

BISON OIL & GAS

Location: COLORADO Slot: SLOT#03 CASTOR FED 8-59 19-24-4 (1504'FSL & 560'FEL SEC.19)

Field: WELD COUNTY (NAD83/TN) Well: CASTOR FED 8-59 19-24-4

Facility: SEC.19-T08N-R59W Wellbore: CASTOR FED 8-59 19-24-4 PWB

Plot reference wellpath is CASTOR FED 8-59 19-24-4 (REV-A.0) PWP	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
True vertical depths are referenced to H&P 290 (4854'GL+25'RIQ @4879'RKB) (RKB)	North Reference: True north
Reference wellpath measured depths are referenced to H&P 290 (4854'GL+25'RIQ @4879'RKB) (RKB)	Scale: True distance
H&P 290 (4854'GL+25'RIQ @4879'RKB) (RKB) to Mean Sea Level: 4879 feet	Coordinates are in feet referenced to Sikt
Mean Sea Level to Mud line (At Slot: SLOT#03 CASTOR FED 8-59 19-24-4 (1504FSL & 560FEL SEC.19): 0 feet	Depths are in feet
Offset wellpath MDs are referenced to each path's default MD datum	Created by: hanisab at 2019-11-12; Database: WA_DENVER

Location Information

Facility Name				Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SEC.19-T08N-R59W				3412761.859	1481203.932	40°38'41.2700"N	104°00'45.0960"W
Stor	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	
SLOT903 CASTOR FED 8-59 19-24-4 (1504FSL & 560FEL SEC.19)	-55.46	-1.11	3412761.680	1481148.464	40°38'40.7220"N	104°00'45.1044"W	
HAP 230 (4854GL+25R(KB)+4879(RKB)) Mean Line (At Slot: SLOT903 CASTOR FED 8-59 19-24-4 (1504FSL & 560FEL SEC.19))							4879ft
Mean Sea Level to Mud line (At Slot: SLOT903 CASTOR FED 8-59 19-24-4 (1504FSL & 560FEL SEC.19))							0ft
HAP 230 (4854GL+25R(KB)+4879(RKB)) Mean Sea Level							4879ft

Survey Program

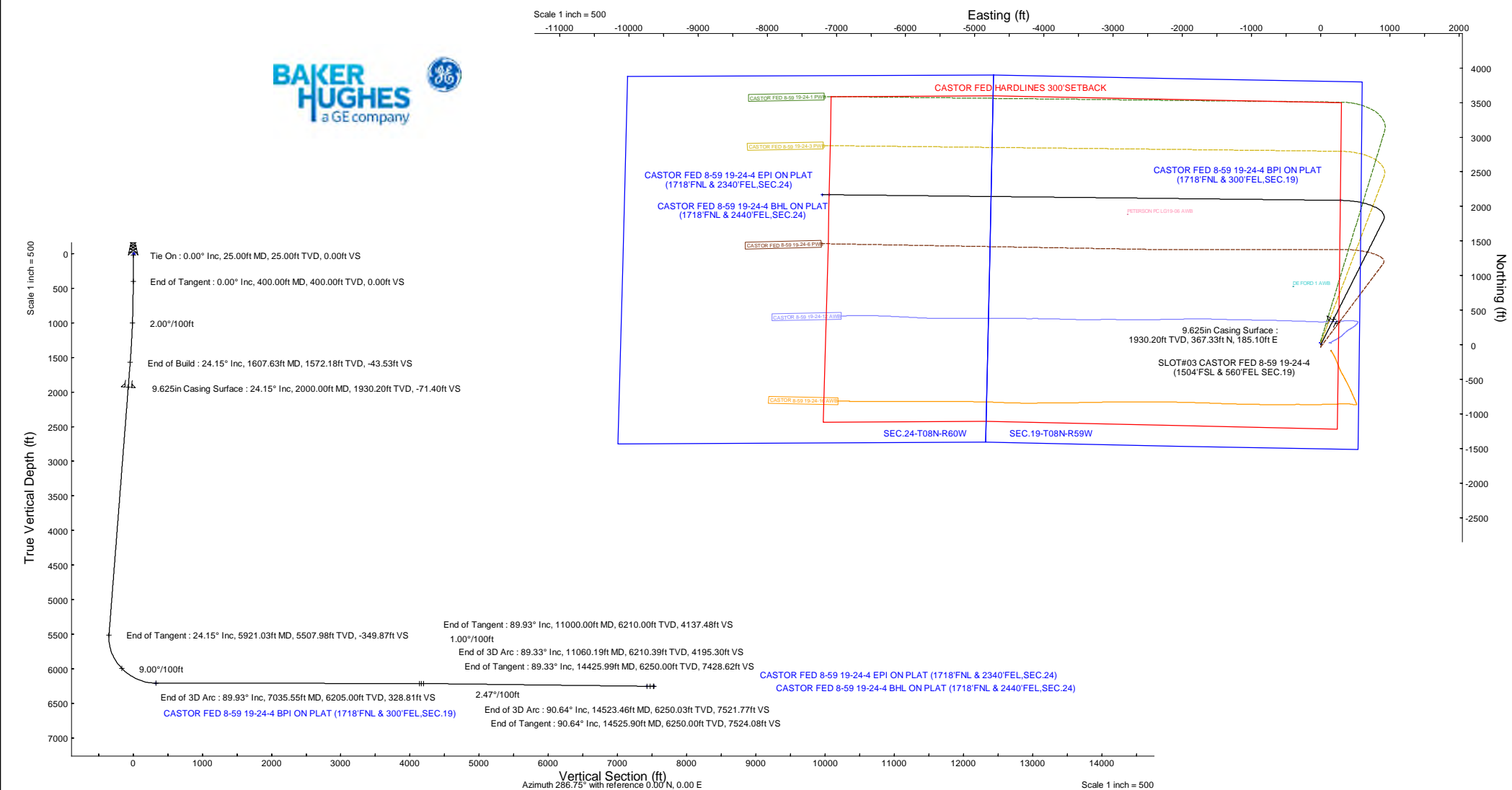
Start MD (ft)	End MD (ft)	Tool	Model	Log Name/Comment	Wellbore
25.00	2000.00	OWSG MWD rev2	OWSG MWD rev2 + IFR1		CASTOR FED 8-59 19-24-4 PWB
2000.00	14525.90	OWSG MWD rev2	OWSG MWD rev2 + IFR1 + Sag Correction		CASTOR FED 8-59 19-24-4 PWB

Bottom Hole Location

MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
14525.90	90.642	268.614	6250.00	2168.08	-7204.94	3405521.54	1483195.34	40°39'2.1348"N	104°02'18.5784"W

Well Profile Data

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	25.00	0.000	26.743	25.00	0.00	0.00	0.00	0.00
End of Tangent	400.00	0.000	26.743	400.00	0.00	0.00	0.00	0.00
End of Build	1607.63	24.153	26.743	1572.18	223.96	112.85	2.00	-43.53
End of Tangent	5921.03	24.153	26.743	5507.98	1800.08	907.04	0.00	-349.87
End of 3D Arc	7035.55	89.928	270.632	6205.00	2087.24	284.70	9.00	328.81
End of Tangent	11000.00	89.928	270.632	6210.00	2130.96	-3679.50	0.00	4137.48
End of 3D Arc	11060.19	89.326	270.632	6210.39	2131.63	-3739.69	1.00	4195.30
End of Tangent	14425.99	89.326	270.632	6250.00	2168.78	-7105.05	0.00	7428.62
End of 3D Arc	14523.46	90.642	268.614	6250.03	2168.14	-7202.51	2.47	7521.77
End of Tangent	14525.90	90.642	268.614	6250.00	2168.08	-7204.94	0.00	7524.00





Planned Wellpath Report

CASTOR FED 8-59 19-24-4 (REV-A.0) PWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	BISON OIL & GAS	Well	CASTOR FED 8-59 19-24-4
Field	WELD COUNTY (NAD83/TN)	API/Legal	
Facility	SEC.19-T08N-R59W	Wellbore	CASTOR FED 8-59 19-24-4 PWB
Slot	SLOT#03 CASTOR FED 8-59 19-24-4 (1504'FSL & 560'FEL SEC.19)		

REPORT SETUP INFORMATION			
Projection System	NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	Software System	WellArchitect® 6.0
North Reference	True	User	Hanisab
Scale	0.999980	Report Generated	11/12/2019 at 1:36:56 PM
Convergence at slot	0.96° 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	-55.46	-1.11	3412761.68	1481148.46	40°38'40.7220"N	104°00'45.1044"W
Facility Reference Pt			3412761.86	1481203.93	40°38'41.2700"N	104°00'45.0900"W
Field Reference Pt			3376841.67	1496090.80	40°41'14.0500"N	104°08'28.0600"W

WELLPATH DATUM			
Calculation method	Minimum curvature	H&P 290 (4854'GL+25'RIG@4879'RKB) (RKB) to Facility Vertical Datum	4879.00ft
Horizontal Reference Pt	Slot	H&P 290 (4854'GL+25'RIG@4879'RKB) (RKB) to Mean Sea Level	4879.00ft
Vertical Reference Pt	H&P 290 (4854'GL+25'RIG@4879'RKB) (RKB)	H&P 290 (4854'GL+25'RIG@4879'RKB) (RKB) to Mud Line at Slot (SLOT#03 CASTOR FED 8-59 19-24-4 (1504'FSL & 560'FEL SEC.19))	4879.00ft
MD Reference Pt	H&P 290 (4854'GL+25'RIG@4879'RKB) (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	286.75°



Planned Wellpath Report

CASTOR FED 8-59 19-24-4 (REV-A.0) PWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	BISON OIL & GAS	Well	CASTOR FED 8-59 19-24-4
Field	WELD COUNTY (NAD83/TN)	API/Legal	
Facility	SEC.19-T08N-R59W	Wellbore	CASTOR FED 8-59 19-24-4 PWB
Slot	SLOT#03 CASTOR FED 8-59 19-24-4 (1504'FSL & 560'FEL SEC.19)		

WELLPATH DATA (164 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	26.743	0.00	0.00	0.00	0.00	40°38'40.7220"N	104°00'45.1044"W	0.00	
25.00	0.000	26.743	25.00	0.00	0.00	0.00	40°38'40.7220"N	104°00'45.1044"W	0.00	Tie On
125.00†	0.000	26.743	125.00	0.00	0.00	0.00	40°38'40.7220"N	104°00'45.1044"W	0.00	
225.00†	0.000	26.743	225.00	0.00	0.00	0.00	40°38'40.7220"N	104°00'45.1044"W	0.00	
325.00†	0.000	26.743	325.00	0.00	0.00	0.00	40°38'40.7220"N	104°00'45.1044"W	0.00	
400.00	0.000	26.743	400.00	0.00	0.00	0.00	40°38'40.7220"N	104°00'45.1044"W	0.00	End of Tangent
425.00†	0.500	26.743	425.00	-0.02	0.10	0.05	40°38'40.7230"N	104°00'45.1038"W	2.00	
525.00†	2.500	26.743	524.96	-0.47	2.43	1.23	40°38'40.7461"N	104°00'45.0885"W	2.00	
625.00†	4.500	26.743	624.77	-1.53	7.89	3.97	40°38'40.7999"N	104°00'45.0528"W	2.00	
725.00†	6.500	26.743	724.30	-3.20	16.45	8.29	40°38'40.8845"N	104°00'44.9969"W	2.00	
825.00†	8.500	26.743	823.44	-5.46	28.10	14.16	40°38'40.9997"N	104°00'44.9207"W	2.00	
925.00†	10.500	26.743	922.07	-8.33	42.84	21.59	40°38'41.1453"N	104°00'44.8244"W	2.00	
1025.00†	12.500	26.743	1020.05	-11.79	60.64	30.56	40°38'41.3212"N	104°00'44.7080"W	2.00	
1125.00†	14.500	26.743	1117.29	-15.84	81.49	41.06	40°38'41.5272"N	104°00'44.5717"W	2.00	
1225.00†	16.500	26.743	1213.64	-20.48	105.35	53.09	40°38'41.7630"N	104°00'44.4157"W	2.00	
1325.00†	18.500	26.743	1309.01	-25.70	132.21	66.62	40°38'42.0284"N	104°00'44.2402"W	2.00	
1425.00†	20.500	26.743	1403.27	-31.49	162.01	81.64	40°38'42.3229"N	104°00'44.0454"W	2.00	
1525.00†	22.500	26.743	1496.31	-37.85	194.74	98.13	40°38'42.6463"N	104°00'43.8314"W	2.00	
1607.63	24.153	26.743	1572.18	-43.53	223.96	112.85	40°38'42.9350"N	104°00'43.6404"W	2.00	End of Build
1625.00†	24.153	26.743	1588.03	-44.76	230.31	116.05	40°38'42.9977"N	104°00'43.5989"W	0.00	
1725.00†	24.153	26.743	1679.28	-51.87	266.85	134.46	40°38'43.3588"N	104°00'43.3601"W	0.00	
1825.00†	24.153	26.743	1770.52	-58.97	303.39	152.87	40°38'43.7198"N	104°00'43.1212"W	0.00	
1925.00†	24.153	26.743	1861.77	-66.07	339.93	171.29	40°38'44.0809"N	104°00'42.8824"W	0.00	
2025.00†	24.153	26.743	1953.01	-73.17	376.47	189.70	40°38'44.4420"N	104°00'42.6435"W	0.00	
2125.00†	24.153	26.743	2044.26	-80.27	413.01	208.11	40°38'44.8030"N	104°00'42.4047"W	0.00	
2225.00†	24.153	26.743	2135.51	-87.38	449.55	226.52	40°38'45.1641"N	104°00'42.1658"W	0.00	
2325.00†	24.153	26.743	2226.75	-94.48	486.09	244.93	40°38'45.5251"N	104°00'41.9269"W	0.00	
2425.00†	24.153	26.743	2318.00	-101.58	522.63	263.35	40°38'45.8862"N	104°00'41.6881"W	0.00	
2525.00†	24.153	26.743	2409.24	-108.68	559.17	281.76	40°38'46.2473"N	104°00'41.4492"W	0.00	
2625.00†	24.153	26.743	2500.49	-115.78	595.71	300.17	40°38'46.6083"N	104°00'41.2104"W	0.00	
2725.00†	24.153	26.743	2591.74	-122.89	632.25	318.58	40°38'46.9694"N	104°00'40.9715"W	0.00	
2825.00†	24.153	26.743	2682.98	-129.99	668.79	337.00	40°38'47.3304"N	104°00'40.7326"W	0.00	
2925.00†	24.153	26.743	2774.23	-137.09	705.33	355.41	40°38'47.6915"N	104°00'40.4938"W	0.00	
3025.00†	24.153	26.743	2865.47	-144.19	741.87	373.82	40°38'48.0525"N	104°00'40.2549"W	0.00	
3125.00†	24.153	26.743	2956.72	-151.30	778.41	392.23	40°38'48.4136"N	104°00'40.0160"W	0.00	

WELLPATH DATA (164 stations) † = interpolated, ‡ = extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
3225.00†	24.153	26.743	3047.96	-158.40	814.95	410.64	40°38'48.7747"N	104°00'39.7772"W	0.00	
3291.89†	24.153	26.743	3109.00	-163.15	839.39	422.96	40°38'49.0162"N	104°00'39.6174"W	0.00	Parkman
3325.00†	24.153	26.743	3139.21	-165.50	851.49	429.06	40°38'49.1357"N	104°00'39.5383"W	0.00	
3425.00†	24.153	26.743	3230.46	-172.60	888.03	447.47	40°38'49.4968"N	104°00'39.2994"W	0.00	
3525.00†	24.153	26.743	3321.70	-179.70	924.57	465.88	40°38'49.8578"N	104°00'39.0606"W	0.00	
3625.00†	24.153	26.743	3412.95	-186.81	961.11	484.29	40°38'50.2189"N	104°00'38.8217"W	0.00	
3725.00†	24.153	26.743	3504.19	-193.91	997.65	502.70	40°38'50.5799"N	104°00'38.5828"W	0.00	
3825.00†	24.153	26.743	3595.44	-201.01	1034.19	521.12	40°38'50.9410"N	104°00'38.3440"W	0.00	
3925.00†	24.153	26.743	3686.69	-208.11	1070.73	539.53	40°38'51.3021"N	104°00'38.1051"W	0.00	
4025.00†	24.153	26.743	3777.93	-215.21	1107.27	557.94	40°38'51.6631"N	104°00'37.8662"W	0.00	
4080.97†	24.153	26.743	3829.00	-219.19	1127.72	568.25	40°38'51.8652"N	104°00'37.7325"W	0.00	Sussex
4125.00†	24.153	26.743	3869.18	-222.32	1143.81	576.35	40°38'52.0242"N	104°00'37.6273"W	0.00	
4225.00†	24.153	26.743	3960.42	-229.42	1180.35	594.77	40°38'52.3852"N	104°00'37.3885"W	0.00	
4325.00†	24.153	26.743	4051.67	-236.52	1216.89	613.18	40°38'52.7463"N	104°00'37.1496"W	0.00	
4425.00†	24.153	26.743	4142.92	-243.62	1253.43	631.59	40°38'53.1073"N	104°00'36.9107"W	0.00	
4525.00†	24.153	26.743	4234.16	-250.72	1289.97	650.00	40°38'53.4684"N	104°00'36.6718"W	0.00	
4625.00†	24.153	26.743	4325.41	-257.83	1326.51	668.41	40°38'53.8294"N	104°00'36.4330"W	0.00	
4725.00†	24.153	26.743	4416.65	-264.93	1363.05	686.83	40°38'54.1905"N	104°00'36.1941"W	0.00	
4825.00†	24.153	26.743	4507.90	-272.03	1399.59	705.24	40°38'54.5516"N	104°00'35.9552"W	0.00	
4891.96†	24.153	26.743	4569.00	-276.79	1424.06	717.57	40°38'54.7933"N	104°00'35.7953"W	0.00	Shannon
4925.00†	24.153	26.743	4599.15	-279.13	1436.13	723.65	40°38'54.9126"N	104°00'35.7163"W	0.00	
5025.00†	24.153	26.743	4690.39	-286.23	1472.67	742.06	40°38'55.2737"N	104°00'35.4775"W	0.00	
5125.00†	24.153	26.743	4781.64	-293.34	1509.21	760.47	40°38'55.6347"N	104°00'35.2386"W	0.00	
5225.00†	24.153	26.743	4872.88	-300.44	1545.75	778.89	40°38'55.9958"N	104°00'34.9997"W	0.00	
5325.00†	24.153	26.743	4964.13	-307.54	1582.29	797.30	40°38'56.3568"N	104°00'34.7608"W	0.00	
5425.00†	24.153	26.743	5055.37	-314.64	1618.83	815.71	40°38'56.7179"N	104°00'34.5219"W	0.00	
5525.00†	24.153	26.743	5146.62	-321.75	1655.37	834.12	40°38'57.0789"N	104°00'34.2831"W	0.00	
5625.00†	24.153	26.743	5237.87	-328.85	1691.91	852.54	40°38'57.4400"N	104°00'34.0442"W	0.00	
5725.00†	24.153	26.743	5329.11	-335.95	1728.45	870.95	40°38'57.8010"N	104°00'33.8053"W	0.00	
5825.00†	24.153	26.743	5420.36	-343.05	1764.99	889.36	40°38'58.1621"N	104°00'33.5664"W	0.00	
5921.03	24.153	26.743	5507.98	-349.87	1800.08	907.04	40°38'58.5088"N	104°00'33.3370"W	0.00	End of Tangent
5925.00†	24.008	25.941	5511.61	-350.14	1801.53	907.76	40°38'58.5232"N	104°00'33.3277"W	9.00	
6025.00†	21.951	3.353	5603.85	-349.06	1838.56	917.77	40°38'58.8890"N	104°00'33.1978"W	9.00	
6125.00†	23.265	340.045	5696.35	-332.89	1875.86	912.11	40°38'59.2576"N	104°00'33.2712"W	9.00	
6225.00†	27.470	321.344	5786.83	-302.04	1912.51	890.92	40°38'59.6197"N	104°00'33.5460"W	9.00	
6325.00†	33.492	308.076	5873.07	-257.26	1947.61	854.72	40°38'59.9666"N	104°00'34.0157"W	9.00	
6365.13†	36.224	303.939	5906.00	-235.61	1961.06	836.16	40°39'0.0995"N	104°00'34.2565"W	9.00	Sharon Springs
6425.00†	40.523	298.699	5952.94	-199.66	1980.29	804.40	40°39'0.2895"N	104°00'34.6685"W	9.00	
6466.86†	43.650	295.563	5984.00	-172.07	1993.06	779.44	40°39'0.4157"N	104°00'34.9924"W	9.00	Sharon Springs Hot GR Marker
6500.77†	46.240	293.278	6008.00	-148.34	2002.95	757.62	40°39'0.5135"N	104°00'35.2754"W	9.00	Nio A Top
6525.00†	48.117	291.763	6024.47	-130.65	2009.76	741.21	40°39'0.5807"N	104°00'35.4884"W	9.00	
6625.00†	56.039	286.335	6085.91	-51.94	2035.27	666.68	40°39'0.8329"N	104°00'36.4552"W	9.00	
6658.57†	58.747	284.744	6104.00	-23.67	2042.84	639.44	40°39'0.9077"N	104°00'36.8086"W	9.00	Nio B Top
6725.00†	64.157	281.846	6135.74	34.55	2056.22	582.67	40°39'1.0399"N	104°00'37.5451"W	9.00	
6825.00†	72.396	277.941	6172.73	126.67	2072.07	491.24	40°39'1.1965"N	104°00'38.7313"W	9.00	
6850.52†	74.511	277.008	6180.00	150.81	2075.25	466.99	40°39'1.2280"N	104°00'39.0459"W	9.00	Nio C Top
6925.00†	80.705	274.381	6195.98	222.16	2082.45	394.64	40°39'1.2991"N	104°00'39.9845"W	9.00	
7025.00†	89.047	270.987	6204.91	318.67	2087.09	295.25	40°39'1.3449"N	104°00'41.2739"W	9.00	
7035.55	89.928	270.632	6205.00†	328.81	2087.24	284.70	40°39'1.3464"N	104°00'41.4108"W	9.00	End of 3D Arc
7125.00†	89.928	270.632	6205.11	414.75	2088.22	195.26	40°39'1.3562"N	104°00'42.5712"W	0.00	

WELLPATH DATA (164 stations) † = interpolated, ‡ = extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
7225.00†	89.928	270.632	6205.24	510.82	2089.33	95.27	40°39'1.3671"N	104°00'43.8685"W	0.00	
7325.00†	89.928	270.632	6205.37	606.89	2090.43	-4.73	40°39'1.3780"N	104°00'45.1657"W	0.00	
7425.00†	89.928	270.632	6205.49	702.96	2091.53	-104.72	40°39'1.3889"N	104°00'46.4630"W	0.00	
7525.00†	89.928	270.632	6205.62	799.03	2092.63	-204.72	40°39'1.3998"N	104°00'47.7603"W	0.00	
7625.00†	89.928	270.632	6205.74	895.10	2093.74	-304.71	40°39'1.4106"N	104°00'49.0576"W	0.00	
7725.00†	89.928	270.632	6205.87	991.17	2094.84	-404.70	40°39'1.4215"N	104°00'50.3548"W	0.00	
7825.00†	89.928	270.632	6206.00	1087.24	2095.94	-504.70	40°39'1.4324"N	104°00'51.6521"W	0.00	
7925.00†	89.928	270.632	6206.12	1183.31	2097.05	-604.69	40°39'1.4433"N	104°00'52.9494"W	0.00	
8025.00†	89.928	270.632	6206.25	1279.38	2098.15	-704.69	40°39'1.4542"N	104°00'54.2467"W	0.00	
8125.00†	89.928	270.632	6206.37	1375.45	2099.25	-804.68	40°39'1.4650"N	104°00'55.5439"W	0.00	
8225.00†	89.928	270.632	6206.50	1471.52	2100.36	-904.67	40°39'1.4759"N	104°00'56.8412"W	0.00	
8325.00†	89.928	270.632	6206.63	1567.59	2101.46	-1004.67	40°39'1.4868"N	104°00'58.1385"W	0.00	
8425.00†	89.928	270.632	6206.75	1663.66	2102.56	-1104.66	40°39'1.4976"N	104°00'59.4358"W	0.00	
8525.00†	89.928	270.632	6206.88	1759.73	2103.67	-1204.65	40°39'1.5085"N	104°01'0.7331"W	0.00	
8625.00†	89.928	270.632	6207.01	1855.80	2104.77	-1304.65	40°39'1.5193"N	104°01'2.0303"W	0.00	
8725.00†	89.928	270.632	6207.13	1951.87	2105.87	-1404.64	40°39'1.5302"N	104°01'3.3276"W	0.00	
8825.00†	89.928	270.632	6207.26	2047.94	2106.97	-1504.64	40°39'1.5410"N	104°01'4.6249"W	0.00	
8925.00†	89.928	270.632	6207.38	2144.02	2108.08	-1604.63	40°39'1.5518"N	104°01'5.9222"W	0.00	
9025.00†	89.928	270.632	6207.51	2240.09	2109.18	-1704.62	40°39'1.5627"N	104°01'7.2194"W	0.00	
9125.00†	89.928	270.632	6207.64	2336.16	2110.28	-1804.62	40°39'1.5735"N	104°01'8.5167"W	0.00	
9225.00†	89.928	270.632	6207.76	2432.23	2111.39	-1904.61	40°39'1.5843"N	104°01'9.8140"W	0.00	
9325.00†	89.928	270.632	6207.89	2528.30	2112.49	-2004.61	40°39'1.5951"N	104°01'11.1113"W	0.00	
9425.00†	89.928	270.632	6208.02	2624.37	2113.59	-2104.60	40°39'1.6060"N	104°01'12.4085"W	0.00	
9525.00†	89.928	270.632	6208.14	2720.44	2114.70	-2204.59	40°39'1.6168"N	104°01'13.7058"W	0.00	
9625.00†	89.928	270.632	6208.27	2816.51	2115.80	-2304.59	40°39'1.6276"N	104°01'15.0031"W	0.00	
9725.00†	89.928	270.632	6208.39	2912.58	2116.90	-2404.58	40°39'1.6384"N	104°01'16.3004"W	0.00	
9825.00†	89.928	270.632	6208.52	3008.65	2118.00	-2504.57	40°39'1.6492"N	104°01'17.5977"W	0.00	
9925.00†	89.928	270.632	6208.65	3104.72	2119.11	-2604.57	40°39'1.6600"N	104°01'18.8949"W	0.00	
10025.00†	89.928	270.632	6208.77	3200.79	2120.21	-2704.56	40°39'1.6708"N	104°01'20.1922"W	0.00	
10125.00†	89.928	270.632	6208.90	3296.86	2121.31	-2804.56	40°39'1.6816"N	104°01'21.4895"W	0.00	
10225.00†	89.928	270.632	6209.02	3392.93	2122.42	-2904.55	40°39'1.6923"N	104°01'22.7868"W	0.00	
10325.00†	89.928	270.632	6209.15	3489.00	2123.52	-3004.54	40°39'1.7031"N	104°01'24.0840"W	0.00	
10425.00†	89.928	270.632	6209.28	3585.07	2124.62	-3104.54	40°39'1.7139"N	104°01'25.3813"W	0.00	
10525.00†	89.928	270.632	6209.40	3681.14	2125.73	-3204.53	40°39'1.7247"N	104°01'26.6786"W	0.00	
10625.00†	89.928	270.632	6209.53	3777.21	2126.83	-3304.52	40°39'1.7354"N	104°01'27.9759"W	0.00	
10725.00†	89.928	270.632	6209.66	3873.28	2127.93	-3404.52	40°39'1.7462"N	104°01'29.2732"W	0.00	
10825.00†	89.928	270.632	6209.78	3969.35	2129.03	-3504.51	40°39'1.7570"N	104°01'30.5704"W	0.00	
10925.00†	89.928	270.632	6209.91	4065.42	2130.14	-3604.51	40°39'1.7677"N	104°01'31.8677"W	0.00	
11000.00	89.928	270.632	6210.00	4137.48	2130.96	-3679.50	40°39'1.7758"N	104°01'32.8407"W	0.00	End of Tangent
11025.00†	89.678	270.632	6210.09	4161.49	2131.24	-3704.50	40°39'1.7785"N	104°01'33.1650"W	1.00	
11060.19	89.326	270.632	6210.39	4195.30	2131.63	-3739.69	40°39'1.7823"N	104°01'33.6215"W	1.00	End of 3D Arc
11125.00†	89.326	270.632	6211.16	4257.56	2132.34	-3804.49	40°39'1.7892"N	104°01'34.4622"W	0.00	
11225.00†	89.326	270.632	6212.33	4353.62	2133.45	-3904.48	40°39'1.8000"N	104°01'35.7594"W	0.00	
11325.00†	89.326	270.632	6213.51	4449.69	2134.55	-4004.46	40°39'1.8107"N	104°01'37.0566"W	0.00	
11425.00†	89.326	270.632	6214.69	4545.75	2135.66	-4104.45	40°39'1.8215"N	104°01'38.3538"W	0.00	
11525.00†	89.326	270.632	6215.86	4641.81	2136.76	-4204.44	40°39'1.8322"N	104°01'39.6510"W	0.00	
11625.00†	89.326	270.632	6217.04	4737.88	2137.86	-4304.42	40°39'1.8429"N	104°01'40.9482"W	0.00	
11725.00†	89.326	270.632	6218.22	4833.94	2138.97	-4404.41	40°39'1.8537"N	104°01'42.2453"W	0.00	
11825.00†	89.326	270.632	6219.39	4930.01	2140.07	-4504.40	40°39'1.8644"N	104°01'43.5425"W	0.00	
11925.00†	89.326	270.632	6220.57	5026.07	2141.17	-4604.38	40°39'1.8751"N	104°01'44.8397"W	0.00	

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
12025.00†	89.326	270.632	6221.75	5122.14	2142.28	-4704.37	40°39'1.8858"N	104°01'46.1369"W	0.00	
12125.00†	89.326	270.632	6222.92	5218.20	2143.38	-4804.36	40°39'1.8966"N	104°01'47.4341"W	0.00	
12225.00†	89.326	270.632	6224.10	5314.26	2144.48	-4904.35	40°39'1.9073"N	104°01'48.7313"W	0.00	
12325.00†	89.326	270.632	6225.28	5410.33	2145.59	-5004.33	40°39'1.9180"N	104°01'50.0285"W	0.00	
12425.00†	89.326	270.632	6226.45	5506.39	2146.69	-5104.32	40°39'1.9287"N	104°01'51.3257"W	0.00	
12525.00†	89.326	270.632	6227.63	5602.46	2147.80	-5204.31	40°39'1.9394"N	104°01'52.6229"W	0.00	
12625.00†	89.326	270.632	6228.81	5698.52	2148.90	-5304.29	40°39'1.9501"N	104°01'53.9201"W	0.00	
12725.00†	89.326	270.632	6229.98	5794.58	2150.00	-5404.28	40°39'1.9608"N	104°01'55.2173"W	0.00	
12825.00†	89.326	270.632	6231.16	5890.65	2151.11	-5504.27	40°39'1.9715"N	104°01'56.5145"W	0.00	
12925.00†	89.326	270.632	6232.34	5986.71	2152.21	-5604.25	40°39'1.9821"N	104°01'57.8116"W	0.00	
13025.00†	89.326	270.632	6233.51	6082.78	2153.31	-5704.24	40°39'1.9928"N	104°01'59.1088"W	0.00	
13125.00†	89.326	270.632	6234.69	6178.84	2154.42	-5804.23	40°39'2.0035"N	104°02'0.4060"W	0.00	
13225.00†	89.326	270.632	6235.87	6274.90	2155.52	-5904.21	40°39'2.0142"N	104°02'1.7032"W	0.00	
13325.00†	89.326	270.632	6237.04	6370.97	2156.63	-6004.20	40°39'2.0248"N	104°02'3.0004"W	0.00	
13425.00†	89.326	270.632	6238.22	6467.03	2157.73	-6104.19	40°39'2.0355"N	104°02'4.2976"W	0.00	
13525.00†	89.326	270.632	6239.40	6563.10	2158.83	-6204.18	40°39'2.0461"N	104°02'5.5948"W	0.00	
13625.00†	89.326	270.632	6240.57	6659.16	2159.94	-6304.16	40°39'2.0568"N	104°02'6.8920"W	0.00	
13725.00†	89.326	270.632	6241.75	6755.22	2161.04	-6404.15	40°39'2.0675"N	104°02'8.1892"W	0.00	
13825.00†	89.326	270.632	6242.93	6851.29	2162.14	-6504.14	40°39'2.0781"N	104°02'9.4864"W	0.00	
13925.00†	89.326	270.632	6244.10	6947.35	2163.25	-6604.12	40°39'2.0887"N	104°02'10.7836"W	0.00	
14025.00†	89.326	270.632	6245.28	7043.42	2164.35	-6704.11	40°39'2.0994"N	104°02'12.0808"W	0.00	
14125.00†	89.326	270.632	6246.46	7139.48	2165.45	-6804.10	40°39'2.1100"N	104°02'13.3780"W	0.00	
14225.00†	89.326	270.632	6247.63	7235.54	2166.56	-6904.08	40°39'2.1206"N	104°02'14.6752"W	0.00	
14325.00†	89.326	270.632	6248.81	7331.61	2167.66	-7004.07	40°39'2.1313"N	104°02'15.9724"W	0.00	
14425.00†	89.326	270.632	6249.99	7427.67	2168.77	-7104.06	40°39'2.1419"N	104°02'17.2695"W	0.00	
14425.99	89.326	270.632	6250.00 ²	7428.62	2168.78	-7105.05	40°39'2.1420"N	104°02'17.2824"W	0.00	End of Tangent
14523.46	90.642	268.614	6250.03	7521.77	2168.14	-7202.51	40°39'2.1354"N	104°02'18.5468"W	2.47	End of 3D Arc
14525.00†	90.642	268.614	6250.01	7523.23	2168.10	-7204.05	40°39'2.1350"N	104°02'18.5668"W	0.00	
14525.90										

String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
13.5in Open Hole	25.00	2000.00	1975.00	25.00	1930.20	0.00	0.00	367.33	185.10
9.625in Casing Surface	25.00	2000.00	1975.00	25.00	1930.20	0.00	0.00	367.33	185.10
8.5in Open Hole	2000.00	14525.90	12525.90	1930.20	N/A	367.33	185.10	N/A	N/A

[illegible]

TARGETS									
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
1) CASTOR FED 8-59 19-24-4 BPI ON PLAT (1718'FNL & 300'FEL,SEC.19)	7035.55	6205.00	2087.24	284.70	3413011.33	1483240.14	40°39'1.3464"N	104°00'41.4108"W	point
3) CASTOR FED 8-59 19-24-4 BHL ON PLAT (1718'FNL & 2440'FEL,SEC.24)	14525.90	6250.00	2168.08	-7204.94	3405521.54	1483195.34	40°39'2.1348"N	104°02'18.5784"W	point
2) CASTOR FED 8-59 19-24-4 EPI ON PLAT (1718'FNL & 2340'FEL,SEC.24)	14425.99	6250.00	2168.78	-7105.05	3405621.41	1483197.71	40°39'2.1420"N	104°02'17.2824"W	point

SURVEY PROGRAM - Ref Wellbore: CASTOR FED 8-59 19-24-4 PWB					Ref Wellpath: CASTOR FED 8-59 19-24-4 (REV-A.0) PWP				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model				Log Name/Comment		Wellbore	
25.00	2000.00	OWSG MWD rev2 + IFR1						CASTOR FED 8-59 19-24-4 PWB	
2000.00	14525.90	OWSG MWD rev2 + IFR1 + Sag Correction						CASTOR FED 8-59 19-24-4 PWB	



Planned Wellpath Report

CASTOR FED 8-59 19-24-4 (REV-A.0) PWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	BISON OIL & GAS	Well	CASTOR FED 8-59 19-24-4
Field	WELD COUNTY (NAD83/TN)	API/Legal	
Facility	SEC.19-T08N-R59W	Wellbore	CASTOR FED 8-59 19-24-4 PWB
Slot	SLOT#03 CASTOR FED 8-59 19-24-4 (1504'FSL & 560'FEL SEC.19)		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
3291.89	24.153	26.743	3109.00	Parkman
4080.97	24.153	26.743	3829.00	Sussex
4891.96	24.153	26.743	4569.00	Shannon
6365.13	36.224	303.939	5906.00	Sharon Springs
6466.86	43.650	295.563	5984.00	Sharon Springs Hot GR Marker
6500.77	46.240	293.278	6008.00	Nio A Top
6658.57	58.747	284.744	6104.00	Nio B Top
6850.52	74.511	277.008	6180.00	Nio C Top

DESIGN COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
25.00	0.000	26.743	25.00	Tie On
400.00	0.000	26.743	400.00	End of Tangent
1607.63	24.153	26.743	1572.18	End of Build
5921.03	24.153	26.743	5507.98	End of Tangent
7035.55	89.928	270.632	6205.00	End of 3D Arc
11000.00	89.928	270.632	6210.00	End of Tangent
11060.19	89.326	270.632	6210.39	End of 3D Arc
14425.99	89.326	270.632	6250.00	End of Tangent
14523.46	90.642	268.614	6250.03	End of 3D Arc
14525.90	90.642	268.614	6250.00	End of Tangent