

NOBLE ENERGY, INC

Location: COLORADO Slot: SLOT#12 GUTTERSEN D29-738 (2361'FNL & 2413'FWL,SEC.29)
Field: WELD COUNTY (NOBLE NAD 83 GRID) Well: GUTTERSEN D29-738
Facility: SEC.29-T03N-R64W Wellbore: GUTTERSEN D29-738 PWB

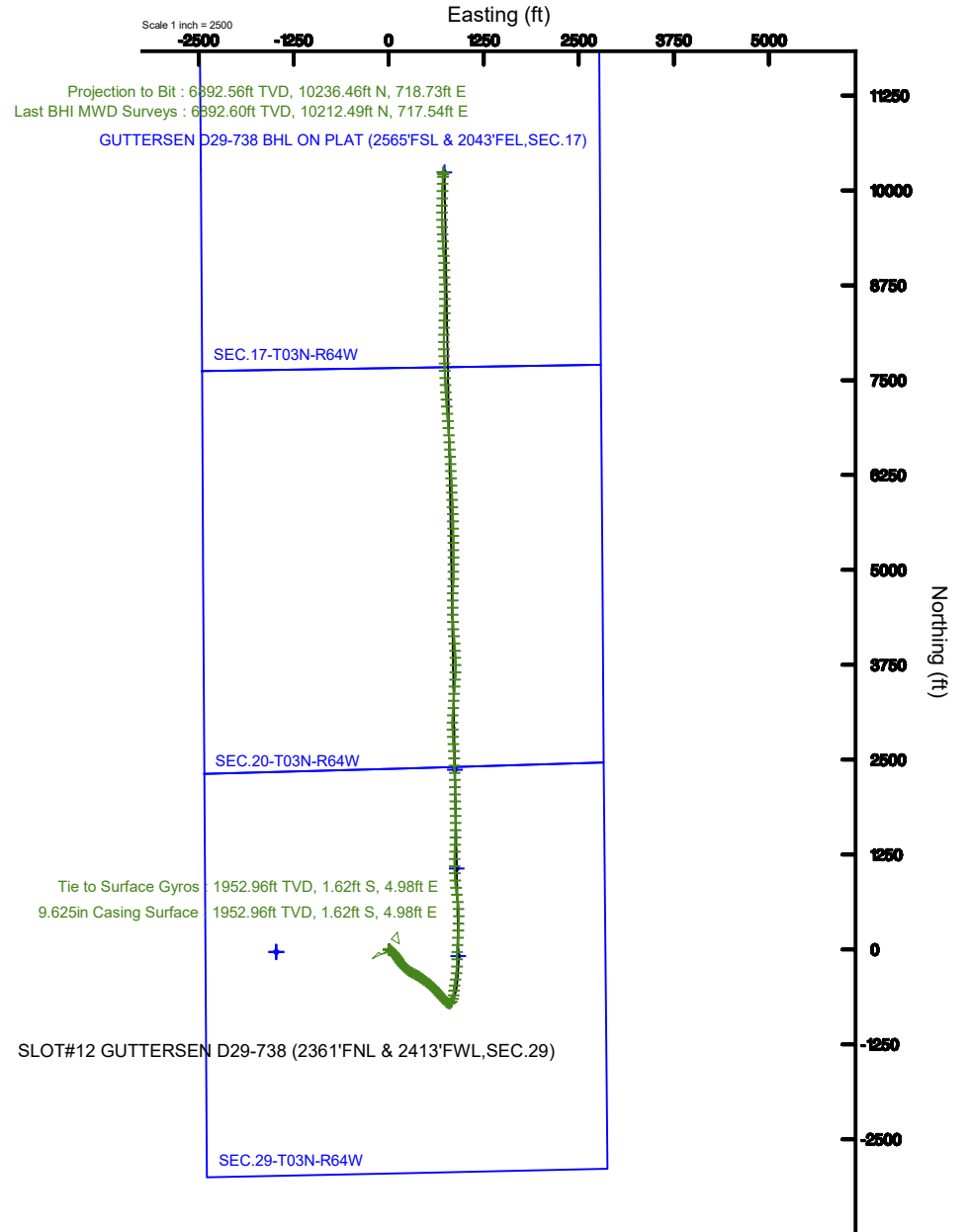
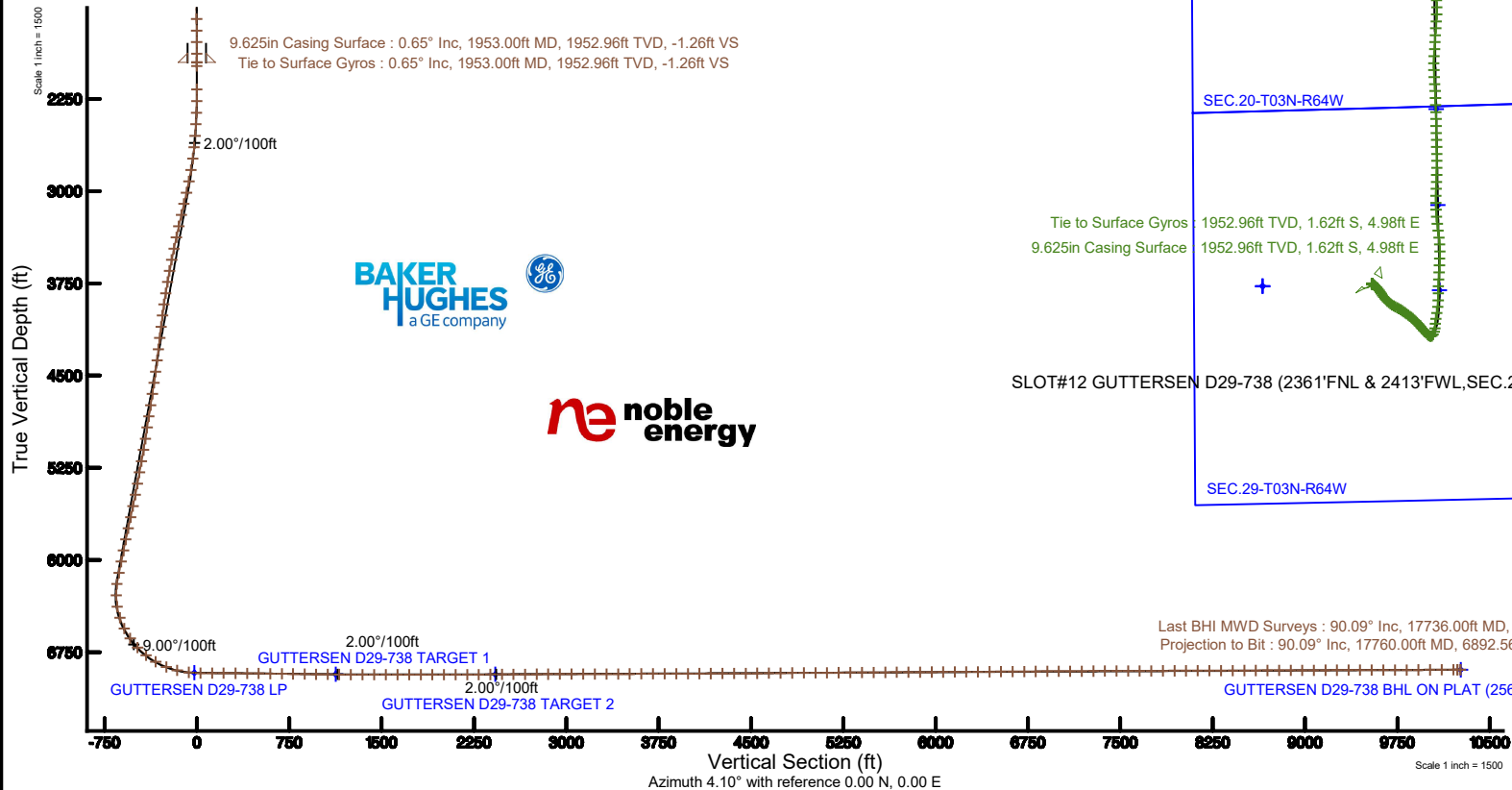
Plot reference wellpath is GUTTERSEN D29-738 PWP (REV-A.0)	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
True vertical depths are referenced to RIG (30') (RKB)	North Reference: Grid north
Measured depths are referenced to RIG (30') (RKB)	Scale: True distance
RIG (30') (RKB) to Mean Sea Level: 4812 feet	Depths are in feet
Mean Sea Level to Mud line (At Slot: SLOT#12 GUTTERSEN D29-738 (2361'FNL & 2413'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#12 GUTTERSEN D29-738 (2361'FNL & 2413'FWL,SEC.29)	-1046.61	2047.44	3256125.966	1315980.058	40°11'49.452"N	104°34'33.384"W
RIG (30') (RKB) to Mud line (At Slot: SLOT#12 GUTTERSEN D29-738 (2361'FNL & 2413'FWL,SEC.29))					4812ft	
Mean Sea Level to Mud line (At Slot: SLOT#12 GUTTERSEN D29-738 (2361'FNL & 2413'FWL,SEC.29))					0ft	
RIG (30') (RKB) to Mean Sea Level					4812ft	

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 D29-738 PWB
1900.00	17763.67	OWSG MWD rev2	OWSG MWD rev2 + IFR1 + Multi-Station Correction		GUTTERSEN D29-738 PWB



Last BHI MWD Surveys : 90.09° Inc, 17736.00ft MD, 6892.60ft TVD, 10237.66ft VS
Projection to Bit : 90.09° Inc, 17760.00ft MD, 6892.56ft TVD, 10261.65ft VS

GUTTERSEN D29-738 BHL ON PLAT (2565'FSL & 2043'FEL,SEC.17)

REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Slot	SLOT#12 GUTTERSEN D29-738 (2361'FNL & 2413'FWL, SEC.29)
Area	COLORADO	Well	GUTTERSEN D29-738
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	GUTTERSEN D29-738 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 10:31:43 AM
Convergence at slot	0.60° East	Database/Source file	WellArchitectDB/GUTTERSEN_D29-738_AWP.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-1046.61	2047.44	3258125.97	1315980.06	40°11'49.452"N	104°34'33.384"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	4812.00ft
Horizontal Reference Pt	Slot	RIG (30') (RKB) to Mean Sea Level	4812.00ft
Vertical Reference Pt	RIG (30') (RKB)	RIG (30') (RKB) to Mud Line at Slot (SLOT#12 GUTTERSEN D29-738 (2361'FNL & 2413'FWL, SEC.29))	4812.00ft
MD Reference Pt	RIG (30') (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	4.10°

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Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	GUTTERSEN D29-738 AWB
Facility	SEC.29-T03N-R64W		

WELLPATH DATA (190 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00	0.000	121.840	0.00	0.00	0.00	0.00	40°11'49.452"N	104°34'33.384"W	0.00	
84.00	0.410	121.840	84.00	-0.14	-0.16	0.26	40°11'49.450"N	104°34'33.381"W	0.49	
179.00	0.260	82.320	179.00	-0.25	-0.31	0.76	40°11'49.449"N	104°34'33.374"W	0.28	
274.00	0.810	18.410	273.99	0.44	0.36	1.18	40°11'49.455"N	104°34'33.369"W	0.77	
368.00	0.220	3.640	367.99	1.26	1.17	1.40	40°11'49.463"N	104°34'33.366"W	0.64	
463.00	0.200	215.260	462.99	1.31	1.21	1.32	40°11'49.464"N	104°34'33.367"W	0.43	
558.00	0.240	101.890	557.99	1.14	1.04	1.42	40°11'49.462"N	104°34'33.366"W	0.39	
653.00	0.300	37.930	652.99	1.32	1.19	1.77	40°11'49.464"N	104°34'33.361"W	0.31	
747.00	0.470	104.780	746.99	1.45	1.29	2.29	40°11'49.464"N	104°34'33.354"W	0.48	
842.00	0.290	185.840	841.98	1.14	0.95	2.64	40°11'49.461"N	104°34'33.350"W	0.54	
937.00	0.450	139.660	936.98	0.63	0.43	2.86	40°11'49.456"N	104°34'33.347"W	0.34	
1032.00	0.400	176.690	1031.98	0.03	-0.19	3.12	40°11'49.450"N	104°34'33.344"W	0.29	
1126.00	0.420	124.200	1125.98	-0.46	-0.71	3.42	40°11'49.445"N	104°34'33.340"W	0.39	
1221.00	0.900	146.830	1220.97	-1.23	-1.53	4.12	40°11'49.436"N	104°34'33.331"W	0.57	
1315.00	0.230	146.120	1314.97	-1.97	-2.30	4.63	40°11'49.429"N	104°34'33.325"W	0.71	
1410.00	0.370	86.630	1409.97	-2.08	-2.45	5.04	40°11'49.427"N	104°34'33.319"W	0.34	
1505.00	0.280	130.110	1504.96	-2.18	-2.58	5.53	40°11'49.426"N	104°34'33.313"W	0.27	
1600.00	0.230	43.470	1599.96	-2.16	-2.59	5.84	40°11'49.426"N	104°34'33.309"W	0.37	
1695.00	0.160	347.170	1694.96	-1.89	-2.32	5.94	40°11'49.428"N	104°34'33.308"W	0.20	
1789.00	0.030	77.390	1788.96	-1.76	-2.19	5.93	40°11'49.430"N	104°34'33.308"W	0.17	
1884.00	0.520	295.980	1883.96	-1.59	-1.99	5.57	40°11'49.432"N	104°34'33.313"W	0.57	
1953.00	0.650	307.150	1952.96	-1.26	-1.62	4.98	40°11'49.435"N	104°34'33.320"W	0.25	Tie to Surface Gyros
1983.00	0.670	357.300	1982.96	-0.99	-1.34	4.83	40°11'49.438"N	104°34'33.322"W	1.87	
2172.00	0.180	114.090	2171.95	0.00	-0.36	5.05	40°11'49.448"N	104°34'33.319"W	0.41	
2267.00	2.110	126.760	2266.93	-0.99	-1.47	6.59	40°11'49.437"N	104°34'33.299"W	2.04	
2362.00	4.180	125.380	2361.78	-3.73	-4.52	10.81	40°11'49.406"N	104°34'33.245"W	2.18	
2457.00	6.070	125.510	2456.40	-8.15	-9.44	17.72	40°11'49.357"N	104°34'33.157"W	1.99	
2551.00	8.180	127.380	2549.67	-14.41	-16.39	27.08	40°11'49.287"N	104°34'33.037"W	2.26	
2646.00	10.210	128.750	2643.44	-22.91	-25.76	39.02	40°11'49.193"N	104°34'32.885"W	2.15	
2741.00	12.270	130.030	2736.61	-33.62	-37.53	53.32	40°11'49.076"N	104°34'32.702"W	2.18	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#12 GUTTERSEN D29-738 (2361'FNL & 2413'FWL,SEC.29)
Area	COLORADO	Well	GUTTERSEN D29-738
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	GUTTERSEN D29-738 AWB
Facility	SEC.29-T03N-R64W		

WELLPATH DATA (190 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
2836.00	14.340	136.330	2829.06	-47.45	-52.53	69.18	40°11'48.926"N	104°34'32.500"W	2.66	
2931.00	15.520	141.080	2920.86	-64.65	-70.93	85.29	40°11'48.742"N	104°34'32.295"W	1.79	
3026.00	16.280	144.600	3012.22	-84.22	-91.67	100.98	40°11'48.536"N	104°34'32.095"W	1.29	
3120.00	15.990	147.850	3102.52	-104.83	-113.38	115.51	40°11'48.320"N	104°34'31.911"W	1.01	
3215.00	16.140	148.330	3193.81	-126.09	-135.69	129.40	40°11'48.098"N	104°34'31.735"W	0.21	
3310.00	16.220	144.330	3285.05	-147.00	-157.71	144.07	40°11'47.879"N	104°34'31.549"W	1.18	
3405.00	16.030	141.460	3376.32	-166.85	-178.75	159.98	40°11'47.669"N	104°34'31.346"W	0.86	
3500.00	16.070	140.340	3467.62	-186.00	-199.13	176.55	40°11'47.466"N	104°34'31.136"W	0.33	
3594.00	16.180	137.190	3557.92	-204.34	-218.75	193.75	40°11'47.270"N	104°34'30.917"W	0.94	
3689.00	16.360	133.070	3649.12	-221.80	-237.60	212.52	40°11'47.082"N	104°34'30.677"W	1.23	
3783.00	16.060	130.470	3739.38	-237.84	-255.08	232.08	40°11'46.908"N	104°34'30.428"W	0.84	
3878.00	16.290	128.850	3830.62	-253.22	-271.97	252.46	40°11'46.739"N	104°34'30.167"W	0.53	
3973.00	16.170	123.480	3921.84	-267.31	-287.62	273.87	40°11'46.582"N	104°34'29.894"W	1.58	
4067.00	16.260	119.870	4012.10	-279.45	-301.40	296.20	40°11'46.443"N	104°34'29.608"W	1.08	
4162.00	15.740	119.410	4103.42	-290.74	-314.35	318.95	40°11'46.313"N	104°34'29.316"W	0.56	
4257.00	16.070	118.100	4194.79	-301.60	-326.87	341.78	40°11'46.187"N	104°34'29.024"W	0.51	
4352.00	16.040	118.820	4286.08	-312.43	-339.39	364.88	40°11'46.061"N	104°34'28.728"W	0.21	
4446.00	16.240	119.880	4376.38	-323.58	-352.20	387.65	40°11'45.932"N	104°34'28.436"W	0.38	
4541.00	16.020	122.260	4467.64	-335.55	-365.81	410.25	40°11'45.795"N	104°34'28.147"W	0.73	
4635.00	16.200	123.050	4557.95	-348.01	-379.89	432.21	40°11'45.654"N	104°34'27.866"W	0.30	
4730.00	15.610	126.450	4649.31	-361.27	-394.71	453.60	40°11'45.505"N	104°34'27.592"W	1.16	
4825.00	16.100	128.180	4740.70	-375.49	-410.45	474.24	40°11'45.347"N	104°34'27.328"W	0.72	
4920.00	15.800	128.340	4832.04	-390.15	-426.61	494.74	40°11'45.185"N	104°34'27.066"W	0.32	
5014.00	15.250	127.420	4922.61	-404.14	-442.06	514.59	40°11'45.031"N	104°34'26.812"W	0.64	
5109.00	16.100	128.460	5014.08	-418.44	-457.85	534.83	40°11'44.873"N	104°34'26.554"W	0.94	
5204.00	16.200	130.090	5105.33	-433.66	-474.58	555.28	40°11'44.705"N	104°34'26.292"W	0.49	
5299.00	16.780	132.310	5196.42	-449.93	-492.34	575.56	40°11'44.528"N	104°34'26.034"W	0.90	
5394.00	15.690	134.580	5287.63	-466.75	-510.59	594.86	40°11'44.345"N	104°34'25.787"W	1.33	
5488.00	14.820	137.230	5378.32	-483.22	-528.34	612.07	40°11'44.168"N	104°34'25.568"W	1.19	
5583.00	15.450	138.910	5470.02	-500.45	-546.79	628.64	40°11'43.984"N	104°34'25.357"W	0.81	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#12 GUTTERSEN D29-738 (2361'FNL & 2413'FWL,SEC.29)
Area	COLORADO	Well	GUTTERSEN D29-738
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	GUTTERSEN D29-738 AWB
Facility	SEC.29-T03N-R64W		

WELLPATH DATA (190 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
5678.00	16.690	139.770	5561.31	-519.12	-566.74	645.77	40°11'43.785"N	104°34'25.139"W	1.33	
5772.00	16.760	139.950	5651.33	-538.50	-587.42	663.21	40°11'43.579"N	104°34'24.917"W	0.09	
5867.00	16.880	138.370	5742.27	-557.96	-608.22	681.18	40°11'43.372"N	104°34'24.688"W	0.50	
5962.00	16.850	138.140	5833.18	-577.16	-628.78	699.53	40°11'43.167"N	104°34'24.454"W	0.08	
6056.00	16.720	137.980	5923.18	-596.00	-648.97	717.68	40°11'42.965"N	104°34'24.223"W	0.15	
6150.00	16.950	136.400	6013.15	-614.59	-668.94	736.18	40°11'42.766"N	104°34'23.988"W	0.54	
6245.00	16.810	136.210	6104.06	-633.13	-688.89	755.23	40°11'42.567"N	104°34'23.745"W	0.16	
6340.00	15.250	130.040	6195.37	-649.67	-706.84	774.31	40°11'42.388"N	104°34'23.501"W	2.43	
6434.00	12.040	87.350	6286.93	-655.79	-714.36	793.62	40°11'42.311"N	104°34'23.254"W	10.95	
6529.00	14.190	53.620	6379.58	-647.06	-706.99	812.92	40°11'42.382"N	104°34'23.004"W	8.24	
6623.00	19.440	32.330	6469.61	-625.76	-686.90	830.59	40°11'42.579"N	104°34'22.774"W	8.52	
6718.00	27.420	17.410	6556.78	-590.46	-652.59	845.63	40°11'42.916"N	104°34'22.575"W	10.41	
6813.00	35.150	4.540	6638.00	-541.70	-604.33	854.36	40°11'43.392"N	104°34'22.456"W	10.72	
6908.00	43.480	4.320	6711.43	-481.56	-544.37	858.99	40°11'43.984"N	104°34'22.388"W	8.77	
7002.00	51.210	9.210	6775.10	-412.60	-475.83	867.31	40°11'44.661"N	104°34'22.272"W	9.07	
7097.00	61.050	9.680	6827.98	-334.17	-398.12	880.26	40°11'45.427"N	104°34'22.095"W	10.37	
7192.00	67.480	6.460	6869.21	-248.85	-313.44	892.20	40°11'46.263"N	104°34'21.929"W	7.42	
7286.00	76.860	2.210	6897.98	-159.49	-224.33	898.86	40°11'47.143"N	104°34'21.831"W	10.86	
7381.00	83.890	0.520	6913.85	-66.00	-130.76	901.08	40°11'48.067"N	104°34'21.790"W	7.60	
7476.00	89.410	1.490	6919.40	28.67	-35.97	902.74	40°11'49.003"N	104°34'21.756"W	5.90	
7571.00	89.480	2.940	6920.32	123.61	58.95	906.41	40°11'49.941"N	104°34'21.696"W	1.53	
7665.00	90.340	3.610	6920.47	217.60	152.79	911.78	40°11'50.868"N	104°34'21.614"W	1.16	
7760.00	89.260	1.350	6920.80	312.55	247.70	915.90	40°11'51.805"N	104°34'21.548"W	2.64	
7855.00	89.450	2.850	6921.87	407.48	342.63	919.38	40°11'52.743"N	104°34'21.491"W	1.59	
7949.00	89.230	359.200	6922.95	501.33	436.59	921.06	40°11'53.671"N	104°34'21.456"W	3.89	
8044.00	89.290	356.290	6924.18	595.72	531.50	917.32	40°11'54.609"N	104°34'21.492"W	3.06	
8139.00	89.290	353.590	6925.36	689.50	626.11	908.94	40°11'55.545"N	104°34'21.587"W	2.84	
8233.00	89.350	353.030	6926.47	781.83	719.46	897.99	40°11'56.469"N	104°34'21.715"W	0.60	
8328.00	89.140	353.720	6927.72	875.16	813.82	887.03	40°11'57.402"N	104°34'21.844"W	0.76	
8423.00	89.260	355.120	6929.05	968.80	908.36	877.80	40°11'58.337"N	104°34'21.950"W	1.48	

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Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	GUTTERSEN D29-738 AWB
Facility	SEC.29-T03N-R64W		

WELLPATH DATA (190 stations)										
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8517.00	89.230	356.130	6930.29	1061.76	1002.07	870.63	40°11'59.264"N	104°34'22.030"W	1.07	
8612.00	89.380	359.260	6931.44	1156.15	1096.98	866.81	40°12'00.202"N	104°34'22.066"W	3.30	
8707.00	90.060	1.680	6931.91	1250.95	1191.97	867.59	40°12'01.141"N	104°34'22.044"W	2.65	
8801.00	89.970	2.740	6931.88	1344.90	1285.90	871.21	40°12'02.069"N	104°34'21.984"W	1.13	
8896.00	89.970	2.290	6931.93	1439.86	1380.80	875.38	40°12'03.006"N	104°34'21.918"W	0.47	
8991.00	89.880	1.100	6932.06	1534.77	1475.76	878.19	40°12'03.944"N	104°34'21.869"W	1.26	
9086.00	89.940	1.420	6932.21	1629.66	1570.74	880.28	40°12'04.882"N	104°34'21.829"W	0.34	
9180.00	89.850	359.870	6932.38	1723.48	1664.73	881.34	40°12'05.811"N	104°34'21.803"W	1.65	
9275.00	89.940	358.970	6932.55	1818.17	1759.72	880.38	40°12'06.750"N	104°34'21.802"W	0.95	
9369.00	89.970	358.550	6932.63	1911.76	1853.70	878.34	40°12'07.679"N	104°34'21.816"W	0.45	
9464.00	89.940	357.490	6932.70	2006.22	1948.64	875.06	40°12'08.617"N	104°34'21.845"W	1.12	
9559.00	90.370	358.280	6932.44	2100.66	2043.58	871.55	40°12'09.556"N	104°34'21.878"W	0.95	
9654.00	90.220	0.350	6931.95	2195.32	2138.56	870.42	40°12'10.494"N	104°34'21.880"W	2.18	
9748.00	90.310	359.500	6931.52	2289.07	2232.56	870.29	40°12'11.423"N	104°34'21.868"W	0.91	
9842.00	90.250	358.020	6931.06	2382.66	2326.54	868.26	40°12'12.352"N	104°34'21.882"W	1.58	
9937.00	90.280	357.550	6930.62	2477.08	2421.46	864.59	40°12'13.290"N	104°34'21.917"W	0.50	
10032.00	90.520	358.370	6929.96	2571.53	2516.40	861.21	40°12'14.229"N	104°34'21.947"W	0.90	
10127.00	90.120	357.720	6929.43	2666.00	2611.34	857.97	40°12'15.167"N	104°34'21.976"W	0.80	
10221.00	90.430	355.400	6928.98	2759.18	2705.17	852.33	40°12'16.095"N	104°34'22.036"W	2.49	
10316.00	90.250	356.560	6928.41	2853.23	2799.93	845.67	40°12'17.032"N	104°34'22.109"W	1.24	
10411.00	90.250	358.130	6928.00	2947.56	2894.82	841.27	40°12'17.970"N	104°34'22.153"W	1.65	
10506.00	90.310	0.630	6927.53	3042.23	2989.81	840.24	40°12'18.909"N	104°34'22.154"W	2.63	
10600.00	89.940	3.850	6927.33	3136.17	3083.72	843.91	40°12'19.837"N	104°34'22.094"W	3.45	
10695.00	90.060	3.900	6927.33	3231.17	3178.51	850.33	40°12'20.773"N	104°34'21.998"W	0.14	
10790.00	90.000	1.370	6927.28	3326.13	3273.40	854.70	40°12'21.710"N	104°34'21.929"W	2.66	
10885.00	90.370	3.910	6926.97	3421.09	3368.29	859.07	40°12'22.647"N	104°34'21.860"W	2.70	
10979.00	90.370	4.810	6926.36	3515.09	3462.01	866.22	40°12'23.572"N	104°34'21.755"W	0.96	
11074.00	90.400	4.000	6925.73	3610.08	3556.73	873.52	40°12'24.508"N	104°34'21.649"W	0.85	
11168.00	90.250	2.180	6925.19	3704.06	3650.59	878.58	40°12'25.434"N	104°34'21.571"W	1.94	
11263.00	90.220	359.300	6924.80	3798.89	3745.57	879.81	40°12'26.373"N	104°34'21.542"W	3.03	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#12 GUTTERSEN D29-738 (2361'FNL & 2413'FWL,SEC.29)
Area	COLORADO	Well	GUTTERSEN D29-738
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	GUTTERSEN D29-738 AWB
Facility	SEC.29-T03N-R64W		

WELLPATH DATA (190 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
11358.00	90.250	357.470	6924.41	3893.41	3840.53	877.13	40°12'27.311"N	104°34'21.564"W	1.93	
11453.00	90.150	356.590	6924.08	3987.69	3935.40	872.21	40°12'28.249"N	104°34'21.614"W	0.93	
11547.00	90.090	355.150	6923.88	4080.72	4029.15	865.44	40°12'29.177"N	104°34'21.689"W	1.53	
11642.00	90.250	354.780	6923.60	4174.51	4123.78	857.10	40°12'30.112"N	104°34'21.784"W	0.42	
11737.00	90.400	356.060	6923.06	4268.42	4218.48	849.52	40°12'31.049"N	104°34'21.869"W	1.36	
11832.00	90.090	358.030	6922.66	4362.70	4313.34	844.62	40°12'31.987"N	104°34'21.919"W	2.10	
11927.00	90.550	358.770	6922.13	4457.22	4408.31	841.97	40°12'32.926"N	104°34'21.940"W	0.92	
12021.00	90.580	0.720	6921.20	4550.94	4502.30	841.55	40°12'33.854"N	104°34'21.933"W	2.07	
12116.00	90.490	0.480	6920.31	4645.76	4597.29	842.54	40°12'34.793"N	104°34'21.907"W	0.27	
12211.00	90.590	1.370	6919.42	4740.61	4692.27	844.08	40°12'35.731"N	104°34'21.875"W	0.94	
12305.00	90.370	2.220	6918.63	4834.53	4786.22	847.02	40°12'36.659"N	104°34'21.824"W	0.93	
12400.00	90.310	1.490	6918.07	4929.45	4881.17	850.10	40°12'37.597"N	104°34'21.772"W	0.77	
12495.00	90.370	0.470	6917.50	5024.31	4976.15	851.72	40°12'38.536"N	104°34'21.738"W	1.08	
12589.00	90.340	0.800	6916.92	5118.14	5070.14	852.76	40°12'39.464"N	104°34'21.712"W	0.35	
12684.00	90.430	359.740	6916.28	5212.92	5165.14	853.21	40°12'40.403"N	104°34'21.693"W	1.12	
12779.00	90.400	358.800	6915.59	5307.58	5260.13	852.00	40°12'41.342"N	104°34'21.696"W	0.99	
12874.00	90.340	359.400	6914.98	5402.22	5355.11	850.51	40°12'42.280"N	104°34'21.703"W	0.63	
12968.00	90.370	359.010	6914.40	5495.87	5449.10	849.21	40°12'43.209"N	104°34'21.707"W	0.42	
13063.00	90.340	358.960	6913.81	5590.49	5544.08	847.52	40°12'44.148"N	104°34'21.716"W	0.06	
13157.00	90.340	358.430	6913.25	5684.07	5638.06	845.38	40°12'45.077"N	104°34'21.731"W	0.56	
13252.00	90.370	358.050	6912.66	5778.57	5733.01	842.46	40°12'46.015"N	104°34'21.755"W	0.40	
13347.00	90.430	357.810	6912.00	5873.02	5827.95	839.03	40°12'46.954"N	104°34'21.787"W	0.26	
13442.00	90.310	357.490	6911.39	5967.42	5922.86	835.14	40°12'47.892"N	104°34'21.824"W	0.36	
13536.00	90.340	357.810	6910.85	6060.82	6016.78	831.28	40°12'48.821"N	104°34'21.861"W	0.34	
13631.00	90.340	357.640	6910.29	6155.23	6111.71	827.51	40°12'49.759"N	104°34'21.897"W	0.18	
13725.00	90.310	357.400	6909.76	6248.61	6205.62	823.44	40°12'50.687"N	104°34'21.937"W	0.26	
13820.00	90.310	357.030	6909.24	6342.92	6300.50	818.83	40°12'51.626"N	104°34'21.984"W	0.39	
13915.00	90.400	357.270	6908.65	6437.22	6395.38	814.11	40°12'52.564"N	104°34'22.032"W	0.27	
14009.00	90.400	356.940	6908.00	6530.52	6489.26	809.36	40°12'53.492"N	104°34'22.080"W	0.35	
14104.00	90.400	356.770	6907.33	6624.76	6584.12	804.15	40°12'54.430"N	104°34'22.135"W	0.18	

REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Slot	SLOT#12 GUTTERSEN D29-738 (2361'FNL & 2413'FWL,SEC.29)
Area	COLORADO	Well	GUTTERSEN D29-738
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	GUTTERSEN D29-738 AWB
Facility	SEC.29-T03N-R64W		

WELLPATH DATA (190 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
14199.00	90.310	356.340	6906.74	6718.94	6678.94	798.44	40°12'55.367"N	104°34'22.195"W	0.46	
14293.00	90.400	355.970	6906.16	6812.03	6772.73	792.13	40°12'56.295"N	104°34'22.264"W	0.41	
14388.00	90.310	356.090	6905.57	6906.09	6867.50	785.56	40°12'57.232"N	104°34'22.336"W	0.16	
14483.00	90.400	355.790	6904.99	7000.13	6962.26	778.83	40°12'58.169"N	104°34'22.410"W	0.33	
14577.00	90.220	356.000	6904.48	7093.16	7056.02	772.10	40°12'59.096"N	104°34'22.484"W	0.29	
14672.00	90.370	355.880	6903.99	7187.20	7150.78	765.38	40°13'00.033"N	104°34'22.558"W	0.20	
14767.00	90.280	356.150	6903.45	7281.25	7245.55	758.77	40°13'00.970"N	104°34'22.630"W	0.30	
14861.00	90.180	356.500	6903.07	7374.39	7339.35	752.75	40°13'01.898"N	104°34'22.695"W	0.39	
14956.00	90.250	356.520	6902.71	7468.55	7434.17	746.97	40°13'02.835"N	104°34'22.757"W	0.08	
15051.00	90.220	357.160	6902.33	7562.79	7529.03	741.73	40°13'03.773"N	104°34'22.812"W	0.67	
15146.00	90.250	357.470	6901.94	7657.13	7623.92	737.28	40°13'04.711"N	104°34'22.856"W	0.33	
15240.00	90.250	357.980	6901.53	7750.54	7717.85	733.55	40°13'05.640"N	104°34'22.892"W	0.54	
15335.00	90.120	358.470	6901.22	7845.04	7812.80	730.61	40°13'06.578"N	104°34'22.917"W	0.53	
15430.00	90.090	358.870	6901.04	7939.62	7907.78	728.40	40°13'07.517"N	104°34'22.933"W	0.42	
15524.00	90.220	359.780	6900.79	8033.29	8001.77	727.29	40°13'08.446"N	104°34'22.934"W	0.98	
15619.00	90.180	0.900	6900.46	8128.08	8096.76	727.86	40°13'09.385"N	104°34'22.914"W	1.18	
15714.00	90.280	1.650	6900.08	8222.97	8191.74	729.97	40°13'10.323"N	104°34'22.874"W	0.80	
15808.00	90.310	2.140	6899.59	8316.89	8285.69	733.08	40°13'11.251"N	104°34'22.821"W	0.52	
15903.00	90.220	1.820	6899.15	8411.83	8380.63	736.36	40°13'12.189"N	104°34'22.766"W	0.35	
15998.00	90.060	0.590	6898.92	8506.71	8475.60	738.36	40°13'13.127"N	104°34'22.728"W	1.31	
16092.00	90.220	0.590	6898.69	8600.53	8569.60	739.33	40°13'14.056"N	104°34'22.703"W	0.17	
16187.00	90.180	359.210	6898.36	8695.27	8664.60	739.16	40°13'14.994"N	104°34'22.692"W	1.45	
16282.00	90.180	358.790	6898.06	8789.89	8759.58	737.50	40°13'15.933"N	104°34'22.700"W	0.44	
16376.00	90.280	358.460	6897.68	8883.46	8853.55	735.25	40°13'16.862"N	104°34'22.717"W	0.37	
16471.00	90.280	358.140	6897.22	8977.98	8948.51	732.43	40°13'17.801"N	104°34'22.740"W	0.34	
16566.00	90.340	357.990	6896.71	9072.45	9043.45	729.22	40°13'18.739"N	104°34'22.769"W	0.17	
16660.00	90.220	356.740	6896.25	9165.80	9137.35	724.90	40°13'19.667"N	104°34'22.812"W	1.34	
16755.00	90.180	356.480	6895.92	9259.99	9232.19	719.28	40°13'20.605"N	104°34'22.872"W	0.28	
16850.00	90.370	356.510	6895.46	9354.15	9327.01	713.48	40°13'21.543"N	104°34'22.934"W	0.20	
16944.00	90.180	357.460	6895.01	9447.42	9420.87	708.53	40°13'22.471"N	104°34'22.985"W	1.03	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#12 GUTTERSEN D29-738 (2361'FNL & 2413'FWL,SEC.29)
Area	COLORADO	Well	GUTTERSEN D29-738
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	GUTTERSEN D29-738 AWB
Facility	SEC.29-T03N-R64W		

WELLPATH DATA (190 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
17039.00	90.090	358.740	6894.78	9541.90	9515.82	705.38	40°13'23.409"N	104°34'23.013"W	1.35	
17134.00	90.060	359.100	6894.66	9636.51	9610.80	703.59	40°13'24.348"N	104°34'23.023"W	0.38	
17229.00	90.220	359.740	6894.43	9731.19	9705.80	702.63	40°13'25.287"N	104°34'23.022"W	0.69	
17324.00	90.180	0.420	6894.10	9825.96	9800.80	702.76	40°13'26.225"N	104°34'23.008"W	0.72	
17418.00	90.250	1.420	6893.74	9919.81	9894.78	704.27	40°13'27.154"N	104°34'22.976"W	1.07	
17513.00	90.220	2.150	6893.35	10014.73	9989.73	707.23	40°13'28.092"N	104°34'22.925"W	0.77	
17608.00	90.180	2.660	6893.02	10109.69	10084.65	711.22	40°13'29.029"N	104°34'22.861"W	0.54	
17703.00	90.220	2.950	6892.69	10204.67	10179.54	715.87	40°13'29.966"N	104°34'22.788"W	0.31	
17736.00	90.090	2.850	6892.60	10237.66	10212.49	717.54	40°13'30.292"N	104°34'22.762"W	0.50	Last BHI MWD Surveys
17760.00	90.090	2.850	6892.56	10261.65	10236.46	718.73	40°13'30.529"N	104°34'22.743"W	0.00	Projection to Bit

HOLE & CASING SECTIONS - Ref Wellbore: GUTTERSEN D29-738 AWB Ref Wellpath: GUTTERSEN D29-738 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	1953.00	1923.00	30.00	1952.96	-0.02	0.03	-1.62	4.98	
9.625in Casing Surface	30.00	1953.00	1923.00	30.00	1952.96	-0.02	0.03	-1.62	4.98	
8.5in Open Hole	1953.00	17760.00	15807.00	1952.96	6892.56	-1.62	4.98	10236.46	718.73	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#12 GUTTERSEN D29-738 (2361'FNL & 2413'FWL,SEC.29)
Area	COLORADO	Well	GUTTERSEN D29-738
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	GUTTERSEN D29-738 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	-3.00	-33.57	-1477.53	3256648.50	1315946.49	40°11'49.272"N	104°34'52.428"W	polygon
SEC.20-T03N-R64W	-3.00	-33.57	-1477.53	3256648.50	1315946.49	40°11'49.272"N	104°34'52.428"W	polygon
SEC.29-T03N-R64W	-3.00	-33.57	-1477.53	3256648.50	1315946.49	40°11'49.272"N	104°34'52.428"W	polygon
GUTTERSEN D29-738 BHL ON PLAT (2565'FSL & 2043'FEL,SEC.17)	6892.20	10237.76	733.87	3258859.81	1326217.36	40°13'30.540"N	104°34'22.548"W	point
GUTTERSEN D29-738 LP	6917.00	-87.81	917.00	3259042.92	1315892.25	40°11'48.490"N	104°34'21.579"W	point
GUTTERSEN D29-738 TARGET 1	6929.09	1066.75	895.68	3259021.61	1317046.76	40°11'59.901"N	104°34'21.698"W	point
GUTTERSEN D29-738 TARGET 2	6929.25	2366.53	871.67	3258997.60	1318346.48	40°12'12.747"N	104°34'21.833"W	point

WELLPATH COMPOSITION - Ref Wellbore: GUTTERSEN D29-738 AWB					Ref Wellpath: GUTTERSEN D29-738 AWP	
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment		Wellbore	
0.00	1953.00	Gyrodatta standard - Drop gyro or Multi-shot	3rd Party Surface Gyros <84'-1953'>		GUTTERSEN D29-738 AWB	
1953.00	17736.00	OWSG MWD rev2 + IFR1 + Multi-Station Correction	BH/ATC 8.5" Hole OWSG MWD rev2+IFR1+MSA <1983'-17736'>		GUTTERSEN D29-738 AWB	
17736.00	17760.00	Blind Drilling (std)	Projection to bit		GUTTERSEN D29-738 AWB	