

NOBLE ENERGY, INC

Location: COLORADO Slot: SLOT#06 VOGLER STATE D21-790(865°FSL&548°FEL,SEC.21)
Field: WELD COUNTY (NOBLE NAD 83 GRID) Well: VOGLER STATE D21-790
Facility: SEC.21-T03N-R64W Wellbore: VOGLER STATE D21-790 PWB

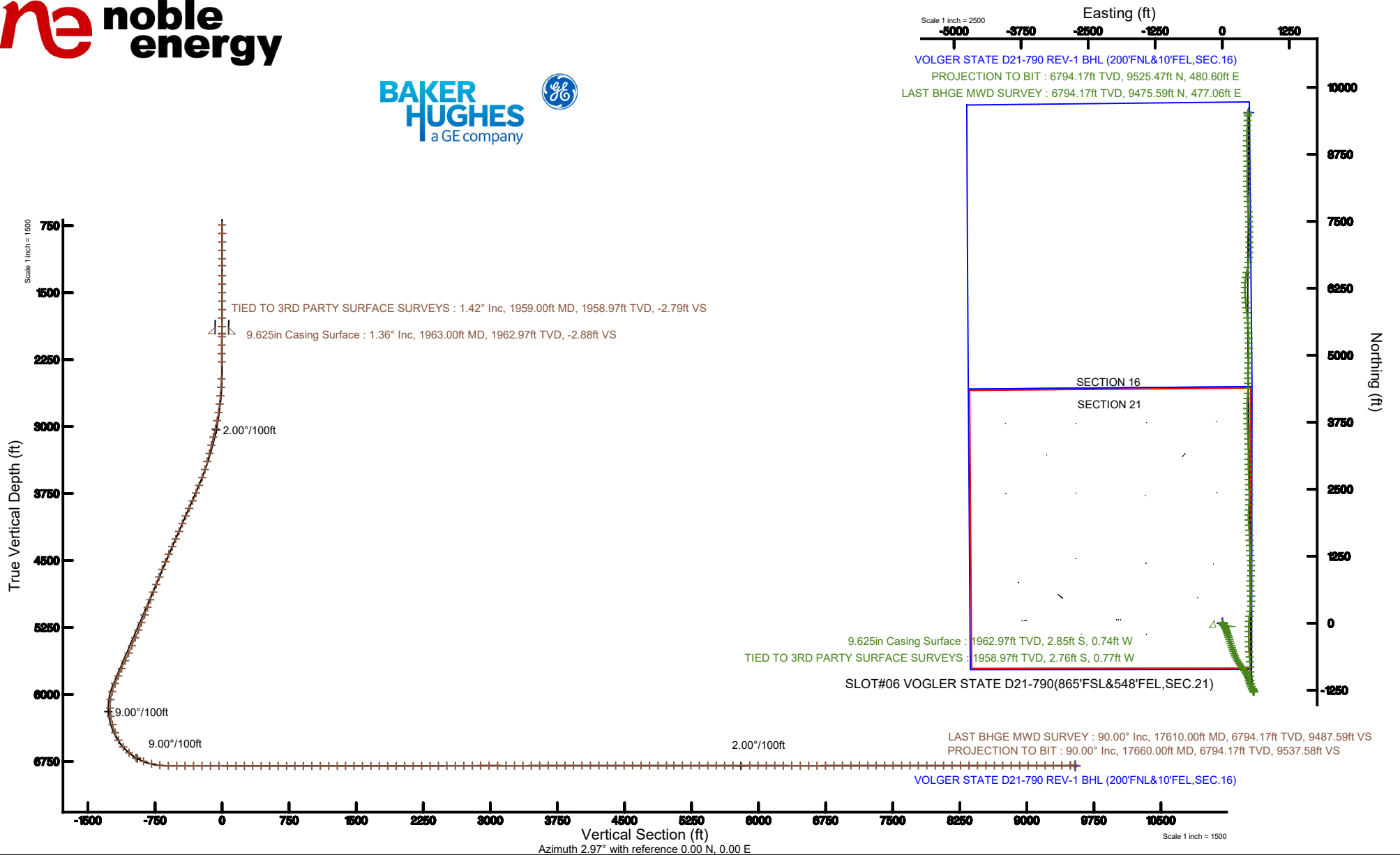
Plot reference wellpath is VOGLER STATE D21-790 (REV-A.0) PWP	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
True vertical depths are referenced to RIG (30°KB) (RKB)	North Reference: Grid north
Measured depths are referenced to RIG (30°KB) (RKB)	Scale: True distance
RIG (30°KB) (RKB) to Mean Sea Level: 4850 feet	Depths are in feet
Mean Sea Level to Ground level (At Slot: SLOT#06 VOGLER STATE D21-790(865°FSL&548°FEL,SEC.21)): 0 feet	Created by: doddanna on 2019-04-29
Coordinates are in feet referenced to Slot	Database: WellArchitectDB

Location Information

Facility Name			Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SEC.21-T03N-R64W			3261611.008	1319018.482	40°12'19.116"N	104°33'48.060"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SLOT#06 VOGLER STATE D21-790(865°FSL&548°FEL,SEC.21)	294.40	4041.67	3265652.494	1319312.873	40°12'21.600"N	104°32'55.932"W
RIG (30°KB) (RKB) to Ground level (At Slot: SLOT#06 VOGLER STATE D21-790(865°FSL&548°FEL,SEC.21))					4850ft	
Mean Sea Level to Ground level (At Slot: SLOT#06 VOGLER STATE D21-790(865°FSL&548°FEL,SEC.21))					0ft	
RIG (30°KB) (RKB) to Mean Sea Level					4850ft	

Survey Program

Start MD (ft)	End MD (ft)	Tool	Model	Log Name/Comment	Wellbore
30.00	17656.99	OWSG MWD rev2	OWSG MWD rev2 + IFR1 + Multi-Station Correction		VOGLER STATE D21-790 PWB



REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Slot	SLOT#06 VOGLER STATE D21-790(865'FSL&548'FEL,SEC.21)
Area	COLORADO	Well	VOGLER STATE D21-790
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	VOGLER STATE D21-790 AWB
Facility	SEC.21-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	4/29/2019 at 2:36:16 PM
Convergence at slot	0.61° East	Database/Source file	WellArchitectDB/VOGLER_STATE_D21-790_AWP.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	294.40	4041.67	3265652.49	1319312.87	40°12'21.600"N	104°32'55.932"W
Facility Reference Pt			3261611.01	1319018.48	40°12'19.116"N	104°33'48.060"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'KB) (RKB) to Facility Vertical Datum	4850.00ft
Horizontal Reference Pt	Slot	RIG (30'KB) (RKB) to Mean Sea Level	4850.00ft
Vertical Reference Pt	RIG (30'KB) (RKB)	RIG (30'KB) (RKB) to Ground Level at Slot (SLOT#06 VOGLER STATE D21-790 (865'FSL&548'FEL,SEC.21))	4850.00ft
MD Reference Pt	RIG (30'KB) (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	2.97°

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Facility	SEC.21-T03N-R64W		

WELLPATH DATA (188 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00	0.000	59.590	0.00	0.00	0.00	0.00	40°12'21.600"N	104°32'55.932"W	0.00	
85.00	0.220	59.590	85.00	0.09	0.08	0.14	40°12'21.601"N	104°32'55.930"W	0.26	
179.00	0.500	62.820	179.00	0.40	0.36	0.66	40°12'21.604"N	104°32'55.923"W	0.30	
270.00	0.200	33.890	270.00	0.73	0.67	1.10	40°12'21.607"N	104°32'55.918"W	0.37	
365.00	0.170	169.760	365.00	0.74	0.67	1.22	40°12'21.607"N	104°32'55.916"W	0.36	
460.00	0.220	50.160	460.00	0.72	0.65	1.39	40°12'21.606"N	104°32'55.914"W	0.36	
554.00	0.100	269.150	554.00	0.84	0.77	1.44	40°12'21.607"N	104°32'55.913"W	0.32	
649.00	0.260	259.980	649.99	0.79	0.73	1.15	40°12'21.607"N	104°32'55.917"W	0.17	
743.00	0.230	327.190	742.99	0.89	0.85	0.83	40°12'21.608"N	104°32'55.921"W	0.29	
838.00	0.140	30.710	837.99	1.15	1.11	0.79	40°12'21.611"N	104°32'55.922"W	0.22	
933.00	0.250	157.980	932.99	1.06	1.02	0.93	40°12'21.610"N	104°32'55.920"W	0.37	
1027.00	0.180	129.270	1026.99	0.79	0.73	1.12	40°12'21.607"N	104°32'55.917"W	0.13	
1122.00	0.130	223.670	1121.99	0.62	0.56	1.16	40°12'21.605"N	104°32'55.917"W	0.24	
1199.00	0.200	238.440	1198.99	0.48	0.43	0.99	40°12'21.604"N	104°32'55.919"W	0.11	
1311.00	0.380	215.460	1310.99	0.05	0.02	0.60	40°12'21.600"N	104°32'55.924"W	0.19	
1406.00	0.220	240.420	1405.99	-0.31	-0.32	0.26	40°12'21.597"N	104°32'55.929"W	0.21	
1501.00	0.350	290.020	1500.99	-0.32	-0.32	-0.17	40°12'21.597"N	104°32'55.934"W	0.28	
1595.00	0.090	194.650	1594.99	-0.31	-0.29	-0.46	40°12'21.597"N	104°32'55.938"W	0.39	
1690.00	0.190	265.310	1689.99	-0.41	-0.37	-0.63	40°12'21.596"N	104°32'55.940"W	0.19	
1785.00	0.420	202.670	1784.99	-0.75	-0.71	-0.92	40°12'21.593"N	104°32'55.944"W	0.39	
1880.00	0.530	182.270	1879.98	-1.52	-1.47	-1.08	40°12'21.586"N	104°32'55.946"W	0.21	
1959.00	1.420	160.900	1958.97	-2.79	-2.76	-0.77	40°12'21.573"N	104°32'55.942"W	1.20	TIED TO 3RD PARTY SURFACE SURVEYS
1993.00	1.010	184.860	1992.96	-3.48	-3.45	-0.66	40°12'21.566"N	104°32'55.941"W	1.90	
2088.00	0.070	195.330	2087.96	-4.38	-4.34	-0.74	40°12'21.557"N	104°32'55.942"W	0.99	
2183.00	0.070	35.370	2182.96	-4.39	-4.35	-0.73	40°12'21.557"N	104°32'55.942"W	0.15	
2277.00	0.180	327.110	2276.96	-4.22	-4.18	-0.77	40°12'21.559"N	104°32'55.943"W	0.18	
2466.00	2.100	143.960	2465.92	-6.67	-6.73	1.10	40°12'21.533"N	104°32'55.919"W	1.21	
2561.00	5.140	142.540	2560.72	-11.26	-11.52	4.72	40°12'21.486"N	104°32'55.873"W	3.20	
2656.00	6.470	142.900	2655.23	-18.60	-19.17	10.53	40°12'21.409"N	104°32'55.799"W	1.40	
2751.00	8.470	142.570	2749.42	-28.02	-28.99	18.02	40°12'21.312"N	104°32'55.704"W	2.11	

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Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	VOGLER STATE D21-790 AWB
Facility	SEC.21-T03N-R64W		

WELLPATH DATA (188 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
2846.00	11.120	142.080	2843.03	-40.28	-41.78	27.90	40°12'21.184"N	104°32'55.578"W	2.79	
2940.00	13.390	146.680	2934.88	-55.91	-58.03	39.45	40°12'21.022"N	104°32'55.432"W	2.63	
3035.00	15.160	151.380	3026.95	-75.36	-78.12	51.44	40°12'20.823"N	104°32'55.280"W	2.23	
3130.00	15.410	155.920	3118.59	-97.18	-100.55	62.54	40°12'20.600"N	104°32'55.140"W	1.29	
3224.00	14.770	157.930	3209.35	-119.16	-123.06	72.14	40°12'20.376"N	104°32'55.019"W	0.88	
3319.00	15.390	161.920	3301.08	-141.90	-146.27	80.61	40°12'20.146"N	104°32'54.913"W	1.27	
3414.00	15.710	164.410	3392.60	-165.85	-170.64	87.97	40°12'19.905"N	104°32'54.822"W	0.78	
3508.00	18.700	161.890	3482.39	-191.98	-197.23	96.08	40°12'19.641"N	104°32'54.721"W	3.28	
3603.00	21.810	159.520	3571.50	-222.39	-228.24	106.99	40°12'19.333"N	104°32'54.585"W	3.39	
3698.00	23.970	160.100	3659.02	-256.37	-262.92	119.74	40°12'18.989"N	104°32'54.425"W	2.29	
3792.00	23.460	161.990	3745.08	-291.43	-298.67	132.02	40°12'18.635"N	104°32'54.272"W	0.97	
3887.00	25.570	166.210	3831.52	-328.73	-336.57	142.76	40°12'18.259"N	104°32'54.139"W	2.88	
3981.00	26.050	164.400	3916.14	-367.72	-376.15	153.14	40°12'17.867"N	104°32'54.010"W	0.98	
4076.00	25.790	161.030	4001.59	-406.66	-415.79	165.47	40°12'17.474"N	104°32'53.857"W	1.57	
4171.00	25.670	159.190	4087.17	-444.66	-454.57	179.50	40°12'17.089"N	104°32'53.682"W	0.85	
4266.00	24.240	161.840	4173.30	-481.69	-492.34	192.89	40°12'16.715"N	104°32'53.514"W	1.91	
4361.00	26.010	162.320	4259.31	-519.37	-530.72	205.29	40°12'16.334"N	104°32'53.360"W	1.88	
4455.00	26.030	160.460	4343.78	-557.71	-569.79	218.45	40°12'15.946"N	104°32'53.195"W	0.87	
4550.00	26.170	156.630	4429.10	-595.75	-608.67	233.74	40°12'15.561"N	104°32'53.004"W	1.78	
4645.00	26.120	153.930	4514.39	-632.81	-646.69	251.24	40°12'15.183"N	104°32'52.784"W	1.25	
4739.00	26.070	150.200	4598.81	-668.27	-683.20	270.60	40°12'14.820"N	104°32'52.539"W	1.75	
4834.00	25.840	147.980	4684.23	-702.78	-718.87	291.95	40°12'14.466"N	104°32'52.269"W	1.05	
4928.00	26.080	145.620	4768.75	-735.99	-753.29	314.48	40°12'14.123"N	104°32'51.983"W	1.13	
5023.00	26.090	144.680	4854.07	-768.99	-787.57	338.35	40°12'13.782"N	104°32'51.680"W	0.44	
5118.00	26.000	144.230	4939.42	-801.63	-821.51	362.60	40°12'13.444"N	104°32'51.373"W	0.23	
5213.00	26.080	144.820	5024.78	-834.29	-855.47	386.80	40°12'13.106"N	104°32'51.065"W	0.29	
5308.00	26.040	145.540	5110.12	-867.27	-889.73	410.63	40°12'12.765"N	104°32'50.763"W	0.34	
5403.00	25.960	148.310	5195.51	-900.94	-924.62	433.35	40°12'12.417"N	104°32'50.475"W	1.28	
5497.00	25.740	152.100	5280.11	-935.38	-960.17	453.71	40°12'12.064"N	104°32'50.218"W	1.77	
5592.00	25.900	158.160	5365.64	-971.93	-997.67	471.09	40°12'11.692"N	104°32'49.999"W	2.78	

REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Slot	SLOT#06 VOGLER STATE D21-790(865'FSL&548'FEL,SEC.21)
Area	COLORADO	Well	VOGLER STATE D21-790
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	VOGLER STATE D21-790 AWB
Facility	SEC.21-T03N-R64W		

WELLPATH DATA (188 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
5687.00	23.500	162.690	5451.95	-1008.54	-1035.02	484.44	40°12'11.321"N	104°32'49.832"W	3.22	
5781.00	24.980	166.230	5537.67	-1045.13	-1072.19	494.75	40°12'10.953"N	104°32'49.704"W	2.21	
5876.00	25.920	163.770	5623.45	-1083.95	-1111.61	505.32	40°12'10.562"N	104°32'49.573"W	1.49	
5971.00	26.030	159.590	5708.86	-1122.69	-1151.09	518.40	40°12'10.171"N	104°32'49.410"W	1.93	
6065.00	25.910	156.600	5793.37	-1160.03	-1189.27	533.75	40°12'09.792"N	104°32'49.218"W	1.40	
6160.00	26.050	153.740	5878.78	-1196.83	-1227.02	551.22	40°12'09.417"N	104°32'48.998"W	1.33	
6255.00	18.760	148.960	5966.55	-1227.74	-1258.87	568.35	40°12'09.100"N	104°32'48.782"W	7.90	
6349.00	10.490	145.460	6057.43	-1247.09	-1278.90	581.02	40°12'08.901"N	104°32'48.621"W	8.84	
6444.00	3.000	79.130	6151.79	-1253.37	-1285.57	588.38	40°12'08.834"N	104°32'48.527"W	10.19	
6539.00	9.840	358.680	6246.26	-1244.66	-1276.97	590.64	40°12'08.919"N	104°32'48.497"W	10.31	
6633.00	15.910	345.300	6337.87	-1224.35	-1256.45	587.18	40°12'09.122"N	104°32'48.539"W	7.15	
6728.00	22.380	332.830	6427.61	-1196.26	-1227.72	575.60	40°12'09.407"N	104°32'48.684"W	8.02	
6823.00	32.710	333.480	6511.73	-1158.18	-1188.56	555.83	40°12'09.796"N	104°32'48.933"W	10.88	
6917.00	41.480	343.090	6586.70	-1106.65	-1135.90	535.38	40°12'10.319"N	104°32'49.190"W	11.16	
7012.00	49.630	355.880	6653.30	-1040.90	-1069.45	523.58	40°12'10.977"N	104°32'49.332"W	12.85	
7107.00	59.610	0.130	6708.25	-963.85	-992.16	521.07	40°12'11.741"N	104°32'49.354"W	11.12	
7201.00	69.380	359.290	6748.68	-879.25	-907.43	520.61	40°12'12.578"N	104°32'49.348"W	10.42	
7296.00	78.140	358.630	6775.22	-788.35	-816.33	518.95	40°12'13.479"N	104°32'49.357"W	9.25	
7391.00	81.820	356.970	6791.75	-695.20	-722.86	515.35	40°12'14.402"N	104°32'49.390"W	4.24	
7486.00	89.850	355.740	6798.64	-601.16	-628.38	509.32	40°12'15.337"N	104°32'49.455"W	8.55	
7581.00	89.970	355.100	6798.79	-506.99	-533.69	501.74	40°12'16.273"N	104°32'49.540"W	0.69	
7675.00	89.970	357.290	6798.84	-413.65	-439.90	495.50	40°12'17.201"N	104°32'49.607"W	2.33	
7770.00	89.850	0.350	6798.99	-318.91	-344.93	493.55	40°12'18.139"N	104°32'49.619"W	3.22	
7865.00	90.000	358.990	6799.12	-224.07	-249.94	493.00	40°12'19.078"N	104°32'49.613"W	1.44	
7959.00	90.150	359.420	6798.99	-130.27	-155.95	491.69	40°12'20.007"N	104°32'49.617"W	0.48	
8054.00	89.940	2.430	6798.92	-35.34	-60.97	493.23	40°12'20.945"N	104°32'49.584"W	3.18	
8149.00	89.750	3.490	6799.17	59.66	33.90	498.13	40°12'21.882"N	104°32'49.508"W	1.13	
8244.00	90.180	7.040	6799.23	154.56	128.49	506.85	40°12'22.816"N	104°32'49.382"W	3.76	
8339.00	89.880	9.660	6799.18	249.14	222.47	520.64	40°12'23.743"N	104°32'49.191"W	2.78	
8433.00	89.820	6.680	6799.43	342.74	315.50	534.00	40°12'24.661"N	104°32'49.006"W	3.17	

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Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	VOGLER STATE D21-790 AWB
Facility	SEC.21-T03N-R64W		

WELLPATH DATA (188 stations)

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8528.00	89.910	0.290	6799.65	437.69	410.28	539.77	40°12'25.597"N	104°32'48.919"W	6.73	
8623.00	89.880	355.350	6799.83	532.27	505.18	536.16	40°12'26.535"N	104°32'48.952"W	5.20	
8718.00	90.000	355.950	6799.93	626.50	599.91	528.95	40°12'27.472"N	104°32'49.032"W	0.64	
8813.00	89.940	357.330	6799.98	720.92	694.74	523.39	40°12'28.409"N	104°32'49.091"W	1.45	
8907.00	90.030	3.470	6800.00	814.78	788.69	524.04	40°12'29.338"N	104°32'49.069"W	6.53	
9002.00	90.090	5.910	6799.90	909.73	883.37	531.81	40°12'30.272"N	104°32'48.956"W	2.57	
9097.00	89.790	1.880	6800.00	1004.70	978.13	538.26	40°12'31.208"N	104°32'48.860"W	4.25	
9192.00	89.880	358.550	6800.28	1099.57	1073.12	538.62	40°12'32.147"N	104°32'48.842"W	3.51	
9287.00	90.000	356.370	6800.37	1194.13	1168.02	534.41	40°12'33.085"N	104°32'48.883"W	2.30	
9381.00	89.880	353.830	6800.47	1287.23	1261.67	526.38	40°12'34.011"N	104°32'48.973"W	2.71	
9476.00	89.880	355.660	6800.67	1381.25	1356.26	517.68	40°12'34.947"N	104°32'49.072"W	1.93	
9571.00	90.090	357.820	6800.70	1475.69	1451.10	512.28	40°12'35.885"N	104°32'49.129"W	2.28	
9666.00	89.790	358.410	6800.80	1570.35	1546.05	509.15	40°12'36.823"N	104°32'49.156"W	0.70	
9760.00	89.940	358.100	6801.02	1664.03	1640.01	506.29	40°12'37.752"N	104°32'49.180"W	0.37	
9855.00	89.940	356.490	6801.12	1758.56	1734.90	501.81	40°12'38.690"N	104°32'49.225"W	1.69	
9950.00	90.160	355.760	6801.03	1852.88	1829.68	495.39	40°12'39.627"N	104°32'49.294"W	0.80	
10045.00	90.190	357.010	6800.74	1947.25	1924.49	489.40	40°12'40.565"N	104°32'49.358"W	1.32	
10139.00	90.120	0.540	6800.49	2040.99	2018.45	487.39	40°12'41.493"N	104°32'49.371"W	3.76	
10234.00	90.060	5.000	6800.34	2135.96	2113.32	491.98	40°12'42.430"N	104°32'49.299"W	4.70	
10329.00	89.660	3.350	6800.57	2230.94	2208.06	498.89	40°12'43.366"N	104°32'49.197"W	1.79	
10424.00	90.400	0.780	6800.52	2325.92	2302.99	502.32	40°12'44.303"N	104°32'49.139"W	2.82	
10518.00	90.460	359.730	6799.82	2419.81	2396.99	502.73	40°12'45.232"N	104°32'49.121"W	1.12	
10613.00	90.560	358.330	6798.97	2514.58	2491.97	501.13	40°12'46.171"N	104°32'49.128"W	1.48	
10707.00	90.340	357.930	6798.23	2608.24	2585.91	498.06	40°12'47.100"N	104°32'49.155"W	0.49	
10802.00	90.460	357.490	6797.57	2702.83	2680.83	494.26	40°12'48.038"N	104°32'49.191"W	0.48	
10897.00	90.280	359.120	6796.96	2797.52	2775.79	491.45	40°12'48.977"N	104°32'49.214"W	1.73	
10991.00	90.310	358.410	6796.47	2891.26	2869.76	489.43	40°12'49.905"N	104°32'49.227"W	0.76	
11086.00	89.880	358.730	6796.32	2985.98	2964.73	487.06	40°12'50.844"N	104°32'49.244"W	0.56	
11181.00	89.850	359.960	6796.54	3080.79	3059.72	485.97	40°12'51.783"N	104°32'49.245"W	1.30	
11275.00	89.970	0.390	6796.69	3174.68	3153.72	486.26	40°12'52.712"N	104°32'49.228"W	0.47	

REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Slot	SLOT#06 VOGLER STATE D21-790(865'FSL&548'FEL,SEC.21)
Area	COLORADO	Well	VOGLER STATE D21-790
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	VOGLER STATE D21-790 AWB
Facility	SEC.21-T03N-R64W		

WELLPATH DATA (188 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
11370.00	90.000	359.550	6796.71	3269.55	3248.72	486.21	40°12'53.650"N	104°32'49.216"W	0.88	
11465.00	90.000	358.430	6796.71	3364.31	3343.71	484.53	40°12'54.589"N	104°32'49.224"W	1.18	
11559.00	90.120	359.150	6796.61	3458.06	3437.69	482.55	40°12'55.518"N	104°32'49.237"W	0.78	
11654.00	90.160	355.680	6796.38	3552.60	3532.57	478.26	40°12'56.456"N	104°32'49.279"W	3.65	
11749.00	90.060	356.560	6796.20	3646.92	3627.36	471.84	40°12'57.393"N	104°32'49.349"W	0.93	
11844.00	90.120	359.020	6796.05	3741.53	3722.28	468.17	40°12'58.332"N	104°32'49.383"W	2.59	
11938.00	90.060	358.560	6795.90	3835.28	3816.26	466.19	40°12'59.260"N	104°32'49.395"W	0.49	
12033.00	90.030	359.600	6795.83	3930.06	3911.24	464.66	40°13'00.199"N	104°32'49.402"W	1.10	
12128.00	89.880	359.900	6795.90	4024.91	4006.24	464.25	40°13'01.138"N	104°32'49.394"W	0.35	
12222.00	90.250	359.650	6795.80	4118.76	4100.24	463.88	40°13'02.067"N	104°32'49.386"W	0.48	
12317.00	90.280	6.660	6795.36	4213.70	4195.04	469.10	40°13'03.003"N	104°32'49.305"W	7.38	
12412.00	90.060	4.800	6795.07	4308.59	4289.56	478.59	40°13'03.936"N	104°32'49.170"W	1.97	
12506.00	90.060	0.680	6794.97	4402.57	4383.43	483.08	40°13'04.863"N	104°32'49.099"W	4.38	
12601.00	89.940	357.150	6794.97	4497.31	4478.40	481.28	40°13'05.802"N	104°32'49.109"W	3.72	
12696.00	89.940	357.020	6795.07	4591.81	4573.27	476.45	40°13'06.740"N	104°32'49.158"W	0.14	
12790.00	89.850	3.900	6795.25	4685.67	4667.21	477.21	40°13'07.668"N	104°32'49.135"W	7.32	
12885.00	89.910	5.110	6795.45	4780.63	4761.92	484.67	40°13'08.603"N	104°32'49.026"W	1.28	
12980.00	89.940	1.690	6795.57	4875.61	4856.74	490.30	40°13'09.539"N	104°32'48.940"W	3.60	
13075.00	90.120	359.320	6795.52	4970.52	4951.73	491.14	40°13'10.478"N	104°32'48.916"W	2.50	
13158.00	89.820	0.670	6795.56	5053.40	5034.72	491.13	40°13'11.298"N	104°32'48.905"W	1.67	
13253.00	90.000	0.690	6795.71	5148.33	5129.72	492.26	40°13'12.237"N	104°32'48.877"W	0.19	
13348.00	90.060	359.610	6795.66	5243.21	5224.72	492.51	40°13'13.175"N	104°32'48.861"W	1.14	
13442.00	90.060	358.740	6795.57	5337.01	5318.71	491.15	40°13'14.104"N	104°32'48.865"W	0.93	
13537.00	90.180	357.470	6795.37	5431.66	5413.65	488.01	40°13'15.043"N	104°32'48.893"W	1.34	
13632.00	90.000	356.450	6795.22	5526.14	5508.52	482.97	40°13'15.981"N	104°32'48.945"W	1.09	
13726.00	89.780	356.010	6795.40	5619.49	5602.31	476.79	40°13'16.908"N	104°32'49.011"W	0.52	
13821.00	89.940	355.130	6795.63	5713.70	5697.03	469.46	40°13'17.845"N	104°32'49.093"W	0.94	
13916.00	90.000	353.130	6795.68	5807.56	5791.52	459.74	40°13'18.780"N	104°32'49.205"W	2.11	
14011.00	90.060	352.270	6795.63	5901.04	5885.75	447.67	40°13'19.712"N	104°32'49.347"W	0.91	
14106.00	89.780	353.810	6795.76	5994.61	5980.05	436.16	40°13'20.645"N	104°32'49.483"W	1.65	

REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Slot	SLOT#06 VOGLER STATE D21-790(865'FSL&548'FEL,SEC.21)
Area	COLORADO	Well	VOGLER STATE D21-790
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	VOGLER STATE D21-790 AWB
Facility	SEC.21-T03N-R64W		

WELLPATH DATA (188 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
14200.00	89.970	355.660	6795.97	6087.64	6073.65	427.53	40°13'21.571"N	104°32'49.581"W	1.98	
14295.00	89.780	356.980	6796.17	6182.00	6168.45	421.44	40°13'22.508"N	104°32'49.646"W	1.40	
14390.00	89.940	1.720	6796.41	6276.78	6263.42	420.36	40°13'23.447"N	104°32'49.647"W	4.99	
14485.00	89.750	6.080	6796.66	6371.75	6358.17	426.82	40°13'24.382"N	104°32'49.551"W	4.59	
14579.00	89.780	9.990	6797.05	6465.36	6451.23	439.95	40°13'25.300"N	104°32'49.368"W	4.16	
14674.00	89.880	10.790	6797.33	6559.56	6544.67	457.09	40°13'26.222"N	104°32'49.135"W	0.85	
14769.00	90.340	9.060	6797.15	6653.86	6638.25	473.46	40°13'27.145"N	104°32'48.911"W	1.88	
14864.00	90.310	6.660	6796.61	6748.51	6732.35	486.45	40°13'28.073"N	104°32'48.730"W	2.53	
14958.00	90.090	5.600	6796.28	6842.36	6825.81	496.49	40°13'28.996"N	104°32'48.588"W	1.15	
15053.00	90.220	2.600	6796.02	6937.33	6920.55	503.28	40°13'29.931"N	104°32'48.487"W	3.16	
15148.00	89.820	359.740	6795.99	7032.27	7015.52	505.22	40°13'30.869"N	104°32'48.449"W	3.04	
15243.00	90.430	358.900	6795.78	7127.08	7110.52	504.09	40°13'31.808"N	104°32'48.450"W	1.09	
15338.00	89.940	359.680	6795.48	7221.88	7205.51	502.91	40°13'32.747"N	104°32'48.452"W	0.97	
15432.00	90.310	0.160	6795.27	7315.75	7299.51	502.78	40°13'33.676"N	104°32'48.441"W	0.64	
15527.00	90.150	358.930	6794.89	7410.58	7394.50	502.03	40°13'34.615"N	104°32'48.438"W	1.31	
15622.00	90.060	358.950	6794.72	7505.34	7489.48	500.27	40°13'35.553"N	104°32'48.447"W	0.10	
15717.00	89.970	357.520	6794.69	7600.02	7584.44	497.35	40°13'36.492"N	104°32'48.472"W	1.51	
15811.00	89.660	353.670	6795.00	7693.22	7678.14	490.13	40°13'37.419"N	104°32'48.552"W	4.11	
15906.00	89.970	354.770	6795.30	7787.11	7772.66	480.56	40°13'38.354"N	104°32'48.662"W	1.20	
16001.00	89.880	357.100	6795.43	7881.39	7867.41	473.83	40°13'39.291"N	104°32'48.736"W	2.45	
16095.00	90.000	357.910	6795.53	7974.96	7961.32	469.73	40°13'40.219"N	104°32'48.775"W	0.87	
16190.00	90.060	357.880	6795.48	8069.59	8056.26	466.24	40°13'41.157"N	104°32'48.807"W	0.07	
16285.00	89.970	358.980	6795.45	8164.29	8151.22	463.64	40°13'42.096"N	104°32'48.828"W	1.16	
16379.00	90.120	0.310	6795.38	8258.13	8245.21	463.06	40°13'43.025"N	104°32'48.822"W	1.42	
16474.00	90.060	0.200	6795.23	8353.02	8340.21	463.48	40°13'43.964"N	104°32'48.803"W	0.13	
16569.00	90.090	1.730	6795.10	8447.96	8435.20	465.08	40°13'44.902"N	104°32'48.770"W	1.61	
16663.00	89.970	0.370	6795.05	8541.91	8529.18	466.80	40°13'45.831"N	104°32'48.734"W	1.45	
16758.00	90.120	359.240	6794.98	8636.76	8624.18	466.48	40°13'46.769"N	104°32'48.725"W	1.20	
16852.00	89.780	357.880	6795.06	8730.48	8718.14	464.12	40°13'47.698"N	104°32'48.743"W	1.49	
16947.00	90.120	358.520	6795.14	8825.15	8813.10	461.14	40°13'48.637"N	104°32'48.768"W	0.76	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#06 VOGLER STATE D21-790(865'FSL&548'FEL,SEC.21)
Area	COLORADO	Well	VOGLER STATE D21-790
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	VOGLER STATE D21-790 AWB
Facility	SEC.21-T03N-R64W		

WELLPATH DATA (188 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
17042.00	90.250	358.730	6794.84	8919.88	8908.07	458.86	40°13'49.575"N	104°32'48.784"W	0.26	
17136.00	89.780	0.010	6794.81	9013.69	9002.06	457.82	40°13'50.504"N	104°32'48.785"W	1.45	
17231.00	90.000	1.230	6795.00	9108.61	9097.05	458.85	40°13'51.443"N	104°32'48.758"W	1.30	
17326.00	89.910	3.090	6795.07	9203.60	9191.98	462.43	40°13'52.380"N	104°32'48.699"W	1.96	
17420.00	90.280	2.400	6794.91	9297.59	9285.87	466.93	40°13'53.308"N	104°32'48.628"W	0.83	
17515.00	90.310	2.880	6794.43	9392.59	9380.77	471.31	40°13'54.245"N	104°32'48.558"W	0.51	
17610.00	90.000	4.060	6794.17	9487.59	9475.59	477.06	40°13'55.181"N	104°32'48.471"W	1.28	LAST BHGE MWD SURVEY
17660.00	90.000	4.060	6794.17	9537.58	9525.47	480.60	40°13'55.674"N	104°32'48.419"W	0.00	PROJECTION TO BIT

HOLE & CASING SECTIONS - Ref Wellbore: VOGLER STATE D21-790 AWB Ref Wellpath: VOGLER STATE D21-790 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]
9.625in Casing Surface	30.00	1963.00	1933.00	30.00	1962.97	0.01	0.02	-2.85	-0.74

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
VOGLER STATE D21-790 Seciton 16	0.00	0.00	0.00	3265652.49	1319312.87	40°12'21.600"N	104°32'55.932"W	polygon
VOGLER STATE D21-790 Seciton 21	0.00	0.00	0.00	3265652.49	1319312.87	40°12'21.600"N	104°32'55.932"W	polygon
VOGLER STATE D21-790 REV-1 BHL (200'FNL&10'FEL,SEC.16)	6800.00	9527.94	494.14	3266146.61	1328840.39	40°13'55.697"N	104°32'48.244"W	point

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#06 VOGLER STATE D21-790(865'FSL&548'FEL,SEC.21)
Area	COLORADO	Well	VOGLER STATE D21-790
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	VOGLER STATE D21-790 AWB
Facility	SEC.21-T03N-R64W		

WELLPATH COMPOSITION - Ref Wellbore: VOGLER STATE D21-790 AWB Ref Wellpath: VOGLER STATE D21-790 AWP				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
0.00	1959.00	Gyrodata standard - Drop gyro or Multi-shot	3rd Party Surface Surveys <85-1959>	VOGLER STATE D21-790 AWB
1959.00	17610.00	OWSG MWD rev2 + IFR1 + Multi-Station Correction	BH/ATC 8.5" OWSG MWD rev2+IFR1+MSA <1993-17610>	VOGLER STATE D21-790 AWB
17610.00	17660.00	Blind Drilling (std)	Projection to bit	VOGLER STATE D21-790 AWB

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#06 VOGLER STATE D21-790(865'FSL&548'FEL,SEC.21)
Area	COLORADO	Well	VOGLER STATE D21-790
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	VOGLER STATE D21-790 AWB
Facility	SEC.21-T03N-R64W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
1959.00	1.420	160.900	1958.97	TIED TO 3RD PARTY SURFACE SURVEYS
17610.00	90.000	4.060	6794.17	LAST BHGE MWD SURVEY
17660.00	90.000	4.060	6794.17	PROJECTION TO BIT