

NOBLE ENERGY, INC

Location: COLORADO Slot: SLOT#01 BISON RIDGE Y22-711(2230'FSL&1948'FEL,SEC.10)
Field: WELD COUNTY (NOBLE NAD 83 GRID) Well: BISON RIDGE Y22-711
Facility: SEC.10-T02N-R64W Wellbore: BISON RIDGE Y22-711 PWB

Comments

SURFACE LOCATION: NWSE
40.15182N
104.53506W
API: 05-123-45377

Survey Program

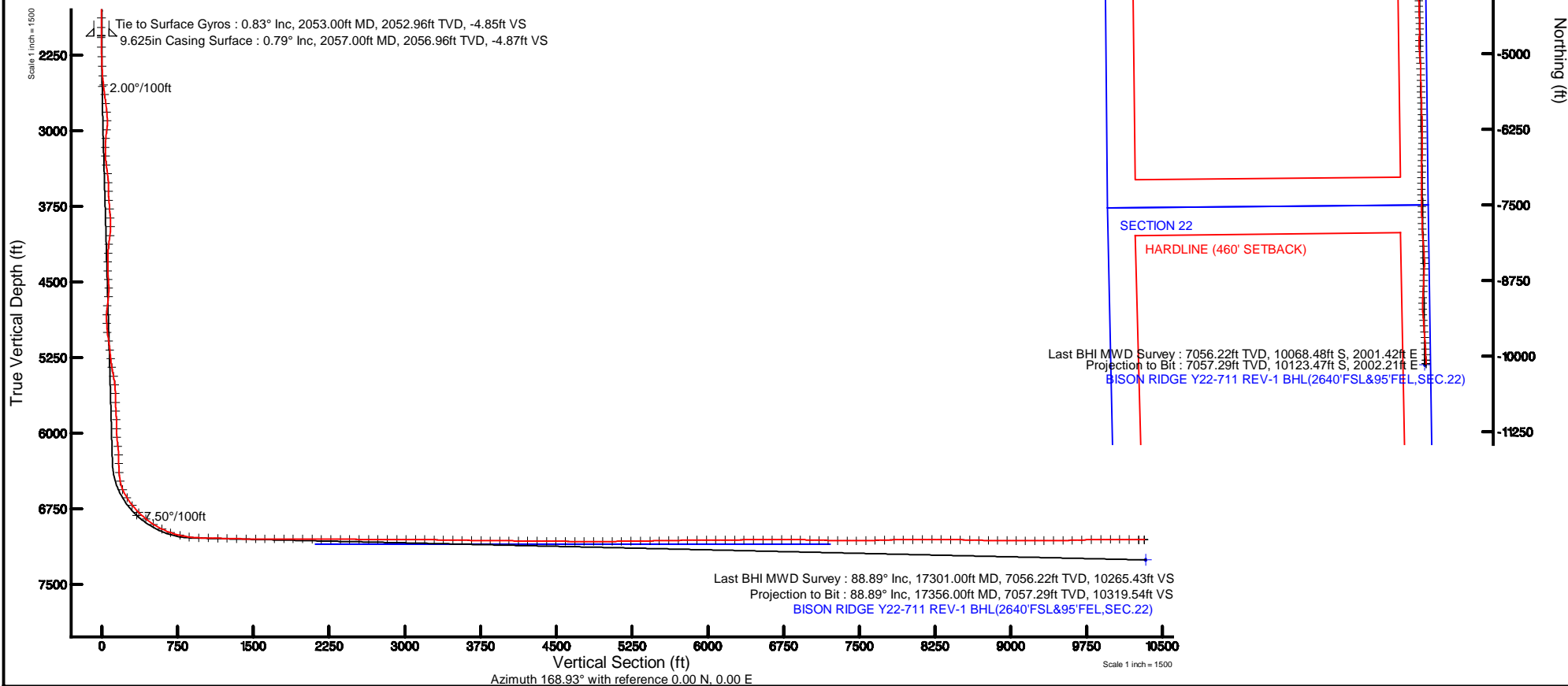
Start MD (ft)	End MD (ft)	Tool	Model	Log Name/Comment	Wellbore
30.00	17405.16	OWSG MWD rev2	OWSG MWD rev2 + IFR1 + Multi-Station Correction		BISON RIDGE Y22-711 PWB



Plot reference wellpath is BISON RIDGE Y22-711 (REV-1) (REV-1) (PWB)	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (2011) US Feet
True vertical depths are referenced to RIG (2008) (RWS)	" = Wellpath was transformed from a different geoidic datum
Measured depths are referenced to RIG (2008) (RWS)	North Reference: Grid north
RIG (2008) (RWS) to Mean Sea Level: 4003 Feet	Scale: True distance
Mean Sea Level to Ground level (At Slot: SLOT#01 BISON RIDGE Y22-711(2230'FSL&1948'FEL,SEC.10): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: generator on 2018-01-08
	Dateline: WA_DEN_Driver_Data

Location Information

Facility Name			Grid East (US F)	Grid North (US F)	Latitude	Longitude
SEC. 10-T02N-R64W			3089704.271	1208918.816	40°10'06.502"N	104°12'08.218"W
Slot	Local N (F)	Local E (F)	Grid East (US F)	Grid North (US F)	Latitude	Longitude
SLOT#01 BISON RIDGE Y22-711(2230'FSL&1948'FEL,SEC.10)	0.00	0.00	3089704.271	1208918.816	40°10'06.502"N	104°12'08.218"W
N10 (2008) (RWS) to Ground level (At Slot: SLOT#01 BISON RIDGE Y22-711(2230'FSL&1948'FEL,SEC.10)						4003ft
Mean Sea Level to Ground level (At Slot: SLOT#01 BISON RIDGE Y22-711(2230'FSL&1948'FEL,SEC.10)						0ft
N10 (2008) (RWS) to Mean Sea Level						4003ft



REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#01 BISON RIDGE Y22-711(2230'FSL&1948'FEL,SEC.10)
Area	COLORADO	Well	BISON RIDGE Y22-711
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	BISON RIDGE Y22-711 AWB
Facility	SEC.10-T02N-R64W		

REPORT SETUP INFORMATION			
Projection System	NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	Software System	WellArchitect® 5.0
North Reference	Grid	User	Guenaler
Scale	0.999958	Report Generated	1/8/2018 at 10:44:44 AM
Convergence at slot	0.63° East	Database/Source file	WA_DEN_Denver_Defn/BISON_RIDGE_Y22-711_AWP.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	0.00	0.00	3269724.27	1299618.92	40°09'06.552"N	104°32'06.216"W
Facility Reference Pt			3269724.27	1299618.92	40°09'06.552"N	104°32'06.216"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	4953.00ft
Horizontal Reference Pt	Slot	RIG (30'KB) (RKB) to Mean Sea Level	4953.00ft
Vertical Reference Pt	RIG (30'KB) (RKB)	RIG (30'KB) (RKB) to Ground Level at Slot (SLOT#01 BISON RIDGE Y22-711 (2230'FSL&1948'FEL,SEC.10))	4953.00ft
MD Reference Pt	RIG (30'KB) (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	168.93°



Actual Wellpath Report

BISON RIDGE Y22-711 AWP



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Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	BISON RIDGE Y22-711 AWB
Facility	SEC.10-T02N-R64W		

WELLPATH DATA (186 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00	0.000	339.380	0.00	0.00	0.00	0.00	40°09'06.552"N	104°32'06.216"W	0.00	
78.00	0.340	339.380	78.00	-0.23	0.22	-0.08	40°09'06.554"N	104°32'06.217"W	0.44	
177.00	0.340	354.260	177.00	-0.81	0.78	-0.21	40°09'06.560"N	104°32'06.219"W	0.09	
269.00	0.350	165.130	269.00	-0.80	0.78	-0.17	40°09'06.560"N	104°32'06.218"W	0.75	
363.00	0.090	277.780	363.00	-0.54	0.52	-0.17	40°09'06.557"N	104°32'06.218"W	0.42	
458.00	0.320	327.210	458.00	-0.81	0.75	-0.39	40°09'06.559"N	104°32'06.221"W	0.28	
553.00	0.290	291.020	552.99	-1.18	1.06	-0.75	40°09'06.563"N	104°32'06.226"W	0.20	
647.00	0.230	203.740	646.99	-1.16	0.97	-1.05	40°09'06.562"N	104°32'06.229"W	0.38	
742.00	0.080	232.680	741.99	-0.97	0.76	-1.18	40°09'06.560"N	104°32'06.231"W	0.17	
836.00	0.230	252.410	835.99	-0.92	0.66	-1.41	40°09'06.559"N	104°32'06.234"W	0.17	
931.00	0.180	350.540	930.99	-1.05	0.75	-1.62	40°09'06.560"N	104°32'06.237"W	0.33	
1026.00	0.400	279.520	1025.99	-1.31	0.95	-1.97	40°09'06.562"N	104°32'06.241"W	0.40	
1120.00	0.430	293.380	1119.99	-1.63	1.15	-2.62	40°09'06.564"N	104°32'06.250"W	0.11	
1215.00	0.550	309.410	1214.99	-2.18	1.58	-3.30	40°09'06.568"N	104°32'06.258"W	0.19	
1310.00	0.710	267.250	1309.98	-2.62	1.84	-4.24	40°09'06.571"N	104°32'06.270"W	0.50	
1404.00	0.220	255.970	1403.98	-2.69	1.77	-5.00	40°09'06.570"N	104°32'06.280"W	0.53	
1499.00	0.170	292.070	1498.98	-2.76	1.77	-5.30	40°09'06.570"N	104°32'06.284"W	0.14	
1593.00	0.260	312.040	1592.98	-3.01	1.97	-5.59	40°09'06.572"N	104°32'06.288"W	0.12	
1688.00	0.220	332.510	1687.98	-3.35	2.28	-5.84	40°09'06.575"N	104°32'06.291"W	0.10	
1783.00	0.370	299.940	1782.97	-3.73	2.59	-6.19	40°09'06.578"N	104°32'06.295"W	0.23	
1877.00	0.220	340.800	1876.97	-4.11	2.91	-6.51	40°09'06.581"N	104°32'06.299"W	0.27	
1972.00	0.560	286.320	1971.97	-4.50	3.22	-7.01	40°09'06.585"N	104°32'06.306"W	0.49	
2053.00	0.830	275.760	2052.96	-4.85	3.39	-7.98	40°09'06.586"N	104°32'06.318"W	0.37	Tie to Surface Gyros
2075.00	0.650	258.150	2074.96	-4.90	3.38	-8.26	40°09'06.586"N	104°32'06.322"W	1.31	
2170.00	1.470	154.690	2169.95	-3.71	2.16	-8.26	40°09'06.574"N	104°32'06.322"W	1.83	
2265.00	3.410	107.410	2264.87	-1.18	0.22	-5.05	40°09'06.555"N	104°32'06.281"W	2.78	
2359.00	5.850	103.900	2358.56	2.17	-1.77	2.27	40°09'06.534"N	104°32'06.187"W	2.61	
2454.00	9.550	105.990	2452.68	7.80	-5.11	14.55	40°09'06.500"N	104°32'06.029"W	3.91	
2548.00	13.200	108.230	2544.82	16.61	-10.61	32.25	40°09'06.444"N	104°32'05.802"W	3.91	
2643.00	16.430	105.770	2636.65	27.98	-17.66	55.49	40°09'06.372"N	104°32'05.504"W	3.46	



Actual Wellpath Report

BISON RIDGE Y22-711 AWP



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Area	COLORADO	Well	BISON RIDGE Y22-711
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	BISON RIDGE Y22-711 AWB
Facility	SEC.10-T02N-R64W		

WELLPATH DATA (186 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
2737.00	19.530	98.640	2726.06	39.29	-23.64	83.82	40°09'06.309"N	104°32'05.140"W	4.04	
2832.00	22.550	93.850	2814.72	49.34	-27.25	117.71	40°09'06.270"N	104°32'04.704"W	3.66	
2926.00	25.160	81.100	2900.74	54.74	-25.36	155.46	40°09'06.285"N	104°32'04.218"W	6.13	
3021.00	23.930	61.810	2987.30	49.82	-13.12	192.46	40°09'06.402"N	104°32'03.739"W	8.50	
3115.00	22.070	63.660	3073.82	39.56	3.73	225.09	40°09'06.565"N	104°32'03.317"W	2.12	
3210.00	22.320	77.280	3161.84	34.33	15.63	258.70	40°09'06.679"N	104°32'02.882"W	5.41	
3304.00	20.980	85.590	3249.23	35.77	20.85	292.90	40°09'06.727"N	104°32'02.441"W	3.56	
3399.00	22.080	101.320	3337.67	44.55	18.65	327.40	40°09'06.701"N	104°32'01.997"W	6.17	
3494.00	22.400	97.670	3425.61	57.17	12.73	362.85	40°09'06.639"N	104°32'01.542"W	1.49	
3588.00	22.400	84.700	3512.57	64.73	12.00	398.45	40°09'06.628"N	104°32'01.083"W	5.25	
3682.00	22.090	80.080	3599.58	66.88	16.69	433.70	40°09'06.670"N	104°32'00.629"W	1.89	
3777.00	22.230	89.580	3687.59	70.56	19.91	469.28	40°09'06.698"N	104°32'00.170"W	3.77	
3871.00	22.360	89.380	3774.57	77.09	20.23	504.94	40°09'06.698"N	104°31'59.711"W	0.16	
3966.00	22.410	91.760	3862.41	84.39	19.87	541.11	40°09'06.690"N	104°31'59.245"W	0.96	
4060.00	22.760	77.690	3949.26	87.97	23.20	576.81	40°09'06.719"N	104°31'58.785"W	5.75	
4155.00	22.480	58.440	4037.08	81.21	36.64	610.28	40°09'06.848"N	104°31'58.352"W	7.77	
4250.00	22.190	60.380	4124.95	69.14	55.01	641.36	40°09'07.027"N	104°31'57.949"W	0.83	
4344.00	21.490	73.510	4212.26	61.86	68.68	673.32	40°09'07.158"N	104°31'57.536"W	5.24	
4439.00	22.910	75.310	4300.21	59.05	78.31	707.89	40°09'07.250"N	104°31'57.089"W	1.66	
4533.00	23.120	84.800	4386.76	59.78	84.62	743.98	40°09'07.308"N	104°31'56.624"W	3.95	
4627.00	23.380	89.760	4473.14	65.18	86.38	781.01	40°09'07.321"N	104°31'56.146"W	2.10	
4722.00	23.680	81.050	4560.26	69.42	89.42	818.72	40°09'07.347"N	104°31'55.660"W	3.67	
4816.00	23.750	65.240	4646.41	65.64	100.30	854.59	40°09'07.451"N	104°31'55.197"W	6.75	
4911.00	20.550	57.260	4734.41	54.95	117.34	886.00	40°09'07.616"N	104°31'54.790"W	4.62	
5005.00	21.080	75.520	4822.37	47.84	130.50	916.28	40°09'07.743"N	104°31'54.398"W	6.90	
5100.00	22.880	84.230	4910.49	48.53	136.63	951.21	40°09'07.800"N	104°31'53.948"W	3.92	
5194.00	21.970	95.980	4997.42	55.38	136.64	986.90	40°09'07.796"N	104°31'53.488"W	4.86	
5289.00	23.360	101.660	5085.09	67.87	130.98	1023.02	40°09'07.736"N	104°31'53.024"W	2.73	
5384.00	23.520	92.970	5172.28	79.74	126.19	1060.41	40°09'07.685"N	104°31'52.543"W	3.64	
5478.00	23.140	91.420	5258.59	88.29	124.76	1097.61	40°09'07.667"N	104°31'52.064"W	0.77	



Actual Wellpath Report

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Area	COLORADO	Well	BISON RIDGE Y22-711
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	BISON RIDGE Y22-711 AWB
Facility	SEC.10-T02N-R64W		

WELLPATH DATA (186 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
5573.00	23.440	104.540	5345.91	100.50	119.55	1134.58	40°09'07.611"N	104°31'51.589"W	5.46	
5668.00	23.350	101.980	5433.10	116.04	110.90	1171.29	40°09'07.522"N	104°31'51.117"W	1.07	
5762.00	23.380	94.960	5519.41	128.48	105.42	1208.10	40°09'07.463"N	104°31'50.644"W	2.96	
5857.00	23.310	79.410	5606.72	133.85	107.24	1245.39	40°09'07.477"N	104°31'50.163"W	6.47	
5951.00	22.730	84.220	5693.24	135.68	112.49	1281.74	40°09'07.525"N	104°31'49.695"W	2.09	
6046.00	23.240	88.510	5780.71	140.49	114.83	1318.74	40°09'07.544"N	104°31'49.218"W	1.84	
6140.00	23.490	81.740	5867.01	144.50	118.00	1355.83	40°09'07.572"N	104°31'48.740"W	2.87	
6235.00	23.150	79.380	5954.25	145.57	124.16	1392.92	40°09'07.629"N	104°31'48.261"W	1.05	
6329.00	22.270	90.680	6041.01	149.34	127.36	1428.91	40°09'07.656"N	104°31'47.797"W	4.73	
6424.00	23.300	95.770	6128.60	158.45	125.25	1465.61	40°09'07.632"N	104°31'47.325"W	2.34	
6518.00	23.390	84.370	6214.95	165.61	125.22	1502.69	40°09'07.627"N	104°31'46.848"W	4.80	
6613.00	23.400	81.000	6302.14	168.08	130.02	1540.09	40°09'07.671"N	104°31'46.365"W	1.41	
6708.00	23.340	87.420	6389.37	171.54	133.82	1577.53	40°09'07.704"N	104°31'45.883"W	2.68	
6802.00	24.530	104.120	6475.38	182.60	129.89	1615.10	40°09'07.661"N	104°31'45.399"W	7.29	
6896.00	28.990	127.660	6559.53	208.11	111.15	1652.18	40°09'07.472"N	104°31'44.925"W	12.14	
6991.00	34.860	141.920	6640.24	249.70	75.63	1687.23	40°09'07.117"N	104°31'44.478"W	10.02	
7085.00	39.040	154.730	6715.45	302.43	27.62	1716.49	40°09'06.640"N	104°31'44.108"W	9.30	
7180.00	45.760	162.910	6785.62	365.40	-32.08	1739.31	40°09'06.047"N	104°31'43.823"W	9.14	
7275.00	50.920	167.150	6848.76	436.16	-100.62	1757.53	40°09'05.368"N	104°31'43.598"W	6.37	
7369.00	57.290	169.830	6903.85	512.26	-175.20	1772.64	40°09'04.630"N	104°31'43.414"W	7.16	
7464.00	64.290	170.050	6950.19	595.12	-256.79	1787.11	40°09'03.822"N	104°31'43.239"W	7.37	
7558.00	71.170	170.630	6985.79	682.03	-342.50	1801.69	40°09'02.973"N	104°31'43.063"W	7.34	
7653.00	76.230	172.400	7012.45	773.08	-432.65	1815.12	40°09'02.081"N	104°31'42.903"W	5.62	
7748.00	82.440	174.330	7030.02	866.11	-525.34	1825.88	40°09'01.164"N	104°31'42.777"W	6.83	
7842.00	88.650	175.230	7037.32	959.29	-618.62	1834.40	40°09'00.241"N	104°31'42.681"W	6.67	
7937.00	88.680	175.060	7039.53	1053.70	-713.25	1842.44	40°08'59.305"N	104°31'42.591"W	0.18	
8031.00	88.680	175.840	7041.70	1147.07	-806.93	1849.90	40°08'58.379"N	104°31'42.508"W	0.83	
8126.00	88.580	178.350	7043.97	1241.07	-901.77	1854.71	40°08'57.441"N	104°31'42.459"W	2.64	
8221.00	88.430	177.910	7046.45	1334.82	-996.69	1857.81	40°08'56.503"N	104°31'42.433"W	0.49	
8315.00	89.880	178.160	7047.83	1427.62	-1090.62	1861.03	40°08'55.574"N	104°31'42.405"W	1.57	



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WELLPATH DATA (186 stations)												
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8410.00	89.850	177.530	7048.06	1521.48	-1185.55	1864.60	40°08'54.636"N		104°31'42.372"W		0.66	
8505.00	89.880	178.060	7048.28	1615.34	-1280.48	1868.26	40°08'53.697"N		104°31'42.338"W		0.56	
8600.00	89.630	178.180	7048.69	1709.12	-1375.43	1871.37	40°08'52.759"N		104°31'42.312"W		0.29	
8694.00	89.850	179.240	7049.11	1801.75	-1469.40	1873.49	40°08'51.830"N		104°31'42.298"W		1.15	
8789.00	89.820	179.350	7049.39	1895.20	-1564.40	1874.66	40°08'50.891"N		104°31'42.296"W		0.12	
8883.00	89.850	179.540	7049.66	1987.62	-1658.39	1875.57	40°08'49.962"N		104°31'42.297"W		0.20	
8978.00	89.720	180.310	7050.01	2080.88	-1753.39	1875.69	40°08'49.024"N		104°31'42.309"W		0.82	
9073.00	89.660	180.220	7050.53	2174.02	-1848.39	1875.25	40°08'48.085"N		104°31'42.328"W		0.11	
9167.00	89.940	178.100	7050.86	2266.53	-1942.37	1876.63	40°08'47.156"N		104°31'42.324"W		2.27	
9262.00	89.600	175.660	7051.24	2360.60	-2037.22	1881.80	40°08'46.218"N		104°31'42.271"W		2.59	
9357.00	89.540	175.920	7051.95	2454.92	-2131.96	1888.78	40°08'45.281"N		104°31'42.194"W		0.28	
9451.00	89.540	178.240	7052.71	2547.96	-2225.83	1893.56	40°08'44.353"N		104°31'42.146"W		2.47	
9546.00	89.910	180.400	7053.16	2641.40	-2320.82	1894.69	40°08'43.414"N		104°31'42.145"W		2.31	
9640.00	89.750	178.330	7053.44	2733.84	-2414.81	1895.73	40°08'42.486"N		104°31'42.145"W		2.21	
9735.00	89.910	177.320	7053.72	2827.70	-2509.74	1899.34	40°08'41.547"N		104°31'42.112"W		1.08	
9830.00	89.820	178.810	7053.95	2921.49	-2604.68	1902.55	40°08'40.609"N		104°31'42.084"W		1.57	
9924.00	89.820	180.760	7054.24	3013.80	-2698.67	1902.90	40°08'39.680"N		104°31'42.092"W		2.07	
10019.00	89.910	182.430	7054.47	3106.49	-2793.63	1900.25	40°08'38.742"N		104°31'42.140"W		1.76	
10113.00	88.980	182.760	7055.38	3197.82	-2887.53	1896.00	40°08'37.814"N		104°31'42.208"W		1.05	
10208.00	89.010	181.970	7057.04	3290.21	-2982.43	1892.08	40°08'36.877"N		104°31'42.272"W		0.83	
10303.00	89.050	180.180	7058.65	3383.06	-3077.40	1890.30	40°08'35.939"N		104°31'42.308"W		1.88	
10397.00	89.290	180.340	7060.01	3475.22	-3171.39	1889.87	40°08'35.010"N		104°31'42.327"W		0.31	
10491.00	89.080	179.750	7061.35	3567.45	-3265.38	1889.80	40°08'34.081"N		104°31'42.341"W		0.67	
10586.00	89.230	179.740	7062.75	3660.75	-3360.37	1890.22	40°08'33.143"N		104°31'42.349"W		0.16	
10681.00	88.920	179.900	7064.28	3754.03	-3455.35	1890.52	40°08'32.204"N		104°31'42.359"W		0.37	
10775.00	89.450	180.660	7065.62	3846.18	-3549.34	1890.06	40°08'31.275"N		104°31'42.378"W		0.99	
10870.00	89.540	179.930	7066.46	3939.32	-3644.34	1889.57	40°08'30.337"N		104°31'42.397"W		0.77	
10964.00	89.690	180.900	7067.09	4031.43	-3738.33	1888.89	40°08'29.408"N		104°31'42.419"W		1.04	
11059.00	88.830	180.960	7068.32	4124.35	-3833.31	1887.35	40°08'28.470"N		104°31'42.453"W		0.91	
11154.00	89.720	181.180	7069.52	4217.21	-3928.29	1885.57	40°08'27.531"N		104°31'42.489"W		0.97	



Actual Wellpath Report

BISON RIDGE Y22-711 AWP



REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#01 BISON RIDGE Y22-711(2230'FSL&1948'FEL,SEC.10)
Area	COLORADO	Well	BISON RIDGE Y22-711
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	BISON RIDGE Y22-711 AWB
Facility	SEC.10-T02N-R64W		

WELLPATH DATA (186 stations)											
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments	
11248.00	89.540	180.460	7070.13	4309.20	-4022.27	1884.23	40°08'26.603"N	104°31'42.519"W	0.79		
11343.00	89.380	179.450	7071.02	4402.44	-4117.27	1884.30	40°08'25.664"N	104°31'42.532"W	1.08		
11438.00	89.630	179.620	7071.84	4495.81	-4212.26	1885.07	40°08'24.725"N	104°31'42.535"W	0.32		
11532.00	89.570	176.570	7072.50	4588.60	-4306.20	1888.20	40°08'23.797"N	104°31'42.508"W	3.25		
11627.00	89.630	175.800	7073.16	4682.83	-4400.98	1894.52	40°08'22.859"N	104°31'42.440"W	0.81		
11721.00	89.480	177.650	7073.89	4775.96	-4494.82	1899.89	40°08'21.932"N	104°31'42.385"W	1.97		
11816.00	89.540	182.460	7074.71	4869.14	-4589.79	1899.80	40°08'20.993"N	104°31'42.399"W	5.06		
11910.00	90.430	184.260	7074.73	4960.17	-4683.62	1894.29	40°08'20.066"N	104°31'42.483"W	2.14		
12005.00	91.110	181.940	7073.45	5052.27	-4778.47	1889.15	40°08'19.130"N	104°31'42.563"W	2.54		
12100.00	90.860	177.070	7071.82	5145.61	-4873.42	1889.97	40°08'18.191"N	104°31'42.566"W	5.13		
12194.00	90.950	176.270	7070.33	5238.75	-4967.25	1895.43	40°08'17.264"N	104°31'42.509"W	0.86		
12289.00	90.460	175.350	7069.17	5333.05	-5061.99	1902.37	40°08'16.327"N	104°31'42.433"W	1.10		
12384.00	91.050	176.180	7067.91	5427.37	-5156.72	1909.39	40°08'15.390"N	104°31'42.356"W	1.07		
12478.00	91.020	178.180	7066.22	5520.38	-5250.59	1914.01	40°08'14.462"N	104°31'42.309"W	2.13		
12573.00	90.860	179.090	7064.66	5614.00	-5345.55	1916.27	40°08'13.523"N	104°31'42.294"W	0.97		
12667.00	90.990	179.470	7063.14	5706.46	-5439.53	1917.45	40°08'12.595"N	104°31'42.292"W	0.43		
12762.00	91.020	178.710	7061.47	5799.96	-5534.50	1918.96	40°08'11.656"N	104°31'42.286"W	0.80		
12856.00	90.370	177.900	7060.33	5892.69	-5628.45	1921.74	40°08'10.727"N	104°31'42.263"W	1.10		
12951.00	90.370	177.960	7059.72	5986.52	-5723.39	1925.17	40°08'09.789"N	104°31'42.232"W	0.06		
13045.00	90.280	178.150	7059.19	6079.33	-5817.33	1928.36	40°08'08.860"N	104°31'42.204"W	0.22		
13140.00	90.400	178.500	7058.62	6173.06	-5912.29	1931.14	40°08'07.921"N	104°31'42.182"W	0.39		
13234.00	90.280	178.430	7058.06	6265.76	-6006.25	1933.66	40°08'06.993"N	104°31'42.163"W	0.15		
13329.00	90.400	178.840	7057.50	6359.40	-6101.22	1935.92	40°08'06.054"N	104°31'42.147"W	0.45		
13423.00	90.460	178.980	7056.80	6451.97	-6195.20	1937.71	40°08'05.125"N	104°31'42.137"W	0.16		
13518.00	90.250	179.110	7056.21	6545.49	-6290.19	1939.29	40°08'04.186"N	104°31'42.130"W	0.26		
13613.00	90.370	180.060	7055.69	6638.85	-6385.18	1939.98	40°08'03.248"N	104°31'42.135"W	1.01		
13707.00	90.250	180.580	7055.18	6731.00	-6479.18	1939.46	40°08'02.319"N	104°31'42.155"W	0.57		
13802.00	89.750	180.990	7055.18	6823.97	-6574.17	1938.16	40°08'01.380"N	104°31'42.185"W	0.68		
13897.00	88.680	181.350	7056.49	6916.80	-6669.14	1936.22	40°08'00.442"N	104°31'42.224"W	1.19		
13991.00	88.860	181.290	7058.50	7008.59	-6763.09	1934.05	40°07'59.514"N	104°31'42.265"W	0.20		



Actual Wellpath Report

BISON RIDGE Y22-711 AWP



REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#01 BISON RIDGE Y22-711(2230'FSL&1948'FEL,SEC.10)
Area	COLORADO	Well	BISON RIDGE Y22-711
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	BISON RIDGE Y22-711 AWB
Facility	SEC.10-T02N-R64W		

WELLPATH DATA (186 stations)											
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments	
14085.00	88.770	181.110	7060.45	7100.43	-6857.05	1932.08	40°07'58.586"N	104°31'42.303"W	0.21		
14180.00	88.580	181.190	7062.64	7193.25	-6952.01	1930.18	40°07'57.648"N	104°31'42.341"W	0.22		
14275.00	88.680	180.810	7064.92	7286.13	-7046.97	1928.52	40°07'56.709"N	104°31'42.376"W	0.41		
14369.00	89.660	179.770	7066.28	7378.27	-7140.95	1928.04	40°07'55.781"N	104°31'42.395"W	1.52		
14464.00	90.180	178.910	7066.41	7471.71	-7235.95	1929.14	40°07'54.842"N	104°31'42.395"W	1.06		
14558.00	91.450	179.460	7065.07	7564.19	-7329.92	1930.47	40°07'53.913"N	104°31'42.391"W	1.47		
14653.00	91.450	179.440	7062.67	7657.57	-7424.89	1931.39	40°07'52.975"N	104°31'42.392"W	0.02		
14748.00	91.600	179.560	7060.14	7750.92	-7519.85	1932.22	40°07'52.036"N	104°31'42.395"W	0.20		
14842.00	91.630	179.840	7057.49	7843.23	-7613.81	1932.71	40°07'51.108"N	104°31'42.402"W	0.30		
14937.00	90.490	178.090	7055.73	7936.76	-7708.78	1934.42	40°07'50.169"N	104°31'42.393"W	2.20		
15031.00	90.550	178.250	7054.88	8029.53	-7802.72	1937.42	40°07'49.240"N	104°31'42.368"W	0.18		
15126.00	90.120	177.410	7054.33	8123.39	-7897.65	1941.02	40°07'48.302"N	104°31'42.335"W	0.99		
15221.00	90.030	176.700	7054.20	8217.43	-7992.53	1945.90	40°07'47.364"N	104°31'42.286"W	0.75		
15315.00	89.480	175.510	7054.60	8310.69	-8086.31	1952.29	40°07'46.437"N	104°31'42.217"W	1.39		
15409.00	89.480	174.700	7055.46	8404.15	-8179.96	1960.31	40°07'45.510"N	104°31'42.127"W	0.86		
15504.00	88.620	174.930	7057.03	8498.63	-8274.56	1968.89	40°07'44.575"N	104°31'42.029"W	0.94		
15599.00	88.580	177.820	7059.35	8592.79	-8369.33	1974.90	40°07'43.637"N	104°31'41.965"W	3.04		
15693.00	88.680	179.740	7061.60	8685.38	-8463.28	1976.90	40°07'42.709"N	104°31'41.953"W	2.04		
15788.00	89.110	183.060	7063.43	8778.10	-8558.22	1974.58	40°07'41.771"N	104°31'41.996"W	3.52		
15883.00	89.780	184.170	7064.35	8870.00	-8653.02	1968.59	40°07'40.835"N	104°31'42.087"W	1.36		
15977.00	89.970	182.060	7064.56	8961.12	-8746.88	1963.48	40°07'39.908"N	104°31'42.166"W	2.25		
16072.00	89.630	181.940	7064.89	9053.66	-8841.82	1960.16	40°07'38.970"N	104°31'42.222"W	0.38		
16166.00	89.630	183.160	7065.50	9145.02	-8935.72	1955.98	40°07'38.043"N	104°31'42.289"W	1.30		
16261.00	90.250	182.930	7065.60	9237.15	-9030.59	1950.94	40°07'37.106"N	104°31'42.367"W	0.70		
16356.00	90.550	181.510	7064.93	9329.60	-9125.51	1947.26	40°07'36.168"N	104°31'42.428"W	1.53		
16450.00	90.400	177.850	7064.15	9421.93	-9219.49	1947.78	40°07'35.240"N	104°31'42.434"W	3.90		
16545.00	90.490	174.330	7063.42	9516.17	-9314.25	1954.26	40°07'34.302"N	104°31'42.364"W	3.71		
16639.00	91.450	176.210	7061.82	9609.58	-9407.91	1962.01	40°07'33.376"N	104°31'42.278"W	2.25		
16734.00	92.220	176.750	7058.78	9703.71	-9502.68	1967.84	40°07'32.439"N	104°31'42.216"W	0.99		
16829.00	92.120	175.900	7055.18	9797.85	-9597.42	1973.92	40°07'31.502"N	104°31'42.151"W	0.90		



Actual Wellpath Report

BISON RIDGE Y22-711 AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#01 BISON RIDGE Y22-711(2230'FSL&1948'FEL,SEC.10)
Area	COLORADO	Well	BISON RIDGE Y22-711
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	BISON RIDGE Y22-711 AWB
Facility	SEC.10-T02N-R64W		

WELLPATH DATA (186 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
16923.00	90.150	175.690	7053.32	9891.15	-9691.14	1980.81	40°07'30.575"N	104°31'42.076"W	2.11	
17018.00	89.880	175.550	7053.30	9985.51	-9785.86	1988.07	40°07'29.639"N	104°31'41.996"W	0.32	
17112.00	89.420	176.610	7053.87	10078.77	-9879.64	1994.49	40°07'28.711"N	104°31'41.926"W	1.23	
17207.00	89.420	177.910	7054.83	10172.76	-9974.53	1999.04	40°07'27.773"N	104°31'41.881"W	1.37	
17301.00	88.890	179.180	7056.22	10265.43	-10068.48	2001.42	40°07'26.844"N	104°31'41.864"W	1.46	Last BHI MWD Survey
17356.00	88.890	179.180	7057.29	10319.54	-10123.47	2002.21	40°07'26.301"N	104°31'41.861"W	0.00	Projection to Bit

HOLE & CASING SECTIONS - Ref Wellbore: BISON RIDGE Y22-711 AWB Ref Wellpath: BISON RIDGE Y22-711 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	2057.00	2027.00	30.00	2056.96	0.03	-0.01	3.39	-8.03
13.5in Open Hole	30.00	2057.00	2027.00	30.00	2056.96	0.03	-0.01	3.39	-8.03
8.5in Open Hole	2057.00	17356.00	15299.00	2056.96	7057.29	3.39	-8.03	-10123.47	2002.21



Actual Wellpath Report

BISON RIDGE Y22-711 AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#01 BISON RIDGE Y22-711(2230'FSL&1948'FEL,SEC.10)
Area	COLORADO	Well	BISON RIDGE Y22-711
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	BISON RIDGE Y22-711 AWB
Facility	SEC.10-T02N-R64W		

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
BISON RIDGE Y22-711 SECTION 10	0.00	0.00	0.00	3269724.27	1299618.92	40°09'06.552"N	104°32'06.216"W	polygon
BISON RIDGE Y22-711 SECTION 15	0.00	0.00	0.00	3269724.27	1299618.92	40°09'06.552"N	104°32'06.216"W	polygon
BISON RIDGE Y22-711 SECTION 22	0.00	0.00	0.00	3269724.27	1299618.92	40°09'06.552"N	104°32'06.216"W	polygon
BISON RIDGE Y22-711 LANDING POINT	7039.00	-550.00	1840.00	3271564.19	1299068.94	40°09'00.919"N	104°31'42.599"W	point
BISON RIDGE Y22-711 SECTION 10 HARDLINE (460' SETBACK)	7100.00	0.00	0.00	3269724.27	1299618.92	40°09'06.552"N	104°32'06.216"W	polygon
BISON RIDGE Y22-711 SECTION 15 HARDLINE (460' SETBACK)	7100.00	0.00	0.00	3269724.27	1299618.92	40°09'06.552"N	104°32'06.216"W	polygon
BISON RIDGE Y22-711 SECTION 22 HARDLINE (460' SETBACK)	7100.00	0.00	0.00	3269724.27	1299618.92	40°09'06.552"N	104°32'06.216"W	polygon
BISON RIDGE Y22-711 REV-1 BHL(2640'FSL&95'FEL,SEC.22)	7256.72	-10142.79	1984.19	3271708.37	1289476.57	40°07'26.112"N	104°31'42.096"W	point

WELLPATH COMPOSITION - Ref Wellbore: BISON RIDGE Y22-711 AWB Ref Wellpath: BISON RIDGE Y22-711 AWP				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
0.00	2053.00	Gyrodatta standard - Drop gyro or Multi-shot	3rd Party Surface Gyros <78'-2053'>	BISON RIDGE Y22-711 AWB
2053.00	17301.00	OWSG MWD rev2 + IFR1 + Multi-Station Correction	BHI/ATC 8.5 " Hole OWSG MWD+IFR+MSA <2075'-17301'>	BISON RIDGE Y22-711 AWB
17301.00	17356.00	Blind Drilling (std)	Projection to bit	BISON RIDGE Y22-711 AWB



Actual Wellpath Report

BISON RIDGE Y22-711 AWP



REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#01 BISON RIDGE Y22-711(2230'FSL&1948'FEL,SEC.10)
Area	COLORADO	Well	BISON RIDGE Y22-711
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	BISON RIDGE Y22-711 AWB
Facility	SEC.10-T02N-R64W		

WELLPATH COMMENTS					
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment	
2053.00	0.830	275.760	2052.96	Tie to Surface Gyros	
17301.00	88.890	179.180	7056.22	Last BHI MWD Survey	
17356.00	88.890	179.180	7057.29	Projection to Bit	

COMMENTS	
<div>Wellpath general comments</div> <div>SURFACE LOCATION: NWSE</div> <div>40.15182N</div> <div>104.53506W</div> <div>API: 05-123-45377</div>	