

# **BISON OIL & GAS II**

**WELD COUNTY  
SEC 18-T8N-R60W  
ROSS 8-60 18-7-8**

**OWB**

**Design: FINAL SURVEY**

## **Standard Survey Report**

**02 June, 2022**

Project: WELD COUNTY  
Site: SEC 18-T8N-R60W  
Well: ROSS 8-60 18-7-8  
Wellbore: OWB  
Design: FINAL SURVEY

PROJECT DETAILS: WELD COUNTY  
Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: Colorado Northern Zone  
System Datum: Mean Sea Level



Azimuths to True North  
Magnetic North: 7.44°  
Magnetic Field  
Strength: 52056.4snT  
Dip Angle: 66.91°  
Date: 5/4/2022  
Model: IGRF2020

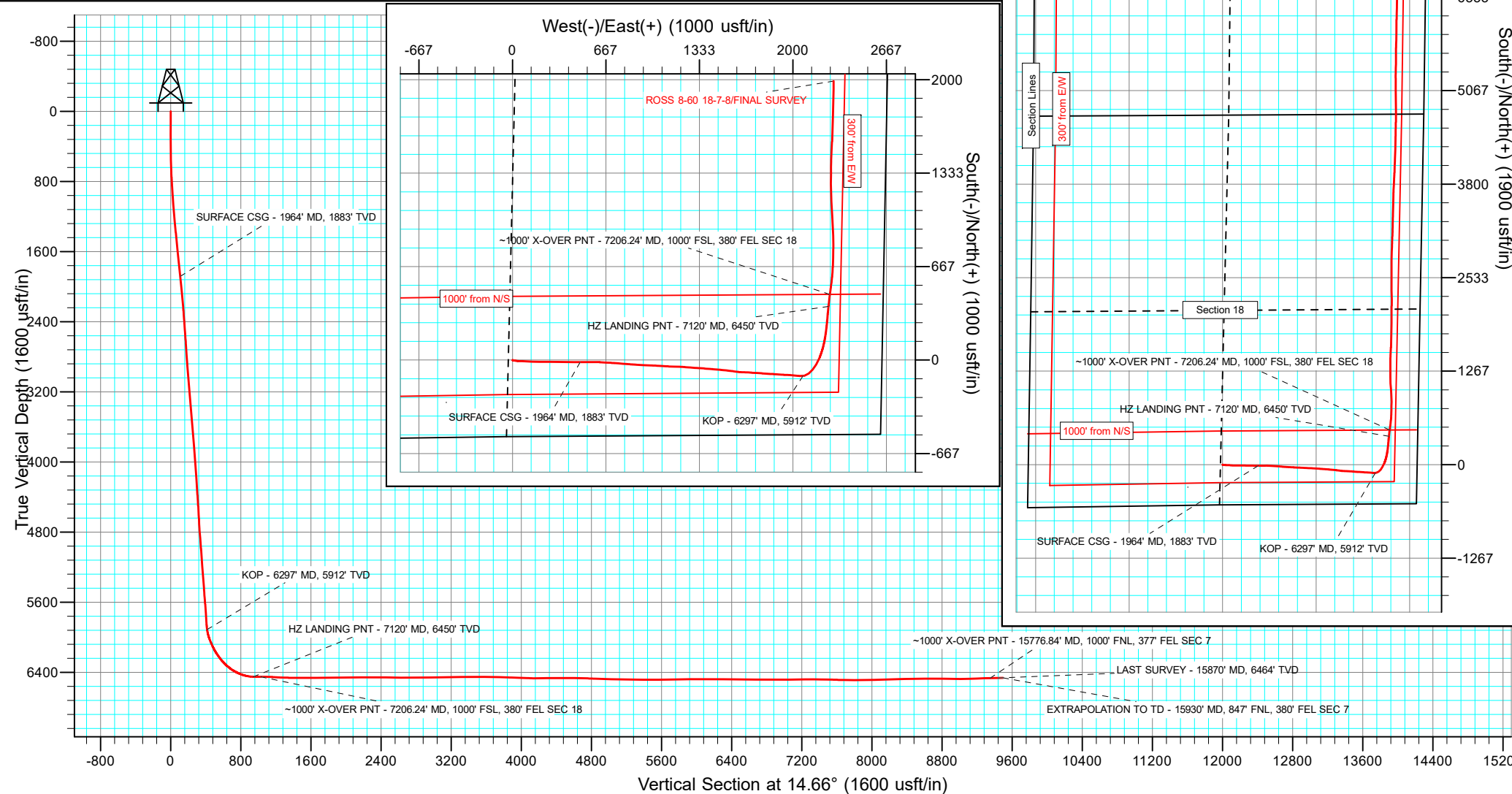
WELL DETAILS: ROSS 8-60 18-7-8

		4953.00									
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot					
0.00	0.00	1484919.10	3378868.11	40.656490°N	104.134442°W						

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSec	Departure	Annotation
1964.00	22.14	90.26	1883.09	-15.02	482.08	107.49	483.26	SURFACE CSG - 1964' MD, 1883' TVD
6297.00	21.72	83.09	5912.24	-113.15	2071.04	414.71	2076.29	KOP - 6297' MD, 5912' TVD
7120.00	87.99	5.81	6450.49	382.64	2253.28	940.48	2633.54	HZ LANDING PNT - 7120' MD, 6450' TVD
7206.24	90.20	7.67	6451.24	468.28	2263.36	1025.88	2719.71	~1000' X-OVER PNT - 7206.24' MD, 1000' FSL, 380' FEL SEC 18
15776.84	91.35	0.16	6466.41	9033.30	2404.27	9347.70	11288.79	~1000' X-OVER PNT - 15776.84' MD, 1000' FNL, 377' FEL SEC 7
15870.00	91.12	359.44	6464.36	9126.44	2403.92	9437.71	11381.92	LAST SURVEY - 15870' MD, 6464' TVD
15930.00	91.12	359.44	6463.19	9186.42	2403.33	9495.60	11441.91	EXTRAPOLATION TO TD - 15930' MD, 847' FNL, 380' FEL SEC 7

SHL:  
545' FSL, 2635' FEL  
Sec 18-T8N-R60W  
~1000' X-OVER PNT:  
1000' FSL, 380' FEL  
Sec 18-T8N-R60W  
~1000' X-OVER PNT:  
1000' FNL, 377' FEL  
Sec 7-T8N-R60W  
BHL:  
847' FNL, 380' FEL  
Sec 7-T8N-R60W



## Survey Report

<b>Company:</b>	BISON OIL & GAS II	<b>Local Co-ordinate Reference:</b>	Well ROSS 8-60 18-7-8
<b>Project:</b>	WELD COUNTY	<b>TVD Reference:</b>	KB 24' @ 4977.00usft
<b>Site:</b>	SEC 18-T8N-R60W	<b>MD Reference:</b>	KB 24' @ 4977.00usft
<b>Well:</b>	ROSS 8-60 18-7-8	<b>North Reference:</b>	True
<b>Wellbore:</b>	OWB	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	FINAL SURVEY	<b>Database:</b>	EDT_32Bit_ODBC

<b>Project</b>	WELD COUNTY		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor

Site		SEC 18-T8N-R60W					
Site Position:		Northing:	1,484,295.38	usft	Latitude:	40.654889°N	
From:	Lat/Long	Easting:	3,376,236.78	usft	Longitude:	104.143959°W	
Position Uncertainty:	0.00	usft	Slot Radius:	13.200	in	Grid Convergence:	0.88 °

Well	ROSS 8-60 18-7-8					
Well Position	+N/-S	0.00 usft	Northing:	1,484,919.10 usft	Latitude:	40.656490°N
	+E/-W	0.00 usft	Easting:	3,378,868.10 usft	Longitude:	104.134442°W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	4,953.00 usft

<b>Wellbore</b>	OWB				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2020	5/4/2022	7.44	66.91	52,056.43689002

<b>Design</b>	FINAL SURVEY				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00	14.66	

<b>Survey Program</b>	<b>Date</b>	6/2/2022			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
157.00	1,906.00	SURFACE SURVEY (OWB)	MWD	OWSG MWD - Standard	
2,027.00	15,930.00	FINAL SURVEY (OWB)	MWD	OWSG MWD - Standard	

<b>Survey</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Vertical Section (usft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Turn Rate (°/100ft)</b>	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
157.00	0.44	114.73	157.00	-0.25	0.55	-0.11	0.28	0.28	0.00	
246.00	1.33	134.04	245.99	-1.11	1.60	-0.67	1.04	1.00	21.70	
335.00	3.14	100.76	334.92	-2.29	4.74	-1.01	2.42	2.03	-37.39	
424.00	4.60	96.05	423.71	-3.12	10.68	-0.31	1.68	1.64	-5.29	
513.00	7.51	98.25	512.21	-4.33	19.99	0.87	3.28	3.27	2.47	
602.00	9.90	97.90	600.18	-6.22	33.32	2.42	2.69	2.69	-0.39	
691.00	12.37	91.47	687.50	-7.51	50.44	5.50	3.10	2.78	-7.22	
781.00	14.18	90.67	775.09	-7.89	71.10	10.36	2.02	2.01	-0.89	
869.00	17.06	92.96	859.83	-8.68	94.77	15.59	3.35	3.27	2.60	

## Survey Report

<b>Company:</b>	BISON OIL & GAS II	<b>Local Co-ordinate Reference:</b>	Well ROSS 8-60 18-7-8
<b>Project:</b>	WELD COUNTY	<b>TVD Reference:</b>	KB 24' @ 4977.00usft
<b>Site:</b>	SEC 18-T8N-R60W	<b>MD Reference:</b>	KB 24' @ 4977.00usft
<b>Well:</b>	ROSS 8-60 18-7-8	<b>North Reference:</b>	True
<b>Wellbore:</b>	OWB	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	FINAL SURVEY	<b>Database:</b>	EDT_32Bit_ODBC

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
958.00	17.15	93.41	944.89	-10.14	120.91	20.80	0.18	0.10	0.51
1,047.00	17.99	91.55	1,029.74	-11.29	147.75	26.47	1.14	0.94	-2.09
1,136.00	18.29	91.42	1,114.32	-12.01	175.45	32.79	0.34	0.34	-0.15
1,225.00	19.27	89.75	1,198.58	-12.29	204.09	39.77	1.26	1.10	-1.88
1,315.00	19.97	89.70	1,283.35	-12.14	234.31	47.56	0.78	0.78	-0.06
1,404.00	21.34	89.88	1,366.63	-12.03	265.71	55.61	1.54	1.54	0.20
1,493.00	22.80	91.03	1,449.11	-12.30	299.14	63.81	1.71	1.64	1.29
1,582.00	24.08	91.91	1,530.76	-13.22	334.53	71.88	1.49	1.44	0.99
1,671.00	22.80	90.94	1,612.42	-14.11	369.92	79.98	1.50	-1.44	-1.09
1,760.00	22.85	90.19	1,694.45	-14.45	404.45	88.39	0.33	0.06	-0.84
1,849.00	22.32	90.32	1,776.62	-14.60	438.63	96.89	0.60	-0.60	0.15
1,906.00	22.18	90.81	1,829.38	-14.81	460.21	102.15	0.41	-0.25	0.86
1,964.00	22.14	90.26	1,883.09	-15.02	482.08	107.49	0.37	-0.08	-0.95
SURFACE CSG - 1964' MD, 1883' TVD									
2,027.00	22.09	89.66	1,941.46	-15.00	505.80	113.51	0.37	-0.07	-0.95
2,116.00	21.26	89.84	2,024.17	-14.86	538.67	121.96	0.94	-0.93	0.20
2,205.00	20.55	89.53	2,107.31	-14.68	570.42	130.17	0.81	-0.80	-0.35
2,295.00	19.53	89.75	2,191.86	-14.49	601.26	138.16	1.14	-1.13	0.24
2,384.00	21.26	94.15	2,275.28	-15.59	632.24	144.94	2.60	1.94	4.94
2,473.00	20.81	93.23	2,358.35	-17.65	664.12	151.01	0.63	-0.51	-1.03
2,562.00	19.84	93.27	2,441.81	-19.40	694.98	157.13	1.09	-1.09	0.04
2,651.00	19.27	92.66	2,525.67	-20.94	724.73	163.17	0.68	-0.64	-0.69
2,740.00	22.49	95.17	2,608.82	-23.16	756.36	169.03	3.75	3.62	2.82
2,829.00	21.70	95.12	2,691.28	-26.16	789.70	174.56	0.89	-0.89	-0.06
2,918.00	21.43	93.98	2,774.05	-28.76	822.31	180.30	0.56	-0.30	-1.28
3,007.00	20.81	93.80	2,857.07	-30.94	854.30	186.30	0.70	-0.70	-0.20
3,096.00	23.33	94.29	2,939.55	-33.30	887.66	192.45	2.84	2.83	0.55
3,185.00	22.76	92.70	3,021.44	-35.43	922.43	199.19	0.95	-0.64	-1.79
3,274.00	21.56	92.70	3,103.87	-37.01	955.96	206.15	1.35	-1.35	0.00
3,363.00	20.33	92.83	3,186.99	-38.55	987.74	212.70	1.38	-1.38	0.15
3,453.00	21.56	91.69	3,271.04	-39.81	1,019.89	219.62	1.44	1.37	-1.27
3,542.00	22.18	93.85	3,353.63	-41.42	1,052.99	226.44	1.14	0.70	2.43
3,631.00	21.79	93.63	3,436.16	-43.59	1,086.24	232.76	0.45	-0.44	-0.25
3,720.00	22.23	92.48	3,518.68	-45.36	1,119.55	239.47	0.69	0.49	-1.29
3,809.00	22.36	91.95	3,601.02	-46.67	1,153.28	246.75	0.27	0.15	-0.60
3,898.00	22.76	91.42	3,683.21	-47.67	1,187.41	254.41	0.50	0.45	-0.60
4,010.00	23.11	95.08	3,786.36	-50.16	1,230.97	263.04	1.31	0.31	3.27
4,099.00	22.98	93.98	3,868.26	-52.91	1,265.70	269.16	0.51	-0.15	-1.24
4,188.00	21.79	93.98	3,950.55	-55.26	1,299.51	275.44	1.34	-1.34	0.00
4,277.00	20.72	92.79	4,033.50	-57.17	1,331.71	281.74	1.30	-1.20	-1.34
4,366.00	20.55	95.87	4,116.79	-59.54	1,362.98	287.37	1.23	-0.19	3.46
4,455.00	21.39	94.42	4,199.90	-62.39	1,394.70	292.64	1.11	0.94	-1.63
4,544.00	22.49	94.59	4,282.45	-65.00	1,427.85	298.51	1.24	1.24	0.19

# Survey Report

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<b>Project:</b>	WELD COUNTY	<b>TVD Reference:</b>	KB 24' @ 4977.00usft
<b>Site:</b>	SEC 18-T8N-R60W	<b>MD Reference:</b>	KB 24' @ 4977.00usft
<b>Well:</b>	ROSS 8-60 18-7-8	<b>North Reference:</b>	True
<b>Wellbore:</b>	OWB	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	FINAL SURVEY	<b>Database:</b>	EDT_32Bit_ODBC

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
4,633.00	20.24	94.90	4,365.33	-67.68	1,460.16	304.09	2.53	-2.53	0.35	
4,722.00	21.87	95.08	4,448.38	-70.46	1,492.01	309.46	1.83	1.83	0.20	
4,811.00	23.29	96.62	4,530.56	-73.96	1,526.00	314.68	1.73	1.60	1.73	
4,901.00	21.65	97.37	4,613.72	-78.14	1,560.14	319.28	1.85	-1.82	0.83	
4,990.00	21.96	98.12	4,696.36	-82.59	1,592.90	323.26	0.47	0.35	0.84	
5,079.00	22.18	92.83	4,778.84	-85.77	1,626.16	328.60	2.25	0.25	-5.94	
5,168.00	20.86	91.51	4,861.64	-87.02	1,658.78	335.65	1.58	-1.48	-1.48	
5,257.00	20.90	94.86	4,944.79	-88.78	1,690.44	341.96	1.34	0.04	3.76	
5,346.00	21.21	92.04	5,027.85	-90.70	1,722.35	348.18	1.19	0.35	-3.17	
5,435.00	20.72	95.12	5,110.97	-92.68	1,754.12	354.30	1.35	-0.55	3.46	
5,524.00	21.61	94.29	5,193.96	-95.31	1,786.14	359.87	1.06	1.00	-0.93	
5,614.00	21.96	94.90	5,277.53	-97.99	1,819.44	365.70	0.46	0.39	0.68	
5,703.00	21.52	91.07	5,360.21	-99.71	1,852.34	372.36	1.67	-0.49	-4.30	
5,792.00	21.48	94.99	5,443.02	-101.44	1,884.90	378.93	1.61	-0.04	4.40	
5,881.00	21.96	94.15	5,525.70	-104.06	1,917.73	384.71	0.64	0.54	-0.94	
5,970.00	21.74	90.76	5,608.31	-105.48	1,950.81	391.70	1.44	-0.25	-3.81	
6,059.00	21.30	95.08	5,691.11	-107.13	1,983.39	398.35	1.85	-0.49	4.85	
6,148.00	21.21	95.74	5,774.06	-110.17	2,015.51	403.54	0.29	-0.10	0.74	
6,237.00	22.58	95.43	5,856.64	-113.40	2,048.54	408.78	1.54	1.54	-0.35	
6,297.00	21.72	83.09	5,912.24	-113.15	2,071.04	414.71	7.87	-1.43	-20.56	
<b>KOP - 6297' MD, 5912' TVD</b>										
6,326.00	21.65	76.92	5,939.19	-111.30	2,081.58	419.17	7.87	-0.25	-21.29	
6,415.00	25.50	51.10	6,020.96	-95.50	2,112.58	442.30	12.27	4.33	-29.01	
6,504.00	27.31	40.39	6,100.72	-67.91	2,140.74	476.12	5.72	2.03	-12.03	
6,593.00	33.23	29.24	6,177.61	-31.01	2,165.92	518.19	9.15	6.65	-12.53	
6,683.00	39.11	22.94	6,250.26	16.70	2,189.06	570.21	7.72	6.53	-7.00	
6,772.00	46.66	16.68	6,315.45	73.67	2,209.33	630.45	9.73	8.48	-7.03	
6,861.00	56.65	10.60	6,370.63	141.42	2,225.51	700.09	12.43	11.22	-6.83	
6,950.00	66.37	6.98	6,413.04	218.63	2,237.33	777.78	11.49	10.92	-4.07	
7,039.00	77.73	4.73	6,440.43	302.71	2,245.90	861.29	12.99	12.76	-2.53	
7,120.00	87.99	5.81	6,450.49	382.64	2,253.28	940.48	12.73	12.66	1.34	
<b>HZ LANDING PNT - 7120' MD, 6450' TVD</b>										
7,128.00	89.00	5.92	6,450.70	390.59	2,254.10	948.39	12.73	12.66	1.32	
7,206.24	90.20	7.67	6,451.24	468.28	2,263.36	1,025.88	2.71	1.54	2.24	
<b>-1000' X-OVER PNT - 7206.24' MD, 1000' FSL, 380' FEL SEC 18</b>										
7,217.00	90.37	7.91	6,451.19	478.94	2,264.81	1,036.57	2.71	1.54	2.24	
7,306.00	88.11	6.84	6,452.37	567.19	2,276.24	1,124.83	2.81	-2.54	-1.20	
7,395.00	86.30	2.79	6,456.71	655.74	2,283.70	1,212.40	4.98	-2.03	-4.55	
7,483.00	88.51	1.51	6,460.69	743.58	2,287.00	1,298.21	2.90	2.51	-1.45	
7,572.00	89.66	0.32	6,462.11	832.56	2,288.42	1,384.65	1.86	1.29	-1.34	
7,661.00	89.93	357.46	6,462.43	921.53	2,286.69	1,470.29	3.23	0.30	-3.21	
7,750.00	90.19	354.99	6,462.34	1,010.33	2,280.83	1,554.71	2.79	0.29	-2.78	
7,840.00	89.22	356.93	6,462.80	1,100.10	2,274.49	1,639.96	2.41	-1.08	2.16	
7,929.00	90.77	359.57	6,462.81	1,189.05	2,271.78	1,725.32	3.44	1.74	2.97	

## Survey Report

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<b>Project:</b>	WELD COUNTY	<b>TVD Reference:</b>	KB 24' @ 4977.00usft
<b>Site:</b>	SEC 18-T8N-R60W	<b>MD Reference:</b>	KB 24' @ 4977.00usft
<b>Well:</b>	ROSS 8-60 18-7-8	<b>North Reference:</b>	True
<b>Wellbore:</b>	OWB	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	FINAL SURVEY	<b>Database:</b>	EDT_32Bit_ODBC

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
8,018.00	90.99	359.75	6,461.44	1,278.04	2,271.25	1,811.28	0.32	0.25	0.20	
8,107.00	90.28	0.41	6,460.46	1,367.03	2,271.37	1,897.40	1.09	-0.80	0.74	
8,285.00	91.52	3.93	6,457.66	1,544.85	2,278.11	2,071.14	2.10	0.70	1.98	
8,374.00	88.95	1.33	6,457.30	1,633.74	2,282.19	2,158.17	4.11	-2.89	-2.92	
8,463.00	89.66	1.47	6,458.38	1,722.71	2,284.37	2,244.79	0.81	0.80	0.16	
8,552.00	90.54	1.82	6,458.22	1,811.67	2,286.92	2,331.50	1.06	0.99	0.39	
8,641.00	89.88	1.07	6,457.89	1,900.64	2,289.17	2,418.14	1.12	-0.74	-0.84	
8,730.00	88.78	359.62	6,458.94	1,989.63	2,289.70	2,504.37	2.04	-1.24	-1.63	
8,819.00	89.17	0.06	6,460.53	2,078.61	2,289.45	2,590.39	0.66	0.44	0.49	
8,908.00	90.32	1.29	6,460.92	2,167.60	2,290.50	2,676.75	1.89	1.29	1.38	
8,998.00	90.50	358.38	6,460.28	2,257.59	2,290.24	2,763.74	3.24	0.20	-3.23	
9,087.00	90.28	359.31	6,459.67	2,346.57	2,288.45	2,849.37	1.07	-0.25	1.04	
9,176.00	90.72	1.20	6,458.90	2,435.56	2,288.84	2,935.56	2.18	0.49	2.12	
9,265.00	90.37	0.06	6,458.05	2,524.55	2,289.82	3,021.90	1.34	-0.39	-1.28	
9,354.00	91.12	0.10	6,456.89	2,613.54	2,289.95	3,108.03	0.84	0.84	0.04	
9,443.00	91.12	358.91	6,455.15	2,702.52	2,289.18	3,193.92	1.34	0.00	-1.34	
9,532.00	90.72	1.78	6,453.72	2,791.50	2,289.71	3,280.13	3.26	-0.45	3.22	
9,658.00	90.46	1.86	6,452.43	2,917.43	2,293.72	3,402.97	0.22	-0.21	0.06	
9,747.00	89.79	1.56	6,452.23	3,006.39	2,296.37	3,489.71	0.82	-0.75	-0.34	
9,836.00	90.41	2.79	6,452.08	3,095.32	2,299.75	3,576.60	1.55	0.70	1.38	
9,925.00	88.60	1.25	6,452.85	3,184.25	2,302.89	3,663.43	2.67	-2.03	-1.73	
10,014.00	88.25	1.60	6,455.29	3,273.19	2,305.10	3,750.04	0.56	-0.39	0.39	
10,103.00	88.47	1.38	6,457.84	3,362.13	2,307.41	3,836.66	0.35	0.25	-0.25	
10,192.00	88.16	0.81	6,460.46	3,451.07	2,309.11	3,923.14	0.73	-0.35	-0.64	
10,281.00	87.98	1.42	6,463.45	3,540.00	2,310.84	4,009.61	0.71	-0.20	0.69	
10,371.00	87.45	1.38	6,467.04	3,629.90	2,313.04	4,097.14	0.59	-0.59	-0.04	
10,460.00	90.41	2.79	6,468.70	3,718.82	2,316.28	4,183.98	3.68	3.33	1.58	
10,549.00	91.03	2.44	6,467.59	3,807.72	2,320.34	4,271.02	0.80	0.70	-0.39	
10,638.00	92.40	3.58	6,464.92	3,896.55	2,325.01	4,358.14	2.00	1.54	1.28	
10,727.00	89.26	2.22	6,463.63	3,985.41	2,329.51	4,445.25	3.84	-3.53	-1.53	
10,816.00	89.62	2.30	6,464.50	4,074.34	2,333.02	4,532.17	0.41	0.40	0.09	
10,905.00	88.78	1.51	6,465.75	4,163.28	2,335.98	4,618.96	1.30	-0.94	-0.89	
10,994.00	88.51	1.78	6,467.85	4,252.22	2,338.53	4,705.65	0.43	-0.30	0.30	
11,083.00	88.20	1.51	6,470.40	4,341.15	2,341.09	4,792.33	0.46	-0.35	-0.30	
11,172.00	87.63	0.94	6,473.64	4,430.07	2,342.99	4,878.83	0.91	-0.64	-0.64	
11,261.00	88.64	1.42	6,476.54	4,519.00	2,344.82	4,965.33	1.26	1.13	0.54	
11,350.00	88.16	0.98	6,479.02	4,607.94	2,346.68	5,051.86	0.73	-0.54	-0.49	
11,439.00	89.44	0.63	6,480.89	4,696.91	2,347.93	5,138.24	1.49	1.44	-0.39	
11,528.00	89.17	0.06	6,481.97	4,785.91	2,348.47	5,224.47	0.71	-0.30	-0.64	
11,617.00	89.17	359.57	6,483.26	4,874.90	2,348.18	5,310.49	0.55	0.00	-0.55	
11,706.00	89.00	358.65	6,484.68	4,963.87	2,346.80	5,396.22	1.05	-0.19	-1.03	
11,795.00	90.32	0.32	6,485.21	5,052.86	2,346.00	5,482.11	2.39	1.48	1.88	
11,884.00	90.72	359.70	6,484.40	5,141.86	2,346.01	5,568.22	0.83	0.45	-0.70	

## Survey Report

<b>Company:</b>	BISON OIL & GAS II	<b>Local Co-ordinate Reference:</b>	Well ROSS 8-60 18-7-8
<b>Project:</b>	WELD COUNTY	<b>TVD Reference:</b>	KB 24' @ 4977.00usft
<b>Site:</b>	SEC 18-T8N-R60W	<b>MD Reference:</b>	KB 24' @ 4977.00usft
<b>Well:</b>	ROSS 8-60 18-7-8	<b>North Reference:</b>	True
<b>Wellbore:</b>	OWB	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	FINAL SURVEY	<b>Database:</b>	EDT_32Bit_ODBC

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
11,973.00	91.12	359.31	6,482.97	5,230.84	2,345.25	5,654.11	0.63	0.45	-0.44	
12,062.00	90.19	1.29	6,481.95	5,319.83	2,345.71	5,740.32	2.46	-1.04	2.22	
12,151.00	90.54	0.89	6,481.39	5,408.81	2,347.40	5,826.83	0.60	0.39	-0.45	
12,241.00	90.63	0.45	6,480.47	5,498.80	2,348.46	5,914.15	0.50	0.10	-0.49	
12,330.00	91.03	359.53	6,479.18	5,587.79	2,348.44	6,000.24	1.13	0.45	-1.03	
12,419.00	90.28	2.57	6,478.16	5,676.76	2,350.07	6,086.73	3.52	-0.84	3.42	
12,508.00	89.97	1.47	6,477.97	5,765.70	2,353.21	6,173.57	1.28	-0.35	-1.24	
12,597.00	90.15	0.67	6,477.87	5,854.69	2,354.87	6,260.08	0.92	0.20	-0.90	
12,686.00	89.35	359.92	6,478.26	5,943.68	2,355.33	6,346.29	1.23	-0.90	-0.84	
12,775.00	89.09	1.73	6,479.47	6,032.66	2,356.61	6,432.70	2.05	-0.29	2.03	
12,864.00	89.09	1.82	6,480.89	6,121.61	2,359.37	6,519.44	0.10	0.00	0.10	
12,953.00	88.78	1.03	6,482.54	6,210.56	2,361.58	6,606.06	0.95	-0.35	-0.89	
13,042.00	90.28	1.86	6,483.27	6,299.53	2,363.82	6,692.70	1.93	1.69	0.93	
13,132.00	90.28	2.08	6,482.83	6,389.47	2,366.92	6,780.50	0.24	0.00	0.24	
13,221.00	89.97	2.30	6,482.64	6,478.41	2,370.32	6,867.40	0.43	-0.35	0.25	
13,310.00	90.01	1.38	6,482.65	6,567.36	2,373.18	6,954.18	1.03	0.04	-1.03	
13,399.00	90.50	1.20	6,482.26	6,656.34	2,375.18	7,040.77	0.59	0.55	-0.20	
13,488.00	91.43	1.20	6,480.76	6,745.31	2,377.04	7,127.31	1.04	1.04	0.00	
13,577.00	89.88	0.19	6,479.74	6,834.29	2,378.12	7,213.67	2.08	-1.74	-1.13	
13,666.00	89.70	358.38	6,480.07	6,923.28	2,377.01	7,299.48	2.04	-0.20	-2.03	
13,755.00	89.48	359.70	6,480.70	7,012.26	2,375.52	7,385.19	1.50	-0.25	1.48	
13,844.00	88.91	1.64	6,481.95	7,101.24	2,376.56	7,471.53	2.27	-0.64	2.18	
13,933.00	88.16	1.64	6,484.23	7,190.18	2,379.11	7,558.22	0.84	-0.84	0.00	
14,022.00	89.53	1.38	6,486.02	7,279.12	2,381.45	7,644.86	1.57	1.54	-0.29	
14,111.00	88.73	1.16	6,487.37	7,368.09	2,383.43	7,731.43	0.93	-0.90	-0.25	
14,200.00	90.19	1.11	6,488.21	7,457.07	2,385.19	7,817.96	1.64	1.64	-0.06	
14,289.00	89.53	0.98	6,488.43	7,546.05	2,386.81	7,904.45	0.76	-0.74	-0.15	
14,378.00	92.00	1.03	6,487.24	7,635.02	2,388.37	7,990.92	2.78	2.78	0.06	
14,467.00	91.56	0.76	6,484.48	7,723.97	2,389.76	8,077.33	0.58	-0.49	-0.30	
14,556.00	91.69	359.79	6,481.95	7,812.93	2,390.19	8,163.50	1.10	0.15	-1.09	
14,645.00	91.52	359.57	6,479.46	7,901.89	2,389.69	8,249.44	0.31	-0.19	-0.25	
14,734.00	91.07	358.78	6,477.45	7,990.86	2,388.41	8,335.19	1.02	-0.51	-0.89	
14,823.00	91.56	2.48	6,475.41	8,079.82	2,389.39	8,421.49	4.19	0.55	4.16	
14,912.00	91.38	2.26	6,473.12	8,168.71	2,393.07	8,508.42	0.32	-0.20	-0.25	
15,002.00	90.46	1.03	6,471.68	8,258.66	2,395.65	8,596.10	1.71	-1.02	-1.37	
15,091.00	89.75	0.85	6,471.51	8,347.65	2,397.11	8,682.56	0.82	-0.80	-0.20	
15,179.00	89.40	0.59	6,472.17	8,435.64	2,398.22	8,767.96	0.50	-0.40	-0.30	
15,269.00	88.64	0.54	6,473.71	8,525.62	2,399.10	8,855.24	0.85	-0.84	-0.06	
15,358.00	89.97	359.26	6,474.79	8,614.61	2,398.95	8,941.29	2.07	1.49	-1.44	
15,447.00	90.68	1.56	6,474.28	8,703.60	2,399.59	9,027.55	2.70	0.80	2.58	
15,536.00	91.07	0.63	6,472.92	8,792.57	2,401.29	9,114.05	1.13	0.44	-1.04	
15,624.00	92.00	0.94	6,470.56	8,880.53	2,402.49	9,199.45	1.11	1.06	0.35	
15,714.00	91.38	0.72	6,467.91	8,970.48	2,403.79	9,286.80	0.73	-0.69	-0.24	
15,776.84	91.35	0.16	6,466.41	9,033.30	2,404.27	9,347.70	0.90	-0.04	-0.90	

## Survey Report

<b>Company:</b>	BISON OIL & GAS II	<b>Local Co-ordinate Reference:</b>	Well ROSS 8-60 18-7-8
<b>Project:</b>	WELD COUNTY	<b>TVD Reference:</b>	KB 24' @ 4977.00usft
<b>Site:</b>	SEC 18-T8N-R60W	<b>MD Reference:</b>	KB 24' @ 4977.00usft
<b>Well:</b>	ROSS 8-60 18-7-8	<b>North Reference:</b>	True
<b>Wellbore:</b>	OWB	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	FINAL SURVEY	<b>Database:</b>	EDT_32Bit_ODBC

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
~1000' X-OVER PNT - 15776.84' MD, 1000' FNL, 377' FEL SEC 7									
15,803.00	91.34	359.92	6,465.80	9,059.45	2,404.29	9,373.01	0.90	-0.05	-0.90
15,870.00	91.12	359.44	6,464.36	9,126.44	2,403.92	9,437.71	0.79	-0.33	-0.72
LAST SURVEY - 15870' MD, 6464' TVD									
15,930.00	91.12	359.44	6,463.19	9,186.42	2,403.33	9,495.60	0.00	0.00	0.00
EXTRAPOLATION TO TD - 15930' MD, 847' FNL, 380' FEL SEC 7									

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
LP-ROSS 8-60 8 - actual wellpath misses target center by 30.74usft at 7210.39usft MD (6451.22 TVD, 472.39 N, 2263.91 E) - Point	0.00	0.00	6,445.00	468.28	2,293.73	1,485,422.63	3,381,154.31	40.657775°N	104.126175°W
EPI-ROSS 8-60 8 - actual wellpath misses target center by 27.17usft at 15776.91usft MD (6466.41 TVD, 9033.37 N, 2404.27 E) - Point	0.00	0.00	6,464.00	9,033.30	2,431.34	1,493,988.60	3,381,160.01	40.681284°N	104.125676°W
PBHL-ROSS 8-60 8 - actual wellpath misses target center by 29.63usft at 15926.68usft MD (6463.25 TVD, 9183.10 N, 2403.36 E) - Point	0.00	0.00	6,464.00	9,183.40	2,432.99	1,494,138.71	3,381,159.34	40.681696°N	104.125670°W

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
1,964.00	1,883.09	-15.02	482.08	SURFACE CSG - 1964' MD, 1883' TVD	
6,297.00	5,912.24	-113.15	2,071.04	KOP - 6297' MD, 5912' TVD	
7,120.00	6,450.49	382.64	2,253.28	HZ LANDING PNT - 7120' MD, 6450' TVD	
7,206.24	6,451.24	468.28	2,263.36	~1000' X-OVER PNT - 7206.24' MD, 1000' FSL, 380' FEL SEC 18	
15,776.84	6,466.41	9,033.30	2,404.27	~1000' X-OVER PNT - 15776.84' MD, 1000' FNL, 377' FEL SEC 7	
15,870.00	6,464.36	9,126.44	2,403.92	LAST SURVEY - 15870' MD, 6464' TVD	
15,930.00	6,463.19	9,186.42	2,403.33	EXTRAPOLATION TO TD - 15930' MD, 847' FNL, 380' FEL SEC 7	

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_