

Geologic Report
Aaron L. Young

Drilling Time and Sample Log

Scale 1:240 (5"=100') Imperial
Measured Depth Log

Well Name: Down-Wald Unit #1-1
API: 15-101-22603
Location: Section 1 - T19S - R27W
License Number: 31652
Spud Date: 2 / 7 / 2018
Surface Coordinates: 2422' FSL and 680' FWL
Approx. NW - NE - NW - SW
Region: Lane Co., KS
Drilling Completed: 2 / 16 / 2018
Bottom Hole
Coordinates:
Ground Elevation (ft): 2640' K.B. Elevation (ft): 2647'
Logged Interval (ft): 3600' To: 4650' Total Depth (ft): 4650'
Formation: Mississippi
Type of Drilling Fluid: Chemical - Andy's

Printed by MudLog from WellSight Systems 1-800-447-1534 www.WellSight.com

OPERATOR

Company: Norstar Petroleum, Inc.
Address: 88 Inverness Cir E. Unit F104
Englewood, CO 80112 + 5514

GEOLOGIST

Name: Aaron L. Young, M. S.
Company: Young Consulting LLC
Address: 100 S Main Ste 505
Wichita, KS 67202

General Info

CONTRACTOR: Pickrell Drilling, Rig #10

BIT RECORD:

No.	Size	Make	Jets	Out	Feet	Hours
1	12-1/4	RR	16-16-16	223'	216'	3.50
2	7-7/8	HA23	14-14-14	4650'	4427'	118.75

SURVEYS: 223'-.75, 723'-.75, 1223'-.75, 1796'-0, 2234'-.1, 4508'-.1, 4572'-1.25, 4650'-1.25

GENERAL DRILLING AND PUMP INFORMATION:

Drilling with 38,000 -40,000 lbs. on bit and approx 60-70 RPM.
Running 9 stands of collars; 537.86'
Pumping approx 800 psi at standpipe.

Daily Status

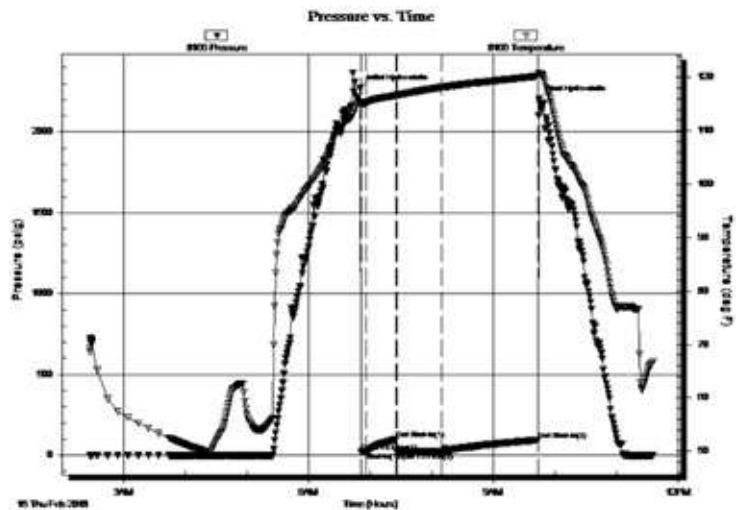
2/7/18 - Spud @ 9:45pm, Drilled to 223', ran 5 jts of new 8 5/8" 23# surface casing set @ 221', cemented w/ 160 sx. Common, w/ 2% gel & 3% CC, PD @ 6:45am. Cem circ.
 2/8/18 - WOC, @ 223'
 2/9/18 - Drilling, @ 796'
 2/10/18 - Drilling, @ 2046'
 2/11/18 - Drilling, @ 2854'
 2/12/18 - Drilling, @ 3328'
 2/13/18 - Drilling, @ 3975'
 2/14/18 - Drilling, @ 4302'
 2/15/18 - DST #1, @ 4508'
 2/16/18 - DST #2 @ 4572'
 2/17/18 - RTD, @ 4650', RTD @ 4650', LTD 4652', Plugged as follows: 50 sx at 2040', 80 sx at 1200', 50 sx at 600', 50 sx at 270', 20 sx at 60', and 30 sx in rathole. all cem 60/40 POZ w/ 4% gel, 1/4# flocele/sx. PD at 11:55am

DST #1 FT. SCOTT
 4458' - 4508'
 5" - 30" - 45" - 90"

IF: 1/4" blow built to 1"
 IS: No blow
 FF: 1/2" blow built to 4.5"
 FSI: No blow

Rec'd: 30' OCM (10% O, 90% M), 155' GIP

SIP: 99-94#
 FP: 19-22#, 20-23#
 HP: 2269-2201#

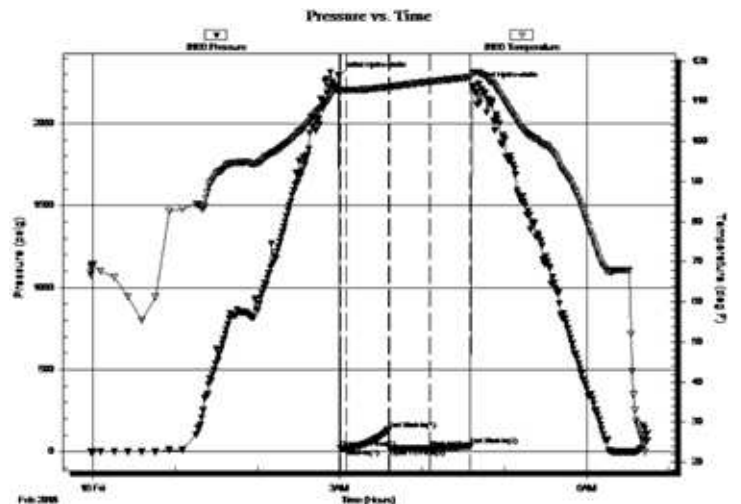


DST #2 CHEROKEE
 4526' - 4572'
 5" - 30" - 30" - 30"

IF: 1/4" blow died to surface blow
 IS: No blow
 FF: No blow
 FSI: No blow

Rec'd: 5' M (100% M)

SIP: 131-35#
 FP: 17-17#, 18-18#
 HP: 2291-2226#



ROCK TYPES

Anhy
 Bent
 Brec
 Cht
 Clyst
 Coal
 Congl
 Dol

Gyp
 Igne
 Lmst
 Meta
 Mrlst
 Salt
 Shale
 Shcol

Shgy
 Sltst
 Ss
 Till
 Carb sh
 Dol
 Dtd
 Gry sh

Sandylms
 Shale
 Sltstn
 Shlyslts
 Sltysht
 Lms

ACCESSORIES

MINERAL

Anhy
 Arggrn
 Arg
 Bent
 Bit
 Brecfrag
 Calc
 Carb
 Chtdk
 Chtlt
 Dol
 Feldspar
 Ferrpel
 Ferr
 Glau
 Gyp
 Hvymn
 Kaol
 Marl
 Minxl
 Nodule
 Phos
 Pyr

Salt
 Sandy
 Silt
 Sil
 Sulphur
 Tuff
 Chlorite
 Dol
 Sand
 Sltly

FOSSIL

Algae
 Amph
 Belm
 Bioclst
 Brach
 Bryozoa
 Cephal
 Coral
 Crin
 Echin
 Fish
 Foram

Fossil
 Gastro
 Oolite
 Ostra
 Pelec
 Pellet
 Pisolite
 Plant
 Strom
 Fuss
 Oomold

STRINGER

Anhy
 Arg
 Bent
 Coal
 Dol
 Gyp
 Ls
 Mrst
 Sltstrg
 Ssstrg
 Carbsh

Clystn
 Dol
 Grysh
 Gryslt
 Lms
 Sandylms
 Sh
 Sltstn

TEXTURE

Boundst
 Chalky
 Cryxln
 Earthy
 Finexln
 Grainst
 Lithogr
 Microxln
 Mudst
 Packst
 Wackest

OTHER SYMBOLS

POROSITY TYPE

Earthy
 Fenest
 Fracture
 Inter
 Moldic
 Organic
 Pinpoint
 Vuggy

SORTING

Well
 Moderate
 Poor

ROUNDING

Rounded
 Subrnd
 Subang
 Angular

OIL SHOWS

Even
 Spotted
 Ques
 Dead
 Gas show

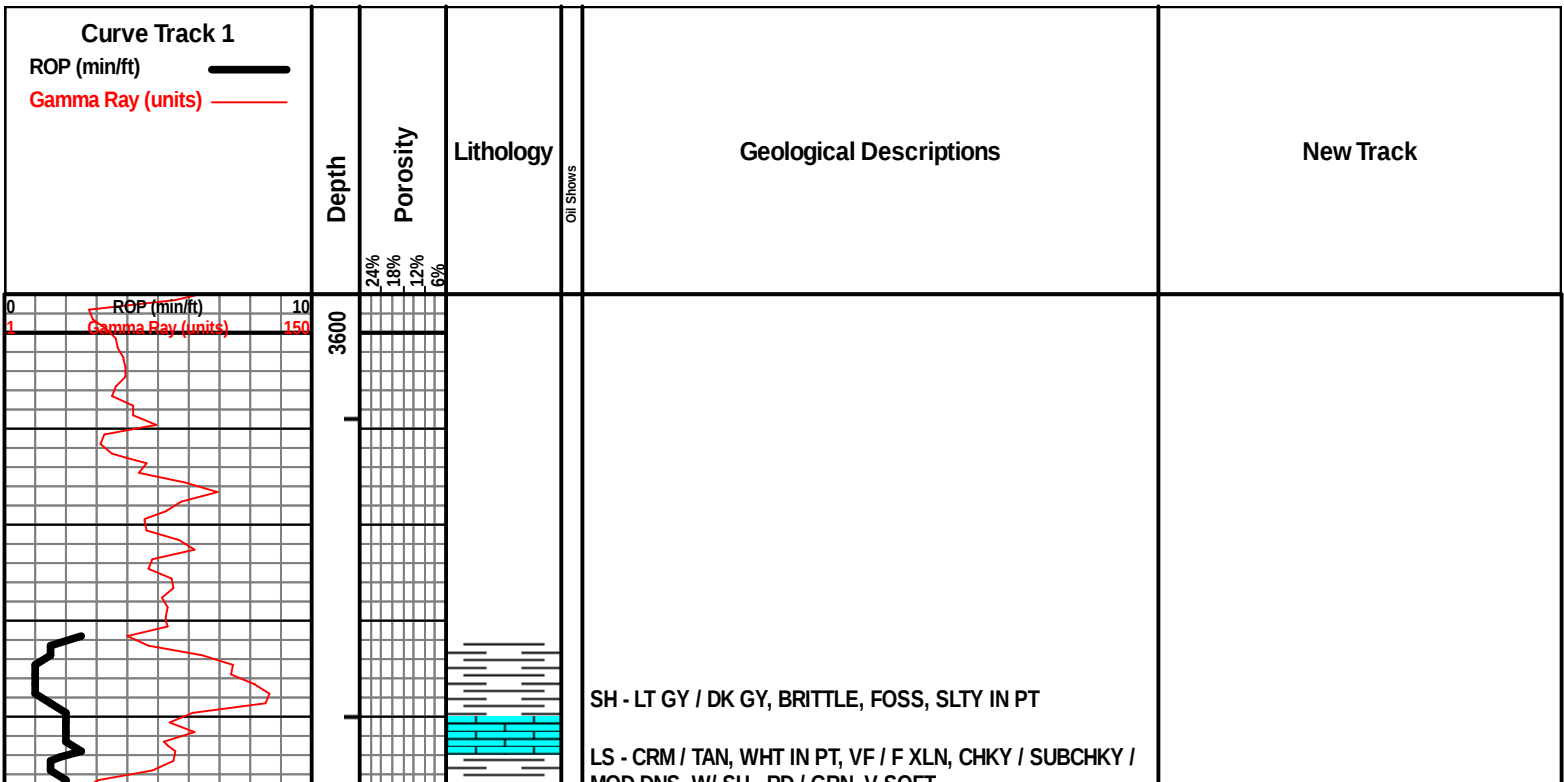
INTERVALS

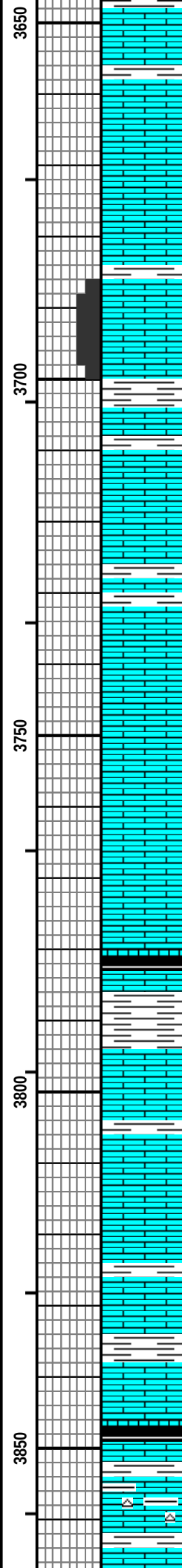
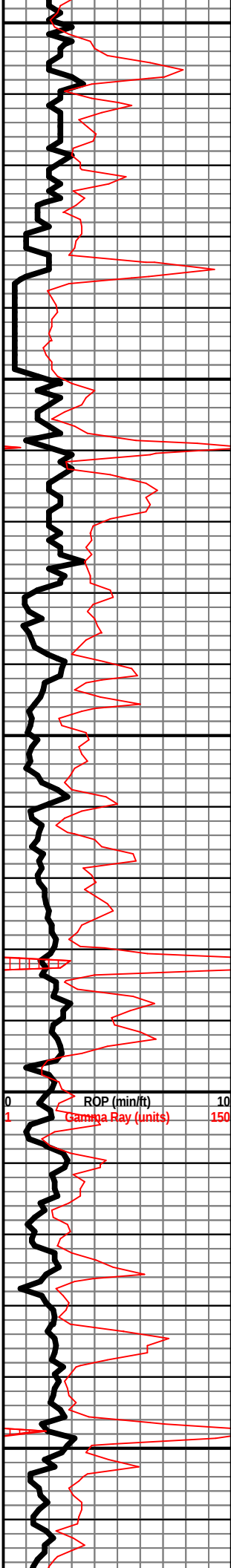
Core
 Dst

Dst

EVENTS

Rft
 Sidewall
 Conn





MOD DNS, W/ SH - RD / GRN, V SOFT

LS - TAN / LT BRN, F XLN, MOD DNS / DNS, FOSS IN PT

LS - TAN / GY, F XLN, MOD DNS / DNS, ABUND OF FOSS

LS - GY / BRN, F XLN, DNS, ABUND FOSS, ABUND OF LRG FUSILINIDS

SH - RD / GRN / GY, W/ LS - GY, F XLN, MOD DNS / DNS, FOSS

LS - BRN, F XLN, F / G INTXLN POR, NS, NO ODOR, SLI MINERAL FLUOR

SH - LT GY, V SOFT, W/ LS - TAN / GY, VF XLN, FOSS

LS - BRN / GY, F XLN, MOD DNS / DNS, ABUND FOSS

LS - WHT / CRM IN PT, VF XLN, V CHKY

LS - TAN, VF / F XLN, MOD DNS, FOSS, W/ SH - GRNISH-GY / RD

LS - WHT, VF XLN, V CHKY

LS - TAN / GY / BRN IN PT, F XLN, MOD DNS / DNS, ABUND FOSS, SPECKLED DIFF COLORS IN PT

LS - TAN / GY IN PT, VF / F XLN, MOD DNS / DNS, ABUND FOSS, SPECKLED DIFF COLORS IN PT

SH - DK GY / BLK, CARB, W/ LS - GY / CRM / WHT, VF XLN, SUBCHKY / CHKY/ ABUND FOSS IN PT

SH - GY / GRN / RD

LS - TAN, F / M XLN, MOD DNS / DNS, FOSS IN PT

LS - TAN / CRM / WHT, VF / F XLN, PRED MOD DNS, SUBCHKY / CHKY IN PT, W/ SH - GRN / RD-ORNG

LS - CRM / TAN, VF / F XLN, MOD DNS / DNS, FOSS IN PT, W/ SH - GRN

SH - RD / RD-ORNG / GY / GRN, W/ LS - GY / TAN / BRN, MULTI-COLOR'D IN PT, MOD DNS / DNS, ABUND OF FOSS

LS - TAN / GY, F XLN, MOD DNS / DNS, FOSS

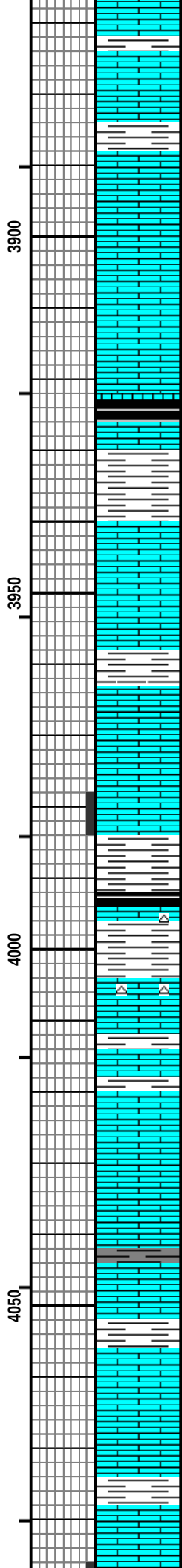
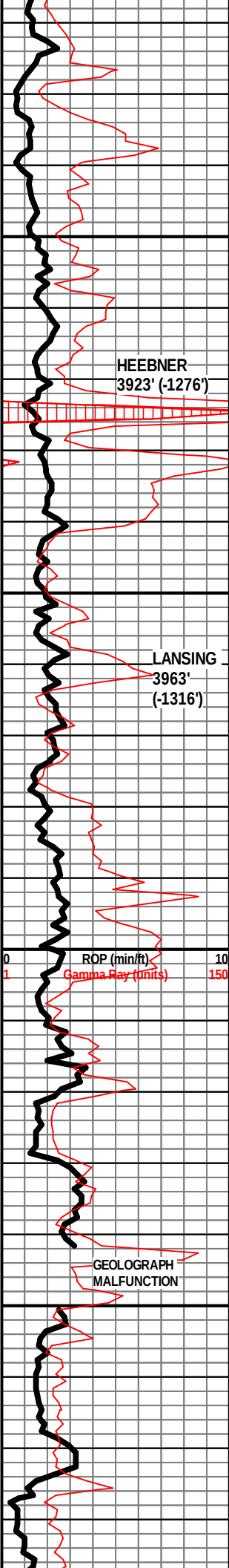
SH - DK GY / BLK, CARB, W/ LS - GY / BRN, TAN IN PT, F XLN, MOD DNS / DNS, FOSS, W/ SH - GY / GRN / RD

LS - CRM / TAN, F XLN, MOD DNS / SUBCHKY IN PT, SHLY IN PT W/ GRN SH, PYRITIC IN PT, W/ CHT - CRM / TAN, OPAQ, ABUND FOSS, FRSH

VIS 62
WT 8.7
LCM 4#

VIS 60
WT 8.9
LCM 4#

VIS 58
WT 8.8
LCM 3#



LS - CRM / TAN / LT BRN IN PT, F XLN, DNS, FOSS, W/ SH - GRN / RD

LS - TAN / BRN, F XLN, MOD DNS / DNS, FOSS, W/ SH - GRN / RD

LS - TAN / GY, BRN IN PT, VF / F XLN, MOD DNS, SUBCHKY IN PT, FOSS

LS - CRM / WHT, VF XLN, SUBCHKY / CHKY, FOSS IN PT

LS - CRM / BRN, MULTI-COLOR'D, VF / F XLN, SUBCHKY / CHKY, FOSS IN PT

SH - BLK, CARB, W/ LS - TAN / GY, F XLN, MOD DNS / DNS, FOSS, W/ SH - GY / GRN / RD

LS - CRM / TAN, F XLN, P / F INTXLN POR IN PT, NS, NO ODOR, NO FLUOR, W/ SH - GRN / RD

LS - WHT / CRM, F XLN, MOD DNS / DNS, FOSS IN PT, W/ CHT - WHT / GY, SLI TRANSLUCNT, FRSH, DNS

SH - GY / GRN / RD IN PT, W/ LS - CRM / TAN / BRN IN PT, VF / F XLN, SUBCHKY, FOSS

LS - CRM / TAN, F XLN, MOD DNS / DNS, FOSS

LS - CRM / TAN, VF / F XLN, MOD DNS, P INTXLN POR IN PT, NS, NO ODOR, SUBCHKY IN PT, W/ SH - GRN / GY / RD

SH - BLK, SLI CARB, W/ LS - TAN / BRN, F / M XLN, DNS, FOSS IN PT, W/ SH - RD / GRN

LS - GY / BRN, F / M XLN, MOD DNS / DNS, FOSS IN PT, W/ CHT - GY / TAN / WHT, FRSH, SLI TRANSLUCNT

SH - RD / GRN, W/ LS - CRM / TAN, VF / F XLN, MOD DNS / SUBCHKY, CHKY IN PT, FOSS IN PT, OOL IN PT

SH - GY / RD / GRN, W/ LS - CRM / TAN, VF / F XLN, SUBCHKY / CHKY, MOD DNS IN PT

LS - CRM, F XLN, MOD DNS / DNS, FOSS

SH - GY, W/ LS - GY / BRN, F / M XLN, MOD DNS / DNS, FOSS

LS - TAN / GY, F XLN, MOD DNS / DNS, FOSS, W/ SH - GY / GRN / RD

SH - RD / GRN / GY IN PT, W/ LS - CRM / TAN, VF / F XLN, 50% MOD DNS / DNS, 50% SUBCHKY, FOSS IN PT

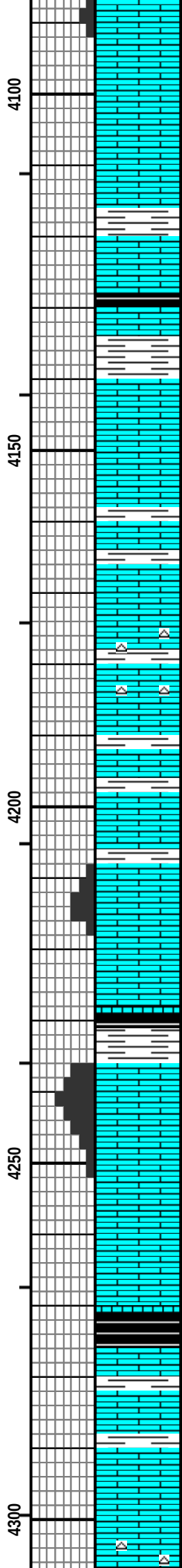
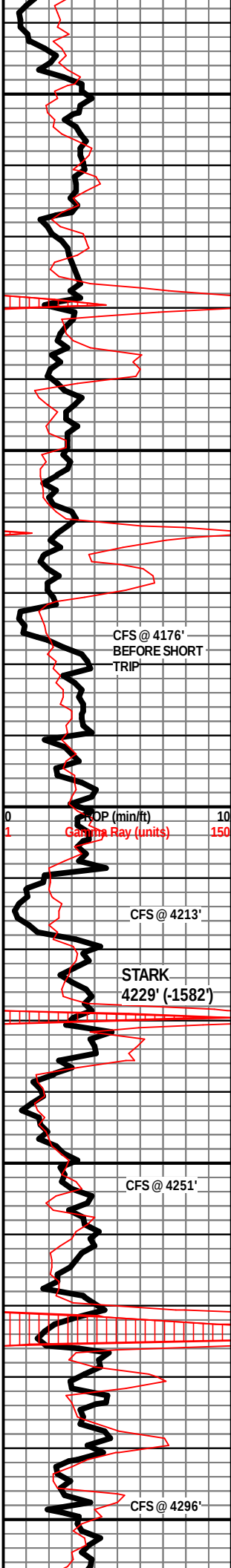
LS - WHT / CRM, VF XLN, SUBCHKY / CHKY

LS - CRM / TAN, F XLN, OOL IN PT, V DNS, OOL CEM IN CALCITE CEM, FOSS, W/ SH - GY / GRN

VIS 61
WT 8.9
LCM 4#

VIS 61
WT 8.9
LCM 3#

VIS 61
WT 8.9
LCM 3#



LS - CRM / TAN, VF / F XLN, MOD DNS / SUBCHKY IN PT, P / F INTXLN POR IN PT, NS, NO ODOR

LS - CRM / TAN, VF / F XLN, SUBCHKY / CHKY, V CHKY IN PT

LS - TAN, F / M XLN, MOD DNS / DNS, FOSS, W/ SH - RD / GRN / GY

SH - RD / GRN, W/ LS - CRM / TAN, F XLN, MOD DNS / DNS, OOL IN PT, FOSS

SH - BLK, CARB, W/ LS - CRM / WHT, VF XLN, SUBHCKY / CHKY

SH - RD / GRN, W/ LS - CRM / TAN, F / M XLN, MOD DNS / DNS

LS - TAN / LT BRN, F / M XLN, MOD DNS / DNS, ABUND FOSS

LS - CRM / TAN, F / M XLN, MOD DNS / DNS, FOSS, W/ SH - GRN

LS - CRM / TAN, F / M XLN, MOD DNS / DNS, FOSS, W/ SH - RD / GRN

LS - CRM / TAN, F / M XLN, DNS, FOSS, W/ SH - GRN / GY, W / CHT - WHT / GY, FRSH, SLI TRANSLUCNT, FOSS

LS - CRM / WHT, VF / F XLN, SUBCHKY / CHKY

LS - CRM / TAN, VF / F XLN, MOD DNS / SUBCHKY, FOSS IN PT, W/ SH - RD / GRN / GY

LS - BRN / LT GY, F / M XLN, MOD DNS / DNS, FOSS IN PT

LS - CRM / TAN, F XLN, P / F OOLMOLDIC POR, NS, NO ODOR, SLI MINERAL FLUOR, DNS IN PT, FOSS

LS - CRM / TAN, F XLN, MOD DNS / DNS, OOLITIC IN PT, FOSS

SH - BLK, CARB, SHO OF GAS BUBB, W/ LS - CRM / TAN / GY IN PT, F XLN, MOD DNS / DNS, FOSS

LS - CRM / TAN / LT BRN, F XLN, F / G INTXLN + INTPART POR, ABUND OF FOSS, F VUG POR IN PT, OOLITIC, P / F OOLMOLDIC POR IN PT, NS, NO ODOR, NO FLUOR, W/ SH - RD / GRN / GY

LS - TAN / CRM, F XLN, MOD DNS / DNS, FOSS IN PT, NO VIS POR, NS, NO ODOR

LS - TAN / GY, F XLN, MOD DNS / DNS, FOSS IN PT

LS - CRM / WHT, VF XLN, SUBCHKY / CHKY

SH - BLK, CARB

LS - GY, F / M XLN, DNS, FOSS IN PT, W/ SH - GRN / GY

LS - WHT / CRM, VF XLN, SUBCHKY / CHKY, STYLOLITIZED

LS - CRM / TAN / LT BRN IN PT, MOD DNS / SUBCHKY, FOSS IN PT

VIS 60
WT 9.1
LCM 3#

SHORT TRIP @ 4176'

VIS 56
WT 9.2
LCM 2#

VIS 61
WT 9.1
LCM 4#

VIS 53
WT 9.3
LCM 3#

