

NOBLE ENERGY, INC

Location: COLORADO

Field: WELD COUNTY (NOBLE NAD 83 GRID)

Facility: SEC.24-T06N-R64W

Slot: SLOT#08 LARSON A23-639(1305°FSL&275°FEL,SEC.24)

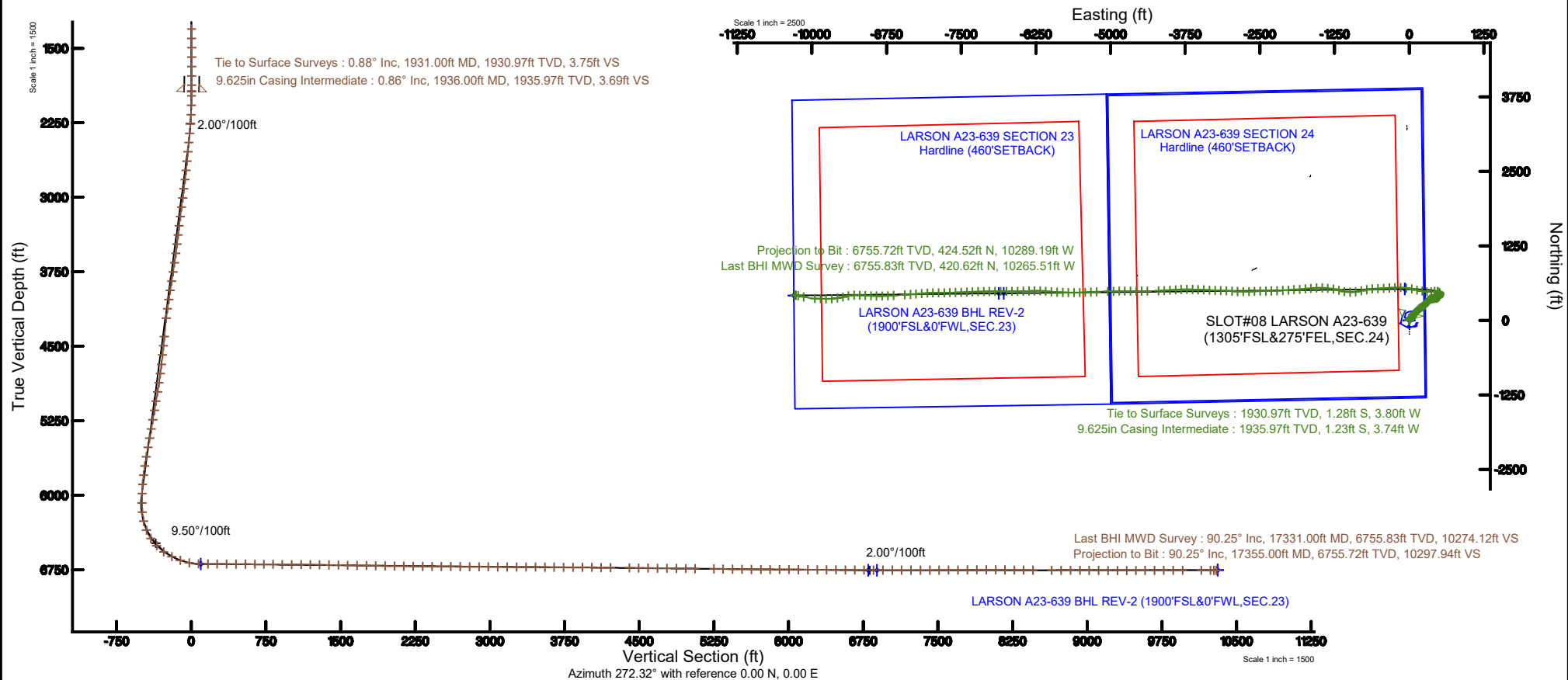
Well: LARSON A23-639

Wellbore: LARSON A23-639 PWB

Plot reference wellpath is LARSON A23-639 (REV-B.0) PWP	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
True vertical depths are referenced to RIG (30°KB) (RKB)	North Reference: Grid north
Measured depths are referenced to RIG (30°KB) (RKB)	Scale: True distance
RIG (30°KB) (RKB) to Mean Sea Level: 4676 feet	Depths are in feet
Mean Sea Level to Ground level (At Slot: SLOT#08 LARSON A23-639(1305°FSL&275°FEL,SEC.24)): 0 feet	Created by: amuntine on 2018-06-14
Coordinates are in feet referenced to Slot	Database: WA DENVER

Survey Program					
Start MD (ft)	End MD (ft)	Tool	Model	Log Name/Comment	Wellbore
30.00	17325.18	OWSG MWD rev2	OWSG MWD rev2 + IFR1 + Multi-Station Correction		LARSON A23-639 PWB
<div>Comments</div> <div>SURFACE LOCATION: NESE</div> <div>40.46834N</div> <div>104.48976W</div> <div>API: 05-123-45547</div>					

Location Information						
Facility Name			Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SEC 24-T06N-R64W			3281075.203	1414828.232	40°28'03.756"N	104°29'23.136"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SLOT#08 LARSON A23-639(1305FSL&275FEL_SEC.24)	229.50	-2.61	3281072.588	1415057.727	40°28'06.024"N	104°29'23.136"W
RIG (30"KB) (RKB) to Ground level (At Slot: SLOT#08 LARSON A23-639(1305FSL&275FEL_SEC.24))					4676ft	
Mean Sea Level to Ground level (At Slot: SLOT#08 LARSON A23-639(1305FSL&275FEL_SEC.24))					0ft	
RIG (30"KB) (RKB) to Mean Sea Level					4676ft	





# Actual Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#08 LARSON A23-639(1305'FSL&275'FEL,SEC.24)
Area	COLORADO	Well	LARSON A23-639
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	LARSON A23-639 AWB
Facility	SEC.24-T06N-R64W		

REPORT SETUP INFORMATION			
Projection System	NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	Software System	WellArchitect® 5.1
North Reference	Grid	User	Amuntime
Scale	0.999964	Report Generated	6/14/2018 at 1:44:36 PM
Convergence at slot	0.65° East	Database/Source file	WA DENVER/LARSON_A23-639_AWP.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	229.50	-2.61	3281072.59	1415057.73	40°28'06.024"N	104°29'23.136"W
Facility Reference Pt			3281075.20	1414828.23	40°28'03.756"N	104°29'23.136"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'KB) (RKB) to Facility Vertical Datum	4676.00ft
Horizontal Reference Pt	Slot	RIG (30'KB) (RKB) to Mean Sea Level	4676.00ft
Vertical Reference Pt	RIG (30'KB) (RKB)	RIG (30'KB) (RKB) to Ground Level at Slot (SLOT#08 LARSON A23-639 (1305'FSL&275'FEL,SEC.24))	4676.00ft
MD Reference Pt	RIG (30'KB) (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	272.32°



# Actual Wellpath Report

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## REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Slot	SLOT#08 LARSON A23-639(1305'FSL&275'FEL,SEC.24)
Area	COLORADO	Well	LARSON A23-639
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	LARSON A23-639 AWP
Facility	SEC.24-T06N-R64W		

## WELLPATH DATA (182 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00	0.000	322.190	0.00	0.00	0.00	0.00	40°28'06.024"N	104°29'23.136"W	0.00	
79.00	0.180	322.190	79.00	0.08	0.10	-0.08	40°28'06.025"N	104°29'23.137"W	0.23	
174.00	0.620	193.870	174.00	0.28	-0.28	-0.29	40°28'06.021"N	104°29'23.140"W	0.78	
265.00	0.290	211.970	265.00	0.49	-0.96	-0.53	40°28'06.015"N	104°29'23.143"W	0.39	
360.00	0.530	223.370	359.99	0.90	-1.48	-0.96	40°28'06.009"N	104°29'23.149"W	0.27	
455.00	0.580	183.690	454.99	1.20	-2.28	-1.29	40°28'06.002"N	104°29'23.153"W	0.40	
549.00	0.290	305.330	548.99	1.41	-2.62	-1.52	40°28'05.998"N	104°29'23.156"W	0.82	
644.00	0.380	313.940	643.99	1.85	-2.26	-1.94	40°28'06.002"N	104°29'23.161"W	0.11	
738.00	0.190	299.840	737.98	2.22	-1.96	-2.30	40°28'06.005"N	104°29'23.166"W	0.21	
833.00	0.180	289.240	832.98	2.50	-1.84	-2.58	40°28'06.006"N	104°29'23.170"W	0.04	
927.00	0.340	283.780	926.98	2.92	-1.72	-2.99	40°28'06.007"N	104°29'23.175"W	0.17	
1022.00	0.140	175.730	1021.98	3.18	-1.77	-3.25	40°28'06.007"N	104°29'23.178"W	0.43	
1116.00	0.070	241.600	1115.98	3.21	-1.91	-3.29	40°28'06.005"N	104°29'23.179"W	0.14	
1211.00	0.370	222.040	1210.98	3.46	-2.17	-3.55	40°28'06.003"N	104°29'23.182"W	0.32	
1305.00	0.310	32.550	1304.98	3.53	-2.18	-3.62	40°28'06.003"N	104°29'23.183"W	0.72	
1400.00	0.420	311.510	1399.98	3.67	-1.73	-3.74	40°28'06.007"N	104°29'23.185"W	0.51	
1494.00	0.120	6.200	1493.98	3.93	-1.41	-3.99	40°28'06.011"N	104°29'23.188"W	0.39	
1589.00	0.140	202.000	1588.98	3.96	-1.41	-4.02	40°28'06.010"N	104°29'23.188"W	0.27	
1683.00	0.410	207.350	1682.98	4.14	-1.82	-4.22	40°28'06.006"N	104°29'23.191"W	0.29	
1778.00	0.270	258.930	1777.98	4.50	-2.16	-4.59	40°28'06.003"N	104°29'23.196"W	0.34	
1872.00	0.690	45.860	1871.97	4.33	-1.81	-4.40	40°28'06.007"N	104°29'23.193"W	0.99	
1931.00	0.880	50.380	1930.97	3.75	-1.28	-3.80	40°28'06.012"N	104°29'23.185"W	0.34	Tie to Surface Surveys
1980.00	0.700	45.680	1979.96	3.26	-0.83	-3.30	40°28'06.016"N	104°29'23.179"W	0.39	
2074.00	3.090	36.680	2073.91	1.44	1.61	-1.37	40°28'06.040"N	104°29'23.154"W	2.55	
2169.00	5.410	36.830	2168.64	-2.55	7.24	2.84	40°28'06.095"N	104°29'23.098"W	2.44	
2263.00	7.290	37.700	2262.06	-8.51	15.51	9.15	40°28'06.176"N	104°29'23.015"W	2.00	
2358.00	8.480	36.900	2356.16	-15.98	25.88	17.04	40°28'06.278"N	104°29'22.912"W	1.26	
2452.00	9.940	35.320	2448.94	-24.33	38.04	25.89	40°28'06.397"N	104°29'22.795"W	1.58	
2547.00	10.490	34.730	2542.44	-33.43	51.84	35.56	40°28'06.532"N	104°29'22.668"W	0.59	
2642.00	10.670	36.360	2635.82	-42.99	66.03	45.70	40°28'06.671"N	104°29'22.535"W	0.37	
2736.00	10.440	36.040	2728.23	-52.59	79.93	55.87	40°28'06.807"N	104°29'22.401"W	0.25	
2831.00	10.470	40.580	2821.66	-62.72	93.44	66.55	40°28'06.940"N	104°29'22.261"W	0.87	
2925.00	10.450	44.800	2914.09	-73.76	105.98	78.11	40°28'07.062"N	104°29'22.110"W	0.82	
3020.00	10.530	46.660	3007.51	-85.65	118.05	90.50	40°28'07.180"N	104°29'21.948"W	0.37	
3114.00	10.540	47.310	3099.92	-97.73	129.77	103.06	40°28'07.295"N	104°29'21.783"W	0.13	
3209.00	10.320	45.110	3193.35	-109.66	141.67	115.48	40°28'07.411"N	104°29'21.621"W	0.48	
3303.00	10.380	44.380	3285.82	-121.05	153.67	127.36	40°28'07.528"N	104°29'21.466"W	0.15	
3398.00	10.260	42.390	3379.29	-132.23	166.03	139.05	40°28'07.649"N	104°29'21.312"W	0.40	
3492.00	10.210	43.650	3471.79	-143.12	178.24	150.45	40°28'07.768"N	104°29'21.163"W	0.24	
3587.00	10.660	48.870	3565.22	-155.06	190.11	162.88	40°28'07.884"N	104°29'21.001"W	1.10	
3682.00	10.590	55.340	3658.60	-168.42	200.86	176.68	40°28'07.989"N	104°29'20.821"W	1.26	
3776.00	10.670	60.130	3750.99	-182.68	210.11	191.33	40°28'08.078"N	104°29'20.630"W	0.94	
3871.00	10.650	58.500	3844.35	-197.42	219.07	206.44	40°28'08.165"N	104°29'20.433"W	0.32	
3965.00	10.400	56.490	3936.76	-211.51	228.29	220.92	40°28'08.255"N	104°29'20.244"W	0.47	
4060.00	10.410	55.030	4030.20	-225.30	237.95	235.10	40°28'08.349"N	104°29'20.059"W	0.28	



# Actual Wellpath Report

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Operator	NOBLE ENERGY, INC	Slot	SLOT#08 LARSON A23-639(1305°FSL&275°FEL,SEC.24)
Area	COLORADO	Well	LARSON A23-639
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	LARSON A23-639 AWP
Facility	SEC.24-T06N-R64W		

## WELLPATH DATA (182 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4154.00	10.510	51.420	4122.64	-238.53	248.16	248.76	40°28'08.448"N	104°29'19.881"W	0.71	
4249.00	10.160	44.550	4216.10	-250.71	259.54	261.42	40°28'08.559"N	104°29'19.716"W	1.35	
4438.00	10.180	32.050	4402.16	-270.21	285.58	281.98	40°28'08.814"N	104°29'19.446"W	1.17	
4533.00	10.150	36.580	4495.67	-279.08	299.41	291.42	40°28'08.950"N	104°29'19.322"W	0.84	
4627.00	10.220	37.210	4588.19	-288.52	312.71	301.40	40°28'09.080"N	104°29'19.190"W	0.14	
4722.00	10.300	43.100	4681.67	-298.88	325.62	312.30	40°28'09.206"N	104°29'19.048"W	1.11	
4816.00	10.230	51.460	4774.17	-310.69	336.96	324.57	40°28'09.317"N	104°29'18.887"W	1.59	
4911.00	10.260	55.830	4867.66	-323.87	346.97	338.17	40°28'09.414"N	104°29'18.710"W	0.82	
5005.00	10.220	66.050	4960.17	-338.08	355.05	352.72	40°28'09.493"N	104°29'18.520"W	1.93	
5100.00	10.200	77.190	5053.67	-353.76	360.34	368.62	40°28'09.543"N	104°29'18.314"W	2.08	
5194.00	9.800	74.720	5146.24	-369.42	364.29	384.46	40°28'09.580"N	104°29'18.108"W	0.62	
5289.00	10.050	83.730	5239.83	-385.32	367.33	400.50	40°28'09.608"N	104°29'17.900"W	1.65	
5383.00	9.900	89.730	5332.41	-401.51	368.26	416.73	40°28'09.616"N	104°29'17.690"W	1.12	
5478.00	10.120	87.520	5425.96	-417.98	368.66	433.24	40°28'09.618"N	104°29'17.477"W	0.47	
5572.00	10.290	81.970	5518.48	-434.47	370.19	449.80	40°28'09.631"N	104°29'17.262"W	1.06	
5667.00	10.660	69.540	5611.91	-450.92	374.45	466.44	40°28'09.671"N	104°29'17.046"W	2.41	
5762.00	10.600	57.080	5705.29	-466.16	382.27	482.01	40°28'09.747"N	104°29'16.844"W	2.42	
5856.00	10.170	44.240	5797.76	-478.77	392.92	495.05	40°28'09.851"N	104°29'16.673"W	2.50	
5951.00	10.760	28.310	5891.20	-488.26	406.74	505.11	40°28'09.986"N	104°29'16.541"W	3.10	
6045.00	11.030	13.410	5983.53	-493.84	423.21	511.36	40°28'10.148"N	104°29'16.458"W	3.00	
6140.00	10.910	358.440	6076.81	-494.98	441.04	513.22	40°28'10.324"N	104°29'16.431"W	2.99	
6235.00	10.880	344.560	6170.11	-491.64	458.67	510.59	40°28'10.499"N	104°29'16.462"W	2.76	
6329.00	16.170	309.930	6261.62	-478.54	475.67	498.17	40°28'10.668"N	104°29'16.621"W	10.05	
6424.00	22.290	276.500	6351.54	-449.98	486.24	470.01	40°28'10.775"N	104°29'16.983"W	13.01	
6518.00	33.160	262.190	6434.71	-406.71	484.75	426.65	40°28'10.766"N	104°29'17.545"W	13.49	
6613.00	44.610	266.800	6508.55	-347.73	479.34	367.40	40°28'10.719"N	104°29'18.312"W	12.42	
6707.00	54.390	273.360	6569.56	-276.45	479.74	296.08	40°28'10.731"N	104°29'19.235"W	11.67	
6802.00	63.680	280.050	6618.43	-195.40	489.46	215.36	40°28'10.836"N	104°29'20.278"W	11.49	
6896.00	69.750	284.900	6655.59	-110.50	508.18	131.15	40°28'11.031"N	104°29'21.364"W	8.01	
6991.00	78.720	280.750	6681.38	-20.71	528.38	42.10	40°28'11.240"N	104°29'22.513"W	10.33	
7085.00	89.320	275.370	6691.17	72.15	541.42	-50.31	40°28'11.379"N	104°29'23.707"W	12.63	
7180.00	89.480	272.370	6692.17	167.10	547.83	-145.07	40°28'11.453"N	104°29'24.932"W	3.16	
7274.00	89.600	268.160	6692.92	261.01	548.27	-239.05	40°28'11.468"N	104°29'26.148"W	4.48	
7369.00	89.480	266.160	6693.68	355.62	543.56	-333.92	40°28'11.432"N	104°29'27.376"W	2.11	
7463.00	89.600	267.120	6694.44	449.15	538.05	-427.76	40°28'11.389"N	104°29'28.591"W	1.03	
7558.00	90.520	267.780	6694.34	543.81	533.82	-522.66	40°28'11.357"N	104°29'29.819"W	1.19	
7653.00	89.200	264.940	6694.57	638.28	527.79	-617.46	40°28'11.308"N	104°29'31.047"W	3.30	
7747.00	89.510	257.900	6695.63	730.53	513.78	-710.34	40°28'11.180"N	104°29'32.251"W	7.50	
7842.00	89.350	258.120	6696.58	822.58	494.04	-803.27	40°28'10.996"N	104°29'33.456"W	0.29	
7937.00	89.510	261.220	6697.52	915.25	477.01	-896.71	40°28'10.838"N	104°29'34.667"W	3.27	
8031.00	90.180	273.090	6697.78	1008.71	472.35	-990.43	40°28'10.803"N	104°29'35.880"W	12.65	
8126.00	89.600	280.780	6697.96	1103.33	483.82	-1084.66	40°28'10.926"N	104°29'37.098"W	8.12	
8220.00	89.010	284.790	6699.10	1195.73	504.61	-1176.30	40°28'11.142"N	104°29'38.281"W	4.31	
8315.00	89.050	278.590	6700.71	1289.41	523.85	-1269.27	40°28'11.343"N	104°29'39.481"W	6.53	
8409.00	89.140	276.570	6702.19	1382.99	536.25	-1362.44	40°28'11.476"N	104°29'40.684"W	2.15	



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Area	COLORADO	Well	LARSON A23-639
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	LARSON A23-639 AWP
Facility	SEC.24-T06N-R64W		

WELLPATH DATA (182 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
8504.00	88.950	272.130	6703.78	1477.90	543.45	-1457.13	40°28'11.557"N	104°29'41.908"W	4.68	
8598.00	89.080	267.740	6705.40	1571.78	543.34	-1551.09	40°28'11.567"N	104°29'43.124"W	4.67	
8693.00	88.980	264.250	6707.00	1666.17	536.71	-1645.83	40°28'11.512"N	104°29'44.350"W	3.67	
8787.00	88.890	264.610	6708.75	1759.27	527.59	-1739.37	40°28'11.432"N	104°29'45.562"W	0.39	
8882.00	88.890	266.910	6710.59	1853.62	520.56	-1834.08	40°28'11.373"N	104°29'46.785"W	2.42	
8976.00	89.260	265.670	6712.11	1947.09	514.48	-1927.87	40°28'11.324"N	104°29'48.003"W	1.38	
9071.00	89.290	266.010	6713.31	2041.48	507.59	-2022.61	40°28'11.266"N	104°29'49.230"W	0.36	
9166.00	89.420	266.800	6714.38	2135.96	501.64	-2117.42	40°28'11.218"N	104°29'50.457"W	0.84	
9260.00	89.230	267.330	6715.49	2229.56	496.82	-2211.29	40°28'11.181"N	104°29'51.672"W	0.60	
9355.00	89.170	268.230	6716.81	2324.25	493.14	-2306.21	40°28'11.155"N	104°29'52.901"W	0.95	
9450.00	89.510	268.730	6717.91	2419.03	490.62	-2401.17	40°28'11.141"N	104°29'54.130"W	0.64	
9544.00	89.780	270.500	6718.49	2512.92	489.99	-2495.16	40°28'11.145"N	104°29'55.346"W	1.90	
9638.00	89.540	266.540	6719.05	2606.70	487.56	-2589.11	40°28'11.132"N	104°29'56.562"W	4.22	
9733.00	89.660	267.890	6719.71	2701.32	482.95	-2683.99	40°28'11.097"N	104°29'57.790"W	1.43	
9827.00	89.510	270.890	6720.39	2795.18	481.95	-2777.97	40°28'11.097"N	104°29'59.006"W	3.20	
9922.00	89.780	272.190	6720.98	2890.17	484.50	-2872.94	40°28'11.133"N	104°30'00.234"W	1.40	
10016.00	89.660	273.180	6721.44	2984.16	488.90	-2966.83	40°28'11.187"N	104°30'01.448"W	1.06	
10111.00	89.820	272.990	6721.87	3079.15	494.02	-3061.69	40°28'11.248"N	104°30'02.675"W	0.26	
10206.00	89.570	272.330	6722.38	3174.15	498.43	-3156.59	40°28'11.302"N	104°30'03.902"W	0.74	
10300.00	89.780	272.600	6722.91	3268.15	502.47	-3250.50	40°28'11.353"N	104°30'05.117"W	0.36	
10395.00	89.600	272.480	6723.43	3363.15	506.68	-3345.40	40°28'11.405"N	104°30'06.344"W	0.23	
10489.00	89.750	272.200	6723.96	3457.15	510.52	-3439.32	40°28'11.453"N	104°30'07.558"W	0.34	
10584.00	89.750	272.130	6724.37	3552.14	514.11	-3534.26	40°28'11.499"N	104°30'08.786"W	0.07	
10678.00	89.780	272.040	6724.76	3646.14	517.53	-3628.19	40°28'11.543"N	104°30'10.001"W	0.10	
10773.00	90.000	270.060	6724.94	3741.11	519.27	-3723.17	40°28'11.571"N	104°30'11.230"W	2.10	
10868.00	89.660	268.140	6725.22	3835.96	517.77	-3818.15	40°28'11.567"N	104°30'12.459"W	2.05	
10962.00	89.880	266.060	6725.60	3929.56	513.02	-3912.03	40°28'11.530"N	104°30'13.674"W	2.23	
11057.00	89.320	265.550	6726.26	4023.95	506.07	-4006.77	40°28'11.472"N	104°30'14.901"W	0.80	
11151.00	89.320	266.760	6727.38	4117.40	499.77	-4100.55	40°28'11.420"N	104°30'16.115"W	1.29	
11246.00	89.170	267.610	6728.63	4212.01	495.10	-4195.43	40°28'11.385"N	104°30'17.343"W	0.91	
11435.00	89.290	269.250	6731.17	4400.55	489.92	-4384.33	40°28'11.355"N	104°30'19.788"W	0.87	
11529.00	89.140	270.360	6732.46	4494.45	489.60	-4478.32	40°28'11.362"N	104°30'21.004"W	1.19	
11624.00	89.170	270.680	6733.86	4589.39	490.47	-4573.31	40°28'11.381"N	104°30'22.233"W	0.34	
11718.00	89.450	269.740	6734.99	4683.32	490.81	-4667.30	40°28'11.395"N	104°30'23.449"W	1.04	
11813.00	89.350	269.980	6735.99	4778.23	490.58	-4762.29	40°28'11.403"N	104°30'24.678"W	0.27	
11907.00	89.320	269.120	6737.08	4872.11	489.84	-4856.28	40°28'11.406"N	104°30'25.894"W	0.92	
12002.00	89.380	268.540	6738.16	4966.93	487.90	-4951.26	40°28'11.397"N	104°30'27.123"W	0.61	
12096.00	89.170	269.000	6739.35	5060.74	485.88	-5045.23	40°28'11.388"N	104°30'28.339"W	0.54	
12286.00	89.080	267.320	6742.25	5250.21	479.78	-5235.10	40°28'11.349"N	104°30'30.797"W	0.89	
12380.00	89.260	266.310	6743.61	5343.77	474.56	-5328.94	40°28'11.307"N	104°30'32.011"W	1.09	
12475.00	89.380	267.900	6744.74	5438.37	469.76	-5423.81	40°28'11.270"N	104°30'33.240"W	1.68	
12569.00	89.200	268.750	6745.90	5532.13	467.02	-5517.76	40°28'11.254"N	104°30'34.455"W	0.92	
12663.00	89.660	269.850	6746.84	5625.99	465.87	-5611.75	40°28'11.253"N	104°30'35.672"W	1.27	
12758.00	89.320	271.210	6747.68	5720.94	466.75	-5706.74	40°28'11.272"N	104°30'36.900"W	1.48	
12852.00	89.510	270.360	6748.64	5814.90	468.03	-5800.73	40°28'11.295"N	104°30'38.116"W	0.93	



# Actual Wellpath Report

LARSON A23-639 AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#08 LARSON A23-639(1305'FSL&275'FEL,SEC.24)
Area	COLORADO	Well	LARSON A23-639
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	LARSON A23-639 AWP
Facility	SEC.24-T06N-R64W		

## WELLPATH DATA (182 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
12947.00	90.310	274.660	6748.79	5909.88	472.19	-5895.61	40°28'11.346"N	104°30'39.343"W	4.60	
13041.00	89.380	274.640	6749.05	6003.80	479.81	-5989.30	40°28'11.432"N	104°30'40.554"W	0.99	
13136.00	90.310	274.410	6749.30	6098.73	487.31	-6084.00	40°28'11.517"N	104°30'41.778"W	1.01	
13230.00	89.380	274.240	6749.56	6192.67	494.40	-6177.73	40°28'11.597"N	104°30'42.990"W	1.01	
13325.00	89.720	267.580	6750.30	6287.58	495.91	-6272.67	40°28'11.622"N	104°30'44.218"W	7.02	
13419.00	89.540	268.120	6750.91	6381.30	492.38	-6366.60	40°28'11.598"N	104°30'45.434"W	0.61	
13514.00	89.600	267.930	6751.62	6476.03	489.11	-6461.54	40°28'11.576"N	104°30'46.663"W	0.21	
13608.00	89.290	269.600	6752.53	6569.84	487.08	-6555.51	40°28'11.566"N	104°30'47.879"W	1.81	
13703.00	89.690	269.130	6753.38	6664.71	486.03	-6650.50	40°28'11.566"N	104°30'49.108"W	0.65	
13797.00	89.450	269.900	6754.09	6758.59	485.23	-6744.49	40°28'11.569"N	104°30'50.324"W	0.86	
13892.00	90.060	270.320	6754.49	6853.52	485.41	-6839.49	40°28'11.581"N	104°30'51.553"W	0.78	
13986.00	89.780	269.660	6754.62	6947.44	485.40	-6933.49	40°28'11.591"N	104°30'52.769"W	0.76	
14081.00	90.120	269.510	6754.71	7042.33	484.71	-7028.49	40°28'11.595"N	104°30'53.999"W	0.39	
14175.00	90.000	268.950	6754.61	7136.20	483.45	-7122.48	40°28'11.593"N	104°30'55.215"W	0.61	
14270.00	89.910	268.450	6754.68	7231.01	481.29	-7217.45	40°28'11.582"N	104°30'56.444"W	0.53	
14364.00	89.940	268.030	6754.80	7324.77	478.40	-7311.41	40°28'11.563"N	104°30'57.660"W	0.45	
14459.00	90.280	267.370	6754.62	7419.46	474.59	-7406.33	40°28'11.536"N	104°30'58.889"W	0.78	
14553.00	90.280	268.000	6754.16	7513.15	470.79	-7500.25	40°28'11.509"N	104°30'59.324"W	0.67	
14648.00	90.370	268.290	6753.62	7607.90	467.72	-7595.20	40°28'11.489"N	104°31'01.333"W	0.32	
14743.00	90.430	268.540	6752.96	7702.68	465.09	-7690.16	40°28'11.473"N	104°31'02.562"W	0.27	
14837.00	90.430	269.020	6752.26	7796.49	463.09	-7784.14	40°28'11.464"N	104°31'03.778"W	0.51	
14932.00	90.430	269.670	6751.54	7891.36	462.00	-7879.13	40°28'11.464"N	104°31'05.007"W	0.68	
15026.00	90.090	269.600	6751.12	7985.26	461.41	-7973.13	40°28'11.468"N	104°31'06.224"W	0.37	
15121.00	89.600	265.410	6751.37	8079.90	457.27	-8068.01	40°28'11.437"N	104°31'07.452"W	4.44	
15215.00	89.540	264.870	6752.08	8173.16	449.31	-8161.67	40°28'11.369"N	104°31'08.665"W	0.58	
15310.00	89.450	265.870	6752.92	8267.46	441.64	-8256.36	40°28'11.304"N	104°31'09.891"W	1.06	
15405.00	89.540	265.880	6753.75	8361.86	434.81	-8351.11	40°28'11.246"N	104°31'11.118"W	0.10	
15499.00	89.450	266.910	6754.58	8455.35	428.90	-8444.92	40°28'11.198"N	104°31'12.332"W	1.10	
15688.00	89.630	266.150	6756.10	8643.38	417.46	-8633.56	40°28'11.106"N	104°31'14.775"W	0.41	
15783.00	89.880	267.260	6756.51	8737.92	412.00	-8728.40	40°28'11.062"N	104°31'16.002"W	1.20	
15877.00	90.090	269.030	6756.53	8831.67	408.95	-8822.35	40°28'11.042"N	104°31'17.218"W	1.90	
15972.00	89.880	271.420	6756.55	8926.60	409.33	-8917.34	40°28'11.056"N	104°31'18.447"W	2.53	
16066.00	89.820	271.850	6756.80	9020.59	412.01	-9011.30	40°28'11.093"N	104°31'19.663"W	0.46	
16161.00	89.880	273.350	6757.05	9115.59	416.32	-9106.20	40°28'11.146"N	104°31'20.890"W	1.58	
16255.00	89.420	272.500	6757.62	9209.58	421.11	-9200.08	40°28'11.204"N	104°31'22.104"W	1.03	
16350.00	89.780	268.050	6758.29	9304.49	421.57	-9295.05	40°28'11.219"N	104°31'23.332"W	4.70	
16444.00	90.460	258.450	6758.09	9397.21	410.53	-9388.29	40°28'11.120"N	104°31'24.540"W	10.24	
16538.00	90.310	257.540	6757.46	9488.29	390.98	-9480.23	40°28'10.937"N	104°31'25.732"W	0.98	
16634.00	90.120	261.030	6757.10	9581.80	373.14	-9574.54	40°28'10.770"N	104°31'26.955"W	3.64	
16729.00	90.150	265.480	6756.87	9675.59	361.98	-9668.86	40°28'10.670"N	104°31'28.177"W	4.68	
16823.00	90.490	271.910	6756.35	9769.35	359.84	-9762.78	40°28'10.660"N	104°31'29.393"W	6.85	
16917.00	90.340	270.750	6755.67	9863.33	362.03	-9856.76	40°28'10.691"N	104°31'30.608"W	1.24	
17012.00	89.690	273.640	6755.64	9958.32	365.66	-9951.68	40°28'10.738"N	104°31'31.836"W	3.12	
17200.00	90.030	283.410	6756.10	10144.99	393.50	-10137.37	40°28'11.033"N	104°31'34.234"W	5.20	
17295.00	90.150	281.610	6755.95	10238.49	414.08	-10230.11	40°28'11.246"N	104°31'35.431"W	1.90	





# Actual Wellpath Report

LARSON A23-639 AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#08 LARSON A23-639(1305'FSL&275'FEL,SEC.24)
Area	COLORADO	Well	LARSON A23-639
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	LARSON A23-639 AWB
Facility	SEC.24-T06N-R64W		

## WELLPATH DATA (182 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
17331.00	90.250	279.350	6755.83	10274.12	420.62	-10265.51	40°28'11.315"N	104°31'35.888"W	6.28	Last BHI MWD Survey
17355.00	90.250	279.350	6755.72	10297.94	424.52	-10289.19	40°28'11.356"N	104°31'36.194"W	0.00	Projection to Bit

## HOLE & CASING SECTIONS - Ref Wellbore: LARSON A23-639 AWB Ref Wellpath: LARSON A23-639 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	1936.00	1906.00	30.00	1935.97	0.01	-0.01	-1.23	-3.74
9.625in Casing Intermediate	30.00	1936.00	1906.00	30.00	1935.97	0.01	-0.01	-1.23	-3.74
8.5in Open Hole	1936.00	17355.00	15419.00	1935.97	6755.72	-1.23	-3.74	424.52	-10289.19

## TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
LARSON A23-639 Section 23	0.00	0.00	0.00	3281072.59	1415057.73	40°28'06.024"N	104°29'23.136"W	polygon
LARSON A23-639 Section 24	0.00	0.00	0.00	3281072.59	1415057.73	40°28'06.024"N	104°29'23.136"W	polygon
LARSON A23-639 Landing Point	6677.00	525.00	-75.00	3280997.59	1415582.71	40°28'11.220"N	104°29'24.029"W	point
LARSON A23-639 Landing Point REV-2	6692.00	525.00	-75.00	3280997.59	1415582.71	40°28'11.220"N	104°29'24.029"W	point
LARSON A23-639 BHL REV-2 (1900'FSL&0'FWL,SEC.23)	6753.10	416.70	-10302.86	3270770.12	1415474.42	40°28'11.280"N	104°31'36.372"W	point
LARSON A23-639 BHL From Plat (1900'FSL&0'FWL,SEC.23)	6753.25	416.70	-10302.86	3270770.12	1415474.42	40°28'11.280"N	104°31'36.372"W	point
LARSON A23-639 Target	6756.00	453.00	-6874.16	3274198.69	1415510.71	40°28'11.264"N	104°30'52.006"W	point
LARSON A23-639 Target REV-2	6756.00	453.00	-6787.24	3274285.61	1415510.71	40°28'11.255"N	104°30'50.882"W	point
LARSON A23-639 SECTION 23 Hardline (460'SETBACK)	7000.00	0.00	0.00	3281072.59	1415057.73	40°28'06.024"N	104°29'23.136"W	polygon
LARSON A23-639 SECTION 24 Hardline (460'SETBACK)	7000.00	0.00	0.00	3281072.59	1415057.73	40°28'06.024"N	104°29'23.136"W	polygon

## WELLPATH COMPOSITION - Ref Wellbore: LARSON A23-639 AWB Ref Wellpath: LARSON A23-639 AWP

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
0.00	1931.00	Gyrodata standard - Drop gyro or Multi-shot	3rd Party Surface Gyros <79'-1931'>	LARSON A23-639 AWB
1931.00	17331.00	OWSG MWD rev2 + IFR1 + Multi-Station Correction	BH/ATC 8.5" Hole OWSG MWD+IFR+MSA <1980'-17331'>	LARSON A23-639 AWB
17331.00	17355.00	Blind Drilling (std)	Projection to bit	LARSON A23-639 AWB