

# NOBLE ENERGY, INC

Location: COLORADO Slot: SLOT#09 GUTTERSEN D29-770 (2356'FNL & 1010'FWL, SEC.29)  
Field: WELD COUNTY (NOBLE NAD 83 GRID) Well: GUTTERSEN D29-770  
Facility: SEC.29-T03N-R64W Wellbore: GUTTERSEN D29-770 PWB

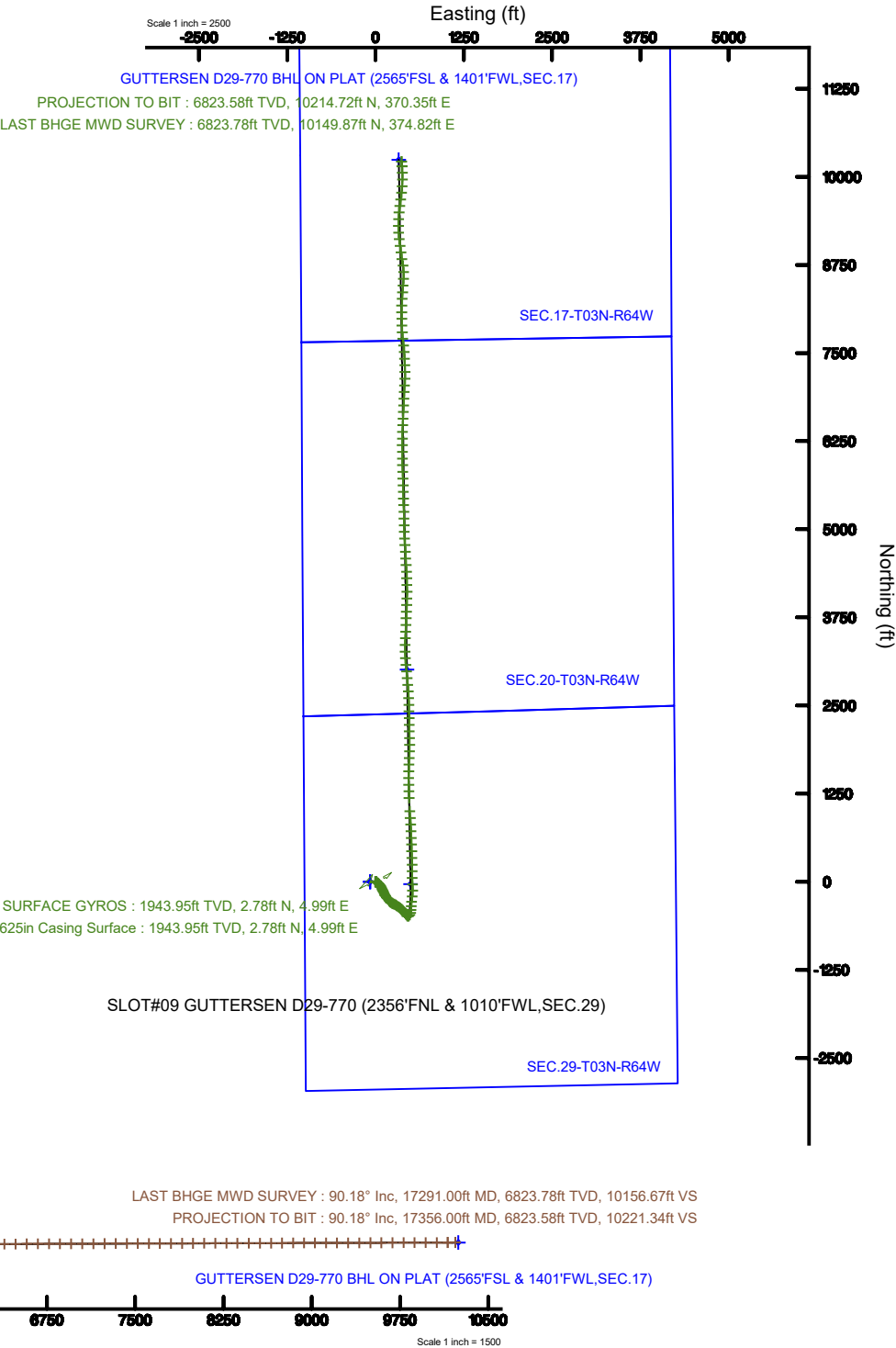
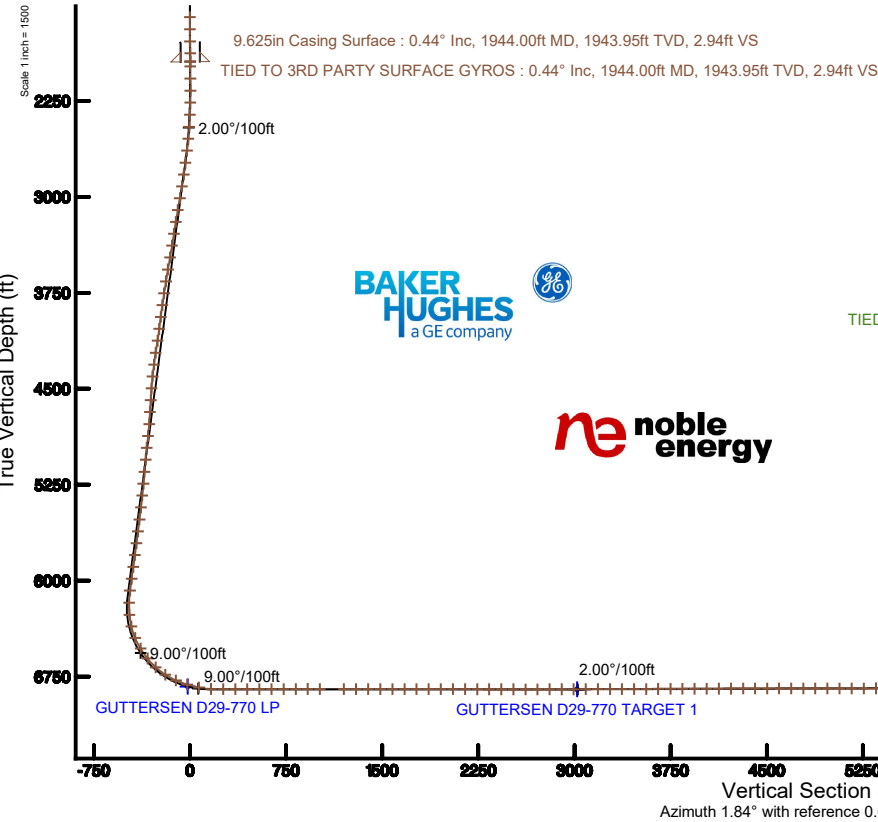
Plot reference wellpath is GUTTERSEN D29-770 PWP (REV-A.0)	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
True vertical depths are referenced to RIG (30') (RKB)	North Reference: Grid north
Measured depths are referenced to RIG (30') (RKB)	Scale: True distance
RIG (30') (RKB) to Mean Sea Level: 4815 feet	Depths are in feet
Mean Sea Level to Mud line (At Slot: SLOT#09 GUTTERSEN D29-770 (2356'FNL & 1010'FWL, SEC.29)): 0 feet	Created by: doddanna on 2019-02-20
Coordinates are in feet referenced to Slot	Database: WellArchitectDB

## Location Information

Facility Name			Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SEC.29-T03N-R64W			3256078.619	1317026.618	40°12'00.004"N	104°34'59.628"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SLOT#09 GUTTERSEN D29-770 (2356'FNL & 1010'FWL, SEC.29)	-1079.39	645.33	3256078.619	1315947.271	40°11'49.272"N	104°34'51.456"W
RIG (30') (RKB) to Mud line (At Slot: SLOT#09 GUTTERSEN D29-770 (2356'FNL & 1010'FWL, SEC.29))					4815ft	
Mean Sea Level to Mud line (At Slot: SLOT#09 GUTTERSEN D29-770 (2356'FNL & 1010'FWL, SEC.29))					0ft	
RIG (30') (RKB) to Mean Sea Level					4815ft	

## Survey Program

Start MD (ft)	End MD (ft)	Tool	Model	Log Name/Comment	Wellbore
30.00	1900.00	OWSG MWD rev2	OWSG MWD rev2 - Standard		GUTTERSEN D29-770 PWB
1900.00	17385.94	OWSG MWD rev2	OWSG MWD rev2 + IFR1 + Multi-Station Correction		GUTTERSEN D29-770 PWB



REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#09 GUTTERSEN D29-770 (2356'FNL & 1010'FWL, SEC.29)
Area	COLORADO	Well	GUTTERSEN D29-770
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	GUTTERSEN D29-770 AWB
Facility	SEC.29-T03N-R64W		

REPORT SETUP INFORMATION			
Projection System	NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	Software System	WellArchitect® 5.1
North Reference	Grid	User	Doddanna
Scale	0.999957	Report Generated	2/20/2019 at 10:24:27 AM
Convergence at slot	0.59° East	Database/Source file	WellArchitectDB/GUTTERSEN_D29-770_AWP.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-1079.39	645.33	3256723.92	1315947.27	40°11'49.272"N	104°34'51.456"W
Facility Reference Pt			3256078.62	1317026.62	40°12'00.004"N	104°34'59.628"W
Field Reference Pt			3000000.00	4454105.15	48°46'34.315"N	105°30'00.000"W

WELLPATH DATUM			
Calculation method	Minimum curvature	RIG (30') (RKB) to Facility Vertical Datum	4815.00ft
Horizontal Reference Pt	Slot	RIG (30') (RKB) to Mean Sea Level	4815.00ft
Vertical Reference Pt	RIG (30') (RKB)	RIG (30') (RKB) to Mud Line at Slot (SLOT#09 GUTTERSEN D29-770 (2356'FNL & 1010'FWL, SEC.29))	4815.00ft
MD Reference Pt	RIG (30') (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	1.84°

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Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	GUTTERSEN D29-770 AWB
Facility	SEC.29-T03N-R64W		

### WELLPATH DATA (185 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00	0.000	321.430	0.00	0.00	0.00	0.00	40°11'49.272"N	104°34'51.456"W	0.00	
83.00	0.450	321.430	83.00	0.25	0.25	-0.20	40°11'49.275"N	104°34'51.459"W	0.54	
178.00	0.390	30.080	178.00	0.82	0.83	-0.27	40°11'49.280"N	104°34'51.459"W	0.50	
270.00	0.120	232.030	270.00	1.03	1.04	-0.19	40°11'49.282"N	104°34'51.458"W	0.55	
365.00	0.080	101.390	365.00	0.96	0.96	-0.21	40°11'49.282"N	104°34'51.459"W	0.19	
459.00	0.400	142.610	459.00	0.69	0.69	0.06	40°11'49.279"N	104°34'51.455"W	0.37	
554.00	0.620	124.360	553.99	0.16	0.14	0.68	40°11'49.273"N	104°34'51.447"W	0.29	
649.00	0.540	96.530	648.99	-0.15	-0.20	1.55	40°11'49.270"N	104°34'51.436"W	0.30	
743.00	0.330	66.210	742.98	-0.07	-0.15	2.24	40°11'49.270"N	104°34'51.427"W	0.32	
838.00	0.230	64.660	837.98	0.13	0.05	2.66	40°11'49.272"N	104°34'51.422"W	0.11	
933.00	0.140	229.750	932.98	0.14	0.05	2.75	40°11'49.272"N	104°34'51.421"W	0.39	
1027.00	0.440	169.710	1026.98	-0.29	-0.38	2.72	40°11'49.268"N	104°34'51.421"W	0.41	
1122.00	0.380	122.410	1121.98	-0.81	-0.90	3.05	40°11'49.263"N	104°34'51.417"W	0.35	
1216.00	0.370	166.410	1215.98	-1.26	-1.37	3.39	40°11'49.258"N	104°34'51.413"W	0.30	
1311.00	0.170	43.390	1310.98	-1.45	-1.56	3.56	40°11'49.256"N	104°34'51.410"W	0.51	
1405.00	0.160	32.350	1404.98	-1.23	-1.35	3.72	40°11'49.258"N	104°34'51.408"W	0.04	
1500.00	0.280	66.860	1499.98	-1.02	-1.15	4.01	40°11'49.260"N	104°34'51.405"W	0.18	
1595.00	0.650	53.590	1594.97	-0.59	-0.74	4.66	40°11'49.264"N	104°34'51.396"W	0.40	
1689.00	0.600	357.900	1688.97	0.24	0.07	5.07	40°11'49.272"N	104°34'51.391"W	0.62	
1785.00	0.720	356.140	1784.96	1.34	1.18	5.01	40°11'49.283"N	104°34'51.391"W	0.13	
1878.00	0.570	8.030	1877.96	2.38	2.22	5.03	40°11'49.293"N	104°34'51.391"W	0.22	
1944.00	0.440	340.130	1943.95	2.94	2.78	4.99	40°11'49.299"N	104°34'51.391"W	0.42	TIED TO 3RD PARTY SURFAVE GYROS
1980.00	0.530	303.970	1979.95	3.16	3.00	4.81	40°11'49.301"N	104°34'51.394"W	0.87	
2075.00	0.860	300.810	2074.95	3.74	3.62	3.83	40°11'49.307"N	104°34'51.406"W	0.35	
2170.00	0.110	286.300	2169.94	4.10	4.01	3.13	40°11'49.311"N	104°34'51.415"W	0.79	
2264.00	2.340	120.390	2263.92	3.21	3.06	4.70	40°11'49.302"N	104°34'51.395"W	2.60	
2359.00	4.670	121.980	2358.73	0.34	0.03	9.65	40°11'49.271"N	104°34'51.332"W	2.45	
2453.00	6.590	122.470	2452.27	-4.33	-4.89	17.45	40°11'49.222"N	104°34'51.232"W	2.04	
2548.00	9.610	126.640	2546.32	-11.63	-12.55	28.42	40°11'49.145"N	104°34'51.092"W	3.24	
2642.00	10.810	132.310	2638.83	-21.83	-23.17	41.23	40°11'49.039"N	104°34'50.928"W	1.66	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#09 GUTTERSEN D29-770 (2356'FNL & 1010'FWL,SEC.29)
Area	COLORADO	Well	GUTTERSEN D29-770
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	GUTTERSEN D29-770 AWB
Facility	SEC.29-T03N-R64W		

WELLPATH DATA (185 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
2737.00	10.900	138.120	2732.13	-34.11	-35.85	53.82	40°11'48.912"N	104°34'50.767"W	1.16	
2831.00	10.860	146.470	2824.45	-47.75	-49.85	64.64	40°11'48.773"N	104°34'50.630"W	1.68	
2926.00	10.740	152.860	2917.77	-62.79	-65.19	73.62	40°11'48.620"N	104°34'50.516"W	1.27	
3020.00	10.930	154.840	3010.09	-78.39	-81.05	81.41	40°11'48.463"N	104°34'50.418"W	0.44	
3115.00	10.670	153.340	3103.41	-94.15	-97.06	89.18	40°11'48.304"N	104°34'50.320"W	0.40	
3209.00	10.670	153.010	3195.78	-109.42	-112.60	97.04	40°11'48.149"N	104°34'50.221"W	0.07	
3304.00	10.560	152.210	3289.16	-124.69	-128.13	105.09	40°11'47.995"N	104°34'50.119"W	0.19	
3398.00	10.050	156.530	3381.64	-139.59	-143.28	112.37	40°11'47.845"N	104°34'50.027"W	0.98	
3492.00	10.830	156.320	3474.09	-154.97	-158.89	119.18	40°11'47.690"N	104°34'49.941"W	0.83	
3587.00	10.610	155.790	3567.43	-170.88	-175.04	126.35	40°11'47.529"N	104°34'49.851"W	0.25	
3681.00	10.680	151.980	3659.81	-186.21	-190.62	133.99	40°11'47.375"N	104°34'49.755"W	0.75	
3776.00	10.770	146.060	3753.16	-201.05	-205.76	143.08	40°11'47.224"N	104°34'49.640"W	1.16	
3870.00	10.870	139.800	3845.49	-214.76	-219.81	153.71	40°11'47.084"N	104°34'49.505"W	1.25	
3965.00	10.710	131.870	3938.81	-227.09	-232.55	166.07	40°11'46.957"N	104°34'49.347"W	1.57	
4060.00	10.320	137.800	4032.22	-238.88	-244.74	178.36	40°11'46.835"N	104°34'49.190"W	1.21	
4154.00	10.610	155.270	4124.68	-252.68	-258.84	187.63	40°11'46.695"N	104°34'49.073"W	3.38	
4249.00	10.480	145.770	4218.08	-267.48	-273.93	196.15	40°11'46.545"N	104°34'48.965"W	1.83	
4343.00	10.380	134.970	4310.54	-280.18	-286.99	206.95	40°11'46.415"N	104°34'48.828"W	2.08	
4438.00	10.490	126.500	4403.97	-290.95	-298.18	219.96	40°11'46.303"N	104°34'48.661"W	1.62	
4532.00	10.320	115.620	4496.44	-299.21	-306.91	234.43	40°11'46.215"N	104°34'48.476"W	2.10	
4627.00	10.300	112.160	4589.90	-305.59	-313.79	249.97	40°11'46.146"N	104°34'48.277"W	0.65	
4721.00	10.060	111.300	4682.42	-311.25	-319.95	265.40	40°11'46.083"N	104°34'48.079"W	0.30	
4816.00	10.190	118.750	4775.95	-317.81	-327.00	280.50	40°11'46.012"N	104°34'47.885"W	1.38	
4910.00	10.230	127.460	4868.47	-326.44	-336.08	294.42	40°11'45.921"N	104°34'47.707"W	1.64	
5004.00	10.210	127.490	4960.97	-336.15	-346.23	307.66	40°11'45.819"N	104°34'47.538"W	0.02	
5099.00	10.060	121.630	5054.49	-345.18	-355.70	321.40	40°11'45.724"N	104°34'47.362"W	1.10	
5194.00	10.030	124.720	5148.04	-353.80	-364.77	335.27	40°11'45.633"N	104°34'47.185"W	0.57	
5288.00	9.840	126.800	5240.63	-362.84	-374.24	348.43	40°11'45.538"N	104°34'47.016"W	0.43	
5383.00	9.210	129.380	5334.32	-372.12	-383.93	360.80	40°11'45.441"N	104°34'46.858"W	0.80	
5477.00	9.930	131.130	5427.01	-381.84	-394.03	372.72	40°11'45.340"N	104°34'46.706"W	0.83	

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Area	COLORADO	Well	GUTTERSEN D29-770
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	GUTTERSEN D29-770 AWB
Facility	SEC.29-T03N-R64W		

WELLPATH DATA (185 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
5572.00	10.000	140.230	5520.58	-393.19	-405.76	384.17	40°11'45.223"N	104°34'46.560"W	1.66	
5666.00	10.080	138.950	5613.14	-405.32	-418.24	394.79	40°11'45.099"N	104°34'46.425"W	0.25	
5761.00	9.940	137.480	5706.70	-417.28	-430.55	405.79	40°11'44.976"N	104°34'46.285"W	0.31	
5855.00	10.110	140.960	5799.26	-429.31	-442.94	416.47	40°11'44.852"N	104°34'46.149"W	0.67	
5949.00	10.060	142.210	5891.81	-441.87	-455.83	426.70	40°11'44.724"N	104°34'46.018"W	0.24	
6044.00	10.140	143.820	5985.34	-454.85	-469.14	436.72	40°11'44.591"N	104°34'45.891"W	0.31	
6138.00	10.240	142.590	6077.86	-467.84	-482.45	446.68	40°11'44.459"N	104°34'45.765"W	0.25	
6233.00	8.000	97.140	6171.77	-475.00	-489.99	458.39	40°11'44.383"N	104°34'45.615"W	7.70	
6328.00	8.390	51.670	6265.89	-471.14	-486.51	470.40	40°11'44.416"N	104°34'45.460"W	6.66	
6422.00	15.660	37.980	6357.78	-456.44	-472.24	483.60	40°11'44.556"N	104°34'45.287"W	8.26	
6517.00	23.610	15.610	6447.31	-427.52	-443.73	496.65	40°11'44.836"N	104°34'45.116"W	11.38	
6611.00	31.620	4.230	6530.59	-384.52	-400.92	503.55	40°11'45.259"N	104°34'45.021"W	10.17	
6706.00	38.390	1.090	6608.37	-330.08	-346.53	505.95	40°11'45.796"N	104°34'44.983"W	7.37	
6800.00	47.440	7.360	6677.17	-266.27	-282.85	510.95	40°11'46.425"N	104°34'44.910"W	10.64	
6895.00	56.950	6.760	6735.34	-191.61	-208.44	520.14	40°11'47.159"N	104°34'44.781"W	10.02	
6989.00	67.250	0.600	6779.30	-108.74	-125.69	525.25	40°11'47.976"N	104°34'44.704"W	12.39	
7084.00	72.620	356.530	6811.89	-19.71	-36.55	522.96	40°11'48.857"N	104°34'44.722"W	6.94	
7178.00	78.600	358.310	6835.24	71.03	54.37	518.89	40°11'49.756"N	104°34'44.762"W	6.62	
7273.00	88.120	1.530	6846.22	165.22	148.61	518.78	40°11'50.687"N	104°34'44.751"W	10.57	
7367.00	90.180	358.970	6847.61	259.16	242.59	519.19	40°11'51.616"N	104°34'44.733"W	3.50	
7462.00	90.120	357.320	6847.36	353.96	337.53	516.12	40°11'52.554"N	104°34'44.760"W	1.74	
7556.00	90.220	358.050	6847.08	447.71	431.45	512.32	40°11'53.483"N	104°34'44.796"W	0.78	
7651.00	90.220	358.320	6846.72	542.51	526.41	509.31	40°11'54.421"N	104°34'44.823"W	0.28	
7746.00	89.940	358.590	6846.59	637.35	621.37	506.75	40°11'55.360"N	104°34'44.843"W	0.41	
7840.00	90.090	357.120	6846.56	731.12	715.30	503.23	40°11'56.289"N	104°34'44.876"W	1.57	
7935.00	89.970	356.570	6846.51	825.75	810.16	498.00	40°11'57.226"N	104°34'44.930"W	0.59	
8029.00	90.150	355.390	6846.41	919.26	903.93	491.41	40°11'58.154"N	104°34'45.003"W	1.27	
8124.00	89.780	356.040	6846.47	1013.72	998.66	484.31	40°11'59.091"N	104°34'45.081"W	0.79	
8313.00	89.940	358.720	6846.93	1202.13	1187.44	475.68	40°12'00.957"N	104°34'45.168"W	1.42	
8407.00	89.970	358.480	6847.01	1295.98	1281.42	473.38	40°12'01.886"N	104°34'45.185"W	0.26	

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Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	GUTTERSEN D29-770 AWB
Facility	SEC.29-T03N-R64W		

WELLPATH DATA (185 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
8502.00	90.000	358.550	6847.03	1390.82	1376.38	470.92	40°12'02.824"N	104°34'45.204"W	0.08	
8596.00	89.970	0.700	6847.06	1484.74	1470.38	470.30	40°12'03.753"N	104°34'45.199"W	2.29	
8691.00	89.910	0.670	6847.16	1579.72	1565.37	471.44	40°12'04.692"N	104°34'45.172"W	0.07	
8786.00	89.910	1.790	6847.30	1674.71	1660.35	473.48	40°12'05.630"N	104°34'45.133"W	1.18	
8880.00	89.880	2.580	6847.48	1768.71	1754.28	477.06	40°12'06.558"N	104°34'45.074"W	0.84	
8975.00	89.970	2.550	6847.60	1863.70	1849.18	481.31	40°12'07.495"N	104°34'45.006"W	0.10	
9069.00	89.910	359.890	6847.70	1957.69	1943.15	483.31	40°12'08.424"N	104°34'44.968"W	2.83	
9164.00	89.910	357.710	6847.85	2052.55	2038.13	481.32	40°12'09.362"N	104°34'44.981"W	2.29	
9258.00	89.850	357.990	6848.05	2146.32	2132.06	477.80	40°12'10.291"N	104°34'45.014"W	0.30	
9353.00	89.720	0.310	6848.40	2241.21	2227.04	476.39	40°12'11.230"N	104°34'45.019"W	2.45	
9447.00	89.970	359.620	6848.66	2335.16	2321.04	476.33	40°12'12.158"N	104°34'45.007"W	0.78	
9542.00	89.940	358.290	6848.73	2430.03	2416.02	474.60	40°12'13.097"N	104°34'45.017"W	1.40	
9636.00	89.940	359.030	6848.83	2523.89	2510.00	472.40	40°12'14.026"N	104°34'45.033"W	0.79	
9731.00	89.850	357.070	6849.00	2618.68	2604.94	469.17	40°12'14.964"N	104°34'45.062"W	2.07	
9825.00	90.120	356.600	6849.03	2712.32	2698.79	463.98	40°12'15.892"N	104°34'45.116"W	0.58	
9920.00	90.000	355.520	6848.93	2806.83	2793.57	457.45	40°12'16.830"N	104°34'45.187"W	1.14	
10015.00	90.030	354.170	6848.90	2901.12	2888.18	448.91	40°12'17.765"N	104°34'45.285"W	1.42	
10109.00	90.310	354.200	6848.63	2994.28	2981.70	439.39	40°12'18.690"N	104°34'45.395"W	0.30	
10204.00	90.180	354.650	6848.22	3088.49	3076.24	430.16	40°12'19.626"N	104°34'45.501"W	0.49	
10298.00	90.120	356.870	6847.97	3181.95	3169.98	423.21	40°12'20.553"N	104°34'45.578"W	2.36	
10393.00	90.310	358.860	6847.62	3276.72	3264.91	419.67	40°12'21.491"N	104°34'45.611"W	2.10	
10487.00	90.280	1.100	6847.13	3370.66	3358.90	419.64	40°12'22.420"N	104°34'45.599"W	2.38	
10581.00	90.030	2.720	6846.88	3464.66	3452.85	422.77	40°12'23.348"N	104°34'45.546"W	1.74	
10676.00	90.310	2.320	6846.60	3559.65	3547.75	426.95	40°12'24.285"N	104°34'45.480"W	0.51	
10770.00	90.370	2.330	6846.04	3653.64	3641.68	430.76	40°12'25.213"N	104°34'45.418"W	0.06	
10865.00	90.250	1.710	6845.52	3748.64	3736.61	434.11	40°12'26.151"N	104°34'45.362"W	0.66	
10959.00	90.250	2.940	6845.11	3842.64	3830.53	437.93	40°12'27.078"N	104°34'45.300"W	1.31	
11054.00	90.180	2.130	6844.76	3937.63	3925.44	442.13	40°12'28.016"N	104°34'45.233"W	0.86	
11148.00	90.370	1.590	6844.31	4031.63	4019.39	445.18	40°12'28.944"N	104°34'45.182"W	0.61	
11243.00	90.310	359.860	6843.74	4126.60	4114.38	446.38	40°12'29.882"N	104°34'45.153"W	1.82	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#09 GUTTERSEN D29-770 (2356'FNL & 1010'FWL,SEC.29)
Area	COLORADO	Well	GUTTERSEN D29-770
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	GUTTERSEN D29-770 AWB
Facility	SEC.29-T03N-R64W		

WELLPATH DATA (185 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
11337.00	90.090	358.410	6843.41	4220.49	4208.36	444.96	40°12'30.811"N	104°34'45.159"W	1.56	
11432.00	90.220	358.180	6843.16	4315.31	4303.32	442.13	40°12'31.750"N	104°34'45.183"W	0.28	
11526.00	89.970	357.450	6843.00	4409.08	4397.25	438.55	40°12'32.678"N	104°34'45.216"W	0.82	
11621.00	90.120	356.250	6842.93	4503.72	4492.11	433.33	40°12'33.616"N	104°34'45.271"W	1.27	
11715.00	89.970	356.540	6842.85	4597.29	4585.92	427.42	40°12'34.544"N	104°34'45.335"W	0.35	
11810.00	90.120	357.170	6842.78	4691.93	4680.78	422.21	40°12'35.482"N	104°34'45.389"W	0.68	
11904.00	90.090	356.640	6842.61	4785.58	4774.64	417.13	40°12'36.410"N	104°34'45.442"W	0.56	
11998.00	90.000	356.740	6842.53	4879.20	4868.48	411.71	40°12'37.337"N	104°34'45.499"W	0.14	
12093.00	90.150	358.460	6842.41	4973.94	4963.39	407.73	40°12'38.276"N	104°34'45.538"W	1.82	
12187.00	90.180	359.040	6842.14	5067.80	5057.37	405.68	40°12'39.205"N	104°34'45.552"W	0.62	
12282.00	90.180	358.610	6841.84	5162.67	5152.35	403.73	40°12'40.143"N	104°34'45.564"W	0.45	
12377.00	90.220	358.810	6841.51	5257.53	5247.33	401.59	40°12'41.082"N	104°34'45.579"W	0.21	
12471.00	90.220	358.000	6841.15	5351.36	5341.29	398.97	40°12'42.011"N	104°34'45.600"W	0.86	
12566.00	90.250	358.490	6840.76	5446.17	5436.24	396.06	40°12'42.949"N	104°34'45.625"W	0.52	
12660.00	90.280	358.850	6840.32	5540.02	5530.22	393.88	40°12'43.878"N	104°34'45.641"W	0.38	
12754.00	90.280	358.290	6839.86	5633.87	5624.18	391.54	40°12'44.807"N	104°34'45.658"W	0.60	
12849.00	90.120	357.870	6839.53	5728.66	5719.13	388.35	40°12'45.745"N	104°34'45.686"W	0.47	
12943.00	90.250	358.260	6839.23	5822.46	5813.08	385.18	40°12'46.674"N	104°34'45.715"W	0.44	
13038.00	90.150	359.750	6838.90	5917.34	5908.06	383.53	40°12'47.613"N	104°34'45.723"W	1.57	
13133.00	90.310	358.610	6838.51	6012.23	6003.05	382.17	40°12'48.552"N	104°34'45.728"W	1.21	
13227.00	90.180	358.950	6838.11	6106.10	6097.02	380.17	40°12'49.480"N	104°34'45.741"W	0.39	
13322.00	90.250	0.320	6837.76	6201.02	6192.02	379.56	40°12'50.419"N	104°34'45.736"W	1.44	
13416.00	90.340	1.510	6837.27	6295.01	6286.00	381.07	40°12'51.348"N	104°34'45.705"W	1.27	
13510.00	90.120	0.910	6836.89	6389.00	6379.98	383.05	40°12'52.276"N	104°34'45.666"W	0.68	
13605.00	90.340	1.710	6836.51	6484.00	6474.96	385.22	40°12'53.214"N	104°34'45.626"W	0.87	
13699.00	90.400	2.630	6835.91	6577.99	6568.89	388.78	40°12'54.142"N	104°34'45.567"W	0.98	
13794.00	90.310	3.110	6835.32	6672.97	6663.76	393.54	40°12'55.079"N	104°34'45.493"W	0.51	
13888.00	90.090	3.770	6834.99	6766.94	6757.59	399.18	40°12'56.006"N	104°34'45.408"W	0.74	
13982.00	90.150	1.500	6834.79	6860.92	6851.49	403.50	40°12'56.933"N	104°34'45.340"W	2.42	
14077.00	89.970	2.070	6834.69	6955.92	6946.44	406.46	40°12'57.871"N	104°34'45.289"W	0.63	

### REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Slot	SLOT#09 GUTTERSEN D29-770 (2356'FNL & 1010'FWL,SEC.29)
Area	COLORADO	Well	GUTTERSEN D29-770
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	GUTTERSEN D29-770 AWB
Facility	SEC.29-T03N-R64W		

### WELLPATH DATA (185 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
14172.00	90.220	4.780	6834.54	7050.87	7041.26	412.13	40°12'58.808"N	104°34'45.203"W	2.86	
14266.00	90.370	1.490	6834.05	7144.84	7135.11	417.27	40°12'59.734"N	104°34'45.124"W	3.50	
14361.00	90.220	358.400	6833.56	7239.77	7230.09	417.18	40°13'00.673"N	104°34'45.113"W	3.26	
14456.00	90.340	358.680	6833.10	7334.61	7325.06	414.76	40°13'01.612"N	104°34'45.131"W	0.32	
14550.00	90.310	357.200	6832.56	7428.39	7419.00	411.38	40°13'02.540"N	104°34'45.162"W	1.57	
14645.00	90.180	356.290	6832.16	7523.01	7513.84	405.99	40°13'03.478"N	104°34'45.219"W	0.97	
14739.00	90.220	353.410	6831.83	7616.30	7607.45	397.55	40°13'04.404"N	104°34'45.315"W	3.06	
14834.00	89.940	353.970	6831.70	7710.34	7701.88	387.11	40°13'05.338"N	104°34'45.437"W	0.66	
14928.00	90.280	356.150	6831.52	7803.68	7795.52	379.02	40°13'06.264"N	104°34'45.529"W	2.35	
15023.00	90.030	357.570	6831.26	7898.32	7890.38	373.81	40°13'07.202"N	104°34'45.583"W	1.52	
15117.00	90.220	0.140	6831.06	7992.18	7984.35	371.93	40°13'08.131"N	104°34'45.595"W	2.74	
15212.00	90.180	358.590	6830.72	8087.09	8079.34	370.88	40°13'09.069"N	104°34'45.596"W	1.63	
15306.00	90.030	2.090	6830.55	8181.04	8173.32	371.44	40°13'09.998"N	104°34'45.576"W	3.73	
15401.00	90.180	3.930	6830.38	8276.02	8268.19	376.43	40°13'10.935"N	104°34'45.499"W	1.94	
15494.00	90.280	4.900	6830.00	8368.92	8360.91	383.59	40°13'11.850"N	104°34'45.394"W	1.05	
15590.00	90.250	3.680	6829.56	8464.83	8456.64	390.77	40°13'12.796"N	104°34'45.289"W	1.27	
15685.00	90.060	3.160	6829.30	8559.79	8551.47	396.44	40°13'13.732"N	104°34'45.203"W	0.58	
15780.00	90.280	357.920	6829.02	8654.74	8646.43	397.33	40°13'14.670"N	104°34'45.179"W	5.52	
15874.00	90.220	351.650	6828.61	8747.98	8739.99	388.79	40°13'15.596"N	104°34'45.277"W	6.67	
15969.00	90.400	351.160	6828.10	8841.40	8833.93	374.59	40°13'16.525"N	104°34'45.447"W	0.55	
16063.00	90.250	352.210	6827.56	8933.93	8926.93	361.00	40°13'17.446"N	104°34'45.610"W	1.13	
16158.00	89.970	352.520	6827.38	9027.63	9021.09	348.38	40°13'18.378"N	104°34'45.760"W	0.44	
16253.00	90.220	353.190	6827.22	9121.46	9115.35	336.56	40°13'19.310"N	104°34'45.900"W	0.75	
16347.00	90.180	356.410	6826.89	9214.74	9208.95	328.04	40°13'20.236"N	104°34'45.997"W	3.43	
16441.00	90.060	0.360	6826.70	9308.55	9302.90	325.39	40°13'21.165"N	104°34'46.018"W	4.20	
16536.00	90.150	1.550	6826.52	9403.54	9397.88	326.98	40°13'22.103"N	104°34'45.985"W	1.26	
16631.00	89.970	6.680	6826.42	9498.43	9492.61	333.79	40°13'23.038"N	104°34'45.885"W	5.40	
16725.00	90.250	7.680	6826.24	9592.02	9585.87	345.54	40°13'23.959"N	104°34'45.721"W	1.10	
16820.00	90.280	6.800	6825.80	9686.60	9680.11	357.51	40°13'24.889"N	104°34'45.554"W	0.93	
16914.00	90.310	5.880	6825.32	9780.31	9773.53	367.89	40°13'25.811"N	104°34'45.408"W	0.98	



REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#09 GUTTERSEN D29-770 (2356'FNL & 1010'FWL,SEC.29)
Area	COLORADO	Well	GUTTERSEN D29-770
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	GUTTERSEN D29-770 AWB
Facility	SEC.29-T03N-R64W		

WELLPATH DATA (185 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
17008.00	90.220	4.390	6824.89	9874.15	9867.15	376.31	40°13'26.735"N	104°34'45.287"W	1.59	
17103.00	90.250	1.050	6824.50	9969.12	9962.03	380.81	40°13'27.672"N	104°34'45.216"W	3.52	
17197.00	90.220	357.790	6824.11	10063.03	10056.01	379.86	40°13'28.601"N	104°34'45.215"W	3.47	
17291.00	90.180	356.060	6823.78	10156.67	10149.87	374.82	40°13'29.529"N	104°34'45.268"W	1.84	LAST BHGE MWD SURVEY
17356.00	90.180	356.060	6823.58	10221.34	10214.72	370.35	40°13'30.170"N	104°34'45.317"W	0.00	PROJECTION TO BIT

HOLE & CASING SECTIONS - Ref Wellbore: GUTTERSEN D29-770 AWB      Ref Wellpath: GUTTERSEN D29-770 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	30.00	1944.00	1914.00	30.00	1943.95	0.03	-0.03	2.78	4.99
9.625in Casing Surface	30.00	1944.00	1914.00	30.00	1943.95	0.03	-0.03	2.78	4.99
8.5in Open Hole	1944.00	17356.00	15412.00	1943.95	6823.58	2.78	4.99	10214.72	370.35

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#09 GUTTERSEN D29-770 (2356'FNL & 1010'FWL,SEC.29)
Area	COLORADO	Well	GUTTERSEN D29-770
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	GUTTERSEN D29-770 AWB
Facility	SEC.29-T03N-R64W		

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SEC.17-T03N-R64W	0.00	-0.78	-75.42	3256648.50	1315946.49	40°11'49.272"N	104°34'52.428"W	polygon
SEC.20-T03N-R64W	0.00	-0.78	-75.42	3256648.50	1315946.49	40°11'49.272"N	104°34'52.428"W	polygon
SEC.29-T03N-R64W	0.00	-0.78	-75.42	3256648.50	1315946.49	40°11'49.272"N	104°34'52.428"W	polygon
GUTTERSEN D29-770 BHL ON PLAT (2565'FSL & 1401'FWL,SEC.17)	6823.78	10240.80	329.50	3257053.41	1326187.61	40°13'30.432"N	104°34'45.840"W	point
GUTTERSEN D29-770 LP	6827.31	-33.63	495.69	3257219.59	1315913.64	40°11'48.889"N	104°34'45.073"W	point
GUTTERSEN D29-770 TARGET 1	6849.00	3007.83	445.04	3257168.94	1318954.97	40°12'18.948"N	104°34'45.319"W	point

WELLPATH COMPOSITION - Ref Wellbore: GUTTERSEN D29-770 AWB				Ref Wellpath: GUTTERSEN D29-770 AWP	
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment		Wellbore
0.00	1944.00	Gyrodatta standard - Drop gyro or Multi-shot	3rd Party Surface Surveys <83'-1944'>		GUTTERSEN D29-770 AWB
1944.00	17291.00	OWSG MWD rev2 + IFR1 + Multi-Station Correction	BH/ATC 8.5" Hole OWSG MWD rev2+IFR1+MSA <1980'-17291'>		GUTTERSEN D29-770 AWB
17291.00	17356.00	Blind Drilling (std)	Projection to bit		GUTTERSEN D29-770 AWB