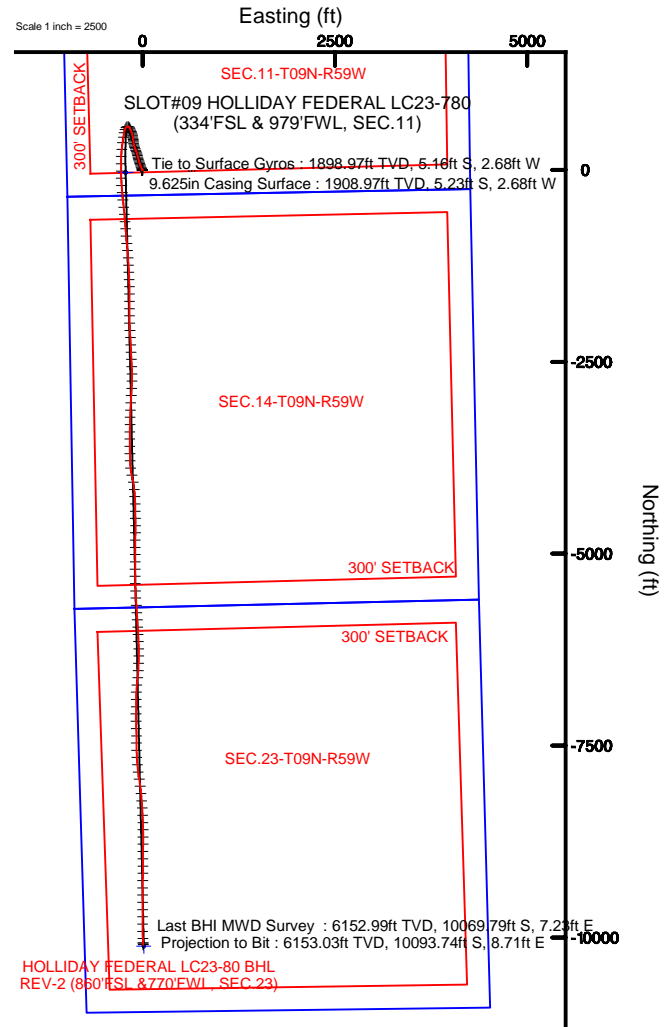
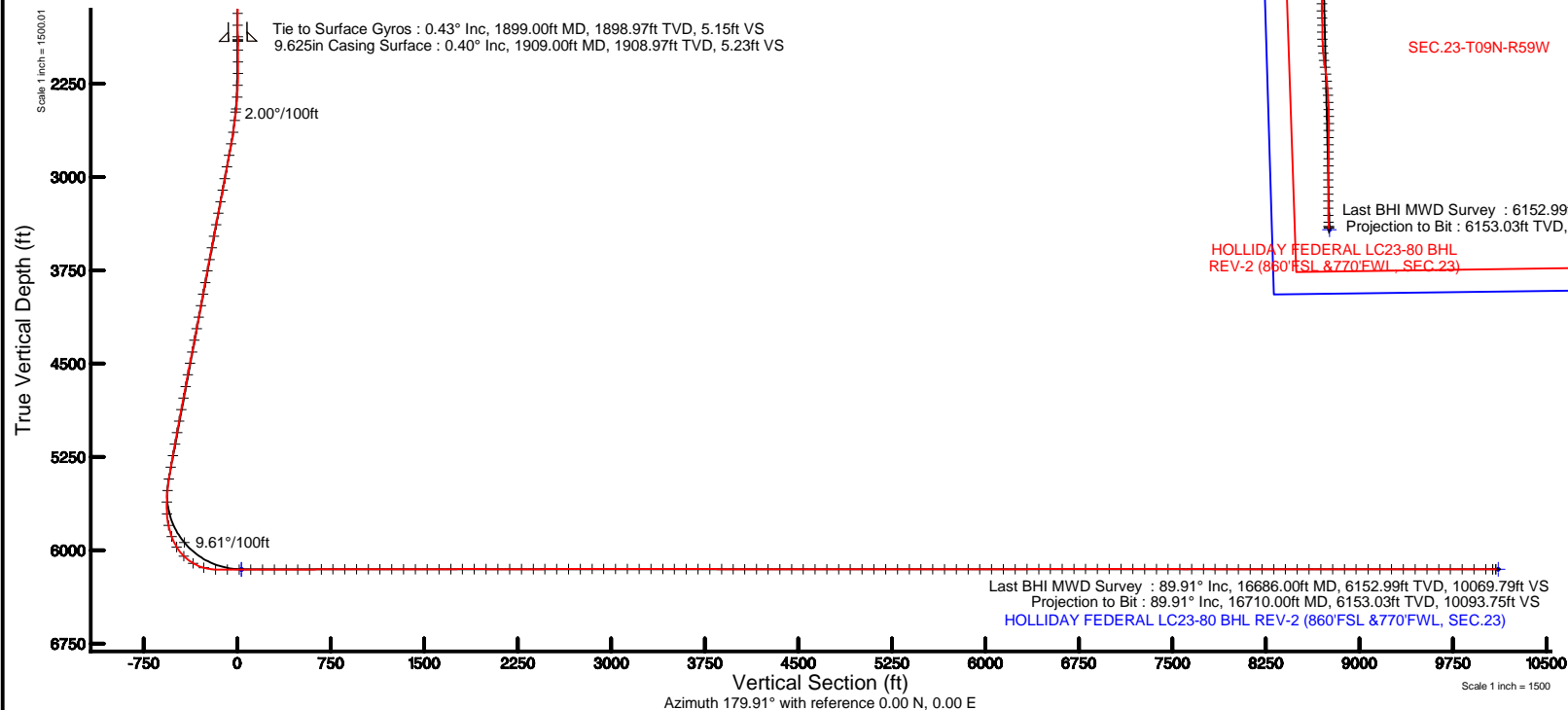


NOBLE ENERGY, INC

Plot reference wellpath is HOLLIDAY FEDERAL LC23-780 PWP (REV-B.0)	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
True vertical depths are referenced to H&P 524 (30XB) (RKB)	* = Wellpath was transformed from a different geodetic datum
Measured depths are referenced to H&P 524 (30XB) (RKB)	North Reference: Grid north
H&P 524 (30XB) (RKB) to Mean Sea Level: 5007 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#09 HOLLIDAY FEDERAL LC23-780 (334FSL & 979FWL, SEC. 11)): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: gualanor on 2017-02-01
	Database: WA_DEN_Deriver_Defn

Location Information						
Facility Name			Grid East (US R)	Grid North (US R)	Latitude	Longitude
SEC.11-109N R59W			3430932.809	1522099.080	40°45'33.192"N	103°56'39.840"W
Site	Local N (R)	Local E (R)	Grid East (US R)	Grid North (US R)	Latitude	Longitude
SLOT#09 HOLLIDAY FEDERAL LC23-780 (334FSL & 979FWL, SEC.11)	-58.72	-1896.96	3429035.859	1523150.375	40°45'32.940"N	103°57'04.500"W
H&P 524 (30'KB) (RKB) to Mud line (At Slot: SLOT#09 HOLLIDAY FEDERAL LC23-780 (334FSL & 979FWL, SEC.11))					5007H	
Mean Sea Level to Mud line (At Slot: SLOT#09 HOLLIDAY FEDERAL LC23-780 (334FSL & 979FWL, SEC.11))					0R	
H&P 524 (30'KB) (RKB) to Mean Sea Level					5007H	



REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Slot	SLOT#09 HOLLIDAY FEDERAL LC23-780 (334'FSL & 979'FWL, SEC.11)
Area	COLORADO	Well	HOLLIDAY FEDERAL LC23-780
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	HOLLIDAY FEDERAL LC23-780 AWB
Facility	SEC.11-T09N-R59W		

REPORT SETUP INFORMATION

Projection System	NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	Software System	WellArchitect® 5.0
North Reference	Grid	User	Guenaler
Scale	0.999996	Report Generated	2/1/2017 at 10:31:02 AM
Convergence at slot	1.01° East	Database/Source file	WA_DEN_Denver_Defn/HOLLIDAY_FEDERAL_LC23-780_AWP.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-58.72	-1896.96	3429035.86	1523150.38	40°45'32.940"N	103°57'04.500"W
Facility Reference Pt			3430932.81	1523209.09	40°45'33.192"N	103°56'39.840"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 524 (30'KB) (RKB) to Facility Vertical Datum	5007.00ft
Horizontal Reference Pt	Slot	H&P 524 (30'KB) (RKB) to Mean Sea Level	5007.00ft
Vertical Reference Pt	H&P 524 (30'KB) (RKB)	H&P 524 (30'KB) (RKB) to Mud Line at Slot (SLOT#09 HOLLIDAY FEDERAL LC23-780 (334'FSL & 979'FWL, SEC.11))	5007.00ft
MD Reference Pt	H&P 524 (30'KB) (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	179.91°

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#09 HOLLIDAY FEDERAL LC23-780 (334'FSL & 979'FWL, SEC.11)
Area	COLORADO	Well	HOLLIDAY FEDERAL LC23-780
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	HOLLIDAY FEDERAL LC23-780 AWB
Facility	SEC.11-T09N-R59W		

WELLPATH DATA (159 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
1899.00	0.430	184.700	1898.97	5.15	-5.16	-2.68	40°45'32.889"N	103°57'04.536"W	0.13	Tie to Surface Gyros
1980.00	0.680	105.330	1979.97	5.59	-5.59	-2.24	40°45'32.885"N	103°57'04.530"W	0.91	
2075.00	0.240	223.860	2074.97	5.88	-5.88	-1.84	40°45'32.882"N	103°57'04.525"W	0.87	
2169.00	0.090	23.730	2168.97	5.95	-5.96	-1.95	40°45'32.881"N	103°57'04.527"W	0.35	
2264.00	1.930	331.060	2263.95	4.48	-4.49	-2.69	40°45'32.896"N	103°57'04.536"W	1.98	
2359.00	4.390	335.860	2358.80	-0.24	0.23	-4.95	40°45'32.943"N	103°57'04.564"W	2.60	
2454.00	5.930	336.860	2453.41	-8.08	8.06	-8.37	40°45'33.021"N	103°57'04.607"W	1.62	
2548.00	8.010	337.410	2546.71	-18.60	18.57	-12.79	40°45'33.126"N	103°57'04.662"W	2.21	
2643.00	9.600	339.200	2640.59	-32.12	32.09	-18.15	40°45'33.260"N	103°57'04.728"W	1.70	
2737.00	11.010	340.100	2733.07	-47.90	47.86	-23.99	40°45'33.417"N	103°57'04.801"W	1.51	
2832.00	11.080	340.270	2826.31	-65.03	64.98	-30.16	40°45'33.587"N	103°57'04.877"W	0.08	
2927.00	11.120	340.920	2919.53	-82.29	82.23	-36.23	40°45'33.759"N	103°57'04.952"W	0.14	
3022.00	10.970	342.000	3012.77	-99.56	99.49	-42.02	40°45'33.930"N	103°57'05.023"W	0.27	
3116.00	10.930	342.890	3105.06	-116.59	116.51	-47.41	40°45'34.099"N	103°57'05.089"W	0.18	
3211.00	10.610	344.420	3198.39	-133.63	133.54	-52.40	40°45'34.268"N	103°57'05.151"W	0.45	
3305.00	11.090	347.450	3290.71	-150.80	150.70	-56.69	40°45'34.439"N	103°57'05.202"W	0.79	
3400.00	11.100	347.470	3383.93	-168.65	168.55	-60.66	40°45'34.616"N	103°57'05.250"W	0.01	
3495.00	11.250	345.700	3477.13	-186.56	186.46	-64.94	40°45'34.793"N	103°57'05.301"W	0.39	
3589.00	11.230	343.290	3569.33	-204.22	204.11	-69.83	40°45'34.969"N	103°57'05.361"W	0.50	
3684.00	11.330	340.990	3662.49	-221.92	221.79	-75.53	40°45'35.144"N	103°57'05.431"W	0.49	
3778.00	11.260	338.060	3754.67	-239.17	239.03	-81.97	40°45'35.316"N	103°57'05.511"W	0.61	
3873.00	11.210	337.910	3847.85	-256.34	256.19	-88.91	40°45'35.486"N	103°57'05.597"W	0.06	
3968.00	11.180	338.500	3941.04	-273.48	273.32	-95.75	40°45'35.657"N	103°57'05.682"W	0.12	
4062.00	11.000	340.820	4033.29	-290.44	290.27	-102.04	40°45'35.825"N	103°57'05.760"W	0.51	
4157.00	10.670	345.720	4126.60	-307.53	307.35	-107.19	40°45'35.995"N	103°57'05.823"W	1.03	
4251.00	11.090	348.670	4218.91	-324.83	324.65	-111.11	40°45'36.167"N	103°57'05.870"W	0.74	
4346.00	11.150	350.270	4312.13	-342.85	342.66	-114.46	40°45'36.345"N	103°57'05.909"W	0.33	
4441.00	11.120	351.970	4405.34	-360.98	360.79	-117.29	40°45'36.525"N	103°57'05.942"W	0.35	
4535.00	11.190	353.130	4497.56	-379.01	378.82	-119.65	40°45'36.703"N	103°57'05.969"W	0.25	
4629.00	10.330	353.760	4589.91	-396.45	396.25	-121.65	40°45'36.876"N	103°57'05.991"W	0.92	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#09 HOLLIDAY FEDERAL LC23-780 (334'FSL & 979'FWL, SEC.11)
Area	COLORADO	Well	HOLLIDAY FEDERAL LC23-780
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	HOLLIDAY FEDERAL LC23-780 AWB
Facility	SEC.11-T09N-R59W		

WELLPATH DATA (159 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4724.00	10.670	351.690	4683.32	-413.62	413.42	-123.85	40°45'37.046"N	103°57'06.015"W	0.53	
4819.00	10.590	349.070	4776.69	-430.90	430.69	-126.78	40°45'37.217"N	103°57'06.049"W	0.52	
4913.00	11.100	347.950	4869.01	-448.24	448.02	-130.30	40°45'37.389"N	103°57'06.091"W	0.59	
5007.00	10.580	343.670	4961.33	-465.38	465.16	-134.62	40°45'37.559"N	103°57'06.144"W	1.02	
5102.00	10.630	342.150	5054.71	-482.10	481.87	-139.76	40°45'37.725"N	103°57'06.207"W	0.30	
5196.00	11.250	340.050	5147.00	-498.98	498.74	-145.54	40°45'37.892"N	103°57'06.278"W	0.78	
5291.00	11.180	336.140	5240.19	-516.12	515.87	-152.43	40°45'38.063"N	103°57'06.363"W	0.80	
5385.00	10.900	333.070	5332.45	-532.39	532.13	-160.14	40°45'38.225"N	103°57'06.460"W	0.69	
5480.00	10.010	330.320	5425.87	-547.59	547.31	-168.30	40°45'38.376"N	103°57'06.562"W	1.07	
5574.00	7.100	312.860	5518.83	-558.66	558.36	-176.61	40°45'38.487"N	103°57'06.668"W	4.12	
5669.00	7.940	283.410	5613.05	-564.19	563.88	-187.30	40°45'38.543"N	103°57'06.806"W	4.10	
5763.00	10.260	251.770	5705.92	-563.10	562.77	-201.57	40°45'38.535"N	103°57'06.991"W	5.77	
5858.00	13.370	212.530	5799.04	-551.19	550.84	-215.54	40°45'38.419"N	103°57'07.176"W	8.86	
5952.00	21.480	203.000	5888.67	-526.16	525.79	-228.13	40°45'38.174"N	103°57'07.345"W	9.12	
6047.00	31.780	189.680	5973.55	-485.37	484.97	-239.17	40°45'37.773"N	103°57'07.498"W	12.47	
6141.00	45.720	188.550	6046.68	-427.42	427.01	-248.39	40°45'37.201"N	103°57'07.630"W	14.85	
6236.00	59.760	188.270	6104.05	-352.82	352.40	-259.40	40°45'36.466"N	103°57'07.790"W	14.78	
6330.00	74.380	186.850	6140.57	-267.25	266.80	-270.70	40°45'35.623"N	103°57'07.957"W	15.61	
6425.00	88.890	181.370	6154.37	-173.80	173.34	-277.33	40°45'34.700"N	103°57'08.064"W	16.30	
6519.00	90.120	180.050	6155.18	-79.81	79.35	-278.50	40°45'33.772"N	103°57'08.100"W	1.92	
6614.00	90.220	179.480	6154.90	15.19	-15.65	-278.11	40°45'32.833"N	103°57'08.117"W	0.61	
6708.00	90.150	178.330	6154.60	109.17	-109.63	-276.31	40°45'31.905"N	103°57'08.115"W	1.23	
6802.00	89.940	175.570	6154.52	203.04	-203.49	-271.31	40°45'30.976"N	103°57'08.071"W	2.94	
6897.00	90.000	174.980	6154.57	297.73	-298.16	-263.48	40°45'30.040"N	103°57'07.991"W	0.62	
6992.00	90.220	174.700	6154.39	392.35	-392.78	-254.94	40°45'29.104"N	103°57'07.901"W	0.37	
7086.00	90.220	173.800	6154.03	485.89	-486.30	-245.52	40°45'28.178"N	103°57'07.800"W	0.96	
7180.00	90.250	174.370	6153.64	579.41	-579.80	-235.84	40°45'27.253"N	103°57'07.696"W	0.61	
7275.00	90.220	175.800	6153.25	674.07	-674.45	-227.70	40°45'26.316"N	103°57'07.611"W	1.51	
7369.00	90.060	176.240	6153.02	767.85	-768.22	-221.17	40°45'25.389"N	103°57'07.548"W	0.50	
7464.00	90.310	174.930	6152.72	862.58	-862.94	-213.86	40°45'24.452"N	103°57'07.474"W	1.40	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#09 HOLLIDAY FEDERAL LC23-780 (334'FSL & 979'FWL, SEC.11)
Area	COLORADO	Well	HOLLIDAY FEDERAL LC23-780
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	HOLLIDAY FEDERAL LC23-780 AWB
Facility	SEC.11-T09N-R59W		

WELLPATH DATA (159 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
7559.00	90.090	173.950	6152.38	957.15	-957.49	-204.66	40°45'23.516"N	103°57'07.376"W	1.06	
7654.00	90.180	174.770	6152.16	1051.70	-1052.03	-195.32	40°45'22.580"N	103°57'07.276"W	0.87	
7748.00	90.280	176.060	6151.78	1145.41	-1145.72	-187.81	40°45'21.653"N	103°57'07.200"W	1.38	
7843.00	90.150	177.080	6151.43	1240.25	-1240.55	-182.12	40°45'20.715"N	103°57'07.148"W	1.08	
7938.00	89.970	177.510	6151.33	1335.15	-1335.44	-177.64	40°45'19.777"N	103°57'07.111"W	0.49	
8032.00	90.030	177.800	6151.33	1429.08	-1429.37	-173.79	40°45'18.849"N	103°57'07.082"W	0.32	
8126.00	89.910	179.150	6151.38	1523.04	-1523.33	-171.29	40°45'17.920"N	103°57'07.071"W	1.44	
8221.00	90.150	179.090	6151.33	1618.04	-1618.32	-169.83	40°45'16.981"N	103°57'07.074"W	0.26	
8316.00	90.180	180.290	6151.05	1713.03	-1713.32	-169.32	40°45'16.042"N	103°57'07.089"W	1.26	
8410.00	90.000	180.630	6150.91	1807.03	-1807.31	-170.07	40°45'15.114"N	103°57'07.120"W	0.41	
8505.00	90.030	179.580	6150.88	1902.03	-1902.31	-170.25	40°45'14.175"N	103°57'07.143"W	1.11	
8599.00	89.880	177.440	6150.95	1995.99	-1996.27	-167.80	40°45'13.247"N	103°57'07.133"W	2.28	
8694.00	89.910	176.990	6151.13	2090.89	-2091.16	-163.19	40°45'12.308"N	103°57'07.095"W	0.47	
8789.00	90.030	177.340	6151.18	2185.78	-2186.04	-158.49	40°45'11.370"N	103°57'07.055"W	0.39	
8883.00	90.030	177.060	6151.13	2279.67	-2279.93	-153.90	40°45'10.442"N	103°57'07.017"W	0.30	
8978.00	90.030	177.210	6151.08	2374.56	-2374.81	-149.15	40°45'09.504"N	103°57'06.977"W	0.16	
9072.00	90.150	176.840	6150.93	2468.44	-2468.69	-144.27	40°45'08.575"N	103°57'06.934"W	0.41	
9167.00	90.090	177.490	6150.73	2563.33	-2563.57	-139.57	40°45'07.637"N	103°57'06.895"W	0.69	
9261.00	89.850	179.200	6150.78	2657.30	-2657.53	-136.86	40°45'06.709"N	103°57'06.881"W	1.84	
9355.00	90.090	181.440	6150.83	2751.29	-2751.52	-137.38	40°45'05.780"N	103°57'06.909"W	2.40	
9450.00	90.250	183.470	6150.55	2846.19	-2846.43	-141.45	40°45'04.843"N	103°57'06.984"W	2.14	
9544.00	89.910	183.490	6150.42	2940.01	-2940.25	-147.15	40°45'03.917"N	103°57'07.079"W	0.36	
9639.00	90.120	182.890	6150.39	3034.85	-3035.10	-152.44	40°45'02.981"N	103°57'07.169"W	0.67	
9733.00	89.970	182.450	6150.32	3128.74	-3129.00	-156.82	40°45'02.054"N	103°57'07.247"W	0.49	
9828.00	90.000	181.560	6150.34	3223.67	-3223.94	-160.14	40°45'01.117"N	103°57'07.312"W	0.94	
9922.00	89.850	181.770	6150.47	3317.63	-3317.90	-162.88	40°45'00.189"N	103°57'07.369"W	0.27	
10017.00	90.030	180.940	6150.57	3412.60	-3412.88	-165.12	40°44'59.251"N	103°57'07.420"W	0.89	
10111.00	89.880	180.470	6150.64	3506.59	-3506.87	-166.28	40°44'58.322"N	103°57'07.456"W	0.52	
10206.00	90.060	178.650	6150.69	3601.58	-3601.86	-165.55	40°44'57.384"N	103°57'07.468"W	1.93	
10300.00	89.880	178.540	6150.74	3695.56	-3695.83	-163.24	40°44'56.455"N	103°57'07.459"W	0.22	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#09 HOLLIDAY FEDERAL LC23-780 (334'FSL & 979'FWL, SEC.11)
Area	COLORADO	Well	HOLLIDAY FEDERAL LC23-780
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	HOLLIDAY FEDERAL LC23-780 AWB
Facility	SEC.11-T09N-R59W		

WELLPATH DATA (159 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
10395.00	89.970	179.020	6150.86	3790.54	-3790.81	-161.22	40°44'55.516"N	103°57'07.455"W	0.51	
10489.00	89.690	173.650	6151.14	3884.32	-3884.58	-155.21	40°44'54.589"N	103°57'07.398"W	5.72	
10584.00	89.940	166.650	6151.45	3977.89	-3978.13	-138.97	40°44'53.662"N	103°57'07.208"W	7.37	
10678.00	90.180	170.450	6151.35	4070.03	-4070.24	-120.32	40°44'52.749"N	103°57'06.987"W	4.05	
10773.00	89.910	175.380	6151.28	4164.30	-4164.48	-108.60	40°44'51.816"N	103°57'06.856"W	5.20	
10867.00	89.880	175.370	6151.45	4258.00	-4258.18	-101.02	40°44'50.889"N	103°57'06.779"W	0.03	
10961.00	89.880	178.540	6151.65	4351.87	-4352.03	-96.03	40°44'49.961"N	103°57'06.735"W	3.37	
11055.00	90.060	179.040	6151.70	4445.85	-4446.01	-94.05	40°44'49.032"N	103°57'06.731"W	0.57	
11149.00	90.060	179.060	6151.60	4539.84	-4540.00	-92.49	40°44'48.103"N	103°57'06.732"W	0.02	
11244.00	89.970	180.120	6151.57	4634.84	-4634.99	-91.81	40°44'47.164"N	103°57'06.744"W	1.12	
11338.00	89.880	180.600	6151.70	4728.83	-4728.99	-92.40	40°44'46.236"N	103°57'06.773"W	0.52	
11432.00	89.970	180.830	6151.82	4822.82	-4822.98	-93.57	40°44'45.307"N	103°57'06.810"W	0.26	
11526.00	89.880	180.170	6151.94	4916.82	-4916.98	-94.39	40°44'44.379"N	103°57'06.842"W	0.71	
11621.00	89.910	180.400	6152.12	5011.81	-5011.98	-94.86	40°44'43.440"N	103°57'06.870"W	0.24	
11715.00	89.970	180.890	6152.21	5105.81	-5105.97	-95.92	40°44'42.512"N	103°57'06.905"W	0.53	
11810.00	89.940	180.270	6152.29	5200.80	-5200.97	-96.88	40°44'41.574"N	103°57'06.939"W	0.65	
11904.00	90.120	179.590	6152.24	5294.80	-5294.97	-96.77	40°44'40.645"N	103°57'06.958"W	0.75	
11999.00	90.090	178.080	6152.07	5389.78	-5389.94	-94.84	40°44'39.706"N	103°57'06.955"W	1.59	
12093.00	89.970	177.320	6152.02	5483.71	-5483.87	-91.06	40°44'38.778"N	103°57'06.927"W	0.82	
12188.00	90.150	176.670	6151.92	5578.59	-5578.74	-86.08	40°44'37.840"N	103°57'06.884"W	0.71	
12283.00	89.880	176.180	6151.89	5673.41	-5673.55	-80.16	40°44'36.902"N	103°57'06.829"W	0.59	
12377.00	89.970	176.790	6152.01	5767.24	-5767.37	-74.40	40°44'35.974"N	103°57'06.775"W	0.66	
12472.00	89.970	175.980	6152.06	5862.06	-5862.18	-68.41	40°44'35.036"N	103°57'06.719"W	0.85	
12566.00	90.000	176.360	6152.09	5955.86	-5955.97	-62.13	40°44'34.108"N	103°57'06.658"W	0.41	
12661.00	90.150	177.350	6151.96	6050.73	-6050.83	-56.92	40°44'33.170"N	103°57'06.612"W	1.05	
12755.00	90.250	177.450	6151.64	6144.64	-6144.73	-52.65	40°44'32.242"N	103°57'06.578"W	0.15	
12850.00	90.120	179.700	6151.33	6239.60	-6239.70	-50.29	40°44'31.303"N	103°57'06.569"W	2.37	
12944.00	90.280	179.670	6151.00	6333.60	-6333.69	-49.77	40°44'30.375"N	103°57'06.584"W	0.17	
13039.00	90.150	182.430	6150.65	6428.57	-6428.67	-51.51	40°44'29.437"N	103°57'06.628"W	2.91	
13133.00	90.030	182.370	6150.50	6522.48	-6522.59	-55.45	40°44'28.509"N	103°57'06.700"W	0.14	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#09 HOLLIDAY FEDERAL LC23-780 (334'FSL & 979'FWL, SEC.11)
Area	COLORADO	Well	HOLLIDAY FEDERAL LC23-780
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	HOLLIDAY FEDERAL LC23-780 AWB
Facility	SEC.11-T09N-R59W		

WELLPATH DATA (159 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
13227.00	90.090	186.920	6150.40	6616.14	-6616.25	-63.06	40°44'27.585"N	103°57'06.820"W	4.84	
13322.00	89.940	185.970	6150.37	6710.52	-6710.65	-73.72	40°44'26.655"N	103°57'06.980"W	1.01	
13416.00	90.060	182.130	6150.37	6804.26	-6804.40	-80.36	40°44'25.730"N	103°57'07.088"W	4.09	
13511.00	90.090	179.660	6150.25	6899.23	-6899.38	-81.85	40°44'24.791"N	103°57'07.128"W	2.60	
13606.00	89.780	181.140	6150.36	6994.23	-6994.37	-82.51	40°44'23.853"N	103°57'07.159"W	1.59	
13700.00	90.030	181.080	6150.51	7088.21	-7088.36	-84.33	40°44'22.925"N	103°57'07.204"W	0.27	
13794.00	89.880	178.980	6150.59	7182.20	-7182.35	-84.38	40°44'21.996"N	103°57'07.226"W	2.24	
13889.00	89.940	177.260	6150.74	7277.15	-7277.30	-81.26	40°44'21.058"N	103°57'07.207"W	1.81	
13984.00	89.970	180.730	6150.81	7372.12	-7372.27	-79.60	40°44'20.119"N	103°57'07.206"W	3.65	
14078.00	89.970	180.000	6150.86	7466.12	-7466.26	-80.20	40°44'19.191"N	103°57'07.236"W	0.78	
14173.00	89.940	177.610	6150.93	7561.10	-7561.24	-78.22	40°44'18.252"N	103°57'07.231"W	2.52	
14267.00	90.060	176.300	6150.93	7654.97	-7655.10	-73.22	40°44'17.324"N	103°57'07.188"W	1.40	
14362.00	90.000	175.280	6150.89	7749.72	-7749.84	-66.25	40°44'16.386"N	103°57'07.119"W	1.08	
14456.00	89.850	172.220	6151.01	7843.17	-7843.27	-56.02	40°44'15.462"N	103°57'07.007"W	3.26	
14551.00	89.780	171.660	6151.31	7937.25	-7937.33	-42.70	40°44'14.530"N	103°57'06.855"W	0.59	
14645.00	89.850	172.700	6151.62	8030.40	-8030.46	-29.91	40°44'13.608"N	103°57'06.710"W	1.11	
14740.00	90.090	174.720	6151.67	8124.84	-8124.88	-19.50	40°44'12.673"N	103°57'06.597"W	2.14	
14834.00	90.090	175.260	6151.52	8218.49	-8218.52	-11.29	40°44'11.747"N	103°57'06.511"W	0.57	
14929.00	89.970	176.880	6151.47	8313.28	-8313.30	-4.78	40°44'10.809"N	103°57'06.448"W	1.71	
15023.00	89.850	177.160	6151.62	8407.16	-8407.17	0.11	40°44'09.881"N	103°57'06.406"W	0.32	
15118.00	89.970	177.840	6151.77	8502.07	-8502.08	4.25	40°44'08.943"N	103°57'06.374"W	0.73	
15212.00	89.850	179.190	6151.92	8596.04	-8596.04	6.69	40°44'08.014"N	103°57'06.363"W	1.44	
15307.00	90.060	179.780	6151.99	8691.04	-8691.04	7.54	40°44'07.075"N	103°57'06.374"W	0.66	
15401.00	89.850	180.530	6152.06	8785.04	-8785.04	7.29	40°44'06.146"N	103°57'06.398"W	0.83	
15496.00	89.970	180.770	6152.21	8880.03	-8880.03	6.21	40°44'05.208"N	103°57'06.434"W	0.28	
15590.00	89.780	181.150	6152.42	8974.01	-8974.02	4.63	40°44'04.280"N	103°57'06.476"W	0.45	
15685.00	90.090	179.950	6152.53	9069.01	-9069.01	3.72	40°44'03.342"N	103°57'06.509"W	1.30	
15780.00	89.880	180.030	6152.55	9164.01	-9164.01	3.74	40°44'02.403"N	103°57'06.530"W	0.24	
15874.00	89.850	181.600	6152.77	9257.99	-9258.00	2.40	40°44'01.475"N	103°57'06.569"W	1.67	
15969.00	90.180	180.470	6152.75	9352.97	-9352.98	0.69	40°44'00.537"N	103°57'06.613"W	1.24	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#09 HOLLIDAY FEDERAL LC23-780 (334'FSL & 979'FWL, SEC.11)
Area	COLORADO	Well	HOLLIDAY FEDERAL LC23-780
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	HOLLIDAY FEDERAL LC23-780 AWB
Facility	SEC.11-T09N-R59W		

WELLPATH DATA (159 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
16063.00	89.970	179.590	6152.62	9446.97	-9446.98	0.64	40°43'59.608"N	103°57'06.635"W	0.96	
16157.00	90.060	179.400	6152.60	9540.97	-9540.98	1.47	40°43'58.679"N	103°57'06.645"W	0.22	
16252.00	89.940	180.120	6152.60	9635.97	-9635.98	1.86	40°43'57.741"N	103°57'06.662"W	0.77	
16346.00	90.030	181.220	6152.62	9729.96	-9729.97	0.76	40°43'56.812"N	103°57'06.697"W	1.17	
16441.00	89.940	180.320	6152.65	9824.94	-9824.96	-0.51	40°43'55.874"N	103°57'06.736"W	0.95	
16536.00	89.850	178.440	6152.82	9919.94	-9919.95	0.52	40°43'54.935"N	103°57'06.744"W	1.98	
16630.00	90.000	177.170	6152.95	10013.87	-10013.88	4.12	40°43'54.007"N	103°57'06.718"W	1.36	
16686.00	89.910	176.460	6152.99	10069.79	-10069.79	7.23	40°43'53.454"N	103°57'06.691"W	1.28	Last BHI MWD Survey
16710.00	89.910	176.460	6153.03	10093.75	-10093.74	8.71	40°43'53.217"N	103°57'06.677"W	0.00	Projection to Bit

HOLE & CASING SECTIONS - Ref Wellbore: HOLLIDAY FEDERAL LC23-780 AWB										Ref Wellpath: HOLLIDAY FEDERAL LC23-780 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 Conductor	30.00	1909.00	1879.00	30.00	1908.97	-0.04	-0.03	-5.23	-2.68	
9.625in Casing Surface	30.00	1909.00	1879.00	30.00	1908.97	-0.04	-0.03	-5.23	-2.68	
8.5in Open Hole	1909.00	16710.00	14801.00	1908.97	6153.03	-5.23	-2.68	-10093.74	8.71	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#09 HOLLIDAY FEDERAL LC23-780 (334'FSL & 979'FWL, SEC.11)
Area	COLORADO	Well	HOLLIDAY FEDERAL LC23-780
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	HOLLIDAY FEDERAL LC23-780 AWB
Facility	SEC.11-T09N-R59W		

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SEC.11-T09N-R59W	39.00	60.03	1971.75	3431007.60	1523210.40	40°45'33.192"N	103°56'38.868"W	polygon
SEC.14-T09N-R59W	39.00	60.03	1971.75	3431007.60	1523210.40	40°45'33.192"N	103°56'38.868"W	polygon
SEC.23-T09N-R59W	39.00	60.03	1971.75	3431007.60	1523210.40	40°45'33.192"N	103°56'38.868"W	polygon
SEC.11-T09N-R59W 300' SETBACK	6039.00	60.03	1971.75	3431007.60	1523210.40	40°45'33.192"N	103°56'38.868"W	polygon
SEC.14-T09N-R59W 300' SETBACK	6039.00	60.03	1971.75	3431007.60	1523210.40	40°45'33.192"N	103°56'38.868"W	polygon
SEC.23-T09N-R59W 300' SETBACK	6039.00	60.03	1971.75	3431007.60	1523210.40	40°45'33.192"N	103°56'38.868"W	polygon
HOLLIDAY FEDERAL LC23-80 BHL REV-1 (810'FSL & 770'FWL, SEC.23)	6101.80	-10162.51	16.74	3429052.60	1512987.93	40°43'52.536"N	103°57'06.588"W	point
HOLLIDAY FEDERAL LC23-80 BHL REV-2 (860'FSL & 770'FWL, SEC.23)	6152.00	-10112.51	16.74	3429052.60	1513037.93	40°43'53.030"N	103°57'06.577"W	point
HOLLIDAY FEDERAL LC23-80 LANDING POINT 2	6152.00	-35.00	-220.00	3428815.86	1523115.38	40°45'32.632"N	103°57'07.366"W	point
HOLLIDAY FEDERAL LC23-80 LANDING POINT	6154.78	-35.00	-220.00	3428815.86	1523115.38	40°45'32.632"N	103°57'07.366"W	point

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#09 HOLLIDAY FEDERAL LC23-780 (334'FSL & 979'FWL, SEC.11)
Area	COLORADO	Well	HOLLIDAY FEDERAL LC23-780
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	HOLLIDAY FEDERAL LC23-780 AWB
Facility	SEC.11-T09N-R59W		

WELLPATH COMPOSITION - Ref Wellbore: HOLLIDAY FEDERAL LC23-780 AWB Ref Wellpath: HOLLIDAY FEDERAL LC23-780 AWP				
Start MD	End MD	Positional Uncertainty Model	Log Name/Comment	Wellbore
[ft]	[ft]			
0.00	1899.00	Gyrodatta standard - Drop gyro or Multi-shot	Surface Gyro provided by Noble <78'-1899'>	HOLLIDAY FEDERAL LC23-780 AWB
1899.00	16686.00	OWSG MWD rev2 + IFR1 + Multi-Station Correction	BHI/ATC 8.5" Hole OWSG MWD+IFR+MSA <1980'-16686'>	HOLLIDAY FEDERAL LC23-780 AWB
16686.00	16710.00	Blind Drilling (std)	Projection to bit	HOLLIDAY FEDERAL LC23-780 AWB

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#09 HOLLIDAY FEDERAL LC23-780 (334'FSL & 979'FWL, SEC.11)
Area	COLORADO	Well	HOLLIDAY FEDERAL LC23-780
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	HOLLIDAY FEDERAL LC23-780 AWB
Facility	SEC.11-T09N-R59W		

WELLPATH COMMENTS					
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment	
1899.00	0.430	184.700	1898.97	Tie to Surface Gyros	
16686.00	89.910	176.460	6152.99	Last BHI MWD Survey	
16710.00	89.910	176.460	6153.03	Projection to Bit	