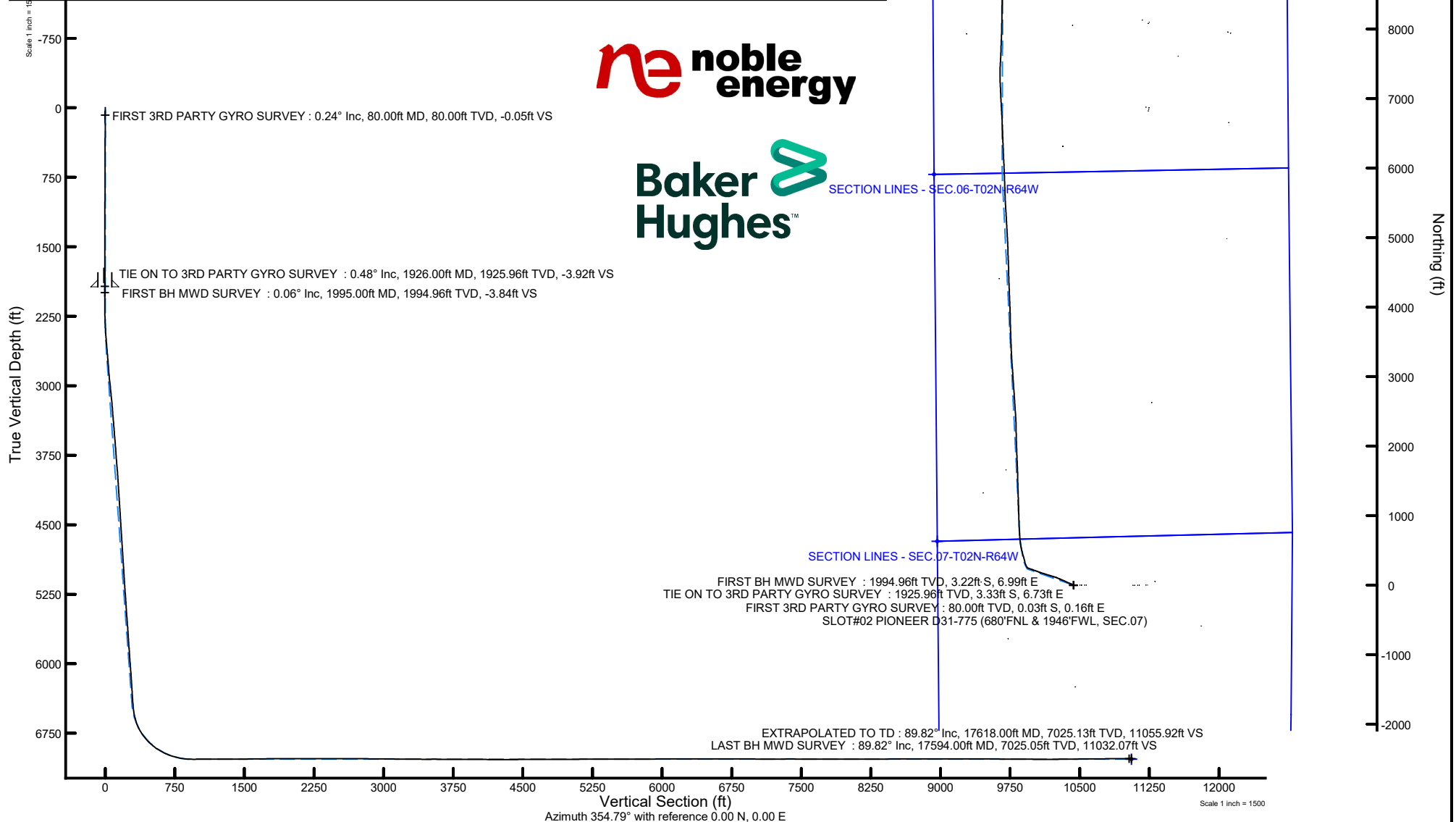


NOBLE ENERGY, INC

Location: COLORADO Slot: SLOT#02 PIONEER D31-775 (680°FNL & 1946°FNL, SEC.07)
Field: WELD COUNTY (NOBLE NAD 83 GRID) Well: PIONEER D31-775
Facility: SEC.07-T02N-R64W Wellbore: PIONEER D31-775 AWB

Plot reference wellpath is PIONEER D31-775 AWP	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
True vertical depths are referenced to H&P 517 (4887°GL+30°KB@4917') (RKB)	North Reference: Grid north
Reference wellpath measured depths are referenced to H&P 517 (4887°GL+30°KB@4917') (RKB)	Scale: True distance
H&P 517 (4887°GL+30°KB@4917') (RKB) to Mean Sea Level: 4917 feet	Coordinates are in feet referenced to Slot
Mean Sea Level to Mud line (At Slot: SLOT#02 PIONEER D31-775 (680°FNL & 1946°FNL, SEC.07)): 0 feet	Depths are in feet
Offset wellpath MDs are referenced to each path's default MD datum	Created by: manajohj on 2020-02-03; Database: WA_NOBLE



REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Well	PIONEER D31-775
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.07-T02N-R64W	Wellbore	PIONEER D31-775 AWB
Slot	SLOT#02 PIONEER D31-775 (680'FNL & 1946'FWL, SEC.07)		

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	0.999958	Report Generated	2/3/2020 at 6:38:19 AM
Convergence at slot	0.58° 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	0.23	22.36	3252681.39	1301719.83	40°09'29.0880"N	104°35'45.4200"W
Facility Reference Pt			3252659.03	1301719.60	40°09'29.0880"N	104°35'45.7080"W
Field Reference Pt			3000000.00	4454105.15	48°46'34.3150"N	105°30'0.0000"W

WELLPATH DATUM

Calculation method	Minimum curvature	H&P 517 (4887'GL+30'KB@4917') (RKB) to Facility Vertical Datum	4917.00ft
Horizontal Reference Pt	Slot	H&P 517 (4887'GL+30'KB@4917') (RKB) to Mean Sea Level	4917.00ft
Vertical Reference Pt	H&P 517 (4887'GL+30'KB@4917') (RKB)	H&P 517 (4887'GL+30'KB@4917') (RKB) to Mud Line at Slot (SLOT#02 PIONEER D31-775 (680'FNL & 1946'FWL, SEC.07))	4917.00ft
MD Reference Pt	H&P 517 (4887'GL+30'KB@4917') (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	354.79°

REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Well	PIONEER D31-775
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.07-T02N-R64W	Wellbore	PIONEER D31-775 AWB
Slot	SLOT#02 PIONEER D31-775 (680'FNL & 1946'FWL, SEC.07)		

WELLPATH DATA (188 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
0.00	0.000	101.710	0.00	-4917.00	0.00	0.00	0.00	40°09'29.0880"N	104°35'45.4200"W	0.00	0.00	0.00	0.00	
80.00	0.240	101.710	80.00	-4837.00	-0.05	-0.03	0.16	40°09'29.0876"N	104°35'45.4179"W	0.30	-167.73	0.30	0.00	FIRST 3RD PARTY GYRO SURVEY
174.00	0.120	319.120	174.00	-4743.00	-0.03	0.00	0.29	40°09'29.0880"N	104°35'45.4162"W	0.37	147.84	-0.13	-151.69	
265.00	0.070	41.100	265.00	-4652.00	0.09	0.11	0.27	40°09'29.0891"N	104°35'45.4166"W	0.14	159.88	-0.05	90.09	
329.00	0.390	197.440	329.00	-4588.00	-0.08	-0.06	0.23	40°09'29.0873"N	104°35'45.4171"W	0.71	-170.18	0.50	244.28	
423.00	0.090	159.610	423.00	-4494.00	-0.45	-0.44	0.16	40°09'29.0837"N	104°35'45.4180"W	0.34	-77.10	-0.32	-40.24	
518.00	0.450	93.750	518.00	-4399.00	-0.58	-0.53	0.56	40°09'29.0827"N	104°35'45.4129"W	0.44	133.60	0.38	-69.33	
613.00	0.330	128.270	612.99	-4304.01	-0.83	-0.73	1.14	40°09'29.0807"N	104°35'45.4054"W	0.27	-48.38	-0.13	36.34	
707.00	0.830	97.180	706.99	-4210.01	-1.16	-0.98	2.03	40°09'29.0781"N	104°35'45.3940"W	0.61	143.14	0.53	-33.07	
802.00	0.610	115.030	801.98	-4115.02	-1.56	-1.28	3.17	40°09'29.0750"N	104°35'45.3793"W	0.33	170.61	-0.23	18.79	
897.00	0.340	122.660	896.98	-4020.02	-1.99	-1.65	3.87	40°09'29.0714"N	104°35'45.3704"W	0.29	-0.66	-0.28	8.03	
992.00	0.520	122.430	991.98	-3925.02	-2.43	-2.03	4.47	40°09'29.0675"N	104°35'45.3627"W	0.19	154.49	0.19	-0.24	
1086.00	0.330	139.660	1085.97	-3831.03	-2.91	-2.46	5.00	40°09'29.0632"N	104°35'45.3559"W	0.24	161.32	-0.20	18.33	
1181.00	0.190	154.780	1180.97	-3736.03	-3.28	-2.81	5.25	40°09'29.0597"N	104°35'45.3528"W	0.16	124.30	-0.15	15.92	
1276.00	0.190	223.380	1275.97	-3641.03	-3.53	-3.07	5.21	40°09'29.0571"N	104°35'45.3534"W	0.23	26.89	0.00	72.21	
1371.00	0.360	236.460	1370.97	-3546.03	-3.78	-3.35	4.85	40°09'29.0544"N	104°35'45.3580"W	0.19	-128.68	0.18	13.77	
1465.00	0.370	157.200	1464.97	-3452.03	-4.21	-3.79	4.72	40°09'29.0500"N	104°35'45.3597"W	0.50	-111.58	0.01	-84.32	
1560.00	0.350	125.060	1559.97	-3357.03	-4.69	-4.24	5.08	40°09'29.0456"N	104°35'45.3552"W	0.21	-91.04	-0.02	-33.83	
1655.00	0.690	64.490	1654.96	-3262.04	-4.68	-4.16	5.83	40°09'29.0463"N	104°35'45.3455"W	0.63	-165.82	0.36	-63.76	
1749.00	0.170	342.570	1748.96	-3168.04	-4.34	-3.79	6.30	40°09'29.0499"N	104°35'45.3394"W	0.73	112.54	-0.55	-87.15	
1844.00	0.180	34.380	1843.96	-3073.04	-4.09	-3.53	6.34	40°09'29.0525"N	104°35'45.3388"W	0.16	56.88	0.01	54.54	
1876.00	0.270	57.320	1875.96	-3041.04	-4.02	-3.45	6.43	40°09'29.0533"N	104°35'45.3376"W	0.39	35.96	0.28	71.69	
1926.00	0.480	73.990	1925.96	-2991.04	-3.92	-3.33	6.73	40°09'29.0545"N	104°35'45.3337"W	0.47	-173.55	0.42	33.34	TIE ON TO 3RD PARTY GYRO SURVEY
1995.00	0.060	324.460	1994.96	-2922.04	-3.84	-3.22	6.99	40°09'29.0555"N	104°35'45.3304"W	0.73	-92.26	-0.61	-158.74	FIRST BH MWD SURVEY
2090.00	0.090	273.970	2089.96	-2827.04	-3.78	-3.17	6.89	40°09'29.0560"N	104°35'45.3317"W	0.07	128.10	0.03	-53.15	
2185.00	0.100	356.980	2184.96	-2732.04	-3.69	-3.08	6.81	40°09'29.0568"N	104°35'45.3327"W	0.13	-45.32	0.01	87.38	
2279.00	2.760	313.140	2278.92	-2638.08	-1.92	-1.45	5.15	40°09'29.0731"N	104°35'45.3538"W	2.86	-27.65	2.83	-46.64	
2374.00	5.080	300.080	2373.70	-2543.30	2.22	2.22	-0.16	40°09'29.1099"N	104°35'45.4217"W	2.60	-6.58	2.44	-13.75	
2469.00	7.130	298.180	2468.15	-2448.85	7.90	7.11	-8.99	40°09'29.1592"N	104°35'45.5349"W	2.17	-3.58	2.16	-2.00	
2564.00	10.030	297.140	2562.08	-2354.92	15.57	13.67	-21.56	40°09'29.2253"N	104°35'45.6958"W	3.06	-54.93	3.05	-1.09	
2658.00	10.830	291.460	2654.53	-2262.47	23.92	20.64	-37.06	40°09'29.2957"N	104°35'45.8946"W	1.39	-162.91	0.85	-6.04	
2848.00	9.620	289.220	2841.51	-2075.49	38.50	32.39	-68.66	40°09'29.4150"N	104°35'46.3001"W	0.67	44.43	-0.64	-1.18	
2943.00	11.930	299.360	2934.83	-1982.17	47.35	39.82	-84.72	40°09'29.4900"N	104°35'46.5059"W	3.14	-125.66	2.43	10.67	
3037.00	10.960	291.490	3026.97	-1890.03	56.88	47.86	-101.50	40°09'29.5712"N	104°35'46.7210"W	1.95	103.62	-1.03	-8.37	
3132.00	10.700	299.650	3120.28	-1796.72	65.98	55.53	-117.57	40°09'29.6486"N	104°35'46.9269"W	1.64	-108.55	-0.27	8.59	
3227.00	10.290	290.760	3213.70	-1703.30	74.74	62.90	-133.17	40°09'29.7230"N	104°35'47.1268"W	1.76	90.86	-0.43	-9.36	
3321.00	10.290	292.510	3306.19	-1610.81	82.32	69.09	-148.78	40°09'29.7857"N	104°35'47.3270"W	0.33	-175.01	0.00	1.86	
3416.00	9.840	292.280	3399.73	-1517.27	90.01	75.42	-164.13	40°09'29.8498"N	104°35'47.5239"W	0.48	168.42	-0.47	-0.24	
3511.00	9.620	292.550	3493.36	-1423.64	97.46	81.54	-178.97	40°09'29.9118"N	104°35'47.7142"W	0.24	106.08	-0.23	0.28	
3605.00	9.470	296.090	3586.06	-1330.94	105.13	87.95	-193.17	40°09'29.9766"N	104°35'47.8963"W	0.64	-93.49	-0.16	3.77	
3700.00	9.460	290.210	3679.77	-1237.23	112.54	94.09	-207.52	40°09'30.0386"N	104°35'48.0802"W	1.02	0.00	-0.01	-6.19	
3795.00	9.460	290.210	3773.48	-1143.52	119.25	99.48	-222.17	40°09'30.0934"N	104°35'48.2682"W	0.00	117.64	0.00	0.00	
3890.00	8.710	302.050	3867.29	-1049.71	126.95	106.00	-235.59	40°09'30.1591"N	104°35'48.4402"W	2.12	-70.15	-0.79	12.46	
3985.00	10.200	285.220	3961.02	-955.98	134.25	112.02	-249.81	40°09'30.2201"N	104°35'48.6225"W	3.29	163.57	1.57	-17.72	
4079.00	9.560	286.360	4053.62	-863.38	140.02	116.41	-265.33	40°09'30.2650"N	104°35'48.8219"W	0.71	72.75	-0.68	1.21	

REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Well	PIONEER D31-775
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.07-T02N-R64W	Wellbore	PIONEER D31-775 AWB
Slot	SLOT#02 PIONEER D31-775 (680'FNL & 1946'FWL, SEC.07)		

WELLPATH DATA (188 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
4174.00	9.610	287.300	4147.30	-769.70	145.96	120.99	-280.47	40°09'30.3118"N	104°35'49.0163"W	0.17	-42.42	0.05	0.99	
4269.00	9.790	286.340	4240.94	-676.06	151.96	125.62	-295.79	40°09'30.3591"N	104°35'49.2130"W	0.25	156.97	0.19	-1.01	
4364.00	9.560	286.930	4334.59	-582.41	157.90	130.19	-311.09	40°09'30.4058"N	104°35'49.4094"W	0.26	-170.71	-0.24	0.62	
4458.00	9.420	286.790	4427.30	-489.70	163.72	134.68	-325.92	40°09'30.4517"N	104°35'49.5998"W	0.15	-25.83	-0.15	-0.15	
4553.00	9.540	286.440	4521.00	-396.00	169.54	139.16	-340.92	40°09'30.4974"N	104°35'49.7923"W	0.14	24.10	0.13	-0.37	
4648.00	9.710	286.890	4614.66	-302.34	175.46	143.71	-356.13	40°09'30.5440"N	104°35'49.9877"W	0.20	151.72	0.18	0.47	
4743.00	9.550	287.410	4708.33	-208.67	181.51	148.40	-371.32	40°09'30.5918"N	104°35'50.1827"W	0.19	57.06	-0.17	0.55	
4837.00	9.600	287.870	4801.02	-115.98	187.58	153.14	-386.22	40°09'30.6401"N	104°35'50.3739"W	0.10	-76.22	0.05	0.49	
4932.00	9.620	287.390	4894.68	-22.32	193.73	157.94	-401.33	40°09'30.6891"N	104°35'50.5680"W	0.09	-16.02	0.02	-0.51	
5027.00	9.720	287.220	4988.33	71.33	199.84	162.69	-416.57	40°09'30.7375"N	104°35'50.7635"W	0.11	-115.21	0.11	-0.18	
5122.00	9.680	286.710	5081.98	164.98	205.89	167.36	-431.88	40°09'30.7852"N	104°35'50.9601"W	0.10	165.25	-0.04	-0.54	
5216.00	9.480	287.030	5174.66	257.66	211.77	171.90	-446.85	40°09'30.8316"N	104°35'51.1523"W	0.22	111.82	-0.21	0.34	
5311.00	9.330	289.470	5268.39	351.39	217.94	176.75	-461.59	40°09'30.8811"N	104°35'51.3415"W	0.45	-78.49	-0.16	2.57	
5405.00	9.350	288.880	5361.14	444.14	224.24	181.76	-476.00	40°09'30.9320"N	104°35'51.5264"W	0.10	-98.58	0.02	-0.63	
5500.00	9.330	288.020	5454.88	537.88	230.43	186.64	-490.62	40°09'30.9817"N	104°35'51.7141"W	0.15	103.79	-0.02	-0.91	
5595.00	9.100	296.480	5548.66	631.66	237.41	192.38	-504.67	40°09'31.0398"N	104°35'51.8943"W	1.45	-71.97	-0.24	8.91	
5689.00	9.590	288.930	5641.42	724.42	244.52	198.23	-518.73	40°09'31.0990"N	104°35'52.0746"W	1.40	-152.36	0.52	-8.03	
5784.00	9.370	288.220	5735.12	818.12	250.83	203.22	-533.56	40°09'31.1498"N	104°35'52.2650"W	0.26	-4.77	-0.23	-0.75	
5879.00	9.610	288.100	5828.82	911.82	257.04	208.10	-548.45	40°09'31.1995"N	104°35'52.4560"W	0.25	59.18	0.25	-0.13	
5973.00	9.710	289.080	5921.49	1004.49	263.41	213.13	-563.40	40°09'31.2507"N	104°35'52.6479"W	0.20	126.18	0.11	1.04	
6068.00	8.950	296.410	6015.23	1098.23	270.58	219.03	-577.59	40°09'31.3105"N	104°35'52.8299"W	1.48	-81.37	-0.80	7.72	
6163.00	9.290	287.250	6109.04	1192.04	277.38	224.59	-591.53	40°09'31.3669"N	104°35'53.0087"W	1.57	59.64	0.36	-9.64	
6257.00	9.420	288.580	6201.79	1284.79	283.39	229.29	-606.07	40°09'31.4148"N	104°35'53.1953"W	0.27	-90.01	0.14	1.41	
6352.00	9.420	288.560	6295.50	1378.50	289.66	234.25	-620.81	40°09'31.4652"N	104°35'53.3845"W	0.00	-21.10	0.00	-0.02	
6447.00	9.510	288.350	6389.21	1472.21	295.93	239.19	-635.62	40°09'31.5155"N	104°35'53.5747"W	0.10	70.56	0.09	-0.22	
6541.00	10.320	298.640	6481.81	1564.81	303.72	245.67	-650.39	40°09'31.5811"N	104°35'53.7640"W	2.07	63.41	0.86	10.95	
6636.00	14.750	323.620	6574.59	1657.59	318.83	259.50	-665.05	40°09'31.7192"N	104°35'53.9509"W	7.27	33.94	4.66	26.29	
6731.00	23.500	337.390	6664.31	1747.31	347.32	286.79	-679.54	40°09'31.9903"N	104°35'54.1340"W	10.30	24.51	9.21	14.49	
6825.00	32.810	345.000	6747.12	1830.12	390.41	328.80	-693.37	40°09'32.4068"N	104°35'54.3066"W	10.60	1.93	9.90	8.10	
6920.00	42.730	345.490	6822.12	1905.12	447.72	385.00	-708.14	40°09'32.9637"N	104°35'54.4895"W	10.45	-5.13	10.44	0.52	
7015.00	51.080	344.530	6886.97	1969.97	516.02	451.94	-726.11	40°09'33.6269"N	104°35'54.7121"W	8.82	16.21	8.79	-1.01	
7109.00	60.100	347.530	6940.04	2023.04	592.59	527.13	-744.70	40°09'34.3718"N	104°35'54.9418"W	9.95	29.66	9.60	3.19	
7204.00	68.220	352.440	6981.43	2064.43	677.69	611.25	-759.43	40°09'35.2045"N	104°35'55.1204"W	9.73	22.79	8.55	5.17	
7298.00	76.770	356.100	7009.69	2092.69	767.23	700.35	-768.30	40°09'36.0859"N	104°35'55.2230"W	9.82	8.74	9.10	3.89	
7393.00	83.710	357.170	7025.79	2108.79	860.75	793.76	-773.78	40°09'37.0094"N	104°35'55.2814"W	7.39	8.73	7.31	1.13	
7488.00	90.370	358.190	7030.69	2113.69	955.45	888.50	-777.62	40°09'37.9460"N	104°35'55.3184"W	7.09	147.72	7.01	1.07	
7583.00	90.180	358.310	7030.23	2113.23	1050.27	983.46	-780.52	40°09'38.8846"N	104°35'55.3433"W	0.24	170.54	-0.20	0.13	
7677.00	90.120	358.320	7029.99	2112.99	1144.10	1077.41	-783.28	40°09'39.8133"N	104°35'55.3666"W	0.06	-161.97	-0.06	0.01	
7772.00	89.690	358.180	7030.14	2113.14	1238.92	1172.37	-786.18	40°09'40.7519"N	104°35'55.3916"W	0.48	19.49	-0.45	-0.15	
7867.00	90.340	358.410	7030.12	2113.12	1333.74	1267.33	-789.01	40°09'41.6905"N	104°35'55.4155"W	0.73	-52.22	0.68	0.24	
7961.00	90.650	358.010	7029.31	2112.31	1427.57	1361.28	-791.95	40°09'42.6192"N	104°35'55.4411"W	0.54	-90.00	0.33	-0.43	
8056.00	90.650	357.970	7028.23	2111.23	1522.42	1456.21	-795.28	40°09'43.5576"N	104°35'55.4715"W	0.04	78.82	0.00	-0.04	
8151.00	90.950	359.490	7026.90	2109.90	1617.18	1551.18	-797.38	40°09'44.4962"N	104°35'55.4862"W	1.63	-108.12	0.32	1.60	
8246.00	90.400	357.810	7025.78	2108.78	1711.96	1646.14	-799.62	40°09'45.4348"N	104°35'55.5026"W	1.86	-176.19	-0.58	-1.77	
8341.00	90.250	357.800	7025.25	2108.25	1806.82	1741.07	-803.26	40°09'46.3732"N	104°35'55.5371"W	0.16	-118.12	-0.16	-0.01	

REFERENCE WELLPATH IDENTIFICATION				
Operator	NOBLE ENERGY, INC		Well	PIONEER D31-775
Field	WELD COUNTY (NOBLE NAD 83 GRID)		API/Legal	
Facility	SEC.07-T02N-R64W		Wellbore	PIONEER D31-775 AWB
Slot	SLOT#02 PIONEER D31-775 (680'FNL & 1946'FWL, SEC.07)			

WELLPATH DATA (188 stations)														
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	TVDSS [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Toothface [°]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
8435.00	89.940	357.220	7025.09	2108.09	1900.72	1834.98	-807.34	40°09'47.3016"N	104°35'55.5774"W	0.70	77.94	-0.33	-0.62	
8530.00	90.220	358.530	7024.96	2107.96	1995.58	1929.91	-810.87	40°09'48.2401"N	104°35'55.6103"W	1.41	-49.04	0.29	1.38	
8625.00	90.680	358.000	7024.21	2107.21	2090.40	2024.87	-813.74	40°09'49.1786"N	104°35'55.6349"W	0.74	152.82	0.48	-0.56	
8719.00	89.940	358.380	7023.70	2106.70	2184.23	2118.82	-816.71	40°09'50.1073"N	104°35'55.6609"W	0.88	146.55	-0.79	0.40	
8814.00	89.380	358.750	7024.27	2107.27	2279.02	2213.78	-819.09	40°09'51.0460"N	104°35'55.6791"W	0.71	11.02	-0.59	0.39	
8909.00	90.150	358.900	7024.66	2107.66	2373.78	2308.76	-821.04	40°09'51.9847"N	104°35'55.6917"W	0.83	-90.00	0.81	0.16	
9003.00	90.150	356.720	7024.41	2107.41	2467.65	2402.69	-824.63	40°09'52.9132"N	104°35'55.7257"W	2.32	-82.87	0.00	-2.32	
9098.00	90.250	355.920	7024.08	2107.08	2562.61	2497.49	-830.73	40°09'53.8506"N	104°35'55.7918"W	0.85	137.42	0.11	-0.84	
9193.00	89.880	356.260	7023.97	2106.97	2657.59	2592.27	-837.21	40°09'54.7878"N	104°35'55.8628"W	0.53	-160.71	-0.39	0.36	
9287.00	89.480	356.120	7024.50	2107.50	2751.56	2686.06	-843.45	40°09'55.7152"N	104°35'55.9310"W	0.45	-175.17	-0.43	-0.15	
9382.00	88.770	356.060	7025.95	2108.95	2846.52	2780.83	-849.93	40°09'56.6523"N	104°35'56.0020"W	0.75	-21.70	-0.75	-0.06	
9477.00	89.750	355.670	7027.17	2110.17	2941.50	2875.57	-856.78	40°09'57.5892"N	104°35'56.0779"W	1.11	84.66	1.03	-0.41	
9571.00	89.880	357.060	7027.48	2110.48	3035.46	2969.38	-862.74	40°09'58.5168"N	104°35'56.1423"W	1.49	-113.00	0.14	1.48	
9666.00	89.290	355.670	7028.16	2111.16	3130.42	3064.18	-868.76	40°09'59.4542"N	104°35'56.2075"W	1.59	-81.87	-0.62	-1.46	
9761.00	89.320	355.460	7029.32	2112.32	3225.40	3158.89	-876.11	40°10'00.3908"N	104°35'56.2897"W	0.22	74.41	0.03	-0.22	
9856.00	89.750	357.000	7030.09	2113.09	3320.36	3253.68	-882.35	40°10'01.3281"N	104°35'56.3578"W	1.68	-109.10	0.45	1.62	
9950.00	89.570	356.480	7030.65	2113.65	3414.31	3347.52	-887.70	40°10'02.2560"N	104°35'56.4143"W	0.59	70.24	-0.19	-0.55	
10045.00	90.400	358.790	7030.67	2113.67	3509.18	3442.44	-891.62	40°10'03.1942"N	104°35'56.4524"W	2.58	-121.02	0.87	2.43	
10140.00	89.480	357.260	7030.77	2113.77	3604.03	3537.38	-894.89	40°10'04.1327"N	104°35'56.4822"W	1.88	77.80	-0.97	-1.61	
10234.00	89.720	358.370	7031.43	2114.43	3697.89	3631.30	-898.47	40°10'05.0612"N	104°35'56.5160"W	1.21	-62.24	0.26	1.18	
10329.00	89.820	358.180	7031.81	2114.81	3792.72	3726.26	-901.33	40°10'05.9998"N	104°35'56.5404"W	0.23	73.95	0.11	-0.20	
10423.00	90.220	359.570	7031.77	2114.77	3886.48	3820.24	-903.18	40°10'06.9287"N	104°35'56.5519"W	1.54	-113.65	0.43	1.48	
10518.00	89.480	357.880	7032.02	2115.02	3981.25	3915.21	-905.29	40°10'07.8673"N	104°35'56.5667"W	1.94	-53.13	-0.78	-1.78	
10613.00	89.600	357.720	7032.79	2115.79	4076.11	4010.14	-908.94	40°10'08.8057"N	104°35'56.6012"W	0.21	-96.34	0.13	-0.17	
10707.00	89.570	357.450	7033.47	2116.47	4170.00	4104.05	-912.90	40°10'09.7341"N	104°35'56.6400"W	0.29	56.05	-0.03	-0.29	
10802.00	90.250	358.460	7033.62	2116.62	4264.85	4198.99	-916.29	40°10'10.6726"N	104°35'56.6712"W	1.28	-101.67	0.72	1.06	
10897.00	90.060	357.540	7033.36	2116.36	4359.70	4293.93	-919.61	40°10'11.6111"N	104°35'56.7015"W	0.99	63.02	-0.20	-0.97	
10991.00	90.340	358.090	7033.03	2116.03	4453.57	4387.86	-923.19	40°10'12.5396"N	104°35'56.7354"W	0.66	-90.00	0.30	0.59	
11086.00	90.340	357.920	7032.47	2115.47	4548.42	4482.80	-926.50	40°10'13.4781"N	104°35'56.7655"W	0.18	82.13	0.00	-0.18	
11181.00	90.590	359.730	7031.70	2114.70	4643.17	4577.78	-928.45	40°10'14.4168"N	104°35'56.7782"W	1.92	-103.84	0.26	1.91	
11275.00	89.690	356.080	7031.47	2114.47	4737.02	4671.70	-931.88	40°10'15.3452"N	104°35'56.8102"W	4.00	81.34	-0.96	-3.88	
11370.00	90.150	359.100	7031.60	2114.60	4831.89	4766.60	-935.88	40°10'16.2834"N	104°35'56.8492"W	3.22	-84.45	0.48	3.18	
11465.00	90.250	358.070	7031.27	2114.27	4926.68	4861.57	-938.22	40°10'17.2221"N	104°35'56.8670"W	1.09	-96.50	0.11	-1.08	
11560.00	90.120	356.930	7030.96	2113.96	5021.58	4956.48	-942.36	40°10'18.1603"N	104°35'56.9079"W	1.21	19.98	-0.14	-1.20	
11654.00	90.340	357.010	7030.58	2113.58	5115.51	5050.34	-947.33	40°10'19.0884"N	104°35'56.9597"W	0.25	-110.67	0.23	0.09	
11749.00	89.940	355.950	7030.35	2113.35	5210.46	5145.16	-953.17	40°10'20.0259"N	104°35'57.0224"W	1.19	72.51	-0.42	-1.12	
11843.00	90.400	357.410	7030.07	2113.07	5304.41	5239.00	-958.61	40°10'20.9538"N	104°35'57.0802"W	1.63	-86.49	0.49	1.55	
11938.00	90.460	356.430	7029.36	2112.36	5399.34	5333.86	-963.71	40°10'21.8916"N	104°35'57.1336"W	1.03	-90.00	0.06	-1.03	
12033.00	90.460	356.240	7028.60	2111.60	5494.30	5428.66	-969.79	40°10'22.8290"N	104°35'57.1994"W	0.20	115.14	0.00	-0.20	
12127.00	89.850	357.540	7028.34	2111.34	5588.24	5522.52	-974.89	40°10'23.7570"N	104°35'57.2528"W	1.53	63.44	-0.65	1.38	
12222.00	90.090	358.020	7028.39	2111.39	5683.11	5617.45	-978.57	40°10'24.6954"N	104°35'57.2878"W	0.56	116.57	0.25	0.51	
12317.00	90.030	358.140	7028.29	2111.29	5777.95	5712.40	-981.75	40°10'25.6339"N	104°35'57.3163"W	0.14	-72.47	-0.06	0.13	
12411.00	90.090	357.950	7028.19	2111.19	5871.80	5806.34	-984.96	40°10'26.5626"N	104°35'57.3454"W	0.21	-78.44	0.06	-0.20	
12506.00	90.180	357.510	7027.97	2110.97	5966.67	5901.27	-988.72	40°10'27.5010"N	104°35'57.3814"W	0.47	138.37	0.09	-0.46	
12601.00	89.910	357.750	7027.90	2110.90	6061.56	5996.19	-992.65	40°10'28.4393"N	104°35'57.4196"W	0.38	-50.76	-0.28	0.25	

REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Well	PIONEER D31-775
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.07-T02N-R64W	Wellbore	PIONEER D31-775 AWB
Slot	SLOT#02 PIONEER D31-775 (680'FNL & 1946'FWL, SEC.07)		

WELLPATH DATA (188 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
12695.00	90.400	357.150	7027.64	2110.64	6155.45	6090.09	-996.83	40°10'29.3677"N	104°35'57.4612"W	0.82	140.77	0.52	-0.64	
12790.00	89.910	357.550	7027.38	2110.38	6250.36	6184.99	-1001.22	40°10'30.3058"N	104°35'57.5053"W	0.67	72.47	-0.52	0.42	
12884.00	89.970	357.740	7027.48	2110.48	6344.24	6278.91	-1005.08	40°10'31.2343"N	104°35'57.5428"W	0.21	-137.49	0.06	0.20	
12979.00	89.850	357.630	7027.63	2110.63	6439.12	6373.83	-1008.92	40°10'32.1727"N	104°35'57.5798"W	0.17	96.84	-0.13	-0.12	
13074.00	89.820	357.880	7027.91	2110.91	6533.99	6468.76	-1012.64	40°10'33.1110"N	104°35'57.6153"W	0.27	13.45	-0.03	0.26	
13168.00	90.280	356.990	7027.82	2110.82	6627.85	6562.70	-1016.03	40°10'34.0396"N	104°35'57.6467"W	0.50	-123.69	0.49	0.12	
13263.00	90.000	357.570	7027.59	2110.59	6722.72	6657.63	-1019.71	40°10'34.9780"N	104°35'57.6817"W	0.53	-76.96	-0.29	-0.44	
13358.00	90.220	356.620	7027.41	2110.41	6817.64	6752.50	-1024.52	40°10'35.9161"N	104°35'57.7313"W	1.03	141.34	0.23	-1.00	
13452.00	89.820	356.940	7027.38	2110.38	6911.58	6846.35	-1029.80	40°10'36.8440"N	104°35'57.7870"W	0.54	180.00	-0.43	0.34	
13547.00	89.320	356.940	7028.09	2111.09	7006.51	6941.22	-1034.88	40°10'37.7819"N	104°35'57.8399"W	0.53	31.49	-0.53	0.00	
13736.00	90.430	357.620	7028.50	2111.50	7195.33	7130.00	-1043.84	40°10'39.6482"N	104°35'57.9308"W	0.69	-144.06	0.59	0.36	
13830.00	90.030	357.330	7028.12	2111.12	7289.23	7223.91	-1047.99	40°10'40.5766"N	104°35'57.9718"W	0.53	87.36	-0.43	-0.31	
13925.00	90.120	359.280	7028.00	2111.00	7384.04	7318.86	-1050.80	40°10'41.5152"N	104°35'57.9956"W	2.05	113.90	0.09	2.05	
14020.00	89.110	1.560	7028.64	2111.64	7478.58	7413.85	-1050.10	40°10'42.4537"N	104°35'57.9742"W	2.62	70.53	-1.06	2.40	
14114.00	89.690	3.200	7029.62	2112.62	7571.74	7507.76	-1046.20	40°10'43.3813"N	104°35'57.9116"W	1.85	-52.94	0.62	1.74	
14209.00	90.060	2.710	7029.83	2112.83	7665.78	7602.63	-1041.30	40°10'44.3183"N	104°35'57.8361"W	0.65	-86.76	0.39	-0.52	
14304.00	90.090	2.180	7029.71	2112.71	7759.93	7697.54	-1037.25	40°10'45.2558"N	104°35'57.7715"W	0.56	-3.01	0.03	-0.56	
14398.00	90.280	2.170	7029.40	2112.40	7853.15	7791.47	-1033.68	40°10'46.1836"N	104°35'57.7133"W	0.20	90.00	0.20	-0.01	
14493.00	90.280	2.200	7028.94	2111.94	7947.36	7886.40	-1030.06	40°10'47.1213"N	104°35'57.6542"W	0.03	-101.79	0.00	0.03	
14588.00	90.090	1.290	7028.63	2111.63	8041.66	7981.36	-1027.16	40°10'48.0593"N	104°35'57.6045"W	0.98	-130.60	-0.20	-0.96	
14683.00	89.970	1.150	7028.58	2111.58	8136.06	8076.34	-1025.14	40°10'48.9976"N	104°35'57.5660"W	0.19	-92.07	-0.13	-0.15	
14777.00	89.940	0.320	7028.66	2111.66	8229.56	8170.33	-1023.93	40°10'49.9263"N	104°35'57.5382"W	0.88	-90.00	-0.03	-0.88	
14872.00	89.940	359.930	7028.76	2111.76	8324.14	8265.33	-1023.73	40°10'50.8650"N	104°35'57.5231"W	0.41	77.31	0.00	-0.41	
14967.00	90.620	2.950	7028.29	2111.29	8418.49	8360.29	-1021.34	40°10'51.8031"N	104°35'57.4799"W	3.26	-103.55	0.72	3.18	
15061.00	90.280	1.540	7027.55	2110.55	8511.69	8454.21	-1017.66	40°10'52.7308"N	104°35'57.4202"W	1.54	-155.23	-0.36	-1.50	
15156.00	90.150	1.480	7027.20	2110.20	8606.04	8549.17	-1015.16	40°10'53.6689"N	104°35'57.3755"W	0.15	-153.81	-0.14	-0.06	
15251.00	89.540	1.180	7027.45	2110.45	8700.42	8644.15	-1012.95	40°10'54.6072"N	104°35'57.3346"W	0.72	34.70	-0.64	-0.32	
15346.00	90.060	1.540	7027.78	2110.78	8794.79	8739.12	-1010.70	40°10'55.5455"N	104°35'57.2932"W	0.67	-84.88	0.55	0.38	
15440.00	90.120	0.870	7027.64	2110.64	8888.21	8833.10	-1008.72	40°10'56.4739"N	104°35'57.2554"W	0.72	-81.57	0.06	-0.71	
15535.00	90.280	359.790	7027.31	2110.31	8982.76	8928.10	-1008.17	40°10'57.4126"N	104°35'57.2359"W	1.15	-80.67	0.17	-1.14	
15630.00	90.620	357.720	7026.56	2109.56	9077.52	9023.06	-1010.24	40°10'58.3512"N	104°35'57.2501"W	2.21	124.36	0.36	-2.18	
15724.00	89.820	358.890	7026.20	2109.20	9171.34	9117.02	-1013.02	40°10'59.2799"N	104°35'57.2736"W	1.51	107.85	-0.85	1.24	
15819.00	89.630	359.480	7026.65	2109.65	9266.06	9212.01	-1014.37	40°11'0.2187"N	104°35'57.2786"W	0.65	-48.50	-0.20	0.62	
15914.00	90.090	358.960	7026.89	2109.89	9360.78	9307.00	-1015.66	40°11'1.1575"N	104°35'57.2828"W	0.73	-150.52	0.48	-0.55	
16008.00	89.630	358.700	7027.12	2110.12	9454.54	9400.98	-1017.58	40°11'2.0863"N	104°35'57.2952"W	0.56	-19.98	-0.49	-0.28	
16103.00	89.850	358.620	7027.55	2110.55	9549.33	9495.95	-1019.80	40°11'3.0250"N	104°35'57.3114"W	0.25	166.91	0.23	-0.08	
16198.00	89.420	358.720	7028.15	2111.15	9644.11	9590.92	-1022.01	40°11'3.9637"N	104°35'57.3274"W	0.46	40.92	-0.45	0.11	
16293.00	89.720	358.980	7028.87	2111.87	9738.86	9685.90	-1023.91	40°11'4.9024"N	104°35'57.3395"W	0.42	-101.69	0.32	0.27	
16387.00	89.660	358.690	7029.37	2112.37	9832.63	9779.88	-1025.82	40°11'5.8313"N	104°35'57.3519"W	0.32	91.41	-0.06	-0.31	
16482.00	89.570	2.370	7030.01	2113.01	9927.13	9874.86	-1024.95	40°11'6.7697"N	104°35'57.3281"W	3.87	-98.80	-0.09	3.87	
16577.00	89.420	1.400	7030.85	2113.85	10021.40	9969.80	-1021.82	40°11'7.7076"N	104°35'57.2754"W	1.03	-71.84	-0.16	-1.02	
16672.00	89.630	0.760	7031.64	2114.64	10115.83	10064.78	-1020.03	40°11'8.6459"N	104°35'57.2399"W	0.71	25.97	0.22	-0.67	
16766.00	90.800	1.330	7031.28	2114.28	10209.26	10158.76	-1018.32	40°11'9.5744"N	104°35'57.2055"W	1.38	-152.45	1.24	0.61	
16861.00	90.340	1.090	7030.34	2113.34	10303.66	10253.74	-1016.31	40°11'10.5127"N	104°35'57.1673"W	0.55	46.93	-0.48	-0.25	
16956.00	90.770	1.550	7029.42	2112.42	10398.04	10348.71	-1014.12	40°11'11.4509"N	104°35'57.1266"W	0.66	-14.93	0.45	0.48	

REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Well	PIONEER D31-775
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.07-T02N-R64W	Wellbore	PIONEER D31-775 AWB
Slot	SLOT#02 PIONEER D31-775 (680'FNL & 1946'FWL, SEC.07)		

WELLPATH DATA (188 stations) † = interpolated, ‡ = extrapolated station

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
17050.00	90.920	1.510	7028.03	2111.03	10491.38	10442.66	-1011.61	40°11'12.3791"N	104°35'57.0820"W	0.17	-133.96	0.16	-0.04	
17145.00	90.650	1.230	7026.73	2109.73	10585.75	10537.63	-1009.34	40°11'13.3173"N	104°35'57.0403"W	0.41	-140.85	-0.28	-0.29	
17240.00	90.220	0.880	7026.01	2109.01	10680.18	10632.61	-1007.59	40°11'14.2556"N	104°35'57.0054"W	0.58	71.57	-0.45	-0.37	
17334.00	90.280	1.060	7025.60	2108.60	10773.63	10726.59	-1006.00	40°11'15.1842"N	104°35'56.9725"W	0.20	-85.24	0.06	0.19	
17429.00	90.310	0.700	7025.11	2108.11	10868.09	10821.58	-1004.54	40°11'16.1227"N	104°35'56.9413"W	0.38	118.20	0.03	-0.38	
17524.00	89.940	1.390	7024.90	2107.90	10962.52	10916.56	-1002.81	40°11'17.0611"N	104°35'56.9066"W	0.82	-128.66	-0.39	0.73	
17594.00	89.820	1.240	7025.05	2108.05	11032.07	10986.55	-1001.20	40°11'17.7524"N	104°35'56.8767"W	0.27	0.00	-0.17	-0.21	LAST BH MWD SURVEY
17618.00‡	89.820	1.240	7025.13	2108.13	11055.92	11010.54	-1000.68	40°11'17.9895"N	104°35'56.8669"W	0.00		0.00	0.00	EXTRAPOLATED TO TD

HOLE & CASING SECTIONS - Ref Wellbore: PIONEER D31-775 AWB Ref Wellpath: PIONEER D31-775 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]
13.5in Open Hole	30.00	1932.00	1902.00	30.00	1931.96	0.00	0.02	-3.31	6.78
9.625in Casing Surface	30.00	1932.00	1902.00	30.00	1931.96	0.00	0.02	-3.31	6.78
8.5in Open Hole	1932.00	17618.00	15686.00	1931.96	7025.13	-3.31	6.78	11010.54	-1000.68

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
PIONEER D31-775 BHL REV-1 (200'FNL & 1027'FWL, SEC.31)	7030.00	11011.34	-1004.13	3251677.30	1312730.68	40°11'17.9977"N	104°35'56.9112"W	point
PIONEER D31-775 TPZ REV-1 (200'FSL & 1179'FWL, SEC.06)	7030.00	859.95	-775.58	3251905.85	1302579.73	40°09'37.6636"N	104°35'55.2959"W	point
SECTION LINES - SEC.06-T02N-R64W	8000.00	5909.96	-1999.32	3250682.16	1307629.53	40°10'27.6881"N	104°36'10.3986"W	polygon
	2D Polygon: dimensions not calculated							
SECTION LINES - SEC.07-T02N-R64W	8000.00	630.69	-1952.61	3250728.87	1302350.49	40°09'35.5162"N	104°36'10.4849"W	polygon
	2D Polygon: dimensions not calculated							
SECTION LINES - SEC.31-T03N-R64W	8000.00	11199.92	-2032.06	3250649.42	1312919.26	40°11'19.9642"N	104°36'10.1310"W	polygon
	2D Polygon: dimensions not calculated							

WELLPATH COMPOSITION - Ref Wellbore: PIONEER D31-775 AWB Ref Wellpath: PIONEER D31-775 AWP

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore	Survey Date
0.00	1926.00	Gyrodatta 2015 - GC+DROP+COND	13.5' GYRODATA 2015-(GC+DROP+COND) <0' - 1926'>	PIONEER D31-775 AWB	1/27/2020
1926.00	17618.00	OWSG MWD rev2 + IFR1 + Multi-Station Correction	8.5' OWSG REV.2 (IFR1+MSA) <1995' - 17594'>	PIONEER D31-775 AWB	1/27/2020

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Well	PIONEER D31-775
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.07-T02N-R64W	Wellbore	PIONEER D31-775 AWB
Slot	SLOT#02 PIONEER D31-775 (680'FNL & 1946'FWL, SEC.07)		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
80.00	0.240	101.710	80.00	FIRST 3RD PARTY GYRO SURVEY
1926.00	0.480	73.990	1925.96	TIE ON TO 3RD PARTY GYRO SURVEY
1995.00	0.060	324.460	1994.96	FIRST BH MWD SURVEY
17594.00	89.820	1.240	7025.05	LAST BH MWD SURVEY
17618.00	89.820	1.240	7025.13	EXTRAPOLATED TO TD