

NOBLE ENERGY, INC



Location: COLORADO Slot: SLOTH07 Scarecrow Federal LG04-785 (436'FNL & 1769'FWL,SEC.09)
 Field: WELD COUNTY (NOBLE NAD 83 GRID) Well: Scarecrow Federal LG04-785
 Facility: SEC.09-T08N-R59W Wellbore: Scarecrow Federal LG04-785 PWB

Plot reference wellpath is Scarecrow Federal LG04-785 (REV-C.0) PWP
 True vertical depths are referenced to (4859'GL+30'KB@4889'RKB) (RKB)
 Reference wellpath measured depths are referenced to (4859'GL+30'KB@4889'RKB) (RKB)
 (4859'GL+30'KB@4889'RKB) (RKB) to Mean Sea Level: 4889 feet
 Mean Sea Level to Ground level (At Slot: SLOTH07 Scarecrow Federal LG04-785 (436'FNL & 1769'FWL,SEC.09)): 0 feet
 Offset wellpath MDs are referenced to each path's default MD datum
 Grid System: NAD83 / Lambert Colorado SP, Northern Zone (S01), US feet
 North Reference: Grid north
 Scale: True distance
 Coordinates are in feet referenced to Slot
 Depths are in feet
 Created by: marisam01 on 2024-03-02; Database: WA_Denver

Location Information

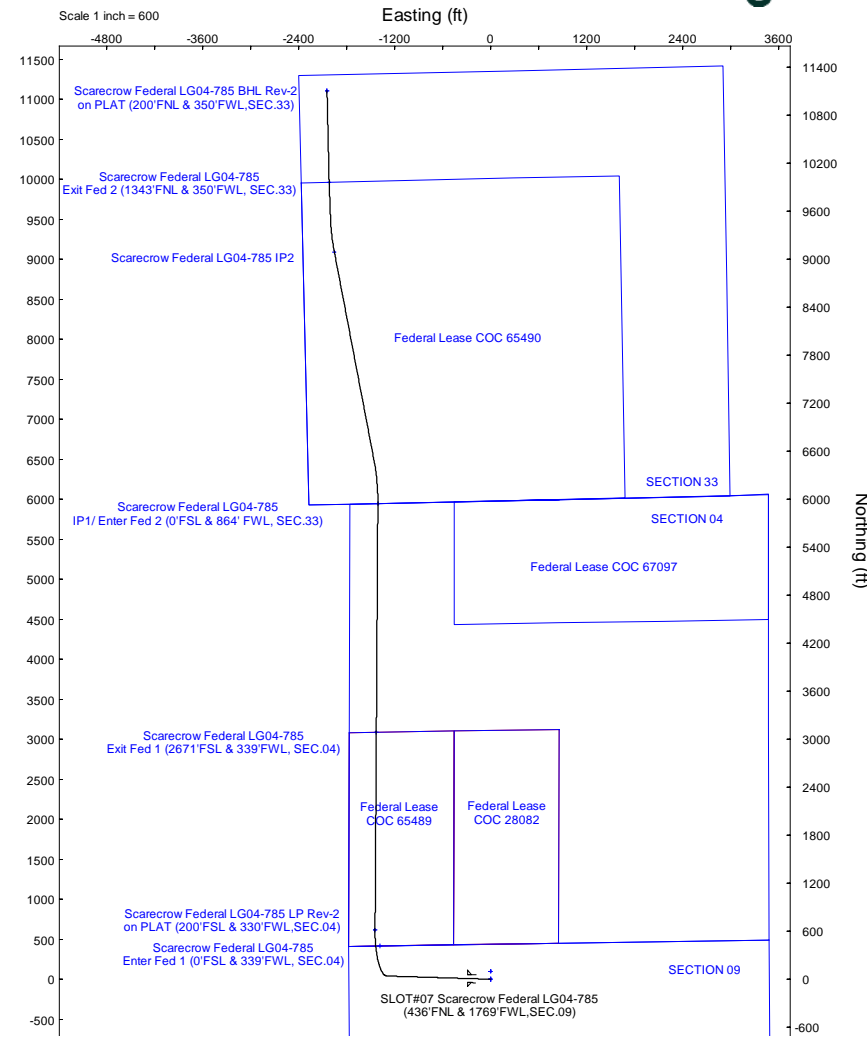
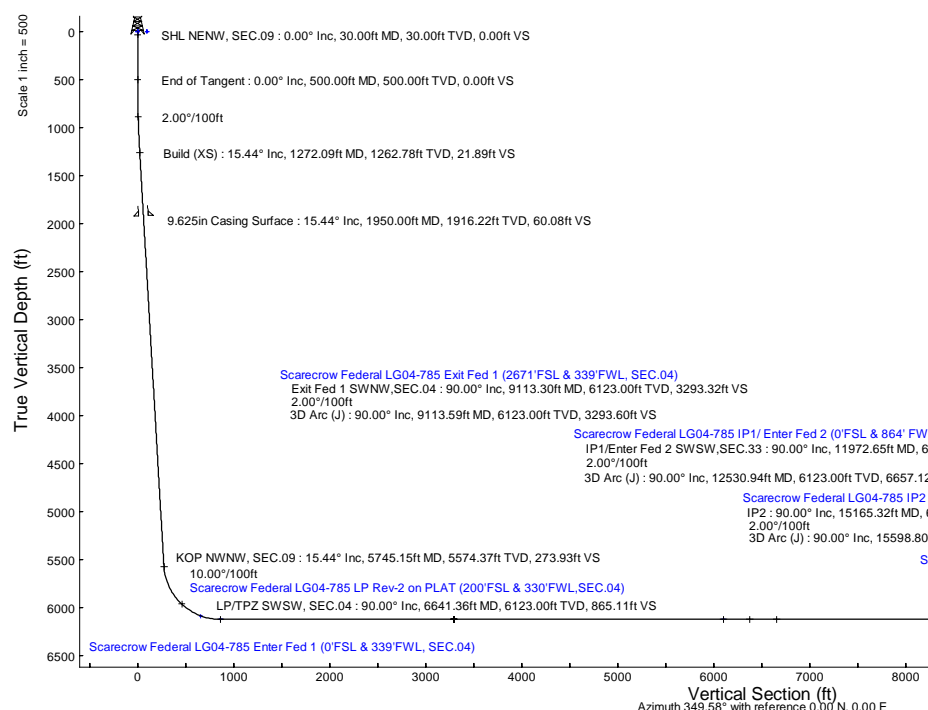
Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude		
SEC.09-T08N-R59W	3419979.808	1495319.889	40°40'59.3200"N	103°59'3.4000"W		
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SLOTH07 Scarecrow Federal LG04-785 (436'FNL & 1769'FWL, SEC.09)	-95.55	336.72	3420318.525	1495223.546	40°40'58.5192"N	103°59'3.9912"W
(4859'GL+30'KB@4889'RKB) (RKB) to Ground level (At Slot: SLOTH07 Scarecrow Federal LG04-785 (436'FNL & 1769'FWL, SEC.09))				4889ft		
Mean Sea Level to Ground level (At Slot: SLOTH07 Scarecrow Federal LG04-785 (436'FNL & 1769'FWL, SEC.09))				0ft		
(4859'GL+30'KB@4889'RKB) (RKB) to Mean Sea Level				4889ft		

Well Profile Data

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
SHL NENW, SEC.09	30.00	0.000	271.798	30.00	0.00	0.00	0.00	0.00
End of Tangent	500.00	0.000	271.798	500.00	0.00	0.00	0.00	0.00
Build (XS)	1272.09	15.442	271.798	1262.78	3.24	-103.36	2.00	21.89
KOP NWNW, SEC.09	5745.15	15.442	271.798	5574.37	40.61	-1293.78	0.00	273.93
LP/TPZ SWSW, SEC.04	6641.36	90.000	0.374	6123.00	614.53	-1441.54	10.00	865.11
Exit Fed 1 SWNW, SEC.04	9113.30	90.000	0.374	6123.00	3086.42	-1425.40	0.00	3293.32
3D Arc (J)	9113.59	90.000	0.380	6123.00	3086.71	-1425.40	2.00	3293.60
IP1/Enter Fed 2 SWSW, SEC.33	11972.65	90.000	0.380	6123.00	5945.70	-1406.45	0.00	6102.02
3D Arc (J)	12530.94	90.000	349.214	6123.00	6500.81	-1457.00	2.00	6657.12
IP2	15165.32	90.000	349.214	6123.00	9088.65	-1950.00	0.00	9291.44
3D Arc (J)	15598.80	90.000	357.884	6123.00	9518.98	-1998.66	2.00	9723.48
Exit Fed 2 NWNW, SEC.33	16041.92	90.000	357.884	6123.00	9961.79	-2015.02	0.00	10161.95
3D Arc (J)	16080.89	90.000	358.663	6123.00	10000.74	-2016.20	2.00	10200.46
BHL NWNW, SEC.33	17184.50	90.000	358.663	6123.00	11104.05	-2041.95	0.00	11290.24

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 LG04-785 PWB
1950.00	17373.63	OWSG MWD rev2	OWSG MWD rev2 (MS+IFR1)		Scarecrow Federal LG04-785 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 = 600

REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Well	Scarecrow Federal LG04-785
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Scarecrow Federal LG04-785 PWB
Slot	SLOT#07 Scarecrow Federal LG04-785 (436'FNL & 1769'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 12:57:52 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	-95.55	336.72	3420316.53	1495223.55	40°40'58.5192"N	103°59'3.9912"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	(4859'GL+30'KB@4889'RKB) (RKB) to Facility Vertical Datum	4889.00ft
Horizontal Reference Pt	Slot	(4859'GL+30'KB@4889'RKB) (RKB) to Mean Sea Level	4889.00ft
Vertical Reference Pt	(4859'GL+30'KB@4889'RKB) (RKB)	(4859'GL+30'KB@4889'RKB) (RKB) to Ground Level at Slot (SLOT#07 Scarecrow Federal LG04-785 (436'FNL & 1769'FWL,SEC.09))	4889.00ft
MD Reference Pt	(4859'GL+30'KB@4889'RKB) (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	349.58°

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Well	Scarecrow Federal LG04-785
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Scarecrow Federal LG04-785 PWB
Slot	SLOT#07 Scarecrow Federal LG04-785 (436'FNL & 1769'FWL,SEC.09)		

WELLPATH DATA (203 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	271.798	0.00	0.00	0.00	0.00	40°40'58.5192"N	103°59'3.9912"W	0.00	
30.00	0.000	271.798	30.00	0.00	0.00	0.00	40°40'58.5192"N	103°59'3.9912"W	0.00	SHL NENW, SEC.09
130.00†	0.000	271.798	130.00	0.00	0.00	0.00	40°40'58.5192"N	103°59'3.9912"W	0.00	
230.00†	0.000	271.798	230.00	0.00	0.00	0.00	40°40'58.5192"N	103°59'3.9912"W	0.00	
330.00†	0.000	271.798	330.00	0.00	0.00	0.00	40°40'58.5192"N	103°59'3.9912"W	0.00	
426.00†	0.000	271.798	426.00	0.00	0.00	0.00	40°40'58.5192"N	103°59'3.9912"W	0.00	FOXHILLS-BASE PROD
430.00†	0.000	271.798	430.00	0.00	0.00	0.00	40°40'58.5192"N	103°59'3.9912"W	0.00	
500.00	0.000	271.798	500.00	0.00	0.00	0.00	40°40'58.5192"N	103°59'3.9912"W	0.00	End of Tangent
530.00†	0.600	271.798	530.00	0.03	0.00	-0.16	40°40'58.5193"N	103°59'3.9932"W	2.00	
630.00†	2.600	271.798	629.96	0.62	0.09	-2.95	40°40'58.5206"N	103°59'4.0294"W	2.00	
730.00†	4.600	271.798	729.75	1.95	0.29	-9.22	40°40'58.5236"N	103°59'4.1108"W	2.00	
830.00†	6.600	271.798	829.27	4.02	0.60	-18.98	40°40'58.5283"N	103°59'4.2373"W	2.00	
861.96†	7.239	271.798	861.00	4.83	0.72	-22.83	40°40'58.5301"N	103°59'4.2873"W	2.00	PIERRE (UPPER)AQUIFER TOP
930.00†	8.600	271.798	928.39	6.82	1.01	-32.19	40°40'58.5346"N	103°59'4.4088"W	2.00	
1030.00†	10.600	271.798	1026.98	10.35	1.53	-48.86	40°40'58.5426"N	103°59'4.6250"W	2.00	
1130.00†	12.600	271.798	1124.93	14.60	2.16	-68.96	40°40'58.5522"N	103°59'4.8857"W	2.00	
1230.00†	14.600	271.798	1222.13	19.58	2.90	-92.46	40°40'58.5635"N	103°59'5.1905"W	2.00	
1272.09	15.442	271.798	1262.78	21.89	3.24	-103.36	40°40'58.5687"N	103°59'5.3319"W	2.00	Build (XS)
1330.00†	15.442	271.798	1318.60	25.15	3.73	-118.78	40°40'58.5761"N	103°59'5.5318"W	0.00	
1430.00†	15.442	271.798	1414.99	30.78	4.56	-145.39	40°40'58.5888"N	103°59'5.8770"W	0.00	
1469.44†	15.442	271.798	1453.00	33.01	4.89	-155.88	40°40'58.5939"N	103°59'6.0132"W	0.00	PIERRE (UPPER) AQUIFER BASE
1530.00†	15.442	271.798	1511.38	36.42	5.40	-172.00	40°40'58.6016"N	103°59'6.2222"W	0.00	
1630.00†	15.442	271.798	1607.77	42.05	6.23	-198.61	40°40'58.6143"N	103°59'6.5674"W	0.00	
1730.00†	15.442	271.798	1704.16	47.69	7.07	-225.23	40°40'58.6271"N	103°59'6.9126"W	0.00	
1830.00†	15.442	271.798	1800.55	53.32	7.90	-251.84	40°40'58.6398"N	103°59'7.2578"W	0.00	
1930.00†	15.442	271.798	1896.94	58.96	8.74	-278.45	40°40'58.6526"N	103°59'7.6030"W	0.00	
2030.00†	15.442	271.798	1993.33	64.59	9.58	-305.07	40°40'58.6653"N	103°59'7.9482"W	0.00	
2130.00†	15.442	271.798	2089.72	70.23	10.41	-331.68	40°40'58.6780"N	103°59'8.2934"W	0.00	
2230.00†	15.442	271.798	2186.11	75.86	11.25	-358.29	40°40'58.6908"N	103°59'8.6386"W	0.00	
2330.00†	15.442	271.798	2282.50	81.50	12.08	-384.91	40°40'58.7035"N	103°59'8.9838"W	0.00	
2430.00†	15.442	271.798	2378.89	87.13	12.92	-411.52	40°40'58.7163"N	103°59'9.3290"W	0.00	
2492.36†	15.442	271.798	2439.00	90.64	13.44	-428.11	40°40'58.7242"N	103°59'9.5443"W	0.00	PIERRE_MBR_A_SD_TOP
2530.00†	15.442	271.798	2475.28	92.77	13.75	-438.13	40°40'58.7290"N	103°59'9.6742"W	0.00	
2630.00†	15.442	271.798	2571.67	98.40	14.59	-464.74	40°40'58.7418"N	103°59'10.0194"W	0.00	
2730.00†	15.442	271.798	2668.06	104.03	15.42	-491.36	40°40'58.7545"N	103°59'10.3646"W	0.00	
2830.00†	15.442	271.798	2764.45	109.67	16.26	-517.97	40°40'58.7672"N	103°59'10.7098"W	0.00	
2930.00†	15.442	271.798	2860.84	115.30	17.09	-544.58	40°40'58.7800"N	103°59'11.0550"W	0.00	
3030.00†	15.442	271.798	2957.23	120.94	17.93	-571.20	40°40'58.7927"N	103°59'11.4002"W	0.00	
3052.59†	15.442	271.798	2979.00	122.21	18.12	-577.21	40°40'58.7956"N	103°59'11.4782"W	0.00	PIERRE_MBR_A_SD_BASE
3130.00†	15.442	271.798	3053.62	126.57	18.76	-597.81	40°40'58.8055"N	103°59'11.7454"W	0.00	
3230.00†	15.442	271.798	3150.01	132.21	19.60	-624.42	40°40'58.8182"N	103°59'12.0906"W	0.00	
3330.00†	15.442	271.798	3246.40	137.84	20.43	-651.03	40°40'58.8309"N	103°59'12.4358"W	0.00	
3409.47†	15.442	271.798	3323.00	142.32	21.10	-672.18	40°40'58.8411"N	103°59'12.7101"W	0.00	PARKMAN
3430.00†	15.442	271.798	3342.79	143.48	21.27	-677.65	40°40'58.8437"N	103°59'12.7810"W	0.00	
3530.00†	15.442	271.798	3439.18	149.11	22.10	-704.26	40°40'58.8564"N	103°59'13.1262"W	0.00	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Well	Scarecrow Federal LG04-785
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Scarecrow Federal LG04-785 PWB
Slot	SLOT#07 Scarecrow Federal LG04-785 (436'FNL & 1769'FWL,SEC.09)		

WELLPATH DATA (203 stations) † = interpolated, ‡ = extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
3630.00†	15.442	271.798	3535.57	154.75	22.94	-730.87	40°40'58.8692"N	103°59'13.4714"W	0.00	
3730.00†	15.442	271.798	3631.96	160.38	23.78	-757.49	40°40'58.8819"N	103°59'13.8166"W	0.00	
3830.00†	15.442	271.798	3728.35	166.02	24.61	-784.10	40°40'58.8946"N	103°59'14.1618"W	0.00	
3930.00†	15.442	271.798	3824.74	171.65	25.45	-810.71	40°40'58.9074"N	103°59'14.5070"W	0.00	
4030.00†	15.442	271.798	3921.13	177.29	26.28	-837.33	40°40'58.9201"N	103°59'14.8522"W	0.00	
4122.20†	15.442	271.798	4010.00	182.48	27.05	-861.86	40°40'58.9319"N	103°59'15.1704"W	0.00	SUSSEX
4130.00†	15.442	271.798	4017.52	182.92	27.12	-863.94	40°40'58.9328"N	103°59'15.1974"W	0.00	
4230.00†	15.442	271.798	4113.91	188.56	27.95	-890.55	40°40'58.9456"N	103°59'15.5426"W	0.00	
4330.00†	15.442	271.798	4210.30	194.19	28.79	-917.16	40°40'58.9583"N	103°59'15.8878"W	0.00	
4430.00†	15.442	271.798	4306.69	199.82	29.62	-943.78	40°40'58.9711"N	103°59'16.2330"W	0.00	
4530.00†	15.442	271.798	4403.08	205.46	30.46	-970.39	40°40'58.9838"N	103°59'16.5782"W	0.00	
4630.00†	15.442	271.798	4499.47	211.09	31.29	-997.00	40°40'58.9965"N	103°59'16.9234"W	0.00	
4667.90†	15.442	271.798	4536.00	213.23	31.61	-1007.09	40°40'59.0014"N	103°59'17.0542"W	0.00	SHANNON
4730.00†	15.442	271.798	4595.86	216.73	32.13	-1023.62	40°40'59.0093"N	103°59'17.2686"W	0.00	
4830.00†	15.442	271.798	4692.25	222.36	32.96	-1050.23	40°40'59.0220"N	103°59'17.6138"W	0.00	
4930.00†	15.442	271.798	4788.64	228.00	33.80	-1076.84	40°40'59.0347"N	103°59'17.9590"W	0.00	
5030.00†	15.442	271.798	4885.03	233.63	34.63	-1103.46	40°40'59.0475"N	103°59'18.3042"W	0.00	
5130.00†	15.442	271.798	4981.42	239.27	35.47	-1130.07	40°40'59.0602"N	103°59'18.6494"W	0.00	
5230.00†	15.442	271.798	5077.81	244.90	36.30	-1156.68	40°40'59.0729"N	103°59'18.9946"W	0.00	
5330.00†	15.442	271.798	5174.20	250.54	37.14	-1183.29	40°40'59.0857"N	103°59'19.3397"W	0.00	
5430.00†	15.442	271.798	5270.59	256.17	37.98	-1209.91	40°40'59.0984"N	103°59'19.6849"W	0.00	
5510.31†	15.442	271.798	5348.00	260.70	38.65	-1231.28	40°40'59.1086"N	103°59'19.9622"W	0.00	TEPEE BUTES
5530.00†	15.442	271.798	5366.98	261.81	38.81	-1236.52	40°40'59.1111"N	103°59'20.0301"W	0.00	
5630.00†	15.442	271.798	5463.37	267.44	39.65	-1263.13	40°40'59.1239"N	103°59'20.3753"W	0.00	
5730.00†	15.442	271.798	5559.76	273.08	40.48	-1289.75	40°40'59.1366"N	103°59'20.7205"W	0.00	
5745.15†	15.442	271.798	5574.36	273.93	40.61	-1293.78	40°40'59.1385"N	103°59'20.7728"W	0.00	KOP (376'FNL&475'FWL,Sec.09)
5745.15	15.442	271.798	5574.37	273.93	40.61	-1293.78	40°40'59.1385"N	103°59'20.7729"W	0.00	KOP NWNW, SEC.09
5830.00†	17.747	300.739	5655.81	284.85	47.58	-1316.22	40°40'59.2112"N	103°59'21.0626"W	10.00	
5930.00†	24.196	322.453	5749.28	313.19	71.68	-1341.88	40°40'59.4537"N	103°59'21.3902"W	10.00	
6030.00†	32.416	334.598	5837.32	357.44	112.25	-1365.93	40°40'59.8585"N	103°59'21.6933"W	10.00	
6130.00†	41.362	342.095	5917.26	416.24	168.04	-1387.64	40°41'0.4133"N	103°59'21.9628"W	10.00	
6151.30†	43.319	343.345	5933.00	430.48	181.74	-1391.89	40°41'0.5494"N	103°59'22.0150"W	10.00	INTRA_SHARON_SPGS_MK
6168.01†	44.862	344.264	5945.00	442.04	192.90	-1395.14	40°41'0.6602"N	103°59'22.0546"W	10.00	SHARON_SPRING_MKR
6205.87†	48.385	346.174	5971.00	469.48	219.51	-1402.14	40°41'0.9243"N	103°59'22.1396"W	10.00	NIO A CHALK
6230.00†	50.645	347.285	5986.67	487.81	237.37	-1406.35	40°41'1.1015"N	103°59'22.1903"W	10.00	
6248.21†	52.358	348.077	5998.00	502.05	251.29	-1409.39	40°41'1.2395"N	103°59'22.2267"W	10.00	NIO A MARL
6330.00†	60.104	351.239	6043.44	569.98	318.13	-1421.50	40°41'1.9019"N	103°59'22.3691"W	10.00	
6385.88†	65.436	353.123	6069.00	619.59	367.34	-1428.24	40°41'2.3892"N	103°59'22.4457"W	10.00	NIO B CHALK
6430.00†	69.661	354.499	6085.85	660.24	407.87	-1432.63	40°41'2.7903"N	103°59'22.4936"W	10.00	
6437.21†	70.352	354.716	6088.31	666.99	414.61	-1433.26	40°41'2.8571"N	103°59'22.5004"W	10.00	Fed Entry 1 (0'FSL & 339'FWL,SEC.04) SWSW
6486.70†	75.105	356.162	6103.00	713.99	461.70	-1437.01	40°41'3.3230"N	103°59'22.5387"W	10.00	NIO B MARL
6530.00†	79.270	357.375	6112.60	755.87	503.85	-1439.39	40°41'3.7398"N	103°59'22.5602"W	10.00	
6630.00†	88.905	0.072	6122.89	853.95	603.17	-1441.58	40°41'4.7214"N	103°59'22.5667"W	10.00	
6641.36	90.000	0.374	6123.00†	865.11	614.53	-1441.54	40°41'4.8336"N	103°59'22.5636"W	10.00	LP/TPZ SWSW, SEC.04
6730.00†	90.000	0.374	6123.00	952.18	703.17	-1440.96	40°41'5.7092"N	103°59'22.5365"W	0.00	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Well	Scarecrow Federal LG04-785
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Scarecrow Federal LG04-785 PWB
Slot	SLOT#07 Scarecrow Federal LG04-785 (436'FNL & 1769'FWL,SEC.09)		

WELLPATH DATA (203 stations) † = interpolated, ‡ = extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS ["/100ft]	Comments
6830.00†	90.000	0.374	6123.00	1050.41	803.16	-1440.31	40°41'6.6970"N	103°59'22.5059"W	0.00	
6930.00†	90.000	0.374	6123.00	1148.64	903.16	-1439.65	40°41'7.6849"N	103°59'22.4753"W	0.00	
7030.00†	90.000	0.374	6123.00	1246.87	1003.16	-1439.00	40°41'8.6727"N	103°59'22.4448"W	0.00	
7130.00†	90.000	0.374	6123.00	1345.10	1103.16	-1438.35	40°41'9.6606"N	103°59'22.4142"W	0.00	
7230.00†	90.000	0.374	6123.00	1443.33	1203.16	-1437.70	40°41'10.6484"N	103°59'22.3836"W	0.00	
7330.00†	90.000	0.374	6123.00	1541.57	1303.15	-1437.04	40°41'11.6362"N	103°59'22.3530"W	0.00	
7430.00†	90.000	0.374	6123.00	1639.80	1403.15	-1436.39	40°41'12.6241"N	103°59'22.3224"W	0.00	
7530.00†	90.000	0.374	6123.00	1738.03	1503.15	-1435.74	40°41'13.6119"N	103°59'22.2918"W	0.00	
7630.00†	90.000	0.374	6123.00	1836.26	1603.15	-1435.08	40°41'14.5998"N	103°59'22.2613"W	0.00	
7730.00†	90.000	0.374	6123.00	1934.49	1703.14	-1434.43	40°41'15.5876"N	103°59'22.2307"W	0.00	
7830.00†	90.000	0.374	6123.00	2032.72	1803.14	-1433.78	40°41'16.5754"N	103°59'22.2001"W	0.00	
7930.00†	90.000	0.374	6123.00	2130.95	1903.14	-1433.13	40°41'17.5633"N	103°59'22.1695"W	0.00	
8030.00†	90.000	0.374	6123.00	2229.18	2003.14	-1432.47	40°41'18.5511"N	103°59'22.1389"W	0.00	
8130.00†	90.000	0.374	6123.00	2327.41	2103.14	-1431.82	40°41'19.5390"N	103°59'22.1083"W	0.00	
8230.00†	90.000	0.374	6123.00	2425.64	2203.13	-1431.17	40°41'20.5268"N	103°59'22.0778"W	0.00	
8330.00†	90.000	0.374	6123.00	2523.87	2303.13	-1430.51	40°41'21.5146"N	103°59'22.0472"W	0.00	
8430.00†	90.000	0.374	6123.00	2622.10	2403.13	-1429.86	40°41'22.5025"N	103°59'22.0166"W	0.00	
8530.00†	90.000	0.374	6123.00	2720.33	2503.13	-1429.21	40°41'23.4903"N	103°59'21.9860"W	0.00	
8630.00†	90.000	0.374	6123.00	2818.56	2603.13	-1428.56	40°41'24.4781"N	103°59'21.9554"W	0.00	
8730.00†	90.000	0.374	6123.00	2916.80	2703.12	-1427.90	40°41'25.4660"N	103°59'21.9248"W	0.00	
8830.00†	90.000	0.374	6123.00	3015.03	2803.12	-1427.25	40°41'26.4538"N	103°59'21.8943"W	0.00	
8930.00†	90.000	0.374	6123.00	3113.26	2903.12	-1426.60	40°41'27.4417"N	103°59'21.8637"W	0.00	
9030.00†	90.000	0.374	6123.00	3211.49	3003.12	-1425.94	40°41'28.4295"N	103°59'21.8331"W	0.00	
9113.30	90.000	0.374	6123.00 ²	3293.32	3086.42	-1425.40	40°41'29.2524"N	103°59'21.8076"W	0.00	Exit Fed 1 SWNW,SEC.04
9113.59	90.000	0.380	6123.00	3293.60	3086.71	-1425.40	40°41'29.2552"N	103°59'21.8075"W	2.00	3D Arc (J)
9130.00†	90.000	0.380	6123.00	3309.72	3103.11	-1425.29	40°41'29.4173"N	103°59'21.8025"W	0.00	
9230.00†	90.000	0.380	6123.00	3407.95	3203.11	-1424.63	40°41'30.4052"N	103°59'21.7718"W	0.00	
9330.00†	90.000	0.380	6123.00	3506.18	3303.11	-1423.96	40°41'31.3930"N	103°59'21.7410"W	0.00	
9430.00†	90.000	0.380	6123.00	3604.40	3403.11	-1423.30	40°41'32.3808"N	103°59'21.7103"W	0.00	
9530.00†	90.000	0.380	6123.00	3702.63	3503.11	-1422.64	40°41'33.3687"N	103°59'21.6796"W	0.00	
9630.00†	90.000	0.380	6123.00	3800.86	3603.10	-1421.98	40°41'34.3565"N	103°59'21.6489"W	0.00	
9730.00†	90.000	0.380	6123.00	3899.09	3703.10	-1421.31	40°41'35.3444"N	103°59'21.6182"W	0.00	
9830.00†	90.000	0.380	6123.00	3997.32	3803.10	-1420.65	40°41'36.3322"N	103°59'21.5874"W	0.00	
9930.00†	90.000	0.380	6123.00	4095.55	3903.10	-1419.99	40°41'37.3200"N	103°59'21.5567"W	0.00	
10030.00†	90.000	0.380	6123.00	4193.78	4003.09	-1419.32	40°41'38.3079"N	103°59'21.5260"W	0.00	
10130.00†	90.000	0.380	6123.00	4292.01	4103.09	-1418.66	40°41'39.2957"N	103°59'21.4953"W	0.00	
10230.00†	90.000	0.380	6123.00	4390.24	4203.09	-1418.00	40°41'40.2835"N	103°59'21.4646"W	0.00	
10330.00†	90.000	0.380	6123.00	4488.46	4303.09	-1417.34	40°41'41.2714"N	103°59'21.4339"W	0.00	
10430.00†	90.000	0.380	6123.00	4586.69	4403.09	-1416.67	40°41'42.2592"N	103°59'21.4031"W	0.00	
10530.00†	90.000	0.380	6123.00	4684.92	4503.08	-1416.01	40°41'43.2470"N	103°59'21.3724"W	0.00	
10630.00†	90.000	0.380	6123.00	4783.15	4603.08	-1415.35	40°41'44.2349"N	103°59'21.3417"W	0.00	
10730.00†	90.000	0.380	6123.00	4881.38	4703.08	-1414.68	40°41'45.2227"N	103°59'21.3110"W	0.00	
10830.00†	90.000	0.380	6123.00	4979.61	4803.08	-1414.02	40°41'46.2105"N	103°59'21.2802"W	0.00	
10930.00†	90.000	0.380	6123.00	5077.84	4903.08	-1413.36	40°41'47.1984"N	103°59'21.2495"W	0.00	
11030.00†	90.000	0.380	6123.00	5176.07	5003.07	-1412.70	40°41'48.1862"N	103°59'21.2188"W	0.00	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Well	Scarecrow Federal LG04-785
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Scarecrow Federal LG04-785 PWB
Slot	SLOT#07 Scarecrow Federal LG04-785 (436'FNL & 1769'FWL,SEC.09)		

WELLPATH DATA (203 stations) † = interpolated, ‡ = extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
11130.00†	90.000	0.380	6123.00	5274.30	5103.07	-1412.03	40°41'49.1740"N	103°59'21.1881"W	0.00	
11230.00†	90.000	0.380	6123.00	5372.52	5203.07	-1411.37	40°41'50.1619"N	103°59'21.1574"W	0.00	
11330.00†	90.000	0.380	6123.00	5470.75	5303.07	-1410.71	40°41'51.1497"N	103°59'21.1266"W	0.00	
11430.00†	90.000	0.380	6123.00	5568.98	5403.06	-1410.04	40°41'52.1375"N	103°59'21.0959"W	0.00	
11530.00†	90.000	0.380	6123.00	5667.21	5503.06	-1409.38	40°41'53.1254"N	103°59'21.0652"W	0.00	
11630.00†	90.000	0.380	6123.00	5765.44	5603.06	-1408.72	40°41'54.1132"N	103°59'21.0345"W	0.00	
11730.00†	90.000	0.380	6123.00	5863.67	5703.06	-1408.06	40°41'55.1010"N	103°59'21.0038"W	0.00	
11830.00†	90.000	0.380	6123.00	5961.90	5803.06	-1407.39	40°41'56.0889"N	103°59'20.9730"W	0.00	
11930.00†	90.000	0.380	6123.00	6060.13	5903.05	-1406.73	40°41'57.0767"N	103°59'20.9423"W	0.00	
11972.65	90.000	0.380	6123.00 ³	6102.02	5945.70	-1406.45	40°41'57.4980"N	103°59'20.9292"W	0.00	P1/Enter Fed 2 SWSW,SEC.33
12030.00†	90.000	359.233	6123.00	6158.46	6003.05	-1406.64	40°41'58.0646"N	103°59'20.9190"W	2.00	
12130.00†	90.000	357.233	6123.00	6257.32	6103.00	-1409.72	40°41'59.0526"N	103°59'20.9370"W	2.00	
12230.00†	90.000	355.233	6123.00	6356.64	6202.78	-1416.29	40°42'0.0395"N	103°59'21.0002"W	2.00	
12330.00†	90.000	353.233	6123.00	6456.30	6302.27	-1426.34	40°42'1.0241"N	103°59'21.1086"W	2.00	
12430.00†	90.000	351.233	6123.00	6556.19	6401.34	-1439.86	40°42'2.0052"N	103°59'21.2621"W	2.00	
12530.00†	90.000	349.233	6123.00	6656.18	6499.89	-1456.82	40°42'2.9817"N	103°59'21.4605"W	2.00	
12530.94	90.000	349.214	6123.00	6657.12	6500.81	-1457.00	40°42'2.9908"N	103°59'21.4626"W	2.00	3D Arc (J)
12630.00†	90.000	349.214	6123.00	6756.18	6598.12	-1475.54	40°42'3.9553"N	103°59'21.6817"W	0.00	
12730.00†	90.000	349.214	6123.00	6856.17	6696.36	-1494.25	40°42'4.9290"N	103°59'21.9030"W	0.00	
12830.00†	90.000	349.214	6123.00	6956.17	6794.59	-1512.96	40°42'5.9027"N	103°59'22.1242"W	0.00	
12930.00†	90.000	349.214	6123.00	7056.17	6892.82	-1531.68	40°42'6.8763"N	103°59'22.3454"W	0.00	
13030.00†	90.000	349.214	6123.00	7156.17	6991.06	-1550.39	40°42'7.8500"N	103°59'22.5666"W	0.00	
13130.00†	90.000	349.214	6123.00	7256.17	7089.29	-1569.11	40°42'8.8237"N	103°59'22.7878"W	0.00	
13230.00†	90.000	349.214	6123.00	7356.16	7187.52	-1587.82	40°42'9.7973"N	103°59'23.0091"W	0.00	
13330.00†	90.000	349.214	6123.00	7456.16	7285.76	-1606.53	40°42'10.7710"N	103°59'23.2303"W	0.00	
13430.00†	90.000	349.214	6123.00	7556.16	7383.99	-1625.25	40°42'11.7446"N	103°59'23.4515"W	0.00	
13530.00†	90.000	349.214	6123.00	7656.16	7482.22	-1643.96	40°42'12.7183"N	103°59'23.6727"W	0.00	
13630.00†	90.000	349.214	6123.00	7756.16	7580.45	-1662.68	40°42'13.6920"N	103°59'23.8940"W	0.00	
13730.00†	90.000	349.214	6123.00	7856.15	7678.69	-1681.39	40°42'14.6656"N	103°59'24.1152"W	0.00	
13830.00†	90.000	349.214	6123.00	7956.15	7776.92	-1700.11	40°42'15.6393"N	103°59'24.3364"W	0.00	
13930.00†	90.000	349.214	6123.00	8056.15	7875.15	-1718.82	40°42'16.6129"N	103°59'24.5577"W	0.00	
14030.00†	90.000	349.214	6123.00	8156.15	7973.39	-1737.53	40°42'17.5866"N	103°59'24.7789"W	0.00	
14130.00†	90.000	349.214	6123.00	8256.15	8071.62	-1756.25	40°42'18.5602"N	103°59'25.0001"W	0.00	
14230.00†	90.000	349.214	6123.00	8356.14	8169.85	-1774.96	40°42'19.5339"N	103°59'25.2214"W	0.00	
14330.00†	90.000	349.214	6123.00	8456.14	8268.09	-1793.68	40°42'20.5076"N	103°59'25.4426"W	0.00	
14430.00†	90.000	349.214	6123.00	8556.14	8366.32	-1812.39	40°42'21.4812"N	103°59'25.6639"W	0.00	
14530.00†	90.000	349.214	6123.00	8656.14	8464.55	-1831.11	40°42'22.4549"N	103°59'25.8851"W	0.00	
14630.00†	90.000	349.214	6123.00	8756.14	8562.79	-1849.82	40°42'23.4285"N	103°59'26.1063"W	0.00	
14730.00†	90.000	349.214	6123.00	8856.13	8661.02	-1868.53	40°42'24.4022"N	103°59'26.3276"W	0.00	
14830.00†	90.000	349.214	6123.00	8956.13	8759.25	-1887.25	40°42'25.3759"N	103°59'26.5488"W	0.00	
14930.00†	90.000	349.214	6123.00	9056.13	8857.49	-1905.96	40°42'26.3495"N	103°59'26.7701"W	0.00	
15030.00†	90.000	349.214	6123.00	9156.13	8955.72	-1924.68	40°42'27.3232"N	103°59'26.9913"W	0.00	
15130.00†	90.000	349.214	6123.00	9256.13	9053.95	-1943.39	40°42'28.2968"N	103°59'27.2126"W	0.00	
15165.32	90.000	349.214	6123.00 ⁴	9291.44	9088.65	-1950.00	40°42'28.6407"N	103°59'27.2907"W	0.00	P2
15230.00†	90.000	350.508	6123.00	9356.12	9152.32	-1961.39	40°42'29.2717"N	103°59'27.4245"W	2.00	

REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Well	Scarecrow Federal LG04-785
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Scarecrow Federal LG04-785 PWB
Slot	SLOT#07 Scarecrow Federal LG04-785 (436'FNL & 1769'FWL,SEC.09)		

WELLPATH DATA (203 stations) † = interpolated, ‡ = extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
15330.00†	90.000	352.508	6123.00	9456.06	9251.22	-1976.15	40°42'30.2512"N	103°59'27.5944"W	2.00	
15430.00†	90.000	354.508	6123.00	9555.82	9350.57	-1987.46	40°42'31.2347"N	103°59'27.7192"W	2.00	
15530.00†	90.000	356.508	6123.00	9655.28	9450.26	-1995.29	40°42'32.2209"N	103°59'27.7989"W	2.00	
15598.80	90.000	357.884	6123.00	9723.48	9518.98	-1998.66	40°42'32.9004"N	103°59'27.8274"W	2.00	3D Arc (J)
15630.00†	90.000	357.884	6123.00	9754.35	9550.15	-1999.81	40°42'33.2086"N	103°59'27.8355"W	0.00	
15730.00†	90.000	357.884	6123.00	9853.30	9650.09	-2003.50	40°42'34.1965"N	103°59'27.8613"W	0.00	
15830.00†	90.000	357.884	6123.00	9952.25	9750.02	-2007.20	40°42'35.1844"N	103°59'27.8872"W	0.00	
15930.00†	90.000	357.884	6123.00	10051.20	9849.95	-2010.89	40°42'36.1723"N	103°59'27.9131"W	0.00	
16030.00†	90.000	357.884	6123.00	10150.15	9949.88	-2014.58	40°42'37.1602"N	103°59'27.9389"W	0.00	
16041.92	90.000	357.884	6123.00 ⁵	10161.95	9961.79	-2015.02	40°42'37.2780"N	103°59'27.9420"W	0.00	Exit Fed 2 NWNW,SEC.33
16080.89	90.000	358.663	6123.00	10200.46	10000.74	-2016.20	40°42'37.6630"N	103°59'27.9486"W	2.00	3D Arc (J)
16130.00†	90.000	358.663	6123.00	10248.96	10049.84	-2017.34	40°42'38.1483"N	103°59'27.9527"W	0.00	
16230.00†	90.000	358.663	6123.00	10347.71	10149.81	-2019.68	40°42'39.1364"N	103°59'27.9609"W	0.00	
16330.00†	90.000	358.663	6123.00	10446.46	10249.79	-2022.01	40°42'40.1244"N	103°59'27.9691"W	0.00	
16430.00†	90.000	358.663	6123.00	10545.20	10349.76	-2024.34	40°42'41.1125"N	103°59'27.9773"W	0.00	
16530.00†	90.000	358.663	6123.00	10643.95	10449.73	-2026.68	40°42'42.1006"N	103°59'27.9855"W	0.00	
16630.00†	90.000	358.663	6123.00	10742.69	10549.70	-2029.01	40°42'43.0887"N	103°59'27.9937"W	0.00	
16730.00†	90.000	358.663	6123.00	10841.44	10649.68	-2031.34	40°42'44.0768"N	103°59'28.0019"W	0.00	
16830.00†	90.000	358.663	6123.00	10940.19	10749.65	-2033.68	40°42'45.0649"N	103°59'28.0101"W	0.00	
16930.00†	90.000	358.663	6123.00	11038.93	10849.62	-2036.01	40°42'46.0530"N	103°59'28.0183"W	0.00	
17030.00†	90.000	358.663	6123.00	11137.68	10949.60	-2038.34	40°42'47.0410"N	103°59'28.0265"W	0.00	
17130.00†	90.000	358.663	6123.00	11236.43	11049.57	-2040.68	40°42'48.0291"N	103°59'28.0347"W	0.00	
17184.50	90.000	358.663	6123.00 ⁶	11290.24	11104.05	-2041.95	40°42'48.5676"N	103°59'28.0392"W	0.00	BHL NWNW,SEC.33

HOLE & CASING SECTIONS - Ref Wellbore: Scarecrow Federal LG04-785 PWB Ref Wellpath: Scarecrow Federal LG04-785 (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	1916.22	0.00	0.00	8.91	-283.78
8.5in Open Hole	1950.00	17184.50	15234.50	1916.22	N/A	8.91	-283.78	N/A	N/A

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Well	Scarecrow Federal LG04-785
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Scarecrow Federal LG04-785 PWB
Slot	SLOT#07 Scarecrow Federal LG04-785 (436'FNL & 1769'FWL,SEC.09)		

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	-2.00	99.12	0.25	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	-2.00	99.12	0.25	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	-2.00	99.12	0.25	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	0.00	0.00	0.00	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	0.00	0.00	0.00	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	0.00	0.00	0.00	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	0.00	0.00	0.00	3420316.53	1495223.55	40°40'58.5192"N	103°59'3.9912"W	polygon
2D Polygon: dimensions not calculated									
Scarecrow Federal LG04-785 Enter Fed 1 (0'FSL & 339'FWL, SEC.04)	N/A	6088.31	415.53	-1379.90	3418936.65	1495639.07	40°41'2.8572"N	103°59'21.8076"W	point
Scarecrow Federal LG04-785 BHL (200'FNL & 350'FWL,SEC.33)	N/A	6123.00	11104.13	-2041.85	3418274.71	1506327.49	40°42'48.5684"N	103°59'28.0379"W	point
6) Scarecrow Federal LG04-785 BHL Rev-2 on PLAT (200'FNL & 350'FWL,SEC.33)	17184.50	6123.00	11104.05	-2041.95	3418274.61	1506327.41	40°42'48.5676"N	103°59'28.0392"W	point
2) Scarecrow Federal LG04-785 Exit Fed 1 (2671'FSL & 339'FWL, SEC.04)	9113.30	6123.00	3086.42	-1425.40	3418891.15	1498309.91	40°41'29.2524"N	103°59'21.8076"W	point
5) Scarecrow Federal LG04-785 Exit Fed 2 (1343'FNL & 350'FWL, SEC.33)	16041.92	6123.00	9961.79	-2015.02	3418301.54	1505185.17	40°42'37.2780"N	103°59'27.9420"W	point
3) Scarecrow Federal LG04-785 IP1/ Enter Fed 2 (0'FSL & 864' FWL, SEC.33)	11972.65	6123.00	5945.70	-1406.45	3418910.10	1501169.15	40°41'57.4980"N	103°59'20.9292"W	point

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Well	Scarecrow Federal LG04-785
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Scarecrow Federal LG04-785 PWB
Slot	SLOT#07 Scarecrow Federal LG04-785 (436'FNL & 1769'FWL,SEC.09)		

TARGETS									
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
4) Scarecrow Federal LG04-785 IP2	15165.32	6123.00	9088.65	-1950.00	3418366.56	1504312.04	40°42'28.6407"N	103°59'27.2907"W	point
Scarecrow Federal LG04-785 LP (200'FSL & 330'FWL,SEC.04)	N/A	6123.00	614.58	-1441.65	3418874.90	1495838.11	40°41'4.8341"N	103°59'22.5651"W	point
1) Scarecrow Federal LG04-785 LP Rev-2 on PLAT (200'FSL & 330'FWL,SEC.04)	6641.36	6123.00	614.53	-1441.54	3418875.01	1495838.07	40°41'4.8336"N	103°59'22.5636"W	point

SURVEY PROGRAM - Ref Wellbore: Scarecrow Federal LG04-785 PWB Ref Wellpath: Scarecrow Federal LG04-785 (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 LG04-785 PWB
1950.00	17373.63	OWSG MWD rev2 (MS+IFR1)		Scarecrow Federal LG04-785 PWB

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Well	Scarecrow Federal LG04-785
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Scarecrow Federal LG04-785 PWB
Slot	SLOT#07 Scarecrow Federal LG04-785 (436'FNL & 1769'FWL,SEC.09)		

WELLPATH COMMENTS					
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment	
426.00	0.000	271.798	426.00	FOXHILLS-BASE PROD	
861.96	7.239	271.798	861.00	PIERRE (UPPER)AQUIFER TOP	
1469.44	15.442	271.798	1453.00	PIERRE (UPPER) AQUIFER BASE	
2492.36	15.442	271.798	2439.00	PIERRE_MBR_A_SD_TOP	
3052.59	15.442	271.798	2979.00	PIERRE_MBR_A_SD_BASE	
3409.47	15.442	271.798	3323.00	PARKMAN	
4122.20	15.442	271.798	4010.00	SUSSEX	
4667.90	15.442	271.798	4536.00	SHANNON	
5510.31	15.442	271.798	5348.00	TEPEE BUTES	
5745.15	15.442	271.798	5574.36	KOP (376'FNL&475'FWL,Sec.09)	
6151.30	43.319	343.345	5933.00	INTRA_SHARON_SPGS_MK	
6168.01	44.862	344.264	5945.00	SHARON_SPRING_MKR	
6205.87	48.385	346.174	5971.00	NIO A CHALK	
6248.21	52.358	348.077	5998.00	NIO A MARL	
6385.88	65.436	353.123	6069.00	NIO B CHALK	
6437.21	70.352	354.716	6088.31	Fed Entry 1 (0'FSL & 339'FWL,SEC.04) SWSW	
6486.70	75.105	356.162	6103.00	NIO B MARL	

DESIGN COMMENTS					
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment	
30.00	0.000	271.798	30.00	SHL NENW, SEC.09	
500.00	0.000	271.798	500.00	End of Tangent	
1272.09	15.442	271.798	1262.78	Build (XS)	
5745.15	15.442	271.798	5574.37	KOP NWNW, SEC.09	
6641.36	90.000	0.374	6123.00	LP/TPZ SWSW, SEC.04	
9113.30	90.000	0.374	6123.00	Exit Fed 1 SWNW,SEC.04	
9113.59	90.000	0.380	6123.00	3D Arc (J)	
11972.65	90.000	0.380	6123.00	IP1/Enter Fed 2 SWSW,SEC.33	
12530.94	90.000	349.214	6123.00	3D Arc (J)	
15165.32	90.000	349.214	6123.00	IP2	
15598.80	90.000	357.884	6123.00	3D Arc (J)	
16041.92	90.000	357.884	6123.00	Exit Fed 2 NWNW,SEC.33	
16080.89	90.000	358.663	6123.00	3D Arc (J)	
17184.50	90.000	358.663	6123.00	BHL NWNW,SEC.33	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Well	Scarecrow Federal LG04-785
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Scarecrow Federal LG04-785 PWB
Slot	SLOT#07 Scarecrow Federal LG04-785 (436'FNL & 1769'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 12:29:13 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	-95.55	336.72	3420316.53	1495223.55	40°40'58.5192"N	103°59'3.9912"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	(4859'GL+30'KB@4889'RKB) (RKB) to Facility Vertical Datum	4889.00ft
Horizontal Reference Pt	Slot	(4859'GL+30'KB@4889'RKB) (RKB) to Mean Sea Level	4889.00ft
Vertical Reference Pt	(4859'GL+30'KB@4889'RKB) (RKB)	(4859'GL+30'KB@4889'RKB) (RKB) to Ground Level at Slot (SLOT#07 Scarecrow Federal LG04-785 (436'FNL & 1769'FWL,SEC.09))	4889.00ft
MD Reference Pt	(4859'GL+30'KB@4889'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 LG04-785
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Scarecrow Federal LG04-785 PWB
Slot	SLOT#07 Scarecrow Federal LG04-785 (436'FNL & 1769'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 LG04-785 PWB Ref Wellpath: Scarecrow Federal LG04-785 (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	1916.22	0.00	0.00	8.91	-283.78
8.5in Open Hole	1950.00	17184.50	15234.50	1916.22	N/A	8.91	-283.78	N/A	N/A

SURVEY PROGRAM - Ref Wellbore: Scarecrow Federal LG04-785 PWB Ref Wellpath: Scarecrow Federal LG04-785 (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 LG04-785 PWB
1950.00	17373.63	OWSG MWD rev2 (MS+IFR1)		Scarecrow Federal LG04-785 PWB

REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Well	Scarecrow Federal LG04-785
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Scarecrow Federal LG04-785 PWB
Slot	SLOT#07 Scarecrow Federal LG04-785 (436'FNL & 1769'FWL,SEC.09)		

CALCULATION RANGE & CUTOFF

From: 30.00ft MD	To: 17184.50ft 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	16745.87	108.02	16745.87	16741.97	0.71	16741.97	FAIL
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 AWB	DOROTHY STATE LG16-785 AWP	Drilling	6249.12	65.62	6249.12	6252.76	1.43	6252.76	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	22.47	17184.50	17164.37	2.83	17164.37	PASS
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 AWB	BULLEIT FEDERAL PC LG04-62HN AWP	Drilling	7130.32	329.05	7130.32	7428.25	2.86	7428.25	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	5934.89	168.46	5934.89	5951.66	3.33	5951.66	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 AWB	DOROTHY STATE LG16-776 AWP	Drilling	2427.39	82.03	6130.00	2437.98	4.88	6130.00	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 AWB	DOROTHY STATE LG16-766 AWP	Drilling	2299.66	80.56	5930.00	2306.42	4.89	6030.00	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 AWB	DOROTHY STATE LG16-766 ST01 AWP	Drilling	2299.66	80.56	5930.00	2306.42	4.89	6030.00	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 AWB	DOROTHY STATE LG16-757 AWP	Drilling	2137.21	82.92	2137.21	2140.79	5.13	6230.00	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	44.93	17184.50	17175.31	5.66	17175.31	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 AWB	Ex.USA #1 AWP	Drilling	11250.93	1608.36	11250.93	11278.59	7.67	11278.59	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	67.68	17184.50	17184.50	8.48	17184.50	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	90.14	17184.50	17184.50	11.30	17184.50	PASS
SEC.09-T08N-R59W	SLOT#12 Scarecrow Federal LG04-735 (436'FNL & 1881'FWL,SEC.09)	Scarecrow Federal LG04-735	Scarecrow Federal LG04-735 PWB	Scarecrow Federal LG04-735 (REV-C.0) PWP	Planned	30.00	112.61	17184.50	17184.50	14.10	17184.50	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	5874.78	741.18	5874.78	5950.31	15.54	5950.31	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	135.07	17184.50	757.51	16.80	17184.50	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	157.54	12130.00	17184.50	19.74	17184.50	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 AWB	Ex.GREY #1 AWP	Drilling	130.00	3028.13	7130.00	7235.38	21.86	7235.38	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	5830.00	1348.07	5830.00	5961.24	29.45	5961.24	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 AWB	Ex.KIRCHNER #1 AWP	Drilling	130.00	5075.88	500.00	6328.92	34.55	6328.92	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 AWB	DOROTHY STATE LG16-748 AWP	Drilling	512.77	2109.52	5630.00	5877.79	38.42	5877.79	PASS
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	5765.14	1951.60	5765.14	5976.21	44.20	5976.21	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 AWB	DOROTHY STATE LG16-739 AWP	Drilling	368.48	2143.59	5530.00	5918.79	50.68	6730.00	PASS
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 AWB	Ex.McCLELLAN PC LG04-15 AWP	Drilling	540.49	2106.50	7330.00	683.92	51.09	8030.00	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 AWB	DOROTHY STATE LG16-729 AWP	Drilling	513.66	2179.92	6830.00	621.55	52.90	7830.00	PASS

REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Well	Scarecrow Federal LG04-785
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Scarecrow Federal LG04-785 PWB
Slot	SLOT#07 Scarecrow Federal LG04-785 (436'FNL & 1769'FWL,SEC.09)		

CALCULATION RANGE & CUTOFF

From: 30.00ft MD	To: 17184.50ft 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#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	1249.04	2108.78	1249.04	5968.45	59.07	5968.45	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	1070.61	2125.10	1070.61	5958.72	73.38	5958.72	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	818.84	2142.24	818.84	5950.86	87.06	5950.86	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 AWB	Ex.McCLELLAN PC LG09-72HN AWP	Drilling	453.77	3212.28	453.77	6179.32	97.66	8430.00	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	567.20	2157.09	567.20	5942.23	101.27	5942.23	PASS