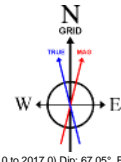


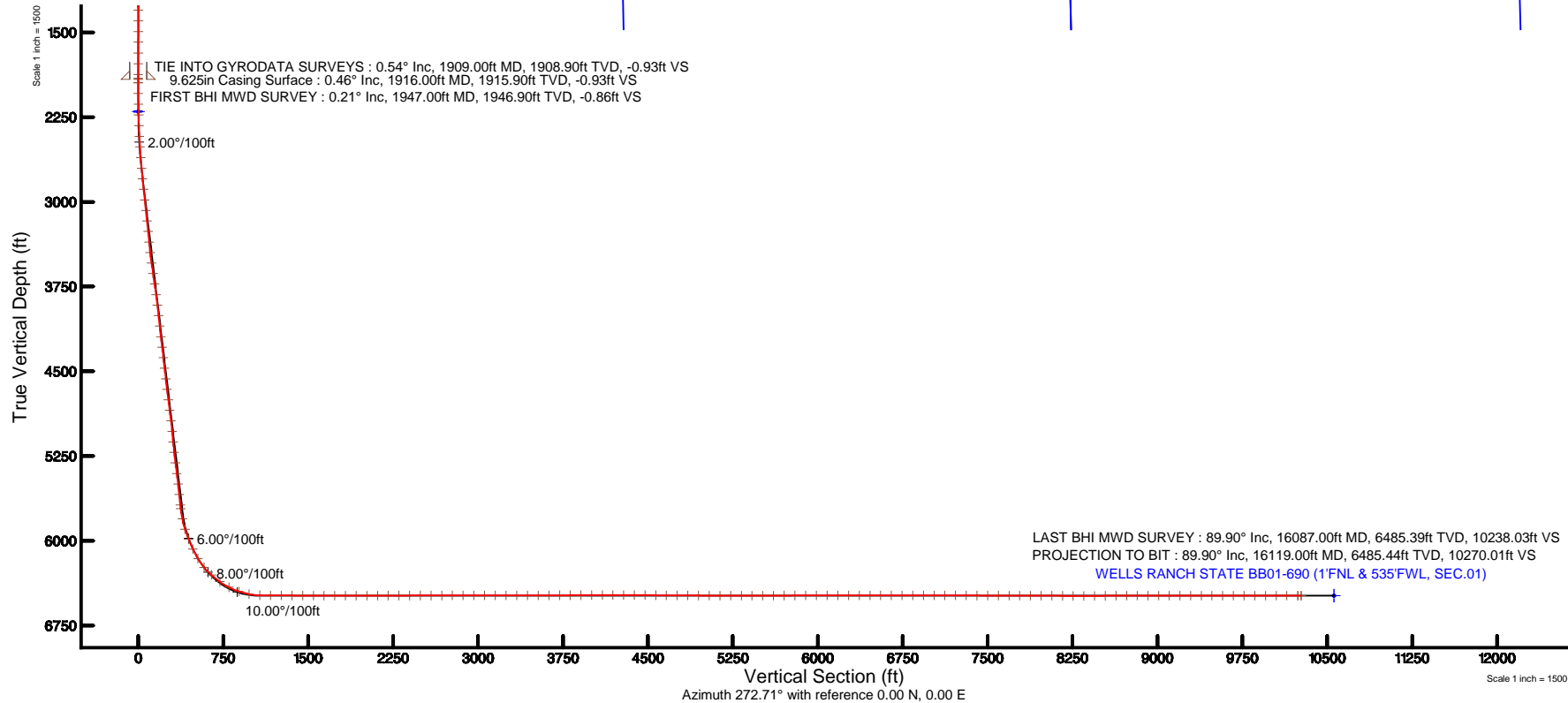
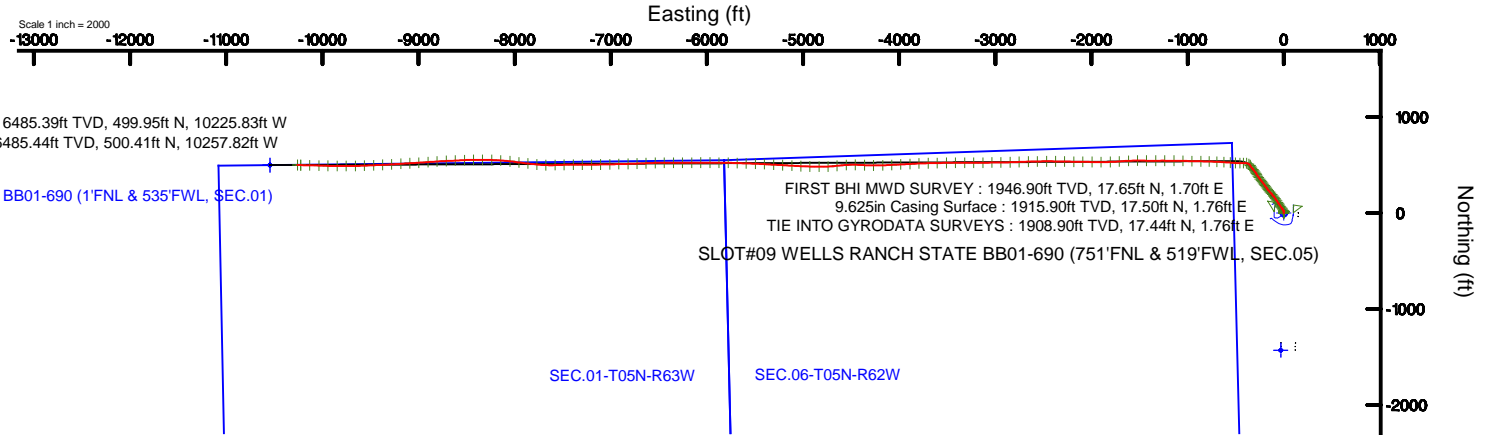
NOBLE ENERGY, INC

Location: COLORADO Slot: SLOT#09 WELLS RANCH STATE BB01-690 (751'FNL & 519'FWL, SEC.05)
Field: WELD COUNTY (NOBLE NAD 83 GRID) Well: WELLS RANCH STATE BB01-690
Facility: SEC.05-T05N-R62W Wellbore: WELLS RANCH STATE BB01-690 PWB

Plot reference wellpath is WELLS RANCH STATE BB01-690 (REV-A.1) 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: 4732 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#09 WELLS RANCH STATE BB01-690 (751'FNL & 519'FWL, SEC.05)): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: adamkat on 2016-04-08
	Database: WA_DEN_Denver_Defn



BGGM (1945.0 to 2017.0) Dip: 67.05° Field: 52618.2 nT
Magnetic North is 8.25 degrees East of True North (at 3/10/2016)
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 7.51 degrees



REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#09 WELLS RANCH STATE BB01-690 (751'FNL & 519'FWL, SEC.05)
Area	COLORADO	Well	WELLS RANCH STATE BB01-690
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	WELLS RANCH STATE BB01-690 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 2:22:14 PM
Convergence at slot	0.74° East	Database/Source file	WA_DEN_Denver_Defn/WELLS_RANCH_STATE_BB01-690_AWP.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	1428.64	31.67	3318734.48	1402960.70	40°26'01.968"N	104°21'17.892"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	4732.00ft
Horizontal Reference Pt	Slot	H&P 321 (RKB) to Mean Sea Level	4732.00ft
Vertical Reference Pt	H&P 321 (RKB)	H&P 321 (RKB) to Mud Line at Slot (SLOT#09 WELLS RANCH STATE BB01-690 (751'FNL & 519'FWL, SEC.05))	4732.00ft
MD Reference Pt	H&P 321 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	272.71°

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#09 WELLS RANCH STATE BB01-690 (751'FNL & 519'FWL, SEC.05)
Area	COLORADO	Well	WELLS RANCH STATE BB01-690
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	WELLS RANCH STATE BB01-690 AWB
Facility	SEC.05-T05N-R62W		

WELLPATH DATA (153 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
1909.00	0.540	1.990	1908.90	-0.93	17.44	1.76	40°26'02.140"N	104°21'17.866"W	0.46	TIE INTO GYRODATA SURVEYS
1947.00	0.210	294.490	1946.90	-0.86	17.65	1.70	40°26'02.142"N	104°21'17.867"W	1.31	FIRST BHI MWD SURVEY
2042.00	0.330	271.560	2041.90	-0.43	17.73	1.27	40°26'02.143"N	104°21'17.873"W	0.17	
2136.00	1.300	313.720	2135.89	0.65	18.47	0.23	40°26'02.150"N	104°21'17.886"W	1.15	
2231.00	2.600	325.400	2230.83	2.77	20.99	-1.77	40°26'02.176"N	104°21'17.911"W	1.42	
2326.00	4.010	339.390	2325.67	5.39	25.87	-4.17	40°26'02.224"N	104°21'17.942"W	1.70	
2421.00	5.230	331.280	2420.36	8.96	32.78	-7.42	40°26'02.293"N	104°21'17.982"W	1.45	
2515.00	6.470	327.760	2513.87	14.23	41.02	-12.30	40°26'02.375"N	104°21'18.044"W	1.37	
2610.00	7.380	323.850	2608.18	21.13	50.47	-18.76	40°26'02.469"N	104°21'18.126"W	1.08	
2705.00	7.840	326.130	2702.34	28.82	60.78	-25.97	40°26'02.572"N	104°21'18.218"W	0.58	
2799.00	8.750	326.600	2795.35	36.85	72.07	-33.48	40°26'02.684"N	104°21'18.313"W	0.97	
2894.00	9.990	324.030	2889.09	46.26	84.77	-42.29	40°26'02.811"N	104°21'18.425"W	1.38	
2989.00	10.310	323.970	2982.60	56.73	98.31	-52.13	40°26'02.946"N	104°21'18.550"W	0.34	
3083.00	10.120	329.740	3075.11	66.49	112.25	-61.24	40°26'03.085"N	104°21'18.665"W	1.11	
3178.00	10.110	324.300	3168.64	76.21	126.23	-70.32	40°26'03.224"N	104°21'18.780"W	1.01	
3273.00	9.290	323.620	3262.28	86.23	139.18	-79.73	40°26'03.353"N	104°21'18.900"W	0.87	
3367.00	8.980	328.030	3355.09	95.19	151.51	-88.11	40°26'03.476"N	104°21'19.006"W	0.81	
3462.00	10.120	323.620	3448.77	104.67	164.52	-96.99	40°26'03.606"N	104°21'19.119"W	1.43	
3557.00	11.940	319.460	3542.01	116.67	178.71	-108.33	40°26'03.748"N	104°21'19.263"W	2.09	
3651.00	11.290	318.890	3634.09	129.71	193.03	-120.70	40°26'03.891"N	104°21'19.421"W	0.70	
3746.00	11.470	318.140	3727.22	142.77	207.07	-133.12	40°26'04.031"N	104°21'19.579"W	0.25	
3841.00	10.940	319.100	3820.41	155.62	220.92	-145.32	40°26'04.169"N	104°21'19.734"W	0.59	
3935.00	10.110	319.330	3912.83	167.44	233.92	-156.54	40°26'04.299"N	104°21'19.877"W	0.88	
4030.00	9.880	324.890	4006.39	178.17	246.91	-166.66	40°26'04.429"N	104°21'20.006"W	1.04	
4125.00	9.730	322.830	4100.00	188.31	259.98	-176.20	40°26'04.559"N	104°21'20.127"W	0.40	
4220.00	10.210	324.280	4193.56	198.69	273.21	-185.97	40°26'04.691"N	104°21'20.251"W	0.57	
4314.00	11.070	323.680	4285.95	209.56	287.24	-196.17	40°26'04.831"N	104°21'20.381"W	0.92	
4409.00	11.000	326.370	4379.19	220.67	302.14	-206.60	40°26'04.980"N	104°21'20.513"W	0.55	
4504.00	9.660	320.090	4472.65	231.44	315.80	-216.73	40°26'05.116"N	104°21'20.642"W	1.84	
4599.00	9.740	321.370	4566.29	242.15	328.19	-226.86	40°26'05.240"N	104°21'20.771"W	0.24	
4693.00	10.860	323.260	4658.78	253.03	341.50	-237.12	40°26'05.373"N	104°21'20.901"W	1.24	
4788.00	11.470	322.720	4751.98	264.79	356.19	-248.20	40°26'05.519"N	104°21'21.042"W	0.65	
4882.00	11.400	323.500	4844.11	276.67	371.09	-259.38	40°26'05.668"N	104°21'21.184"W	0.18	
4977.00	10.680	325.160	4937.36	287.97	385.86	-270.00	40°26'05.815"N	104°21'21.319"W	0.83	
5072.00	9.790	327.810	5030.84	297.96	399.93	-279.33	40°26'05.955"N	104°21'21.437"W	1.06	
5167.00	9.690	328.300	5124.47	307.10	413.56	-287.83	40°26'06.091"N	104°21'21.545"W	0.14	
5261.00	9.980	324.850	5217.09	316.57	426.95	-296.68	40°26'06.224"N	104°21'21.657"W	0.70	
5356.00	10.260	322.310	5310.62	327.10	440.38	-306.59	40°26'06.358"N	104°21'21.783"W	0.55	
5451.00	10.490	317.110	5404.06	338.77	453.41	-317.65	40°26'06.489"N	104°21'21.924"W	1.01	
5545.00	10.410	323.410	5496.51	350.26	466.50	-328.54	40°26'06.619"N	104°21'22.062"W	1.22	
5640.00	9.640	324.590	5590.06	360.61	479.87	-338.26	40°26'06.753"N	104°21'22.186"W	0.84	
5735.00	11.610	327.440	5683.42	371.04	494.42	-348.02	40°26'06.898"N	104°21'22.310"W	2.15	
5766.00	10.410	326.420	5713.85	374.50	499.38	-351.24	40°26'06.947"N	104°21'22.351"W	3.92	
5859.00	12.660	305.140	5805.01	388.08	512.25	-364.23	40°26'07.076"N	104°21'22.516"W	5.13	
5954.00	18.470	276.930	5896.61	411.93	520.08	-387.74	40°26'07.156"N	104°21'22.819"W	9.88	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#09 WELLS RANCH STATE BB01-690 (751'FNL & 519'FWL, SEC.05)
Area	COLORADO	Well	WELLS RANCH STATE BB01-690
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	WELLS RANCH STATE BB01-690 AWP
Facility	SEC.05-T05N-R62W		

WELLPATH DATA (153 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
6049.00	21.850	266.490	5985.81	444.53	520.81	-420.34	40°26'07.168"N	104°21'23.240"W	5.18	
6143.00	24.570	272.130	6072.20	481.48	520.47	-457.34	40°26'07.169"N	104°21'23.719"W	3.73	
6238.00	31.030	273.840	6156.20	525.75	522.84	-501.56	40°26'07.198"N	104°21'24.290"W	6.85	
6333.00	39.200	273.920	6233.84	580.34	526.54	-556.03	40°26'07.241"N	104°21'24.994"W	8.60	
6427.00	48.590	273.630	6301.50	645.43	530.81	-620.99	40°26'07.292"N	104°21'25.833"W	9.99	
6522.00	53.470	272.610	6361.23	719.27	534.81	-694.72	40°26'07.341"N	104°21'26.786"W	5.20	
6617.00	63.210	271.590	6411.04	800.02	537.73	-775.43	40°26'07.380"N	104°21'27.829"W	10.29	
6712.00	71.520	271.500	6447.57	887.61	540.09	-863.00	40°26'07.414"N	104°21'28.961"W	8.75	
6806.00	79.100	271.130	6471.39	978.45	542.17	-953.84	40°26'07.447"N	104°21'30.136"W	8.07	
6901.00	88.480	271.580	6481.65	1072.76	544.40	-1048.15	40°26'07.481"N	104°21'31.355"W	9.88	
6996.00	89.780	270.380	6483.09	1167.70	546.03	-1143.12	40°26'07.509"N	104°21'32.583"W	1.86	
7090.00	89.830	270.060	6483.41	1261.61	546.39	-1237.12	40°26'07.524"N	104°21'33.798"W	0.34	
7185.00	89.740	269.820	6483.77	1356.50	546.29	-1332.12	40°26'07.535"N	104°21'35.027"W	0.27	
7280.00	89.830	270.270	6484.13	1451.39	546.36	-1427.12	40°26'07.548"N	104°21'36.255"W	0.48	
7375.00	89.620	270.580	6484.58	1546.31	547.07	-1522.12	40°26'07.567"N	104°21'37.483"W	0.39	
7469.00	90.060	267.100	6484.85	1640.08	545.17	-1616.08	40°26'07.560"N	104°21'38.699"W	3.73	
7564.00	90.030	264.810	6484.77	1734.42	538.47	-1710.84	40°26'07.506"N	104°21'39.925"W	2.41	
7659.00	90.120	268.730	6484.65	1828.89	533.11	-1805.67	40°26'07.465"N	104°21'41.152"W	4.13	
7753.00	90.030	270.040	6484.52	1922.73	532.11	-1899.66	40°26'07.467"N	104°21'42.368"W	1.40	
7848.00	90.090	270.750	6484.42	2017.65	532.76	-1994.66	40°26'07.486"N	104°21'43.596"W	0.75	
7943.00	90.120	271.080	6484.25	2112.60	534.28	-2089.65	40°26'07.513"N	104°21'44.824"W	0.35	
8037.00	90.120	270.860	6484.05	2206.56	535.87	-2183.63	40°26'07.540"N	104°21'46.039"W	0.23	
8132.00	90.000	271.110	6483.95	2301.52	537.50	-2278.62	40°26'07.569"N	104°21'47.267"W	0.29	
8226.00	90.150	271.070	6483.83	2395.48	539.29	-2372.60	40°26'07.598"N	104°21'48.482"W	0.17	
8321.00	90.060	269.940	6483.66	2490.40	540.13	-2467.60	40°26'07.619"N	104°21'49.710"W	1.19	
8416.00	89.940	268.840	6483.66	2585.24	539.12	-2562.59	40°26'07.621"N	104°21'50.939"W	1.16	
8511.00	90.090	268.300	6483.63	2679.99	536.74	-2657.56	40°26'07.609"N	104°21'52.167"W	0.59	
8605.00	90.120	267.290	6483.46	2773.65	533.13	-2751.49	40°26'07.585"N	104°21'53.383"W	1.07	
8700.00	90.030	268.630	6483.33	2868.32	529.75	-2846.43	40°26'07.564"N	104°21'54.611"W	1.41	
8795.00	90.000	269.530	6483.31	2963.13	528.22	-2941.41	40°26'07.561"N	104°21'55.839"W	0.95	
8890.00	90.090	268.850	6483.23	3057.95	526.88	-3036.40	40°26'07.560"N	104°21'57.068"W	0.72	
8984.00	90.180	269.470	6483.01	3151.76	525.50	-3130.39	40°26'07.558"N	104°21'58.284"W	0.67	
9079.00	90.150	269.820	6482.74	3246.63	524.91	-3225.39	40°26'07.564"N	104°21'59.512"W	0.37	
9174.00	90.120	269.740	6482.52	3341.50	524.55	-3320.39	40°26'07.572"N	104°22'00.741"W	0.09	
9268.00	90.150	269.420	6482.29	3435.36	523.86	-3414.38	40°26'07.577"N	104°22'01.956"W	0.34	
9363.00	90.090	270.050	6482.10	3530.23	523.42	-3509.38	40°26'07.585"N	104°22'03.185"W	0.67	
9458.00	90.150	268.510	6481.90	3625.06	522.22	-3604.37	40°26'07.585"N	104°22'04.413"W	1.62	
9553.00	90.150	268.930	6481.65	3719.83	520.10	-3699.35	40°26'07.576"N	104°22'05.642"W	0.44	
9647.00	90.270	267.500	6481.30	3813.53	517.17	-3793.30	40°26'07.559"N	104°22'06.857"W	1.53	
9742.00	90.120	266.820	6480.98	3908.09	512.47	-3888.18	40°26'07.525"N	104°22'08.085"W	0.73	
9837.00	90.210	267.050	6480.71	4002.60	507.39	-3983.05	40°26'07.486"N	104°22'09.312"W	0.26	
9932.00	90.030	267.090	6480.51	4097.14	502.53	-4077.92	40°26'07.450"N	104°22'10.540"W	0.19	
10026.00	90.030	267.890	6480.46	4190.75	498.42	-4171.83	40°26'07.422"N	104°22'11.755"W	0.85	
10121.00	90.060	269.760	6480.38	4285.53	496.47	-4266.81	40°26'07.414"N	104°22'12.983"W	1.97	
10216.00	89.870	273.920	6480.44	4380.50	499.52	-4361.74	40°26'07.456"N	104°22'14.210"W	4.38	

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Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	WELLS RANCH STATE BB01-690 AWP
Facility	SEC.05-T05N-R62W		

WELLPATH DATA (153 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
10311.00	89.720	270.880	6480.78	4475.48	503.50	-4456.64	40°26'07.508"N	104°22'15.437"W	3.20	
10405.00	89.560	266.520	6481.37	4569.23	501.36	-4550.59	40°26'07.498"N	104°22'16.652"W	4.64	
10500.00	89.720	263.870	6481.97	4663.40	493.41	-4645.25	40°26'07.432"N	104°22'17.878"W	2.79	
10595.00	89.630	266.830	6482.51	4757.61	485.71	-4739.92	40°26'07.367"N	104°22'19.103"W	3.12	
10689.00	89.630	271.220	6483.12	4851.39	484.11	-4833.88	40°26'07.363"N	104°22'20.318"W	4.67	
10784.00	89.630	271.410	6483.73	4946.36	486.29	-4928.86	40°26'07.397"N	104°22'21.546"W	0.20	
10879.00	89.500	272.420	6484.45	5041.34	489.46	-5023.80	40°26'07.440"N	104°22'22.773"W	1.07	
10973.00	90.000	273.350	6484.86	5135.34	494.19	-5117.68	40°26'07.499"N	104°22'23.987"W	1.12	
11068.00	90.060	273.500	6484.81	5230.33	499.87	-5212.51	40°26'07.567"N	104°22'25.212"W	0.17	
11163.00	90.180	273.150	6484.61	5325.33	505.38	-5307.35	40°26'07.633"N	104°22'26.437"W	0.39	
11257.00	90.030	273.100	6484.44	5419.32	510.50	-5401.21	40°26'07.695"N	104°22'27.650"W	0.17	
11352.00	90.060	272.050	6484.37	5514.32	514.77	-5496.11	40°26'07.750"N	104°22'28.877"W	1.11	
11447.00	90.120	272.020	6484.22	5609.32	518.14	-5591.05	40°26'07.795"N	104°22'30.104"W	0.07	
11541.00	90.150	271.860	6483.99	5703.31	521.33	-5685.00	40°26'07.838"N	104°22'31.318"W	0.17	
11636.00	90.180	271.360	6483.72	5798.29	523.99	-5779.96	40°26'07.876"N	104°22'32.546"W	0.53	
11731.00	90.180	270.800	6483.42	5893.25	525.79	-5874.94	40°26'07.906"N	104°22'33.774"W	0.59	
11826.00	90.120	269.750	6483.17	5988.16	526.24	-5969.94	40°26'07.922"N	104°22'35.002"W	1.11	
11921.00	90.090	269.910	6483.00	6083.04	525.96	-6064.94	40°26'07.931"N	104°22'36.230"W	0.17	
12015.00	90.060	269.770	6482.88	6176.92	525.70	-6158.94	40°26'07.941"N	104°22'37.446"W	0.15	
12110.00	90.240	270.150	6482.63	6271.81	525.63	-6253.94	40°26'07.952"N	104°22'38.674"W	0.44	
12205.00	89.810	270.010	6482.59	6366.71	525.76	-6348.94	40°26'07.965"N	104°22'39.903"W	0.48	
12300.00	89.840	269.330	6482.88	6461.58	525.22	-6443.93	40°26'07.971"N	104°22'41.131"W	0.72	
12394.00	89.900	268.310	6483.09	6555.36	523.28	-6537.91	40°26'07.964"N	104°22'42.347"W	1.09	
12489.00	89.900	267.700	6483.26	6650.04	519.97	-6632.85	40°26'07.943"N	104°22'43.575"W	0.64	
12583.00	90.090	267.800	6483.26	6743.68	516.28	-6726.78	40°26'07.919"N	104°22'44.790"W	0.23	
12678.00	90.120	268.340	6483.09	6838.37	513.08	-6821.73	40°26'07.899"N	104°22'46.019"W	0.57	
12773.00	90.060	268.590	6482.94	6933.11	510.54	-6916.69	40°26'07.885"N	104°22'47.247"W	0.27	
12868.00	89.900	269.370	6482.97	7027.91	508.85	-7011.68	40°26'07.881"N	104°22'48.476"W	0.84	
12962.00	89.940	267.780	6483.10	7121.66	506.51	-7105.65	40°26'07.869"N	104°22'49.691"W	1.69	
13057.00	89.970	268.730	6483.18	7216.37	503.62	-7200.60	40°26'07.853"N	104°22'50.920"W	1.00	
13152.00	89.780	271.440	6483.39	7311.26	503.76	-7295.59	40°26'07.866"N	104°22'52.148"W	2.86	
13247.00	89.810	270.000	6483.73	7406.20	504.95	-7390.58	40°26'07.889"N	104°22'53.376"W	1.52	
13341.00	89.840	268.090	6484.01	7500.00	503.38	-7484.56	40°26'07.886"N	104°22'54.592"W	2.03	
13436.00	90.000	268.160	6484.15	7594.70	500.28	-7579.51	40°26'07.867"N	104°22'55.820"W	0.18	
13531.00	89.750	271.700	6484.35	7689.57	500.16	-7674.50	40°26'07.877"N	104°22'57.048"W	3.74	
13625.00	89.840	275.950	6484.69	7783.53	506.43	-7768.26	40°26'07.951"N	104°22'58.260"W	4.52	
13720.00	89.780	276.940	6485.01	7878.33	517.09	-7862.66	40°26'08.068"N	104°22'59.479"W	1.04	
13814.00	89.720	277.360	6485.42	7972.05	528.79	-7955.93	40°26'08.195"N	104°23'00.683"W	0.45	
13909.00	89.720	276.300	6485.88	8066.80	540.09	-8050.25	40°26'08.319"N	104°23'01.901"W	1.12	
14004.00	89.720	274.040	6486.34	8161.70	548.65	-8144.86	40°26'08.415"N	104°23'03.123"W	2.38	
14098.00	89.750	271.860	6486.78	8255.70	553.49	-8238.73	40°26'08.475"N	104°23'04.336"W	2.32	
14193.00	89.840	270.280	6487.12	8350.65	555.26	-8333.71	40°26'08.504"N	104°23'05.564"W	1.67	
14288.00	90.370	269.820	6486.94	8445.55	555.34	-8428.71	40°26'08.516"N	104°23'06.792"W	0.74	
14382.00	90.460	266.680	6486.26	8539.25	552.47	-8522.65	40°26'08.500"N	104°23'08.007"W	3.34	
14477.00	90.000	267.170	6485.88	8633.77	547.38	-8617.51	40°26'08.461"N	104°23'09.235"W	0.71	

REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Slot	SLOT#09 WELLS RANCH STATE BB01-690 (751'FNL & 519'FWL, SEC.05)
Area	COLORADO	Well	WELLS RANCH STATE BB01-690
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	WELLS RANCH STATE BB01-690 AWB
Facility	SEC.05-T05N-R62W		

WELLPATH DATA (153 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
14572.00	90.060	267.690	6485.83	8728.36	543.12	-8712.42	40°26'08.431"N	104°23'10.463"W	0.55	
14666.00	90.090	266.160	6485.71	8821.88	538.08	-8806.28	40°26'08.393"N	104°23'11.677"W	1.63	
14761.00	89.940	266.190	6485.68	8916.26	531.74	-8901.07	40°26'08.342"N	104°23'12.904"W	0.16	
14856.00	90.000	266.320	6485.73	9010.66	525.53	-8995.86	40°26'08.292"N	104°23'14.131"W	0.15	
14950.00	90.120	266.790	6485.64	9104.11	519.89	-9089.69	40°26'08.248"N	104°23'15.345"W	0.52	
15045.00	90.120	265.580	6485.44	9198.50	513.56	-9184.48	40°26'08.197"N	104°23'16.572"W	1.27	
15140.00	90.060	267.220	6485.29	9292.92	507.60	-9279.29	40°26'08.150"N	104°23'17.799"W	1.73	
15235.00	89.970	267.030	6485.26	9387.47	502.83	-9374.17	40°26'08.115"N	104°23'19.026"W	0.22	
15329.00	90.150	267.710	6485.16	9481.06	498.52	-9468.07	40°26'08.084"N	104°23'20.241"W	0.75	
15424.00	90.030	267.880	6485.02	9575.71	494.87	-9563.00	40°26'08.060"N	104°23'21.469"W	0.22	
15519.00	89.970	268.450	6485.02	9670.41	491.82	-9657.95	40°26'08.041"N	104°23'22.698"W	0.60	
15614.00	90.030	270.310	6485.02	9765.24	490.80	-9752.94	40°26'08.043"N	104°23'23.926"W	1.96	
15708.00	89.970	270.410	6485.02	9859.16	491.39	-9846.94	40°26'08.060"N	104°23'25.142"W	0.12	
15803.00	90.000	271.300	6485.04	9954.11	492.80	-9941.93	40°26'08.086"N	104°23'26.370"W	0.94	
15898.00	89.940	272.360	6485.09	10049.10	495.84	-10036.88	40°26'08.128"N	104°23'27.597"W	1.12	
15992.00	89.900	270.900	6485.22	10143.08	498.51	-10130.84	40°26'08.166"N	104°23'28.812"W	1.55	
16087.00	89.900	270.830	6485.39	10238.03	499.95	-10225.83	40°26'08.192"N	104°23'30.040"W	0.07	LAST BHI MWD SURVEY
16119.00	89.900	270.830	6485.44	10270.01	500.41	-10257.82	40°26'08.200"N	104°23'30.453"W	0.00	PROJECTION TO BIT

HOLE & CASING SECTIONS - Ref Wellbore: WELLS RANCH STATE BB01-690 AWB Ref Wellpath: WELLS RANCH STATE BB01-690 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	1916.00	1916.00	0.00	1915.90	0.00	0.00	17.50	1.76
8.5in Open Hole	1926.00	16119.00	14193.00	1925.90	6485.44	17.57	1.75	500.41	-10257.82

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SEC.01-T05N-R63W	26.00	-1428.64	-31.67	3318702.82	1401532.12	40°25'47.856"N	104°21'18.540"W	polygon
SEC.06-T05N-R62W	26.00	-1428.64	-31.67	3318702.82	1401532.12	40°25'47.856"N	104°21'18.540"W	polygon
WELLS RANCH STATE BB01-690 KOP (35' RADII)	2200.00	0.00	0.00	3318734.48	1402960.70	40°26'01.968"N	104°21'17.892"W	circle
WELLS RANCH STATE BB01-690 (1'FNL & 535'FWL, SEC.01)	6485.00	500.00	-10546.60	3308188.30	1403460.68	40°26'08.232"N	104°23'34.188"W	point
WELLS RANCH STATE BB01-690 DRILLING COORIDOR (35'L/R & 8'U/D)	6485.00	500.00	-10546.60	3308188.30	1403460.68	40°26'08.232"N	104°23'34.188"W	polygon

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#09 WELLS RANCH STATE BB01-690 (751'FNL & 519'FWL, SEC.05)
Area	COLORADO	Well	WELLS RANCH STATE BB01-690
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	WELLS RANCH STATE BB01-690 AWB
Facility	SEC.05-T05N-R62W		

WELLPATH COMPOSITION - Ref Wellbore: WELLS RANCH STATE BB01-690 AWB				Ref Wellpath: WELLS RANCH STATE BB01-690 AWP
Start MD	End MD	Positional Uncertainty Model	Log Name/Comment	Well
[ft]	[ft]			
0.00	1909.00	Gyrodatta standard - Drop gyro or Multi-shot	GYRODATA SURFACE SURVEYS 13 1/2" HOLE <82 - 1909>	WELLS RANCH STATE
1909.00	5766.00	Custom OnTrak (MagCorr) (Rockies 0.03Gt model)	BHI MWD ONTRAK (MAGCORR) INTERMEDIATE SURVEYS 8 3/4" HOLE <1947 - 5766>	WELLS RANCH STATE
5766.00	16087.00	Custom BHI OnTrak (IFR1, Standard Rotating) (Rockies 0.03Gt model)	BHI MWD ONTRAK (IFR) SURVEYS <5766 - 15992>	WELLS RANCH STATE
16087.00	16119.00	Blind Drilling (std)	Projection to bit	WELLS RANCH STATE

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#09 WELLS RANCH STATE BB01-690 (751'FNL & 519'FWL, SEC.05)
Area	COLORADO	Well	WELLS RANCH STATE BB01-690
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	WELLS RANCH STATE BB01-690 AWB
Facility	SEC.05-T05N-R62W		

WELLPATH COMMENTS					
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment	
1909.00	0.540	1.990	1908.90	TIE INTO GYRODATA SURVEYS	
1947.00	0.210	294.490	1946.90	FIRST BHI MWD SURVEY	
16087.00	89.900	270.830	6485.39	LAST BHI MWD SURVEY	
16119.00	89.900	270.830	6485.44	PROJECTION TO BIT	