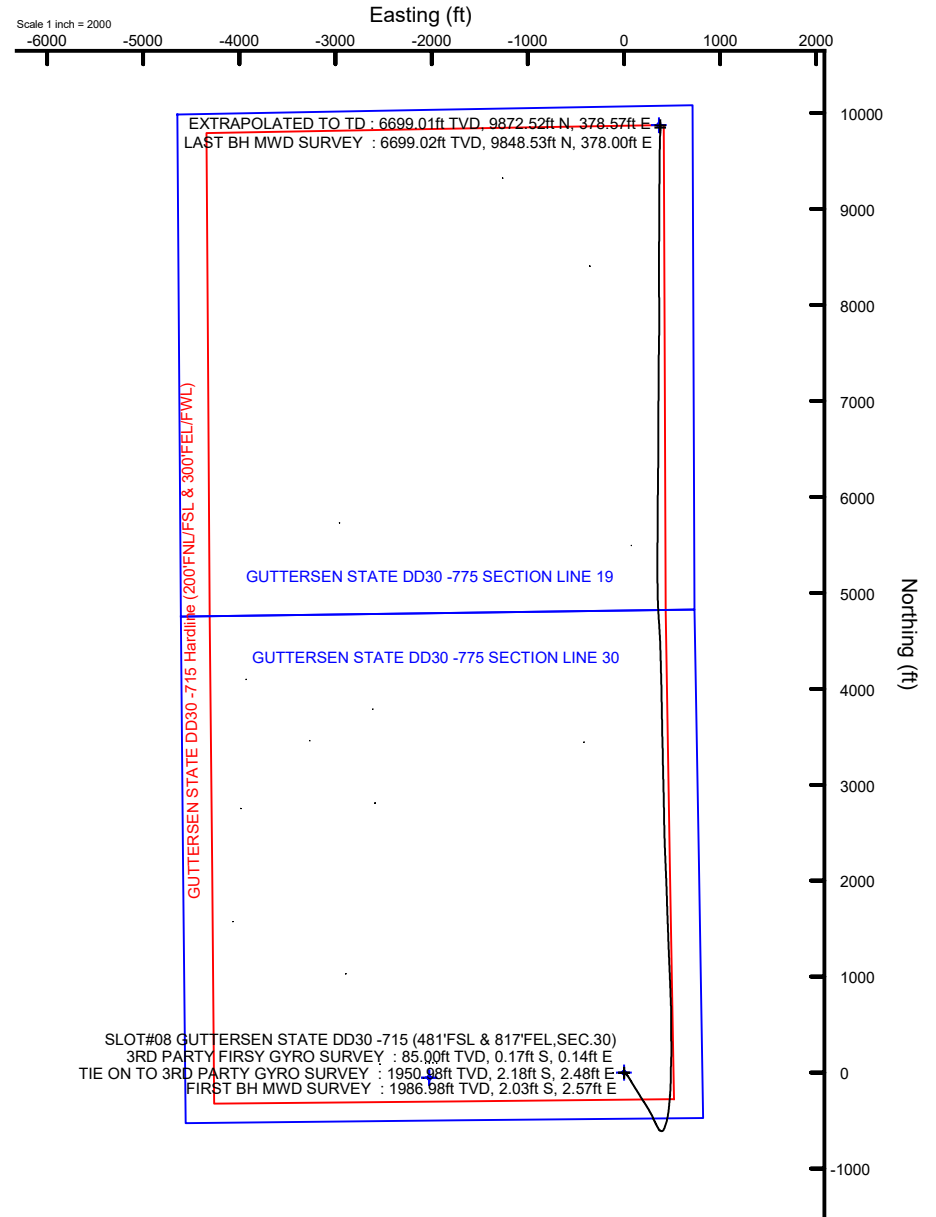
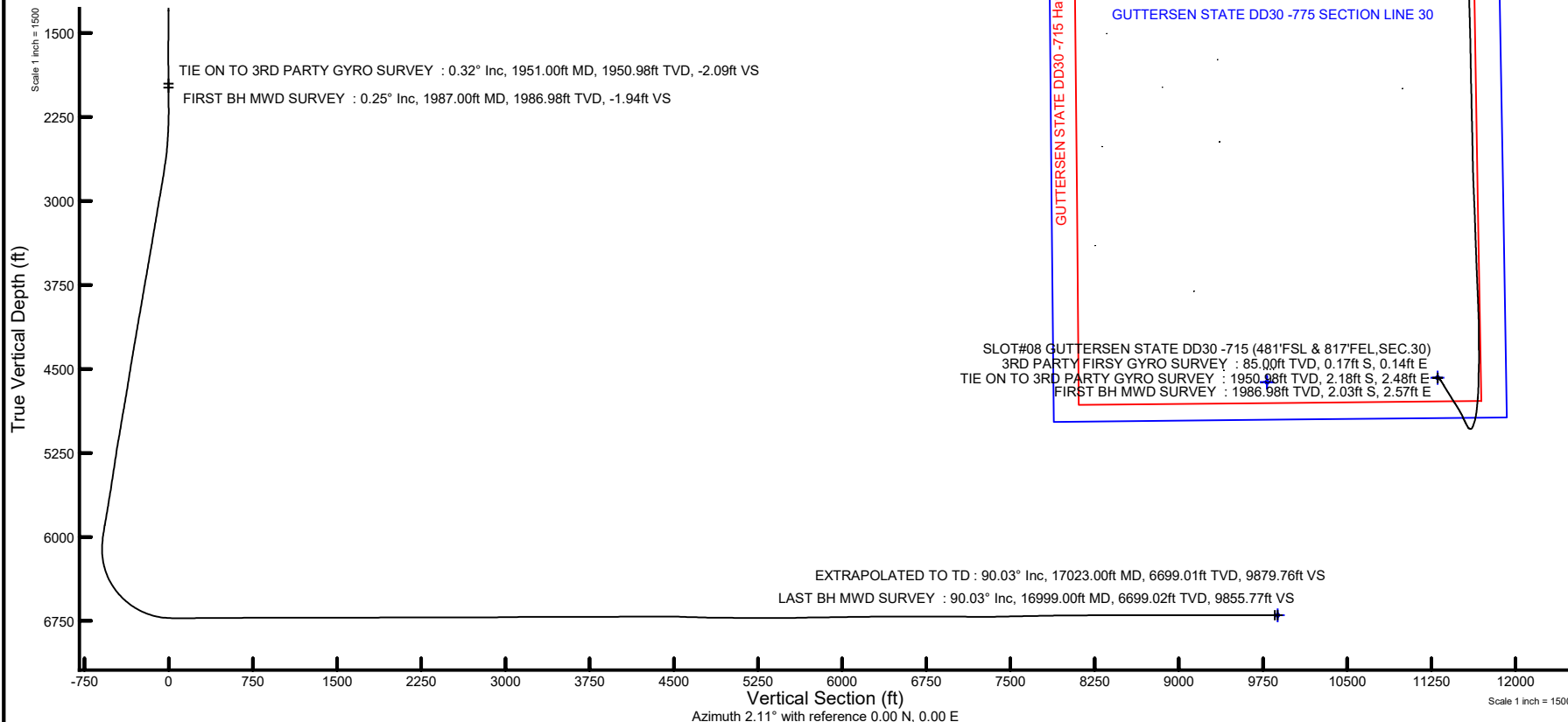


NOBLE ENERGY, INC

Location: COLORADO Slot: SLOT#08 GUTTERSEN STATE DD30 -715 (481'FSL & 817'FEL,SEC.30)
Field: WELD COUNTY (NOBLE NAD 83 GRID) Well: GUTTERSEN STATE DD30 -715
Facility: SEC.30-T03N-R63W Wellbore: GUTTERSEN STATE DD30 -715 AWB

Location Information

Facility Name				Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SEC.30-T03N-R63W				3284561.516	1313836.085	40°1'25.4040"N	104°28'53.0400"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	
SLOT#08 GUTTERSEN STATE DD30 -715 (481'FSL & 817'FEL,SEC.30)	49.27	2061.42	3286622.845	1313885.352	40°11'25.6560"N	104°28'26.4720"W	
RIG (307) (RKB) to Mud line (At Slot: SLOT#08 GUTTERSEN STATE DD30 -715 (481'FSL & 817'FEL,SEC.30))						4853R	
Mean Sea Level to Mud line (At Slot: SLOT#08 GUTTERSEN STATE DD30 -715 (481'FSL & 817'FEL,SEC.30))						0R	
RIG (307) (RKB) to Mean Sea Level						4853R	
Plot reference wellpath is GUTTERSEN STATE DD30 -715 AWP				Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet			
True vertical depths are referenced to RIG (307) (RKB)				North Reference: Grid north			
Reference wellpath measured depths are referenced to RIG (307) (RKB)				Scale: True distance			
RIG (307) (RKB) to Mean Sea Level: 4853 feet				Coordinates are in feet referenced to Slot			
Mean Sea Level to Mud line (At Slot: SLOT#08 GUTTERSEN STATE DD30 -715 (481'FSL & 817'FEL,SEC.30)): 0 feet				Depths are in feet			
Offset wellpath MDs are referenced to each path's default MD datum				Created by: manajohi on 2019-12-10; Database: WA_NOBLE			



REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Well	GUTTERSEN STATE DD30 -715
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.30-T03N-R63W	Wellbore	GUTTERSEN STATE DD30 -715 AWB
Slot	SLOT#08 GUTTERSEN STATE DD30 -715 (481'FSL & 817'FEL,SEC.30)		

REPORT SETUP INFORMATION

Projection System	NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	Software System	WellArchitect® 6.0
North Reference	Grid	User	Manajohj
Scale	0.999957	Report Generated	12/10/2019 at 1:54:07 PM
Convergence at slot	0.66° East	Database	WA_NOBLE

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	49.27	2061.42	3286622.85	1313885.35	40°11'25.6560"N	104°28'26.4720"W
Facility Reference Pt			3284561.52	1313836.09	40°11'25.4040"N	104°28'53.0400"W
Field Reference Pt			3000000.00	4454105.15	48°46'34.3150"N	105°30'0.0000"W

WELLPATH DATUM

Calculation method	Minimum curvature	RIG (30') (RKB) to Facility Vertical Datum	4853.00ft
Horizontal Reference Pt	Slot	RIG (30') (RKB) to Mean Sea Level	4853.00ft
Vertical Reference Pt	RIG (30') (RKB)	RIG (30') (RKB) to Mud Line at Slot (SLOT#08 GUTTERSEN STATE DD30 -715 (481'FSL & 817'FEL,SEC.30))	4853.00ft
MD Reference Pt	RIG (30') (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	2.11°

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Well	GUTTERSEN STATE DD30 -715
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.30-T03N-R63W	Wellbore	GUTTERSEN STATE DD30 -715 AWB
Slot	SLOT#08 GUTTERSEN STATE DD30 -715 (481'FSL & 817'FEL, SEC.30)		

WELLPATH DATA (172 stations)														
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	TVDSS [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Toolface [°]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
0.00	0.000	139.760	0.00	-4853.00	0.00	0.00	0.00	40°11'25.6560"N	104°28'26.4720"W	0.00	0.00	0.00	0.00	
85.00	0.300	139.760	85.00	-4768.00	-0.16	-0.17	0.14	40°11'25.6543"N	104°28'26.4702"W	0.35	-19.49	0.35	0.00	3RD PARTY FIRSY GYRO SURVEY
179.00	0.580	130.210	179.00	-4674.00	-0.64	-0.66	0.67	40°11'25.6494"N	104°28'26.4635"W	0.31	-148.34	0.30	-10.16	
268.00	0.430	116.800	267.99	-4585.01	-1.06	-1.11	1.31	40°11'25.6449"N	104°28'26.4553"W	0.21	162.45	-0.17	-15.07	
363.00	0.130	193.150	362.99	-4490.01	-1.31	-1.37	1.60	40°11'25.6423"N	104°28'26.4516"W	0.44	104.18	-0.32	80.37	
457.00	0.430	280.280	456.99	-4396.01	-1.37	-1.41	1.23	40°11'25.6419"N	104°28'26.4564"W	0.47	178.03	0.32	92.69	
552.00	0.090	88.860	551.99	-4301.01	-1.31	-1.35	0.95	40°11'25.6426"N	104°28'26.4599"W	0.55	-112.88	-0.36	177.45	
646.00	0.160	7.200	645.99	-4207.01	-1.18	-1.22	1.04	40°11'25.6439"N	104°28'26.4587"W	0.18	153.58	0.07	-86.87	
741.00	0.170	136.030	740.99	-4112.01	-1.14	-1.19	1.16	40°11'25.6441"N	104°28'26.4572"W	0.31	92.95	0.01	135.61	
836.00	0.450	206.810	835.99	-4017.01	-1.58	-1.62	1.09	40°11'25.6399"N	104°28'26.4582"W	0.45	-176.10	0.29	74.51	
930.00	0.050	172.990	929.99	-3923.01	-1.95	-1.99	0.93	40°11'25.6362"N	104°28'26.4604"W	0.44	19.24	-0.43	-35.98	
1024.00	0.140	185.470	1023.99	-3829.01	-2.11	-2.15	0.92	40°11'25.6347"N	104°28'26.4604"W	0.10	155.39	0.10	13.28	
1119.00	0.070	284.480	1118.99	-3734.01	-2.21	-2.25	0.85	40°11'25.6337"N	104°28'26.4613"W	0.17	174.82	-0.07	104.22	
1213.00	0.360	98.290	1212.99	-3640.01	-2.23	-2.27	1.09	40°11'25.6334"N	104°28'26.4583"W	0.46	129.28	0.31	184.90	
1307.00	0.280	131.940	1306.99	-3546.01	-2.41	-2.47	1.55	40°11'25.6314"N	104°28'26.4523"W	0.21	105.67	-0.09	35.80	
1402.00	0.280	163.270	1401.98	-3451.02	-2.78	-2.85	1.79	40°11'25.6277"N	104°28'26.4493"W	0.16	145.55	0.00	32.98	
1496.00	0.180	190.450	1495.98	-3357.02	-3.14	-3.21	1.83	40°11'25.6240"N	104°28'26.4489"W	0.15	-130.23	-0.11	28.91	
1591.00	0.140	139.190	1590.98	-3262.02	-3.38	-3.45	1.88	40°11'25.6217"N	104°28'26.4483"W	0.15	-25.12	-0.04	-53.96	
1685.00	0.180	133.350	1684.98	-3168.02	-3.56	-3.64	2.06	40°11'25.6198"N	104°28'26.4460"W	0.05	-139.68	0.04	-6.21	
1779.00	0.370	12.020	1778.98	-3074.02	-3.36	-3.44	2.23	40°11'25.6217"N	104°28'26.4437"W	0.52	-13.57	0.20	-129.07	
1874.00	0.510	8.250	1873.98	-2979.02	-2.63	-2.72	2.36	40°11'25.6288"N	104°28'26.4420"W	0.15	163.72	0.15	-3.97	
1951.00	0.320	18.510	1950.98	-2902.02	-2.09	-2.18	2.48	40°11'25.6342"N	104°28'26.4404"W	0.26	129.12	-0.25	13.32	TIE ON TO 3RD PARTY GYRO SURVEY
1987.00	0.250	50.900	1986.98	-2866.02	-1.94	-2.03	2.57	40°11'25.6356"N	104°28'26.4392"W	0.48	-0.25	-0.19	89.97	FIRST BH MWD SURVEY
2176.00	0.770	50.730	2175.97	-2677.03	-0.83	-0.97	3.87	40°11'25.6460"N	104°28'26.4223"W	0.28	108.62	0.28	-0.09	
2270.00	1.750	134.710	2269.95	-2583.05	-1.38	-1.58	5.38	40°11'25.6398"N	104°28'26.4029"W	1.95	-7.56	1.04	89.34	
2365.00	4.280	130.230	2364.81	-2488.19	-4.55	-4.89	9.12	40°11'25.6066"N	104°28'26.3552"W	2.67	-6.74	2.66	-4.72	
2459.00	6.690	127.790	2458.37	-2394.63	-9.91	-10.51	16.13	40°11'25.5503"N	104°28'26.2658"W	2.58	7.67	2.56	-2.60	
2554.00	8.840	129.670	2552.50	-2300.50	-17.59	-18.56	26.12	40°11'25.4696"N	104°28'26.1382"W	2.28	72.78	2.26	1.98	
2649.00	10.170	146.440	2646.21	-2206.79	-28.86	-30.22	36.38	40°11'25.3533"N	104°28'26.0078"W	3.22	-43.32	1.40	17.65	
2743.00	10.410	145.200	2738.70	-2114.30	-42.39	-44.10	45.81	40°11'25.2149"N	104°28'25.8883"W	0.35	28.76	0.26	-1.32	
2838.00	11.500	148.160	2831.97	-2021.03	-57.11	-59.20	55.70	40°11'25.0647"N	104°28'25.7631"W	1.29	65.53	1.15	3.12	
2932.00	11.800	151.210	2924.03	-1928.97	-73.13	-75.58	65.28	40°11'24.9017"N	104°28'25.6422"W	0.73	-95.53	0.32	3.24	
3027.00	11.750	147.370	3017.03	-1835.97	-89.41	-92.24	75.17	40°11'24.7359"N	104°28'25.5172"W	0.83	-159.62	-0.05	-4.04	
3121.00	11.620	147.130	3109.08	-1743.92	-105.03	-108.25	85.47	40°11'24.5765"N	104°28'25.3869"W	0.15	128.03	-0.14	-0.26	
3216.00	11.360	148.850	3202.18	-1650.82	-120.70	-124.30	95.50	40°11'24.4169"N	104°28'25.2600"W	0.45	-139.55	-0.27	1.81	
3311.00	11.070	147.550	3295.37	-1557.63	-136.03	-140.00	105.24	40°11'24.2606"N	104°28'25.1370"W	0.40	56.81	-0.31	-1.37	
3405.00	11.480	150.580	3387.55	-1465.45	-151.44	-155.76	114.67	40°11'24.1037"N	104°28'25.0177"W	0.77	-51.96	0.44	3.22	
3500.00	11.940	147.820	3480.58	-1372.42	-167.61	-172.32	124.55	40°11'23.9391"N	104°28'24.8929"W	0.76	149.61	0.48	-2.91	
3594.00	11.770	148.310	3572.57	-1280.43	-183.61	-188.70	134.77	40°11'23.7759"N	104°28'24.7637"W	0.21	160.31	-0.18	0.52	
3689.00	11.390	149.000	3665.64	-1187.36	-199.52	-204.99	144.69	40°11'23.6139"N	104°28'24.6383"W	0.43	10.23	-0.40	0.73	
3784.00	11.810	149.370	3758.70	-1094.30	-215.56	-221.39	154.47	40°11'23.4507"N	104°28'24.5147"W	0.45	-101.14	0.44	0.39	
3878.00	11.700	146.170	3850.73	-1002.27	-231.36	-237.59	164.68	40°11'23.2895"N	104°28'24.3856"W	0.70	83.18	-0.12	-3.40	
3973.00	11.810	149.750	3943.74	-909.26	-247.38	-253.99	174.94	40°11'23.1262"N	104°28'24.2559"W	0.78	-107.43	0.12	3.77	
4067.00	11.660	147.210	4035.77	-817.23	-263.29	-270.28	184.93	40°11'22.9641"N	104°28'24.1296"W	0.57	30.59	-0.16	-2.70	
4162.00	12.110	148.470	4128.74	-724.26	-279.46	-286.85	195.34	40°11'22.7992"N	104°28'23.9979"W	0.55	-127.06	0.47	1.33	

REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Well	GUTTERSEN STATE DD30 -715
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.30-T03N-R63W	Wellbore	GUTTERSEN STATE DD30 -715 AWB
Slot	SLOT#08 GUTTERSEN STATE DD30 -715 (481'FSL & 817'FEL, SEC.30)		

WELLPATH DATA (172 stations)

MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	TVDSS (ft)	Vert Sect (ft)	North (ft)	East (ft)	Latitude	Longitude	DLS (°/100ft)	Toolface (°)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Comments
4256.00	11.680	145.560	4220.72	-632.28	-295.31	-303.10	205.88	40°11'22.6374"N	104°28'23.8646"W	0.78	79.37	-0.46	-3.10	
4351.00	11.830	148.940	4313.73	-539.27	-311.19	-319.37	216.34	40°11'22.4754"N	104°28'23.7322"W	0.74	-135.41	0.16	3.56	
4445.00	11.340	146.430	4405.81	-447.19	-326.76	-335.33	226.42	40°11'22.3166"N	104°28'23.6047"W	0.75	131.46	-0.52	-2.67	
4540.00	10.780	149.940	4499.05	-353.95	-341.87	-350.80	236.04	40°11'22.1626"N	104°28'23.4831"W	0.92	-70.12	-0.59	3.69	
4634.00	11.030	146.590	4591.35	-261.65	-356.63	-365.91	245.39	40°11'22.0122"N	104°28'23.3648"W	0.72	86.66	0.27	-3.56	
4729.00	11.040	147.390	4684.59	-168.41	-371.50	-381.16	255.30	40°11'21.8604"N	104°28'23.2395"W	0.16	89.67	0.01	0.84	
4823.00	11.140	154.840	4776.84	-76.16	-386.97	-396.96	264.01	40°11'21.7033"N	104°28'23.1296"W	1.53	-59.49	0.11	7.93	
4917.00	11.500	151.900	4869.02	16.02	-403.14	-413.45	272.28	40°11'21.5394"N	104°28'23.0254"W	0.72	-141.63	0.38	-3.13	
5012.00	10.950	149.570	4962.20	109.20	-418.93	-429.58	281.31	40°11'21.3790"N	104°28'22.9115"W	0.75	75.29	-0.58	-2.45	
5201.00	11.290	155.170	5147.66	294.66	-450.56	-461.85	298.17	40°11'21.0582"N	104°28'22.6991"W	0.60	160.63	0.18	2.96	
5296.00	9.330	159.480	5241.12	388.12	-465.96	-477.51	304.78	40°11'20.9027"N	104°28'22.6163"W	2.22	-62.79	-2.06	4.54	
5390.00	9.900	153.600	5333.80	480.80	-480.09	-491.88	311.04	40°11'20.7600"N	104°28'22.5377"W	1.21	-71.67	0.61	-6.26	
5485.00	10.210	148.890	5427.34	574.34	-494.31	-506.40	319.03	40°11'20.6156"N	104°28'22.4370"W	0.92	125.37	0.33	-4.96	
5579.00	9.120	160.190	5520.02	667.02	-508.20	-520.55	325.86	40°11'20.4750"N	104°28'22.3512"W	2.32	-45.93	-1.16	12.02	
5674.00	10.620	152.310	5613.61	760.61	-522.78	-535.38	332.48	40°11'20.3277"N	104°28'22.2681"W	2.12	-37.17	1.58	-8.29	
5769.00	10.860	151.350	5706.95	853.95	-538.07	-550.99	340.83	40°11'20.1725"N	104°28'22.1627"W	0.32	14.56	0.25	-1.01	
5958.00	11.490	152.170	5892.36	1039.36	-569.68	-583.26	358.16	40°11'19.8516"N	104°28'21.9443"W	0.34	-107.48	0.33	0.43	
6052.00	10.980	138.430	5984.58	1131.58	-584.27	-598.24	368.47	40°11'19.7024"N	104°28'21.8137"W	2.89	-96.73	-0.54	-14.62	
6147.00	11.820	108.570	6077.78	1224.78	-593.58	-608.12	383.71	40°11'19.6031"N	104°28'21.6188"W	6.20	-114.34	0.88	-31.43	
6241.00	11.410	64.030	6170.04	1317.04	-591.92	-607.11	401.23	40°11'19.6111"N	104°28'21.3929"W	9.32	-84.63	-0.44	-47.38	
6336.00	16.090	23.650	6262.49	1409.49	-575.21	-590.89	415.00	40°11'19.7697"N	104°28'21.2131"W	10.94	-12.69	4.93	-42.51	
6430.00	23.570	19.480	6350.86	1497.86	-545.11	-561.20	426.51	40°11'20.0618"N	104°28'21.0604"W	8.09	-6.79	7.96	-4.44	
6525.00	33.140	17.410	6434.37	1581.37	-501.84	-518.41	440.64	40°11'20.4830"N	104°28'20.8719"W	10.13	-29.48	10.07	-2.18	
6619.00	41.180	10.700	6509.25	1656.25	-446.34	-463.37	454.11	40°11'21.0253"N	104°28'20.6902"W	9.57	-21.06	8.55	-7.14	
6713.00	49.760	6.430	6575.12	1722.12	-379.83	-397.17	463.89	40°11'21.6783"N	104°28'20.5543"W	9.68	-4.41	9.13	-4.54	
6808.00	57.930	5.690	6631.12	1778.12	-303.37	-320.96	471.95	40°11'22.4305"N	104°28'20.4390"W	8.62	-7.44	8.60	-0.78	
6902.00	66.770	4.440	6674.70	1821.70	-220.29	-238.10	479.26	40°11'23.2484"N	104°28'20.3324"W	9.48	-11.18	9.40	-1.33	
6997.00	75.640	2.640	6705.28	1852.28	-130.48	-148.43	484.77	40°11'24.1338"N	104°28'20.2481"W	9.51	-13.58	9.34	-1.89	
7091.00	84.760	0.440	6721.27	1868.27	-37.96	-55.94	487.23	40°11'25.0475"N	104°28'20.2025"W	9.97	6.18	9.70	-2.34	
7186.00	90.030	1.010	6725.58	1872.58	56.88	38.92	488.44	40°11'25.9847"N	104°28'20.1729"W	5.58	85.27	5.55	0.60	
7280.00	90.150	2.460	6725.44	1872.44	150.87	132.88	491.28	40°11'26.9128"N	104°28'20.1222"W	1.55	-87.10	0.13	1.54	
7375.00	90.280	359.890	6725.08	1872.08	245.85	227.85	493.23	40°11'27.8510"N	104°28'20.0829"W	2.71	-67.52	0.14	-2.71	
7469.00	90.520	359.310	6724.42	1871.42	339.76	321.84	492.57	40°11'28.7799"N	104°28'20.0773"W	0.67	98.13	0.26	-0.62	
7564.00	90.460	359.730	6723.61	1870.61	434.66	416.83	491.78	40°11'29.7186"N	104°28'20.0734"W	0.45	137.86	-0.06	0.44	
7658.00	90.250	359.920	6723.03	1870.03	528.58	510.83	491.49	40°11'30.6475"N	104°28'20.0630"W	0.30	-107.88	-0.22	0.20	
7752.00	90.150	359.610	6722.70	1869.70	622.50	604.83	491.10	40°11'31.5763"N	104°28'20.0540"W	0.35	-90.00	-0.11	-0.33	
7847.00	90.150	357.740	6722.45	1869.45	717.33	699.80	488.91	40°11'32.5150"N	104°28'20.0681"W	1.97	80.31	0.00	-1.97	
7941.00	90.220	358.150	6722.15	1869.15	811.08	793.74	485.54	40°11'33.4436"N	104°28'20.0975"W	0.44	-95.19	0.07	0.44	
8035.00	90.180	357.710	6721.82	1868.82	904.83	887.68	482.14	40°11'34.3723"N	104°28'20.1272"W	0.47	146.31	-0.04	-0.47	
8130.00	90.000	357.830	6721.67	1868.67	999.56	982.61	478.45	40°11'35.3107"N	104°28'20.1607"W	0.23	-112.99	-0.19	0.13	
8225.00	89.720	357.170	6721.90	1868.90	1094.25	1077.51	474.30	40°11'36.2490"N	104°28'20.1999"W	0.75	57.78	-0.29	-0.69	
8319.00	90.180	357.900	6721.99	1868.99	1187.95	1171.43	470.26	40°11'37.1774"N	104°28'20.2380"W	0.92	-64.98	0.49	0.78	
8414.00	90.250	357.750	6721.63	1868.63	1282.68	1266.36	466.65	40°11'38.1159"N	104°28'20.2702"W	0.17	-180.00	0.07	-0.16	
8508.00	90.180	357.750	6721.28	1868.28	1376.41	1360.28	462.96	40°11'39.0444"N	104°28'20.3038"W	0.07	126.87	-0.07	0.00	
8603.00	90.030	357.950	6721.10	1868.10	1471.14	1455.22	459.40	40°11'39.9829"N	104°28'20.3355"W	0.26	-69.44	-0.16	0.21	

REFERENCE WELLPATH IDENTIFICATION				
Operator	NOBLE ENERGY, INC		Well	GUTTERSEN STATE DD30 -715
Field	WELD COUNTY (NOBLE NAD 83 GRID)		API/Legal	
Facility	SEC.30-T03N-R63W		Wellbore	GUTTERSEN STATE DD30 -715 AWB
Slot	SLOT#08 GUTTERSEN STATE DD30 -715 (481'FSL & 817'FEL, SEC.30)			

WELLPATH DATA (172 stations)														
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	TVDSS [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Toolface [°]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
8697.00	90.060	357.870	6721.03	1868.03	1564.89	1549.15	455.97	40°11'40.9115"N	104°28'20.3656"W	0.09	-150.95	0.03	-0.09	
8792.00	89.970	357.820	6721.00	1868.00	1659.63	1644.09	452.40	40°11'41.8500"N	104°28'20.3975"W	0.11	40.60	-0.09	-0.05	
8886.00	90.250	358.060	6720.82	1867.82	1753.38	1738.03	449.02	40°11'42.7786"N	104°28'20.4270"W	0.39	37.87	0.30	0.26	
8981.00	90.430	358.200	6720.26	1867.26	1848.15	1832.97	445.92	40°11'43.7172"N	104°28'20.4528"W	0.24	-154.36	0.19	0.15	
9076.00	90.180	358.080	6719.75	1866.75	1942.92	1927.92	442.84	40°11'44.6558"N	104°28'20.4783"W	0.29	-84.92	-0.26	-0.13	
9170.00	90.220	357.630	6719.43	1866.43	2036.66	2021.86	439.32	40°11'45.5844"N	104°28'20.5096"W	0.48	-148.39	0.04	-0.48	
9265.00	90.090	357.550	6719.17	1866.17	2131.36	2116.77	435.32	40°11'46.5227"N	104°28'20.5469"W	0.16	46.00	-0.14	-0.08	
9359.00	90.370	357.840	6718.79	1865.79	2225.08	2210.69	431.54	40°11'47.4512"N	104°28'20.5816"W	0.43	-102.68	0.30	0.31	
9453.00	90.280	357.440	6718.26	1865.26	2318.80	2304.61	427.67	40°11'48.3797"N	104°28'20.6175"W	0.44	120.32	-0.10	-0.43	
9548.00	89.970	357.970	6718.05	1865.05	2413.52	2399.54	423.87	40°11'49.3181"N	104°28'20.6523"W	0.65	76.50	-0.33	0.56	
9643.00	90.150	358.720	6717.95	1864.95	2508.31	2494.50	421.12	40°11'50.2567"N	104°28'20.6735"W	0.81	161.57	0.19	0.79	
9737.00	89.850	358.820	6717.95	1864.95	2602.15	2588.47	419.11	40°11'51.1856"N	104°28'20.6855"W	0.34	63.44	-0.32	0.11	
9832.00	90.000	359.120	6718.08	1865.08	2697.01	2683.46	417.40	40°11'52.1244"N	104°28'20.6933"W	0.35	-41.35	0.16	0.32	
9927.00	90.250	358.900	6717.87	1864.87	2791.87	2778.44	415.76	40°11'53.0631"N	104°28'20.7003"W	0.35	-159.27	0.26	-0.23	
10021.00	89.880	358.760	6717.76	1864.76	2885.71	2872.42	413.84	40°11'53.9920"N	104°28'20.7110"W	0.42	-17.26	-0.39	-0.15	
10115.00	91.360	358.300	6716.74	1863.74	2979.52	2966.38	411.43	40°11'54.9207"N	104°28'20.7280"W	1.65	140.90	1.57	-0.49	
10210.00	90.400	359.080	6715.29	1862.29	3074.34	3061.35	409.25	40°11'55.8593"N	104°28'20.7418"W	1.30	-114.30	-1.01	0.82	
10304.00	90.120	358.460	6714.86	1861.86	3168.18	3155.32	407.24	40°11'56.7882"N	104°28'20.7538"W	0.72	106.09	-0.30	-0.66	
10399.00	89.970	358.980	6714.78	1861.78	3263.01	3250.30	405.12	40°11'57.7269"N	104°28'20.7669"W	0.57	5.53	-0.16	0.55	
10493.00	90.280	359.010	6714.58	1861.58	3356.87	3344.28	403.47	40°11'58.6558"N	104°28'20.7741"W	0.33	-131.95	0.33	0.03	
10587.00	89.570	358.220	6714.70	1861.70	3450.70	3438.26	401.19	40°11'59.5846"N	104°28'20.7894"W	1.13	38.91	-0.76	-0.84	
10682.00	90.400	358.890	6714.73	1861.73	3545.51	3533.22	398.80	40°12'0.5233"N	104°28'20.8061"W	1.12	169.99	0.87	0.71	
10871.00	90.060	358.950	6713.97	1860.97	3734.22	3722.19	395.24	40°12'2.3909"N	104°28'20.8238"W	0.18	90.00	-0.18	0.03	
10965.00	90.060	358.960	6713.87	1860.87	3828.07	3816.17	393.52	40°12'3.3198"N	104°28'20.8318"W	0.01	-2.66	0.00	0.01	
11060.00	90.490	358.940	6713.41	1860.41	3922.93	3911.16	391.78	40°12'4.2586"N	104°28'20.8401"W	0.45	-69.62	0.45	-0.02	
11249.00	90.620	358.590	6711.58	1858.58	4111.60	4100.10	387.71	40°12'6.1261"N	104°28'20.8643"W	0.20	-172.29	0.07	-0.19	
11343.00	89.660	358.460	6711.35	1858.35	4205.41	4194.07	385.29	40°12'7.0549"N	104°28'20.8815"W	1.03	-9.21	-1.02	-0.14	
11437.00	90.030	358.400	6711.61	1858.61	4299.22	4288.03	382.71	40°12'7.9837"N	104°28'20.9006"W	0.40	6.12	0.39	-0.06	
11532.00	90.310	358.430	6711.33	1858.33	4394.02	4383.00	380.09	40°12'8.9223"N	104°28'20.9203"W	0.30	-141.49	0.29	0.03	
11626.00	89.380	357.690	6711.58	1858.58	4487.78	4476.94	376.90	40°12'9.8510"N	104°28'20.9473"W	1.26	-148.30	-0.99	-0.79	
11721.00	87.940	356.800	6713.80	1860.80	4582.41	4571.80	372.34	40°12'10.7889"N	104°28'20.9920"W	1.78	-45.70	-1.52	-0.94	
11815.00	88.340	356.390	6716.85	1863.85	4675.93	4665.59	366.76	40°12'11.7162"N	104°28'21.0499"W	0.61	-61.39	0.43	-0.44	
11910.00	88.580	355.950	6719.41	1866.41	4770.38	4760.34	360.42	40°12'12.6532"N	104°28'21.1175"W	0.53	68.00	0.25	-0.46	
12099.00	89.850	359.090	6722.00	1869.00	4958.73	4949.12	352.24	40°12'14.5195"N	104°28'21.1946"W	1.79	-172.78	0.67	1.66	
12194.00	89.140	359.000	6722.83	1869.83	5053.59	5044.10	350.66	40°12'15.4583"N	104°28'21.2009"W	0.75	-79.37	-0.75	-0.09	
12288.00	89.450	357.350	6723.99	1870.99	5147.36	5138.04	347.66	40°12'16.3869"N	104°28'21.2254"W	1.79	82.38	0.33	-1.76	
12383.00	89.970	1.230	6724.47	1871.47	5242.22	5233.01	346.49	40°12'17.3255"N	104°28'21.2264"W	4.12	-79.10	0.55	4.08	
12572.00	90.180	0.140	6724.22	1871.22	5431.16	5422.00	348.75	40°12'19.1926"N	104°28'21.1690"W	0.59	36.67	0.11	-0.58	
12667.00	90.650	0.490	6723.54	1870.54	5526.11	5516.99	349.27	40°12'20.1312"N	104°28'21.1481"W	0.62	22.90	0.49	0.37	
12761.00	91.360	0.790	6721.89	1868.89	5620.07	5610.97	350.32	40°12'21.0597"N	104°28'21.1206"W	0.82	-76.75	0.76	0.32	
12865.00	91.480	0.280	6719.31	1866.31	5724.00	5714.94	351.29	40°12'22.0869"N	104°28'21.0925"W	0.50	-152.38	0.12	-0.49	
12950.00	90.180	359.600	6718.08	1865.08	5808.92	5799.92	351.20	40°12'22.9267"N	104°28'21.0810"W	1.73	58.65	-1.53	-0.80	
13045.00	90.710	0.470	6717.34	1864.34	5903.86	5894.92	351.26	40°12'23.8654"N	104°28'21.0661"W	1.07	37.74	0.56	0.92	
13139.00	91.020	0.710	6715.92	1862.92	5997.81	5988.90	352.23	40°12'24.7940"N	104°28'21.0395"W	0.42	-162.65	0.33	0.26	
13234.00	90.860	0.660	6714.36	1861.36	6092.77	6083.89	353.36	40°12'25.7324"N	104°28'21.0107"W	0.18	-109.98	-0.17	-0.05	

REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Well	GUTTERSEN STATE DD30 -715
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.30-T03N-R63W	Wellbore	GUTTERSEN STATE DD30 -715 AWB
Slot	SLOT#08 GUTTERSEN STATE DD30 -715 (481'FSL & 817'FEL, SEC.30)		

WELLPATH DATA (172 stations) † = interpolated, ‡ = extrapolated station

MD (ft)	Inclination [°]	Azimuth [°]	TVD (ft)	TVDSS (ft)	Vert Sect (ft)	North (ft)	East (ft)	Latitude	Longitude	DLS [°/100ft]	Tooface [°]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
13328.00	90.620	360.000	6713.15	1860.15	6186.72	6177.88	353.90	40°12'26.6611"N	104°28'20.9897"W	0.75	96.88	-0.26	-0.70	
13423.00	90.400	1.820	6712.30	1859.30	6281.69	6272.86	355.41	40°12'27.5994"N	104°28'20.9561"W	1.93	-96.06	-0.23	1.92	
13517.00	90.280	0.690	6711.75	1858.75	6375.67	6366.83	357.47	40°12'28.5278"N	104°28'20.9155"W	1.21	-104.19	-0.13	-1.20	
13612.00	90.060	359.820	6711.46	1858.46	6470.62	6461.83	357.89	40°12'29.4664"N	104°28'20.8959"W	0.94	-37.88	-0.23	-0.92	
13706.00	90.150	359.750	6711.29	1858.29	6564.55	6555.83	357.54	40°12'30.3953"N	104°28'20.8864"W	0.12	113.75	0.10	-0.07	
13801.00	89.820	0.500	6711.32	1858.32	6659.49	6650.83	357.75	40°12'31.3340"N	104°28'20.8695"W	0.86	-90.00	-0.35	0.79	
13895.00	89.820	359.750	6711.61	1858.61	6753.43	6744.82	357.95	40°12'32.2628"N	104°28'20.8528"W	0.80	62.72	0.00	-0.80	
13990.00	90.150	0.390	6711.64	1858.64	6848.37	6839.82	358.07	40°12'33.2015"N	104°28'20.8372"W	0.76	159.15	0.35	0.67	
14084.00	89.940	0.470	6711.56	1858.56	6942.33	6933.82	358.77	40°12'34.1302"N	104°28'20.8140"W	0.24	154.80	-0.22	0.09	
14179.00	89.600	0.630	6711.94	1858.94	7037.29	7028.82	359.69	40°12'35.0688"N	104°28'20.7881"W	0.40	-102.32	-0.36	0.17	
14274.00	89.410	359.760	6712.76	1859.76	7132.24	7123.81	360.01	40°12'36.0074"N	104°28'20.7697"W	0.94	42.73	-0.20	-0.92	
14463.00	90.460	0.730	6712.98	1859.98	7321.13	7312.80	360.82	40°12'37.8749"N	104°28'20.7311"W	0.76	-12.15	0.56	0.51	
14557.00	91.110	0.590	6711.69	1858.69	7415.09	7406.79	361.90	40°12'38.8034"N	104°28'20.7031"W	0.71	43.36	0.69	-0.15	
14652.00	91.290	0.760	6709.70	1856.70	7510.04	7501.76	363.02	40°12'39.7417"N	104°28'20.6745"W	0.26	120.97	0.19	0.18	
14746.00	91.140	1.010	6707.71	1854.71	7604.00	7595.73	364.47	40°12'40.6701"N	104°28'20.6417"W	0.31	117.30	-0.16	0.27	
14841.00	90.980	1.320	6705.95	1852.95	7698.97	7690.69	366.40	40°12'41.6082"N	104°28'20.6027"W	0.37	-86.73	-0.17	0.33	
14935.00	91.050	0.090	6704.29	1851.29	7792.92	7784.67	367.56	40°12'42.5367"N	104°28'20.5737"W	1.31	-83.73	0.07	-1.31	
15030.00	91.140	359.270	6702.47	1849.47	7887.82	7879.65	367.03	40°12'43.4753"N	104°28'20.5664"W	0.87	148.42	0.09	-0.86	
15125.00	90.180	359.860	6701.38	1848.38	7982.72	7974.64	366.31	40°12'44.4140"N	104°28'20.5615"W	1.19	-7.77	-1.01	0.62	
15219.00	90.400	359.830	6700.90	1847.90	8076.64	8068.64	366.05	40°12'45.3429"N	104°28'20.5507"W	0.24	90.00	0.23	-0.03	
15314.00	90.400	359.840	6700.24	1847.24	8171.57	8163.63	365.78	40°12'46.2816"N	104°28'20.5401"W	0.01	37.23	0.00	0.01	
15408.00	90.650	0.030	6699.38	1846.38	8265.49	8257.63	365.67	40°12'47.2104"N	104°28'20.5274"W	0.33	-136.66	0.27	0.20	
15503.00	89.940	359.360	6698.89	1845.89	8360.41	8352.63	365.17	40°12'48.1491"N	104°28'20.5197"W	1.03	78.60	-0.75	-0.71	
15691.00	90.180	0.550	6698.69	1845.69	8548.27	8540.62	365.02	40°12'50.0068"N	104°28'20.4935"W	0.65	-145.98	0.13	0.63	
15880.00	89.780	0.280	6698.76	1845.76	8737.19	8729.62	366.39	40°12'51.8742"N	104°28'20.4477"W	0.26	113.20	-0.21	-0.14	
15975.00	89.690	0.490	6699.19	1846.19	8832.14	8824.61	367.03	40°12'52.8128"N	104°28'20.4252"W	0.24	-22.20	-0.09	0.22	
16069.00	90.180	0.290	6699.30	1846.30	8926.10	8918.61	367.67	40°12'53.7415"N	104°28'20.4030"W	0.56	158.75	0.52	-0.21	
16164.00	89.820	0.430	6699.30	1846.30	9021.06	9013.61	368.26	40°12'54.6802"N	104°28'20.3811"W	0.41	-35.54	-0.38	0.15	
16353.00	90.310	0.080	6699.09	1846.09	9209.96	9202.61	369.10	40°12'56.5476"N	104°28'20.3420"W	0.32	137.77	0.26	-0.19	
16447.00	89.660	0.670	6699.11	1846.11	9303.91	9296.60	369.72	40°12'57.4763"N	104°28'20.3200"W	0.93	-8.53	-0.69	0.63	
16541.00	90.060	0.610	6699.34	1846.34	9397.88	9390.60	370.77	40°12'58.4050"N	104°28'20.2925"W	0.43	-77.01	0.43	-0.06	
16636.00	90.090	0.480	6699.22	1846.22	9492.85	9485.59	371.67	40°12'59.3436"N	104°28'20.2666"W	0.14	-157.25	0.03	-0.14	
16731.00	89.780	0.350	6699.32	1846.32	9587.80	9580.59	372.36	40°13'0.2822"N	104°28'20.2436"W	0.35	81.99	-0.33	-0.14	
16825.00	89.970	1.700	6699.53	1846.53	9681.78	9674.57	374.04	40°13'1.2107"N	104°28'20.2078"W	1.45	-59.97	0.20	1.44	
16920.00	90.340	1.060	6699.27	1846.27	9776.78	9769.54	376.33	40°13'2.1489"N	104°28'20.1642"W	0.78	135.94	0.39	-0.67	
16999.00	90.030	1.360	6699.02	1846.02	9855.77	9848.53	378.00	40°13'2.9291"N	104°28'20.1309"W	0.55	0.00	-0.39	0.38	LAST BH MWD SURVEY
17023.00†	90.030	1.360	6699.01	1846.01	9879.76	9872.52	378.57	40°13'3.1661"N	104°28'20.1199"W	0.00		0.00	0.00	EXTRAPOLATED TO TD

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Well	GUTTERSEN STATE DD30 -715
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.30-T03N-R63W	Wellbore	GUTTERSEN STATE DD30 -715 AWB
Slot	SLOT#08 GUTTERSEN STATE DD30 -715 (481'FSL & 817'FEL, SEC.30)		

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
GUTTERSEN STATE DD30 -775 SECTION LINE 19	29.00	-52.49	-2025.06	3284597.87	1313832.86	40°11'25.3680"N	104°28'52.5720"W	polygon
	2D Polygon: dimensions not calculated							
GUTTERSEN STATE DD30 -775 SECTION LINE 30	29.00	-52.49	-2025.06	3284597.87	1313832.86	40°11'25.3680"N	104°28'52.5720"W	polygon
	2D Polygon: dimensions not calculated							
GUTTERSEN STATE DD30 -715 BHL REV-1 (200'FNL & 350'FEL, SEC.19)	6699.82	9873.63	363.78	3286986.61	1323758.54	40°13'3.1788"N	104°28'20.3103"W	point
GUTTERSEN STATE DD30 -715 TPZ REV-1 (500'FSL & 330'FEL, SEC.30)	6727.00	23.34	485.97	3287108.79	1313908.69	40°11'25.8310"N	104°28'20.2070"W	point
GUTTERSEN STATE DD30 -715 Hardline (200'FNL/FSL & 300'FEL/FWL)	7000.00	0.00	0.00	3286622.85	1313885.35	40°11'25.6560"N	104°28'26.4720"W	polygon
	2D Polygon: dimensions not calculated							

WELLPATH COMPOSITION - Ref Wellbore: GUTTERSEN STATE DD30 -715 AWB					Ref Wellpath: GUTTERSEN STATE DD30 -715 AWP	
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment		Wellbore	Survey Date
0.00	1951.00	Gyrodatta 2015 - GC+DROP+COND	13.5" Gyrodatta Surface Surveys (Gyrodatta 2015 - GC+DROP+COND) <0'-1951'>		GUTTERSEN STATE DD30 -715 AWB	12/10/2019
1951.00	17023.00	OWSG MWD rev2 - Standard	8.5" Monobore ATC (OWSG MWD rev2 + IFR1 + MSA) <1987' - 16999'>		GUTTERSEN STATE DD30 -715 AWB	12/10/2019

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Well	GUTTERSEN STATE DD30 -715
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.30-T03N-R63W	Wellbore	GUTTERSEN STATE DD30 -715 AWP
Slot	SLOT#08 GUTTERSEN STATE DD30 -715 (481'FSL & 817'FEL, SEC.30)		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
85.00	0.300	139.760	85.00	3RD PARTY FIRSY GYRO SURVEY
1951.00	0.320	18.510	1950.98	TIE ON TO 3RD PARTY GYRO SURVEY
1987.00	0.250	50.900	1986.98	FIRST BH MWD SURVEY
16999.00	90.030	1.360	6699.02	LAST BH MWD SURVEY
17023.00	90.030	1.360	6699.01	EXTRAPOLATED TO TD