83	-886.27	863.33	40°01'00.168"N	104°53'16.101"W	3.75	
7418.00	15.290	160.850	7276.30	1040.20	-896.17	866.75	40°01'00.070"N	104°53'16.057"W	5.49	
7460.00	18.370	162.230	7316.50	1052.24	-907.71	870.59	40°00'59.956"N	104°53'16.008"W	7.39	
7503.00	21.280	162.840	7356.95	1066.72	-921.62	874.96	40°00'59.818"N	104°53'15.951"W	6.78	
7546.00	23.700	165.820	7396.67	1083.10	-937.46	879.38	40°00'59.662"N	104°53'15.895"W	6.22	



Actual Wellpath Report

HOWARD 38C-33HZ AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#24 HOWARD 38C-33HZ (1575'FSL & 1351'FEL, SEC.28)
Area	COLORADO	Well	HOWARD 38C-33HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 38C-33HZ AWB
Facility	SEC.28-T1N-R67W		

WELLPATH DATA (141 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
7589.00	25.160	167.950	7435.82	1100.86	-954.78	883.40	40°00'59.490"N	104°53'15.843"W	3.97	
7631.00	27.510	170.190	7473.46	1119.49	-973.07	886.92	40°00'59.310"N	104°53'15.798"W	6.07	
7674.00	30.290	171.490	7511.10	1140.26	-993.58	890.22	40°00'59.107"N	104°53'15.755"W	6.63	
7717.00	34.130	171.140	7547.48	1163.17	-1016.24	893.68	40°00'58.883"N	104°53'15.711"W	8.94	
7760.00	37.800	171.650	7582.28	1188.40	-1041.20	897.45	40°00'58.636"N	104°53'15.662"W	8.56	
7802.00	41.920	172.290	7614.51	1215.28	-1067.85	901.21	40°00'58.373"N	104°53'15.614"W	9.86	
7845.00	45.840	172.780	7645.50	1245.04	-1097.40	905.07	40°00'58.081"N	104°53'15.564"W	9.15	
7888.00	50.760	172.860	7674.09	1277.08	-1129.24	909.08	40°00'57.766"N	104°53'15.513"W	11.44	
7930.00	55.510	172.900	7699.28	1310.61	-1162.58	913.25	40°00'57.437"N	104°53'15.459"W	11.31	
7973.00	60.940	172.930	7721.92	1347.08	-1198.84	917.75	40°00'57.079"N	104°53'15.401"W	12.63	
8015.00	65.980	173.090	7740.68	1384.57	-1236.12	922.32	40°00'56.710"N	104°53'15.343"W	12.00	
8058.00	70.850	173.880	7756.49	1424.44	-1275.84	926.86	40°00'56.318"N	104°53'15.285"W	11.45	
8100.00	74.950	175.020	7768.84	1464.42	-1315.78	930.73	40°00'55.923"N	104°53'15.235"W	10.10	
8143.00	79.030	176.480	7778.52	1506.05	-1357.55	933.83	40°00'55.510"N	104°53'15.195"W	10.05	
8185.00	83.420	177.680	7784.93	1547.17	-1399.00	935.94	40°00'55.101"N	104°53'15.168"W	10.83	
8213.00	86.270	178.480	7787.44	1574.74	-1426.87	936.88	40°00'54.825"N	104°53'15.156"W	10.57	
8254.00†	88.353	178.296	7789.36	1615.19	-1467.80	938.03	40°00'54.421"N	104°53'15.141"W	5.10	7" CASING POINT
8262.00	88.760	178.260	7789.57	1623.09	-1475.80	938.27	40°00'54.342"N	104°53'15.138"W	5.10	
8291.00	89.130	178.080	7790.10	1651.75	-1504.78	939.20	40°00'54.055"N	104°53'15.126"W	1.42	
8376.00	90.520	177.760	7790.36	1735.81	-1589.72	942.28	40°00'53.216"N	104°53'15.086"W	1.68	
8460.00	91.320	177.220	7789.01	1818.96	-1673.63	945.96	40°00'52.387"N	104°53'15.039"W	1.15	
8545.00	91.360	176.520	7787.02	1903.22	-1758.47	950.60	40°00'51.548"N	104°53'14.980"W	0.82	
8630.00	90.950	177.550	7785.31	1987.45	-1843.34	954.99	40°00'50.709"N	104°53'14.923"W	1.30	
8716.00	90.270	176.790	7784.39	2072.66	-1929.23	959.24	40°00'49.861"N	104°53'14.869"W	1.19	
8886.00	90.610	177.680	7783.09	2241.07	-2099.03	967.44	40°00'48.183"N	104°53'14.763"W	0.56	
9057.00	89.720	177.490	7782.60	2410.33	-2269.87	974.65	40°00'46.494"N	104°53'14.671"W	0.53	
9228.00	89.750	177.370	7783.39	2579.65	-2440.70	982.31	40°00'44.806"N	104°53'14.572"W	0.07	
9399.00	89.410	177.740	7784.64	2748.92	-2611.54	989.61	40°00'43.118"N	104°53'14.479"W	0.29	
9571.00	89.440	175.810	7786.37	2919.49	-2783.25	999.28	40°00'41.421"N	104°53'14.354"W	1.12	
9741.00	90.950	176.990	7785.79	3088.22	-2952.90	1009.96	40°00'39.744"N	104°53'14.217"W	1.13	
9913.00	89.250	175.320	7785.49	3259.01	-3124.50	1021.49	40°00'38.049"N	104°53'14.069"W	1.39	
10084.00	90.300	174.860	7786.16	3429.17	-3294.87	1036.13	40°00'36.365"N	104°53'13.881"W	0.67	
10255.00	89.780	175.670	7786.04	3599.28	-3465.29	1050.24	40°00'34.681"N	104°53'13.700"W	0.56	
10426.00	90.330	175.800	7785.88	3769.23	-3635.81	1062.96	40°00'32.996"N	104°53'13.537"W	0.33	
10597.00	91.010	176.360	7783.88	3939.06	-3806.40	1074.65	40°00'31.310"N	104°53'13.386"W	0.52	
10767.00	90.460	175.920	7781.70	4107.88	-3976.00	1086.09	40°00'29.634"N	104°53'13.239"W	0.41	
10937.00	88.730	175.540	7782.90	4276.83	-4145.52	1098.75	40°00'27.959"N	104°53'13.077"W	1.04	
11108.00	91.760	177.100	7782.17	4446.56	-4316.14	1109.72	40°00'26.272"N	104°53'12.936"W	1.99	
11278.00	90.330	175.940	7779.07	4615.22	-4485.79	1120.04	40°00'24.596"N	104°53'12.803"W	1.08	
11449.00	90.430	178.990	7777.93	4784.51	-4656.60	1127.60	40°00'22.908"N	104°53'12.706"W	1.78	
11620.00	90.270	178.800	7776.89	4953.17	-4827.56	1130.90	40°00'21.218"N	104°53'12.664"W	0.15	
11789.00	89.160	177.410	7777.73	5120.22	-4996.46	1136.49	40°00'19.549"N	104°53'12.592"W	1.05	
11960.00	89.290	177.980	7780.04	5289.42	-5167.30	1143.36	40°00'17.861"N	104°53'12.504"W	0.34	
12131.00	90.210	178.450	7780.79	5458.40	-5338.22	1148.69	40°00'16.172"N	104°53'12.436"W	0.60	
12301.00	89.560	176.600	7781.13	5626.69	-5508.05	1156.03	40°00'14.494"N	104°53'12.342"W	1.15	



Actual Wellpath Report

HOWARD 38C-33HZ AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#24 HOWARD 38C-33HZ (1575'FSL & 1351'FEL, SEC.28)
Area	COLORADO	Well	HOWARD 38C-33HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 38C-33HZ AWB
Facility	SEC.28-T1N-R67W		

WELLPATH DATA (141 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
12473.00	89.260	175.440	7782.90	5797.53	-5679.62	1167.97	40°00'12.798"N	104°53'12.188"W	0.70	
12643.00	91.170	175.670	7782.26	5966.55	-5849.10	1181.14	40°00'11.123"N	104°53'12.019"W	1.13	
12814.00	90.760	177.310	7779.38	6136.21	-6019.75	1191.61	40°00'09.437"N	104°53'11.885"W	0.99	
12985.00	89.750	180.670	7778.62	6304.80	-6190.70	1194.62	40°00'07.747"N	104°53'11.846"W	2.05	
13098.00	89.720	182.900	7779.14	6415.17	-6303.63	1191.10	40°00'06.631"N	104°53'11.891"W	1.97	LAST BHI MWD+IFR SURVEYS
13151.00	89.720	182.900	7779.40	6466.71	-6356.57	1188.42	40°00'06.108"N	104°53'11.926"W	0.00	PROJECTION TO BIT

HOLE & CASING SECTIONS - Ref Wellbore: HOWARD 38C-33HZ AWB Ref Wellpath: HOWARD 38C-33HZ 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	1224.00	1208.00	16.00	1224.00	0.00	0.00	-0.28	-2.45
9.625in Casing Surface	16.00	1224.00	1208.00	16.00	1224.00	0.00	0.00	-0.28	-2.45
8.75in Open Hole	1224.00	8262.00	7038.00	1224.00	7789.57	-0.28	-2.45	-1475.80	938.27
7in Casing Intermediate	16.00	8254.00	8238.00	16.00	7789.36	0.00	0.00	-1467.80	938.03
6.125in Open Hole	8254.00	13151.00	4897.00	7789.36	7779.40	-1467.80	938.03	-6356.57	1188.42



Actual Wellpath Report

HOWARD 38C-33HZ AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#24 HOWARD 38C-33HZ (1575'FSL & 1351'FEL, SEC.28)
Area	COLORADO	Well	HOWARD 38C-33HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 38C-33HZ AWB
Facility	SEC.28-T1N-R67W		

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
HOWARD 14W-28HZ PAD SEC.28 LINES		-1.00	-1282.15	-2681.95	3167922.66	1249106.69	40°00'56.254"N	104°54'01.667"W	polygon
SECTION 33 LINES		-1.00	-1071.29	-2458.71	3168144.45	1249319.07	40°00'58.338"N	104°53'58.798"W	polygon
HOWARD 38C-33HZ BHL ON PLAT REV-1 (460'FSL & 190'FEL, SEC.33)		7766.00	-6381.99	1180.86	3171820.28	1244033.69	40°00'05.857"N	104°53'12.023"W	point
HOWARD 38C-33HZ BHL REV-2 (460'FSL & 240'FEL, SEC.33)		7766.00	-6381.99	1130.86	3171770.28	1244033.35	40°00'05.857"N	104°53'12.666"W	point
HOWARD 38C-33HZ BHL REV-3 (460'FSL & 240'FEL, SEC.33)		7767.00	-6381.99	1130.86	3171770.28	1244033.35	40°00'05.857"N	104°53'12.666"W	point
HOWARD 38C-33HZ LAND BOX		7767.00	0.00	0.00	3170595.65	1250407.18	40°01'08.926"N	104°53'27.197"W	polygon

WELLPATH COMPOSITION - Ref Wellbore: HOWARD 38C-33HZ AWB Ref Wellpath: HOWARD 38C-33HZ AWP

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
16.00	1146.00	Generic gyro - continuous (Standard)	MS GYRODATA SURVEYS <116-1146>	HOWARD 38C-33HZ AWB
1146.00	8213.00	NaviTrak (MAGCORR,IFR)	BHI MWD+IFR SURVEYS 8 3/4" HOLE <1250-8213>	HOWARD 38C-33HZ AWB
8213.00	13098.00	NaviTrak (MAGCORR,IFR)	BHI MWD+IFR SURVEYS 6 1/8" HOLE <8262-13098>	HOWARD 38C-33HZ AWB
13098.00	13151.00	Blind Drilling (std)	Projection to bit	HOWARD 38C-33HZ AWB



Actual Wellpath Report

HOWARD 38C-33HZ AWP

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REFERENCE WELLPATH IDENTIFICATION

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Area	COLORADO	Well	HOWARD 38C-33HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 38C-33HZ AWB
Facility	SEC.28-T1N-R67W		

WELLPATH COMMENTS

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
16.00	0.000	208.070	16.00	TIE-ON
116.00	0.080	208.070	116.00	BEGIN GYRO SURVEYS
1146.00	0.300	241.310	1146.00	TIE-INTO GYRO SURVEYS
1250.00	0.330	276.810	1250.00	BEGIN BHI MWD+IFR SURVEYS
8254.00	88.353	178.296	7789.36	7" CASING POINT
13098.00	89.720	182.900	7779.14	LAST BHI MWD+IFR SURVEYS
13151.00	89.720	182.900	7779.40	PROJECTION TO BIT