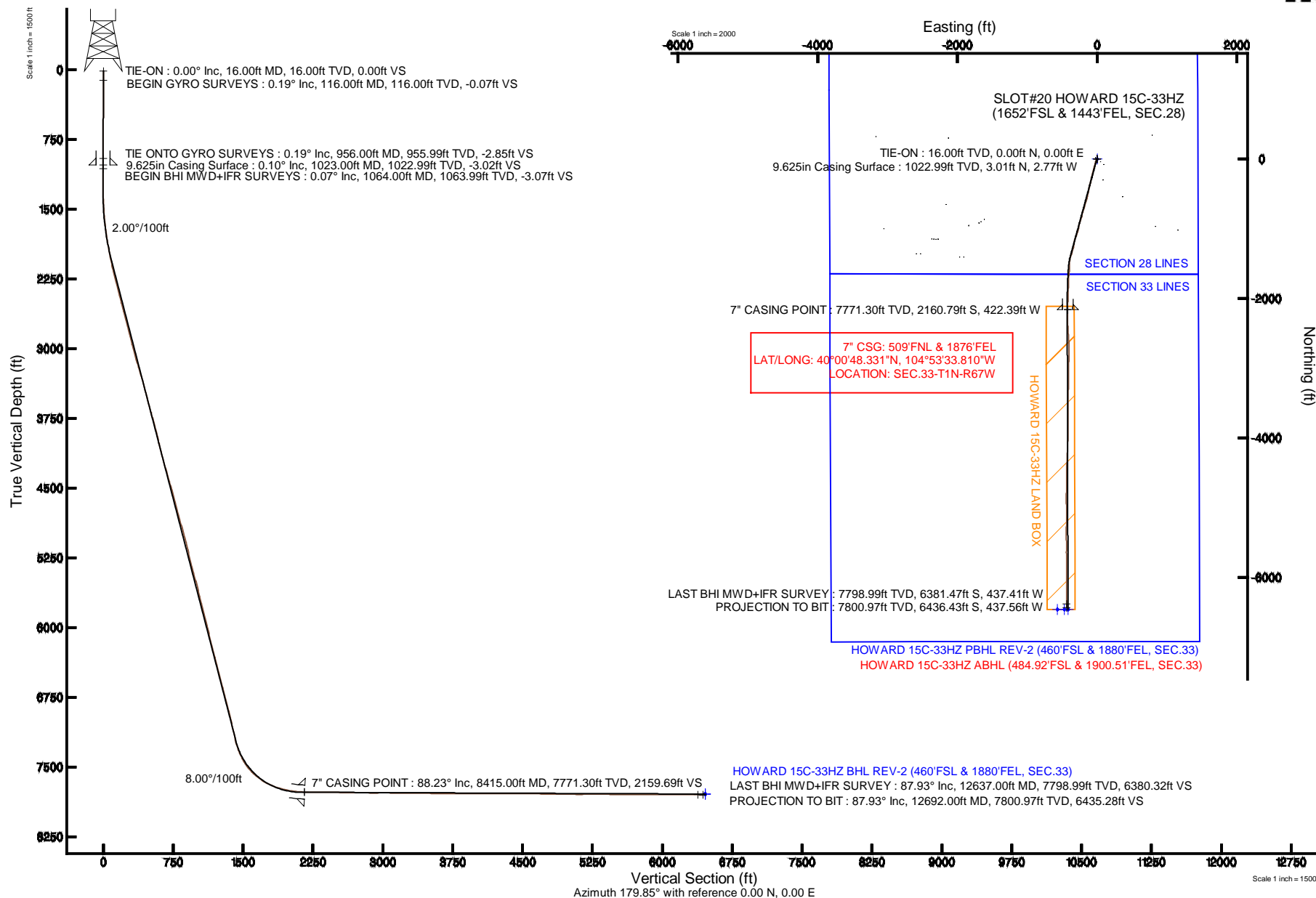


KERR-MCGEE OIL & GAS ONSHORE LP

Location:	COLORADO	Slot:	SLOT#20 HOWARD 15C-33HZ (1652'FSL & 1443'FEL, SEC.28)
Field:	WELD COUNTY (KERR MCGEE)	Well:	HOWARD 15C-33HZ
Facility:	SEC.28-T1N-R67W	Wellbore:	HOWARD 15C-33HZ PWB

Plot reference wellpath is HOWARD 15C-33HZ (REV-C.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) to Mean Sea Level: 5037 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#20 HOWARD 15C-33HZ (1652FSL & 1443FEL, SEC.28)): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: robaleo1 on 12/Feb/2014



Actual Wellpath Report

HOWARD 15C-33HZ AWP

Page 1 of 7

REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#20 HOWARD 15C-33HZ (1652'FSL & 1443'FEL, SEC.28)
Area	COLORADO	Well	HOWARD 15C-33HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 15C-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	Robiale01
Scale	0.999965	Report Generated	12/Feb/2014 at 13:39
Convergence at slot	n/a	Database/Source file	WellArchitectDB/HOWARD_15C-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	1413526.33	2716960.06	3170503.01	1250483.35	40°01'09.685"N	104°53'28.381"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#20 HOWARD 15C-33HZ (1652'FSL & 1443'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	183.89°

Actual Wellpath Report

HOWARD 15C-33HZ AWP

Page 2 of 7

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#20 HOWARD 15C-33HZ (1652'FSL & 1443'FEL, SEC.28)
Area	COLORADO	Well	HOWARD 15C-33HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 15C-33HZ AWB
Facility	SEC.28-T1N-R67W		

WELLPATH DATA (163 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	294.030	0.00	0.00	0.00	0.00	40°01'09.685"N	104°53'28.381"W	0.00	
16.00	0.000	294.030	16.00	0.00	0.00	0.00	40°01'09.685"N	104°53'28.381"W	0.00	TIE-ON
116.00	0.190	294.030	116.00	-0.06	0.07	-0.15	40°01'09.686"N	104°53'28.383"W	0.19	BEGIN GYRO SURVEYS
216.00	0.220	286.350	216.00	-0.16	0.19	-0.49	40°01'09.687"N	104°53'28.387"W	0.04	
316.00	0.280	296.460	316.00	-0.29	0.35	-0.89	40°01'09.688"N	104°53'28.392"W	0.07	
416.00	0.430	306.240	416.00	-0.59	0.68	-1.41	40°01'09.692"N	104°53'28.399"W	0.16	
516.00	0.350	339.740	515.99	-1.06	1.19	-1.82	40°01'09.697"N	104°53'28.404"W	0.24	
616.00	0.310	359.880	615.99	-1.61	1.75	-1.93	40°01'09.702"N	104°53'28.406"W	0.12	
716.00	0.290	306.850	715.99	-2.02	2.17	-2.13	40°01'09.706"N	104°53'28.408"W	0.27	
816.00	0.260	314.540	815.99	-2.31	2.48	-2.49	40°01'09.710"N	104°53'28.413"W	0.05	
916.00	0.150	319.260	915.99	-2.55	2.74	-2.74	40°01'09.712"N	104°53'28.416"W	0.11	
956.00	0.190	5.890	955.99	-2.65	2.85	-2.77	40°01'09.713"N	104°53'28.417"W	0.35	TIE ONTO GYRO SURVEYS
1064.00	0.070	312.040	1063.99	-2.87	3.07	-2.80	40°01'09.715"N	104°53'28.417"W	0.15	BEGIN BHI MWD+IFR SURVEYS
1156.00	0.060	274.720	1155.99	-2.91	3.11	-2.89	40°01'09.716"N	104°53'28.418"W	0.05	
1250.00	1.360	282.750	1249.98	-3.08	3.36	-4.03	40°01'09.718"N	104°53'28.433"W	1.38	
1341.00	1.250	200.420	1340.96	-2.29	2.67	-5.43	40°01'09.711"N	104°53'28.451"W	1.89	
1434.00	3.070	200.640	1433.89	1.06	-0.61	-6.66	40°01'09.679"N	104°53'28.467"W	1.96	
1526.00	4.310	200.980	1525.70	6.73	-6.15	-8.76	40°01'09.624"N	104°53'28.494"W	1.35	
1617.00	5.450	193.900	1616.37	14.25	-13.54	-11.03	40°01'09.551"N	104°53'28.523"W	1.41	
1709.00	7.680	201.480	1707.76	24.42	-23.50	-14.33	40°01'09.453"N	104°53'28.565"W	2.60	
1801.00	8.820	200.660	1798.81	37.03	-35.82	-19.07	40°01'09.331"N	104°53'28.626"W	1.25	
1892.00	10.150	196.330	1888.56	51.54	-50.04	-23.78	40°01'09.190"N	104°53'28.687"W	1.66	
1984.00	11.360	195.390	1978.95	68.34	-66.56	-28.47	40°01'09.027"N	104°53'28.747"W	1.33	
2075.00	12.270	194.940	2068.02	86.61	-84.54	-33.34	40°01'08.850"N	104°53'28.810"W	1.01	
2166.00	13.760	194.740	2156.68	106.73	-104.35	-38.59	40°01'08.654"N	104°53'28.877"W	1.64	
2258.00	15.390	194.940	2245.71	129.46	-126.73	-44.52	40°01'08.433"N	104°53'28.953"W	1.77	
2350.00	13.700	195.000	2334.76	152.13	-149.05	-50.48	40°01'08.212"N	104°53'29.030"W	1.84	
2441.00	14.400	195.510	2423.04	173.79	-170.36	-56.30	40°01'08.001"N	104°53'29.105"W	0.78	
2533.00	15.620	191.380	2511.90	197.28	-193.53	-61.80	40°01'07.772"N	104°53'29.175"W	1.76	
2625.00	16.240	193.420	2600.37	222.24	-218.19	-67.23	40°01'07.529"N	104°53'29.245"W	0.91	
2717.00	15.950	197.220	2688.76	247.23	-242.77	-73.96	40°01'07.286"N	104°53'29.332"W	1.19	
2808.00	14.050	190.200	2776.67	270.38	-265.59	-79.62	40°01'07.060"N	104°53'29.404"W	2.89	
2900.00	13.490	190.860	2866.02	292.13	-287.12	-83.62	40°01'06.848"N	104°53'29.456"W	0.63	
2991.00	13.840	193.100	2954.45	313.41	-308.15	-88.08	40°01'06.640"N	104°53'29.513"W	0.70	
3076.00	15.470	195.950	3036.68	334.53	-328.95	-93.50	40°01'06.434"N	104°53'29.583"W	2.10	
3161.00	17.610	194.620	3118.16	358.26	-352.29	-99.87	40°01'06.204"N	104°53'29.665"W	2.56	
3246.00	17.910	195.180	3199.11	383.71	-377.35	-106.53	40°01'05.956"N	104°53'29.750"W	0.41	
3332.00	16.280	191.390	3281.31	408.63	-401.93	-112.38	40°01'05.713"N	104°53'29.825"W	2.29	
3417.00	15.940	190.510	3362.97	432.03	-425.09	-116.86	40°01'05.484"N	104°53'29.883"W	0.49	
3502.00	15.330	189.990	3444.82	454.80	-447.63	-120.94	40°01'05.261"N	104°53'29.935"W	0.74	
3588.00	14.890	194.700	3527.85	476.96	-469.51	-125.71	40°01'05.045"N	104°53'29.997"W	1.52	
3673.00	15.300	193.670	3609.92	498.74	-490.97	-131.14	40°01'04.833"N	104°53'30.066"W	0.58	
3759.00	15.870	193.200	3692.76	521.52	-513.45	-136.50	40°01'04.611"N	104°53'30.135"W	0.68	
3844.00	15.340	193.160	3774.63	544.09	-535.71	-141.72	40°01'04.391"N	104°53'30.202"W	0.62	
3929.00	14.410	188.030	3856.78	565.73	-557.13	-145.75	40°01'04.179"N	104°53'30.254"W	1.90	

REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#20 HOWARD 15C-33HZ (1652'FSL & 1443'FEL, SEC.28)
Area	COLORADO	Well	HOWARD 15C-33HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 15C-33HZ AWB
Facility	SEC.28-T1N-R67W		

WELLPATH DATA (163 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4014.00	14.950	197.000	3939.02	586.96	-578.09	-150.44	40°01'03.972"N	104°53'30.315"W	2.75	
4100.00	14.180	197.320	4022.25	608.01	-598.76	-156.82	40°01'03.768"N	104°53'30.397"W	0.90	
4185.00	14.970	198.910	4104.52	628.74	-619.08	-163.47	40°01'03.567"N	104°53'30.482"W	1.04	
4270.00	15.580	197.220	4186.51	650.45	-640.37	-170.41	40°01'03.357"N	104°53'30.571"W	0.89	
4354.00	16.470	195.930	4267.25	673.08	-662.60	-177.02	40°01'03.137"N	104°53'30.656"W	1.14	
4439.00	16.250	194.500	4348.81	696.55	-685.70	-183.30	40°01'02.909"N	104°53'30.737"W	0.54	
4524.00	17.220	198.910	4430.21	720.39	-709.12	-190.36	40°01'02.677"N	104°53'30.828"W	1.88	
4609.00	16.790	199.820	4511.49	744.35	-732.57	-198.60	40°01'02.446"N	104°53'30.934"W	0.59	
4695.00	15.140	198.950	4594.17	767.14	-754.88	-206.46	40°01'02.225"N	104°53'31.035"W	1.94	
4780.00	14.710	191.120	4676.31	788.57	-775.97	-212.15	40°01'02.017"N	104°53'31.108"W	2.42	
4865.00	15.480	189.090	4758.38	810.57	-797.76	-216.02	40°01'01.801"N	104°53'31.157"W	1.10	
4950.00	16.280	195.610	4840.14	833.54	-820.44	-221.02	40°01'01.577"N	104°53'31.222"W	2.30	
5035.00	16.490	196.720	4921.69	856.96	-843.46	-227.69	40°01'01.350"N	104°53'31.308"W	0.44	
5121.00	16.550	196.950	5004.14	880.80	-866.87	-234.78	40°01'01.118"N	104°53'31.399"W	0.10	
5206.00	15.100	200.070	5085.92	903.22	-888.85	-242.11	40°01'00.901"N	104°53'31.493"W	1.98	
5291.00	12.800	199.490	5168.41	922.93	-908.13	-249.05	40°01'00.711"N	104°53'31.582"W	2.71	
5377.00	13.430	195.980	5252.16	941.87	-926.71	-254.98	40°01'00.527"N	104°53'31.658"W	1.18	
5462.00	15.630	189.660	5334.45	962.92	-947.49	-259.62	40°01'00.322"N	104°53'31.718"W	3.19	
5547.00	15.050	187.740	5416.42	985.32	-969.72	-263.02	40°01'00.102"N	104°53'31.762"W	0.91	
5633.00	15.620	189.930	5499.36	1007.98	-992.18	-266.52	40°00'59.880"N	104°53'31.807"W	0.94	
5718.00	14.550	198.340	5581.44	1029.70	-1013.59	-271.86	40°00'59.668"N	104°53'31.875"W	2.86	
5803.00	13.750	197.180	5663.86	1049.87	-1033.38	-278.20	40°00'59.473"N	104°53'31.957"W	1.00	
5888.00	14.200	195.160	5746.34	1069.93	-1053.09	-283.91	40°00'59.278"N	104°53'32.030"W	0.78	
5974.00	15.790	200.960	5829.41	1091.46	-1074.20	-290.86	40°00'59.069"N	104°53'32.119"W	2.54	
6059.00	16.220	200.840	5911.12	1113.87	-1096.10	-299.22	40°00'58.853"N	104°53'32.227"W	0.51	
6145.00	14.050	200.520	5994.13	1135.36	-1117.10	-307.15	40°00'58.645"N	104°53'32.329"W	2.53	
6230.00	13.680	198.880	6076.65	1154.96	-1136.28	-314.02	40°00'58.456"N	104°53'32.417"W	0.63	
6315.00	14.610	194.760	6159.08	1175.20	-1156.16	-320.00	40°00'58.260"N	104°53'32.494"W	1.61	
6400.00	15.140	192.170	6241.23	1196.71	-1177.37	-325.07	40°00'58.050"N	104°53'32.559"W	1.00	
6485.00	14.490	189.630	6323.41	1218.27	-1198.71	-329.19	40°00'57.839"N	104°53'32.612"W	1.08	
6571.00	14.330	187.130	6406.70	1239.61	-1219.88	-332.31	40°00'57.630"N	104°53'32.652"W	0.75	
6656.00	14.940	189.530	6488.94	1261.01	-1241.12	-335.43	40°00'57.420"N	104°53'32.692"W	1.01	
6741.00	14.570	193.230	6571.14	1282.47	-1262.33	-339.69	40°00'57.210"N	104°53'32.747"W	1.19	
6826.00	15.280	198.000	6653.28	1303.88	-1283.39	-345.60	40°00'57.002"N	104°53'32.823"W	1.67	
6912.00	15.430	194.680	6736.21	1326.11	-1305.24	-352.00	40°00'56.786"N	104°53'32.905"W	1.04	
6997.00	15.300	193.670	6818.17	1348.27	-1327.07	-357.52	40°00'56.570"N	104°53'32.976"W	0.35	
7082.00	14.230	195.580	6900.36	1369.55	-1348.04	-362.98	40°00'56.363"N	104°53'33.046"W	1.38	
7168.00	13.390	200.940	6983.88	1389.42	-1367.52	-369.37	40°00'56.171"N	104°53'33.128"W	1.78	
7253.00	13.300	201.080	7066.58	1408.17	-1385.83	-376.41	40°00'55.990"N	104°53'33.219"W	0.11	
7331.00	13.400	199.500	7142.48	1425.45	-1402.72	-382.65	40°00'55.823"N	104°53'33.299"W	0.48	
7417.00	13.840	193.490	7226.06	1445.19	-1422.12	-388.38	40°00'55.631"N	104°53'33.373"W	1.72	
7458.00	16.370	187.480	7265.65	1455.79	-1432.62	-390.28	40°00'55.527"N	104°53'33.397"W	7.25	
7500.00	19.310	184.750	7305.62	1468.65	-1445.41	-391.62	40°00'55.401"N	104°53'33.414"W	7.28	
7543.00	22.490	184.270	7345.79	1483.98	-1460.70	-392.82	40°00'55.250"N	104°53'33.430"W	7.41	
7585.00	25.690	181.810	7384.13	1501.12	-1477.82	-393.71	40°00'55.081"N	104°53'33.441"W	7.98	

REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#20 HOWARD 15C-33HZ (1652'FSL & 1443'FEL, SEC.28)
Area	COLORADO	Well	HOWARD 15C-33HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 15C-33HZ AWB
Facility	SEC.28-T1N-R67W		

WELLPATH DATA (163 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
7628.00	28.640	180.540	7422.38	1520.72	-1497.44	-394.10	40°00'54.887"N	104°53'33.446"W	6.99	
7670.00	32.080	180.620	7458.61	1541.91	-1518.67	-394.32	40°00'54.677"N	104°53'33.449"W	8.19	
7712.00	36.210	181.050	7493.37	1565.45	-1542.23	-394.66	40°00'54.444"N	104°53'33.453"W	9.85	
7754.00	40.640	182.370	7526.26	1591.53	-1568.32	-395.46	40°00'54.186"N	104°53'33.464"W	10.73	
7797.00	45.510	185.060	7557.67	1620.88	-1597.60	-397.39	40°00'53.897"N	104°53'33.488"W	12.10	
7840.00	49.970	187.530	7586.58	1652.66	-1629.22	-400.90	40°00'53.585"N	104°53'33.534"W	11.21	
7882.00	51.250	186.770	7613.23	1685.07	-1661.43	-404.94	40°00'53.266"N	104°53'33.585"W	3.35	
7925.00	54.950	183.660	7639.05	1719.43	-1695.66	-408.04	40°00'52.928"N	104°53'33.625"W	10.37	
7968.00	60.100	181.370	7662.13	1755.68	-1731.89	-409.61	40°00'52.570"N	104°53'33.645"W	12.79	
8010.00	64.240	181.080	7681.73	1792.77	-1769.01	-410.40	40°00'52.203"N	104°53'33.656"W	9.88	
8053.00	66.970	181.490	7699.49	1831.89	-1808.16	-411.28	40°00'51.816"N	104°53'33.667"W	6.41	
8095.00	69.770	181.960	7714.97	1870.90	-1847.18	-412.46	40°00'51.431"N	104°53'33.682"W	6.75	
8138.00	72.930	182.130	7728.72	1911.62	-1887.89	-413.92	40°00'51.028"N	104°53'33.701"W	7.36	
8180.00	76.180	181.690	7739.91	1952.07	-1928.35	-415.26	40°00'50.628"N	104°53'33.718"W	7.80	
8223.00	79.320	181.990	7749.03	1994.06	-1970.34	-416.61	40°00'50.213"N	104°53'33.735"W	7.33	
8266.00	81.280	182.530	7756.27	2036.43	-2012.69	-418.28	40°00'49.795"N	104°53'33.757"W	4.72	
8308.00	83.100	181.990	7761.98	2078.02	-2054.27	-419.93	40°00'49.384"N	104°53'33.778"W	4.52	
8351.00	84.280	181.840	7766.71	2120.73	-2096.98	-421.35	40°00'48.962"N	104°53'33.796"W	2.77	
8381.00	85.390	181.100	7769.41	2150.58	-2126.85	-422.12	40°00'48.667"N	104°53'33.806"W	4.44	
8415.00†	88.226	179.809	7771.30	2184.46	-2160.79	-422.39	40°00'48.331"N	104°53'33.810"W	9.16	7" CASING POINT
8425.00	89.060	179.430	7771.54	2194.43	-2170.79	-422.32	40°00'48.233"N	104°53'33.809"W	9.16	
8468.00	89.810	180.170	7771.96	2237.32	-2213.79	-422.17	40°00'47.808"N	104°53'33.807"W	2.45	
8554.00	89.100	179.520	7772.78	2323.10	-2299.78	-421.94	40°00'46.958"N	104°53'33.804"W	1.12	
8639.00	89.780	178.060	7773.61	2407.76	-2384.75	-420.14	40°00'46.118"N	104°53'33.781"W	1.89	
8724.00	89.780	176.250	7773.94	2492.17	-2469.65	-415.93	40°00'45.279"N	104°53'33.726"W	2.13	
8809.00	88.610	175.680	7775.13	2576.35	-2554.42	-409.95	40°00'44.441"N	104°53'33.650"W	1.53	
8894.00	89.190	178.480	7776.76	2660.72	-2639.29	-405.62	40°00'43.603"N	104°53'33.594"W	3.36	
8980.00	89.070	180.850	7778.07	2746.47	-2725.27	-405.11	40°00'42.753"N	104°53'33.587"W	2.76	
9065.00	89.290	180.220	7779.28	2831.32	-2810.26	-405.91	40°00'41.913"N	104°53'33.598"W	0.78	
9151.00	89.900	180.460	7779.89	2917.15	-2896.25	-406.42	40°00'41.063"N	104°53'33.604"W	0.76	
9235.00	90.730	181.380	7779.43	3001.03	-2980.24	-407.77	40°00'40.233"N	104°53'33.622"W	1.48	
9321.00	89.010	180.620	7779.63	3086.92	-3066.22	-409.27	40°00'39.384"N	104°53'33.641"W	2.19	
9406.00	89.720	180.560	7780.57	3171.77	-3151.21	-410.14	40°00'38.544"N	104°53'33.652"W	0.84	
9491.00	89.440	181.130	7781.19	3256.65	-3236.20	-411.40	40°00'37.704"N	104°53'33.668"W	0.75	
9577.00	90.150	181.500	7781.50	3342.56	-3322.18	-413.37	40°00'36.854"N	104°53'33.693"W	0.93	
9662.00	88.420	180.690	7782.56	3427.45	-3407.15	-414.99	40°00'36.014"N	104°53'33.714"W	2.25	
9747.00	89.100	180.160	7784.40	3512.28	-3492.13	-415.62	40°00'35.175"N	104°53'33.722"W	1.01	
9833.00	89.780	179.930	7785.24	3598.08	-3578.12	-415.69	40°00'34.325"N	104°53'33.723"W	0.83	
9918.00	90.400	179.710	7785.11	3682.86	-3663.12	-415.42	40°00'33.485"N	104°53'33.720"W	0.77	
10002.00	90.060	179.290	7784.77	3766.62	-3747.12	-414.69	40°00'32.655"N	104°53'33.710"W	0.64	
10087.00	88.820	180.930	7785.60	3851.42	-3832.11	-414.85	40°00'31.815"N	104°53'33.712"W	2.42	
10173.00	89.590	181.550	7786.79	3937.32	-3918.08	-416.72	40°00'30.965"N	104°53'33.736"W	1.15	
10258.00	90.340	181.200	7786.84	4022.24	-4003.06	-418.76	40°00'30.126"N	104°53'33.763"W	0.97	
10321.00	89.840	181.430	7786.75	4085.18	-4066.04	-420.20	40°00'29.503"N	104°53'33.781"W	0.87	
10406.00	90.060	182.340	7786.82	4170.12	-4150.99	-423.00	40°00'28.664"N	104°53'33.817"W	1.10	

REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#20 HOWARD 15C-33HZ (1652'FSL & 1443'FEL, SEC.28)
Area	COLORADO	Well	HOWARD 15C-33HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 15C-33HZ AWB
Facility	SEC.28-T1N-R67W		

WELLPATH DATA (163 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
10491.00	89.290	183.520	7787.30	4255.11	-4235.88	-427.34	40°00'27.825"N	104°53'33.873"W	1.66	
10577.00	90.240	182.280	7787.65	4341.09	-4321.76	-431.69	40°00'26.976"N	104°53'33.929"W	1.82	
10662.00	90.060	181.550	7787.43	4426.04	-4406.71	-434.53	40°00'26.137"N	104°53'33.965"W	0.88	
10747.00	88.950	181.010	7788.17	4510.95	-4491.69	-436.43	40°00'25.297"N	104°53'33.990"W	1.45	
10832.00	90.120	179.910	7788.86	4595.79	-4576.68	-437.11	40°00'24.457"N	104°53'33.998"W	1.89	
10917.00	89.350	180.630	7789.25	4680.62	-4661.68	-437.51	40°00'23.617"N	104°53'34.003"W	1.24	
11003.00	89.440	181.270	7790.16	4766.50	-4747.66	-438.94	40°00'22.767"N	104°53'34.022"W	0.75	
11088.00	89.100	180.580	7791.24	4851.38	-4832.64	-440.31	40°00'21.927"N	104°53'34.039"W	0.90	
11173.00	89.320	179.170	7792.41	4936.16	-4917.63	-440.13	40°00'21.087"N	104°53'34.037"W	1.68	
11258.00	88.950	180.080	7793.70	5020.91	-5002.62	-439.57	40°00'20.248"N	104°53'34.030"W	1.16	
11344.00	89.690	179.510	7794.72	5106.69	-5088.61	-439.26	40°00'19.398"N	104°53'34.026"W	1.09	
11427.00	90.770	180.330	7794.38	5189.48	-5171.61	-439.15	40°00'18.578"N	104°53'34.024"W	1.63	
11512.00	89.960	180.360	7793.84	5274.32	-5256.60	-439.66	40°00'17.738"N	104°53'34.031"W	0.95	
11597.00	89.960	180.040	7793.90	5359.14	-5341.60	-439.96	40°00'16.898"N	104°53'34.035"W	0.38	
11683.00	89.130	179.920	7794.58	5444.94	-5427.60	-439.93	40°00'16.048"N	104°53'34.034"W	0.98	
11768.00	88.790	179.430	7796.13	5529.70	-5512.58	-439.44	40°00'15.208"N	104°53'34.028"W	0.70	
11853.00	89.750	180.680	7797.21	5614.50	-5597.58	-439.53	40°00'14.368"N	104°53'34.029"W	1.85	
11938.00	90.370	179.300	7797.12	5699.30	-5682.57	-439.51	40°00'13.528"N	104°53'34.029"W	1.78	
12022.00	89.560	178.950	7797.17	5783.01	-5766.56	-438.23	40°00'12.698"N	104°53'34.012"W	1.05	
12107.00	89.100	179.600	7798.17	5867.72	-5851.55	-437.15	40°00'11.858"N	104°53'33.999"W	0.94	
12191.00	90.370	179.200	7798.55	5951.46	-5935.54	-436.27	40°00'11.028"N	104°53'33.987"W	1.59	
12275.00	90.830	180.520	7797.68	6035.25	-6019.53	-436.07	40°00'10.198"N	104°53'33.985"W	1.66	
12359.00	90.340	179.260	7796.82	6119.04	-6103.53	-435.91	40°00'09.368"N	104°53'33.982"W	1.61	
12444.00	90.580	180.450	7796.14	6203.82	-6188.52	-435.69	40°00'08.528"N	104°53'33.980"W	1.43	
12529.00	89.410	180.920	7796.14	6288.69	-6273.52	-436.71	40°00'07.688"N	104°53'33.993"W	1.48	
12613.00	87.900	180.000	7798.11	6372.51	-6357.49	-437.38	40°00'06.858"N	104°53'34.001"W	2.10	
12637.00	87.930	180.150	7798.99	6396.44	-6381.47	-437.41	40°00'06.621"N	104°53'34.002"W	0.64	LAST BHI MWD+IFR SURVEY
12692.00	87.930	180.150	7800.97	6451.29	-6436.43	-437.56	40°00'06.078"N	104°53'34.004"W	0.00	PROJECTION TO BIT

HOLE & CASING SECTIONS - Ref Wellbore: HOWARD 15C-33HZ AWB Ref Wellpath: HOWARD 15C-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	1024.00	1008.00	16.00	1023.99	0.00	0.00	3.02	-2.77
9.625in Casing Surface	16.00	1023.00	1007.00	16.00	1022.99	0.00	0.00	3.01	-2.77
8.75in Open Hole	1024.00	8425.00	7401.00	1023.99	7771.54	3.02	-2.77	-2170.79	-422.32
7in Casing Intermediate	16.00	8415.00	8399.00	16.00	7771.30	0.00	0.00	-2160.79	-422.39
6.125in Open Hole	8425.00	12692.00	4267.00	7771.54	7800.97	-2170.79	-422.32	-6436.43	-437.56

Actual Wellpath Report

HOWARD 15C-33HZ AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#20 HOWARD 15C-33HZ (1652'FSL & 1443'FEL, SEC.28)
Area	COLORADO	Well	HOWARD 15C-33HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 15C-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	-1358.96	-2589.83	3167922.66	1249106.69	40°00'56.254"N	104°54'01.667"W	polygon
SECTION 33 LINES		-1.00	-1148.10	-2366.59	3168144.45	1249319.07	40°00'58.338"N	104°53'58.798"W	polygon
HOWARD 15C-33HZ BHL ON PLAT REV-1 (460'FSL & 2030'FEL, SEC.33)		7792.00	-6461.35	-567.05	3169980.35	1244018.50	40°00'05.832"N	104°53'35.668"W	point
HOWARD 15C-33HZ BHL REV-2 (460'FSL & 1880'FEL, SEC.33)		7792.00	-6461.35	-417.05	3170130.34	1244019.53	40°00'05.832"N	104°53'33.740"W	point
HOWARD 15C-33HZ BHL REV-3 (460'FSL & 1930'FEL, SEC.33)		7792.00	-6461.35	-467.05	3170080.35	1244019.19	40°00'05.832"N	104°53'34.383"W	point
HOWARD 15C-33HZ LAND BOX		7792.00	0.00	0.00	3170503.01	1250483.35	40°01'09.685"N	104°53'28.381"W	polygon

WELLPATH COMPOSITION - Ref Wellbore: HOWARD 15C-33HZ AWB Ref Wellpath: HOWARD 15C-33HZ AWP				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
16.00	956.00	Generic gyro - continuous (Standard)	MS GYRODATA SURVEYS <116-956>	HOWARD 15C-33HZ AWB
956.00	8425.00	NaviTrak (MAGCORR,IFR)	BHI NAVITRAK MWD+IFR 8 3/4" <1064-8425>	HOWARD 15C-33HZ AWB
8425.00	12637.00	NaviTrak (MAGCORR,IFR)	BHI NAVITRAK MWD+IFR 6 1/8" <8468-12637>	HOWARD 15C-33HZ AWB
12637.00	12692.00	Blind Drilling (std)	Projection to bit	HOWARD 15C-33HZ AWB

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#20 HOWARD 15C-33HZ (1652'FSL & 1443'FEL, SEC.28)
Area	COLORADO	Well	HOWARD 15C-33HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 15C-33HZ AWB
Facility	SEC.28-T1N-R67W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
16.00	0.000	294.030	16.00	TIE-ON
116.00	0.190	294.030	116.00	BEGIN GYRO SURVEYS
956.00	0.190	5.890	955.99	TIE ONTO GYRO SURVEYS
1064.00	0.070	312.040	1063.99	BEGIN BHI MWD+IFR SURVEYS
8415.00	88.226	179.809	7771.30	7" CASING POINT
12637.00	87.930	180.150	7798.99	LAST BHI MWD+IFR SURVEY
12692.00	87.930	180.150	7800.97	PROJECTION TO BIT