

Bison Oil & Gas II, LLC

WELD COUNTY, COLORADO (NAD 83)

ROSS 8-60 18 SESW & SWSE SEC 18 T8N R60W 6th P.M.

ROSS 8-60 18-7-7

Wellbore #1

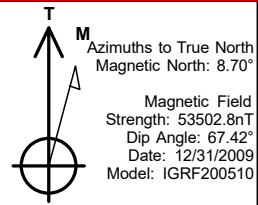
Plan: Design #1

Standard Survey Report

03 September, 2020



Project: WELD COUNTY, COLORADO (NAD 83)
Site: ROSS 8-60 18 SESW & SWSE SEC 18 T8N R60W 6th P.M.
Well: ROSS 8-60 18-7-7
Wellbore: Wellbore #1
Design: Design #1



ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSec	Departure	Annotation
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.0	Start Build 1.50
1085.9	4.29	138.41	1085.6	-8.0	7.1	-7.7	10.7	Start 4500.4 hold at 1085.9 MD
5586.3	4.29	138.41	5573.4	-259.7	230.4	-251.1	347.2	Start Drop -1.50
5872.1	0.00	0.00	5859.0	-267.7	237.5	-258.8	357.9	Start Build 10.00
6772.1	90.00	0.87	6432.0	305.2	246.3	314.0	930.8	Start DLS 0.02 TFO 180.00
6923.1	89.97	0.87	6432.0	456.1	248.6	464.9	1081.8	Start DLS 0.01 TFO -83.92
15493.2	90.03	0.27	6432.0	9025.8	334.5	9031.9	9651.9	Start 149.7 hold at 15493.2 MD
15642.9	90.03	0.27	6431.9	9175.5	335.2	9181.6	9801.6	TD at 15642.9

PROPOSED LOCAL COORDINATES:

SHL: 545 ft FSL & 2663 ft FEL Sec 18

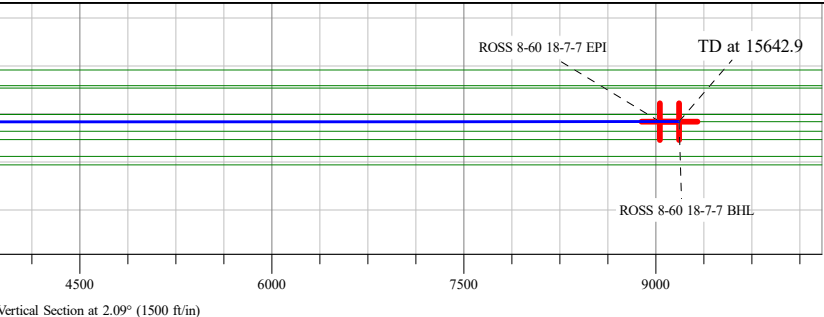
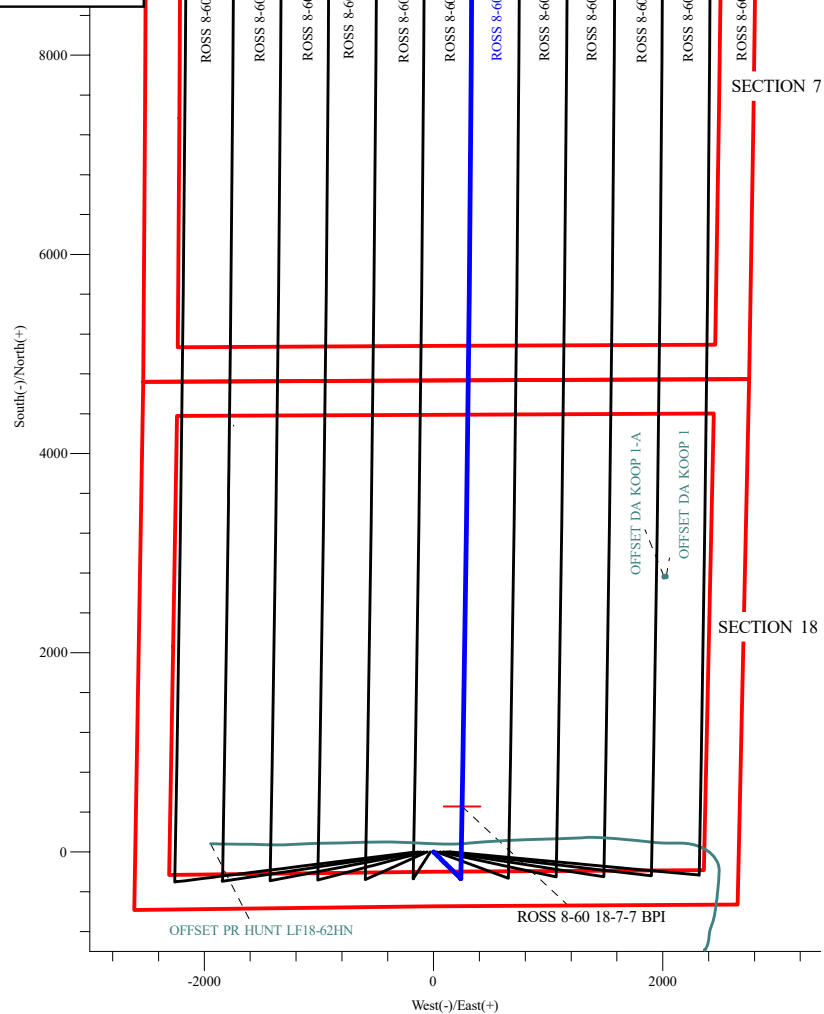
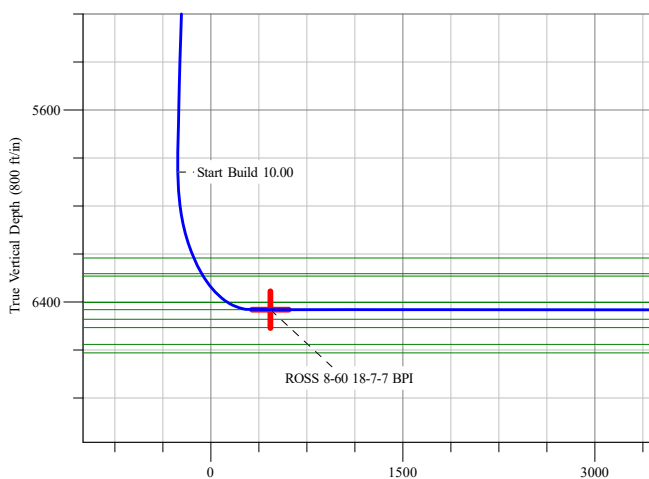
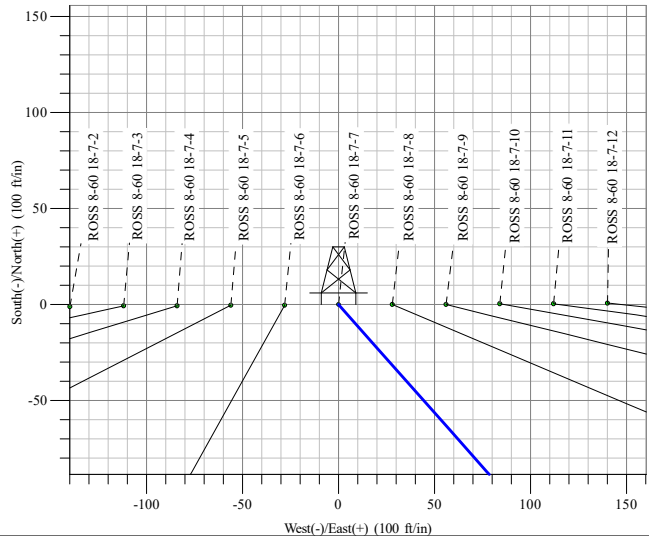
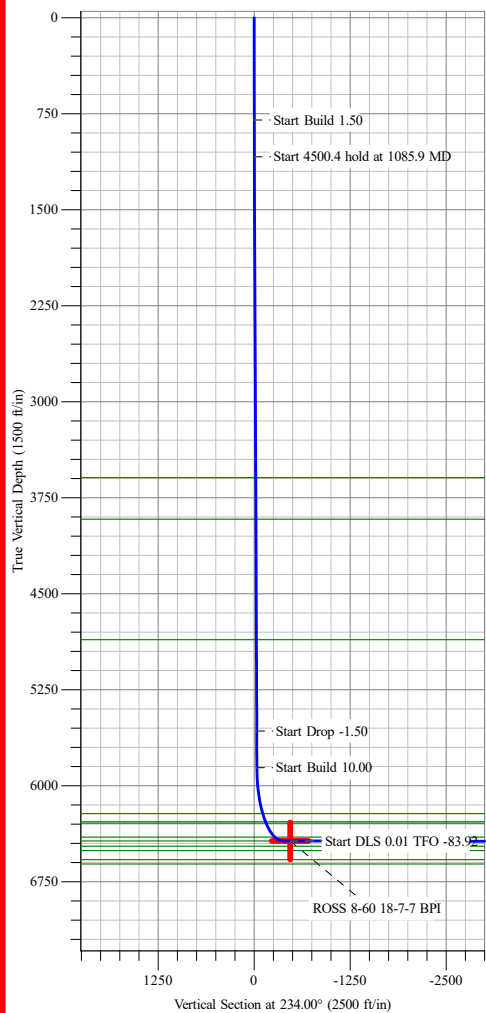
BPI: 1000 ft FSL & 2423 ft FEL Sec 18

EPI: 1000 ft FNL & 2475 ft FEL Sec 7

BHL: 850 ft FNL & 2476 ft FEL Sec 7

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
ROSS 8-60 18-7-7 BPI	6432.0	456.1	248.6	452744.30	1029946.14	40° 39' 27.871 N	104° 8' 1.129 W
ROSS 8-60 18-7-7 EPI	6432.0	9025.8	334.5	455356.41	1029932.10	40° 40' 52.550 N	104° 8' 0.013 W
ROSS 8-60 18-7-7 BHL	6432.0	9175.5	335.0	455402.04	1029931.56	40° 40' 54.030 N	104° 8' 0.006 W



Survey Report

Company:	Bison Oil & Gas II, LLC	Local Co-ordinate Reference:	Well ROSS 8-60 18-7-7
Project:	WELD COUNTY, COLORADO (NAD 83)	TVD Reference:	WELL @ 4953.0ft (Original Well Elev)
Site:	ROSS 8-60 18 SESW & SWSE SEC 18 T8N R60W 6th P.M.	MD Reference:	WELL @ 4953.0ft (Original Well Elev)
Well:	ROSS 8-60 18-7-7	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Design #1	Database:	EDM 5000.16 Single User Db

Project	WELD COUNTY, COLORADO (NAD 83),		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site	ROSS 8-60 18 SESW & SWSE SEC 18 T8N R60W 6th P.M.				
Site Position:		Northing:	452,604.25 m	Latitude:	40° 39' 23.364 N
From:	Lat/Long	Easting:	1,029,881.06 m	Longitude:	104° 8' 3.991 W
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in		

Well	ROSS 8-60 18-7-7					
Well Position	+N/-S	0.0 ft	Northing:	452,604.11 m	Latitude:	40° 39' 23.364 N
	+E/-W	0.0 ft	Easting:	1,029,872.52 m	Longitude:	104° 8' 4.355 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,952.2 ft
Grid Convergence:		0.88 °				

Wellbore	Wellbore #1				
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	12/31/2009	8.70	67.42	53,502.81758579

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
Start Build 1.50									
900.0	1.50	138.41	900.0	-1.0	0.9	-0.9	1.50	1.50	0.00
1,000.0	3.00	138.41	999.9	-3.9	3.5	-3.8	1.50	1.50	0.00
1,085.9	4.29	138.41	1,085.6	-8.0	7.1	-7.7	1.50	1.50	0.00
Start 4500.4 hold at 1085.9 MD									
1,100.0	4.29	138.41	1,099.7	-8.8	7.8	-8.5	0.00	0.00	0.00
1,200.0	4.29	138.41	1,199.4	-14.4	12.8	-13.9	0.00	0.00	0.00
1,300.0	4.29	138.41	1,299.1	-20.0	17.7	-19.3	0.00	0.00	0.00
1,400.0	4.29	138.41	1,398.9	-25.6	22.7	-24.7	0.00	0.00	0.00
1,500.0	4.29	138.41	1,498.6	-31.2	27.6	-30.1	0.00	0.00	0.00
1,600.0	4.29	138.41	1,598.3	-36.8	32.6	-35.5	0.00	0.00	0.00
1,700.0	4.29	138.41	1,698.0	-42.3	37.6	-40.9	0.00	0.00	0.00
1,800.0	4.29	138.41	1,797.7	-47.9	42.5	-46.4	0.00	0.00	0.00

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Well:	ROSS 8-60 18-7-7	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Design #1	Database:	EDM 5000.16 Single User Db

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
1,900.0	4.29	138.41	1,897.5	-53.5	47.5	-51.8	0.00	0.00	0.00
2,000.0	4.29	138.41	1,997.2	-59.1	52.5	-57.2	0.00	0.00	0.00
2,100.0	4.29	138.41	2,096.9	-64.7	57.4	-62.6	0.00	0.00	0.00
2,200.0	4.29	138.41	2,196.6	-70.3	62.4	-68.0	0.00	0.00	0.00
2,300.0	4.29	138.41	2,296.3	-75.9	67.4	-73.4	0.00	0.00	0.00
2,400.0	4.29	138.41	2,396.1	-81.5	72.3	-78.8	0.00	0.00	0.00
2,500.0	4.29	138.41	2,495.8	-87.1	77.3	-84.2	0.00	0.00	0.00
2,600.0	4.29	138.41	2,595.5	-92.7	82.2	-89.6	0.00	0.00	0.00
2,700.0	4.29	138.41	2,695.2	-98.3	87.2	-95.0	0.00	0.00	0.00
2,800.0	4.29	138.41	2,794.9	-103.9	92.2	-100.4	0.00	0.00	0.00
2,900.0	4.29	138.41	2,894.7	-109.5	97.1	-105.8	0.00	0.00	0.00
3,000.0	4.29	138.41	2,994.4	-115.0	102.1	-111.2	0.00	0.00	0.00
3,100.0	4.29	138.41	3,094.1	-120.6	107.1	-116.7	0.00	0.00	0.00
3,200.0	4.29	138.41	3,193.8	-126.2	112.0	-122.1	0.00	0.00	0.00
3,300.0	4.29	138.41	3,293.5	-131.8	117.0	-127.5	0.00	0.00	0.00
3,400.0	4.29	138.41	3,393.3	-137.4	121.9	-132.9	0.00	0.00	0.00
3,500.0	4.29	138.41	3,493.0	-143.0	126.9	-138.3	0.00	0.00	0.00
3,600.0	4.29	138.41	3,592.7	-148.6	131.9	-143.7	0.00	0.00	0.00
3,700.0	4.29	138.41	3,692.4	-154.2	136.8	-149.1	0.00	0.00	0.00
3,800.0	4.29	138.41	3,792.1	-159.8	141.8	-154.5	0.00	0.00	0.00
3,900.0	4.29	138.41	3,891.9	-165.4	146.8	-159.9	0.00	0.00	0.00
4,000.0	4.29	138.41	3,991.6	-171.0	151.7	-165.3	0.00	0.00	0.00
4,100.0	4.29	138.41	4,091.3	-176.6	156.7	-170.7	0.00	0.00	0.00
4,200.0	4.29	138.41	4,191.0	-182.2	161.6	-176.1	0.00	0.00	0.00
4,300.0	4.29	138.41	4,290.7	-187.8	166.6	-181.5	0.00	0.00	0.00
4,400.0	4.29	138.41	4,390.5	-193.3	171.6	-187.0	0.00	0.00	0.00
4,500.0	4.29	138.41	4,490.2	-198.9	176.5	-192.4	0.00	0.00	0.00
4,600.0	4.29	138.41	4,589.9	-204.5	181.5	-197.8	0.00	0.00	0.00
4,700.0	4.29	138.41	4,689.6	-210.1	186.5	-203.2	0.00	0.00	0.00
4,800.0	4.29	138.41	4,789.3	-215.7	191.4	-208.6	0.00	0.00	0.00
4,900.0	4.29	138.41	4,889.1	-221.3	196.4	-214.0	0.00	0.00	0.00
5,000.0	4.29	138.41	4,988.8	-226.9	201.4	-219.4	0.00	0.00	0.00
5,100.0	4.29	138.41	5,088.5	-232.5	206.3	-224.8	0.00	0.00	0.00
5,200.0	4.29	138.41	5,188.2	-238.1	211.3	-230.2	0.00	0.00	0.00
5,300.0	4.29	138.41	5,287.9	-243.7	216.2	-235.6	0.00	0.00	0.00
5,400.0	4.29	138.41	5,387.7	-249.3	221.2	-241.0	0.00	0.00	0.00
5,500.0	4.29	138.41	5,487.4	-254.9	226.2	-246.4	0.00	0.00	0.00
5,586.3	4.29	138.41	5,573.4	-259.7	230.4	-251.1	0.00	0.00	0.00
Start Drop -1.50									
5,600.0	4.08	138.41	5,587.1	-260.4	231.1	-251.8	1.50	-1.50	0.00
5,700.0	2.58	138.41	5,686.9	-264.8	235.0	-256.0	1.50	-1.50	0.00
5,800.0	1.08	138.41	5,786.9	-267.2	237.1	-258.3	1.50	-1.50	0.00
5,872.1	0.00	0.00	5,859.0	-267.7	237.5	-258.8	1.50	-1.50	0.00

Survey Report

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Well:	ROSS 8-60 18-7-7	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Design #1	Database:	EDM 5000.16 Single User Db

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
Start Build 10.00									
5,900.0	2.79	0.87	5,886.9	-267.0	237.6	-258.2	10.00	10.00	0.00
6,000.0	12.79	0.87	5,985.8	-253.5	237.8	-244.6	10.00	10.00	0.00
6,100.0	22.79	0.87	6,080.9	-223.0	238.2	-214.1	10.00	10.00	0.00
6,200.0	32.79	0.87	6,169.3	-176.4	238.9	-167.6	10.00	10.00	0.00
6,300.0	42.79	0.87	6,248.2	-115.2	239.9	-106.4	10.00	10.00	0.00
6,400.0	52.79	0.87	6,315.3	-41.3	241.0	-32.4	10.00	10.00	0.00
6,500.0	62.79	0.87	6,368.5	43.2	242.3	52.0	10.00	10.00	0.00
6,600.0	72.79	0.87	6,406.3	135.7	243.7	144.5	10.00	10.00	0.00
6,700.0	82.79	0.87	6,427.4	233.3	245.2	242.1	10.00	10.00	0.00
6,772.1	90.00	0.87	6,432.0	305.2	246.3	314.0	10.00	10.00	0.00
Start DLS 0.02 TFO 180.00									
6,800.0	89.99	0.87	6,432.0	333.1	246.7	341.9	0.02	-0.02	0.00
6,900.0	89.97	0.87	6,432.0	433.1	248.2	441.8	0.02	-0.02	0.00
6,923.1	89.97	0.87	6,432.0	456.1	248.6	464.9	0.02	-0.02	0.00
Start DLS 0.01 TFO -83.92 - ROSS 8-60 18-7-7 BPI									
7,000.0	89.97	0.87	6,432.0	533.0	249.8	541.8	0.01	0.00	-0.01
7,100.0	89.97	0.86	6,432.1	633.0	251.3	641.8	0.01	0.00	-0.01
7,200.0	89.97	0.86	6,432.1	733.0	252.8	741.8	0.01	0.00	-0.01
7,300.0	89.97	0.85	6,432.2	833.0	254.3	841.7	0.01	0.00	-0.01
7,400.0	89.97	0.84	6,432.3	933.0	255.7	941.7	0.01	0.00	-0.01
7,500.0	89.97	0.83	6,432.3	1,033.0	257.2	1,041.7	0.01	0.00	-0.01
7,600.0	89.97	0.83	6,432.3	1,133.0	258.7	1,141.7	0.01	0.00	-0.01
7,700.0	89.97	0.82	6,432.4	1,233.0	260.1	1,241.6	0.01	0.00	-0.01
7,800.0	89.97	0.81	6,432.4	1,333.0	261.5	1,341.6	0.01	0.00	-0.01
7,900.0	89.98	0.81	6,432.5	1,432.9	262.9	1,441.6	0.01	0.00	-0.01
8,000.0	89.98	0.80	6,432.5	1,532.9	264.3	1,541.6	0.01	0.00	-0.01
8,100.0	89.98	0.79	6,432.6	1,632.9	265.7	1,641.5	0.01	0.00	-0.01
8,200.0	89.98	0.79	6,432.6	1,732.9	267.1	1,741.5	0.01	0.00	-0.01
8,300.0	89.98	0.78	6,432.6	1,832.9	268.5	1,841.5	0.01	0.00	-0.01
8,400.0	89.98	0.77	6,432.7	1,932.9	269.8	1,941.5	0.01	0.00	-0.01
8,500.0	89.98	0.76	6,432.7	2,032.9	271.2	2,041.4	0.01	0.00	-0.01
8,600.0	89.98	0.76	6,432.8	2,132.9	272.5	2,141.4	0.01	0.00	-0.01
8,700.0	89.98	0.75	6,432.8	2,232.9	273.8	2,241.4	0.01	0.00	-0.01
8,800.0	89.98	0.74	6,432.8	2,332.9	275.1	2,341.4	0.01	0.00	-0.01
8,900.0	89.98	0.74	6,432.9	2,432.9	276.4	2,441.3	0.01	0.00	-0.01
9,000.0	89.98	0.73	6,432.9	2,532.8	277.7	2,541.3	0.01	0.00	-0.01
9,100.0	89.98	0.72	6,432.9	2,632.8	278.9	2,641.3	0.01	0.00	-0.01
9,200.0	89.98	0.72	6,432.9	2,732.8	280.2	2,741.2	0.01	0.00	-0.01
9,300.0	89.99	0.71	6,433.0	2,832.8	281.4	2,841.2	0.01	0.00	-0.01
9,400.0	89.99	0.70	6,433.0	2,932.8	282.7	2,941.2	0.01	0.00	-0.01
9,500.0	89.99	0.69	6,433.0	3,032.8	283.9	3,041.2	0.01	0.00	-0.01
9,600.0	89.99	0.69	6,433.0	3,132.8	285.1	3,141.1	0.01	0.00	-0.01

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Well:	ROSS 8-60 18-7-7	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Design #1	Database:	EDM 5000.16 Single User Db

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
9,700.0	89.99	0.68	6,433.0	3,232.8	286.3	3,241.1	0.01	0.00	-0.01
9,800.0	89.99	0.67	6,433.1	3,332.8	287.5	3,341.1	0.01	0.00	-0.01
9,900.0	89.99	0.67	6,433.1	3,432.8	288.6	3,441.0	0.01	0.00	-0.01
10,000.0	89.99	0.66	6,433.1	3,532.8	289.8	3,541.0	0.01	0.00	-0.01
10,100.0	89.99	0.65	6,433.1	3,632.8	290.9	3,641.0	0.01	0.00	-0.01
10,200.0	89.99	0.64	6,433.1	3,732.8	292.1	3,740.9	0.01	0.00	-0.01
10,300.0	89.99	0.64	6,433.1	3,832.8	293.2	3,840.9	0.01	0.00	-0.01
10,400.0	89.99	0.63	6,433.2	3,932.7	294.3	3,940.9	0.01	0.00	-0.01
10,500.0	89.99	0.62	6,433.2	4,032.7	295.4	4,040.8	0.01	0.00	-0.01
10,600.0	90.00	0.62	6,433.2	4,132.7	296.5	4,140.8	0.01	0.00	-0.01
10,700.0	90.00	0.61	6,433.2	4,232.7	297.5	4,240.8	0.01	0.00	-0.01
10,800.0	90.00	0.60	6,433.2	4,332.7	298.6	4,340.7	0.01	0.00	-0.01
10,900.0	90.00	0.60	6,433.2	4,432.7	299.6	4,440.7	0.01	0.00	-0.01
11,000.0	90.00	0.59	6,433.2	4,532.7	300.7	4,540.7	0.01	0.00	-0.01
11,100.0	90.00	0.58	6,433.2	4,632.7	301.7	4,640.6	0.01	0.00	-0.01
11,200.0	90.00	0.57	6,433.2	4,732.7	302.7	4,740.6	0.01	0.00	-0.01
11,300.0	90.00	0.57	6,433.2	4,832.7	303.7	4,840.6	0.01	0.00	-0.01
11,400.0	90.00	0.56	6,433.2	4,932.7	304.7	4,940.5	0.01	0.00	-0.01
11,500.0	90.00	0.55	6,433.2	5,032.7	305.7	5,040.5	0.01	0.00	-0.01
11,600.0	90.00	0.55	6,433.2	5,132.7	306.6	5,140.5	0.01	0.00	-0.01
11,700.0	90.00	0.54	6,433.2	5,232.7	307.6	5,240.4	0.01	0.00	-0.01
11,800.0	90.00	0.53	6,433.2	5,332.7	308.5	5,340.4	0.01	0.00	-0.01
11,900.0	90.01	0.53	6,433.2	5,432.7	309.4	5,440.3	0.01	0.00	-0.01
12,000.0	90.01	0.52	6,433.2	5,532.7	310.3	5,540.3	0.01	0.00	-0.01
12,100.0	90.01	0.51	6,433.1	5,632.7	311.2	5,640.3	0.01	0.00	-0.01
12,200.0	90.01	0.50	6,433.1	5,732.7	312.1	5,740.2	0.01	0.00	-0.01
12,300.0	90.01	0.50	6,433.1	5,832.7	313.0	5,840.2	0.01	0.00	-0.01
12,400.0	90.01	0.49	6,433.1	5,932.7	313.9	5,940.2	0.01	0.00	-0.01
12,500.0	90.01	0.48	6,433.1	6,032.6	314.7	6,040.1	0.01	0.00	-0.01
12,600.0	90.01	0.48	6,433.1	6,132.6	315.5	6,140.1	0.01	0.00	-0.01
12,700.0	90.01	0.47	6,433.1	6,232.6	316.4	6,240.0	0.01	0.00	-0.01
12,800.0	90.01	0.46	6,433.0	6,332.6	317.2	6,340.0	0.01	0.00	-0.01
12,900.0	90.01	0.46	6,433.0	6,432.6	318.0	6,440.0	0.01	0.00	-0.01
13,000.0	90.01	0.45	6,433.0	6,532.6	318.8	6,539.9	0.01	0.00	-0.01
13,100.0	90.01	0.44	6,433.0	6,632.6	319.6	6,639.9	0.01	0.00	-0.01
13,200.0	90.01	0.43	6,432.9	6,732.6	320.3	6,739.8	0.01	0.00	-0.01
13,300.0	90.02	0.43	6,432.9	6,832.6	321.1	6,839.8	0.01	0.00	-0.01
13,400.0	90.02	0.42	6,432.9	6,932.6	321.8	6,939.7	0.01	0.00	-0.01
13,500.0	90.02	0.41	6,432.9	7,032.6	322.5	7,039.7	0.01	0.00	-0.01
13,600.0	90.02	0.41	6,432.8	7,132.6	323.3	7,139.7	0.01	0.00	-0.01
13,700.0	90.02	0.40	6,432.8	7,232.6	324.0	7,239.6	0.01	0.00	-0.01
13,800.0	90.02	0.39	6,432.8	7,332.6	324.6	7,339.6	0.01	0.00	-0.01
13,900.0	90.02	0.39	6,432.7	7,432.6	325.3	7,439.5	0.01	0.00	-0.01

Survey Report

Company:	Bison Oil & Gas II, LLC	Local Co-ordinate Reference:	Well ROSS 8-60 18-7-7
Project:	WELD COUNTY, COLORADO (NAD 83)	TVD Reference:	WELL @ 4953.0ft (Original Well Elev)
Site:	ROSS 8-60 18 SESW & SWSE SEC 18 T8N R60W 6th P.M.	MD Reference:	WELL @ 4953.0ft (Original Well Elev)
Well:	ROSS 8-60 18-7-7	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Design #1	Database:	EDM 5000.16 Single User Db

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
14,000.0	90.02	0.38	6,432.7	7,532.6	326.0	7,539.5	0.01	0.00	-0.01
14,100.0	90.02	0.37	6,432.7	7,632.6	326.6	7,639.4	0.01	0.00	-0.01
14,200.0	90.02	0.36	6,432.6	7,732.6	327.3	7,739.4	0.01	0.00	-0.01
14,300.0	90.02	0.36	6,432.6	7,832.6	327.9	7,839.4	0.01	0.00	-0.01
14,400.0	90.02	0.35	6,432.5	7,932.6	328.5	7,939.3	0.01	0.00	-0.01
14,500.0	90.02	0.34	6,432.5	8,032.6	329.1	8,039.3	0.01	0.00	-0.01
14,600.0	90.03	0.34	6,432.4	8,132.6	329.7	8,139.2	0.01	0.00	-0.01
14,700.0	90.03	0.33	6,432.4	8,232.6	330.3	8,239.2	0.01	0.00	-0.01
14,800.0	90.03	0.32	6,432.4	8,332.6	330.9	8,339.1	0.01	0.00	-0.01
14,900.0	90.03	0.32	6,432.3	8,432.6	331.4	8,439.1	0.01	0.00	-0.01
15,000.0	90.03	0.31	6,432.3	8,532.6	332.0	8,539.0	0.01	0.00	-0.01
15,100.0	90.03	0.30	6,432.2	8,632.6	332.5	8,639.0	0.01	0.00	-0.01
15,200.0	90.03	0.29	6,432.2	8,732.6	333.0	8,738.9	0.01	0.00	-0.01
15,300.0	90.03	0.29	6,432.1	8,832.6	333.5	8,838.9	0.01	0.00	-0.01
15,400.0	90.03	0.28	6,432.1	8,932.6	334.0	8,938.8	0.01	0.00	-0.01
15,493.2	90.03	0.27	6,432.0	9,025.8	334.5	9,031.9	0.01	0.00	-0.01
Start 149.7 hold at 15493.2 MD - ROSS 8-60 18-7-7 EPI									
15,500.0	90.03	0.27	6,432.0	9,032.6	334.5	9,038.8	0.00	0.00	0.00
15,600.0	90.03	0.27	6,431.9	9,132.6	335.0	9,138.7	0.00	0.00	0.00
15,642.9	90.03	0.27	6,431.9	9,175.5	335.2	9,181.6	0.00	0.00	0.00
TD at 15642.9 - ROSS 8-60 18-7-7 BHL									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (m)	Easting (m)	Latitude	Longitude
ROSS 8-60 18-7-7 BH - hit/miss target - Shape - Point	0.00	0.88	6,432.0	9,175.5	335.0	455,402.04	1,029,931.57	40° 40' 54.030 N	104° 8' 0.006 W
- plan misses target center by 0.2ft at 15642.9ft MD (6431.9 TVD, 9175.5 N, 335.2 E)									
ROSS 8-60 18-7-7 BF - plan hits target center - Point	0.00	0.88	6,432.0	456.1	248.6	452,744.30	1,029,946.14	40° 39' 27.871 N	104° 8' 1.129 W
ROSS 8-60 18-7-7 EF - plan hits target center - Point	0.00	0.89	6,432.0	9,025.8	334.5	455,356.41	1,029,932.10	40° 40' 52.550 N	104° 8' 0.013 W

Survey Report

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Project:	WELD COUNTY, COLORADO (NAD 83)	TVD Reference:	WELL @ 4953.0ft (Original Well Elev)
Site:	ROSS 8-60 18 SESW & SWSE SEC 18 T8N R60W 6th P.M.	MD Reference:	WELL @ 4953.0ft (Original Well Elev)
Well:	ROSS 8-60 18-7-7	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Design #1	Database:	EDM 5000.16 Single User Db

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,600.3	3,593.0	Parkman				
3,926.2	3,918.0	Sussex				
4,868.9	4,858.0	Shannon				
6,258.8	6,217.0	Sharon Springs Shale				
6,348.0	6,282.0	Niobrara Formation				
6,363.0	6,292.0	Niobrara A Chalk				
6,586.0	6,402.0	Niobrara B Chalk				
6,772.1	6,432.0	Niobrara B Landing Point				

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
800	800	0	0	Start Build 1.50
1086	1086	-8	7	Start 4500.4 hold at 1085.9 MD
5586	5573	-260	230	Start Drop -1.50
5872	5859	-268	238	Start Build 10.00
6772	6432	305	246	Start DLS 0.02 TFO 180.00
6923	6432	456	249	Start DLS 0.01 TFO -83.92
15,493	6432	9026	334	Start 149.7 hold at 15493.2 MD
15,643	6432	9175	335	TD at 15642.9