



# NOBLE ENERGY, INC

Location:	COLORADO	Slot:	SLOT#12 BERETTA FEDERAL LC24-760 (859'FNL & 1884'FWL, SEC.24)
Field:	WELD COUNTY (NOBLE NAD 83 GRID)	Well:	BERETTA FEDERAL LC24-760
Facility:	SEC.24-T09N-R59W	Wellbore:	BERETTA FEDERAL LC24-760 PWB
Plot reference wellpath is BERETTA FEDERAL LC24-760 (REV-C-0) PWP		Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	
True vertical depths are referenced to H&P 517 (30' KB) (RKB)		* = Wellpath was transformed from a different geodetic datum	
Measured depths are referenced to H&P 517 (30' KB) (RKB)		North Reference: Grid north	
H&P 517 (30' KB) (RKB) to Mean Sea Level: 4888 feet		Scale: True distance	
Mean Sea Level to Mud line (At Slot: SLOT#12 BERETTA FEDERAL LC24-760 (859'FNL & 1884'FWL, SEC.24)): 0 feet		Depths are in feet	
Coordinates are in feet referenced to Slot		Created by: cookdanm on 2017-01-09	
		Database: WA_DEN_Denver_Deln	

Scale 1 inch = 1500

## REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Slot	SLOT#12 BERETTA FEDERAL LC24-760 (859'FNL & 1884'FWL, SEC.24)
Area	COLORADO	Well	BERETTA FEDERAL LC24-760
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	BERETTA FEDERAL LC24-760 AWP
Facility	SEC.24-T09N-R59W		

## REPORT SETUP INFORMATION

Projection System	NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	Software System	WellArchitect® 5.0
North Reference	Grid	User	Cookdanm
Scale	0.999993	Report Generated	1/9/17 at 12:39:38 PM
Convergence at slot	1.02° East	Database/Source file	WA_DEN_Denver_Defn/BERETTA_FEDERAL_LC24-760_AWP.xml

## WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-576.93	-2914.00	3435317.10	1516745.62	40°44'28.572"N	103°55'44.364"W
Facility Reference Pt			3438231.08	1517322.55	40°44'33.760"N	103°55'06.380"W
Field Reference Pt			3000000.00	4454105.15	48°46'34.315"N	105°30'00.000"W

## WELLPATH DATUM

Calculation method	Minimum curvature	H&P 517 (30' KB) (RKB) to Facility Vertical Datum	4888.00ft
Horizontal Reference Pt	Slot	H&P 517 (30' KB) (RKB) to Mean Sea Level	4888.00ft
Vertical Reference Pt	H&P 517 (30' KB) (RKB)	H&P 517 (30' KB) (RKB) to Mud Line at Slot (SLOT#12 BERETTA FEDERAL LC24-760 (859'FNL & 1884'FWL, SEC.24))	4888.00ft
MD Reference Pt	H&P 517 (30' KB) (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	175.57°

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Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	BERETTA FEDERAL LC24-760 AWP
Facility	SEC.24-T09N-R59W		

WELLPATH DATA (92 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
1906.00	0.140	236.130	1905.71	11.20	-12.55	-17.07	40°44'28.451"N	103°55'44.589"W	0.33	Tie to Surface Gyros
1980.00	0.130	106.880	1979.71	11.27	-12.63	-17.07	40°44'28.450"N	103°55'44.589"W	0.33	
2075.00	2.590	47.770	2074.68	9.99	-11.22	-15.38	40°44'28.464"N	103°55'44.566"W	2.66	
2169.00	4.260	43.080	2168.51	6.33	-7.24	-11.42	40°44'28.502"N	103°55'44.514"W	1.80	
2263.00	6.090	51.020	2262.12	1.15	-1.55	-5.16	40°44'28.558"N	103°55'44.431"W	2.09	
2358.00	6.930	43.360	2356.51	-5.56	5.78	2.70	40°44'28.629"N	103°55'44.328"W	1.27	
2453.00	9.100	38.430	2450.58	-14.92	15.84	11.30	40°44'28.726"N	103°55'44.214"W	2.39	
2547.00	10.810	22.370	2543.18	-28.24	29.82	19.28	40°44'28.863"N	103°55'44.107"W	3.45	
2642.00	13.620	8.980	2636.04	-47.08	49.11	24.42	40°44'29.053"N	103°55'44.036"W	4.18	
2736.00	12.930	357.210	2727.54	-68.36	70.55	25.63	40°44'29.265"N	103°55'44.015"W	2.96	
2831.00	11.160	347.380	2820.46	-88.09	90.14	23.11	40°44'29.459"N	103°55'44.043"W	2.85	
2925.00	11.290	2.760	2912.68	-106.22	108.21	21.56	40°44'29.637"N	103°55'44.059"W	3.18	
3020.00	11.310	13.530	3005.85	-124.31	126.56	24.19	40°44'29.818"N	103°55'44.021"W	2.22	
3114.00	11.350	10.370	3098.02	-142.02	144.62	28.01	40°44'29.996"N	103°55'43.967"W	0.66	
3209.00	11.210	7.540	3191.18	-160.09	162.97	30.91	40°44'30.177"N	103°55'43.925"W	0.60	
3303.00	11.400	10.940	3283.36	-177.99	181.15	33.87	40°44'30.356"N	103°55'43.882"W	0.74	
3398.00	11.370	15.190	3376.49	-195.86	199.41	38.10	40°44'30.535"N	103°55'43.823"W	0.88	
3493.00	11.340	21.060	3469.64	-213.12	217.16	43.91	40°44'30.710"N	103°55'43.744"W	1.22	
3587.00	11.240	24.980	3561.82	-229.44	234.09	51.10	40°44'30.876"N	103°55'43.646"W	0.82	
3682.00	11.560	14.190	3654.96	-246.53	251.71	57.35	40°44'31.049"N	103°55'43.561"W	2.27	
3776.00	11.370	2.540	3747.09	-264.65	270.10	60.07	40°44'31.230"N	103°55'43.522"W	2.47	
3871.00	11.260	8.270	3840.25	-282.99	288.64	61.82	40°44'31.413"N	103°55'43.495"W	1.19	
3965.00	11.350	24.170	3932.45	-300.07	306.16	66.92	40°44'31.585"N	103°55'43.424"W	3.31	
4060.00	11.260	36.920	4025.62	-315.24	322.11	76.33	40°44'31.741"N	103°55'43.298"W	2.63	
4155.00	11.470	29.180	4118.76	-330.07	337.77	86.50	40°44'31.894"N	103°55'43.163"W	1.62	
4249.00	11.280	18.270	4210.93	-346.34	354.66	93.94	40°44'32.059"N	103°55'43.062"W	2.29	
4343.00	11.340	20.640	4303.10	-363.19	372.04	100.08	40°44'32.230"N	103°55'42.978"W	0.50	
4438.00	11.250	25.860	4396.26	-379.65	389.12	107.42	40°44'32.398"N	103°55'42.879"W	1.08	
4533.00	11.180	30.420	4489.45	-395.21	405.40	116.12	40°44'32.557"N	103°55'42.762"W	0.94	
4627.00	11.520	30.530	4581.61	-410.38	421.35	125.50	40°44'32.713"N	103°55'42.637"W	0.36	

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Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	BERETTA FEDERAL LC24-760 AWP
Facility	SEC.24-T09N-R59W		

WELLPATH DATA (92 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4722.00	11.700	30.910	4674.67	-426.01	437.78	135.27	40°44'32.873"N	103°55'42.506"W	0.21	
4816.00	11.730	29.740	4766.71	-441.69	454.26	144.91	40°44'33.034"N	103°55'42.377"W	0.25	
4911.00	11.720	19.570	4859.74	-458.50	471.73	152.93	40°44'33.206"N	103°55'42.269"W	2.17	
5005.00	11.380	4.710	4951.86	-476.38	489.98	156.89	40°44'33.385"N	103°55'42.213"W	3.18	
5100.00	11.540	17.990	5044.98	-494.42	508.36	160.60	40°44'33.566"N	103°55'42.161"W	2.78	
5194.00	11.640	27.860	5137.07	-511.13	525.69	167.93	40°44'33.736"N	103°55'42.062"W	2.11	
5289.00	4.520	27.230	5231.07	-522.43	537.50	174.13	40°44'33.852"N	103°55'41.978"W	7.50	
5383.00	6.580	107.380	5324.74	-523.58	539.19	180.97	40°44'33.867"N	103°55'41.889"W	7.78	
5477.00	9.720	181.090	5417.99	-513.66	529.62	185.98	40°44'33.772"N	103°55'41.826"W	10.72	
5572.00	18.580	177.370	5510.02	-490.50	506.44	186.52	40°44'33.543"N	103°55'41.825"W	9.37	
5666.00	26.160	183.860	5596.90	-454.97	470.75	185.81	40°44'33.190"N	103°55'41.842"W	8.47	
5761.00	34.790	183.660	5678.70	-407.33	422.72	182.67	40°44'32.716"N	103°55'41.894"W	9.08	
5855.00	44.760	177.280	5750.88	-347.52	362.72	182.52	40°44'32.124"N	103°55'41.910"W	11.45	
5950.00	52.690	179.760	5813.50	-276.29	291.41	184.27	40°44'31.419"N	103°55'41.903"W	8.57	
6045.00	61.740	179.490	5864.89	-196.70	211.63	184.80	40°44'30.630"N	103°55'41.915"W	9.53	
6139.00	69.920	177.400	5903.35	-111.13	125.98	187.18	40°44'29.784"N	103°55'41.904"W	8.93	
6234.00	77.840	175.830	5929.71	-19.96	34.95	192.59	40°44'28.884"N	103°55'41.854"W	8.49	
6328.00	85.070	176.680	5943.67	72.93	-57.74	198.65	40°44'27.967"N	103°55'41.797"W	7.74	
6423.00	90.520	176.680	5947.32	167.81	-152.48	204.14	40°44'27.030"N	103°55'41.747"W	5.74	
6518.00	90.400	175.490	5946.56	262.80	-247.25	210.63	40°44'26.092"N	103°55'41.685"W	1.26	
6612.00	90.770	175.640	5945.60	356.79	-340.96	217.90	40°44'25.165"N	103°55'41.612"W	0.42	
6707.00	90.680	177.390	5944.40	451.77	-435.78	223.67	40°44'24.228"N	103°55'41.559"W	1.84	
6802.00	90.710	177.640	5943.24	546.71	-530.68	227.79	40°44'23.289"N	103°55'41.527"W	0.27	
6896.00	90.520	174.980	5942.23	640.68	-624.47	233.84	40°44'22.362"N	103°55'41.470"W	2.84	
6991.00	90.890	176.080	5941.07	735.68	-719.17	241.24	40°44'21.425"N	103°55'41.396"W	1.22	
7085.00	90.620	177.740	5939.83	829.64	-813.03	246.31	40°44'20.497"N	103°55'41.352"W	1.79	
7180.00	90.710	178.400	5938.72	924.54	-907.97	249.51	40°44'19.558"N	103°55'41.332"W	0.70	
7275.00	90.710	180.560	5937.55	1019.31	-1002.95	250.37	40°44'18.620"N	103°55'41.343"W	2.27	
7369.00	90.710	182.460	5936.38	1112.79	-1096.90	247.89	40°44'17.692"N	103°55'41.397"W	2.02	
7464.00	90.490	180.880	5935.39	1207.24	-1191.86	245.13	40°44'16.754"N	103°55'41.454"W	1.68	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#12 BERETTA FEDERAL LC24-760 (859'FNL & 1884'FWL, SEC.24)
Area	COLORADO	Well	BERETTA FEDERAL LC24-760
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	BERETTA FEDERAL LC24-760 AWP
Facility	SEC.24-T09N-R59W		

WELLPATH DATA (92 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
7558.00	90.430	178.340	5934.63	1301.00	-1285.84	245.77	40°44'15.825"N	103°55'41.468"W	2.70	
7653.00	90.490	177.640	5933.87	1395.91	-1380.78	249.10	40°44'14.887"N	103°55'41.446"W	0.74	
7747.00	90.430	177.720	5933.12	1489.84	-1474.70	252.90	40°44'13.958"N	103°55'41.419"W	0.11	
7842.00	90.620	177.480	5932.24	1584.78	-1569.61	256.88	40°44'13.020"N	103°55'41.389"W	0.32	
7937.00	90.370	177.950	5931.42	1679.71	-1664.53	260.67	40°44'12.082"N	103°55'41.361"W	0.56	
8031.00	90.580	179.180	5930.64	1773.57	-1758.50	263.02	40°44'11.153"N	103°55'41.352"W	1.33	
8126.00	90.580	181.510	5929.68	1868.23	-1853.49	262.45	40°44'10.215"N	103°55'41.382"W	2.45	
8220.00	90.520	181.720	5928.78	1961.70	-1947.44	259.80	40°44'09.287"N	103°55'41.438"W	0.23	
8315.00	90.580	180.220	5927.87	2056.27	-2042.42	258.19	40°44'08.349"N	103°55'41.481"W	1.58	
8409.00	90.490	181.260	5926.99	2149.89	-2136.41	256.98	40°44'07.420"N	103°55'41.518"W	1.11	
8503.00	90.430	180.310	5926.24	2243.49	-2230.40	255.69	40°44'06.492"N	103°55'41.556"W	1.01	
8598.00	90.340	177.810	5925.60	2338.31	-2325.38	257.25	40°44'05.553"N	103°55'41.558"W	2.63	
8693.00	90.460	174.560	5924.93	2433.28	-2420.15	263.57	40°44'04.616"N	103°55'41.498"W	3.42	
8787.00	90.400	175.740	5924.23	2527.28	-2513.81	271.52	40°44'03.689"N	103°55'41.416"W	1.26	
8881.00	90.370	174.350	5923.60	2621.27	-2607.45	279.64	40°44'02.763"N	103°55'41.332"W	1.48	
8976.00	90.490	174.910	5922.88	2716.25	-2702.03	288.53	40°44'01.827"N	103°55'41.238"W	0.60	
9070.00	90.590	176.220	5922.00	2810.25	-2795.75	295.79	40°44'00.900"N	103°55'41.166"W	1.40	
9165.00	90.460	178.210	5921.13	2905.20	-2890.62	300.41	40°43'59.961"N	103°55'41.128"W	2.10	
9259.00	90.590	179.110	5920.27	2999.06	-2984.59	302.61	40°43'59.033"N	103°55'41.121"W	0.97	
9354.00	90.400	179.750	5919.45	3093.84	-3079.59	303.55	40°43'58.094"N	103°55'41.130"W	0.70	
9449.00	90.490	179.760	5918.71	3188.58	-3174.58	303.96	40°43'57.155"N	103°55'41.147"W	0.10	
9543.00	90.400	179.830	5917.98	3282.32	-3268.58	304.30	40°43'56.227"N	103°55'41.164"W	0.12	
9638.00	90.310	180.700	5917.39	3377.00	-3363.57	303.86	40°43'55.288"N	103°55'41.192"W	0.92	
9732.00	90.490	177.810	5916.73	3470.79	-3457.55	305.08	40°43'54.360"N	103°55'41.197"W	3.08	
9827.00	90.650	173.050	5915.79	3565.76	-3552.22	312.64	40°43'53.423"N	103°55'41.121"W	5.01	
9921.00	90.430	172.570	5914.90	3659.65	-3645.48	324.41	40°43'52.500"N	103°55'40.990"W	0.56	
10016.00	90.490	174.080	5914.14	3754.57	-3739.83	335.45	40°43'51.566"N	103°55'40.868"W	1.59	
10111.00	90.490	174.840	5913.33	3849.55	-3834.38	344.62	40°43'50.630"N	103°55'40.771"W	0.80	
10205.00	90.400	177.580	5912.60	3943.53	-3928.16	350.83	40°43'49.702"N	103°55'40.712"W	2.92	
10299.00	90.280	181.220	5912.04	4037.30	-4022.14	351.82	40°43'48.774"N	103°55'40.720"W	3.87	

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Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	BERETTA FEDERAL LC24-760 AWP
Facility	SEC.24-T09N-R59W		

WELLPATH DATA (92 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
10373.00	90.430	184.390	5911.58	4110.70	-4096.04	348.20	40°43'48.044"N	103°55'40.784"W	4.29	Last BHI MWD Surveys
10397.00	90.430	184.390	5911.40	4134.42	-4119.97	346.36	40°43'47.808"N	103°55'40.814"W	0.00	Projection to Bit

HOLE & CASING SECTIONS									
- Ref Wellbore: BERETTA FEDERAL LC24-760 AWP					Ref Wellpath: BERETTA FEDERAL LC24-760 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	1942.00	1912.00	30.00	1941.71	-0.06	0.06	-12.60	-17.11
9.625in Casing Surface	30.00	1942.00	1912.00	30.00	1941.71	-0.06	0.06	-12.60	-17.11
8.5in Open Hole	1942.00	10397.00	8455.00	1941.71	5911.40	-12.60	-17.11	-4119.97	346.36

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Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	BERETTA FEDERAL LC24-760 AWP
Facility	SEC.24-T09N-R59W		

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SEC.24-T09N-R59W	7.00	576.52	2913.70	3438230.78	1517322.14	40°44'33.756"N	103°55'06.384"W	polygon
BERETTA FEDERAL LC24-760 BHL (330'FSL & 2090'FWL) REV-1	5891.91	-4122.87	319.76	3435636.86	1512622.78	40°43'47.784"N	103°55'41.160"W	point
BERETTA FEDERAL LC24-760 BHL REV-2 (330'FSL & 2090'FWL)	5898.91	-4122.87	319.76	3435636.86	1512622.78	40°43'47.784"N	103°55'41.160"W	point
BERETTA FEDERAL LC24-760 BHL REV-3 (330'FSL & 2090'FWL)	5909.91	-4122.87	319.76	3435636.86	1512622.78	40°43'47.784"N	103°55'41.160"W	point
BERETTA FEDERAL LC24-760 LANDING POINT (966'FNL & 2095'FWL, SEC.24)	5934.00	-100.00	213.60	3435530.70	1516645.62	40°44'27.547"N	103°55'41.613"W	point
BERETTA FEDERAL LC24-760 LANDING POINT 2(966'FNL & 2095'FWL, SEC.24)	5945.00	-100.00	213.60	3435530.70	1516645.62	40°44'27.547"N	103°55'41.613"W	point
SECTION 24 330' SETBACK	6000.00	576.52	2913.70	3438230.78	1517322.14	40°44'33.756"N	103°55'06.384"W	polygon

WELLPATH COMPOSITION - Ref Wellbore: BERETTA FEDERAL LC24-760 AWP						Ref Wellpath: BERETTA FEDERAL LC24-760 AWP
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment		Wellbore	
0.00	1906.00	Gyrodata standard - Drop gyro or Multi-shot	Gyrodata/Surface Surveys 13.5" Hole <81'-1906'>		BERETTA FEDERAL LC24-760 AWP	
1906.00	10373.00	OWSG MWD rev2 + IFR1 + Multi-Station Correction	BHI/ATC OWSG+IFR+MSA 8.5" Hole <1980'-10373'>		BERETTA FEDERAL LC24-760 AWP	
10373.00	10397.00	Blind Drilling (std)	Projection to bit		BERETTA FEDERAL LC24-760 AWP	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#12 BERETTA FEDERAL LC24-760 (859'FNL & 1884'FWL, SEC.24)
Area	COLORADO	Well	BERETTA FEDERAL LC24-760
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	BERETTA FEDERAL LC24-760 AWP
Facility	SEC.24-T09N-R59W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
1906.00	0.140	236.130	1905.71	Tie to Surface Gyros
10373.00	90.430	184.390	5911.58	Last BHI MWD Surveys
10397.00	90.430	184.390	5911.40	Projection to Bit