

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 Recompletion Date _____ 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	Darrah Oil Company, LLC
Well Name	KNOPP 9-13
Doc ID	1672168

All Electric Logs Run

micro
sonic
dual induction
porosity



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Darrah Oil Company

13-14s-32w Logan Ks

125 N Market ste 1425
Wichita, Ks 67202

Knopp 9-13

Job Ticket: 67992

DST#: 1

ATTN: Mac Armstrong

Test Start: 2022.07.17 @ 16:50:33

GENERAL INFORMATION:

Formation: **Johnson**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 20:00:33

Time Test Ended: 00:34:33

Test Type: Conventional Bottom Hole (Initial)

Tester: Brandon Turley

Unit No: 79

Interval: 4410.00 ft (KB) To 4458.00 ft (KB) (TVD)

Reference Elevations: 2824.00 ft (KB)

Total Depth: 4458.00 ft (KB) (TVD)

2814.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 10.00 ft

Serial #: 8674 Outside

Press@RunDepth: 31.99 psig @ 4411.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2022.07.17 End Date: 2022.07.18

Last Calib.: 2022.07.18

Start Time: 16:50:38 End Time: 00:34:32

Time On Btm: 2022.07.17 @ 19:59:33

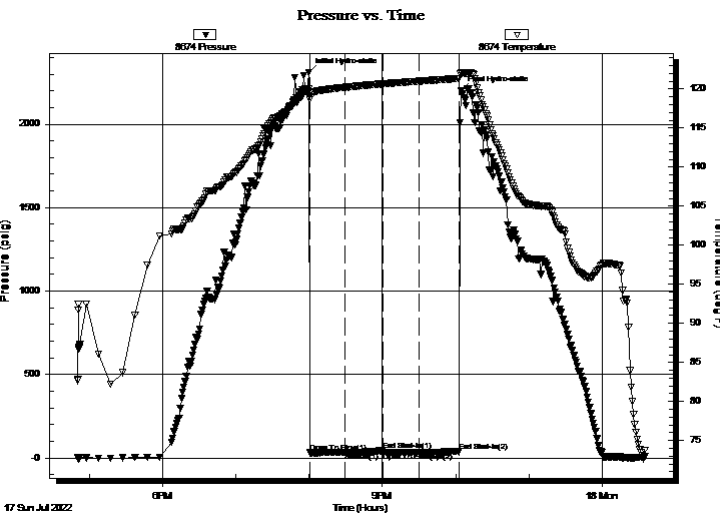
Time Off Btm: 2022.07.17 @ 22:04:33

TEST COMMENT: IF: Surface blow built to 1/4.

IS: No return.

FF: No blow.

FS: No return. 30s



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2310.24	119.97	Initial Hydro-static
1	31.35	118.65	Open To Flow (1)
30	32.18	120.22	Shut-In(1)
61	44.29	120.64	End Shut-In(1)
61	31.41	120.66	Open To Flow (2)
91	31.99	121.00	Shut-In(2)
123	39.53	121.34	End Shut-In(2)
125	2199.08	122.05	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	mud 100%m	0.07

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Darrah Oil Company

13-14s-32w Logan Ks

125 N Market ste 1425
Wichita, Ks 67202

Knopp 9-13

Job Ticket: 67992

DST#: 1

ATTN: Mac Armstrong

Test Start: 2022.07.17 @ 16:50:33

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 54.00 sec/qt

Cushion Volume:

bbl

Water Loss: 9.59 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 3000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	mud 100%m	0.070

Total Length: 5.00 ft Total Volume: 0.070 bbl

Num Fluid Samples: 0

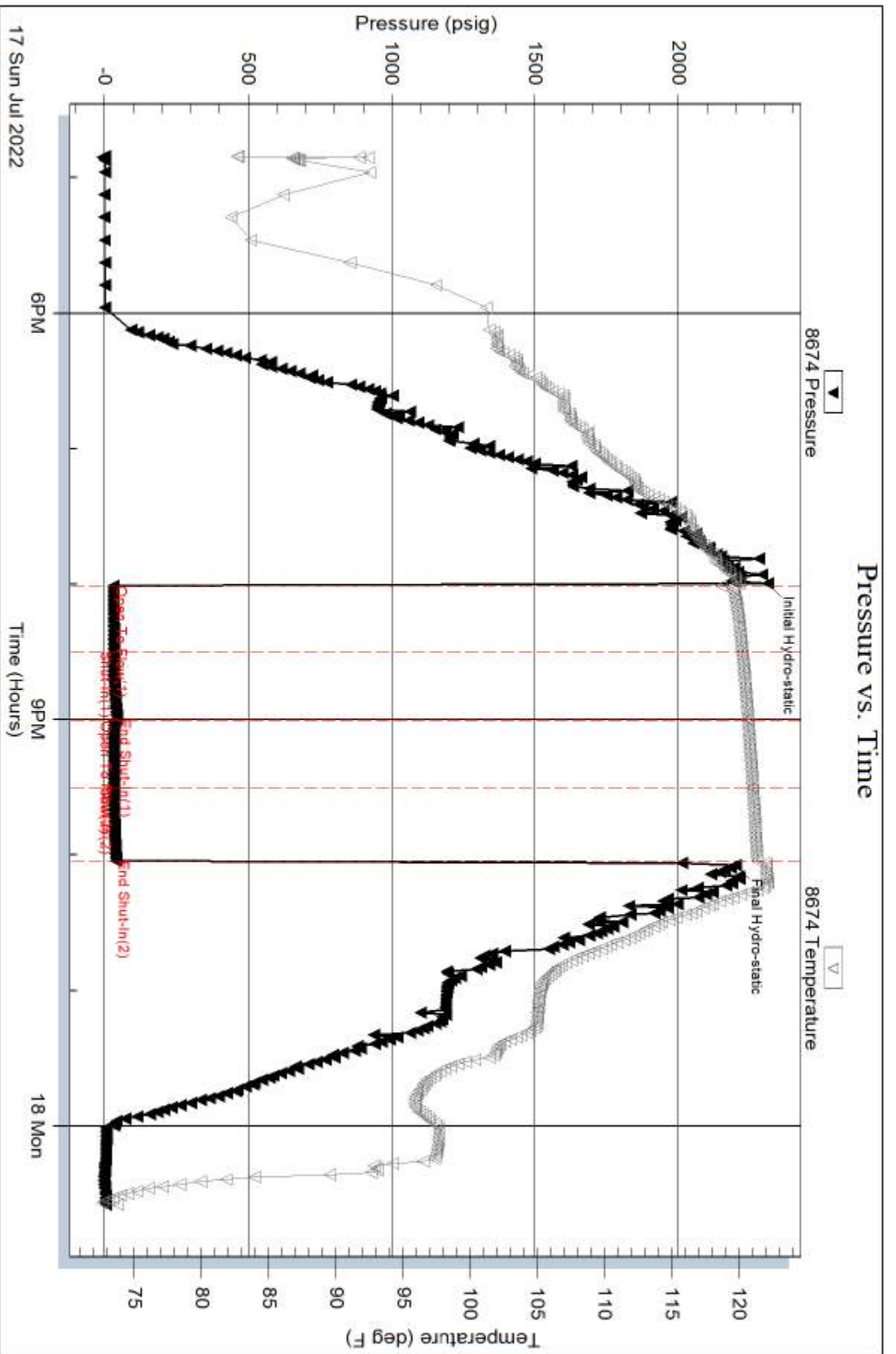
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



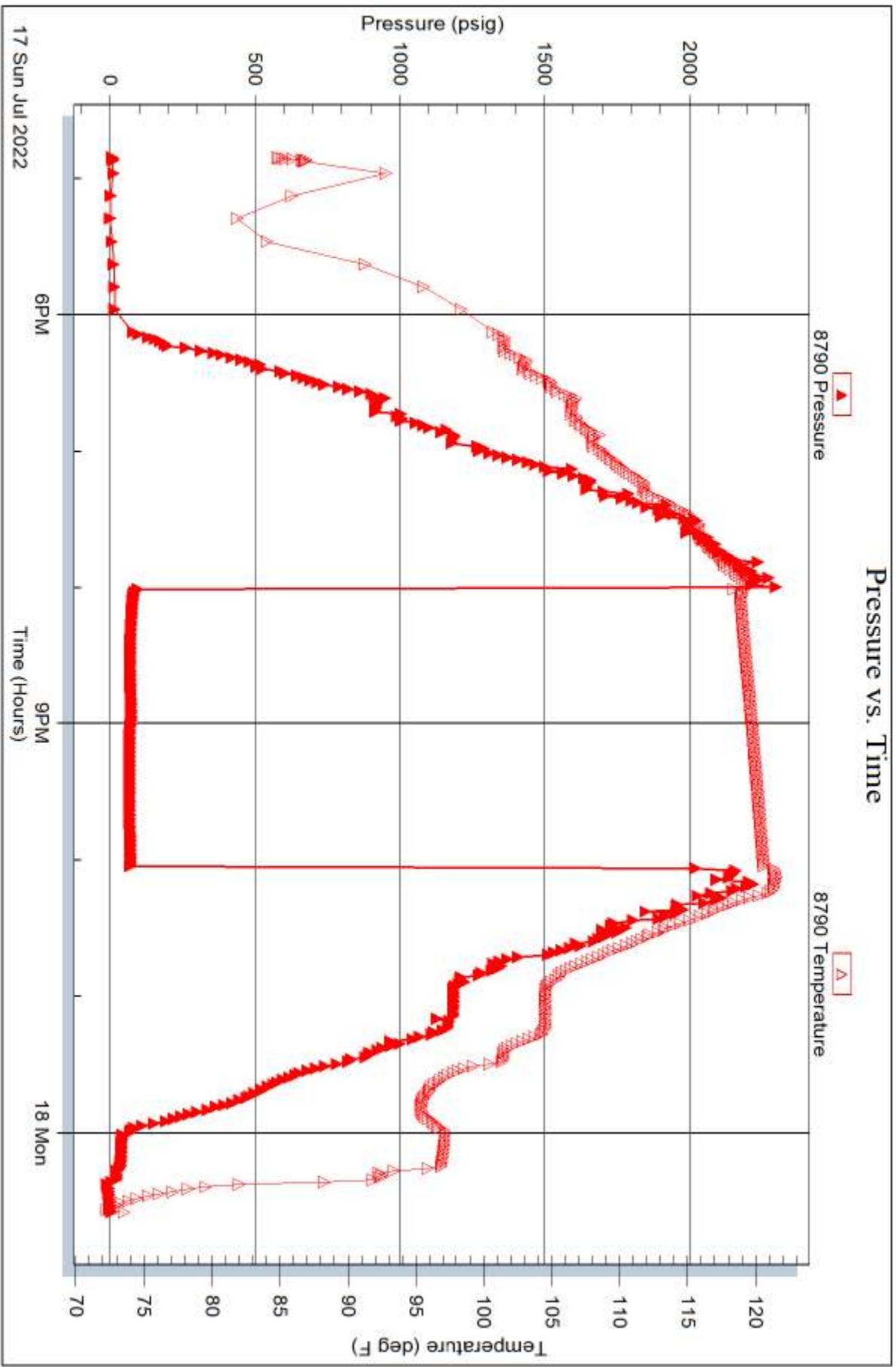
Serial #: 8790

Inside

Darrah Oil Company

Knopp 9-13

DST Test Number: 1





Remit To: Hurricane Services, Inc.
 250 N. Water, Suite 200
 Wichita, KS 67202
 316-303-9515

Customer:
 DARRAH OIL
 C/O JOHN JAY DARRAH JR
 PO BOX 2786
 WICHITA, KS 67201-2786

Invoice Date: 7/11/2022
 Invoice #: 0361891
 Lease Name: Knopp
 Well #: 9-13 (New)
 County: Logan, Ks
 Job Number: WP3062
 District: Oakley

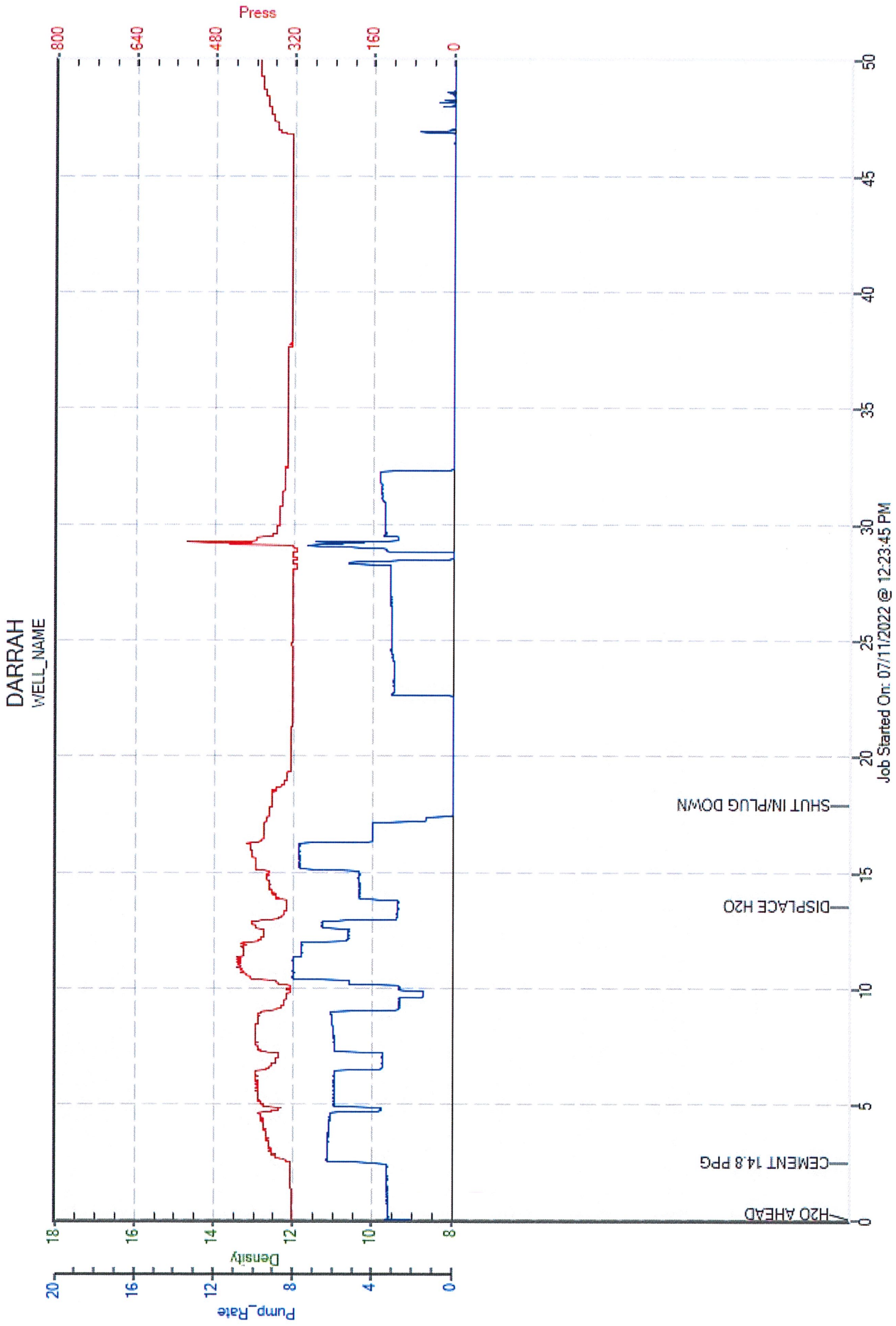
Date/Description	HRS/QTY	Rate	Total
Surface	0.000	0.000	0.00
H-325	200.000	21.600	4,320.00
Light Eq Mileage	40.000	2.000	80.00
Heavy Eq Mileage	80.000	4.000	320.00
Ton Mileage	376.000	1.500	564.00
Depth Charge 0'-500'	1.000	960.000	960.00
Cement Blending & Mixing	200.000	1.344	268.80
Service Supervisor	1.000	264.000	264.00
Cement Data Acquisition	1.000	240.000	240.00

Total 7,016.80

TERMS: Net 30 days. Interest may be charged on past due invoice at rate of 1 ½% per month or maximum allowed by applicable state or federal laws. HSI has right to revoke any discounts applied in arriving at net invoice price if invoice is past due. If revoked, full invoice price without discount plus additional sales tax, as applicable, is due immediately and subject to interest charges. Customer agrees to pay all collection costs directly or indirectly incurred by HSI in the event HSI engages a third party to pursue collection of past due invoice.

SALES TAX: Services performed on oil, gas and water wells in Kansas are subject to sales tax, with certain exceptions. HSI relies on the well information provided by the customer in identifying whether the services performed on wells qualify for exemption.

WE APPRECIATE YOUR BUSINESS!





Remit To: Hurricane Services, Inc.
 250 N. Water, Suite 200
 Wichita, KS 67202
 316-303-9515

Customer:
 DARRAH OIL
 C/O JOHN JAY DARRAH JR
 PO BOX 2786
 WICHITA, KS 67201-2786

Invoice Date: 7/19/2022
 Invoice #: 0361879
 Lease Name: Knopp
 Well #: 9-13
 County: Logan, Ks
 Job Number: WP3104
 District: Oakley

Date/Description	HRS/QTY	Rate	Total
PTA	0.000	0.000	0.00
H-Plug	240.000	13.440	3,225.60
Light Eq Mileage	40.000	2.000	80.00
Heavy Eq Mileage	80.000	4.000	320.00
Ton Mileage	427.000	1.500	640.50
Depth Charge 2001'-3000'	1.000	1,920.000	1,920.00
Cement Blending & Mixing	240.000	1.344	322.56
Service Supervisor	1.000	264.000	264.00
Wooden plug 8 5/8"	1.000	168.000	168.00

Net Invoice 6,940.66
 Sales Tax: 430.37
Total 7,371.03

TERMS: Net 30 days. Interest may be charged on past due invoice at rate of 1 ½% per month or maximum allowed by applicable state or federal laws. HSI has right to revoke any discounts applied in arriving at net invoice price if invoice is past due. If revoked, full invoice price without discount plus additional sales tax, as applicable, is due immediately and subject to interest charges. Customer agrees to pay all collection costs directly or indirectly incurred by HSI in the event HSI engages a third party to pursue collection of past due invoice.

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WE APPRECIATE YOUR BUSINESS!



CEMENT TREATMENT REPORT

Customer: Darrah Oil	Well: Knopp #9-13	Ticket: WP 3104
City, State:	County: Logan, KS	Date: 7/19/2022
Field Rep: Spencer Savage	S-T-R: 13-14S-32W	Service: PTA

Downhole Information		Calculated Slurry - Lead		Calculated Slurry - Tail	
Hole Size:	7 7/8 in	Blend:	H-Plug	Blend:	
Hole Depth:	4665 ft	Weight:	13.8 ppg	Weight:	ppg
Casing Size:	in	Water / Sx:	6.9 gal / sx	Water / Sx:	gal / sx
Casing Depth:	ft	Yield:	1.42 ft ³ / sx	Yield:	ft ³ / sx
Tubing / Liner:	in	Annular Bbls / Ft.:	0.0406 bbs / ft.	Annular Bbls / Ft.:	bbs / ft.
Depth:	ft	Depth:	ft	Depth:	ft
Tool / Packer:		Annular Volume:	bbls	Annular Volume:	bbls
Tool Depth:	ft	Excess:		Excess:	
Displacement:	bbls	Total Slurry:	60.7 bbls	Total Slurry:	bbls
		Total Sacks:	240 sx	Total Sacks:	sx

TIME	RATE	PSI	BBLs	TOTAL BBLs	REMARKS
300pm					Arrive on Location
315pm					Safety Meeting
330pm					Rig up
					Set Pipe at 2300' to pump plug
408pm	5.0	50.0	5.0	5.0	Start H2O ahead
411pm	4.5	60.0	12.6	17.6	Begin Slurry H-Plug 13.8ppg 50sks
413pm	5.0	100.0	29.4	47.0	Start Displace with Mud
					Move up hole to 1300'
508pm	5.0	50.0	5.0	52.0	Start H2O ahead
511pm	5.0	200.0	25.2	77.2	Begin Slurry H-Plug 13.8ppg 100sks
516pm	4.0	100.0	11.9	89.1	Displace
					Move up hole to 275'
558pm	4.0	50.0	5.0	94.1	Start H2O ahead
600pm	4.3	60.0	12.6	106.7	Begin Slurry H-Plug 13,8ppg 50sks
603pm	2.0	50.0	1.0	107.7	Displace
					POOH insert 8 5/8 wooden plug to 40'
701pm	2.0	50.0	2.5	110.2	Pump Slurry H-Plug 13.8ppg 10sks
708pm	2.0	50.0	3.8	114.0	Pump Slurry H-Plug 13.8ppg 30sks Down Rat Hole
710pm					Wash Up
725pm					Rig Down
740pm					Leave Location

CREW		UNIT	SUMMARY		
Cementer:	Spencer	194/235	Average Rate	Average Pressure	Total Fluid
Pump Operator:	Jimmie	528/520	3.9 bpm	75 psi	114 bbls
Bulk #1:	Scotty	VAP			
Bulk #2:					

**Darrah Oil Company, LLC
Knopp No. 9-13
1155' FNL and 2475' FWL
SW SW NW NE
Sec 13 T14S R32W
Logan County, Kansas**

Geological Report
by

Macklin M. Armstrong

Scale 1:240 Imperial

Well Name:	KNOPP NO. 9-13	
Surface Location:	SEC 13 T14S R32W	
Bottom Location:	1155' FNL and 2475' FEL	
API:	15-109-21636	
License Number:	35615	
Spud Date:	7/11/2022	Time: 7:00 AM
Region:	Logan County, Kansas	
Drilling Completed:	7/21/2022	Time: 1:26 AM
Surface Coordinates:	197512 & 1195208	
Bottom Hole Coordinates:	197512 & 1195208	
Ground Elevation:	2815.00ft	
K.B. Elevation:	2824.00ft	
Logged Interval:	3400.00ft	To: 4600.00ft
Total Depth:	4600.00ft	
Formation:	Mississippi	
Drilling Fluid Type:	Chemical/Fresh Water Gel	

OPERATOR

Company: DARRAH OIL COMPANY, LLC
Address: 125 N Market, Suite 1015
Wichita, Kansas 67202

Contact Geologist: John Hastings
Contact Phone Nbr: 316-219-3390

Well Name: KNOPP NO. 9-13
Location: SEC 13 T14S R32W
API: 15-109-21636

Pool: Oil

Field: BRIDGES NORTHEAST

CONTRACTOR

Contractor: Duke Drilling Company
 Rig #: 4
 Rig Type: mud rotary
 Spud Date: 7/11/2022
 TD Date: 7/21/2022
 Rig Release: 7/22/2022

Time: 7:00 AM
 Time: 1:26 AM
 Time: 7:00 AM

SURFACE CO-ORDINATES

Well Type: Vertical
 Longitude: -100.825843
 Latitude: 38.84117
 N/S Co-ord: 197512
 E/W Co-ord: 1195208

ELEVATIONS

K.B. Elevation: 2824.00ft
 K.B. to Ground: 9.00ft

Ground Elevation: 2815.00ft

NOTES

Date	Depth at 7 am	Activity
7-11-22	MIRU	Spud at 7:00 am
7-12-22	1200	Drilling
7-13-22	2580	Drilling
7-14-22	3375	GIH with New Bit
7-15-22	3853	Drilling
7-16-22	4140	Drilling
7-17-22	4420	Drilling
7-18-22	4486	CFS
7-19-22		
7-20-22		
7-21-22		

Surface Casing: 8 5/8" 20# at 232'
 Production Casing:

Deviation: 232' - 1/2°
 2316' - 1/2°
 3375' - 1/2°
 4458' - 1/4°
 ' - 1/2°

Bit Record:	Make	Size	Type	Depth In	Depth Out	Hours
	JZ	12 1/4"	PL619	Surface	232	1
	JZ	7 7/8"	PTL616	232	3375	39 1/2
	JZ	7 7/8"	HA527	3375		

Drill Stem Tests:

DST No. 1 4410 to 4458 Johnson Zone
 30-30-30-30
 Recovery: 5' Mud
 IHP 2310 FHP 2199
 IFP 31-32 FFP 31-32
 ISIP 44 FSIP 40
 Temp 122°

DST No.
 30-30-30-30
 Recovery:
 IHP FHP
 IFP FFP

ISIP FSIP
Temp °

Formation	Sample	E-Log	Datum	Well 1	Well 2	Well 3	Well 4
Anhydrite	2283		+541	+3	+12	+11	+6
Base/Anhydrite	2305		+519	+1	+12	0	+5
Stotler	3448		-624	0	+11	-7	+3
Topeka	3586		-762	0	+9	+1	+3
Heebner	3816		-992	-3	+2	-2	+3
Lansing	3854		-1030	-2	+3	-14	+2
B Zone	3888		-1064	-2	+1	-11	+8
D Zone	3936		-1112	-1	0	-10	+3
Muncie Creek	4012		-1188	-6	+1	-15	+1
H Zone	4030		-1206	-7	+1	-17	+2
I Zone	4060		-1236	-6	+1	-17	-2
J Zone	4084		-1260	-6	+1	-17	0
Stark	4102		-1278	-8	+1	-16	0
K Zone	4110		-1286	-6	+5	-15	+2
Hushpuckney	4135		-1311	-9	0	-15	+2
L Zone	4138		-1314	-7	+1	-15	+9
Base/Kansas City	4189		-1365	-8	+1	-12	+2
Marmaton	4230		-1406	-9	+2	-7	+9
Pawnee	4304		-1480	-9	+1	-11	+8
Fort Scott	4335		-1511	-9	+2	-10	+8
Cherokee Shale	4360		-1536	-14	-3	-13	+3
Lower Cherokee Shale	4390		-1566	-12	-3	-13	+5
Johnson Zone	4434		-1610	-14	-4	-14	+6
Morrow Shale	4460		-1636	-11	-2	-4	+10
Morrow Sand	4474		-1650	-16	+7	-6	+13
Mississippi			-	-	+	+	+
Total Depth			-				

Well 1: Darrah Oil Company Ottley No. 3-12 NE SW SE SW Sec 12 T14S R32W
 Well 2: Pioneer Resources Knopp No. 7 2283' FNL & 1650' FEL Sec 13 T14S R32W
 Well 2: Pioneer Resources Knopp No. 5 N2 NW SW NW Sec 13 T14S R32W
 Well 2: Pioneer Resources Ottley No. 1 NE NW SE Sec 12 T14S R32W

Respectfully submitted,
Macklin M. Armstrong

ROCK TYPES

 Lmst fw7> shale, grn	 shale, gry	 shale, red
 Carbon Sh	 Ss	

ACCESSORIES

MINERAL

- ▲ Chert, dark
- Sandy
- △ Chert White

FOSSIL

- Crinoids
- F Fossils < 20%
- ⊕ Oolite
- ⊗ Fossilinid


TEXTURE

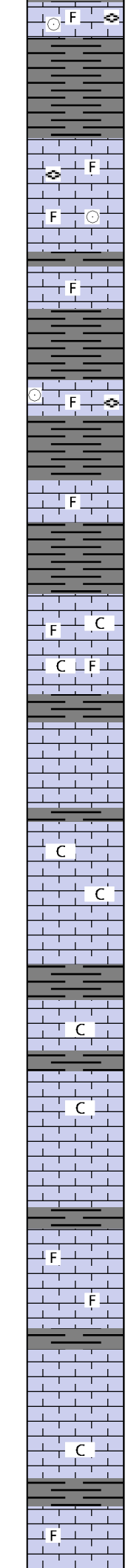
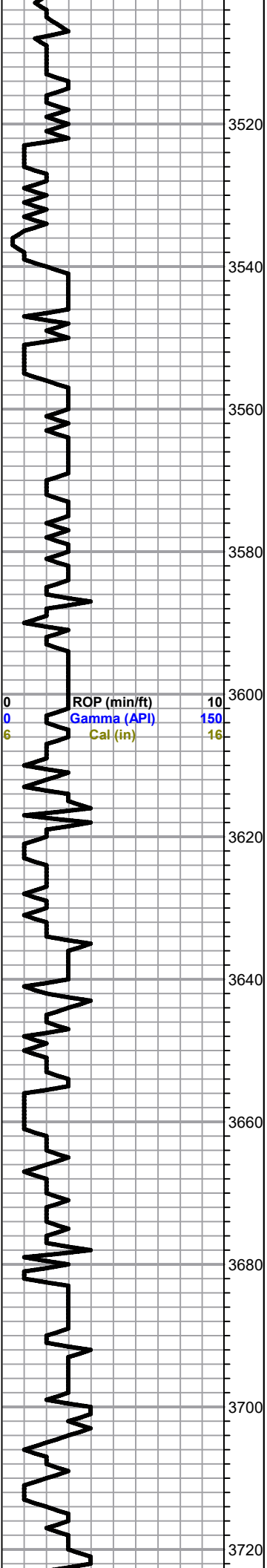
- C Chalky

OTHER SYMBOLS

DST

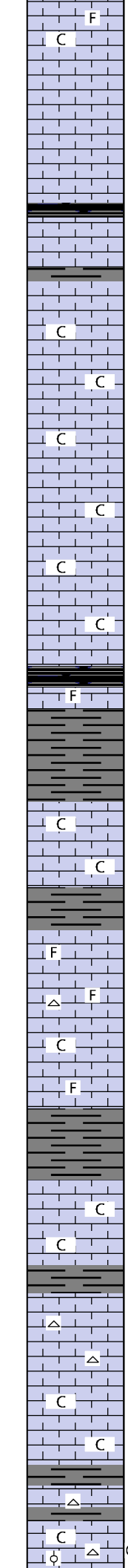
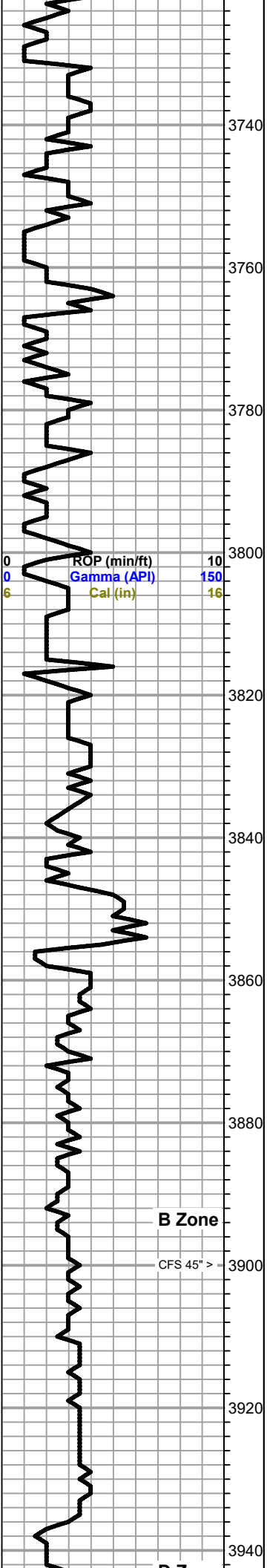
-  DST Int
-  DST alt
-  Core

Curve Track #1				
ROP (min/ft)		Intervals	ology	Show
Gamma (API)				
Cal (in)				



- 3520 Ls-lt gry/tan f/mxln mhd/dns sl fos with crin and fus no por
- Sh-gry/dk gry
- Sh-AA
- 3530 Ls-tan/lt gry fxln to blkly mhd highly fos with fus and crin no por
- Ls-AA
- Sh-gry
- 3540 Ls-lt gry/tan f/mxln dns sl fos no por
- Sh-gry/dk gry
- 3550 Ls-tan/crm fxln to blkly mhd highly fos with fus and crin no por
- Sh-gry/dk gry
- 3560 Ls-tan/crm fxln to blkly highly fos with fus and crin no por
- Sh-gry/dk gry
- 3570 ----- **Topeka 3586 -762** -----
- 3580 Ls-tan/crm fxln mhd/dns fos sl clky no por
- Ls-AA
- 3590 Sh-gry/dk gry
- 3600 Ls-lt gry fxln mdh no por
- Ls-AA
- Sh-gry
- 3610 Ls-crm/lt gry f/mxln mhd sl clky no por
- Ls-AA
- 3620 Ls-crm/lt gry fxln mhd/dns no por
- Sh-gry/dk gry
- 3630 Ls-crm/lt gry fxln mhd sl clky no por
- Sh-gry/dk gry
- 3640 Ls-crm/lt gry fxln mhd sl clky no por
- Ls-tan fxln mhd/dns no por
- Sh-gry/dk gry
- 3650 Ls-tan/lt gry fxln mhd sl fos no por
- Ls-tan/lt gry fxln mhd/dns sl fos no por
- Sh-gry/dk gry
- 3660 Ls-lt gry fxln mhd no por
- Ls-lt gry fxln mhd/dns no por
- Ls-tan/lt gry fxln soft/mhd clky no por
- Sh-gry/dk gry
- 3670 Ls-tan/lt gry f/mxln mhd/dns fos no por

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



Ls-crm/lt tan fxln sl fos clky no por

Ls-tan fxln mhd no por

Ls-AA

Ls-tan/lt gry fxln mhd/dns no por

Sh-blk carb

Ls-tan/lt gry fxln mhd/dns no por

Sh-gry/dk gry

Ls-tan fxln mhd/dns no por

Ls-lt gry/crm fxln soft/mhd clky no por

Ls-AA

Ls-lt gry fxln mhd sl clky no por

Ls-crm/tan fx;n mhd sl clky no por

Ls-AA

Ls-lt gry/crm fxln mhd sl clky no por

Ls-AA

----- Heebner 3816 -992 -----

Ls-gry f/mxln dns sl fos dns no por

Sh-gry/dk gry

Sh-AA

Ls-crm/wt fxln mhd clky no por

Ls-AA

Sh-gry/dk gry

----- Lansing 3854 -1030 -----

Ls-crm/lt tan fxln mhd fos no por

Ls-crm/lt gry fxln/dns fos no por sm Cht-lt gry fsh sl fos opa

Ls-crm/lt tan fxln dns no por sm Ls-wt fxln soft clky

Ls-lt gry/gry fxln mhd fos no por

Sh-gry/dk gry

Ls-crm fxln mhd/dns no por sm Ls-wt fxln soft clky

Ls-AA

Sh-gry/dk gry

Ls-crm/lt tan fxln dns no por sm Cht-tan fsh opa

Ls-AA sm Cht-tan fsh opa

Ls-crm fxln dns no por sm Ls-wt fxln soft clky

Sh-gry/dk gry

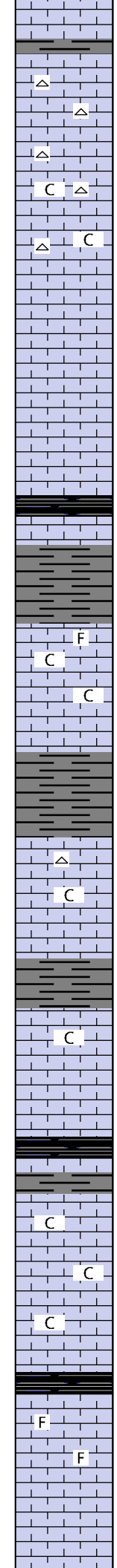
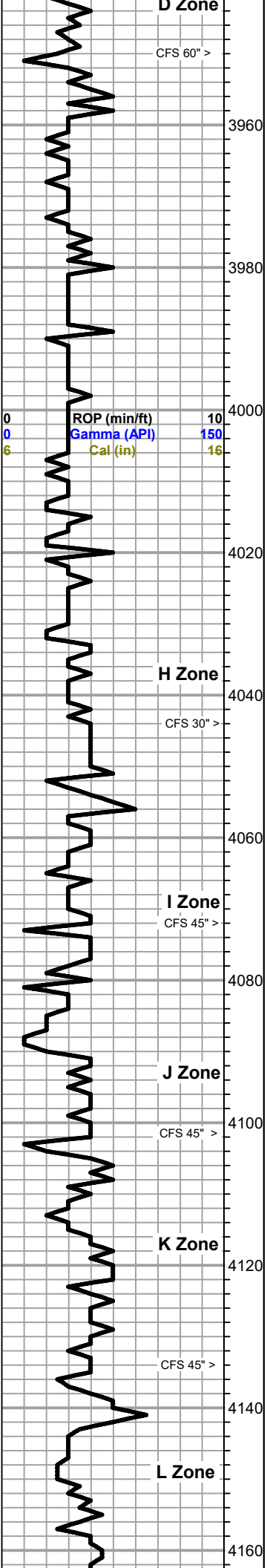
Ls-crm/tan fxln dns no por sm Cht-wt fsh opa

Sh-gry/gry

Ls-crm/lt gry fxln mhd/dns no por sm Ls-wt fxln soft clky and sm Cht-wt/lt gry fsh opa and one piece of Ls-gry fxln mhd fos ool gd inter ool por dk brn act str frad out vgrfs on blk

B Zone
 CFS 45" >

Mud Data 3875'
 9:00 am on 7-15-22
 Wt 9.0 Vis 57 WL 7.2
 pH 11.0 Chl 2000 Sol 4.9
 YP 15 LCM 1.0



brn sct stn ir/gd cut vssio on brk

Ls-crm/lt gry fxln dns no por
Sh-gry/dk gry

Ls-crm/tan fxln dns no por sm Cht-lt gry fsh opa

Ls-AA sm Cht-wt/lt gry fsh opa

Ls-crm/tsn fxln mhd sl clk no por sm Cht-lt gry fsh opa

Ls-AA sm Cht-wt fsh opa

Ls-crm/lt gry fxln mhd/dns no por

Ls-AA

Ls-crm/lt gry fxln mhd/dns no por

Ls-AA

----- **Muncie Creek 4012 -1188** -----

Sh-blk carb
Ls-gry/gry brn fxln dns no por

Sh-gry/dk gry

Ls-gry/brn fxln dns no por sm Ls-gry blk dns fos no por

Ls-crm/lt gry fxln mhd sl clk no por

Ls-lt gry/crm fxln mnd/dns no por

Sh-gry/dk gry

Ls-tan/lt gry fxln dns no por sm Cht-wt fsh opa

Ls-crm fxln mhd sl clk no por

Ls-gry fxln dns no por

Sh-gry/dk gry

Ls-crm/lt tsn fxln mhd clk no por

Ls-crm/lt gry fxln dns no por

----- **Stark 4102 -1278** -----

Sh-blk carb
Ls-gry/brn f/mxln dns no por
Sh-gry/dk gry

Ls-crm/lt gry fxln mhd sl clk no por

Ls-lt gry fxln dns sl clk no por

Ls-lt gry fxln mhd/dns no por sm Ls-crm fxln mhd sl clk no por

----- **Hushpuckney 4135 -1311** -----

Sh-blk carb

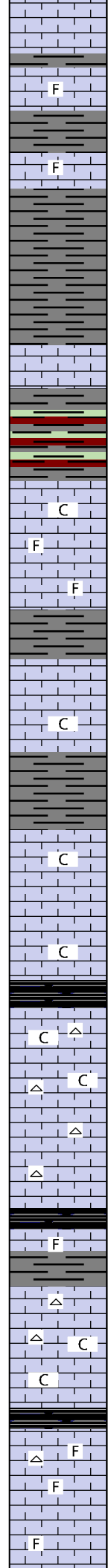
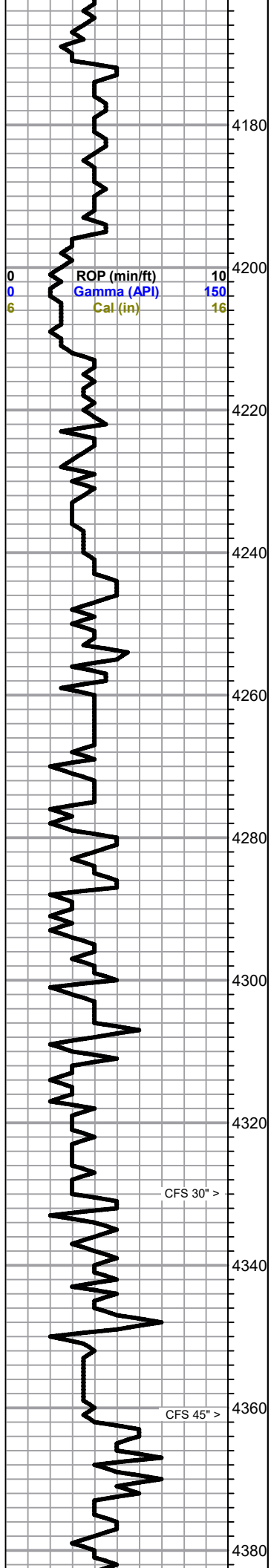
Ls-gry/tan fxln dns fos no por

Ls-gry/tan/brn fxln mhd/dns fos no por

Ls-lt gry/gry fxln dns no por

Ls-crm/lt gry fxln dns no por

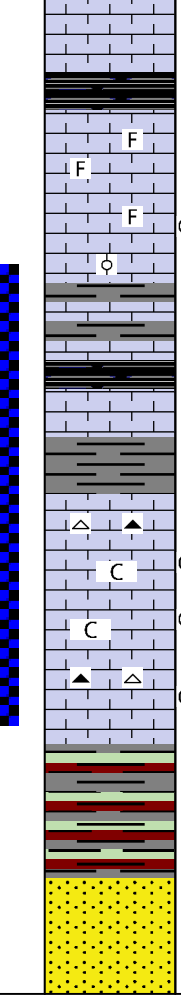
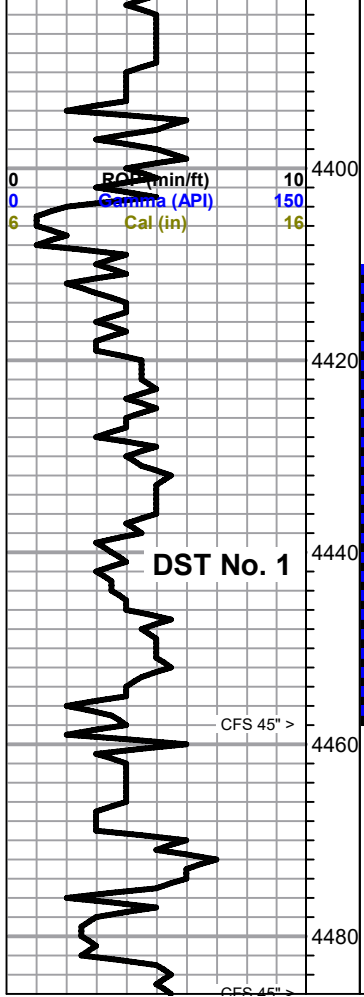
Mud Data 4143'
 7:10 am on 7-16-22
 Wt 9.2 Vis 58 WL 8.8
 pH 11.0 Chl 2500 Sol 5.0
 YP 19 LCM 2.0



Ls-AA
 Sh-gry/dk gry
 Ls-lt gry f/mxln mhd/dns fos no por

F

Sh-gry/dk gry
 Ls-lt gry fxln mhd/dns sl fos no por
 ----- **Base/Kansas City 4189 -1365** -----
 Sh-gry/dk gry
 Sh-AA
 Sh-gry/dk gry
 Ls-lt gry fxln mhd/dns no por
 Sh-gry/mar/grn
 ----- **Marmaton 4230 -1406** -----
 Ls-crm fxln mhd sl clky no por
 Ls-lt gry/gry fxln to blk highly fos mhd/dns no por
 Ls-lt gry/gry fxln dns no por sm Ls-brn blk fos mhd/dns no por
 Sh-gry/dk gry
 Ls-lt gry/gry fxln dns no por
 Ls-crm/lt gry fxln mhd/dns sl clky no por
 Sh-gry/dk gry
 Sh-AA
 Ls-lt gry/crm fxln mhd/dns sl clky no por
 Ls-lt gry fxln dns no por
 Ls-AA sm Ls-wt fxln soft clky no por
 Sh-blk carb
 ----- **Pawnee 4304 -1480** -----
 Ls-crm/lt tan fxln mhd sl clky no por with Cht-lt gry/gry wt fsh opaq
 Ls-lt gry fxln mdh fos clky no por sm Cht-lt gry fsh opaq
 Ls-tan/lt gry fxln mhd/dns fos no por sm Cht-gry wt fsh opaq
 Ls-AA sm Cht-gry wt fsh opaq
 ----- **Fort Scott 4335 -1511** -----
 Ls-gry/gry brn fxln dns sl fos no por
 Sh-gry/dk gry
 Ls-crm/lt gry fxln mhd/dns no por sm Cht-wt fsh opaq
 Ls-crm/lt tan fxln dns sl clky no por sm Cht-wt lt gry fsh opaq
 Ls-AA
 ----- **Cherokee Shale 4360 -1536** -----
 Ls-gry/gry brn fxln mhd fos no por sm Cht-wt/brn fsh opaq
 Ls-gry/gry brn fxln dns sl fos no por
 Ls-AA



----- Lower Cherokee Shale 4390 -1566 -----

Sh-blk carb

Ls-tan/brn fxln mhd fos no por

Ls-tan/gry f/mxln mhd sl fos no por with few pcs (2) of Ls-gry fxln mhd pr interxln por spt brn stn fr cut trc fo on brk

Ls-tan/brn/gry fxln dns no por sm Ls-gry mxln dns fos ool no por

Sh-ary/dk ary
 Ls-tan/brn fxln dns no por with sm pvrte
 Sh-gry/dk gry
 Ls-tan/brn fxln dns no por
 Sh-blk carb

Ls-tan/brn/gry fxln dns no por

Sh-gry/dk gry

----- Johnson Zone 4434 -1610 -----

Ls-lt gry/tan fxln dns no por sm Cht-tan/brn fsh opa

Ls-lt gry/tan fxln mhd sl clk no por with few pcs (3) Ls-brn fxln mhd fr/gd vug por dk brn sct stn gd cut ssfo on brk no odor

Ls-lt gry/tan fxln mhd/dns no por with few pcs (3) Ls-brn fxln mhd pr interxln por dk brn spt stn gd cut vssfo on brk no odor

Ls-lt gry/tan fxln dns sl clk no por sm Cht-lt gry/brn fsh opa

Ls-crm/tan fxln mhd/dns sl clk no por with few pcs (2) Ls-brn fxln mhd pr/fr vug por dk brn spt stn gd cut ssfo on brk no odor

----- Morrow Shale 4460 -1636 -----

Sh-gry/grn/mar/blk/yel

Sh-AA with sm Siltstone lt grn vfgrn very soft to gummy

----- Morrow Sand 4474 -1650 -----

Ss-wt fgrr sub ang tite cement nsfo

Ss-AA and Ss-lt grn vfgr sug and sl fri to tite cement nsfo

Mud Data 4407'
 8:00 am on 7-17-22
 Wt 9.4 Vis 54 WL 9.6
 pH 10.5 Chl 3600 Sol 7.4
 YP 16 LCM 2.0

DST No. 1
 4411 to 4458
 30-30-30-30
 1st Open: Weak blow, built to 1 1/4"
 2nd Open: No blow
 Recovery: 25' OCM (10%O, 90%M)
 IHP 2092 FHP 1992
 IFP 36-38 FFP 26-29
 ISIP 106 FSIP 116
 Temp 116°

Pulled 28 stand short trip at 4458' then cir for test 60"

Mud Data 4456'
 5:45 am on 7-18-22
 Wt 9.0 Vis 76 WL 9.6
 pH 10.5 Chl 3000 Sol 5.0
 YP 22 LCM 2.0