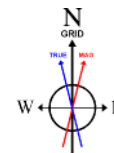
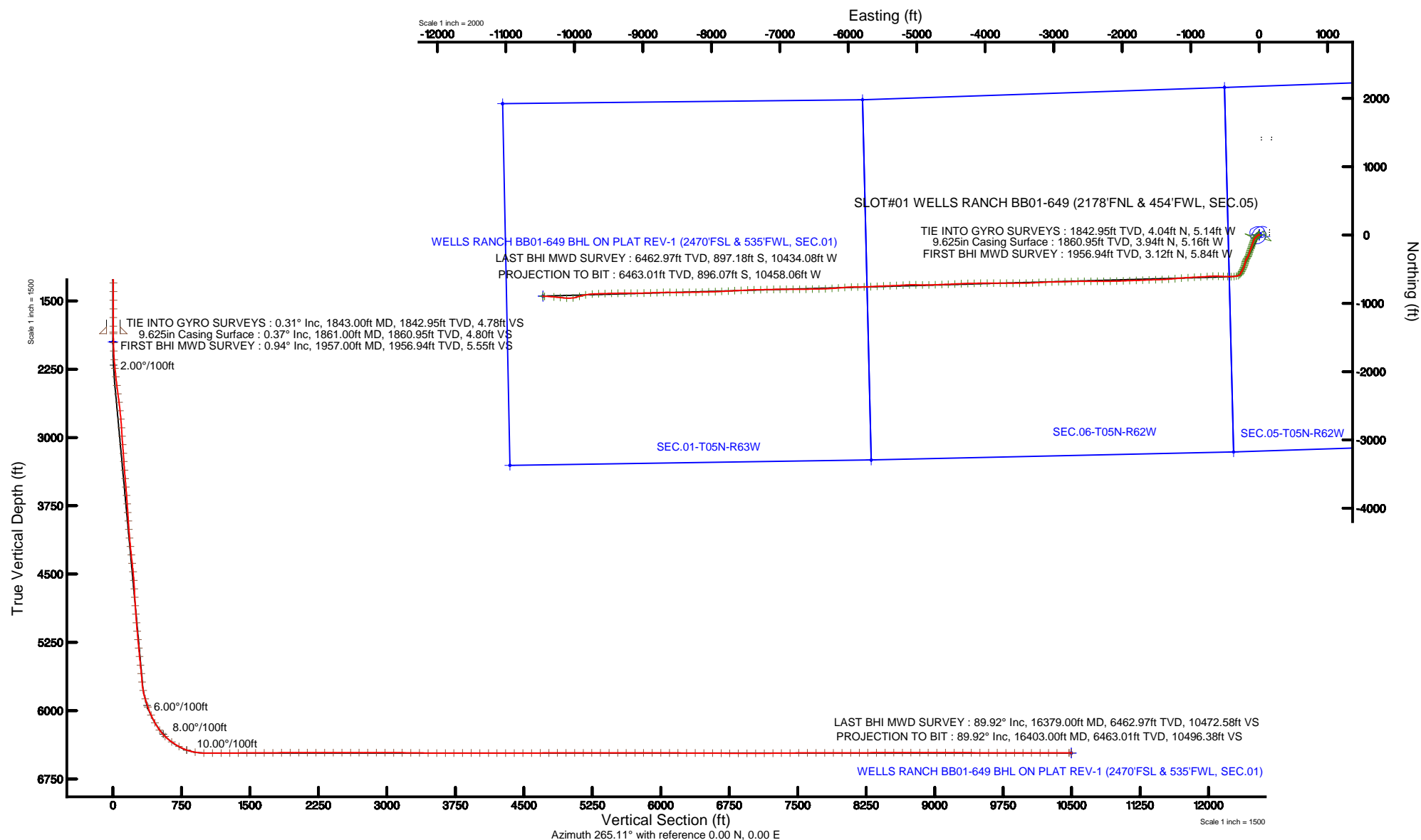


Location:	COLORADO	Slot:	SLOT#01 WELLS RANCH BB01-649 (2178FNL & 454FWL, SEC.05)
Field:	WELD COUNTY (NOBLE NAD 83 GRID)	Well:	WELLS RANCH BB01-649
Facility:	SEC.05-T05N-R62W	Wellbore:	WELLS RANCH BB01-649 PWB
Plot reference wellpath is WELLS RANCH BB01-649 (REV-B.0) PWP		Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	
True vertical depths are referenced to H&P 321 (RKB)		* = Wellpath was transformed from a different geodetic datum	
Measured depths are referenced to H&P 321 (RKB)		North Reference: Grid north	
H&P 321 (RKB) to Mean Sea Level: 4706 feet		Scale: True distance	
Mean Sea Level to Mud line (At Slot: SLOT#01 WELLS RANCH BB01-649 (2178FNL & 454FWL, SEC.05)): 0 feet		Depths are in feet	
Coordinates are in feet referenced to Slot		Created by: adamkant on 2016-04-08	
		Database: WA_DEN_Denver_Deht	



BGGM (1945.0 to 2017.0) Dip: 67.05° Field: 52641.1 nT  
Magnetic North is 8.27 degrees East of True North (at 12/22/2015)  
Grid North is 0.74 degrees East of True North  
To correct azimuth from True to Grid subtract 0.74 degrees  
To correct azimuth from Magnetic to Grid add 7.53 degrees

API # 05-123-41976



REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#01 WELLS RANCH BB01-649 (2178'FNL & 454'FWL, SEC.05)
Area	COLORADO	Well	WELLS RANCH BB01-649
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	WELLS RANCH BB01-649 AWB
Facility	SEC.05-T05N-R62W		

REPORT SETUP INFORMATION			
Projection System	NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	Software System	WellArchitect® 5.0
North Reference	Grid	User	Adamkat
Scale	0.999962	Report Generated	4/8/2016 at 10:29:51 AM
Convergence at slot	0.74° East	Database/Source file	WA_DEN_Denver_Defn/WELLS_RANCH_BB01-649_AWP.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	0.00	0.00	3318702.82	1401532.12	40°25'47.856"N	104°21'18.540"W
Facility Reference Pt			3318702.82	1401532.12	40°25'47.856"N	104°21'18.540"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 321 (RKB) to Facility Vertical Datum	4706.00ft
Horizontal Reference Pt	Slot	H&P 321 (RKB) to Mean Sea Level	4706.00ft
Vertical Reference Pt	H&P 321 (RKB)	H&P 321 (RKB) to Mud Line at Slot (SLOT#01 WELLS RANCH BB01-649 (2178'FNL & 454'FWL, SEC.05))	4706.00ft
MD Reference Pt	H&P 321 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	265.11°

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#01 WELLS RANCH BB01-649 (2178'FNL & 454'FWL, SEC.05)
Area	COLORADO	Well	WELLS RANCH BB01-649
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	WELLS RANCH BB01-649 AWB
Facility	SEC.05-T05N-R62W		

WELLPATH DATA (155 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
1843.00	0.310	177.910	1842.95	4.78	4.04	-5.14	40°25'47.897"N	104°21'18.606"W	0.28	TIE INTO GYRO SURVEYS
1957.00	0.940	228.950	1956.94	5.55	3.12	-5.84	40°25'47.888"N	104°21'18.615"W	0.69	FIRST BHI MWD SURVEY
2051.00	2.800	237.790	2050.88	8.21	1.39	-8.36	40°25'47.871"N	104°21'18.648"W	2.00	
2146.00	4.790	241.890	2145.67	13.92	-1.72	-13.82	40°25'47.841"N	104°21'18.719"W	2.11	
2241.00	6.390	234.280	2240.22	22.11	-6.67	-21.62	40°25'47.793"N	104°21'18.821"W	1.85	
2335.00	7.850	224.730	2333.49	31.49	-14.29	-30.38	40°25'47.719"N	104°21'18.935"W	1.99	
2430.00	9.640	225.160	2427.39	42.53	-24.51	-40.59	40°25'47.619"N	104°21'19.069"W	1.89	
2524.00	9.740	220.730	2520.05	54.25	-36.08	-51.36	40°25'47.506"N	104°21'19.210"W	0.80	
2619.00	10.250	219.680	2613.60	65.92	-48.68	-62.00	40°25'47.383"N	104°21'19.350"W	0.57	
2714.00	10.330	212.950	2707.08	77.08	-62.33	-72.03	40°25'47.249"N	104°21'19.482"W	1.27	
2808.00	10.320	202.080	2799.57	86.07	-77.21	-79.78	40°25'47.103"N	104°21'19.584"W	2.07	
2903.00	10.190	196.580	2893.05	93.00	-93.15	-85.37	40°25'46.947"N	104°21'19.659"W	1.04	
2998.00	10.260	198.170	2986.54	99.39	-109.24	-90.41	40°25'46.788"N	104°21'19.727"W	0.31	
3092.00	10.370	199.950	3079.02	106.22	-125.15	-95.91	40°25'46.632"N	104°21'19.801"W	0.36	
3187.00	10.260	197.680	3172.49	113.06	-141.24	-101.39	40°25'46.473"N	104°21'19.875"W	0.44	
3281.00	10.380	196.050	3264.97	119.30	-157.36	-106.28	40°25'46.315"N	104°21'19.940"W	0.34	
3376.00	10.060	199.290	3358.46	125.76	-173.41	-111.39	40°25'46.157"N	104°21'20.009"W	0.69	
3471.00	10.720	204.190	3451.90	133.45	-189.31	-117.75	40°25'46.001"N	104°21'20.094"W	1.16	
3565.00	10.750	201.400	3544.26	141.58	-205.44	-124.53	40°25'45.842"N	104°21'20.184"W	0.55	
3660.00	10.780	198.420	3637.59	149.02	-222.12	-130.57	40°25'45.678"N	104°21'20.265"W	0.59	
3754.00	10.720	195.600	3729.94	155.56	-238.88	-135.70	40°25'45.513"N	104°21'20.334"W	0.56	
3849.00	10.180	197.630	3823.36	161.87	-255.39	-140.62	40°25'45.350"N	104°21'20.401"W	0.69	
3944.00	10.110	196.160	3916.88	168.07	-271.40	-145.48	40°25'45.193"N	104°21'20.466"W	0.28	
4038.00	10.140	199.460	4009.42	174.45	-287.13	-150.53	40°25'45.038"N	104°21'20.534"W	0.62	
4133.00	10.080	203.490	4102.94	181.85	-302.64	-156.63	40°25'44.886"N	104°21'20.616"W	0.75	
4228.00	10.350	210.440	4196.44	190.73	-317.62	-164.27	40°25'44.739"N	104°21'20.717"W	1.33	
4322.00	10.220	210.110	4288.93	200.40	-332.12	-172.73	40°25'44.596"N	104°21'20.829"W	0.15	
4417.00	10.250	210.590	4382.42	210.14	-346.68	-181.26	40°25'44.454"N	104°21'20.942"W	0.10	
4511.00	10.340	210.370	4474.90	219.86	-361.16	-189.78	40°25'44.312"N	104°21'21.054"W	0.10	
4606.00	10.110	198.500	4568.41	228.10	-376.43	-196.74	40°25'44.162"N	104°21'21.147"W	2.23	
4701.00	10.170	192.850	4661.92	233.96	-392.51	-201.25	40°25'44.003"N	104°21'21.208"W	1.05	
4795.00	10.160	192.550	4754.45	238.97	-408.69	-204.90	40°25'43.844"N	104°21'21.257"W	0.06	
4890.00	10.400	194.680	4847.92	244.36	-425.17	-208.89	40°25'43.682"N	104°21'21.312"W	0.47	
4984.00	10.430	197.430	4940.38	250.43	-441.49	-213.59	40°25'43.521"N	104°21'21.375"W	0.53	
5079.00	10.290	200.830	5033.83	257.38	-457.63	-219.18	40°25'43.362"N	104°21'21.450"W	0.66	
5173.00	10.380	202.850	5126.30	264.96	-473.28	-225.46	40°25'43.208"N	104°21'21.534"W	0.40	
5268.00	10.420	207.030	5219.74	273.49	-488.82	-232.68	40°25'43.056"N	104°21'21.630"W	0.80	
5363.00	10.410	205.190	5313.18	282.33	-504.24	-240.24	40°25'42.904"N	104°21'21.730"W	0.35	
5457.00	10.400	207.240	5405.63	291.10	-519.46	-247.74	40°25'42.755"N	104°21'21.830"W	0.39	
5552.00	10.460	209.340	5499.06	300.51	-534.61	-255.89	40°25'42.606"N	104°21'21.938"W	0.41	
5647.00	10.500	207.540	5592.48	310.00	-549.80	-264.12	40°25'42.457"N	104°21'22.047"W	0.35	
5742.00	10.420	200.020	5685.91	318.26	-565.55	-271.06	40°25'42.303"N	104°21'22.139"W	1.44	
5836.00	13.480	226.350	5777.92	330.40	-581.11	-281.91	40°25'42.150"N	104°21'22.282"W	6.57	
5931.00	17.570	249.360	5869.52	352.86	-593.83	-303.37	40°25'42.027"N	104°21'22.562"W	7.70	
6025.00	19.660	258.760	5958.62	382.24	-601.91	-332.16	40°25'41.951"N	104°21'22.935"W	3.88	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#01 WELLS RANCH BB01-649 (2178'FNL & 454'FWL, SEC.05)
Area	COLORADO	Well	WELLS RANCH BB01-649
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	WELLS RANCH BB01-649 AWB
Facility	SEC.05-T05N-R62W		

WELLPATH DATA (155 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
6120.00	23.710	264.590	6046.89	417.24	-606.83	-366.87	40°25'41.907"N	104°21'23.385"W	4.82	
6215.00	28.820	268.960	6132.06	459.22	-609.05	-408.81	40°25'41.890"N	104°21'23.928"W	5.75	
6310.00	35.730	271.140	6212.34	509.71	-608.91	-459.50	40°25'41.898"N	104°21'24.583"W	7.38	
6404.00	47.020	273.150	6282.77	571.26	-606.47	-521.48	40°25'41.930"N	104°21'25.384"W	12.09	
6499.00	54.350	272.710	6342.92	644.03	-602.73	-594.83	40°25'41.976"N	104°21'26.332"W	7.72	
6593.00	61.270	267.610	6392.99	723.19	-602.64	-674.30	40°25'41.987"N	104°21'27.359"W	8.67	
6687.00	70.290	265.610	6431.51	808.79	-607.76	-759.77	40°25'41.948"N	104°21'28.465"W	9.79	
6782.00	79.930	266.720	6455.89	900.48	-613.87	-851.27	40°25'41.899"N	104°21'29.649"W	10.21	
6877.00	89.830	267.810	6464.36	994.91	-618.37	-945.66	40°25'41.866"N	104°21'30.870"W	10.48	
6971.00	89.930	265.680	6464.56	1088.87	-623.71	-1039.51	40°25'41.826"N	104°21'32.085"W	2.27	
7066.00	90.200	265.630	6464.45	1183.87	-630.91	-1134.23	40°25'41.767"N	104°21'33.311"W	0.29	
7161.00	90.140	264.590	6464.17	1278.86	-639.01	-1228.89	40°25'41.699"N	104°21'34.536"W	1.10	
7255.00	90.200	266.030	6463.89	1372.86	-646.69	-1322.57	40°25'41.635"N	104°21'35.748"W	1.53	
7350.00	90.360	267.890	6463.43	1467.81	-651.73	-1417.43	40°25'41.597"N	104°21'36.976"W	1.97	
7444.00	90.050	268.360	6463.09	1561.67	-654.80	-1511.38	40°25'41.578"N	104°21'38.191"W	0.60	
7539.00	90.330	268.060	6462.78	1656.54	-657.77	-1606.33	40°25'41.561"N	104°21'39.419"W	0.43	
7634.00	90.230	267.830	6462.31	1751.42	-661.18	-1701.27	40°25'41.540"N	104°21'40.647"W	0.26	
7728.00	91.340	267.970	6461.02	1845.30	-664.62	-1795.20	40°25'41.517"N	104°21'41.862"W	1.19	
7823.00	89.890	267.890	6460.00	1940.17	-668.05	-1890.13	40°25'41.496"N	104°21'43.090"W	1.53	
7918.00	89.990	267.970	6460.10	2035.06	-671.49	-1985.06	40°25'41.474"N	104°21'44.318"W	0.13	
8012.00	89.930	268.290	6460.17	2128.93	-674.55	-2079.01	40°25'41.455"N	104°21'45.534"W	0.35	
8107.00	89.940	269.550	6460.28	2223.72	-676.34	-2173.99	40°25'41.450"N	104°21'46.762"W	1.33	
8202.00	89.920	268.810	6460.39	2318.48	-677.70	-2268.98	40°25'41.448"N	104°21'47.990"W	0.78	
8296.00	89.960	270.020	6460.49	2412.21	-678.66	-2362.98	40°25'41.451"N	104°21'49.206"W	1.29	
8391.00	89.890	270.200	6460.62	2506.85	-678.48	-2457.98	40°25'41.464"N	104°21'50.434"W	0.20	
8486.00	89.990	270.240	6460.71	2601.47	-678.12	-2552.98	40°25'41.480"N	104°21'51.662"W	0.11	
8580.00	89.960	268.790	6460.76	2695.19	-678.91	-2646.97	40°25'41.484"N	104°21'52.878"W	1.54	
8675.00	89.930	268.420	6460.85	2790.01	-681.22	-2741.94	40°25'41.473"N	104°21'54.106"W	0.39	
8770.00	90.020	268.790	6460.89	2884.84	-683.54	-2836.91	40°25'41.462"N	104°21'55.335"W	0.40	
8864.00	89.920	268.810	6460.94	2978.64	-685.51	-2930.89	40°25'41.455"N	104°21'56.550"W	0.11	
8959.00	89.960	268.880	6461.04	3073.44	-687.42	-3025.87	40°25'41.448"N	104°21'57.778"W	0.08	
9053.00	89.800	267.180	6461.23	3167.32	-690.65	-3119.81	40°25'41.428"N	104°21'58.994"W	1.82	
9148.00	89.460	266.550	6461.85	3262.27	-695.85	-3214.67	40°25'41.389"N	104°22'00.221"W	0.75	
9243.00	89.120	267.370	6463.02	3357.21	-700.88	-3309.53	40°25'41.351"N	104°22'01.448"W	0.93	
9337.00	89.220	268.320	6464.39	3451.09	-704.42	-3403.45	40°25'41.328"N	104°22'02.663"W	1.02	
9432.00	90.170	269.890	6464.89	3545.86	-705.90	-3498.43	40°25'41.325"N	104°22'03.891"W	1.93	
9527.00	90.170	270.120	6464.61	3640.51	-705.89	-3593.43	40°25'41.337"N	104°22'05.120"W	0.24	
9621.00	90.170	270.040	6464.33	3734.16	-705.76	-3687.43	40°25'41.350"N	104°22'06.335"W	0.09	
9716.00	90.050	270.330	6464.15	3828.78	-705.46	-3782.43	40°25'41.365"N	104°22'07.563"W	0.33	
9811.00	89.950	269.840	6464.15	3923.43	-705.32	-3877.43	40°25'41.379"N	104°22'08.792"W	0.53	
9906.00	89.860	270.180	6464.31	4018.08	-705.30	-3972.43	40°25'41.391"N	104°22'10.020"W	0.37	
10000.00	89.890	269.460	6464.51	4111.76	-705.59	-4066.43	40°25'41.400"N	104°22'11.235"W	0.77	
10095.00	89.920	269.040	6464.67	4206.51	-706.84	-4161.42	40°25'41.399"N	104°22'12.464"W	0.44	
10189.00	89.920	268.230	6464.80	4300.34	-709.08	-4255.39	40°25'41.389"N	104°22'13.679"W	0.86	
10284.00	90.200	267.510	6464.70	4395.22	-712.61	-4350.33	40°25'41.366"N	104°22'14.907"W	0.81	

## REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Slot	SLOT#01 WELLS RANCH BB01-649 (2178'FNL & 454'FWL, SEC.05)
Area	COLORADO	Well	WELLS RANCH BB01-649
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	WELLS RANCH BB01-649 AWB
Facility	SEC.05-T05N-R62W		

## WELLPATH DATA (155 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
10379.00	90.140	267.350	6464.42	4490.15	-716.87	-4445.23	40°25'41.336"N	104°22'16.135"W	0.18	
10473.00	90.140	267.950	6464.19	4584.05	-720.72	-4539.15	40°25'41.310"N	104°22'17.350"W	0.64	
10568.00	90.230	267.830	6463.88	4678.94	-724.22	-4634.09	40°25'41.287"N	104°22'18.578"W	0.16	
10663.00	90.110	266.960	6463.60	4773.86	-728.54	-4728.99	40°25'41.256"N	104°22'19.806"W	0.92	
10757.00	90.140	269.400	6463.40	4867.72	-731.52	-4822.93	40°25'41.239"N	104°22'21.021"W	2.60	
10852.00	90.230	270.750	6463.09	4962.36	-731.40	-4917.93	40°25'41.252"N	104°22'22.249"W	1.42	
10946.00	90.200	271.900	6462.74	5055.81	-729.22	-5011.90	40°25'41.285"N	104°22'23.464"W	1.22	
11041.00	90.170	268.000	6462.43	5150.45	-729.31	-5106.88	40°25'41.296"N	104°22'24.692"W	4.11	
11135.00	89.920	265.840	6462.36	5244.40	-734.36	-5200.74	40°25'41.258"N	104°22'25.907"W	2.31	
11229.00	89.860	267.670	6462.54	5338.36	-739.68	-5294.59	40°25'41.217"N	104°22'27.121"W	1.95	
11324.00	89.920	268.170	6462.72	5433.24	-743.13	-5389.52	40°25'41.195"N	104°22'28.349"W	0.53	
11419.00	89.920	268.090	6462.85	5528.11	-746.23	-5484.47	40°25'41.176"N	104°22'29.577"W	0.08	
11513.00	89.890	266.780	6463.01	5622.03	-750.43	-5578.38	40°25'41.147"N	104°22'30.792"W	1.39	
11608.00	89.950	266.610	6463.14	5716.99	-755.91	-5673.22	40°25'41.104"N	104°22'32.019"W	0.19	
11702.00	89.920	268.510	6463.25	5810.90	-759.91	-5767.13	40°25'41.077"N	104°22'33.234"W	2.02	
11797.00	89.980	270.040	6463.33	5905.65	-761.11	-5862.12	40°25'41.077"N	104°22'34.462"W	1.61	
11891.00	89.950	268.810	6463.39	5999.38	-762.06	-5956.11	40°25'41.079"N	104°22'35.678"W	1.31	
11986.00	89.830	265.420	6463.57	6094.31	-766.84	-6050.98	40°25'41.044"N	104°22'36.905"W	3.57	
12080.00	89.920	264.920	6463.77	6188.31	-774.75	-6144.64	40°25'40.977"N	104°22'38.118"W	0.54	
12175.00	89.980	266.550	6463.86	6283.30	-781.82	-6239.38	40°25'40.919"N	104°22'39.344"W	1.72	
12270.00	89.950	267.520	6463.91	6378.25	-786.73	-6334.25	40°25'40.883"N	104°22'40.571"W	1.02	
12364.00	89.580	268.420	6464.30	6472.13	-790.06	-6428.19	40°25'40.861"N	104°22'41.786"W	1.04	
12459.00	89.400	269.120	6465.15	6566.93	-792.10	-6523.16	40°25'40.853"N	104°22'43.014"W	0.76	
12554.00	89.490	269.330	6466.07	6661.68	-793.38	-6618.15	40°25'40.852"N	104°22'44.243"W	0.24	
12648.00	89.430	269.280	6466.95	6755.43	-794.53	-6712.14	40°25'40.853"N	104°22'45.458"W	0.08	
12743.00	89.370	270.170	6467.95	6850.11	-794.98	-6807.13	40°25'40.860"N	104°22'46.687"W	0.94	
12838.00	90.080	270.100	6468.40	6944.75	-794.76	-6902.13	40°25'40.874"N	104°22'47.915"W	0.75	
12932.00	90.540	269.580	6467.89	7038.42	-795.02	-6996.13	40°25'40.883"N	104°22'49.130"W	0.74	
13027.00	90.510	268.700	6467.02	7133.18	-796.45	-7091.11	40°25'40.881"N	104°22'50.359"W	0.93	
13122.00	90.470	268.700	6466.21	7227.99	-798.60	-7186.08	40°25'40.872"N	104°22'51.587"W	0.04	
13216.00	90.660	269.320	6465.28	7321.77	-800.22	-7280.06	40°25'40.867"N	104°22'52.802"W	0.69	
13311.00	90.540	268.040	6464.29	7416.58	-802.41	-7375.03	40°25'40.857"N	104°22'54.031"W	1.35	
13406.00	90.570	267.310	6463.37	7511.48	-806.27	-7469.95	40°25'40.831"N	104°22'55.258"W	0.77	
13501.00	90.010	267.590	6462.89	7606.40	-810.49	-7564.85	40°25'40.801"N	104°22'56.486"W	0.66	
13595.00	90.100	266.920	6462.80	7700.33	-815.00	-7658.74	40°25'40.769"N	104°22'57.701"W	0.72	
13690.00	90.140	266.420	6462.60	7795.30	-820.51	-7753.58	40°25'40.726"N	104°22'58.928"W	0.53	
13784.00	90.200	267.310	6462.32	7889.25	-825.65	-7847.44	40°25'40.687"N	104°23'00.142"W	0.95	
13879.00	90.100	267.980	6462.07	7984.16	-829.56	-7942.36	40°25'40.660"N	104°23'01.370"W	0.71	
13974.00	90.200	267.820	6461.82	8079.05	-833.04	-8037.29	40°25'40.637"N	104°23'02.598"W	0.20	
14069.00	90.100	269.040	6461.57	8173.88	-835.64	-8132.26	40°25'40.623"N	104°23'03.827"W	1.29	
14163.00	90.130	269.430	6461.39	8267.64	-836.90	-8226.25	40°25'40.623"N	104°23'05.042"W	0.42	
14258.00	90.260	268.940	6461.06	8362.40	-838.25	-8321.24	40°25'40.621"N	104°23'06.271"W	0.53	
14353.00	90.200	269.350	6460.68	8457.16	-839.67	-8416.23	40°25'40.619"N	104°23'07.499"W	0.44	
14447.00	90.160	269.760	6460.39	8550.88	-840.40	-8510.22	40°25'40.623"N	104°23'08.714"W	0.44	
14542.00	90.230	271.190	6460.06	8645.46	-839.61	-8605.22	40°25'40.643"N	104°23'09.943"W	1.51	

### REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Slot	SLOT#01 WELLS RANCH BB01-649 (2178'FNL & 454'FWL, SEC.05)
Area	COLORADO	Well	WELLS RANCH BB01-649
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	WELLS RANCH BB01-649 AWB
Facility	SEC.05-T05N-R62W		

### WELLPATH DATA (155 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
14637.00	89.460	268.450	6460.32	8740.13	-839.91	-8700.21	40°25'40.652"N	104°23'11.171"W	3.00	
14732.00	90.010	267.340	6460.76	8835.02	-843.40	-8795.14	40°25'40.629"N	104°23'12.399"W	1.30	
14826.00	89.800	268.370	6460.91	8928.91	-846.91	-8889.07	40°25'40.606"N	104°23'13.614"W	1.12	
14921.00	90.130	268.790	6460.97	9023.73	-849.27	-8984.04	40°25'40.595"N	104°23'14.842"W	0.56	
15016.00	90.040	269.290	6460.83	9118.51	-850.86	-9079.03	40°25'40.591"N	104°23'16.071"W	0.53	
15111.00	89.860	270.150	6460.91	9213.20	-851.32	-9174.03	40°25'40.598"N	104°23'17.299"W	0.92	
15205.00	89.920	269.560	6461.09	9306.88	-851.56	-9268.03	40°25'40.607"N	104°23'18.514"W	0.63	
15300.00	89.830	268.930	6461.30	9401.63	-852.81	-9363.02	40°25'40.606"N	104°23'19.743"W	0.67	
15394.00	90.070	268.790	6461.38	9495.43	-854.68	-9457.00	40°25'40.600"N	104°23'20.958"W	0.30	
15489.00	89.790	268.220	6461.50	9590.26	-857.16	-9551.96	40°25'40.587"N	104°23'22.187"W	0.67	
15583.00	90.040	268.900	6461.64	9684.09	-859.52	-9645.93	40°25'40.575"N	104°23'23.402"W	0.77	
15678.00	89.890	265.820	6461.70	9779.01	-863.90	-9740.82	40°25'40.544"N	104°23'24.630"W	3.25	
15773.00	89.890	259.440	6461.88	9873.87	-876.08	-9834.99	40°25'40.435"N	104°23'25.849"W	6.72	
15867.00	89.980	252.690	6461.99	9966.65	-898.70	-9926.17	40°25'40.223"N	104°23'27.032"W	7.18	
15962.00	89.920	260.990	6462.07	10060.58	-920.31	-10018.59	40°25'40.021"N	104°23'28.230"W	8.74	
16057.00	89.980	274.150	6462.15	10155.28	-924.33	-10113.30	40°25'39.993"N	104°23'29.455"W	13.85	
16151.00	89.820	276.860	6462.32	10247.73	-915.32	-10206.86	40°25'40.093"N	104°23'30.664"W	2.89	
16243.00	89.790	274.770	6462.63	10338.12	-906.00	-10298.38	40°25'40.197"N	104°23'31.845"W	2.27	
16379.00	89.920	272.660	6462.97	10472.58	-897.18	-10434.08	40°25'40.300"N	104°23'33.599"W	1.55	LAST BHI MWD SURVEY
16403.00	89.920	272.660	6463.01	10496.38	-896.07	-10458.06	40°25'40.314"N	104°23'33.908"W	0.00	PROJECTION TO BIT

### HOLE & CASING SECTIONS - Ref Wellbore: WELLS RANCH BB01-649 AWP Ref Wellpath: WELLS RANCH BB01-649 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	0.00	1861.00	1861.00	0.00	1860.95	0.00	0.00	3.94	-5.16
8.5in Open Hole	1861.00	16403.00	14542.00	1860.95	6463.01	3.94	-5.16	-896.07	-10458.06

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#01 WELLS RANCH BB01-649 (2178'FNL & 454'FWL, SEC.05)
Area	COLORADO	Well	WELLS RANCH BB01-649
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	WELLS RANCH BB01-649 AWP
Facility	SEC.05-T05N-R62W		

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SEC.01-T05N-R63W	0.00	0.00	0.00	3318702.82	1401532.12	40°25'47.856"N	104°21'18.540"W	polygon
SEC.01-T05N-R63W NW CORNER	0.00	1921.99	-11049.39	3307653.87	1403454.03	40°26'08.232"N	104°23'41.100"W	point
SEC.01-T05N-R63W SW CORNER	0.00	-3370.56	-10941.65	3307761.60	1398161.70	40°25'15.924"N	104°23'40.560"W	point
SEC.04-T05N-R62W	0.00	0.00	0.00	3318702.82	1401532.12	40°25'47.856"N	104°21'18.540"W	polygon
SEC.04-T05N-R62W NE CORNER	0.00	2525.31	10031.36	3328733.77	1404057.33	40°26'11.508"N	104°19'08.400"W	point
SEC.04-T05N-R62W SE CORNER	0.00	-2832.97	10125.01	3328827.41	1398699.26	40°25'18.552"N	104°19'08.112"W	point
SEC.05-T05N-R62W	0.00	0.00	0.00	3318702.82	1401532.12	40°25'47.856"N	104°21'18.540"W	polygon
SEC.05-T05N-R62W NE CORNER	0.00	2346.38	4760.90	3323463.52	1403878.40	40°26'10.428"N	104°20'16.584"W	point
SEC.05-T05N-R62W NW CORNER	0.00	2161.31	-506.75	3318196.09	1403693.35	40°26'09.276"N	104°21'24.732"W	point
SEC.05-T05N-R62W SE CORNER	0.00	-3008.14	4864.49	3323567.11	1398524.10	40°25'17.508"N	104°20'16.152"W	point
SEC.05-T05N-R62W SW CORNER	0.00	-3174.62	-373.91	3318328.92	1398357.63	40°25'16.536"N	104°21'23.904"W	point
SEC.06-T05N-R62W	0.00	0.00	0.00	3318702.82	1401532.12	40°25'47.856"N	104°21'18.540"W	polygon
SEC.06-T05N-R62W NW CORNER	0.00	1980.80	-5791.21	3312911.84	1403512.85	40°26'08.160"N	104°22'33.096"W	point
SEC.06-T05N-R62W SW CORNER	0.00	-3293.30	-5665.87	3313037.18	1398238.96	40°25'16.032"N	104°22'32.340"W	point
WELLS RANCH BB01-649 KOP	1950.00	0.00	0.00	3318702.82	1401532.12	40°25'47.856"N	104°21'18.540"W	circle
WELLS RANCH BB01-649 BHL ON PLAT REV-1 (2470'FSL & 535'FWL, SEC.01)	6464.00	-894.28	-10457.43	3308245.80	1400637.88	40°25'40.332"N	104°23'33.900"W	point
WELLS RANCH BB01-649 DRILLING CORRIDOR (35' LEFT/RIGHT & 8' UP/DOWN)	6464.00	-894.28	-10457.43	3308245.80	1400637.88	40°25'40.332"N	104°23'33.900"W	polygon

WELLPATH COMPOSITION - Ref Wellbore: WELLS RANCH BB01-649 AWP				Ref Wellpath: WELLS RANCH BB01-649 AWP	
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment		Wellbore
0.00	1843.00	BHI Generic gyro - continuous (Standard)	GYRO SURFACE SURVEYS 13 1/2" HOLE <0 - 1843>		WELLS RANCH BB01-6
1843.00	16379.00	Custom BHI AutoTrak Curve (IFR1, Short) (Rockies 0.03Gt model)	BHI MWD AUTOTRAK CURVE (IFR, SHORT) MONOBORE 8 1/2" HOLE <1957 - 16379>		WELLS RANCH BB01-6
16379.00	16403.00	Blind Drilling (std)	Projection to bit		WELLS RANCH BB01-6

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#01 WELLS RANCH BB01-649 (2178'FNL & 454'FWL, SEC.05)
Area	COLORADO	Well	WELLS RANCH BB01-649
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	WELLS RANCH BB01-649 AWB
Facility	SEC.05-T05N-R62W		

WELLPATH COMMENTS					
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment	
1843.00	0.310	177.910	1842.95	TIE INTO GYRO SURVEYS	
1957.00	0.940	228.950	1956.94	FIRST BHI MWD SURVEY	
16379.00	89.920	272.660	6462.97	LAST BHI MWD SURVEY	
16403.00	89.920	272.660	6463.01	PROJECTION TO BIT	