

NOBLE ENERGY, INC



Location: COLORADO Slot: SLOTR08 Scarecrow Federal LG04-775 (436FNL & 1792FWL,SEC.09)
 Field: WELD COUNTY (NOBLE NAD 83 GRID) Well: Scarecrow Federal LG04-775
 Facility: SEC.09-T08N-R59W Wellbore: Scarecrow Federal LG04-775 PWB

Plot reference wellpath is Scarecrow Federal LG04-775 (REV-C.0) PWP
 Grid System: NAD83 / Lambert Colorado SP, Northern Zone (S01), US feet
 True vertical depths are referenced to (4859GL+30KB@4889RKB) (RKB)
 North Reference: Grid north
 Reference wellpath measured depths are referenced to (4859GL+30KB@4889RKB) (RKB)
 Scale: True distance
 (4859GL+30KB@4889RKB) (RKB) to Mean Sea Level: 4889 feet
 Coordinates are in feet referenced to Slot
 Mean Sea Level to Ground level (At Slot: SLOTR08 Scarecrow Federal LG04-775 (436FNL & 1792FWL,SEC.09)): 0 feet
 Depths are in feet
 Offset wellpath MDs are referenced to each path's default MD datum
 Created by: marisam01 on 2024-03-02; Database: WA_Denver

Location Information

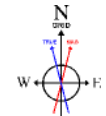
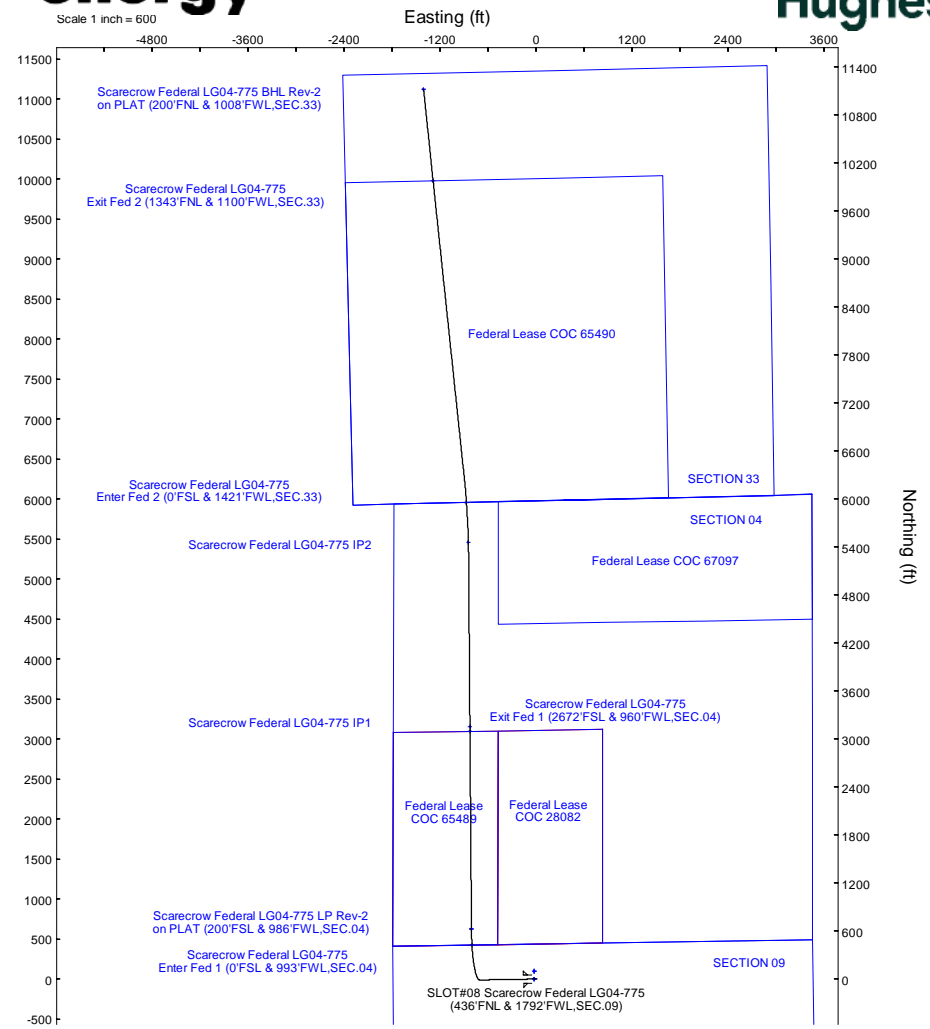
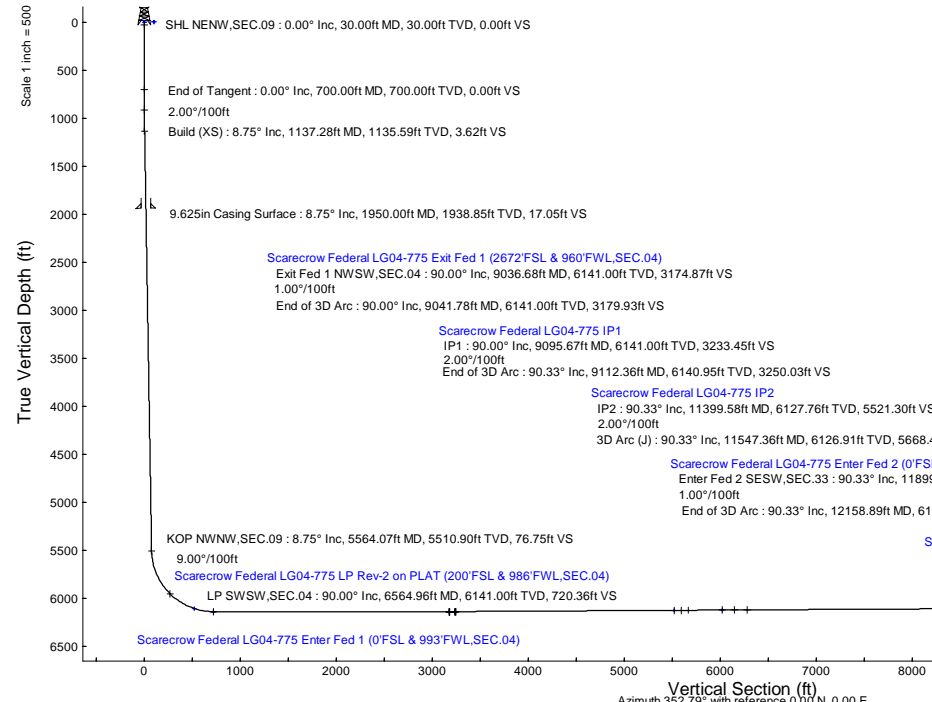
Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude		
SEC.09-T08N-R59W	3419979.608	1495319.889	40°40'59.3200"N	103°59'3.4000"W		
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SLOTR08 Scarecrow Federal LG04-775 (436FNL & 1792FWL,SEC.09)	-95.16	359.18	3420338.987	1495223.930	40°40'58.5192"N	103°59'3.6998"W
(4859GL+30KB@4889RKB) (RKB) to Ground level (At Slot: SLOTR08 Scarecrow Federal LG04-775 (436FNL & 1792FWL,SEC.09))				4889ft		
Mean Sea Level to Ground level (At Slot: SLOTR08 Scarecrow Federal LG04-775 (436FNL & 1792FWL,SEC.09))				0ft		
(4859GL+30KB@4889RKB) (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	269.028	30.00	0.00	0.00	0.00	0.00
End of Tangent	700.00	0.000	269.028	700.00	0.00	0.00	0.00	0.00
Build (XS)	1137.28	8.746	269.028	1135.59	-0.56	-33.30	2.00	3.62
KOP NWNW,SEC.09	5564.07	8.746	269.028	5510.90	-11.98	-706.29	0.00	76.75
LP SWSW,SEC.04	6564.96	90.000	359.556	6141.00	623.87	-808.15	9.00	720.36
Exit Fed 1 NWSW,SEC.04	9036.68	90.000	359.556	6141.00	3095.52	-827.30	0.00	3174.87
End of 3D Arc	9041.78	90.000	359.505	6141.00	3100.62	-827.34	1.00	3179.93
IP1	9095.67	90.000	359.505	6141.00	3154.51	-827.81	0.00	3233.45
End of 3D Arc	9112.36	90.330	359.552	6140.95	3171.20	-827.94	2.00	3250.03
IP2	11399.58	90.330	359.552	6127.76	5458.31	-845.81	0.00	5521.30
3D Arc (J)	11547.36	90.330	356.597	6126.91	5605.98	-850.78	2.00	5668.43
Enter Fed 2 SESW,SEC.33	11899.73	90.330	356.597	6124.88	5957.73	-871.70	0.00	6020.03
End of 3D Arc	12158.89	90.330	354.005	6123.39	6215.99	-892.92	1.00	6278.90
Exit Fed 2 NWNW,SEC.33	15941.83	90.330	354.005	6101.60	9978.18	-1288.00	0.00	10060.94
3D Arc (J)	15948.44	90.330	354.071	6101.56	9984.75	-1288.69	1.00	10067.54
BHL NWNW,SEC.33	17088.32	90.330	354.071	6095.00	11118.52	-1406.43	0.00	11207.12

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 LG04-775 PWB
1950.00	17163.19	OWSG MWD rev2	OWSG MWD rev2 (MS+IFR1)		Scarecrow Federal LG04-775 PWB



BGMM (1900.0 to 2024.0) Dip: 66.80° Field: 51940.1 nT
 Magnetic North is 7.42 degrees East of True North (at 4/23/2023)
 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 LG04-775
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Scarecrow Federal LG04-775 PWB
Slot	SLOT#08 Scarecrow Federal LG04-775 (436'FNL & 1792'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 1:01:25 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	-95.16	359.18	3420338.99	1495223.93	40°40'58.5192"N	103°59'3.6996"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#08 Scarecrow Federal LG04-775 (436'FNL & 1792'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	352.79°

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Facility	SEC.09-T08N-R59W	Wellbore	Scarecrow Federal LG04-775 PWB
Slot	SLOT#08 Scarecrow Federal LG04-775 (436'FNL & 1792'FWL,SEC.09)		

WELLPATH DATA (205 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	269.028	0.00	0.00	0.00	0.00	40°40'58.5192"N	103°59'3.6996"W	0.00	
30.00	0.000	269.028	30.00	0.00	0.00	0.00	40°40'58.5192"N	103°59'3.6996"W	0.00	SHL NENW,SEC.09
130.00†	0.000	269.028	130.00	0.00	0.00	0.00	40°40'58.5192"N	103°59'3.6996"W	0.00	
230.00†	0.000	269.028	230.00	0.00	0.00	0.00	40°40'58.5192"N	103°59'3.6996"W	0.00	
330.00†	0.000	269.028	330.00	0.00	0.00	0.00	40°40'58.5192"N	103°59'3.6996"W	0.00	
426.00†	0.000	269.028	426.00	0.00	0.00	0.00	40°40'58.5192"N	103°59'3.6996"W	0.00	FOXHILLS-BASE PROD
430.00†	0.000	269.028	430.00	0.00	0.00	0.00	40°40'58.5192"N	103°59'3.6996"W	0.00	
530.00†	0.000	269.028	530.00	0.00	0.00	0.00	40°40'58.5192"N	103°59'3.6996"W	0.00	
630.00†	0.000	269.028	630.00	0.00	0.00	0.00	40°40'58.5192"N	103°59'3.6996"W	0.00	
700.00	0.000	269.028	700.00	0.00	0.00	0.00	40°40'58.5192"N	103°59'3.6996"W	0.00	End of Tangent
730.00†	0.600	269.028	730.00	0.02	0.00	-0.16	40°40'58.5192"N	103°59'3.7016"W	2.00	
830.00†	2.600	269.028	829.96	0.32	-0.05	-2.95	40°40'58.5192"N	103°59'3.7379"W	2.00	
861.08†	3.222	269.028	861.00	0.49	-0.08	-4.53	40°40'58.5192"N	103°59'3.7584"W	2.00	PIERRE (UPPER)AQUIFER TOP
930.00†	4.600	269.028	929.75	1.00	-0.16	-9.23	40°40'58.5192"N	103°59'3.8194"W	2.00	
1030.00†	6.600	269.028	1029.27	2.06	-0.32	-18.98	40°40'58.5192"N	103°59'3.9460"W	2.00	
1130.00†	8.600	269.028	1128.39	3.50	-0.55	-32.21	40°40'58.5192"N	103°59'4.1177"W	2.00	
1137.28	8.746	269.028	1135.59	3.62	-0.56	-33.30	40°40'58.5192"N	103°59'4.1319"W	2.00	Build (XS)
1230.00†	8.746	269.028	1227.23	5.15	-0.80	-47.40	40°40'58.5193"N	103°59'4.3149"W	0.00	
1330.00†	8.746	269.028	1326.06	6.80	-1.06	-62.60	40°40'58.5193"N	103°59'4.5123"W	0.00	
1430.00†	8.746	269.028	1424.90	8.45	-1.32	-77.80	40°40'58.5193"N	103°59'4.7096"W	0.00	
1458.43†	8.746	269.028	1453.00	8.92	-1.39	-82.13	40°40'58.5193"N	103°59'4.7657"W	0.00	PIERRE (UPPER) AQUIFER BASE
1530.00†	8.746	269.028	1523.74	10.11	-1.58	-93.01	40°40'58.5193"N	103°59'4.9070"W	0.00	
1630.00†	8.746	269.028	1622.58	11.76	-1.84	-108.21	40°40'58.5193"N	103°59'5.1044"W	0.00	
1730.00†	8.746	269.028	1721.41	13.41	-2.09	-123.41	40°40'58.5194"N	103°59'5.3017"W	0.00	
1830.00†	8.746	269.028	1820.25	15.06	-2.35	-138.62	40°40'58.5194"N	103°59'5.4991"W	0.00	
1930.00†	8.746	269.028	1919.09	16.71	-2.61	-153.82	40°40'58.5194"N	103°59'5.6964"W	0.00	
2030.00†	8.746	269.028	2017.92	18.37	-2.87	-169.02	40°40'58.5194"N	103°59'5.8938"W	0.00	
2130.00†	8.746	269.028	2116.76	20.02	-3.12	-184.22	40°40'58.5194"N	103°59'6.0911"W	0.00	
2230.00†	8.746	269.028	2215.60	21.67	-3.38	-199.43	40°40'58.5195"N	103°59'6.2885"W	0.00	
2330.00†	8.746	269.028	2314.44	23.32	-3.64	-214.63	40°40'58.5195"N	103°59'6.4858"W	0.00	
2430.00†	8.746	269.028	2413.27	24.98	-3.90	-229.83	40°40'58.5195"N	103°59'6.6832"W	0.00	
2456.03†	8.746	269.028	2439.00	25.41	-3.97	-233.79	40°40'58.5195"N	103°59'6.7346"W	0.00	PIERRE_MBR_A_SD_TOP
2530.00†	8.746	269.028	2512.11	26.63	-4.16	-245.03	40°40'58.5195"N	103°59'6.8806"W	0.00	
2630.00†	8.746	269.028	2610.95	28.28	-4.41	-260.24	40°40'58.5195"N	103°59'7.0779"W	0.00	
2730.00†	8.746	269.028	2709.79	29.93	-4.67	-275.44	40°40'58.5195"N	103°59'7.2753"W	0.00	
2830.00†	8.746	269.028	2808.62	31.58	-4.93	-290.64	40°40'58.5196"N	103°59'7.4726"W	0.00	
2930.00†	8.746	269.028	2907.46	33.24	-5.19	-305.84	40°40'58.5196"N	103°59'7.6700"W	0.00	
3002.38†	8.746	269.028	2979.00	34.43	-5.37	-316.85	40°40'58.5196"N	103°59'7.8128"W	0.00	PIERRE_MBR_A_SD_BASE
3030.00†	8.746	269.028	3006.30	34.89	-5.45	-321.05	40°40'58.5196"N	103°59'7.8673"W	0.00	
3130.00†	8.746	269.028	3105.13	36.54	-5.70	-336.25	40°40'58.5196"N	103°59'8.0647"W	0.00	
3230.00†	8.746	269.028	3203.97	38.19	-5.96	-351.45	40°40'58.5196"N	103°59'8.2621"W	0.00	
3330.00†	8.746	269.028	3302.81	39.84	-6.22	-366.65	40°40'58.5197"N	103°59'8.4594"W	0.00	
3350.43†	8.746	269.028	3323.00	40.18	-6.27	-369.76	40°40'58.5197"N	103°59'8.4997"W	0.00	PARKMAN
3430.00†	8.746	269.028	3401.65	41.50	-6.48	-381.86	40°40'58.5197"N	103°59'8.6568"W	0.00	
3530.00†	8.746	269.028	3500.48	43.15	-6.73	-397.06	40°40'58.5197"N	103°59'8.8541"W	0.00	

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Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Scarecrow Federal LG04-775 PWB
Slot	SLOT#08 Scarecrow Federal LG04-775 (436'FNL & 1792'FWL,SEC.09)		

WELLPATH DATA (205 stations) † = interpolated, ‡ = extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS ["/100ft]	Comments
3630.00†	8.746	269.028	3599.32	44.80	-6.99	-412.26	40°40'58.5197"N	103°59'9.0515"W	0.00	
3730.00†	8.746	269.028	3698.16	46.45	-7.25	-427.47	40°40'58.5197"N	103°59'9.2488"W	0.00	
3830.00†	8.746	269.028	3797.00	48.10	-7.51	-442.67	40°40'58.5197"N	103°59'9.4462"W	0.00	
3930.00†	8.746	269.028	3895.83	49.76	-7.77	-457.87	40°40'58.5198"N	103°59'9.6436"W	0.00	
4030.00†	8.746	269.028	3994.67	51.41	-8.02	-473.07	40°40'58.5198"N	103°59'9.8409"W	0.00	
4045.51†	8.746	269.028	4010.00	51.66	-8.06	-475.43	40°40'58.5198"N	103°59'9.8715"W	0.00	SUSSEX
4130.00†	8.746	269.028	4093.51	53.06	-8.28	-488.28	40°40'58.5198"N	103°59'10.0383"W	0.00	
4230.00†	8.746	269.028	4192.35	54.71	-8.54	-503.48	40°40'58.5198"N	103°59'10.2356"W	0.00	
4330.00†	8.746	269.028	4291.18	56.36	-8.80	-518.68	40°40'58.5198"N	103°59'10.4330"W	0.00	
4430.00†	8.746	269.028	4390.02	58.02	-9.06	-533.88	40°40'58.5198"N	103°59'10.6303"W	0.00	
4530.00†	8.746	269.028	4488.86	59.67	-9.31	-549.09	40°40'58.5199"N	103°59'10.8277"W	0.00	
4577.70†	8.746	269.028	4536.00	60.46	-9.44	-556.34	40°40'58.5199"N	103°59'10.9218"W	0.00	SHANNON
4630.00†	8.746	269.028	4587.69	61.32	-9.57	-564.29	40°40'58.5199"N	103°59'11.0250"W	0.00	
4730.00†	8.746	269.028	4686.53	62.97	-9.83	-579.49	40°40'58.5199"N	103°59'11.2224"W	0.00	
4830.00†	8.746	269.028	4785.37	64.62	-10.09	-594.69	40°40'58.5199"N	103°59'11.4198"W	0.00	
4930.00†	8.746	269.028	4884.21	66.28	-10.34	-609.90	40°40'58.5199"N	103°59'11.6171"W	0.00	
5030.00†	8.746	269.028	4983.04	67.93	-10.60	-625.10	40°40'58.5199"N	103°59'11.8145"W	0.00	
5130.00†	8.746	269.028	5081.88	69.58	-10.86	-640.30	40°40'58.5200"N	103°59'12.0118"W	0.00	
5230.00†	8.746	269.028	5180.72	71.23	-11.12	-655.50	40°40'58.5200"N	103°59'12.2092"W	0.00	
5330.00†	8.746	269.028	5279.56	72.88	-11.38	-670.71	40°40'58.5200"N	103°59'12.4065"W	0.00	
5399.25†	8.746	269.028	5348.00	74.03	-11.55	-681.23	40°40'58.5200"N	103°59'12.5432"W	0.00	TEPEE BUTES
5430.00†	8.746	269.028	5378.39	74.54	-11.63	-685.91	40°40'58.5200"N	103°59'12.6039"W	0.00	
5530.00†	8.746	269.028	5477.23	76.19	-11.89	-701.11	40°40'58.5200"N	103°59'12.8013"W	0.00	
5564.07	8.746	269.028	5510.90	76.75	-11.98	-706.29	40°40'58.5200"N	103°59'12.8685"W	0.00	KOP NWNW,SEC.09
5564.07†	8.746	269.031	5510.90	76.75	-11.98	-706.29	40°40'58.5200"N	103°59'12.8685"W	9.00	KOP (437'FNL&1085'FWL,Sec.09)
5630.00†	10.511	303.549	5575.96	81.23	-8.74	-716.32	40°40'58.5537"N	103°59'12.9980"W	9.00	
5730.00†	17.187	329.732	5673.08	100.81	9.10	-731.40	40°40'58.7325"N	103°59'13.1897"W	9.00	
5830.00†	25.318	340.581	5766.24	135.38	42.09	-745.99	40°40'59.0609"N	103°59'13.3717"W	9.00	
5930.00†	33.871	346.308	5853.13	184.07	89.43	-759.72	40°40'59.5309"N	103°59'13.5395"W	9.00	
6030.00†	42.592	349.923	5931.62	245.68	149.95	-772.27	40°41'0.1309"N	103°59'13.6889"W	9.00	
6031.88†	42.757	349.979	5933.00	246.95	151.20	-772.49	40°41'0.1434"N	103°59'13.6915"W	9.00	INTRA_SHARON_SPGS_MK
6048.42†	44.209	350.457	5945.00	258.32	162.42	-774.42	40°41'0.2545"N	103°59'13.7141"W	9.00	SHARON_SPRING_MKR
6085.75†	47.492	351.451	5971.00	285.09	188.87	-778.63	40°41'0.5165"N	103°59'13.7628"W	9.00	NIO A CHALK
6127.18†	51.145	352.437	5998.00	316.50	219.97	-783.02	40°41'0.8246"N	103°59'13.8129"W	9.00	NIO A MARL
6130.00†	51.394	352.501	5999.76	318.70	222.15	-783.31	40°41'0.8462"N	103°59'13.8162"W	9.00	
6230.00†	60.240	354.510	6055.90	401.32	304.26	-792.58	40°41'1.6590"N	103°59'13.9183"W	9.00	
6257.42†	62.671	354.996	6069.00	425.40	328.25	-794.78	40°41'1.8963"N	103°59'13.9416"W	9.00	NIO B CHALK
6330.00†	69.111	356.190	6098.63	491.53	394.27	-799.85	40°41'2.5494"N	103°59'13.9928"W	9.00	
6342.58†	70.228	356.386	6103.00	503.30	406.04	-800.62	40°41'2.6658"N	103°59'14.0001"W	9.00	NIO B MARL
6361.52†	71.911	356.676	6109.15	521.18	423.92	-801.70	40°41'2.8427"N	103°59'14.0102"W	9.00	Fed Entry 1 (0'FSL & 993'FWL,SEC.04) SWSW
6430.00†	77.997	357.682	6126.91	587.08	489.94	-804.94	40°41'3.4955"N	103°59'14.0377"W	9.00	
6530.00†	86.890	359.077	6140.05	685.64	588.93	-807.73	40°41'4.4740"N	103°59'14.0519"W	9.00	
6564.96	90.000	359.556	6141.00†	720.36	623.87	-808.15	40°41'4.8192"N	103°59'14.0496"W	9.00	LP SWSW,SEC.04
6630.00†	90.000	359.556	6141.00	784.94	688.91	-808.65	40°41'5.4619"N	103°59'14.0417"W	0.00	
6730.00†	90.000	359.556	6141.00	884.25	788.91	-809.43	40°41'6.4499"N	103°59'14.0297"W	0.00	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Well	Scarecrow Federal LG04-775
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Scarecrow Federal LG04-775 PWB
Slot	SLOT#08 Scarecrow Federal LG04-775 (436'FNL & 1792'FWL,SEC.09)		

WELLPATH DATA (205 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	359.556	6141.00	983.55	888.90	-810.20	40°41'7.4380"N	103°59'14.0176"W	0.00	
6930.00†	90.000	359.556	6141.00	1082.86	988.90	-810.98	40°41'8.4261"N	103°59'14.0055"W	0.00	
7030.00†	90.000	359.556	6141.00	1182.16	1088.90	-811.75	40°41'9.4142"N	103°59'13.9934"W	0.00	
7130.00†	90.000	359.556	6141.00	1281.46	1188.89	-812.53	40°41'10.4022"N	103°59'13.9813"W	0.00	
7230.00†	90.000	359.556	6141.00	1380.77	1288.89	-813.30	40°41'11.3903"N	103°59'13.9692"W	0.00	
7330.00†	90.000	359.556	6141.00	1480.07	1388.89	-814.08	40°41'12.3784"N	103°59'13.9571"W	0.00	
7430.00†	90.000	359.556	6141.00	1579.37	1488.89	-814.85	40°41'13.3664"N	103°59'13.9450"W	0.00	
7530.00†	90.000	359.556	6141.00	1678.68	1588.88	-815.63	40°41'14.3545"N	103°59'13.9329"W	0.00	
7630.00†	90.000	359.556	6141.00	1777.98	1688.88	-816.40	40°41'15.3426"N	103°59'13.9209"W	0.00	
7730.00†	90.000	359.556	6141.00	1877.29	1788.88	-817.17	40°41'16.3306"N	103°59'13.9088"W	0.00	
7830.00†	90.000	359.556	6141.00	1976.59	1888.87	-817.95	40°41'17.3187"N	103°59'13.8967"W	0.00	
7930.00†	90.000	359.556	6141.00	2075.89	1988.87	-818.72	40°41'18.3068"N	103°59'13.8846"W	0.00	
8030.00†	90.000	359.556	6141.00	2175.20	2088.87	-819.50	40°41'19.2949"N	103°59'13.8725"W	0.00	
8130.00†	90.000	359.556	6141.00	2274.50	2188.86	-820.27	40°41'20.2829"N	103°59'13.8604"W	0.00	
8230.00†	90.000	359.556	6141.00	2373.80	2288.86	-821.05	40°41'21.2710"N	103°59'13.8483"W	0.00	
8330.00†	90.000	359.556	6141.00	2473.11	2388.86	-821.82	40°41'22.2591"N	103°59'13.8362"W	0.00	
8430.00†	90.000	359.556	6141.00	2572.41	2488.86	-822.60	40°41'23.2471"N	103°59'13.8241"W	0.00	
8530.00†	90.000	359.556	6141.00	2671.71	2588.85	-823.37	40°41'24.2352"N	103°59'13.8121"W	0.00	
8630.00†	90.000	359.556	6141.00	2771.02	2688.85	-824.15	40°41'25.2233"N	103°59'13.8000"W	0.00	
8730.00†	90.000	359.556	6141.00	2870.32	2788.85	-824.92	40°41'26.2114"N	103°59'13.7879"W	0.00	
8830.00†	90.000	359.556	6141.00	2969.63	2888.84	-825.70	40°41'27.1994"N	103°59'13.7758"W	0.00	
8930.00†	90.000	359.556	6141.00	3068.93	2988.84	-826.47	40°41'28.1875"N	103°59'13.7637"W	0.00	
9030.00†	90.000	359.556	6141.00	3168.23	3088.84	-827.25	40°41'29.1756"N	103°59'13.7516"W	0.00	
9036.68	90.000	359.556	6141.00 ²	3174.87	3095.52	-827.30	40°41'29.2416"N	103°59'13.7508"W	0.00	Exit Fed 1 NWSW,SEC.04
9041.78	90.000	359.505	6141.00	3179.93	3100.62	-827.34	40°41'29.2919"N	103°59'13.7502"W	1.00	End of 3D Arc
9095.67	90.000	359.505	6141.00 ³	3233.45	3154.51	-827.81	40°41'29.8244"N	103°59'13.7443"W	0.00	IP1
9112.36	90.330	359.552	6140.95	3250.03	3171.20	-827.94	40°41'29.9894"N	103°59'13.7424"W	2.00	End of 3D Arc
9130.00†	90.330	359.552	6140.85	3267.54	3188.83	-828.08	40°41'30.1636"N	103°59'13.7403"W	0.00	
9230.00†	90.330	359.552	6140.27	3366.85	3288.83	-828.86	40°41'31.1517"N	103°59'13.7283"W	0.00	
9330.00†	90.330	359.552	6139.70	3466.15	3388.82	-829.64	40°41'32.1397"N	103°59'13.7163"W	0.00	
9430.00†	90.330	359.552	6139.12	3565.45	3488.82	-830.42	40°41'33.1278"N	103°59'13.7043"W	0.00	
9530.00†	90.330	359.552	6138.54	3664.75	3588.81	-831.21	40°41'34.1158"N	103°59'13.6923"W	0.00	
9630.00†	90.330	359.552	6137.97	3764.06	3688.81	-831.99	40°41'35.1039"N	103°59'13.6803"W	0.00	
9730.00†	90.330	359.552	6137.39	3863.36	3788.81	-832.77	40°41'36.0920"N	103°59'13.6683"W	0.00	
9830.00†	90.330	359.552	6136.81	3962.66	3888.80	-833.55	40°41'37.0800"N	103°59'13.6563"W	0.00	
9930.00†	90.330	359.552	6136.24	4061.97	3988.80	-834.33	40°41'38.0681"N	103°59'13.6443"W	0.00	
10030.00†	90.330	359.552	6135.66	4161.27	4088.79	-835.11	40°41'39.0561"N	103°59'13.6323"W	0.00	
10130.00†	90.330	359.552	6135.08	4260.57	4188.79	-835.89	40°41'40.0442"N	103°59'13.6203"W	0.00	
10230.00†	90.330	359.552	6134.51	4359.87	4288.78	-836.68	40°41'41.0322"N	103°59'13.6082"W	0.00	
10330.00†	90.330	359.552	6133.93	4459.18	4388.78	-837.46	40°41'42.0203"N	103°59'13.5962"W	0.00	
10430.00†	90.330	359.552	6133.35	4558.48	4488.77	-838.24	40°41'43.0083"N	103°59'13.5842"W	0.00	
10530.00†	90.330	359.552	6132.78	4657.78	4588.77	-839.02	40°41'43.9964"N	103°59'13.5722"W	0.00	
10630.00†	90.330	359.552	6132.20	4757.09	4688.76	-839.80	40°41'44.9844"N	103°59'13.5602"W	0.00	
10730.00†	90.330	359.552	6131.62	4856.39	4788.76	-840.58	40°41'45.9725"N	103°59'13.5482"W	0.00	
10830.00†	90.330	359.552	6131.05	4955.69	4888.75	-841.36	40°41'46.9605"N	103°59'13.5362"W	0.00	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Well	Scarecrow Federal LG04-775
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Scarecrow Federal LG04-775 PWB
Slot	SLOT#08 Scarecrow Federal LG04-775 (436'FNL & 1792'FWL,SEC.09)		

WELLPATH DATA (205 stations) † = interpolated, ‡ = extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS ["/100ft]	Comments
10930.00†	90.330	359.552	6130.47	5054.99	4988.75	-842.14	40°41'47.9486"N	103°59'13.5242"W	0.00	
11030.00†	90.330	359.552	6129.89	5154.30	5088.74	-842.93	40°41'48.9366"N	103°59'13.5122"W	0.00	
11130.00†	90.330	359.552	6129.31	5253.60	5188.74	-843.71	40°41'49.9247"N	103°59'13.5002"W	0.00	
11230.00†	90.330	359.552	6128.74	5352.90	5288.73	-844.49	40°41'50.9127"N	103°59'13.4882"W	0.00	
11330.00†	90.330	359.552	6128.16	5452.21	5388.73	-845.27	40°41'51.9008"N	103°59'13.4762"W	0.00	
11399.58	90.330	359.552	6127.76 ⁴	5521.30	5458.31	-845.81	40°41'52.5883"N	103°59'13.4678"W	0.00	IP2
11430.00†	90.330	358.944	6127.58	5551.53	5488.72	-846.21	40°41'52.8889"N	103°59'13.4663"W	2.00	
11530.00†	90.330	356.944	6127.01	5651.12	5588.65	-849.80	40°41'53.8767"N	103°59'13.4907"W	2.00	
11547.36	90.330	356.597	6126.91	5668.43	5605.98	-850.78	40°41'54.0481"N	103°59'13.4996"W	2.00	3D Arc (J)
11630.00†	90.330	356.597	6126.43	5750.89	5688.48	-855.68	40°41'54.8640"N	103°59'13.5450"W	0.00	
11730.00†	90.330	356.597	6125.86	5850.67	5788.30	-861.62	40°41'55.8512"N	103°59'13.5999"W	0.00	
11830.00†	90.330	356.597	6125.28	5950.45	5888.12	-867.56	40°41'56.8384"N	103°59'13.6549"W	0.00	
11899.73	90.330	356.597	6124.88 ⁵	6020.03	5957.73	-871.70	40°41'57.5268"N	103°59'13.6932"W	0.00	Enter Fed 2 SESW,SEC.33
11930.00†	90.330	356.294	6124.71	6050.23	5987.94	-873.57	40°41'57.8255"N	103°59'13.7109"W	1.00	
12030.00†	90.330	355.294	6124.13	6150.09	6087.67	-880.91	40°41'58.8121"N	103°59'13.7840"W	1.00	
12130.00†	90.330	354.294	6123.55	6250.02	6187.25	-889.98	40°41'59.7975"N	103°59'13.8797"W	1.00	
12158.89	90.330	354.005	6123.39	6278.90	6215.99	-892.92	40°42'0.0819"N	103°59'13.9116"W	1.00	End of 3D Arc
12230.00†	90.330	354.005	6122.98	6350.00	6286.71	-900.35	40°42'0.7818"N	103°59'13.9923"W	0.00	
12330.00†	90.330	354.005	6122.40	6449.97	6386.16	-910.80	40°42'1.7661"N	103°59'14.1059"W	0.00	
12430.00†	90.330	354.005	6121.83	6549.95	6485.61	-921.24	40°42'2.7504"N	103°59'14.2194"W	0.00	
12530.00†	90.330	354.005	6121.25	6649.93	6585.06	-931.68	40°42'3.7347"N	103°59'14.3330"W	0.00	
12630.00†	90.330	354.005	6120.67	6749.90	6684.52	-942.13	40°42'4.7190"N	103°59'14.4465"W	0.00	
12730.00†	90.330	354.005	6120.10	6849.88	6783.97	-952.57	40°42'5.7034"N	103°59'14.5601"W	0.00	
12830.00†	90.330	354.005	6119.52	6949.85	6883.42	-963.01	40°42'6.6877"N	103°59'14.6736"W	0.00	
12930.00†	90.330	354.005	6118.95	7049.83	6982.87	-973.46	40°42'7.6720"N	103°59'14.7872"W	0.00	
13030.00†	90.330	354.005	6118.37	7149.81	7082.32	-983.90	40°42'8.6563"N	103°59'14.9007"W	0.00	
13130.00†	90.330	354.005	6117.79	7249.78	7181.77	-994.34	40°42'9.6406"N	103°59'15.0143"W	0.00	
13230.00†	90.330	354.005	6117.22	7349.76	7281.22	-1004.79	40°42'10.6249"N	103°59'15.1278"W	0.00	
13330.00†	90.330	354.005	6116.64	7449.73	7380.68	-1015.23	40°42'11.6092"N	103°59'15.2414"W	0.00	
13430.00†	90.330	354.005	6116.07	7549.71	7480.13	-1025.68	40°42'12.5935"N	103°59'15.3549"W	0.00	
13530.00†	90.330	354.005	6115.49	7649.68	7579.58	-1036.12	40°42'13.5778"N	103°59'15.4685"W	0.00	
13630.00†	90.330	354.005	6114.91	7749.66	7679.03	-1046.56	40°42'14.5621"N	103°59'15.5821"W	0.00	
13730.00†	90.330	354.005	6114.34	7849.64	7778.48	-1057.01	40°42'15.5464"N	103°59'15.6956"W	0.00	
13830.00†	90.330	354.005	6113.76	7949.61	7877.93	-1067.45	40°42'16.5307"N	103°59'15.8092"W	0.00	
13930.00†	90.330	354.005	6113.19	8049.59	7977.39	-1077.89	40°42'17.5150"N	103°59'15.9227"W	0.00	
14030.00†	90.330	354.005	6112.61	8149.56	8076.84	-1088.34	40°42'18.4993"N	103°59'16.0363"W	0.00	
14130.00†	90.330	354.005	6112.04	8249.54	8176.29	-1098.78	40°42'19.4836"N	103°59'16.1499"W	0.00	
14230.00†	90.330	354.005	6111.46	8349.52	8275.74	-1109.23	40°42'20.4679"N	103°59'16.2634"W	0.00	
14330.00†	90.330	354.005	6110.88	8449.49	8375.19	-1119.67	40°42'21.4523"N	103°59'16.3770"W	0.00	
14430.00†	90.330	354.005	6110.31	8549.47	8474.64	-1130.11	40°42'22.4366"N	103°59'16.4906"W	0.00	
14530.00†	90.330	354.005	6109.73	8649.44	8574.09	-1140.56	40°42'23.4209"N	103°59'16.6041"W	0.00	
14630.00†	90.330	354.005	6109.16	8749.42	8673.55	-1151.00	40°42'24.4052"N	103°59'16.7177"W	0.00	
14730.00†	90.330	354.005	6108.58	8849.40	8773.00	-1161.44	40°42'25.3895"N	103°59'16.8313"W	0.00	
14830.00†	90.330	354.005	6108.00	8949.37	8872.45	-1171.89	40°42'26.3738"N	103°59'16.9448"W	0.00	
14930.00†	90.330	354.005	6107.43	9049.35	8971.90	-1182.33	40°42'27.3581"N	103°59'17.0584"W	0.00	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Well	Scarecrow Federal LG04-775
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Scarecrow Federal LG04-775 PWB
Slot	SLOT#08 Scarecrow Federal LG04-775 (436'FNL & 1792'FWL,SEC.09)		

WELLPATH DATA (205 stations) † = interpolated, ‡ = extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
15030.00†	90.330	354.005	6106.85	9149.32	9071.35	-1192.78	40°42'28.3424"N	103°59'17.1720"W	0.00	
15130.00†	90.330	354.005	6106.28	9249.30	9170.80	-1203.22	40°42'29.3267"N	103°59'17.2855"W	0.00	
15230.00†	90.330	354.005	6105.70	9349.27	9270.25	-1213.66	40°42'30.3110"N	103°59'17.3991"W	0.00	
15330.00†	90.330	354.005	6105.12	9449.25	9369.71	-1224.11	40°42'31.2953"N	103°59'17.5127"W	0.00	
15430.00†	90.330	354.005	6104.55	9549.23	9469.16	-1234.55	40°42'32.2796"N	103°59'17.6263"W	0.00	
15530.00†	90.330	354.005	6103.97	9649.20	9568.61	-1244.99	40°42'33.2639"N	103°59'17.7398"W	0.00	
15630.00†	90.330	354.005	6103.40	9749.18	9668.06	-1255.44	40°42'34.2482"N	103°59'17.8534"W	0.00	
15698.75†	90.330	354.005	6103.00	9817.92	9736.44	-1262.62	40°42'34.9250"N	103°59'17.9315"W	0.00	NIO B MARL
15730.00†	90.330	354.005	6102.82	9849.15	9767.51	-1265.88	40°42'35.2325"N	103°59'17.9670"W	0.00	
15830.00†	90.330	354.005	6102.24	9949.13	9866.96	-1276.33	40°42'36.2168"N	103°59'18.0806"W	0.00	
15930.00†	90.330	354.005	6101.67	10049.11	9966.41	-1286.77	40°42'37.2011"N	103°59'18.1942"W	0.00	
15941.83	90.330	354.005	6101.60 ⁶	10060.94	9978.18	-1288.00	40°42'37.3176"N	103°59'18.2076"W	0.00	Exit Fed 2 NWNW,SEC.33
15948.44	90.330	354.071	6101.56	10067.54	9984.75	-1288.69	40°42'37.3826"N	103°59'18.2151"W	1.00	3D Arc (J)
16030.00†	90.330	354.071	6101.09	10149.08	10065.88	-1297.12	40°42'38.1855"N	103°59'18.3065"W	0.00	
16130.00†	90.330	354.071	6100.52	10249.05	10165.34	-1307.44	40°42'39.1699"N	103°59'18.4186"W	0.00	
16230.00†	90.330	354.071	6099.94	10349.03	10264.80	-1317.77	40°42'40.1543"N	103°59'18.5307"W	0.00	
16330.00†	90.330	354.071	6099.37	10449.00	10364.27	-1328.10	40°42'41.1387"N	103°59'18.6428"W	0.00	
16430.00†	90.330	354.071	6098.79	10548.97	10463.73	-1338.43	40°42'42.1231"N	103°59'18.7548"W	0.00	
16530.00†	90.330	354.071	6098.21	10648.95	10563.19	-1348.76	40°42'43.1075"N	103°59'18.8669"W	0.00	
16630.00†	90.330	354.071	6097.64	10748.92	10662.66	-1359.09	40°42'44.0919"N	103°59'18.9790"W	0.00	
16730.00†	90.330	354.071	6097.06	10848.89	10762.12	-1369.42	40°42'45.0763"N	103°59'19.0911"W	0.00	
16830.00†	90.330	354.071	6096.49	10948.87	10861.58	-1379.75	40°42'46.0607"N	103°59'19.2032"W	0.00	
16930.00†	90.330	354.071	6095.91	11048.84	10961.05	-1390.08	40°42'47.0451"N	103°59'19.3153"W	0.00	
17030.00†	90.330	354.071	6095.34	11148.81	11060.51	-1400.41	40°42'48.0295"N	103°59'19.4274"W	0.00	
17088.32	90.330	354.071	6095.00 ⁷	11207.12	11118.52	-1406.43	40°42'48.6036"N	103°59'19.4928"W	0.00	BHL NWNW,SEC.33

HOLE & CASING SECTIONS - Ref Wellbore: Scarecrow Federal LG04-775 PWB Ref Wellpath: Scarecrow Federal LG04-775 (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	1938.85	0.00	0.00	-2.66	-156.86
8.5in Open Hole	1950.00	17088.32	15138.32	1938.85	N/A	-2.66	-156.86	N/A	N/A

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Well	Scarecrow Federal LG04-775
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Scarecrow Federal LG04-775 PWB
Slot	SLOT#08 Scarecrow Federal LG04-775 (436'FNL & 1792'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	98.73	-22.21	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	98.73	-22.21	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	98.73	-22.21	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	-0.38	-22.46	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	-0.38	-22.46	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	-0.38	-22.46	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	-0.38	-22.46	3420316.53	1495223.55	40°40'58.5192"N	103°59'3.9912"W	polygon
2D Polygon: dimensions not calculated									
Scarecrow Federal LG04-775 BHL (200'FNL & 1008'FWL,SEC.33)	N/A	6095.00	11118.53	-1406.25	3418932.76	1506342.27	40°42'48.6037"N	103°59'19.4905"W	point
7) Scarecrow Federal LG04-775 BHL Rev-2 on PLAT (200'FNL & 1008'FWL,SEC.33)	17088.32	6095.00	11118.52	-1406.43	3418932.58	1506342.26	40°42'48.6036"N	103°59'19.4928"W	point
6) Scarecrow Federal LG04-775 Exit Fed 2 (1343'FNL & 1100'FWL,SEC.33)	15941.83	6101.60	9978.18	-1288.00	3419051.00	1505201.95	40°42'37.3176"N	103°59'18.2076"W	point
Scarecrow Federal LG04-775 Enter Fed 1 (0'FSL & 993'FWL,SEC.04)	N/A	6109.15	423.94	-801.41	3419537.59	1495647.86	40°41'2.8428"N	103°59'14.0064"W	point
5) Scarecrow Federal LG04-775 Enter Fed 2 (0'FSL & 1421'FWL,SEC.33)	11899.73	6124.88	5957.73	-871.70	3419467.31	1501181.56	40°41'57.5268"N	103°59'13.6932"W	point
4) Scarecrow Federal LG04-775 IP2	11399.58	6127.76	5458.31	-845.81	3419493.19	1500682.15	40°41'52.5883"N	103°59'13.4678"W	point

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Well	Scarecrow Federal LG04-775
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Scarecrow Federal LG04-775 PWB
Slot	SLOT#08 Scarecrow Federal LG04-775 (436'FNL & 1792'FWL,SEC.09)		

TARGETS									
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
2) Scarecrow Federal LG04-775 Exit Fed 1 (2672'FSL & 960'FWL,SEC.04)	9036.68	6141.00	3095.52	-827.30	3419511.70	1498319.40	40°41'29.2416"N	103°59'13.7508"W	point
3) Scarecrow Federal LG04-775 IP1	9095.67	6141.00	3154.51	-827.81	3419511.20	1498378.38	40°41'29.8244"N	103°59'13.7443"W	point
Scarecrow Federal LG04-775 LP (200'FSL & 986'FWL,SEC.04)	N/A	6141.00	623.82	-808.00	3419531.00	1495847.74	40°41'4.8187"N	103°59'14.0477"W	point
1) Scarecrow Federal LG04-775 LP Rev-2 on PLAT (200'FSL & 986'FWL,SEC.04)	6564.96	6141.00	623.87	-808.15	3419530.85	1495847.79	40°41'4.8192"N	103°59'14.0496"W	point

SURVEY PROGRAM - Ref Wellbore: Scarecrow Federal LG04-775 PWB Ref Wellpath: Scarecrow Federal LG04-775 (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 LG04-775 PWB
1950.00	17163.19	OWSG MWD rev2 (MS+IFR1)		Scarecrow Federal LG04-775 PWB

REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Well	Scarecrow Federal LG04-775
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Scarecrow Federal LG04-775 PWB
Slot	SLOT#08 Scarecrow Federal LG04-775 (436'FNL & 1792'FWL,SEC.09)		

WELLPATH COMMENTS

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
426.00	0.000	269.028	426.00	FOXHILLS-BASE PROD
861.08	3.222	269.028	861.00	PIERRE (UPPER)AQUIFER TOP
1458.43	8.746	269.028	1453.00	PIERRE (UPPER) AQUIFER BASE
2456.03	8.746	269.028	2439.00	PIERRE_MBR_A_SD_TOP
3002.38	8.746	269.028	2979.00	PIERRE_MBR_A_SD_BASE
3350.43	8.746	269.028	3323.00	PARKMAN
4045.51	8.746	269.028	4010.00	SUSSEX
4577.70	8.746	269.028	4536.00	SHANNON
5399.25	8.746	269.028	5348.00	TEPEE BUTES
5564.07	8.746	269.031	5510.90	KOP (437'FNL&1085'FWL,Sec.09)
6031.88	42.757	349.979	5933.00	INTRA_SHARON_SPGS_MK
6048.42	44.209	350.457	5945.00	SHARON_SPRING_MKR
6085.75	47.492	351.451	5971.00	NIO A CHALK
6127.18	51.145	352.437	5998.00	NIO A MARL
6257.42	62.671	354.996	6069.00	NIO B CHALK
6342.58	70.228	356.386	6103.00	NIO B MARL
6361.52	71.911	356.676	6109.15	Fed Entry 1 (0'FSL & 993'FWL,SEC.04) SWSW
15698.75	90.330	354.005	6103.00	NIO B MARL

DESIGN COMMENTS

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
30.00	0.000	269.028	30.00	SHL NENW,SEC.09
700.00	0.000	269.028	700.00	End of Tangent
1137.28	8.746	269.028	1135.59	Build (XS)
5564.07	8.746	269.028	5510.90	KOP NWNW,SEC.09
6564.96	90.000	359.556	6141.00	LP SWSW,SEC.04
9036.68	90.000	359.556	6141.00	Exit Fed 1 NWSW,SEC.04
9041.78	90.000	359.505	6141.00	End of 3D Arc
9095.67	90.000	359.505	6141.00	IP1
9112.36	90.330	359.552	6140.95	End of 3D Arc
11399.58	90.330	359.552	6127.76	IP2
11547.36	90.330	356.597	6126.91	3D Arc (J)
11899.73	90.330	356.597	6124.88	Enter Fed 2 SESW,SEC.33
12158.89	90.330	354.005	6123.39	End of 3D Arc
15941.83	90.330	354.005	6101.60	Exit Fed 2 NWNW,SEC.33
15948.44	90.330	354.071	6101.56	3D Arc (J)
17088.32	90.330	354.071	6095.00	BHL NWNW,SEC.33

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Well	Scarecrow Federal LG04-775
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Scarecrow Federal LG04-775 PWB
Slot	SLOT#08 Scarecrow Federal LG04-775 (436'FNL & 1792'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 12:41:40 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	-95.16	359.18	3420338.99	1495223.93	40°40'58.5192"N	103°59'3.6996"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#08 Scarecrow Federal LG04-775 (436'FNL & 1792'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 LG04-775
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Scarecrow Federal LG04-775 PWB
Slot	SLOT#08 Scarecrow Federal LG04-775 (436'FNL & 1792'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 LG04-775 PWB Ref Wellpath: Scarecrow Federal LG04-775 (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	1938.85	0.00	0.00	-2.66	-156.86
8.5in Open Hole	1950.00	17088.32	15138.32	1938.85	N/A	-2.66	-156.86	N/A	N/A

SURVEY PROGRAM - Ref Wellbore: Scarecrow Federal LG04-775 PWB Ref Wellpath: Scarecrow Federal LG04-775 (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 LG04-775 PWB
1950.00	17163.19	OWSG MWD rev2 (MS+IFR1)		Scarecrow Federal LG04-775 PWB

REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Well	Scarecrow Federal LG04-775
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Scarecrow Federal LG04-775 PWB
Slot	SLOT#08 Scarecrow Federal LG04-775 (436'FNL & 1792'FWL,SEC.09)		

CALCULATION RANGE & CUTOFF

From: 30.00ft MD	To: 17088.32ft 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	16647.38	28.57	16647.38	16647.49	0.18	16647.49	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 AWB	BULLEIT FEDERAL PC LG04-62HN AWP	Drilling	7046.55	31.07	7046.55	7019.70	0.28	7019.70	FAIL
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	6186.89	43.10	6186.89	6188.50	1.02	6188.50	WARN
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	22.47	11547.36	746.24	2.45	17030.00	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	22.47	17088.32	17088.32	2.83	17088.32	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	11146.25	1018.50	11146.25	11159.46	4.86	11159.46	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	45.21	11530.00	798.18	5.05	17030.00	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	67.68	11530.00	877.09	7.50	17088.32	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	2596.74	133.32	6130.00	2622.39	7.98	6230.00	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	90.14	11530.00	930.00	9.92	17088.32	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	2709.50	181.44	6030.00	2779.70	10.64	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	2709.50	181.44	6030.00	2779.70	10.64	6030.00	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	112.61	12030.00	824.68	12.77	17088.32	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	5673.35	693.43	5673.35	5879.19	14.60	5879.19	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 AWB	DOROTHY STATE LG16-785 AWP	Drilling	2480.89	289.46	6330.00	6315.91	16.42	6315.91	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	135.07	12030.00	760.61	16.82	17088.32	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	3007.02	7030.00	7069.52	18.53	7069.52	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	5690.62	962.44	5690.62	5769.17	21.90	5769.17	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	5845.56	1704.64	5845.56	5938.73	28.76	5938.73	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	5063.55	700.00	6209.49	32.19	6209.49	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	5645.37	1459.67	5645.37	5769.72	35.07	5769.72	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	368.46	2122.68	5830.00	5934.10	41.01	5934.10	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	737.11	2086.46	7230.00	7681.15	42.89	7681.15	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	5579.76	1999.89	5579.76	5774.88	49.85	5774.88	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	709.33	2158.49	6730.00	5943.13	51.43	7430.00	PASS

REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Well	Scarecrow Federal LG04-775
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Scarecrow Federal LG04-775 PWB
Slot	SLOT#08 Scarecrow Federal LG04-775 (436'FNL & 1792'FWL,SEC.09)		

CALCULATION RANGE & CUTOFF

From: 30.00ft MD	To: 17088.32ft 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	1251.72	2115.02	1251.72	5830.00	65.23	5830.00	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	1084.39	2131.31	1084.39	5823.54	80.17	5823.54	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	453.78	3189.82	3230.00	6169.77	85.92	7630.00	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	778.45	2147.56	778.45	5819.17	94.75	5819.17	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	2160.81	530.00	5813.39	109.41	12030.00	PASS