KOLAR Document ID: 1486567

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 # | API No.: |
|--|--|
| Name: | Spot Description: |
| Address 1: | |
| Address 2: | Feet from North / South Line of Section |
| City: | Feet from |
| Contact Person: | Footages Calculated from Nearest Outside Section Corner: |
| Phone: () | □NE □NW □SE □SW |
| CONTRACTOR: License # | GPS Location: Lat:, Long: |
| Name: | (e.g. xx.xxxxx) (e.gxxx.xxxxxx) |
| Wellsite Geologist: | Datum: NAD27 NAD83 WGS84 |
| Purchaser: | County: |
| Designate Type of Completion: | Lease Name: Well #: |
| ☐ New Well ☐ Re-Entry ☐ Workover | Field Name: |
| □ Oil □ WSW □ SWD | Producing Formation: |
| Gas DH EOR | Elevation: Ground: Kelly Bushing: |
| □ og □ GSW | Total Vertical Depth: Plug Back Total Depth: |
| CM (Coal Bed Methane) | Amount of Surface Pipe Set and Cemented at: Feet |
| Cathodic Other (Core, Expl., etc.): | Multiple Stage Cementing Collar Used? Yes No |
| If Workover/Re-entry: Old Well Info as follows: | If yes, show depth set: Feet |
| Operator: | If Alternate II completion, cement circulated from: |
| Well Name: | feet depth to:w/sx cmt. |
| Original Comp. Date: Original Total Depth: | |
| ☐ Deepening ☐ Re-perf. ☐ Conv. to EOR ☐ Conv. to SWD | Drilling Fluid Management Plan |
| ☐ Plug Back ☐ Liner ☐ Conv. to GSW ☐ Conv. to Producer | (Data must be collected from the Reserve Pit) |
| Committee of the Commit | Chloride content: ppm Fluid volume: bbls |
| □ Commingled Permit #: □ Dual Completion Permit #: | Dewatering method used: |
| SWD Permit #: | Location of fluid disposal if hauled offsite: |
| EOR Permit #: | Location of haid disposal if hadied offsite. |
| GSW Permit #: | Operator Name: |
| | Lease Name: License #: |
| Spud Date or Date Reached TD Completion Date or | Quarter Sec TwpS. R East West |
| Recompletion Date Recompletion Date | 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 Approved by: Date: | | | | | | |

KOLAR Document ID: 1486567

Page Two

| Operator Name: | | | | | Lease Nam | ne: | | | Well #: | |
|---|--|------------------------------|---------------------------------|--|---|------------------------------|------------------------------------|---|--|--|
| Sec Tw | pS. F | R [| East | West | County: | | | | | |
| open and closed and flow rates if | , flowing and sh gas to surface t ty Log, Final Lo | nut-in pressurest, along wit | es, whe h final c ain Geo | ther shut-in pre hart(s). Attach physical Data a | essure reached extra sheet if r and Final Electr | station more : ric Loc | level, hydrosta space is needed | tic pressures, d. | bottom hole tempe | val tested, time tool erature, fluid recovery, Digital electronic log |
| Drill Stem Tests (Attach Addit | | | Ye | es No | | Lo | og Formatio | n (Top), Deptl | n and Datum | Sample |
| Samples Sent to | Geological Sur | vey | Ye | es 🗌 No | | Name |) | | Тор | Datum |
| Cores Taken Electric Log Run Geologist Repor List All E. Logs F | t / Mud Logs | | Y€ Y€ | es No | | | | | | |
| | | | | | | | | | | |
| | | | Repo | | RECORD [| Nev | w Used rmediate, producti | on. etc. | | |
| Purpose of St | | ze Hole Orilled | Siz | e Casing (In O.D.) | Weight Lbs. / Ft. | | Setting Depth | Type of Cement | # Sacks Used | Type and Percent Additives |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | ADDITIONAL | OF MENTING / | | | | | |
| Purpose: | [| Depth | Typo | | # Sacks Use | | EEZE RECORD | Typo a | nd Percent Additives | |
| Perforate Protect Ca Plug Back | Top | Bottom | туре | e of Cement # Sacks Used | | | 1 Type und refeelt Additives | | | |
| Plug Off Z | | | | | | | | | | |
| Did you perform Does the volum Was the hydraul | e of the total base | fluid of the hyd | draulic fra | cturing treatmen | | • | Yes ns? Yes | No (If No | , skip questions 2 an , skip question 3) , fill out Page Three o | , |
| Date of first Produ | ction/Injection or | Resumed Produ | uction/ | Producing Meth | | | Coolift 0 | thor (Fundain) | | |
| Estimated Produc | otion | Oil Bb | le. | Flowing Gas | Pumping Gas Lift Other (Explain) Mcf Water Bbls. Gas-Oil Ratio | | | | Gravity | |
| Per 24 Hours | | Oli Bb | 15. | Gas | Mcf | vvale | ı Di | JIS. | Gas-Oil Hallo | Gravity |
| DISPO | OSITION OF GAS | S: | | N | METHOD OF CO | MPLE. | TION: | | PRODUCTIO | N INTERVAL: |
| ✓ Vented Sold Used on Lease ✓ Open Hole ✓ Perf. ✓ Dually Comp. ✓ Commin | | | | nmingled | Тор | Bottom | | | | |
| (If vente | ed, Submit ACO-18 | .) | | | (5 | SUDITIIL I | ACO-5) (Subi | mit ACO-4) | | |
| Shots Per Foot | Perforation Top | Perforation Bottom | on | Bridge Plug Type | | | Acid, | Acid, Fracture, Shot, Cementing Squeeze Record (Amount and Kind of Material Used) | | Record |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| TUBING RECOR | D: Size: | | Set At: | | Packer At: | | | | | |

| Form | ACO1 - Well Completion |
|-----------|---|
| Operator | Larson Engineering, Inc. dba Larson Operating Company |
| Well Name | MONROE A 2 |
| Doc ID | 1486567 |

Casing

| Purpose Of String | Size Hole Drilled | Size Casing Set | Weight | Setting Depth | Type Of Cement | Type and Percent Additives |
|----------------------|----------------------|-----------------------|--------|------------------|-------------------|--------------------------------------|
| Surface | 12.25 | 8.625 | 20 | 390 | Class A | 2% gel, 3% CC |
| Production | 7.875 | 5.5 | 15.5 | 3494 | QPro-C | 2% gel, 2% CC, 5% gilsonite |
| | | | | | | |
| | | | | | | |

QUALITY OILWELL CEMENTING, INC. Federal Tax I.D.# 20-2886107

Home Office P.O. Box 32 Russell, KS 67665 Phone 785-483-1071 Cell 785-324-1041

No. 1759

| 0011100 021 1011 | | , | | | 1 |
|-----------------------------|---------------------------------------|--------------------|---|---------------------------|---|
| 10 22 P 16 | Twp. Range | County | State | On Location | Finish |
| Date 10.22.19 4 | 18 17 | Darfor | 1 55 | 101 | 12 12 |
| M I | #12 | Location 28% | \$ JC+ 4H | wy 15 /w | 15 Wisto |
| Lease Montoe A | Well No. 72 | Owner To Quality Q | Pilwell Cementing, Inc. | | |
| Contractor Southwi | pd | You are here | eby requested to ren | t cementing equipmen | t and furnish |
| Type Job Sunface. | | Charge / | a a cara | viiei or contractor to di | J WOIK AS IISIEU. |
| Hole Size | T.D. | To LC | TISON CA | girering | · · · · · · · · · · · · · · · · · · · |
| Csg. 878 23 | Depth 390' | Street | | | · · · · · · · · · · · · · · · · · · · |
| Tbg. Size | Depth. | City | · | State | |
| Tool | Depth | | | and supervision of owner | |
| Cement Left in Csg. | Shoe Joint 15 | Sh Cement Am | ount Ordered | 10 com 31. | + 27 . 4 F |
| Meas Line | Displace 2374 | 11120 | · · | | |
| No. Cementer | on P | Common | 70 | | |
| Pumptrk / Helper | :0C | Poz. Mix | | * | |
| Bulktrk Driver | ,,,,, | Gel. 3 | • | | |
| Bulktrk 9 No. Driver Driver | 1Ke | Calcium | 7 | | |
| JOB SERVICES | & REMARKS | Hulls | | | |
| Remarks: | 222 212 | Salt | <u> </u> | | |
| Rat Hole USED", / | 1000K 31Z | 19 Plowseal | 5074 | | |
| Mouse Hole | | Kol-Seal | | · | |
| Centralizers | | Mud CLR 48 | 3 | - | |
| Baskets | | CFL-117 or | CD110 CAF 38 | د. | |
| D/V or Port Collar | • | Sand | : | | |
| V Cet 789 @ | 390 Brai | Handling 3 | 7/20 | | |
| Calla Polition | | Mileage | | | , |
| - Cravers | | *** | FLOAT EQUIPM | MENT | |
| 4 GNixed 1900 | um 31. 2% | Guide Shoe | 2 | | |
| Displace I Comen | 1 02334, | | | | |
| Surger of Concer | , | Baskets | | *. | |
| + Chronet 40 | SINTERO | AFU Inserts | \$ ** * * * ** ** | 3 | |
| | | Float Shoe | × × × × × × × × × × × × × × × × × × × | | |
| | | Latch Qown | क अ.ट | Br - 1 | |
| | | 2 Zaton Zomi | | | |
| | / | | | · was give | - 4 |
| | / / / / · | Pumptyk Ch | arga Sun Eac | | *************************************** |
| | W 19 | Mijeage / | C JUNIOUS | | |
| | | ivilizacje | <i>o</i> | Tax | |
| A | · · · · · · · · · · · · · · · · · · · | | | Discount | *** |
| x /\ /// | <u> </u> | | errore de la companya del companya del companya de la companya de | Total Charge | |
| Signature Cyry / hu | · · · · / | <u> </u> | • | rotal Charge | <u> </u> |
| $(\setminus U)$ | | | | • | • |

QUALITY OILWELL CEMENTING, INC. Federal Tax I.D.# 20-2886107

Phone 785-483-1071 Cell 785-324-1041

Home Office P.O. Box 32 Russell, KS 67665

No. 1734

| | | | , | | | | | | | |
|--------------------|--------------------|---|---------------------------------------|-------------|------------------------|--|---|---------------|-----------|------------------|
| Date 10=31- | PA Se | c. Twp. | Range | 8 | County | State | | On Location | n | Finish OM |
| Date Po O1 | <u> </u> | 1/0 | 179 | Locati | on 287 + | 4 564- | 3122 | 13/45, | WIT | -7. -20 kln/ |
| Lease // | lonco | 2 H [| Well No. #2 | Locatio | Owner | 1 001 | 100 1 | | | 14.10 |
| Contractor Wild | d Wes | W 42 | ell Serv | ١٥٩ | | lwell Cementing by requested to | | nentina equin | ment and | furnish |
| Type Job Poct | Custlo | X | | | cementer and | d helper to assi | | | | |
| Hole Size | | T.D. | | | Charge La | rzon Er | Dives | cinor | | |
| Csg. 5 | %'' | Depth | | | Street | | 3 | 0 | | |
| Tbg. Size | 78/2 | Depth | | | City | | 9 | State | | |
| Tool Part C | ollar | Depth | 1798- | | The above wa | s done to satisfac | | | wner agen | t or contractor. |
| Cement Left in Cso | 1. | Shoe J | oint | | | ount Ordered ∂ | 75 5 | 30/3° O | MDC | 1/4 # Flora |
| Meas Line | | Displac | e 91/2 | Bus | 5 apl | ~ 3,90 | | | | |
| | | JIPMENT | | | Common 2 | 75 <u>8%</u> 0 | OM | DC | | |
| Pumptrk 640 | Cementer Helper | Tony) | <u> </u> | | Poz. Mix | | | | | |
| Bulktrk 1 No. | Driver \ | sug J | | | Gel. 5 | | | | | |
| Bulkirk P.U.No. | Driver O | 35/A | | | Calcium | | | | | · |
| test tool | JOB SERVIC | ES & REMA | RKS & 70t | 世. | Hulls | | | | | |
| Remarks: Duw | p 3 | 5× 0¢ | 1 to to | 1 | Salt | | | | | |
| Rat Hole | N + 221 | | 25,001 + | . \ " | Flowseal / | 54 | | | | |
| Mouse Hole | 275 52 | 1 Comp | x +0 | place | ol-Seal | | | | | |
| Centralizers w/ | 4 / 1 | 15. Jh | at down | , | Mud CLR 48 | | | | | |
| Baskets Clox | ed tool | <u> + 10 x 1 </u> | -6- Joot | 25.1 | CFL-117 or C | CD110 CAF 38 | | | | |
| D/V or Port Collar | Kun | 5045 | + wash | Clear | ,Sand | | | | | |
| AL 0 | | Nh A | | . : | Handling (| a de la companya de l | * | , 4 | | |
| Co Ce | Ment | did | Circulo | te | Mileage | | | . · · · · . | | |
| //5= | · K | 1 70 | | \cap | | FLOAT EQ | | | *- ·- ·- | |
| USE | D | 275 sl | <u> 2 9 9 e</u> | <u>ب</u> کا | Guide Shoe | | | .* | | |
| | | | Ů. | | Centralizer | | | | | W-1-1 |
| | | - h | , | · | Baskets | ar .a | | | · | |
| · | · / / | <u> </u> | <u> </u> | | AFU Inserts | <u> </u> | | : | | |
| <u></u> | <u> </u> | <i>V</i> ** | | | Float Shoe | #1 ₂ , | * · · · · · · · · · · · · · · · · · · · | alter * | | |
| | | | ; | <u>:</u> / | Latch Down | | | | | |
| | | .a. * | త్వారం | | (* | | · 1 · | | | |
| | • • • | | · · · · · · · · · · · · · · · · · · · | 3 P. | | | - بر ع | 11- | | · · · |
| | | | <u> </u> | 1 % . | Pumptrk Cha Mileage | | امي ا | vou la | 0 | • |
| | | | | | <u>0</u> | • | | | Tax | |
| | _ ^ | | | | | | | Disc | ount | |
| x Signature | ·C. 1 | ann | \sim | | | | | Total Cha | - | |
| | - X | - · - · y | | J | l | | | | | |

QUALITY OILWELL CEMENTING, INC. Federal Tax I.D.# 20-2886107

Phone 785-483-1071 Cell 785-324-1041

Home Office P.O. Box 32 Russell, KS 67665

No. 1732

| Date 10 - 26 - 19 4 | Twp. | Range | 0 | County | V State | On Location | Finish Ov | | | |
|---------------------------------------|--------------|---------------|----------------|---|--------------------------|-------------------------|----------------------|--|--|--|
| Date 10 -26-11 9 | 110 | 19 | DO | cton | 1,77 | 1 121 2 | D-30 KK | | | |
| M | Г | | Location | on 281 + | · 4 ~ Cct - | 1w, 13/45 | WITHO | | | |
| Lease //onroe | | Well No. ∦-2 | <u> </u> | Owner | | | | | | |
| Contractor Southwing | #3 | | | To Quality Oilwell Cementing, Inc. You are hereby requested to rent cementing equipment and furnish | | | | | | |
| Type Job Long St C. no | | | | cementer an | | ner or contractor to do | | | | |
| Hole Size | T.D. | 34951 | | Charge To0 | wasoin End | Lineering | | | | |
| csg. 51/2" New 15.5 | Depth | 3495' | | Street | |) (| | | | |
| Tbg. Size | Depth | | | City | | State | | | | |
| Tool Port Collar | Depth | 17981 | | The above wa | s done to satisfaction a | nd supervision of owner | agent or contractor. | | | |
| Cement Left in Csg. | Shoe J | oint 43.18 | <u> </u> | Cement Amo | ount Ordered 195 | | <u>%2 462%</u> | | | |
| Meas Line | Displac | <u>.e 82 </u> | <u> BUS</u> | G?lson?} | e 1000 gal | mud Clear 4 | 8 | | | |
| | PMENT | | | Common / | 95 Pro- C | | | | | |
| Pumptrk No. Cementer Helper | nu L | | | Poz. Mix | , | | | | | |
| Bulktrk No. Driver Driver | 102 | | | Gel. | | | | | | |
| Bulktrk O.W. No. Driver Co. | χI | | | Calcium | | | | | | |
| JOB SERVICE | S & REMA | RKS | | Hulls | | | | | | |
| Remarks: | | | | Salt /6 | | | | | | |
| Rat Hole 30 SX | | | Flowseal | | | | | | | |
| Mouse Hole | | | Kol-Seal 860 H | | | | | | | |
| Centralizers | | | | Mud CLR 48 1000 gal | | | | | | |
| Baskets | | | | CFL-117 or (| CD110 CAF 68 | | | | | |
| D/V or Port Collar) # 4/ | 1.0 | 198' | | Sand | , | | , a | | | |
| DiDe on bottom | breal | Coccul | roite | Handling | | , · | 13 | | | |
| Dino los agt mi | & Creo | 5 48 Dlu | \0r | Mileage | <u> </u> | • | | | | |
| Rothale Hook | to Co | Sing 1 n | 10/1× | * | FLOAT EQUIPM | ENT . | | | | |
| 160 sx Cement. | Shut | dowth u | msh | Guide Shoe | Supplied | By Customer | <u>†</u> | | | |
| | baced | olus w | 82 BL | Centralizer | | <u> </u> | | | | |
| Released + held | ` | , u ' | , | Baskets , | | | | | | |
| Lift pressure | 75 | ٠ <u>١</u> ٢ | | AFU Inserts | | | | | | |
| Land Diva to | 600 | # | . 4 | Float Shoe | | | | | | |
| | 74 PF | ar | . 3' | Latch Down | b . 4 | | | | | |
| | 1. | ا کری | | | | | | | | |
| , . | ///0 | 10 | | • | ₩ # # ÷ ; | | | | | |
| | 1/ | | <u> </u> | Pumptrk Cha | arge prod 5 | taine | | | | |
| | \checkmark | | | Mileage | | | | | | |
| | | | | | | Tax | | | | |
| · \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | | | | | • | Discount | | | | |
| Signature Julium | / | | | | • | Total Charge | | | | |
| 77.0 | | | | = | | | | | | |



Prepared For: Larson Engineering Inc

562 W. State Rd 4 Olmitz KS 67564+8561

ATTN: Vern Schrag

Monroe 'A' #2

4-18s-14w Barton,KS

Start Date: 2019.10.25 @ 14:54:00 End Date: 2019.10.25 @ 20:19:00 Job Ticket #: 65707 DST #: 1

Trilobite Testing, Inc

1515 Commerce Parkway Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620



Larson Engineering Inc

562 W. State Rd 4 Olmitz KS 67564+8561

ATTN: Vern Schrag

4-18s-14w Barton, KS

Monroe 'A' #2

Job Ticket: 65707 DST#: 1

Test Start: 2019.10.25 @ 14:54:00

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 16:47:20 Time Test Ended: 20:19:00

Interval: 3368.00 ft (KB) To 3420.00 ft (KB) (TVD)

Total Depth: 3420.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair Test Type: Conventional Bottom Hole (Initial)

Tester:

Benny Mulligan

Unit No:

Reference Elevations:

1949.00 ft (KB)

1940.00 ft (CF)

KB to GR/CF: 9.00 ft

Serial #: 6772 Inside

Press@RunDepth: 3369.00 ft (KB) 149.80 psig @

Start Date: 2019.10.25 Start Time: 14:54:01

End Date:

2019.10.25 End Time: 20:19:00 Capacity: Last Calib.:

8000.00 psig 2019.10.25

Time On Btm: Time Off Btm:

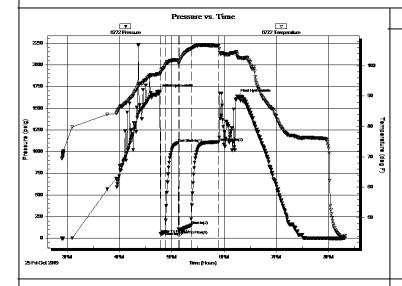
2019.10.25 @ 16:45:30 2019.10.25 @ 18:14:50

TEST COMMENT: IF-5-BOB 3 mins 30 secs total build of 16 1/2 "

ISI-15- no blow back

FF-15-BOB 3 mins 30 secs total build of 41"

FSI-30- 4 1/2" of blow back



PRESSURE SUMMARY

| Time | Pressure | Temp | Annotation |
|--------|----------|---------|----------------------|
| (Min.) | (psig) | (deg F) | |
| 0 | 1696.37 | 97.29 | Initial Hydro-static |
| 2 | 51.66 | 97.78 | Open To Flow (1) |
| 7 | 75.98 | 100.08 | Shut-In(1) |
| 22 | 1098.49 | 101.88 | End Shut-In(1) |
| 23 | 96.99 | 101.12 | Open To Flow (2) |
| 37 | 149.80 | 105.57 | Shut-In(2) |
| 69 | 1109.82 | 106.53 | End Shut-In(2) |
| 90 | 1637.38 | 103.65 | Final Hydro-static |
| | | | |
| | | | |

Recovery

| Description | Volume (bbl) |
|----------------------|----------------------|
| GHOCM 20%G 50%O 30%M | 3.37 |
| GMCO 10%G 60%O 30%M | 1.26 |
| | |
| | |
| | |
| | |
| | GHOCM 20%G 50%O 30%M |

Gas Rates

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

Trilobite Testing, Inc. Ref. No: 65707 Printed: 2019.10.29 @ 11:24:02



Larson Engineering Inc

4-18s-14w Barton, KS

562 W. State Rd 4 Olmitz KS 67564+8561

ATTN: Vern Schrag

Monroe 'A' #2

Job Ticket: 65707 DST#: 1

Test Start: 2019.10.25 @ 14:54:00

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: Test Type: Conventional Bottom Hole (Initial) ft (KB)

Time Tool Opened: 16:47:20 Time Test Ended: 20:19:00

Tester: Benny Mulligan

Unit No:

3368.00 ft (KB) To 3420.00 ft (KB) (TVD)

Reference Elevations:

1949.00 ft (KB)

3420.00 ft (KB) (TVD)

1940.00 ft (CF)

Total Depth:

KB to GR/CF:

9.00 ft

Hole Diameter: 7.88 inches Hole Condition: Fair

Serial #: 6769 Outside

Press@RunDepth:

Interval:

Start Time:

psig @

3369.00 ft (KB)

Capacity: 2019.10.25 Last Calib.: 8000.00 psig

2019.10.25

Start Date:

2019.10.25 14:54:01

End Date: End Time:

20:19:00

Time On Btm:

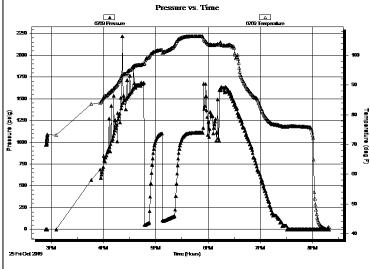
Time Off Btm:

TEST COMMENT: IF-5-BOB 3 mins 30 secs total build of 16 1/2 "

ISI-15- no blow back

FF-15-BOB 3 mins 30 secs total build of 41"

FSI-30- 4 1/2" of blow back



| | Time | Pressure | Temp | Annotation | | | | | | | | | |
|---|--------|----------|---------|------------|--|--|--|--|--|--|--|--|--|
| | (Min.) | (psig) | (deg F) | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | |

Recovery

| Volume (bbl) |
|--------------|
| O 30%M 3.37 |
| 30%M 1.26 |
| |
| |
| |
| |
| |

Gas Rates

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

Printed: 2019.10.29 @ 11:24:02 Trilobite Testing, Inc. Ref. No: 65707



TOOL DIAGRAM

Larson Engineering Inc

4-18s-14w Barton, KS

562 W. State Rd 4 Olmitz KS 67564+8561 Monroe 'A' #2

Job Ticket: 65707 **DST#: 1**

ATTN: Vern Schrag

Test Start: 2019.10.25 @ 14:54:00

Tool Information

Drill Pipe: Length: 3354.00 ft Diameter: Heavy Wt. Pipe: Length: 0.00 ft Diameter: Drill Collar: Length: 0.00 ft Diameter:

3.80 inches Volume: 47.05 bbl 0.00 inches Volume: 0.00 bbl 0.00 inches Volume: 0.00 bbl

47.05 bbl

Total Volume:

Tool Weight: 2500.00 lb Weight set on Packer: 25000.00 lb Weight to Pull Loose: 70000.00 lb

Drill Pipe Above KB: 6.00 ft
Depth to Top Packer: 3368.00 ft

Tool Chased 6.00 ft String Weight: Initial 40000.00 lb

Depth to Bottom Packer: ft Interval between Packers: 52.00 ft

Final 41000.00 lb

Tool Length: 72.00 ft
Number of Packers: 2

Diameter: 6.75 inches

Tool Comments:

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths | |
|------------------|-------------|------------|----------|------------|----------------|-------------------------|
| Change Over Sub | 1.00 | | | 3349.00 | | |
| Shut In Tool | 5.00 | | | 3354.00 | | |
| Hydraulic tool | 5.00 | | | 3359.00 | | |
| Packer | 5.00 | | | 3364.00 | 20.00 | Bottom Of Top Packer |
| Packer | 4.00 | | | 3368.00 | | |
| Stubb | 1.00 | | | 3369.00 | | |
| Recorder | 0.00 | 6772 | Inside | 3369.00 | | |
| Recorder | 0.00 | 6769 | Outside | 3369.00 | | |
| Perforations | 14.00 | | | 3383.00 | | |
| Change Over Sub | 1.00 | | | 3384.00 | | |
| Drill Pipe | 32.00 | | | 3416.00 | | |
| Change Over Sub | 1.00 | | | 3417.00 | | |
| Bullnose | 3.00 | | | 3420.00 | 52.00 | Bottom Packers & Anchor |

Total Tool Length: 72.00

Trilobite Testing, Inc Ref. No: 65707 Printed: 2019.10.29 @ 11:24:02



FLUID SUMMARY

Larson Engineering Inc

4-18s-14w Barton, KS

562 W. State Rd 4 Olmitz KS 67564+8561 Monroe 'A' #2

Job Ticket: 65707

DST#: 1

ATTN: Vern Schrag

Test Start: 2019.10.25 @ 14:54:00

Mud and Cushion Information

Mud Type:Gel ChemCushion Type:Oil API:deg APIMud Weight:9.00 lb/galCushion Length:ftWater Salinity:ppm

Viscosity: 48.00 sec/qt Cushion Volume: bbl

Water Loss: 7.19 in³ Gas Cushion Type:

Resistivity: ohm.m Gas Cushion Pressure: psig

Salinity: 5300.00 ppm Filter Cake: 1.00 inches

Recovery Information

Recovery Table

| Length ft | Description | Volume bbl | | |
|--------------|----------------------|---------------|--|--|
| 240.00 | GHOCM 20%G 50%O 30%M | 3.367 | | |
| 90.00 | GMCO 10%G 60%O 30%M | 1.262 | | |

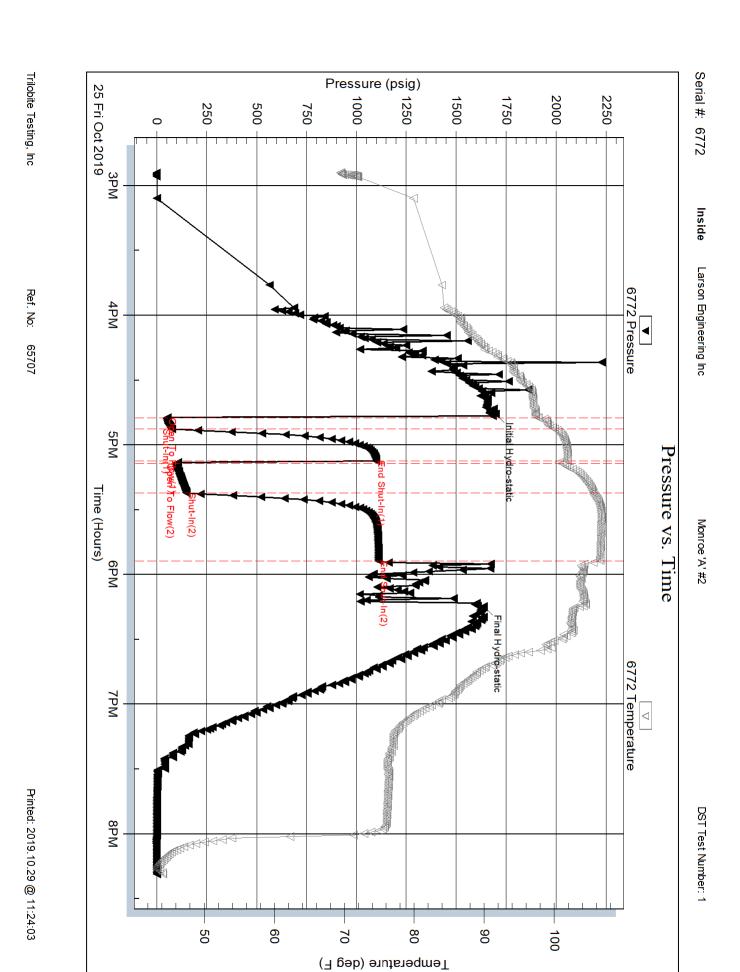
Total Length: 330.00 ft Total Volume: 4.629 bbl

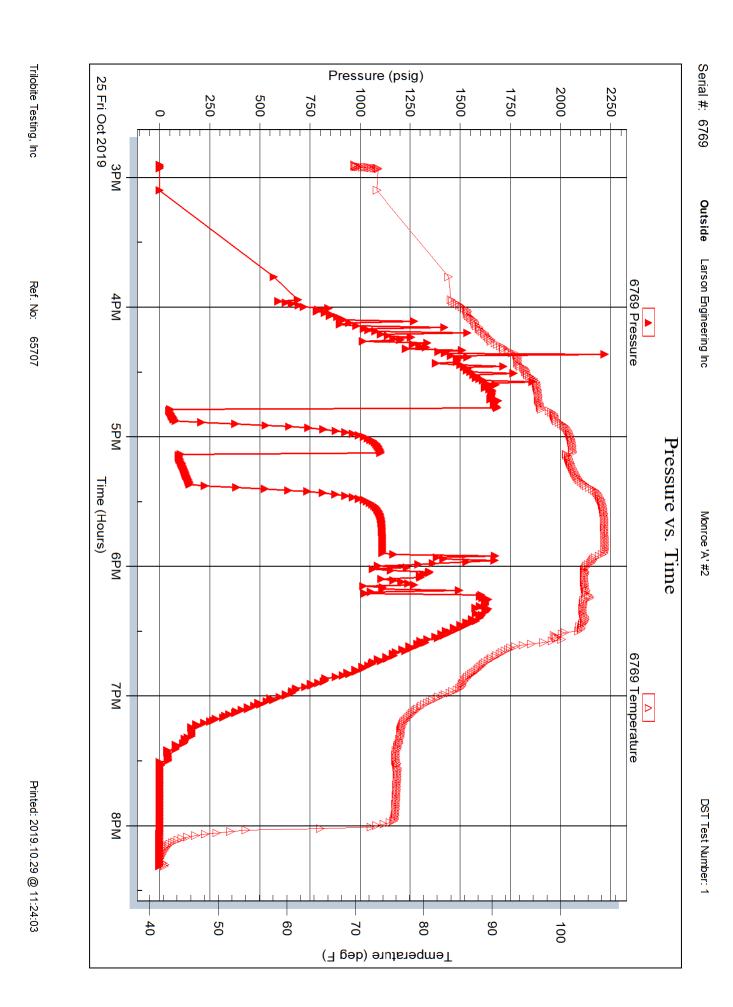
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

Laboratory Name: Laboratory Location:

Recovery Comments:

Trilobite Testing, Inc Ref. No: 65707 Printed: 2019.10.29 @ 11:24:03







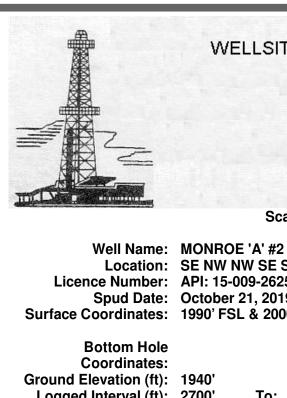
RILOBITE ESTING INC.

Test Ticket

1515 Commerce Parkway • Hays, Kansas 67601

NO. 65707

| | makes division in the same of | | | | | |
|------------------------------|---|-------------|-----------------|------------|---------------------|----------|
| Well Name & No. Monroe A | #2 | | Test No | 1 | Date 10/2 | 5/2019 |
| Company Larson Engineering | IInc | | Elevation _ | 1949 | <u>кв /94</u> | Ó GL |
| Address 562 W. State RD | , , | 1.47/ | KS 675. | 64+851 | 51 | |
| Co. Rep/Geo. Vern Schrug | | | Rig <u>Sou</u> | thwind | Rig 3 | |
| Location: Sec. 4 Twp 185 | Rgel | Iw | _ CoBC.1 | ton | State/ | 45 |
| Interval Tested 3368-3420 | Zone Zone | Tested | rbuckle | | | |
| Anchor Length 52' | Drill P | ipe Run _ | 3354 | <u></u> | Mud Wt. 9-6 | 2 |
| Top Packer Depth 3363 | Drill C | ollars Run | | | Vis 4 8 | 3 |
| Bottom Packer Depth 3368 | Wt. Pi | pe Run | | | WL 7.2 | |
| Total Depth 3420 | Chlori | des 5,3 | 300 | ppm System | LCM | <u> </u> |
| Blow Description IF BOB 31/ | 2 mins | toto | 1 build | ot 16 | 1/2" | |
| IST-no blow k | oach | | // . | 2 | , | |
| FF-BOB 3 /2 | mins . | total | build | of 41 | | |
| | slow bo | ick | | | | |
| Rec 90 Feet of GIMCO. | | 2 | / D %gas | 66 %oil | %water | SO %mud |
| Rec 240 Feet of 640CM | · | | 20 %gas | 50 %il | %water | 30 %mud |
| Rec Feet of | | | %gas | %oil | %water | %mud |
| Rec Feet of | | | %gas | %oil | %water | %mud |
| Rec Feet of | | | %gas | %oil | %water | %mud |
| Rec Total 330 BHT 103 | Gravity | | API RW | @° | F Chlorides | ppm |
| (A) Initial Hydrostatic 1676 | _ On Test_ | 1200 | | T-On | Location 870 | AM |
| (B) First Initial Flow 5 | _ 🔘 Jars_ | | | T-Star | ted 2.54 | PM |
| (C) First Final Flow | _ 🗆 Safety | Joint | | Т-Оре | | , |
| (D) Initial Shut-In 1098 | _ Circ S | Sub | | T-Pull | | |
| (E) Second Initial Flow 96 | _ | y Standby _ | | T-Out | , , , | / / |
| (F) Second Final Flow 149 | | | Mi RT | | 6: | +0015 |
| (G) Final Shut-In 1109 | | | | | tar OST | #/ |
| (H) Final Hydrostatic 1637 | | | | | M Tool | |
| | | | | | uined Shale Packer_ | |
| Initial Open | | 127 | 150 | | uined Packer | |
| Initial Shut-In | | | | | xtra Copies | |
| Final Flow 15 | | | | | otal | |
| Final Shut-In 30 | | | | | 1006 | |
| | Sub Total | 1 2 2 | | | OST Disc't | |
| Approved By | | 15 | r Representativ | 0 | Mallugan | |



Southwind Drilling Co., Rig #3

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

WELLSITE GEOLOGIST'S REPORT VERNON C. SCHRAG CONSULTANT GEOLOGIST



Region: Barton Co., KS
Drilling Completed: October 26, 2019

Location: SE NW NW SE SEC. 4-18S-14W
Licence Number: API: 15-009-26255
Spud Date: October 21, 2019
Surface Coordinates: 1990' FSL & 2000' FEL

Ground Elevation (ft): 1940'
Logged Interval (ft): 2700'
Formation: Arbuckle K.B. Elevation (ft): 1949' Total Depth (ft): 3495' To: RTD

Type of Drilling Fluid: Chemical Premix (Displaced)
Printed by MUD.LOG from WellSight Systems 1-800-447-1534 www.WellSight.com **OPERATOR:**

Company: Larson Engineering Inc. Address: 562 West State Road 4 Olmitz, KS 67564-8561

DRILLING CONTRACTOR:

DP 4.5" XH (16.6#); DC 402.86' x 6-1/4" x 2-3/8", Kelly 40.00', Tool Joint 5.5"; Bit: JZ RX23, 7-7/8", standard jets 14-14-14; rpm 80, WOB 35k; Kelly Bushing 9' above ground level; Jay Krier (tool pusher).

Continental EMSCO D-375, duplex, 6 x 14, Chemical, premix, earth pits, MudCo/Service Mud, Inc., Jason Whiting, apparently there were considerable pump problems which may explain some of the slow lagging.

DRILL STEM TESTS:

CASING:

Ran 9 jts new 8-5/8" 20# R3 STC 8rd csg. Tallied 379.53', set @ 390' KB Ran 83 jts new MPW 5-1/2" 15.5# M-55 R3 LTC 8rd csg. Tallied 3496.77', set @ 3494' KB.

CIRCULATION SYSTEM:

OPEN HOLE LOGS: DN, DI (SP), ML, No Sonic; 5" detail LTD-2700'; 2" DI to suface casing; LogTech-Pioneer Wireline, Hays, KS, Hendrixson, Log total depth (3496') was one foot long to rotary total depth (3495').

| close; no BB ISIP, 41' | 8-3420 (52') ' FFP, 4.5" E | , v 3B | ery FS | weak blow at initial open increased to lip; Time Intervals: 5-15-15-30; Total Re 30%M); HP: 1696-1637, SIP: 1098-1109, | CO | very | y 33 | 0 ', | 90' | GM | O (1 | 10% | G, | |
|------------------------|-------------------------------|---|------------|--|-----------------------|-----------------|------------------|----------------|---------------|----------------|----------|----------------------|-------|------------|
| ROP ROP (min/ft) Five | Afr. | wor | | | Fi | G (un | its) | 7 | | Gas | S | <u> </u> | | <u> </u> |
| Ten | DST | Porosity and Shov | Depth | Geological Descriptions | 0 | ne | | | | | | | | _ |
| 0 ROP 15 | | | | | 0 | | | | Hot- | Wire | | | | 100 |
| | | | | | | | | | | | | | | |
| | | | 0 | | | | | | | | | | | |
| | | | 2500 | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
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| | | | 2550 | | | | | | | | | | | |
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| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| 0 ROP 15 | | | 2600 | | 0 | | | | Hot- | Wire | | | | 100 |
| > | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | 2650 | | | | | | | | | | | |
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| \\ | | | | | | | | | | | | | | |
| 3 | | | 2700 | | | | | | | | | | | |
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| | | 1 | | | | | | | | | | | | |
| | | 1 1 1 1 1 | | | | | | | | | | | | |
| | | 1 | 2750 | | | | | | | | | | | |
| | | 1 | | | | | | | | | | | | |
| | | 1 | | | | | | | | | | | | |
| MUD UP 2800' | | | 0ر | | | | | | | | | | | |
| 0 ROP 15 | | | 2800 | | 0 | | | | Hot- | Wire | | | | 100 |
| | | 1 | | | | | | | | | | | | |
| START 10' SAMPLES | | | | LS: It grayish brown; vf-xtal; dense, platey; chalky in | | | | | | | | | | |
| → SEVERY SH. | | | 2850 | part; w/much grayish green, calc. shale; N.S. | | | | | | | | | | |
| | | | | Shale: gray to greenish gray; | | | | | | | | | | |
| Topeka | | | | TOPEKA 2873 (-924) LS: It-md browns; vf-xtal; fine granular in part; looks cleaner than limes above; sli. chalky; mostly dense; no visible porosity; N.S., 2900. | MUE |)-CO: | 2886: | VIS 54 | , WT 8 | 3.6, FIL | 7.6, C | HL 2k. | | |
| | | | | LS: grayish brown; vf-xtal; sli. chalky; w/ dk gray, greenish gray shales; no visible porosity; N.S. | | | | | | | | | | |
| | | | 2900 | LS: as above. | | | | | | | | | | |
| | | | | LS: It grayish brown to It brown; vf-xtal; chalky in part; platey; no visible porosity; N.S., 2940. | | | | | | | | | | |
| | | | | LS: grayish-brn to brown; vf-xtal; chalky to argill. in part; fusulinids; poor apparent porosity; N.S. | | | | | | | | | | |
| | | | 2950 | LS: as above. | | | | | | | | | | |
| | | | | Shale: black, sli. brownish; fissile; few chips 2990, possible trc 2980 ? | | | | | | | | | | |
| | | | | LS: It brown, off white; mic-vf xtal; dense, platey; no visible porosity; N.S., 2990, incr 3000. | | | | | | | | | | |
| | | | | Shale: gray; calcareous; LS: It-md brown; vf-xtal; sli. fos-frag; dense; no visible porosity; N.S. | | | | | | | | | | |
| 0 ROP 15 | | | 3000 | LS: md-dk brown; vf-xtal; sli. fos-frag; argill. in part; no visible porosity; N.S. | 0 | | | | Hot- | Wire | | | | 100 |
| | | | | LS: md brown; vf-xtal; mixed w/dk gray, pyritic shale; no visible porosity; N.S. | | | | | | | | | | |
| } | | • | | LS: It brown; vf-xtal; trc w/fine isolated vug porosity, It-md brn dry stain; no visble oil; 3050. LS: It-md browns; vf-xtal; mostly dense; sli. peletal; | | | | | | | | | | |
| | | | 3050 | sli. fos; no visible porosity; N.S. | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | • | | LS: It brown to md grayish brown; vf-xtal; trc oomoldic porosity & scattered fine vugs w/dk brn wet stain & trc oil, spotted dk brn dry stains; 1-2% 3100 through 3130 samples. | | | | | | | | | | |
| | | | | LS: mostly it brown; vf-xtal; sli. chalky to dense; sli. granular in part; poor apparent porosity; N.S. | | | | | | | | | | |
| HB HB | | | 3100 | LS: as above. HEEBNER 3109 (-1160) | | | | | | | | | | |
| Toronto | | | | Shale: black; carbon; few chips 3140. LS: dense, indistinct. Shale: greenish, silty; LS: white; mic-vf xtal; trc green sh contact; even dull | -Trc s | shows, | 1-2 ch | ips/tra | ay, 314 | 0, 3150 | are ro | unded | l and | look - |
| S ←Dg | | | | mineral fluor in part; no visible porosity; N.S., starts 3140, incr 3150. DOUGLAS SH 3135 (-1186) | asl | OU | ine | . are | . uDa | .y rlo | . 6 | | | |
| | | | 3150 | Shale: It green, green, dk greenish-gray; marly in part; Shale: as above. | | | | | | | | | | |
| | | | . . | Shale: as above. | | | | | | | | | | |
| #—BRN LIME | | | | BRN LS 3176 (-1227) LS: It grayish brown; vf-xtal; dense; no visible porosity; N.S. | | | | | | | | | | |
| LAN | | • | | LANSING 3184 (-1235) LS: It brown; md-crs oolite w/fair drusy int ool & minor oomoldic porosity; It brown spotted stains, | | | | | | | | | | |
| 0 ROP 15 | | | 3200 | crush VSSO, weak fluor; 1-2% 3110-30m. LS: It gray to brown; vf xtal; dense; sli. oolitic; no visible porosity; N.S. | 0 | | | | Hot- | Wire | | | | 100 |
| 3210 - ○ | | | | LS: It-md grayish brown; vf-xtal; dense oolite in part; poor porosity; N.S.; (trc show as above w/sli. drab stains 3230 probably float) | | | | | | | | | | |
| | | • | | LS: It brown; vf-xtal; poor oomoldic porosity w/ spotted black tar-like stains; no visible oil; 5-10% 3240, decr 3250. | | | | | | | | | | |
| | | | 0. | LS: grayish brown; vf-xtal; dense, blocky; no visible porosity; N.S. | | | | | | | | | | |
| G | 0 | • | 3250 | LS: grayish brown; vf-xtal; fair med-coarse oomoldic w/drab spotted stain, speckeled fluor; looks washed out; 50% of 30 min but 3/4 porosity is baren; | | | | | | | | | | |
| 3265 🔿 | | | | LS: It brown to gray; vf-xtal; soft chalk in part; no visible porosity; N.S. LS: It brown to gray; vf-xtal; chalky in part; poor | | | | | | | | | | |
| | | • | | LS: It brown to gray; vf-xtal; chalky in part; poor oomoldic porosity; very It scattered stains; no visible oil; looks washed out. | | | | | | | | | | |
| | | 1 | 3300 | LS: md-dk grayish brown; mic-vf xtal; dense; no visible porosity; N.S, 3320. | | | | | | | | | | |
| | | | | LS: as above. | | | | | | | | | | |
| | | • | | LS: It-md grayish brown; vf-xtal; dense, platey; sli. fos; poor apparent porosity; N.S. LS: off-white to v lt brown; vf-xtal; sli. oolitic; tight int grain & scattered vug porosity w/black tar-like stains, | | | | | | | | | | |
| | | | | grain & scattered vug porosity w/black tar-like stains, VSSO at best; <1% 3350, 3360. | | | | | | | | | | |
| | | • | 3350 | LS: It-md grayish brown; vf-xtal; trc poor vug porosity w/black tar-like stain; no visible oil; <1% 3370, 3380. | | | | | | | | | | |
| | DS1 #1 | • | | LS: It-md brown; vf-xtal; vugular porosity w/black tar-like stains, VSSO at best; 2-5% 3390. | -MU[|)-CO: | 3420: | VIS 48 | WT 9 | .2, FIL | 7.2, CI | IL 5k. | | |
| | | | | | BO FSI | B 3 M P; 5-1 | IIN IF 15-15- | P, 16 30; R | " IFP EC 3 | , 43" 30' G | FFP; | NCR 4.5" ; SIP | ВВ | |
| 0 ROP 15 | | 1 | 3400 | Conglom: lime as above w/incr green & marly maroon sh 3410, 3417; white opaq to semi- trans chert & opaq oolitic chert 3417 -30m; | 109 0 PER | -1109; FORM | FP: | 51-7 | 5, 96- | 149_ | | 20 & CI | | 100 OLE |
| ARB 3417 O | | • | | ARBUCKLE 3413 (-1464) DOL: off white to It gray; medium to coarse rhombics; delayed acid; fair int xtal por; even bright fluor; crush | _75 M -PUL -DST | IN LED 40 | OK OVE | R, 16 | STAN | DS OU | T, ON | T.O.H. O BOT | for – | |
| 3420 | | • | | SSO; It brn dry stain; 2-5% 3417-60m, 5-10% 3420-CFS. DOL: off-white, It gray; md-crs rhombic clusters; It brn to black oil stain, crush SSO, 5-10% 3450. | STU | CK, RI ER WE | EQUIR ERE R | ED MI OUTIN | JCH V E. | WAS VORKI | NG, A | TIGHT LL STA | , ALM | IOST |
| | | • | | to black oil stain, crush SSO, 5-10% 3450. DOL: off-white, It gray; fine-crs rhombic clusters mixed w/vf xtal, cherty; fair int xtal porosity; It brn to black | | | | | | | | LE, SHALE | | |
| | | • | 3450 | stain, SSO, 50-75% 3460. DOL: off-white, It gray; half fine-crs rhombics, half vf limey, cherty dolomites; It brn to black stains, SSO, even fluor; 90% 3470, 3480. | | | | | | | | | | |
| | | 1 | | DOL: as above but w/decr shows 3490 and after. | | | | | | | | | | |
| | | | | | | | | | | | | | | |

DOL: off-white, It gray; vf-xtal; dense; tight; poor

PIONEER LTD 3496"

ROTARY TOTAL DEPTH 3495 (-1546)

porosity; N.S.

RTD 1:22 AM, 10/26/2019