



WESLEY D. HANSEN Consulting Petroleum Geologist

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**KGS
AAPG
Kansas License #418**



HARTMAN OIL CO INC
PEOPLE WITH ENERGY

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

Well Name: Hartman Oil Co., Inc. #1-32 Wilkonson
API: 15-015-24121

Location: 1966' FNL, 1802' FEL of Section 32-24S-3E

License Number:

Region: Butler County, Kansas

Spud Date: 4-3-2019

Drilling Completed: 4-11-2019

Surface Coordinates: 1966' FNL, 1802' FEL of Section 32-24S-3E

Bottom Hole Vertical hole

Coordinates:

Ground Elevation (ft): 1351'

K.B. Elevation (ft): 1356'

Logged Interval (ft): 1700' To: RTD

Total Depth (ft): 3322'

Formation: Simpson at RTD

Type of Drilling Fluid: Chemical

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

OPERATOR

Company: Hartman Oil Co., Inc.
Address: 10500 E. Berkeley Square Parkway
Suite 100
Wichita, KS 67206

GEOLOGIST

Name: Wesley D. Hansen
Company: Wesley D. Hansen - Consulting Petroleum Geologist
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COMMENTS

Contractor: WW Drilling Rig 4
 Pusher: Dustin Day

Surface Casing: 8 5/8" set at 257' w/200 sx
 Production Casing: 5 1/2" set at 3314' w/575 sx

Mud by: MudCo - Matt Smith was the engineer

DST's by: Trilobite Testing - Jimmy Ricketts was the tester

Logs by: ELI - (DIL, CN-CD, ML) - Gus Pfanenstiel was the engineer

Deviation Surveys: 3/4 deg. @257'; 1 1/4 deg. @675'; 3/4 deg. @1469'; 3/4 deg. @1857'; 1 deg. @2364'; 1 deg. @2782'; 3 deg. @3322'

BIT RECORD

Bit #	Size	MFG	Type	Depth Out	Footage Cut	Hours on bit
1	12 1/4"	Smith	PDC	257'	257'	4
2	7 7/8"	Smith	F27	2802'	2545'	62.5
3	7 7/8"	Smith	PDC	3322'	520'	18.25

FORMATION TOPS AND STRUCTURAL COMPARISON

FORMATION	SAMPLE TOPS		LOG TOPS		COMPARISON WELLS	
	Depth	Datum	Depth	Datum	1.)	2.)
		KB 1356'		KB 1356'	1.) Marshel Oil & Gas Kaufman #1 SWSEW 5-25-3E	2.) Range Oil Company Roth #1 1500' FSL, 1200' FWL 5-25-3E
					1.)	2.)
Heebner Shale (DT)	1785'	-429	1786'	-430	-425	-413
Brown Lime	1976'	-620	1973'	-617	-612	-602
Lansing	2074'	-718	2074'	-718	-714	-704
Base/Lansing	2220'	-864	2214'	-858	-852	-838
Kansas City	2347'	-991	2344'	-988	-982	-971
Stark Shale	2446'	-1090	2446'	-1090	-1084	-1070
Hushpuckney Shale	2478'	-1122	2478'	-1122	-1112	-1100
BKC	2509'	-1153	2509'	-1153	-1145	-1130
Marmaton	2571'	-1215	2570'	-1214	-1208	-1191
Altamont	2604'	-1248	2604'	-1248	-1238	-1226
Mississippian	2777'	-1421	2780'	-1424	-1408	-1427
Kinderhook Shale*	3103'	-1747	3102'	-1746	-1751	NDE
Hunton*	3192'	-1836	3194'	-1838	-1835	NDE
Viola*	3240'	-1884	3252'	-1896	-1893	NDE
Simpson*	3304'	-1948	not logged		-1965	NDE
RTD	3322'	-1966				
LTD			3322'	-1966		

*Sample tops from Kinderhook through Simpson were adjusted down 32' to compensate for extra joint of drill pipe

DRILL STEM TESTS

DST No. 1 Mississippian
Interval: 2765'-2782'
Times: 60-45-60-60
Recovery: 90' GIP; 5' clean oil; 90'HOCM (43o, 57m)
FP: 21-36/38-53 SIP: 753-754
HP: 1400-1365 BHT: 108 deg. F

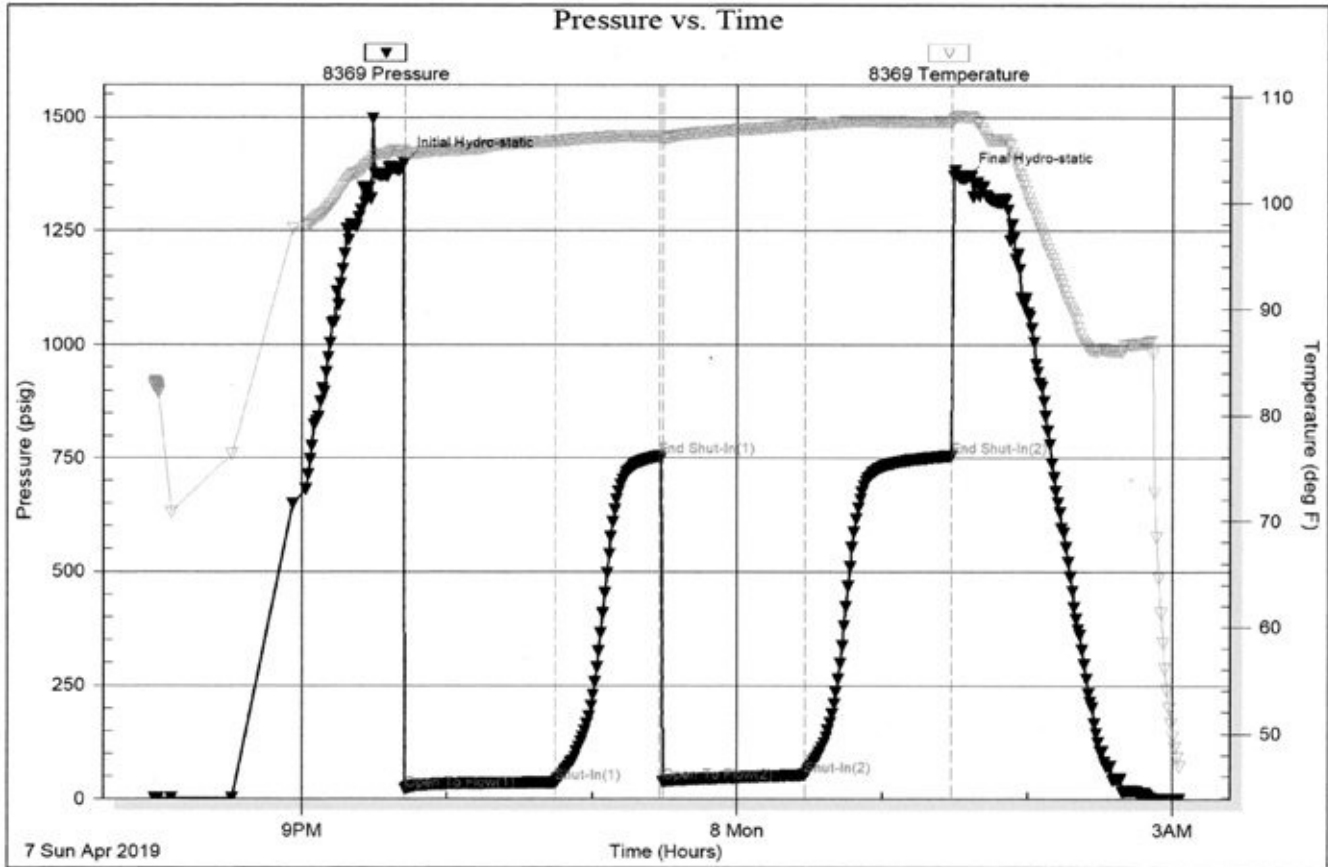
IFP: weak blow bldg. to 8 inches
ISIP: no return blow
FFP: weak blow bldg. to 14 inches
FSIP: no return blow

Serial #: 8369

Outside Hartman Oil Co., Inc.

Wilkinson #1-32

DST Test Number: 1



DRILL STEM TESTS

DST No. 2 Mississippian
 Interval: 2782'-2787'
 Times: 60-45-60-60
 Recovery: 80' GIP; 85' G&HOCM (4g, 31o, 65m)
 FP: 18-35/35-55 SIP: 729-734
 HP: 1390-1369 BHT: 104 deg. F

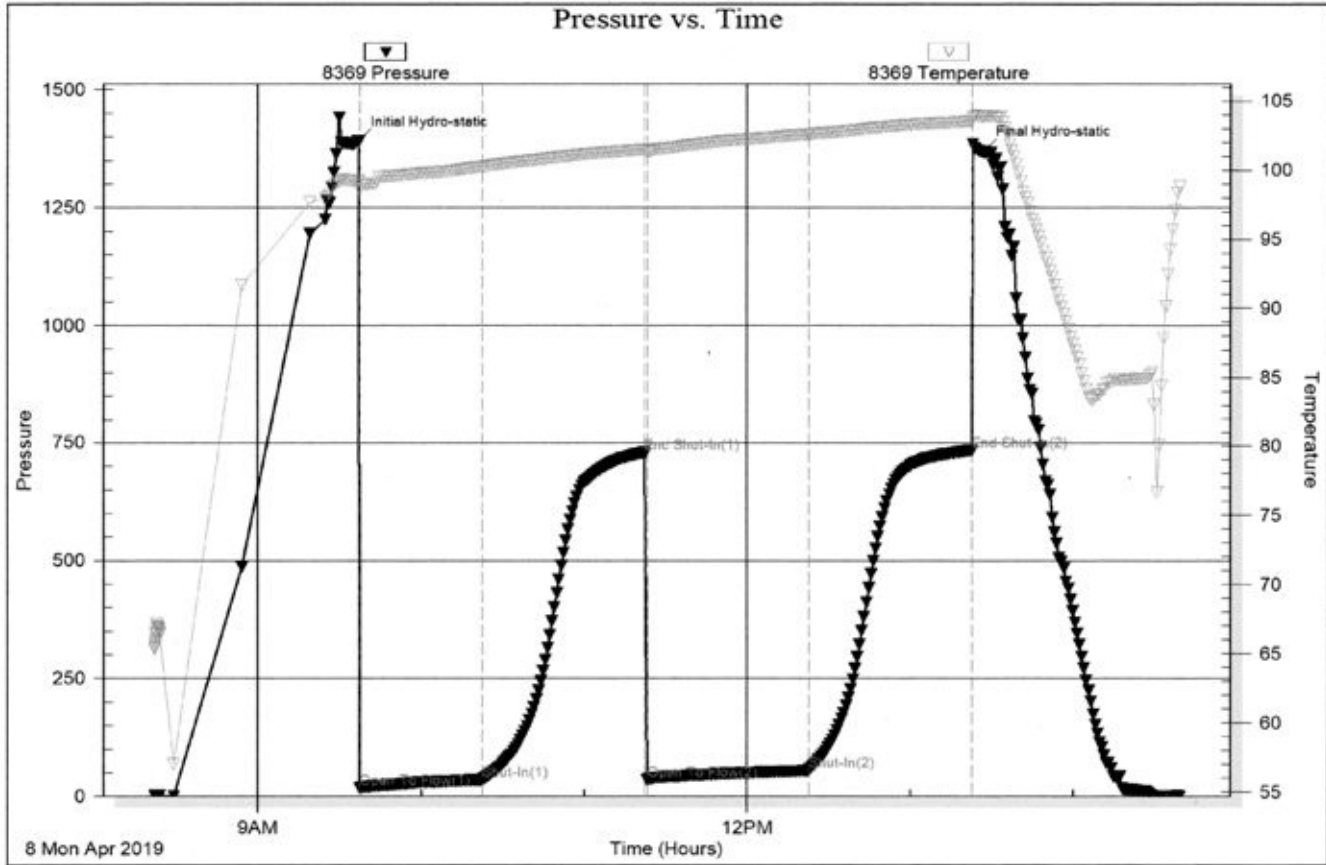
IFP: weak blow bldg. to 6 inches
 ISIP: no return blow
 FFP: weak blow bldg. to 14 inches
 FSIP: no return blow

Serial #: 8369

Outside Hartman Oil Co., Inc.

Wilkinson #1-32

DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 63940

Printed: 2019.04.08 @ 16:46:41

ROCK TYPES

- Anhy
- Cht
- Coal
- Congl
- Gyp
- Lmst
- Salt

- Shale
- Shcol
- Shale red
- Sltst
- Ss
- Carb sh
- Dol

- Dtd
- Gry sh
- Sandylms
- Shale green
- Sltstn
- Shlyslts
- Sltyslts

- Sdy dolo
- Silty dolo
- Shy dolo
- Shaly ls

ACCESSORIES

FOSSIL

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

- Plant
- Strom
- Fuss
- Oomold

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
- Chlorite
- Dol
- Sand
- Sltly

STRINGER

- Anhy
- Arg
- Bent
- Coal
- Dol
- Gyp
- Ls
- Mrst
- Sltstrg
- Ssstrg
- Carbsh
- Clystn
- Dol
- Grysh
- Gryslt
- Lms
- Sandylms
- Sh
- Sltstn

OTHER SYMBOLS

INTERVALS

- Core
- Dst
- Dst

EVENTS

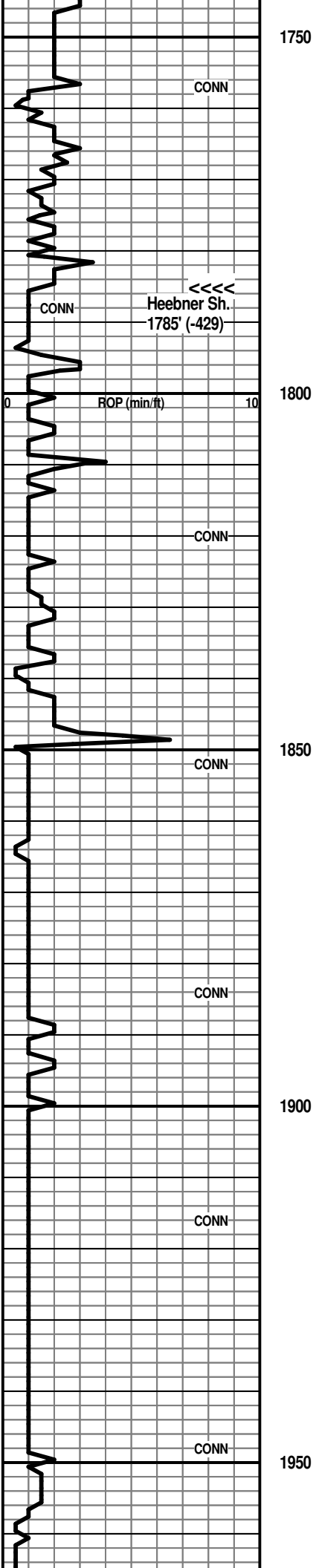
- Rft
- Dst top/base

OIL SHOWS

- Even
- Spotted
- Quest.

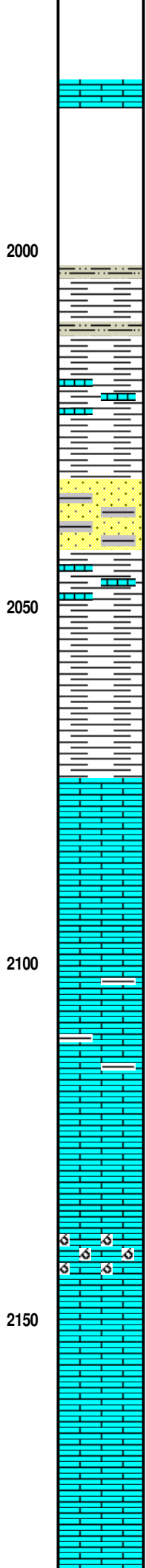
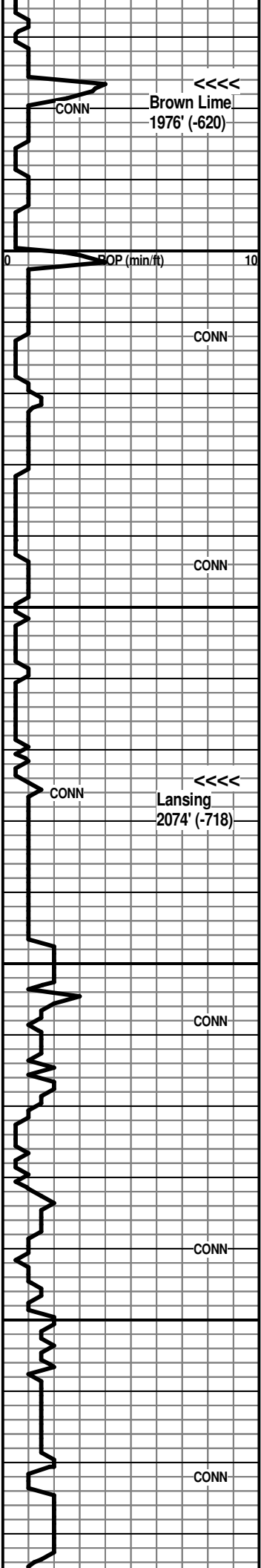
- Trace
- Dead
- Gas show

Curve Track 1 ROP (min/ft)	Depth	Lithology	Geological Descriptions	Remarks
	<p>0</p> <p style="margin-top: 100px;">1700</p> <p style="margin-top: 100px;">10</p>	<p>CONN</p>		<p>Morning Depth & Activity</p> <p>4-3-2019 MIRT, Spud at 9:30 PM</p> <p>4-4 WOC @ 257'</p> <p>4-5 Drlg. @ 1021'</p> <p>4-6 Drlg. @ 1948</p> <p>4-7 Drlg. @ 2622'</p> <p>4-8 CFS @ 2787'</p> <p>4-9 Drlg. @ 3004'</p> <p>4-10 WOO @ 3322'</p> <p>4-11 Run casing</p>



Heebner Sh. 1785' (-429)

7:00 AM at 1948' on 4-6-2019



Sh: lt to med gray, some silty; scatt. Ls: lt to med brn mic-vfxln dense

Sh: more med to dark gray; some lt gray Siltst

Sh: vc gray, some gray-green; silty IP with scatt. Siltst AA

Sh: mix AA, some gray-green, brn, some micac. gray; Ls: scatt. tan, lt brn dense

Sst: influx lt gray vfg, sl micac. IP; shale mix AA; scatt. Ls's AA

mix shales and Sst AA; Ls: offwhite, tan, lt brn mic-vfxln dense

Sh: becoming pred. med to dark gray, scatt. gray-green, brn

Ls: influx in 2100' spl - offwhite, tan mic-vfxln dense; lesser lt brn vf-cryptoxln, NVP, N.S.

Ls: offwhite, tan mic-vfxln dense; some gran. with poor-NVP; other lt to med brn cryptoxln to gran., NVP, N.S.

Ls: mix AA, some offwhite subchalky; influx med to dark gray shale

Ls: more tan, lt to med brn gran., poor-NVP, N.S.; Sh: sl influx dark gray, dark red-brn

very shaly mix AA; some lt gray and dark brn cryptoxln Ls

very shaly AA; Ls: some offwhite, tan oolitic with fair to good fine oomoldic por., N.S.

very shaly samples AA; Ls: mix offwhite, tan mic-vfxln dense; some gran., scatt. oolitic AA

still very shaly samples; Ls: tan, offwhite mic-vfxln dense, gran. IP, poor-NVP, N.S.

AA

2200' spl - (great spl) flood Ls: mix tan, offwhite mic-vfxln dense and lt brn, gray-brn cryptoxln, NVP, N.S.

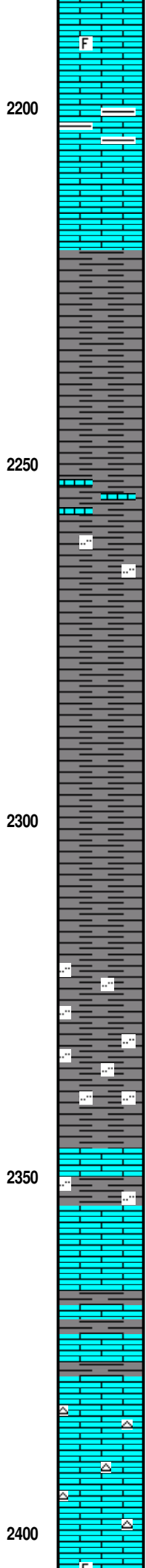
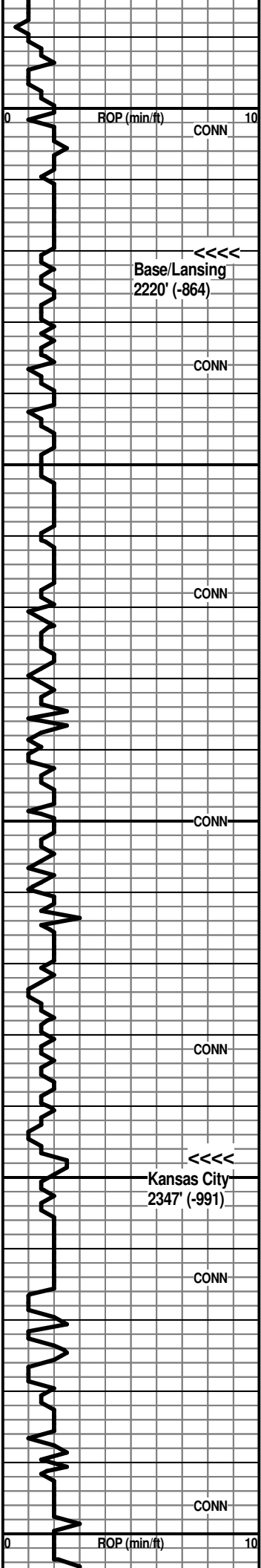
Brown Lime 1976' (-620)

Start 10' samples - wet and dry

Lansing 2074' (-718)

spls very shaly - not mudded up

mud up with two pre-mixes



Ls: mix tan, lt gray, lt brn cryptoxln; tan, offwhite micxln dense and mottled tan gran., sl foss., poor-NVP, N.S.

Ls: mix AA, some tan, offwhite micxln subchalky; influx Sh: med to dark gray, some gray-green

Ls: pred. tan, offwhite mic-vfxln dense; lesser med brn cryptoxln to sl gran., NVP

40' spl - flood Sh: med gray, firm; some pale gray mushy, clayey

Sh: med gray

Sh: AA, some pale gray mushy, clayey

Sh: med gray AA; with sl influx Ls: mix offwhite mic-vfxln dense and tan, lt brn gran., vsl pyritic IP, vsl foss. IP; trace offwhite vfg calcar. Sst

Sh: flood med gray, firm, silty IP

Sh: AA

Sh: AA

Sh: med gray firm

Sh: AA; some pale gray gummy

Sh: mix AA

Sh: med gray firm and med gray silty

Sh: mix AA

Ls: sl mott. tan/brn gran. IP, NVP, N.S.; med brn, gray cryptoxln; Sh: lt to med gray, med gray finely micac. and silty

Ls: sl influx med brn cryptoxln, NVP

Ls: tan, lt brn, lt gray cryptoxln and offwhite, tan mic-vfxln dense

Ls: mix AA with beds of med to dark gray shale

Ls: lt to med brn, lt gray cryptoxln; tan, offwhite mic-vfxln dense, NVP, N.S.; Chert: some tan opq, sharp

Ls: sl cherty mix AA; minor med to dark gray shale

Ls: mix AA; some mottled mic-fnxln, NVP, foss. IP, N.S.

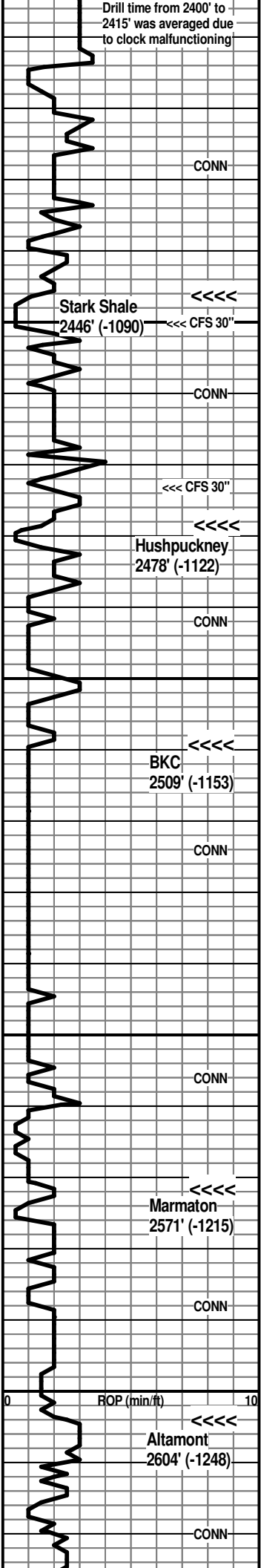
Base/Lansing 2220' (-864)

vis 46 wt 9.3+
WOB 28K RPM 80 SPM 60

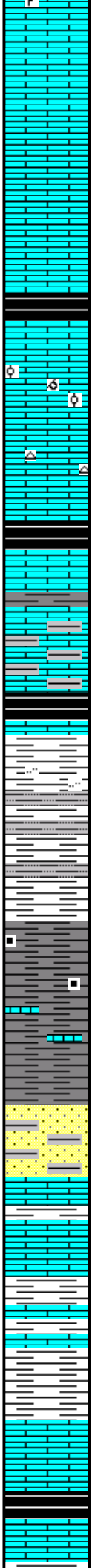
Kansas City 2347' (-991)

vis 45 wt 9.4

Drill time from 2400' to 2415' was averaged due to clock malfunctioning



2450
2500
2550
2600



Ls: various lt to med brn, gray cryptoxln to gran. IP, NVP, N.S.; tan mic-vfxln dense; tan mic-fnxln with some interxln por., N.S.

Ls: mix tan micxln dense; lt to med brn, gray cryptoxln to sl gran., NVP

Ls: various tan, lt gray, offwhite mic-vfxln; lesser gray cryptoxln; scatt. chips with large calcite xtals, N.S.

Ls: influx offwhite micxln, subchalky IP

Sh: black carbon.

Ls: mottled tan, gray, brn gran., shaly IP

Ls: lt gray, tan gran. to oolitic IP with poor inter-particle and oomoldic por., N.S.

Ls: good influx offwhite, tan mic-vfxln dense, subchalky IP and med brn cryptoxln, NVP, N.S.

Ls: mix AA, more tan, lt brn vf-cryptoxln; with offwhite opq chert

Ls: mix tan mic-vfxln dense and lt to med brn cryptoxln, NVP

Sh: black carbon.

Ls: dark brn cryptoxln

Ls: pred.lt to med brn cryptoxln, some dark brn AA; Sh: dark gray

Ls: med to dark brn, gray cryptoxln

Sh: black carbon.

Sh: lt to med gray, some silty, some lt gray mushy; common Ls's AA

Sh: lt to med gray more silty with Siltst: lt gray micac.

Sh: flood med to dark gray, firm to soft, carbon. IP

Sh: pred. dark gray; some dark gray shaly Ls

Sh: med to dark gray, black AA; new soft lt gray; some pale gray mushy

Sst: tan, lt gray vf-fg, calcar. and micac., tight, N.S.

Ls: lt to med brn, gray gran. to cryptoxln, NVP, N.S.

Ls: med-dark brn cryptoxln and gray silty; Sh: med to dark gray, silty IP

Sh: influx lt to med gray, gray-green, some silty, some pale gray mushy; Ls: mottled tan/brn fn-coarse gran., NVP, N.S.

Ls: flood lt gray, tan vf-cryptoxln, NVP, N.S.

Ls: med to dark brn cryptoxln; Sh: dark gray, black carbon.

Ls: various tan, brn, gray vf-cryptoxln with various gray shales

Stark Shale 2446' (-1090)

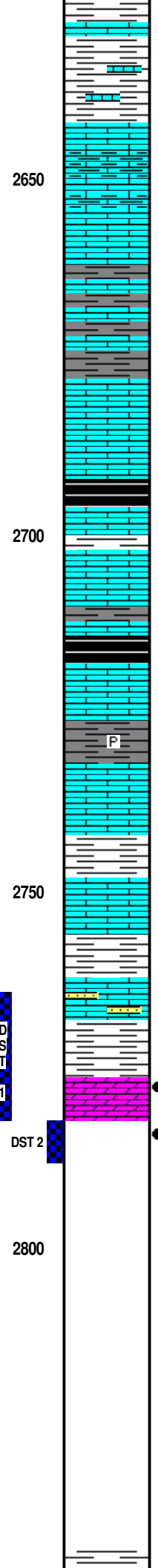
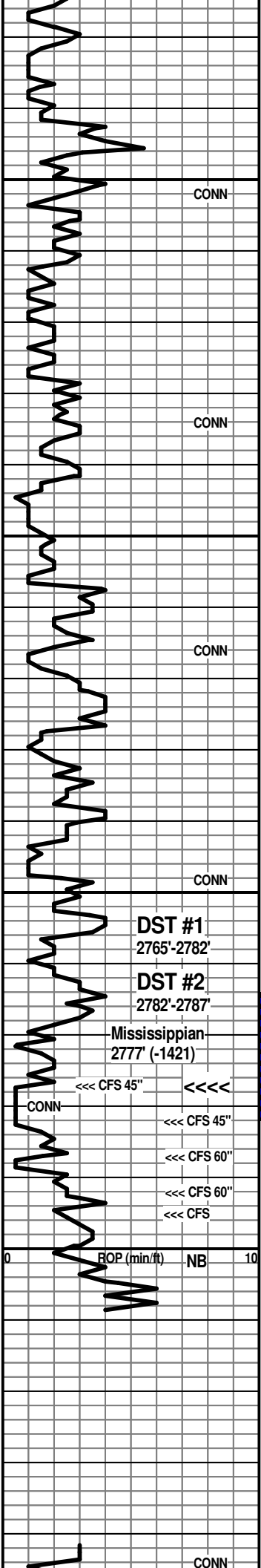
Hushpuckney 2478' (-1122)

BKC 2509' (-1153)

Marmaton 2571' (-1215)

Altamont 2604' (-1248)

7:00 AM at 2622' on 4-7-2019



Shales and Ls's AA

Ls: tan, lt to med brn vf-cryptoxln, some sl mottled; lt gray dense shaly

CONN

2650

Sh: black carb.

Ls: gray, lt brn coarse xln, scatt. fossils, mostly dense, N.S.

CONN

2700

Sh: black carb.

Sh: turq-green, sandy, glauc.

Ls: gray, lt brn coarse xln, foss., dense, N.S.

CONN

Ls: tan, gray coarse xln cherty tan, gray fresh, No vis. por., N.S.

Ls: tan fn-med xln, most dense, N.S.

Sh: gray with pyrite

Ls: tan

Sh: blue green

CONN

2750

Ls: tan med to coarse xln with incl., dense, N.S.

Ls: wht w/SS, wht-gray-green, rare tight clusters, fn-med grnd, subrnd, well sorted and cemented clusters, barren, NSFO, no odor

Sh: blue-green, sm maroon

CFS 2782' - Dolomite, brown-tan; fine to medium crystalline; rare vugular porosity; poor to fair intercrystalline porosity; good amount medium brown subsaturated to mostly saturated stain in 15" and 30" samples; slight to fair show of free oil; slight odor - rocks kick out oil and gas for several minutes when broken; abundant pieces tan, white and orange chert; show seems to weaken with less stained rocks in 45" sample.

CONN

2800

Ls: wht dolo fnxln, pr intprt por., glauc.N.S.; abun. gry & grn shale

Chris Peters was geologist from 2680' to 2760'

DST No. 1 Mississippian
Interval: 2765'-2782'
Times: 60-45-60-60
IFP: weak blow bldg. to 8 inches
ISIP: no return blow
FFP: weak blow bldg. to 14 inches
FSIP: no return blow
Recovery: 90' GIP: 5' clean oil; 90'HOCM (43o, 57m)
FP: 21-36/38-53 SIP: 753-754
HP: 1400-1365 BHT: 108 deg. F

DST No. 2 Mississippian
Interval: 2782'-2787'
Times: 60-45-60-60
IFP: weak blow bldg. to 6 inches
ISIP: no return blow
FFP: weak blow bldg. to 14 inches
FSIP: no return blow
Recovery: 80' GIP: 85' G&HOCM (4g, 31o, 65m)
FP: 18-35/35-55 SIP: 729-734
HP: 1390-1369 BHT: 104 deg. F

Kitt Noah was geologist from 2760' to RTD

Burgess not present; few remnant stringers

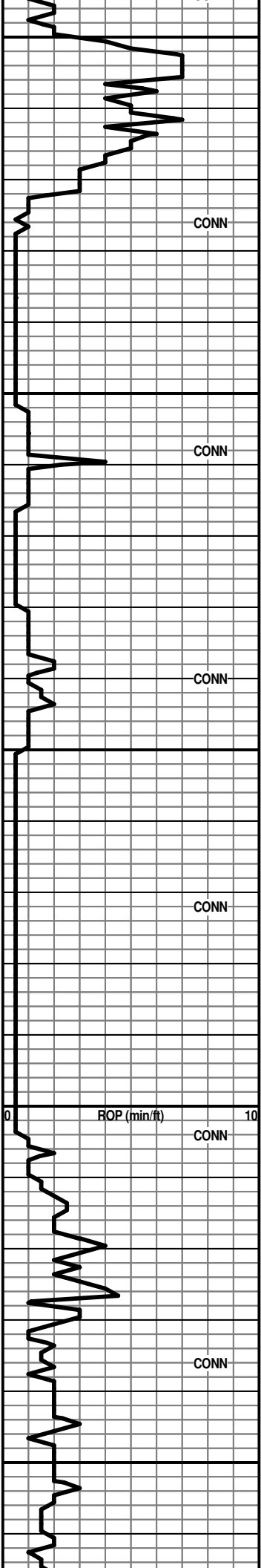
Mississippian 2777' (-1421)

CFS 2787' - Dolomite, gray; some fossilcast porosity; excellent large vugular porosity; many pieces white tripolitic chert also with large vugular porosity; very abundant pieces medium to dark brown subsaturated to saturated stain in 20" sample; slight show of free oil; good gassy odor; fewer pieces vuggy dolomite in 40" sample.

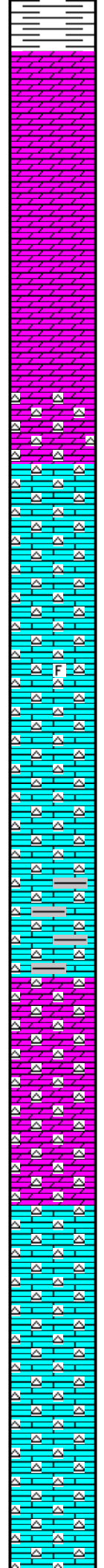
CFS 2792' - 20" - flood grn shale; 40" - Dolo: fn-med xln sm fossilcast, med vug. por., lt to med golden brn subsat-sat stain, SSFO, sli odor, no chert

CFS 2795' Dolo: crm fnxln, pr intxn por.; sm Ls: chalky - spls wash wht

All data was shifted down 32' at 2810' to



2850
2900
2950
3000
3050



Ls: crm, wht dolo fnxln pr intpart por., N.S.; flood dk gray & grn shale

Dolo: tan fnxln pr intxln por., sli sucrosic, barren, N.S.; rare pcs wht chrt

Dolo: AA; Sh: gray, grn, purple

Dolo: crm, tan fnxln, pr intxln por., sli sucrosic, barren, N.S.

Dolo: crm, tan AA

AA

Ls, dolo, crm fnxln pr intpart por., N.S.; abun wht & yellow chrt

Ls: crm, wht very chrty, chalky, spls wash wht, wht & yellow chrt

AA

Ls: crm very chrty AA; incr. amt dk gray shale

F

Ls: crm tan fnxln fossil, pr interpart por., N.S., no odor; abun smoky blue chrt

AA

Ls: crm, tan fnxln, sli foss., pr intpart. por, NSNO, abun. blue gray ang chrt

AA; Sh: dk gray

Ls: crm, tan pr intpart por.; very abun. blue gray chrt

Dolo: tan, brn, abun. chrt, pr intxln por., dense, barren

Dolo: tan, abun. gray foss. chrt, sm brn

Dolo: AA, very abun gray-dk gray chrt

Ls: crm fnxln pr vis por, very abun. gray, blue gray shale

AA

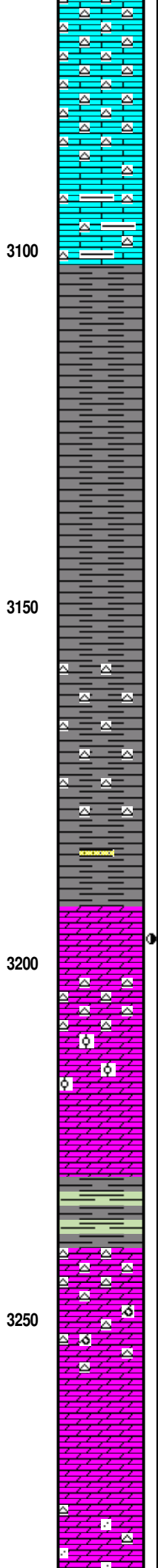
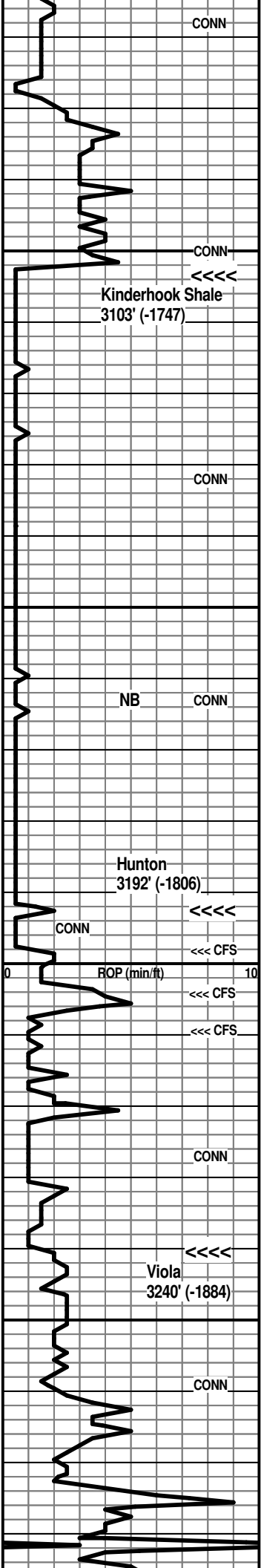
Ls: crm, dolo, pr intpart por., NSNO, very abun wht chrt

AA; very abun lt gray, translucent chrt

Sh: flood blk

Ls: crm fnxln barren, abun gray translucent chrt

account for a missing joint of drill pipe that was discovered when open hole logs were run. Log tops from the Mississippian and above were close to the sample tops. Below that point the tops were off approx. 30'.



AA
 Ls: crm fnxln pr por, abun gray, blue gray chrt

Ls: crm, scat. wht chrt AA; incr. dark bk, gray & maroon shales

Sh: dk gray, bk

AA
 Sh: dk gray, bk w/many pcs crm Ls

Sh: dk gry, dk grn

AA
 Sh: abun dk gry

Sh: abun dk gry w/good amt wht chrt

AA
 Sh: dk gry with poss wht vfg SS, friable, NSNO

3198' Dolomite, tan-cream; fine crystalline; poor intercrystalline porosity; few pieces light brown spotty stain; no show of free oil; slight odor.

Dolo: sli oolitic pr intxln por., dense w/tan, brn, wht chrt

AA
 incr. bk carb shale and much dk gry and dk grn shale

Dolo: tan fnxln pr intxln por., very dense, abun wht trip chrt

Dolo: crm sm ooc pr ooc por, pr intxln por, barren, NSNO, fr amt wht chrt

Dolo: gray med-coarse xln, rhombic, exc vug por. barren, NSNO

Dolo: crm, gry very coarse rhombic xtals exc vug por., barren, NSNO

AA with scat. wht chrt: few qtz grns in trav

Kinnerhook Sh. 3103' (-1747)

Hunton 3192' (-1806)

3204' Dolomite, tan; fine to rare medium crystalline; sucrosic; poor to fair intercrystalline and pinpoint porosity; few pieces light brown spotty stain; no show of free oil; no odor; increasing amount white chert; drilled rough.

3209' Dolomite, tan-cream; fine to medium crystalline; sucrosic; poor to fair intercrystalline porosity; barren; no show of free oil; no odor; abundant white translucent chert; drilled rough.

Viola 3240' (-1884)

AA with scat. whit chert, few qtz grains in tray

Sh: dk gry, cpl pcs kelly grn; sm Ls: crm, tan, brn

Sh: flood kelly grn

Sst: clr abun clusters fn-med grnd, friable well sorted NSNO;
many med grnd qtz grains in bottom of tray

AA

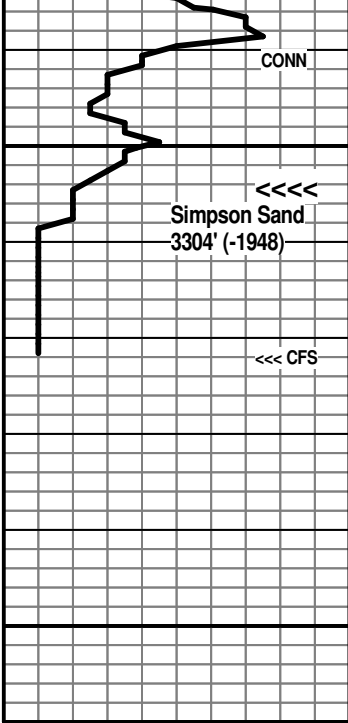
After review of samples, DST results and open hole logs, the decision was made to run 5 1/2" casing for further testing through perforations.

Respectfully submitted,

Wesley D. Hansen
Petroleum Geologist
Kansas License No. 418

Simpson Sand 3304' (-1948)

This report was finalized on behalf of Chris Peters and Kitt Noah by Wesley Hansen



3300

3350