

Noble Energy Inc.- Weld County, CO (Grid North)

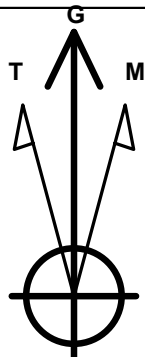
Well Name: **Sauer F33-77-1HNX**

Surface Location: Sauer F33-76-1HN Pad Sec.33-T5N-R65W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 4670.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1371106.56	3230820.85	40.349130	-104.671840	
Ensign 121 RKB - 13' WELL @ 4683.0ft (Ensign 121 RKB - 13')						

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
Sauer F33-77-1HNX BHL 735'FNL & 1650'FWL	6775.0	4338.8	-70.3	Circle (Radius: 35.0)
Sauer F33-77-1HNX Landing Pt.	6865.0	909.6	-29.6	Circle (Radius: 35.0)



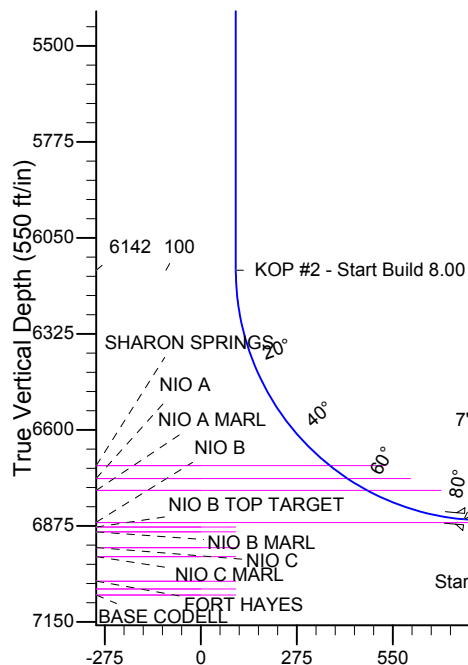
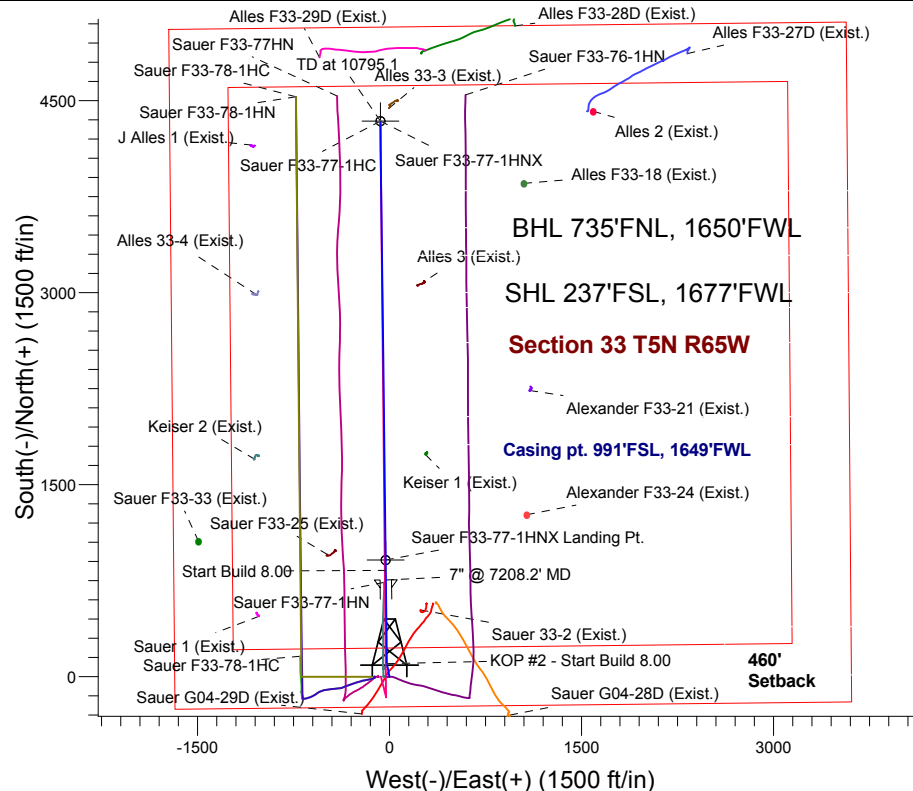
Azimuths to Grid North
True North: -0.53°
Magnetic North: 8.03°

Magnetic Field
Strength: 52924.7nT
Dip Angle: 66.96°
Date: 4/8/2013
Model: IGRF2010

Sauer F33-76-1HN Pad Sec.33-T5N-R65W
Sauer F33-77-1HNX
Plan A - Rev 0
12:31, April 08 2013

ANNOTATIONS

TVD	MD	Annotation
800.0	800.0	KOP - Start Build 1.50
2227.8	2231.0	Start Drop -1.50
6142.3	6145.7	KOP #2 - Start Build 8.00
6855.8	7208.2	Start 75.0 hold at 7208.2 MD
6862.3	7283.2	Start Build 8.00
6775.0	10795.1	TD at 10795.1



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	800.0	0.00	0.00	800.0	0.0	0.0	0.00	0.00	0.0	
3	1072.4	4.09	348.69	1072.2	9.5	-1.9	1.50	348.69	9.6	
4	2231.0	4.09	348.69	2227.8	90.5	-18.1	0.00	0.00	90.8	
5	2503.4	0.00	0.00	2500.0	100.0	-20.0	1.50	180.00	100.3	
6	6145.7	0.00	0.00	6142.3	100.0	-20.0	0.00	0.00	100.3	
7	7208.2	85.00	359.32	6855.8	753.7	-27.8	8.00	359.32	754.1	
8	7283.2	85.00	359.32	6862.3	828.4	-28.6	0.00	0.00	828.8	
9	7364.5	91.50	359.32	6864.8	909.6	-29.6	8.00	0.00	910.0	
10	10795.1	91.50	359.32	6775.0	4338.8	-70.3	0.00	0.00	4339.4	Sauer F33-77-1HNX BHL 735'FNL & 1650'FWL

ENSIGN
Directional

Sauer F33-77-1HNX BHL 735'FNL & 1650'FWL

Vertical Section at 359.07° (550 ft/in)