

NOBLE ENERGY, INC

Location: COLORADO Slot: SLOT#21 WELLS RANCH BB11-674(765'FNL&235'FWL,SEC.11)
Field: WELD COUNTY (NOBLE NAD 83 GRID) Well: WELLS RANCH BB11-674
Facility: SEC.11-T05N-R63W Wellbore: WELLS RANCH BB11-674 PWB

Plot reference wellpath is WELLS RANCH BB11-674 (REV-A.0) PWP	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
True vertical depths are referenced to H&P RIG (30KB) (RKB)	* = Wellpath was transformed from a different geodetic datum
Measured depths are referenced to H&P RIG (30KB) (RKB)	North Reference: Grid north
H&P RIG (30KB) (RKB) to Mean Sea Level: 4715 feet	Scale: True distance
Mean Sea Level to Ground level (At Slot: SLOT#21 WELLS RANCH BB11-674(765'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_DeIn

Survey Program

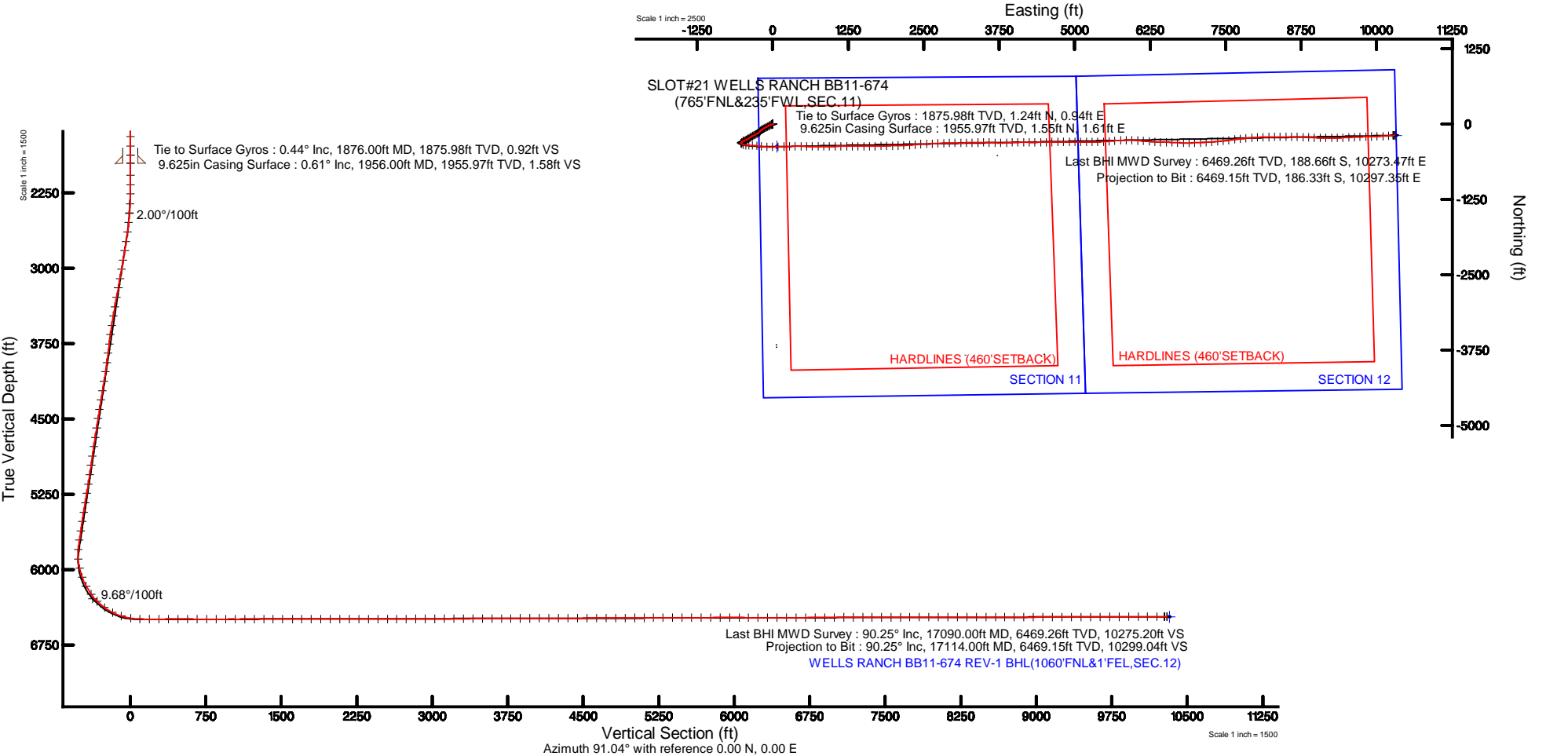
Start MD (ft)	End MD (ft)	Tool	Model	Log Name/Comment	Wellbore
30.00	17147.26	OWSG MWD rev2	OWSG MWD rev2 + IFR1 + Multi-Station Correction		WELLS RANCH BB11-674 PWB

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#21 WELLS RANCH BB11-674(765'FNL&235'FWL,SEC.11)	3740.97	-65.37	3302737.064	1393767.275	40°25'08.688"N	104°24'45.648"W
H&P RIG (30KB) (RKB) to Ground level (At Slot: SLOT#21 WELLS RANCH BB11-674(765'FNL&235'FWL,SEC.11))					4715R	
Mean Sea Level to Ground level (At Slot: SLOT#21 WELLS RANCH BB11-674(765'FNL&235'FWL,SEC.11))					0R	
H&P RIG (30KB) (RKB) to Mean Sea Level					4715R	

Comments

SURFACE LOCATION: NWNW
40.41908N
104.41268W
API #: 05-123-44966





Actual Wellpath Report

WELLS RANCH BB11-674 AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#21 WELLS RANCH BB11-674(765'FNL&235'FWL,SEC.11)
Area	COLORADO	Well	WELLS RANCH BB11-674
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	WELLS RANCH BB11-674 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 2:36:18 PM
Convergence at slot	0.71° East	Database/Source file	WA_DEN_Denver_Defn/WELLS_RANCH_BB11-674_AWP.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	3740.97	-65.37	3302737.06	1397367.28	40°25'08.688"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#21 WELLS RANCH BB11-674 (765'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	91.04°

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Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	WELLS RANCH BB11-674 AWB
Facility	SEC.11-T05N-R63W		

WELLPATH DATA (184 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00	0.000	66.330	0.00	0.00	0.00	0.00	40°25'08.688"N	104°24'45.648"W	0.00	
79.93	0.310	66.330	79.93	0.20	0.09	0.20	40°25'08.689"N	104°24'45.645"W	0.39	
176.91	0.760	66.040	176.91	1.02	0.45	1.03	40°25'08.692"N	104°24'45.635"W	0.46	
269.02	0.560	36.010	269.01	1.83	1.07	1.85	40°25'08.698"N	104°24'45.624"W	0.43	
363.32	0.110	122.290	363.31	2.17	1.39	2.20	40°25'08.701"N	104°24'45.619"W	0.60	
457.88	0.020	222.900	457.87	2.24	1.33	2.26	40°25'08.701"N	104°24'45.619"W	0.12	
552.30	0.360	258.310	552.29	1.94	1.26	1.96	40°25'08.700"N	104°24'45.622"W	0.36	
646.89	0.010	60.600	646.88	1.65	1.20	1.68	40°25'08.700"N	104°24'45.626"W	0.39	
741.60	0.220	306.390	741.59	1.51	1.31	1.54	40°25'08.701"N	104°24'45.628"W	0.24	
836.05	0.280	333.370	836.04	1.26	1.63	1.29	40°25'08.704"N	104°24'45.631"W	0.14	
930.64	0.190	298.740	930.62	1.01	1.91	1.05	40°25'08.707"N	104°24'45.634"W	0.17	
1025.31	0.100	267.410	1025.29	0.79	1.98	0.83	40°25'08.707"N	104°24'45.637"W	0.12	
1119.79	0.180	347.000	1119.77	0.67	2.12	0.71	40°25'08.709"N	104°24'45.638"W	0.20	
1214.37	0.070	207.510	1214.35	0.61	2.22	0.65	40°25'08.710"N	104°24'45.639"W	0.25	
1308.78	0.060	128.210	1308.76	0.62	2.13	0.66	40°25'08.709"N	104°24'45.639"W	0.09	
1403.31	0.230	56.310	1403.29	0.82	2.21	0.86	40°25'08.710"N	104°24'45.637"W	0.23	
1498.04	0.320	330.260	1498.02	0.84	2.54	0.89	40°25'08.713"N	104°24'45.636"W	0.40	
1592.64	0.190	127.500	1592.62	0.83	2.68	0.88	40°25'08.714"N	104°24'45.636"W	0.53	
1687.38	0.650	207.840	1687.36	0.72	2.11	0.75	40°25'08.709"N	104°24'45.638"W	0.68	
1781.89	0.270	169.390	1781.87	0.52	1.41	0.54	40°25'08.702"N	104°24'45.641"W	0.50	
1876.00†	0.439	82.242	1875.98	0.92	1.24	0.94	40°25'08.700"N	104°24'45.636"W	0.54	Tie to Surface Gyros
1876.22	0.440	82.160	1876.20	0.92	1.24	0.94	40°25'08.700"N	104°24'45.636"W	0.54	
1952.00	0.630	54.640	1951.97	1.54	1.52	1.57	40°25'08.703"N	104°24'45.627"W	0.41	
2073.00	0.040	173.940	2072.97	2.08	1.87	2.12	40°25'08.706"N	104°24'45.620"W	0.54	
2168.00	0.070	278.790	2167.97	2.03	1.84	2.07	40°25'08.706"N	104°24'45.621"W	0.09	
2262.00	1.460	229.850	2261.96	1.07	1.08	1.09	40°25'08.699"N	104°24'45.634"W	1.51	
2358.00	3.210	234.140	2357.88	-2.00	-1.28	-2.02	40°25'08.676"N	104°24'45.674"W	1.83	
2452.00	4.720	243.980	2451.65	-7.55	-4.52	-7.63	40°25'08.644"N	104°24'45.747"W	1.76	
2547.00	6.460	247.180	2546.19	-15.91	-8.31	-16.07	40°25'08.608"N	104°24'45.857"W	1.86	
2641.00	8.440	248.110	2639.40	-27.10	-12.93	-27.34	40°25'08.564"N	104°24'46.004"W	2.11	



Actual Wellpath Report

WELLS RANCH BB11-674 AWP



REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#21 WELLS RANCH BB11-674(765'FNL&235'FWL,SEC.11)
Area	COLORADO	Well	WELLS RANCH BB11-674
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	WELLS RANCH BB11-674 AWB
Facility	SEC.11-T05N-R63W		

WELLPATH DATA (184 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
2736.00	9.180	245.650	2733.28	-40.37	-18.66	-40.72	40°25'08.509"N	104°24'46.177"W	0.87	
2830.00	10.530	243.810	2825.89	-54.78	-25.54	-55.26	40°25'08.442"N	104°24'46.366"W	1.47	
2925.00	11.080	242.760	2919.20	-70.54	-33.55	-71.16	40°25'08.365"N	104°24'46.573"W	0.61	
3019.00	11.460	242.770	3011.39	-86.72	-41.96	-87.50	40°25'08.284"N	104°24'46.786"W	0.40	
3114.00	11.590	242.140	3104.47	-103.38	-50.73	-104.33	40°25'08.199"N	104°24'47.005"W	0.19	
3208.00	11.510	242.180	3196.57	-119.86	-59.52	-120.97	40°25'08.115"N	104°24'47.221"W	0.09	
3303.00	11.460	241.190	3289.67	-136.35	-68.49	-137.62	40°25'08.028"N	104°24'47.438"W	0.21	
3398.00	11.510	239.030	3382.77	-152.57	-77.92	-154.02	40°25'07.937"N	104°24'47.651"W	0.46	
3492.00	11.520	238.170	3474.87	-168.40	-87.70	-170.03	40°25'07.842"N	104°24'47.860"W	0.18	
3587.00	11.660	231.440	3567.94	-183.77	-98.68	-185.60	40°25'07.735"N	104°24'48.063"W	1.43	
3682.00	11.180	223.910	3661.07	-197.43	-111.30	-199.49	40°25'07.612"N	104°24'48.245"W	1.65	
3776.00	10.220	221.130	3753.43	-209.00	-124.15	-211.30	40°25'07.487"N	104°24'48.399"W	1.16	
3870.00	10.160	225.780	3845.95	-220.21	-136.21	-222.73	40°25'07.369"N	104°24'48.549"W	0.88	
3965.00	10.160	230.640	3939.46	-232.48	-147.37	-235.21	40°25'07.260"N	104°24'48.712"W	0.90	
4059.00	9.970	238.210	4032.02	-245.64	-156.92	-248.54	40°25'07.168"N	104°24'48.886"W	1.42	
4154.00	10.320	245.440	4125.54	-260.22	-164.79	-263.27	40°25'07.092"N	104°24'49.078"W	1.39	
4248.00	10.300	243.050	4218.02	-275.23	-172.09	-278.42	40°25'07.021"N	104°24'49.275"W	0.46	
4343.00	10.100	242.820	4311.52	-290.07	-179.75	-293.40	40°25'06.947"N	104°24'49.470"W	0.21	
4438.00	10.120	244.910	4405.04	-304.90	-187.09	-308.37	40°25'06.877"N	104°24'49.664"W	0.39	
4532.00	10.170	246.430	4497.57	-319.86	-193.91	-323.45	40°25'06.811"N	104°24'49.860"W	0.29	
4627.00	10.020	242.130	4591.10	-334.72	-201.13	-338.45	40°25'06.742"N	104°24'50.055"W	0.81	
4722.00	10.130	238.480	4684.64	-349.00	-209.36	-352.87	40°25'06.662"N	104°24'50.243"W	0.68	
4816.00	10.270	236.530	4777.16	-362.87	-218.30	-366.91	40°25'06.575"N	104°24'50.426"W	0.40	
4911.00	10.210	233.580	4870.64	-376.53	-227.97	-380.75	40°25'06.482"N	104°24'50.606"W	0.56	
5005.00	10.080	232.500	4963.17	-389.58	-237.93	-393.98	40°25'06.385"N	104°24'50.779"W	0.25	
5100.00	10.290	237.080	5056.68	-403.12	-247.60	-407.70	40°25'06.291"N	104°24'50.958"W	0.88	
5194.00	10.230	242.570	5149.18	-417.42	-256.01	-422.16	40°25'06.210"N	104°24'51.146"W	1.04	
5289.00	10.130	246.920	5242.68	-432.46	-263.17	-437.33	40°25'06.141"N	104°24'51.343"W	0.82	
5383.00	10.170	250.010	5335.21	-447.75	-269.25	-452.73	40°25'06.082"N	104°24'51.544"W	0.58	
5478.00	10.210	247.470	5428.71	-463.29	-275.34	-468.39	40°25'06.024"N	104°24'51.747"W	0.47	



Actual Wellpath Report

WELLS RANCH BB11-674 AWP



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Operator	NOBLE ENERGY, INC	Slot	SLOT#21 WELLS RANCH BB11-674(765'FNL&235'FWL,SEC.11)
Area	COLORADO	Well	WELLS RANCH BB11-674
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	WELLS RANCH BB11-674 AWB
Facility	SEC.11-T05N-R63W		

WELLPATH DATA (184 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
5573.00	10.130	238.550	5522.23	-478.06	-282.93	-483.30	40°25'05.951"N	104°24'51.941"W	1.66	
5667.00	10.070	232.420	5614.77	-491.45	-292.25	-496.86	40°25'05.860"N	104°24'52.118"W	1.14	
5762.00	10.130	233.910	5708.30	-504.60	-302.24	-510.20	40°25'05.763"N	104°24'52.292"W	0.28	
5856.00	8.750	231.410	5801.03	-516.70	-311.57	-522.46	40°25'05.673"N	104°24'52.452"W	1.53	
5951.00	7.060	136.770	5895.44	-518.19	-320.36	-524.12	40°25'05.586"N	104°24'52.475"W	12.28	
6045.00	14.640	119.610	5987.71	-503.70	-330.45	-509.81	40°25'05.485"N	104°24'52.291"W	8.68	
6140.00	20.690	109.350	6078.21	-477.19	-341.96	-483.51	40°25'05.368"N	104°24'51.953"W	7.14	
6234.00	28.110	96.110	6163.82	-439.29	-349.84	-445.74	40°25'05.285"N	104°24'51.466"W	9.76	
6329.00	35.620	93.270	6244.45	-389.28	-353.80	-395.79	40°25'05.240"N	104°24'50.821"W	8.06	
6424.00	45.520	92.570	6316.53	-327.60	-356.91	-334.16	40°25'05.202"N	104°24'50.025"W	10.43	
6518.00	53.380	97.210	6377.61	-256.44	-363.16	-263.11	40°25'05.132"N	104°24'49.107"W	9.16	
6613.00	63.170	96.520	6427.50	-176.15	-372.78	-182.97	40°25'05.027"N	104°24'48.073"W	10.32	
6708.00	73.680	92.120	6462.40	-88.09	-379.30	-95.02	40°25'04.952"N	104°24'46.937"W	11.87	
6802.00	79.810	88.470	6483.95	3.34	-379.73	-3.59	40°25'04.936"N	104°24'45.755"W	7.54	
6896.00	88.860	88.850	6493.22	96.70	-377.55	89.83	40°25'04.947"N	104°24'44.547"W	9.64	
6991.00	90.000	88.290	6494.16	191.60	-375.18	184.79	40°25'04.959"N	104°24'43.319"W	1.34	
7086.00	90.180	87.700	6494.02	286.47	-371.86	279.73	40°25'04.980"N	104°24'42.091"W	0.65	
7180.00	90.220	89.100	6493.69	380.36	-369.23	373.69	40°25'04.994"N	104°24'40.875"W	1.49	
7275.00	89.970	90.890	6493.53	475.34	-369.22	468.69	40°25'04.983"N	104°24'39.647"W	1.90	
7370.00	89.910	90.790	6493.63	570.34	-370.62	563.68	40°25'04.958"N	104°24'38.420"W	0.12	
7464.00	89.690	90.980	6493.96	664.34	-372.07	657.67	40°25'04.932"N	104°24'37.205"W	0.31	
7559.00	90.060	90.830	6494.16	759.34	-373.57	752.66	40°25'04.906"N	104°24'35.977"W	0.42	
7653.00	90.090	88.630	6494.04	853.31	-373.12	846.65	40°25'04.898"N	104°24'34.762"W	2.34	
7747.00	90.120	89.270	6493.87	947.25	-371.40	940.63	40°25'04.904"N	104°24'33.547"W	0.68	
7842.00	89.940	89.550	6493.82	1042.21	-370.42	1035.63	40°25'04.902"N	104°24'32.318"W	0.35	
7937.00	90.150	89.850	6493.75	1137.18	-369.93	1130.63	40°25'04.896"N	104°24'31.090"W	0.39	
8031.00	90.090	89.760	6493.55	1231.16	-369.61	1224.62	40°25'04.887"N	104°24'29.875"W	0.12	
8126.00	90.090	89.590	6493.40	1326.13	-369.07	1319.62	40°25'04.881"N	104°24'28.647"W	0.18	
8220.00	90.180	89.520	6493.18	1420.10	-368.34	1413.62	40°25'04.877"N	104°24'27.431"W	0.12	
8315.00	90.150	90.000	6492.90	1515.08	-367.94	1508.62	40°25'04.869"N	104°24'26.203"W	0.51	



Actual Wellpath Report

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WELLPATH DATA (184 stations)										
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8410.00	89.970	89.890	6492.80	1610.06	-367.85	1603.62	40°25'04.859"N	104°24'24.975"W	0.22	
8504.00	90.000	89.140	6492.83	1704.02	-367.05	1697.61	40°25'04.855"N	104°24'23.760"W	0.80	
8599.00	89.970	88.590	6492.85	1798.96	-365.17	1792.60	40°25'04.862"N	104°24'22.531"W	0.58	
8693.00	89.910	88.310	6492.95	1892.86	-362.63	1886.56	40°25'04.876"N	104°24'21.316"W	0.30	
8788.00	89.970	88.420	6493.05	1987.76	-359.92	1981.52	40°25'04.891"N	104°24'20.088"W	0.13	
8882.00	90.090	88.850	6493.00	2081.67	-357.68	2075.50	40°25'04.901"N	104°24'18.873"W	0.47	
8977.00	90.280	88.000	6492.70	2176.57	-355.07	2170.46	40°25'04.916"N	104°24'17.645"W	0.92	
9072.00	90.250	85.930	6492.26	2271.32	-350.04	2265.32	40°25'04.954"N	104°24'16.418"W	2.18	
9166.00	90.090	84.310	6491.98	2364.82	-342.04	2358.97	40°25'05.021"N	104°24'15.206"W	1.73	
9261.00	89.970	85.110	6491.93	2459.24	-333.28	2453.57	40°25'05.096"N	104°24'13.981"W	0.85	
9356.00	90.060	89.910	6491.90	2554.03	-329.16	2548.45	40°25'05.126"N	104°24'12.754"W	5.05	
9450.00	90.030	88.580	6491.83	2647.98	-327.92	2642.44	40°25'05.126"N	104°24'11.539"W	1.42	
9545.00	90.030	86.540	6491.78	2742.80	-323.87	2737.35	40°25'05.155"N	104°24'10.311"W	2.15	
9639.00	90.120	86.730	6491.66	2836.52	-318.36	2831.19	40°25'05.198"N	104°24'09.097"W	0.22	
9733.00	90.120	88.440	6491.46	2930.35	-314.40	2925.10	40°25'05.225"N	104°24'07.883"W	1.82	
9828.00	90.340	90.360	6491.08	3025.30	-313.40	3020.09	40°25'05.224"N	104°24'06.654"W	2.03	
9922.00	90.370	89.230	6490.50	3119.28	-313.07	3114.09	40°25'05.215"N	104°24'05.439"W	1.20	
10017.00	90.340	89.300	6489.91	3214.23	-311.85	3209.08	40°25'05.216"N	104°24'04.211"W	0.08	
10111.00	90.310	88.220	6489.37	3308.15	-309.81	3303.05	40°25'05.224"N	104°24'02.996"W	1.15	
10206.00	90.430	89.320	6488.76	3403.07	-307.77	3398.03	40°25'05.233"N	104°24'01.768"W	1.16	
10301.00	90.180	89.750	6488.25	3498.04	-307.00	3493.02	40°25'05.229"N	104°24'00.539"W	0.52	
10395.00	90.340	91.170	6487.83	3592.03	-307.76	3587.01	40°25'05.210"N	104°23'59.324"W	1.52	
10490.00	90.370	92.970	6487.24	3687.01	-311.19	3681.95	40°25'05.164"N	104°23'58.098"W	1.89	
10584.00	90.030	89.070	6486.91	3780.99	-312.86	3775.91	40°25'05.136"N	104°23'56.883"W	4.16	
10679.00	90.310	87.410	6486.63	3875.87	-309.94	3870.86	40°25'05.153"N	104°23'55.655"W	1.77	
10774.00	90.310	88.230	6486.12	3970.72	-306.33	3965.79	40°25'05.178"N	104°23'54.427"W	0.86	
10868.00	90.120	89.000	6485.76	4064.63	-304.06	4059.77	40°25'05.188"N	104°23'53.212"W	0.84	
10963.00	90.120	89.820	6485.56	4159.59	-303.08	4154.76	40°25'05.186"N	104°23'51.984"W	0.86	
11058.00	90.180	91.120	6485.31	4254.59	-303.86	4249.75	40°25'05.167"N	104°23'50.756"W	1.37	
11152.00	90.400	89.380	6484.84	4348.57	-304.27	4343.75	40°25'05.151"N	104°23'49.541"W	1.87	



Actual Wellpath Report

WELLS RANCH BB11-674 AWP



REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#21 WELLS RANCH BB11-674(765'FNL&235'FWL,SEC.11)
Area	COLORADO	Well	WELLS RANCH BB11-674
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	WELLS RANCH BB11-674 AWB
Facility	SEC.11-T05N-R63W		

WELLPATH DATA (184 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
11247.00	90.250	89.110	6484.30	4443.52	-303.02	4438.74	40°25'05.152"N	104°23'48.313"W	0.33	
11341.00	90.370	89.140	6483.79	4537.47	-301.58	4532.73	40°25'05.155"N	104°23'47.097"W	0.13	
11435.00	90.250	88.700	6483.28	4631.40	-299.81	4626.71	40°25'05.161"N	104°23'45.882"W	0.49	
11530.00	90.250	89.020	6482.87	4726.33	-297.92	4721.69	40°25'05.168"N	104°23'44.654"W	0.34	
11625.00	90.220	90.230	6482.48	4821.30	-297.30	4816.68	40°25'05.162"N	104°23'43.426"W	1.27	
11719.00	90.370	90.280	6481.99	4915.29	-297.72	4910.68	40°25'05.146"N	104°23'42.211"W	0.17	
11814.00	90.250	90.250	6481.48	5010.28	-298.16	5005.68	40°25'05.130"N	104°23'40.983"W	0.13	
11909.00	90.150	90.130	6481.15	5105.27	-298.47	5100.68	40°25'05.116"N	104°23'39.754"W	0.16	
12003.00	90.090	89.470	6480.95	5199.25	-298.14	5194.68	40°25'05.107"N	104°23'38.539"W	0.71	
12097.00	90.090	90.360	6480.80	5293.23	-298.00	5288.67	40°25'05.097"N	104°23'37.324"W	0.95	
12192.00	90.090	88.240	6480.66	5388.18	-296.84	5383.66	40°25'05.097"N	104°23'36.096"W	2.23	
12286.00	90.370	86.650	6480.28	5481.99	-292.65	5477.56	40°25'05.127"N	104°23'34.881"W	1.72	
12381.00	90.250	84.960	6479.76	5576.59	-285.70	5572.31	40°25'05.184"N	104°23'33.655"W	1.78	
12475.00	90.250	86.200	6479.35	5670.16	-278.46	5666.02	40°25'05.244"N	104°23'32.443"W	1.32	
12570.00	90.310	87.370	6478.89	5764.89	-273.13	5760.87	40°25'05.285"N	104°23'31.216"W	1.23	
12665.00	90.150	87.660	6478.51	5859.71	-269.01	5855.78	40°25'05.314"N	104°23'29.988"W	0.35	
12759.00	89.940	91.600	6478.43	5953.66	-268.41	5949.76	40°25'05.308"N	104°23'28.773"W	4.20	
12854.00	89.820	95.140	6478.63	6048.57	-273.99	6044.58	40°25'05.241"N	104°23'27.548"W	3.73	
12948.00	89.780	93.920	6478.96	6142.39	-281.41	6138.28	40°25'05.156"N	104°23'26.338"W	1.30	
13043.00	89.690	94.860	6479.40	6237.23	-288.69	6233.00	40°25'05.073"N	104°23'25.114"W	0.99	
13138.00	89.540	93.860	6480.04	6332.07	-295.91	6327.73	40°25'04.989"N	104°23'23.891"W	1.06	
13232.00	90.120	91.470	6480.32	6426.02	-300.28	6421.62	40°25'04.935"N	104°23'22.678"W	2.62	
13327.00	90.340	90.620	6479.94	6521.02	-302.01	6516.60	40°25'04.906"N	104°23'21.450"W	0.92	
13422.00	90.280	93.380	6479.42	6616.00	-305.33	6611.53	40°25'04.861"N	104°23'20.224"W	2.91	
13515.00	90.370	92.690	6478.90	6708.94	-310.25	6704.40	40°25'04.801"N	104°23'19.024"W	0.75	
13610.00	90.550	90.260	6478.13	6803.93	-312.69	6799.36	40°25'04.765"N	104°23'17.797"W	2.56	
13704.00	90.460	89.750	6477.30	6897.91	-312.70	6893.35	40°25'04.754"N	104°23'16.581"W	0.55	
13799.00	90.060	88.450	6476.87	6992.85	-311.21	6988.34	40°25'04.756"N	104°23'15.353"W	1.43	
13894.00	90.310	87.510	6476.57	7087.71	-307.86	7083.28	40°25'04.778"N	104°23'14.125"W	1.02	
13988.00	89.970	86.640	6476.34	7181.49	-303.06	7177.15	40°25'04.814"N	104°23'12.911"W	0.99	



Actual Wellpath Report
WELLS RANCH BB11-674 AWP
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REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#21 WELLS RANCH BB11-674(765'FNL&235'FWL,SEC.11)
Area	COLORADO	Well	WELLS RANCH BB11-674
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	WELLS RANCH BB11-674 AWB
Facility	SEC.11-T05N-R63W		

WELLPATH DATA (184 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
14083.00	90.030	86.600	6476.34	7276.20	-297.46	7271.99	40°25'04.857"N	104°23'11.684"W	0.08	
14178.00	90.180	84.980	6476.16	7370.80	-290.49	7366.73	40°25'04.914"N	104°23'10.458"W	1.71	
14272.00	90.030	83.920	6475.99	7464.18	-281.40	7460.29	40°25'04.992"N	104°23'09.247"W	1.14	
14367.00	90.000	82.040	6475.97	7558.23	-269.79	7554.57	40°25'05.096"N	104°23'08.026"W	1.98	
14461.00	89.940	82.280	6476.01	7651.10	-256.97	7647.69	40°25'05.211"N	104°23'06.820"W	0.26	
14556.00	90.150	84.070	6475.94	7745.21	-245.68	7742.01	40°25'05.310"N	104°23'05.599"W	1.90	
14651.00	90.000	84.860	6475.82	7839.58	-236.51	7836.57	40°25'05.389"N	104°23'04.375"W	0.85	
14745.00	90.090	85.390	6475.74	7933.08	-228.53	7930.23	40°25'05.457"N	104°23'03.163"W	0.57	
14840.00	89.970	86.940	6475.69	8027.73	-222.17	8025.01	40°25'05.508"N	104°23'01.937"W	1.64	
14934.00	90.060	88.380	6475.67	8121.56	-218.33	8118.93	40°25'05.534"N	104°23'00.722"W	1.53	
15029.00	90.090	89.600	6475.54	8216.50	-216.66	8213.92	40°25'05.538"N	104°22'59.494"W	1.28	
15123.00	90.030	89.010	6475.44	8310.46	-215.52	8307.91	40°25'05.538"N	104°22'58.279"W	0.63	
15218.00	89.910	89.690	6475.49	8405.41	-214.44	8402.90	40°25'05.537"N	104°22'57.050"W	0.73	
15312.00	90.120	90.170	6475.47	8499.40	-214.33	8496.90	40°25'05.526"N	104°22'55.835"W	0.56	
15407.00	90.060	89.980	6475.32	8594.38	-214.45	8591.90	40°25'05.513"N	104°22'54.607"W	0.21	
15501.00	90.220	90.590	6475.09	8688.37	-214.92	8685.90	40°25'05.497"N	104°22'53.392"W	0.67	
15596.00	90.180	92.200	6474.76	8783.37	-217.23	8780.87	40°25'05.462"N	104°22'52.164"W	1.70	
15691.00	90.280	92.880	6474.38	8878.33	-221.44	8875.77	40°25'05.409"N	104°22'50.938"W	0.72	
15785.00	90.310	93.220	6473.89	8972.28	-226.44	8969.64	40°25'05.348"N	104°22'49.726"W	0.36	
15880.00	90.220	91.250	6473.45	9067.25	-230.15	9064.56	40°25'05.299"N	104°22'48.499"W	2.08	
15975.00	90.120	90.330	6473.17	9162.25	-231.46	9159.55	40°25'05.274"N	104°22'47.271"W	0.97	
16069.00	90.090	89.480	6473.00	9256.23	-231.30	9253.55	40°25'05.264"N	104°22'46.056"W	0.90	
16164.00	90.150	89.670	6472.80	9351.20	-230.60	9348.55	40°25'05.259"N	104°22'44.828"W	0.21	
16258.00	90.310	86.830	6472.42	9445.07	-227.73	9442.49	40°25'05.276"N	104°22'43.613"W	3.03	
16353.00	90.060	86.810	6472.12	9539.81	-222.46	9537.34	40°25'05.316"N	104°22'42.386"W	0.26	
16447.00	90.180	87.920	6471.92	9633.62	-218.14	9631.24	40°25'05.347"N	104°22'41.171"W	1.19	
16542.00	90.280	87.040	6471.54	9728.43	-213.96	9726.15	40°25'05.377"N	104°22'39.943"W	0.93	
16637.00	90.220	88.400	6471.12	9823.27	-210.18	9821.07	40°25'05.402"N	104°22'38.716"W	1.43	
16731.00	90.030	88.500	6470.92	9917.17	-207.64	9915.04	40°25'05.415"N	104°22'37.501"W	0.23	
16826.00	90.280	87.490	6470.66	10012.04	-204.31	10009.98	40°25'05.436"N	104°22'36.273"W	1.10	



Actual Wellpath Report

WELLS RANCH BB11-674 AWP



REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Slot	SLOT#21 WELLS RANCH BB11-674(765'FNL&235'FWL,SEC.11)
Area	COLORADO	Well	WELLS RANCH BB11-674
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	WELLS RANCH BB11-674 AWB
Facility	SEC.11-T05N-R63W		

WELLPATH DATA (184 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
16920.00	90.280	87.560	6470.20	10105.86	-200.25	10103.89	40°25'05.465"N	104°22'35.058"W	0.07	
17015.00	90.370	86.010	6469.66	10200.59	-194.93	10198.73	40°25'05.505"N	104°22'33.831"W	1.63	
17090.00	90.250	84.410	6469.26	10275.20	-188.66	10273.47	40°25'05.558"N	104°22'32.864"W	2.14	Last BHI MWD Survey
17114.00	90.250	84.410	6469.15	10299.04	-186.33	10297.35	40°25'05.578"N	104°22'32.555"W	0.00	Projection to Bit

HOLE & CASING SECTIONS - Ref Wellbore: WELLS RANCH BB11-674 AWB Ref Wellpath: WELLS RANCH BB11-674 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	1956.00	1926.00	30.00	1955.97	0.01	0.03	1.55	1.61
8.5in Open Hole	1956.00	17114.00	15158.00	1955.97	6469.15	1.55	1.61	-186.33	10297.35



Actual Wellpath Report

WELLS RANCH BB11-674 AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#21 WELLS RANCH BB11-674(765'FNL&235'FWL,SEC.11)
Area	COLORADO	Well	WELLS RANCH BB11-674
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	WELLS RANCH BB11-674 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	10.00	-3740.97	65.37	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	-3740.97	65.37	3302802.43	1393626.45	40°24'31.716"N	104°24'45.396"W	polygon
WELLS RANCH BB11-674 REV-1 BHL(1060'FNL&1'FEL,SEC.12)	6470.15	-188.24	10322.33	3313058.97	1397179.04	40°25'05.556"N	104°22'32.232"W	point
WELLS RANCH BB11-674 Landing Point(1135'FNL&300'FWL,SEC.11)	6497.00	-375.00	70.00	3302807.06	1396992.29	40°25'04.974"N	104°24'44.802"W	point
WELLS RANCH BB11-618 SECTION 11 HARDLINES (460'SETBACK)	6510.00	-3740.97	65.37	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	-3740.97	65.37	3302802.43	1393626.45	40°24'31.716"N	104°24'45.396"W	polygon

WELLPATH COMPOSITION - Ref Wellbore: WELLS RANCH BB11-674 AWB Ref Wellpath: WELLS RANCH BB11-674 AWP				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
0.00	1876.22	Gyrodata standard - Drop gyro or Multi-shot	13.5 SURFACE GYRO SURVEYS <79.93'-1876.22'>	WELLS RANCH BB11-674 AWB
1876.22	17090.00	OWSG MWD rev2 + IFR1 + Multi-Station Correction	BHI 8.5" MONOBORE SURVEYS <195'2-17090'>	WELLS RANCH BB11-674 AWB
17090.00	17114.00	Blind Drilling (std)	Projection to bit	WELLS RANCH BB11-674 AWB



Actual Wellpath Report

WELLS RANCH BB11-674 AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#21 WELLS RANCH BB11-674(765'FNL&235'FWL,SEC.11)
Area	COLORADO	Well	WELLS RANCH BB11-674
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	WELLS RANCH BB11-674 AWB
Facility	SEC.11-T05N-R63W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
1876.00	0.439	82.242	1875.98	Tie to Surface Gyros
17090.00	90.250	84.410	6469.26	Last BHI MWD Survey
17114.00	90.250	84.410	6469.15	Projection to Bit

COMMENTS
<div>Wellpath general comments</div> <div>SURFACE LOCATION: NWNW</div> <div>40.41908N</div> <div>104.41268W</div> <div>API #: 05-123-44966</div>