

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 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|

| 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 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|

| 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: | |
|----------------|-------|---------|------------|--|



EXPLORATION, INC.
Wichita, Kansas

#2 Frusher 9D

2,185' FSL & 1,633' FEL

125' S & 17' E of NE NW SE Section 9-21S-23W

Hodgeman County, Kansas

API# 15-083-21975-0000

Elevation: GL: 2,309', KB: 2,320'

| Sample Tops | | | Ref. Well |
|---------------|------|-------|--------------|
| Anhydrite | 1525 | +795 | +4 |
| B/Anhydrite | 1566 | +754 | +3 |
| Heebner | 3817 | -1497 | +6 |
| Toronto | 3828 | -1508 | +7 |
| Lansing | 3867 | -1547 | +5 |
| Muncie | 4043 | -1713 | +6 |
| Stark | 4132 | -1812 | +1 |
| Hush | 4168 | -1848 | +1 |
| BKC | 4202 | -1882 | +3 |
| Marmaton | 4240 | -1920 | +2 |
| Altamont | 4254 | -1934 | +2 |
| Pawnee | 4320 | -2000 | +1 |
| Ft. Scott | 4388 | -2068 | Flat |
| Cherokee | 4416 | -2096 | -3 |
| Mississippian | 4481 | -2161 | -13 |
| RTD | 4600 | -2280 | |

QUALITY WELL SERVICE, INC.

7316

Federal Tax I.D. # 481187368

Home Office 30060 N. Hwy 281, Pratt, KS 67124

Mailing Address P.O. Box 468

Office 620-727-3410
Fax 620-672-3663

Rich's Cell 620-727-3409
Brady's Cell 620-727-6964

| | | | | | | | | | | | | | | | | |
|----------------------------------------|---------------------------|----------|------------|------|-----------------------------------|-------|----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-------|----|-------------|--|--------|--|--|
| Date | 1-7-20 | Sec. | 9 | Twp. | 21S | Range | 23W | County | Hodgeman | State | Ks | On Location | | Finish | | |
| Lease | FRUSHER | Well No. | 9D-2 | | Location JETMORE, Ks 11 N to V RD | | | | | | | | | | | |
| Contractor | STEELING OIL & GAS RIG #4 | | | | | | | Owner | 2 1/2 E to GALE. S S 2.E into | | | | | | | |
| Type Job | SURFACE | | | | | | | To Quality Well Service, Inc. You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed. | | | | | | | | |
| Hole Size | 12 1/4 | | T.D. | | 228' | | Charge To Kitchie Exploration INC. | | | | | | | | | |
| Csg. | 3 7/8 23" | | Depth | | 225' | | Street | | | | | | | | | |
| Tbg. Size | | | Depth | | | | City | | | | | | | | | |
| Tool | | | Depth | | | | State | | | | | | | | | |
| Cement Left in Csg. | | | Shoe Joint | | 25' | | The above was done to satisfaction and supervision of owner agent or contractor. | | | | | | | | | |
| Meas Line | | | Displace | | 12.9 bbl | | Cement Amount Ordered 175 sz Common | | | | | | | | | |
| EQUIPMENT | | | | | | | 2 1/2 GAL 3 1/2" 1/2" PS | | | | | | | | | |
| Pumptrk | 8 | No. | | | | | Common 175 | | | | | | | | | |
| Bulktrk | 10 | No. | | | | | Poz. Mix | | | | | | | | | |
| Bulktrk | | No. | | | | | Gel. 329" | | | | | | | | | |
| Pickup | | No. | | | | | Calcium 494" | | | | | | | | | |
| JOB SERVICES & REMARKS | | | | | | | Hulls | | | | | | | | | |
| Rat Hole | | | | | | | Salt | | | | | | | | | |
| Mouse Hole | | | | | | | Flowseal 37.5" | | | | | | | | | |
| Centralizers | | | | | | | Kol-Seal | | | | | | | | | |
| Baskets | | | | | | | Mud CLR 48 | | | | | | | | | |
| D/V or Port Collar | | | | | | | CFL-117 or CD110 CAF 38 | | | | | | | | | |
| Run 5 H's 3 7/8 23" ESG SET 225' | | | | | | | Sand | | | | | | | | | |
| START CSG CSG ON BOTTOM | | | | | | | Handling 189 | | | | | | | | | |
| Hook up to CSG & BREAK CIRCUIT W/ RIG | | | | | | | Mileage 37 / 6956 | | | | | | | | | |
| START Pumping 10 bbls H ₂ O | | | | | | | FLOAT EQUIPMENT | | | | | | | | | |
| START MIX & PUMP 175 sz Common | | | | | | | Guide Shoe | | | | | | | | | |
| 2 1/2 GAL 3 1/2" 1/2" PS @ 14.8"/GAL | | | | | | | Centralizer | | | | | | | | | |
| START DISP | | | | | | | Baskets | | | | | | | | | |
| Plug down 5:15 150" | | | | | | | AFU Inserts | | | | | | | | | |
| CLOSE VALVE ON CSG | | | | | | | Float Shoe | | | | | | | | | |
| Oppo circ thru JDS | | | | | | | Latch Down | | | | | | | | | |
| CIRCUIT TO PST | | | | | | | SERVICE Spool 1 EA | | | | | | | | | |
| | | | | | | | LMV 37 | | | | | | | | | |
| THANK YOU | | | | | | | Pumptrk Charge SURFACE | | | | | | | | | |
| PLEASE CALL AGAIN | | | | | | | Mileage 75 | | | | | | | | | |
| TODD T. JAKE | | | | | | | | | | | | | | | | |
| X Signature <i>Todd T. Jake</i> | | | | | | | Tax | | | | | | | | | |
| | | | | | | | Discount | | | | | | | | | |
| | | | | | | | Total Charge | | | | | | | | | |



Services, Inc.

CHARGE TO:

ADDRESS

CITY, STATE, ZIP CODE

Ritchie

TICKET 032947

PAGE 1 OF 2

1 | 2

| | | | | | | | |
|--------------------------------------------------------------------------------------|-------------------------------------|-------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------|-----------------------|---------------------------------|-----------|
| 1. SERVICE LOCATIONS <i>KS</i> | WELL/PROJECT NO. <i>42</i> | LEASE <i>Fisher 9D</i> | COUNTY/PARISH <i>Haskell</i> | STATE <i>KS</i> | CITY <i>Tetlow</i> | DATE <i>17 Nov 20</i> | OWNER |
| 2. TICKET TYPE <input type="checkbox"/> SERVICE <input type="checkbox"/> SALES | CONTRACTOR | RIG NAME/NO. | SHIPPED <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO | DELIVERED TO <i>Location</i> | WELL PERMIT NO. | WELL LOCATION <i>9-21-23</i> | ORDER NO. |
| 3. WELL TYPE <i>Dr</i> | WELL CATEGORY <i>Development</i> | JOB PURPOSE <i>Conduct long string</i> | | | | | |
| 4. REFERRAL LOCATION | INVOICE INSTRUCTIONS | | | | | | |

| PRICE REFERENCE | SECONDARY REFERENCE/ PART NUMBER | ACCOUNTING | | | DESCRIPTION | MILEAGE | QTY. | UM | UNIT PRICE | AMOUNT |
|-----------------|-------------------------------------|------------|------|----|------------------------------------|---------|------|----|------------|---------|
| | | LOC | ACCT | DF | | | | | | |
| 575 | | | | | TRK 114 | | 30 | in | 5.00 | 150.00 |
| 578 | | | | | Ring Charge | | 1 | ea | 1400.00 | 1400.00 |
| 403 | | | | | Conduct Basket | | 3 | ea | 275.00 | 825.00 |
| 404 | | | | | Port collar | | 1 | ea | 2500.00 | 2500.00 |
| 406 | | | | | latch drum Plug & bubble | | 1 | ea | 258.00 | 258.00 |
| 407 | | | | | Insert + flats shoe - 1" auto fill | | 1 | ea | 325.00 | 325.00 |
| 409 | | | | | Tri-Balizer | | 5 | in | 90.00 | 450.00 |

LEGAL TERMS: Customer hereby acknowledges and agrees to the terms and conditions on the reverse side hereof which include, but are not limited to, **PAYMENT, RELEASE, INDEMNITY, and LIMITED WARRANTY** provisions.

MUST BE SIGNED BY CUSTOMER OR CUSTOMER'S AGENT PRIOR TO START OF WORK OR DELIVERY OF GOODS.

DATE SIGNED: *[Signature]* TIME SIGNED: A.M. P.M.

REMIT PAYMENT TO:

SWIFT SERVICES, INC.

P.O. BOX 466

NESS CITY, KS 67560

785-798-2300

| SURVEY | AGREE | UNDECIDED | DISAGREE | PAGE TOTAL |
|--------------------------------------------------------------------------|------------------------------|-----------------------------|----------|------------|
| OUR EQUIPMENT PERFORMED WITHOUT BREAKDOWN? | | | | 6178.00 |
| WE UNDERSTOOD AND MET YOUR NEEDS? | | | | 9363.68 |
| OUR SERVICE WAS PERFORMED WITHOUT DELAY? | | | | 102.00 |
| WE OPERATED THE EQUIPMENT AND PERFORMED JOB CALCULATIONS SATISFACTORILY? | | | | 13533.68 |
| ARE YOU SATISFIED WITH OUR SERVICE? | <input type="checkbox"/> YES | <input type="checkbox"/> NO | | 12180.31 |
| TAX | | | | 772.57 |
| TOTAL | | | | 12953.08 |

CUSTOMER ACCEPTANCE OF MATERIALS AND SERVICES. The customer hereby acknowledges receipt of the materials and services listed on this ticket.

SWIFT OPERATOR

APPROVAL

[Signature]

Thank You!

JOB LOG

SWIFT Services, Inc.

DATE 17 Jan 20 PAGE NO. 1

| CUSTOMER | | WELL NO. | | LEASE | | JOB TYPE | | TICKET NO. | |
|-----------------|------|------------|--------------------|------------|---|-----------------|--------|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Pitche | | #2 | | Frosher 9D | | cmt long string | | 32947 | |
| CHART NO. | TIME | RATE (BPM) | VOLUME (BBL) (GAL) | PUMPS | | PRESSURE (PSI) | | DESCRIPTION OF OPERATION AND MATERIALS | |
| | | | | T | C | TUBING | CASING | | |
| | | | | | | | | | 225 sk Standard cmt w/ 2% bge/ 10% oge/ 5 1/2" x 15.5" casing 110 jts 4587' SJ 4215 Turbolizes 1, 2, 4, 5, 20, 23, 73, 75 Bsk 12, 74, 96 Bert collar #74 - 1510' TD = 4600' |
| | 1800 | | | | | | | | ORLOC TRK 114 |
| | 1900 | | | | | | | | start 5 1/2" x 15.5" casing in well |
| | 2130 | | | | | | | | Drop ball - circulate well |
| | 2230 | 4 | 12 | | | | 200 | | Pump 500 gal mud flush |
| | | 4 | 20 | | | | 200 | | Pump 20 bbl KCL flush |
| | | | 7 | | | | | | Plug bit / mtt 30sk 20sk |
| | | 4 | 42 | | | | 200 | | Mix STD 2% bge cmt @ 14.9 pps 175sk |
| 2313 | 113 | | | | | | | | Drop hch down plug wash out pup & line |
| 2325 | 1125 | 6 | | | | | 2 | | Displace plug |
| | | 6 | 100 | | | | 650 | | |
| 2345 | 1145 | 6 | 108 | | | | 1500 | | Land plug |
| | | | | | | | | | Release pressure to truck - dried up |
| | 2353 | | | | | | | | wash truck |
| | | | | | | | | | Rack up |
| 18 Jan | 0020 | | | | | | | | job complete |
| | | | | | | | | | Thanks Blaine, Shane & FLUIT |



Services, Inc.

TICKET 032795

CHARGE TO: Refrigerator Exploration
 ADDRESS _____
 CITY, STATE, ZIP CODE _____

PAGE 1 OF 1

SERVICE LOCATIONS
 1. Ness City, KS
 2. _____
 3. _____
 4. _____

WELL/PROJECT NO. 980 #2
 TICKET TYPE SERVICE SALES
 CONTRACTOR H.D. Oldfield Services
 LEASE Fruisher
 COUNTY/PARISH Haskell
 RIG NAME/NO. _____
 STATE KS CITY Ness City DATE 11/11/2000 OWNER _____
 WELL TYPE Oil WELL CATEGORY Development JOB PURPOSE Port Collar
 RIG NAME/NO. _____
 STATE KS CITY Ness City DATE 11/11/2000 ORDER NO. _____
 WELL PERMIT NO. _____
 WELL LOCATION Ness City, Ste X Rd
 REFERRAL LOCATION _____ INVOICE INSTRUCTIONS 3-F, Ste E into

| PRICE REFERENCE | SECONDARY REFERENCE/PART NUMBER | ACCOUNTING | | | DESCRIPTION | MILEAGE | QTY. U/M | | | UNIT PRICE | AMOUNT |
|-----------------|---------------------------------|------------|------|----|---------------------------|---------|----------|-----|------|------------|--------|
| | | LOC | ACCT | DF | | | QTY. | U/M | QTY. | | |
| 575 | | | | | | | | | | | |
| 576D | | | | | Pump Change - Port Collar | | | | | | |
| 339-8 | | | | | 40/40 Perm x 8 1/2 gal | | | | | | |
| 276 | | | | | Fluoride | | | | | | |
| 290 | | | | | D-Air | | | | | | |
| 581 | | | | | CMT Service Charge | | | | | | |
| 583 | | | | | Drayage | | | | | | |

LEGAL TERMS: Customer hereby acknowledges and agrees to the terms and conditions on the reverse side hereof which include, but are not limited to, **PAYMENT, RELEASE, INDEMNITY, and LIMITED WARRANTY** provisions.

MUST BE SIGNED BY CUSTOMER OR CUSTOMER'S AGENT PRIOR TO START OF WORK OR DELIVERY OF GOODS.
 X [Signature]
 DATE SIGNED 11/11/2000 TIME SIGNED 4:45
 A.M. P.M.

REMIT PAYMENT TO:
 SWIFT SERVICES, INC.
 P.O. BOX 466
 NESS CITY, KS 67560
 785-798-2300

SURVEY
 OUR EQUIPMENT PERFORMED WITHOUT BREAKDOWN? YES NO
 WE UNDERSTOOD AND MET YOUR NEEDS? YES NO
 OUR SERVICE WAS PERFORMED WITHOUT DELAY? YES NO
 WE OPERATED THE EQUIPMENT AND PERFORMED JOB CALCULATIONS SATISFACTORILY? YES NO
 ARE YOU SATISFIED WITH OUR SERVICE? YES NO
 CUSTOMER DID NOT WISH TO RESPOND

PAGE TOTAL 1
 TOTAL 5303 34

SWIFT OPERATOR [Signature] APPROVAL [Signature]
 CUSTOMER ACCEPTANCE OF MATERIALS AND SERVICES The customer hereby acknowledges receipt of the materials and services listed on this ticket.
 Thank You!

JOB LOG

SWIFT Services, Inc.

DATE 1/21/2020 PAGE NO. 1

| CUSTOMER | | WELL NO. | | LEASE | | JOB TYPE | | TICKET NO. | |
|---------------------|------|------------|--------------------|---------|---|----------------|--------|--------------------------------------------------------------------------------------------|--|
| Ritchie Exploration | | 9 D #2 | | Frusher | | Perf Collar | | 032795 | |
| CHART NO. | TIME | RATE (BPM) | VOLUME (BBL) (GAL) | PUMPS | | PRESSURE (PSI) | | DESCRIPTION OF OPERATION AND MATERIALS | |
| | | | | T | C | TUBING | CASING | | |
| | 1500 | | | | | | | On Location 2 7/8" 5 1/2" | |
| | | | | | | | | P.C. : 1508' | |
| | 1520 | Ø | | | ✓ | 1200 | | Test BS to 1,200 PSI *Hold* -Release | |
| | | | | | | | | Open PC | |
| | 1535 | 2 | 4 | ✓ | | 300 | | Injection Rate | |
| | 1530 | 4 | 75 | ✓ | | 300 | | Mix 225 sks of 60/40 Pozmix 8% gel @ 12.24ppg w/ 300# hulls | |
| | 1555 | 3 1/2 | 7 3/4 | ✓ | | 400 | | Displace CMT | |
| | 1600 | | | | | | | Close PC | |
| | 1605 | Ø | | | ✓ | 1200 | | P-Test to 1200 PSI *Hold* Run 5 JEs | |
| | 1615 | 3 | 25 | ✓ | | 350 | | Reverse Clean | |
| | 1630 | | | | | | | Wash up Trk #115 TOH | |
| | 1700 | | | | | | | *Shut in 300 PSI* Job Complete | |
| | | | | | | | | 225 sks 60/40 Pozmix 8% gel + 300# of Hulls used Thank You Gordon, Preston, Isaac | |



Company: Ritchie Exploration, Inc.

Lease: Frusher 9D #2

SEC: 9 TWN: 21S RNG: 23W
County: HODGEMAN
State: Kansas
Drilling Contractor: WW Drilling, LLC - Rig 102
Elevation: 2312 Est
Field Name: Sandpit North
Pool: Infield
Job Number: 402
API #: 15-083-21975-00-00

Operation:
Uploading recovery & pressures

DATE
January
13
2020

DST #1 Formation: Ft. Scott Test Interval: 4380 - 4413' Total Depth: 4413'
Time On: 01:41 01/13 Time Off: 09:38 01/13
Time On Bottom: 04:13 01/13 Time Off Bottom: 07:13 01/13

Electronic Volume Estimate:
1185'

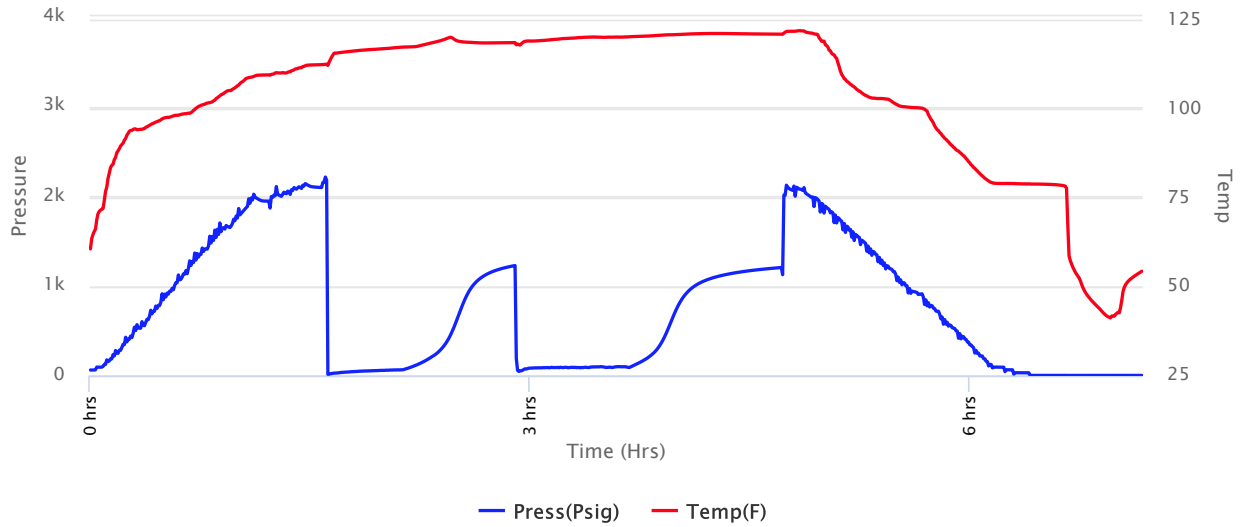
1st Open
Minutes: 30
Current Reading: 28.6" at 30 min
Max Reading: 28.6"

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

2nd Open
Minutes: 45
Current Reading: 69.4" at 45 min
Max Reading: 69.4"

2nd Close
Minutes: 60
Current Reading: 0" at 60 min
Max Reading: 0"

Inside Recorder





Company: Ritchie Exploration, Inc.

Lease: Frusher 9D #2

SEC: 9 TWN: 21S RNG: 23W
 County: HODGEMAN
 State: Kansas
 Drilling Contractor: WW Drilling, LLC - Rig 102
 Elevation: 2312 Est
 Field Name: Sandpit North
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Operation:
 Uploading recovery & pressures

DATE
 January
13
 2020

DST #1 **Formation: Ft. Scott** **Test Interval: 4380 - 4413'** **Total Depth: 4413'**
 Time On: 01:41 01/13 Time Off: 09:38 01/13
 Time On Bottom: 04:13 01/13 Time Off Bottom: 07:13 01/13

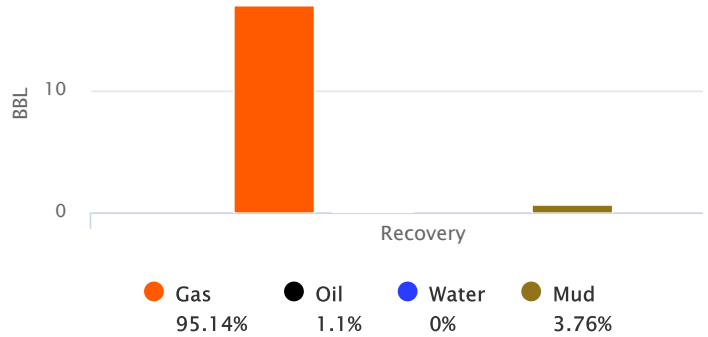
| <u>Recovered</u> | | <u>Description of Fluid</u> | <u>Gas %</u> | <u>Oil %</u> | <u>Water %</u> | <u>Mud %</u> |
|------------------|-------------|-----------------------------|--------------|--------------|----------------|--------------|
| <u>Foot</u> | <u>BBLs</u> | | | | | |
| 1195 | 16.9404248 | G | 100 | 0 | 0 | 0 |
| 20 | 0.0984 | SLOCM | 0 | 16 | 0 | 84 |
| 185 | 0.9102 | SLGCOCM | 15 | 20 | 0 | 65 |

Total Recovered: 1400 ft
 Total Barrels Recovered: 17.9490248

**Reversed Out
 NO**

| | | |
|---------------------------------------------|-------------|------------|
| Initial Hydrostatic Pressure | 2153 | PSI |
| Initial Flow | 13 to 64 | PSI |
| Initial Closed in Pressure | 1225 | PSI |
| Final Flow Pressure | 45 to 90 | PSI |
| Final Closed in Pressure | 1203 | PSI |
| Final Hydrostatic Pressure | 2120 | PSI |
| Temperature | 121 | °F |
| Pressure Change Initial Close / Final Close | 1.8 | % |

Recovery at a glance



GIP cubic foot volume: 95.87856



Company: Ritchie Exploration, Inc.

Lease: Frusher 9D #2

SEC: 9 TWN: 21S RNG: 23W
County: HODGEMAN
State: Kansas
Drilling Contractor: WW Drilling, LLC - Rig 102
Elevation: 2312 Est
Field Name: Sandpit North
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13
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Time On: 01:41 01/13 Time Off: 09:38 01/13
Time On Bottom: 04:13 01/13 Time Off Bottom: 07:13 01/13

BUCKET MEASUREMENT:

1st Open: 1/4" blow building to BOB 13 min.
1st Close: No BB
2nd Open: 3 1/2" blow building to BOB 30 sec.
2nd Close: No BB

REMARKS:

Tool Sample: 0% Gas 79% Oil 0% Water 21% Mud



Company: Ritchie Exploration, Inc.

SEC: 9 TWN: 21S RNG: 23W
County: HODGEMAN
State: Kansas
Drilling Contractor: WW Drilling, LLC - Rig 102
Elevation: 2312 Est

Operation:Uploading recovery &
pressures**Lease: Frusher 9D #2**Field Name: Sandpit North
Pool: Infield
Job Number: 402
API #: 15-083-21975-00-00**DATE**January
13
2020

| | | | |
|---------------|-----------------------------|------------------------------------|---------------------------|
| DST #1 | Formation: Ft. Scott | Test Interval: 4380 - 4413' | Total Depth: 4413' |
| | Time On: 01:41 01/13 | Time Off: 09:38 01/13 | |
| | Time On Bottom: 04:13 01/13 | Time Off Bottom: 07:13 01/13 | |

Down Hole Makeup

| | |
|----------------------------------------------------------------------------------------|---------------------------------|
| Heads Up: 10.16 FT | Packer 1: 4375 FT |
| Drill Pipe: 4145.67 FT <i>ID-3 1/2</i> | Packer 2: 4380 FT |
| Weight Pipe: 0 FT <i>ID-2 7/8</i> | Top Recorder: 4364.42 FT |
| Collars: 211.92 FT <i>ID-2 1/4</i> | Bottom Recorder: 4382 FT |
| Test Tool: 33.57 FT <i>ID-3 1/2-FH</i> <i>Jars</i> <i>Safety Joint</i> | Well Bore Size: 7 7/8 |
| Total Anchor: 33 | Surface Choke: 1" |
| Anchor Makeup | Bottom Choke: 5/8" |
| Packer Sub: 1 FT | |
| Perforations: (top): 0 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): 32 FT <i>4 1/2-FH</i> | |



Operation:

Company: Ritchie Exploration, Inc.**Lease: Frusher 9D #2**SEC: 9 TWN: 21S RNG: 23W
County: HODGEMAN
State: Kansas
Drilling Contractor: WW Drilling, LLC -
Rig 102
Elevation: 2312 Est
Field Name: Sandpit North
Pool: Infield

Uploading recovery &
pressures

Job Number: 402
API #: 15-083-21975-00-00

DATE

January
13
2020

DST #1 **Formation: Ft. Scott** **Test Interval: 4380 - 4413'** **Total Depth: 4413'**

Time On: 01:41 01/13

Time Off: 09:38 01/13

Time On Bottom: 04:13 01/13

Time Off Bottom: 07:13 01/13

Mud Properties

Mud Type: Chemical

Weight: 9.25

Viscosity: 54

Filtrate: 8.0

Chlorides: 3,800 ppm



Operation:

Uploading recovery &
pressures

**Company: Ritchie Exploration,
Inc.**

Lease: Frusher 9D #2

SEC: 9 TWN: 21S RNG: 23W
County: HODGEMAN
State: Kansas
Drilling Contractor: WW Drilling, LLC -
Rig 102
Elevation: 2312 Est
Field Name: Sandpit North
Pool: Infield
Job Number: 402
API #: 15-083-21975-00-00

DATE

January

13

2020

DST #1 Formation: Ft. Scott Test Interval: 4380 - Total Depth: 4413'
4413'

Time On: 01:41 01/13 Time Off: 09:38 01/13

Time On Bottom: 04:13 01/13 Time Off Bottom: 07:13 01/13

Gas Volume Report**1st Open**

| 1st Open | | | |
|-----------------|----------------|------------|--------------|
| Time | Orifice | PSI | MCF/D |

2nd Open

| 2nd Open | | | |
|-----------------|----------------|------------|--------------|
| Time | Orifice | PSI | MCF/D |



Company: Ritchie Exploration, Inc.

Lease: Frusher 9D #2

SEC: 9 TWN: 21S RNG: 23W
County: HODGEMAN
State: Kansas
Drilling Contractor: WW Drilling, LLC - Rig 102
Elevation: 2312 EGL
Field Name: Sandpit North
Pool: Infield
Job Number: 402
API #: 15-083-21975-00-00

Operation:
Uploading recovery & pressures

DATE
January
13
2020

DST #2 **Formation: Mississippian** **Test Interval: 4454 - 4489'** **Total Depth: 4489'**
Time On: 21:37 01/13 Time Off: 05:33 01/14
Time On Bottom: 00:01 01/14 Time Off Bottom: 03:01 01/14

Electronic Volume Estimate:
339'

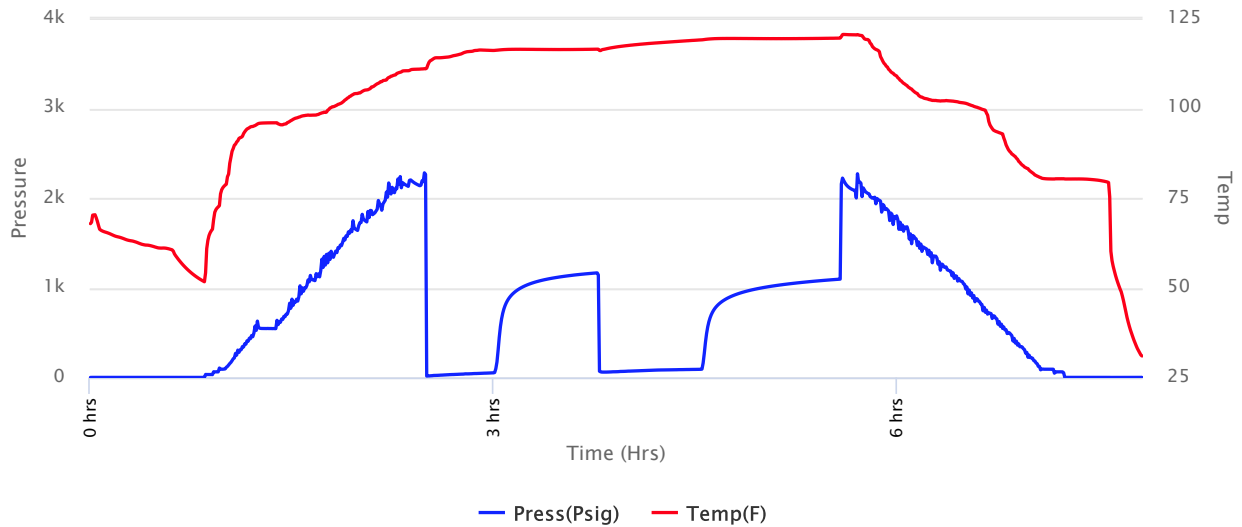
1st Open
Minutes: 30
Current Reading: 8.6" at 30 min
Max Reading: 8.6"

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

2nd Open
Minutes: 45
Current Reading: 9.0" at 45 min
Max Reading: 9.0"

2nd Close
Minutes: 60
Current Reading: 0" at 60 min
Max Reading: 0"

Inside Recorder





Company: Ritchie Exploration, Inc.

Lease: Frusher 9D #2

SEC: 9 TWN: 21S RNG: 23W
 County: HODGEMAN
 State: Kansas
 Drilling Contractor: WW Drilling, LLC - Rig 102
 Elevation: 2312 EGL
 Field Name: Sandpit North
 Pool: Infield
 Job Number: 402
 API #: 15-083-21975-00-00

Operation:
 Uploading recovery & pressures

DATE
 January
13
 2020

DST #2 **Formation: Mississippian** **Test Interval: 4454 - 4489'** **Total Depth: 4489'**
 Time On: 21:37 01/13 Time Off: 05:33 01/14
 Time On Bottom: 00:01 01/14 Time Off Bottom: 03:01 01/14

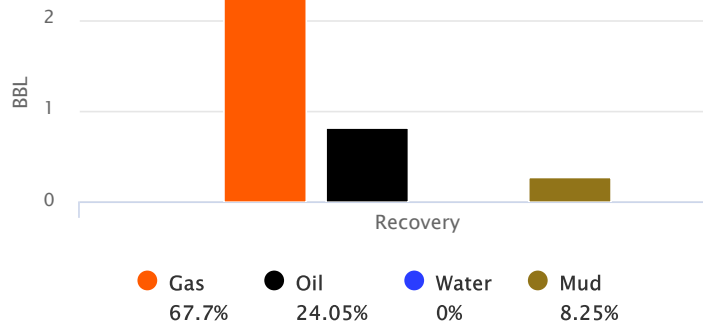
| <u>Recovered</u> | | <u>Description of Fluid</u> | <u>Gas %</u> | <u>Oil %</u> | <u>Water %</u> | <u>Mud %</u> |
|------------------|-------------|-----------------------------|--------------|--------------|----------------|--------------|
| <u>Foot</u> | <u>BBLs</u> | | | | | |
| 160 | 2.2768 | G | 100 | 0 | 0 | 0 |
| 155 | 0.7912748 | O | 0 | 100 | 0 | 0 |
| 60 | 0.2952 | SLOCM | 0 | 6 | 0 | 94 |

Total Recovered: 375 ft
 Total Barrels Recovered: 3.3632748

Reversed Out
NO

| | | |
|---------------------------------------------|-------------|------------|
| Initial Hydrostatic Pressure | 2182 | PSI |
| Initial Flow | 16 to 52 | PSI |
| Initial Closed in Pressure | 1166 | PSI |
| Final Flow Pressure | 63 to 94 | PSI |
| Final Closed in Pressure | 1096 | PSI |
| Final Hydrostatic Pressure | 2171 | PSI |
| Temperature | 120 | °F |
| Pressure Change Initial Close / Final Close | 6.0 | % |

Recovery at a glance



GIP cubic foot volume: 12.78309



Company: Ritchie Exploration, Inc.

Lease: Frusher 9D #2

SEC: 9 TWN: 21S RNG: 23W
County: HODGEMAN
State: Kansas
Drilling Contractor: WW Drilling, LLC - Rig 102
Elevation: 2312 EGL
Field Name: Sandpit North
Pool: Infield
Job Number: 402
API #: 15-083-21975-00-00

Operation:
Uploading recovery & pressures

DATE
January
13
2020

DST #2 **Formation: Mississippian** **Test Interval: 4454 - 4489'** **Total Depth: 4489'**
Time On: 21:37 01/13 Time Off: 05:33 01/14
Time On Bottom: 00:01 01/14 Time Off Bottom: 03:01 01/14

BUCKET MEASUREMENT:

1st Open: 1/4" blow building to 8 1/4"
1st Close: No BB
2nd Open: Surface blow building to 8 3/4"
2nd Close: No BB

REMARKS:

Tool Sample: 0% Gas 8% Oil 0% Water 92% Mud
Gravity: 35.6 @ 60 °F



Company: Ritchie Exploration, Inc.

SEC: 9 TWN: 21S RNG: 23W
County: HODGEMAN
State: Kansas
Drilling Contractor: WW Drilling, LLC - Rig 102
Elevation: 2312 EGL

Operation:Uploading recovery &
pressures**Lease: Frusher 9D #2**Field Name: Sandpit North
Pool: Infield
Job Number: 402
API #: 15-083-21975-00-00**DATE**January
13
2020**DST #2****Formation:**
Mississippian**Test Interval: 4454 -**
4489'**Total Depth: 4489'**

Time On: 21:37 01/13

Time Off: 05:33 01/14

Time On Bottom: 00:01 01/14

Time Off Bottom: 03:01 01/14

Down Hole Makeup**Heads Up:** 29.48 FT**Packer 1:** 4449 FT**Drill Pipe:** 4238.99 FT**Packer 2:** 4454 FT

ID-3 1/2

Top Recorder: 4438.42 FT**Weight Pipe:** 0 FT**Bottom Recorder:** 4456 FT

ID-2 7/8

Collars: 211.92 FT**Well Bore Size:** 7 7/8

ID-2 1/4

Surface Choke: 1"**Test Tool:** 33.57 FT**Bottom Choke:** 5/8"

ID-3 1/2-FH

Jars

Safety Joint

Total Anchor: 35**Anchor Makeup****Packer Sub:** 1 FT**Perforations: (top):** 0 FT

4 1/2-FH

Change Over: 0 FT**Drill Pipe: (in anchor):** 0 FT

ID-3 1/2

Change Over: 0 FT**Perforations: (below):** 34 FT

4 1/2-FH

**Operation:****Company: Ritchie Exploration,**
Inc.**Lease: Frusher 9D #2**SEC: 9 TWN: 21S RNG: 23W
County: HODGEMAN
State: Kansas
Drilling Contractor: WW Drilling, LLC -
Rig 102
Elevation: 2312 EGL
Field Name: Sandpit North
Pool: Infield



Company: Ritchie Exploration, Inc.

Lease: Frusher 9D #2

SEC: 9 TWN: 21S RNG: 23W
County: HODGEMAN
State: Kansas
Drilling Contractor: WW Drilling, LLC - Rig 102
Elevation: 2312 EGL
Field Name: Sandpit North
Pool: Infield
Job Number: 402
API #: 15-083-21975-00-00

Operation:
Uploading recovery & pressures

DATE
January
14
2020

DST #3 **Formation: Mississippian #2** **Test Interval: 4484 - 4495'** **Total Depth: 4495'**
Time On: 12:26 01/14 Time Off: 19:36 01/14
Time On Bottom: 14:09 01/14 Time Off Bottom: 17:09 01/14

Electronic Volume Estimate:
336'

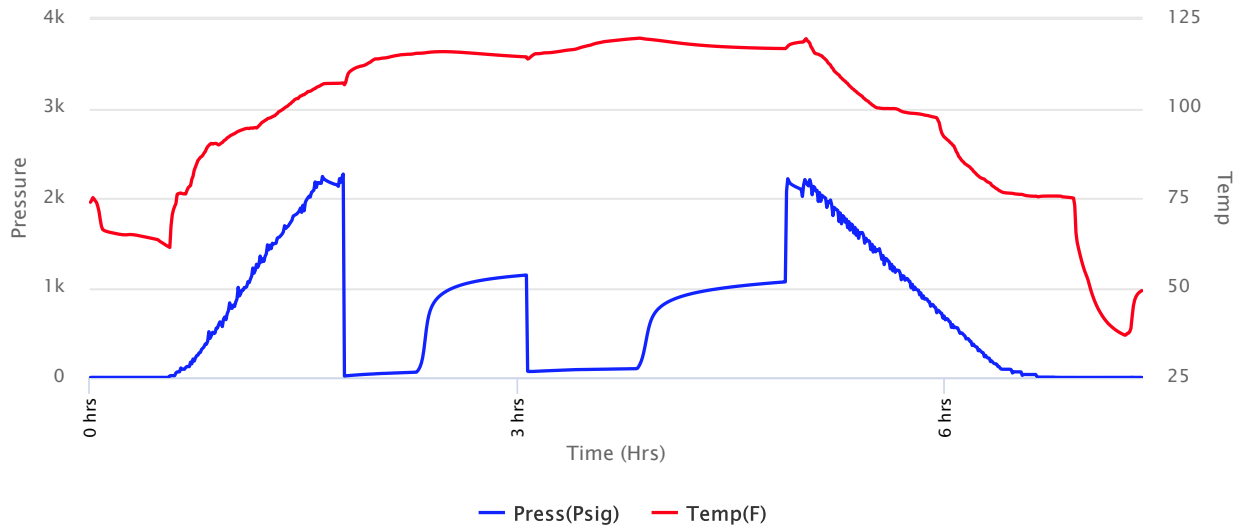
1st Open
Minutes: 30
Current Reading: 7.3" at 30 min
Max Reading: 7.3"

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

2nd Open
Minutes: 45
Current Reading: 9.9" at 45 min
Max Reading: 9.9"

2nd Close
Minutes: 60
Current Reading: 0" at 60 min
Max Reading: 0"

Inside Recorder





Company: Ritchie Exploration, Inc.

Lease: Frusher 9D #2

SEC: 9 TWN: 21S RNG: 23W
 County: HODGEMAN
 State: Kansas
 Drilling Contractor: WW Drilling, LLC - Rig 102
 Elevation: 2312 EGL
 Field Name: Sandpit North
 Pool: Infield
 Job Number: 402
 API #: 15-083-21975-00-00

Operation:
 Uploading recovery & pressures

DATE
 January
14
 2020

DST #3 **Formation: Mississippian #2** **Test Interval: 4484 - 4495'** **Total Depth: 4495'**
 Time On: 12:26 01/14 Time Off: 19:36 01/14
 Time On Bottom: 14:09 01/14 Time Off Bottom: 17:09 01/14

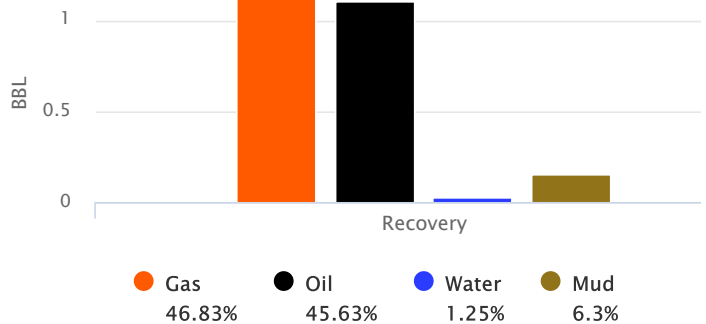
| <u>Recovered</u> | | <u>Description of Fluid</u> | <u>Gas %</u> | <u>Oil %</u> | <u>Water %</u> | <u>Mud %</u> |
|------------------|-------------|-----------------------------|--------------|--------------|----------------|--------------|
| <u>Foot</u> | <u>BBLs</u> | | | | | |
| 75 | 1.06725 | G | 100 | 0 | 0 | 0 |
| 155 | 0.9774748 | SLGCO | 4 | 96 | 0 | 0 |
| 20 | 0.0984 | SLGCSLWCSLMCO | 6 | 72 | 10 | 12 |
| 60 | 0.2952 | SLWCSLGCHOCM | 10 | 35 | 7 | 48 |

Total Recovered: 310 ft
 Total Barrels Recovered: 2.4383248

**Reversed Out
 NO**

| | | |
|---------------------------------------------|-------------|------------|
| Initial Hydrostatic Pressure | 2176 | PSI |
| Initial Flow | 16 to 59 | PSI |
| Initial Closed in Pressure | 1141 | PSI |
| Final Flow Pressure | 67 to 98 | PSI |
| Final Closed in Pressure | 1065 | PSI |
| Final Hydrostatic Pressure | 2162 | PSI |
| Temperature | 120 | °F |
| Pressure Change Initial Close / Final Close | 6.7 | % |

Recovery at a glance



GIP cubic foot volume: 6.41048



Company: Ritchie Exploration, Inc.

Lease: Frusher 9D #2

SEC: 9 TWN: 21S RNG: 23W
County: HODGEMAN
State: Kansas
Drilling Contractor: WW Drilling, LLC - Rig 102
Elevation: 2312 EGL
Field Name: Sandpit North
Pool: Infield
Job Number: 402
API #: 15-083-21975-00-00

Operation:
Uploading recovery & pressures

DATE
January
14
2020

DST #3 **Formation: Mississippian #2** **Test Interval: 4484 - 4495'** **Total Depth: 4495'**
Time On: 12:26 01/14 Time Off: 19:36 01/14
Time On Bottom: 14:09 01/14 Time Off Bottom: 17:09 01/14

BUCKET MEASUREMENT:

1st Open: 1/4" blow building to 7"
1st Close: Surface BB
2nd Open: 1/4" blow building to 9 1/2"
2nd Close: No BB

REMARKS:

Tool Sample: 5% Gas 47% Oil 11% Water 37% Mud
Gravity: 34.4 @ 60 °F
Ph: 7.0
Measured RW: 1.0 @ 53 degrees °F
RW at Formation Temp: 0.471 @ 120 °F
Chlorides: 5,000 ppm



Company: Ritchie Exploration, Inc.

SEC: 9 TWN: 21S RNG: 23W
County: HODGEMAN
State: Kansas
Drilling Contractor: WW Drilling, LLC - Rig 102
Elevation: 2312 EGL

Operation:Uploading recovery &
pressures**Lease: Frusher 9D #2**Field Name: Sandpit North
Pool: Infield
Job Number: 402
API #: 15-083-21975-00-00**DATE**January
14
2020**DST #3****Formation:**
Mississippian #2**Test Interval: 4484 -**
4495'**Total Depth: 4495'**

Time On: 12:26 01/14

Time Off: 19:36 01/14

Time On Bottom: 14:09 01/14

Time Off Bottom: 17:09 01/14

Down Hole Makeup**Heads Up:** 31.27 FT**Packer 1:** 4479 FT**Drill Pipe:** 4270.78 FT**Packer 2:** 4484 FT

ID-3 1/2

Top Recorder: 4468.42 FT**Weight Pipe:** 0 FT**Bottom Recorder:** 4486 FT

ID-2 7/8

Collars: 211.92 FT**Well Bore Size:** 7 7/8

ID-2 1/4

Surface Choke: 1"**Test Tool:** 33.57 FT**Bottom Choke:** 5/8"

ID-3 1/2-FH

Jars

Safety Joint

Total Anchor: 11**Anchor Makeup****Packer Sub:** 1 FT**Perforations: (top):** 0 FT

4 1/2-FH

Change Over: 0 FT**Drill Pipe: (in anchor):** 0 FT

ID-3 1/2

Change Over: 0 FT**Perforations: (below):** 10 FT

4 1/2-FH

**Operation:****Company: Ritchie Exploration,**
Inc.**Lease: Frusher 9D #2**SEC: 9 TWN: 21S RNG: 23W
County: HODGEMAN
State: Kansas
Drilling Contractor: WW Drilling, LLC -
Rig 102
Elevation: 2312 EGL
Field Name: Sandpit North
Pool: Infield

Uploading recovery &
pressures

Job Number: 402
API #: 15-083-21975-00-00

DATE

January

14

2020

DST #3

**Formation:
Mississippian #2**

**Test Interval: 4484 -
4495'**

Total Depth: 4495'

Time On: 12:26 01/14

Time Off: 19:36 01/14

Time On Bottom: 14:09 01/14

Time Off Bottom: 17:09 01/14

Mud Properties

Mud Type: Chemical

Weight: 9.0

Viscosity: 58

Filtrate: 8.8

Chlorides: 6,300 ppm



Operation:

Uploading recovery &
pressures

**Company: Ritchie Exploration,
Inc.**

Lease: Frusher 9D #2

SEC: 9 TWN: 21S RNG: 23W
County: HODGEMAN
State: Kansas
Drilling Contractor: WW Drilling, LLC -
Rig 102
Elevation: 2312 EGL
Field Name: Sandpit North
Pool: Infield
Job Number: 402
API #: 15-083-21975-00-00

| |
|---------------------------------------------|
| DATE January 14 2020 |
|---------------------------------------------|

DST #3 **Formation:** **Test Interval: 4484 -** **Total Depth: 4495'**
Mississippian #2 **4495'**
Time On: 12:26 01/14 Time Off: 19:36 01/14
Time On Bottom: 14:09 01/14 Time Off Bottom: 17:09 01/14

Gas Volume Report

| 1st Open | | | |
|----------|---------|-----|-------|
| Time | Orifice | PSI | MCF/D |

| 2nd Open | | | |
|----------|---------|-----|-------|
| Time | Orifice | PSI | MCF/D |



Company: Ritchie Exploration, Inc.

Lease: Frusher 9D #2

SEC: 9 TWN: 21S RNG: 23W
County: HODGEMAN
State: Kansas
Drilling Contractor: WW Drilling, LLC - Rig 102
Elevation: 2312 EGL
Field Name: Sandpit North
Pool: Infield
Job Number: 402
API #: 15-083-21975-00-00

Operation:
Uploading recovery & pressures

DATE
January
15
2020

DST #4 **Formation: Mississippian #3** **Test Interval: 4496 - 4510'** **Total Depth: 4510'**
Time On: 05:40 01/15 Time Off: 13:15 01/15
Time On Bottom: 07:56 01/15 Time Off Bottom: 10:56 01/15

Electronic Volume Estimate:
236'

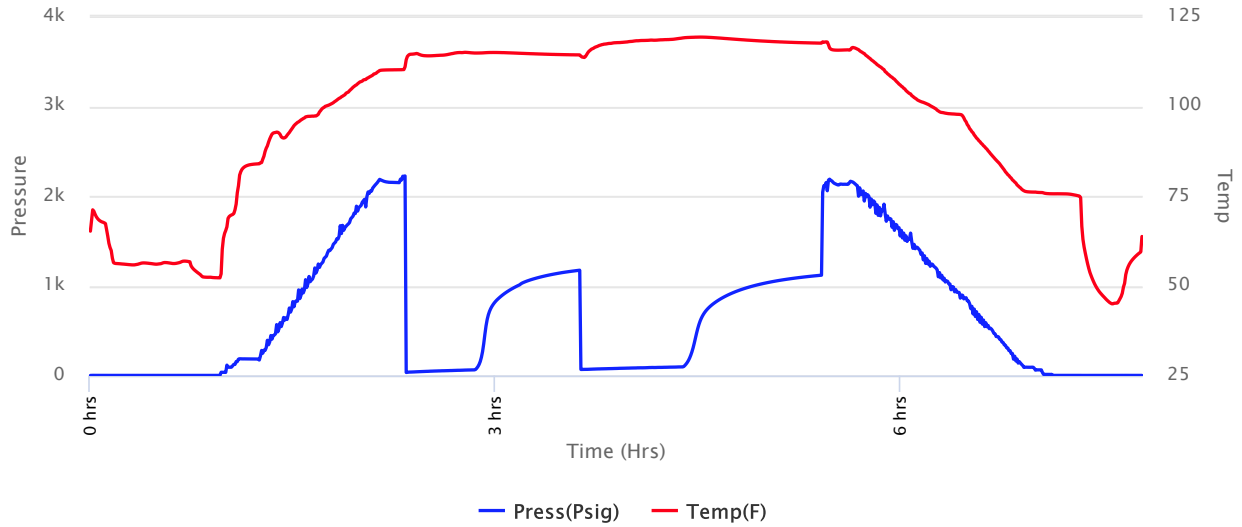
1st Open
Minutes: 30
Current Reading: 4.4" at 30 min
Max Reading: 4.4"

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

2nd Open
Minutes: 45
Current Reading: 4.0" at 45 min
Max Reading: 4.0"

2nd Close
Minutes: 60
Current Reading: 0" at 60 min
Max Reading: 0"

Inside Recorder





Company: Ritchie Exploration, Inc.

Lease: Frusher 9D #2

SEC: 9 TWN: 21S RNG: 23W
 County: HODGEMAN
 State: Kansas
 Drilling Contractor: WW Drilling, LLC - Rig 102
 Elevation: 2312 EGL
 Field Name: Sandpit North
 Pool: Infield
 Job Number: 402
 API #: 15-083-21975-00-00

Operation:
 Uploading recovery & pressures

DATE
 January
15
 2020

DST #4 **Formation: Mississippian #3** **Test Interval: 4496 - 4510'** **Total Depth: 4510'**
 Time On: 05:40 01/15 Time Off: 13:15 01/15
 Time On Bottom: 07:56 01/15 Time Off Bottom: 10:56 01/15

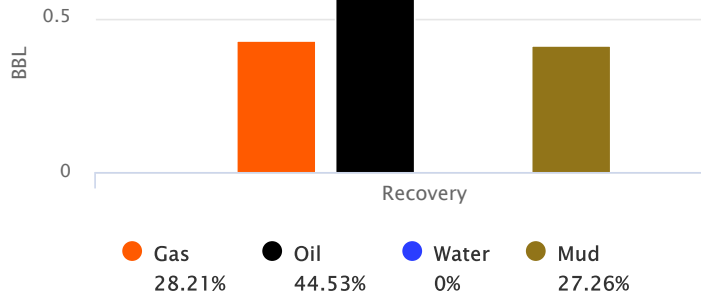
| Recovered | | Description of Fluid | Gas % | Oil % | Water % | Mud % |
|-----------|-----------|----------------------|-------|-------|---------|-------|
| Foot | BBLs | | | | | |
| 30 | 0.4269 | G | 100 | 0 | 0 | 0 |
| 90 | 0.4714748 | O | 0 | 100 | 0 | 0 |
| 5 | 0.0246 | MCO | 0 | 79 | 0 | 21 |
| 120 | 0.5904 | HOCM | 0 | 31 | 0 | 69 |

Total Recovered: 245 ft
 Total Barrels Recovered: 1.5133748

Reversed Out
 NO

| | | |
|---------------------------------------------|-------------|------------|
| Initial Hydrostatic Pressure | 2178 | PSI |
| Initial Flow | 34 to 63 | PSI |
| Initial Closed in Pressure | 1173 | PSI |
| Final Flow Pressure | 67 to 96 | PSI |
| Final Closed in Pressure | 1117 | PSI |
| Final Hydrostatic Pressure | 2174 | PSI |
| Temperature | 120 | °F |
| Pressure Change Initial Close / Final Close | 4.7 | % |

Recovery at a glance



GIP cubic foot volume: 2.39683



Company: Ritchie Exploration, Inc.

Lease: Frusher 9D #2

SEC: 9 TWN: 21S RNG: 23W
County: HODGEMAN
State: Kansas
Drilling Contractor: WW Drilling, LLC - Rig 102
Elevation: 2312 EGL
Field Name: Sandpit North
Pool: Infield
Job Number: 402
API #: 15-083-21975-00-00

Operation:
Uploading recovery & pressures

DATE
January
15
2020

DST #4 **Formation: Mississippian #3** **Test Interval: 4496 - 4510'** **Total Depth: 4510'**
Time On: 05:40 01/15 Time Off: 13:15 01/15
Time On Bottom: 07:56 01/15 Time Off Bottom: 10:56 01/15

BUCKET MEASUREMENT:

1st Open: 1 1/4" blow building to 4 1/4"
1st Close: No BB
2nd Open: Surface blow building g to 3 3/4"
2nd Close: No BB

REMARKS:

We slid about 5' when setting tool.
Tool Sample: 0% Gas 51% Oil 0% Water 49% Mud
Gravity: 35.8 @ 60 °F



Company: Ritchie Exploration, Inc.

SEC: 9 TWN: 21S RNG: 23W
County: HODGEMAN
State: Kansas
Drilling Contractor: WW Drilling, LLC - Rig 102
Elevation: 2312 EGL

Operation:Uploading recovery &
pressures**Lease: Frusher 9D #2**Field Name: Sandpit North
Pool: Infield
Job Number: 402
API #: 15-083-21975-00-00**DATE**January
15
2020**DST #4****Formation:**
Mississippian #3**Test Interval: 4496 -**
4510'**Total Depth: 4510'**

Time On: 05:40 01/15

Time Off: 13:15 01/15

Time On Bottom: 07:56 01/15

Time Off Bottom: 10:56 01/15

Down Hole Makeup**Heads Up:** 29.27 FT**Packer 1:** 4491 FT**Drill Pipe:** 4280.78 FT**Packer 2:** 4496 FT

ID-3 1/2

Top Recorder: 4480.42 FT**Weight Pipe:** 0 FT**Bottom Recorder:** 4498 FT

ID-2 7/8

Collars: 211.92 FT**Well Bore Size:** 7 7/8

ID-2 1/4

Surface Choke: 1"**Test Tool:** 33.57 FT**Bottom Choke:** 5/8"

ID-3 1/2-FH

Jars

Safety Joint

Total Anchor: 14**Anchor Makeup****Packer Sub:** 1 FT**Perforations: (top):** 0 FT

4 1/2-FH

Change Over: 0 FT**Drill Pipe: (in anchor):** 0 FT

ID-3 1/2

Change Over: 0 FT**Perforations: (below):** 13 FT

4 1/2-FH

**Operation:****Company: Ritchie Exploration,**
Inc.**Lease: Frusher 9D #2**SEC: 9 TWN: 21S RNG: 23W
County: HODGEMAN
State: Kansas
Drilling Contractor: WW Drilling, LLC -
Rig 102
Elevation: 2312 EGL
Field Name: Sandpit North
Pool: Infield

Uploading recovery &
pressures

Job Number: 402
API #: 15-083-21975-00-00

DATE

January
15
2020

DST #4 **Formation: Mississippi #3** **Test Interval: 4496 - 4510'** **Total Depth: 4510'**
Time On: 05:40 01/15 Time Off: 13:15 01/15
Time On Bottom: 07:56 01/15 Time Off Bottom: 10:56 01/15

Mud Properties

Mud Type: Chemical **Weight:** 9.0 **Viscosity:** 58 **Filtrate:** 8.8 **Chlorides:** 6,300 ppm



Operation:

Uploading recovery &
pressures

Company: Ritchie Exploration, Inc.

Lease: Frusher 9D #2

SEC: 9 TWN: 21S RNG: 23W
County: HODGEMAN
State: Kansas
Drilling Contractor: WW Drilling, LLC -
Rig 102
Elevation: 2312 EGL
Field Name: Sandpit North
Pool: Infield
Job Number: 402
API #: 15-083-21975-00-00

| |
|---------------------------------------------|
| DATE January 15 2020 |
|---------------------------------------------|

DST #4 **Formation:** **Test Interval: 4496 -** **Total Depth: 4510'**
Mississippian #3 **4510'**

Time On: 05:40 01/15 Time Off: 13:15 01/15
Time On Bottom: 07:56 01/15 Time Off Bottom: 10:56 01/15

Gas Volume Report

| 1st Open | | | |
|----------|---------|-----|-------|
| Time | Orifice | PSI | MCF/D |

| 2nd Open | | | |
|----------|---------|-----|-------|
| Time | Orifice | PSI | MCF/D |



Company: Ritchie Exploration, Inc.

Lease: Frusher 9D #2

SEC: 9 TWN: 21S RNG: 23W
County: HODGEMAN
State: Kansas
Drilling Contractor: WW Drilling, LLC - Rig 102
Elevation: 2312 EGL
Field Name: Sandpit North
Pool: Infield
Job Number: 402
API #: 15-083-21975-00-00

Operation:
Uploading recovery & pressures

DATE
January
15
2020

DST #5 **Formation: Lower Mississippian** **Test Interval: 4506 - 4521'** **Total Depth: 4521'**
Time On: 20:39 01/15 Time Off: 04:08 01/16
Time On Bottom: 22:52 01/15 Time Off Bottom: 01:52 01/16

Electronic Volume Estimate:
61'

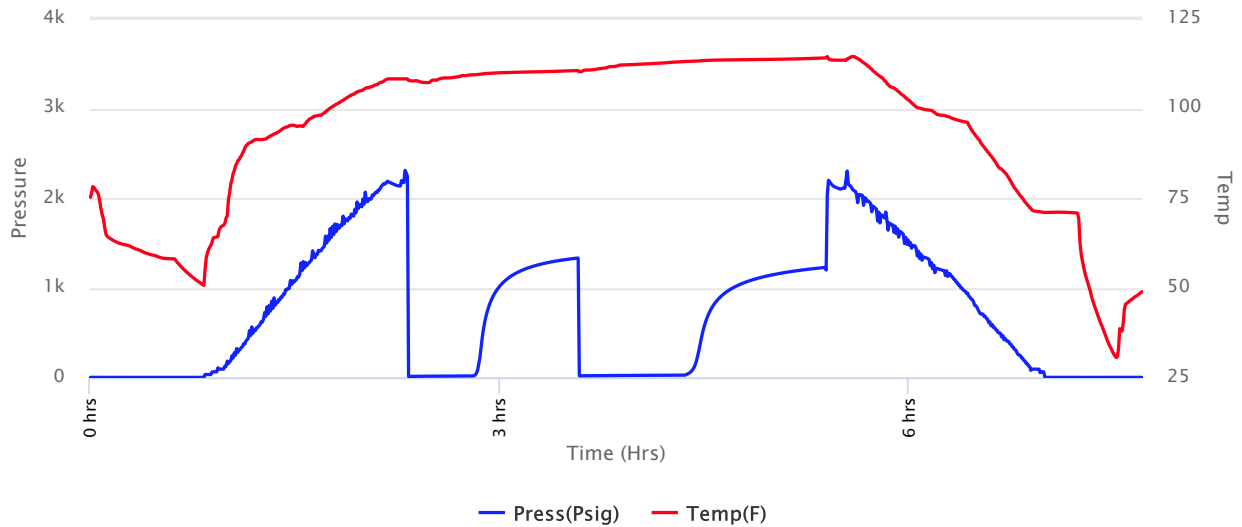
1st Open
Minutes: 30
Current Reading: 1.8" at 30 min
Max Reading: 1.8"

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

2nd Open
Minutes: 45
Current Reading: 0" at 45 min
Max Reading: 0"

2nd Close
Minutes: 60
Current Reading: 0" at 60 min
Max Reading: 0"

Inside Recorder





Company: Ritchie Exploration, Inc.

Lease: Frusher 9D #2

SEC: 9 TWN: 21S RNG: 23W
 County: HODGEMAN
 State: Kansas
 Drilling Contractor: WW Drilling, LLC - Rig 102
 Elevation: 2312 EGL
 Field Name: Sandpit North
 Pool: Infield
 Job Number: 402
 API #: 15-083-21975-00-00

Operation:
 Uploading recovery & pressures

DATE
 January
15
 2020

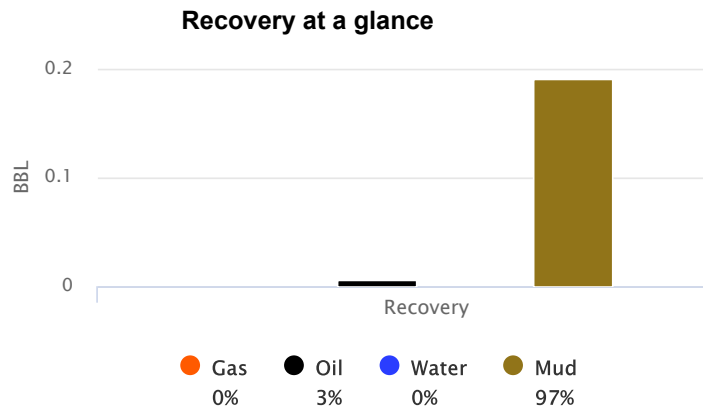
DST #5 **Formation: Lower Mississippian** **Test Interval: 4506 - 4521'** **Total Depth: 4521'**
 Time On: 20:39 01/15 Time Off: 04:08 01/16
 Time On Bottom: 22:52 01/15 Time Off Bottom: 01:52 01/16

| Recovered | | Description of Fluid | Gas % | Oil % | Water % | Mud % |
|-----------|--------|----------------------|-------|-------|---------|-------|
| Foot | BBLs | | | | | |
| 40 | 0.1968 | SLOCM | 0 | 3 | 0 | 97 |

Total Recovered: 40 ft
 Total Barrels Recovered: 0.1968

**Reversed Out
 NO**

| | | |
|---------------------------------------------|-------------|------------|
| Initial Hydrostatic Pressure | 2172 | PSI |
| Initial Flow | 11 to 18 | PSI |
| Initial Closed in Pressure | 1331 | PSI |
| Final Flow Pressure | 19 to 27 | PSI |
| Final Closed in Pressure | 1226 | PSI |
| Final Hydrostatic Pressure | 2161 | PSI |
| Temperature | 115 | °F |
| Pressure Change Initial Close / Final Close | 7.9 | % |



GIP cubic foot volume: 0



Company: Ritchie Exploration, Inc.

Lease: Frusher 9D #2

SEC: 9 TWN: 21S RNG: 23W
County: HODGEMAN
State: Kansas
Drilling Contractor: WW Drilling, LLC - Rig 102
Elevation: 2312 EGL
Field Name: Sandpit North
Pool: Infield
Job Number: 402
API #: 15-083-21975-00-00

Operation:
Uploading recovery & pressures

DATE
January
15
2020

DST #5 **Formation: Lower Mississippian** **Test Interval: 4506 - 4521'** **Total Depth: 4521'**
Time On: 20:39 01/15 Time Off: 04:08 01/16
Time On Bottom: 22:52 01/15 Time Off Bottom: 01:52 01/16

BUCKET MEASUREMENT:

1st Open: Surface blow building to 1 1/2"
1st Close: No BB
2nd Open: Surface blow
2nd Close: No BB

REMARKS:

Tool Sample: 0% Gas 14% Oil 0% Water 86% Mud



Company: Ritchie Exploration, Inc.

SEC: 9 TWN: 21S RNG: 23W
County: HODGEMAN
State: Kansas
Drilling Contractor: WW Drilling, LLC - Rig 102
Elevation: 2312 EGL

Operation:Uploading recovery &
pressures**Lease: Frusher 9D #2**Field Name: Sandpit North
Pool: Infield
Job Number: 402
API #: 15-083-21975-00-00**DATE**January
15
2020

| | | | |
|---------------|-------------------------------------------|----------------------------------------|---------------------------|
| DST #5 | Formation: Lower Mississippian | Test Interval: 4506 - 4521' | Total Depth: 4521' |
| | Time On: 20:39 01/15 | Time Off: 04:08 01/16 | |
| | Time On Bottom: 22:52 01/15 | Time Off Bottom: 01:52 01/16 | |

Down Hole Makeup

| | |
|----------------------------------------------------------------------------|---------------------------------|
| Heads Up: 19.27 FT | Packer 1: 4501 FT |
| Drill Pipe: 4280.78 FT <i>ID-3 1/2</i> | Packer 2: 4506 FT |
| Weight Pipe: 0 FT <i>ID-2 7/8</i> | Top Recorder: 4490.42 FT |
| Collars: 211.92 FT <i>ID-2 1/4</i> | Bottom Recorder: 4508 FT |
| Test Tool: 33.57 FT <i>ID-3 1/2-FH Jars Safety Joint</i> | Well Bore Size: 7 7/8 |
| Total Anchor: 15 | Surface Choke: 1" |
| Anchor Makeup | Bottom Choke: 5/8" |
| Packer Sub: 1 FT | |
| Perforations: (top): 0 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): 14 FT <i>4 1/2-FH</i> | |



Operation:

**Company: Ritchie Exploration,
Inc.****Lease: Frusher 9D #2**SEC: 9 TWN: 21S RNG: 23W
County: HODGEMAN
State: Kansas
Drilling Contractor: WW Drilling, LLC -
Rig 102
Elevation: 2312 EGL
Field Name: Sandpit North
Pool: Infield

Uploading recovery &
pressures

Job Number: 402
API #: 15-083-21975-00-00

DATE

January
15
2020

DST #5 **Formation: Lower** **Test Interval: 4506 -** **Total Depth: 4521'**
 Mississippian **4521'**
Time On: 20:39 01/15 Time Off: 04:08 01/16
Time On Bottom: 22:52 01/15 Time Off Bottom: 01:52 01/16

Mud Properties

Mud Type: Chemical **Weight:** 9.3 **Viscosity:** 55 **Filtrate:** 7.2 **Chlorides:** 7,300 ppm



Operation:

Uploading recovery &
pressures

**Company: Ritchie Exploration,
Inc.**

Lease: Frusher 9D #2

SEC: 9 TWN: 21S RNG: 23W
County: HODGEMAN
State: Kansas
Drilling Contractor: WW Drilling, LLC -
Rig 102
Elevation: 2312 EGL
Field Name: Sandpit North
Pool: Infield
Job Number: 402
API #: 15-083-21975-00-00

| |
|---------------------------------------------|
| DATE January 15 2020 |
|---------------------------------------------|

DST #5 **Formation: Lower Mississippian** **Test Interval: 4506 - 4521'** **Total Depth: 4521'**
Time On: 20:39 01/15 Time Off: 04:08 01/16
Time On Bottom: 22:52 01/15 Time Off Bottom: 01:52 01/16

Gas Volume Report

| 1st Open | | | |
|----------|---------|-----|-------|
| Time | Orifice | PSI | MCF/D |

| 2nd Open | | | |
|----------|---------|-----|-------|
| Time | Orifice | PSI | MCF/D |



Company: Ritchie Exploration, Inc.

Lease: Frusher 9D #2

SEC: 9 TWN: 21S RNG: 23W
County: HODGEMAN
State: Kansas
Drilling Contractor: WW Drilling, LLC - Rig 102
Elevation: 2312 EGL
Field Name: Sandpit North
Pool: Infield
Job Number: 402
API #: 15-083-21975-00-00

Operation:
Uploading recovery & pressures

DATE
January
16
2020

DST #6 **Formation: Osage** **Test Interval: 4532 - 4547'** **Total Depth: 4547'**
Time On: 12:16 01/16 Time Off: 18:58 01/16
Time On Bottom: 14:05 01/16 Time Off Bottom: 16:05 01/16

Electronic Volume Estimate:
2672'

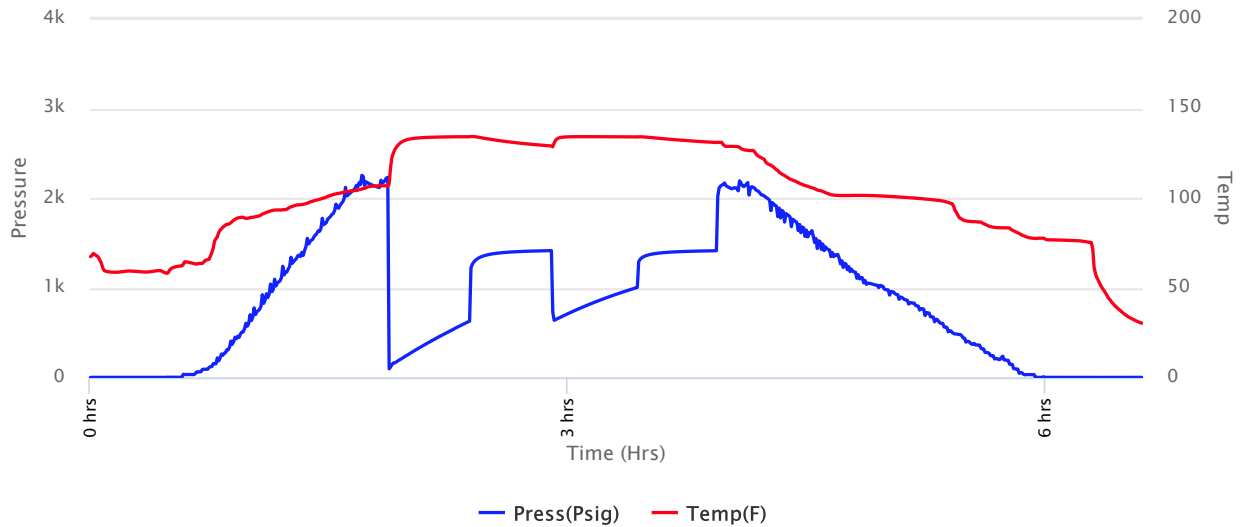
1st Open
Minutes: 30
Current Reading:
136.2" at 30 min
Max Reading: 136.2"

1st Close
Minutes: 30
Current Reading:
0" at 30 min
Max Reading: 0"

2nd Open
Minutes: 30
Current Reading:
126.2" at 30 min
Max Reading: 126.2"

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

Inside Recorder





Company: Ritchie Exploration, Inc.

Lease: Frusher 9D #2

SEC: 9 TWN: 21S RNG: 23W
 County: HODGEMAN
 State: Kansas
 Drilling Contractor: WW Drilling, LLC - Rig 102
 Elevation: 2312 EGL
 Field Name: Sandpit North
 Pool: Infield
 Job Number: 402
 API #: 15-083-21975-00-00

Operation:
 Uploading recovery & pressures

DATE
 January
16
 2020

DST #6 Formation: Osage Test Interval: 4532 - 4547' Total Depth: 4547'
 Time On: 12:16 01/16 Time Off: 18:58 01/16
 Time On Bottom: 14:05 01/16 Time Off Bottom: 16:05 01/16

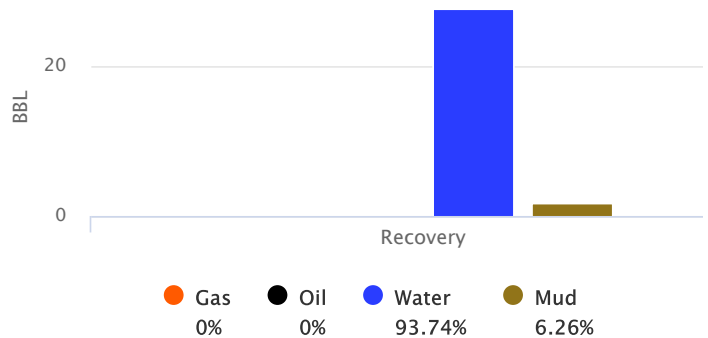
| Recovered | | Description of Fluid | Gas % | Oil % | Water % | Mud % |
|-----------|-----------|----------------------|-------|-------|---------|-------|
| Foot | BBLs | | | | | |
| 245 | 3.48635 | HMCW | 0 | 0 | 63 | 37 |
| 635 | 9.03605 | SLMCW | 0 | 0 | 96 | 4 |
| 1280 | 16.800248 | W | 0 | 0 | 100 | 0 |
| 60 | 0.2952 | HWCM | 0 | 0 | 31 | 69 |

Total Recovered: 2220 ft
 Total Barrels Recovered: 29.6176248

Reversed Out
 NO

| | | |
|---------------------------------------------|-------------|------------|
| Initial Hydrostatic Pressure | 2173 | PSI |
| Initial Flow | 97 to 628 | PSI |
| Initial Closed in Pressure | 1413 | PSI |
| Final Flow Pressure | 637 to 998 | PSI |
| Final Closed in Pressure | 1412 | PSI |
| Final Hydrostatic Pressure | 2167 | PSI |
| Temperature | 135 | °F |
| Pressure Change Initial Close / Final Close | 0.1 | % |

Recovery at a glance



GIP cubic foot volume: 0



Company: Ritchie Exploration, Inc.

Lease: Frusher 9D #2

SEC: 9 TWN: 21S RNG: 23W
County: HODGEMAN
State: Kansas
Drilling Contractor: WW Drilling, LLC - Rig 102
Elevation: 2312 EGL
Field Name: Sandpit North
Pool: Infield
Job Number: 402
API #: 15-083-21975-00-00

Operation:
Uploading recovery & pressures

DATE
January
16
2020

DST #6 Formation: Osage Test Interval: 4532 - 4547' Total Depth: 4547'
Time On: 12:16 01/16 Time Off: 18:58 01/16
Time On Bottom: 14:05 01/16 Time Off Bottom: 16:05 01/16

BUCKET MEASUREMENT:

1st Open: 2" blow building to BOB 2 1/2 min.
1st Close: No BB
2nd Open: 2 1/2" blow building to BOB 3 min.
2nd Close: No BB

REMARKS:

Tool Sample: 0% Gas 5% Oil 82% Water 13% Mud
Ph: 6.0
Measured RW: .56 @ 46 degrees °F
RW at Formation Temp: 0.208 @ 135 °F
Chlorides: 22,000 ppm



Company: Ritchie Exploration, Inc.

SEC: 9 TWN: 21S RNG: 23W
County: HODGEMAN
State: Kansas
Drilling Contractor: WW Drilling, LLC - Rig 102
Elevation: 2312 EGL

Operation:Uploading recovery &
pressures**Lease: Frusher 9D #2**Field Name: Sandpit North
Pool: Infield
Job Number: 402
API #: 15-083-21975-00-00**DATE**January
16
2020

| | | | |
|---------------|-----------------------------|------------------------------------|---------------------------|
| DST #6 | Formation: Osage | Test Interval: 4532 - 4547' | Total Depth: 4547' |
| | Time On: 12:16 01/16 | Time Off: 18:58 01/16 | |
| | Time On Bottom: 14:05 01/16 | Time Off Bottom: 16:05 01/16 | |

Down Hole Makeup

| | |
|----------------------------------------------------------------------------------------|---------------------------------|
| Heads Up: 15.12 FT | Packer 1: 4527 FT |
| Drill Pipe: 4302.63 FT <i>ID-3 1/2</i> | Packer 2: 4532 FT |
| Weight Pipe: 0 FT <i>ID-2 7/8</i> | Top Recorder: 4516.42 FT |
| Collars: 211.92 FT <i>ID-2 1/4</i> | Bottom Recorder: 4534 FT |
| Test Tool: 33.57 FT <i>ID-3 1/2-FH</i> <i>Jars</i> <i>Safety Joint</i> | Well Bore Size: 7 7/8 |
| Total Anchor: 15 | Surface Choke: 1" |
| Anchor Makeup | Bottom Choke: 5/8" |
| Packer Sub: 1 FT | |
| Perforations: (top): 0 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): 14 FT <i>4 1/2-FH</i> | |



Operation:

Company: Ritchie Exploration, Inc.**Lease: Frusher 9D #2**SEC: 9 TWN: 21S RNG: 23W
County: HODGEMAN
State: Kansas
Drilling Contractor: WW Drilling, LLC -
Rig 102
Elevation: 2312 EGL
Field Name: Sandpit North
Pool: Infield

Uploading recovery &
pressures

Job Number: 402
API #: 15-083-21975-00-00

DATE

January
16
2020

DST #6 **Formation: Osage** **Test Interval: 4532 - 4547'** **Total Depth: 4547'**

Time On: 12:16 01/16

Time Off: 18:58 01/16

Time On Bottom: 14:05 01/16

Time Off Bottom: 16:05 01/16

Mud Properties

Mud Type: Chemical

Weight: 9.1

Viscosity: 63

Filtrate: 8.4

Chlorides: 7,400 ppm



Operation:

Uploading recovery &
pressures

**Company: Ritchie Exploration,
Inc.**

Lease: Frusher 9D #2

SEC: 9 TWN: 21S RNG: 23W
County: HODGEMAN
State: Kansas
Drilling Contractor: WW Drilling, LLC -
Rig 102
Elevation: 2312 EGL
Field Name: Sandpit North
Pool: Infield
Job Number: 402
API #: 15-083-21975-00-00

DATE

January

16

2020

DST #6 Formation: Osage Test Interval: 4532 - Total Depth: 4547'
4547'

Time On: 12:16 01/16 Time Off: 18:58 01/16

Time On Bottom: 14:05 01/16 Time Off Bottom: 16:05 01/16

Gas Volume Report

| 1st Open | | | |
|----------|---------|-----|-------|
| Time | Orifice | PSI | MCF/D |

| 2nd Open | | | |
|----------|---------|-----|-------|
| Time | Orifice | PSI | MCF/D |

Wellsite Services, LLC

John Goldsmith
(316) 640-0236

427 Roosevelt St.
Cheney, KS 67025

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

Well Name: #2 Frusher 9D
API: 15-083-21975
Location: 2185' FSL & 1633' FEL, NE NW SE, 9-21S-23W
License Number: #4767
Spud Date: 1/6/2020
Surface Coordinates: LAT 38.23893
LONG -99.850314
Bottom Hole Vertical hole
Coordinates: 1/2 Degree Deviation
Ground Elevation (ft): 2309' K.B. Elevation (ft): 2320'
Logged Interval (ft): 3700' To: RTD Total Depth (ft): 4600'
Formation: Mississippian at RTD
Type of Drilling Fluid: Chemical

Region: Hodgeman County

Drilling Completed: 1/17/2020

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

OPERATOR

Company: Ritchie Exploration Inc.
Address: 8100 E. 22nd St. N Bldg #700
Wichita, KS 67226
(316) 691-9500

GEOLOGIST

Name: John Goldsmith
Company: Wellsite Services LLC
Address: 427 Roosevelt St.
Cheney, KS 67025
316-640-0236

RIG RECORDS

Contractor: Sterling Drilling Rig #4
Tool Pusher: Lanny Saloga

Collar Talley: 578.72'
6 1/4" x 2 1/4"

Pump: Ideco MM700F
Liner & Stroke: 7 1/4 x 16

BIT RECORDS

| Size: | Type: | Footage: | Condition: | Hours: | Serial #: |
|---------|---------|------------|------------|--------|-----------|
| 12 1/4" | JZ GTC | 0-228' | RR | 4.25 | #5228112 |
| 7 7/8" | JZ HA20 | 228-2844' | New | 40.25 | #1807033 |
| 7 7/8" | JZ HA20 | 2844-4600' | New | 69.00 | #1818324 |

COMMENTS

Surface Casing: 5 joints of 23#, 8 5/8" set at 224'
Production Casing: 5.5", 15.5# casing was installed.
Mud by: MudCo
DST's by: Diamond Testing
Logs by: Pioneer Wireline Services (DIL, CN-CD, ML, CS)
RTD=4600' LTD=4600'

FORMATION TOPS

| FORMATION | SAMPLE TOPS | | LOG TOPS | |
|--------------------|-------------|-------|----------|-------|
| | Depth | Datum | Depth | Datum |
| B/Anhydrite | 1566' | +754 | 1566' | +754 |
| Heebner Shale | 3817' | -1497 | 3815' | -1495 |
| Toronto | 3828' | -1508 | 3830' | -1510 |
| Lansing | 3867' | -1547 | 3865' | -1545 |
| Muncie Creek Shale | 4033' | -1713 | 4037' | -1717 |
| Stark Shale | 4132' | -1812 | 4130' | -1810 |
| Hushpuckney Shale | 4168' | -1848 | 4166' | -1846 |
| Base of KC | 4202' | -1882 | 4201' | -1881 |
| Marmaton | 4222' | -1902 | 4220' | -1900 |
| Altamont | 4244' | -1924 | 4238' | -1918 |
| Pawnee | 4320' | -2000 | 4322' | -2002 |
| Fort Scott | 4390' | -2070 | 4389' | -2069 |
| Cherokee Shale | 4416' | -2096 | 4414' | -2094 |
| Mississippian | 4481' | -2161 | 4477' | -2157 |
| RTD | 4600' | -2280 | | |
| LTD | | | 4600' | -2280 |

DSTs

DST #1: 4,380' -4,413' (Ft. Scott) Rec 1,195'GIP, 20'SOCM (16% oil, 84% mud), and 185'SGOCM (15% gas, 20% oil, 65% mud).

Total fluid 205' (13.54% gas, 19.61% oil, 66.85% mud).

IFP: 13-64#/30" ISIP: 1225#/45"

FFP: 45-90#/45" FSIP: 1203#/60"

DST #2: 4,454' -4,489' (Miss) Rec 160'GIP, 155'CO, and 60'SOCM (6% oil, 94% mud).

Total fluid 215' (73.77% oil, 26.23% mud).

IFP: 16-52#/30" ISIP: 1166#/45"

FFP: 63-94#/45" FSIP: 1096#/60"

DST #3: 4,484' -4,495' (Miss#2) Rec 75'GIP, 155'SGCO (4% gas, 96% oil), 20'SGWCMCO (6% gas, 10% water, 12% mud, 72% oil), and 60'SWGCOM (7% water, 10% gas, 35% oil, 48% mud).

Total fluid 235' (5.70% gas, 78.38% oil, 2.64% water, 13.28% mud).

IFP: 16-59#/30" ISIP: 1141#/45"

FFP: 67-98#/45" FSIP: 1065#/60"

DST #4: 4,496' -4510' (Miss#3) Rec 30'GIP, 90'O, 5'MCO (21% mud, 79% oil) and 120'HOCM (31% oil, 69% mud).

Total fluid 215' (61% oil, 39% mud).

IFP: 34-63#/30" ISIP: 1173#/45"

FFP: 67-96#/45" FSIP: 1117#/60"

DST #5: 4,506' -4,521' (Lower Miss) Rec 40'SOCM (3% oil, 97% mud).

IFP: 11-18#/30" ISIP: 1331#/45"

FFP: 19-27#/45" FSIP: 1226#/60"

DST #6: 4,532' -4,547' (Osage) Rec 245'MCW (37% mud, 63% water), 635'MCW (4% mud, 96% water), 1280'W, and 60'WCM (31% water, 69% mud).


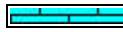
Total fluid 2220' (92.91% water, 7.09% mud).




IFP: 97-628#/30" ISIP: 1413#/30"

FFP: 637-998#/30" FSIP: 1412#/30"

ROCK TYPES

 Anhy
 Cht
 Congl



 Dol
 Lmst
 Shale

 Sltst
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 Gry sh
 Sandylms
 Shaly ls

ACCESSORIES

EVENTS

 Circ
 Conn

FOSSIL

 Brach
 Bryozoa
 Crin





 Foram
 Fossil
 Gastro
 Oolite
 Ostra
 Plant
 Fuss
 Oomold

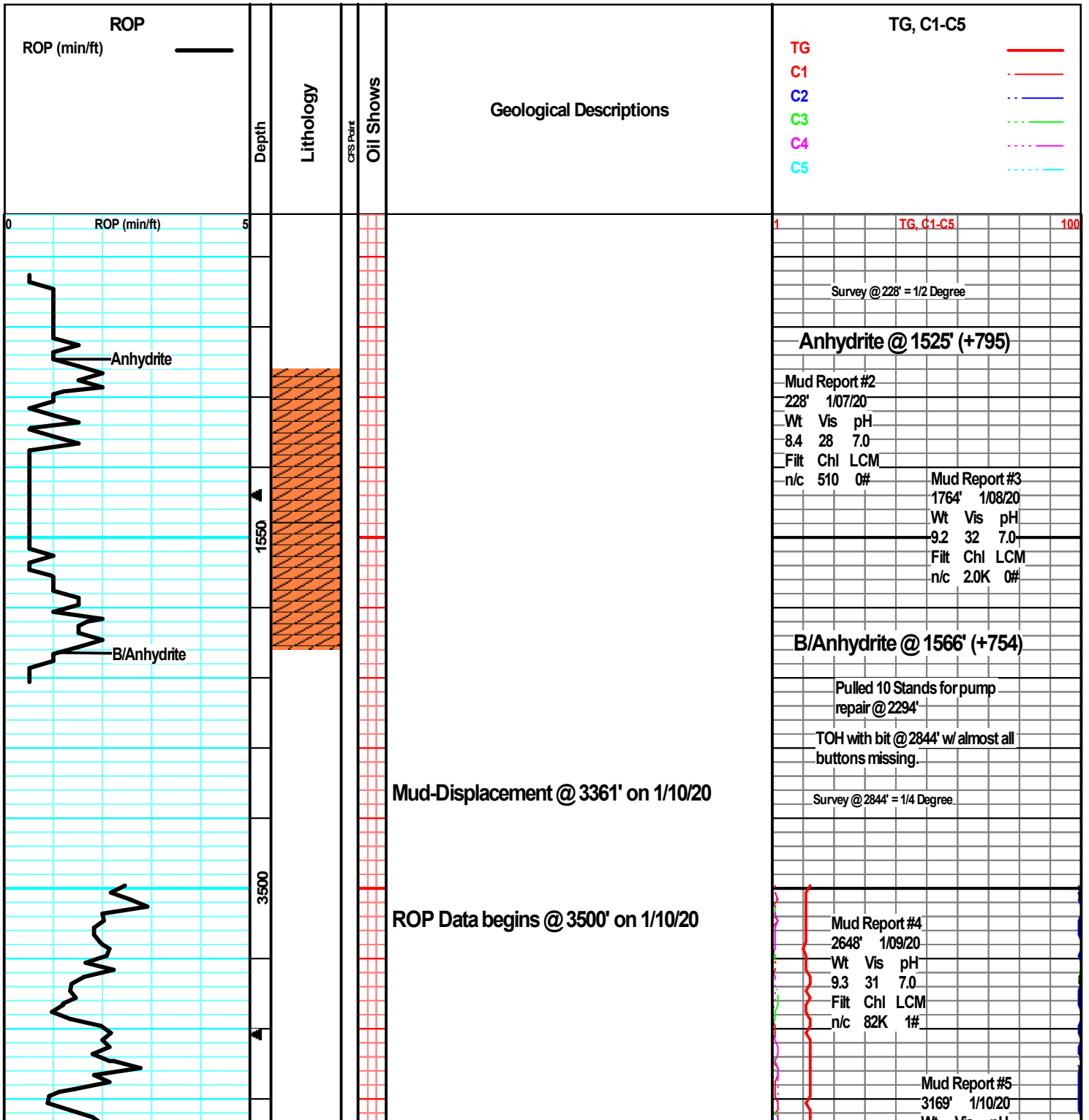
MINERAL

 Calc
 Chtdk
 Chtlt
 Feldspar
 Glau
 Hvymin
 Pyr

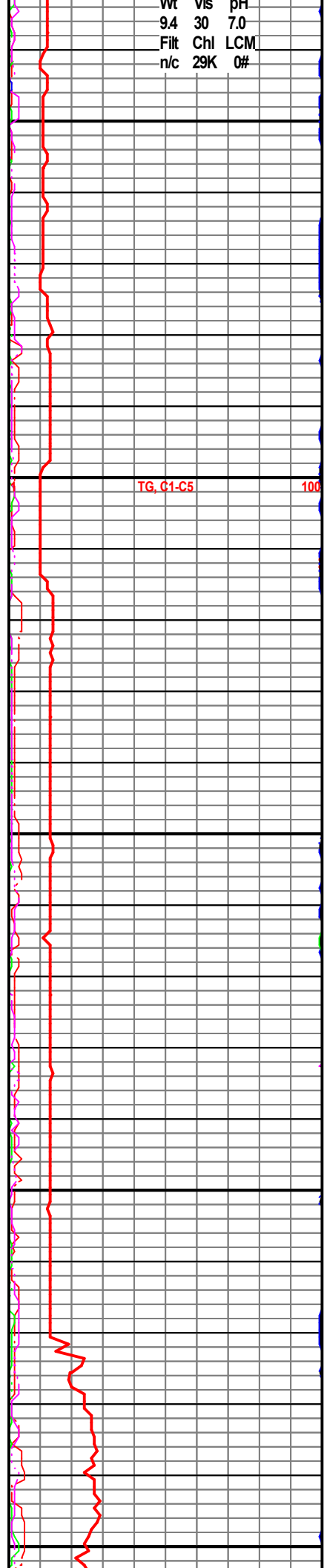
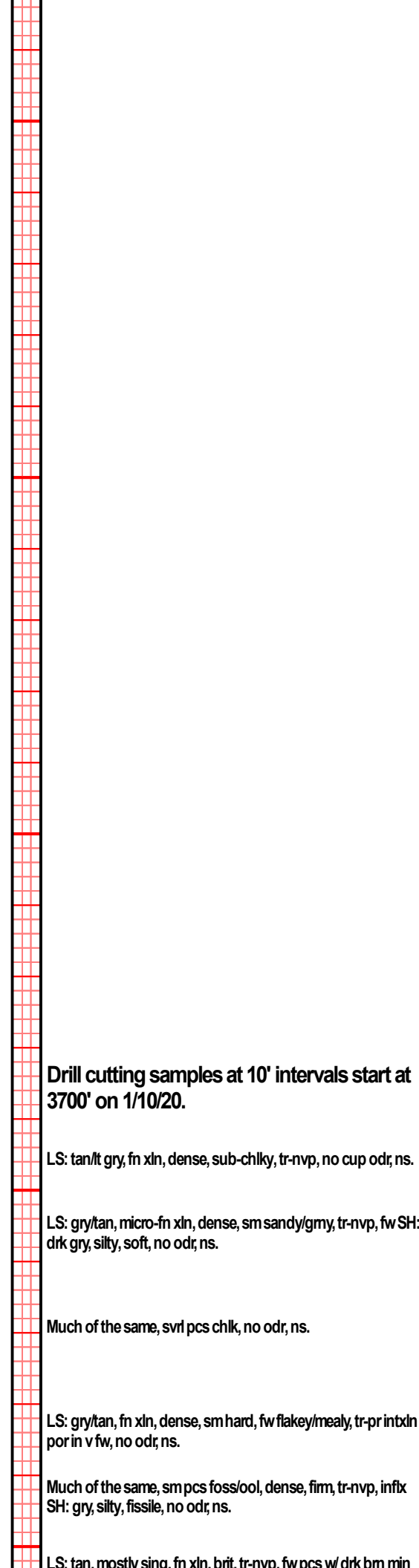
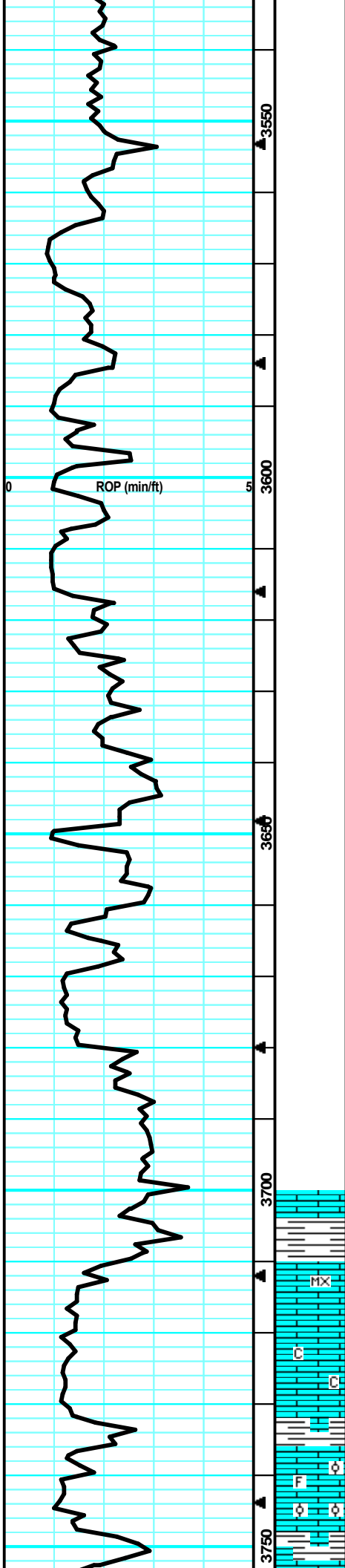
 Sil

TEXTURE

 Chalky
 Crxsxn
 Finexln
 Microxln



| | | |
|------|-----|-----|
| wt | vis | pH |
| 9.4 | 30 | 7.0 |
| Filt | Chl | LCM |
| n/c | 29K | 0# |



Drill cutting samples at 10' intervals start at 3700' on 1/10/20.

LS: tan/lt gry, fn xln, dense, sub-chlky, tr-nvp, no cup odr; ns.

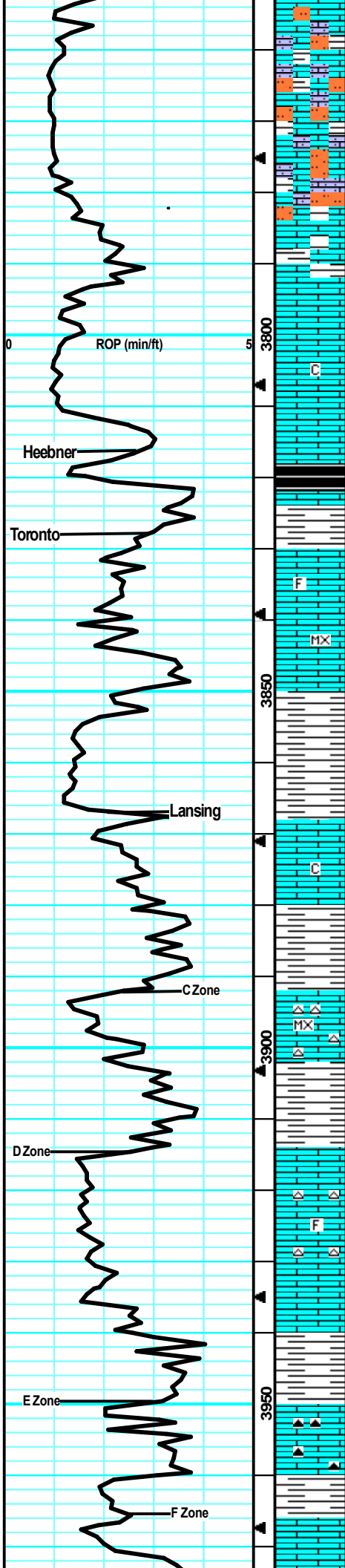
LS: gry/tan, micro-fn xln, dense, sms sandy/gmy, tr-nvp, fw SH: drk gry, silty, soft, no odr; ns.

Much of the same, svrl pcs chl, no odr, ns.

LS: gry/tan, fn xln, dense, sm hard, fw flakey/mealy, tr-pr intxln por in v fw, no odr; ns.

Much of the same, sm pcs foss/ool, dense, firm, tr-nvp, infx SH: gry, silty, fissile, no odr; ns.

LS: tan, mostlv sind, fn xln, brjt, tr-nvp, fw pcs w/ drk bm min



LS: tan, medly silty, fn xln, sm, tr-nvp, fw pcs pur chlk, no fluor/cut, no cup odr, nsfo.

LS: tan/lt tan, sing, fn xln, sm sandy/gritty, tr-nvp, fw SH/SltStr: soft, gritty no cup odr, ns.

Much of the same, infx of Chert: wht, foss, sharp, fw pcs pur chlk, no odr, ns.

LS: gry/lt tan, fn xln, sm foss, fw brit, tr-nvp, no odr, ns.

LS: tan/lt gry, fn xln, sandy/gritty, fw pcs chlk, tr-nvp, no cup odr, ns.

SH: gry/blu, silty, soft, fw fissile, no cup odr, ns.

SH: blk silty, carb, soft, no odr, ns.

LS: lt tan, sing, fn xln, fw foss frags, mostly brit, sub-chlky in prt, tr-nvp, no cup odr, ns.

LS: cm/lt tan, sing, micro-fn xln, dense, sm brit, chlky in prt, tr-nvp, no odr, ns.

SH: gry/drk gry, silty, soft, no cup odr, ns.

LS: cm/lt tan/lt gry, slight mott, fn xln, sub-chlky in prt, tr-nvp, no odr, ns.

SH: drk gry/bm, silty, soft, no odr, ns.

LS: lt gry/lt tan, sing, micro-fn xln, dense, tr-nvp, fw Chert: wht/lt gry, sharp, no odr, ns.

LS: gry, slight mott, fn xln, firm, tr-nvp, svrl SH: gry, soft, no odr, ns.

LS: cm/lt tan, fn xln, sm foss, tr-nvp, sm Chert: tan/wht, foss, sharp, no odr, ns.

Much of the same, infx of pur chlk, no odr, ns.

SH: drk gry/blk, silty, fw LS: gry, slight mott, fn xln, tr-nvp, no odr, ns.

LS: lt tan/lt gry, fn xln, chlky in prt, tr-nvp, fw Chert: gry/tan, sharp, no odr, ns.

LS: cm/lt tan, sing, fn xln, chlky, brit, tr-nvp, no odr, ns.

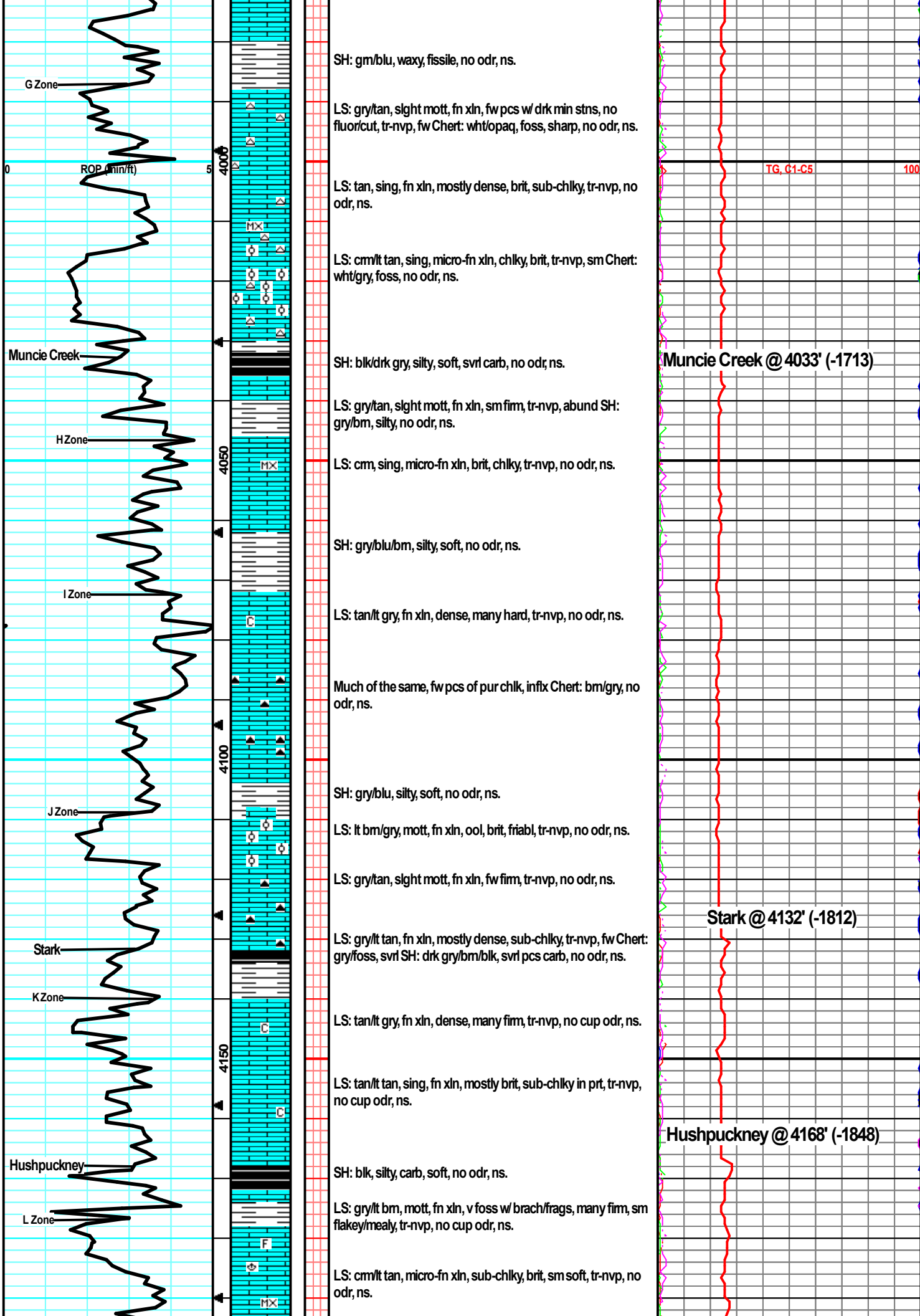
TG, C1-C5 100

Heebner @ 3817' (-1497)

Toronto @ 3828' (-1508)

| | | |
|---------------|---------|-----|
| Mud Report #6 | | |
| 3852' | 1/11/20 | |
| Wt | Vis | pH |
| 9.0 | 52 | 9.5 |
| Filt | Chl | LCM |
| 8.8 | 4.4K | 1# |

Lansing @ 3867' (-1547)



SH: gm/blu, waxy, fissile, no odr, ns.

LS: gry/tan, slight mott, fn xln, fw pcs w drk min stns, no fluor/cut, tr-nvp, fw Chert: wht/opaq, foss, sharp, no odr, ns.

LS: tan, sing, fn xln, mostly dense, brit, sub-chlky, tr-nvp, no odr, ns.

LS: cm/lt tan, sing, micro-fn xln, chlky, brit, tr-nvp, sm Chert: wht/gry, foss, no odr, ns.

SH: blk/drck gry, silty, soft, svrl carb, no odr, ns.

LS: gry/tan, slight mott, fn xln, sm firm, tr-nvp, abund SH: gry/bm, silty, no odr, ns.

LS: cm, sing, micro-fn xln, brit, chlky, tr-nvp, no odr, ns.

SH: gry/blu/bm, silty, soft, no odr, ns.

LS: tan/lt gry, fn xln, dense, many hard, tr-nvp, no odr, ns.

Much of the same, fw pcs of pur chl, infx Chert: bm/gry, no odr, ns.

SH: gry/blu, silty, soft, no odr, ns.

LS: lt bm/gry, mott, fn xln, ool, brit, friabl, tr-nvp, no odr, ns.

LS: gry/tan, slight mott, fn xln, fw firm, tr-nvp, no odr, ns.

LS: gry/lt tan, fn xln, mostly dense, sub-chlky, tr-nvp, fw Chert: gry/foss, svrl SH: drk gry/bm/blk, svrl pcs carb, no odr, ns.

LS: tan/lt gry, fn xln, dense, many firm, tr-nvp, no cup odr, ns.

LS: tan/lt tan, sing, fn xln, mostly brit, sub-chlky in prt, tr-nvp, no cup odr, ns.

SH: blk, silty, carb, soft, no odr, ns.

LS: gry/lt bm, mott, fn xln, v foss w brach/frags, many firm, sm flakey/mealy, tr-nvp, no cup odr, ns.

LS: cm/lt tan, micro-fn xln, sub-chlky, brit, sm soft, tr-nvp, no odr, ns.

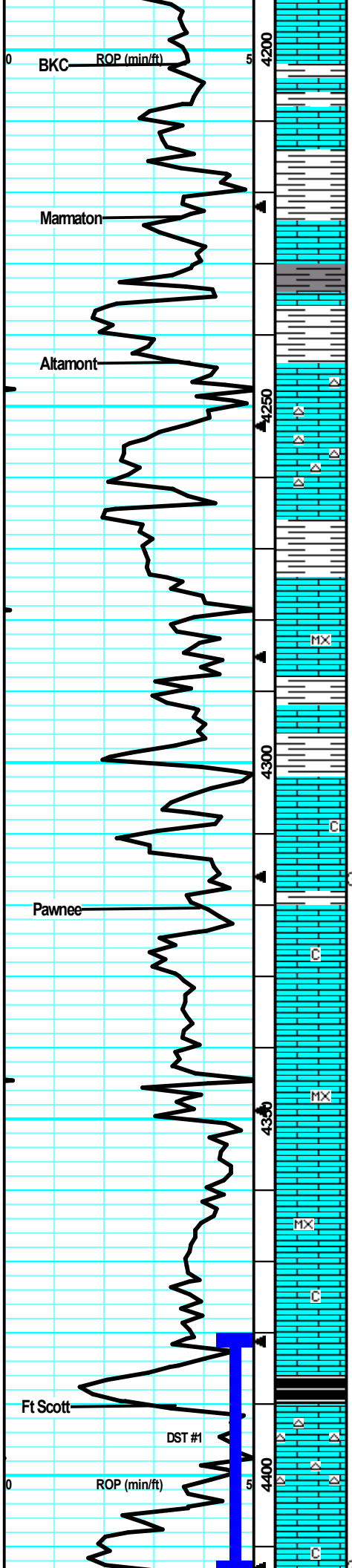
TG, C1-C5

100

Muncie Creek @ 4033' (-1713)

Stark @ 4132' (-1812)

Hushpuckney @ 4168' (-1848)



Most of the same, lrg infx SH: drk gry, silty, sm fissile, no odr, ns.

SH: drk gry/blu/gm, silty, soft, fw waxy, no odr, ns.

LS: cm/lt tan/lt gry, sing, fn xln, sm brit, tr-nvp, no odr, ns.

SH: drk gry/bm/bluish/bm, fw waxy, fw gritty/SltStn, no odr, ns.

LS: lt tan/lt gry, fn xln, sub-chlky in prt, tr-nvp, no odr, ns.

SH: drk gry/gry/bm, fw waxy, no odr, ns.

LS: tan/lt gry, fn xln, fw hard, fw flakey/mealy, sub-chlky in prt, tr-nvp, no odr, ns.

LS: tan/gry, fn xln, sm hard, chlky in prt, tr-nvp, fw Chert: wht/opaq, svrl SH: gry/drk, no odr, ns.

Much of the same LS, more SH: gry/drk gry, silty, soft, no odr, ns.

LS: lt gry/lt tan, fn xln, many hard, tr-nvp, no odr, ns.

LS: cm/lt gry, micro-fn xln, firm yet brit, sub-chlky in prt, tr-nvp, no odr, ns.

Much of the same with lrg infx of SH: gry/drk gry/blu-gm, no odr, ns.

LS: tan/lt gry, fn xln, hard, fw flakey/mealy, fw pcs w/ sm drk min stns, no fluor/cut, no cup odr, ns.

LS: lt gry/lt tan, sing, fn xln, dense, fw firm, tr-nvp, no odr, ns.

LS: cm/lt tan, sing, fn xln, sm firm, sub-chlky, tr-nvp, no odr, ns.

Much of the same, fw pcs pur chl, no odr, ns.

LS: gry/bm, micro-fn xln, dense, hard, tr-nvp, no odr, ns.

Much of the same dense, hard, LS, no odr, ns.

LS: gry/tan, micro-fn xln, dense, fw hard, tr-nvp, infx SH: gry, soft, no odr, ns.

LS: gry/lt bm, fn xln, dense, mostly firm, tr-nvp, no odr, ns.

SH: blk, silty, carb, soft, no odr, ns.

LS: tan/lt gry, fn xln, sm firm, fw flakey/mealy, tr-nvp, svrl Chert: wht/opaq, foss, no odr, ns.

LS: gry, tan, fn xln, svrl pcs w/ fr-gd inbxdn por, spntd-ewn sat stns, gld fluor, strn cut, gd cup odr, fr sho med brn oil in 56 pcs.

BKC @ 4202' (-1882)

TG, C1-C5 100
Gas Baseline Reset

Marmaton @ 4222' (-1902)

Altamont @ 4244' (-1924)

Gas Check

DST #1: 4,380'-4,413' (Ft. Scott) Rec 1,195' GIP, 20' SOCM (16% oil, 84% mud), and 185' SGOCM (15% gas, 20% oil, 65% mud). Total fluid 205' (13.54% gas, 19.61% oil, 66.85% mud).
IFP: 13-64#30" ISIP: 1225#45"
FFP: 45-90#45" FSIP: 1203#60"

Mud Report #7
4281' 1/12/20

| | | |
|------|------|-----|
| Wt | Vis | pH |
| 9.2 | 54 | 9.5 |
| Filt | Chl | LCM |
| 8.0 | 3.8K | 3# |

DST #2: 4,454'-4,489' (Miss) Rec 160' GIP, 155' CO, and 60' SOCM (6% oil, 94% mud). Total fluid 215' (73.77% oil, 26.23% mud).
IFP: 16-52#30" ISIP: 1166#45"
FFP: 63-94#45" FSIP: 1096#60"

CFS @ 4316' (30"/60")

Pawnee @ 4320' (-2000)

DST #3: 4,484'-4,495' (Miss#2) Rec 75' GIP, 155' SGCO (4% gas, 96% oil), 20' SGWMCO (6% gas, 10% water, 12% mud, 72% oil), and 60' SWGCOM (7% water, 10% gas, 35% oil, 48% mud). Total fluid 235' (5.70% gas, 78.38% oil, 2.64% water, 13.28% mud).
IFP: 16-59#30" ISIP: 1141#45"
FFP: 67-98#45" FSIP: 1065#60"

DST #4: 4,496'-4,510' (Miss#3) Rec 30' GIP, 90' O, 5' MCO (21% mud, 79% oil) and 120' HOCM (31% oil, 69% mud). Total fluid 215' (61% oil, 39% mud).
IFP: 34-63#30" ISIP: 1173#45"
FFP: 67-96#45" FSIP: 1117#60"

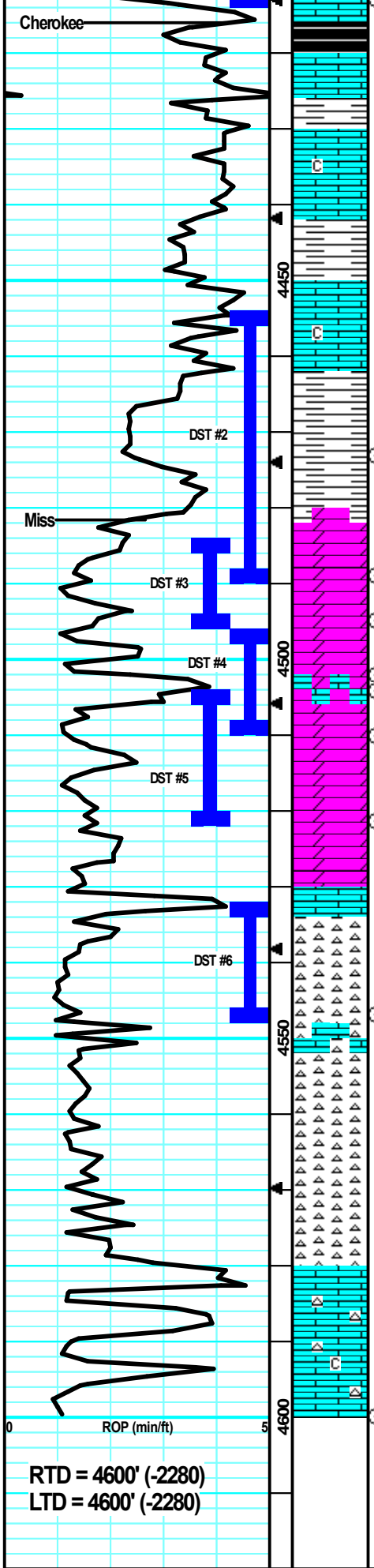
Ft Scott @ 4390' (-2070)

Shale Kick

Pipe Strap @ 4413' = 0.54 Long
Survey @ 4413' = 1/4 Degree

TG, C1-C5 100

CFS @ 4413' (30"/60")



Cherokee

LS: tan, fn xln, dense, sm hard, tr-nvp, svrl SH: blk, silty, many carb, no odr, ns.

LS: tan/lt gry, fn xln, mostly dense, fw flakey, sub-chlky in prt, tr-nvp, fw pcs pur chl, no odr, ns.

LS: cm/lt gry, slight mott, fn xln, sub-chlky, tr-nvp, fw SH: gry/drck gry, soft, no odr, ns.

LS: lt gry/lt tan, fn xln, fw flakey/mealy, sub-chlky in prt, tr-nvp, svrl SH: gry, no odr, ns.

LS: cm/gry, fn xln, sub-chlky, sm brit, tr-nvp, svrl SH: gry, silty, no odr, ns.

LS: gry/tan, mott, fn xln, many flakey/mealy, dirty, fw sandy/gritty, tr-nvp, abund SH: gry/drck gry/bm, gritty, sity, no odr, ns.

SH: gry/gm/blu, soft, mott, withrd, fw mixed in LS: fn xln, tr-nvp, no odr, ns.
SH: gry/gm-blm/yel, withrd, sft, sm wxy, no odr, ns.

DOL: tan/lt gry, sing, fn xln, suc, fr-gd inbdn por, sm slight vuggy por, many firm, yel/gld fluor, strm cut, gas bub on brk, med-ght brn oil, gd sfo fo in 6-7 pcs, fr odr.
60" Smpl: Svrl more pcs of DOL, 10-12 pcs w/ sho, gd cup odr.

Much of the same DOL: svrl more pcs w/ fr vuggy por, gd odr, sm sptted stns on surf, sat on brk, 15+ pcs w/ gd sfo on brk.

DOL: tan/lt gry/lt brn, fn xln, suc, patchy brn-ewn stns, gd sfo on brk and in scat vuggy/fr inbdn por, fr cup odr.

DOL: tan/lt brn, fn xln, suc, sm firm, mostly brit, gd evn sat stns, gd inbdn por., sm scat vuggy por, gd strng odr, gd fluor/cut, gd sfo in 15+ pcs.

DOL: tan/lt brn/gry, fn xln, suc, sm firm, patchy brn stns, sm well sat, fr-gd inbdn por, rare scat vugs, gd fluor/cut, fr cup odr, fr-gd sfo in 10+ pcs.
60" Smpl, much of the same, svrl more pcs w/ sho, 15+ pcs, gd cup odr, fr-gd sfo on brk.

DOL: lt tan/lt gry/crm, fn xln, mostly dense, brit in prt, sub-chlky, tr-nvp, sm Chert: cm/wht, opa, fresh, sharp, no odr, 3-4 sho rx as above, most likely slough.

DOL/LS: cm/lt tan, fn xln, sub-chlky in prt, glauc, slight, fr acid react, brit, tr-nvp, sm Chert: wht/opa, fresh, sharp, no odr, ns.

Chert: wht/opa, sharp, sm pr patchy por on frac edges, wk cup odr, even brn stns in por, gd fluor/cut, vssfo in 10+ pcs.
60" Smpl much of the same Chert, less sho pcs and wk cup odr.

Chert: cm/wht/opa, sharp, sm pr frac edge por, lght brn evn stns in por, gd fluor/cut, vssfo cng to fw rx chp, wk cup odr, vssfo in 4-5 pcs.

Chert: wht/opa, sharp, fresh, hard, tr-nvp, 2 pcs w/ frac edge por, brn stns, and vssfo, mostly likely from above, ? cup odr.

Chert: wht, fresh sharp, no odr, ns.

Much of the same, lrg infx LS: lt tan/cm, sing, fn xln, dense, brit, tr-nvp, svrl more pcs of Chert: with frac edge por and gd sho of brn stns, vssfo in few pcs, poss from abv, no cup odr.

LS: lt tan/tan, sing, fn xln, dense, brit, tr-nvp, abund Chert: wht/opa, fresh, sharp, no odr, ns.

Cherokee @ 4416' (-2096)

| | | | |
|---------------|---------|-----|--|
| Mud Report #8 | | | |
| 4413' | 1/13/20 | | |
| Wt | Vis | pH | |
| 9.3 | 50 | 9.0 | |
| Filt | Chl | LCM | |
| 8.0 | 4.3K | 2# | |

| | | | |
|---------------|---------|-----|--|
| Mud Report #9 | | | |
| 4489' | 1/14/20 | | |
| Wt | Vis | pH | |
| 9.0 | 58 | 8.5 | |
| Filt | Chl | LCM | |
| 8.8 | 6.3K | 2# | |

CFS @ 4473' (30"60")

Mississippi @ 4481' (-2161)

CFS @ 4489' (30"60")

CFS @ 4495' (30"60")

CFS @ 4502' (30"60")

CFS @ 4504' (30"60")

CFS @ 4510' (30"60")

| | | | |
|----------------|---------|------|--|
| Mud Report #10 | | | |
| 4510' | 1/15/20 | | |
| Wt | Vis | pH | |
| 9.3 | 55 | 10.0 | |
| Filt | Chl | LCM | |
| 7.2 | 7.3K | 2# | |

CFS @ 4521' (30"60")

| | | | |
|----------------|---------|-----|--|
| Mud Report #11 | | | |
| 4547' | 1/16/20 | | |
| Wt | Vis | pH | |
| 9.1 | 63 | 9.5 | |
| Filt | Chl | LCM | |
| 8.4 | 7.4K | 2# | |

CFS @ 4547' (30"60")

DST #5: 4,506'-4,521' (Lower Miss) Rec 40'SOCM (3% oil, 97% mud).
IFP: 11-18#30" ISIP: 1331#45"
FFP: 19-27#45" FSIP: 1226#60"

DST #6: 4,532'-4,547' (Osage) Rec 245'MCW (37% mud, 63% water), 635'MCW (4% mud, 96% water), 1280'W, and 60'WCM (31% water, 69% mud).
Total fluid 2220' (92.91% water, 7.09% mud).
IFP: 97-628#30" ISIP: 1413#30"
FFP: 637-998#30" FSIP: 1412#30"

CFS @ 4600' (30"60")

TG, C1-C5

Survey @ 4600' = 1/2 Degree