

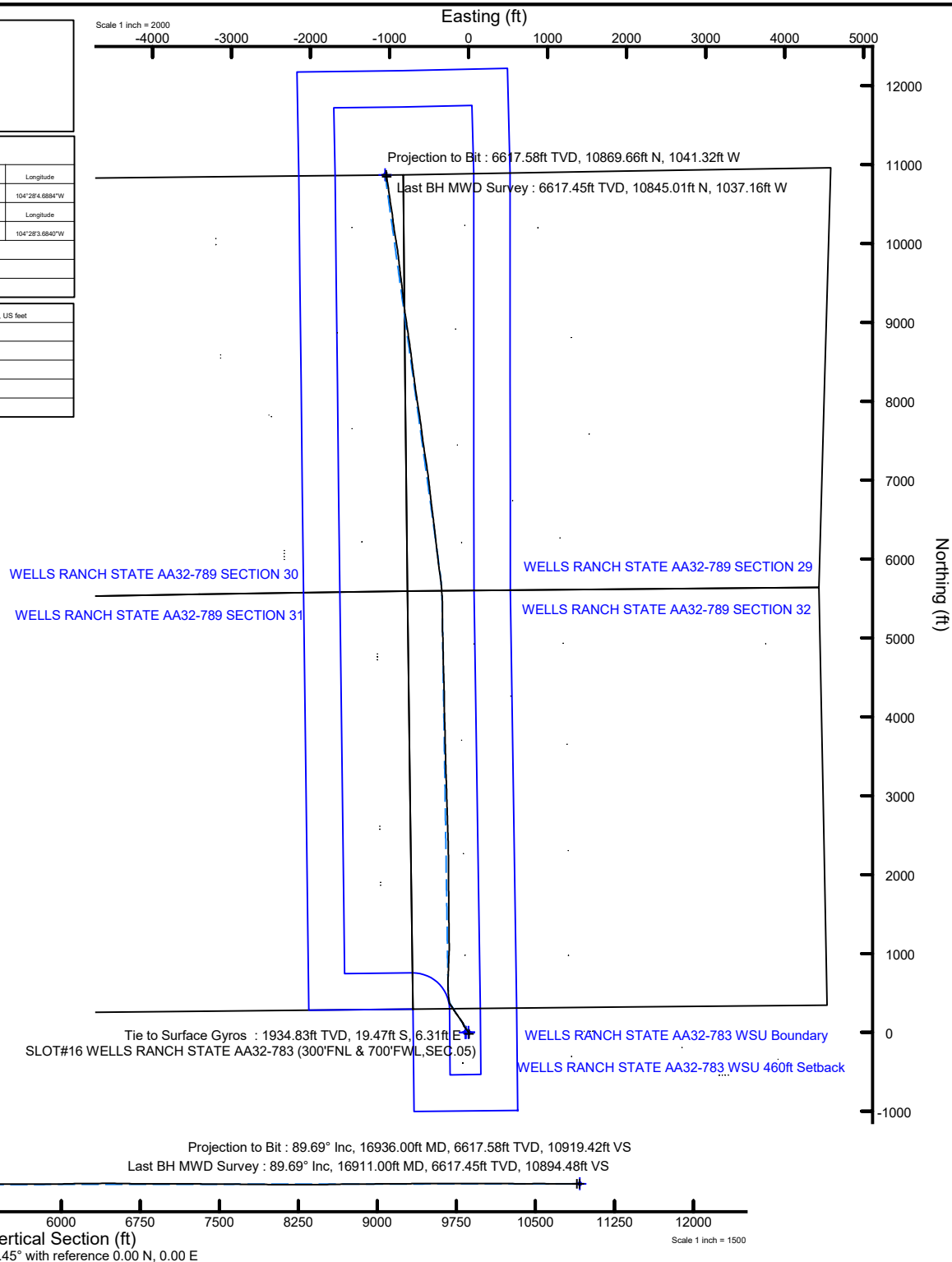
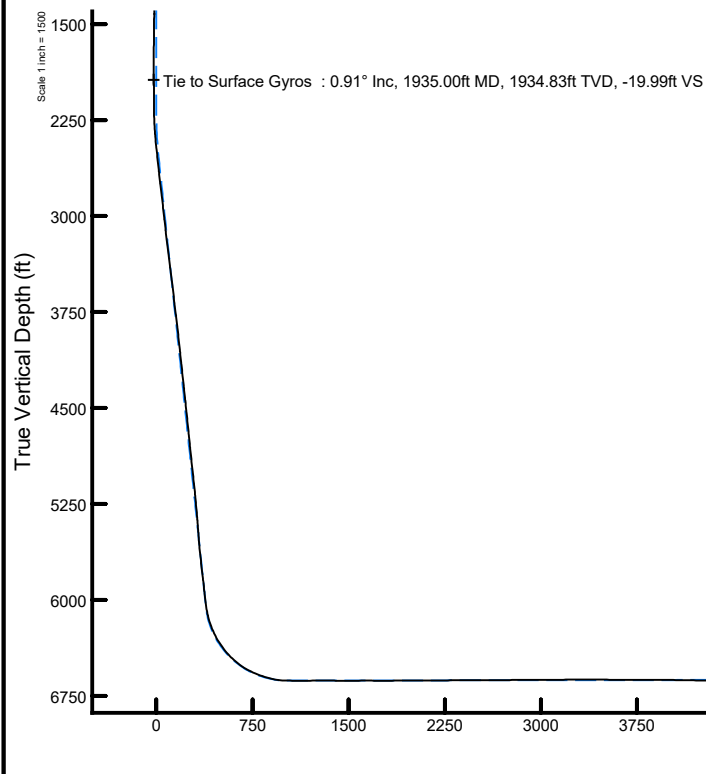
# NOBLE ENERGY, INC

Location: COLORADO Slot: SLOT#16 WELLS RANCH STATE AA32-783 (300'FNL & 700'FWL, SEC.05)  
Field: WELD COUNTY (NOBLE NAD 83 GRID) Well: WELLS RANCH STATE AA32-783  
Facility: SEC.05-T05N-R63W Wellbore: WELLS RANCH STATE AA32-783 AWB

## Location Information

Facility Name			Grid East (US R)	Grid North (US R)	Latitude	Longitude
SEC.05-T05N-R63W			3287261.420	1402554.910	40°26'1.7736"N	104°28'4.6884"W
Slot	Local N (R)	Local E (R)	Grid East (US R)	Grid North (US R)	Latitude	Longitude
SLOT#16 WELLS RANCH STATE AA32-783 (300'FNL & 700'FWL, SEC.05)	388.50	73.15	3287354.567	1402943.399	40°26'5.6040"N	104°28'3.6840"W
RIG (307) (RKB) to Ground level (At Slot: SLOT#16 WELLS RANCH STATE AA32-783 (300'FNL & 700'FWL, SEC.05))					4703R	
Mean Sea Level to Ground level (At Slot: SLOT#16 WELLS RANCH STATE AA32-783 (300'FNL & 700'FWL, SEC.05))					0R	
RIG (307) (RKB) to Mean Sea Level					4703R	

Plot reference wellpath is WELLS RANCH STATE AA32-783 AWP	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (601), US feet
True vertical depths are referenced to RIG (307) (RKB)	North Reference: Grid north
Reference wellpath measured depths are referenced to RIG (307) (RKB)	Scale: True distance
RIG (307) (RKB) to Mean Sea Level: 4703 feet	Coordinates are in feet referenced to Slot
Mean Sea Level to Ground level (At Slot: SLOT#16 WELLS RANCH STATE AA32-783 (300'FNL & 700'FWL, SEC.05)): 0 feet	Depths are in feet
Offset wellpath MDs are referenced to each path's default MD datum	Created by: manajohj on 2020-01-07; Database: WA_NOBLE



REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Well	WELLS RANCH STATE AA32-783
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.05-T05N-R63W	Wellbore	WELLS RANCH STATE AA32-783 AWB
Slot	SLOT#16 WELLS RANCH STATE AA32-783 (300'FNL & 700'FWL,SEC.05)		

REPORT SETUP INFORMATION			
Projection System	NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	Software System	WellArchitect® 6.0
North Reference	Grid	User	Manajohj
Scale	0.999962	Report Generated	1/7/2020 at 1:50:18 PM
Convergence at slot	0.67° East	Database	WA_NOBLE

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	388.50	73.15	3287354.57	1402943.40	40°26'5.6040"N	104°28'3.6840"W
Facility Reference Pt			3287281.42	1402554.91	40°26'1.7736"N	104°28'4.6884"W
Field Reference Pt			3000000.00	4454105.15	48°46'34.3150"N	105°30'0.0000"W

WELLPATH DATUM			
Calculation method	Minimum curvature	RIG (30') (RKB) to Facility Vertical Datum	4703.00ft
Horizontal Reference Pt	Slot	RIG (30') (RKB) to Mean Sea Level	4703.00ft
Vertical Reference Pt	RIG (30') (RKB)	RIG (30') (RKB) to Ground Level at Slot (SLOT#16 WELLS RANCH STATE AA32-783 (300'FNL & 700'FWL,SEC.05))	4703.00ft
MD Reference Pt	RIG (30') (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	354.45°

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Well	WELLS RANCH STATE AA32-783
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.05-T05N-R63W	Wellbore	WELLS RANCH STATE AA32-783 AWB
Slot	SLOT#16 WELLS RANCH STATE AA32-783 (300'FNL & 700'FWL,SEC.05)		

WELLPATH DATA (172 stations)														
MD (ft)	Inclination [°]	Azimuth [°]	TVD (ft)	TVDSS (ft)	Vert Sect (ft)	North (ft)	East (ft)	Latitude	Longitude	DLS [°/100ft]	Toolface [°]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
0.00	0.000	121.110	0.00	-4703.00	0.00	0.00	0.00	40°26'5.6040"N	104°28'3.6840"W	0.00	0.00	0.00	0.00	
81.00	0.370	121.110	81.00	-4622.00	-0.16	-0.14	0.22	40°26'5.6026"N	104°28'3.6811"W	0.46	75.78	0.46	0.00	
175.00	0.640	162.810	175.00	-4528.00	-0.85	-0.79	0.64	40°26'5.5961"N	104°28'3.6759"W	0.47	-132.52	0.29	44.36	
266.00	0.540	149.420	265.99	-4437.01	-1.74	-1.65	1.01	40°26'5.5876"N	104°28'3.6712"W	0.19	179.52	-0.11	-14.71	
329.00	0.090	151.820	328.99	-4374.01	-2.05	-1.95	1.18	40°26'5.5846"N	104°28'3.6690"W	0.71	29.29	-0.71	3.81	
424.00	0.400	174.790	423.99	-4279.01	-2.45	-2.34	1.25	40°26'5.5807"N	104°28'3.6682"W	0.34	-47.72	0.33	24.18	
519.00	0.660	153.710	518.99	-4184.01	-3.30	-3.16	1.52	40°26'5.5726"N	104°28'3.6648"W	0.34	-155.38	0.27	-22.19	
613.00	0.530	147.080	612.98	-4090.02	-4.19	-4.01	2.00	40°26'5.5641"N	104°28'3.6588"W	0.16	-20.41	-0.14	-7.05	
708.00	0.990	137.430	707.97	-3995.03	-5.23	-4.99	2.79	40°26'5.5544"N	104°28'3.6487"W	0.50	174.42	0.48	-10.16	
803.00	0.840	138.430	802.96	-3900.04	-6.45	-6.11	3.81	40°26'5.5432"N	104°28'3.6357"W	0.16	52.07	-0.16	1.05	
898.00	1.350	161.110	897.94	-3805.06	-8.10	-7.69	4.63	40°26'5.5275"N	104°28'3.6253"W	0.69	172.61	0.54	23.87	
993.00	0.720	167.680	992.93	-3710.07	-9.79	-9.33	5.12	40°26'5.5112"N	104°28'3.6192"W	0.67	-108.30	-0.66	6.92	
1087.00	0.690	141.550	1086.92	-3616.08	-10.85	-10.36	5.60	40°26'5.5010"N	104°28'3.6132"W	0.34	3.38	-0.03	-27.80	
1182.00	0.890	142.310	1181.91	-3521.09	-11.95	-11.39	6.41	40°26'5.4907"N	104°28'3.6029"W	0.21	38.28	0.21	0.80	
1277.00	1.190	152.990	1276.89	-3426.11	-13.50	-12.85	7.30	40°26'5.4762"N	104°28'3.5915"W	0.37	101.82	0.32	11.24	
1371.00	1.240	184.870	1370.87	-3332.13	-15.40	-14.73	7.66	40°26'5.4575"N	104°28'3.5871"W	0.71	166.97	0.05	33.91	
1466.00	1.010	187.910	1465.86	-3237.14	-17.23	-16.59	7.46	40°26'5.4393"N	104°28'3.5900"W	0.25	-175.48	-0.24	3.20	
1560.00	0.410	181.240	1559.85	-3143.15	-18.37	-17.74	7.34	40°26'5.4278"N	104°28'3.5918"W	0.64	63.30	-0.64	-7.10	
1655.00	0.860	219.330	1654.84	-3048.16	-19.21	-18.63	6.88	40°26'5.4191"N	104°28'3.5979"W	0.63	-158.54	0.47	40.09	
1750.00	0.650	211.840	1749.83	-2953.17	-20.15	-19.64	6.14	40°26'5.4092"N	104°28'3.6075"W	0.24	-167.20	-0.22	-7.88	
1845.00	0.170	102.540	1844.83	-2858.17	-20.62	-20.13	6.00	40°26'5.4044"N	104°28'3.6095"W	0.76	-98.04	-0.51	-115.05	
1935.00	0.910	15.160	1934.83	-2768.17	-19.99	-19.47	6.31	40°26'5.4109"N	104°28'3.6053"W	1.02	-29.31	0.82	-97.09	Tie to Surface Gyros
1991.00	1.310	5.730	1990.82	-2712.18	-18.95	-18.41	6.49	40°26'5.4214"N	104°28'3.6028"W	0.78	176.83	0.71	-16.84	
2085.00	0.170	27.760	2084.81	-2618.19	-17.78	-17.21	6.67	40°26'5.4332"N	104°28'3.6004"W	1.23	-171.70	-1.21	23.44	
2180.00	0.110	228.960	2179.81	-2523.19	-17.71	-17.15	6.66	40°26'5.4338"N	104°28'3.6004"W	0.29	110.35	-0.06	-167.16	
2275.00	2.960	337.310	2274.77	-2428.23	-15.42	-14.94	5.65	40°26'5.4557"N	104°28'3.6132"W	3.15	-13.54	3.00	114.05	
2370.00	5.390	331.150	2369.51	-2333.49	-8.98	-8.77	2.55	40°26'5.5170"N	104°28'3.6524"W	2.60	-9.17	2.56	-6.48	
2464.00	6.710	329.330	2462.98	-2240.02	0.05	-0.18	-2.38	40°26'5.6025"N	104°28'3.7149"W	1.42	-99.79	1.40	-1.94	
2559.00	6.700	328.820	2557.33	-2145.67	10.07	9.33	-8.08	40°26'5.6972"N	104°28'3.7871"W	0.06	-62.47	-0.01	-0.54	
2653.00	6.820	326.940	2650.68	-2052.32	19.97	18.70	-13.97	40°26'5.7904"N	104°28'3.8618"W	0.27	-102.33	0.13	-2.00	
2748.00	6.790	325.720	2745.01	-1957.99	29.89	28.07	-20.21	40°26'5.8837"N	104°28'3.9411"W	0.16	-7.69	-0.03	-1.28	
2843.00	8.920	323.870	2839.11	-1863.89	41.16	38.66	-27.71	40°26'5.9892"N	104°28'4.0366"W	2.26	169.89	2.24	-1.95	
2937.00	7.050	326.600	2932.20	-1770.80	52.54	49.36	-35.19	40°26'6.0958"N	104°28'4.1316"W	2.03	-55.13	-1.99	2.90	
3032.00	7.670	320.400	3026.42	-1676.58	62.94	59.12	-42.44	40°26'6.1930"N	104°28'4.2239"W	1.06	80.66	0.65	-6.53	
3126.00	7.800	325.080	3119.56	-1583.44	73.70	69.18	-50.09	40°26'6.2933"N	104°28'4.3213"W	0.68	136.55	0.14	4.98	
3221.00	7.240	329.450	3213.75	-1489.25	84.74	79.62	-56.82	40°26'6.3973"N	104°28'4.4068"W	0.84	87.87	-0.59	4.60	
3316.00	7.330	336.590	3307.98	-1395.02	95.94	90.34	-62.27	40°26'6.5038"N	104°28'4.4757"W	0.96	103.14	0.09	7.52	
3410.00	7.150	346.370	3401.23	-1301.77	107.44	101.53	-66.03	40°26'6.6148"N	104°28'4.5226"W	1.32	-58.10	-0.19	10.40	
3505.00	7.590	341.360	3495.45	-1207.55	119.40	113.22	-69.43	40°26'6.7307"N	104°28'4.5648"W	0.82	-95.25	0.46	-5.27	
3600.00	7.760	322.880	3589.61	-1113.39	130.98	124.28	-75.31	40°26'6.8406"N	104°28'4.6391"W	2.59	90.37	0.18	-19.45	
3694.00	7.760	323.630	3682.75	-1020.25	141.84	134.45	-82.90	40°26'6.9420"N	104°28'4.7358"W	0.11	88.85	0.00	0.80	
3789.00	7.780	326.760	3776.88	-926.12	153.04	144.99	-90.23	40°26'7.0470"N	104°28'4.8290"W	0.45	-100.10	0.02	3.29	
3884.00	7.710	323.220	3871.02	-831.98	164.18	155.47	-97.57	40°26'7.1514"N	104°28'4.9223"W	0.51	144.21	-0.07	-3.73	
3978.00	6.990	327.610	3964.24	-738.76	174.68	165.35	-104.41	40°26'7.2498"N	104°28'5.0092"W	0.97	-77.97	-0.77	4.67	
4073.00	7.100	323.970	4058.53	-644.47	184.89	174.98	-110.96	40°26'7.3457"N	104°28'5.0925"W	0.48	155.81	0.12	-3.83	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Well	WELLS RANCH STATE AA32-783
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.05-T05N-R63W	Wellbore	WELLS RANCH STATE AA32-783 AWB
Slot	SLOT#16 WELLS RANCH STATE AA32-783 (300'FNL & 700'FWL,SEC.05)		

WELLPATH DATA (172 stations)														
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	TVDSS [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Tooface [°]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
4167.00	6.960	324.490	4151.82	-551.18	194.83	184.32	-117.68	40°26'7.4387°N	104°28'5.1781°W	0.16	134.10	-0.15	0.55	
4262.00	6.850	325.450	4246.13	-456.87	204.78	193.67	-124.24	40°26'7.5319°N	104°28'5.2614°W	0.17	17.66	-0.12	1.01	
4357.00	7.260	326.480	4340.41	-362.59	215.03	203.34	-130.77	40°26'7.6282°N	104°28'5.3444°W	0.45	-115.53	0.43	1.08	
4452.00	7.000	321.570	4434.68	-268.32	225.20	212.88	-137.68	40°26'7.7233°N	104°28'5.4323°W	0.70	106.79	-0.27	-5.17	
4546.00	6.830	327.240	4527.99	-175.01	234.98	222.07	-144.27	40°26'7.8148°N	104°28'5.5161°W	0.75	-118.27	-0.18	6.03	
4641.00	6.600	323.260	4622.34	-80.66	244.67	231.19	-150.59	40°26'7.9057°N	104°28'5.5965°W	0.55	104.58	-0.24	-4.19	
4735.00	6.510	326.710	4715.73	12.73	254.01	239.97	-156.74	40°26'7.9932°N	104°28'5.6748°W	0.43	-52.01	-0.10	3.67	
4830.00	6.840	323.290	4810.09	107.09	263.62	249.01	-163.08	40°26'8.0832°N	104°28'5.7554°W	0.54	72.34	0.35	-3.60	
4925.00	6.980	326.610	4904.40	201.40	273.56	258.37	-169.64	40°26'8.1764°N	104°28'5.8388°W	0.45	-131.07	0.15	3.49	
5019.00	6.900	325.840	4997.71	294.71	283.57	267.81	-175.95	40°26'8.2704°N	104°28'5.9190°W	0.13	93.64	-0.09	-0.82	
5114.00	6.890	327.550	5092.02	389.02	293.66	277.34	-182.22	40°26'8.3653°N	104°28'5.9985°W	0.22	-168.47	-0.01	1.80	
5209.00	6.440	326.730	5186.38	483.38	303.46	286.60	-188.20	40°26'8.4575°N	104°28'6.0745°W	0.48	-172.67	-0.47	-0.86	
5304.00	5.700	325.770	5280.84	577.84	312.31	294.96	-193.77	40°26'8.5407°N	104°28'6.1453°W	0.79	177.55	-0.78	-1.01	
5398.00	5.080	326.070	5374.43	671.43	320.07	302.27	-198.72	40°26'8.6135°N	104°28'6.2082°W	0.66	136.29	-0.66	0.32	
5493.00	4.900	328.120	5469.07	766.07	327.41	309.20	-203.21	40°26'8.6826°N	104°28'6.2653°W	0.27	6.54	-0.19	2.16	
5588.00	5.110	328.390	5563.71	860.71	334.84	316.25	-207.57	40°26'8.7527°N	104°28'6.3206°W	0.22	-1.72	0.22	0.28	
5682.00	7.020	327.920	5657.18	954.18	343.74	324.68	-212.82	40°26'8.8366°N	104°28'6.3871°W	2.03	-78.89	2.03	-0.50	
5777.00	7.110	324.680	5751.45	1048.45	354.04	334.40	-219.30	40°26'8.9334°N	104°28'6.4695°W	0.43	58.65	0.09	-3.41	
5872.00	7.390	328.090	5845.70	1142.70	364.62	344.38	-225.93	40°26'9.0328°N	104°28'6.5537°W	0.54	-1.72	0.29	3.59	
5966.00	7.750	328.010	5938.88	1235.88	375.71	354.89	-232.48	40°26'9.1374°N	104°28'6.6369°W	0.38	-158.89	0.38	-0.09	
6061.00	7.520	327.330	6033.03	1330.03	386.98	365.56	-239.23	40°26'9.2435°N	104°28'6.7226°W	0.26	46.67	-0.24	-0.72	
6156.00	13.260	349.810	6126.47	1423.47	403.39	381.53	-244.52	40°26'9.4020°N	104°28'6.7886°W	7.29	7.76	6.04	23.66	
6250.00	21.310	352.810	6216.16	1513.16	431.26	409.13	-248.57	40°26'9.6752°N	104°28'6.8368°W	8.61	6.21	8.56	3.19	
6345.00	29.810	354.660	6301.78	1598.78	472.20	449.85	-252.94	40°26'10.0780°N	104°28'6.8871°W	8.99	4.47	8.95	1.95	
6440.00	37.170	355.610	6380.96	1677.96	524.58	502.05	-257.34	40°26'10.5943°N	104°28'6.9362°W	7.77	15.31	7.75	1.00	
6534.00	44.890	358.580	6451.82	1748.82	586.15	563.62	-260.34	40°26'11.2030°N	104°28'6.9657°W	8.47	8.60	8.21	3.16	
6629.00	54.730	0.390	6513.05	1810.05	658.34	636.09	-260.91	40°26'11.9192°N	104°28'6.9622°W	10.46	11.40	10.36	1.91	
6724.00	65.060	2.670	6560.64	1857.64	739.77	718.13	-258.63	40°26'12.7295°N	104°28'6.9204°W	11.07	-3.88	10.87	2.40	
6819.00	70.780	2.260	6596.34	1893.34	826.91	806.04	-254.85	40°26'13.5977°N	104°28'6.8583°W	6.03	-6.65	6.02	-0.43	
6913.00	78.630	1.330	6621.12	1918.12	916.77	896.60	-252.03	40°26'14.4922°N	104°28'6.8082°W	8.41	13.98	8.35	-0.99	
7008.00	89.140	3.930	6631.22	1928.22	1010.12	990.81	-247.68	40°26'15.4226°N	104°28'6.7378°W	11.39	-79.56	11.06	2.74	
7103.00	90.030	359.110	6631.91	1928.91	1104.37	1085.75	-245.16	40°26'16.3604°N	104°28'6.6909°W	5.16	59.24	0.94	-5.07	
7292.00	90.280	359.530	6631.40	1928.40	1292.69	1274.73	-247.40	40°26'18.2280°N	104°28'6.6915°W	0.26	-140.75	0.13	0.22	
7387.00	89.350	358.770	6631.71	1928.71	1387.36	1369.72	-248.81	40°26'19.1667°N	104°28'6.6954°W	1.26	41.33	-0.98	-0.80	
7481.00	90.180	359.500	6632.09	1929.09	1481.05	1463.71	-250.23	40°26'20.0955°N	104°28'6.6996°W	1.18	90.00	0.88	0.78	
7576.00	90.180	359.860	6631.79	1928.79	1575.65	1558.71	-250.76	40°26'21.0343°N	104°28'6.6922°W	0.38	175.76	0.00	0.38	
7671.00	89.910	359.880	6631.72	1928.72	1670.23	1653.71	-250.98	40°26'21.9730°N	104°28'6.6807°W	0.28	-96.19	-0.28	0.02	
7765.00	89.820	359.050	6631.94	1928.94	1763.87	1747.70	-251.86	40°26'22.9018°N	104°28'6.6779°W	0.89	51.75	-0.10	-0.88	
7860.00	90.490	359.900	6631.68	1928.68	1858.50	1842.70	-252.73	40°26'23.8406°N	104°28'6.6749°W	1.14	-131.57	0.71	0.89	
8049.00	89.940	359.280	6630.98	1927.98	2046.74	2031.69	-254.08	40°26'25.7081°N	104°28'6.6639°W	0.44	93.30	-0.29	-0.33	
8144.00	89.910	359.800	6631.10	1928.10	2141.36	2126.68	-254.84	40°26'26.6469°N	104°28'6.6595°W	0.55	-13.27	-0.03	0.55	
8238.00	91.140	359.510	6630.24	1927.24	2234.97	2220.68	-255.41	40°26'27.5757°N	104°28'6.6527°W	1.34	-154.93	1.31	-0.31	
8333.00	90.520	359.220	6628.86	1925.86	2329.61	2315.66	-256.46	40°26'28.5143°N	104°28'6.6520°W	0.72	-91.63	-0.65	-0.31	
8428.00	90.490	358.170	6628.03	1925.03	2424.34	2410.63	-258.62	40°26'29.4529°N	104°28'6.6657°W	1.11	168.06	-0.03	-1.11	
8522.00	89.970	358.280	6627.65	1924.65	2518.14	2504.58	-261.54	40°26'30.3816°N	104°28'6.6892°W	0.57	-93.12	-0.55	0.12	

REFERENCE WELLPATH IDENTIFICATION				
Operator	NOBLE ENERGY, INC		Well	WELLS RANCH STATE AA32-783
Field	WELD COUNTY (NOBLE NAD 83 GRID)		API/Legal	
Facility	SEC.05-T05N-R63W		Wellbore	WELLS RANCH STATE AA32-783 AWB
Slot	SLOT#16 WELLS RANCH STATE AA32-783 (300'FNL & 700'FWL,SEC.05)			

WELLPATH DATA (172 stations)															
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	TVDSS [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Toolface [°]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments	
8617.00	89.940	357.730	6627.72	1924.72	2612.95	2599.53	-264.84	40°26'31.3201"N	104°28'6.7177"W	0.58	57.32	-0.03	-0.58		
8712.00	90.620	358.790	6627.26	1924.26	2707.74	2694.48	-267.73	40°26'32.2587"N	104°28'6.7407"W	1.33	-103.36	0.72	1.12		
8806.00	90.430	357.990	6626.40	1923.40	2801.51	2788.44	-270.37	40°26'33.1874"N	104°28'6.7607"W	0.87	116.56	-0.20	-0.85		
8995.00	90.180	358.490	6625.39	1922.39	2990.10	2977.35	-276.17	40°26'35.0546"N	104°28'6.8074"W	0.30	41.82	-0.13	0.26		
9090.00	90.370	358.660	6624.93	1921.93	3084.85	3072.31	-278.54	40°26'35.9933"N	104°28'6.8237"W	0.27	-81.10	0.20	0.18		
9280.00	90.550	357.510	6623.41	1920.41	3274.46	3262.20	-284.88	40°26'37.8702"N	104°28'6.8772"W	0.61	132.76	0.09	-0.61		
9374.00	89.690	358.440	6623.21	1920.21	3368.28	3356.14	-288.21	40°26'38.7988"N	104°28'6.9060"W	1.35	112.48	-0.91	0.99		
9469.00	89.570	358.730	6623.83	1920.83	3463.03	3451.11	-290.55	40°26'39.7374"N	104°28'6.9221"W	0.33	-41.63	-0.13	0.31		
9563.00	89.750	358.570	6624.38	1921.38	3556.78	3545.08	-292.77	40°26'40.6662"N	104°28'6.9366"W	0.26	-86.19	0.19	-0.17		
9658.00	89.780	358.120	6624.77	1921.77	3651.55	3640.04	-295.51	40°26'41.6048"N	104°28'6.9578"W	0.47	100.84	0.03	-0.47		
9753.00	89.510	359.530	6625.36	1922.36	3746.27	3735.01	-297.46	40°26'42.5435"N	104°28'6.9687"W	1.51	-33.69	-0.28	1.48		
9847.00	90.710	358.730	6625.18	1922.18	3839.96	3829.00	-298.88	40°26'43.4723"N	104°28'6.9730"W	1.53	-137.41	1.28	-0.85		
9942.00	89.720	357.820	6624.82	1921.82	3934.74	3923.95	-301.74	40°26'44.4109"N	104°28'6.9957"W	1.42	153.44	-1.04	-0.96		
10037.00	88.460	358.450	6626.33	1923.33	4029.53	4018.89	-304.84	40°26'45.3493"N	104°28'7.0214"W	1.48	37.60	-1.33	0.66		
10226.00	89.720	359.420	6629.34	1926.34	4217.92	4207.83	-308.35	40°26'47.2166"N	104°28'7.0384"W	0.84	47.39	0.67	0.51		
10321.00	90.180	359.920	6629.42	1926.42	4312.53	4302.83	-308.90	40°26'48.1553"N	104°28'7.0312"W	0.72	-91.86	0.48	0.53		
10415.00	90.120	358.070	6629.17	1926.17	4406.23	4396.81	-310.54	40°26'49.0841"N	104°28'7.0384"W	1.97	14.30	-0.06	-1.97		
10510.00	91.140	358.330	6628.13	1925.13	4501.02	4491.75	-313.53	40°26'50.0226"N	104°28'7.0627"W	1.11	-162.97	1.07	0.27		
10605.00	90.030	357.990	6627.16	1924.16	4595.81	4586.70	-316.58	40°26'50.9611"N	104°28'7.0878"W	1.22	115.64	-1.17	-0.36		
10699.00	89.910	358.240	6627.21	1924.21	4689.62	4680.65	-319.67	40°26'51.8897"N	104°28'7.1137"W	0.30	83.29	-0.13	0.27		
10794.00	90.030	359.260	6627.26	1924.26	4784.35	4775.62	-321.74	40°26'52.8284"N	104°28'7.1262"W	1.08	71.03	0.13	1.07		
10888.00	90.250	359.900	6627.03	1924.03	4877.97	4869.62	-322.43	40°26'53.7573"N	104°28'7.1210"W	0.72	-58.04	0.23	0.68		
10983.00	91.360	358.120	6625.69	1922.69	4972.66	4964.59	-324.07	40°26'54.6958"N	104°28'7.1279"W	2.21	-128.65	1.17	-1.87		
11077.00	90.520	357.070	6624.15	1921.15	5066.50	5058.49	-328.02	40°26'55.6241"N	104°28'7.1648"W	1.43	87.49	-0.89	-1.12		
11172.00	90.620	359.360	6623.20	1920.20	5161.29	5153.44	-330.97	40°26'56.5626"N	104°28'7.1888"W	2.41	99.96	0.11	2.41		
11267.00	90.490	0.100	6622.28	1919.28	5255.88	5248.43	-331.42	40°26'57.5013"N	104°28'7.1803"W	0.79	-115.74	-0.14	0.78		
11361.00	90.220	359.540	6621.70	1918.70	5349.46	5342.43	-331.72	40°26'58.4301"N	104°28'7.1700"W	0.66	64.65	-0.29	-0.60		
11456.00	90.490	0.110	6621.11	1918.11	5444.04	5437.42	-332.01	40°26'59.3688"N	104°28'7.1594"W	0.66	-92.37	0.28	0.60		
11551.00	90.310	355.790	6620.45	1917.45	5538.84	5532.34	-335.41	40°27'0.3070"N	104°28'7.1891"W	4.55	156.25	-0.19	-4.55		
11645.00	90.060	355.900	6620.15	1917.15	5632.81	5626.09	-342.22	40°27'1.2341"N	104°28'7.2631"W	0.29	-90.70	-0.27	0.12		
11740.00	90.030	353.450	6620.07	1917.07	5727.81	5720.67	-351.03	40°27'2.1697"N	104°28'7.3629"W	2.58	-92.63	-0.03	-2.58		
11834.00	89.940	351.490	6620.10	1917.10	5821.74	5813.86	-363.35	40°27'3.0919"N	104°28'7.5082"W	2.09	86.06	-0.10	-2.09		
11929.00	90.000	352.360	6620.15	1917.15	5916.65	5907.92	-376.69	40°27'4.0228"N	104°28'7.6666"W	0.92	53.51	0.06	0.92		
12024.00	91.050	353.780	6619.28	1916.28	6011.62	6002.21	-388.16	40°27'4.9558"N	104°28'7.8007"W	1.86	-54.93	1.11	1.49		
12118.00	91.450	353.210	6617.23	1914.23	6105.58	6095.59	-398.80	40°27'5.8797"N	104°28'7.9244"W	0.74	151.01	0.43	-0.61		
12213.00	90.060	353.980	6615.97	1912.97	6200.56	6189.98	-409.40	40°27'6.8136"N	104°28'8.0472"W	1.67	-47.03	-1.46	0.81		
12308.00	90.740	353.250	6615.31	1912.31	6295.54	6284.39	-419.96	40°27'7.7476"N	104°28'8.1697"W	1.05	90.00	0.72	-0.77		
12402.00	90.740	353.420	6614.10	1911.10	6389.52	6377.75	-430.87	40°27'8.6713"N	104°28'8.2967"W	0.18	-149.82	0.00	0.18		
12497.00	89.450	352.670	6613.94	1910.94	6484.49	6472.04	-442.38	40°27'9.6044"N	104°28'8.4313"W	1.57	121.23	-1.36	-0.79		
12591.00	89.050	353.330	6615.17	1912.17	6578.45	6565.33	-453.83	40°27'10.5275"N	104°28'8.5655"W	0.82	-106.58	-0.43	0.70		
12686.00	88.800	352.490	6616.95	1913.95	6673.40	6659.59	-465.55	40°27'11.4602"N	104°28'8.7029"W	0.92	32.40	-0.26	-0.88		
12781.00	90.250	353.410	6617.74	1914.74	6768.36	6753.87	-477.21	40°27'12.3930"N	104°28'8.8396"W	1.81	158.92	1.53	0.97		
12875.00	89.290	353.780	6618.12	1915.12	6862.34	6847.28	-487.70	40°27'13.3172"N	104°28'8.9612"W	1.09	-38.08	-1.02	0.39		
13065.00	90.490	352.840	6618.48	1915.48	7052.30	7035.98	-509.83	40°27'15.1843"N	104°28'9.2191"W	0.80	-115.13	0.63	-0.49		
13159.00	89.880	351.540	6618.18	1915.18	7146.23	7129.10	-522.61	40°27'16.1059"N	104°28'9.3703"W	1.53	-142.50	-0.65	-1.38		

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Well	WELLS RANCH STATE AA32-783
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.05-T05N-R63W	Wellbore	WELLS RANCH STATE AA32-783 AWB
Slot	SLOT#16 WELLS RANCH STATE AA32-783 (300'FNL & 700'FWL,SEC.05)		

WELLPATH DATA (172 stations) † = interpolated, ‡ = extrapolated station														
MD (ft)	Inclination [°]	Azimuth [°]	TVD (ft)	TVDSS (ft)	Vert Sect (ft)	North (ft)	East (ft)	Latitude	Longitude	DLS [°/100ft]	Toolface [°]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
13349.00	89.450	351.210	6619.29	1916.29	7335.95	7316.95	-551.10	40°27'17.9653"N	104°28'9.7106"W	0.29	-33.69	-0.23	-0.17	
13443.00	89.780	350.990	6619.92	1916.92	7429.78	7409.82	-565.64	40°27'18.8846"N	104°28'9.8847"W	0.42	101.19	0.35	-0.23	
13538.00	89.420	352.810	6620.58	1917.58	7524.68	7503.86	-579.03	40°27'19.8153"N	104°28'10.0437"W	1.95	62.65	-0.38	1.92	
13633.00	89.720	353.390	6621.30	1918.30	7619.65	7598.17	-590.44	40°27'20.7485"N	104°28'10.1772"W	0.69	-102.51	0.32	0.61	
13822.00	89.230	351.180	6623.03	1920.03	7808.50	7785.44	-615.81	40°27'22.6018"N	104°28'10.4772"W	1.20	44.33	-0.26	-1.17	
13917.00	89.660	351.600	6623.95	1920.95	7903.36	7879.36	-630.03	40°27'23.5315"N	104°28'10.6470"W	0.63	-88.05	0.45	0.44	
14011.00	89.690	350.720	6624.48	1921.48	7997.20	7972.24	-644.47	40°27'24.4509"N	104°28'10.8199"W	0.94	86.70	0.03	-0.94	
14106.00	89.750	351.760	6624.95	1921.95	8092.05	8066.13	-658.94	40°27'25.3803"N	104°28'10.9930"W	1.10	48.18	0.06	1.09	
14200.00	90.090	352.140	6625.08	1922.08	8185.96	8159.21	-672.11	40°27'26.3014"N	104°28'11.1493"W	0.54	146.98	0.36	0.40	
14390.00	89.690	352.400	6625.44	1922.44	8375.82	8347.48	-697.66	40°27'28.1646"N	104°28'11.4515"W	0.25	36.23	-0.21	0.14	
14485.00	90.550	353.030	6625.24	1922.24	8470.78	8441.71	-709.71	40°27'29.0971"N	104°28'11.5932"W	1.12	40.74	0.91	0.66	
14579.00	91.200	353.590	6623.81	1920.81	8564.75	8535.06	-720.66	40°27'30.0207"N	104°28'11.7208"W	0.91	-77.58	0.69	0.60	
14674.00	91.600	351.770	6621.49	1918.49	8659.67	8629.25	-732.76	40°27'30.9528"N	104°28'11.8632"W	1.96	174.16	0.42	-1.92	
14863.00	89.350	352.000	6619.92	1916.92	8848.46	8816.34	-759.43	40°27'32.8045"N	104°28'12.1801"W	1.20	-12.33	-1.19	0.12	
14958.00	90.860	351.670	6619.75	1916.75	8943.36	8910.38	-772.93	40°27'33.7352"N	104°28'12.3405"W	1.63	164.22	1.59	-0.35	
15052.00	90.400	351.800	6618.71	1915.71	9037.25	9003.39	-786.44	40°27'34.6558"N	104°28'12.5014"W	0.51	-87.47	-0.49	0.14	
15147.00	90.430	351.120	6618.02	1915.02	9132.11	9097.34	-800.54	40°27'35.5857"N	104°28'12.6697"W	0.72	91.51	0.03	-0.72	
15242.00	90.370	353.390	6617.36	1914.36	9227.04	9191.46	-813.35	40°27'36.5172"N	104°28'12.8212"W	2.39	90.00	-0.06	2.39	
15336.00	90.370	353.620	6616.75	1913.75	9321.02	9284.86	-823.98	40°27'37.4412"N	104°28'12.9447"W	0.24	101.31	0.00	0.24	
15431.00	90.340	353.770	6616.16	1913.16	9416.01	9379.28	-834.41	40°27'38.3754"N	104°28'13.0655"W	0.16	-60.04	-0.03	0.16	
15526.00	90.680	353.180	6615.32	1912.32	9510.99	9473.66	-845.21	40°27'39.3092"N	104°28'13.1909"W	0.72	-124.76	0.36	-0.62	
15620.00	90.090	352.330	6614.69	1911.69	9604.95	9566.91	-857.06	40°27'40.2319"N	104°28'13.3303"W	1.10	111.50	-0.63	-0.90	
15715.00	89.570	353.650	6614.97	1911.97	9699.92	9661.19	-868.65	40°27'41.1649"N	104°28'13.4661"W	1.49	-44.22	-0.55	1.39	
15810.00	89.940	353.290	6615.38	1912.38	9794.90	9755.58	-879.46	40°27'42.0987"N	104°28'13.5917"W	0.54	-136.85	0.39	-0.38	
15905.00	89.780	353.140	6615.61	1912.61	9889.88	9849.91	-890.68	40°27'43.0321"N	104°28'13.7227"W	0.23	-90.00	-0.17	-0.16	
16000.00	89.780	352.350	6615.97	1912.97	9984.83	9944.15	-902.68	40°27'43.9646"N	104°28'13.8637"W	0.83	-74.99	0.00	-0.83	
16094.00	90.710	348.880	6615.57	1912.57	10078.61	10036.87	-918.00	40°27'44.8826"N	104°28'14.0481"W	3.82	116.93	0.99	-3.69	
16189.00	89.450	351.360	6615.44	1912.44	10173.33	10130.46	-934.30	40°27'45.8091"N	104°28'14.2449"W	2.93	91.78	-1.33	2.61	
16284.00	89.420	352.330	6616.37	1913.37	10268.22	10224.49	-947.78	40°27'46.7398"N	104°28'14.4051"W	1.02	107.33	-0.03	1.02	
16379.00	89.080	353.420	6617.62	1914.62	10363.18	10318.75	-959.56	40°27'47.6725"N	104°28'14.5433"W	1.20	-48.39	-0.36	1.15	
16474.00	91.540	350.650	6617.10	1914.10	10458.08	10412.81	-972.72	40°27'48.6035"N	104°28'14.6995"W	3.90	156.03	2.59	-2.92	
16569.00	89.380	351.610	6616.34	1913.34	10552.91	10506.67	-987.37	40°27'49.5325"N	104°28'14.8749"W	2.49	72.79	-2.27	1.01	
16663.00	89.600	352.320	6617.18	1914.18	10646.81	10599.74	-1000.51	40°27'50.4536"N	104°28'15.0309"W	0.79	-69.95	0.23	0.76	
16758.00	90.060	351.060	6617.46	1914.46	10741.70	10693.74	-1014.24	40°27'51.3840"N	104°28'15.1944"W	1.41	88.07	0.48	-1.33	
16853.00	90.090	351.950	6617.34	1914.34	10836.57	10787.70	-1028.27	40°27'52.3140"N	104°28'15.3618"W	0.94	-104.65	0.03	0.94	
16911.00	89.690	350.420	6617.45	1914.45	10894.48	10845.01	-1037.16	40°27'52.8813"N	104°28'15.4682"W	2.73	0.00	-0.69	-2.64	Last BH MWD Survey
16936.00†	89.690	350.420	6617.58	1914.58	10919.42	10869.66	-1041.32	40°27'53.1254"N	104°28'15.5183"W	0.00		0.00	0.00	Projection to Bit

## REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Well	WELLS RANCH STATE AA32-783
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.05-T05N-R63W	Wellbore	WELLS RANCH STATE AA32-783 AWB
Slot	SLOT#16 WELLS RANCH STATE AA32-783 (300'FNL & 700'FWL,SEC.05)		

## TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
WELLS RANCH STATE AA32-789 SECTION 29	1.00	-0.45	-38.97	3287315.60	1402942.95	40°26'5.6040"N	104°28'4.1880"W	polygon
	2D Polygon: dimensions not calculated							
WELLS RANCH STATE AA32-789 SECTION 30	1.00	-0.45	-38.97	3287315.60	1402942.95	40°26'5.6040"N	104°28'4.1880"W	polygon
	2D Polygon: dimensions not calculated							
WELLS RANCH STATE AA32-789 SECTION 31	1.00	-0.45	-38.97	3287315.60	1402942.95	40°26'5.6040"N	104°28'4.1880"W	polygon
	2D Polygon: dimensions not calculated							
WELLS RANCH STATE AA32-789 SECTION 32	1.00	-0.45	-38.97	3287315.60	1402942.95	40°26'5.6040"N	104°28'4.1880"W	polygon
	2D Polygon: dimensions not calculated							
WELLS RANCH STATE AA32-783 BHL REV-1 (0'FNL & 228'FEL,SEC.29)	6617.18	10870.56	-1056.30	3286298.31	1413813.53	40°27'53.1360"N	104°28'15.7120"W	point
WELLS RANCH STATE AA32-783 LP TPZ REV-1 (400'FSL & 445'FWL,SEC.32)	6631.00	1000.87	-266.70	3287087.88	1403944.23	40°26'15.5242"N	104°28'6.9822"W	point
WELLS RANCH STATE AA32-783 WSU 460ft Setback	7000.00	0.00	0.00	3287354.57	1402943.40	40°26'5.6040"N	104°28'3.6840"W	polygon
	2D Polygon: dimensions not calculated							
WELLS RANCH STATE AA32-783 WSU Boundary	7000.00	0.00	0.00	3287354.57	1402943.40	40°26'5.6040"N	104°28'3.6840"W	polygon
	2D Polygon: dimensions not calculated							

## WELLPATH COMPOSITION - Ref Wellbore: WELLS RANCH STATE AA32-783 AWB Ref Wellpath: WELLS RANCH STATE AA32-783 AWP

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore	Survey Date
0.00	1935.00	Gyrodata 2015 - GC+DROP+OH	3rd Party Surface Gyros <81'-1935'>	WELLS RANCH STATE AA32-783 AWB	11/14/2019
1935.00	16936.00	OWSG MWD rev2 + IFR1 + Multi-Station Correction	BH/ATC 8.5" Hole OWSG MWD Rev-2+IFR+MSA <1991'-16911'>	WELLS RANCH STATE AA32-783 AWB	11/14/2019

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Well	WELLS RANCH STATE AA32-783
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.05-T05N-R63W	Wellbore	WELLS RANCH STATE AA32-783 AWB
Slot	SLOT#16 WELLS RANCH STATE AA32-783 (300'FNL & 700'FWL,SEC.05)		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
1935.00	0.910	15.160	1934.83	Tie to Surface Gyros
16911.00	89.690	350.420	6617.45	Last BH MWD Survey
16936.00	89.690	350.420	6617.58	Projection to Bit