

# NOBLE ENERGY, INC

Location: COLORADO Slot: SLOT#19 WELLS RANCH BB11-658(2244'FSL&235'FWL,SEC.11)  
 Field: WELD COUNTY (NOBLE NAD 83 GRID) Well: WELLS RANCH BB11-658  
 Facility: SEC.11-T05N-R63W Wellbore: WELLS RANCH BB11-658 PWB

Plot reference wellpath is WELLS RANCH BB11-658 (REV-A.0) PWP	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
True vertical depths are referenced to H&P RIG (30'KB) (RKB)	* = Wellpath was transformed from a different geodetic datum
Measured depths are referenced to H&P RIG (30'KB) (RKB)	North Reference: Grid north
H&P RIG (30'KB) (RKB) to Mean Sea Level: 4698 feet	Scale: True distance
Mean Sea Level to Ground level (At Slot: SLOT#19 WELLS RANCH BB11-658(2244'FSL&235'FWL,SEC.11)): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: guenaler on 2017-10-23
	Database: WA_DEN_Denver_Defn

## Comments

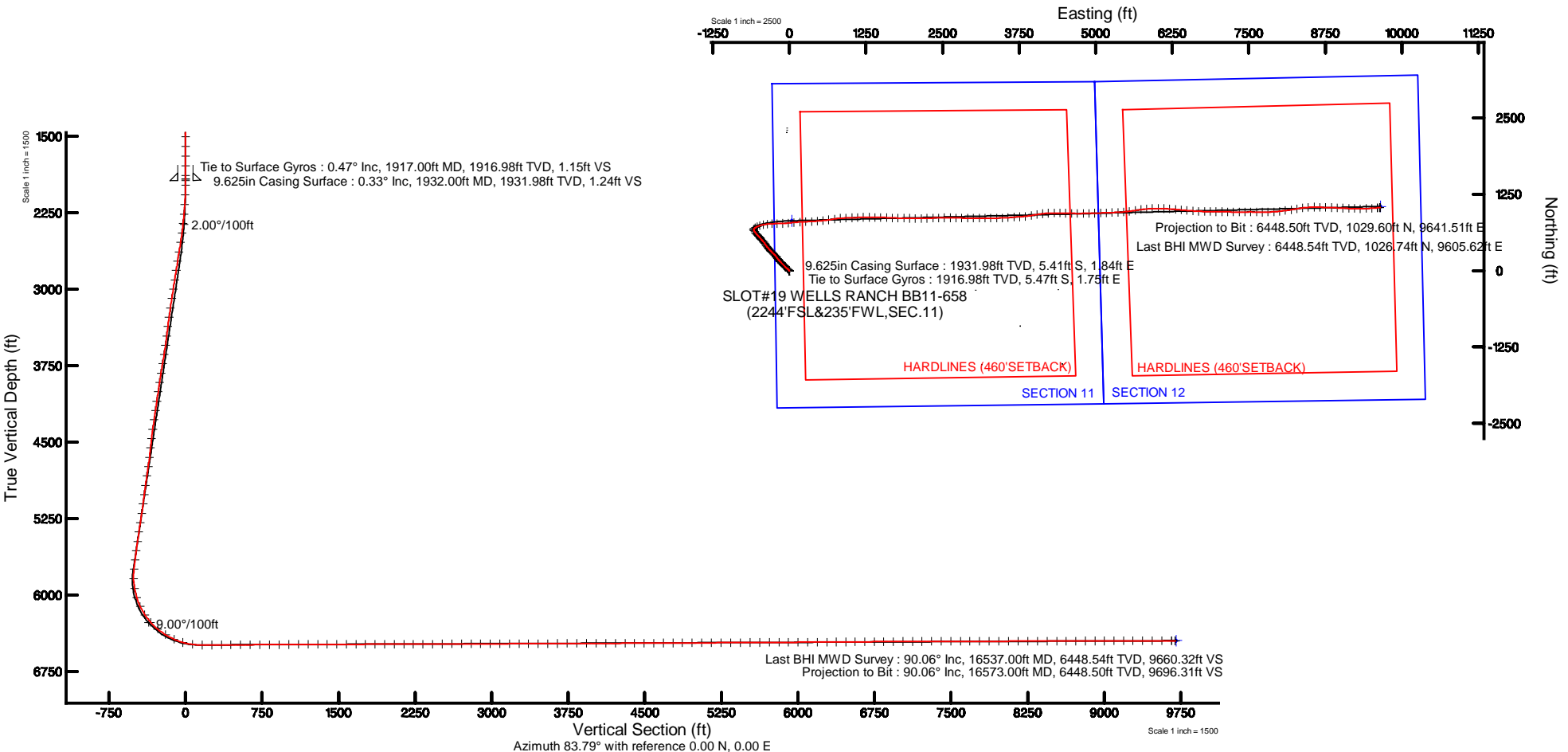
SURFACE LOCATION: NWSW  
 40.41278N  
 104.41263W  
 API #: 05-123-44959

## Location Information

Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude		
SEC.11-T05N-R63W	3302802.430	1393626.455	40°24'31.716"N	104°24'45.396"W		
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SLOT#19 WELLS RANCH BB11-658(2244'FSL&235'FWL,SEC.11)	1446.14	-23.30	3302779.127	1395072.540	40°24'46.008"N	104°24'45.468"W
H&P RIG (30'KB) (RKB) to Ground level (At Slot: SLOT#19 WELLS RANCH BB11-658(2244'FSL&235'FWL,SEC.11))				4698ft		
Mean Sea Level to Ground level (At Slot: SLOT#19 WELLS RANCH BB11-658(2244'FSL&235'FWL,SEC.11))				0ft		
H&P RIG (30'KB) (RKB) to Mean Sea Level				4698ft		

## Survey Program

Start MD (ft)	End MD (ft)	Tool	Model	Log Name/Comment	Wellbore
30.00	16589.06	OWSG MWD rev2	OWSG MWD rev2 + IFR1 + Multi-Station Correction		WELLS RANCH BB11-658 PWB



REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#19 WELLS RANCH BB11-658(2244'FSL&235'FWL,SEC.11)
Area	COLORADO	Well	WELLS RANCH BB11-658
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	WELLS RANCH BB11-658 AWB
Facility	SEC.11-T05N-R63W		

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	0.999961	Report Generated	10/23/2017 at 1:11:59 PM
Convergence at slot	0.71° East	Database/Source file	WA_DEN_Denver_Defn/WELLS_RANCH_BB11-658_AWP.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	1446.14	-23.30	3302779.13	1395072.54	40°24'46.008"N	104°24'45.468"W
Facility Reference Pt			3302802.43	1393626.46	40°24'31.716"N	104°24'45.396"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 RIG (30'KB) (RKB) to Facility Vertical Datum	4698.00ft
Horizontal Reference Pt	Slot	H&P RIG (30'KB) (RKB) to Mean Sea Level	4698.00ft
Vertical Reference Pt	H&P RIG (30'KB) (RKB)	H&P RIG (30'KB) (RKB) to Ground Level at Slot (SLOT#19 WELLS RANCH BB11-658 (2244'FSL&235'FWL,SEC.11))	4698.00ft
MD Reference Pt	H&P RIG (30'KB) (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	83.79°

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Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	WELLS RANCH BB11-658 AWP
Facility	SEC.11-T05N-R63W		

WELLPATH DATA (170 stations)											
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments	
0.00	0.000	147.050	0.00	0.00	0.00	0.00	40°24'46.008"N	104°24'45.468"W	0.00		
842.83	0.240	147.050	842.83	0.79	-1.48	0.96	40°24'45.993"N	104°24'45.456"W	0.03		
937.35	0.270	159.980	937.35	0.94	-1.86	1.14	40°24'45.990"N	104°24'45.454"W	0.07		
1031.93	0.370	119.790	1031.93	1.24	-2.22	1.49	40°24'45.986"N	104°24'45.449"W	0.25		
1126.63	0.460	176.800	1126.62	1.46	-2.75	1.77	40°24'45.981"N	104°24'45.446"W	0.43		
1221.12	0.580	165.460	1221.11	1.51	-3.59	1.91	40°24'45.972"N	104°24'45.444"W	0.17		
1315.64	0.390	176.430	1315.63	1.57	-4.37	2.05	40°24'45.965"N	104°24'45.442"W	0.22		
1410.31	0.360	204.270	1410.29	1.40	-4.97	1.95	40°24'45.959"N	104°24'45.444"W	0.19		
1504.76	0.240	195.360	1504.74	1.18	-5.43	1.78	40°24'45.954"N	104°24'45.446"W	0.14		
1599.23	0.270	245.990	1599.21	0.89	-5.71	1.52	40°24'45.951"N	104°24'45.449"W	0.23		
1693.76	0.060	196.070	1693.74	0.66	-5.85	1.30	40°24'45.950"N	104°24'45.452"W	0.25		
1788.30	0.090	353.030	1788.28	0.64	-5.82	1.28	40°24'45.950"N	104°24'45.452"W	0.16		
1882.71	0.370	59.410	1882.69	0.92	-5.59	1.53	40°24'45.953"N	104°24'45.449"W	0.36		
1917.00	0.470	62.150	1916.98	1.15	-5.47	1.75	40°24'45.954"N	104°24'45.446"W	0.30	Tie to Surface Gyros	
1979.00	0.420	307.780	1978.98	1.23	-5.21	1.80	40°24'45.956"N	104°24'45.446"W	1.21		
2074.00	4.110	316.520	2073.89	-1.09	-2.53	-0.82	40°24'45.983"N	104°24'45.479"W	3.89		
2168.00	7.360	320.110	2167.41	-6.47	4.54	-7.00	40°24'46.054"N	104°24'45.558"W	3.48		
2263.00	8.600	317.210	2261.48	-14.08	14.42	-15.73	40°24'46.152"N	104°24'45.669"W	1.37		
2358.00	9.230	313.370	2355.34	-23.25	24.86	-26.09	40°24'46.257"N	104°24'45.801"W	0.91		
2452.00	10.480	310.840	2447.95	-33.96	35.63	-38.04	40°24'46.365"N	104°24'45.954"W	1.41		
2547.00	13.140	310.530	2540.93	-47.25	48.30	-52.79	40°24'46.492"N	104°24'46.143"W	2.80		
2641.00	14.130	314.370	2632.28	-61.86	63.27	-69.11	40°24'46.642"N	104°24'46.351"W	1.43		
2736.00	14.320	317.270	2724.37	-76.22	80.01	-85.37	40°24'46.809"N	104°24'46.559"W	0.78		
2830.00	14.320	316.070	2815.45	-90.25	96.92	-101.32	40°24'46.978"N	104°24'46.762"W	0.32		
2925.00	14.240	314.720	2907.51	-104.80	113.60	-117.78	40°24'47.145"N	104°24'46.972"W	0.36		
3019.00	14.320	316.180	2998.61	-119.19	130.12	-134.04	40°24'47.310"N	104°24'47.180"W	0.39		
3114.00	14.130	316.920	3090.70	-133.31	147.07	-150.10	40°24'47.479"N	104°24'47.385"W	0.28		
3208.00	14.140	318.340	3181.85	-146.86	164.03	-165.57	40°24'47.649"N	104°24'47.582"W	0.37		
3303.00	14.220	319.670	3273.96	-160.14	181.59	-180.83	40°24'47.824"N	104°24'47.777"W	0.35		
3397.00	14.200	324.330	3365.08	-172.28	199.76	-195.03	40°24'48.005"N	104°24'47.957"W	1.22		

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Operator	NOBLE ENERGY, INC	Slot	SLOT#19 WELLS RANCH BB11-658(2244'FSL&235'FWL,SEC.11)
Area	COLORADO	Well	WELLS RANCH BB11-658
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	WELLS RANCH BB11-658 AWP
Facility	SEC.11-T05N-R63W		

WELLPATH DATA (170 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
3492.00	14.240	325.570	3457.17	-183.54	218.86	-208.43	40°24'48.196"N	104°24'48.128"W	0.32	
3586.00	14.330	321.290	3548.27	-195.26	237.48	-222.24	40°24'48.381"N	104°24'48.303"W	1.13	
3681.00	14.240	312.610	3640.34	-209.27	254.56	-238.19	40°24'48.552"N	104°24'48.507"W	2.25	
3775.00	14.250	312.740	3731.45	-224.48	270.24	-255.20	40°24'48.709"N	104°24'48.724"W	0.04	
3869.00	14.190	316.310	3822.57	-239.09	286.43	-271.65	40°24'48.871"N	104°24'48.934"W	0.93	
3964.00	14.110	317.690	3914.69	-253.00	303.41	-287.49	40°24'49.041"N	104°24'49.136"W	0.36	
4058.00	14.080	317.410	4005.86	-266.53	320.30	-302.94	40°24'49.210"N	104°24'49.333"W	0.08	
4153.00	14.000	316.570	4098.02	-280.34	337.15	-318.66	40°24'49.378"N	104°24'49.534"W	0.23	
4247.00	13.820	320.310	4189.27	-293.41	354.05	-333.65	40°24'49.547"N	104°24'49.725"W	0.98	
4342.00	14.080	316.300	4281.47	-306.71	371.14	-348.88	40°24'49.717"N	104°24'49.919"W	1.05	
4436.00	13.980	319.160	4372.67	-320.12	387.99	-364.20	40°24'49.886"N	104°24'50.115"W	0.75	
4531.00	14.190	328.130	4464.82	-331.68	406.57	-377.86	40°24'50.071"N	104°24'50.288"W	2.31	
4626.00	14.050	327.720	4556.95	-341.80	426.20	-390.16	40°24'50.267"N	104°24'50.444"W	0.18	
4720.00	13.860	324.250	4648.18	-352.36	444.99	-402.84	40°24'50.454"N	104°24'50.605"W	0.91	
4814.00	14.160	319.490	4739.38	-364.39	462.87	-416.88	40°24'50.632"N	104°24'50.784"W	1.27	
4909.00	13.980	318.150	4831.53	-377.63	480.25	-432.09	40°24'50.806"N	104°24'50.978"W	0.39	
5003.00	14.010	318.890	4922.74	-390.76	497.28	-447.14	40°24'50.976"N	104°24'51.169"W	0.19	
5097.00	13.180	321.060	5014.11	-403.06	514.19	-461.36	40°24'51.145"N	104°24'51.351"W	1.04	
5192.00	13.340	320.200	5106.58	-414.98	531.03	-475.18	40°24'51.313"N	104°24'51.527"W	0.27	
5286.00	14.090	318.210	5197.90	-427.64	547.90	-489.75	40°24'51.481"N	104°24'51.712"W	0.94	
5381.00	14.100	315.840	5290.04	-441.49	564.82	-505.52	40°24'51.650"N	104°24'51.913"W	0.61	
5475.00	14.170	316.480	5381.19	-455.50	581.38	-521.42	40°24'51.816"N	104°24'52.116"W	0.18	
5570.00	14.080	319.160	5473.32	-469.12	598.55	-536.98	40°24'51.987"N	104°24'52.315"W	0.69	
5664.00	14.130	322.710	5564.49	-481.54	616.33	-551.41	40°24'52.165"N	104°24'52.498"W	0.92	
5759.00	14.010	324.200	5656.64	-493.21	634.88	-565.16	40°24'52.350"N	104°24'52.673"W	0.40	
5853.00	14.180	326.610	5747.81	-504.08	653.72	-578.16	40°24'52.537"N	104°24'52.838"W	0.65	
5948.00	8.720	5.790	5841.01	-507.91	670.64	-583.85	40°24'52.705"N	104°24'52.909"W	9.69	
6043.00	12.830	43.500	5934.43	-498.35	685.48	-575.85	40°24'52.851"N	104°24'52.803"W	8.37	
6137.00	18.440	53.670	6024.93	-477.51	701.87	-556.67	40°24'53.011"N	104°24'52.553"W	6.62	
6232.00	27.030	64.780	6112.51	-444.03	720.02	-524.96	40°24'53.186"N	104°24'52.140"W	10.07	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#19 WELLS RANCH BB11-658(2244'FSL&235'FWL,SEC.11)
Area	COLORADO	Well	WELLS RANCH BB11-658
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	WELLS RANCH BB11-658 AWB
Facility	SEC.11-T05N-R63W		

WELLPATH DATA (170 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
6327.00	34.130	72.590	6194.27	-397.40	737.22	-479.92	40°24'53.350"N	104°24'51.555"W	8.55	
6421.00	41.640	79.020	6268.44	-340.31	751.08	-424.00	40°24'53.481"N	104°24'50.830"W	9.02	
6516.00	51.080	84.000	6333.95	-271.72	760.98	-356.09	40°24'53.570"N	104°24'49.951"W	10.63	
6610.00	57.770	87.810	6388.62	-195.39	766.33	-279.89	40°24'53.614"N	104°24'48.965"W	7.84	
6705.00	65.570	89.350	6433.67	-112.13	768.36	-196.36	40°24'53.624"N	104°24'47.885"W	8.33	
6799.00	74.750	87.300	6465.54	-24.08	770.99	-108.08	40°24'53.639"N	104°24'46.743"W	9.98	
6894.00	82.590	84.410	6484.19	68.92	777.74	-15.26	40°24'53.695"N	104°24'45.542"W	8.77	
6988.00	89.850	84.600	6490.38	162.65	786.72	78.04	40°24'53.772"N	104°24'44.334"W	7.73	
7083.00	89.970	86.610	6490.53	257.60	794.00	172.76	40°24'53.832"N	104°24'43.109"W	2.12	
7178.00	90.580	87.210	6490.08	352.45	799.12	267.62	40°24'53.872"N	104°24'41.882"W	0.90	
7272.00	90.340	87.340	6489.32	446.28	803.59	361.51	40°24'53.904"N	104°24'40.667"W	0.29	
7367.00	90.310	85.290	6488.78	541.18	809.69	456.31	40°24'53.953"N	104°24'39.441"W	2.16	
7461.00	90.220	83.850	6488.35	635.17	818.59	549.88	40°24'54.030"N	104°24'38.230"W	1.53	
7555.00	90.310	82.050	6487.91	729.15	830.13	643.17	40°24'54.132"N	104°24'37.022"W	1.92	
7650.00	90.430	80.790	6487.30	824.06	844.30	737.10	40°24'54.261"N	104°24'35.805"W	1.33	
7744.00	90.430	85.890	6486.60	918.03	855.20	830.43	40°24'54.357"N	104°24'34.597"W	5.43	
7839.00	90.430	88.320	6485.88	1012.86	859.99	925.30	40°24'54.393"N	104°24'33.370"W	2.56	
7934.00	90.400	87.670	6485.19	1107.60	863.32	1020.24	40°24'54.414"N	104°24'32.142"W	0.68	
8028.00	89.880	87.140	6484.96	1201.41	867.57	1114.14	40°24'54.445"N	104°24'30.928"W	0.79	
8123.00	90.090	88.400	6484.99	1296.18	871.27	1209.07	40°24'54.470"N	104°24'29.700"W	1.34	
8217.00	90.060	91.150	6484.87	1389.66	871.64	1303.06	40°24'54.462"N	104°24'28.485"W	2.93	
8312.00	90.120	91.010	6484.72	1483.89	869.85	1398.04	40°24'54.433"N	104°24'27.257"W	0.16	
8406.00	90.400	90.010	6484.29	1577.25	869.01	1492.03	40°24'54.413"N	104°24'26.042"W	1.10	
8501.00	90.370	92.360	6483.65	1671.45	867.05	1587.01	40°24'54.382"N	104°24'24.815"W	2.47	
8595.00	90.180	93.600	6483.20	1764.24	862.16	1680.88	40°24'54.323"N	104°24'23.602"W	1.33	
8690.00	90.460	91.250	6482.67	1858.16	858.14	1775.78	40°24'54.271"N	104°24'22.376"W	2.49	
8784.00	90.180	90.690	6482.15	1951.42	856.55	1869.77	40°24'54.244"N	104°24'21.161"W	0.67	
8879.00	90.060	91.230	6481.95	2045.67	854.96	1964.75	40°24'54.217"N	104°24'19.934"W	0.58	
8973.00	90.000	90.800	6481.90	2138.93	853.29	2058.74	40°24'54.189"N	104°24'18.719"W	0.46	
9068.00	90.150	90.260	6481.77	2233.27	852.41	2153.73	40°24'54.169"N	104°24'17.491"W	0.59	

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Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	WELLS RANCH BB11-658 AWB
Facility	SEC.11-T05N-R63W		

WELLPATH DATA (170 stations)										
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9162.00	90.000	86.890	6481.65	2326.93	854.75	2247.69	40°24'54.180"N	104°24'16.276"W	3.59	
9257.00	90.370	88.040	6481.34	2421.73	858.95	2342.60	40°24'54.210"N	104°24'15.048"W	1.27	
9352.00	90.460	88.870	6480.65	2516.42	861.51	2437.56	40°24'54.224"N	104°24'13.820"W	0.88	
9446.00	90.370	89.250	6479.97	2610.02	863.06	2531.54	40°24'54.228"N	104°24'12.605"W	0.42	
9541.00	90.250	90.770	6479.46	2704.45	863.04	2626.54	40°24'54.216"N	104°24'11.377"W	1.60	
9636.00	90.400	91.450	6478.92	2798.68	861.20	2721.52	40°24'54.186"N	104°24'10.150"W	0.73	
9730.00	90.060	91.150	6478.54	2891.87	859.07	2815.49	40°24'54.154"N	104°24'08.935"W	0.48	
9825.00	89.910	90.850	6478.57	2986.12	857.41	2910.48	40°24'54.126"N	104°24'07.708"W	0.35	
9919.00	90.120	90.500	6478.54	3079.44	856.30	3004.47	40°24'54.103"N	104°24'06.493"W	0.43	
10014.00	90.340	90.310	6478.16	3173.81	855.63	3099.47	40°24'54.085"N	104°24'05.265"W	0.31	
10109.00	90.250	89.560	6477.67	3268.26	855.74	3194.47	40°24'54.074"N	104°24'04.037"W	0.80	
10203.00	90.280	89.400	6477.24	3361.80	856.59	3288.46	40°24'54.071"N	104°24'02.821"W	0.17	
10298.00	90.090	88.630	6476.93	3456.40	858.22	3383.45	40°24'54.076"N	104°24'01.593"W	0.83	
10393.00	90.490	87.570	6476.45	3551.13	861.37	3478.39	40°24'54.095"N	104°24'00.365"W	1.19	
10487.00	90.430	86.320	6475.70	3644.99	866.38	3572.25	40°24'54.133"N	104°23'59.151"W	1.33	
10582.00	90.090	85.560	6475.27	3739.92	873.11	3667.01	40°24'54.188"N	104°23'57.925"W	0.88	
10676.00	90.310	86.420	6474.94	3833.85	879.68	3760.78	40°24'54.241"N	104°23'56.712"W	0.94	
10771.00	90.250	84.690	6474.47	3928.80	887.05	3855.49	40°24'54.303"N	104°23'55.486"W	1.82	
10865.00	90.000	79.810	6474.27	4022.73	899.72	3948.60	40°24'54.416"N	104°23'54.281"W	5.20	
10960.00	90.370	79.950	6473.96	4117.51	916.41	4042.12	40°24'54.570"N	104°23'53.069"W	0.42	
11054.00	90.250	83.780	6473.45	4211.44	929.71	4135.16	40°24'54.690"N	104°23'51.864"W	4.08	
11149.00	90.340	86.440	6472.96	4306.41	937.81	4229.80	40°24'54.758"N	104°23'50.639"W	2.80	
11243.00	90.310	88.890	6472.43	4400.18	941.64	4323.72	40°24'54.785"N	104°23'49.425"W	2.61	
11338.00	90.220	91.720	6471.99	4494.56	941.13	4418.71	40°24'54.768"N	104°23'48.197"W	2.98	
11432.00	90.340	92.560	6471.53	4587.56	937.62	4512.64	40°24'54.722"N	104°23'46.983"W	0.90	
11527.00	90.310	90.840	6470.99	4681.65	934.80	4607.59	40°24'54.682"N	104°23'45.756"W	1.81	
11621.00	90.250	90.330	6470.53	4774.99	933.84	4701.59	40°24'54.661"N	104°23'44.541"W	0.55	
11716.00	90.370	89.230	6470.02	4869.47	934.21	4796.58	40°24'54.653"N	104°23'43.313"W	1.16	
11811.00	90.220	88.780	6469.53	4964.08	935.86	4891.57	40°24'54.658"N	104°23'42.085"W	0.50	
11905.00	90.340	88.070	6469.07	5057.77	938.44	4985.53	40°24'54.672"N	104°23'40.870"W	0.77	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#19 WELLS RANCH BB11-658(2244'FSL&235'FWL,SEC.11)
Area	COLORADO	Well	WELLS RANCH BB11-658
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	WELLS RANCH BB11-658 AWB
Facility	SEC.11-T05N-R63W		

WELLPATH DATA (170 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
12000.00	90.340	87.420	6468.51	5152.54	942.18	5080.45	40°24'54.697"N	104°23'39.642"W	0.68	
12094.00	90.400	88.100	6467.90	5246.31	945.85	5174.38	40°24'54.721"N	104°23'38.427"W	0.73	
12189.00	90.430	88.180	6467.21	5341.04	948.94	5269.33	40°24'54.740"N	104°23'37.199"W	0.09	
12283.00	90.400	86.790	6466.53	5434.84	953.06	5363.23	40°24'54.769"N	104°23'35.985"W	1.48	
12378.00	90.340	84.850	6465.92	5529.77	959.98	5457.97	40°24'54.826"N	104°23'34.759"W	2.04	
12472.00	90.180	82.250	6465.49	5623.76	970.54	5551.37	40°24'54.919"N	104°23'33.550"W	2.77	
12567.00	90.460	81.450	6464.96	5718.70	984.01	5645.41	40°24'55.040"N	104°23'32.332"W	0.89	
12662.00	90.310	82.180	6464.32	5813.64	997.53	5739.44	40°24'55.162"N	104°23'31.114"W	0.78	
12756.00	90.340	85.090	6463.79	5907.63	1007.95	5832.84	40°24'55.254"N	104°23'29.905"W	3.10	
12851.00	90.370	87.750	6463.20	6002.52	1013.89	5927.65	40°24'55.301"N	104°23'28.679"W	2.80	
12945.00	90.340	90.340	6462.62	6096.12	1015.45	6021.63	40°24'55.305"N	104°23'27.463"W	2.76	
13040.00	90.310	92.690	6462.08	6190.25	1012.94	6116.58	40°24'55.268"N	104°23'26.236"W	2.47	
13134.00	90.280	93.730	6461.59	6282.98	1007.68	6210.43	40°24'55.204"N	104°23'25.024"W	1.11	
13229.00	90.400	95.380	6461.03	6376.30	1000.13	6305.13	40°24'55.118"N	104°23'23.801"W	1.74	
13324.00	90.400	95.370	6460.37	6469.37	991.23	6399.71	40°24'55.019"N	104°23'22.580"W	0.01	
13418.00	90.430	94.330	6459.69	6561.62	983.29	6493.37	40°24'54.928"N	104°23'21.370"W	1.11	
13513.00	90.550	94.280	6458.87	6655.02	976.16	6588.10	40°24'54.846"N	104°23'20.147"W	0.14	
13607.00	90.520	92.900	6458.00	6747.64	970.27	6681.91	40°24'54.777"N	104°23'18.935"W	1.47	
13702.00	90.650	92.040	6457.03	6841.55	966.18	6776.81	40°24'54.724"N	104°23'17.709"W	0.92	
13796.00	90.460	90.520	6456.12	6934.74	964.08	6870.78	40°24'54.692"N	104°23'16.494"W	1.63	
13891.00	90.030	90.260	6455.71	7029.11	963.43	6965.78	40°24'54.674"N	104°23'15.267"W	0.53	
13985.00	90.030	90.730	6455.66	7122.47	962.62	7059.77	40°24'54.654"N	104°23'14.052"W	0.50	
14079.00	90.060	91.800	6455.59	7215.67	960.54	7153.75	40°24'54.622"N	104°23'12.837"W	1.14	
14173.00	90.250	91.600	6455.33	7308.77	957.75	7247.71	40°24'54.583"N	104°23'11.623"W	0.29	
14268.00	90.120	90.290	6455.02	7403.03	956.19	7342.69	40°24'54.555"N	104°23'10.395"W	1.39	
14363.00	90.030	87.910	6454.90	7497.62	957.68	7437.67	40°24'54.558"N	104°23'09.167"W	2.51	
14457.00	90.310	90.400	6454.62	7591.20	959.07	7531.66	40°24'54.560"N	104°23'07.952"W	2.67	
14552.00	90.120	92.150	6454.26	7685.39	956.95	7626.63	40°24'54.528"N	104°23'06.725"W	1.85	
14646.00	90.220	89.740	6453.99	7778.65	955.40	7720.61	40°24'54.501"N	104°23'05.510"W	2.57	
14741.00	90.150	87.980	6453.68	7873.27	957.29	7815.58	40°24'54.508"N	104°23'04.282"W	1.85	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#19 WELLS RANCH BB11-658(2244'FSL&235'FWL,SEC.11)
Area	COLORADO	Well	WELLS RANCH BB11-658
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	WELLS RANCH BB11-658 AWB
Facility	SEC.11-T05N-R63W		

WELLPATH DATA (170 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
14835.00	90.150	86.340	6453.43	7967.11	961.95	7909.47	40°24'54.542"N	104°23'03.067"W	1.74	
14929.00	90.120	83.760	6453.21	8061.07	970.06	8003.11	40°24'54.610"N	104°23'01.856"W	2.74	
15024.00	90.220	82.460	6452.93	8156.07	981.46	8097.42	40°24'54.711"N	104°23'00.635"W	1.37	
15119.00	90.150	81.500	6452.62	8251.02	994.71	8191.49	40°24'54.831"N	104°22'59.416"W	1.01	
15213.00	90.220	79.640	6452.32	8344.86	1010.11	8284.21	40°24'54.971"N	104°22'58.215"W	1.98	
15308.00	90.120	83.000	6452.04	8439.76	1024.45	8378.11	40°24'55.101"N	104°22'56.999"W	3.54	
15403.00	90.180	85.660	6451.79	8534.75	1033.83	8472.64	40°24'55.182"N	104°22'55.776"W	2.80	
15497.00	90.280	89.720	6451.41	8628.51	1037.62	8566.54	40°24'55.208"N	104°22'54.561"W	4.32	
15592.00	90.030	92.820	6451.15	8722.69	1035.51	8661.51	40°24'55.175"N	104°22'53.334"W	3.27	
15686.00	90.150	90.910	6451.01	8815.75	1032.45	8755.45	40°24'55.133"N	104°22'52.120"W	2.04	
15781.00	90.220	92.540	6450.70	8909.84	1029.59	8850.40	40°24'55.093"N	104°22'50.893"W	1.72	
15875.00	90.060	92.590	6450.47	9002.74	1025.39	8944.31	40°24'55.040"N	104°22'49.679"W	0.18	
15970.00	90.220	92.720	6450.24	9096.61	1020.99	9039.21	40°24'54.985"N	104°22'48.453"W	0.22	
16064.00	90.220	92.230	6449.88	9189.53	1016.93	9133.12	40°24'54.933"N	104°22'47.240"W	0.52	
16158.00	90.310	91.510	6449.44	9282.60	1013.86	9227.07	40°24'54.891"N	104°22'46.026"W	0.77	
16253.00	90.060	90.080	6449.14	9376.88	1012.54	9322.06	40°24'54.866"N	104°22'44.798"W	1.53	
16348.00	90.180	87.490	6448.94	9471.52	1014.56	9417.03	40°24'54.874"N	104°22'43.570"W	2.73	
16442.00	90.120	86.150	6448.69	9565.38	1019.77	9510.88	40°24'54.914"N	104°22'42.356"W	1.43	
16537.00	90.060	85.440	6448.54	9660.32	1026.74	9605.62	40°24'54.971"N	104°22'41.130"W	0.75	Last BHI MWD Survey
16573.00	90.060	85.440	6448.50	9696.31	1029.60	9641.51	40°24'54.994"N	104°22'40.666"W	0.00	Projection to Bit

HOLE & CASING SECTIONS - Ref Wellbore: WELLS RANCH BB11-658 AWB Ref Wellpath: WELLS RANCH BB11-658 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	1932.00	1902.00	30.00	1931.98	0.00	0.00	-5.41	1.84
9.625in Casing Surface	30.00	1932.00	1902.00	30.00	1931.98	0.00	0.00	-5.41	1.84
8.5in Open Hole	1932.00	16573.00	14641.00	1931.98	6448.50	-5.41	1.84	1029.60	9641.51



REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#19 WELLS RANCH BB11-658(2244'FSL&235'FWL,SEC.11)
Area	COLORADO	Well	WELLS RANCH BB11-658
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	WELLS RANCH BB11-658 AWB
Facility	SEC.11-T05N-R63W		

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
WELLS RANCH BB11-618 SECTION 11-T05N-R63W	-7.00	-1446.14	23.30	3302802.43	1393626.45	40°24'31.716"N	104°24'45.396"W	polygon
WELLS RANCH BB11-618 SECTION 12-T05N-R63W	-7.00	-1446.14	23.30	3302802.43	1393626.45	40°24'31.716"N	104°24'45.396"W	polygon
WELLS RANCH BB11-658 REV-1 BHL)2110'FNL&660'FEL,SEC.12)	6447.66	1049.27	9647.60	3312426.33	1396121.76	40°24'55.188"N	104°22'40.584"W	point
WELLS RANCH BB11-658 Landing Point(2240'FNL&300'FWL,SEC.12)	6489.59	815.00	40.00	3302819.13	1395887.51	40°24'54.056"N	104°24'44.822"W	point
WELLS RANCH BB11-618 SECTION 11 HARDLINES (460'SETBACK)	6493.00	-1446.14	23.30	3302802.43	1393626.45	40°24'31.716"N	104°24'45.396"W	polygon
WELLS RANCH BB11-618 SECTION 12 HARDLINES (460'SETBACK)	6493.00	-1446.14	23.30	3302802.43	1393626.45	40°24'31.716"N	104°24'45.396"W	polygon

WELLPATH COMPOSITION - Ref Wellbore: WELLS RANCH BB11-658 AWB Ref Wellpath: WELLS RANCH BB11-658 AWP				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
0.00	1917.00	Gyrodata standard - Drop gyro or Multi-shot	Gyrodata Surface Surveys <842'-1917'>	WELLS RANCH BB11-658 AWB
1917.00	16537.00	OWSG MWD rev2 + IFR1 + Multi-Station Correction	BHI 8 1/2" Monobore ATCurve <1979'-16537'>	WELLS RANCH BB11-658 AWB
16537.00	16573.00	Blind Drilling (std)	Projection to bit	WELLS RANCH BB11-658 AWB

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#19 WELLS RANCH BB11-658(2244'FSL&235'FWL,SEC.11)
Area	COLORADO	Well	WELLS RANCH BB11-658
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	WELLS RANCH BB11-658 AWB
Facility	SEC.11-T05N-R63W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
1917.00	0.470	62.150	1916.98	Tie to Surface Gyros
16537.00	90.060	85.440	6448.54	Last BHI MWD Survey
16573.00	90.060	85.440	6448.50	Projection to Bit

COMMENTS
<p><b>Wellpath general comments</b>            SURFACE LOCATION: NWSW            40.41278N            104.41263W            API #: 05-123-44959</p>