

**O'Brien Energy Resources, Inc.**  
**Crooked Creek Offset No. 5-8, Angell South Field**  
**Section 8, T33S, R29W**  
Meade County, Kansas  
May, 2012

**Well Summary**

The O'Brien Energy Resources, Crooked Creek Offset No. 5-8 was drilled to a total depth of 6350' in the Mississippian St. Louis Formation. It offset the Crooked Creek Offset No. 4-8 by 1200' to the West. Formation tops ran high relative to this offset. The Heebner to the Atoka ran 7' high. The Morrow came in 5' high. The Chester, Ste. Genevieve and St. Louis came in 21', 13' and 6' high respectively.

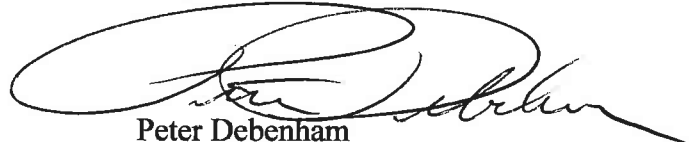
Several Morrow show intervals were documented. A Morrow B Sandstone(5813'-5821') consists of a Sandstone in 15% of the samples: Light brown, buff, hard to friable in part, very fine upper, well sorted subround grains, siliceous cement, slightly calcareous, clean, trace intergranular and fine vuggy porosity, bright light yellow to pale blue hydrocarbon fluorescence(all sand) good streaming cut, trace light brown matrix oil stain, gas bubbles when crushed, no live oil, slight odor. A 42 Unit gas increase was recorded. This interval proves tight with 2' of 12 percent porosity and little micro log separation.

The interval from 5838' to 5854' consists of a Sandstone in 25% of the samples: Light to medium mottled brown to gray, hard, slightly friable, very fine upper to fine lower, well sorted, subround grains, very calcareous, fossiliferous, argillaceous to clean, good intergranular porosity and fine vuggy porosity, pale mottled blue hydrocarbon fluorescence(most SS), slow bleeding to weak streaming cut, trace gas bubbles and oil stain when crushed, weak show. A 120 to 70 Unit gas kick was recorded. This interval calculates wet.

Additional minor shows were noted in the St. Louis and Cherokee.

The Crooked Creek Offset No. 5-8 was plugged and abandoned 5/12/12.

Respectfully Submitted,

  
Peter Debenham

## WELL DATA

Operator: O'Brien Energy Resources, Inc., John Forma – Portsmouth, NH  
Geologist: Paul Wiemann – Denver, CO

Prospect Geologist: David Ward, Ed Schuett, Denver

Well: Crooked Creek No. 5-8, Angell South Field

Location: 1858'' FSL & 1671' FEL, Section 8, T33S, R29W, Meade County, Kansas – Southeast of Plains.

Elevation: Ground Level 2671', Kelly Bushing 2683'

Contractor: Duke Drilling Rig No. 6, Type: Double jackknife, triple stand, Toolpusher Rick Schollenbarger, Drillers: Terry Sorter, Danny White, Saul Garcia

Company Man: Roger Pearson – Liberal, Kansas

Spud Date: 5/5/12

Total Depth: 5/11/12, Driller 6350', Logger 6356', St. Louis Formation

Casing Program: 40 joints of 8 5/8", J-2, 24Lbs/ft, set at 1480'.

Mud Program: Mud-Co/Service Mud, engineer Justin Whiting, displaced 2800', Chem. gel/LCM.

Wellsite Consultant: Peter Debenham with mudlogging trailer, Call depth 4000', Box 350, Drake, CO 80515, 720/220-4860.

Samples: 30' to 5700', 20' to TD and 10' through zones of interest.

Electric Logs: Weatherford, engineer Ron Hoffman , Array Induction, Compensated Neutron/Density, Microlog, Hi Res.

Status: Plugged and abandoned 5/12/12

## WELL CHRONOLOGY

<b>10 PM</b>			
<u>DATE</u>	<u>DEPTH</u>	<u>FOOTAGE</u>	<u>RIG ACTIVITY</u>
5/4			Move to and rig up rotary tools.
5/5	1165'	1165'	Mix spud mud and blow down mouse hole and rat hole. Spud in 12 1/4" surface hole to 1165'. Survey(3/4 deg.).
5/6	1630'	1490'	To 1490' and circulate and trip out. Run and cement 8 5/8" set at 1480' and wait on cement. Plug down at 10 am. Back off landing joint and nipple up BOP and pressure test blind rams. Trip in and test pipe rams. Drill plug and cement and 7 7/8" hole to 1630'.
5/7	3110'	1390'	To 1700' and trip for bit no. 3. Survey(1/2 deg.) and drill to 3110'. Clean suction and displace mud system at 2500'.
5/8	4500'	1390'	
5/9	5255'	755'	To 5010' and circulate and wiper trip 27 stands. To 5255'.
5/10	6265'	1010'	
5/11	6350'TD	85'	TD and circulate and short trip 40 stands and circulate and condition mud. Drop survey(1 deg.) and out for logs and run e-logs. Trip and out open ended and plug and abandon well.
5/12	TD		Plug and abandon well and rig down.

## LOST CIRCULATION

none

## BIT RECORD

<u>NO.</u>	<u>MAKE</u>	<u>TYPE</u>	<u>SIZE</u>	<u>OUT</u>	<u>FOOTAGE</u>	<u>HOURS</u>
1	STC	FDnSTC	12 1/4"	1490'	1490'	22
2	STC	F27I	7 7/8"	1700'	210'	4 1/2
3	HTC	Q506F	7 7/8"	6350'	4650'	97 1/2
Total Rotating Hours:						123
Average:						51.6 Ft/hr

## DEVIATION RECORD - degree

1012' 3/4, 1490' 3/4, 3043' 3/4, TD 1

**MUD PROPERTIES**

<b><u>DATE</u></b>	<b><u>DEPTH</u></b>	<b><u>WT</u></b>	<b><u>VIS</u></b>	<b><u>PV</u></b>	<b><u>YP</u></b>	<b><u>pH</u></b>	<b><u>WL</u></b>	<b><u>CL</u></b>	<b><u>LCM-LBS/BBL</u></b>
5/5	400'	8.8	29			7.0	nc	120	3
5/6	1490'	Water							
5/7	2430'	9.5	29			7.0	n/c	70k	2
5/8	3856'	8.95	42	12	12	8.0	18.0	6.4	3
5/9	5035'	8.75	58	16	17	9.6	9.6	4.4k	2
5/10	5920'	9.1	52	15	17	9.5	10.0	3.7k	2

**ELECTRIC LOG FORMATION TOPS- KB Elev. 2656'**

<b><u>FORMATION</u></b>	<b><u>DEPTH</u></b>	<b><u>DATUM</u></b>	<b><u>*Crooked Creek No. 4-8</u></b>	
			<b><u>DATUM</u></b>	<b><u>POSITION</u></b>
Casing	1489'			
Heebner	4462'	-1779'	-1786'	+7'
Toronto	4485'	-1802'	-1810'	+8'
Lansing	4607'	-1924'	-1930'	+6'
Marmaton	5270'	-2587'	-2592'	+5'
Cherokee	5442'	-2759'	-2766'	+7'
Atoka	5701'	-3018'	-3025'	+7'
Morrow	5760'	-3077'	-3082'	+5'
Mississippi Chester	5884'	-3201'	-3222'	+21'
Ste. Genevieve	6124'	-3441'	-3454'	+13'
St. Louis	6211'	-3528'	-3534'	+6'
TD	6356'	-3643'		

\*O'Brien Energy Resources, Crooked Creek No. 4-8, 2271'FSL & 526'FEL, Sec. 8 – app. 1150' to the East, K.B. Elev. 2656'.



**ACCESSORIES**

**FOSSIL**

- Algae
- Amph
- Belm
- Bioclst
- Brach
- Bryozoa
- Cephal
- Coral
- Crin
- Echin
- Fish
- Foram
- Fossil
- Gastro
- Oolite

- Ostra
- Pelec
- Pellet
- Pisolite
- Plant
- Strom

**MINERAL**

- Anhy
- Arggrn
- Arg
- Bent
- Bit
- Breclrag
- Calc
- Carb

- Chtdk
- Chtlt
- Dol
- Feldspar
- Ferrpel
- Ferr
- Glau
- Gyp
- Hvymin
- Kaol
- Marl
- Minxl
- Nodule
- Phos
- Pyr
- Salt

- Sandy
- Silt
- Sil
- Sulphur
- Tuff

**STRINGER**

- Anhy
- Arg
- Bent
- Coal
- Dol
- Gyp
- Ls
- Mrst
- Sltstrg

- Ssstrg

**TEXTURE**

- Boundst
- Chalky
- Cryxln
- Earthy
- Finexln
- Grainst
- Lithogr
- Microxln
- Mudst
- Packst
- Wackest

**OTHER SYMBOLS**

**INTERVALS**

- Core
- Dst

**EVENTS**

- Rft
- Sidewall

**POROSITY TYPE**

- Earthy
- Fenest
- Fracture
- Inter
- Moldic
- Organic

- Pinpoint
- Vuggy

**SORTING**

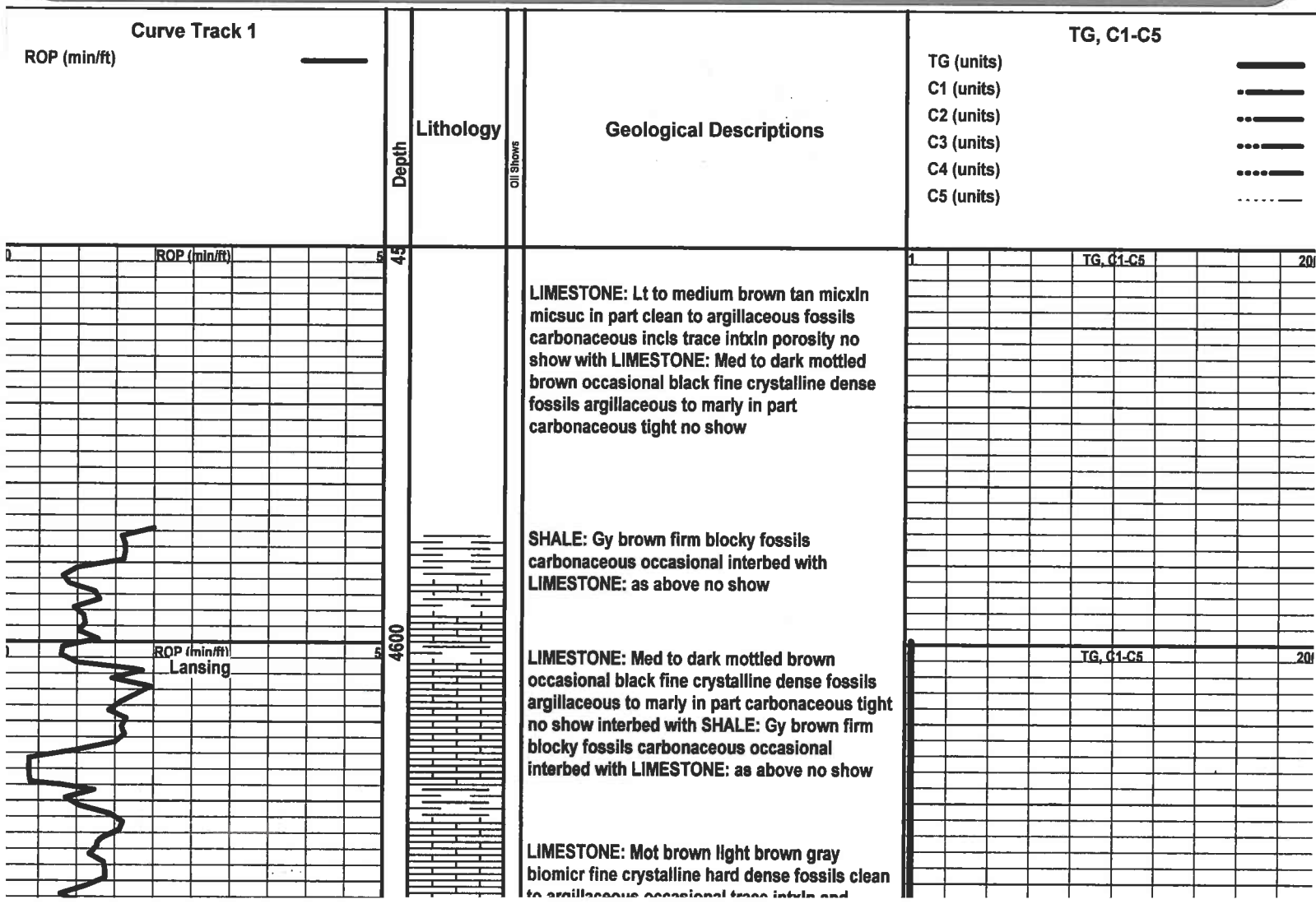
- Well
- Moderate
- Poor

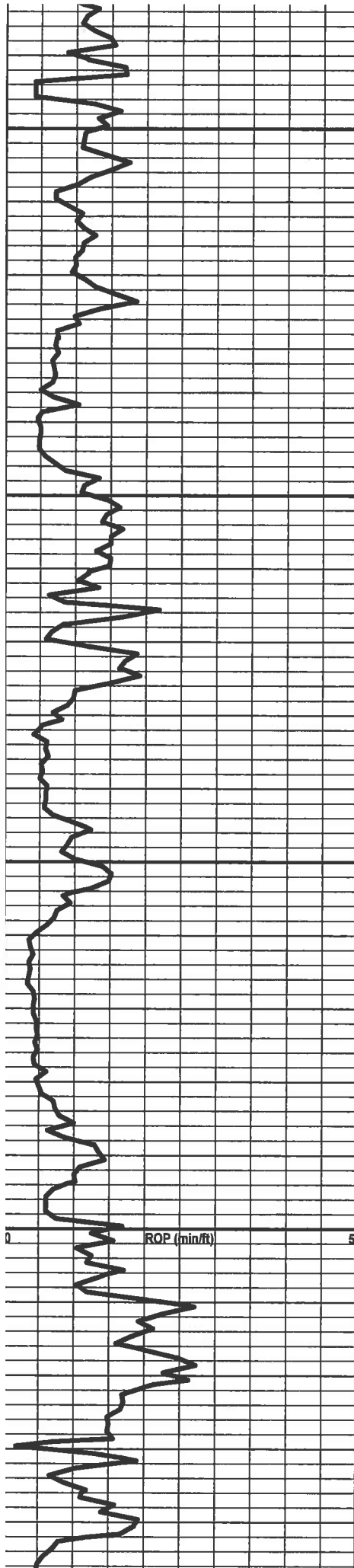
**ROUNDING**

- Rounded
- Subbrnd
- Subang
- Angular

**OIL SHOWS**

- Even
- Spotted
- Ques
- Dead





moldic porosity no show

LIMESTONE: Med to light mottled brown buff micxln micsuc in part sbchky clean fossils trace intxln porosity no show

LIMESTONE: Lt mottled brown gray biomicr fine crystalline clean very fossils occasional moldic and intxln porosity predominant hard and tight no show occasional interbed with SHALE: Dk brown black blocky firm silty carbonaceous

LIMESTONE: Lt brown fine crystalline brittle clean very oolites well/exc moldic porosity no show

LIMESTONE: Med brown crpxln hard dense clean silica in part tight no show with LIMESTONE: Lt brown fine crystalline brittle clean very oolites well/exc oomoldic porosity no show

LIMESTONE: Lt to medium brown oomicr fine crystalline brittle clean very oolites exc oomoldic porosity no fluorescence no stain or cut

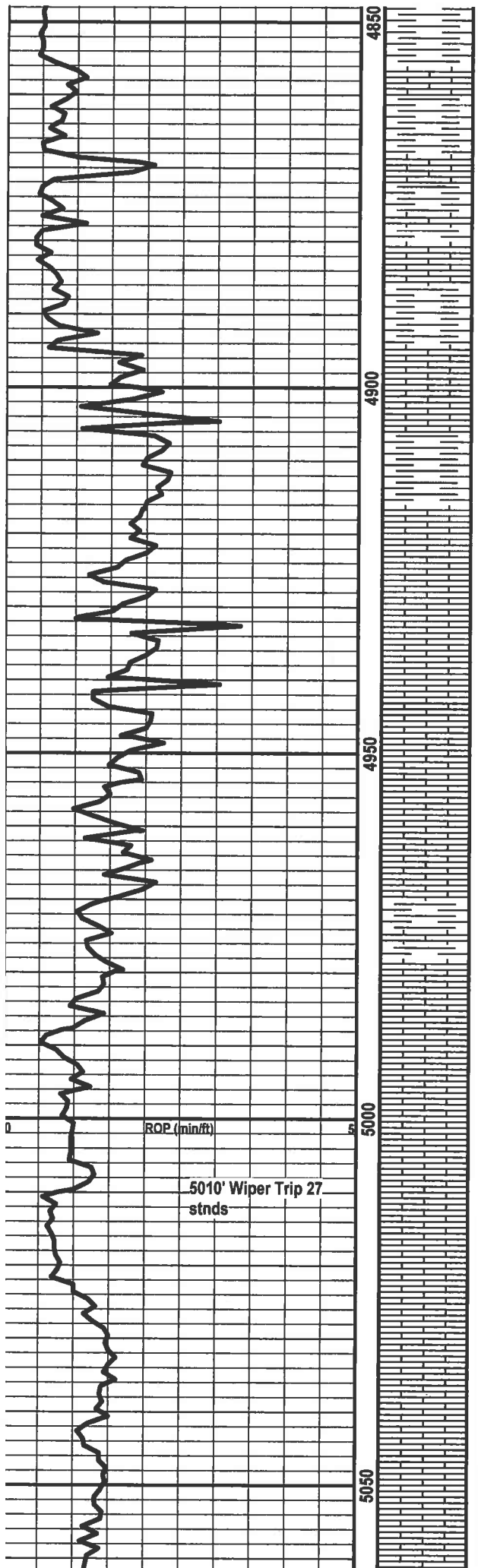
LIMESTONE: Mot brown gray crpxln hard dense silica fossils tight no show

SHALE: Dk brown hard blocky to sbfis waxy to silty carbonaceous with LIMESTONE: Brn gray crpxln hard dense tight no show

LIMESTONE: Med brown micxln micsuc brittle clean exc oomoldic porosity trace intxln porosity no show with LIMESTONE: Lt brown buff micxln micsuc in part brittle clean sbchky fossils hard and silica in part no show

LIMESTONE: Mot brown crpxln hard dense silica fossils clean to argillaceous tight no show

SHALE: Blk very dark brown firm sbfis to blocky carbonaceous silty to waxy calcareous interbed



with LIMESTONE: Lt brown buff micxl n micsuc in part brittle clean sbchky fossils trace intxl n porosity no fluorescence no stain or cut

LIMESTONE: Mot brown very brittle clean very oolites well/exc oomoldic porosity mottled orange mineral fluorescence no stain or cut no show

SHALE: Dk brown gray hard blocky silty carbonaceous with LIMESTONE: Mot brown to gray fine crystalline hard dense silica in part poor vis porosity no show

LIMESTONE: Lt to medium mottled brown to gray micxl n micsuc in part predominant hard and silica tight/ occasional trace moldic and intxl n porosity no fluorescence no stain or cut

LIMESTONE: Lt brown gray buff micxl n micsuc very brittle clean chalky in part trace intxl n porosity occasional moldic porosity no show

SHALE: Blk dark brown firm sbfis carbonaceous with LIMESTONE: Lt brown gray buff micxl n micsuc very brittle clean chalky in part trace intxl n porosity occasional moldic porosity no show

LIMESTONE: Med to dark mottled brown light brown buff micro/crpxl n micsuc in part clean to marly silica in part predominant hard and tight occasional micsuc with intxl n porosity no fluorescence no stain or cut

LIMESTONE: Med to dark mottled brown micr crpxl n hard dense silica argillaceous to marly fossils tight no show

SHALE: Dk brown black dark gray hard blocky carbonaceous calcareous fossils silica in part interbed with LIMESTONE: Pred as above micsuc in part with trace intercrystalline

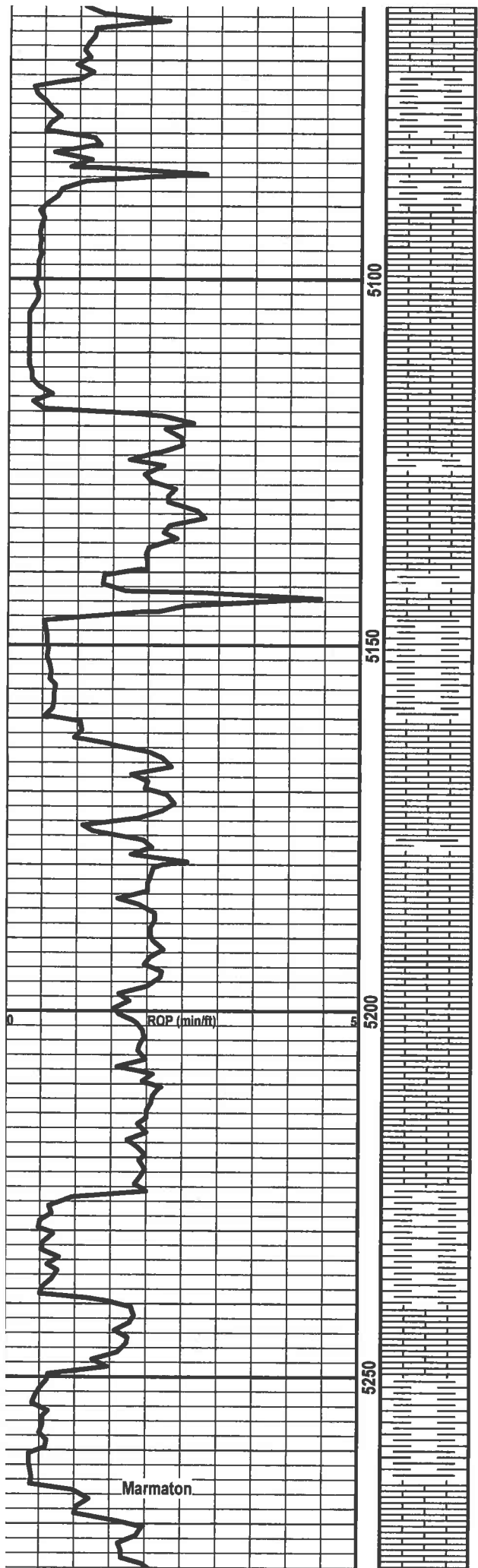
ROP (min/ft)

5010' Wiper Trip 27 stnds

TG, C1-C5

201





SHALE: Blk very dark brown hard sbfis to blocky waxy carbonaceous silty

LIMESTONE: Med mottled brown oomicr fine crystalline brittle clean very oolites well/exc oomoldic porosity no fluorescence no stain or cut mottled orange mineral fluorescence

LIMESTONE: Dk mottled gray to brown occasional black crpxln hard dense silica argillaceous to marly in part tight no show

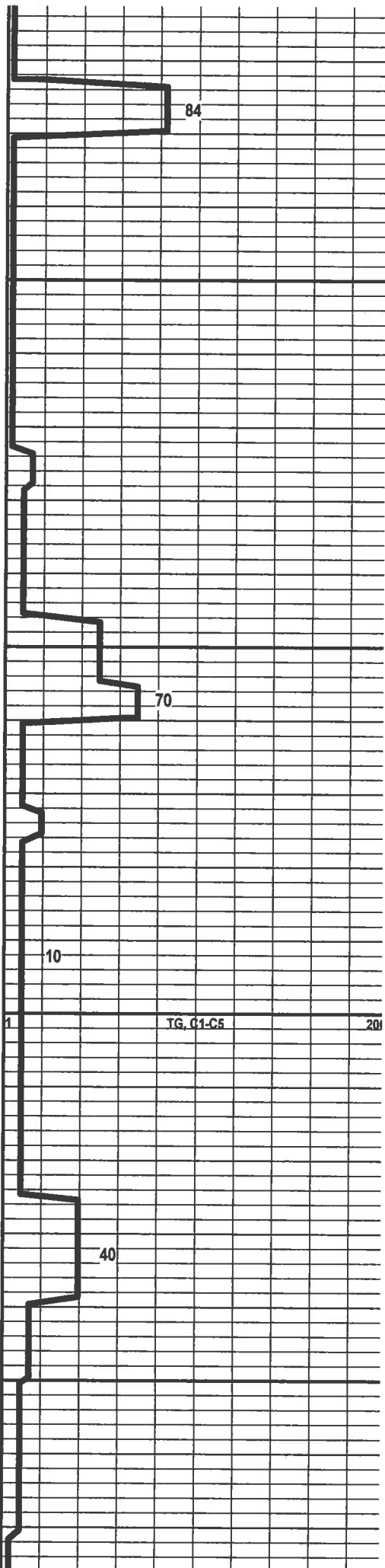
SHALE: Blk very dark brown hard sbfis to blocky waxy carbonaceous silty

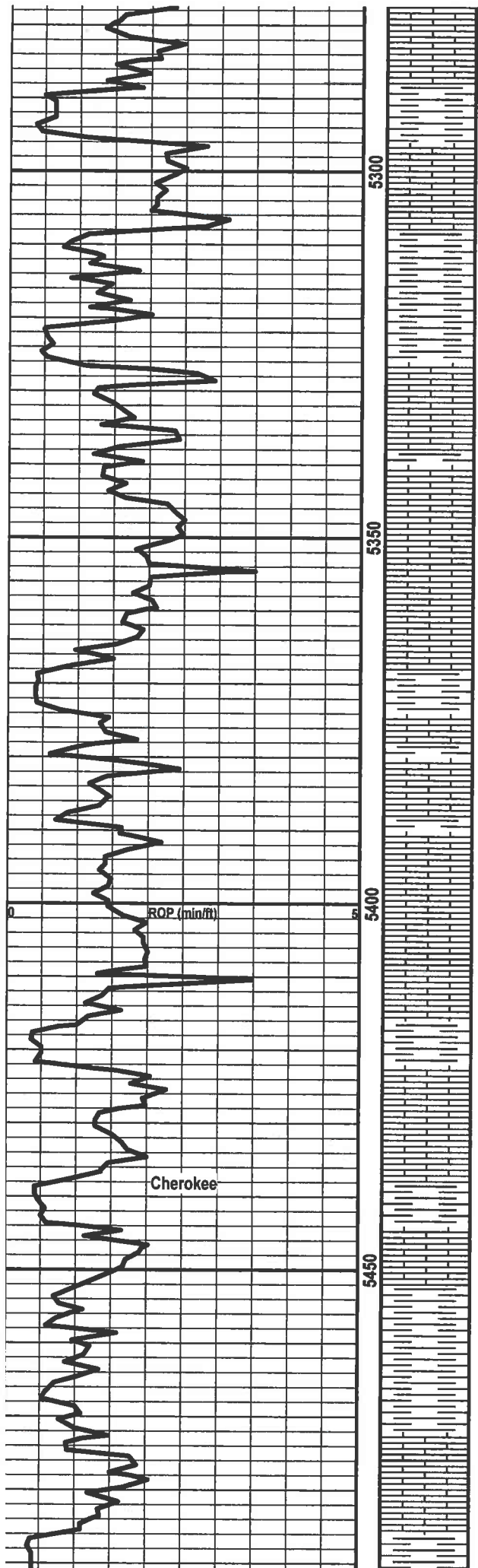
LIMESTONE: Dk mottled brown gray micr crpxln hard dense argillaceous to marly fossils carbonaceous tight no show with SHALE: Blk dark brown hard sbfis carbonaceous

LIMESTONE: Med to dark mottled brown fine crystalline brittle clean very oolites exc oomoldic porosity trace intxn porosity mottled orange mineral fluorescence no stain or cut no show

LIMESTONE: Med mottled brown crpxln hard dense brittle in part argillaceous fossils occasional exc oomoldic porosity no show

SHALE: Blk dark brown firm fissile carbonaceous silty interbed with LIMESTONE: Pred as above occasional exc oomoldic porosity no fluorescence no stain or cut





**LIMESTONE:** Mot brown to gray fine crystalline hard dense silica in part fossils oolites clean tight no show

**SHALE:** Blk dark gray firm sbfis to blocky carbonaceous calcareous silty to sndy in part interbed with **LIMESTONE:** Lt brown buff white fine crystalline sbchky clean to argillaceous soft brittle no show

**LS:** Lt brown white tan micxn chalky in part clean to argillaceous soft brittle poor vis porosity no fluorescence no stain or cut

**SHALE with interbed LIMESTONE:** as above no show

**LIMESTONE:** Lt brown buff white fine crystalline chalky in part soft brittle clean no show with **LIMESTONE:** Med mottled brown oomicr micxn very oolites well/exc oomoldic porosity no show occasional Interbed with **SHALE:** Blk firm fissile

**LIMESTONE:** Lt brown buff white fine crystalline chalky in part soft brittle clean no show with **LIMESTONE:** Med mottled brown oomicr micxn very oolites well/exc oomoldic porosity no show

**SHALE:** Blk dark brown firm sbfis to blocky waxy to silty carbonaceous

**LIMESTONE:** Brn micxn micsuc in part clean fossils sbchky tight no show with **SHALE:** Dk brown to gray black firm sbfis to blocky carbonaceous

**SHALE:** Blk firm fissile carbonaceous

**LIMESTONE:** Med to dark brown gray crpxln hard dense silica fossils clean to argillaceous tight no show

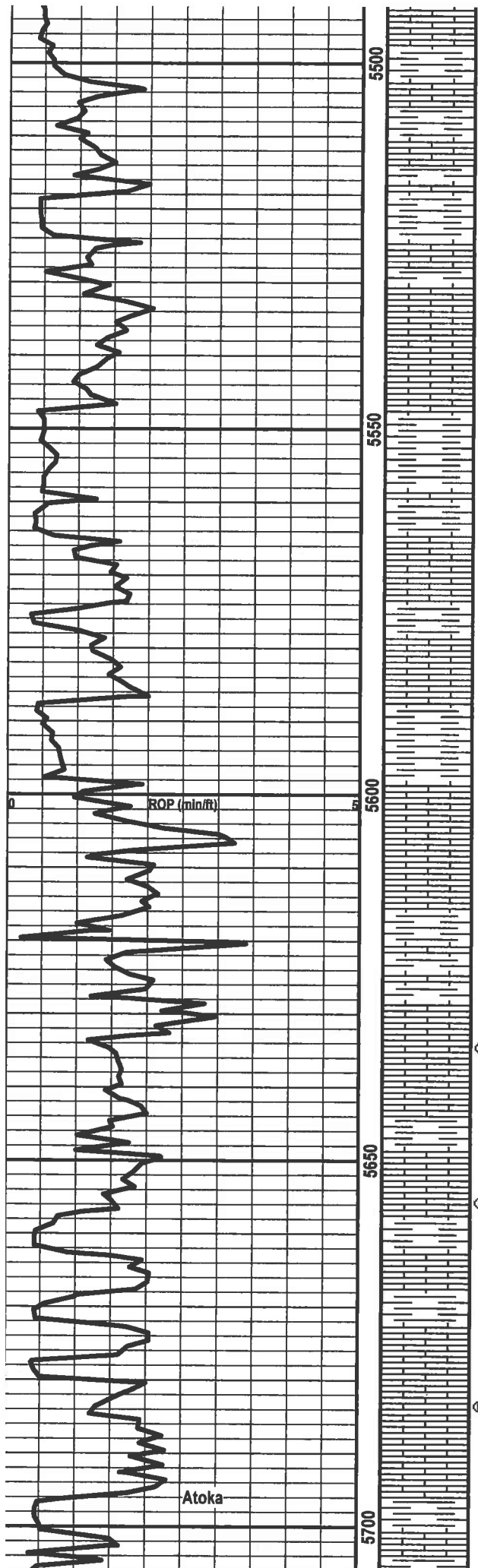
**SHALE:** Blk firm fissile carbonaceous

**LIMESTONE:** Med to dark brown occasional black crpxln hard dense silica argillaceous fossils poor vis porosity no show

**SHALE:** Blk dark gray to brown sbfis firm carbonaceous silty

**LIMESTONE:** Med to dark brown to gray biomicr crpxln hard dense fossils argillaceous to marly carbonaceous tight no shoow interbed with **SHALE:** Blk firm fissile carbonaceous

TG, C1-C5 20



LIMESTONE: Med to dark brown to gray biomicr crpxln hard dense fossils argillaceous to marly carbonaceous tight no show interbed with SHALE: Blk firm fissile carbonaceous

LIMESTONE: Med to dark mottled brown gray occasional black micr crpxln hard dense argillaceous to marly fossils carbonaceous tight interbed with SHALE: Blk firm fissile carbonaceous

SHALE: Blk dark brown firm sbfis to blocky carbonaceous calcareous

LIMESTONE: Dk brown fine crystalline hard dense fossils argillaceous to marly tight no show with SHALE: as above

SHALE: Blk dark brown to gray hard blocky to sbfis carbonaceous calcareous silty

LIMESTONE: Mot brown to gray buff micxn firm dense to trace intxn porosity sbchky in part clean to argillaceous no fluorescence no stain or cut

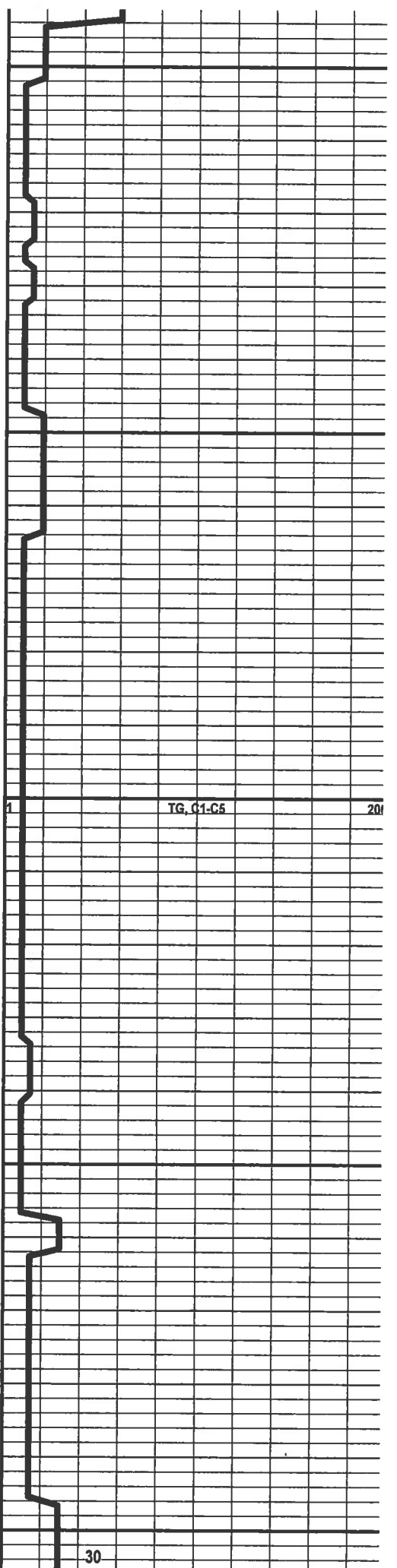
SHALE: Blk dark brown firm sbfis to blocky carbonaceous interbed with LIMESTONE: Mot brown buff fine crystalline hard dense sbchky poor vis porosity no fluorescence no stain or cut

LIMESTONE: Medium to light brown micrite finely crystalline to microscrosic in part clean fossiliferous occ tr intcrystalline porosity pred tight light pale blue hydrc flor(2% spl) slow bleeding cut tr o stn

SHALE: Blk firm fissile carbonaceous interbed with IS: Dk brown black medium to light brown buff micr crpxln to micxn dense sbchky in part fossils clean to marly fossils tight no show trace CHRT

LIMESTONE: Medium to light brown micrite finely crystalline to microscrosic in part clean fossiliferous occ tr intcrystalline porosity pred tight light pale blue hydrc flor(2% spl) slow bleeding cut tr o stn

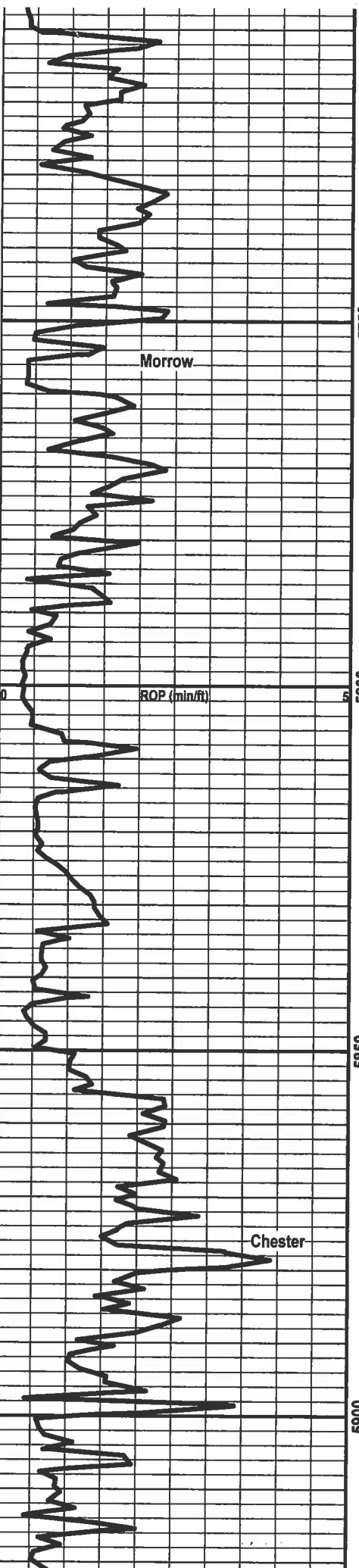
SHALE: Blk dark brown firm fissile to blocky



TG, C1-C5

20

30



very to silty carbonaceous member with  
**LIMESTONE:** Dk to medium brown occasional black crpxln hard dense argillaceous to marly occasional sbchky and clean poor vis porosity no fluorescence no stain or cut

**SHALE:** Blk firm to hd fissile carbonaceous

**LIMESTONE:** Dk mot brown to gray black micr fine crystalline dense argillaceous to clean carbonaceous occasional sbchky trace very dull pale blue hydrocarbon fluorescence faint cut no stain weak show

**SH:** Blk dk gy frm fis to blk carb wxy to sndy ip foss glauc

**LS:** Mot brn to gy f xln dns sndy glauc foss carb p vis por tr mot bl hydc flor fnt cut wk show

**SS(15% spl):** Lt brn bf fri to hd vfu w srted sbrnd grs sil cmt sl calc clin tr intgran por tr f vug por bri lt yel to pale yelbl hydc flor(all SS) gd to fr strmg cut occ lt brn mtx o stn no vis live oil abt gas bubbles when crushed sl odor

**SH:** Blk dk gy frm sbfis to fis wxy carb

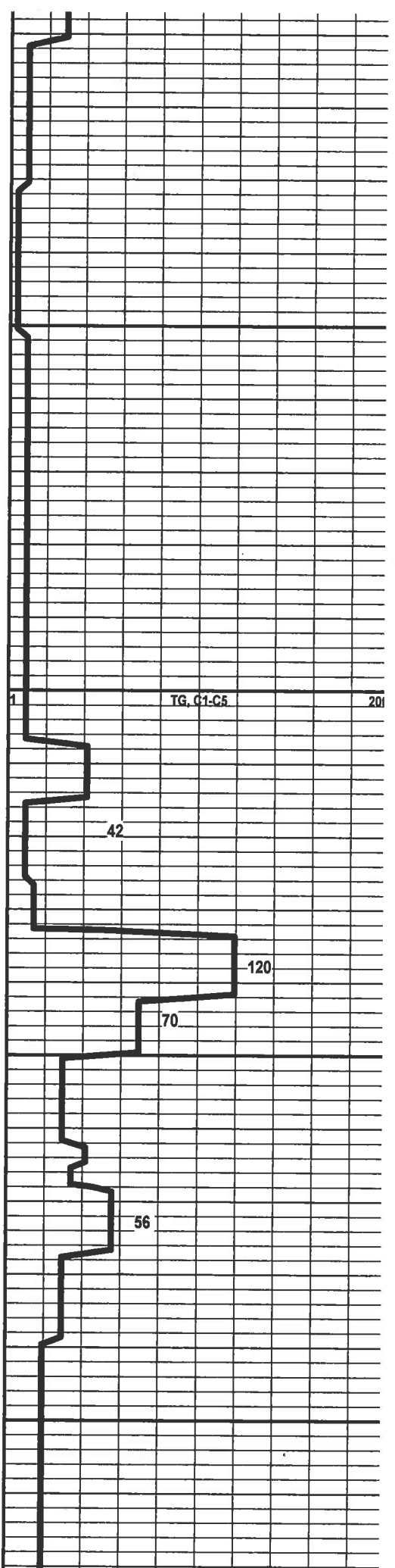
**SS(25% spl):** Lt to med mot brn to gy hd to sl fri ip vfu/fl w srted sbrnd grs v calc foss arg to mrlly ip occ clin tr ro gd intgran por f isol vug por pale mot bl hydc flor(most SS) slow bldng to wk strmg cut tr gas bubbles no stn with tr arg to mrlly sandy LS: Poor vis por wk show

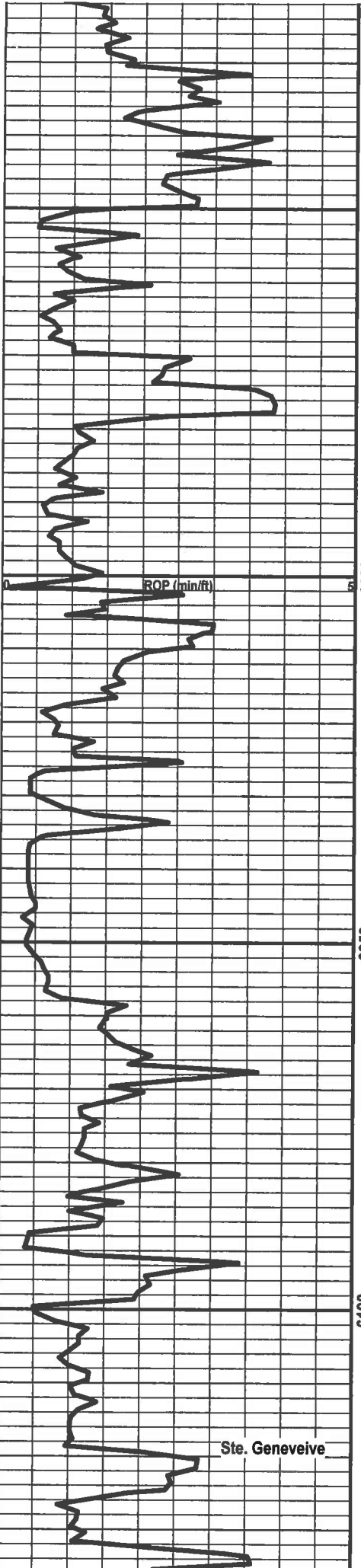
**LS:** Brn crpxln hd dns clin to arg tt no show tr  
**CHRT:** Blk hd dns xln

**LS:** Mot brn to gy micr f xln brit sndy carb glauc ip tr f vug & intxln por dull bl hydc flor wk cut wk show ?spl interp

**SH:** Med gy to gygn blk fis to blk wxy carb foss calc glauc ip intbd with LS: Lt to med brn bf mot gy micxln sbchky ip foss carb tt no show

**SH:** Med gy to gygn blk fis to blk wxy carb foss calc glauc ip occ intbd with LS: aa





LS: Lt mot brn gy micr micxln micsuc sbchky ip  
brit cln tr intxln por no flor no stn or cut

SH: Med gy to gygn blk fis to blkly wxy carb foss  
calc glauc ip

LS: Brn to gy crpxln hd dns occ sbchky & brit  
foss tt no show intbd with SH: Med brn gy frm  
blkly to sbfis wxy calc

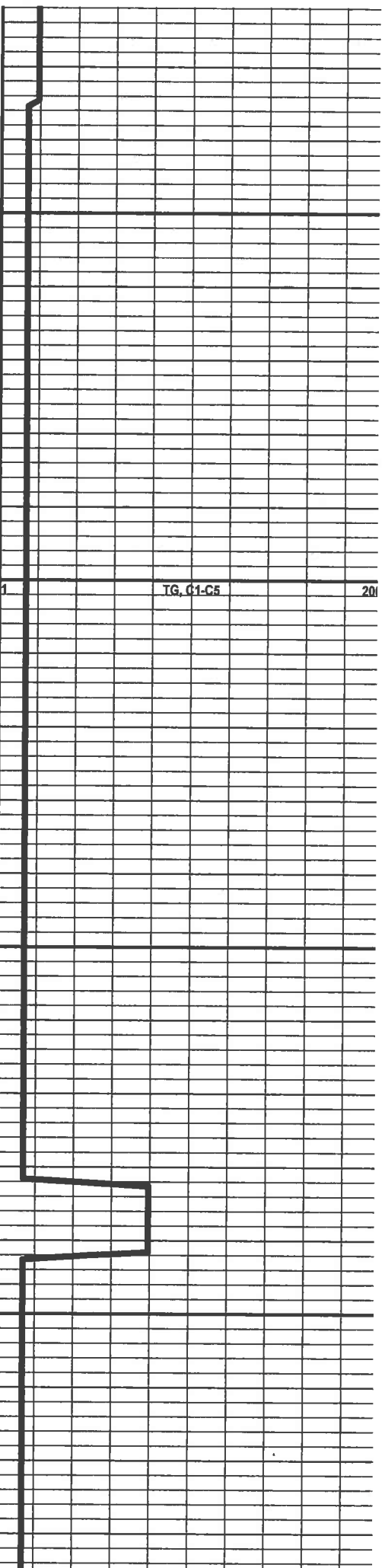
SH: Gy gygn dk brn to blk occ redbrn blkly rthy  
wxy intbd with LS: Brn med to dk f xln sbchky  
ip dns cln tt no show

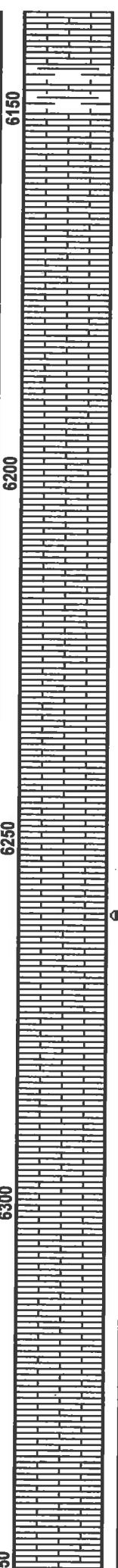
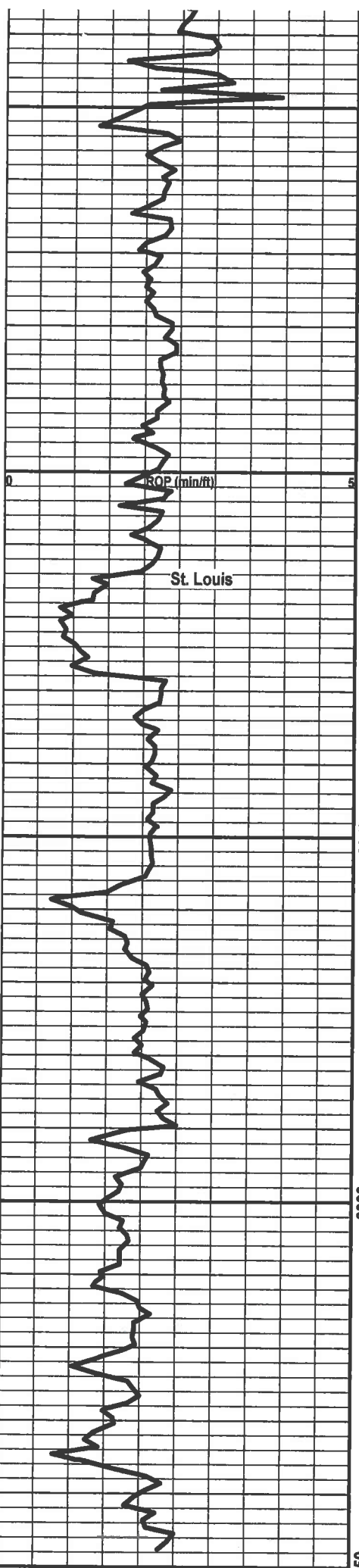
SH: Med gy to gygn dk brn occ redbrn rthy blkly  
to fis to blkly wxy carb foss calc glauc ip

SH: Red to orngbrn gy gygn to gn mar viol varic  
blkly brit wxy with LS: Mot brn gy occ redbrn  
gygn varic ip f xln hd dns arg to mrlly tt no show

LS: Lt to dk mot brn to wh redbrn viol varic  
micxln micsuc ip sbchky cln to arg foss ool  
med to dk spec brn o stn tr live oil v dull hydc  
flor gd strmg cut tt to tr intxln & tr moldic por wk  
show no perm

SH: Red to orngbrn gy gygn to gn mar viol varic  
blkly brit wxy with LS: Mot brn gy occ redbrn  
gygn varic ip f xln hd dns arg to mrlly tt no show





LS: Mot brn gy occ redbrn gygn varic ip f xln hd dns arg to mrlly tt no show wihnt intbd SH: Red to orngrbrn gy gygn to gn mar viol varic blkly brit wxy

LS: Med gy gygn med brn micr f xln hd dns sndy arg to mrlly tt no show

LS: Med gy gygn med brn micr f xln hd dns sndy arg to mrlly tt no show

LS: Lt brn to med brn micsuc to suc brit cln v sndy foss ool tr vis por no flor no stn or cut

CHRT: Mlky gy hd xln LS: Brn micxln to f xln frm to hd dns v sndy cln foss ool tt no show

LS: Lt brn wh micxln sbchky to chky sft to frm brit cln foss tr pp & intxln por spec yel hydc flor(2% spl) gd strmg cut spty dk brn oil stn and tr live oil wk show

LS: Med brn f xln dns to r intxln por foss sndy cln no show

LS: Med brn f xln dns to r intxln por foss sndy cln no show

LS: Med brn f xln dns to r intxln por foss sndy cln no show

