

NOBLE ENERGY, INC

Location: COLORADO Slot: SLOT#15 Tinman Federal LG07-685 (2454FNL & 1339FWL,SEC.09)

Field: WELD COUNTY (NOBLE NAD 83 GRID) Well: Tinman Federal LG07-685

Facility: SEC.09-T08N-R59W Wellbore: Tinman Federal LG07-685 PWB

Plot reference wellpath is Tinman Federal LG07-685 (REV-C.0) PWP

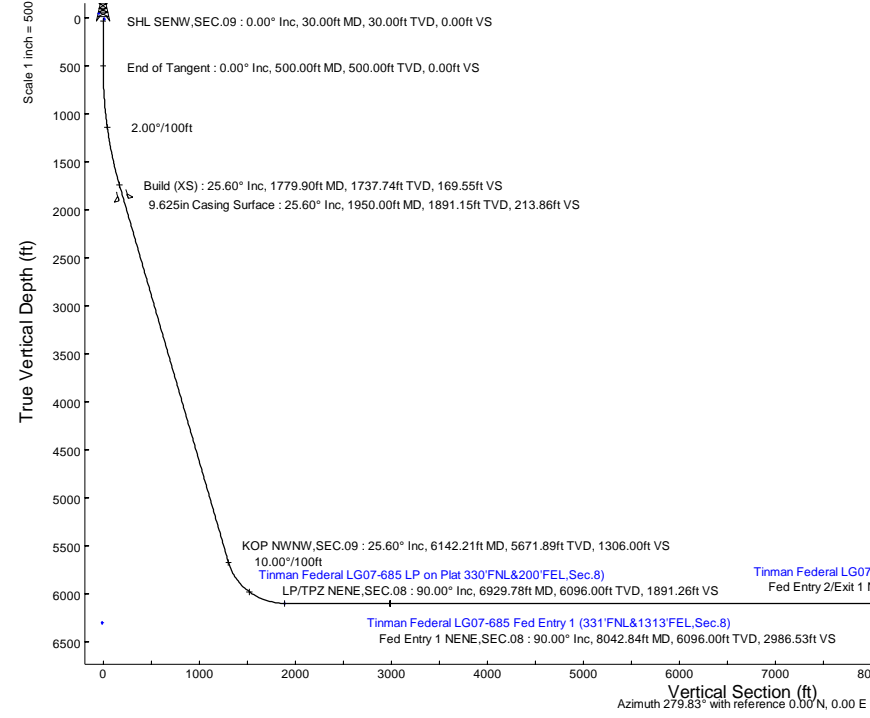
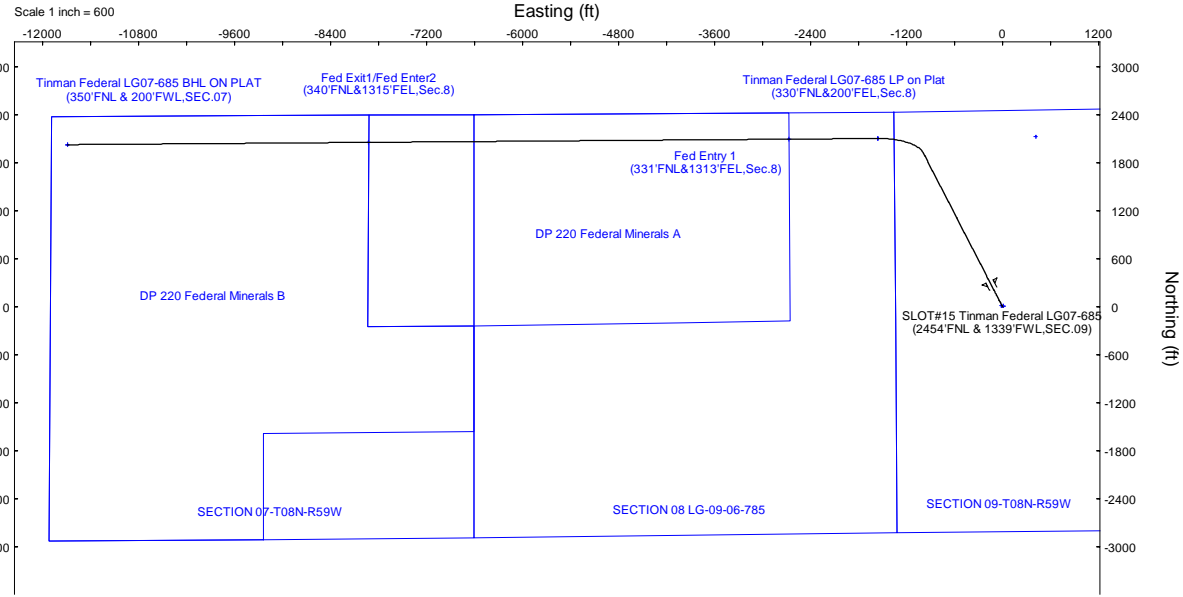
Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
North Reference: Grid north
Scale: True distance
Coordinates are in feet referenced to Slot
Depths are in feet
Created by: matsam01 on 2024-02-28; Database: WA_Denver

Location Information						
Facility Name		Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	
SEC.09-T08N-R59W		3419979.808	1495319.089	40°40'59.5200"N	103°59'9.3400"W	
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SLOT#15 Tinman Federal LG07-685 (2454FNL & 1339FWL,SEC.09)	2119.85	-77.81	3419901.997	1493199.274	40°40'38.5896"N	103°59'9.8196"W
(4815GL+30KB@4845RKB) (RKB) to Ground level (At Slot: SLOT#15 Tinman Federal LG07-685 (2454FNL & 1339FWL,SEC.09))						4845ft
Mean Sea Level to Ground level (At Slot: SLOT#15 Tinman Federal LG07-685 (2454FNL & 1339FWL,SEC.09))						0ft
(4815GL+30KB@4845RKB) (RKB) to Mean Sea Level						4845ft

Well Profile Data									
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)	
SHL SENW,SEC.09	30.00	0.000	332.746	30.00	0.00	0.00	0.00	0.00	
End of Tangent	500.00	0.000	332.746	500.00	0.00	0.00	0.00	0.00	
Build (XS)	1779.90	25.598	332.746	1737.74	249.97	-128.77	2.00	169.55	
KOP NWNW,SEC.09	6142.21	25.598	332.746	5671.89	1925.48	-991.87	0.00	1306.00	
LP/TPZ NENE,SEC.08	6929.78	90.000	269.571	6096.00	2102.58	-1555.18	10.00	1891.26	
Fed Entry 1 NENE,SEC.08	8042.84	90.000	269.571	6096.00	2094.24	-2668.21	0.00	2986.53	
3D Arc (J)	8043.65	90.000	269.562	6096.00	2094.23	-2669.02	1.00	2987.33	
Fed Entry 2/Exit 1 NWNW,SEC.07	13297.48	90.000	269.562	6096.00	2054.11	-7922.70	0.00	8157.05	
3D Arc (J)	13297.74	90.000	269.560	6096.00	2054.11	-7922.95	1.00	8157.30	
BHL (350FNL & 200FWL,SEC.07)	17064.61	90.000	269.560	6096.00	2025.17	-11689.71	0.00	11863.84	

Targets									
Name	MD (ft)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	
SECTION 09 LG09-03-785	N/A	-46.00	2123.42	414.78	3420316.77	1495322.66	40°40'59.4984"N	103°59'3.9660"W	
SECTION 07 LG-09-06-785	N/A	9.00	10.38	-10.72	3419891.28	1493209.66	40°40'38.6940"N	103°59'9.9564"W	
SECTION 08 LG-09-06-785	N/A	9.00	10.38	-10.72	3419891.28	1493209.66	40°40'38.6940"N	103°59'9.9564"W	
Tinman Federal LG07-685 BHL ON PLAT (350FNL & 200FWL,SEC.07)	17064.61	6096.00	2025.17	-11689.71	3408212.49	1495224.41	40°41'0.5424"N	104°01'41.0808"W	
Tinman Federal LG07-685 BPZ (350FNL & 200FWL,SEC.07)	N/A	6096.00	2025.19	-11689.82	3408212.38	1495224.43	40°41'0.5426"N	104°01'41.0822"W	
Tinman Federal LG07-685 Fed Entry 1 (331FNL&1313FEL,Sec.8)	8042.84	6096.00	2094.24	-2668.21	3417233.84	1495293.48	40°40'59.7289"N	103°59'43.9836"W	
Tinman Federal LG07-685 Fed Entry 2 (340FNL&1316FEL,Sec.8)	13297.48	6096.00	2054.11	-7922.70	3411979.44	1495253.36	40°41'0.2076"N	104°00'52.1858"W	
Tinman Federal LG07-685 LP (330FNL & 200FEL,SEC.08)	N/A	6096.00	2102.74	-1555.13	3418346.89	1495301.97	40°40'59.6259"N	103°59'25.5362"W	
Tinman Federal LG07-685 LP on Plat 330FNL&200FEL,Sec.8)	6929.78	6096.00	2102.58	-1555.18	3418346.85	1495301.82	40°40'59.6244"N	103°59'25.5368"W	
DP 220 Federal Minerals A	N/A	6300.00	10.00	10.00	3419912.00	1493209.27	40°40'38.6867"N	103°59'68.76"W	
DP 220 Federal Minerals B	N/A	6300.00	10.00	10.00	3419912.00	1493209.27	40°40'38.6867"N	103°59'68.76"W	

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)		Tinman Federal LG07-685 PWB
1950.00	17332.28	OWSG MWD rev2	OWSG MWD rev2 (MS+IFR1)		Tinman Federal LG07-685 PWB



BGGM (1900.0 to 2024.0) Dip: 66.80° Field: 51932.3 nT
Magnetic North is 7.44 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 6.46 degrees

REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Well	Tinman Federal LG07-685
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Tinman Federal LG07-685 PWB
Slot	SLOT#15 Tinman Federal LG07-685 (2454'FNL & 1339'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	2/28/2024 at 3:07:16 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	-2119.85	-77.81	3419902.00	1493199.27	40°40'38.5896"N	103°59'9.8196"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	(4815'GL+30'KB@4845'RKB) (RKB) to Facility Vertical Datum	4845.00ft
Horizontal Reference Pt	Slot	(4815'GL+30'KB@4845'RKB) (RKB) to Mean Sea Level	4845.00ft
Vertical Reference Pt	(4815'GL+30'KB@4845'RKB) (RKB)	(4815'GL+30'KB@4845'RKB) (RKB) to Ground Level at Slot (SLOT#15 Tinman Federal LG07-685 (2454'FNL & 1339'FWL,SEC.09))	4845.00ft
MD Reference Pt	(4815'GL+30'KB@4845'RKB) (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	279.83°

REFERENCE WELLPATH IDENTIFICATION			
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Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Tinman Federal LG07-685 PWB
Slot	SLOT#15 Tinman Federal LG07-685 (2454'FNL & 1339'FWL,SEC.09)		

WELLPATH DATA (193 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	332.746	0.00	0.00	0.00	0.00	40°40'38.5896"N	103°59'9.8196"W	0.00	
30.00	0.000	332.746	30.00	0.00	0.00	0.00	40°40'38.5896"N	103°59'9.8196"W	0.00	SHL SENW,SEC.09
130.00†	0.000	332.746	130.00	0.00	0.00	0.00	40°40'38.5896"N	103°59'9.8196"W	0.00	
230.00†	0.000	332.746	230.00	0.00	0.00	0.00	40°40'38.5896"N	103°59'9.8196"W	0.00	
330.00†	0.000	332.746	330.00	0.00	0.00	0.00	40°40'38.5896"N	103°59'9.8196"W	0.00	
365.00†	0.000	332.746	365.00	0.00	0.00	0.00	40°40'38.5896"N	103°59'9.8196"W	0.00	FOXHILLS-BASE_PROD
430.00†	0.000	332.746	430.00	0.00	0.00	0.00	40°40'38.5896"N	103°59'9.8196"W	0.00	
500.00	0.000	332.746	500.00	0.00	0.00	0.00	40°40'38.5896"N	103°59'9.8196"W	0.00	End of Tangent
530.00†	0.600	332.746	530.00	0.09	0.14	-0.07	40°40'38.5910"N	103°59'9.8205"W	2.00	
630.00†	2.600	332.746	629.96	1.78	2.62	-1.35	40°40'38.6157"N	103°59'9.8365"W	2.00	
730.00†	4.600	332.746	729.75	5.56	8.20	-4.23	40°40'38.6714"N	103°59'9.8726"W	2.00	
830.00†	6.600	332.746	829.27	11.45	16.88	-8.69	40°40'38.7578"N	103°59'9.9287"W	2.00	
930.00†	8.600	332.746	928.39	19.42	28.63	-14.75	40°40'38.8750"N	103°59'10.0047"W	2.00	
1030.00†	10.600	332.746	1026.98	29.48	43.46	-22.39	40°40'39.0227"N	103°59'10.1005"W	2.00	
1130.00†	12.600	332.746	1124.93	41.60	61.33	-31.59	40°40'39.2009"N	103°59'10.2160"W	2.00	
1145.45†	12.909	332.746	1140.00	43.66	64.37	-33.16	40°40'39.2311"N	103°59'10.2356"W	2.00	PIERRE_(UPPER)_AQUIFER_TOP
1230.00†	14.600	332.746	1222.13	55.78	82.24	-42.36	40°40'39.4092"N	103°59'10.3511"W	2.00	
1330.00†	16.600	332.746	1318.44	71.99	106.14	-54.68	40°40'39.6475"N	103°59'10.5056"W	2.00	
1430.00†	18.600	332.746	1413.75	90.22	133.02	-68.52	40°40'39.9154"N	103°59'10.6793"W	2.00	
1530.00†	20.600	332.746	1507.95	110.45	162.84	-83.88	40°40'40.2126"N	103°59'10.8721"W	2.00	
1630.00†	22.600	332.746	1600.93	132.65	195.56	-100.74	40°40'40.5387"N	103°59'11.0836"W	2.00	
1730.00†	24.600	332.746	1692.56	156.78	231.15	-119.07	40°40'40.8934"N	103°59'11.3136"W	2.00	
1773.53†	25.471	332.746	1732.00	167.89	247.53	-127.51	40°40'41.0566"N	103°59'11.4195"W	2.00	PIERRE_(UPPER)_AQUIFER_BASE
1779.90	25.598	332.746	1737.74	169.55	249.97	-128.77	40°40'41.0809"N	103°59'11.4352"W	2.00	Build (XS)
1830.00†	25.598	332.746	1782.93	182.60	269.21	-138.68	40°40'41.2727"N	103°59'11.5596"W	0.00	
1930.00†	25.598	332.746	1873.11	208.65	307.62	-158.46	40°40'41.6555"N	103°59'11.8078"W	0.00	
2030.00†	25.598	332.746	1963.30	234.70	346.03	-178.25	40°40'42.0383"N	103°59'12.0561"W	0.00	
2130.00†	25.598	332.746	2053.48	260.75	384.44	-198.04	40°40'42.4211"N	103°59'12.3043"W	0.00	
2230.00†	25.598	332.746	2143.67	286.80	422.85	-217.82	40°40'42.8040"N	103°59'12.5526"W	0.00	
2330.00†	25.598	332.746	2233.85	312.86	461.26	-237.61	40°40'43.1868"N	103°59'12.8008"W	0.00	
2430.00†	25.598	332.746	2324.04	338.91	499.67	-257.39	40°40'43.5696"N	103°59'13.0491"W	0.00	
2530.00†	25.598	332.746	2414.22	364.96	538.07	-277.18	40°40'43.9524"N	103°59'13.2974"W	0.00	
2630.00†	25.598	332.746	2504.41	391.01	576.48	-296.96	40°40'44.3352"N	103°59'13.5456"W	0.00	
2730.00†	25.598	332.746	2594.59	417.06	614.89	-316.75	40°40'44.7180"N	103°59'13.7939"W	0.00	
2830.00†	25.598	332.746	2684.77	443.11	653.30	-336.53	40°40'45.1008"N	103°59'14.0421"W	0.00	
2930.00†	25.598	332.746	2774.96	469.17	691.71	-356.32	40°40'45.4836"N	103°59'14.2904"W	0.00	
3030.00†	25.598	332.746	2865.14	495.22	730.12	-376.10	40°40'45.8664"N	103°59'14.5386"W	0.00	
3130.00†	25.598	332.746	2955.33	521.27	768.53	-395.89	40°40'46.2492"N	103°59'14.7869"W	0.00	
3230.00†	25.598	332.746	3045.51	547.32	806.94	-415.68	40°40'46.6320"N	103°59'15.0352"W	0.00	
3330.00†	25.598	332.746	3135.70	573.37	845.34	-435.46	40°40'47.0148"N	103°59'15.2834"W	0.00	
3382.45†	25.598	332.746	3183.00	587.04	865.49	-445.84	40°40'47.2156"N	103°59'15.4136"W	0.00	PARKMAN
3430.00†	25.598	332.746	3225.88	599.42	883.75	-455.25	40°40'47.3976"N	103°59'15.5317"W	0.00	
3530.00†	25.598	332.746	3316.07	625.47	922.16	-475.03	40°40'47.7804"N	103°59'15.7799"W	0.00	
3630.00†	25.598	332.746	3406.25	651.53	960.57	-494.82	40°40'48.1632"N	103°59'16.0282"W	0.00	
3730.00†	25.598	332.746	3496.44	677.58	998.98	-514.60	40°40'48.5460"N	103°59'16.2765"W	0.00	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Well	Tinman Federal LG07-685
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Tinman Federal LG07-685 PWB
Slot	SLOT#15 Tinman Federal LG07-685 (2454'FNL & 1339'FWL,SEC.09)		

WELLPATH DATA (193 stations) † = interpolated, ‡ = extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
3830.00†	25.598	332.746	3586.62	703.63	1037.39	-534.39	40°40'48.9288"N	103°59'16.5247"W	0.00	
3930.00†	25.598	332.746	3676.81	729.68	1075.80	-554.17	40°40'49.3116"N	103°59'16.7730"W	0.00	
4030.00†	25.598	332.746	3766.99	755.73	1114.21	-573.96	40°40'49.6944"N	103°59'17.0213"W	0.00	
4130.00†	25.598	332.746	3857.18	781.78	1152.62	-593.75	40°40'50.0772"N	103°59'17.2695"W	0.00	
4146.44†	25.598	332.746	3872.00	786.07	1158.93	-597.00	40°40'50.1401"N	103°59'17.3103"W	0.00	SUSSEX
4230.00†	25.598	332.746	3947.36	807.84	1191.02	-613.53	40°40'50.4600"N	103°59'17.5178"W	0.00	
4330.00†	25.598	332.746	4037.55	833.89	1229.43	-633.32	40°40'50.8428"N	103°59'17.7661"W	0.00	
4430.00†	25.598	332.746	4127.73	859.94	1267.84	-653.10	40°40'51.2256"N	103°59'18.0143"W	0.00	
4530.00†	25.598	332.746	4217.92	885.99	1306.25	-672.89	40°40'51.6084"N	103°59'18.2626"W	0.00	
4630.00†	25.598	332.746	4308.10	912.04	1344.66	-692.67	40°40'51.9912"N	103°59'18.5109"W	0.00	
4730.00†	25.598	332.746	4398.29	938.09	1383.07	-712.46	40°40'52.3740"N	103°59'18.7592"W	0.00	
4830.00†	25.598	332.746	4488.47	964.14	1421.48	-732.24	40°40'52.7568"N	103°59'19.0074"W	0.00	
4872.72†	25.598	332.746	4527.00	975.27	1437.89	-740.70	40°40'52.9204"N	103°59'19.1135"W	0.00	SHANNON
4930.00†	25.598	332.746	4578.66	990.20	1459.89	-752.03	40°40'53.1396"N	103°59'19.2557"W	0.00	
5030.00†	25.598	332.746	4668.84	1016.25	1498.29	-771.81	40°40'53.5224"N	103°59'19.5040"W	0.00	
5130.00†	25.598	332.746	4759.02	1042.30	1536.70	-791.60	40°40'53.9052"N	103°59'19.7522"W	0.00	
5230.00†	25.598	332.746	4849.21	1068.35	1575.11	-811.39	40°40'54.2880"N	103°59'20.0005"W	0.00	
5330.00†	25.598	332.746	4939.39	1094.40	1613.52	-831.17	40°40'54.6708"N	103°59'20.2488"W	0.00	
5430.00†	25.598	332.746	5029.58	1120.45	1651.93	-850.96	40°40'55.0536"N	103°59'20.4971"W	0.00	
5530.00†	25.598	332.746	5119.76	1146.51	1690.34	-870.74	40°40'55.4364"N	103°59'20.7454"W	0.00	
5630.00†	25.598	332.746	5209.95	1172.56	1728.75	-890.53	40°40'55.8192"N	103°59'20.9936"W	0.00	
5730.00†	25.598	332.746	5300.13	1198.61	1767.16	-910.31	40°40'56.2020"N	103°59'21.2419"W	0.00	
5735.40†	25.598	332.746	5305.00	1200.01	1769.23	-911.38	40°40'56.2227"N	103°59'21.2553"W	0.00	TEPEE BUTTES
5830.00†	25.598	332.746	5390.32	1224.66	1805.57	-930.10	40°40'56.5848"N	103°59'21.4902"W	0.00	
5903.94†	25.598	332.746	5457.00	1243.92	1833.96	-944.73	40°40'56.8678"N	103°59'21.6738"W	0.00	TEPEE BUTTES
5930.00†	25.598	332.746	5480.50	1250.71	1843.97	-949.88	40°40'56.9676"N	103°59'21.7385"W	0.00	
6030.00†	25.598	332.746	5570.69	1276.76	1882.38	-969.67	40°40'57.3504"N	103°59'21.9868"W	0.00	
6130.00†	25.598	332.746	5660.87	1302.81	1920.79	-989.46	40°40'57.7332"N	103°59'22.2350"W	0.00	
6142.21	25.598	332.746	5671.89	1306.00	1925.48	-991.87	40°40'57.7799"N	103°59'22.2654"W	0.00	KOP NWNW,SEC.09
6230.00†	30.240	316.740	5749.54	1335.16	1958.51	-1015.75	40°40'58.1102"N	103°59'22.5680"W	10.00	
6330.00†	37.238	303.797	5832.76	1383.07	1993.76	-1058.26	40°40'58.4657"N	103°59'23.1119"W	10.00	
6430.00†	45.239	294.656	5907.96	1445.19	2025.48	-1115.82	40°40'58.7888"N	103°59'23.8518"W	10.00	
6508.68†	51.933	289.132	5960.00	1502.85	2047.32	-1170.55	40°40'59.0138"N	103°59'24.5573"W	10.00	INTRA_SHARON_SPGS_MK
6530.00†	53.788	287.813	5972.87	1519.65	2052.71	-1186.67	40°40'59.0697"N	103°59'24.7653"W	10.00	
6533.61†	54.104	287.595	5975.00	1522.54	2053.59	-1189.45	40°40'59.0789"N	103°59'24.8012"W	10.00	SHARON_SPRING_MKR
6578.41†	58.049	285.035	6000.00	1559.47	2064.01	-1225.12	40°40'59.1878"N	103°59'25.2619"W	10.00	NIO_A_CHALK
6630.00†	62.649	282.347	6025.52	1604.19	2074.60	-1268.67	40°40'59.2997"N	103°59'25.8247"W	10.00	
6633.24†	62.940	282.186	6027.00	1607.06	2075.21	-1271.49	40°40'59.3063"N	103°59'25.8611"W	10.00	NIO_A_MARL
6730.00†	71.690	277.703	6064.30	1696.22	2090.50	-1359.32	40°40'59.4721"N	103°59'26.9977"W	10.00	
6830.00†	80.832	273.527	6088.03	1792.97	2099.92	-1455.88	40°40'59.5814"N	103°59'28.2487"W	10.00	
6929.78	90.000	269.571	6096.00†	1891.26	2102.58	-1555.18	40°40'59.6244"N	103°59'29.5368"W	10.00	LP/TPZ NENE,SEC.08
6930.00†	90.000	269.571	6096.00	1891.48	2102.58	-1555.40	40°40'59.6244"N	103°59'29.5396"W	0.00	
7030.00†	90.000	269.571	6096.00	1989.88	2101.83	-1655.39	40°40'59.6338"N	103°59'30.8376"W	0.00	
7130.00†	90.000	269.571	6096.00	2088.28	2101.08	-1755.39	40°40'59.6432"N	103°59'32.1355"W	0.00	
7230.00†	90.000	269.571	6096.00	2186.68	2100.33	-1855.39	40°40'59.6526"N	103°59'33.4334"W	0.00	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Well	Tinman Federal LG07-685
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Tinman Federal LG07-685 PWB
Slot	SLOT#15 Tinman Federal LG07-685 (2454'FNL & 1339'FWL,SEC.09)		

WELLPATH DATA (193 stations) † = interpolated, ‡ = extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
7330.00†	90.000	269.571	6096.00	2285.09	2099.58	-1955.38	40°40'59.6620"N	103°59'34.7314"W	0.00	
7430.00†	90.000	269.571	6096.00	2383.49	2098.83	-2055.38	40°40'59.6714"N	103°59'36.0293"W	0.00	
7530.00†	90.000	269.571	6096.00	2481.89	2098.08	-2155.38	40°40'59.6808"N	103°59'37.3272"W	0.00	
7630.00†	90.000	269.571	6096.00	2580.29	2097.33	-2255.38	40°40'59.6901"N	103°59'38.6252"W	0.00	
7730.00†	90.000	269.571	6096.00	2678.69	2096.58	-2355.37	40°40'59.6995"N	103°59'39.9231"W	0.00	
7830.00†	90.000	269.571	6096.00	2777.09	2095.84	-2455.37	40°40'59.7089"N	103°59'41.2210"W	0.00	
7930.00†	90.000	269.571	6096.00	2875.50	2095.09	-2555.37	40°40'59.7182"N	103°59'42.5190"W	0.00	
8030.00†	90.000	269.571	6096.00	2973.90	2094.34	-2655.36	40°40'59.7276"N	103°59'43.8169"W	0.00	
8042.84	90.000	269.571	6096.00 ²	2986.53	2094.24	-2668.21	40°40'59.7288"N	103°59'43.9836"W	0.00	Fed Entry 1 NENE,SEC.08
8043.65	90.000	269.562	6096.00	2987.33	2094.23	-2669.02	40°40'59.7289"N	103°59'43.9941"W	1.00	3D Arc (J)
8130.00†	90.000	269.562	6096.00	3072.30	2093.57	-2755.36	40°40'59.7368"N	103°59'45.1148"W	0.00	
8230.00†	90.000	269.562	6096.00	3170.70	2092.81	-2855.36	40°40'59.7460"N	103°59'46.4128"W	0.00	
8330.00†	90.000	269.562	6096.00	3269.09	2092.05	-2955.36	40°40'59.7553"N	103°59'47.7107"W	0.00	
8430.00†	90.000	269.562	6096.00	3367.49	2091.28	-3055.35	40°40'59.7645"N	103°59'49.0086"W	0.00	
8530.00†	90.000	269.562	6096.00	3465.89	2090.52	-3155.35	40°40'59.7737"N	103°59'50.3066"W	0.00	
8630.00†	90.000	269.562	6096.00	3564.29	2089.76	-3255.35	40°40'59.7829"N	103°59'51.6045"W	0.00	
8730.00†	90.000	269.562	6096.00	3662.69	2088.99	-3355.34	40°40'59.7920"N	103°59'52.9025"W	0.00	
8830.00†	90.000	269.562	6096.00	3761.09	2088.23	-3455.34	40°40'59.8012"N	103°59'54.2004"W	0.00	
8930.00†	90.000	269.562	6096.00	3859.49	2087.46	-3555.34	40°40'59.8104"N	103°59'55.4983"W	0.00	
9030.00†	90.000	269.562	6096.00	3957.89	2086.70	-3655.34	40°40'59.8196"N	103°59'56.7963"W	0.00	
9130.00†	90.000	269.562	6096.00	4056.29	2085.94	-3755.33	40°40'59.8288"N	103°59'58.0942"W	0.00	
9230.00†	90.000	269.562	6096.00	4154.69	2085.17	-3855.33	40°40'59.8379"N	103°59'59.3921"W	0.00	
9330.00†	90.000	269.562	6096.00	4253.09	2084.41	-3955.33	40°40'59.8471"N	104°00'0.6901"W	0.00	
9430.00†	90.000	269.562	6096.00	4351.48	2083.65	-4055.32	40°40'59.8563"N	104°00'1.9880"W	0.00	
9530.00†	90.000	269.562	6096.00	4449.88	2082.88	-4155.32	40°40'59.8654"N	104°00'3.2860"W	0.00	
9630.00†	90.000	269.562	6096.00	4548.28	2082.12	-4255.32	40°40'59.8746"N	104°00'4.5839"W	0.00	
9730.00†	90.000	269.562	6096.00	4646.68	2081.35	-4355.32	40°40'59.8837"N	104°00'5.8818"W	0.00	
9830.00†	90.000	269.562	6096.00	4745.08	2080.59	-4455.31	40°40'59.8929"N	104°00'7.1798"W	0.00	
9930.00†	90.000	269.562	6096.00	4843.48	2079.83	-4555.31	40°40'59.9020"N	104°00'8.4777"W	0.00	
10030.00†	90.000	269.562	6096.00	4941.88	2079.06	-4655.31	40°40'59.9112"N	104°00'9.7756"W	0.00	
10130.00†	90.000	269.562	6096.00	5040.28	2078.30	-4755.30	40°40'59.9203"N	104°00'11.0736"W	0.00	
10230.00†	90.000	269.562	6096.00	5138.68	2077.54	-4855.30	40°40'59.9294"N	104°00'12.3715"W	0.00	
10330.00†	90.000	269.562	6096.00	5237.08	2076.77	-4955.30	40°40'59.9386"N	104°00'13.6694"W	0.00	
10430.00†	90.000	269.562	6096.00	5335.47	2076.01	-5055.29	40°40'59.9477"N	104°00'14.9674"W	0.00	
10530.00†	90.000	269.562	6096.00	5433.87	2075.24	-5155.29	40°40'59.9568"N	104°00'16.2653"W	0.00	
10630.00†	90.000	269.562	6096.00	5532.27	2074.48	-5255.29	40°40'59.9659"N	104°00'17.5633"W	0.00	
10730.00†	90.000	269.562	6096.00	5630.67	2073.72	-5355.29	40°40'59.9750"N	104°00'18.8612"W	0.00	
10830.00†	90.000	269.562	6096.00	5729.07	2072.95	-5455.28	40°40'59.9841"N	104°00'20.1591"W	0.00	
10930.00†	90.000	269.562	6096.00	5827.47	2072.19	-5555.28	40°40'59.9932"N	104°00'21.4571"W	0.00	
11030.00†	90.000	269.562	6096.00	5925.87	2071.43	-5655.28	40°41'0.0023"N	104°00'22.7550"W	0.00	
11130.00†	90.000	269.562	6096.00	6024.27	2070.66	-5755.27	40°41'0.0114"N	104°00'24.0530"W	0.00	
11230.00†	90.000	269.562	6096.00	6122.67	2069.90	-5855.27	40°41'0.0205"N	104°00'25.3509"W	0.00	
11330.00†	90.000	269.562	6096.00	6221.07	2069.13	-5955.27	40°41'0.0296"N	104°00'26.6488"W	0.00	
11430.00†	90.000	269.562	6096.00	6319.46	2068.37	-6055.27	40°41'0.0387"N	104°00'27.9468"W	0.00	
11530.00†	90.000	269.562	6096.00	6417.86	2067.61	-6155.26	40°41'0.0478"N	104°00'29.2447"W	0.00	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Well	Tinman Federal LG07-685
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Tinman Federal LG07-685 PWB
Slot	SLOT#15 Tinman Federal LG07-685 (2454'FNL & 1339'FWL,SEC.09)		

WELLPATH DATA (193 stations) † = interpolated, ‡ = extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS ["/100ft]	Comments
11630.00†	90.000	269.562	6096.00	6516.26	2066.84	-6255.26	40°41'0.0569"N	104°00'30.5426"W	0.00	
11730.00†	90.000	269.562	6096.00	6614.66	2066.08	-6355.26	40°41'0.0659"N	104°00'31.8406"W	0.00	
11830.00†	90.000	269.562	6096.00	6713.06	2065.32	-6455.25	40°41'0.0750"N	104°00'33.1385"W	0.00	
11930.00†	90.000	269.562	6096.00	6811.46	2064.55	-6555.25	40°41'0.0841"N	104°00'34.4365"W	0.00	
12030.00†	90.000	269.562	6096.00	6909.86	2063.79	-6655.25	40°41'0.0931"N	104°00'35.7344"W	0.00	
12130.00†	90.000	269.562	6096.00	7008.26	2063.02	-6755.25	40°41'0.1022"N	104°00'37.0323"W	0.00	
12230.00†	90.000	269.562	6096.00	7106.66	2062.26	-6855.24	40°41'0.1112"N	104°00'38.3303"W	0.00	
12330.00†	90.000	269.562	6096.00	7205.06	2061.50	-6955.24	40°41'0.1203"N	104°00'39.6282"W	0.00	
12430.00†	90.000	269.562	6096.00	7303.46	2060.73	-7055.24	40°41'0.1293"N	104°00'40.9262"W	0.00	
12530.00†	90.000	269.562	6096.00	7401.85	2059.97	-7155.23	40°41'0.1384"N	104°00'42.2241"W	0.00	
12630.00†	90.000	269.562	6096.00	7500.25	2059.21	-7255.23	40°41'0.1474"N	104°00'43.5220"W	0.00	
12730.00†	90.000	269.562	6096.00	7598.65	2058.44	-7355.23	40°41'0.1564"N	104°00'44.8200"W	0.00	
12830.00†	90.000	269.562	6096.00	7697.05	2057.68	-7455.22	40°41'0.1655"N	104°00'46.1179"W	0.00	
12930.00†	90.000	269.562	6096.00	7795.45	2056.91	-7555.22	40°41'0.1745"N	104°00'47.4159"W	0.00	
13030.00†	90.000	269.562	6096.00	7893.85	2056.15	-7655.22	40°41'0.1835"N	104°00'48.7138"W	0.00	
13130.00†	90.000	269.562	6096.00	7992.25	2055.39	-7755.22	40°41'0.1925"N	104°00'50.0117"W	0.00	
13230.00†	90.000	269.562	6096.00	8090.65	2054.62	-7855.21	40°41'0.2015"N	104°00'51.3097"W	0.00	
13297.48	90.000	269.562	6096.00 ³	8157.05	2054.11	-7922.70	40°41'0.2076"N	104°00'52.1856"W	0.00	Fed Entry 2/Exit 1 NWNE,SEC.07
13297.74	90.000	269.560	6096.00	8157.30	2054.11	-7922.95	40°41'0.2076"N	104°00'52.1889"W	1.00	3D Arc (J)
13330.00†	90.000	269.560	6096.00	8189.05	2053.86	-7955.21	40°41'0.2105"N	104°00'52.6076"W	0.00	
13430.00†	90.000	269.560	6096.00	8287.44	2053.09	-8055.21	40°41'0.2195"N	104°00'53.9056"W	0.00	
13530.00†	90.000	269.560	6096.00	8385.84	2052.32	-8155.20	40°41'0.2284"N	104°00'55.2035"W	0.00	
13630.00†	90.000	269.560	6096.00	8484.24	2051.55	-8255.20	40°41'0.2374"N	104°00'56.5015"W	0.00	
13730.00†	90.000	269.560	6096.00	8582.64	2050.79	-8355.20	40°41'0.2463"N	104°00'57.7994"W	0.00	
13830.00†	90.000	269.560	6096.00	8681.04	2050.02	-8455.20	40°41'0.2553"N	104°00'59.0973"W	0.00	
13930.00†	90.000	269.560	6096.00	8779.44	2049.25	-8555.19	40°41'0.2642"N	104°01'0.3953"W	0.00	
14030.00†	90.000	269.560	6096.00	8877.83	2048.48	-8655.19	40°41'0.2731"N	104°01'1.6932"W	0.00	
14130.00†	90.000	269.560	6096.00	8976.23	2047.71	-8755.19	40°41'0.2821"N	104°01'2.9912"W	0.00	
14230.00†	90.000	269.560	6096.00	9074.63	2046.95	-8855.18	40°41'0.2910"N	104°01'4.2891"W	0.00	
14330.00†	90.000	269.560	6096.00	9173.03	2046.18	-8955.18	40°41'0.2999"N	104°01'5.5870"W	0.00	
14430.00†	90.000	269.560	6096.00	9271.43	2045.41	-9055.18	40°41'0.3089"N	104°01'6.8850"W	0.00	
14530.00†	90.000	269.560	6096.00	9369.83	2044.64	-9155.17	40°41'0.3178"N	104°01'8.1829"W	0.00	
14630.00†	90.000	269.560	6096.00	9468.22	2043.87	-9255.17	40°41'0.3267"N	104°01'9.4809"W	0.00	
14730.00†	90.000	269.560	6096.00	9566.62	2043.10	-9355.17	40°41'0.3356"N	104°01'10.7788"W	0.00	
14830.00†	90.000	269.560	6096.00	9665.02	2042.34	-9455.17	40°41'0.3445"N	104°01'12.0768"W	0.00	
14930.00†	90.000	269.560	6096.00	9763.42	2041.57	-9555.16	40°41'0.3534"N	104°01'13.3747"W	0.00	
15030.00†	90.000	269.560	6096.00	9861.82	2040.80	-9655.16	40°41'0.3623"N	104°01'14.6726"W	0.00	
15130.00†	90.000	269.560	6096.00	9960.22	2040.03	-9755.16	40°41'0.3712"N	104°01'15.9706"W	0.00	
15230.00†	90.000	269.560	6096.00	10058.61	2039.26	-9855.15	40°41'0.3801"N	104°01'17.2685"W	0.00	
15330.00†	90.000	269.560	6096.00	10157.01	2038.50	-9955.15	40°41'0.3889"N	104°01'18.5665"W	0.00	
15430.00†	90.000	269.560	6096.00	10255.41	2037.73	-10055.15	40°41'0.3978"N	104°01'19.8644"W	0.00	
15530.00†	90.000	269.560	6096.00	10353.81	2036.96	-10155.15	40°41'0.4067"N	104°01'21.1624"W	0.00	
15630.00†	90.000	269.560	6096.00	10452.21	2036.19	-10255.14	40°41'0.4156"N	104°01'22.4603"W	0.00	
15730.00†	90.000	269.560	6096.00	10550.60	2035.42	-10355.14	40°41'0.4244"N	104°01'23.7582"W	0.00	
15830.00†	90.000	269.560	6096.00	10649.00	2034.66	-10455.14	40°41'0.4333"N	104°01'25.0562"W	0.00	

REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Well	Tinman Federal LG07-685
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Tinman Federal LG07-685 PWB
Slot	SLOT#15 Tinman Federal LG07-685 (2454'FNL & 1339'FWL,SEC.09)		

WELLPATH DATA (193 stations) † = interpolated, ‡ = extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
15930.00†	90.000	269.560	6096.00	10747.40	2033.89	-10555.13	40°41'0.4422"N	104°01'26.3541"W	0.00	
16030.00†	90.000	269.560	6096.00	10845.80	2033.12	-10655.13	40°41'0.4510"N	104°01'27.6521"W	0.00	
16130.00†	90.000	269.560	6096.00	10944.20	2032.35	-10755.13	40°41'0.4599"N	104°01'28.9500"W	0.00	
16230.00†	90.000	269.560	6096.00	11042.60	2031.58	-10855.12	40°41'0.4687"N	104°01'30.2480"W	0.00	
16330.00†	90.000	269.560	6096.00	11140.99	2030.82	-10955.12	40°41'0.4776"N	104°01'31.5459"W	0.00	
16430.00†	90.000	269.560	6096.00	11239.39	2030.05	-11055.12	40°41'0.4864"N	104°01'32.8439"W	0.00	
16530.00†	90.000	269.560	6096.00	11337.79	2029.28	-11155.12	40°41'0.4952"N	104°01'34.1418"W	0.00	
16630.00†	90.000	269.560	6096.00	11436.19	2028.51	-11255.11	40°41'0.5041"N	104°01'35.4397"W	0.00	
16730.00†	90.000	269.560	6096.00	11534.59	2027.74	-11355.11	40°41'0.5129"N	104°01'36.7377"W	0.00	
16830.00†	90.000	269.560	6096.00	11632.99	2026.97	-11455.11	40°41'0.5217"N	104°01'38.0356"W	0.00	
16930.00†	90.000	269.560	6096.00	11731.38	2026.21	-11555.10	40°41'0.5305"N	104°01'39.3336"W	0.00	
17030.00†	90.000	269.560	6096.00	11829.78	2025.44	-11655.10	40°41'0.5393"N	104°01'40.6315"W	0.00	
17064.61	90.000	269.560	6096.00‡	11863.84	2025.17	-11689.71	40°41'0.5424"N	104°01'41.0808"W	0.00	BHL (350'FNL & 200'FWL,SEC.07)

HOLE & CASING SECTIONS - Ref Wellbore: Tinman Federal LG07-685 PWB Ref Wellpath: Tinman Federal LG07-685 (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	1891.15	0.00	0.00	315.30	-162.42
8.5in Open Hole	1950.00	17064.61	15114.61	1891.15	6096.00	315.30	-162.42	2025.17	-11689.71

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Well	Tinman Federal LG07-685
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Tinman Federal LG07-685 PWB
Slot	SLOT#15 Tinman Federal LG07-685 (2454'FNL & 1339'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 09 LG09-03-785	N/A	-46.00	2123.42	414.78	3420316.77	1495322.66	40°40'59.4984"N	103°59'3.9660"W	polygon
	2D Polygon: dimensions not calculated								
SECTION 07 LG-09-06-785	N/A	9.00	10.38	-10.72	3419891.28	1493209.66	40°40'38.6940"N	103°59'9.9564"W	polygon
	2D Polygon: dimensions not calculated								
SECTION 08 LG-09-06-785	N/A	9.00	10.38	-10.72	3419891.28	1493209.66	40°40'38.6940"N	103°59'9.9564"W	polygon
	2D Polygon: dimensions not calculated								
4) Tinman Federal LG07-685 BHL ON PLAT (350'FNL & 200'FWL,SEC.07)	17064.61	6096.00	2025.17	-11689.71	3408212.49	1495224.41	40°41'0.5424"N	104°01'41.0808"W	point
Tinman Federal LG07-685 BPZ (350'FNL & 200'FWL,SEC.07)	N/A	6096.00	2025.19	-11689.82	3408212.38	1495224.43	40°41'0.5426"N	104°01'41.0822"W	point
2) Tinman Federal LG07-685 Fed Entry 1 (331'FNL&1313'FEL,Sec.8)	8042.84	6096.00	2094.24	-2668.21	3417233.84	1495293.48	40°40'59.7288"N	103°59'43.9836"W	point
3) Tinman Federal LG07-685 Fed Exit1/Fed Enter2 (340'FNL&1315'FEL,Sec.8)	13297.48	6096.00	2054.11	-7922.70	3411979.44	1495253.35	40°41'0.2076"N	104°00'52.1856"W	point
Tinman Federal LG07-685 LP (330'FNL & 200'FEL,SEC.08)	N/A	6096.00	2102.74	-1555.13	3418346.89	1495301.97	40°40'59.6259"N	103°59'29.5362"W	point
1) Tinman Federal LG07-685 LP on Plat 330'FNL&200'FEL,Sec.8)	6929.78	6096.00	2102.58	-1555.18	3418346.85	1495301.82	40°40'59.6244"N	103°59'29.5368"W	point
DP 220 Federal Minerals A	N/A	6300.00	10.00	10.00	3419912.00	1493209.27	40°40'38.6867"N	103°59'9.6876"W	polygon
	2D Polygon: dimensions not calculated								
DP 220 Federal Minerals B	N/A	6300.00	10.00	10.00	3419912.00	1493209.27	40°40'38.6867"N	103°59'9.6876"W	polygon
	2D Polygon: dimensions not calculated								

SURVEY PROGRAM - Ref Wellbore: Tinman Federal LG07-685 PWB Ref Wellpath: Tinman Federal LG07-685 (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)		Tinman Federal LG07-685 PWB
1950.00	17332.28	OWSG MWD rev2 (MS+IFR1)		Tinman Federal LG07-685 PWB

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Well	Tinman Federal LG07-685
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Tinman Federal LG07-685 PWB
Slot	SLOT#15 Tinman Federal LG07-685 (2454'FNL & 1339'FWL,SEC.09)		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
365.00	0.000	332.746	365.00	FOXHILLS-BASE_PROD
1145.45	12.909	332.746	1140.00	PIERRE_(UPPER)_AQUIFER_TOP
1773.53	25.471	332.746	1732.00	PIERRE_(UPPER)_AQUIFER_BASE
3382.45	25.598	332.746	3183.00	PARKMAN
4146.44	25.598	332.746	3872.00	SUSSEX
4872.72	25.598	332.746	4527.00	SHANNON
5735.40	25.598	332.746	5305.00	TEPEE_BUTTES
5903.94	25.598	332.746	5457.00	TEPEE_BUTTES
6508.68	51.933	289.132	5960.00	INTRA_SHARON_SPGS_MK
6533.61	54.104	287.595	5975.00	SHARON_SPRING_MKR
6578.41	58.049	285.035	6000.00	NIO_A_CHALK
6633.24	62.940	282.186	6027.00	NIO_A_MARL

DESIGN COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
30.00	0.000	332.746	30.00	SHL SENW,SEC.09
500.00	0.000	332.746	500.00	End of Tangent
1779.90	25.598	332.746	1737.74	Build (XS)
6142.21	25.598	332.746	5671.89	KOP NWNW,SEC.09
6929.78	90.000	269.571	6096.00	LP/TPZ NENE,SEC.08
8042.84	90.000	269.571	6096.00	Fed Entry 1 NENE,SEC.08
8043.65	90.000	269.562	6096.00	3D Arc (J)
13297.48	90.000	269.562	6096.00	Fed Entry 2/Exit 1 NWNE,SEC.07
13297.74	90.000	269.560	6096.00	3D Arc (J)
17064.61	90.000	269.560	6096.00	BHL (350'FNL & 200'FWL,SEC.07)

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Well	Tinman Federal LG07-685
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Tinman Federal LG07-685 PWB
Slot	SLOT#15 Tinman Federal LG07-685 (2454'FNL & 1339'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	2/28/2024 at 3:31:33 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	-2119.85	-77.81	3419902.00	1493199.27	40°40'38.5896"N	103°59'9.8196"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	(4815'GL+30'KB@4845'RKB) (RKB) to Facility Vertical Datum	4845.00ft
Horizontal Reference Pt	Slot	(4815'GL+30'KB@4845'RKB) (RKB) to Mean Sea Level	4845.00ft
Vertical Reference Pt	(4815'GL+30'KB@4845'RKB) (RKB)	(4815'GL+30'KB@4845'RKB) (RKB) to Ground Level at Slot (SLOT#15 Tinman Federal LG07-685 (2454'FNL & 1339'FWL,SEC.09))	4845.00ft
MD Reference Pt	(4815'GL+30'KB@4845'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	7.44° East of TN	Dip Angle	66.80°	Mag Field Strength	51932 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	Tinman Federal LG07-685
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Tinman Federal LG07-685 PWB
Slot	SLOT#15 Tinman Federal LG07-685 (2454'FNL & 1339'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: Tinman Federal LG07-685 PWB Ref Wellpath: Tinman Federal LG07-685 (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	1891.15	0.00	0.00	315.30	-162.42
8.5in Open Hole	1950.00	17064.61	15114.61	1891.15	6096.00	315.30	-162.42	2025.17	-11689.71

SURVEY PROGRAM - Ref Wellbore: Tinman Federal LG07-685 PWB Ref Wellpath: Tinman Federal LG07-685 (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)		Tinman Federal LG07-685 PWB
1950.00	17332.28	OWSG MWD rev2 (MS+IFR1)		Tinman Federal LG07-685 PWB

REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Well	Tinman Federal LG07-685
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Tinman Federal LG07-685 PWB
Slot	SLOT#15 Tinman Federal LG07-685 (2454'FNL & 1339'FWL,SEC.09)		

CALCULATION RANGE & CUTOFF

From: 30.00ft MD	To: 17064.61ft MD	C-C Cutoff: (none)
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OFFSET WELL CLEARANCE SUMMARY (26 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
LG Section 08	(FEDERAL G #4-8 (PA))	FEDERAL G #4-8 (05-123-14371)	FEDERAL G #4-8	FEDERAL G #4-8\No Surveys	Drilling	11339.78	370.48	11339.78	11339.77	0.05	11339.77	FAIL
LG Section 08	(FEDERAL PC #LG08-12 (PR))	FEDERAL PC #LG08-12 (05-123-34244)	FEDERAL PC #LG08-12	FEDERAL PC #LG08-12\No Surveys	Drilling	11349.20	2966.52	11349.20	11349.48	0.39	11349.48	FAIL
LG Section 08	(WELD PAWNEE #11-8 (DA))	WELD PAWNEE #11-8 (05-123-14194)	WELD PAWNEE #11-8	WELD PAWNEE #11-8\No Surveys	Drilling	10053.31	3014.69	10053.31	10053.54	0.40	10053.54	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	6438.97	90.64	6438.97	6455.90	1.82	6455.90	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	30.00	22.58	13330.00	17064.61	1.90	17064.61	PASS
SEC.11-T08N-R60W	SLOT#01 SONIC STAR #1101-16H	SONIC STAR #1101-(05-123-49003)	SONIC STAR #1101-16H AWB	SONIC STAR #1101-16H AWP	Drilling	17064.61	577.73	17064.61	17064.61	3.32	17064.61	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	6218.34	168.46	6218.34	6227.12	3.34	6227.12	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	30.00	44.91	500.00	17064.61	3.80	17064.61	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	30.00	67.42	500.00	17064.61	5.71	17064.61	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	30.00	90.00	500.00	17064.61	7.61	17064.61	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	30.00	112.52	500.00	17064.61	9.51	17064.61	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	30.00	135.10	500.00	17064.61	11.42	17064.61	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	30.00	157.42	500.00	17064.61	13.31	17064.61	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	6254.26	697.65	6254.26	6316.88	14.56	6316.88	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	5951.60	693.43	5951.60	6174.33	14.61	6174.33	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	6142.21	1229.45	6142.21	6249.41	25.97	6249.41	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	6142.21	1229.45	6142.21	6249.41	25.97	6249.41	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	5061.52	1246.47	5061.52	6196.33	28.44	6196.33	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	3930.56	500.00	6586.54	34.11	6586.54	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	3806.93	1507.71	6142.21	6304.70	38.28	6304.70	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	3914.19	1600.23	3914.19	6205.44	42.03	6205.44	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	3063.20	1780.33	3063.20	6176.77	55.19	6176.77	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	2552.45	1862.86	2552.45	6166.35	67.69	6166.35	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	2326.34	1922.58	2326.34	6159.54	80.75	6159.54	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	3872.96	4097.43	3872.96	6351.98	86.79	6351.98	PASS

REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Well	Tinman Federal LG07-685
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Tinman Federal LG07-685 PWB
Slot	SLOT#15 Tinman Federal LG07-685 (2454'FNL & 1339'FWL,SEC.09)		

CALCULATION RANGE & CUTOFF

From: 30.00ft MD	To: 17064.61ft MD	C-C Cutoff: (none)
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OFFSET WELL CLEARANCE SUMMARY (26 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#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	2169.14	1983.56	2169.14	6159.01	92.19	6159.01	PASS