

NOBLE ENERGY, INC



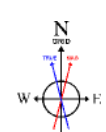
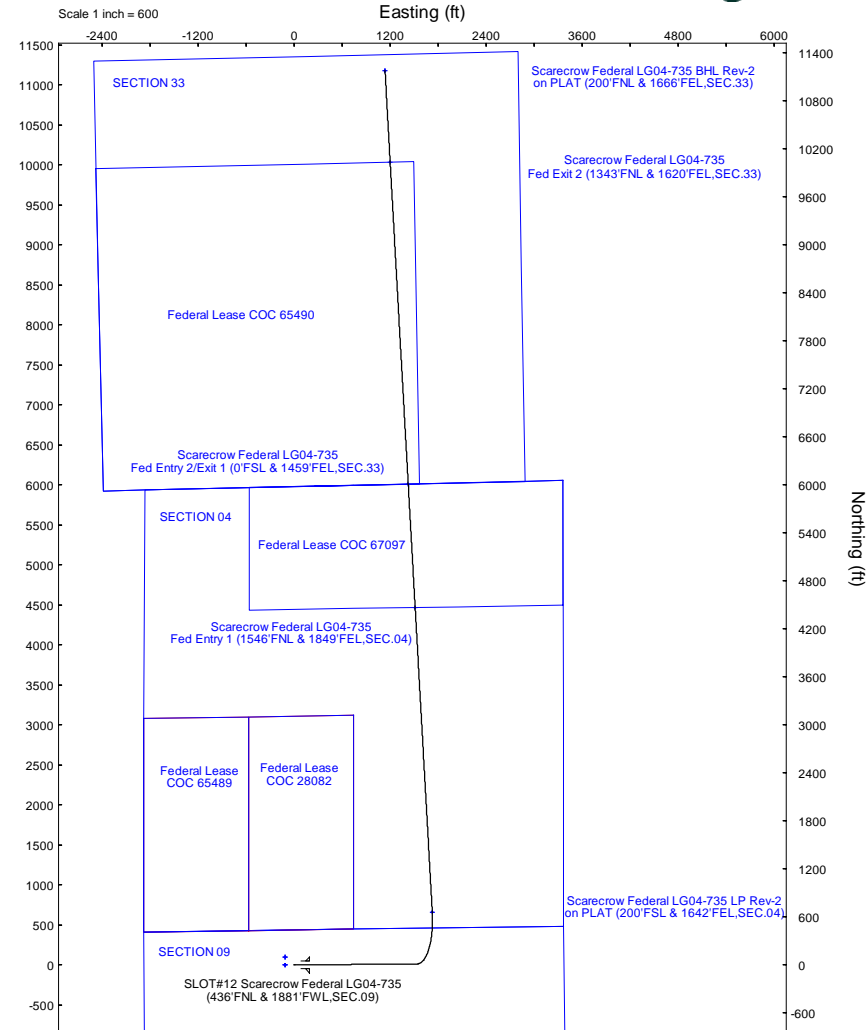
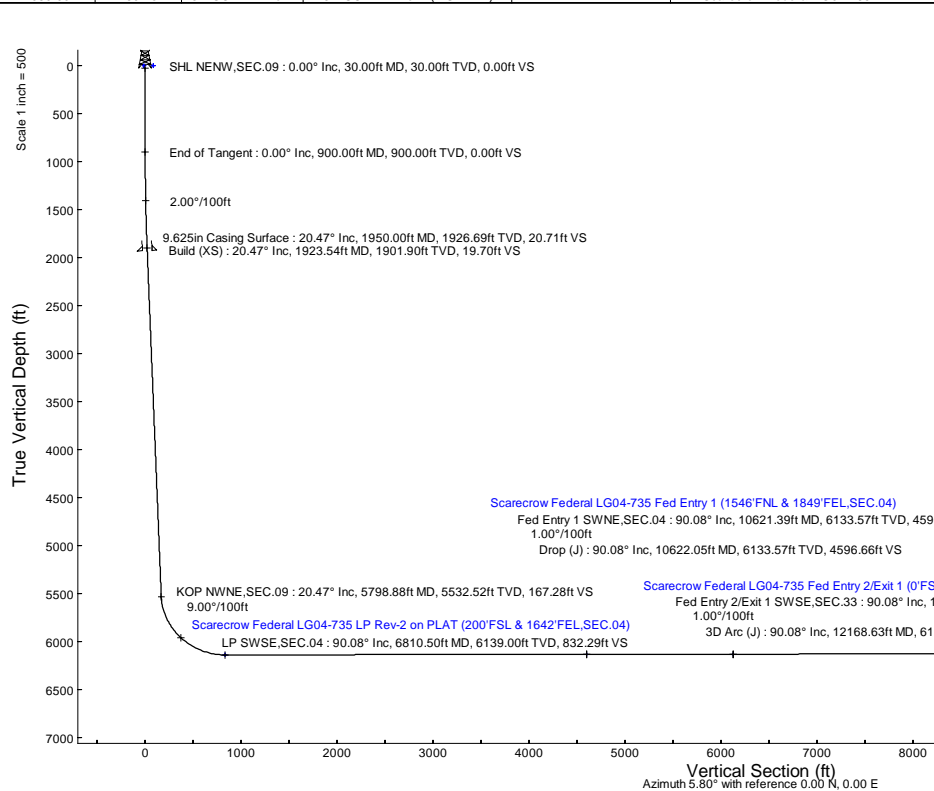
Location: COLORADO Slot: SLOT#12 Scarecrow Federal LG04-735 (436'FNL & 1881'FWL,SEC.09)
 Field: WELD COUNTY (NOBLE NAD 83 GRID) Well: Scarecrow Federal LG04-735
 Facility: SEC.09-T08N-R59W Wellbore: Scarecrow Federal LG04-735 PWB

Plot reference wellpath is Scarecrow Federal LG04-735 (REV-C.0) PWP
 Grid System: NAD83 / Lambert Colorado SP, Northern Zone (S01), US feet
 True vertical depths are referenced to (4862'GL+30'KB@4892'RKB) (RKB)
 North Reference: Grid north
 Reference wellpath measured depths are referenced to (4862'GL+30'KB@4892'RKB) (RKB)
 Scale: True distance
 (4862'GL+30'KB@4892'RKB) (RKB) to Mean Sea Level: 4892 feet
 Coordinates are in feet referenced to Slot
 Mean Sea Level to Ground level (At Slot: SLOT#12 Scarecrow Federal LG04-735 (436'FNL & 1881'FWL,SEC.09)): 0 feet
 Depths are in feet
 Offset wellpath MDs are referenced to each path's default MD datum
 Created by: marisam01 on 2024-03-01; Database: WA_Denver

Location Information				
Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SEC.09-T08N-R59W	3419979.608	1465319.089	40°40'59.3200"N	103°59'3.4000"W
Slot	Local N (ft)	Local E (ft)	Grid North (US ft)	Grid North (US ft)
SLOT#12 Scarecrow Federal LG04-735 (436'FNL & 1881'FWL,SEC.09)	-93.98	449.32	3420429.119	1465225.106
(4862'GL+30'KB@4892'RKB) (RKB) to Ground level (At Slot: SLOT#12 Scarecrow Federal LG04-735 (436'FNL & 1881'FWL,SEC.09))				4892ft
Mean Sea Level to Ground level (At Slot: SLOT#12 Scarecrow Federal LG04-735 (436'FNL & 1881'FWL,SEC.09))				0ft
(4862'GL+30'KB@4892'RKB) (RKB) to Mean Sea Level				4892ft

Well Profile Data							
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	VS (ft)
SHL NENW,SEC.09	30.00	0.000	89.554	30.00	0.00	0.00	0.00
End of Tangent	900.00	0.000	89.554	900.00	0.00	0.00	0.00
Build (XS)	1923.54	20.471	89.554	1901.90	1.41	180.90	17.70
KOP NWNE,SEC.09	5798.88	20.471	89.554	5532.52	11.97	1536.19	167.28
LP SWSE,SEC.04	6810.50	90.082	356.781	6139.00	661.06	1726.52	832.29
Fed Entry 1 SWNE,SEC.04	10621.39	90.082	356.781	6133.57	4465.93	1512.54	4596.01
Drop (J)	10622.05	90.082	356.788	6133.57	4466.58	1512.51	4596.66
Fed Entry 2/Exit 1 SWSE,SEC.33	12168.42	90.082	356.788	6131.36	6010.53	1425.85	6123.92
3D Arc (J)	12168.63	90.082	356.786	6131.36	6010.74	1425.84	6124.13
Fed Exit 2 SWNE,SEC.33	16198.81	90.082	356.786	6125.63	10034.58	1199.86	10104.47
3D Arc (J)	16201.05	90.082	356.808	6125.63	10036.81	1199.74	10106.68
BHL NWNE,SEC.33	17342.21	90.082	356.808	6124.00	11176.20	1136.19	11233.81

Survey Program					
Start MD (ft)	End MD (ft)	Tool	Model	Log Name/Comment	Wellbore
30.00	1950.00	OWSG MWD rev2	OWSG MWD rev2 (MS+IFR1)		Scarecrow Federal LG04-735 PWB
1950.00	17394.82	OWSG MWD rev2	OWSG MWD rev2 (MS+IFR1)		Scarecrow Federal LG04-735 PWB



BGGM (1900.0 to 2024.0) Dip: 66.80° Field: 51940.1 nT
 Magnetic North is 7.42 degrees East of True North (at 4/20/2023)
 Grid North is 0.98 degrees East of True North
 To correct azimuth from True to Grid subtract 0.98 degrees
 To correct azimuth from Magnetic to Grid add 6.44 degrees

Scale 1 inch = 500

REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Well	Scarecrow Federal LG04-735
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Scarecrow Federal LG04-735 PWB
Slot	SLOT#12 Scarecrow Federal LG04-735 (436'FNL & 1881'FWL,SEC.09)		

REPORT SETUP INFORMATION

Projection System	NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	Software System	WellArchitect® 6.0
North Reference	Grid	User	Martsam01
Scale	0.999985	Report Generated	3/1/2024 at 3:45:40 PM
Convergence at slot	0.98° East	Database	WA_Denver

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-93.98	449.32	3420429.12	1495225.11	40°40'58.5156"N	103°59'2.5296"W
Facility Reference Pt			3419979.81	1495319.09	40°40'59.5200"N	103°59'8.3400"W
Field Reference Pt			3000000.00	4454105.15	48°46'34.3150"N	105°30'0.0000"W

WELLPATH DATUM

Calculation method	Minimum curvature	(4862'GL+30'KB@4892'RKB) (RKB) to Facility Vertical Datum	4892.00ft
Horizontal Reference Pt	Slot	(4862'GL+30'KB@4892'RKB) (RKB) to Mean Sea Level	4892.00ft
Vertical Reference Pt	(4862'GL+30'KB@4892'RKB) (RKB)	(4862'GL+30'KB@4892'RKB) (RKB) to Ground Level at Slot (SLOT#12 Scarecrow Federal LG04-735 (436'FNL & 1881'FWL,SEC.09))	4892.00ft
MD Reference Pt	(4862'GL+30'KB@4892'RKB) (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	5.80°

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Well	Scarecrow Federal LG04-735
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Scarecrow Federal LG04-735 PWB
Slot	SLOT#12 Scarecrow Federal LG04-735 (436'FNL & 1881'FWL,SEC.09)		

WELLPATH DATA (202 stations) † = interpolated, ‡ = extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00†	0.000	89.554	0.00	0.00	0.00	0.00	40°40'58.5156"N	103°59'2.5296"W	0.00	
30.00	0.000	89.554	30.00	0.00	0.00	0.00	40°40'58.5156"N	103°59'2.5296"W	0.00	SHL NENW,SEC.09
130.00†	0.000	89.554	130.00	0.00	0.00	0.00	40°40'58.5156"N	103°59'2.5296"W	0.00	
230.00†	0.000	89.554	230.00	0.00	0.00	0.00	40°40'58.5156"N	103°59'2.5296"W	0.00	
330.00†	0.000	89.554	330.00	0.00	0.00	0.00	40°40'58.5156"N	103°59'2.5296"W	0.00	
429.00†	0.000	89.554	429.00	0.00	0.00	0.00	40°40'58.5156"N	103°59'2.5296"W	0.00	FOXHILLS-BASE PROD
430.00†	0.000	89.554	430.00	0.00	0.00	0.00	40°40'58.5156"N	103°59'2.5296"W	0.00	
530.00†	0.000	89.554	530.00	0.00	0.00	0.00	40°40'58.5156"N	103°59'2.5296"W	0.00	
630.00†	0.000	89.554	630.00	0.00	0.00	0.00	40°40'58.5156"N	103°59'2.5296"W	0.00	
730.00†	0.000	89.554	730.00	0.00	0.00	0.00	40°40'58.5156"N	103°59'2.5296"W	0.00	
830.00†	0.000	89.554	830.00	0.00	0.00	0.00	40°40'58.5156"N	103°59'2.5296"W	0.00	
864.00†	0.000	89.554	864.00	0.00	0.00	0.00	40°40'58.5156"N	103°59'2.5296"W	0.00	PIERRE (UPPER)AQUIFER TOP
900.00	0.000	89.554	900.00	0.00	0.00	0.00	40°40'58.5156"N	103°59'2.5296"W	0.00	End of Tangent
930.00†	0.600	89.554	930.00	0.02	0.00	0.16	40°40'58.5156"N	103°59'2.5276"W	2.00	
1030.00†	2.600	89.554	1029.96	0.32	0.02	2.95	40°40'58.5153"N	103°59'2.4913"W	2.00	
1130.00†	4.600	89.554	1129.75	1.00	0.07	9.23	40°40'58.5148"N	103°59'2.4098"W	2.00	
1230.00†	6.600	89.554	1229.27	2.07	0.15	18.99	40°40'58.5139"N	103°59'2.2832"W	2.00	
1330.00†	8.600	89.554	1328.39	3.51	0.25	32.21	40°40'58.5126"N	103°59'2.1115"W	2.00	
1430.00†	10.600	89.554	1426.98	5.32	0.38	48.89	40°40'58.5111"N	103°59'1.8951"W	2.00	
1459.55†	11.191	89.554	1456.00	5.93	0.42	54.47	40°40'58.5106"N	103°59'1.8226"W	2.00	PIERRE (UPPER) AQUIFER BASE
1530.00†	12.600	89.554	1524.93	7.51	0.54	68.99	40°40'58.5093"N	103°59'1.6341"W	2.00	
1630.00†	14.600	89.554	1622.13	10.07	0.72	92.50	40°40'58.5071"N	103°59'1.3289"W	2.00	
1730.00†	16.600	89.554	1718.44	13.00	0.93	119.39	40°40'58.5046"N	103°59'0.9799"W	2.00	
1830.00†	18.600	89.554	1813.75	16.29	1.17	149.63	40°40'58.5018"N	103°59'0.5875"W	2.00	
1923.54	20.471	89.554	1901.90	19.70	1.41	180.90	40°40'58.4990"N	103°59'0.1815"W	2.00	Build (XS)
1930.00†	20.471	89.554	1907.95	19.94	1.43	183.16	40°40'58.4988"N	103°59'0.1522"W	0.00	
2030.00†	20.471	89.554	2001.64	23.75	1.70	218.14	40°40'58.4955"N	103°58'59.6983"W	0.00	
2130.00†	20.471	89.554	2095.32	27.56	1.97	253.11	40°40'58.4923"N	103°58'59.2443"W	0.00	
2230.00†	20.471	89.554	2189.01	31.37	2.24	288.08	40°40'58.4891"N	103°58'58.7904"W	0.00	
2330.00†	20.471	89.554	2282.69	35.18	2.52	323.05	40°40'58.4859"N	103°58'58.3365"W	0.00	
2430.00†	20.471	89.554	2376.38	38.99	2.79	358.02	40°40'58.4827"N	103°58'57.8826"W	0.00	
2500.04†	20.471	89.554	2442.00	41.65	2.98	382.52	40°40'58.4804"N	103°58'57.5646"W	0.00	PIERRE_MBR_A_SD_TOP
2530.00†	20.471	89.554	2470.06	42.79	3.06	393.00	40°40'58.4794"N	103°58'57.4286"W	0.00	
2630.00†	20.471	89.554	2563.75	46.60	3.33	427.97	40°40'58.4762"N	103°58'56.9747"W	0.00	
2730.00†	20.471	89.554	2657.44	50.41	3.61	462.94	40°40'58.4730"N	103°58'56.5208"W	0.00	
2830.00†	20.471	89.554	2751.12	54.22	3.88	497.91	40°40'58.4698"N	103°58'56.0669"W	0.00	
2930.00†	20.471	89.554	2844.81	58.03	4.15	532.88	40°40'58.4665"N	103°58'55.6129"W	0.00	
3030.00†	20.471	89.554	2938.49	61.83	4.42	567.85	40°40'58.4633"N	103°58'55.1590"W	0.00	
3076.44†	20.471	89.554	2982.00	63.60	4.55	584.10	40°40'58.4618"N	103°58'54.9482"W	0.00	PIERRE_MBR_A_SD_BASE
3130.00†	20.471	89.554	3032.18	65.64	4.70	602.83	40°40'58.4601"N	103°58'54.7051"W	0.00	
3230.00†	20.471	89.554	3125.86	69.45	4.97	637.80	40°40'58.4569"N	103°58'54.2512"W	0.00	
3330.00†	20.471	89.554	3219.55	73.26	5.24	672.77	40°40'58.4536"N	103°58'53.7972"W	0.00	
3430.00†	20.471	89.554	3313.23	77.07	5.51	707.74	40°40'58.4504"N	103°58'53.3433"W	0.00	
3443.63†	20.471	89.554	3326.00	77.59	5.55	712.51	40°40'58.4500"N	103°58'53.2815"W	0.00	PARKMAN
3530.00†	20.471	89.554	3406.92	80.87	5.79	742.71	40°40'58.4472"N	103°58'52.8894"W	0.00	

REFERENCE WELLPATH IDENTIFICATION			
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Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Scarecrow Federal LG04-735 PWB
Slot	SLOT#12 Scarecrow Federal LG04-735 (436'FNL & 1881'FWL,SEC.09)		

WELLPATH DATA (202 stations) † = interpolated, ‡ = extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
3630.00†	20.471	89.554	3500.60	84.68	6.06	777.69	40°40'58.4440"N	103°58'52.4355"W	0.00	
3730.00†	20.471	89.554	3594.29	88.49	6.33	812.66	40°40'58.4407"N	103°58'51.9815"W	0.00	
3830.00†	20.471	89.554	3687.97	92.30	6.60	847.63	40°40'58.4375"N	103°58'51.5276"W	0.00	
3930.00†	20.471	89.554	3781.66	96.11	6.88	882.60	40°40'58.4343"N	103°58'51.0737"W	0.00	
4030.00†	20.471	89.554	3875.34	99.92	7.15	917.57	40°40'58.4311"N	103°58'50.6198"W	0.00	
4130.00†	20.471	89.554	3969.03	103.72	7.42	952.55	40°40'58.4278"N	103°58'50.1658"W	0.00	
4176.94†	20.471	89.554	4013.00	105.51	7.55	968.96	40°40'58.4263"N	103°58'49.9528"W	0.00	SUSSEX
4230.00†	20.471	89.554	4062.71	107.53	7.69	987.52	40°40'58.4246"N	103°58'49.7119"W	0.00	
4330.00†	20.471	89.554	4156.40	111.34	7.97	1022.49	40°40'58.4214"N	103°58'49.2580"W	0.00	
4430.00†	20.471	89.554	4250.08	115.15	8.24	1057.46	40°40'58.4181"N	103°58'48.8041"W	0.00	
4530.00†	20.471	89.554	4343.77	118.96	8.51	1092.43	40°40'58.4149"N	103°58'48.3501"W	0.00	
4630.00†	20.471	89.554	4437.45	122.76	8.78	1127.41	40°40'58.4117"N	103°58'47.8962"W	0.00	
4730.00†	20.471	89.554	4531.14	126.57	9.06	1162.38	40°40'58.4084"N	103°58'47.4423"W	0.00	
4738.39†	20.471	89.554	4539.00	126.89	9.08	1165.31	40°40'58.4082"N	103°58'47.4042"W	0.00	SHANNON
4830.00†	20.471	89.554	4624.82	130.38	9.33	1197.35	40°40'58.4052"N	103°58'46.9884"W	0.00	
4930.00†	20.471	89.554	4718.51	134.19	9.60	1232.32	40°40'58.4020"N	103°58'46.5345"W	0.00	
5030.00†	20.471	89.554	4812.19	138.00	9.87	1267.29	40°40'58.3987"N	103°58'46.0805"W	0.00	
5130.00†	20.471	89.554	4905.88	141.80	10.14	1302.27	40°40'58.3955"N	103°58'45.6266"W	0.00	
5230.00†	20.471	89.554	4999.56	145.61	10.42	1337.24	40°40'58.3923"N	103°58'45.1727"W	0.00	
5330.00†	20.471	89.554	5093.25	149.42	10.69	1372.21	40°40'58.3890"N	103°58'44.7188"W	0.00	
5430.00†	20.471	89.554	5186.93	153.23	10.96	1407.18	40°40'58.3858"N	103°58'44.2648"W	0.00	
5530.00†	20.471	89.554	5280.62	157.04	11.23	1442.15	40°40'58.3826"N	103°58'43.8109"W	0.00	
5605.13†	20.471	89.554	5351.00	159.90	11.44	1468.43	40°40'58.3801"N	103°58'43.4699"W	0.00	TEPEE BUTES
5630.00†	20.471	89.554	5374.30	160.85	11.51	1477.12	40°40'58.3793"N	103°58'43.3570"W	0.00	
5730.00†	20.471	89.554	5467.99	164.65	11.78	1512.10	40°40'58.3761"N	103°58'42.9031"W	0.00	
5798.88†	20.471	89.554	5532.52	167.28	11.97	1536.19	40°40'58.3739"N	103°58'42.5904"W	0.00	KOP (446'FNL&1837'FEL,SEC.09)
5798.88	20.471	89.554	5532.52	167.28	11.97	1536.19	40°40'58.3739"N	103°58'42.5904"W	0.00	KOP NWNE,SEC.09
5830.00†	20.529	81.553	5561.67	169.21	12.81	1547.03	40°40'58.3804"N	103°58'42.4495"W	9.00	
5930.00†	23.036	58.081	5654.70	185.53	25.76	1581.05	40°40'58.5025"N	103°58'42.0051"W	9.00	
6030.00†	28.194	40.886	5744.97	216.90	54.02	1613.18	40°40'58.7763"N	103°58'41.5818"W	9.00	
6130.00†	34.840	29.203	5830.25	262.54	96.90	1642.64	40°40'59.1949"N	103°58'41.1899"W	9.00	
6230.00†	42.274	21.027	5908.44	321.33	153.34	1668.70	40°40'59.7482"N	103°58'40.8391"W	9.00	
6268.15†	45.236	18.516	5936.00	346.93	178.17	1677.61	40°40'59.9919"N	103°58'40.7180"W	9.00	INTRA_SHARON_SPGS_MK
6285.40†	46.593	17.464	5948.00	359.04	189.96	1681.43	40°41'0.1077"N	103°58'40.6657"W	9.00	SHARON_SPRING_MKR
6324.36†	49.689	15.254	5974.00	387.57	217.80	1689.59	40°41'0.3814"N	103°58'40.5536"W	9.00	NIO A CHALK
6330.00†	50.140	14.951	5977.63	391.82	221.96	1690.72	40°41'0.4223"N	103°58'40.5381"W	9.00	
6367.68†	53.176	13.024	6001.00	421.07	250.63	1697.85	40°41'0.7044"N	103°58'40.4392"W	9.00	NIO A MARL
6430.00†	58.258	10.148	6036.10	472.28	301.06	1708.15	40°41'1.2009"N	103°58'40.2943"W	9.00	
6504.90†	64.440	7.084	6072.00	537.89	366.01	1717.94	40°41'1.8409"N	103°58'40.1528"W	9.00	NIO B CHALK
6530.00†	66.526	6.130	6082.42	560.72	388.70	1720.56	40°41'2.0646"N	103°58'40.1136"W	9.00	
6596.78†	72.101	3.728	6106.00	623.16	450.92	1725.90	40°41'2.6784"N	103°58'40.0304"W	9.00	NIO B MARL
6630.00†	74.885	2.592	6115.44	654.97	482.71	1727.66	40°41'2.9922"N	103°58'40.0006"W	9.00	
6730.00†	83.295	359.324	6134.35	752.71	580.79	1729.26	40°41'3.9609"N	103°58'39.9580"W	9.00	
6810.50	90.082	356.781	6139.00†	832.29	661.06	1726.52	40°41'4.7544"N	103°58'39.9756"W	9.00	LP SWSE,SEC.04
6830.00†	90.082	356.781	6138.97	851.54	680.52	1725.43	40°41'4.9469"N	103°58'39.9855"W	0.00	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Well	Scarecrow Federal LG04-735
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Scarecrow Federal LG04-735 PWB
Slot	SLOT#12 Scarecrow Federal LG04-735 (436'FNL & 1881'FWL,SEC.09)		

WELLPATH DATA (202 stations) † = interpolated, ‡ = extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS ["/100ft]	Comments
6930.00†	90.082	356.781	6138.83	950.31	780.37	1719.81	40°41'5.9343"N	103°58'40.0361"W	0.00	
7030.00†	90.082	356.781	6138.69	1049.07	880.21	1714.20	40°41'6.9216"N	103°58'40.0867"W	0.00	
7130.00†	90.082	356.781	6138.54	1147.83	980.05	1708.58	40°41'7.9090"N	103°58'40.1374"W	0.00	
7230.00†	90.082	356.781	6138.40	1246.59	1079.89	1702.97	40°41'8.8964"N	103°58'40.1880"W	0.00	
7330.00†	90.082	356.781	6138.26	1345.36	1179.73	1697.35	40°41'9.8837"N	103°58'40.2386"W	0.00	
7430.00†	90.082	356.781	6138.12	1444.12	1279.58	1691.74	40°41'10.8711"N	103°58'40.2892"W	0.00	
7530.00†	90.082	356.781	6137.97	1542.88	1379.42	1686.12	40°41'11.8584"N	103°58'40.3399"W	0.00	
7630.00†	90.082	356.781	6137.83	1641.64	1479.26	1680.51	40°41'12.8458"N	103°58'40.3905"W	0.00	
7730.00†	90.082	356.781	6137.69	1740.41	1579.10	1674.89	40°41'13.8332"N	103°58'40.4411"W	0.00	
7830.00†	90.082	356.781	6137.55	1839.17	1678.94	1669.28	40°41'14.8205"N	103°58'40.4918"W	0.00	
7930.00†	90.082	356.781	6137.40	1937.93	1778.79	1663.66	40°41'15.8079"N	103°58'40.5424"W	0.00	
8030.00†	90.082	356.781	6137.26	2036.69	1878.63	1658.05	40°41'16.7952"N	103°58'40.5930"W	0.00	
8130.00†	90.082	356.781	6137.12	2135.45	1978.47	1652.43	40°41'17.7826"N	103°58'40.6436"W	0.00	
8230.00†	90.082	356.781	6136.98	2234.22	2078.31	1646.82	40°41'18.7700"N	103°58'40.6943"W	0.00	
8330.00†	90.082	356.781	6136.83	2332.98	2178.16	1641.20	40°41'19.7573"N	103°58'40.7449"W	0.00	
8430.00†	90.082	356.781	6136.69	2431.74	2278.00	1635.59	40°41'20.7447"N	103°58'40.7955"W	0.00	
8530.00†	90.082	356.781	6136.55	2530.50	2377.84	1629.97	40°41'21.7320"N	103°58'40.8462"W	0.00	
8630.00†	90.082	356.781	6136.41	2629.27	2477.68	1624.36	40°41'22.7194"N	103°58'40.8968"W	0.00	
8730.00†	90.082	356.781	6136.26	2728.03	2577.52	1618.74	40°41'23.7068"N	103°58'40.9474"W	0.00	
8830.00†	90.082	356.781	6136.12	2826.79	2677.37	1613.13	40°41'24.6941"N	103°58'40.9981"W	0.00	
8930.00†	90.082	356.781	6135.98	2925.55	2777.21	1607.51	40°41'25.6815"N	103°58'41.0487"W	0.00	
9030.00†	90.082	356.781	6135.84	3024.31	2877.05	1601.90	40°41'26.6688"N	103°58'41.0993"W	0.00	
9130.00†	90.082	356.781	6135.70	3123.08	2976.89	1596.28	40°41'27.6562"N	103°58'41.1500"W	0.00	
9230.00†	90.082	356.781	6135.55	3221.84	3076.73	1590.67	40°41'28.6436"N	103°58'41.2006"W	0.00	
9330.00†	90.082	356.781	6135.41	3320.60	3176.58	1585.05	40°41'29.6309"N	103°58'41.2513"W	0.00	
9430.00†	90.082	356.781	6135.27	3419.36	3276.42	1579.44	40°41'30.6183"N	103°58'41.3019"W	0.00	
9530.00†	90.082	356.781	6135.13	3518.13	3376.26	1573.82	40°41'31.6056"N	103°58'41.3525"W	0.00	
9630.00†	90.082	356.781	6134.98	3616.89	3476.10	1568.21	40°41'32.5930"N	103°58'41.4032"W	0.00	
9730.00†	90.082	356.781	6134.84	3715.65	3575.95	1562.59	40°41'33.5804"N	103°58'41.4538"W	0.00	
9830.00†	90.082	356.781	6134.70	3814.41	3675.79	1556.98	40°41'34.5677"N	103°58'41.5044"W	0.00	
9930.00†	90.082	356.781	6134.56	3913.17	3775.63	1551.36	40°41'35.5551"N	103°58'41.5551"W	0.00	
10030.00†	90.082	356.781	6134.41	4011.94	3875.47	1545.75	40°41'36.5424"N	103°58'41.6057"W	0.00	
10130.00†	90.082	356.781	6134.27	4110.70	3975.31	1540.13	40°41'37.5298"N	103°58'41.6564"W	0.00	
10230.00†	90.082	356.781	6134.13	4209.46	4075.16	1534.52	40°41'38.5172"N	103°58'41.7070"W	0.00	
10330.00†	90.082	356.781	6133.99	4308.22	4175.00	1528.90	40°41'39.5045"N	103°58'41.7576"W	0.00	
10430.00†	90.082	356.781	6133.84	4406.99	4274.84	1523.29	40°41'40.4919"N	103°58'41.8083"W	0.00	
10530.00†	90.082	356.781	6133.70	4505.75	4374.68	1517.67	40°41'41.4792"N	103°58'41.8589"W	0.00	
10621.39	90.082	356.781	6133.57	4596.01	4465.93	1512.54	40°41'42.3816"N	103°58'41.9052"W	0.00	Fed Entry 1 SWNE,SEC.04
10622.05	90.082	356.788	6133.57	4596.66	4466.58	1512.51	40°41'42.3881"N	103°58'41.9055"W	1.00	Drop (J)
10630.00†	90.082	356.788	6133.56	4604.51	4474.52	1512.06	40°41'42.4666"N	103°58'41.9095"W	0.00	
10730.00†	90.082	356.788	6133.42	4703.27	4574.37	1506.46	40°41'43.4540"N	103°58'41.9600"W	0.00	
10830.00†	90.082	356.788	6133.27	4802.04	4674.21	1500.85	40°41'44.4413"N	103°58'42.0105"W	0.00	
10930.00†	90.082	356.788	6133.13	4900.80	4774.05	1495.25	40°41'45.4287"N	103°58'42.0610"W	0.00	
11030.00†	90.082	356.788	6132.99	4999.57	4873.90	1489.65	40°41'46.4160"N	103°58'42.1115"W	0.00	
11130.00†	90.082	356.788	6132.85	5098.33	4973.74	1484.04	40°41'47.4034"N	103°58'42.1620"W	0.00	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Well	Scarecrow Federal LG04-735
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Scarecrow Federal LG04-735 PWB
Slot	SLOT#12 Scarecrow Federal LG04-735 (436'FNL & 1881'FWL,SEC.09)		

WELLPATH DATA (202 stations) † = interpolated, ‡ = extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
11230.00†	90.082	356.788	6132.70	5197.10	5073.58	1478.44	40°41'48.3908"N	103°58'42.2125"W	0.00	
11330.00†	90.082	356.788	6132.56	5295.86	5173.42	1472.84	40°41'49.3781"N	103°58'42.2630"W	0.00	
11430.00†	90.082	356.788	6132.42	5394.62	5273.27	1467.23	40°41'50.3655"N	103°58'42.3135"W	0.00	
11530.00†	90.082	356.788	6132.27	5493.39	5373.11	1461.63	40°41'51.3529"N	103°58'42.3640"W	0.00	
11630.00†	90.082	356.788	6132.13	5592.15	5472.95	1456.03	40°41'52.3402"N	103°58'42.4145"W	0.00	
11730.00†	90.082	356.788	6131.99	5690.92	5572.80	1450.42	40°41'53.3276"N	103°58'42.4650"W	0.00	
11830.00†	90.082	356.788	6131.85	5789.68	5672.64	1444.82	40°41'54.3149"N	103°58'42.5155"W	0.00	
11930.00†	90.082	356.788	6131.70	5888.44	5772.48	1439.21	40°41'55.3023"N	103°58'42.5660"W	0.00	
12030.00†	90.082	356.788	6131.56	5987.21	5872.32	1433.61	40°41'56.2897"N	103°58'42.6165"W	0.00	
12130.00†	90.082	356.788	6131.42	6085.97	5972.17	1428.01	40°41'57.2770"N	103°58'42.6670"W	0.00	
12168.42	90.082	356.788	6131.36 ³	6123.92	6010.53	1425.85	40°41'57.6564"N	103°58'42.6864"W	0.00	Fed Entry 2/Exit 1 SWSE,SEC.33
12168.63	90.082	356.786	6131.36	6124.13	6010.74	1425.84	40°41'57.6585"N	103°58'42.6865"W	1.00	3D Arc (J)
12230.00†	90.082	356.786	6131.28	6184.74	6072.01	1422.40	40°41'58.2644"N	103°58'42.7175"W	0.00	
12330.00†	90.082	356.786	6131.14	6283.50	6171.85	1416.79	40°41'59.2517"N	103°58'42.7681"W	0.00	
12430.00†	90.082	356.786	6130.99	6382.26	6271.69	1411.19	40°42'0.2391"N	103°58'42.8186"W	0.00	
12530.00†	90.082	356.786	6130.85	6481.03	6371.54	1405.58	40°42'1.2265"N	103°58'42.8692"W	0.00	
12630.00†	90.082	356.786	6130.71	6579.79	6471.38	1399.97	40°42'2.2138"N	103°58'42.9197"W	0.00	
12730.00†	90.082	356.786	6130.57	6678.55	6571.22	1394.37	40°42'3.2012"N	103°58'42.9703"W	0.00	
12830.00†	90.082	356.786	6130.42	6777.32	6671.06	1388.76	40°42'4.1885"N	103°58'43.0208"W	0.00	
12930.00†	90.082	356.786	6130.28	6876.08	6770.91	1383.15	40°42'5.1759"N	103°58'43.0714"W	0.00	
13030.00†	90.082	356.786	6130.14	6974.84	6870.75	1377.54	40°42'6.1633"N	103°58'43.1219"W	0.00	
13130.00†	90.082	356.786	6130.00	7073.61	6970.59	1371.94	40°42'7.1506"N	103°58'43.1725"W	0.00	
13230.00†	90.082	356.786	6129.85	7172.37	7070.43	1366.33	40°42'8.1380"N	103°58'43.2230"W	0.00	
13330.00†	90.082	356.786	6129.71	7271.13	7170.28	1360.72	40°42'9.1253"N	103°58'43.2736"W	0.00	
13430.00†	90.082	356.786	6129.57	7369.90	7270.12	1355.12	40°42'10.1127"N	103°58'43.3241"W	0.00	
13530.00†	90.082	356.786	6129.43	7468.66	7369.96	1349.51	40°42'11.1001"N	103°58'43.3747"W	0.00	
13630.00†	90.082	356.786	6129.29	7567.42	7469.81	1343.90	40°42'12.0874"N	103°58'43.4252"W	0.00	
13730.00†	90.082	356.786	6129.14	7666.19	7569.65	1338.29	40°42'13.0748"N	103°58'43.4758"W	0.00	
13830.00†	90.082	356.786	6129.00	7764.95	7669.49	1332.69	40°42'14.0621"N	103°58'43.5263"W	0.00	
13930.00†	90.082	356.786	6128.86	7863.71	7769.33	1327.08	40°42'15.0495"N	103°58'43.5769"W	0.00	
14030.00†	90.082	356.786	6128.72	7962.48	7869.18	1321.47	40°42'16.0369"N	103°58'43.6275"W	0.00	
14130.00†	90.082	356.786	6128.57	8061.24	7969.02	1315.87	40°42'17.0242"N	103°58'43.6780"W	0.00	
14230.00†	90.082	356.786	6128.43	8160.00	8068.86	1310.26	40°42'18.0116"N	103°58'43.7286"W	0.00	
14330.00†	90.082	356.786	6128.29	8258.77	8168.70	1304.65	40°42'18.9989"N	103°58'43.7791"W	0.00	
14430.00†	90.082	356.786	6128.15	8357.53	8268.55	1299.04	40°42'19.9863"N	103°58'43.8297"W	0.00	
14530.00†	90.082	356.786	6128.00	8456.30	8368.39	1293.44	40°42'20.9736"N	103°58'43.8802"W	0.00	
14630.00†	90.082	356.786	6127.86	8555.06	8468.23	1287.83	40°42'21.9610"N	103°58'43.9308"W	0.00	
14730.00†	90.082	356.786	6127.72	8653.82	8568.07	1282.22	40°42'22.9484"N	103°58'43.9814"W	0.00	
14830.00†	90.082	356.786	6127.58	8752.59	8667.92	1276.61	40°42'23.9357"N	103°58'44.0319"W	0.00	
14930.00†	90.082	356.786	6127.44	8851.35	8767.76	1271.01	40°42'24.9231"N	103°58'44.0825"W	0.00	
15030.00†	90.082	356.786	6127.29	8950.11	8867.60	1265.40	40°42'25.9104"N	103°58'44.1330"W	0.00	
15130.00†	90.082	356.786	6127.15	9048.88	8967.44	1259.79	40°42'26.8978"N	103°58'44.1836"W	0.00	
15230.00†	90.082	356.786	6127.01	9147.64	9067.29	1254.19	40°42'27.8851"N	103°58'44.2341"W	0.00	
15330.00†	90.082	356.786	6126.87	9246.40	9167.13	1248.58	40°42'28.8725"N	103°58'44.2847"W	0.00	
15430.00†	90.082	356.786	6126.72	9345.17	9266.97	1242.97	40°42'29.8599"N	103°58'44.3353"W	0.00	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Well	Scarecrow Federal LG04-735
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Scarecrow Federal LG04-735 PWB
Slot	SLOT#12 Scarecrow Federal LG04-735 (436'FNL & 1881'FWL,SEC.09)		

WELLPATH DATA (202 stations) † = interpolated, ‡ = extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
15530.00†	90.082	356.786	6126.58	9443.93	9366.81	1237.36	40°42'30.8472"N	103°58'44.3858"W	0.00	
15630.00†	90.082	356.786	6126.44	9542.69	9466.66	1231.76	40°42'31.8346"N	103°58'44.4364"W	0.00	
15730.00†	90.082	356.786	6126.30	9641.46	9566.50	1226.15	40°42'32.8219"N	103°58'44.4870"W	0.00	
15830.00†	90.082	356.786	6126.15	9740.22	9666.34	1220.54	40°42'33.8093"N	103°58'44.5375"W	0.00	
15930.00†	90.082	356.786	6126.01	9838.98	9766.18	1214.94	40°42'34.7966"N	103°58'44.5881"W	0.00	
16030.00†	90.082	356.786	6125.87	9937.75	9866.03	1209.33	40°42'35.7840"N	103°58'44.6386"W	0.00	
16130.00†	90.082	356.786	6125.73	10036.51	9965.87	1203.72	40°42'36.7714"N	103°58'44.6892"W	0.00	
16198.81	90.082	356.786	6125.63 [†]	10104.47	10034.58	1199.86	40°42'37.4508"N	103°58'44.7240"W	0.00	Fed Exit 2 SWNE,SEC.33
16201.05	90.082	356.808	6125.63	10106.68	10036.81	1199.74	40°42'37.4729"N	103°58'44.7251"W	1.00	3D Arc (J)
16230.00†	90.082	356.808	6125.59	10135.28	10065.71	1198.13	40°42'37.7587"N	103°58'44.7396"W	0.00	
16330.00†	90.082	356.808	6125.44	10234.05	10165.56	1192.56	40°42'38.7461"N	103°58'44.7897"W	0.00	
16430.00†	90.082	356.808	6125.30	10332.82	10265.40	1186.99	40°42'39.7335"N	103°58'44.8397"W	0.00	
16530.00†	90.082	356.808	6125.16	10431.59	10365.25	1181.42	40°42'40.7208"N	103°58'44.8898"W	0.00	
16630.00†	90.082	356.808	6125.02	10530.35	10465.09	1175.85	40°42'41.7082"N	103°58'44.9399"W	0.00	
16730.00†	90.082	356.808	6124.87	10629.12	10564.94	1170.28	40°42'42.6956"N	103°58'44.9899"W	0.00	
16830.00†	90.082	356.808	6124.73	10727.89	10664.78	1164.72	40°42'43.6829"N	103°58'45.0400"W	0.00	
16930.00†	90.082	356.808	6124.59	10826.66	10764.63	1159.15	40°42'44.6703"N	103°58'45.0900"W	0.00	
17030.00†	90.082	356.808	6124.45	10925.43	10864.47	1153.58	40°42'45.6577"N	103°58'45.1401"W	0.00	
17130.00†	90.082	356.808	6124.30	11024.20	10964.32	1148.01	40°42'46.6451"N	103°58'45.1902"W	0.00	
17230.00†	90.082	356.808	6124.16	11122.97	11064.16	1142.44	40°42'47.6324"N	103°58'45.2402"W	0.00	
17330.00†	90.082	356.808	6124.02	11221.74	11164.00	1136.87	40°42'48.6198"N	103°58'45.2903"W	0.00	
17342.21	90.082	356.808	6124.00 [‡]	11233.81	11176.20	1136.19	40°42'48.7404"N	103°58'45.2964"W	0.00	BHL NWNE,SEC.33

TARGETS										
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape	
SECTION 04 LG09-03-785	N/A	1.00	97.56	-112.35	3420316.77	1495322.66	40°40'59.4984"N	103°59'3.9660"W	polygon	
	2D Polygon: dimensions not calculated									
SECTION 09 LG09-03-785	N/A	1.00	97.56	-112.35	3420316.77	1495322.66	40°40'59.4984"N	103°59'3.9660"W	polygon	
	2D Polygon: dimensions not calculated									
SECTION 33 LG09-03-785	N/A	1.00	97.56	-112.35	3420316.77	1495322.66	40°40'59.4984"N	103°59'3.9660"W	polygon	
	2D Polygon: dimensions not calculated									
Federal Lease COC 28082	N/A	3.00	-1.56	-112.59	3420316.53	1495223.55	40°40'58.5192"N	103°59'3.9912"W	polygon	
	2D Polygon: dimensions not calculated									
Federal Lease COC 65489	N/A	3.00	-1.56	-112.59	3420316.53	1495223.55	40°40'58.5192"N	103°59'3.9912"W	polygon	
	2D Polygon: dimensions not calculated									
Federal Lease COC 65490	N/A	3.00	-1.56	-112.59	3420316.53	1495223.55	40°40'58.5192"N	103°59'3.9912"W	polygon	
	2D Polygon: dimensions not calculated									
Federal Lease COC 67097	N/A	3.00	-1.56	-112.59	3420316.53	1495223.55	40°40'58.5192"N	103°59'3.9912"W	polygon	
	2D Polygon: dimensions not calculated									
Scarecrow Federal LG04-735 BHL (200'FNL & 1666'FEL,SEC.33)	N/A	6124.00	11176.37	1135.86	3421564.96	1506401.29	40°42'48.7421"N	103°58'45.3007"W	point	
5) Scarecrow Federal LG04-735 BHL Rev-2 on PLAT (200'FNL & 1666'FEL,SEC.33)	17342.21	6124.00	11176.20	1136.19	3421565.29	1506401.12	40°42'48.7404"N	103°58'45.2964"W	point	
4) Scarecrow Federal LG04-735 Fed Exit 2 (1343'FNL & 1620'FEL,SEC.33)	16198.81	6125.63	10034.58	1199.86	3421628.96	1505259.51	40°42'37.4508"N	103°58'44.7240"W	point	
3) Scarecrow Federal LG04-735 Fed Entry 2/Exit 1 (0'FSL & 1459'FEL,SEC.33)	12168.42	6131.36	6010.53	1425.85	3421854.95	1501235.53	40°41'57.6564"N	103°58'42.6864"W	point	

TARGETS									
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
2) Scarecrow Federal LG04-735 Fed Entry 1 (1546'FNL & 1849'FEL,SEC.04)	10621.39	6133.57	4465.93	1512.54	3421941.64	1499690.96	40°41'42.3816"N	103°58'41.9052"W	point
Scarecrow Federal LG04-735 LP (200'FSL & 1642'FEL,SEC.04)	N/A	6139.00	661.13	1726.32	3422155.40	1495886.23	40°41'4.7552"N	103°58'39.9783"W	point

TARGETS									
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
1) Scarecrow Federal LG04-735 LP Rev-2 on PLAT (200'FSL & 1642'FEL,SEC.04)	6810.50	6139.00	661.06	1726.52	3422155.61	1495886.15	40°41'4.7544"N	103°58'39.9756"W	point

SURVEY PROGRAM - Ref Wellbore: Scarecrow Federal LG04-735 PWB					Ref Wellpath: Scarecrow Federal LG04-735 (REV-C.0) PWP				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model			Log Name/Comment		Wellbore		
30.00	1950.00	OWSG MWD rev2 (MS+IFR1)					Scarecrow Federal LG04-735 PWB		
1950.00	17394.82	OWSG MWD rev2 (MS+IFR1)					Scarecrow Federal LG04-735 PWB		

REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Well	Scarecrow Federal LG04-735
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Scarecrow Federal LG04-735 PWB
Slot	SLOT#12 Scarecrow Federal LG04-735 (436'FNL & 1881'FWL,SEC.09)		

WELLPATH COMMENTS

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
429.00	0.000	89.554	429.00	FOXHILLS-BASE PROD
864.00	0.000	89.554	864.00	PIERRE (UPPER)AQUIFER TOP
1459.55	11.191	89.554	1456.00	PIERRE (UPPER) AQUIFER BASE
2500.04	20.471	89.554	2442.00	PIERRE_MBR_A_SD_TOP
3076.44	20.471	89.554	2982.00	PIERRE_MBR_A_SD_BASE
3443.63	20.471	89.554	3326.00	PARKMAN
4176.94	20.471	89.554	4013.00	SUSSEX
4738.39	20.471	89.554	4539.00	SHANNON
5605.13	20.471	89.554	5351.00	TEPEE BUTES
5798.88	20.471	89.554	5532.52	KOP (446'FNL&1837'FEL,SEC.09)
6268.15	45.236	18.516	5936.00	INTRA_SHARON_SPGS_MK
6285.40	46.593	17.464	5948.00	SHARON_SPRING_MKR
6324.36	49.689	15.254	5974.00	NIO A CHALK
6367.68	53.176	13.024	6001.00	NIO A MARL
6504.90	64.440	7.084	6072.00	NIO B CHALK
6596.78	72.101	3.728	6106.00	NIO B MARL

DESIGN COMMENTS

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
30.00	0.000	89.554	30.00	SHL NENW,SEC.09
900.00	0.000	89.554	900.00	End of Tangent
1923.54	20.471	89.554	1901.90	Build (XS)
5798.88	20.471	89.554	5532.52	KOP NWNE,SEC.09
6810.50	90.082	356.781	6139.00	LP SWSE,SEC.04
10621.39	90.082	356.781	6133.57	Fed Entry 1 SWNE,SEC.04
10622.05	90.082	356.788	6133.57	Drop (J)
12168.42	90.082	356.788	6131.36	Fed Entry 2/Exit 1 SWSE,SEC.33
12168.63	90.082	356.786	6131.36	3D Arc (J)
16198.81	90.082	356.786	6125.63	Fed Exit 2 SWNE,SEC.33
16201.05	90.082	356.808	6125.63	3D Arc (J)
17342.21	90.082	356.808	6124.00	BHL NWNE,SEC.33



Closest Approach Clearance Summary Report

Scarecrow Federal LG04-735 (REV-C.0) PWP - SPE WPTS Stop Drilling HSE Risk (2017)
Page 1 of 4



REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Well	Scarecrow Federal LG04-735
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Scarecrow Federal LG04-735 PWB
Slot	SLOT#12 Scarecrow Federal LG04-735 (436'FNL & 1881'FWL,SEC.09)		

REPORT SETUP INFORMATION			
Projection System	NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	Software System	WellArchitect® 6.0
North Reference	Grid	User	Martsam01
Scale	0.999985	Report Generated	3/1/2024 at 5:11:36 PM
Convergence at slot	0.98° East	Database	WA_Denver

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-93.98	449.32	3420429.12	1495225.11	40°40'58.5156"N	103°59'2.5296"W
Facility Reference Pt			3419979.81	1495319.09	40°40'59.5200"N	103°59'8.3400"W
Field Reference Pt			3000000.00	4454105.15	48°46'34.3150"N	105°30'0.0000"W

WELLPATH DATUM			
Calculation method	Minimum Curvature	(4862'GL+30'KB@4892'RKB) (RKB) to Facility Vertical Datum	4892.00ft
Horizontal Reference Pt	Slot	(4862'GL+30'KB@4892'RKB) (RKB) to Mean Sea Level	4892.00ft
Vertical Reference Pt	(4862'GL+30'KB@4892'RKB) (RKB)	(4862'GL+30'KB@4892'RKB) (RKB) to Ground Level at Slot (SLOT#12 Scarecrow Federal LG04-735 (436'FNL & 1881'FWL,SEC.09))	4892.00ft
MD Reference Pt	(4862'GL+30'KB@4892'RKB) (RKB)		
Field Vertical Reference	Mean Sea Level		

POSITIONAL UNCERTAINTY CALCULATION SETTINGS					
Ellipse Confidence Limit	3.50 Std Dev	Ellipse Start MD	30.00ft	Surface Position Uncertainty	included
Declination	7.42° East of TN	Dip Angle	66.80°	Mag Field Strength	51940 nT
Slot Surface Uncertainty @1SD		Horizontal	0.100ft	Vertical	1.000ft
Facility Surface Uncertainty @1SD		Horizontal	8.200ft	Vertical	3.000ft
Positional Uncertainty values in the WELLPATH DATA table are the projection of the ellipsoid of uncertainty onto the vertical and horizontal planes					

REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Well	Scarecrow Federal LG04-735
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Scarecrow Federal LG04-735 PWB
Slot	SLOT#12 Scarecrow Federal LG04-735 (436'FNL & 1881'FWL,SEC.09)		

PROXIMITY-SCAN RULE

Rule Name	SPE WPTS Stop Drilling HSE Risk (2017)	Rule Based On	Ratio
Plane of Rule	Closest Approach	Threshold Value	1.00
Include Casing & Hole Size	yes	Apply Cone of Safety	no

HOLE & CASING SECTIONS - Ref Wellbore: Scarecrow Federal LG04-735 PWB Ref Wellpath: Scarecrow Federal LG04-735 (REV-C.0) PWP

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]
9.625in Casing Surface	30.00	1950.00	1920.00	30.00	1926.69	0.00	0.00	1.48	190.16
8.5in Open Hole	1950.00	17342.21	15392.21	1926.69	6124.00	1.48	190.16	11176.20	1136.19

SURVEY PROGRAM - Ref Wellbore: Scarecrow Federal LG04-735 PWB Ref Wellpath: Scarecrow Federal LG04-735 (REV-C.0) PWP

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
30.00	1950.00	OWSG MWD rev2 (MS+IFR1)		Scarecrow Federal LG04-735 PWB
1950.00	17394.82	OWSG MWD rev2 (MS+IFR1)		Scarecrow Federal LG04-735 PWB

REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Well	Scarecrow Federal LG04-735
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Scarecrow Federal LG04-735 PWB
Slot	SLOT#12 Scarecrow Federal LG04-735 (436'FNL & 1881'FWL,SEC.09)		

CALCULATION RANGE & CUTOFF

From: 30.00ft MD	To: 17342.21ft MD	C-C Cutoff: (none)
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OFFSET WELL CLEARANCE SUMMARY (30 Offset Wellpaths selected) Ratios are calculated in Closest Approach plane

Offset Facility	Offset Slot	Offset Well	Offset Wellbore	Offset Wellpath	Wellbore Status	C-C Clearance Distance			Rule Separation Ratio			
						Ref MD [ft]	Min C-C Clear Dist [ft]	Diverging from MD [ft]	Ref MD of Min Ratio [ft]	Min Ratio	Min Ratio Dvrg from [ft]	Rule Status
SEC.33-T09N-R59W	SLOT#01 Ptasnik PC LC33-68HN	Ptasnik PC LC33-68HN (05-123-33945)	Ptasnik PC LC33-68HN	Ptasnik PC LC33-68HN AWP	Drilling	16878.67	28.71	16878.67	16878.98	0.17	16878.98	FAIL
SEC.04-T08N-R59W	SLOT#07 BULLEIT FEDERAL PC LG04-62HN (430'FSL&300'FEL,SEC.04) (PR)	BULLEIT FEDERAL PC LG04-62HN (05-123-38758)	BULLEIT FEDERAL PC LG04-62HN AWP	BULLEIT FEDERAL PC LG04-62HN AWP	Drilling	7295.09	31.11	7295.09	7271.87	0.56	7330.00	FAIL
SEC.04-T08N-R59W	SLOT#05 Ex.McCLELLAN PC LG04-15 (830'FSL&1810'FEL,SEC.04) (PA)	Ex.McCLELLAN PC LG04-15 (05-123-10256)	Ex.McCLELLAN PC LG04-15 AWP	Ex.McCLELLAN PC LG04-15 AWP	Drilling	7451.26	101.09	7451.26	7447.27	1.68	7447.27	PASS
SEC.09-T08N-R59W	SLOT#11 Scarecrow Federal LG04-745 (436'FNL & 1859'FWL,SEC.09)	Scarecrow Federal LG04-745	Scarecrow Federal LG04-745 PWB	Scarecrow Federal LG04-745 (REV-C.0) PWP	Planned	30.00	22.47	6830.00	942.26	2.11	17342.21	PASS
SEC.09-T08N-R59W	SLOT#13 Scarecrow Federal LG04-725 (436'FNL & 1904'FWL,SEC.09)	Scarecrow Federal LG04-725	Scarecrow Federal LG04-725 PWB	Scarecrow Federal LG04-725 (REV-C.0) PWP	Planned	30.00	22.47	12730.00	746.42	2.45	17342.21	PASS
SEC.04-T08N-R59W	SLOT#02 DOROTHY STATE LG16-739(350'FSL&1497'FEL,SEC.04)	DOROTHY STATE LG16-739 (05-123-33457)	DOROTHY STATE LG16-739 AWP	DOROTHY STATE LG16-739 AWP	Drilling	6504.24	215.33	6504.24	6523.28	3.54	6523.28	PASS
SEC.09-T08N-R59W	SLOT#10 Scarecrow Federal LG04-755 (436'FNL & 1837'FWL,SEC.09)	Scarecrow Federal LG04-755	Scarecrow Federal LG04-755 PWB	Scarecrow Federal LG04-755 (REV-C.0) PWP	Planned	30.00	44.93	16198.81	993.14	4.34	17342.21	PASS
SEC.04-T08N-R59W	SLOT#06 Ex.GREY #1(660'FSL&660'FEL,SEC.04) (PA)	Ex.GREY #1 (05-123-38758)	Ex.GREY #1 AWP	Ex.GREY #1 AWP	Drilling	7174.32	1010.89	7174.32	7182.53	5.16	7182.53	PASS
SEC.09-T08N-R59W	SLOT#14 Scarecrow Federal LG04-715 (436'FNL & 1926'FWL,SEC.09)	Scarecrow Federal LG04-715	Scarecrow Federal LG04-715 PWB	Scarecrow Federal LG04-715 (REV-B.0) PWP	Planned	30.00	44.93	12530.00	17342.21	5.58	17342.21	PASS
SEC.04-T08N-R59W	SLOT#01 DOROTHY STATE LG16-729(350'FSL&1460'FEL,SEC.04)	DOROTHY STATE LG16-729 (05-123-34243)	DOROTHY STATE LG16-729 AWP	DOROTHY STATE LG16-729 AWP	Drilling	6655.39	385.05	6655.39	6658.51	6.34	6658.51	PASS
SEC.04-T08N-R59W	SLOT#04 Ex.USA #1 (817'FNL&1970'FWL,SEC.04) (DA)	Ex.USA #1 (05-123-07092)	Ex.USA #1 AWP	Ex.USA #1 AWP	Drilling	11446.08	1384.00	11446.08	11461.34	6.57	11461.34	PASS
SEC.09-T08N-R59W	SLOT#09 Scarecrow Federal LG04-765 (436'FNL & 1814'FWL,SEC.09)	Scarecrow Federal LG04-765	Scarecrow Federal LG04-765 PWB	Scarecrow Federal LG04-765 (REV-C.0) PWP	Planned	30.00	67.68	900.00	972.86	6.68	17342.21	PASS
SEC.09-T08N-R59W	SLOT#08 Scarecrow Federal LG04-775 (436'FNL & 1792'FWL,SEC.09)	Scarecrow Federal LG04-775	Scarecrow Federal LG04-775 PWB	Scarecrow Federal LG04-775 (REV-C.0) PWP	Planned	30.00	90.14	11930.00	906.90	9.85	17342.21	PASS
SEC.04-T08N-R59W	SLOT#03 DOROTHY STATE LG16-748(350'FSL&1535'FEL,SEC.04)	DOROTHY STATE LG16-748 (05-123-47703)	DOROTHY STATE LG16-748 AWP	DOROTHY STATE LG16-748 AWP	Drilling	6163.82	823.63	6930.00	6301.53	13.66	6301.53	PASS
SEC.09-T08N-R59W	SLOT#07 Scarecrow Federal LG04-785 (436'FNL & 1769'FWL,SEC.09)	Scarecrow Federal LG04-785	Scarecrow Federal LG04-785 PWB	Scarecrow Federal LG04-785 (REV-C.0) PWP	Planned	30.00	112.61	17342.21	17342.21	14.10	17342.21	PASS
SEC.09-T08N-R59W	SLOT#05 McCLELLAN PC LG09-72HN(360'FNL&275'FEL,SEC.09)	Ex.McCLELLAN PC LG09-72HN (05-123-36972)	Ex.McCLELLAN PC LG09-72HN AWP	Ex.McCLELLAN PC LG09-72HN AWP	Drilling	6397.92	1042.51	6397.92	6530.00	22.42	6530.00	PASS
SEC.09-T08N-R59W	SLOT#06 Ex.KIRCHNER #1 (660'FSL&660'FEL,SEC.09) (PA)	Ex.KIRCHNER #1 (05-123-05575)	Ex.KIRCHNER #1 AWP	Ex.KIRCHNER #1 AWP	Drilling	5859.51	4372.72	5859.51	6383.36	25.91	6383.36	PASS
SEC.09-T08N-R59W	SLOT#01 DOROTHY STATE LG16-757(335'FNL&1433'FWL,SEC.09)	DOROTHY STATE LG16-757 (05-123-47612)	DOROTHY STATE LG16-757 AWP	DOROTHY STATE LG16-757 AWP	Drilling	788.99	456.83	5930.00	6041.89	30.98	6041.89	PASS
SEC.09-T08N-R59W	SLOT#02 DOROTHY STATE LG16-766(335'FNL&1395'FWL,SEC.09)	DOROTHY STATE LG16-766 (05-123-47610)	DOROTHY STATE LG16-766 AWP	DOROTHY STATE LG16-766 AWP	Drilling	30.00	497.00	630.00	5931.48	45.16	5931.48	PASS
SEC.09-T08N-R59W	SLOT#02 DOROTHY STATE LG16-766(335'FNL&1395'FWL,SEC.09)	DOROTHY STATE LG16-766 (05-123-47610)	DOROTHY STATE LG16-766 ST01 AWP	DOROTHY STATE LG16-766 ST01 AWP	Drilling	30.00	497.00	630.00	5931.48	45.16	5931.48	PASS
SEC.09-T08N-R59W	SLOT#03 DOROTHY STATE LG16-776(335'FNL&1358'FWL,SEC.09)	DOROTHY STATE LG16-776 (05-123-47609)	DOROTHY STATE LG16-776 AWP	DOROTHY STATE LG16-776 AWP	Drilling	30.00	532.34	830.00	1805.20	47.71	6930.00	PASS
SEC.09-T08N-R59W	SLOT#04 DOROTHY STATE LG16-785(335'FNL&1320'FWL,SEC.09)	DOROTHY STATE LG16-785 (05-123-47611)	DOROTHY STATE LG16-785 AWP	DOROTHY STATE LG16-785 AWP	Drilling	901.62	568.23	7030.00	1900.25	50.29	8030.00	PASS
SEC.09-T08N-R59W	SLOT#15 Tinman Federal LG07-685 (2454'FNL & 1339'FWL,SEC.09)	Tinman Federal LG07-685	Tinman Federal LG07-685 PWB	Tinman Federal LG07-685 (REV-C.0) PWP	Planned	2116.31	1862.86	2116.31	6769.93	65.33	6769.93	PASS
SEC.09-T08N-R59W	SLOT#16 Tinman Federal LG07-675 (2470'FNL & 1354'FWL,SEC.09)	Tinman Federal LG07-675	Tinman Federal LG07-675 PWB	Tinman Federal LG07-675 (REV-C.0) PWP	Planned	1910.91	1996.97	1910.91	6330.00	70.95	6330.00	PASS
SEC.09-T08N-R59W	SLOT#17 Tinman Federal LG07-665 (2486'FNL & 1370'FWL,SEC.09)	Tinman Federal LG07-665	Tinman Federal LG07-665 PWB	Tinman Federal LG07-665 (REV-C.0) PWP	Planned	1635.10	2104.16	1635.10	6126.02	78.49	6126.02	PASS

REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Well	Scarecrow Federal LG04-735
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Scarecrow Federal LG04-735 PWB
Slot	SLOT#12 Scarecrow Federal LG04-735 (436'FNL & 1881'FWL,SEC.09)		

CALCULATION RANGE & CUTOFF

From: 30.00ft MD	To: 17342.21ft MD	C-C Cutoff: (none)
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OFFSET WELL CLEARANCE SUMMARY (30 Offset Wellpaths selected) Ratios are calculated in Closest Approach plane

Offset Facility	Offset Slot	Offset Well	Offset Wellbore	Offset Wellpath	Wellbore Status	C-C Clearance Distance			Rule Separation Ratio			
						Ref MD [ft]	Min C-C Clear Dist [ft]	Diverging from MD [ft]	Ref MD of Min Ratio [ft]	Min Ratio	Min Ratio Dvrg from [ft]	Rule Status
SEC.09-T08N-R59W	SLOT#18 Tinman Federal LG07-655 (2502'FNL & 1386'FWL,SEC.09)	Tinman Federal LG07-655	Tinman Federal LG07-655 PWB	Tinman Federal LG07-655 (REV-C.0) PWP	Planned	130.00	2128.22	900.00	6030.00	87.53	6030.00	PASS
SEC.09-T08N-R59W	SLOT#19 Tinman Federal LG07-645 (2518'FNL & 1402'FWL,SEC.09)	Tinman Federal LG07-645	Tinman Federal LG07-645 PWB	Tinman Federal LG07-645 (REV-C.0) PWP	Planned	130.00	2140.45	900.00	6030.00	97.44	6030.00	PASS
SEC.09-T08N-R59W	SLOT#20 Tinman Federal LG07-635 (2534'FNL & 1417'FWL,SEC.09)	Tinman Federal LG07-635	Tinman Federal LG07-635 PWB	Tinman Federal LG07-635 (REV-C.0) PWP	Planned	130.00	2152.44	900.00	6029.23	107.85	6029.23	PASS
SEC.09-T08N-R59W	SLOT#21 Tinman Federal LG07-625 (2551'FNL & 1433'FWL,SEC.09)	Tinman Federal LG07-625	Tinman Federal LG07-625 PWB	Tinman Federal LG07-625 (REV-C.0) PWP	Planned	130.00	2165.01	730.00	6005.80	120.00	6005.80	PASS
SEC.09-T08N-R59W	SLOT#22 Tinman Federal LG07-615 (2567'FNL & 1449'FWL,SEC.09)	Tinman Federal LG07-615	Tinman Federal LG07-615 PWB	Tinman Federal LG07-615 (REV-B.0) PWP	Planned	130.00	2177.38	530.00	5993.81	130.83	11330.00	PASS