

Confidentiality Requested:

Yes No

**KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION**

Form ACO-1

January 2018

Form must be Typed

Form must be Signed

All blanks must be Filled

**WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE**

OPERATOR: License # _____

Name: _____

Address 1: _____

Address 2: _____

City: _____ State: _____ Zip: _____ + _____

Contact Person: _____

Phone: (_____) _____

CONTRACTOR: License # _____

Name: _____

Wellsite Geologist: _____

Purchaser: _____

Designate Type of Completion:

New Well Re-Entry Workover

Oil WSW SWD

Gas DH EOR

OG GSW

CM (Coal Bed Methane)

Cathodic Other (Core, Expl., etc.): _____

If Workover/Re-entry: Old Well Info as follows:

Operator: _____

Well Name: _____

Original Comp. Date: _____ Original Total Depth: _____

Deepening Re-perf. Conv. to EOR Conv. to SWD

Plug Back Liner Conv. to GSW Conv. to Producer

Commingled Permit #: _____

Dual Completion Permit #: _____

SWD Permit #: _____

EOR Permit #: _____

GSW Permit #: _____

Spud Date or Date Reached TD Completion Date or Recompletion Date

API No.: _____

Spot Description: _____

_____ - _____ - _____ Sec. _____ Twp. _____ S. R. _____ East West

_____ Feet from North / South Line of Section

_____ Feet from East / West Line of Section

Footages Calculated from Nearest Outside Section Corner:

NE NW SE SW

GPS Location: Lat: _____, Long: _____
(e.g. xx.xxxxx) (e.g. -xxx.xxxxx)

Datum: NAD27 NAD83 WGS84

County: _____

Lease Name: _____ Well #: _____

Field Name: _____

Producing Formation: _____

Elevation: Ground: _____ Kelly Bushing: _____

Total Vertical Depth: _____ Plug Back Total Depth: _____

Amount of Surface Pipe Set and Cemented at: _____ Feet

Multiple Stage Cementing Collar Used? Yes No

If yes, show depth set: _____ Feet

If Alternate II completion, cement circulated from: _____

feet depth to: _____ w/ _____ sx cmt.

Drilling Fluid Management Plan

(Data must be collected from the Reserve Pit)

Chloride content: _____ ppm Fluid volume: _____ bbls

Dewatering method used: _____

Location of fluid disposal if hauled offsite:

Operator Name: _____

Lease Name: _____ License #: _____

Quarter _____ Sec. _____ Twp. _____ S. R. _____ East West

County: _____ Permit #: _____

AFFIDAVIT

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

KCC Office Use ONLY

Confidentiality Requested

Date: _____

Confidential Release Date: _____

Wireline Log Received Drill Stem Tests Received

Geologist Report / Mud Logs Received

UIC Distribution

ALT I II III Approved by: _____ Date: _____

Operator Name: _____ Lease Name: _____ Well #: _____

Sec. _____ Twp. _____ S. R. _____ East West County: _____

INSTRUCTIONS: Show important tops of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

Drill Stem Tests Taken <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i> Samples Sent to Geological Survey <input type="checkbox"/> Yes <input type="checkbox"/> No Cores Taken <input type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Run <input type="checkbox"/> Yes <input type="checkbox"/> No Geologist Report / Mud Logs <input type="checkbox"/> Yes <input type="checkbox"/> No List All E. Logs Run:	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample Name Top Datum
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CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate <input type="checkbox"/> Protect Casing <input type="checkbox"/> Plug Back TD <input type="checkbox"/> Plug Off Zone				

1. Did you perform a hydraulic fracturing treatment on this well? Yes No *(If No, skip questions 2 and 3)*
2. Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons? Yes No *(If No, skip question 3)*
3. Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry? Yes No *(If No, fill out Page Three of the ACO-1)*

Date of first Production/Injection or Resumed Production/Injection:	Producing Method: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other <i>(Explain)</i> _____			
Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio Gravity

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <i>(Submit ACO-4)</i>	PRODUCTION INTERVAL: Top Bottom
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Shots Per Foot	Perforation Top	Perforation Bottom	Bridge Plug Type	Bridge Plug Set At	Acid, Fracture, Shot, Cementing Squeeze Record <i>(Amount and Kind of Material Used)</i>

TUBING RECORD:	Size:	Set At:	Packer At:	
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Form	ACO1 - Well Completion
Operator	IA Operating, Inc.
Well Name	STRATHMAN-MCKEE 10-1
Doc ID	1452755

All Electric Logs Run

DIL
Micro
CDN
Sonic

Form	ACO1 - Well Completion
Operator	IA Operating, Inc.
Well Name	STRATHMAN-MCKEE 10-1
Doc ID	1452755

Tops

Name	Top	Datum
Lansing	1428	-68
BKC	1792	-432
Mississippi	2687	-1327
Kinderhook	2747	-1387
Hunton	2952	-1592
Maquoketa Sh	3602	-2242
Viola	3654	-2294
Simpson Sh	3778	-2418
LTD	3901	-2541

810 E 7TH
 PO Box 92
 EUREKA, KS 67045
 (620) 583-5561



Cement or Acid Field Report
 Ticket No. **4358**
 Foreman Kevin McCoy
 Camp EUREKA

API #15-131-20247

Date	Cust. ID #	Lease & Well Number	Section	Township	Range	County	State
2-10-19	1296	STRATHMAN-McKee 10-1 Hendon 10-1	10	5S	13E	Nemaha	Ks
Customer		Safety Meeting KM DG ZA SM	Unit #	Driver	Unit #	Driver	
Mailing Address			105	DAVE G.			
785 W. COVELL ROAD STE 200			113	Zevi A.			
City				Steve M.			
Edmond	State	Zip Code					
	OK	73003					

Job Type SURFACE Hole Depth 265' KB Slurry Vol. Total: 63 BBL Tubing _____
 Casing Depth 265' Hole Size 12 1/4" Slurry Wt. 15# Drill Pipe _____
 Casing Size & Wt. 8 5/8" 23# Cement Left in Casing 15' Water Gal/SK 6.5 Other _____
 Displacement 16 BBL Displacement PSI _____ Bump Plug to _____ BPM _____

Remarks: Safety Meeting: Rig up to 8 5/8" casing. BREAK circulation w/ 10 BBL fresh water. Mixed 160 SKS CLASS 'A' Cement w/ 3% CaCl2, 2% Gel 1/4" Flo-Seal/SK @ 15#/GAL, yield 1.35 = 38 BBL slurry. Displace w/ 16 BBL fresh water. Shut casing in. No cement to surface. CALL FOR more cement & 1" tubing. WAIT 4 HRS. RAN 1" Hydrill tubing. wash down tag firm cement 45' below K.B. Mixed 110 SKS CLASS 'A' Cement w/ 3% CaCl2. Good cement to surface. PULL 1" tubing. Job Complete. Rig Down.

Code	Qty or Units	Description of Product or Services	Unit Price	Total
C 101	1	Pump Charge	890.00	890.00
C 107	110	Mileage	4.20	462.00
C 200	160 SKS	CLASS 'A' Cement	15.75	2520.00
C 205	450 #	CaCl2 3%	.63 #	283.50
C 206	300 #	Gel 2%	.21 #	63.00
C 209	40 #	Flo-Seal 1/4 #/SK	2.35 #	94.00
C 200	110 SKS	CLASS 'A' Cement	15.75	1732.50
C 205	310 #	CaCl2 3% } 1" Top OFF ANNULUS OF 8 5/8 FROM 45' TO SURFACE	.63 #	195.30
C 108 B	12.69 TONS	Ton Mileage 110 miles	1.40	1954.26
			Sub Total	8194.56
			Less 5%	429.28
			Sales Tax	391.06
			8.0%	
Authorization <u>[Signature]</u> Title <u>Tool Pusher</u>			Total	8156.34

I agree to the payment terms and conditions of services provided on the back of this job ticket. Any amendments to payment terms must be in writing on the front of this job ticket or in the Customer's records at ELITE's office.

810 E 7TH
 PO Box 92
 EUREKA, KS 67045
 (620) 583-5561



Cement or Acid Field Report
 Ticket No. **4368**
 Foreman Kevin McCoy
 Camp EUREKA

API #15-131-20247

Date	Cust. ID #	Lease & Well Number	Section	Township	Range	County	State
2-21-19	1296	Strathman - McKee 10-1	10	55	13E	Nemaha	Ks
Customer <u>I A Operating</u>			Unit # 104	Driver ALAN M.		Unit #	Driver
Mailing Address 785 W. COVELL ROAD STE 200			113	CALEB G			
City Edmond			113	Zevi A.			
State OK							
Zip Code 73003							

Job Type Longstring Hole Depth 3915' K.B. Slurry Vol. 68 BBL TOTAL Tubing _____
 Casing Depth 3912' Hole Size 7 7/8" Slurry Wt. 13.8# Drill Pipe _____
 Casing Size & Wt. 5 1/2" 15.50# Cement Left in Casing 21.13' Water Gal/SK 9.0 Other _____
 Displacement 94.5 BBL Displacement PSI 1000 Bump Plug to 1500 PSI BPM _____

Remarks: Safety Meeting: Rig up to 5 1/2 casing. Pump 500 gals Mud Flush 10 BBL Fresh water spacer. Mixing 175 sks Thick Set Cement w/ 5# Kol-Seal /sk, 1# Pheno Seal /sk @ 13.8#/gal yield 1.85 = 58 BBL slurry. Wash out pump & lines. Shut down. Release Latch down plug. Displace w/ 94.5 BBL Fresh water. (KCL in first 40 BBL of displacement water) FINAL pumping pressure 1000 PSI. Bump Plug to 1500 PSI. Wait 2 mins. Release pressure. Float and plug held. Good circulation @ ALL times while cementing. Job Complete. Rig down.

Plug RAT Hole w/ 30 sks

CENTRALIZERS ON *1, 4, 7, 10, 13

Code	Qty or Units	Description of Product or Services	Unit Price	Total
C 102	1	Pump Charge	1100.00	1100.00
C 107	110	Mileage	4.20	462.00
C 201	205 sks	THICK Set Cement	20.50	4202.50
C 207	1025 #	Kol-Seal 5#/sk } 175 sks Longstring	.47 #	481.75
C 208	205 #	Pheno Seal 1#/sk } 30 sks RAT Hole	1.30 #	266.50
C 226	500 Gals	Mud Flush	.50	250.00
C 108 B	11.28 Tons	Ton Mileage 110 miles	1.40	1737.12
C 222	5 gals	KCL (IN FIRST 40 BBL OF Displacement water)	30.00	150.00
C 421	1	5 1/2 Latch down Plug	242.00	242.00
C 691	1	5 1/2 Guide Shoe	175.00	175.00
C 674	1	5 1/2 AFU Float Collar	359.00	359.00
C 504	5	5 1/2 x 7 7/8 CENTRALIZERS	50.00	250.00
			Sub Total	9675.87
			Less 5%	509.30
			Sales Tax 8.0%	510.14
Authorization <u>Tom Beren</u> Title _____			Total	9676.71

I agree to the payment terms and conditions of services provided on the back of this job ticket. Any amendments to payment terms must be in writing on the front of this job ticket or in the Customer's records at ELITE's office.



Company: IA Operating, Inc.
Lease: Strathman-McKee #10-1

SEC: 10 TWN: 5S RNG: 13E
 County: NEMAHA
 State: Kansas
 Drilling Contractor: Southwind Drilling, Inc - Rig 2
 Elevation: 1351 EGL
 Field Name: Heinen
 Pool: Pool Ext
 Job Number: 311

Operation:
 Uploading recovery & pressures

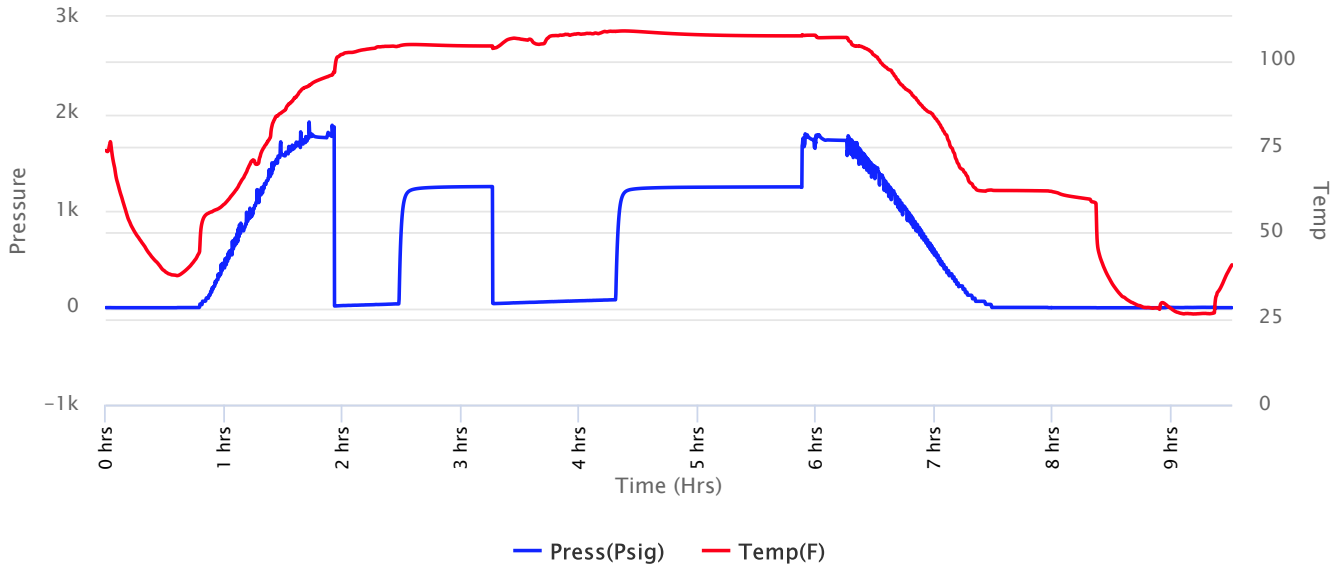
DATE
 February
16
 2019

DST #1 **Formation: Viola** **Test Interval: 3598 - 3660'** **Total Depth: 3660'**
 Time On: 12:06 02/16 Time Off: 21:21 02/16
 Time On Bottom: 13:58 02/16 Time Off Bottom: 17:43 02/16

Electronic Volume Estimate:
 106'

<u>1st Open</u>	<u>1st Close</u>	<u>2nd Open</u>	<u>2nd Close</u>
Minutes: 30	Minutes: 45	Minutes: 60	Minutes: 90
Current Reading: 5.6" at 30 min	Current Reading: 0" at 45 min	Current Reading: 5.9" at 60 min	Current Reading: 0" at 90 min
Max Reading: 5.6"	Max Reading: 0"	Max Reading: 5.9"	Max Reading: 0"

Inside Recorder





Company: IA Operating, Inc.
Lease: Strathman-McKee #10-1

SEC: 10 TWN: 5S RNG: 13E
 County: NEMAHA
 State: Kansas
 Drilling Contractor: Southwind Drilling, Inc - Rig 2
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Recovered

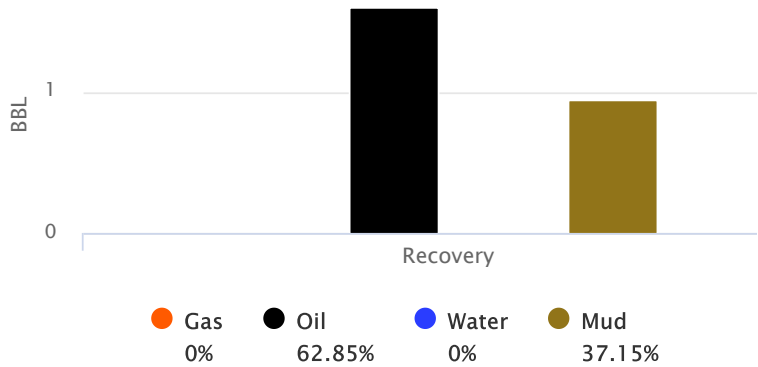
Foot	BBLs	Description of Fluid	Gas %	Oil %	Water %	Mud %
109	1.55107	O	0	100	0	0
70	0.9961	SLOCM	0	5	0	95

Total Recovered: 179 ft
 Total Barrels Recovered: 2.54717

Reversed Out
 NO

Initial Hydrostatic Pressure	1753	PSI
Initial Flow	18 to 40	PSI
Initial Closed in Pressure	1249	PSI
Final Flow Pressure	43 to 82	PSI
Final Closed in Pressure	1246	PSI
Final Hydrostatic Pressure	1753	PSI
Temperature	109	°F
Pressure Change Initial Close / Final Close	0.2	%

Recovery at a glance



GIP cubic foot volume: 0



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Inc - Rig 2
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DST #1 **Formation: Viola** **Test Interval: 3598 -**
3660' **Total Depth: 3660'**
Time On: 12:06 02/16 Time Off: 21:21 02/16
Time On Bottom: 13:58 02/16 Time Off Bottom: 17:43 02/16

BUCKET MEASUREMENT:

Diesel in Bucket

1st Open: 1/4" Blow. Built to 5 1/2 inches in 30 mins

1st Close: NOB

2nd Open: WSB. Built to 6 inches in 60 mins

2nd Close: NOBB

REMARKS:

Tool Sample: 0% Gas 30% Oil 4% Water 66% Mud

Gravity: 31.9 @ 60 °F



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DST #1 **Formation: Viola** **Test Interval: 3598 - 3660'** **Total Depth: 3660'**
 Time On: 12:06 02/16 Time Off: 21:21 02/16
 Time On Bottom: 13:58 02/16 Time Off Bottom: 17:43 02/16

Down Hole Makeup

Heads Up: 18.31 FT	Packer 1: 3593.12 FT
Drill Pipe: 3591.27 FT <i>ID-3 1/2</i>	Packer 2: 3598.12 FT
Weight Pipe: FT <i>ID-2 7/8</i>	Top Recorder: 3585.12 FT
Collars: FT <i>ID-2 1/4</i>	Bottom Recorder: 3637 FT
Test Tool: 26.16 FT <i>ID-3 1/2-FH</i>	Well Bore Size: 7 7/8
Total Anchor: 61.88	Surface Choke: 1"
<u>Anchor Makeup</u>	Bottom Choke: 5/8"
Packer Sub: 1 FT	
Perforations: (top): 3 FT <i>4 1/2-FH</i>	
Change Over: 1 FT	
Drill Pipe: (in anchor): 31.88 FT <i>ID-3 1/2</i>	
Change Over: 1 FT	
Perforations: (below): 24 FT <i>4 1/2-FH</i>	



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Mud Properties

Mud Type: Chem **Weight:** 9.3 **Viscosity:** 68 **Filtrate:** 8.4 **Chlorides:** 500 ppm



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 Time On: 12:06 02/16 Time Off: 21:21 02/16
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Gas Volume Report

1st Open

2nd Open

Time	Orifice	PSI	MCF/D
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Time	Orifice	PSI	MCF/D
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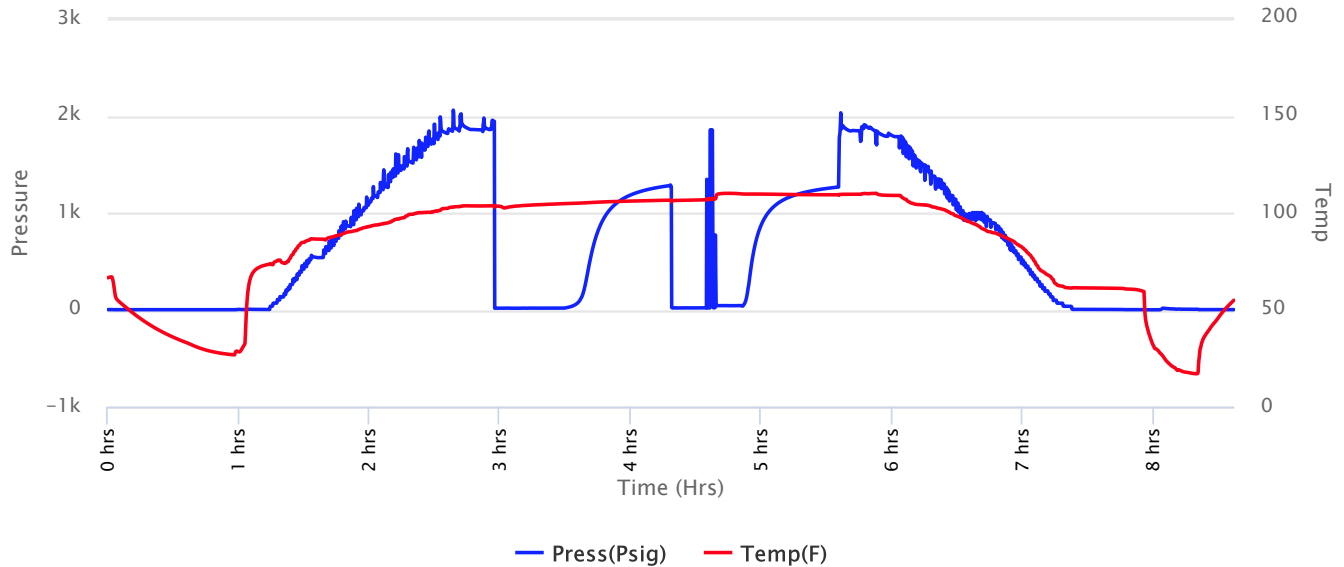
DST #2 Formation: Simpson Test Interval: 3836 - 3850' Total Depth: 3850'

Time On: 23:56 02/17 Time Off: 08:14 02/18
 Time On Bottom: 02:44 02/18 Time Off Bottom: 05:04 02/18

Electronic Volume Estimate:
 8'

<u>1st Open</u>	<u>1st Close</u>	<u>2nd Open</u>	<u>2nd Close</u>
Minutes: 30	Minutes: 45	Minutes: 30	Minutes: 30
Current Reading: .5" at 30 min	Current Reading: 0" at 45 min	Current Reading: 0" at 30 min	Current Reading: 0" at 30 min
Max Reading: .8"	Max Reading: 0"	Max Reading: 0"	Max Reading: 0"

Inside Recorder





Company: IA Operating, Inc.
Lease: Strathman-McKee #10-1

SEC: 10 TWN: 5S RNG: 13E
 County: NEMAHA
 State: Kansas
 Drilling Contractor: Southwind Drilling, Inc - Rig 2
 Elevation: 1351 EGL
 Field Name: Heinen
 Pool: Pool Ext
 Job Number: 311

Operation:
 Uploading recovery & pressures

DATE
 February
17
 2019

DST #2 **Formation: Simpson** **Test Interval: 3836 - 3850'** **Total Depth: 3850'**
 Time On: 23:56 02/17 Time Off: 08:14 02/18
 Time On Bottom: 02:44 02/18 Time Off Bottom: 05:04 02/18

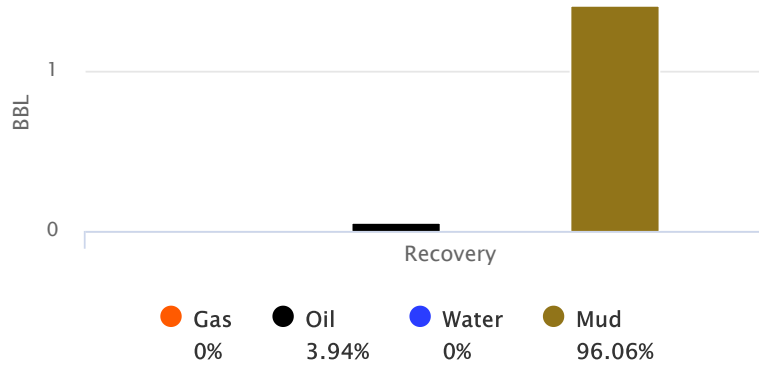
Recovered		Description of Fluid	Gas %	Oil %	Water %	Mud %
Foot	BBLs					
1	0.01423	O	0	100	0	0
102	1.45146	SLOCM	0	3	0	97

Total Recovered: 103 ft
 Total Barrels Recovered: 1.46569

Reversed Out
 NO

Initial Hydrostatic Pressure	1854	PSI
Initial Flow	15 to 17	PSI
Initial Closed in Pressure	1286	PSI
Final Flow Pressure	19 to 42	PSI
Final Closed in Pressure	1266	PSI
Final Hydrostatic Pressure	1853	PSI
Temperature	111	°F
Pressure Change Initial Close / Final Close	1.6	%

Recovery at a glance



GIP cubic foot volume: 0



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 Pool: Pool Ext
 Job Number: 311

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 Uploading recovery & pressures

DATE
 February
17
 2019

DST #2 Formation: Simpson Test Interval: 3836 - 3850' Total Depth: 3850'
 Time On: 23:56 02/17 Time Off: 08:14 02/18
 Time On Bottom: 02:44 02/18 Time Off Bottom: 05:04 02/18

Down Hole Makeup

Heads Up: 30.44 FT	Packer 1: 3831 FT
Drill Pipe: 3841.28 FT <i>ID-3 1/2</i>	Packer 2: 3836 FT
Weight Pipe: FT <i>ID-2 7/8</i>	Top Recorder: 3823 FT
Collars: FT <i>ID-2 1/4</i>	Bottom Recorder: 2841 FT
Test Tool: 26.16 FT <i>ID-3 1/2-FH</i>	Well Bore Size: 7 7/8
Total Anchor: 14	Surface Choke: 1"
<u>Anchor Makeup</u>	Bottom Choke: 5/8"
Packer Sub: 1 FT	
Perforations: (top): 3 FT <i>4 1/2-FH</i>	
Change Over: 0 FT	
Drill Pipe: (in anchor): 0 FT <i>ID-3 1/2</i>	
Change Over: 0 FT	
Perforations: (below): 10 FT <i>4 1/2-FH</i>	

Scale 1:240 Imperial

Well Name: STRATHAM - MCKEE #10-1
Surface Location: NE NE NW NW Sec. 10 - 5S - 13E
Bottom Location:
API: 15-131-20247
License Number: 34903
Spud Date: 2/10/2019 Time: 12:45 AM
Region: NEMAHA COUNTY
Drilling Completed: 2/18/2019 Time: 4:22 PM
Surface Coordinates: 140' FNL & 1070' FWL
Bottom Hole Coordinates:
Ground Elevation: 1351.00ft
K.B. Elevation: 1360.00ft
Logged Interval: 1350.00ft To: 3900.00ft
Total Depth: 3900.00ft
Formation:
Drilling Fluid Type: FRESH WATER / CHEMICAL GEL

OPERATOR

Company: IA OPERATING, INC.
Address: 785 W COVELL ROAD
SUITE 200
EDMOND, OK 73003
Contact Geologist: JONATHAN ALLEN
Contact Phone Nbr: (316) 721-0036
Well Name: STRATHAM - MCKEE #10-1
Location: NE NE NW NW Sec. 10 - 5S - 13E
API: 15-131-20247
Pool: Field: HEINEN
State: KANSAS Country: USA

SURFACE CO-ORDINATES

Well Type: Vertical
Longitude: -95.9538493
Latitude: 39.6382635
N/S Co-ord: 140' FNL
E/W Co-ord: 1070' FWL

LOGGED BY



Company: BIG CREEK CONSULTING, INC.
Address: 1909 MAPLE
ELLIS, KS 67637
Phone Nbr: (785) 259-3737
Logged By: GEOLOGIST Name: JEFF LAWLER

CONTRACTOR

Contractor: SOUTHWIND DRILLING
Rig #: 2
Rig Type: MUD ROTARY
Spud Date: 2/10/2019 Time: 12:45 AM
TD Date: 2/18/2019 Time: 4:22 PM
Rig Release: Time:

ELEVATIONS

K.B. Elevation: 1360.00ft
K.B. to Ground: 9.00ft

Ground Elevation: 1351.00ft

NOTES

DUE TO DST RECOVERY & LOG ANALYSIS DECISION WAS MADE TO RUN 5 1/2" PRODUCTION CASING & FURTHER EVALUATE ZONES OF INTEREST UPON COMPLETION.

RESPECTFULLY SUBMITTED,
JEFF LAWLER

WELL COMPARISON SHEET

FORMATION	SWD										P&A 12-98					INCLINE RESERVES, INC.					INCLINE RESERVES, INC.								
	STRATHAM-MCKEE #10-1					NE NW NW 10-5-13					E/2 NE SW SW					NW NW SE 3-5-13					S/2 SESW								
	KB		1360		GL		1351		KB		1355		KB		1368		KB		1368		KB		1361		KB		1361		
	LOG TOPS		SAMPLE TOPS		COMP. CARD		LOG		SMPL.		COMP. CARD		LOG		SMPL.		COMP. CARD		LOG		SMPL.		COMP. CARD		LOG		SMPL.		
DEPTH	DATUM	DEPTH	DATUM	DEPTH	DATUM	DEPTH	DATUM	CORR.	CORR.	DEPTH	DATUM	CORR.	CORR.	DEPTH	DATUM	CORR.	CORR.	DEPTH	DATUM	CORR.	CORR.	DEPTH	DATUM	CORR.	CORR.	DEPTH	DATUM	CORR.	CORR.
TARKIO LM										621	747					626	742					620	741						
LANSING	1428	-68	1427	-67	1428	-73		+ 5	+ 6	1432	-64	- 4	- 3	1427	-59	- 9	- 8												
BKC	1792	-432	1791	-431	1793	-438		+ 6	+ 7	1797	-429	- 3	- 2	1796	-428	- 4	- 3												
MISS. UNCONFORMITY			2662	-1302	2693	-1338			+ 36	2694	-1326		+ 24	2678	-1310		+ 8												
MISSISSIPPIAN LIME	2687	-1327	2685	-1325	2708	-1353		+ 26	+ 28	2717	-1349	+ 22	+ 24									2693	-1332	+ 5	+ 7				
KINDERHOOK SHALE	2747	-1387	2743	-1383	2753	-1398		+ 11	+ 15	2750	-1382	- 5	- 1	2752	-1384	- 3	+ 1	2759	-1398	+ 11	+ 15								
HUNTON	2952	-1592	2978	-1618	2984	-1629		+ 37	+ 11	2987	-1619	+ 27	+ 1	2999	-1631	+ 39	+ 13	2992	-1631	+ 39	+ 13								
MAQUOKETA SHALE	3602	-2242	3602	-2242	3607	-2252		+ 10	+ 10	3618	-2250	+ 8	+ 8	3617	-2249	+ 7	+ 7	3611	-2250	+ 8	+ 8								
VIOLA	3654	-2294	3655	-2295	3656	-2301		+ 7	+ 6	3672	-2304	+ 10	+ 9	3671	-2303	+ 9	+ 8	3662	-2301	+ 7	+ 6								
SIMPSON	3778	-2418	3779	-2419	3773	-2418		+ 0	- 1									3782	-2421	+ 3	+ 2								
TOTAL DEPTH	3901	-2541	3900	-2540	3916	-2561		+ 20	+ 21	3677	-2309	- 232	- 231	3677	-2309	- 232	- 231	3920	-2559	+ 18	+ 19								

DST #1 VIOLA 3498' - 3660'



Company: IA Operating, Inc.
Lease: Strathman-McKee #10-1

SEC: 10 TWN: 5S RNG: 13E
County: NEMAHA
State: Kansas
Drilling Contractor: Southwind Drilling, Inc - Rig 2
Elevation: 1351 EGL
Field Name: Heinen
Pool: Pool Ext
Job Number: 311

Operation:

Uploading recovery & pressures

DATE

February
16
2019

DST #1 Formation: Viola Test Interval: 3598 - 3660' Total Depth: 3660'

Time On: 12:06 02/16 Time Off: 21:21 02/16
Time On Bottom: 13:58 02/16 Time Off Bottom: 17:43 02/16

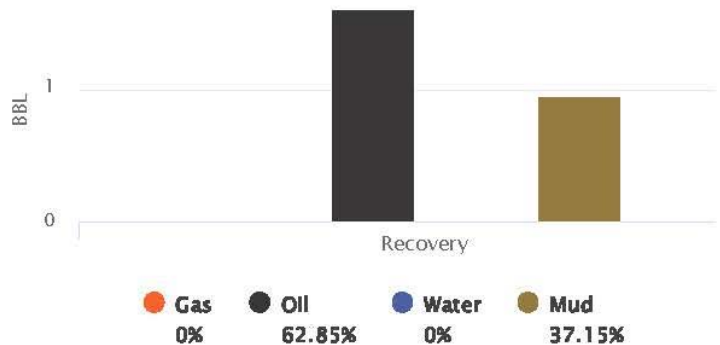
Recovered

Foot	BBLs	Description of Fluid	Gas %	Oil %	Water %	Mud %
109	1.55107	O	0	100	0	0
70	0.9961	SLOCM	0	5	0	95

Total Recovered: 179 ft
Total Barrels Recovered: 2.54717

Reversed Out
NO

Recovery at a glance



Initial Hydrostatic Pressure	1753	PSI
Initial Flow	18 to 40	PSI
Initial Closed in Pressure	1249	PSI
Final Flow Pressure	43 to 82	PSI
Final Closed in Pressure	1246	PSI
Final Hydrostatic Pressure	1753	PSI
Temperature	109	°F

Pressure Change Initial Close / Final Close 0.2 %

GIP cubic foot volume: 0

DST #1 VIOLA 3498' - 3660'



Company: IA Operating, Inc.
Lease: Strathman-McKee #10-1

SEC: 10 TWN: 5S RNG: 13E
 County: NEMAHA
 State: Kansas
 Drilling Contractor: Southwind Drilling, Inc - Rig 2
 Elevation: 1351 EGL
 Field Name: Heinen
 Pool: Pool Ext
 Job Number: 311

Operation:
 Uploading recovery & pressures

DATE
 February
16
 2019

DST #1 **Formation: Viola** **Test Interval: 3598 - 3660'** **Total Depth: 3660'**
 Time On: 12:06 02/16 Time Off: 21:21 02/16
 Time On Bottom: 13:58 02/16 Time Off Bottom: 17:43 02/16

Electronic Volume Estimate:
 106'

<u>1st Open</u>	<u>1st Close</u>	<u>2nd Open</u>	<u>2nd Close</u>
Minutes: 30	Minutes: 45	Minutes: 60	Minutes: 90
Current Reading: 5.6" at 30 min	Current Reading: 0" at 45 min	Current Reading: 5.9" at 60 min	Current Reading: 0" at 90 min
Max Reading: 5.6"	Max Reading: 0"	Max Reading: 5.9"	Max Reading: 0"

Inside Recorder



0 H 1 H 2 H 3 H 4 H 5 H 6 H 7 H 8 H 9 H
Time (Hrs)

— Press(Psig) — Temp(F)

DST #2 SIMPSON SAND 3836' - 3850'



Company: IA Operating, Inc.
Lease: Strathman-McKee #10-1

SEC: 10 TWN: 5S RNG: 13E
County: NEMAHA
State: Kansas
Drilling Contractor: Southwind Drilling, Inc - Rig 2
Elevation: 1351 EGL
Field Name: Heinen
Pool: Pool Ext
Job Number: 311

Operation:
Uploading recovery & pressures

DATE
February
17
2019

DST #2 **Formation: Simpson** **Test Interval: 3836 - 3850'** **Total Depth: 3850'**

Time On: 23:56 02/17 Time Off: 08:14 02/18
Time On Bottom: 02:44 02/18 Time Off Bottom: 05:04 02/18

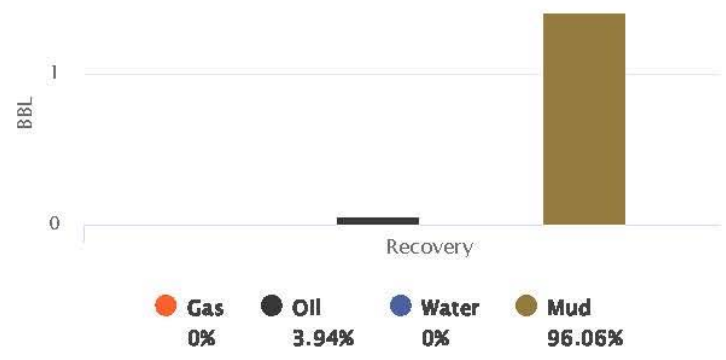
Recovered		Description of Fluid	Gas %	Oil %	Water %	Mud %
Foot	BBLs					
1	0.01423	O	0	100	0	0
102	1.45146	SLOCM	0	3	0	97

Total Recovered: 103 ft
Total Barrels Recovered: 1.46569

Reversed Out
NO

Initial Hydrostatic Pressure	1854	PSI
Initial Flow	15 to 17	PSI
Initial Closed in Pressure	1286	PSI
Final Flow Pressure	19 to 42	PSI
Final Closed in Pressure	1266	PSI
Final Hydrostatic Pressure	1853	PSI
Temperature	111	°F
Pressure Change Initial Close / Final Close	1.6	%

Recovery at a glance



GIP cubic foot volume: 0

DST #2 SIMPSON SAND 3836' - 3850'



Company: IA Operating, Inc.
Lease: Strathman-McKee #10-1

SEC: 10 TWN: 5S RNG: 13E
 County: NEMAHA
 State: Kansas
 Drilling Contractor: Southwind Drilling, Inc - Rig 2
 Elevation: 1351 EGL
 Field Name: Heinen
 Pool: Pool Ext
 Job Number: 311

Operation:
 Uploading recovery & pressures

DATE
 February
17
 2019

DST #2 Formation: Simpson Test Interval: 3836 - 3850' Total Depth: 3850'
 Time On: 23:56 02/17 Time Off: 08:14 02/18
 Time On Bottom: 02:44 02/18 Time Off Bottom: 05:04 02/18

Electronic Volume Estimate:
 8'

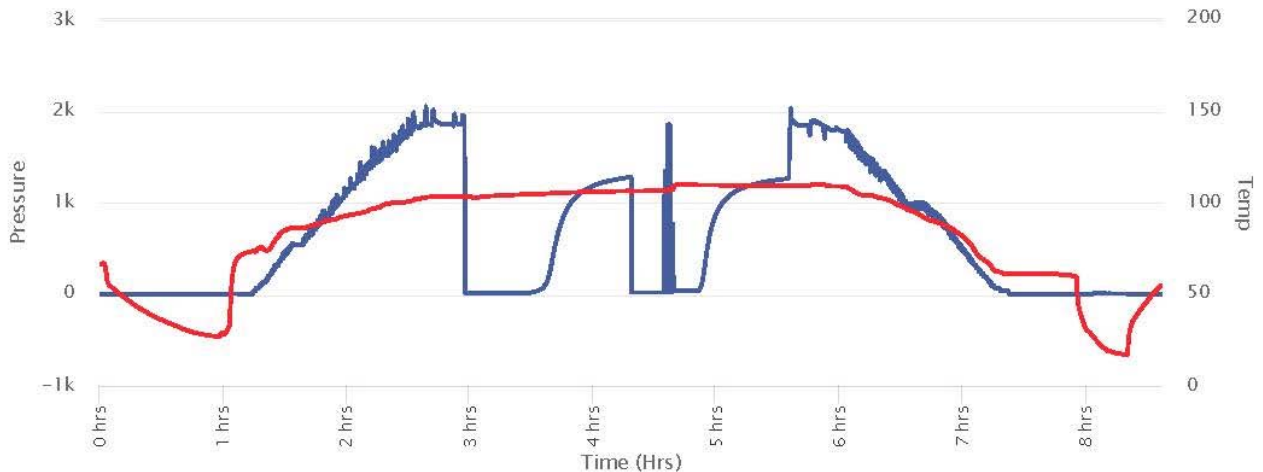
1st Open
 Minutes: 30
 Current Reading: .5" at 30 min
 Max Reading: .8"

1st Close
 Minutes: 45
 Current Reading: 0" at 45 min
 Max Reading: 0"

2nd Open
 Minutes: 30
 Current Reading: 0" at 30 min
 Max Reading: 0"

2nd Close
 Minutes: 30
 Current Reading: 0" at 30 min
 Max Reading: 0"

Inside Recorder



ROCK TYPES

Cht	Dolsec	shale, gry	shale, red
Cht vari	Lmst fw7>	Carbon Sh	Shcol
Dolprim	shale, grn	Shblck	Ss

OTHER SYMBOLS

MISC	DST
Daily Report	DST Int
Digital Photo	DST alt
Document	
Folder	
Link	
Vertical Log File	
Horizontal Log File	
Core Log File	
Drill Cuttings Rpt	

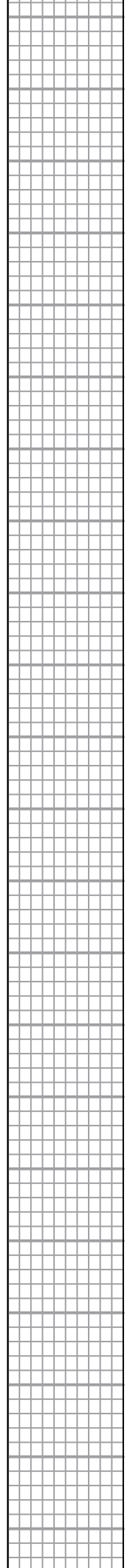
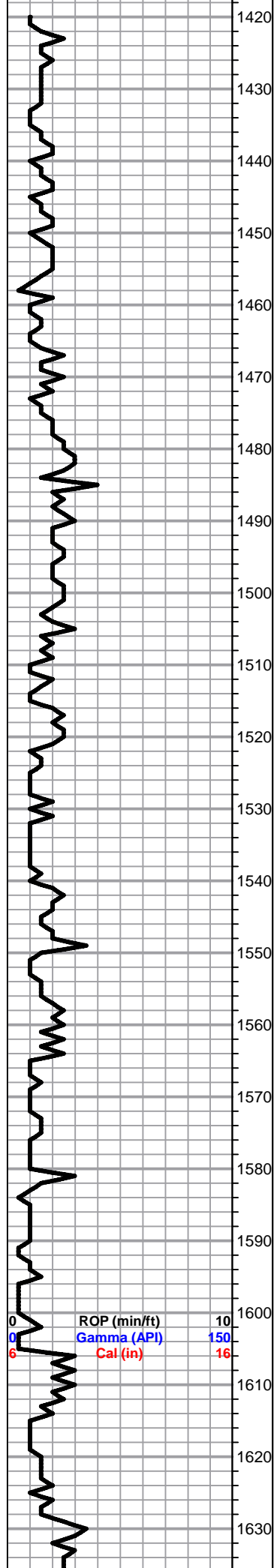
Curve Track #1				Depth Intervals	DST	Lithology	Oil Show	Geological Descriptions	Curve Track #3
ROP (min/ft)	Gamma (API)	Cal (in)							
0	150	16	10	1390					1:240 Imperial
0	150	16	10	1400					
0	150	16	10	1410					

1' DRILL TIME FROM 1420' - RTD
10' WET/DRY SAMPLES FROM 2600' - RTD

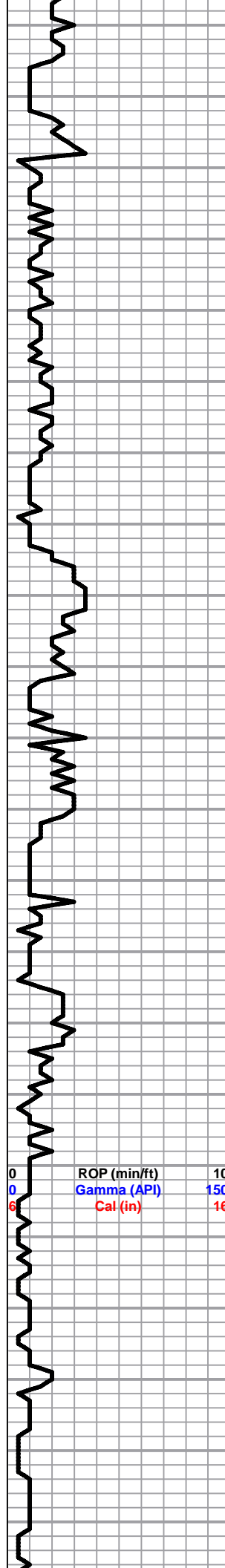
GEOLOGICAL SUPERVISION BY JEFF LAWLER FROM 1420' - RTD

8 5/8" SURFACE PIPE SET @ 265' SURVEY 3/4"

LANSING 1427' (-67) E-LOG 1428' (-68)



1640
1650
1660
1670
1680
1690
1700
1710
1720
1730
1740
1750
1760
1770
1780
1790
1800
1810
1820
1830
1840
1850



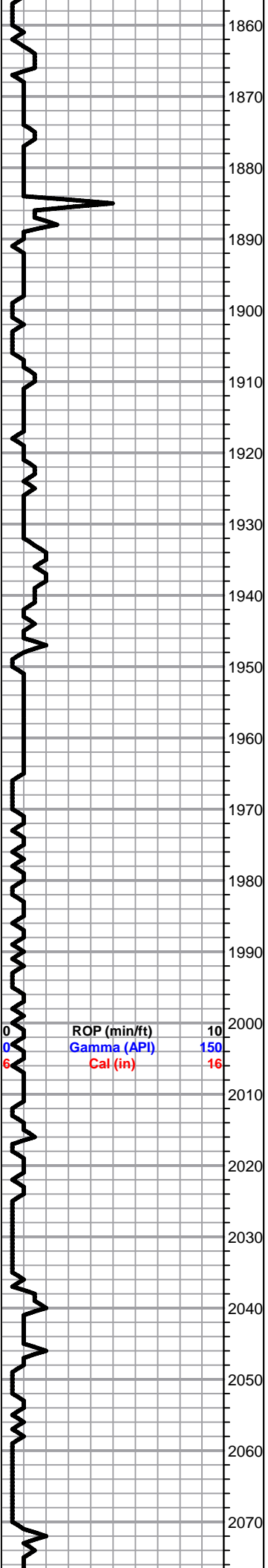
0	ROP (min/ft)	10
0	Gamma (API)	150
6	Cal (in)	16

BKC 1791' (-431) E-LOG 1792' (-432)

1860
1870
1880
1890
1900
1910
1920
1930
1940
1950
1960
1970
1980
1990
2000
2010
2020
2030
2040
2050
2060
2070

WORK ON PUMP

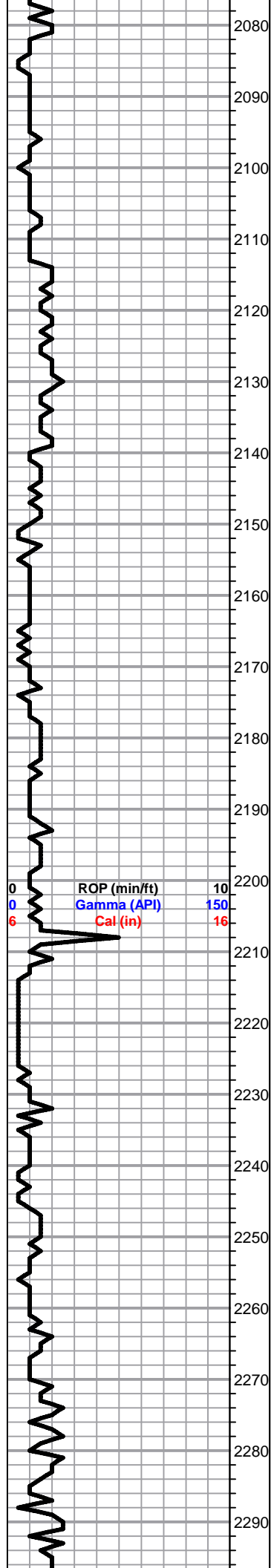
0	ROP (min/ft)	10
0	Gamma (API)	150
6	Cal (in)	16

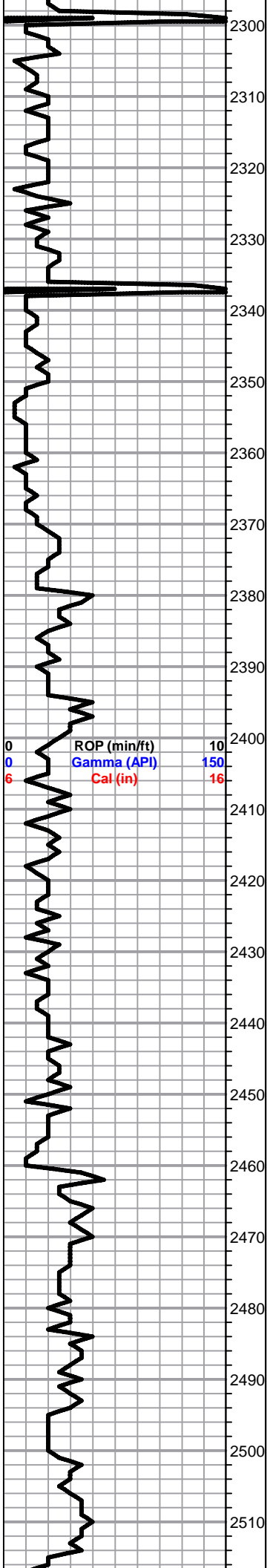


2080
2090
2100
2110
2120
2130
2140
2150
2160
2170
2180
2190
2200
2210
2220
2230
2240
2250
2260
2270
2280
2290

0 ROP (min/ft) 10
0 Gamma (API) 150
6 Cal (in) 16

WORK ON PUMP





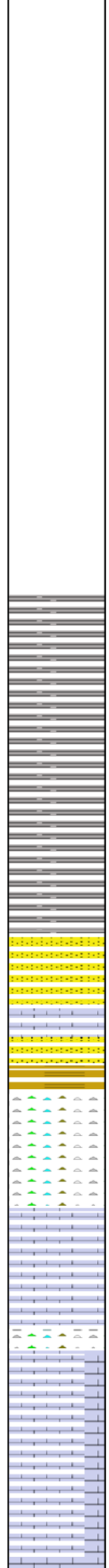
WORK ON PUMP

WORK ON PUMP

2520
2530
2540
2550
2560
2570
2580
2590
2600
2610
2620
2630
2640
2650
2660
2670
2680
2690
2700
2710
2720
2730

ROP (min/ft) 10
Gamma (API) 150
Cal (in) 16

0
6



Sh- Black Gray Brown, silty & calcareous, dense & waxy, few argillaceous clumps

Sh/Chalk- White, abundant argillaceous, micaceous, & sandy chalk

A/A w/ dark gray thin shale slivers

Sh/Snd- White Frosted, abundant sub-rounded, fn grains, gummy white wash

MISS UNCONFORMITY 2662' (-1302) Snd- Clear, Fn Grn, sub-rounded, semi-friable, well consolidated & sorted, barren, white/brown detrital chert

Chert- White Off White, mix of detrital chert w/ sctrd XLN & fn ppt porosity & fresh bedded vitreous chert w/o vis. porosity, barren

MISSISSIPPIAN 2685' (-1325) E-LOG 2687' (-1327) Lm- Tan Brown, VF-FXLN, dense, well cemented, micro XLN porosity, barren

Lm- Cream Tan, FXLN, mix of well to loosely cemented, dense XLN porosity, barren, few sl chalky in part

Lm- Brown, F-Med XLN, well cemented w/ dense XLN porosity, apparent detrital Lm/Chert inclusions, barren

Lm- Tan Brown, FXLN, well cemented, dense XLN porosity, barren

Lm- Cream Tan, FXLN, sl fsl, dense XLN porosity, barren

2740
2750
2760
2770
2780
2790
2800
2810
2820
2830
2840
2850
2860
2870
2880
2890
2900
2910
2920
2930
2940
2950

ROP (min/ft) 10
Gamma (API) 150
Cal (in) 16



Lm- Buff Dark Gray, FXLN, oolitic & clastic, dense XLN porosity, sl chalky in part

KINDERHOOK SHALE 2743' (-1383) E-LOG 2747' (-1387) Sh- Black Gray Green Maroon, silty & soft, semi-waxy, calcareous & semi-gummy wash

Sh- Green Gray, calcareous & semi-gummy, gritty & semi-waxy, some sandy

Sh- A/A Maroon Lt Purple, gritty & earthy

Sh- Lt Green Gray Black, silty & calcareous, semi-waxy, fissile & dense

Sh- A/A, sl influx of black shale

Sh- Lt Green Gray Brown, silty & calcareous, semi-waxy, gritty & earthy

Sh- A/A w/ sl influx of calcareous Lt Green wash

Sh- Black Gray Brown, fissile & striated, waxy, gritty & earthy

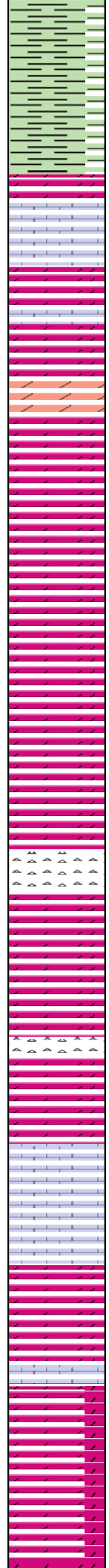
Sh- Gray Green, waxy, silty & calcareous, gummy wash

Sh- Green, abundant calcareous wash

Sh- A/A w/ dense & waxy sl fsl brown slivers

2960
2970
2980
2990
3000
3010
3020
3030
3040
3050
3060
3070
3080
3090
3100
3110
3120
3130
3140
3150
3160
3170

0 ROP (min/ft) 10
0 Gamma (API) 150
6 Cal (in) 16



HUNTON 2978' (-1618) E-LOG 2982' (-1592) Dol- Tan Buff, VF-FXLN, dense, well cemented, dense XLN porosity, few pcs of friable sandy dolomite, barren

Lm- Cream Buff, FXLN, well cemented, mostly tight w/ dense micro XLN & XLN porosity, few pcs w/ poor vis. porosity, barren

Dol- Brown, FXLN, dense, well cemented, XLN porosity, barren

Dol- Cream Off White, VF-FXLN, dense, well cemented, some mostly tight w/ poor vis. porosity, most w/ micro XLN porosity, clean & barren

Lm- Cream Off White, A/A w/ tight limey dolomite, poor vis. porosity, barren

Dol- Cream Off White, FXLN, dense, well cemented, XLN porosity, some soft white chalk, barren

A/A w/ sl cherty dolomite/dolomitic chert, barren

Dol- White Off White, loosely cemented, XLN porosity, chalky in part, clean & barren

Dol- Tan, FXLN, well cemented, dense XLN porosity, barren

Chert- Translucent Cream White, mix of fresh bedded vitreous & dolomitic chert, all clean & barren

Dol- Cream Off White, FXLN, dense, well cemented sl cherty dolomite w/ sctrd to dense XLN porosity, clean & barren

Chert- Translucent White, Crypto XLN, vitreous w/o vis. porosity, barren

Lm- Buff, VF-FXLN, dense, well cemented cherty Ls, tight w/ poor vis. porosity, barren

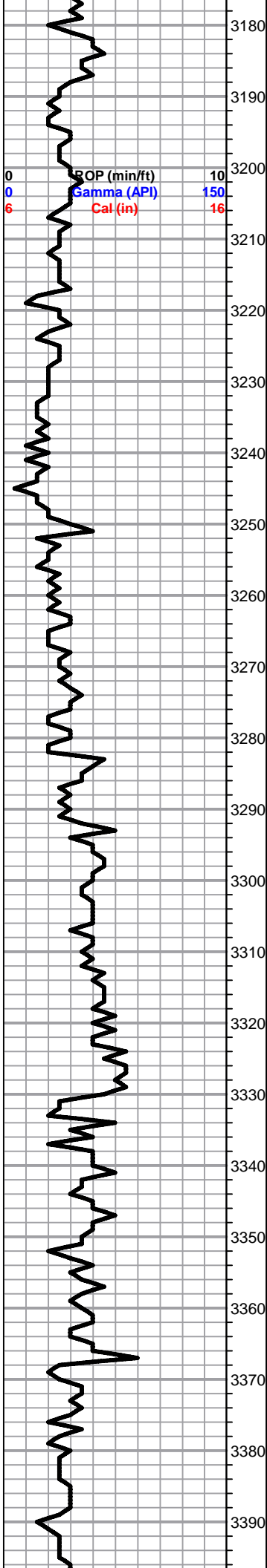
Lm- Cream Tan, VF-FXLN, dense, well cemented, some tight w/o vis. porosity, sctrd to dense XLN porosity, barren

Lm- Cream Off White, VFXLN, dense cherty Ls, well cemented & tight w/ poor vis. porosity, barren

Dol- Cream Buff, FXLN, dense, well cemented, dense XLN porosity, barren

Lm- Buff, VFXLN, dense, well cemented, tight w/ poor vis. porosity

Dol- Buff, FXLN, well cemented, w/ dense XLN & sctrd fn ppt inter XLN porosity, sl limey dolomite



Lm- Cream Off White, VF-FXLN, dense, well cemented, sctrd XLN porosity, clean & barren

Dol- Cream Buff, FXLN, well cemented w/ dense XLN porosity, barren, some soft white chalk

A/A w/ influx of soft white chalk

Dol- Cream Buff, FXLN, dense XLN & sctrd fn ppt XLN porosity, barren

A/A w/ few pcs of vitreous fresh bedded chert

Dol- Cream Off White, FXLN, dense XLN & sctrd fn ppt porosity, few pcs of sl limey dolomite

Dol- Cream, VF-FXLN, dense well cemented limey dolomite, barren

Dol- Cream Off White, F-MedXLN, well cemented dolomite w/ dense XLN & sctrd ppt porosity, barren

Lm- Tan Cream, VFXLN, dense, tight w/ poor vis. porosity

Dol- Cream Buff, FXLN, sctrd to dense XLN porosity, barren

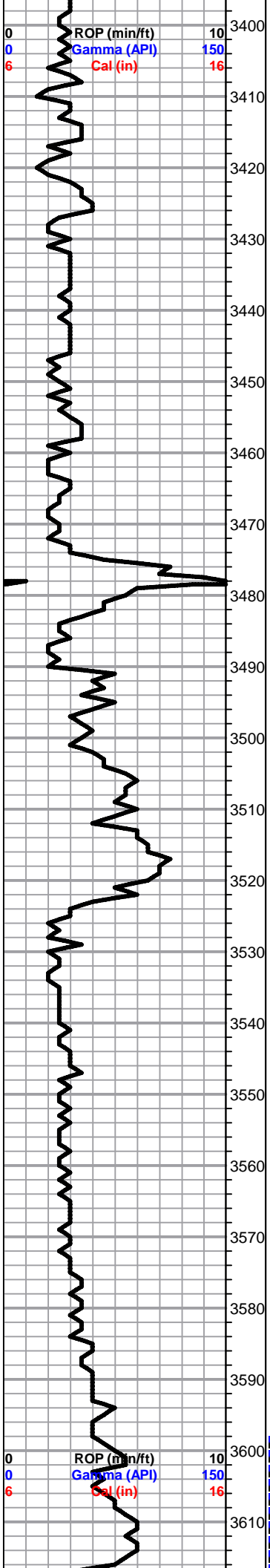
Dol- Off White, VFXLN, dense, vry well cemented & tight, poor vis. porosity, barren

Dol- Cream, F-Crs XLN, dense & very well cemented, semi-translucent rhombic crystalline w/ poor vis. porosity, some massive in appearance w/ min. vis. porosity

Dol- Cream Off White, FXLN, dense, well cemented, dense XLN porosity, clean & barren, some soft white chalk

Dol- Cream Off White, FXLN, dense XLN porosity, clean & barren

Dol- Gray, FXLN, well cemented w/ sctrd to dense XLN porosity, much soft white chalk



Dol- A/A sl increase in dev. w/ sctrd fn ppt porosity, massive, barren, heavy white chalk

A/A w/ abundant soft white chalk

Dol- Cream Off White Lt Gray, VF-FXLN, well cemented, sctrd XLN & fn ppt porosity, some soft white chalk, barren

Dol- White Off White, VFXLN, loosely cemented, semi-crumbly, consistent micro XLN porosity, clean & barren

A/A w/ considerable waxy brown shale & semi fissile black shale??

Dol- Off White, some w/ lt green tint, VF-FXLN, some massive, all mod. cementation w/ consistent XLN porosity, some w/ fin ppt inter XLN porosity, clean & barren

Dol- Golden Salmon, FXLN, well cemented, consistent XLN porosity, barren

Dol- Cream Tan, FXLN, well cemented, few pcs w/ visible rhombs, consistent XLN porosity, barren

Dol- Tan Buff, FXLN, loosely cemented, few sl chalky in part, consistent micro XLN porosity, barren

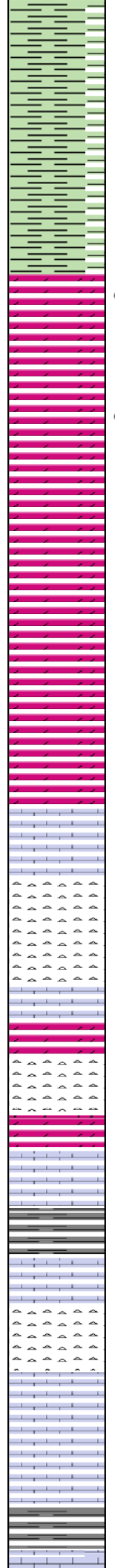
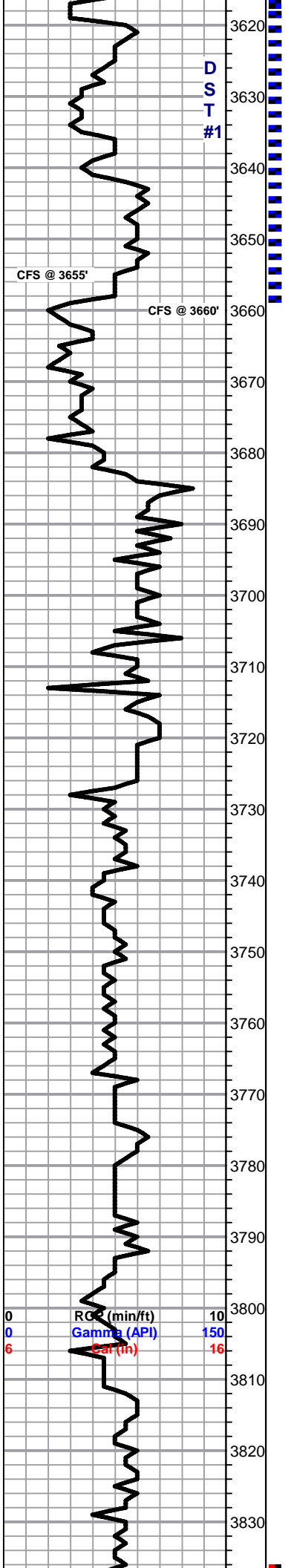
Dol- Cream Buff, FXLN, well cemented, consistent micro XLN porosity, some soft white chalk, barren

Dol- A/A, influx of soft white chalk, few dol pcs w/ small pyrite inclusions

Dol- Tan Brown, FXLN, well cemented, consistent XLN porosity throughout, barren

Dol- Brown, FXLN, well cemented, tight w/ consistent micro XLN porosity, barren

MAQUOKETA 3602' (-2242) E-LOG 3602' (-2242) Sh- Green Gray, semi-waxy, silty & soft



Sh- Gray Green, semi-waxy, calcareous

VIOLA 3655' (-2295) E-LOG 3654' (-2294) Dol- Translucent Gray, trashy, well cemented, sl vis. rhombs, sctrd XLN porosity, barren, few pcs of tan FXLN, tight w/ micro XLN porosity, TR SCTRDR STN, NSFO, TR ODR??
3655' - Dol- Tan, F-Med XLN porosity, mod. well dev. w/ mostly consistent ppt inter XLN porosity, few w/ vis. rhombs, SCTRDR DRK STN, WK SFO, FR ODR, few pcs of milky gray fsl fresh bedded chert

Dol- White Off White, F-Med XLN, well dev. w/ vis. rhombs & consistent inter XLN ppt porosity, DRK STN, TR FRO, FODR

Dol- Tan Cream, FXLN, dense, well cemented, consistent micro XLN porosity, barren

Dol- Tan Brown, FXLN, sl limey dolomite, dense micro XLN porosity

A/A

Dol/Lm- Cream Tan, loosely cemented, dense XLN porosity, some soft white chalk, barren

Lm- White Brown, loosely cemented & crumbly, some soft white chalk, barren

Lm- Tan Cream, FXLN, mix of well cemented w/ dense XLN porosity & some loosely cemented & chalky in part, barren

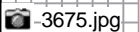
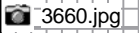
SIMPSON 3779' (-2419) E-LOG 3778' (-2418) Lm- Gray, Trashy FXLN, well cemented, sctrd XLN porosity, barren

Sh- Gray, vry dense & waxy

Lm- Brown Tan, FXLN, well cemented w/ dense XLN porosity, chalky in part, barren

Lm- Brown, FN Grn, loosely cemented, sl arenaceous

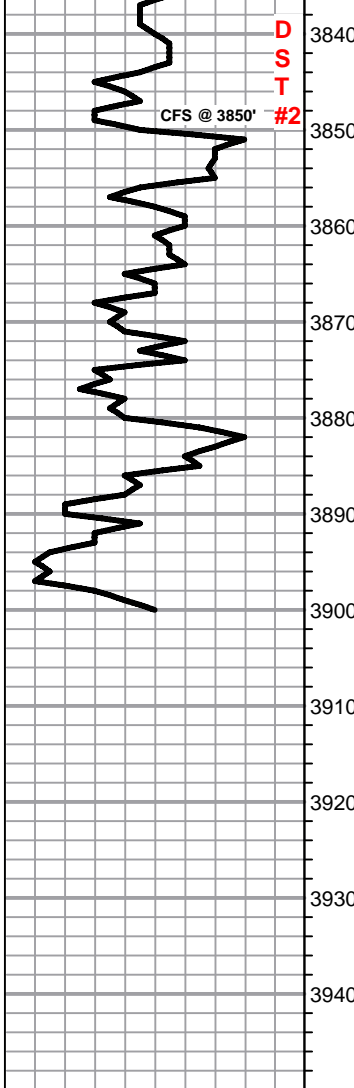
DST #1 VIOLA
 3498' - 3660'
 30-45-60-90
 179' TOTAL FLUID
 109' OIL Gr: 32
 70' SLOCM
 (5%O, 95%M)
 IFP: 18-40#
 FFP: 43-82#
 SIP: 1249-1246#
 BHT: 109 deg.



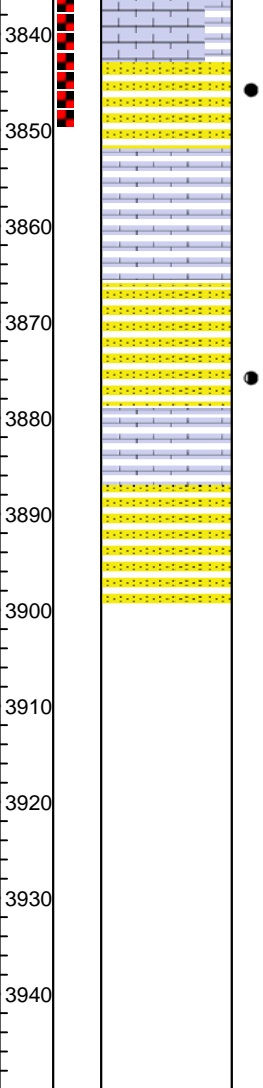
DST #2 SIMPSON
 3836' - 3850'
 30-45-30-30

1' OIL
 102' SLOCM
 (3%O, 97%M)
 (MOST FLUID
 RECOVERY FROM
 FLUSHING TOOL)

IFP: 15-17#



D
S
T
#2



● SS- Clear Frosted Brown, consolidated & mod. sorting, Fn-Med Grn, sub-rounded, well Ca cementing, SCTRD DRK STN, TR FO UPON CRUSH, WK ODR

Lm- Brown, VF-FXLN, dense, well cemented, tight w/ dense micro XLN porosity, barren

● Sand- Clear, Fn Grn, consolidated & mod. sorted, sub-rounded, semi-friable, SCTRD DRK STN, SFO UPON CRUSH, WK ODR

Ss- Frosted White, Vf Grn, well cemented, sl shaley & micaceous, consolidated & mod. sorted, sub-rounded, barren, considerable amount of pure white chalk

RTD 3900' (-2540) LTD 3901' (-2541) @ 16:22 2/18/2019

3850.jpg

3875.jpg

SURVEY 1 3/4 deg







