

Nichols Federal 0994-24-19E  
Mesa County, CO  
Q180547 & RM-180471  
Design #3



Company Name: Laramie Energy, LLC  
Nichols Federal 0994-24-19E  
Mesa County, CO  
Rig: H&P #290  
Created By: Will Jircik  
Date: 5/9/2018

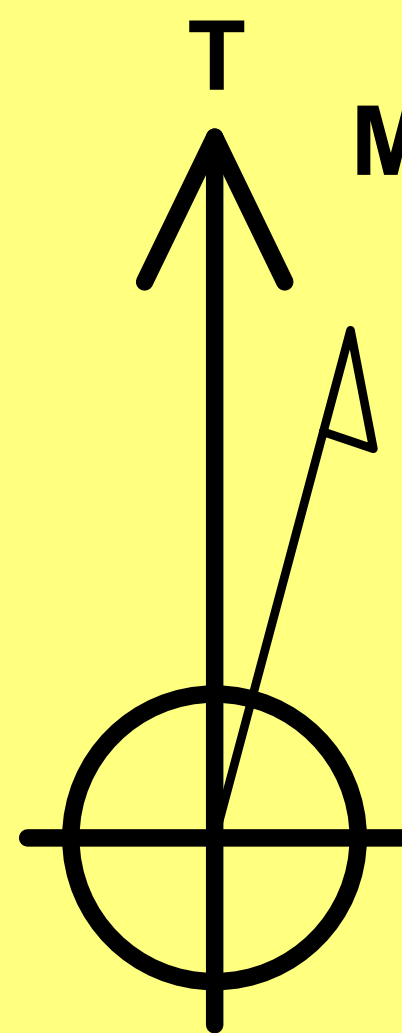


PROJECT DETAILS: Mesa County, CO

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
2396.0	2495.6	G' Sand
4146.0	4642.2	Williams Fork
5546.0	6259.1	TOG
6446.0	7159.5	Cameo
7106.0	7819.5	Base Cameo Coal
7146.0	7859.5	Rollins



Azimuths to True North  
Magnetic North: 9.44°

Strength: 51298.8snT  
Dip Angle: 65.40°  
Date: 5/2/2018  
Model: USER DEFINED

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PBHL - Nichols Federal 0994-24-19E	7396.0	-2153.2	1407.6	1527039.50	2341482.84	39.257310	-107.825876	Circle (Radius: 50.0)

DESIGN #3 ANNOTATIONS

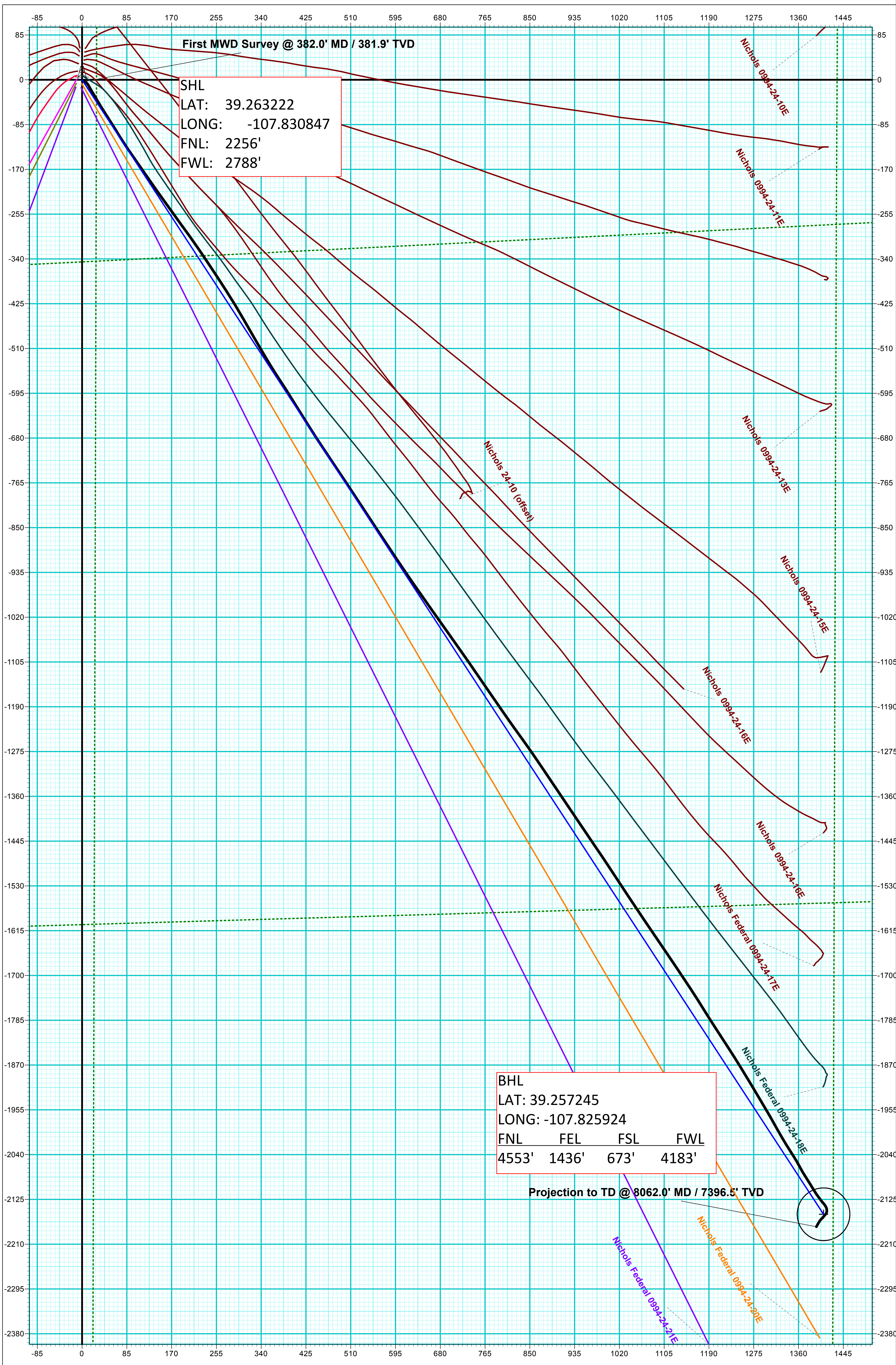
MD	Inc	Azi	TVD	+N/-S	+E/-W	VSec	Departure	Annotation
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.0	KOP (Build 3° / 100')
1066.7	20.00	146.83	1053.2	-96.4	63.0	115.2	115.2	EOB @ 20.00° Inc. / 146.83° Azm
2712.7	20.00	146.83	2600.0	-567.7	371.0	678.2	678.2	Build 3° / 100'
3369.5	39.70	146.83	3166.8	-839.9	549.0	1003.5	1003.5	EOB @ 39.70° Inc.
5136.1	39.70	146.83	4526.0	-1784.5	1166.5	2132.0	2132.0	Drop 3° / 100'
6459.5	0.00	0.00	5746.0	-2153.2	1407.6	2572.5	2572.5	EOD @ Vertical
8109.5	0.00	0.00	7396.0	-2153.2	1407.6	2572.5	2572.5	TD @ 8109.5' MD / 7396.0' TVD

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSec	Departure	Annotation
382.0	1.80	121.90	381.9	-3.2	5.1	5.4	6.0	First MWD Survey @ 382.0' MD / 381.9' TVD
8062.0	2.37	209.74	7396.5	-2176.8	1394.0	2584.8	2609.9	Projection to TD @ 8062.0' MD / 7396.5' TVD



Vertical Section at 146.83° (200 usft/in)



First MWD Survey @ 382.0' MD / 381.9' TVD

SHL  
LAT: 39.263222  
LONG: -107.830847  
FNL: 2256'  
FWL: 2788'

BHL  
LAT: 39.257245  
LONG: -107.825924  
FNL FEL FSL FWL  
4553' 1436' 673' 4183'

Projection to TD @ 8062.0' MD / 7396.5' TVD