

NOBLE ENERGY, INC

Location: COLORADO Slot: SLOT#09 BISON RIDGE Y22-771(2230'FSL&2055'FWL,SEC.10)
Field: WELD COUNTY (NOBLE NAD 83 GRID) Well: BISON RIDGE Y22-771
Facility: SEC.10-T22N-R64W Wellbore: BISON RIDGE Y22-771 PWB

Comments

SURFACE LOCATION: NESW
40.15183N
104.53971W
API: 05-123-45372

Survey Program

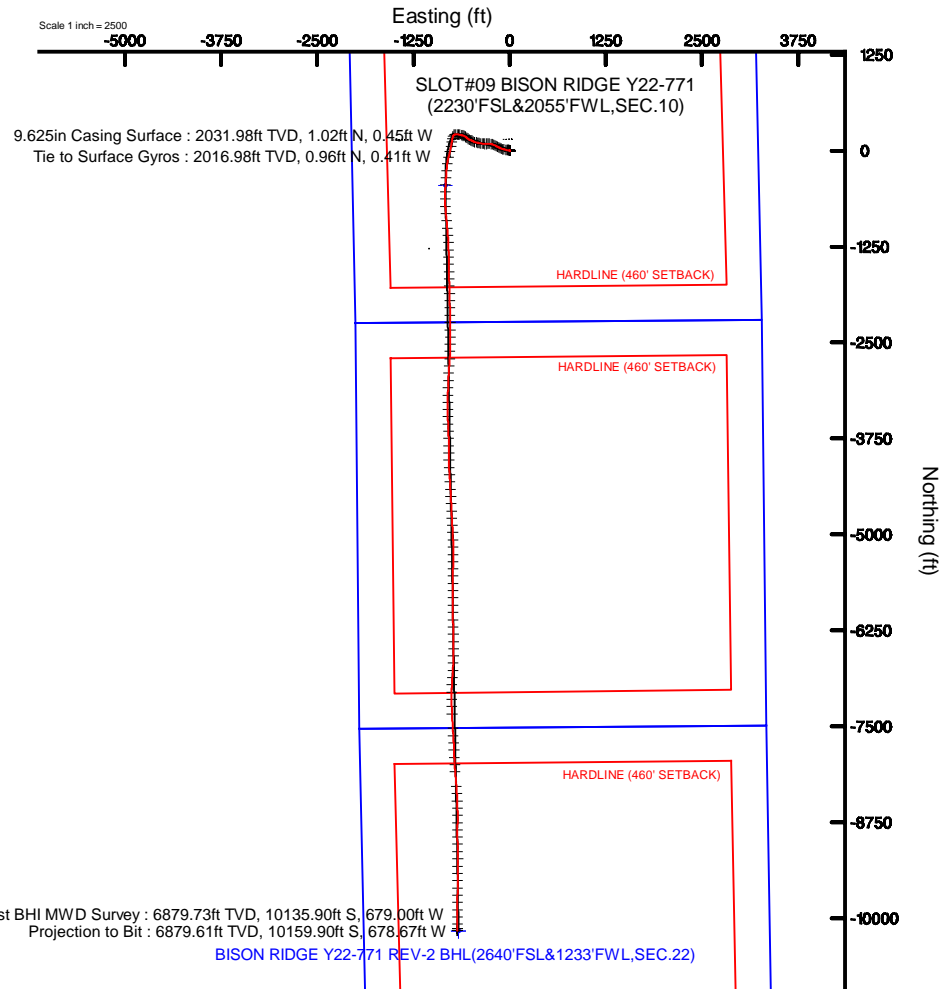
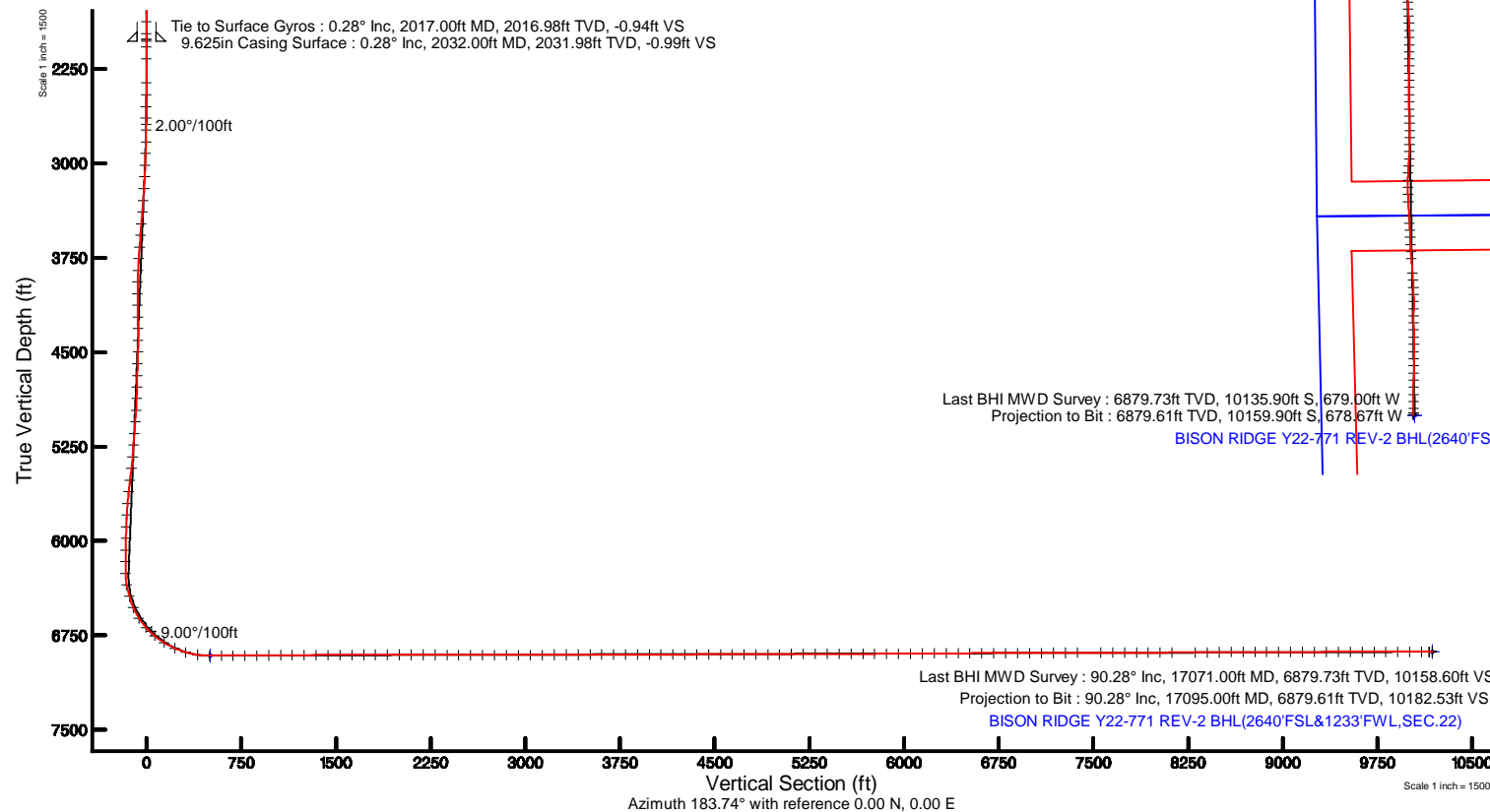
Start MD (ft)	End MD (ft)	Tool	Model	Log Name/Comment	Wellbore
30.00	17078.24	OWSG MWD rev2	OWSG MWD rev2 + IFR1 + Multi-Station Correction		BISON RIDGE Y22-771 PWB



True reference wellpath is BISON RIDGE Y22-771 (REV-2) PWB	Grid System: NAD83 (Lambert Colorado SP, Northern Zone (N), US feet)
True vertical depths are referenced to RIG (2018) (RWB)	* a Wellpath was transformed from a different geoidic datum
Measured depths are referenced to RIG (2018) (RWB)	North Reference: Grid north
RIG (2018) (RWB) to Mean Sea Level: 4881 feet	Scale: True distance
Mean Sea Level to Ground level (At Slot: SLOT#09 BISON RIDGE Y22-771(2230'FSL&2055'FWL,SEC.10): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: geowater on 2018-01-08
	Dateline: WA, DEN, Denver, Denr

Location Information

Facility Name		Grid East (US F)	Grid North (US F)	Latitude	Longitude
SEC.10-T22N-R64W		3283724.271	1298818.916	40°09'00.552"N	104°32'08.216"W
Bit	Local N (F)	Local E (F)	Grid East (US F)	Grid North (US F)	Latitude
SLOT#09 BISON RIDGE Y22-771(2230'FSL&2055'FWL,SEC.10)	-10.47	-1289.83	3283424.404	1298808.448	40°09'00.588"N
RIG (2018) (RWB) to Ground level (At Slot: SLOT#09 BISON RIDGE Y22-771(2230'FSL&2055'FWL,SEC.10)					48811
Mean Sea Level to Ground level (At Slot: SLOT#09 BISON RIDGE Y22-771(2230'FSL&2055'FWL,SEC.10)					01
RIG (2018) (RWB) to Mean Sea Level					48811





Actual Wellpath Report
BISON RIDGE Y22-771 AWP
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REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#09 BISON RIDGE Y22-771(2230'FSL&2055'FWL,SEC.10)
Area	COLORADO	Well	BISON RIDGE Y22-771
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	BISON RIDGE Y22-771 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 2:47:28 PM
Convergence at slot	0.63° East	Database/Source file	WA_DEN_Denver_Defn/BISON_RIDGE_Y22-771_AWP.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-10.47	-1299.83	3268424.49	1299608.45	40°09'06.588"N	104°32'22.956"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	4961.00ft
Horizontal Reference Pt	Slot	RIG (30'KB) (RKB) to Mean Sea Level	4961.00ft
Vertical Reference Pt	RIG (30'KB) (RKB)	RIG (30'KB) (RKB) to Ground Level at Slot (SLOT#09 BISON RIDGE Y22-771 (2230'FSL&2055'FWL,SEC.10))	4961.00ft
MD Reference Pt	RIG (30'KB) (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	183.74°



Actual Wellpath Report

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Facility	SEC.10-T02N-R64W		

WELLPATH DATA (181 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00	0.000	154.600	0.00	0.00	0.00	0.00	40°09'06.588"N	104°32'22.956"W	0.00	
81.00	0.150	154.600	81.00	0.09	-0.10	0.05	40°09'06.587"N	104°32'22.955"W	0.19	
177.00	0.140	271.620	177.00	0.21	-0.21	-0.02	40°09'06.586"N	104°32'22.956"W	0.26	
271.00	0.330	330.500	271.00	-0.02	0.03	-0.27	40°09'06.588"N	104°32'22.959"W	0.30	
366.00	0.480	67.070	366.00	-0.42	0.43	-0.03	40°09'06.592"N	104°32'22.956"W	0.65	
460.00	0.560	184.670	460.00	-0.14	0.12	0.29	40°09'06.589"N	104°32'22.952"W	0.95	
555.00	0.420	236.740	554.99	0.53	-0.53	-0.04	40°09'06.583"N	104°32'22.957"W	0.47	
649.00	0.150	331.170	648.99	0.64	-0.61	-0.39	40°09'06.582"N	104°32'22.961"W	0.49	
744.00	0.490	328.740	743.99	0.20	-0.16	-0.66	40°09'06.587"N	104°32'22.964"W	0.36	
838.00	0.330	307.490	837.99	-0.28	0.35	-1.08	40°09'06.592"N	104°32'22.970"W	0.23	
933.00	0.130	36.870	932.99	-0.52	0.60	-1.23	40°09'06.594"N	104°32'22.972"W	0.37	
1027.00	0.430	298.610	1026.99	-0.76	0.86	-1.48	40°09'06.597"N	104°32'22.975"W	0.50	
1122.00	0.250	119.800	1121.99	-0.82	0.93	-1.61	40°09'06.597"N	104°32'22.977"W	0.72	
1216.00	0.150	34.900	1215.98	-0.83	0.92	-1.36	40°09'06.597"N	104°32'22.973"W	0.30	
1311.00	0.090	348.260	1310.98	-1.01	1.10	-1.31	40°09'06.599"N	104°32'22.973"W	0.12	
1405.00	0.190	135.470	1404.98	-0.98	1.06	-1.21	40°09'06.599"N	104°32'22.971"W	0.29	
1500.00	0.040	165.530	1499.98	-0.84	0.92	-1.09	40°09'06.597"N	104°32'22.970"W	0.16	
1594.00	0.050	43.670	1593.98	-0.84	0.91	-1.06	40°09'06.597"N	104°32'22.969"W	0.08	
1689.00	0.060	157.700	1688.98	-0.83	0.90	-1.01	40°09'06.597"N	104°32'22.969"W	0.10	
1783.00	0.160	123.270	1782.98	-0.72	0.78	-0.88	40°09'06.596"N	104°32'22.967"W	0.12	
1878.00	0.340	90.710	1877.98	-0.67	0.70	-0.49	40°09'06.595"N	104°32'22.962"W	0.23	
1972.00	0.180	322.280	1971.98	-0.80	0.82	-0.30	40°09'06.596"N	104°32'22.960"W	0.50	
2017.00	0.280	325.060	2016.98	-0.94	0.96	-0.41	40°09'06.598"N	104°32'22.961"W	0.22	Tie to Surface Gyros
2077.00	0.280	305.260	2076.98	-1.13	1.17	-0.61	40°09'06.600"N	104°32'22.964"W	0.16	
2171.00	0.100	166.130	2170.98	-1.17	1.22	-0.78	40°09'06.600"N	104°32'22.966"W	0.38	
2360.00	0.310	92.630	2359.98	-1.02	1.04	-0.23	40°09'06.598"N	104°32'22.959"W	0.16	
2455.00	2.290	326.680	2454.96	-2.54	2.61	-1.01	40°09'06.614"N	104°32'22.969"W	2.62	
2550.00	4.120	289.970	2549.81	-5.01	5.36	-5.26	40°09'06.642"N	104°32'23.023"W	2.80	
2644.00	5.470	267.180	2643.49	-5.44	6.30	-12.91	40°09'06.652"N	104°32'23.121"W	2.46	
2738.00	7.570	270.410	2736.88	-4.57	6.12	-23.58	40°09'06.651"N	104°32'23.259"W	2.27	



Actual Wellpath Report

BISON RIDGE Y22-771 AWP



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Area	COLORADO	Well	BISON RIDGE Y22-771
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	BISON RIDGE Y22-771 AWB
Facility	SEC.10-T02N-R64W		

WELLPATH DATA (181 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
2833.00	8.530	277.930	2830.94	-4.72	7.14	-36.82	40°09'06.662"N	104°32'23.429"W	1.50	
2927.00	11.460	285.430	2923.51	-7.12	10.59	-52.73	40°09'06.698"N	104°32'23.634"W	3.40	
3022.00	11.460	285.760	3016.62	-11.00	15.66	-70.91	40°09'06.750"N	104°32'23.867"W	0.07	
3116.00	11.300	287.330	3108.77	-15.11	20.94	-88.69	40°09'06.804"N	104°32'24.095"W	0.37	
3211.00	11.260	290.750	3201.93	-20.01	27.00	-106.24	40°09'06.866"N	104°32'24.320"W	0.71	
3306.00	11.280	293.200	3295.10	-25.82	33.94	-123.46	40°09'06.937"N	104°32'24.541"W	0.50	
3400.00	11.400	300.190	3387.27	-33.02	42.24	-139.94	40°09'07.020"N	104°32'24.752"W	1.47	
3495.00	11.340	298.560	3480.41	-41.12	51.42	-156.26	40°09'07.113"N	104°32'24.961"W	0.34	
3589.00	11.720	295.450	3572.51	-48.53	59.95	-173.00	40°09'07.199"N	104°32'25.175"W	0.77	
3684.00	11.580	293.950	3665.55	-55.39	67.96	-190.42	40°09'07.280"N	104°32'25.399"W	0.35	
3778.00	11.330	290.580	3757.68	-61.33	75.04	-207.69	40°09'07.352"N	104°32'25.620"W	0.76	
3873.00	11.600	291.050	3850.79	-66.87	81.75	-225.34	40°09'07.420"N	104°32'25.846"W	0.30	
3968.00	11.820	281.510	3943.82	-71.03	87.12	-243.79	40°09'07.475"N	104°32'26.083"W	2.05	
4062.00	12.040	273.040	4035.80	-72.21	89.56	-263.01	40°09'07.501"N	104°32'26.330"W	1.88	
4157.00	11.440	265.580	4128.81	-70.75	89.36	-282.30	40°09'07.501"N	104°32'26.579"W	1.72	
4251.00	11.420	268.630	4220.95	-68.60	88.42	-300.90	40°09'07.494"N	104°32'26.819"W	0.64	
4346.00	11.890	271.860	4313.99	-67.44	88.51	-320.08	40°09'07.497"N	104°32'27.066"W	0.85	
4441.00	11.900	273.100	4406.95	-67.01	89.36	-339.65	40°09'07.507"N	104°32'27.317"W	0.27	
4535.00	12.070	280.560	4498.91	-68.07	91.69	-358.99	40°09'07.532"N	104°32'27.566"W	1.66	
4630.00	12.010	282.470	4591.82	-70.75	95.64	-378.40	40°09'07.574"N	104°32'27.816"W	0.42	
4725.00	12.150	278.800	4684.72	-73.13	99.30	-397.93	40°09'07.612"N	104°32'28.067"W	0.82	
4819.00	11.970	280.480	4776.64	-75.15	102.59	-417.29	40°09'07.646"N	104°32'28.315"W	0.42	
4913.00	11.920	284.440	4868.61	-78.09	106.79	-436.28	40°09'07.690"N	104°32'28.559"W	0.87	
5008.00	12.000	290.640	4961.55	-82.78	112.71	-455.02	40°09'07.750"N	104°32'28.800"W	1.35	
5102.00	12.160	297.050	5053.47	-89.54	120.66	-472.99	40°09'07.831"N	104°32'29.030"W	1.44	
5197.00	11.630	296.360	5146.43	-97.18	129.46	-490.48	40°09'07.920"N	104°32'29.254"W	0.58	
5291.00	11.480	290.820	5238.53	-103.58	136.99	-507.71	40°09'07.996"N	104°32'29.475"W	1.19	
5386.00	11.860	297.040	5331.57	-110.21	144.79	-525.24	40°09'08.075"N	104°32'29.700"W	1.38	
5481.00	12.050	309.020	5424.52	-119.80	155.48	-541.64	40°09'08.182"N	104°32'29.909"W	2.62	
5575.00	11.900	309.920	5516.48	-131.19	167.87	-556.70	40°09'08.306"N	104°32'30.102"W	0.25	



Actual Wellpath Report

BISON RIDGE Y22-771 AWP



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Operator	NOBLE ENERGY, INC	Slot	SLOT#09 BISON RIDGE Y22-771(2230'FSL&2055'FWL,SEC.10)
Area	COLORADO	Well	BISON RIDGE Y22-771
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	BISON RIDGE Y22-771 AWB
Facility	SEC.10-T02N-R64W		

WELLPATH DATA (181 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
5670.00	12.160	304.670	5609.40	-142.12	179.85	-572.44	40°09'08.426"N	104°32'30.303"W	1.18	
5764.00	12.020	295.250	5701.32	-150.79	189.66	-589.44	40°09'08.525"N	104°32'30.520"W	2.10	
5859.00	12.040	286.440	5794.24	-156.60	196.68	-607.89	40°09'08.596"N	104°32'30.757"W	1.93	
5953.00	11.940	283.400	5886.19	-160.39	201.71	-626.75	40°09'08.648"N	104°32'30.999"W	0.68	
6048.00	11.900	282.540	5979.14	-163.53	206.11	-645.87	40°09'08.694"N	104°32'31.245"W	0.19	
6142.00	11.560	277.580	6071.18	-165.65	209.46	-664.67	40°09'08.729"N	104°32'31.486"W	1.13	
6237.00	12.160	273.950	6164.16	-166.32	211.41	-684.09	40°09'08.750"N	104°32'31.736"W	1.01	
6331.00	11.750	269.470	6256.12	-165.64	212.00	-703.54	40°09'08.758"N	104°32'31.986"W	1.08	
6426.00	13.600	232.920	6348.94	-157.61	205.16	-722.15	40°09'08.693"N	104°32'32.227"W	8.51	
6520.00	17.740	200.560	6439.60	-136.63	185.05	-736.03	40°09'08.495"N	104°32'32.408"W	10.11	
6615.00	21.850	191.280	6528.99	-105.23	154.14	-744.58	40°09'08.191"N	104°32'32.523"W	5.43	
6710.00	33.470	188.450	6612.99	-61.44	110.74	-751.91	40°09'07.763"N	104°32'32.623"W	12.31	
6804.00	42.690	190.510	6686.91	-3.84	53.64	-761.55	40°09'07.199"N	104°32'32.755"W	9.90	
6899.00	50.210	195.430	6752.34	64.01	-13.33	-777.16	40°09'06.539"N	104°32'32.966"W	8.76	
6993.00	58.730	193.190	6806.92	139.14	-87.40	-795.98	40°09'05.809"N	104°32'33.218"W	9.27	
7088.00	65.990	187.560	6850.99	222.65	-170.10	-810.98	40°09'04.994"N	104°32'33.423"W	9.27	
7182.00	73.750	184.850	6883.32	310.75	-257.77	-820.46	40°09'04.129"N	104°32'33.557"W	8.69	
7277.00	81.970	183.500	6903.28	403.54	-350.32	-827.20	40°09'03.215"N	104°32'33.657"W	8.76	
7371.00	90.220	183.920	6909.68	497.24	-443.82	-833.26	40°09'02.291"N	104°32'33.748"W	8.79	
7466.00	89.970	181.500	6909.52	592.22	-538.71	-837.75	40°09'01.354"N	104°32'33.819"W	2.56	
7560.00	90.460	179.720	6909.17	686.08	-632.70	-838.75	40°09'00.426"N	104°32'33.845"W	1.96	
7655.00	90.120	176.830	6908.68	780.63	-727.64	-835.89	40°08'59.487"N	104°32'33.821"W	3.06	
7749.00	90.150	174.610	6908.46	873.71	-821.38	-828.88	40°08'58.560"N	104°32'33.744"W	2.36	
7844.00	90.340	175.000	6908.06	967.55	-915.98	-820.28	40°08'57.624"N	104°32'33.646"W	0.46	
7939.00	90.340	174.770	6907.49	1061.42	-1010.60	-811.81	40°08'56.688"N	104°32'33.551"W	0.24	
8033.00	90.460	175.250	6906.84	1154.33	-1104.24	-803.63	40°08'55.762"N	104°32'33.458"W	0.53	
8128.00	90.550	176.980	6906.00	1248.48	-1199.02	-797.20	40°08'54.825"N	104°32'33.389"W	1.82	
8222.00	90.220	179.380	6905.37	1342.03	-1292.96	-794.21	40°08'53.896"N	104°32'33.363"W	2.58	
8317.00	90.430	178.740	6904.83	1436.71	-1387.95	-792.65	40°08'52.958"N	104°32'33.356"W	0.71	
8412.00	90.400	178.780	6904.14	1531.35	-1482.92	-790.60	40°08'52.019"N	104°32'33.343"W	0.05	



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WELLPATH DATA (181 stations)										
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8506.00	90.340	178.730	6903.53	1624.99	-1576.90	-788.55	40°08'51.090"N	104°32'33.330"W	0.08	
8601.00	90.150	178.620	6903.13	1719.62	-1671.87	-786.36	40°08'50.151"N	104°32'33.315"W	0.23	
8695.00	90.180	178.300	6902.86	1813.22	-1765.84	-783.83	40°08'49.223"N	104°32'33.295"W	0.34	
8790.00	89.880	178.740	6902.81	1907.82	-1860.81	-781.38	40°08'48.284"N	104°32'33.277"W	0.56	
8885.00	90.090	178.610	6902.83	2002.45	-1955.78	-779.18	40°08'47.345"N	104°32'33.262"W	0.26	
8979.00	89.880	178.220	6902.86	2096.05	-2049.74	-776.58	40°08'46.416"N	104°32'33.241"W	0.47	
9074.00	90.030	178.960	6902.93	2190.66	-2144.72	-774.24	40°08'45.478"N	104°32'33.224"W	0.79	
9168.00	89.720	179.820	6903.14	2284.39	-2238.71	-773.24	40°08'44.549"N	104°32'33.225"W	0.97	
9263.00	89.970	179.550	6903.39	2379.15	-2333.71	-772.72	40°08'43.610"N	104°32'33.231"W	0.39	
9357.00	89.690	180.150	6903.67	2472.93	-2427.71	-772.47	40°08'42.681"N	104°32'33.241"W	0.70	
9452.00	90.220	180.460	6903.75	2567.76	-2522.70	-772.98	40°08'41.743"N	104°32'33.261"W	0.65	
9546.00	89.780	181.820	6903.75	2661.66	-2616.68	-774.85	40°08'40.814"N	104°32'33.298"W	1.52	
9641.00	90.090	183.780	6903.85	2756.65	-2711.56	-779.49	40°08'39.877"N	104°32'33.371"W	2.09	
9735.00	90.150	183.770	6903.66	2850.65	-2805.36	-785.68	40°08'38.951"N	104°32'33.464"W	0.06	
9830.00	89.970	183.100	6903.56	2945.64	-2900.19	-791.37	40°08'38.014"N	104°32'33.550"W	0.73	
9924.00	90.030	183.070	6903.56	3039.64	-2994.05	-796.43	40°08'37.087"N	104°32'33.628"W	0.07	
10019.00	90.000	182.000	6903.53	3134.62	-3088.96	-800.63	40°08'36.150"N	104°32'33.696"W	1.13	
10114.00	90.340	181.540	6903.25	3229.56	-3183.91	-803.57	40°08'35.212"N	104°32'33.747"W	0.60	
10208.00	90.030	180.730	6902.95	3323.46	-3277.89	-805.43	40°08'34.284"N	104°32'33.784"W	0.92	
10302.00	90.250	179.650	6902.72	3417.28	-3371.89	-805.74	40°08'33.355"N	104°32'33.801"W	1.17	
10397.00	90.030	178.590	6902.49	3511.97	-3466.88	-804.28	40°08'32.416"N	104°32'33.795"W	1.14	
10491.00	90.120	177.260	6902.36	3605.48	-3560.81	-800.88	40°08'31.487"N	104°32'33.764"W	1.42	
10585.00	90.340	177.760	6901.99	3698.92	-3654.72	-796.79	40°08'30.559"N	104°32'33.725"W	0.58	
10680.00	90.430	177.740	6901.35	3793.40	-3749.65	-793.06	40°08'29.621"N	104°32'33.690"W	0.10	
10774.00	90.150	179.590	6900.87	3887.03	-3843.62	-790.87	40°08'28.692"N	104°32'33.675"W	1.99	
10869.00	89.940	179.900	6900.80	3981.80	-3938.62	-790.45	40°08'27.753"N	104°32'33.683"W	0.39	
10963.00	90.000	179.390	6900.85	4075.56	-4032.61	-789.87	40°08'26.824"N	104°32'33.688"W	0.55	
11058.00	89.970	177.190	6900.87	4170.12	-4127.57	-787.03	40°08'25.886"N	104°32'33.665"W	2.32	
11152.00	90.220	175.710	6900.71	4263.36	-4221.38	-781.21	40°08'24.958"N	104°32'33.603"W	1.60	
11247.00	90.120	176.500	6900.43	4357.52	-4316.16	-774.76	40°08'24.021"N	104°32'33.533"W	0.84	



Actual Wellpath Report
BISON RIDGE Y22-771 AWP
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REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#09 BISON RIDGE Y22-771(2230'FSL&2055'FWL,SEC.10)
Area	COLORADO	Well	BISON RIDGE Y22-771
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	BISON RIDGE Y22-771 AWB
Facility	SEC.10-T02N-R64W		

WELLPATH DATA (181 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
11342.00	90.120	176.960	6900.23	4451.81	-4411.01	-769.34	40°08'23.083"N	104°32'33.476"W	0.48	
11436.00	90.120	176.950	6900.04	4545.15	-4504.87	-764.35	40°08'22.155"N	104°32'33.425"W	0.01	
11531.00	90.180	176.970	6899.79	4639.48	-4599.74	-759.31	40°08'21.217"N	104°32'33.374"W	0.07	
11625.00	90.090	177.610	6899.57	4732.89	-4693.63	-754.87	40°08'20.289"N	104°32'33.329"W	0.69	
11720.00	90.150	177.710	6899.37	4827.35	-4788.55	-750.99	40°08'19.350"N	104°32'33.293"W	0.12	
11814.00	90.250	175.950	6899.04	4920.66	-4882.41	-745.79	40°08'18.422"N	104°32'33.239"W	1.88	
11908.00	90.520	176.780	6898.41	5013.88	-4976.21	-739.83	40°08'17.495"N	104°32'33.175"W	0.93	
12003.00	90.460	178.380	6897.60	5108.33	-5071.12	-735.82	40°08'16.556"N	104°32'33.137"W	1.69	
12098.00	90.310	180.140	6896.96	5203.03	-5166.11	-734.59	40°08'15.618"N	104°32'33.134"W	1.86	
12192.00	89.660	180.290	6896.98	5296.85	-5260.11	-734.94	40°08'14.689"N	104°32'33.152"W	0.71	
12286.00	90.150	180.270	6897.14	5390.68	-5354.11	-735.40	40°08'13.760"N	104°32'33.171"W	0.52	
12381.00	90.340	180.260	6896.73	5485.50	-5449.10	-735.84	40°08'12.821"N	104°32'33.189"W	0.20	
12475.00	90.150	181.150	6896.33	5579.37	-5543.10	-737.00	40°08'11.893"N	104°32'33.217"W	0.97	
12570.00	90.250	180.570	6896.00	5674.25	-5638.08	-738.43	40°08'10.954"N	104°32'33.249"W	0.62	
12664.00	90.370	180.260	6895.49	5768.09	-5732.08	-739.11	40°08'10.025"N	104°32'33.271"W	0.35	
12758.00	90.120	179.960	6895.09	5861.90	-5826.08	-739.29	40°08'09.097"N	104°32'33.286"W	0.42	
12853.00	90.460	179.610	6894.61	5956.67	-5921.08	-738.93	40°08'08.158"N	104°32'33.295"W	0.51	
12948.00	90.520	179.420	6893.79	6051.41	-6016.07	-738.13	40°08'07.219"N	104°32'33.298"W	0.21	
13042.00	90.400	179.070	6893.04	6145.12	-6110.06	-736.89	40°08'06.290"N	104°32'33.295"W	0.39	
13137.00	90.710	177.900	6892.12	6239.71	-6205.02	-734.38	40°08'05.352"N	104°32'33.276"W	1.27	
13231.00	90.250	178.080	6891.33	6333.24	-6298.96	-731.08	40°08'04.423"N	104°32'33.246"W	0.53	
13326.00	90.250	179.730	6890.92	6427.89	-6393.94	-729.26	40°08'03.484"N	104°32'33.236"W	1.74	
13420.00	90.280	180.610	6890.48	6521.71	-6487.93	-729.54	40°08'02.555"N	104°32'33.253"W	0.94	
13515.00	90.310	181.770	6889.99	6616.61	-6582.91	-731.52	40°08'01.617"N	104°32'33.291"W	1.22	
13609.00	90.090	181.580	6889.67	6710.55	-6676.87	-734.26	40°08'00.689"N	104°32'33.340"W	0.31	
13704.00	90.180	183.320	6889.44	6805.52	-6771.78	-738.32	40°07'59.752"N	104°32'33.405"W	1.83	
13798.00	90.430	184.200	6888.94	6899.52	-6865.57	-744.49	40°07'58.825"N	104°32'33.498"W	0.97	
13893.00	89.940	183.340	6888.63	6994.52	-6960.37	-750.73	40°07'57.889"N	104°32'33.591"W	1.04	
13987.00	90.120	181.160	6888.59	7088.48	-7054.29	-754.42	40°07'56.962"N	104°32'33.652"W	2.33	
14082.00	90.250	179.270	6888.28	7183.30	-7149.28	-754.78	40°07'56.023"N	104°32'33.670"W	1.99	



Actual Wellpath Report

BISON RIDGE Y22-771 AWP



REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#09 BISON RIDGE Y22-771(2230'FSL&2055'FWL,SEC.10)
Area	COLORADO	Well	BISON RIDGE Y22-771
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	BISON RIDGE Y22-771 AWB
Facility	SEC.10-T02N-R64W		

WELLPATH DATA (181 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
14176.00	90.460	177.930	6887.70	7276.91	-7243.25	-752.48	40°07'55.094"N	104°32'33.653"W	1.44	
14271.00	90.000	177.530	6887.31	7371.39	-7338.17	-748.72	40°07'54.156"N	104°32'33.618"W	0.64	
14460.00	90.090	176.540	6887.17	7559.09	-7526.92	-738.95	40°07'52.290"N	104°32'33.518"W	0.53	
14554.00	90.060	176.110	6887.04	7652.31	-7620.73	-732.92	40°07'51.362"N	104°32'33.454"W	0.46	
14649.00	90.000	176.730	6886.99	7746.53	-7715.54	-726.99	40°07'50.425"N	104°32'33.391"W	0.66	
14743.00	90.520	178.460	6886.57	7839.99	-7809.45	-723.04	40°07'49.496"N	104°32'33.353"W	1.92	
14838.00	90.090	176.930	6886.06	7934.46	-7904.37	-719.22	40°07'48.558"N	104°32'33.317"W	1.67	
14932.00	90.310	176.720	6885.73	8027.77	-7998.23	-714.02	40°07'47.630"N	104°32'33.263"W	0.32	
15027.00	90.370	175.190	6885.17	8121.89	-8092.99	-707.32	40°07'46.693"N	104°32'33.190"W	1.61	
15215.00	90.370	175.890	6883.95	8307.96	-8280.41	-692.70	40°07'44.839"N	104°32'33.028"W	0.37	
15310.00	90.400	176.550	6883.32	8402.14	-8375.20	-686.43	40°07'43.902"N	104°32'32.960"W	0.70	
15405.00	90.370	177.720	6882.68	8496.51	-8470.08	-681.69	40°07'42.964"N	104°32'32.912"W	1.23	
15499.00	90.180	178.360	6882.23	8590.04	-8564.02	-678.47	40°07'42.035"N	104°32'32.884"W	0.71	
15593.00	90.250	179.550	6881.87	8683.71	-8658.00	-676.76	40°07'41.106"N	104°32'32.875"W	1.27	
15688.00	89.910	181.120	6881.74	8778.54	-8753.00	-677.31	40°07'40.168"N	104°32'32.895"W	1.69	
15782.00	90.340	180.660	6881.54	8872.42	-8846.99	-678.77	40°07'39.239"N	104°32'32.927"W	0.67	
15877.00	90.280	179.090	6881.02	8967.20	-8941.98	-678.57	40°07'38.300"N	104°32'32.938"W	1.65	
15971.00	89.910	178.520	6880.87	9060.85	-9035.96	-676.61	40°07'37.371"N	104°32'32.925"W	0.72	
16066.00	90.180	179.100	6880.79	9155.50	-9130.94	-674.63	40°07'36.433"N	104°32'32.913"W	0.67	
16160.00	89.970	179.970	6880.67	9249.25	-9224.94	-673.87	40°07'35.504"N	104°32'32.917"W	0.95	
16255.00	90.340	180.440	6880.41	9344.07	-9319.94	-674.21	40°07'34.565"N	104°32'32.934"W	0.63	
16350.00	89.880	180.390	6880.23	9438.91	-9414.93	-674.90	40°07'33.626"N	104°32'32.956"W	0.49	
16444.00	90.060	180.710	6880.28	9532.76	-9508.93	-675.80	40°07'32.698"N	104°32'32.981"W	0.39	
16539.00	90.060	180.620	6880.18	9627.62	-9603.92	-676.90	40°07'31.759"N	104°32'33.008"W	0.09	
16634.00	89.780	180.290	6880.31	9722.47	-9698.92	-677.66	40°07'30.821"N	104°32'33.031"W	0.46	
16728.00	90.280	180.300	6880.26	9816.30	-9792.92	-678.14	40°07'29.892"N	104°32'33.050"W	0.53	
16822.00	89.970	180.930	6880.06	9910.16	-9886.91	-679.15	40°07'28.963"N	104°32'33.077"W	0.75	
16917.00	90.150	180.230	6879.96	10005.01	-9981.90	-680.11	40°07'28.024"N	104°32'33.102"W	0.76	
17012.00	89.970	179.340	6879.86	10099.78	-10076.90	-679.75	40°07'27.086"N	104°32'33.111"W	0.96	
17071.00	90.280	179.200	6879.73	10158.60	-10135.90	-679.00	40°07'26.503"N	104°32'33.109"W	0.58	Last BHI MWD Survey



Actual Wellpath Report

BISON RIDGE Y22-771 AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#09 BISON RIDGE Y22-771(2230'FSL&2055'FWL,SEC.10)
Area	COLORADO	Well	BISON RIDGE Y22-771
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	BISON RIDGE Y22-771 AWB
Facility	SEC.10-T02N-R64W		

WELLPATH DATA (181 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
17095.00	90.280	179.200	6879.61	10182.53	-10159.90	-678.67	40°07'26.265"N	104°32'33.108"W	0.00	Projection to Bit

HOLE & CASING SECTIONS - Ref Wellbore: BISON RIDGE Y22-771 AWB Ref Wellpath: BISON RIDGE Y22-771 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	2032.00	2002.00	30.00	2031.98	-0.01	0.01	1.02	-0.45
9.625in Casing Surface	30.00	2032.00	2002.00	30.00	2031.98	-0.01	0.01	1.02	-0.45
8.5in Open Hole	2032.00	17095.00	15063.00	2031.98	6879.61	1.02	-0.45	-10159.90	-678.67



Actual Wellpath Report

BISON RIDGE Y22-771 AWP



REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#09 BISON RIDGE Y22-771(2230'FSL&2055'FWL,SEC.10)
Area	COLORADO	Well	BISON RIDGE Y22-771
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	BISON RIDGE Y22-771 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	8.00	10.47	1299.83	3269724.27	1299618.92	40°09'06.552"N	104°32'06.216"W	polygon
BISON RIDGE Y22-711 SECTION 15	8.00	10.47	1299.83	3269724.27	1299618.92	40°09'06.552"N	104°32'06.216"W	polygon
BISON RIDGE Y22-711 SECTION 22	8.00	10.47	1299.83	3269724.27	1299618.92	40°09'06.552"N	104°32'06.216"W	polygon
BISON RIDGE Y22-771 REV-2 BHL(2640'FSL&1233'FWL,SEC.22)	6879.48	-10164.35	-664.62	3267759.91	1289444.55	40°07'26.220"N	104°32'32.928"W	point
BISON RIDGE Y22-771 REV-1 BHL(2640'FSL&1233'FWL,SEC.22)	6897.00	-10164.35	-664.62	3267759.91	1289444.55	40°07'26.220"N	104°32'32.928"W	point
BISON RIDGE Y22-771 Landing Point	6910.00	-450.00	-835.00	3267589.53	1299158.47	40°09'02.231"N	104°32'33.771"W	point
BISON RIDGE Y22-711 SECTION 10 HARDLINE (460' SETBACK)	7108.00	10.47	1299.83	3269724.27	1299618.92	40°09'06.552"N	104°32'06.216"W	polygon
BISON RIDGE Y22-711 SECTION 15 HARDLINE (460' SETBACK)	7108.00	10.47	1299.83	3269724.27	1299618.92	40°09'06.552"N	104°32'06.216"W	polygon
BISON RIDGE Y22-711 SECTION 22 HARDLINE (460' SETBACK)	7108.00	10.47	1299.83	3269724.27	1299618.92	40°09'06.552"N	104°32'06.216"W	polygon

WELLPATH COMPOSITION - Ref Wellbore: BISON RIDGE Y22-771 AWB Ref Wellpath: BISON RIDGE Y22-771 AWP				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
0.00	2017.00	Gyrodata standard - Drop gyro or Multi-shot	Surface Gyros <81'-2017'>	BISON RIDGE Y22-771 AWB
2017.00	17071.00	OWSG MWD rev2 + IFR1 + Multi-Station Correction	BHI/Navitrak MWD 8.5" Hole OWSG MWD+IFR+MSA <2077'-17071'>	BISON RIDGE Y22-771 AWB
17071.00	17095.00	Blind Drilling (std)	Projection to bit	BISON RIDGE Y22-771 AWB



Actual Wellpath Report

BISON RIDGE Y22-771 AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#09 BISON RIDGE Y22-771(2230'FSL&2055'FWL,SEC.10)
Area	COLORADO	Well	BISON RIDGE Y22-771
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	BISON RIDGE Y22-771 AWB
Facility	SEC.10-T02N-R64W		

WELLPATH COMMENTS					
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment	
2017.00	0.280	325.060	2016.98	Tie to Surface Gyros	
17071.00	90.280	179.200	6879.73	Last BHI MWD Survey	
17095.00	90.280	179.200	6879.61	Projection to Bit	

COMMENTS	
<div>Wellpath general comments</div> <div>SURFACE LOCATION: NESW</div> <div>40.15183N</div> <div>104.53971W</div> <div>API: 05-123-45372</div>	