

**THE STATE CORPORATION COMMISSION
OF THE STATE OF KANSAS**

Before Commissioners: Pat Apple, Chairman
Shari Feist Albrecht
Jay Scott Emler

In the matter of the application of Quail Oil)	Docket No: 17-CONS-3484-CUIC
& Gas, LC to authorize injection of saltwater)	
into the Arbuckle formation at the Sly 2-6)	CONSERVATION DIVISION
SWD well, located in the NE NE SE of)	
Section 6, Township 17S, Range 6E in)	License No. 33185
<u>Morris County, Kansas.</u>)	

**NOTICE OF FILING OF PRE-FILED TESTIMONY OF LEE B. SHOBE
ON BEHALF OF QUAIL OIL & GAS, LC**

Quail Oil & Gas, LC hereby provides notice on this 24th day of April 2017 of the filing of the Pre-filed Testimony of Lee B. Shobe on Behalf of Quail Oil & Gas, LC dated April 24, 2017, a copy of which is attached hereto.

Respectfully submitted,

DEPEW GILLEN RATHBUN & McINTEER, LC
8301 East 21st St. North, Suite 450
Wichita, KS 67206-2936
Office (316) 262-4000
Fax (316) 265-3819
robert@depewgillen.com

By /s/Robert J. Vincze
Robert J. Vincze #14101
Joseph A. Schremmer #25968
Attorneys for Quail Oil & Gas, LC

CERTIFICATE OF SERVICE

I hereby certify that on this 24th day of April 2017, I caused a complete and accurate copy of the foregoing Notice of Filing of the Pre-filed Testimony of Lee B. Shobe on Behalf of Quail Oil & Gas, LC to be served via U.S. Mail, postage prepaid and properly addressed, to the following:

Robert V. Eye, #10689
Robert V. Eye Law Office, LLC
Suite 1010
4840 Bob Billings Parkway
Lawrence, Kansas 66049
bob@kauffmaneye.com
*Attorney for Protestants Elexa Dawson,
Katherine Kelly, Cindy Hoedel,
Regina Compernelle and Karla Jo Grimmert*

And delivered electronically to:

Jonathan R. Myers
KCC Conservation Division
j.myers@kcc.ks.gov

Michael J. Duenes
Assistant General Counsel
m.duenes@kcc.ks.gov

/s/Robert J. Vincze

Robert J. Vincze #14101

**THE STATE CORPORATION COMMISSION
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Before Commissioners: Pat Apple, Chairman
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In the matter of the application of Quail Oil) & Gas, LC to authorize injection of saltwater) into the Arbuckle formation at the Sly 2-6) SWD well, located in the NE NE SE of) Section 6, Township 17S, Range 6E in) <u>Morris County, Kansas.</u>)	Docket No: 17-CONS-3484-CUIC CONSERVATION DIVISION License No. 33185
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PRE-FILED TESTIMONY OF LEE B. SHOBE
ON BEHALF OF QUAIL OIL & GAS, LC

- 1 Q. Please state your name, position, employer and office address.
- 2 A. My name is Lee B. Shobe. I am an independent geologist. My address is 9232 W. Brandt
- 3 Avenue, Littleton, Colorado 80123.
- 4 Q. Please state your educational background.
- 5 A. I was awarded my Bachelor of Science degree in Geology from the University of
- 6 Tennessee in 1979.
- 7 Q. Please summarize your work experience.
- 8 A. I worked for Marmik Oil Company in El Dorado, Arkansas, as a geologist for over 30
- 9 years. Since then, I have worked as a consulting geologist. I have over 35 years of
- 10 experience with oil and gas exploration in Kansas, Oklahoma and the Mid-Continent. I
- 11 have also worked with geophysics for over 20 years, interpreting 2D and 3D seismic data.
- 12 Q. Are you familiar with the Application filed by Quail Oil & Gas, LC with the Kansas
- 13 Corporation Commission ("Commission") to use the Sly 2-6 well as a saltwater disposal
- 14 well in the Arbuckle formation?

1 A. Yes.

2 Q. Did you help prepare such Application?

3 A. Yes.

4 Q. What are the characteristics of the Sly 2-6 well that make it a good prospect for a disposal
5 well?

6 A. The Arbuckle formation has very good porosity which allows it to take fluid very well.
7 The well will be perforated 30 feet below the top of the Arbuckle formation. The average
8 thickness of the Arbuckle formation in this area is 265 feet.

9 Q. Will the injection of saltwater into the Arbuckle formation at a perforated depth of 2710 to
10 2730 feet, at a maximum injection rate of 5000 bbls/day and at a maximum injection
11 pressure of 650 psig, affect the correlative rights of others in the Camp Creek field or any
12 of the producing wells within ¼ mile radius of the proposed injection well?

13 A. No.

14 Q. In your opinion, will fluids introduced into the proposed injection zone be confined to that
15 zone?

16 A. Yes.

17 Q. What is the depth of any fresh or useable water within ¼ mile of the proposed injection
18 well?

19 A. Approximately 120 feet below ground surface.

20 Q. Is the Arbuckle formation into which you plan to dispose of saltwater separated from fresh
21 and usable water formations by impervious beds?

22 A. Yes, Pennsylvanian and Permian aged rock lies above the Lansing formation and below the
23 measured depth of fresh water (120 feet) and usable water formations at approximately 200
24 feet below ground surface. In addition, there is more than 1000 feet of impermeable rock

1 between the Lansing formation and the top of the Arbuckle formation. Please see the
2 attached Geologist's Report which I prepared (Exhibit A).

3 Q. Have you reviewed publically available information on the United States' Geological
4 Survey National Earthquake Information Center (NEIC) website?

5 A. Yes, on April 13, 2017.

6 Q. As of April 13, 2017, did such NEIC website show any earthquakes since 1990 with an
7 epicenter in Morris County, Kansas?

8 A. No.

9 Q. Have you reviewed the "Staff's 2016 Proposed Area of Reduction" map attached to the
10 Commission's Second Order Reducing Saltwater Injection Rates, Docket No.: 15-CONS-
11 770-CMSC?

12 A. Yes.

13 Q. Does the proposed Sly 2-6 SWD lie in the "Staff's 2016 Proposed Area of Reduction?"

14 A. No.

15 Q. Does this conclude your testimony?

16 A. Yes, and I reserve the right to submit rebuttal testimony.


EXHIBIT LIST FOR PRE-FILED TESTIMONY OF LEE B. SHOBE
ON BEHALF OF QUAIL OIL & GAS, LC

1. Exhibit A: Geologist's Report

VERIFICATION

STATE OF Kansas)
) ss:
COUNTY OF Cowley)

I, Lee B. Shobe, being duly sworn, upon my oath, state that I have read the foregoing Pre-Filed Testimony to which this verification is attached, that I am aware of its contents, and the statements and attached exhibits are true and correct.



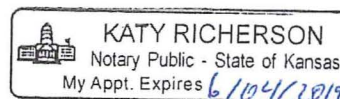
Lee B. Shobe

SUBSCRIBED AND SWORN to before me on this 24th day of April 2017.



Notary Public

My commission expires: 6/04/2019



LEE B. SHOBE

Independent Petroleum Geologist

EXHIBIT

tabbies

A

GEOLOGIST'S REPORT

Drill Time & Sample Log

COMPANY QUAIL OIL & GAS, LC

LEASE 2 SWD SLY

LOCATION 2,155' FSL & 335' FEL

FIELD UNKNOWN

SECT. 6 TOWNSHI 17S RANGE 6E

COUNTY MORRIS STATE KS

API 15-127-20597-0000

ALT. ID

ELEVATIONS

KB 1,403

GL 1,399

START SAMPLE REPORT

1,400'

END SAMPLE REPORT

2,750'

CONTRACTOR C & G DRILLING, INC., RIG #2

SPUD 11/18/16 COMP 11/30/16

RTD 2,750' LTD

OPEN HOLE LOGS

None

CASING

SURFACE

287' 8 5/8", 28#, set @ 286'

PRODUCTION

FORMATION TOPS

LOG

SAMPLE

CHRONOLOGY

LANSING

1,756

(-173)

STARK

1,848

(-445)

BASE KANSAS CITY

1,908

(-505)

MISS CHERT

2,067

(-664)

MISS LIME

2,104

(-701)

KINDERHOOK

2,135

(-732)

HUNTON

2,302

(-899)

MAQUOKETA

2,443

(-1040)

VIOLA

2,507

(-1104)

SIMPSON

2,590

(-1187)

ARBUCKLE

2,681

(-1287)

SPUD 11/18/2016

set surface, shut down for

Thanksgiving

11/28, resume drlg

11/29, drlg 1,747'

11/30, drlg 2,567'

11/30 TD 2,750

REMARKS

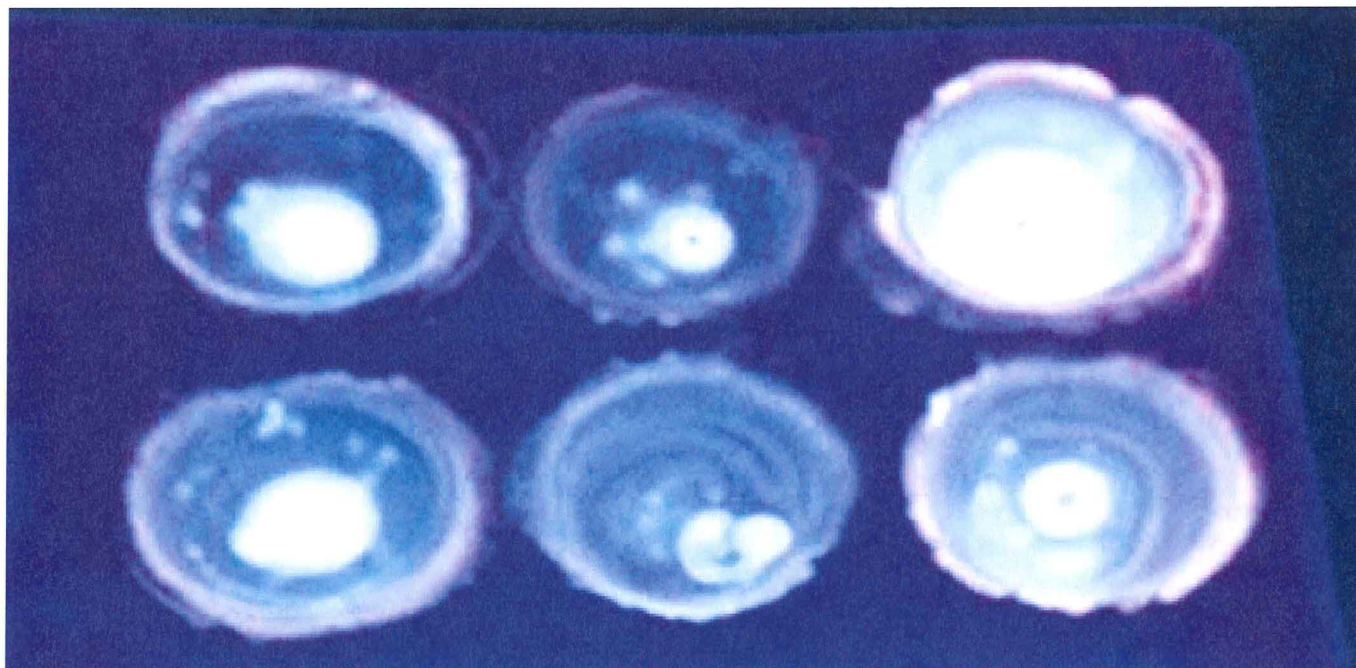
The only shows of oil encountered in this well were in the Miss Chert.

DST CHARTS

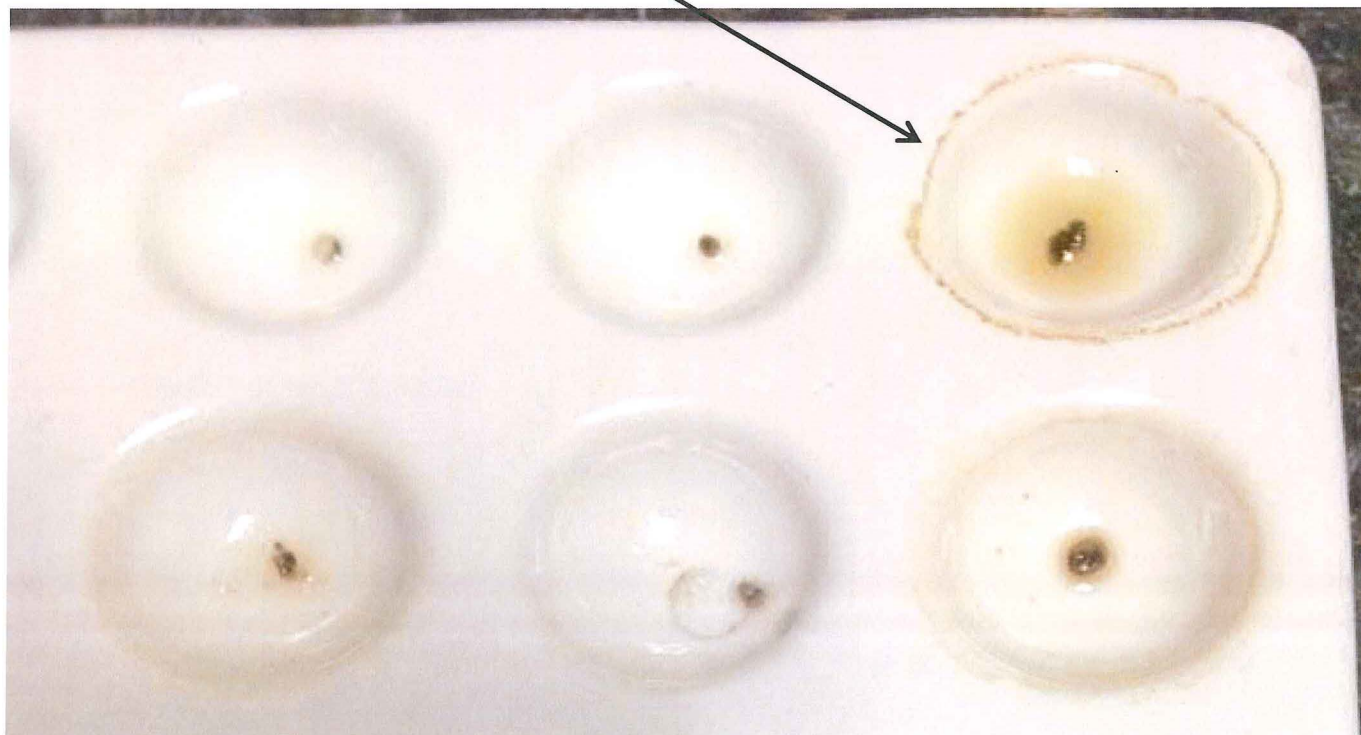
NONE

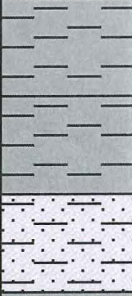
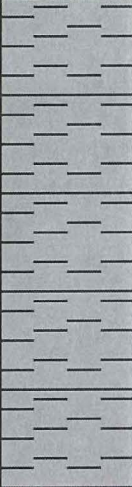

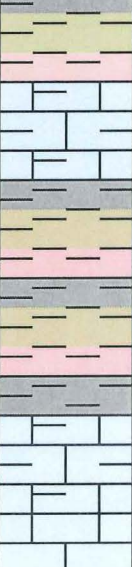
Oil flourcense from top 10' of the Miss Chert sample from 2,070'-2,080'

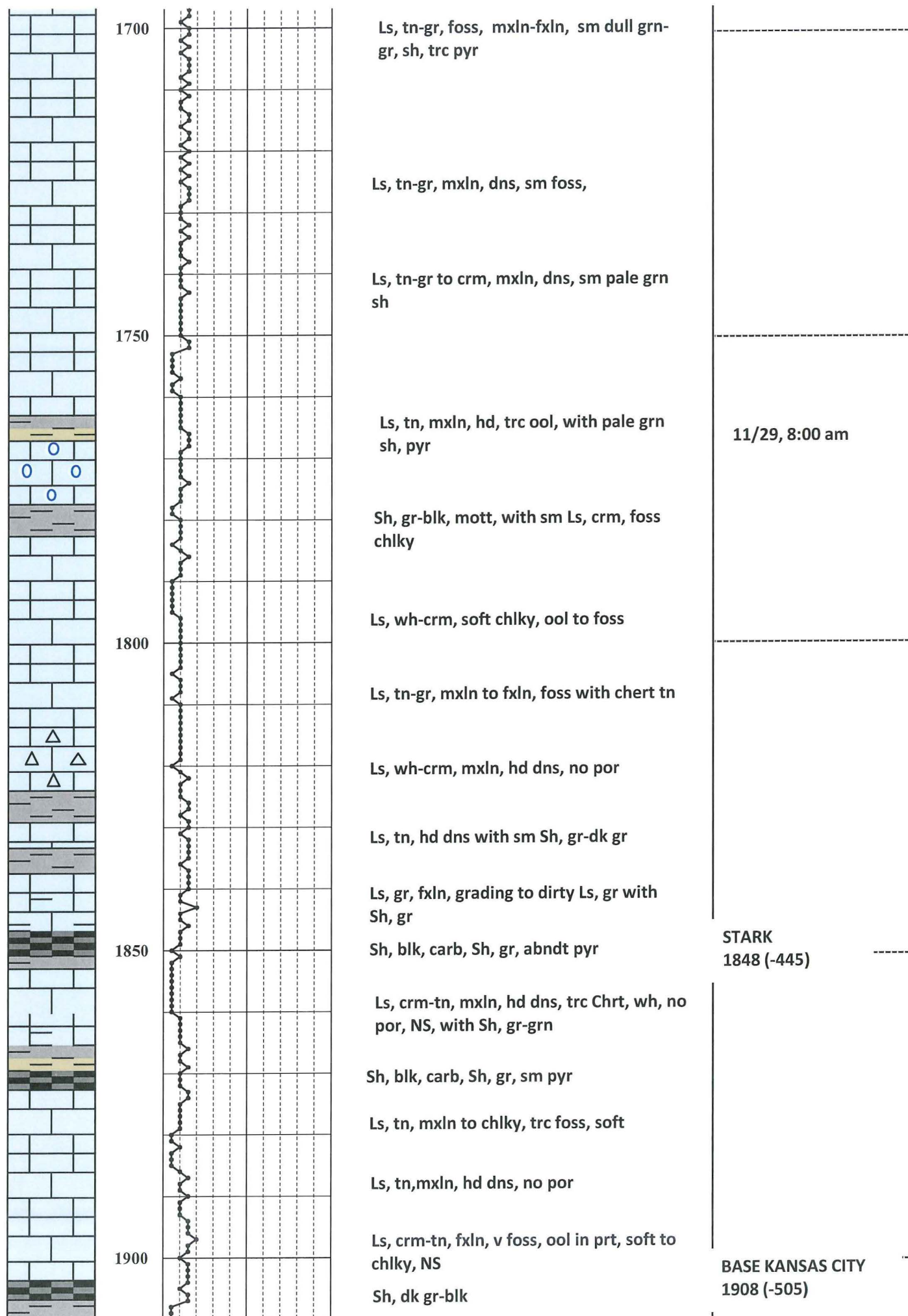
Immediate streaming cuts (using oil solvent) from the Miss Chert porosity leaving residual oil ring when dried.

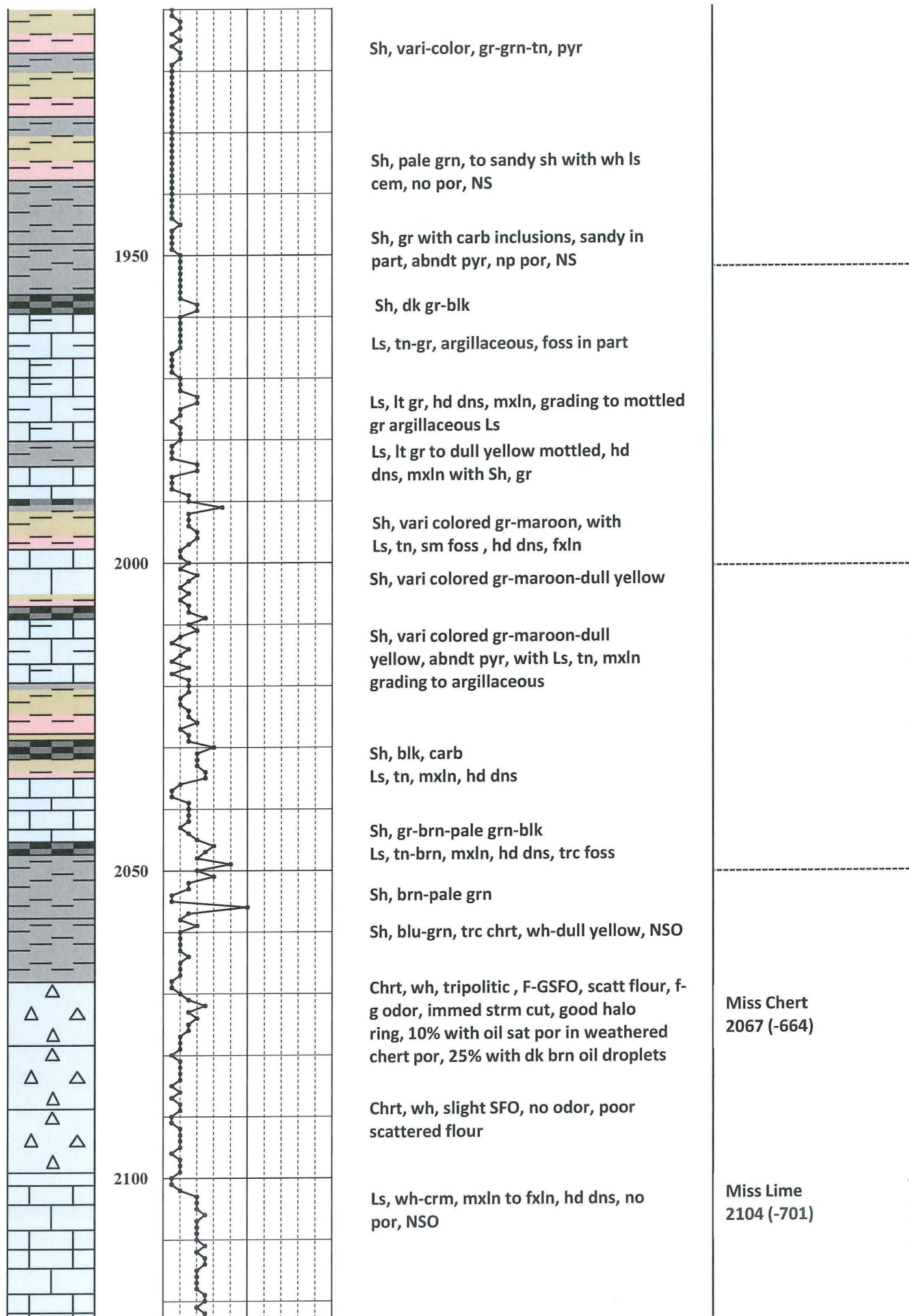


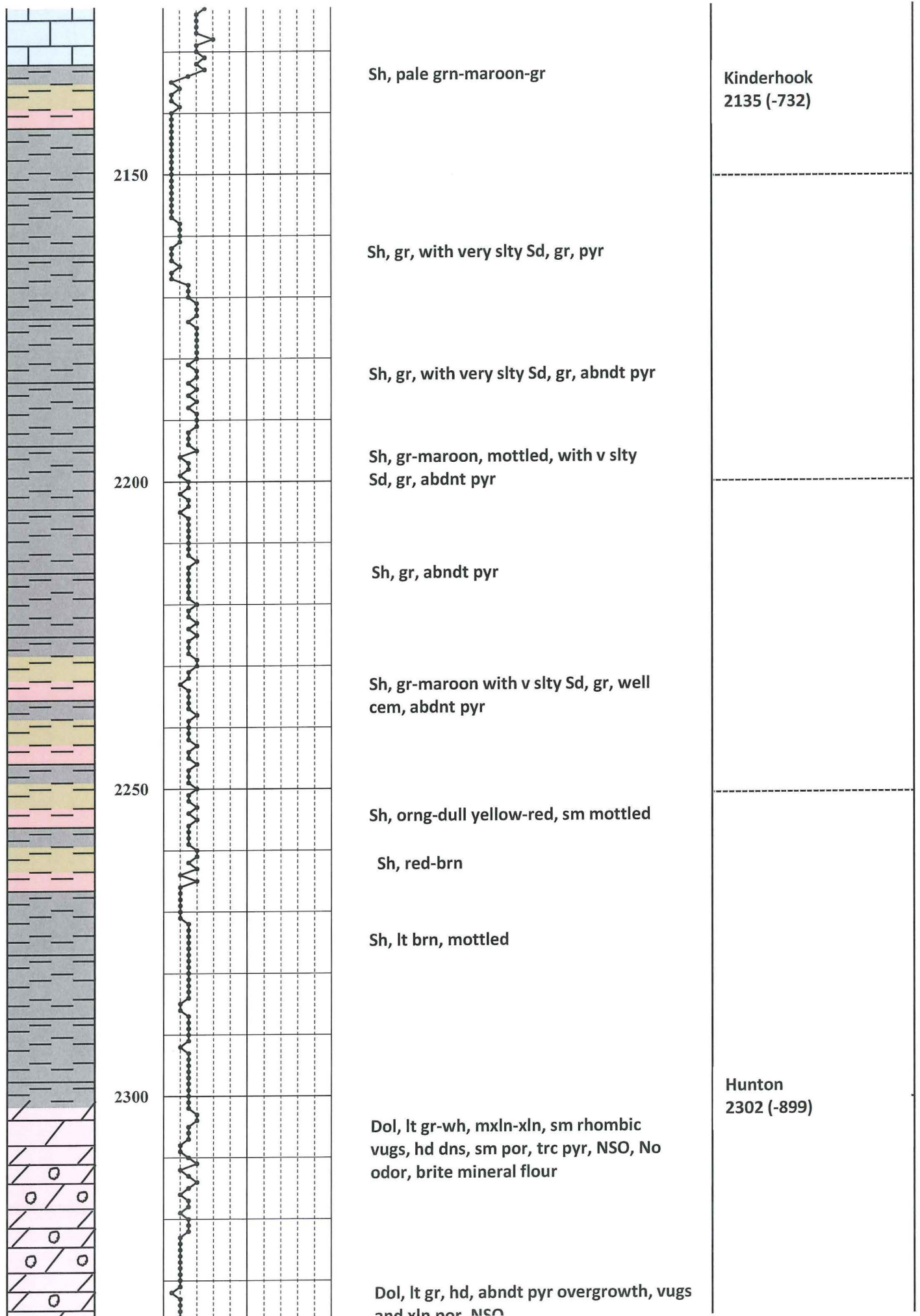
Same photo under normal light, note brown residual ring of oil

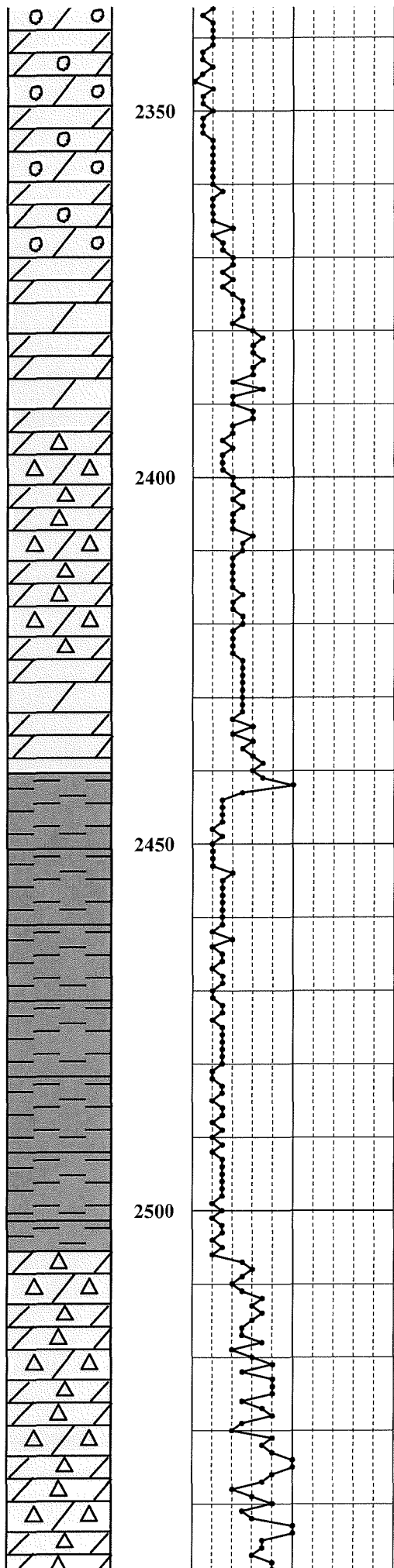


LITHOLOGY	DEPTH	MIN/FT	DST's	SAMPLE DESCRIPTIONS	REMARKS
	0	5	10		
	1500			Sh, lt gr, sm sd grains, sm blk carb inclusions	On location 11/28, 5:30 pm
				Sh, gr, sm sd, md gr, well sort well cem, no por	
				Sh, lt gr to dk gr, trc pyr, trc pale gr sh	
				Sh, gr, with ls tn-brn, mxln dns	
	1550			Sh, gr, ls tn-brn, hd dns, mxln	LANSING 1576 (-173)
	1600			Ls, wh-crm, mxln, hd dns, no por, wh ls chlky in part	
				Ls, wh-crm, mxln, hd dns, no por, sm mineral flour, trc pale grn sh	
				Ls, wh-crm, mxln, hd dns, no por, sm blk carb sh	
				Ls, wh-tn, mxln, trc foss & pyr, sm pale grn sh	
	1650			Sh pale grn to gr, sm rd-brn, mott in part, Ls, tn, mxlm to xln, no por, hd dns, sm chlky	
				Sh pale grn to gr & dull red	
				Ls, crm-tn, most chalk, foss, ool, mottled, slty in part, sm	









and xln por, NSO

Dol, wh-crm, hd dns, mxln, with trc
chrt, wh, NSO

Dol, crm, mxln-xln, most hd dns, sm
vuggy & xln por, Chrt, wh-lt tan, NSO

Sh, pale grn, slightly sandy in part

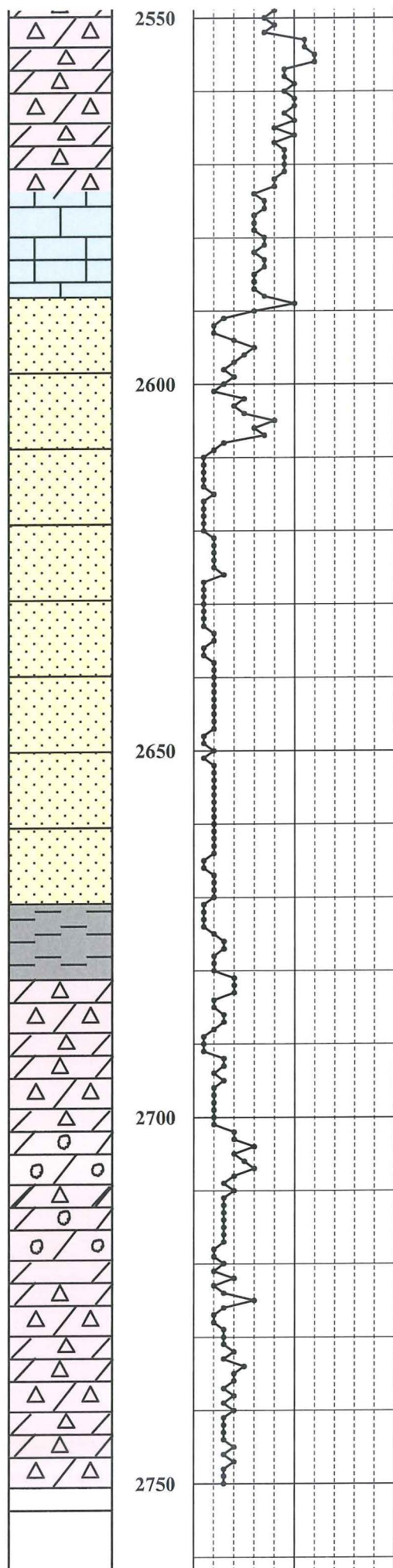
Sh, pale grn-grn, grading to ss, pale grn, f
gr, well sort, well cem, argillaceous

Dol, wh-gr, micro-fine xln , abndt
Chrt, tn, poor por, NSO

Chrt, tan, dol, tan, hd dns, mxln, no
por, NSO

Maquoketa
2443 (-1040)

Viola
2507 (-1104)



Ls, crm-buff, xln, no por, NSO

Ss, brn, f-m gr, qtz, well sort, su-ang to rounded, clean, well cem with ls, NSO

Ss, clear, qtz, course gr, fair por, well sorted, well rounded, frosted, ls cem, NSO

Ss, clear, qtz, course gr, v good por, well sorted, well rounded, frosted, NSO

Ss, clear, qtz, med gr, well sort, well cem, ls,

Ss, clear, qtz, course gr, v good por, well sorted, well rounded, frosted, NSO

Ss, clear, qtz, f-c gr, poor por, poorly sorted, well rounded, frosted, NSO

Sh, br & pale gr

Dol, gr-brn, mxln, hd dns, sm
Chrt, wh, NSO

Dol, gr-tn, fxln to sucrosic, trc xvl
vugs, p-f por, with Chrt clr-wh, NSO

Dol, gr-tn, xln to sucrosic, trc xvl
vugs, good inter-xln por, with Chrt clr-wh, NSO

Dol, crm, xln to sucrosic, good inter-xln por, with Chrt clr-wh, NSO

Simpson
2590 (-1187)

Arbuckle
2681 (-1278)

TD 2,750'
11/30/2016