

OPERATOR

Company: TDI, INC.
 Address: 1310 BISON ROAD
 HAYS, KANSAS 67601-9696

Contact Geologist: TOM DENNING
 Contact Phone Nbr: 785-628-2593
 Well Name: MATLOCK # 2
 Location: SE NW NE SE, SEC,26-T13S-R19W
 API: 15-051-26,965-00-00
 Pool: IN FIELD
 State: KANSAS

Field: UNNAMED
 Country: USA



Scale 1:240 Imperial

Well Name: MATLOCK # 2
 Surface Location: SE NW NE SE, SEC,26-T13S-R19W
 Bottom Location:
 API: 15-051-26,965-00-00
 License Number: 4787
 Spud Date: 9/18/2019 Time: 5:00 PM
 Region: ELLIS COUNTY
 Drilling Completed: 9/25/2019 Time: 3:30 AM
 Surface Coordinates: 2290' FSL & 700' FEL
 Bottom Hole Coordinates:
 Ground Elevation: 2160.00ft
 K.B. Elevation: 2170.00ft
 Logged Interval: 3000.00ft To: 3900.00ft
 Total Depth: 3900.00ft
 Formation: LANSING-KANSAS CITY
 Drilling Fluid Type: CHEMICAL/FRESH WATER GEL

SURFACE CO-ORDINATES

Well Type: Vertical
 Longitude: -99.3936799
 Latitude: 38.8915823
 N/S Co-ord: 2290' FSL
 E/W Co-ord: 700' FEL

LOGGED BY

Company: SOLUTIONS CONSULTING, INC.
 Address: 108 W 35TH
 HAYS, KS 67601

Phone Nbr: (785) 639-1337
 Logged By: GEOLOGIST Name: HERB DEINES

CONTRACTOR

Contractor: SOUTHWIND DRILLING, INC.
 Rig #: 1
 Rig Type: MUD ROTARY
 Spud Date: 9/18/2019 Time: 5:00 PM
 TD Date: 9/25/2019 Time: 3:30 AM

ELEVATIONS

K.B. Elevation: 2170.00ft Ground Elevation: 2160.00ft
 K.B. to Ground: 10.00ft

NOTES

RECOMMENDATION TO PLUG AND ABANDON WELL BASED ON LOG ANALYSIS AND NEGATIVE RESULTS OF TWO DSTS.

OPEN HOLE LOGGING BY PIONEER ENERGY SERVICES: DUAL INDUCTION LOG, DUAL COMPENSATED POROSITY LOG, AND MICRORESISTIVITY LOG.

DRILL STEM TESTING BY TRILOBITE TESTING INC: TWO (2) CONVENTIONAL TESTS.

MATLOCK # 2	MATLOCK # 1	HART # 1
SE NW NE SE	NW SW NE SE	NW SE SE NE
SEC.26-13S-19W	SEC.26-13-19W	SEC.26-13-19W
KB 2170'	KB 2172'	KB 2105'

LOG TOPS

Anhydrite top	1463 +707	+ 704	+ 707
Anhydrite base	1502 +668	+ 667	+ 669
Topeka	3180-1010	-1010	-1015
Heebner Sh.	3436-1266	-1260	-1262
Toronto	3454-1284	-1280	-1288
LKC	3479-1309	-1305	-1311
BKC	3714-1544	-1542	-1541
Arbuckle	3844-1674	-1642	-1659
RTD	3900-1730	-1730	-1695

SUMMARY OF DAILY ACTIVITY

09-18-19 **RU, Spud 5:00 pm, Drilling surface hole.**

09-19-19 **226', set 8 5/8" surface casing to 225.85' w/ 170 sxs 60/40 pos
 2%gel 3%CC, plug down 1:30AM. Slope ¾ degree, WOC, drill plug
 9:30 AM**

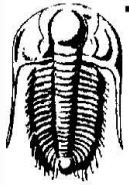
09-20-19 **1255' drilling**

09-21-19 **2180', drilling**

09-22-19 **2915' drilling, displace 2803' to 2826'**

09-23-19 **3491', drilling, CFS 3467', short trip 15 stds, CFS 3520', CFS 3535',
 DST # 1 3495'-3535', slope ½ degree**

09-24-19 **3665', drilling, CFS 3665', CFS 3700', DST # 2 3648' to 3700', TIWB,
 drilling**



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

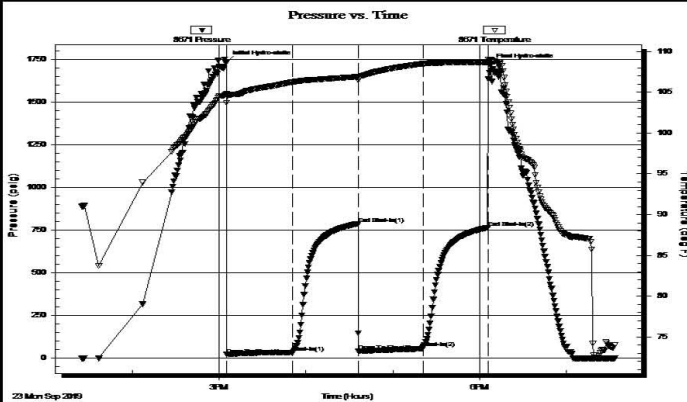
TDI **26 - 13S - 19W**
 1310 Bison Rd **Matlock #2**
 Hays Ks 67601 Job Ticket: 66317 **DST#: 1**
 ATTN: Herb Deines Test Start: 2019.09.23 @ 13:25:00

GENERAL INFORMATION:

Formation: **"C & D"**
 Deviated: No Whipstock: ft (KB) Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 15:05:15 Tester: Royal Fisher
 Time Test Ended: 19:33:45 Unit No: #77
Interval: 3495.00 ft (KB) To 3535.00 ft (KB) (TVD) Reference Elevations: 2170.00 ft (KB)
 Total Depth: 3535.00 ft (KB) (TVD) 2160.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 10.00 ft

Serial #: 8671 Outside
 Press@RunDepth: 60.46 psig @ 3496.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2019.09.23 End Date: 2019.09.23 Last Calib.: 2019.09.23
 Start Time: 13:25:05 End Time: 19:33:44 Time On Btm: 2019.09.23 @ 15:05:00
 Time Off Btm: 2019.09.23 @ 18:07:30

TEST COMMENT: 45 - IFP - Surface blow gradually built up to 7"
 45 - ISI - No Return
 45 - FFP - Surface blow slowly built up to 6 1/2"
 45 - FSI - No Return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1733.78	104.79	Initial Hydro-static
1	21.23	103.73	Open To Flow (1)
46	33.56	106.26	Shut-In(1)
91	787.29	106.89	End Shut-In(1)
92	42.55	106.71	Open To Flow (2)
136	60.46	108.50	Shut-In(2)
181	764.56	108.69	End Shut-In(2)
183	1715.00	108.99	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
3.00	Free Oil - 100%o	0.03
90.00	OCCMV - 10%o - 40%m - 50%w	0.92

Gas Rates

Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

TDI
1310 Bison Rd
Hays Ks 67601
ATTN: Herb Deines

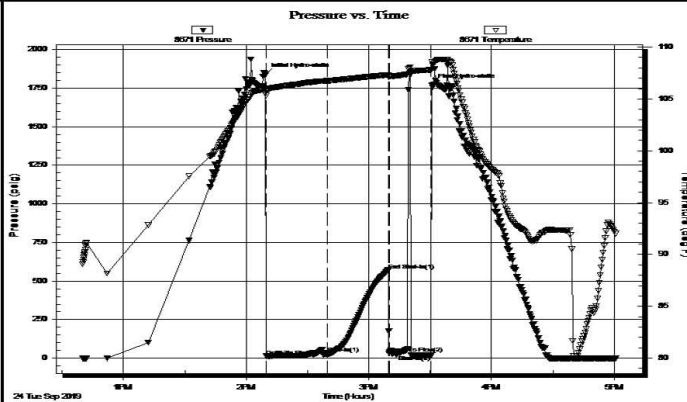
26 - 13S - 19W
Matlock #2
Job Ticket: 66318 **DST#: 2**
Test Start: 2019.09.24 @ 12:40:00

GENERAL INFORMATION:

Formation: **"J & K"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 14:09:45
Time Test Ended: 17:01:00
Test Type: Conventional Bottom Hole (Initial)
Tester: Royal Fisher
Unit No: #77
Interval: **3648.00 ft (KB) To 3700.00 ft (KB) (TVD)**
Total Depth: 3700.00 ft (KB) (TVD)
Reference Elevations: 2170.00 ft (KB)
Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 2160.00 ft (CF)
KB to GR/CF: 10.00 ft

Serial #: 8671 Outside
Press@RunDepth: 33.46 psig @ 3649.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2019.09.24 End Date: 2019.09.24 Last Calib.: 2019.09.24
Start Time: 12:40:05 End Time: 17:00:59 Time On Btm: 2019.09.24 @ 14:09:30
Time Off Btm: 2019.09.24 @ 15:31:00

TEST COMMENT: 30 - IFP - Surface blow built to a weak blow and stayed
30 - ISI - No Return
20 - FFP - No blow flushed tool 10 mins. in blow bubbled then died
0 - FSI -



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1838.54	106.05	Initial Hydro-static
1	13.69	105.34	Open To Flow (1)
30	33.46	106.75	Shut-In(1)
60	571.28	107.32	End Shut-In(1)
61	32.70	107.16	Open To Flow (2)
81	19.18	107.81	Shut-In(2)
82	1771.03	108.57	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbt)
10.00	OSM - Oil Spots - 100% m	0.10

Gas Rates

Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)

Trilobite Testing, Inc

Ref. No: 66318

Printed: 2019.09.24 @ 19:42:07

ROCK TYPES

Chtcong	Lmst fw<7	shale, grn	Carbon Sh
Dolprim	Lmst fw>7	shale, gry	shale, red

ACCESSORIES

ACCESSORIES

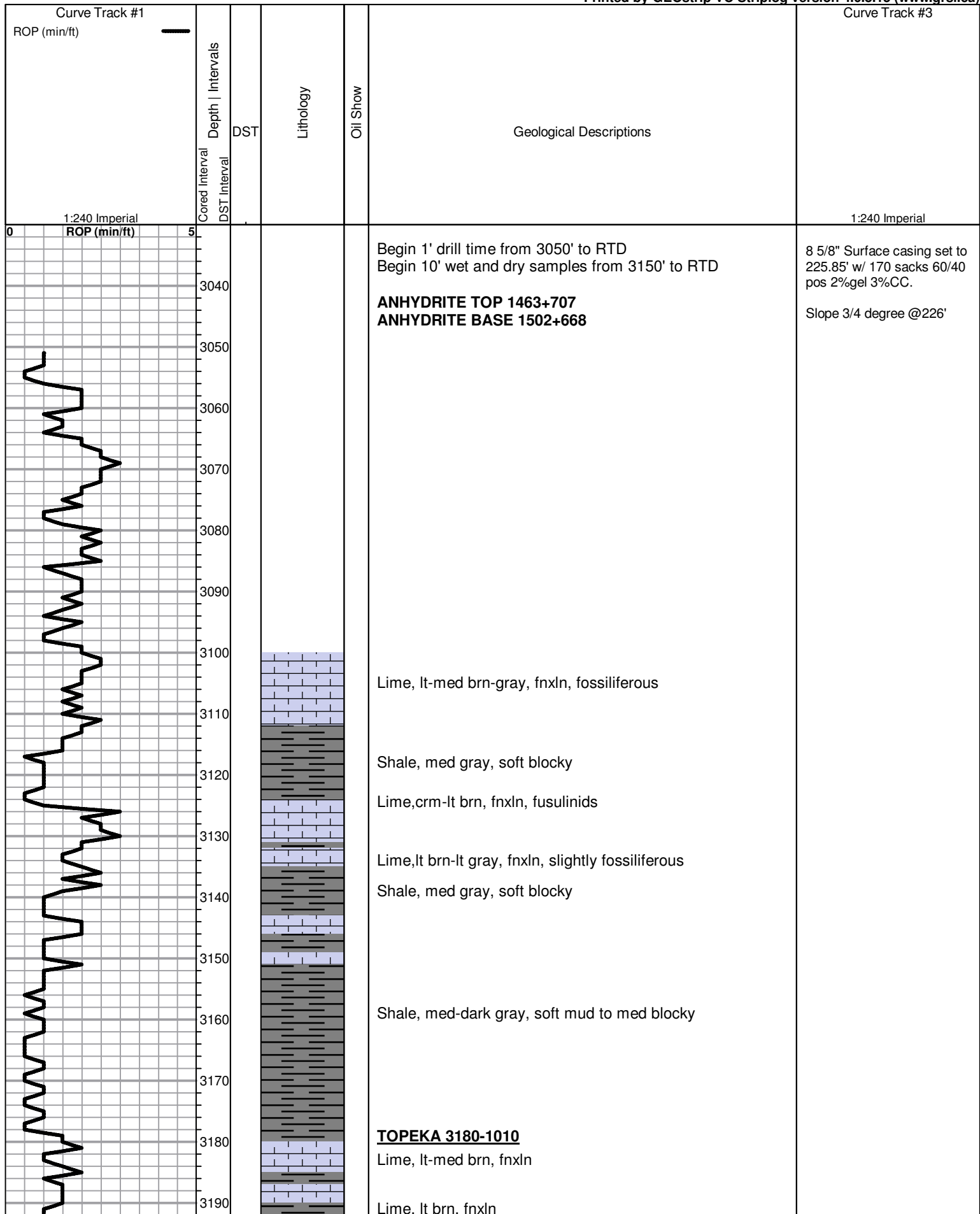
MINERAL

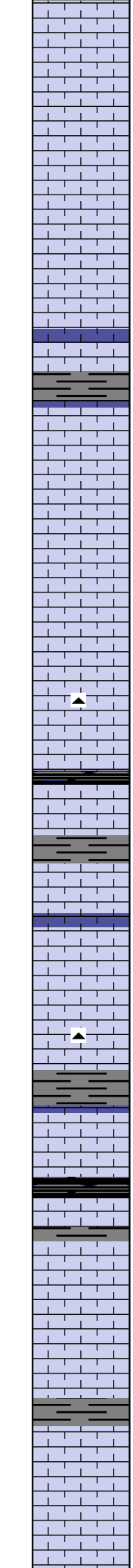
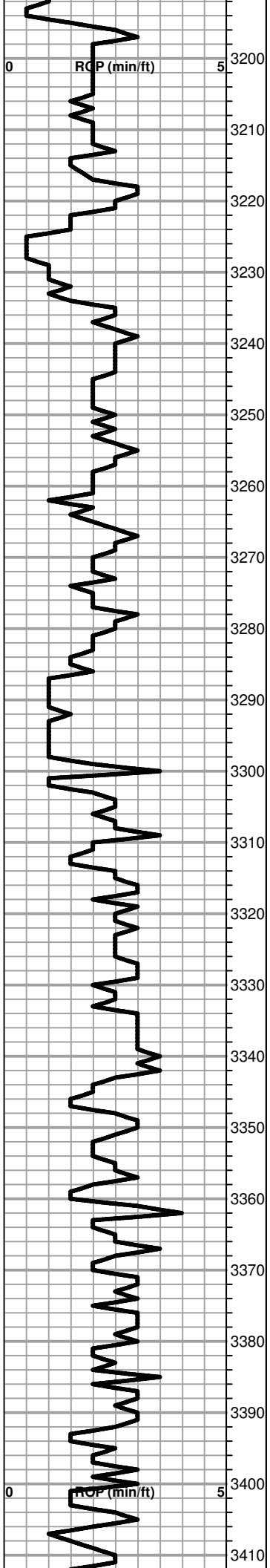
▲ Chert, dark

FOSSIL

🪨 Oomoldic

Printed by GEOstrip VC Striplog version 4.0.8.15 (www.grsi.ca)





Lime, lt brn, fnxln, sticky chalky clumps in part

Lime, lt brn, fnxln, bedded chalk

Lime, crm-lt brn, slightly granular to fnxln, NS, bedded chalk in part

Lime, lt brn, fn-vfxln, white chalk wash

Lime, lt-med brn, fnxln, bedded chalk

Lime, lt-med brn-lt gray, fn-vfxln

Lime, lt brn-lt gray, fnxln, slightly chalky

Lime, lt brn-lt grayish brn, granular to fnxln, chalky

Lime, lt brn, soft granular, chalky, white wash

Shale, black carbonaceous, blocky

Lime, lt brn, fnxln-granular, bedded chalk

Lime, crm-lt brn, fnxln-micro xln

Lime, buff-crm- vfxln, lithographic

Lime, crm-lt brn, fn-micro xln

Lime, lt brn-lt gray, fn-vfxln

Shale, black carbonaceous, blocky

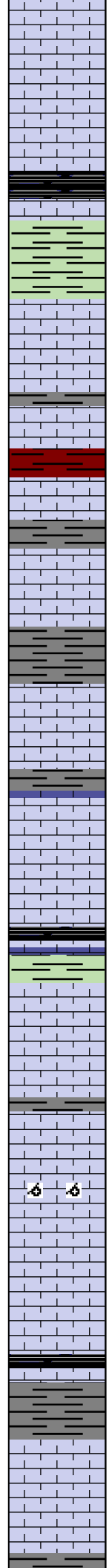
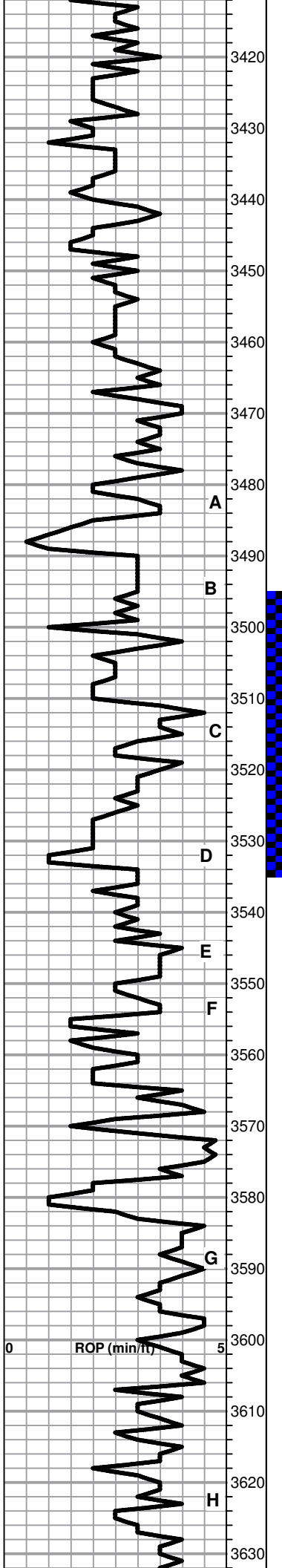
Lime, lt-med brn, fn-vfxln

Lime, lt-med brn, fn-vfxln, thin beds of cemented fusulinids

Lime, lt brn-lt gray, fnxln to slightly granular in part with bedded chalk, NS

Lime, lt-med brn, fn-vfxln

Lime, lt brn, fnxln-granular in part, NS



Lime, lt-brn, fnxln granular in part, NS

Lime, lt-med brn, fnxln granular, bedded chalk

HEEBNER SHALE 3436-1266

Shale, black carbonaceous, blocky
Lime, lt brn, vfxln

Shale, lt gray-lime green, soft mud.

TORONTO 3454-1284

○ Lime, white-crm, mostly fnxln, part fine ppt and interxln porosity with lt spotty staining, NFO very lt odor

Lime, lt brn, fn-micro xln

LKC 3479-1309

Lime, lt brn, fn-micro xln

Shale, lt gray, soft sticky clumps

Lime, lt-med brn-med gray, fn-vfxln

Lime, crm-lt brn, fn-vfxln, bedded chalk

○ Lime, crm-lt brn, fnxln, fossiliferous with sparry calcite backfill, scattered ppt porosity with trace of lt stain, NFO or odor

○ Lime, lt brn, fnxln, oolitic with fossil fragments in part, poor development, scattered lt spotty staining, NFO, very lt odor

Lime, lt brn, vfxln

Shale, black carbonaceous, blocky

○ Lime, crm, fnxln, fossiliferous, cemented, spotty staining, NFO or odor, white chalk wash.

Lime, crm-tan, soft chalky, NFO or odor or staining

Lime, white-crm, fnxln, bedded chalk

○ Lime, crm, fnxln to soft chalk and oomoldic, NS, few chips with black dead oil specks

Lime, crm-tan, fn-micro xln

Lime, crm-tan, fn-micro xln

○ Lime, med brn, fn-vfxln, fine oolitic in part with spotty dark staining, NFO or odor

Lime, crm-tan, fn-micro xln

CFS 3470', Short Trip 15 stands

DST # 1 3495' TO 3535'
SEE HEADER FOR TEST SUMMARY

CFS 3520'

CFS 3535'

ROP (min/ft)

A

B

C

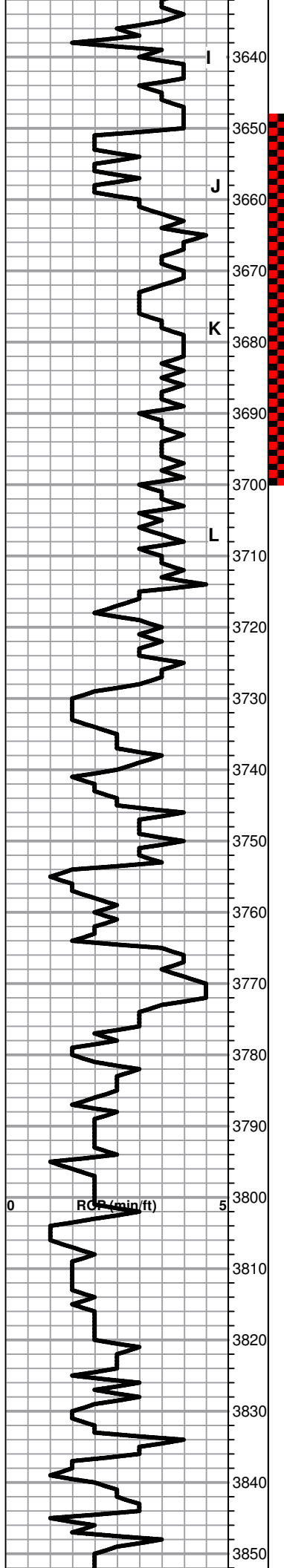
D

E

F

G

H



Lime, crm-tan, fn-micro xln

Lime, crm, fn-micro xln

Lime, crm-tan, fnxln, white chalk wash

Lime, crm-tan, fn-micro xln with white chalk wash

CFS 3665'

Lime, crm-tan, fn-micro xln, NFO or odor, few chips with trace of spotty staining.

DST # 2 3648' TO 3700'
SEE HEADER FOR TEST SUMMARY

Lime, crm-tan, mostly fn-micro xln, few oolitic chips well cemented with scattered oomolds with trace of free oil on crush. Does not appear well developed with little development of uniform porosity.

CFS 3700'

Lime, crm, fn-micro xln

BKC 3714-1544

Shale, red, soft with lt red wash and cherty rubble in part

Lime, clastic mix with red shale, fnxln

Shale, red, soft with red wash

Lime, crm, fnxln, some clastic lime mix

Lime, crm, fn-vfxln

Shale, red, soft with red wash

Lime, crm, vfxln, sticky chalk, some clastic lime.

Shale, red wash with vari color cherts

Shale, red soft with red wash, increasing vari colored cherts and shales.

Vari color shales and vari colored cherts

ARBUCKLE 3844-1674

Dolomite, crm, fnxln-granular, sucrosic in part, NS

		<p>Dolomite. ivory to tan, fnxln-granular</p> <p>Dolomite, salmon-ivory-tan, fnxln-granular</p> <p>Dolomite, ivory-crm, fnxln-granular, scattered glauconite</p> <p>Dolomite, ivory-crm, fnxln-granular</p> <p>RTD 3900-1730 LTD 3901-1731</p>	<p>1st plug@3820'w50 sxs 2nd plug@1485'w50 sxs 3rd plug@760'w100 sxs 4th plug@275'w/50 sxs 5th plug@40'w/10 sxs rathole/30 sxs mousehole 15 sxs</p> <p>Ordered 305 sacks 60/40pos 4% gel with 1/4# flocele per sack</p> <p>Plug down 4:30PM 9/25/19</p>
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