

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#01 ANNI LD29-755 (380'FSL & 1403'FWL, SEC.20)
Area	COLORADO	Well	ANNI LD29-755
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	ANNI LD29-755 AWB
Facility	SEC.20-T09N-R58W		

REPORT SETUP INFORMATION			
Projection System	NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	Software System	WellArchitect® 5.0
North Reference	Grid	User	Ingmjmr
Scale	0.999992	Report Generated	11/4/2016 at 1:07:52 PM
Convergence at slot	1.04° East	Database/Source file	WA_DEN_Denver_Defn/ANNI_LD29-755_AWP.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	0.00	0.00	3445485.69	1512934.19	40°43'49.116"N	103°53'33.180"W
Facility Reference Pt			3445485.69	1512934.19	40°43'49.116"N	103°53'33.180"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 517 (30'KB) (RKB) to Facility Vertical Datum	4897.00ft
Horizontal Reference Pt	Slot	H&P 517 (30'KB) (RKB) to Mean Sea Level	4897.00ft
Vertical Reference Pt	H&P 517 (30'KB) (RKB)	H&P 517 (30'KB) (RKB) to Mud Line at Slot (SLOT#01 ANNI LD29-755 (380'FSL & 1403'FWL, SEC.20))	4897.00ft
MD Reference Pt	H&P 517 (30'KB) (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	168.64°

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#01 ANNI LD29-755 (380'FSL & 1403'FWL, SEC.20)
Area	COLORADO	Well	ANNI LD29-755
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	ANNI LD29-755 AWB
Facility	SEC.20-T09N-R58W		

WELLPATH DATA (99 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
1912.00	0.370	193.730	1911.90	5.59	-4.08	8.03	40°43'49.074"N	103°53'33.077"W	0.13	Tie to Surface Gyro
1981.00	0.330	54.380	1980.90	5.71	-4.19	8.14	40°43'49.073"N	103°53'33.075"W	0.95	
2075.00	0.760	357.040	2074.89	4.98	-3.41	8.33	40°43'49.081"N	103°53'33.073"W	0.69	
2170.00	1.270	140.490	2169.89	5.28	-3.59	8.96	40°43'49.079"N	103°53'33.064"W	2.04	
2265.00	3.270	143.890	2264.81	8.67	-6.59	11.23	40°43'49.049"N	103°53'33.036"W	2.11	
2359.00	4.120	158.400	2358.61	14.43	-11.90	14.05	40°43'48.996"N	103°53'33.000"W	1.34	
2454.00	6.390	165.830	2453.21	23.07	-20.20	16.60	40°43'48.914"N	103°53'32.969"W	2.49	
2548.00	9.370	149.140	2546.32	35.51	-31.84	21.81	40°43'48.798"N	103°53'32.904"W	3.97	
2643.00	11.950	137.290	2639.69	51.21	-45.71	32.45	40°43'48.659"N	103°53'32.769"W	3.55	
2738.00	14.580	123.380	2732.17	68.03	-59.52	49.12	40°43'48.519"N	103°53'32.556"W	4.33	
2832.00	16.600	109.740	2822.73	83.30	-70.57	71.64	40°43'48.406"N	103°53'32.266"W	4.44	
2927.00	16.000	92.420	2913.97	93.43	-75.71	97.51	40°43'48.351"N	103°53'31.931"W	5.14	
3021.00	16.010	86.380	3004.33	98.26	-75.44	123.40	40°43'48.349"N	103°53'31.595"W	1.77	
3116.00	16.120	80.030	3095.63	100.35	-72.33	149.46	40°43'48.375"N	103°53'31.256"W	1.85	
3211.00	15.830	77.960	3186.96	100.51	-67.34	175.12	40°43'48.419"N	103°53'30.922"W	0.67	
3305.00	15.980	74.140	3277.36	99.34	-61.13	200.11	40°43'48.476"N	103°53'30.596"W	1.12	
3400.00	16.000	70.860	3368.69	96.54	-53.26	225.06	40°43'48.549"N	103°53'30.270"W	0.95	
3494.00	15.960	66.690	3459.06	92.11	-43.90	249.17	40°43'48.638"N	103°53'29.954"W	1.22	
3589.00	15.940	68.500	3550.40	87.11	-33.95	273.30	40°43'48.732"N	103°53'29.639"W	0.52	
3684.00	15.970	69.310	3641.75	82.69	-24.55	297.66	40°43'48.820"N	103°53'29.320"W	0.24	
3778.00	15.900	70.450	3732.13	78.76	-15.68	321.89	40°43'48.903"N	103°53'29.003"W	0.34	
3873.00	15.940	72.700	3823.49	75.56	-7.44	346.61	40°43'48.980"N	103°53'28.680"W	0.65	
3967.00	15.170	81.060	3914.06	74.74	-1.69	371.09	40°43'49.033"N	103°53'28.361"W	2.52	
4062.00	15.760	85.110	4005.62	76.72	1.34	396.22	40°43'49.058"N	103°53'28.034"W	1.29	
4156.00	15.860	83.930	4096.07	79.34	3.79	421.71	40°43'49.078"N	103°53'27.702"W	0.36	
4251.00	15.940	83.340	4187.43	81.60	6.67	447.58	40°43'49.102"N	103°53'27.366"W	0.19	
4345.00	15.890	83.100	4277.83	83.66	9.71	473.17	40°43'49.127"N	103°53'27.033"W	0.09	
4440.00	14.700	80.010	4369.46	84.96	13.37	497.96	40°43'49.159"N	103°53'26.710"W	1.52	
4535.00	14.580	80.620	4461.38	85.66	17.41	521.63	40°43'49.194"N	103°53'26.402"W	0.21	
4629.00	14.620	80.660	4552.34	86.49	21.26	545.00	40°43'49.228"N	103°53'26.097"W	0.04	

REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Slot	SLOT#01 ANNI LD29-755 (380'FSL & 1403'FWL, SEC.20)
Area	COLORADO	Well	ANNI LD29-755
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	ANNI LD29-755 AWB
Facility	SEC.20-T09N-R58W		

WELLPATH DATA (99 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4724.00	14.590	78.730	4644.27	86.93	25.54	568.57	40°43'49.266"N	103°53'25.790"W	0.51	
4819.00	14.560	84.840	4736.22	88.23	28.96	592.20	40°43'49.296"N	103°53'25.482"W	1.62	
4913.00	14.610	88.290	4827.20	91.50	30.37	615.82	40°43'49.306"N	103°53'25.175"W	0.93	
5008.00	14.570	85.840	4919.13	95.00	31.60	639.71	40°43'49.314"N	103°53'24.865"W	0.65	
5102.00	14.410	89.850	5010.15	98.76	32.49	663.20	40°43'49.318"N	103°53'24.559"W	1.08	
5197.00	14.580	87.210	5102.12	102.84	33.10	686.96	40°43'49.320"N	103°53'24.251"W	0.72	
5291.00	14.510	88.380	5193.11	106.59	34.01	710.55	40°43'49.325"N	103°53'23.944"W	0.32	
5386.00	14.200	116.790	5285.26	115.81	29.09	732.88	40°43'49.272"N	103°53'23.655"W	7.35	
5481.00	17.070	130.480	5376.76	133.98	14.78	753.90	40°43'49.127"N	103°53'23.386"W	4.90	
5575.00	22.070	135.820	5465.31	159.69	-6.86	776.71	40°43'48.909"N	103°53'23.094"W	5.64	
5670.00	28.240	139.970	5551.27	194.44	-36.90	803.64	40°43'48.607"N	103°53'22.752"W	6.75	
5764.00	37.050	145.750	5630.36	240.14	-77.43	833.94	40°43'48.202"N	103°53'22.368"W	9.93	
5859.00	43.540	158.420	5702.90	298.87	-131.66	862.16	40°43'47.661"N	103°53'22.014"W	10.98	
5953.00	46.650	172.480	5769.42	365.02	-195.83	878.59	40°43'47.024"N	103°53'21.816"W	11.08	
6048.00	55.630	179.060	5829.00	438.24	-269.47	883.77	40°43'46.295"N	103°53'21.766"W	10.87	
6142.00	65.490	175.270	5875.16	519.10	-351.10	887.94	40°43'45.488"N	103°53'21.731"W	11.06	
6237.00	76.330	174.590	5906.19	608.20	-440.39	895.88	40°43'44.605"N	103°53'21.649"W	11.43	
6331.00	80.850	176.020	5924.78	699.69	-532.20	903.41	40°43'43.696"N	103°53'21.573"W	5.03	
6426.00	86.770	177.240	5935.02	793.18	-626.44	908.96	40°43'42.764"N	103°53'21.523"W	6.36	
6455.00†	87.776	177.206	5936.40	821.82	-655.37	910.36	40°43'42.478"N	103°53'21.512"W	3.47	Crossed 300' Setback
6520.00	90.030	177.130	5937.64	886.09	-720.28	913.57	40°43'41.836"N	103°53'21.485"W	3.47	
6615.00	90.000	175.520	5937.62	980.23	-815.08	919.66	40°43'40.899"N	103°53'21.429"W	1.70	
6709.00	90.090	174.220	5937.54	1073.67	-908.70	928.06	40°43'39.972"N	103°53'21.342"W	1.39	
6804.00	90.620	174.050	5936.95	1168.24	-1003.20	937.77	40°43'39.037"N	103°53'21.238"W	0.59	
6898.00	90.580	175.220	5935.97	1261.71	-1096.78	946.56	40°43'38.111"N	103°53'21.146"W	1.25	
6993.00	90.520	176.140	5935.06	1355.99	-1191.51	953.72	40°43'37.174"N	103°53'21.075"W	0.97	
7088.00	90.460	176.890	5934.24	1450.09	-1286.33	959.49	40°43'36.236"N	103°53'21.023"W	0.79	
7182.00	90.550	177.030	5933.42	1543.10	-1380.19	964.47	40°43'35.308"N	103°53'20.980"W	0.18	
7277.00	90.590	177.780	5932.47	1636.99	-1475.09	968.78	40°43'34.369"N	103°53'20.947"W	0.79	
7371.00	90.620	179.560	5931.48	1729.54	-1569.05	970.96	40°43'33.441"N	103°53'20.940"W	1.89	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#01 ANNI LD29-755 (380'FSL & 1403'FWL, SEC.20)
Area	COLORADO	Well	ANNI LD29-755
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	ANNI LD29-755 AWB
Facility	SEC.20-T09N-R58W		

WELLPATH DATA (99 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
7465.00	90.370	179.120	5930.67	1821.91	-1663.04	972.04	40°43'32.512"N	103°53'20.949"W	0.54	
7560.00	90.370	176.630	5930.05	1915.67	-1757.97	975.56	40°43'31.573"N	103°53'20.925"W	2.62	
7654.00	90.340	176.270	5929.47	2008.79	-1851.79	981.38	40°43'30.645"N	103°53'20.872"W	0.38	
7749.00	90.370	180.900	5928.88	2102.34	-1946.73	983.73	40°43'29.707"N	103°53'20.864"W	4.87	
7843.00	90.340	179.270	5928.30	2194.46	-2040.73	983.59	40°43'28.778"N	103°53'20.888"W	1.73	
7938.00	90.280	176.200	5927.78	2288.26	-2135.64	987.34	40°43'27.840"N	103°53'20.861"W	3.23	
8032.00	90.250	177.130	5927.35	2381.34	-2229.48	992.81	40°43'26.912"N	103°53'20.812"W	0.99	
8127.00	90.340	175.520	5926.86	2475.48	-2324.28	998.90	40°43'25.974"N	103°53'20.756"W	1.70	
8221.00	90.280	177.970	5926.35	2568.53	-2418.12	1004.24	40°43'25.046"N	103°53'20.709"W	2.61	
8316.00	90.430	181.860	5925.76	2661.68	-2513.10	1004.38	40°43'24.108"N	103°53'20.729"W	4.10	
8410.00	90.220	185.810	5925.23	2752.37	-2606.87	998.09	40°43'23.183"N	103°53'20.833"W	4.21	
8505.00	90.120	182.980	5924.95	2843.80	-2701.58	990.81	40°43'22.248"N	103°53'20.950"W	2.98	
8600.00	90.220	179.380	5924.67	2936.52	-2796.54	988.86	40°43'21.310"N	103°53'20.998"W	3.79	
8694.00	90.090	177.550	5924.41	3029.13	-2890.50	991.37	40°43'20.382"N	103°53'20.987"W	1.95	
8789.00	90.150	176.570	5924.21	3123.11	-2985.38	996.25	40°43'19.443"N	103°53'20.946"W	1.03	
8883.00	90.250	177.430	5923.88	3216.11	-3079.25	1001.17	40°43'18.515"N	103°53'20.904"W	0.92	
8978.00	90.000	176.930	5923.68	3310.06	-3174.13	1005.84	40°43'17.577"N	103°53'20.866"W	0.59	
9072.00	90.090	176.870	5923.60	3403.08	-3267.99	1010.92	40°43'16.649"N	103°53'20.822"W	0.12	
9167.00	90.090	176.430	5923.45	3497.15	-3362.83	1016.47	40°43'15.711"N	103°53'20.773"W	0.46	
9356.00	90.250	178.440	5922.89	3683.92	-3551.63	1024.93	40°43'13.844"N	103°53'20.707"W	1.07	
9451.00	90.030	178.910	5922.66	3777.47	-3646.60	1027.13	40°43'12.905"N	103°53'20.701"W	0.55	
9546.00	90.090	181.150	5922.56	3870.59	-3741.60	1027.08	40°43'11.967"N	103°53'20.724"W	2.36	
9640.00	90.310	180.110	5922.23	3962.54	-3835.59	1026.05	40°43'11.038"N	103°53'20.760"W	1.13	
9735.00	90.400	181.040	5921.65	4055.49	-3930.58	1025.09	40°43'10.100"N	103°53'20.795"W	0.98	
9829.00	90.310	179.400	5921.06	4147.57	-4024.58	1024.73	40°43'09.172"N	103°53'20.821"W	1.75	
9924.00	90.340	177.550	5920.52	4241.17	-4119.54	1027.26	40°43'08.233"N	103°53'20.811"W	1.95	
10019.00	90.280	178.800	5920.01	4334.85	-4214.49	1030.29	40°43'07.294"N	103°53'20.794"W	1.32	
10113.00	90.430	178.530	5919.43	4427.42	-4308.46	1032.48	40°43'06.366"N	103°53'20.788"W	0.33	
10208.00	90.370	178.700	5918.76	4520.98	-4403.43	1034.77	40°43'05.427"N	103°53'20.780"W	0.19	
10397.00	90.400	181.040	5917.49	4706.34	-4592.41	1035.20	40°43'03.560"N	103°53'20.820"W	1.24	

REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Slot	SLOT#01 ANNI LD29-755 (380'FSL & 1403'FWL, SEC.20)
Area	COLORADO	Well	ANNI LD29-755
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	ANNI LD29-755 AWB
Facility	SEC.20-T09N-R58W		

WELLPATH DATA (99 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
10492.00	90.370	180.210	5916.86	4799.27	-4687.40	1034.16	40°43'02.622"N	103°53'20.855"W	0.87	
10586.00	90.370	178.850	5916.25	4891.57	-4781.40	1034.93	40°43'01.693"N	103°53'20.868"W	1.45	
10681.00	90.340	175.780	5915.66	4985.47	-4876.28	1039.38	40°43'00.755"N	103°53'20.832"W	3.23	
10775.00	90.250	175.580	5915.18	5078.76	-4970.01	1046.47	40°42'59.827"N	103°53'20.762"W	0.23	
10870.00	90.340	177.070	5914.69	5172.91	-5064.81	1052.55	40°42'58.890"N	103°53'20.706"W	1.57	
10964.00	90.310	177.660	5914.15	5265.82	-5158.71	1056.88	40°42'57.961"N	103°53'20.672"W	0.63	
11059.00	90.310	177.060	5913.64	5359.72	-5253.61	1061.25	40°42'57.023"N	103°53'20.637"W	0.63	
11122.00	90.280	176.970	5913.32	5422.05	-5316.52	1064.53	40°42'56.401"N	103°53'20.609"W	0.15	Last Baker MWD Survey
11146.00	90.280	176.970	5913.20	5445.79	-5340.49	1065.80	40°42'56.164"N	103°53'20.599"W	0.00	Projection to Bit

HOLE & CASING SECTIONS - Ref Wellbore: ANNI LD29-755 AWB Ref Wellpath: ANNI LD29-755 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	1913.00	1883.00	30.00	1912.90	0.03	0.05	-4.09	8.03
9.625in Casing Surface	30.00	1913.00	1883.00	30.00	1912.90	0.03	0.05	-4.09	8.03
8.5in Open Hole	1913.00	11146.00	9233.00	1912.90	5913.20	-4.09	8.03	-5340.49	1065.80



Actual Wellpath Report

ANNI LD29-755 AWP

Page 6 of 7



REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Slot	SLOT#01 ANNI LD29-755 (380'FSL & 1403'FWL, SEC.20)
Area	COLORADO	Well	ANNI LD29-755
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	ANNI LD29-755 AWB
Facility	SEC.20-T09N-R58W		

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SEC.20-T09N-R58W	0.00	0.00	0.00	3445485.69	1512934.19	40°43'49.116"N	103°53'33.180"W	polygon
SEC.29-T09N-R68W	0.00	0.00	0.00	3445485.69	1512934.19	40°43'49.116"N	103°53'33.180"W	polygon
ANNI LD29-755 Top of Nio (88'FSL&2281'FWL,SEC.20)	5828.00	-267.46	885.05	3446370.73	1512666.73	40°43'46.315"N	103°53'21.749"W	point
ANNI LD29-755 BHL REV-2 ON PLAT (330'FSL & 2310'FWL, SEC.29)	5912.50	-5340.74	1072.79	3446558.47	1507593.50	40°42'56.160"N	103°53'20.508"W	point
ANNI LD29-755 Cross 300'SETBACK/Landing (300'FNL&2310'FWL,SEC.29)	5937.05	-655.86	926.17	3446411.85	1512278.33	40°43'42.470"N	103°53'21.307"W	point
SEC.29-T09N-R68W (300'SETBACK)	5951.00	0.00	0.00	3445485.69	1512934.19	40°43'49.116"N	103°53'33.180"W	polygon

WELLPATH COMPOSITION - Ref Wellbore: ANNI LD29-755 AWB Ref Wellpath: ANNI LD29-755 AWP

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
0.00	1912.00	Gyrodata standard - Drop gyro or Multi-shot	Gyrodata Surveys 13.5" Hole <83-1912>	ANNI LD29-755 AWB
1912.00	11122.00	OWSG MWD rev2 + IFR1 + Multi-Station Correction	BHI MWD NAVITRAK 8.5" HOLE <1981-11122>	ANNI LD29-755 AWB
11122.00	11146.00	Blind Drilling (std)	Projection to bit	ANNI LD29-755 AWB

REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Slot	SLOT#01 ANNI LD29-755 (380'FSL & 1403'FWL, SEC.20)
Area	COLORADO	Well	ANNI LD29-755
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	ANNI LD29-755 AWB
Facility	SEC.20-T09N-R58W		

WELLPATH COMMENTS

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
1912.00	0.370	193.730	1911.90	Tie to Surface Gyro
6455.00	87.776	177.206	5936.40	Crossed 300' Setback
11122.00	90.280	176.970	5913.32	Last Baker MWD Survey
11146.00	90.280	176.970	5913.20	Projection to Bit