

NOBLE ENERGY, INC

Location: COLORADO Slot: SLOT#20 WELLS RANCH BB11-667(803°FNL&235°FWL,SEC.11)
Field: WELD COUNTY (NOBLE NAD 83 GRID) Well: WELLS RANCH BB11-667
Facility: SEC.11-T05N-R63W Wellbore: WELLS RANCH BB11-667 PWB

Plot reference wellpath is WELLS RANCH BB11-667 (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: 4715 feet	Scale: True distance
Mean Sea Level to Ground level (At Slot: SLOT#20 WELLS RANCH BB11-667(803°FNL&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

Survey Program

Start MD (ft)	End MD (ft)	Tool	Model	Log Name/Comment	Wellbore
30.00	16725.76	OWSG MWD rev2	OWSG MWD rev2 + IFR1 + Multi-Station Correction		WELLS RANCH BB11-667 PWB

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#20 WELLS RANCH BB11-667(803°FNL&235°FWL,SEC.11)	3704.55	-64.92	3302737.511	1397330.848	40°25'08.328"N	104°24'45.648"W
H&P RIG (30°KB) (RKB) to Ground level (At Slot: SLOT#20 WELLS RANCH BB11-667(803°FNL&235°FWL,SEC.11))					4715R	
Mean Sea Level to Ground level (At Slot: SLOT#20 WELLS RANCH BB11-667(803°FNL&235°FWL,SEC.11))					0R	
H&P RIG (30°KB) (RKB) to Mean Sea Level					4715R	

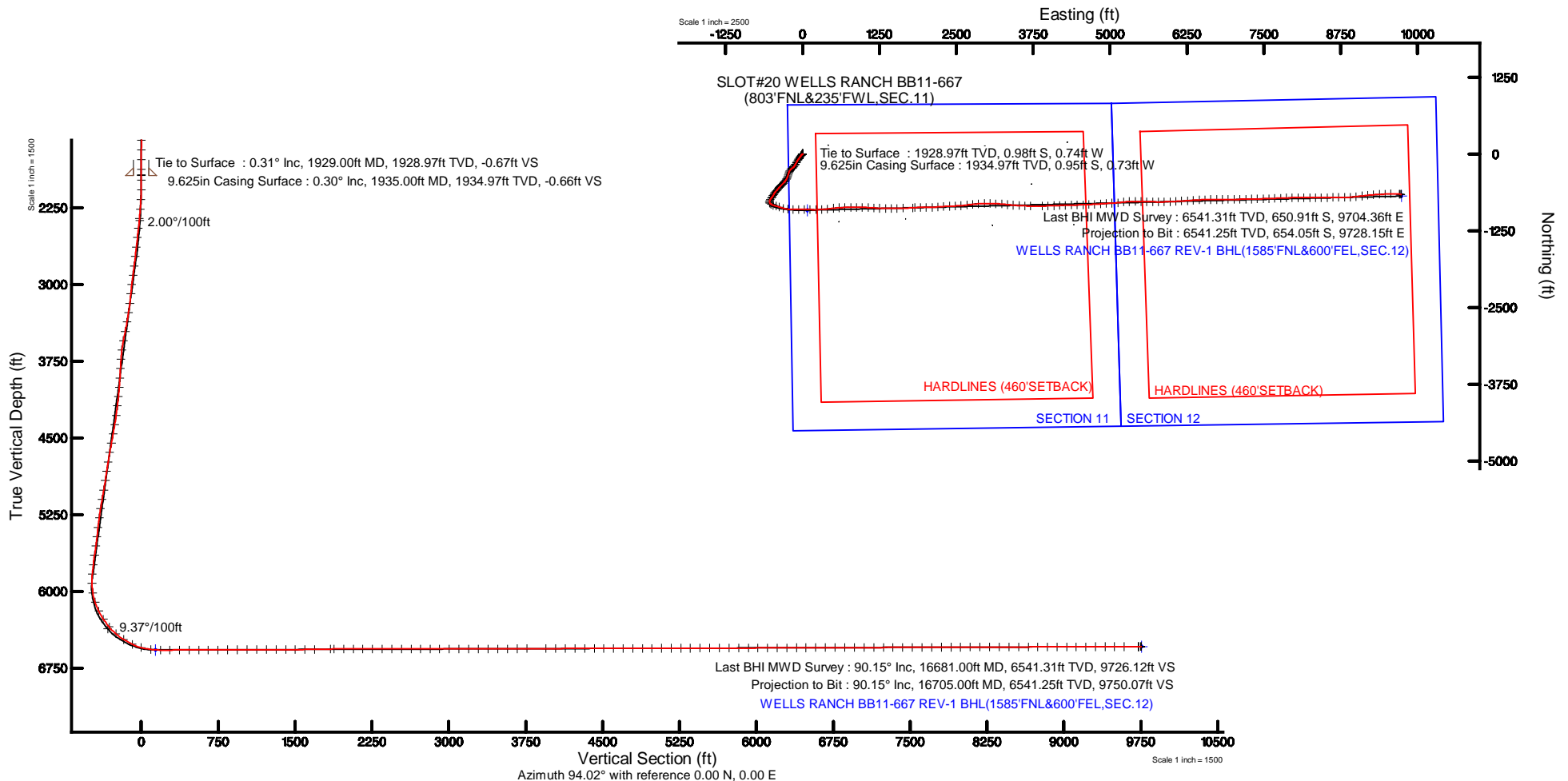
Comments

SURFACE LOCATION: NWNW

40.41898N

104.41268W

API #: 05-123-44968



REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#20 WELLS RANCH BB11-667(803'FNL&235'FWL,SEC.11)
Area	COLORADO	Well	WELLS RANCH BB11-667
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	WELLS RANCH BB11-667 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 2:11:59 PM
Convergence at slot	0.71° East	Database/Source file	WA_DEN_Denver_Defn/WELLS_RANCH_BB11-667_AWP.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	3704.55	-64.92	3302737.51	1397330.85	40°25'08.328"N	104°24'45.648"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	4715.00ft
Horizontal Reference Pt	Slot	H&P RIG (30'KB) (RKB) to Mean Sea Level	4715.00ft
Vertical Reference Pt	H&P RIG (30'KB) (RKB)	H&P RIG (30'KB) (RKB) to Ground Level at Slot (SLOT#20 WELLS RANCH BB11-667 (803'FNL&235'FWL,SEC.11))	4715.00ft
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	94.02°



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Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	WELLS RANCH BB11-667 AWB
Facility	SEC.11-T05N-R63W		

WELLPATH DATA (178 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00	0.000	141.330	0.00	0.00	0.00	0.00	40°25'08.328"N	104°24'45.648"W	0.00	
84.00	0.090	141.330	84.00	0.04	-0.05	0.04	40°25'08.327"N	104°24'45.647"W	0.11	
178.00	0.500	46.380	178.00	0.37	0.17	0.38	40°25'08.330"N	104°24'45.643"W	0.55	
269.00	0.280	42.150	269.00	0.78	0.61	0.82	40°25'08.334"N	104°24'45.637"W	0.24	
363.00	0.370	13.160	363.00	0.97	1.08	1.04	40°25'08.339"N	104°24'45.634"W	0.20	
458.00	0.480	329.500	457.99	0.79	1.72	0.91	40°25'08.345"N	104°24'45.636"W	0.35	
552.00	0.610	358.370	551.99	0.52	2.56	0.70	40°25'08.353"N	104°24'45.639"W	0.32	
647.00	0.060	270.080	646.99	0.42	3.06	0.63	40°25'08.358"N	104°24'45.639"W	0.64	
741.00	0.140	201.990	740.99	0.33	2.96	0.54	40°25'08.357"N	104°24'45.641"W	0.14	
836.00	0.250	138.580	835.99	0.44	2.70	0.64	40°25'08.355"N	104°24'45.639"W	0.24	
930.00	0.500	105.780	929.98	0.99	2.43	1.17	40°25'08.352"N	104°24'45.633"W	0.34	
1025.00	0.170	147.160	1024.98	1.48	2.20	1.64	40°25'08.350"N	104°24'45.626"W	0.41	
1120.00	0.230	183.510	1119.98	1.57	1.89	1.71	40°25'08.346"N	104°24'45.626"W	0.14	
1214.00	0.250	222.430	1213.98	1.44	1.55	1.56	40°25'08.343"N	104°24'45.628"W	0.17	
1309.00	0.380	213.850	1308.98	1.16	1.14	1.24	40°25'08.339"N	104°24'45.632"W	0.15	
1403.00	0.170	198.920	1402.98	0.97	0.75	1.02	40°25'08.335"N	104°24'45.635"W	0.23	
1498.00	0.370	216.820	1497.98	0.76	0.37	0.79	40°25'08.332"N	104°24'45.638"W	0.23	
1592.00	0.100	238.180	1591.98	0.53	0.08	0.54	40°25'08.329"N	104°24'45.641"W	0.30	
1687.00	0.680	203.490	1686.97	0.28	-0.48	0.25	40°25'08.323"N	104°24'45.645"W	0.63	
1782.00	0.430	249.900	1781.97	-0.23	-1.12	-0.31	40°25'08.317"N	104°24'45.652"W	0.52	
1876.00	0.140	313.210	1875.97	-0.65	-1.16	-0.73	40°25'08.317"N	104°24'45.658"W	0.41	
1929.00	0.310	15.730	1928.97	-0.67	-0.98	-0.74	40°25'08.318"N	104°24'45.658"W	0.52	Tie to Surface
1979.00	0.280	45.330	1978.97	-0.56	-0.76	-0.61	40°25'08.321"N	104°24'45.656"W	0.31	
2074.00	2.120	217.670	2073.95	-1.38	-1.99	-1.52	40°25'08.309"N	104°24'45.668"W	2.52	
2168.00	3.720	236.310	2167.83	-4.76	-5.06	-5.12	40°25'08.279"N	104°24'45.715"W	1.96	
2263.00	6.310	228.400	2262.45	-10.85	-10.24	-11.59	40°25'08.228"N	104°24'45.799"W	2.82	
2357.00	8.740	219.880	2355.64	-18.64	-19.15	-20.04	40°25'08.141"N	104°24'45.910"W	2.84	
2452.00	10.940	217.530	2449.24	-27.85	-31.84	-30.16	40°25'08.017"N	104°24'46.043"W	2.35	
2547.00	11.790	213.250	2542.38	-37.57	-47.10	-40.97	40°25'07.868"N	104°24'46.185"W	1.26	
2641.00	12.480	217.180	2634.28	-47.81	-63.23	-52.37	40°25'07.710"N	104°24'46.335"W	1.14	



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REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#20 WELLS RANCH BB11-667(803'FNL&235'FWL,SEC.11)
Area	COLORADO	Well	WELLS RANCH BB11-667
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	WELLS RANCH BB11-667 AWB
Facility	SEC.11-T05N-R63W		

WELLPATH DATA (178 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
2735.00	13.170	215.420	2725.93	-58.95	-80.05	-64.72	40°25'07.545"N	104°24'46.497"W	0.84	
2830.00	14.350	212.500	2818.20	-70.20	-98.80	-77.32	40°25'07.361"N	104°24'46.663"W	1.44	
2924.00	15.450	211.420	2909.04	-81.52	-119.31	-90.10	40°25'07.160"N	104°24'46.832"W	1.21	
3019.00	15.380	209.000	3000.63	-92.66	-141.12	-102.81	40°25'06.946"N	104°24'46.999"W	0.68	
3114.00	14.840	205.010	3092.34	-102.34	-163.17	-114.06	40°25'06.730"N	104°24'47.148"W	1.23	
3208.00	14.490	212.110	3183.29	-112.19	-184.04	-125.40	40°25'06.525"N	104°24'47.298"W	1.95	
3303.00	14.740	220.450	3275.23	-124.97	-203.30	-139.56	40°25'06.336"N	104°24'47.484"W	2.23	
3398.00	13.970	228.060	3367.27	-140.12	-220.17	-155.93	40°25'06.171"N	104°24'47.699"W	2.14	
3492.00	15.000	233.080	3458.28	-157.20	-235.06	-174.10	40°25'06.027"N	104°24'47.936"W	1.73	
3587.00	15.560	225.740	3549.93	-174.97	-251.34	-193.05	40°25'05.868"N	104°24'48.184"W	2.12	
3681.00	15.640	213.230	3640.49	-189.55	-270.74	-209.03	40°25'05.678"N	104°24'48.393"W	3.57	
3776.00	15.440	198.530	3732.06	-198.97	-293.45	-220.07	40°25'05.455"N	104°24'48.540"W	4.14	
3870.00	15.360	193.850	3822.69	-204.23	-317.40	-227.03	40°25'05.219"N	104°24'48.633"W	1.32	
3965.00	15.470	197.390	3914.27	-209.31	-341.71	-233.83	40°25'04.980"N	104°24'48.725"W	1.00	
4059.00	15.380	200.500	4004.89	-215.74	-365.35	-241.94	40°25'04.747"N	104°24'48.834"W	0.89	
4154.00	15.430	204.390	4096.48	-223.72	-388.66	-251.57	40°25'04.518"N	104°24'48.962"W	1.09	
4248.00	15.370	209.480	4187.10	-233.43	-410.90	-262.87	40°25'04.300"N	104°24'49.111"W	1.44	
4343.00	15.430	216.100	4278.70	-245.55	-432.07	-276.51	40°25'04.092"N	104°24'49.291"W	1.85	
4437.00	15.460	221.510	4369.31	-259.82	-451.56	-292.18	40°25'03.902"N	104°24'49.497"W	1.53	
4532.00	15.250	223.330	4460.92	-275.44	-470.13	-309.15	40°25'03.720"N	104°24'49.719"W	0.55	
4627.00	15.430	225.130	4552.54	-291.67	-488.13	-326.68	40°25'03.544"N	104°24'49.949"W	0.54	
4721.00	15.100	225.940	4643.22	-308.07	-505.47	-344.34	40°25'03.375"N	104°24'50.180"W	0.42	
4816.00	14.860	221.330	4734.99	-323.72	-523.22	-361.27	40°25'03.202"N	104°24'50.401"W	1.28	
4910.00	14.920	218.360	4825.84	-337.85	-541.76	-376.74	40°25'03.021"N	104°24'50.604"W	0.81	
5005.00	14.920	218.690	4917.64	-351.71	-560.90	-391.98	40°25'02.833"N	104°24'50.804"W	0.09	
5100.00	14.820	223.270	5009.46	-366.36	-579.29	-407.95	40°25'02.654"N	104°24'51.014"W	1.24	
5194.00	15.160	225.620	5100.26	-382.12	-596.64	-424.98	40°25'02.484"N	104°24'51.237"W	0.74	
5289.00	15.010	219.930	5191.99	-397.59	-614.76	-441.75	40°25'02.307"N	104°24'51.456"W	1.57	
5383.00	15.120	213.770	5282.77	-410.81	-634.29	-456.38	40°25'02.116"N	104°24'51.649"W	1.71	
5478.00	15.070	208.540	5374.49	-422.09	-655.44	-469.17	40°25'01.908"N	104°24'51.817"W	1.43	



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REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#20 WELLS RANCH BB11-667(803'FNL&235'FWL,SEC.11)
Area	COLORADO	Well	WELLS RANCH BB11-667
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	WELLS RANCH BB11-667 AWB
Facility	SEC.11-T05N-R63W		

WELLPATH DATA (178 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
5572.00	15.120	208.890	5465.25	-432.31	-676.91	-480.93	40°25'01.698"N	104°24'51.973"W	0.11	
5667.00	15.050	215.350	5556.98	-443.94	-697.82	-494.05	40°25'01.493"N	104°24'52.146"W	1.77	
5762.00	15.060	215.020	5648.72	-456.71	-717.99	-508.27	40°25'01.295"N	104°24'52.333"W	0.09	
5856.00	15.080	210.470	5739.49	-468.45	-738.53	-521.48	40°25'01.094"N	104°24'52.507"W	1.26	
5951.00	15.170	206.100	5831.21	-478.63	-760.34	-533.22	40°25'00.880"N	104°24'52.662"W	1.20	
6045.00	12.930	174.920	5922.52	-481.59	-781.89	-537.70	40°25'00.667"N	104°24'52.723"W	8.28	
6140.00	13.090	141.110	6015.21	-472.57	-800.88	-530.00	40°25'00.479"N	104°24'52.627"W	7.90	
6234.00	20.070	121.000	6105.32	-450.91	-817.51	-509.45	40°25'00.312"N	104°24'52.364"W	9.51	
6329.00	26.700	107.570	6192.53	-415.57	-832.37	-475.07	40°25'00.161"N	104°24'51.921"W	8.91	
6423.00	33.560	106.430	6273.78	-369.61	-846.11	-429.96	40°25'00.020"N	104°24'51.340"W	7.32	
6518.00	41.560	110.100	6349.04	-313.59	-864.40	-375.08	40°24'59.832"N	104°24'50.634"W	8.74	
6613.00	49.530	104.060	6415.55	-247.59	-884.05	-310.30	40°24'59.630"N	104°24'49.800"W	9.53	
6707.00	57.290	94.300	6471.62	-172.61	-895.74	-235.95	40°24'59.506"N	104°24'48.840"W	11.72	
6802.00	64.950	90.710	6517.48	-89.53	-899.27	-152.93	40°24'59.461"N	104°24'47.768"W	8.71	
6896.00	74.960	90.090	6549.66	-1.52	-899.87	-64.74	40°24'59.444"N	104°24'46.628"W	10.67	
6991.00	82.620	90.740	6568.12	91.42	-900.56	28.38	40°24'59.426"N	104°24'45.424"W	8.09	
7086.00	89.880	91.490	6574.33	186.03	-902.40	123.09	40°24'59.397"N	104°24'44.200"W	7.68	
7180.00	90.220	89.870	6574.24	279.86	-903.52	217.08	40°24'59.374"N	104°24'42.985"W	1.76	
7275.00	90.220	87.830	6573.88	374.47	-901.61	312.06	40°24'59.381"N	104°24'41.757"W	2.15	
7369.00	90.220	82.940	6573.52	467.38	-894.05	405.73	40°24'59.445"N	104°24'40.545"W	5.20	
7464.00	90.280	82.840	6573.10	560.59	-882.29	499.99	40°24'59.550"N	104°24'39.324"W	0.12	
7558.00	90.120	86.050	6572.77	653.27	-873.19	593.54	40°24'59.628"N	104°24'38.113"W	3.42	
7653.00	90.280	88.810	6572.44	747.63	-868.93	688.43	40°24'59.659"N	104°24'36.886"W	2.91	
7747.00	90.250	89.630	6572.01	841.30	-867.65	782.42	40°24'59.660"N	104°24'35.671"W	0.87	
7842.00	90.220	89.940	6571.62	936.04	-867.30	877.42	40°24'59.652"N	104°24'34.443"W	0.33	
7936.00	90.180	90.410	6571.29	1029.83	-867.59	971.42	40°24'59.638"N	104°24'33.227"W	0.50	
8031.00	90.180	92.670	6570.99	1124.73	-870.14	1066.38	40°24'59.601"N	104°24'32.000"W	2.38	
8126.00	90.220	94.380	6570.66	1219.73	-875.98	1161.20	40°24'59.532"N	104°24'30.775"W	1.80	
8220.00	90.150	93.320	6570.36	1313.72	-882.29	1254.98	40°24'59.458"N	104°24'29.564"W	1.13	
8315.00	90.280	90.500	6570.00	1408.65	-885.46	1349.92	40°24'59.415"N	104°24'28.337"W	2.97	



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Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	WELLS RANCH BB11-667 AWB
Facility	SEC.11-T05N-R63W		

WELLPATH DATA (178 stations)										
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8409.00	90.150	88.700	6569.65	1502.37	-884.80	1443.91	40°24'59.410"N	104°24'27.122"W	1.92	
8504.00	90.650	88.640	6568.98	1596.95	-882.60	1538.88	40°24'59.420"N	104°24'25.894"W	0.53	
8599.00	90.520	88.780	6568.01	1691.54	-880.46	1633.86	40°24'59.430"N	104°24'24.666"W	0.20	
8755.00	91.880	86.650	6564.75	1846.55	-874.24	1789.68	40°24'59.472"N	104°24'22.650"W	1.62	
8788.00	91.970	86.100	6563.64	1879.24	-872.15	1822.60	40°24'59.489"N	104°24'22.224"W	1.69	
8883.00	89.940	88.950	6562.05	1973.60	-868.05	1917.48	40°24'59.518"N	104°24'20.997"W	3.68	
8977.00	89.880	91.130	6562.20	2067.37	-868.12	2011.48	40°24'59.506"N	104°24'19.782"W	2.32	
9071.00	90.030	86.580	6562.28	2160.96	-866.24	2105.43	40°24'59.513"N	104°24'18.567"W	4.84	
9166.00	89.750	85.340	6562.46	2255.02	-859.55	2200.20	40°24'59.567"N	104°24'17.341"W	1.34	
9261.00	90.090	86.890	6562.59	2349.11	-853.11	2294.97	40°24'59.619"N	104°24'16.115"W	1.67	
9355.00	89.970	87.660	6562.54	2442.46	-848.64	2388.87	40°24'59.652"N	104°24'14.900"W	0.83	
9450.00	90.220	87.770	6562.38	2536.89	-844.86	2483.79	40°24'59.678"N	104°24'13.673"W	0.29	
9545.00	89.910	86.050	6562.28	2631.15	-839.73	2578.65	40°24'59.717"N	104°24'12.445"W	1.84	
9639.00	89.780	82.260	6562.53	2723.75	-830.16	2672.14	40°24'59.800"N	104°24'11.235"W	4.03	
9734.00	89.970	82.970	6562.74	2816.87	-817.95	2766.35	40°24'59.909"N	104°24'10.015"W	0.77	
9827.00	89.970	86.690	6562.79	2908.66	-809.57	2858.96	40°24'59.981"N	104°24'08.817"W	4.00	
9922.00	90.030	87.830	6562.79	3003.00	-805.03	2953.85	40°25'00.014"N	104°24'07.589"W	1.20	
10017.00	89.970	91.240	6562.79	3097.70	-804.26	3048.83	40°25'00.010"N	104°24'06.361"W	3.59	
10111.00	90.090	93.290	6562.74	3191.65	-807.98	3142.75	40°24'59.962"N	104°24'05.148"W	2.18	
10206.00	89.880	94.620	6562.76	3286.64	-814.53	3237.53	40°24'59.885"N	104°24'03.924"W	1.42	
10300.00	90.000	96.110	6562.86	3380.62	-823.32	3331.11	40°24'59.787"N	104°24'02.715"W	1.59	
10395.00	90.120	94.220	6562.76	3475.59	-831.87	3425.72	40°24'59.691"N	104°24'01.494"W	1.99	
10490.00	90.460	93.550	6562.28	3570.59	-838.31	3520.50	40°24'59.616"N	104°24'00.269"W	0.79	
10584.00	90.340	92.550	6561.62	3664.57	-843.31	3614.36	40°24'59.555"N	104°23'59.057"W	1.07	
10679.00	90.370	90.680	6561.04	3759.48	-845.98	3709.32	40°24'59.517"N	104°23'57.830"W	1.97	
10868.00	90.250	89.020	6560.01	3947.97	-845.49	3898.31	40°24'59.498"N	104°23'55.386"W	0.88	
10963.00	90.400	88.820	6559.47	4042.60	-843.70	3993.29	40°24'59.505"N	104°23'54.158"W	0.26	
11057.00	90.060	87.360	6559.10	4136.09	-840.57	4087.24	40°24'59.524"N	104°23'52.943"W	1.59	
11152.00	90.090	87.570	6558.97	4230.47	-836.36	4182.14	40°24'59.554"N	104°23'51.716"W	0.22	
11246.00	90.120	88.390	6558.80	4323.95	-833.05	4276.08	40°24'59.575"N	104°23'50.501"W	0.87	



Actual Wellpath Report

WELLS RANCH BB11-667 AWP



REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#20 WELLS RANCH BB11-667(803'FNL&235'FWL,SEC.11)
Area	COLORADO	Well	WELLS RANCH BB11-667
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	WELLS RANCH BB11-667 AWB
Facility	SEC.11-T05N-R63W		

WELLPATH DATA (178 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
11341.00	90.120	88.460	6558.60	4418.50	-830.44	4371.05	40°24'59.589"N	104°23'49.273"W	0.07	
11435.00	90.220	88.560	6558.32	4512.06	-828.00	4465.02	40°24'59.602"N	104°23'48.057"W	0.15	
11530.00	90.150	87.560	6558.02	4606.55	-824.78	4559.96	40°24'59.622"N	104°23'46.830"W	1.06	
11624.00	90.220	88.220	6557.71	4700.01	-821.32	4653.89	40°24'59.644"N	104°23'45.615"W	0.71	
11719.00	90.090	87.050	6557.46	4794.42	-817.40	4748.81	40°24'59.672"N	104°23'44.387"W	1.24	
11814.00	90.150	85.490	6557.26	4888.55	-811.22	4843.61	40°24'59.721"N	104°23'43.161"W	1.64	
11908.00	90.150	86.440	6557.01	4981.62	-804.60	4937.37	40°24'59.775"N	104°23'41.947"W	1.01	
12003.00	90.030	86.550	6556.86	5075.80	-798.80	5032.19	40°24'59.820"N	104°23'40.721"W	0.17	
12097.00	90.180	83.970	6556.69	5168.70	-791.03	5125.87	40°24'59.886"N	104°23'39.508"W	2.75	
12192.00	90.060	84.010	6556.49	5262.24	-781.08	5220.34	40°24'59.972"N	104°23'38.285"W	0.13	
12286.00	90.060	87.300	6556.39	5355.23	-773.96	5314.06	40°25'00.031"N	104°23'37.073"W	3.50	
12381.00	90.220	90.270	6556.16	5449.82	-771.95	5409.03	40°25'00.039"N	104°23'35.845"W	3.13	
12475.00	90.220	91.200	6555.80	5543.67	-773.15	5503.02	40°25'00.016"N	104°23'34.630"W	0.99	
12570.00	90.120	90.560	6555.52	5638.53	-774.61	5598.01	40°24'59.990"N	104°23'33.402"W	0.68	
12664.00	90.030	91.910	6555.39	5732.41	-776.64	5691.98	40°24'59.958"N	104°23'32.188"W	1.44	
12759.00	90.220	90.580	6555.19	5827.30	-778.70	5786.96	40°24'59.926"N	104°23'30.960"W	1.41	
12854.00	90.370	88.410	6554.70	5922.00	-777.87	5881.95	40°24'59.922"N	104°23'29.732"W	2.29	
12948.00	90.400	87.190	6554.07	6015.44	-774.26	5975.87	40°24'59.946"N	104°23'28.517"W	1.30	
13043.00	90.340	87.080	6553.45	6109.75	-769.51	6070.75	40°24'59.982"N	104°23'27.290"W	0.13	
13137.00	90.310	86.510	6552.92	6203.00	-764.25	6164.60	40°25'00.022"N	104°23'26.076"W	0.61	
13232.00	90.400	86.040	6552.33	6297.14	-758.08	6259.40	40°25'00.071"N	104°23'24.849"W	0.50	
13327.00	90.310	85.820	6551.74	6391.19	-751.34	6354.16	40°25'00.126"N	104°23'23.623"W	0.25	
13421.00	90.120	87.420	6551.39	6484.40	-745.80	6447.99	40°25'00.169"N	104°23'22.409"W	1.71	
13516.00	90.120	88.420	6551.19	6578.86	-742.35	6542.93	40°25'00.192"N	104°23'21.181"W	1.05	
13611.00	90.120	88.990	6550.99	6673.46	-740.20	6637.90	40°25'00.201"N	104°23'19.953"W	0.60	
13705.00	90.090	90.360	6550.82	6767.18	-739.67	6731.90	40°25'00.195"N	104°23'18.738"W	1.46	
13800.00	90.150	90.130	6550.62	6861.98	-740.08	6826.90	40°25'00.179"N	104°23'17.510"W	0.25	
13895.00	90.150	89.070	6550.37	6956.69	-739.41	6921.89	40°25'00.174"N	104°23'16.282"W	1.12	
13989.00	90.220	88.900	6550.07	7050.33	-737.75	7015.88	40°25'00.179"N	104°23'15.066"W	0.20	
14084.00	90.250	89.060	6549.68	7144.96	-736.06	7110.86	40°25'00.183"N	104°23'13.838"W	0.17	



Actual Wellpath Report

WELLS RANCH BB11-667 AWP



REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Slot	SLOT#20 WELLS RANCH BB11-667(803'FNL&235'FWL,SEC.11)
Area	COLORADO	Well	WELLS RANCH BB11-667
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	WELLS RANCH BB11-667 AWB
Facility	SEC.11-T05N-R63W		

WELLPATH DATA (178 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
14179.00	90.370	88.680	6549.16	7239.58	-734.18	7205.84	40°25'00.190"N	104°23'12.610"W	0.42	
14273.00	90.150	88.550	6548.74	7333.16	-731.91	7299.81	40°25'00.201"N	104°23'11.395"W	0.27	
14368.00	90.400	88.860	6548.28	7427.75	-729.76	7394.79	40°25'00.210"N	104°23'10.167"W	0.42	
14463.00	90.180	88.560	6547.80	7522.34	-727.63	7489.76	40°25'00.220"N	104°23'08.939"W	0.39	
14557.00	90.220	87.900	6547.47	7615.86	-724.72	7583.72	40°25'00.237"N	104°23'07.724"W	0.70	
14652.00	90.150	87.160	6547.17	7710.25	-720.63	7678.63	40°25'00.265"N	104°23'06.496"W	0.78	
14746.00	90.060	87.960	6546.99	7803.65	-716.63	7772.54	40°25'00.293"N	104°23'05.281"W	0.86	
14841.00	90.180	88.140	6546.79	7898.14	-713.39	7867.49	40°25'00.313"N	104°23'04.053"W	0.23	
14935.00	90.180	88.540	6546.50	7991.68	-710.67	7961.45	40°25'00.329"N	104°23'02.838"W	0.43	
15030.00	90.150	89.020	6546.23	8086.28	-708.65	8056.42	40°25'00.337"N	104°23'01.610"W	0.51	
15124.00	90.220	90.090	6545.92	8179.99	-707.92	8150.42	40°25'00.332"N	104°23'00.395"W	1.14	
15219.00	90.220	90.080	6545.56	8274.77	-708.06	8245.42	40°25'00.319"N	104°22'59.167"W	0.01	
15314.00	90.220	90.410	6545.19	8369.56	-708.47	8340.42	40°25'00.303"N	104°22'57.939"W	0.35	
15408.00	90.180	90.730	6544.86	8463.39	-709.40	8434.41	40°25'00.282"N	104°22'56.724"W	0.34	
15503.00	90.150	88.100	6544.59	8558.07	-708.43	8529.40	40°25'00.280"N	104°22'55.496"W	2.77	
15597.00	90.280	89.100	6544.24	8651.65	-706.13	8623.37	40°25'00.291"N	104°22'54.280"W	1.07	
15692.00	90.220	90.870	6543.82	8746.41	-706.11	8718.36	40°25'00.280"N	104°22'53.052"W	1.86	
15787.00	90.150	89.130	6543.52	8841.17	-706.11	8813.36	40°25'00.268"N	104°22'51.824"W	1.83	
15881.00	90.150	84.580	6543.27	8934.42	-700.95	8907.19	40°25'00.307"N	104°22'50.610"W	4.84	
15976.00	90.180	83.940	6543.00	9028.04	-691.45	9001.72	40°25'00.389"N	104°22'49.387"W	0.67	
16070.00	90.250	83.720	6542.64	9120.56	-681.35	9095.17	40°25'00.477"N	104°22'48.177"W	0.25	
16165.00	90.220	83.420	6542.25	9213.98	-670.71	9189.57	40°25'00.570"N	104°22'46.955"W	0.32	
16259.00	90.090	85.150	6542.00	9306.62	-661.35	9283.10	40°25'00.651"N	104°22'45.744"W	1.85	
16354.00	90.030	88.180	6541.90	9400.83	-655.82	9377.93	40°25'00.694"N	104°22'44.518"W	3.19	
16448.00	90.120	86.570	6541.78	9494.20	-651.52	9471.83	40°25'00.725"N	104°22'43.303"W	1.72	
16543.00	90.090	86.640	6541.60	9588.40	-645.89	9566.66	40°25'00.769"N	104°22'42.076"W	0.08	
16681.00	90.150	97.530	6541.31	9726.12	-650.91	9704.36	40°25'00.702"N	104°22'40.297"W	7.89	Last BHI MWD Survey
16705.00	90.150	97.530	6541.25	9750.07	-654.05	9728.15	40°25'00.668"N	104°22'39.990"W	0.00	Projection to Bit



Actual Wellpath Report

WELLS RANCH BB11-667 AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#20 WELLS RANCH BB11-667(803'FNL&235'FWL,SEC.11)
Area	COLORADO	Well	WELLS RANCH BB11-667
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	WELLS RANCH BB11-667 AWB
Facility	SEC.11-T05N-R63W		

HOLE & CASING SECTIONS - Ref Wellbore: WELLS RANCH BB11-667 AWB Ref Wellpath: WELLS RANCH BB11-667 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	1935.00	1905.00	30.00	1934.97	-0.01	0.01	-0.95	-0.73
8.5in Open Hole	1935.00	16705.00	14770.00	1934.97	6541.25	-0.95	-0.73	-654.05	9728.15

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	10.00	-3704.54	64.92	3302802.43	1393626.45	40°24'31.716"N	104°24'45.396"W	polygon
WELLS RANCH BB11-618 SECTION 12-T05N-R63W	10.00	-3704.54	64.92	3302802.43	1393626.45	40°24'31.716"N	104°24'45.396"W	polygon
WELLS RANCH BB11-618 SECTION 11 HARDLINES (460'SETBACK)	6510.00	-3704.54	64.92	3302802.43	1393626.45	40°24'31.716"N	104°24'45.396"W	polygon
WELLS RANCH BB11-618 SECTION 12 HARDLINES (460'SETBACK)	6510.00	-3704.54	64.92	3302802.43	1393626.45	40°24'31.716"N	104°24'45.396"W	polygon
WELLS RANCH BB11-667 REV-1 BHL(1585'FNL&600'FEL,SEC.12)	6540.27	-683.90	9735.47	3312472.59	1396646.98	40°25'00.372"N	104°22'39.900"W	point
WELLS RANCH BB11-667 LANDING POINT (550'FNL&300'FWL,SEC.11)	6574.00	-915.00	75.00	3302812.51	1396415.89	40°24'59.278"N	104°24'44.823"W	point

WELLPATH COMPOSITION - Ref Wellbore: WELLS RANCH BB11-667 AWB Ref Wellpath: WELLS RANCH BB11-667 AWP				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
0.00	1929.00	Gyrodata standard - Drop gyro or Multi-shot	GyroData 13.5" Surface <84'-1929'>	WELLS RANCH BB11-667 AWB
1929.00	16681.00	OWSG MWD rev2 + IFR1 + Multi-Station Correction	BH/ATC 8.5" Hole OWSG MWD rev2+IFR+MSA <1979'-16681'>	WELLS RANCH BB11-667 AWB
16681.00	16705.00	Blind Drilling (std)	Projection to bit	WELLS RANCH BB11-667 AWB



Actual Wellpath Report

WELLS RANCH BB11-667 AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#20 WELLS RANCH BB11-667(803'FNL&235'FWL,SEC.11)
Area	COLORADO	Well	WELLS RANCH BB11-667
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	WELLS RANCH BB11-667 AWB
Facility	SEC.11-T05N-R63W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
1929.00	0.310	15.730	1928.97	Tie to Surface
16681.00	90.150	97.530	6541.31	Last BHI MWD Survey
16705.00	90.150	97.530	6541.25	Projection to Bit

COMMENTS
<div>Wellpath general comments</div> <div>SURFACE LOCATION: NWNW</div> <div>40.41898N</div> <div>104.41268W</div> <div>API #: 05-123-44968</div>