

# NOBLE ENERGY, INC

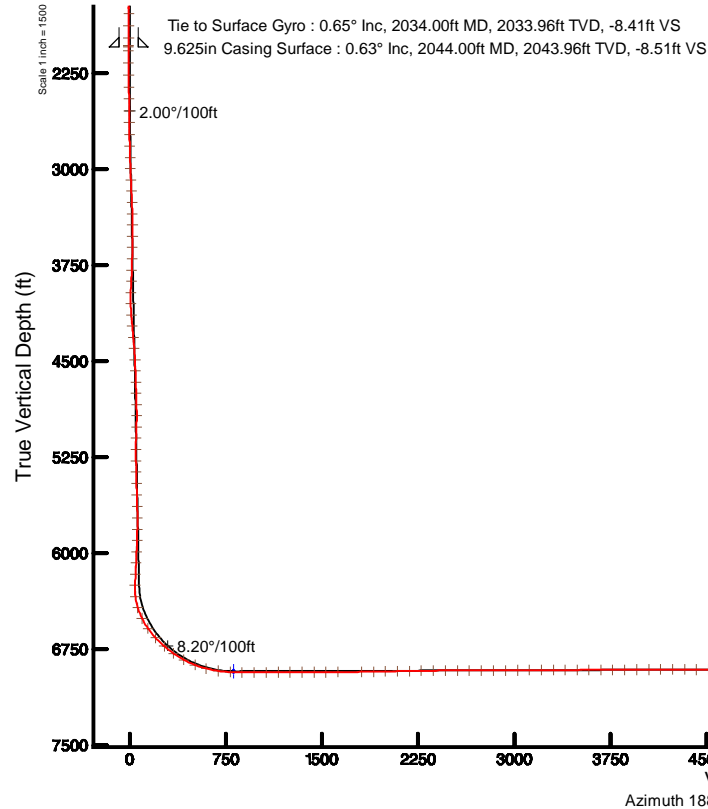
Location: COLORADO Slot: SLOT#11 BISON RIDGE Y22-786(2230'FSL&1980'FWL,SEC.10)  
Field: WELD COUNTY (NOBLE NAD 83 GRID) Well: BISON RIDGE Y22-786  
Facility: SEC-10-T02N-R64W Wellbore: BISON RIDGE Y22-786 PWB

## Comments

SURFACE LOCATION: NESW  
40.15183N  
104.53998W  
API: 05-123-45373

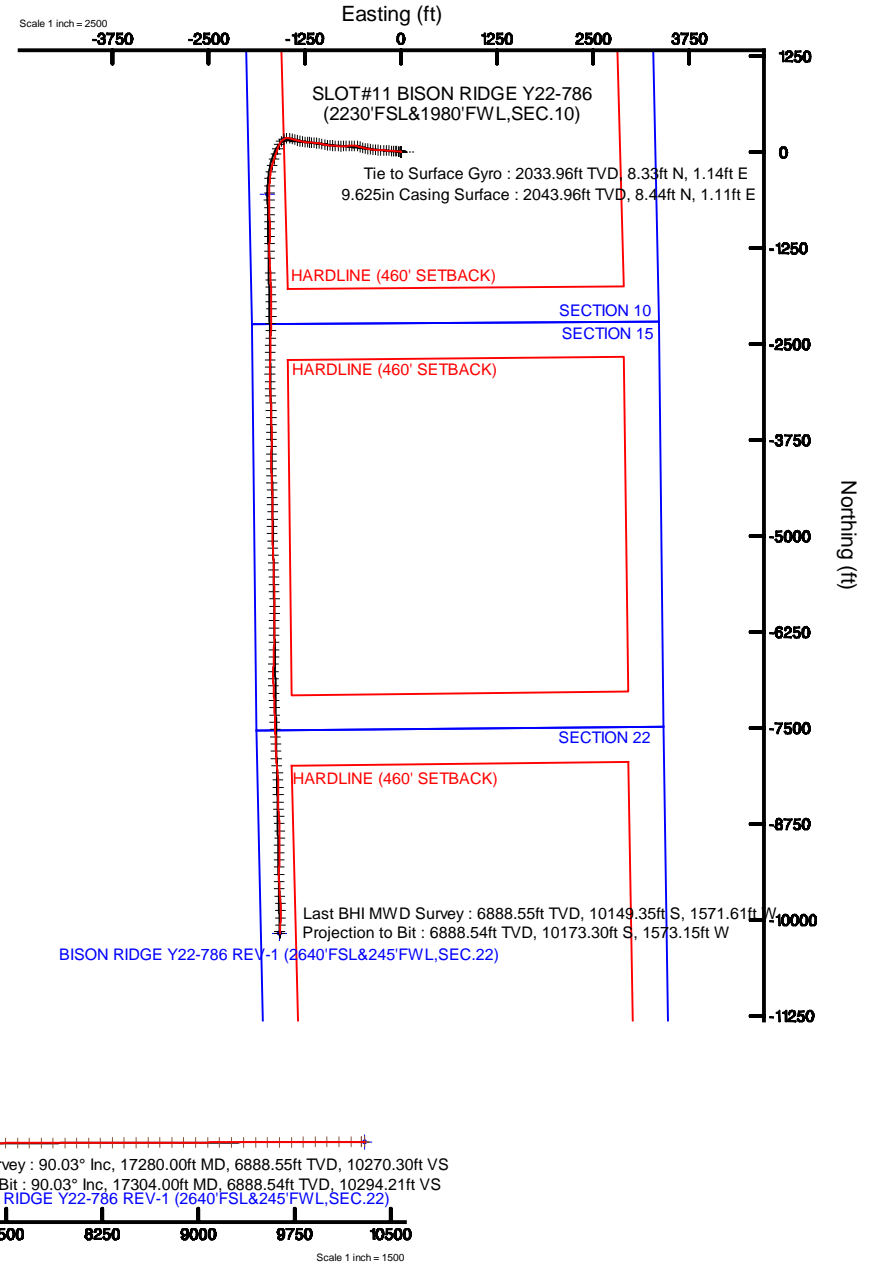
## Survey Program

Start MD (ft)	End MD (ft)	Tool	Model	Log Name/Comment	Wellbore
30.00	17275.23	OWSG MWD rev2	OWSG MWD rev2 + IFR1 + Multi-Station Correction		BISON RIDGE Y22-786 PWB



Plot reference wellpath is BISON RIDGE Y22-786 (REV-A-G) PWB	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (2011), US Feet
True vertical depths are referenced to RIG (2018) (RWB)	* - Wellpath was created from a different geospatial datum
Measured depths are referenced to RIG (2018) (RWB)	North Reference: Grid north
RIG (2018) (RWB) to Mean Sea Level: 4860 feet	Scale: True distance
Mean Sea Level to Ground level (At Slot: SLOT#11 BISON RIDGE Y22-786(2230'FSL&1980'FWL,SEC.10): 0 feet	Depth: sea to feet
Coordinates are in feet not referenced to Slot	Created by: geospatial on 2019-01-12
	Datemark: WA, DEN, Denver, Datm

Location Information					
Facility Name	Grid East (US Feet)	Grid North (US Feet)	Latitude	Longitude	
SEC-10-T02N-R64W	388704.271	388648.646	40.1518327N	104.5399817W	
Site	Local N (ft)	Local E (ft)	Grid East (US Feet)	Grid North (US Feet)	Latitude
SLOT#11 BISON RIDGE Y22-786(2230'FSL&1980'FWL,SEC.10)	-11.28	-1375.31	388648.646	388648.646	40.1518327N
RIG (2018) (RWB) to Ground level (At Slot: SLOT#11 BISON RIDGE Y22-786(2230'FSL&1980'FWL,SEC.10)					4860
Mean Sea Level to Ground level (At Slot: SLOT#11 BISON RIDGE Y22-786(2230'FSL&1980'FWL,SEC.10)					0
RIG (2018) (RWB) to Mean Sea Level					4860



REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#11 BISON RIDGE Y22-786(2230'FSL&1980'FWL,SEC.10)
Area	COLORADO	Well	BISON RIDGE Y22-786
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	BISON RIDGE Y22-786 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	1/12/2018 at 1:57:04 PM
Convergence at slot	0.63° East	Database/Source file	WA_DEN_Denver_Defn/BISON_RIDGE_Y22-786_AWP.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-11.29	-1375.31	3268349.03	1299607.63	40°09'06.588"N	104°32'23.928"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	4960.00ft
Horizontal Reference Pt	Slot	RIG (30'KB) (RKB) to Mean Sea Level	4960.00ft
Vertical Reference Pt	RIG (30'KB) (RKB)	RIG (30'KB) (RKB) to Ground Level at Slot (SLOT#11 BISON RIDGE Y22-786 (2230'FSL&1980'FWL,SEC.10))	4960.00ft
MD Reference Pt	RIG (30'KB) (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	188.82°



Actual Wellpath Report

BISON RIDGE Y22-786 AWP



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Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	BISON RIDGE Y22-786 AWB
Facility	SEC.10-T02N-R64W		

WELLPATH DATA (185 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00	0.000	244.250	0.00	0.00	0.00	0.00	40°09'06.588"N	104°32'23.928"W	0.00	
80.00	0.200	244.250	80.00	0.08	-0.06	-0.13	40°09'06.587"N	104°32'23.930"W	0.25	
179.00	0.370	253.180	179.00	0.32	-0.23	-0.59	40°09'06.586"N	104°32'23.936"W	0.18	
272.00	0.150	14.290	272.00	0.32	-0.20	-0.84	40°09'06.586"N	104°32'23.939"W	0.50	
368.00	0.500	67.710	368.00	-0.02	0.08	-0.43	40°09'06.589"N	104°32'23.933"W	0.45	
462.00	0.600	311.220	461.99	-0.49	0.56	-0.42	40°09'06.594"N	104°32'23.933"W	1.00	
557.00	0.280	338.480	556.99	-0.96	1.11	-0.88	40°09'06.599"N	104°32'23.939"W	0.39	
651.00	0.320	329.690	650.99	-1.36	1.55	-1.09	40°09'06.603"N	104°32'23.942"W	0.06	
746.00	0.260	337.940	745.99	-1.75	1.98	-1.31	40°09'06.608"N	104°32'23.945"W	0.08	
840.00	0.220	57.680	839.99	-2.05	2.27	-1.24	40°09'06.611"N	104°32'23.944"W	0.33	
935.00	0.240	332.610	934.99	-2.33	2.54	-1.17	40°09'06.613"N	104°32'23.943"W	0.33	
1029.00	0.370	344.400	1028.99	-2.77	3.01	-1.34	40°09'06.618"N	104°32'23.945"W	0.15	
1124.00	0.320	11.400	1123.98	-3.31	3.57	-1.37	40°09'06.623"N	104°32'23.945"W	0.18	
1218.00	0.430	44.280	1217.98	-3.86	4.08	-1.08	40°09'06.628"N	104°32'23.941"W	0.25	
1313.00	0.190	45.050	1312.98	-4.28	4.44	-0.72	40°09'06.632"N	104°32'23.937"W	0.25	
1407.00	0.440	357.350	1406.98	-4.76	4.91	-0.62	40°09'06.637"N	104°32'23.935"W	0.36	
1502.00	0.680	69.360	1501.98	-5.40	5.48	-0.11	40°09'06.642"N	104°32'23.929"W	0.72	
1596.00	0.620	21.770	1595.97	-6.17	6.15	0.60	40°09'06.649"N	104°32'23.919"W	0.56	
1691.00	0.290	51.590	1690.97	-6.84	6.77	0.98	40°09'06.655"N	104°32'23.914"W	0.42	
1785.00	0.200	38.020	1784.97	-7.16	7.05	1.26	40°09'06.658"N	104°32'23.911"W	0.11	
1880.00	0.140	24.790	1879.97	-7.42	7.29	1.42	40°09'06.660"N	104°32'23.909"W	0.08	
1974.00	0.490	340.320	1973.97	-7.88	7.77	1.33	40°09'06.665"N	104°32'23.910"W	0.43	
2034.00	0.650	342.410	2033.96	-8.41	8.33	1.14	40°09'06.670"N	104°32'23.912"W	0.27	Tie to Surface Gyro
2075.00	0.590	4.750	2074.96	-8.83	8.77	1.09	40°09'06.675"N	104°32'23.913"W	0.60	
2170.00	3.010	272.050	2169.91	-9.02	9.34	-1.37	40°09'06.680"N	104°32'23.944"W	3.26	
2264.00	6.080	267.420	2263.61	-7.75	9.21	-8.81	40°09'06.680"N	104°32'24.040"W	3.29	
2359.00	7.960	272.120	2357.89	-5.99	9.22	-20.41	40°09'06.681"N	104°32'24.190"W	2.07	
2453.00	10.290	276.180	2450.70	-4.84	10.37	-35.26	40°09'06.694"N	104°32'24.381"W	2.57	
2548.00	12.320	275.720	2543.85	-3.90	12.29	-53.78	40°09'06.715"N	104°32'24.619"W	2.14	
2642.00	14.020	275.560	2635.37	-2.71	14.40	-75.10	40°09'06.738"N	104°32'24.893"W	1.81	



Actual Wellpath Report  
BISON RIDGE Y22-786 AWP  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#11 BISON RIDGE Y22-786(2230'FSL&1980'FWL,SEC.10)
Area	COLORADO	Well	BISON RIDGE Y22-786
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	BISON RIDGE Y22-786 AWB
Facility	SEC.10-T02N-R64W		

WELLPATH DATA (185 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
2737.00	15.680	274.840	2727.20	-1.16	16.59	-99.34	40°09'06.763"N	104°32'25.205"W	1.76	
2831.00	17.330	274.470	2817.32	0.78	18.76	-125.96	40°09'06.787"N	104°32'25.547"W	1.76	
2926.00	20.470	274.150	2907.19	3.21	21.06	-156.64	40°09'06.813"N	104°32'25.942"W	3.31	
3020.00	21.860	273.370	2994.85	6.21	23.28	-190.51	40°09'06.838"N	104°32'26.378"W	1.51	
3115.00	21.820	272.500	3083.03	9.84	25.09	-225.80	40°09'06.860"N	104°32'26.832"W	0.34	
3209.00	21.730	271.580	3170.32	13.95	26.33	-260.65	40°09'06.876"N	104°32'27.281"W	0.38	
3304.00	21.780	272.970	3258.55	17.97	27.73	-295.83	40°09'06.894"N	104°32'27.734"W	0.54	
3399.00	21.560	275.630	3346.84	20.74	30.36	-330.80	40°09'06.923"N	104°32'28.184"W	1.06	
3493.00	21.670	278.100	3434.23	21.92	34.50	-365.17	40°09'06.968"N	104°32'28.626"W	0.97	
3588.00	20.750	279.130	3522.80	22.05	39.64	-399.15	40°09'07.022"N	104°32'29.063"W	1.04	
3682.00	20.150	280.990	3610.88	21.35	45.37	-431.49	40°09'07.082"N	104°32'29.478"W	0.94	
3777.00	22.110	282.560	3699.48	19.56	52.37	-465.00	40°09'07.155"N	104°32'29.909"W	2.15	
3871.00	21.690	283.980	3786.70	16.85	60.42	-499.13	40°09'07.238"N	104°32'30.347"W	0.72	
3966.00	22.190	287.360	3874.82	12.60	70.01	-533.29	40°09'07.337"N	104°32'30.786"W	1.43	
4061.00	22.220	284.070	3962.78	8.30	79.73	-567.84	40°09'07.437"N	104°32'31.229"W	1.31	
4155.00	22.430	274.460	4049.77	8.04	85.45	-602.97	40°09'07.497"N	104°32'31.681"W	3.89	
4250.00	22.240	265.720	4137.66	13.49	85.52	-638.97	40°09'07.501"N	104°32'32.144"W	3.50	
4345.00	22.070	266.990	4225.65	21.23	83.24	-674.72	40°09'07.483"N	104°32'32.605"W	0.53	
4439.00	22.190	265.960	4312.72	28.80	81.06	-710.07	40°09'07.465"N	104°32'33.061"W	0.43	
4534.00	22.260	267.220	4400.67	36.41	78.92	-745.93	40°09'07.448"N	104°32'33.523"W	0.51	
4628.00	22.260	272.550	4487.67	41.94	78.85	-781.51	40°09'07.451"N	104°32'33.981"W	2.15	
4723.00	22.210	274.970	4575.61	45.11	81.21	-817.37	40°09'07.478"N	104°32'34.442"W	0.97	
4817.00	22.220	274.100	4662.63	47.77	84.02	-852.80	40°09'07.509"N	104°32'34.898"W	0.35	
4912.00	21.850	272.670	4750.69	51.14	86.13	-888.38	40°09'07.534"N	104°32'35.356"W	0.69	
5006.00	21.640	275.740	4838.01	53.95	88.67	-923.10	40°09'07.563"N	104°32'35.803"W	1.23	
5101.00	21.760	278.720	4926.28	54.92	93.10	-957.93	40°09'07.610"N	104°32'36.251"W	1.17	
5195.00	21.540	282.450	5013.65	53.86	99.46	-992.01	40°09'07.677"N	104°32'36.689"W	1.48	
5290.00	21.950	285.310	5101.89	50.75	107.91	-1026.16	40°09'07.764"N	104°32'37.127"W	1.20	
5385.00	21.820	279.790	5190.06	48.44	115.60	-1060.69	40°09'07.844"N	104°32'37.571"W	2.17	
5479.00	21.380	274.850	5277.46	49.34	120.02	-1094.98	40°09'07.891"N	104°32'38.012"W	1.99	



Actual Wellpath Report

BISON RIDGE Y22-786 AWP



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Operator	NOBLE ENERGY, INC	Slot	SLOT#11 BISON RIDGE Y22-786(2230'FSL&1980'FWL,SEC.10)
Area	COLORADO	Well	BISON RIDGE Y22-786
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	BISON RIDGE Y22-786 AWB
Facility	SEC.10-T02N-R64W		

WELLPATH DATA (185 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
5574.00	20.000	275.570	5366.33	51.46	123.06	-1128.41	40°09'07.924"N	104°32'38.442"W	1.48	
5668.00	18.280	274.800	5455.13	53.40	125.85	-1159.10	40°09'07.955"N	104°32'38.837"W	1.85	
5763.00	17.520	273.140	5545.53	55.86	127.88	-1188.22	40°09'07.979"N	104°32'39.212"W	0.96	
5857.00	17.580	273.060	5635.16	58.69	129.42	-1216.53	40°09'07.997"N	104°32'39.576"W	0.07	
5952.00	19.270	278.280	5725.29	60.28	132.44	-1246.37	40°09'08.030"N	104°32'39.960"W	2.48	
6047.00	21.110	281.020	5814.45	59.77	137.97	-1278.68	40°09'08.088"N	104°32'40.375"W	2.18	
6141.00	21.410	282.660	5902.06	57.97	144.96	-1312.03	40°09'08.160"N	104°32'40.804"W	0.71	
6235.00	21.870	286.150	5989.43	54.59	153.59	-1345.59	40°09'08.249"N	104°32'41.234"W	1.45	
6330.00	22.760	285.400	6077.32	50.23	163.40	-1380.30	40°09'08.350"N	104°32'41.680"W	0.98	
6424.00	22.520	284.020	6164.08	46.52	172.59	-1415.30	40°09'08.444"N	104°32'42.130"W	0.62	
6519.00	21.580	287.680	6252.13	42.18	182.30	-1449.60	40°09'08.544"N	104°32'42.570"W	1.75	
6613.00	22.840	261.500	6339.37	44.96	184.86	-1484.20	40°09'08.573"N	104°32'43.015"W	10.53	
6708.00	25.670	239.190	6426.16	63.61	171.56	-1520.19	40°09'08.445"N	104°32'43.480"W	10.03	
6803.00	30.860	221.120	6509.95	97.42	142.60	-1553.97	40°09'08.163"N	104°32'43.919"W	10.48	
6897.00	35.890	205.460	6588.57	144.31	99.45	-1581.74	40°09'07.739"N	104°32'44.283"W	10.58	
6992.00	42.620	198.660	6662.13	202.78	43.75	-1604.03	40°09'07.191"N	104°32'44.578"W	8.40	
7086.00	49.960	197.550	6727.04	269.79	-20.80	-1625.10	40°09'06.556"N	104°32'44.858"W	7.85	
7181.00	55.240	199.310	6784.72	344.17	-92.36	-1648.98	40°09'05.851"N	104°32'45.176"W	5.75	
7275.00	62.140	196.350	6833.55	423.44	-168.78	-1673.48	40°09'05.099"N	104°32'45.502"W	7.82	
7370.00	68.170	189.720	6873.48	509.32	-252.69	-1692.78	40°09'04.272"N	104°32'45.762"W	8.96	
7464.00	76.670	184.330	6901.87	598.76	-341.52	-1703.63	40°09'03.395"N	104°32'45.914"W	10.56	
7559.00	81.220	182.140	6920.08	691.52	-434.58	-1708.88	40°09'02.476"N	104°32'45.994"W	5.30	
7653.00	87.940	180.910	6928.96	784.29	-528.07	-1711.36	40°09'01.552"N	104°32'46.039"W	7.27	
7748.00	89.540	179.600	6931.05	878.20	-623.04	-1711.78	40°09'00.614"N	104°32'46.058"W	2.18	
7843.00	90.060	179.080	6931.38	971.90	-718.03	-1710.69	40°08'59.675"N	104°32'46.057"W	0.77	
7937.00	90.340	179.130	6931.05	1064.55	-812.02	-1709.22	40°08'58.746"N	104°32'46.051"W	0.30	
8032.00	90.150	178.350	6930.64	1158.08	-906.99	-1707.13	40°08'57.808"N	104°32'46.037"W	0.85	
8126.00	90.120	180.030	6930.42	1250.75	-1000.98	-1705.80	40°08'56.879"N	104°32'46.033"W	1.79	
8221.00	90.000	180.850	6930.32	1344.74	-1095.98	-1706.53	40°08'55.940"N	104°32'46.056"W	0.87	
8315.00	90.060	181.010	6930.27	1437.85	-1189.97	-1708.06	40°08'55.012"N	104°32'46.088"W	0.18	



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8410.00	90.250	180.600	6930.02	1531.92	-1284.96	-1709.39	40°08'54.073"N	104°32'46.119"W	0.48	
8505.00	90.280	177.460	6929.58	1625.52	-1379.93	-1707.78	40°08'53.134"N	104°32'46.111"W	3.31	
8694.00	90.990	176.930	6927.48	1810.63	-1568.69	-1698.54	40°08'51.268"N	104°32'46.018"W	0.47	
8789.00	90.920	177.460	6925.90	1903.67	-1663.56	-1693.89	40°08'50.330"N	104°32'45.971"W	0.56	
8883.00	91.020	178.710	6924.31	1996.01	-1757.49	-1690.75	40°08'49.402"N	104°32'45.944"W	1.33	
8978.00	90.950	178.790	6922.67	2089.53	-1852.46	-1688.67	40°08'48.463"N	104°32'45.930"W	0.11	
9072.00	90.860	179.100	6921.19	2182.12	-1946.43	-1686.94	40°08'47.534"N	104°32'45.921"W	0.34	
9167.00	90.920	179.880	6919.71	2275.85	-2041.41	-1686.10	40°08'46.596"N	104°32'45.923"W	0.82	
9261.00	90.890	180.860	6918.23	2368.82	-2135.40	-1686.71	40°08'45.667"N	104°32'45.944"W	1.04	
9356.00	90.120	181.510	6917.39	2462.97	-2230.37	-1688.67	40°08'44.729"N	104°32'45.983"W	1.06	
9450.00	90.250	181.210	6917.09	2556.18	-2324.35	-1690.90	40°08'43.800"N	104°32'46.024"W	0.35	
9545.00	90.150	181.130	6916.76	2650.33	-2419.33	-1692.84	40°08'42.862"N	104°32'46.063"W	0.13	
9639.00	90.030	181.440	6916.61	2743.52	-2513.30	-1694.95	40°08'41.934"N	104°32'46.103"W	0.35	
9734.00	90.250	181.010	6916.38	2837.68	-2608.28	-1696.98	40°08'40.995"N	104°32'46.142"W	0.51	
9828.00	90.340	181.400	6915.89	2930.85	-2702.26	-1698.96	40°08'40.067"N	104°32'46.181"W	0.43	
9923.00	90.370	181.730	6915.30	3025.09	-2797.22	-1701.55	40°08'39.129"N	104°32'46.227"W	0.35	
10017.00	90.310	180.240	6914.75	3118.21	-2891.20	-1703.17	40°08'38.200"N	104°32'46.261"W	1.59	
10112.00	90.400	178.930	6914.16	3211.97	-2986.20	-1702.48	40°08'37.261"N	104°32'46.265"W	1.38	
10207.00	90.220	177.630	6913.64	3305.36	-3081.15	-1699.63	40°08'36.323"N	104°32'46.242"W	1.38	
10301.00	90.180	177.330	6913.32	3397.53	-3175.06	-1695.49	40°08'35.394"N	104°32'46.201"W	0.32	
10395.00	90.340	177.470	6912.89	3489.66	-3268.96	-1691.23	40°08'34.466"N	104°32'46.160"W	0.23	
10490.00	90.280	178.050	6912.37	3582.90	-3363.89	-1687.52	40°08'33.528"N	104°32'46.125"W	0.61	
10584.00	90.180	178.690	6912.00	3675.34	-3457.85	-1684.84	40°08'32.599"N	104°32'46.104"W	0.69	
10678.00	90.310	179.260	6911.60	3767.95	-3551.83	-1683.16	40°08'31.670"N	104°32'46.095"W	0.62	
10773.00	90.340	179.510	6911.06	3861.66	-3646.82	-1682.14	40°08'30.731"N	104°32'46.095"W	0.27	
10867.00	90.220	179.850	6910.60	3954.47	-3740.82	-1681.62	40°08'29.802"N	104°32'46.101"W	0.38	
10962.00	90.310	180.870	6910.16	4048.43	-3835.82	-1682.21	40°08'28.864"N	104°32'46.122"W	1.08	
11056.00	90.090	181.450	6909.83	4141.59	-3929.80	-1684.12	40°08'27.935"N	104°32'46.160"W	0.66	
11151.00	90.000	179.890	6909.75	4235.63	-4024.79	-1685.23	40°08'26.997"N	104°32'46.187"W	1.64	
11246.00	89.820	179.030	6909.90	4329.36	-4119.78	-1684.33	40°08'26.058"N	104°32'46.189"W	0.92	





Actual Wellpath Report

BISON RIDGE Y22-786 AWP



REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#11 BISON RIDGE Y22-786(2230'FSL&1980'FWL,SEC.10)
Area	COLORADO	Well	BISON RIDGE Y22-786
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	BISON RIDGE Y22-786 AWB
Facility	SEC.10-T02N-R64W		

WELLPATH DATA (185 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
11340.00	90.060	178.130	6910.00	4421.86	-4213.75	-1682.00	40°08'25.129"N	104°32'46.172"W	0.99	
11435.00	90.090	177.740	6909.88	4515.15	-4308.69	-1678.58	40°08'24.191"N	104°32'46.141"W	0.41	
11529.00	90.030	177.690	6909.78	4607.39	-4402.61	-1674.83	40°08'23.262"N	104°32'46.105"W	0.08	
11624.00	90.180	178.780	6909.61	4700.77	-4497.57	-1671.91	40°08'22.324"N	104°32'46.081"W	1.16	
11718.00	90.370	179.550	6909.15	4793.44	-4591.56	-1670.54	40°08'21.395"N	104°32'46.076"W	0.84	
11812.00	90.220	178.980	6908.67	4886.13	-4685.55	-1669.33	40°08'20.466"N	104°32'46.074"W	0.63	
11907.00	90.340	181.990	6908.21	4980.12	-4780.53	-1670.13	40°08'19.527"N	104°32'46.097"W	3.17	
12001.00	90.250	181.990	6907.72	5073.45	-4874.47	-1673.40	40°08'18.599"N	104°32'46.152"W	0.10	
12096.00	90.340	178.430	6907.23	5167.36	-4969.46	-1673.75	40°08'17.661"N	104°32'46.170"W	3.75	
12191.00	90.220	176.540	6906.77	5260.50	-5064.36	-1669.58	40°08'16.723"N	104°32'46.129"W	1.99	
12285.00	90.220	176.380	6906.41	5352.32	-5158.18	-1663.77	40°08'15.795"N	104°32'46.068"W	0.17	
12379.00	90.280	178.300	6906.00	5444.44	-5252.07	-1659.41	40°08'14.867"N	104°32'46.025"W	2.04	
12474.00	90.340	178.710	6905.48	5537.90	-5347.04	-1656.93	40°08'13.928"N	104°32'46.006"W	0.44	
12568.00	90.400	178.720	6904.88	5630.44	-5441.01	-1654.83	40°08'12.999"N	104°32'45.992"W	0.06	
12663.00	90.280	178.540	6904.31	5723.94	-5535.98	-1652.55	40°08'12.060"N	104°32'45.976"W	0.23	
12757.00	90.310	178.520	6903.83	5816.42	-5629.95	-1650.14	40°08'11.132"N	104°32'45.958"W	0.04	
12851.00	90.250	177.850	6903.37	5908.81	-5723.90	-1647.17	40°08'10.203"N	104°32'45.932"W	0.72	
12946.00	90.120	178.970	6903.06	6002.24	-5818.86	-1644.53	40°08'09.264"N	104°32'45.911"W	1.19	
13041.00	90.090	179.890	6902.89	6095.96	-5913.86	-1643.58	40°08'08.326"N	104°32'45.912"W	0.97	
13135.00	90.220	181.680	6902.63	6189.04	-6007.84	-1644.87	40°08'07.397"N	104°32'45.942"W	1.91	
13229.00	90.090	181.050	6902.38	6282.24	-6101.82	-1647.11	40°08'06.469"N	104°32'45.984"W	0.68	
13324.00	90.150	179.690	6902.18	6376.21	-6196.81	-1647.73	40°08'05.530"N	104°32'46.005"W	1.43	
13419.00	90.280	179.970	6901.82	6470.04	-6291.81	-1647.44	40°08'04.591"N	104°32'46.014"W	0.32	
13513.00	90.120	181.330	6901.50	6563.08	-6385.80	-1648.51	40°08'03.662"N	104°32'46.041"W	1.46	
13608.00	90.280	180.900	6901.16	6657.22	-6480.78	-1650.36	40°08'02.724"N	104°32'46.078"W	0.48	
13702.00	90.220	182.300	6900.75	6750.47	-6574.74	-1652.98	40°08'01.796"N	104°32'46.125"W	1.49	
13797.00	90.310	182.190	6900.32	6844.85	-6669.67	-1656.70	40°08'00.858"N	104°32'46.186"W	0.15	
13892.00	90.180	180.880	6899.91	6939.08	-6764.63	-1659.25	40°07'59.920"N	104°32'46.232"W	1.39	
13986.00	90.220	179.380	6899.58	7031.99	-6858.63	-1659.46	40°07'58.991"N	104°32'46.248"W	1.60	
14080.00	90.120	177.760	6899.30	7124.49	-6952.60	-1657.12	40°07'58.063"N	104°32'46.231"W	1.73	



Actual Wellpath Report

BISON RIDGE Y22-786 AWP



REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#11 BISON RIDGE Y22-786(2230'FSL&1980'FWL,SEC.10)
Area	COLORADO	Well	BISON RIDGE Y22-786
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	BISON RIDGE Y22-786 AWB
Facility	SEC.10-T02N-R64W		

WELLPATH DATA (185 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
14175.00	90.220	176.410	6899.02	7217.50	-7047.47	-1652.29	40°07'57.125"N	104°32'46.181"W	1.42	
14269.00	90.340	177.960	6898.56	7309.56	-7141.35	-1647.67	40°07'56.196"N	104°32'46.135"W	1.65	
14364.00	90.250	177.930	6898.07	7402.86	-7236.29	-1644.26	40°07'55.258"N	104°32'46.104"W	0.10	
14458.00	90.030	178.290	6897.84	7495.22	-7330.24	-1641.16	40°07'54.329"N	104°32'46.077"W	0.45	
14553.00	90.120	177.880	6897.72	7588.55	-7425.19	-1637.99	40°07'53.391"N	104°32'46.050"W	0.44	
14647.00	90.180	178.160	6897.47	7680.89	-7519.13	-1634.74	40°07'52.462"N	104°32'46.021"W	0.30	
14742.00	90.220	178.010	6897.14	7774.22	-7614.08	-1631.57	40°07'51.523"N	104°32'45.993"W	0.16	
14836.00	90.180	177.760	6896.81	7866.52	-7708.01	-1628.10	40°07'50.595"N	104°32'45.962"W	0.27	
14931.00	90.250	177.590	6896.46	7959.72	-7802.93	-1624.24	40°07'49.657"N	104°32'45.925"W	0.19	
15025.00	90.090	177.150	6896.18	8051.85	-7896.83	-1619.93	40°07'48.728"N	104°32'45.883"W	0.50	
15119.00	90.150	174.260	6895.98	8143.39	-7990.56	-1612.89	40°07'47.801"N	104°32'45.805"W	3.08	
15214.00	90.120	175.300	6895.76	8235.55	-8085.16	-1604.25	40°07'46.866"N	104°32'45.707"W	1.10	
15308.00	90.220	176.860	6895.48	8327.23	-8178.94	-1597.82	40°07'45.938"N	104°32'45.637"W	1.66	
15403.00	90.030	179.930	6895.27	8420.65	-8273.89	-1595.16	40°07'45.000"N	104°32'45.616"W	3.24	
15498.00	90.280	180.610	6895.01	8514.59	-8368.89	-1595.61	40°07'44.061"N	104°32'45.635"W	0.76	
15592.00	90.250	178.650	6894.58	8607.38	-8462.88	-1595.00	40°07'43.132"N	104°32'45.640"W	2.09	
15686.00	90.150	178.290	6894.25	8699.85	-8556.85	-1592.49	40°07'42.203"N	104°32'45.621"W	0.40	
15781.00	90.180	175.860	6893.98	8792.85	-8651.72	-1587.64	40°07'41.265"N	104°32'45.572"W	2.56	
15875.00	90.220	174.740	6893.65	8884.24	-8745.40	-1579.94	40°07'40.339"N	104°32'45.485"W	1.19	
15970.00	90.250	179.940	6893.26	8977.31	-8840.26	-1575.54	40°07'39.401"N	104°32'45.442"W	5.47	
16064.00	90.250	183.060	6892.85	9070.53	-8934.22	-1578.00	40°07'38.473"N	104°32'45.486"W	3.32	
16159.00	90.250	180.710	6892.43	9164.83	-9029.16	-1581.12	40°07'37.535"N	104°32'45.540"W	2.47	
16254.00	90.280	179.170	6891.99	9258.69	-9124.15	-1581.02	40°07'36.596"N	104°32'45.552"W	1.62	
16348.00	90.180	180.880	6891.62	9351.58	-9218.15	-1581.06	40°07'35.667"N	104°32'45.565"W	1.82	
16443.00	90.220	181.550	6891.28	9445.74	-9313.13	-1583.08	40°07'34.729"N	104°32'45.604"W	0.71	
16537.00	90.000	179.700	6891.10	9538.77	-9407.12	-1584.10	40°07'33.800"N	104°32'45.631"W	1.98	
16632.00	90.120	179.140	6891.00	9632.50	-9502.11	-1583.14	40°07'32.862"N	104°32'45.631"W	0.60	
16726.00	90.220	176.990	6890.73	9724.84	-9596.05	-1579.97	40°07'31.933"N	104°32'45.603"W	2.29	
16821.00	90.370	174.520	6890.24	9817.37	-9690.78	-1572.93	40°07'30.996"N	104°32'45.526"W	2.60	
16916.00	90.310	177.490	6889.67	9909.99	-9785.54	-1566.32	40°07'30.059"N	104°32'45.454"W	3.13	





Actual Wellpath Report

BISON RIDGE Y22-786 AWP



REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#11 BISON RIDGE Y22-786(2230'FSL&1980'FWL,SEC.10)
Area	COLORADO	Well	BISON RIDGE Y22-786
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	BISON RIDGE Y22-786 AWB
Facility	SEC.10-T02N-R64W		

WELLPATH DATA (185 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
17010.00	90.250	179.720	6889.21	10002.49	-9879.51	-1564.03	40°07'29.130"N	104°32'45.438"W	2.37	
17105.00	90.060	180.990	6888.96	10096.46	-9974.50	-1564.62	40°07'28.192"N	104°32'45.458"W	1.35	
17200.00	90.220	182.360	6888.72	10190.72	-10069.46	-1567.39	40°07'27.254"N	104°32'45.507"W	1.45	
17280.00	90.030	183.680	6888.55	10270.30	-10149.35	-1571.61	40°07'26.465"N	104°32'45.572"W	1.67	Last BHI MWD Survey
17304.00	90.030	183.680	6888.54	10294.21	-10173.30	-1573.15	40°07'26.228"N	104°32'45.596"W	0.00	Projection to Bit

HOLE & CASING SECTIONS - Ref Wellbore: BISON RIDGE Y22-786 AWB      Ref Wellpath: BISON RIDGE Y22-786 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	2044.00	2014.00	30.00	2043.96	-0.01	-0.02	8.44	1.11	
9.625in Casing Surface	30.00	2044.00	2014.00	30.00	2043.96	-0.01	-0.02	8.44	1.11	
8.5in Open Hole	2044.00	17304.00	15260.00	2043.96	6888.54	8.44	1.11	-10173.30	-1573.15	



Actual Wellpath Report

BISON RIDGE Y22-786 AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#11 BISON RIDGE Y22-786(2230'FSL&1980'FWL,SEC.10)
Area	COLORADO	Well	BISON RIDGE Y22-786
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	BISON RIDGE Y22-786 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	7.00	11.29	1375.31	3269724.27	1299618.92	40°09'06.552"N	104°32'06.216"W	polygon
BISON RIDGE Y22-711 SECTION 15	7.00	11.29	1375.31	3269724.27	1299618.92	40°09'06.552"N	104°32'06.216"W	polygon
BISON RIDGE Y22-711 SECTION 22	7.00	11.29	1375.31	3269724.27	1299618.92	40°09'06.552"N	104°32'06.216"W	polygon
BISON RIDGE Y22-786 REV-1 (2640'FSL&245'FWL,SEC.22)	6889.40	-10174.20	-1579.07	3266770.02	1289433.88	40°07'26.220"N	104°32'45.672"W	point
BISON RIDGE Y22-786 LANDING POINT	6923.00	-550.00	-1735.00	3266614.10	1299057.66	40°09'01.338"N	104°32'46.347"W	point
BISON RIDGE Y22-711 SECTION 10 HARDLINE (460' SETBACK)	7107.00	11.29	1375.31	3269724.27	1299618.92	40°09'06.552"N	104°32'06.216"W	polygon
BISON RIDGE Y22-711 SECTION 15 HARDLINE (460' SETBACK)	7107.00	11.29	1375.31	3269724.27	1299618.92	40°09'06.552"N	104°32'06.216"W	polygon
BISON RIDGE Y22-711 SECTION 22 HARDLINE (460' SETBACK)	7107.00	11.29	1375.31	3269724.27	1299618.92	40°09'06.552"N	104°32'06.216"W	polygon

WELLPATH COMPOSITION - Ref Wellbore: BISON RIDGE Y22-786 AWB    Ref Wellpath: BISON RIDGE Y22-786 AWP				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
0.00	2034.00	Gyrodata standard - Drop gyro or Multi-shot	3rd Party Surface Gyros <80'-2034'>	BISON RIDGE Y22-786 AWB
2034.00	17280.00	OWSG MWD rev2 + IFR1 + Multi-Station Correction	BHI/ATCurve OWSG+IFR+MSA 8.5" Hole <2075'-17304'>	BISON RIDGE Y22-786 AWB
17280.00	17304.00	Blind Drilling (std)	Projection to bit	BISON RIDGE Y22-786 AWB



Actual Wellpath Report

BISON RIDGE Y22-786 AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#11 BISON RIDGE Y22-786(2230'FSL&1980'FWL,SEC.10)
Area	COLORADO	Well	BISON RIDGE Y22-786
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	BISON RIDGE Y22-786 AWB
Facility	SEC.10-T02N-R64W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
2034.00	0.650	342.410	2033.96	Tie to Surface Gyro
17280.00	90.030	183.680	6888.55	Last BHI MWD Survey
17304.00	90.030	183.680	6888.54	Projection to Bit

COMMENTS
<div>Wellpath general comments</div> <div>SURFACE LOCATION: NESW</div> <div>40.15183N</div> <div>104.53998W</div> <div>API: 05-123-45373</div>