

ENSIGN

Directional

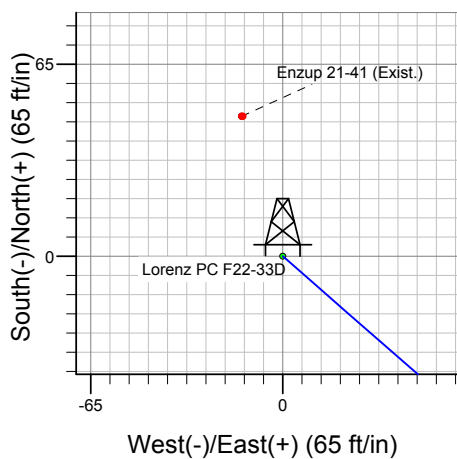
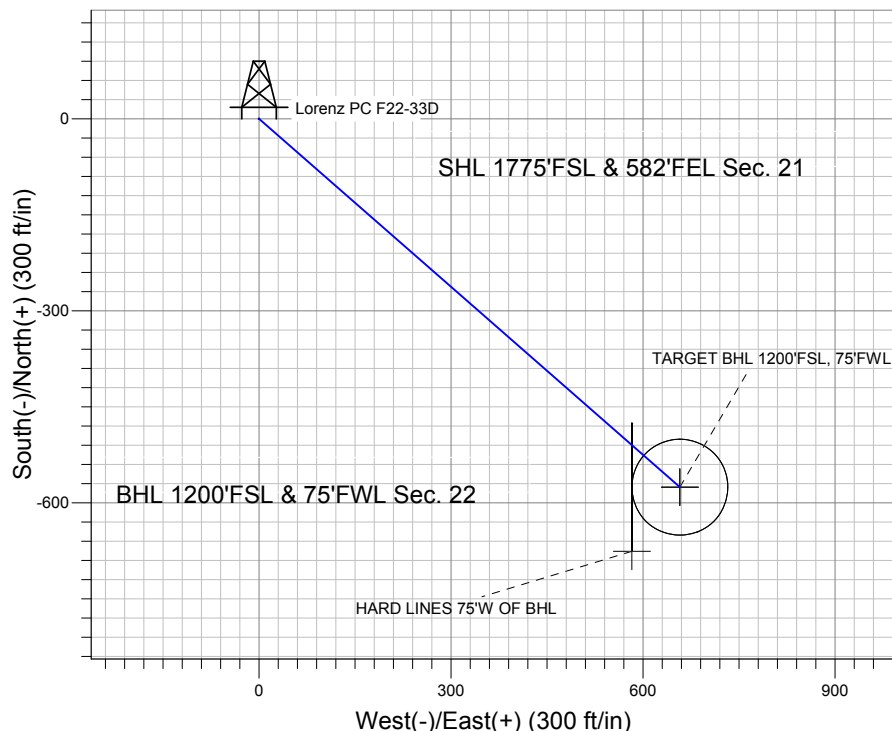
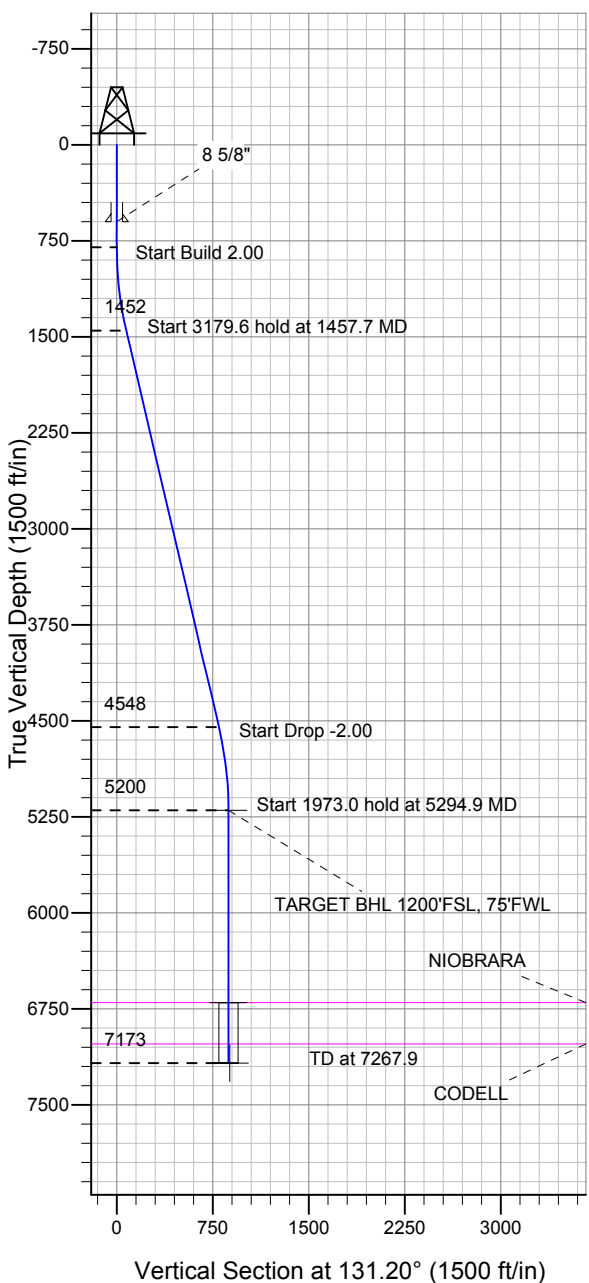
Well Name: Lorenz PC F22-33D

Surface Location: Lorenz PC F22-33D Pad Sec.21-T5N-R65W
North American Datum 1983 US State Plane 1983 Colorado Northern Zone

Ground Elevation: 4635.0

+N/-S +E/-W Northing Easting Latitude Longitude Slot
0.0 0.0 1383254.57 3233735.72 40° 22' 56.640 N 104° 39' 39.492 W
Original Well Elev WELL @ 4648.0ft (Original Well Elev)

NOBLE ENERGY INC WELD COUNTY CO



Lorenz PC F22-33D Pad Sec.21-T5N-R65W
Lorenz PC F22-33D
Noble Lorenz PC F22-33D Plan #1 (2-11-11)
11:03, February 11 2011



Azimuths to True North
Magnetic North: 8.81°

Magnetic Field
Strength: 53192.1nT
Dip Angle: 67.07°
Date: 2/11/2011
Model: IGRF200510

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 1200'FSL, 75'FWL	5200.0	-575.6	657.5	40° 22' 50.952 N	104° 39' 30.996 W	Point
TARGET CIRCLE 1200'FSL, 75'FWL	6701.0	-575.6	657.5	40° 22' 50.952 N	104° 39' 30.996 W	Circle (Radius: 75.0)
HARD LINES 75'W OF BHL	7173.0	-675.6	582.5	40° 22' 49.964 N	104° 39' 31.965 W	Polygon

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	1457.7	13.15	131.20	1451.9	-49.5	56.5	2.00	131.20	75.2	
4	4637.3	13.15	131.20	4548.1	-526.1	600.9	0.00	0.00	798.7	
5	5294.9	0.00	0.00	5200.0	-575.6	657.5	2.00	180.00	873.8	TARGET BHL 1200'FSL, 75'FWL
6	7267.9	0.00	0.00	7173.0	-575.6	657.5	0.00	0.00	873.8	