

Nichols Federal 0994-24-18E
Mesa County, CO
Q180508 & RM-180436
Design #4



Company Name: Laramie Energy, LLC
Nichols Federal 0994-24-18E
Mesa County, CO
Rig: H&P #290
Created By: Will Jircik
Date: 5/02/2018

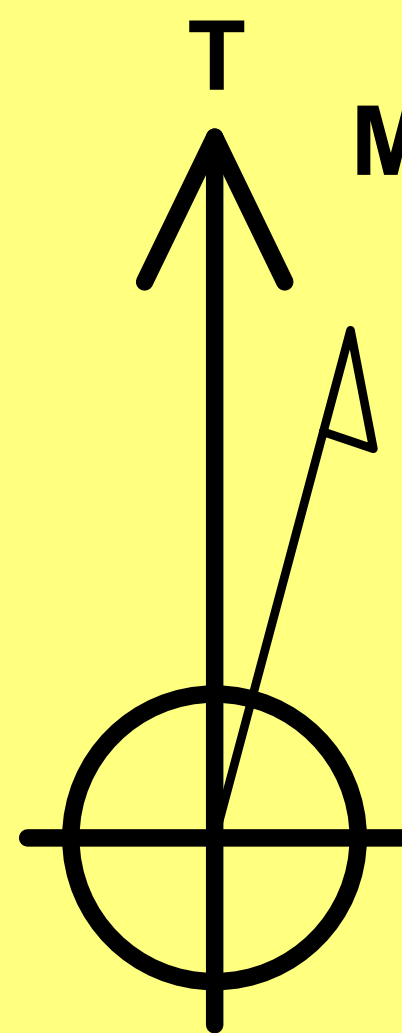


PROJECT DETAILS: Mesa County, CO

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 |
|---------|--------|-----------------|
| 2406.0 | 2502.8 | G' Sand |
| 4156.0 | 4568.5 | Williams Fork |
| 5556.0 | 6158.2 | TOG |
| 6456.0 | 7058.6 | Cameo |
| 7116.0 | 7718.6 | Base Cameo Coal |
| 7156.0 | 7758.6 | Rollins |



Azimuths to True North
Magnetic North: 9.44°

Strength: 51303.8snT
Dip Angle: 65.40°
Date: 4/17/2018
Model: USER DEFINED

DESIGN TARGET DETAILS

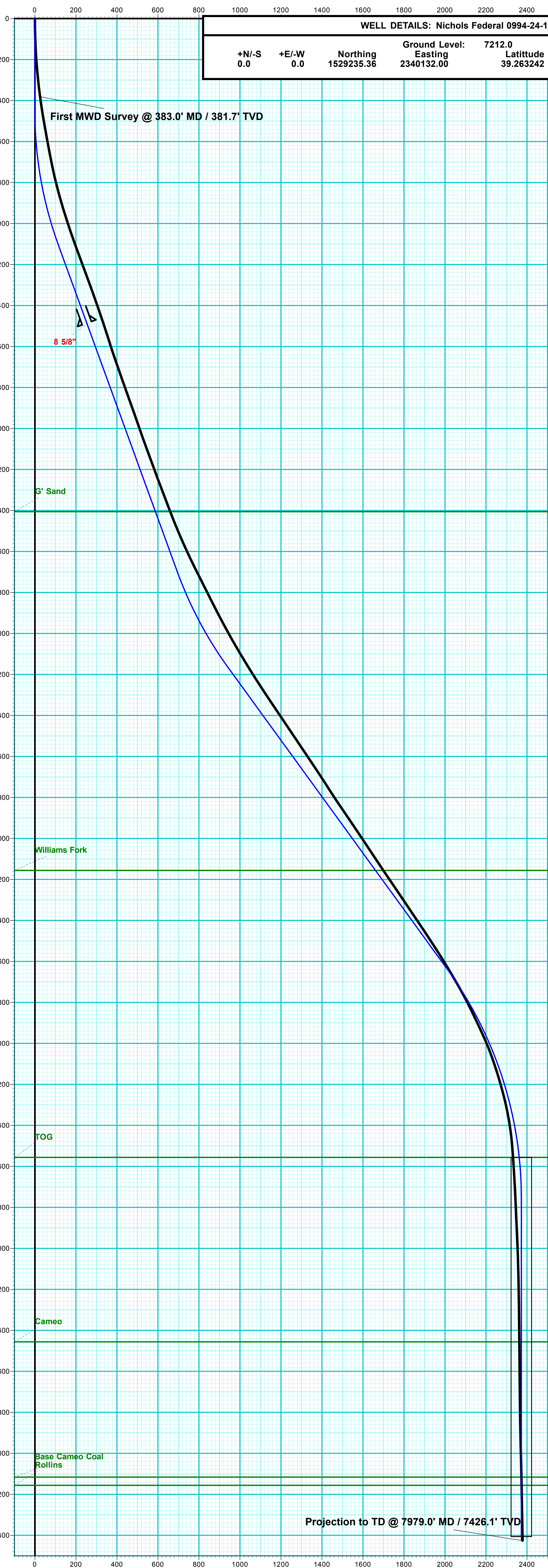
| Name | TVD | +N/-S | +E/-W | Northing | Easting | Latitude | Longitude | Shape |
|------------------------------------|--------|---------|--------|------------|------------|-----------|-------------|-----------------------|
| PBHL - Nichols Federal 0994-24-18E | 7406.0 | -1915.4 | 1400.5 | 1527284.70 | 2341482.89 | 39.257983 | -107.825898 | Circle (Radius: 50.0) |

DESIGN #4 ANNOTATIONS

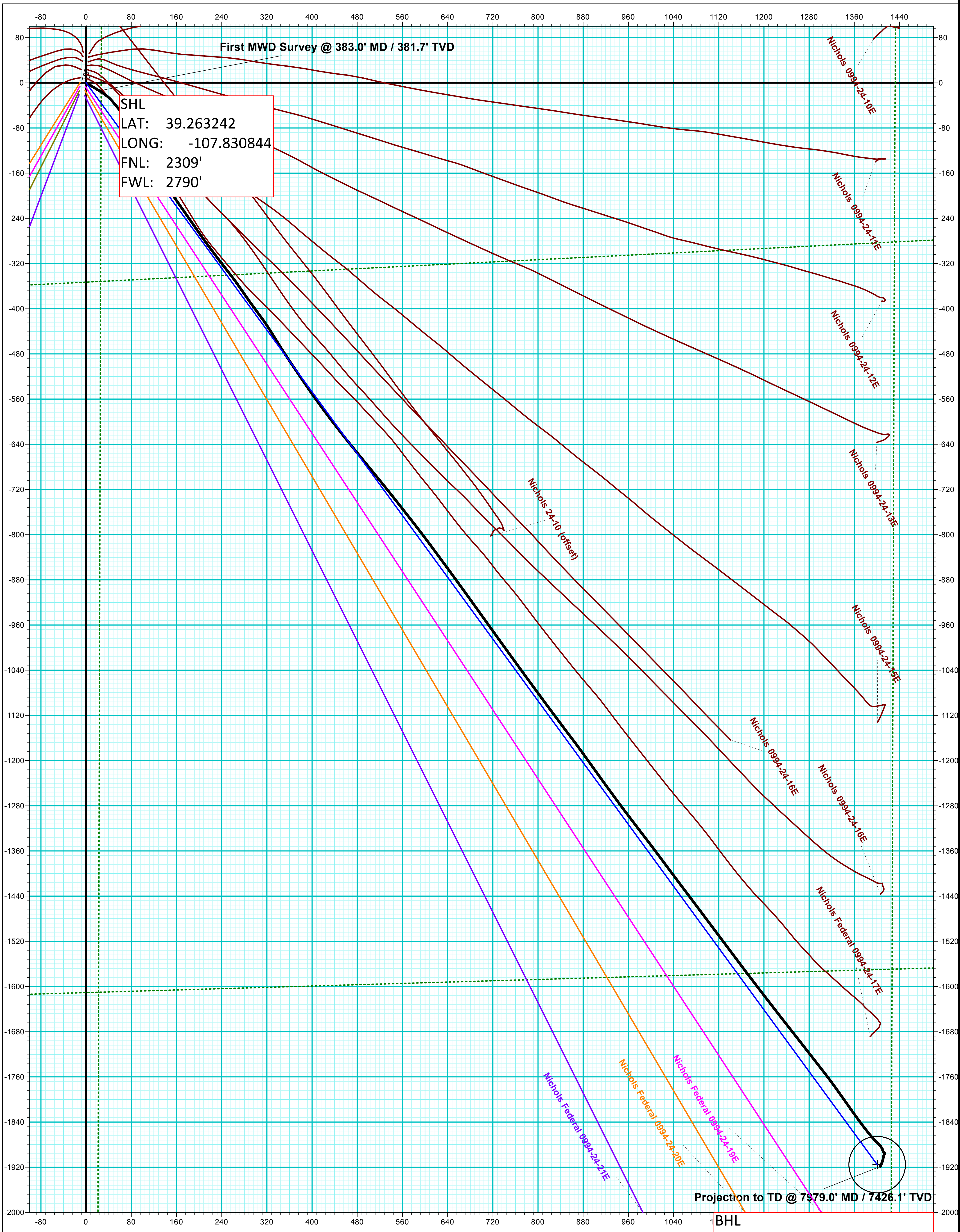
| MD | Inc | Azi | TVD | +N/-S | +E/-W | VSec | Departure | Annotation |
|--------|-------|--------|--------|---------|--------|--------|-----------|---------------------------------|
| 454.0 | 0.00 | 0.00 | 454.0 | 0.0 | 0.0 | 0.0 | 0.0 | KOP (Build 3° / 100') |
| 1120.7 | 20.00 | 143.83 | 1107.2 | -3.0 | 68.0 | 115.2 | 115.2 | EOB @ 20.00° Inc. / 143.83° Azm |
| 2815.7 | 20.00 | 143.83 | 2700.0 | -561.0 | 410.1 | 694.9 | 694.9 | Build 3° / 100' |
| 3348.9 | 36.00 | 143.82 | 3169.3 | -762.4 | 557.4 | 944.4 | 944.4 | EOB @ 36.00° Inc. |
| 5158.7 | 36.00 | 143.82 | 4633.5 | -1621.0 | 1185.2 | 2008.1 | 2008.1 | Drop 3° / 100' |
| 6358.6 | 0.00 | 0.00 | 5756.0 | -1915.4 | 1400.5 | 2372.8 | 2372.8 | EOD @ Vertical |
| 8008.6 | 0.00 | 0.00 | 7406.0 | -1915.4 | 1400.5 | 2372.8 | 2372.8 | TD @ 8008.6' MD / 7406.0' TVD |

ANNOTATIONS

| MD | Inc | Azi | TVD | +N/-S | +E/-W | VSec | Departure | Annotation |
|--------|------|--------|--------|---------|--------|--------|-----------|---|
| 383.0 | 8.20 | 121.10 | 381.7 | -14.1 | 23.4 | 25.2 | 27.4 | First MWD Survey @ 383.0' MD / 381.7' TVD |
| 7979.0 | 2.02 | 205.52 | 7426.1 | -1918.6 | 1406.1 | 2378.7 | 2394.5 | Projection to TD @ 7979.0' MD / 7426.1' TVD |



Vertical Section at 143.83° (200 usf/in)



SHL
LAT: 39.263242
LONG: -107.830844
FNL: 2309'
FWL: 2790'

| | | | |
|-------------------|-------|------|-------|
| PBHL | | | |
| LAT: 39.257974 | | | |
| LONG: -107.825878 | | | |
| FNL | FEL | FSL | FWL |
| 4288' | 1424' | 938' | 4196' |