

Décollement Consulting Inc.



Scale: 5" / 100'
Measured Depth Log

Well Name North Platte K31-O34-34HNB

Location SE/SW Section 27, T5N - R63W

State CO

County Weld

Country USA

Rig Number Xtreme 22

API Number 05-123-41887

Field Wattenberg

Region D.J. Basin

Drilling Completed 8/31/2015

Spud Date 8/28/2015

Surface Coordinates 1188 FSL x 2492 FWL (Lat: 40.36648, -104.42233)

Bottom Hole Coordinates 470 FSL x 2397 FEL (Lat: 40.35002, -104.42127)

Ground Elevation 4,541

K.B. Elevation 4,558

Logged Interval 6,250 To 6,897

Total Depth 11,068

Formation Niobrara "B" Chalk

Type of Drilling Fluid Water Based Mud

Operator

Address Bonanza Creek Energy, Inc.
410 17th Street, Suite 1500
Denver, Colorado 80202

Geologist

Name Dan Kabala & Brian Spitzmiller
Company Décollement Consulting Inc.
Address 13300 Braun Rd.
Golden, CO. 80401

Zone Color Coding



Rock Types

Blank



CHALK

CEMENT



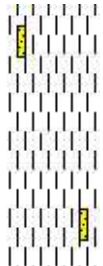
LIMESTONE



SANDSTONE



MPF



SHALE S



SHALE SF

CPF TT TT TT MARLSTONE --- -- -- SHALE



Accessories

Fossils

- ALGAE
- AMPHIPORA
- BELEMNITE
- BIOCLASTIC
- BRACHIOPOD
- BRYOZOA
- CEPHALOPOD
- CORAL
- CRINOID
- ECHINOID
- FISH
- FORAMINIFERA

F FOSSIL

GASTROPOD

OOLITE

OSTRACOD

PELECYPOD

PELLET

PISOLITE

PLANT REMAINS

PLANT SPORES

SCAPHOPOD

STROMATOPOROID

Minerals

ANHYDRITE

ARGILLACEOUS

ARGILLITE GRAIN

BENTONITE

BITUMENOUS SUBSTANCE

BRECCIA FRAGMENTS

CALCAREOUS

CARBONACEOUS FLAKES

CHTDK

CHTLT

COAL - THIN BEDS

DOLOMITIC

FELDSPAR

FERRUGINOUS PELLET

FERRUGINOUS

GLAUCONITE

GYPSIFEROUS

HEAVY MINERAL

KAOLIN

MARLSTONE

MINERAL CRYSTALS

NODULES

PHOSPHATE PELLETS

PHYRITE

SALT CAST

SANDY

SILICEOUS

SILTY

TUFFACEOUS

Stringer

- ANHYDRITE STRINGER
- BENTONITE STRINGER
- COAL STRINGER
- DOLomite STRINGER
- GYPSUM STRINGER
- LIMESTONE STRINGER
- MARLSTONE (CALC) STRG
- MARLSTONE (DOU) STRG
- SANDSTONE STRINGER
- SHALE STRINGER
- SILTSTONE STRINGER

Slide/Rotate

Depth

6,160 6,170 6,180 6,190 6,200 6,210 6,220 6,230 6,240 6,250 6,260 6,270 6,280 6,290 6,300 6,310 6,320 6,330

Total Gas & Chromatography

GAS
C1
C2
C3
iC4
nC4
CO2

Black = Slide
White = Rotate

Total Gas Calibration
1% Methane = 100u

Gas Chromatograph Calibration
C1 = 1.0% Methane = 10,000ppm
C2 = 1.0% Ethane = 10,000ppm
C3 = 1.0% Propane = 10,000ppm
iC4 = 1.0% Iso-Butane = 10,000ppm
nC4 = 1.0% N-Butane = 10,000ppm

10000
1000000
100

C1: 69.9%
C2: 12.7%
C3: 10.0%
iC4: 1.4%
nC4: 4.0%

CO2: 0.0%

GAS (units)
C1-C4 (PPM)
CO2 (percent)

4482u

5389u

MMW: 9.1 VIS 31

800
250

WOB 15
RPM 21
SPP 2654
SPM 90/91

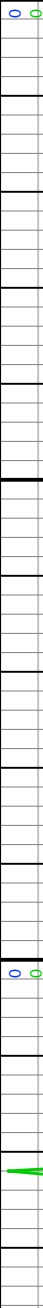
Curves
ROP
Gamma

Decollement Consulting on location and rigged up with Bloodhound #5643 on 8/31/2015.

Start logging at 6,200 on 8/31/2015 at 19:13 hours.

Bit #: 2
Size: 8.75
Mfr.: VAREL
Type: VS513HG
Depth In: 1,662'
Depth Out: 6,897'
Hours: 10 hrs
Avg Ft/Hr: 523 /hr
Jets: 7X18
S/N: 4008352

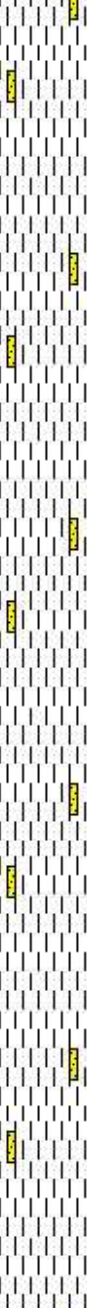
ROP (ft/hr)
Gamma (API)



Depth Labels

6,160 6,170 6,180 6,190 6,200 6,210 6,220 6,230 6,240 6,250 6,260 6,270 6,280 6,290 6,300 6,310 6,320 6,330

Interpretive Lithology



Well Bore
TVD

MD: 6,181'
TVD: 5,981.99'
Inclination: 20.82°
Azimuth: 163.12°
VS: 1,256.53'

TVD (ft)

100% SH: lt-med gy, tr drk gy/bm, dll rthy istr, sl wxy, v com silty grty txt, tblr ply occ blk, crmbly ten, tr drk intbdd carb mat

tr SS

V slw v dul bleeding orng cut, v thin drk yel resid ring

MD: 6,275'
TVD: 6,064.23'
Inclination: 36.86°
Azimuth: 182.27°
VS: 1,301.2'

TVD (ft)

100% SH: lt-med gy, tr drk gy/bm, dll rthy istr, sl wxy, v com silty grty txt, tblr ply occ blk, crmbly ten, tr drk intbdd carb mat

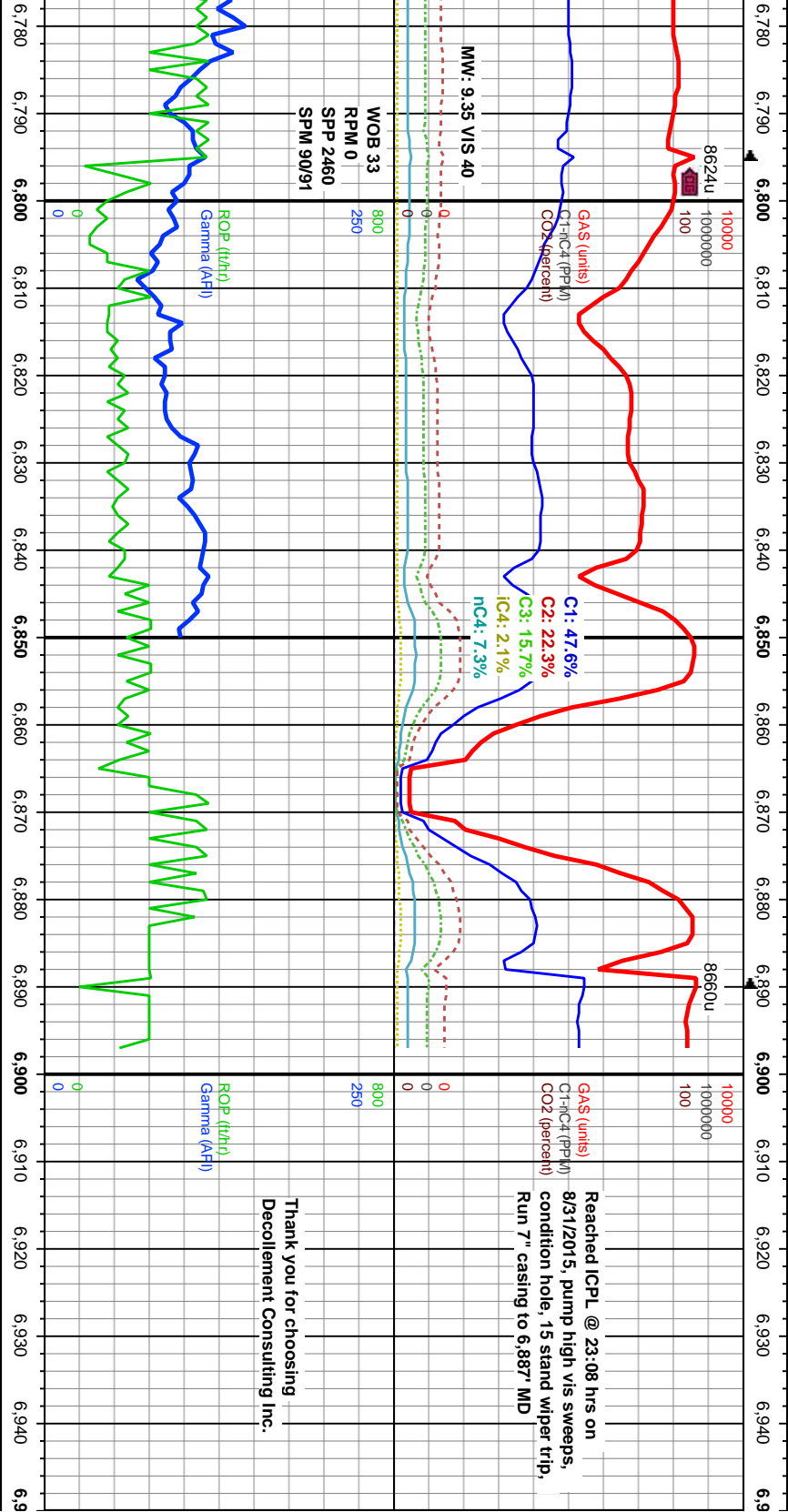
tr SS

V slw v dul milky blu-grn cut, v thin grn-yel resid ring

Oil Show

Mod slw dul milky blu sl grn cut, mod thc tresid ring

TR
P
FR
G
E



Thank you for choosing
Decollement Consulting Inc.

5700	90% CHK: lt-med gy, ooc brn, mottld wh, sft - mod frm, ooc brt, sb ply-sb blkly, rthy lstr, v calc, sl brn/bk sin. 10% MARL: dk gy/bk, frm-sft, sb ply-sb blkly, rthy lstr, grty, mottld carb mat.	95% CHK: lt-med gy, ooc brn, mottld wh, sft - mod frm, ooc brt, sb ply-sb blkly, rthy lstr, v calc, sl brn/bk sin. 5% MARL: dk gy/bk, frm-sft, sb ply-sb blkly, rthy lstr, grty, mottld carb mat.	5700
MD: 6,848' TVD: 6,347.11' Inclination: 83° Azimuth: 176.25° VS: 1,782.94'	MD: 6,897' TVD: 6,351.32' Inclination: 87.15° Azimuth: 177.76° VS: 1,831.75'	Projection to Bit MD: 6,897' TVD: 6,351.32' Inclination: 87.15° Azimuth: 177.76° VS: 1,831.75'	
TVD (ft)	TVD (ft)	TVD (ft)	
90% CHK: lt-med gy, ooc brn, mottld wh, sft - mod frm, ooc brt, sb ply-sb blkly, rthy lstr, v calc, sl brn/bk sin. 10% MARL: dk gy/bk, frm-sft, sb ply-sb blkly, rthy lstr, grty, mottld carb mat.	95% CHK: lt-med gy, ooc brn, mottld wh, sft - mod frm, ooc brt, sb ply-sb blkly, rthy lstr, v calc, sl brn/bk sin. 5% MARL: dk gy/bk, frm-sft, sb ply-sb blkly, rthy lstr, grty, mottld carb mat.	rr BENT, rr pyr nods, abndt cal frags Mod fst blu-whi bleeding cut, thick blu-whi resid ring.	rr BENT, rr pyr nods, abndt cal frags Mod fst blu-whi bleeding cut, thick blu-whi resid ring.
ags	ags	ags	ags
thick blu-whi resid	thick blu-whi resid	thick blu-whi resid	thick blu-whi resid
ring.	ring.	ring.	ring.
7000	7000	7000	7000