

# NOBLE ENERGY, INC

Location: COLORADO Slot: SLOT#07 STARS FEDERAL LD17-750 (285'FSL & 1203'FWL,SEC.05)  
Field: WELD COUNTY (NOBLE NAD 83 GRID) Well: STARS FEDERAL LD17-750  
Facility: SEC.05-T09N-R58W Wellbore: STARS FEDERAL LD17-750 PWB

Plot reference wellpath is STARS FEDERAL LD17-750 (REV-A.0) PWP	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
True vertical depths are referenced to RIG (30') (RKB)	North Reference: Grid north
Measured depths are referenced to RIG (30') (RKB)	Scale: True distance
RIG (30') (RKB) to Mean Sea Level: 4863 feet	Depths are in feet
Mean Sea Level to Mud line (At Slot: SLOT#07 STARS FEDERAL LD17-750 (285'FSL & 1203'FWL,SEC.05)): 0 feet	Created by: doddanna on 2019-08-28
Coordinates are in feet referenced to Slot	Database: WellArchitectDB2

## Location Information

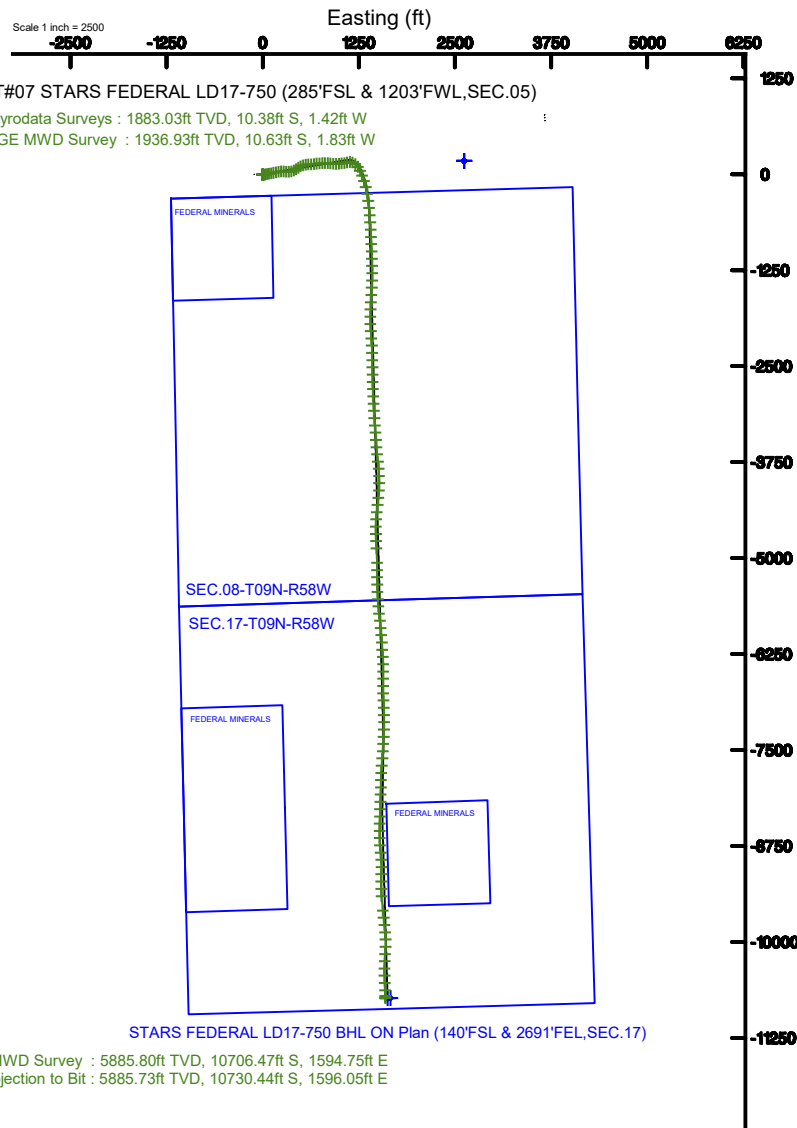
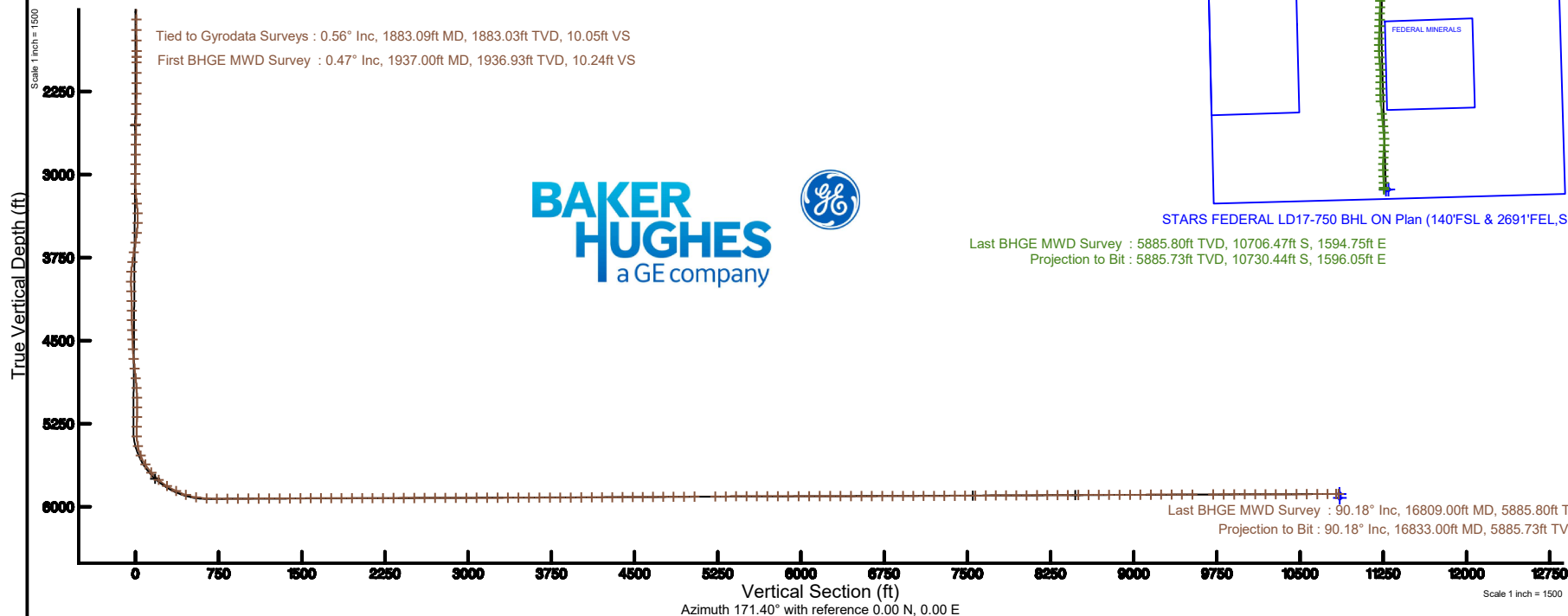
Facility Name			Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SEC.05-T09N-R58W			3448481.809	1533139.636	40°47'06.196"N	103°52'49.476"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SLOT#07 STARS FEDERAL LD17-750 (285'FSL & 1203'FWL,SEC.05)	-4364.29	-3540.95	3444940.867	1528775.350	40°46'25.716"N	103°53'36.528"W
RIG (30') (RKB) to Mud line (At Slot: SLOT#07 STARS FEDERAL LD17-750 (285'FSL & 1203'FWL,SEC.05))					4863R	
Mean Sea Level to Mud line (At Slot: SLOT#07 STARS FEDERAL LD17-750 (285'FSL & 1203'FWL,SEC.05))					0ft	
RIG (30') (RKB) to Mean Sea Level					4863R	

## Survey Program

Start MD (ft)	End MD (ft)	Tool	Model	Log Name/Comment	Wellbore
30.00	16846.81	OWSG MWD rev2	OWSG MWD rev2 + IFR1 + Multi-Station Correction		STARS FEDERAL LD17-750 PWB



Tied to Gyrodata Surveys : 0.56° Inc, 1883.09ft MD, 1883.03ft TVD, 10.05ft VS  
First BHGE MWD Survey : 0.47° Inc, 1937.00ft MD, 1936.93ft TVD, 10.24ft VS



Last BHGE MWD Survey : 5885.80ft TVD, 10706.47ft S, 1594.75ft E  
Projection to Bit : 5885.73ft TVD, 10730.44ft S, 1596.05ft E

Last BHGE MWD Survey : 90.18° Inc, 16809.00ft MD, 5885.80ft TVD, 10824.57ft VS  
Projection to Bit : 90.18° Inc, 16833.00ft MD, 5885.73ft TVD, 10848.46ft VS

## REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Slot	SLOT#07 STARS FEDERAL LD17-750 (285'FSL & 1203'FWL,SEC.05)
Area	COLORADO	Well	STARS FEDERAL LD17-750
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	STARS FEDERAL LD17-750 AWB
Facility	SEC.05-T09N-R58W		

## REPORT SETUP INFORMATION

Projection System	NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	Software System	WellArchitect® 5.1
North Reference	Grid	User	Doddanna
Scale	0.999998	Report Generated	8/28/2019 at 12:28:54 PM
Convergence at slot	1.04° East	Database/Source file	WellArchitectDB2/STARS_FEDERAL_LD17-750_AWP.xml

## WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-4364.29	-3540.95	3444940.87	1528775.35	40°46'25.716"N	103°53'36.528"W
Facility Reference Pt			3448481.81	1533139.64	40°47'08.196"N	103°52'49.476"W
Field Reference Pt			3000000.00	4454105.15	48°46'34.315"N	105°30'00.000"W

## WELLPATH DATUM

Calculation method	Minimum curvature	RIG (30') (RKB) to Facility Vertical Datum	4863.00ft
Horizontal Reference Pt	Slot	RIG (30') (RKB) to Mean Sea Level	4863.00ft
Vertical Reference Pt	RIG (30') (RKB)	RIG (30') (RKB) to Mud Line at Slot (SLOT#07 STARS FEDERAL LD17-750 (285'FSL & 1203'FWL,SEC.05))	4863.00ft
MD Reference Pt	RIG (30') (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	171.40°

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Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	STARS FEDERAL LD17-750 AWB
Facility	SEC.05-T09N-R58W		

WELLPATH DATA (179 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00	0.000	229.173	0.00	0.00	0.00	0.00	40°46'25.716"N	103°53'36.528"W	0.00	
81.13	0.369	229.173	81.13	0.14	-0.17	-0.20	40°46'25.714"N	103°53'36.531"W	0.45	
175.97	0.379	147.215	175.97	0.59	-0.63	-0.26	40°46'25.710"N	103°53'36.532"W	0.52	
270.81	0.204	283.533	270.81	0.81	-0.86	-0.25	40°46'25.708"N	103°53'36.531"W	0.57	
365.65	0.645	139.652	365.65	1.20	-1.23	-0.07	40°46'25.704"N	103°53'36.529"W	0.86	
460.49	0.399	112.409	460.48	1.83	-1.76	0.58	40°46'25.699"N	103°53'36.521"W	0.36	
555.33	0.520	181.848	555.32	2.42	-2.31	0.87	40°46'25.693"N	103°53'36.517"W	0.56	
650.17	0.480	192.393	650.16	3.21	-3.13	0.77	40°46'25.685"N	103°53'36.519"W	0.11	
745.01	0.130	355.530	744.99	3.48	-3.41	0.68	40°46'25.682"N	103°53'36.520"W	0.64	
839.85	0.495	112.181	839.83	3.58	-3.46	1.05	40°46'25.682"N	103°53'36.515"W	0.60	
934.69	0.289	110.315	934.67	3.90	-3.70	1.65	40°46'25.679"N	103°53'36.507"W	0.22	
1029.53	0.693	188.203	1029.51	4.57	-4.35	1.79	40°46'25.673"N	103°53'36.506"W	0.73	
1124.37	0.979	169.905	1124.34	5.93	-5.71	1.86	40°46'25.659"N	103°53'36.505"W	0.41	
1219.21	0.782	192.759	1219.17	7.34	-7.14	1.85	40°46'25.645"N	103°53'36.506"W	0.42	
1314.05	0.591	202.203	1314.00	8.36	-8.23	1.53	40°46'25.634"N	103°53'36.510"W	0.23	
1408.89	0.144	168.902	1408.84	8.90	-8.80	1.36	40°46'25.629"N	103°53'36.512"W	0.50	
1503.73	0.333	245.793	1503.68	9.10	-9.03	1.14	40°46'25.627"N	103°53'36.515"W	0.35	
1598.57	0.341	255.834	1598.52	9.20	-9.21	0.61	40°46'25.625"N	103°53'36.522"W	0.06	
1693.41	0.402	264.486	1693.35	9.21	-9.31	0.01	40°46'25.624"N	103°53'36.530"W	0.09	
1788.25	0.640	221.683	1788.19	9.53	-9.74	-0.68	40°46'25.620"N	103°53'36.539"W	0.46	
1883.09	0.559	238.329	1883.03	10.05	-10.38	-1.42	40°46'25.614"N	103°53'36.549"W	0.20	Tied to Gyrodata Surveys
1937.00	0.470	237.958	1936.93	10.24	-10.63	-1.83	40°46'25.611"N	103°53'36.554"W	0.17	First BHGE MWD Survey
1986.00	0.060	85.730	1985.93	10.32	-10.74	-1.98	40°46'25.610"N	103°53'36.556"W	1.07	
2081.00	1.960	83.780	2080.91	10.39	-10.56	-0.31	40°46'25.612"N	103°53'36.535"W	2.00	
2175.00	4.320	80.350	2174.77	10.39	-9.79	4.77	40°46'25.618"N	103°53'36.468"W	2.52	
2269.00	6.510	76.110	2268.34	9.84	-7.92	13.44	40°46'25.635"N	103°53'36.355"W	2.37	
2363.00	8.550	74.550	2361.53	8.51	-4.78	25.35	40°46'25.664"N	103°53'36.200"W	2.18	
2458.00	10.630	76.570	2455.19	6.93	-0.86	40.68	40°46'25.700"N	103°53'36.000"W	2.22	
2552.00	12.930	78.840	2547.21	5.73	3.19	59.43	40°46'25.737"N	103°53'35.755"W	2.50	
2647.00	15.610	79.890	2639.27	4.92	7.49	82.45	40°46'25.775"N	103°53'35.455"W	2.83	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#07 STARS FEDERAL LD17-750 (285'FSL & 1203'FWL,SEC.05)
Area	COLORADO	Well	STARS FEDERAL LD17-750
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	STARS FEDERAL LD17-750 AWB
Facility	SEC.05-T09N-R58W		

WELLPATH DATA (179 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
2741.00	18.370	79.950	2729.16	4.21	12.30	109.49	40°46'25.818"N	103°53'35.102"W	2.94	
2836.00	20.940	80.040	2818.61	3.43	17.85	140.95	40°46'25.867"N	103°53'34.692"W	2.71	
2931.00	20.930	77.670	2907.34	1.92	24.41	174.25	40°46'25.926"N	103°53'34.258"W	0.89	
3025.00	19.990	79.160	2995.41	0.20	31.02	206.44	40°46'25.985"N	103°53'33.838"W	1.14	
3120.00	20.280	84.840	3084.62	0.55	35.55	238.78	40°46'26.024"N	103°53'33.417"W	2.08	
3215.00	19.880	92.970	3173.86	4.78	36.19	271.32	40°46'26.025"N	103°53'32.994"W	2.97	
3309.00	20.980	99.020	3261.96	13.08	32.73	303.90	40°46'25.985"N	103°53'32.571"W	2.53	
3404.00	21.410	88.450	3350.56	20.36	30.53	338.05	40°46'25.957"N	103°53'32.128"W	4.04	
3498.00	21.260	74.700	3438.18	20.48	35.49	371.66	40°46'26.000"N	103°53'31.690"W	5.31	
3593.00	20.940	64.160	3526.84	13.44	47.44	403.56	40°46'26.112"N	103°53'31.272"W	4.00	
3687.00	21.450	55.970	3614.50	1.07	64.39	432.93	40°46'26.275"N	103°53'30.887"W	3.19	
3782.00	21.830	56.740	3702.80	-13.75	83.79	462.09	40°46'26.461"N	103°53'30.503"W	0.50	
3876.00	21.630	61.880	3790.13	-26.84	101.55	491.99	40°46'26.631"N	103°53'30.110"W	2.04	
3971.00	21.980	71.120	3878.36	-35.86	115.56	524.26	40°46'26.764"N	103°53'29.688"W	3.63	
4066.00	21.690	82.500	3966.59	-38.70	123.60	558.51	40°46'26.837"N	103°53'29.241"W	4.46	
4160.00	22.560	87.890	4053.67	-36.33	126.53	593.75	40°46'26.860"N	103°53'28.782"W	2.35	
4255.00	22.550	84.290	4141.41	-33.35	129.02	630.09	40°46'26.878"N	103°53'28.309"W	1.45	
4350.00	22.590	81.990	4229.14	-32.24	133.37	666.29	40°46'26.914"N	103°53'27.838"W	0.93	
4444.00	22.520	84.230	4315.95	-31.17	137.70	702.07	40°46'26.951"N	103°53'27.372"W	0.92	
4539.00	22.570	86.430	4403.69	-28.67	140.66	738.37	40°46'26.973"N	103°53'26.899"W	0.89	
4633.00	22.620	86.380	4490.47	-25.52	142.93	774.42	40°46'26.989"N	103°53'26.430"W	0.06	
4728.00	22.150	87.670	4578.32	-21.98	144.81	810.54	40°46'27.001"N	103°53'25.960"W	0.72	
4822.00	22.000	95.110	4665.44	-15.87	143.96	845.79	40°46'26.987"N	103°53'25.503"W	2.98	
4917.00	22.380	98.150	4753.41	-6.44	139.81	881.42	40°46'26.939"N	103°53'25.041"W	1.27	
5011.00	22.580	95.790	4840.27	3.20	135.45	917.09	40°46'26.890"N	103°53'24.578"W	0.98	
5106.00	22.660	90.200	4927.97	10.53	133.55	953.54	40°46'26.865"N	103°53'24.105"W	2.26	
5201.00	22.810	85.040	5015.60	14.50	135.08	990.19	40°46'26.873"N	103°53'23.628"W	2.10	
5295.00	22.590	81.050	5102.32	15.55	139.46	1026.18	40°46'26.910"N	103°53'23.159"W	1.65	
5390.00	22.430	78.830	5190.09	14.62	145.81	1061.98	40°46'26.966"N	103°53'22.693"W	0.91	
5485.00	21.410	75.080	5278.22	11.90	153.79	1096.52	40°46'27.039"N	103°53'22.242"W	1.82	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#07 STARS FEDERAL LD17-750 (285'FSL & 1203'FWL,SEC.05)
Area	COLORADO	Well	STARS FEDERAL LD17-750
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	STARS FEDERAL LD17-750 AWB
Facility	SEC.05-T09N-R58W		

WELLPATH DATA (179 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
5579.00	22.760	87.290	5365.37	11.88	159.07	1131.28	40°46'27.085"N	103°53'21.789"W	5.08	
5674.00	24.210	108.030	5452.65	22.52	153.90	1168.23	40°46'27.027"N	103°53'21.310"W	8.79	
5768.00	27.880	131.850	5537.32	48.18	133.21	1203.03	40°46'26.816"N	103°53'20.863"W	11.71	
5863.00	34.860	144.820	5618.47	89.69	96.11	1235.30	40°46'26.444"N	103°53'20.452"W	10.19	
5957.00	42.500	153.840	5691.86	144.11	45.54	1264.84	40°46'25.939"N	103°53'20.080"W	10.08	
6052.00	50.240	160.190	5757.39	210.66	-17.75	1291.42	40°46'25.309"N	103°53'19.750"W	9.47	
6146.00	57.800	161.850	5812.58	285.43	-89.64	1316.09	40°46'24.594"N	103°53'19.446"W	8.17	
6241.00	64.890	165.360	5858.12	367.97	-169.57	1339.52	40°46'23.801"N	103°53'19.161"W	8.14	
6336.00	71.850	169.540	5893.13	455.99	-255.71	1358.61	40°46'22.946"N	103°53'18.933"W	8.39	
6430.00	81.100	173.310	5915.10	547.27	-345.98	1372.16	40°46'22.052"N	103°53'18.778"W	10.58	
6525.00	86.120	174.650	5925.67	641.55	-439.83	1382.06	40°46'21.123"N	103°53'18.672"W	5.47	
6619.00	90.250	175.260	5928.64	735.30	-533.40	1390.32	40°46'20.197"N	103°53'18.586"W	4.44	
6714.00	90.340	176.380	5928.15	830.02	-628.15	1397.24	40°46'19.260"N	103°53'18.519"W	1.18	
6809.00	90.400	177.020	5927.54	924.61	-722.99	1402.71	40°46'18.322"N	103°53'18.470"W	0.68	
6903.00	90.280	177.160	5926.98	1018.14	-816.86	1407.48	40°46'17.394"N	103°53'18.430"W	0.20	
6998.00	90.340	177.470	5926.47	1112.63	-911.76	1411.93	40°46'16.455"N	103°53'18.395"W	0.33	
7092.00	90.220	177.320	5926.01	1206.12	-1005.66	1416.20	40°46'15.527"N	103°53'18.361"W	0.20	
7187.00	90.370	178.010	5925.52	1300.55	-1100.58	1420.07	40°46'14.588"N	103°53'18.334"W	0.74	
7281.00	90.340	178.770	5924.94	1393.85	-1194.54	1422.72	40°46'13.660"N	103°53'18.321"W	0.81	
7376.00	90.280	179.750	5924.42	1487.95	-1289.53	1423.94	40°46'12.721"N	103°53'18.328"W	1.03	
7471.00	90.460	181.340	5923.81	1581.74	-1384.52	1423.04	40°46'11.783"N	103°53'18.362"W	1.68	
7565.00	90.000	183.890	5923.43	1673.94	-1478.41	1418.75	40°46'10.856"N	103°53'18.440"W	2.76	
7660.00	90.120	184.590	5923.33	1766.56	-1573.15	1411.73	40°46'09.921"N	103°53'18.554"W	0.75	
7754.00	90.090	182.910	5923.16	1858.38	-1666.95	1405.58	40°46'08.996"N	103°53'18.656"W	1.79	
7849.00	90.180	181.190	5922.94	1951.74	-1761.88	1402.18	40°46'08.058"N	103°53'18.722"W	1.81	
7943.00	90.120	181.860	5922.69	2044.28	-1855.85	1399.68	40°46'07.130"N	103°53'18.777"W	0.72	
8038.00	90.150	177.550	5922.47	2138.26	-1950.83	1400.17	40°46'06.192"N	103°53'18.793"W	4.54	
8132.00	90.180	175.200	5922.20	2231.90	-2044.63	1406.11	40°46'05.264"N	103°53'18.738"W	2.50	
8227.00	90.120	176.360	5921.95	2326.62	-2139.37	1413.10	40°46'04.327"N	103°53'18.669"W	1.22	
8321.00	90.150	177.130	5921.73	2420.21	-2233.22	1418.44	40°46'03.399"N	103°53'18.622"W	0.82	

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Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	STARS FEDERAL LD17-750 AWB
Facility	SEC.05-T09N-R58W		

WELLPATH DATA (179 stations)										
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8415.00	90.150	178.170	5921.48	2513.65	-2327.14	1422.29	40°46'02.470"N	103°53'18.594"W	1.11	
8510.00	90.120	178.850	5921.26	2607.92	-2422.10	1424.76	40°46'01.532"N	103°53'18.585"W	0.72	
8604.00	90.030	179.250	5921.13	2701.08	-2516.09	1426.32	40°46'00.603"N	103°53'18.587"W	0.44	
8699.00	90.220	179.190	5920.93	2795.20	-2611.08	1427.62	40°45'59.664"N	103°53'18.592"W	0.21	
8793.00	90.340	179.130	5920.47	2888.34	-2705.07	1428.99	40°45'58.735"N	103°53'18.597"W	0.14	
8888.00	90.310	177.810	5919.93	2982.61	-2800.03	1431.53	40°45'57.797"N	103°53'18.586"W	1.39	
8983.00	90.090	176.910	5919.60	3077.10	-2894.93	1435.91	40°45'56.858"N	103°53'18.552"W	0.98	
9077.00	90.120	176.850	5919.42	3170.67	-2988.79	1441.02	40°45'55.930"N	103°53'18.507"W	0.07	
9172.00	89.940	176.650	5919.37	3265.25	-3083.64	1446.41	40°45'54.992"N	103°53'18.460"W	0.28	
9266.00	90.340	176.620	5919.14	3358.86	-3177.48	1451.92	40°45'54.064"N	103°53'18.410"W	0.43	
9361.00	90.340	175.550	5918.58	3453.54	-3272.25	1458.41	40°45'53.127"N	103°53'18.348"W	1.13	
9455.00	90.120	175.360	5918.20	3547.30	-3365.95	1465.86	40°45'52.200"N	103°53'18.274"W	0.31	
9550.00	90.090	176.650	5918.03	3641.99	-3460.72	1472.48	40°45'51.262"N	103°53'18.210"W	1.36	
9645.00	90.000	176.060	5917.95	3736.64	-3555.53	1478.52	40°45'50.324"N	103°53'18.154"W	0.63	
9739.00	90.250	174.180	5917.75	3830.44	-3649.18	1486.51	40°45'49.398"N	103°53'18.072"W	2.02	
9834.00	90.280	173.200	5917.31	3925.36	-3743.61	1496.95	40°45'48.463"N	103°53'17.959"W	1.03	
9928.00	90.400	174.510	5916.75	4019.27	-3837.06	1507.02	40°45'47.538"N	103°53'17.850"W	1.40	
10023.00	90.460	178.270	5916.04	4113.89	-3931.85	1513.00	40°45'46.600"N	103°53'17.795"W	3.96	
10117.00	90.250	180.450	5915.46	4206.98	-4025.84	1514.05	40°45'45.672"N	103°53'17.803"W	2.33	
10212.00	90.460	182.480	5914.87	4300.51	-4120.80	1511.62	40°45'44.734"N	103°53'17.857"W	2.15	
10306.00	90.340	185.880	5914.21	4392.16	-4214.54	1504.77	40°45'43.809"N	103°53'17.969"W	3.62	
10401.00	90.490	187.650	5913.52	4483.76	-4308.87	1493.58	40°45'42.879"N	103°53'18.136"W	1.87	
10495.00	90.370	186.500	5912.82	4574.26	-4402.15	1482.00	40°45'41.960"N	103°53'18.309"W	1.23	
10590.00	90.490	182.820	5912.10	4666.71	-4496.82	1474.28	40°45'41.026"N	103°53'18.431"W	3.88	
10684.00	90.550	180.290	5911.25	4759.23	-4590.77	1471.73	40°45'40.098"N	103°53'18.487"W	2.69	
10778.00	90.490	179.360	5910.40	4852.21	-4684.76	1472.02	40°45'39.169"N	103°53'18.505"W	0.99	
10873.00	90.370	177.650	5909.69	4946.47	-4779.73	1474.50	40°45'38.231"N	103°53'18.495"W	1.80	
10967.00	90.280	176.790	5909.15	5039.98	-4873.61	1479.06	40°45'37.302"N	103°53'18.458"W	0.92	
11157.00	90.460	179.250	5907.92	5228.70	-5063.48	1485.62	40°45'35.426"N	103°53'18.418"W	1.30	
11251.00	90.460	179.990	5907.17	5321.73	-5157.48	1486.25	40°45'34.497"N	103°53'18.432"W	0.79	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#07 STARS FEDERAL LD17-750 (285'FSL & 1203'FWL,SEC.05)
Area	COLORADO	Well	STARS FEDERAL LD17-750
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	STARS FEDERAL LD17-750 AWB
Facility	SEC.05-T09N-R58W		

WELLPATH DATA (179 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
11345.00	90.520	178.970	5906.37	5414.79	-5251.47	1487.10	40°45'33.568"N	103°53'18.443"W	1.09	
11440.00	90.340	178.630	5905.65	5509.00	-5346.44	1489.09	40°45'32.629"N	103°53'18.440"W	0.40	
11534.00	90.370	177.470	5905.07	5602.36	-5440.39	1492.29	40°45'31.701"N	103°53'18.420"W	1.23	
11629.00	90.000	176.300	5904.76	5696.92	-5535.24	1497.45	40°45'30.763"N	103°53'18.376"W	1.29	
11724.00	89.850	175.620	5904.89	5791.62	-5630.01	1504.14	40°45'29.825"N	103°53'18.311"W	0.73	
11818.00	89.910	173.210	5905.09	5885.49	-5723.55	1513.29	40°45'28.899"N	103°53'18.214"W	2.56	
11913.00	90.090	173.470	5905.09	5980.43	-5817.91	1524.31	40°45'27.965"N	103°53'18.093"W	0.33	
12007.00	90.180	174.500	5904.86	6074.33	-5911.39	1534.16	40°45'27.040"N	103°53'17.987"W	1.10	
12102.00	90.120	175.840	5904.62	6169.13	-6006.05	1542.16	40°45'26.103"N	103°53'17.906"W	1.41	
12196.00	89.970	176.530	5904.54	6262.80	-6099.84	1548.41	40°45'25.176"N	103°53'17.847"W	0.75	
12291.00	90.000	175.940	5904.57	6357.46	-6194.64	1554.65	40°45'24.238"N	103°53'17.788"W	0.62	
12385.00	90.000	176.360	5904.57	6451.14	-6288.43	1560.96	40°45'23.310"N	103°53'17.728"W	0.45	
12480.00	90.150	179.150	5904.44	6545.54	-6383.34	1564.68	40°45'22.372"N	103°53'17.702"W	2.94	
12574.00	90.000	179.650	5904.32	6638.63	-6477.34	1565.66	40°45'21.443"N	103°53'17.712"W	0.56	
12669.00	90.090	179.810	5904.24	6732.63	-6572.34	1566.11	40°45'20.504"N	103°53'17.728"W	0.19	
12763.00	90.120	180.420	5904.07	6825.54	-6666.34	1565.92	40°45'19.576"N	103°53'17.753"W	0.65	
12858.00	90.090	178.240	5903.90	6919.63	-6761.32	1567.03	40°45'18.637"N	103°53'17.761"W	2.29	
12952.00	90.340	177.530	5903.55	7013.02	-6855.26	1570.50	40°45'17.709"N	103°53'17.738"W	0.80	
13046.00	90.370	178.400	5902.96	7106.40	-6949.20	1573.84	40°45'16.780"N	103°53'17.717"W	0.93	
13141.00	90.280	178.600	5902.42	7200.67	-7044.16	1576.33	40°45'15.841"N	103°53'17.707"W	0.23	
13235.00	90.280	180.160	5901.96	7293.76	-7138.15	1577.35	40°45'14.913"N	103°53'17.716"W	1.66	
13330.00	90.310	181.570	5901.48	7387.46	-7233.14	1575.91	40°45'13.974"N	103°53'17.757"W	1.48	
13425.00	90.430	183.190	5900.86	7480.72	-7328.05	1571.97	40°45'13.037"N	103°53'17.831"W	1.71	
13519.00	90.310	182.810	5900.25	7572.80	-7421.92	1567.05	40°45'12.111"N	103°53'17.917"W	0.42	
13614.00	90.460	183.170	5899.62	7665.86	-7516.79	1562.09	40°45'11.175"N	103°53'18.004"W	0.41	
13708.00	90.400	185.000	5898.91	7757.56	-7610.54	1555.40	40°45'10.250"N	103°53'18.113"W	1.95	
13802.00	90.400	184.350	5898.25	7849.04	-7704.23	1547.73	40°45'09.325"N	103°53'18.234"W	0.69	
13897.00	90.250	183.080	5897.72	7941.85	-7799.02	1541.58	40°45'08.390"N	103°53'18.337"W	1.35	
13991.00	90.340	181.030	5897.23	8034.23	-7892.96	1538.21	40°45'07.463"N	103°53'18.403"W	2.18	
14086.00	90.370	181.210	5896.64	8127.86	-7987.94	1536.35	40°45'06.524"N	103°53'18.449"W	0.19	



REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#07 STARS FEDERAL LD17-750 (285'FSL & 1203'FWL,SEC.05)
Area	COLORADO	Well	STARS FEDERAL LD17-750
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	STARS FEDERAL LD17-750 AWB
Facility	SEC.05-T09N-R58W		

WELLPATH DATA (179 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
14180.00	90.340	181.790	5896.06	8220.40	-8081.90	1533.89	40°45'05.597"N	103°53'18.503"W	0.62	
14275.00	90.280	182.490	5895.55	8313.74	-8176.83	1530.34	40°45'04.659"N	103°53'18.572"W	0.74	
14369.00	90.180	182.110	5895.17	8406.04	-8270.76	1526.57	40°45'03.732"N	103°53'18.643"W	0.42	
14464.00	90.490	181.070	5894.61	8499.54	-8365.72	1523.94	40°45'02.794"N	103°53'18.700"W	1.14	
14558.00	90.310	182.250	5893.96	8592.03	-8459.68	1521.21	40°45'01.867"N	103°53'18.757"W	1.27	
14652.00	90.060	180.570	5893.65	8684.60	-8553.64	1518.90	40°45'00.939"N	103°53'18.810"W	1.81	
14747.00	90.340	178.450	5893.32	8778.64	-8648.63	1519.71	40°45'00.000"N	103°53'18.821"W	2.25	
14841.00	90.250	174.630	5892.84	8872.24	-8742.44	1525.38	40°44'59.072"N	103°53'18.770"W	4.06	
14936.00	90.220	174.110	5892.45	8967.12	-8836.98	1534.70	40°44'58.137"N	103°53'18.671"W	0.55	
15030.00	90.280	176.750	5892.04	9060.87	-8930.68	1542.19	40°44'57.210"N	103°53'18.596"W	2.81	
15125.00	90.310	180.810	5891.55	9155.07	-9025.63	1544.22	40°44'56.271"N	103°53'18.592"W	4.27	
15219.00	90.220	180.920	5891.11	9247.79	-9119.62	1542.80	40°44'55.343"N	103°53'18.633"W	0.15	
15314.00	90.120	180.310	5890.83	9341.56	-9214.62	1541.78	40°44'54.405"N	103°53'18.668"W	0.65	
15408.00	90.180	179.520	5890.59	9434.52	-9308.61	1541.92	40°44'53.476"N	103°53'18.689"W	0.84	
15503.00	90.250	175.820	5890.23	9528.94	-9403.52	1545.78	40°44'52.538"N	103°53'18.661"W	3.90	
15692.00	90.180	173.700	5889.52	9717.60	-9591.72	1563.04	40°44'50.675"N	103°53'18.481"W	1.12	
15786.00	90.220	174.500	5889.19	9811.49	-9685.22	1572.70	40°44'49.750"N	103°53'18.378"W	0.85	
15881.00	90.030	174.810	5888.98	9906.34	-9779.80	1581.55	40°44'48.814"N	103°53'18.285"W	0.38	
15976.00	90.150	174.400	5888.84	10001.19	-9874.38	1590.48	40°44'47.878"N	103°53'18.191"W	0.45	
16070.00	90.150	176.930	5888.59	10094.92	-9968.11	1597.59	40°44'46.951"N	103°53'18.121"W	2.69	
16165.00	90.120	182.890	5888.37	10188.83	-10063.06	1597.74	40°44'46.012"N	103°53'18.142"W	6.27	
16260.00	90.280	184.080	5888.03	10281.73	-10157.88	1591.96	40°44'45.077"N	103°53'18.239"W	1.26	
16354.00	90.340	182.560	5887.53	10373.70	-10251.72	1586.52	40°44'44.151"N	103°53'18.332"W	1.62	
16449.00	90.150	180.300	5887.12	10467.24	-10346.69	1584.15	40°44'43.213"N	103°53'18.385"W	2.39	
16543.00	90.220	179.050	5886.82	10560.26	-10440.68	1584.68	40°44'42.284"N	103°53'18.401"W	1.33	
16638.00	90.150	178.030	5886.51	10654.52	-10535.65	1587.10	40°44'41.345"N	103°53'18.392"W	1.08	
16732.00	90.310	177.350	5886.13	10747.95	-10629.57	1590.89	40°44'40.417"N	103°53'18.365"W	0.74	
16809.00	90.180	176.900	5885.80	10824.57	-10706.47	1594.75	40°44'39.656"N	103°53'18.333"W	0.61	Last BHGE MWD Survey
16833.00	90.180	176.900	5885.73	10848.46	-10730.44	1596.05	40°44'39.419"N	103°53'18.321"W	0.00	Projection to Bit

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SEC.08-T09N-R58W	39.00	171.51	2620.27	3447561.13	1528946.86	40°46'26.940"N	103°53'02.436"W	polygon
SEC.17-T09N-R58W	39.00	171.51	2620.27	3447561.13	1528946.86	40°46'26.940"N	103°53'02.436"W	polygon
STARS FEDERAL LD17-720 SEC.17 FEDERAL MINERALS 1	39.00	171.51	2620.27	3447561.13	1528946.86	40°46'26.940"N	103°53'02.436"W	polygon
STARS FEDERAL LD17-720 SEC.17 FEDERAL MINERALS 2	39.00	171.51	2620.27	3447561.13	1528946.86	40°46'26.940"N	103°53'02.436"W	polygon
STARS FEDERAL LD17-720 SEC.8 FEDERAL MINERALS	39.00	171.51	2620.27	3447561.13	1528946.86	40°46'26.940"N	103°53'02.436"W	polygon
STARS FEDERAL LD17-750 BHL ON Plan (140'FSL & 2691'FEL,SEC.17)	5885.09	-10733.60	1623.25	3446564.11	1518041.79	40°44'39.383"N	103°53'17.969"W	point
STARS FEDERAL LD17-750 BHL ON PLAT (140'FSL & 2653'FEL,SEC.17)	5920.09	-10730.42	1660.51	3446601.37	1518044.97	40°44'39.408"N	103°53'17.484"W	point

WELLPATH COMPOSITION - Ref Wellbore: STARS FEDERAL LD17-750 AWB Ref Wellpath: STARS FEDERAL LD17-750 AWP				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
0.00	1883.09	Gyrodata standard - Drop gyro or Multi-shot	BH/ATC Surface Surveys Gyrodata <81.13'-1883.09'>	STARS FEDERAL LD17-750 AWB
1883.09	16809.00	OWSG MWD rev2 + IFR1 + Multi-Station Correction	BH/ATC 8.5 OWSG MWD rev2+IFR1+MSA <1937'-16809'>	STARS FEDERAL LD17-750 AWB
16809.00	16833.00	Blind Drilling (std)	Projection to bit	STARS FEDERAL LD17-750 AWB



REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#07 STARS FEDERAL LD17-750 (285'FSL & 1203'FWL,SEC.05)
Area	COLORADO	Well	STARS FEDERAL LD17-750
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	STARS FEDERAL LD17-750 AWB
Facility	SEC.05-T09N-R58W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
1883.09	0.559	238.329	1883.03	Tied to Gyrodata Surveys
1937.00	0.470	237.958	1936.93	First BHGE MWD Survey
16809.00	90.180	176.900	5885.80	Last BHGE MWD Survey
16833.00	90.180	176.900	5885.73	Projection to Bit