

Nichols Federal 0994-24-20E
Mesa County, CO
Q180590 & RM-180507
Design #3



Company Name: Laramie Energy, LLC
Nichols Federal 0994-24-20E
Mesa County, CO
Rig: H&P #290
Created By: Will Jircik
Date: 5/21/2018

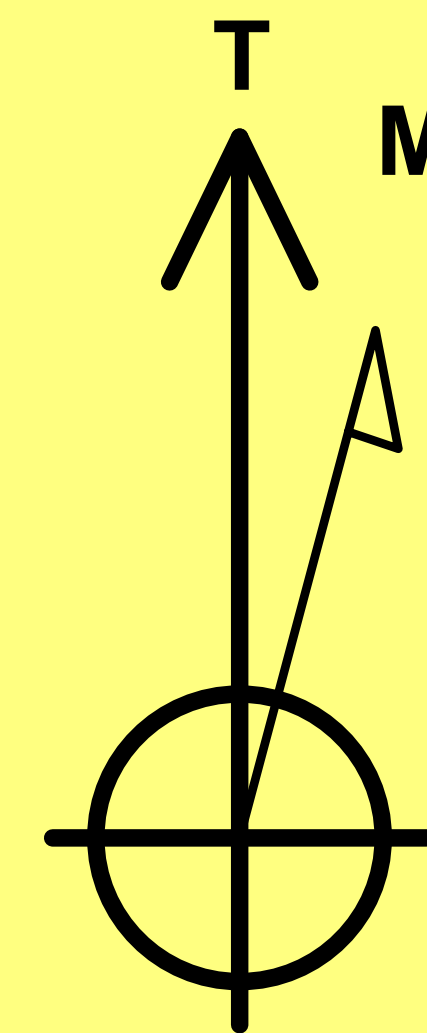


PROJECT DETAILS: Mesa County, CO

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Central Zone
System Datum: Mean Sea Level

FORMATION TOP DETAILS

| TVDPath | MDPath | Formation |
|---------|--------|-----------------|
| 2386.0 | 2530.8 | G' Sand |
| 4136.0 | 4692.8 | Williams Fork |
| 5536.0 | 6307.1 | TOG |
| 6436.0 | 7207.4 | Cameo |
| 7096.0 | 7867.4 | Base Cameo Coal |
| 7136.0 | 7907.4 | Rollins |



Azimuths to True North
Magnetic North: 9.43°

Strength: 51296.5snT
Dip Angle: 65.40°
Date: 5/10/2018
Model: USER DEFINED

DESIGN TARGET DETAILS

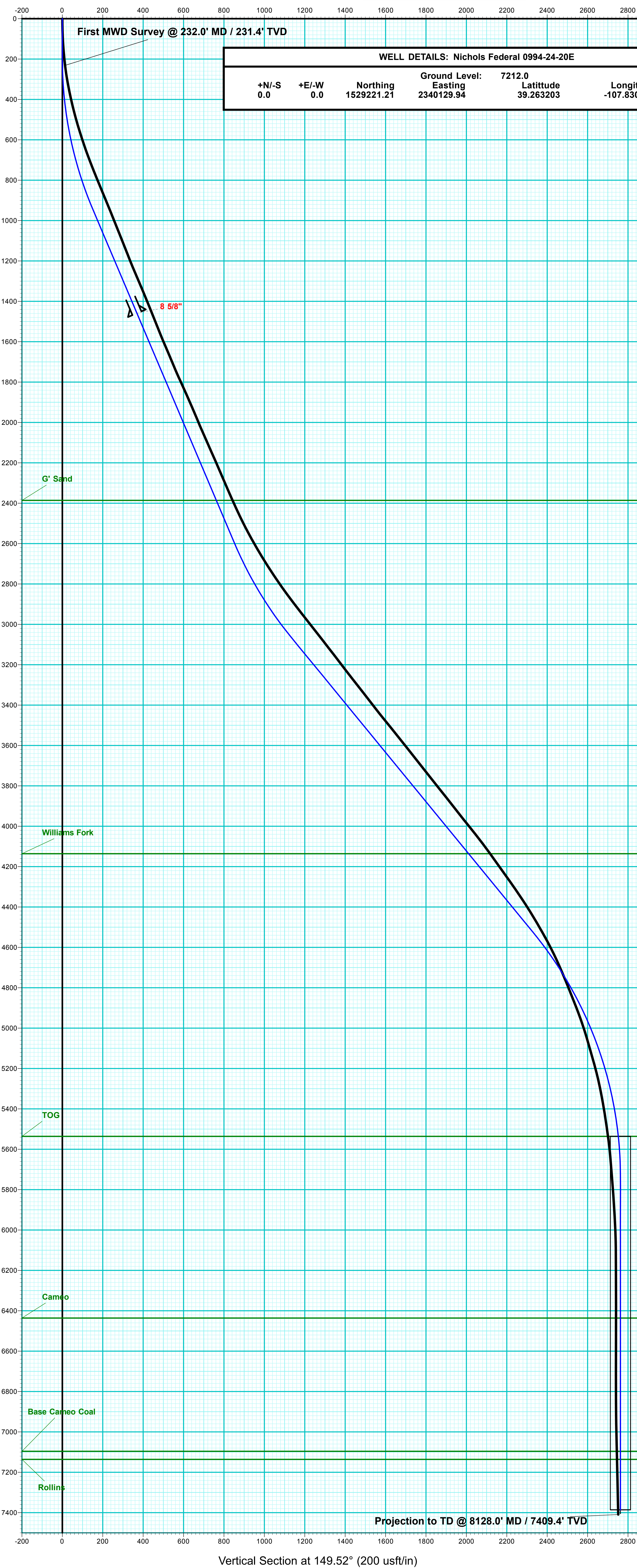
| Name | TVD | +N/-S | +E/-W | Northing | Easting | Latitude | Longitude | Shape |
|------------------------------------|--------|---------|--------|------------|------------|-----------|-------------|-----------------------|
| PBHL - Nichols Federal 0994-24-20E | 7386.0 | -2380.8 | 1401.1 | 1526805.21 | 2341469.47 | 39.256666 | -107.825902 | Circle (Radius: 50.0) |

DESIGN ANNOTATIONS

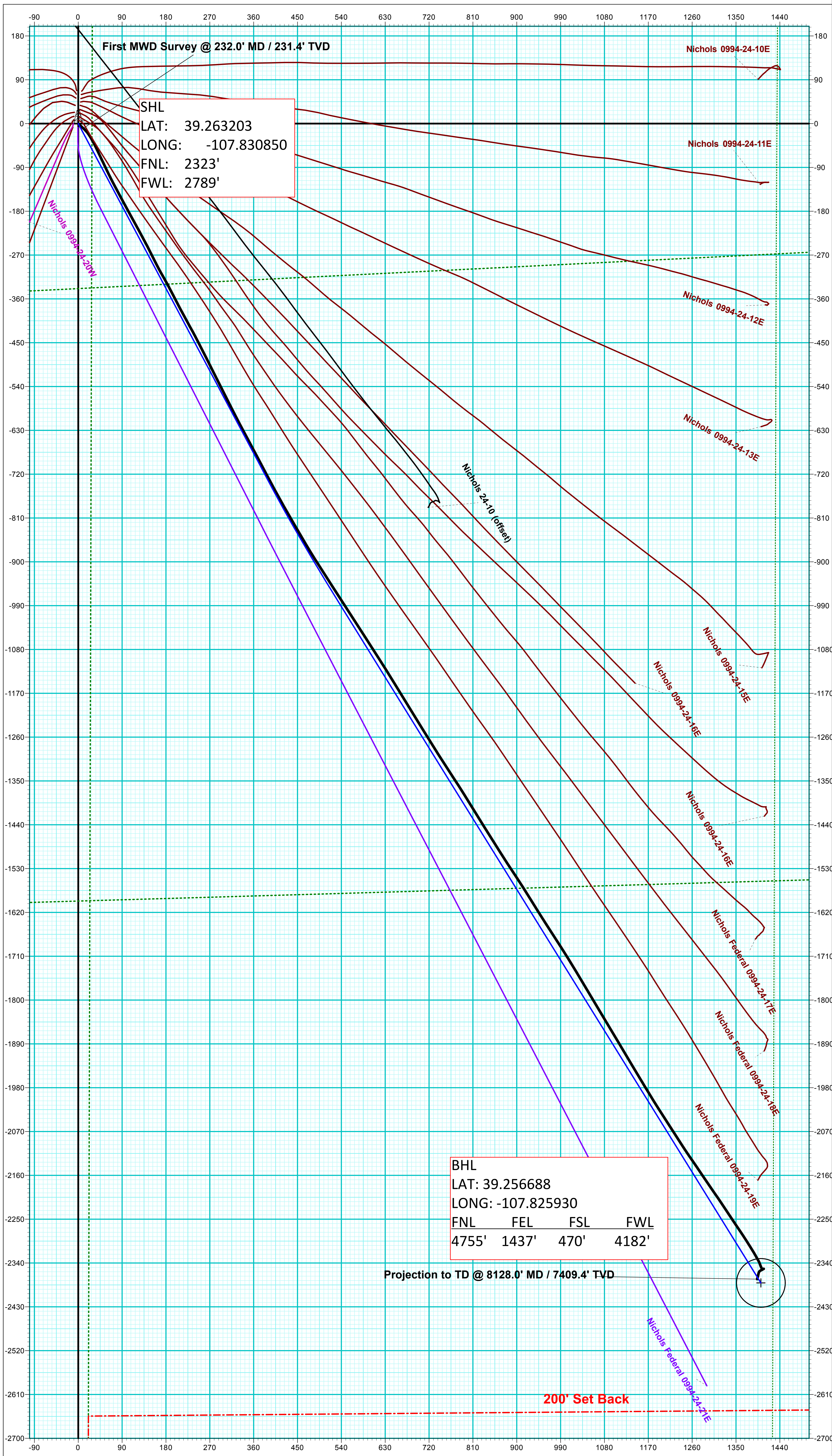
| MD | Inc | Azi | TVD | +N/-S | +E/-W | VSec | Departure | Annotation |
|--------|-------|--------|--------|---------|--------|--------|-----------|---------------------------------|
| 200.0 | 0.00 | 0.00 | 200.0 | 0.0 | 0.0 | 0.0 | 0.0 | / Build 3° / 100' |
| 966.7 | 23.00 | 152.00 | 946.2 | -134.1 | 71.3 | 151.7 | 151.8 | EOB @ 23.00° Inc. / 152.00° Azm |
| 2763.2 | 23.00 | 152.00 | 2600.0 | -753.9 | 400.8 | 853.0 | 853.8 | Build 3° / 100' |
| 3311.3 | 39.33 | 148.20 | 3067.4 | -997.7 | 543.6 | 1135.6 | 1136.4 | EOB @ 39.33° Inc. / 148.20° Azm |
| 5196.4 | 39.33 | 148.20 | 4525.5 | -2013.2 | 1173.1 | 2330.0 | 2331.2 | Drop 3° / 100' |
| 6507.4 | 0.00 | 0.00 | 5736.0 | -2380.8 | 1401.1 | 2762.5 | 2763.8 | EOD @ Vertical |
| 8157.4 | 0.00 | 0.00 | 7386.0 | -2380.8 | 1401.1 | 2762.5 | 2763.8 | TD @ 8157.4' MD / 7386.0' TVD |

ANNOTATIONS

| MD | Inc | Azi | TVD | +N/-S | +E/-W | VSec | Departure | Annotation |
|--------|------|--------|--------|---------|--------|--------|-----------|---|
| 232.0 | 7.00 | 133.00 | 231.4 | -9.7 | 10.4 | 13.4 | 14.2 | First MWD Survey @ 232.0' MD / 231.4' TVD |
| 8128.0 | 2.02 | 197.87 | 7409.4 | -2373.0 | 1393.3 | 2750.6 | 2774.0 | Projection to TD @ 8128.0' MD / 7409.4' TVD |



Vertical Section at 149.52° (200 usft/in)



SHL
LAT: 39.263203
LONG: -107.830850
FNL: 2323'
FWL: 2789'

BHL
LAT: 39.256688
LONG: -107.825930
FNL FEL FSL FWL
4755' 1437' 470' 4182'

Projection to TD @ 8128.0' MD / 7409.4' TVD

200' Set Back