

Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

Form ACO-1

January 2018

Form must be Typed

Form must be Signed

All blanks must be Filled

WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # _____

Name: _____

Address 1: _____

Address 2: _____

City: _____ State: _____ Zip: _____ + _____

Contact Person: _____

Phone: (_____) _____

CONTRACTOR: License # _____

Name: _____

Wellsite Geologist: _____

Purchaser: _____

Designate Type of Completion:

New Well Re-Entry Workover

Oil WSW SWD

Gas DH EOR

OG GSW

CM (Coal Bed Methane)

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

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

Operator: _____

Well Name: _____

Original Comp. Date: _____ Original Total Depth: _____

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

Plug Back Liner Conv. to GSW Conv. to Producer

Commingled Permit #: _____

Dual Completion Permit #: _____

SWD Permit #: _____

EOR Permit #: _____

GSW Permit #: _____

Spud Date or Date Reached TD Completion Date or Recompletion Date

API No.: _____

Spot Description: _____

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

_____ Feet from North / South Line of Section

_____ Feet from East / West Line of Section

Footages Calculated from Nearest Outside Section Corner:

NE NW SE SW

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

Datum: NAD27 NAD83 WGS84

County: _____

Lease Name: _____ Well #: _____

Field Name: _____

Producing Formation: _____

Elevation: Ground: _____ Kelly Bushing: _____

Total Vertical Depth: _____ Plug Back Total Depth: _____

Amount of Surface Pipe Set and Cemented at: _____ Feet

Multiple Stage Cementing Collar Used? Yes No

If yes, show depth set: _____ Feet

If Alternate II completion, cement circulated from: _____

feet depth to: _____ w/ _____ sx cmt.

Drilling Fluid Management Plan

(Data must be collected from the Reserve Pit)

Chloride content: _____ ppm Fluid volume: _____ bbls

Dewatering method used: _____

Location of fluid disposal if hauled offsite:

Operator Name: _____

Lease Name: _____ License #: _____

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

County: _____ Permit #: _____

AFFIDAVIT

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

Submitted Electronically

KCC Office Use ONLY

Confidentiality Requested

Date: _____

Confidential Release Date: _____

Wireline Log Received Drill Stem Tests Received

Geologist Report / Mud Logs Received

UIC Distribution

ALT I II III Approved by: _____ Date: _____

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

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

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

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

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

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

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

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

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

TUBING RECORD:	Size:	Set At:	Packer At:	
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#1 Anderson-Schwartz Trust

107' FNL & 775' FWL

123' N & 115' E of N/2 NW NW Section 32-19S-30W

Lane County, Kansas

API# 15-101-22621-0000

Elevation: GL: 2,927', KB: 2,935'

Sample Tops			Ref. Well
Anhydrite	2248'	+687	+1
B/Anhydrite	2265'	+670	+2
Stotler	3541'	-606	+16
Heebner	3940'	-1005	+7
Toronto	3954'	-1019	+6
Lansing	3986'	-1051	+7
Muncie	4170'	-1235	+2
Stark	4276'	-1341	+9
Hush	4317'	-1382	+6
BKC	4360	-1425	+1
Marmaton	4391	-1456	+4
Altamont	4404	-1469	+5
Pawnee	4488	-1553	-1
Myrick Station	4516	-1581	Flat
Ft. Scott	4530	-1595	Flat
Cherokee	4550	-1615	+3
Johnson	4592	-1657	+1
Mississippian	4616	-1681	+3
Spergen	4643	-1708	+5
RTD	4725	-1790	



PRESSURE PUMPING LLC
PO Box 884, Chanute, KS 66720
620-431-9210 or 800-467-8676

11885
40208

TICKET NUMBER 56017
LOCATION Oakley Ks
FOREMAN Jerry Y

FIELD TICKET & TREATMENT REPORT
CEMENT

Invoice # 900215

DATE	CUSTOMER #	WELL NAME & NUMBER	SECTION	TOWNSHIP	RANGE	COUNTY	
2-28-19	7173	Anderson Schwartz #1	32	18	30	Lane	
CUSTOMER <u>Ritchie Exp.</u>			CITY <u>Wichita</u>				
MAILING ADDRESS <u>P.O. Box 783188</u>			STATE <u>Ks</u>				
CITY <u>Wichita</u>			ZIP CODE <u>67278-3188</u>				
TRUCK #		DRIVER		TRUCK #		DRIVER	
753		Cory D		assist		Matadillo	
70		Neil W					
535		Jerry Y					
assist		Xavier C					

JOB TYPE Surface HOLE SIZE 12 1/4 HOLE DEPTH 221 CASING SIZE & WEIGHT 8 3/8 23#
 CASING DEPTH 221 DRILL PIPE _____ TUBING _____ OTHER _____
 SLURRY WEIGHT 14.8 SLURRY VOL 1.24 WATER gal/sk _____ CEMENT LEFT IN CASING 20'
 DISPLACEMENT 12 1/2 DISPLACEMENT PSI _____ MIX PSI _____ RATE _____

REMARKS: Salty meeting & rig upon WW12 circulate casing mix 165 sks com 3 & 2 wash up & displace with 12 1/2 bbl fresh water & shut in

Cement did

Circulate

Thank you Jerry & crew

ACCOUNT CODE	QUANTITY or UNITS	DESCRIPTION of SERVICES or PRODUCT	UNIT PRICE	TOTAL
<u>CE0471</u>		<u>PUMP CHARGE</u>	<u>1150.00</u>	<u>1150.00</u>
<u>CE0002</u>	<u>35</u>	<u>MILEAGE</u>	<u>7.15</u>	<u>250.25</u>
<u>CE0711</u>	<u>7.76</u>	<u>ton mileage delivery (min)</u>	<u>660.00</u>	<u>660.00</u>
<u>CC5871</u>	<u>165 sks</u>	<u>surface blend FF</u>	<u>24.00</u>	<u>3960.00</u>
<u>CC5326</u>	<u>100 #</u>	<u>salt</u>	<u>NC</u>	<u>NC</u>
			<u>subtotal</u>	<u>6020.25</u>
			<u>-24%</u>	<u>1505.06</u>
			<u>subtotal</u>	<u>4515.19</u>

[Signature]

SALES TAX 222.75
ESTIMATED TOTAL 4737.94
DATE 2-28-19

Rev 3737

AUTHORIZATION [Signature]

TITLE [Signature]

DATE 2-28-19

I acknowledge that the payment terms, unless specifically amended in writing on the front of the form or in the customer's account records, at our office, and conditions of service on the back of this form are in effect for services identified on this form.

TERMS AND CONDITIONS

ATTENTION: THESE TERMS AND CONDITIONS CONTAIN INDEMNITY PROVISIONS FOR DAMAGE TO PERSONS AND PROPERTY.

All Services or Products provided by QES Pressure Pumping LLC (QES) (a non-affiliated Oil Well Services LLC) are subject to these Terms and Conditions unless superseded by a Master Service Agreement signed by the parties. In the event Customer does not accept these Terms and Conditions as written, Customer must request a Master Service Agreement from QES' Contracts Administration Department at contracts@qes.com.

The operator's services, supplies, materials, personnel or goods to be provided ("Services" or "Products") as applicable by QES Pressure Pumping LLC (QES) will be provided to your customer ("Customer") in accordance with the following terms and conditions ("Agreement"). QES and Customer may be referred to as "Party" or "Parties".

1. Price and Taxes. Customer will pay QES for the Services or Products in accordance with QES' quoted price which includes applicable taxes or process license fees. Customer shall pay all applicable taxes and process license fees related to the Services and/or Products. QES' prices are subject to change without notice.

2. Terms of Payment. Customer will pay QES cash in advance for Services and Products unless QES has approved credit prior to the performance of the Services and/or delivery of the Products. Credit terms for approved accounts require full payment of the invoiced amount within 30 days from the date of invoice. All invoices are due within 30 days and to be charged at interest rate of 1.5% per month or the maximum rate allowed under applicable state law, whichever is higher. Customer will be responsible for any fines, penalties, QES or the retention of any amount owed to QES resulting from late payment to QES and/or collection fees and/or collection costs.

3. Right of Access to Ownership of Products. QES will furnish verification of proof of Services performed and Product delivered to Customer's representative at the time of performance of the Services or Product as delivery. Customer agrees to sign and return such verification including Customer's acceptance of the Services or Products.

4. Delivery or Completion. An industry and responsibility of QES ceases when (1) Products are delivered to the Customer by QES and no longer in the care, custody and control of QES or (2) upon the time when receives the Products and/or shipment. QES will not be responsible for loss or damage to Products in transit or the delays of carriers in delivering goods. In case of shortage, non-conformances, or apparent damage, it is the Customer's responsibility to resolve within acknowledgment from the carrier before Customer accepts delivery. Additionally, QES will not be liable for any damage to delays in delivery or any other loss to a Force Majeure (as defined below), acts of negligence of the Customer, non-party members of manufacturing delays, responsibility or negligence of performance or any other cause in relation beyond the control of QES. In the event of a delay caused by the aforesaid, the delivery or completion date will be extended for a period equal to such delay, and the purchase or service will not be void or voidable as a result thereof.

5. Work of Service Site Conditions. Customer has a primary and control of the work service site and, containing inherent knowledge of the same and the conditions surrounding them, warrants that the well and/or service site will be in proper condition to receive and accommodate Services and Products. Also, QES request Customer and provide documentation to verify that the well or service site is adequate to support the Services and the delivery of Products. Customer also warrants that QES' personnel and equipment will be able to safely access the well and service site and that any special equipment or tool requirements required for such access will be the responsibility of Customer unless otherwise agreed to by the Parties.

6. Environmental and Hazardous Materials. Customer agrees that for any well created in part of the Services, Customer will be considered the "generator" for purposes of any applicable laws or regulations pertaining to the transportation, storage and handling of chemicals and hazardous materials.

7. Data, Data Transmission and Storage. QES does not warrant or guarantee the accuracy of any research analysis, history or log of data generated for the Services. QES is not responsible for any accidental or intentional destruction of such data by QES and it is the responsibility of the Customer to safeguard such data against loss including appropriate secure digital copies of data for storage.

8. WARRANTIES, LIMITATION OF WARRANTY.

a) QES warrants that the Services and Products will (i) be free from defects in materials and workmanship, (ii) be performed in a good and workmanlike manner, in accordance with good industry working practices, and (iii) conform to the plans, specifications and technical information provided in writing by Customer and the Services or Products are accepted by Customer or QES' designated representative. In the event that Customer discovers a defect in the Services or Products of the nature or extent of a defect, Customer shall notify QES of such defect. In the event that QES confirms the nature of Products or Services of defect, QES' liability and Customer's liability shall be limited to the extent of the defect (for example, cost of labor of warranty effort) and shall be limited to the extent of any Services or Products as expressly stated by QES. QES' obligation to repair or replace such Services or Products upon their return to QES or to be used by Customer for the full price paid by Customer for the defective product of the Services or Products shall be limited to QES. In the event of Products or parts not wholly of QES' manufacture, QES' liability will be limited to the extent of its recovery from the manufacturer of such Products or parts under its liability to QES. QES will not be liable for any damages, claims, losses or expenses of Customer resulting from such defects or for damages resulting from delays, acts of force or other direct, indirect, incidental, punitive or consequential damages of any kind. QES will not be responsible for (i) failures of Services that have been in any way licensed with or allowed by anyone other than a duly-authorized representative of QES, (ii) failures due to lack of compliance with recommended maintenance procedures, and (iii) products requiring repair or replacement due to normal wear and tear.

b) EXCEPT FOR THE WARRANTIES EXPRESSLY STATED ABOVE, THERE ARE NO OTHER WARRANTIES. THE PARTIES EXPRESSLY EXCLUDE AND CUSTOMER WAIVES ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

c) IN NO EVENT WILL QES' ENTIRE LIABILITY (IN TORT, CONTRACT, WARRANTY, INFRINGEMENT OR OTHERWISE) TO CUSTOMER EXCEED THE PURCHASE PRICE ACTUALLY PAID BY CUSTOMER FOR THE SERVICES OR PRODUCTS THAT GIVE RISE TO A DISPUTE. THIS PROVISION WILL SURVIVE ANY TERMINATION OF THIS AGREEMENT.

9. INDEMNIFICATION AND WAIVER OF CONSEQUENTIAL DAMAGES.

9.1 For purposes of this Section 9, the following definitions shall apply. "QES Group" means QES Pressure Pumping LLC, its parent company, and affiliated companies, and its and their officers, directors, employees, contractors, subcontractors and assigns. "Customer Group" means Customer, its parent if any, its subsidiaries and affiliated companies, its assigns, its contractors, partners and any entity with whom Customer has an economic interest with respect to Oil Services, including Customer's joint interest owners and partners and its and their officers, directors, employees, contractors and including QES' subcontractors and assigns.

9.2 QES INDEMNIFY. QES AGREES TO PROTECT, DEFEND, INDEMNIFY AND HOLD HARMLESS CUSTOMER GROUP FROM AND AGAINST ALL CLAIMS, DEMANDS, AND CAUSES OF ACTION OF EVERY KIND AND CHARACTER, ARISING IN CONNECTION WITH THE SERVICES, ON ACCOUNT OF BODILY INJURY, ILLNESS, OR DEATH OF ANY MEMBER OF QES GROUP OR DAMAGE TO OR LOSS OF PROPERTY OF ANY MEMBER OF QES GROUP.

9.3 CUSTOMER INDEMNIFY. CUSTOMER AGREES TO PROTECT, DEFEND, INDEMNIFY AND HOLD HARMLESS QES GROUP FROM AND AGAINST ALL CLAIMS, DEMANDS, AND CAUSES OF ACTION OF EVERY KIND AND CHARACTER, ARISING IN CONNECTION WITH THE SERVICES, ON ACCOUNT OF BODILY INJURY, ILLNESS, OR DEATH OF ANY MEMBER OF CUSTOMER GROUP OR DAMAGE TO OR LOSS OF PROPERTY OF ANY MEMBER OF CUSTOMER GROUP.

9.4 WELL. CUSTOMER WILL RELEASE, PROTECT, DEFEND, AND INDEMNIFY QES GROUP FROM AND AGAINST ALL CLAIMS, DEMANDS AND CAUSES OF ACTION OF EVERY KIND AND CHARACTER IN THE EVENTS OF: (i) LOSS OR DAMAGE TO ANY GEOLOGICAL FORMATION, STRATA OR OIL OR GAS RESERVOIR OR MINERAL OR WATER RESOURCE BENEATH THE SURFACE OF THE LAND OR WATER, (ii) LOSS OR DAMAGE TO THE HOLE OR WELL, (iii)

IMPAIRMENT OF PROPERTY RIGHTS OR OTHER INTERESTS IN OR TO OIL, GAS, MINERAL OR WATER RESOURCES, AND (iv) REGARDING CONTROL OF ANY WILDWELL OR OUT OF CONTROL WELL, UNDERGROUND OR ABOVE THE SURFACE, INCLUDING REMOVAL OF WRECK, DEBRIS, EQUIPMENT, AND HAZARDOUS MATERIALS AND REMEDIATING ENVIRONMENTAL DAMAGE.

9.5 POLLUTION RESPONSIBILITY. Subject to paragraphs 9.2 and 9.3, it is understood and agreed between Customer and QES that the responsibility for pollution shall be as follows:

(a) QES WILL ASSUME RESPONSIBILITY FOR CONTROL AND REMOVAL OF AND WILL PROTECT, DEFEND AND INDEMNIFY CUSTOMER GROUP FROM AND AGAINST ALL CLAIMS, DEMANDS AND CAUSES OF ACTION OF EVERY KIND OF CHARACTER ARISING FROM POLLUTION OR CONTAMINATION WHICH ORIGINATES ABOVE THE SURFACE OF THE LAND OR WATER FROM THE EQUIPMENT OF ANY MEMBER OF QES GROUP MAINTAINED IN QES GROUPS' CARE, CUSTODY AND CONTROL, AND ARISING FROM THE PERFORMANCE OF THE SERVICES.

(b) CUSTOMER WILL ASSUME RESPONSIBILITY FOR CONTROL AND REMOVAL OF AND WILL PROTECT, DEFEND AND INDEMNIFY QES GROUP FROM AND AGAINST ALL CLAIMS, DEMANDS AND CAUSES OF ACTION OF EVERY KIND AND CHARACTER ARISING FROM POLLUTION OTHER THAN THAT DESCRIBED IN SECTION 9 (A) ABOVE, WHICH MAY OCCUR DURING THE CONDUCT OF OPERATIONS HEREUNDER, INCLUDING BUT NOT LIMITED TO, POLLUTION RESULTING FROM FIRE, BLOWOUT, CHATERING, SEEPAGE OR OTHER UNCONTROLLED FLOW OF OIL, GAS OR OTHER SUBSTANCE.

9.6 WAIVER OF CONSEQUENTIAL DAMAGES. NOTWITHSTANDING ANY PROVISION TO THE CONTRARY, CUSTOMER AND QES FURTHER AGREE THAT NEITHER PARTY WILL BE LIABLE TO THE OTHER OR EACH OTHER'S RESPECTIVE GROUP FOR ANY CONSEQUENTIAL, INCIDENTAL OR INDIRECT DAMAGES, INCLUDING BUT NOT LIMITED TO, LOSS OF PROFIT, LOSS OF PRODUCTION, REVENUE, OR ANTICIPATED BUSINESS ("LOSSES"). CUSTOMER AGREES TO INDEMNIFY AND HOLD QES GROUP HARMLESS FROM AND AGAINST ANY AND ALL CLAIMS FOR SUCH LOSSES ASSERTED BY MEMBERS OF CUSTOMER GROUP. QES AGREES TO INDEMNIFY AND HOLD CUSTOMER GROUP HARMLESS FROM AND AGAINST ANY AND ALL CLAIMS FOR SUCH LOSSES ASSERTED BY MEMBERS OF QES GROUP.

9.7 EXCEPT AS OTHERWISE EXPRESSLY LIMITED BY THIS AGREEMENT OR BY LAW, ALL RELEASES, INDEMNITY OBLIGATIONS AND OTHER LIABILITIES ASSUMED UNDER THIS AGREEMENT WILL BE WITHOUT LIMIT AND WITHOUT REGARD TO THE CAUSE OR CAUSES, INCLUDING, WITHOUT LIMITATION, PREEXISTING CONDITIONS, USEWORTHINESS, STRICT LIABILITY, WILLFUL MISCONDUCT, AND THE SOLE, JOINT, GROSS, OR CONSCIOUS NEGLIGENCE OF ANY PARTY.

9.8 Each Party herunder agrees to support its indemnity obligations with liability insurance coverage with limits of liability not less than ten million dollars (\$10,000,000). It is the express intention of the Parties that the indemnities contained herein apply to the fullest extent permitted by applicable law, and in no event will a Party's indemnity obligation be limited to the amount of insurance carried by each Party.

THIS SECTION 9 WILL SURVIVE THE TERMINATION OR EXPIRATION OF THIS AGREEMENT

10. Insurance. All insurance policies of either Party, in any way related to the Services, at the time required by the Agreement, shall be the order of the risk and insurable assigned by such party. In the event the other party group is not fully insured (except for workers compensation, QES OIL AND GAS OPERATIONS LIABILITY POLICIES), (i) such party agrees to make the other party group and (ii) the other party group shall be jointly and severally liable to any person or other party group.

11. Force Majeure. Except the obligation to make payments when due, neither QES nor Customer will be liable for non-compliance or in breach of this Agreement for any delay or failure in performance resulting from the acts of God, war or military activity, national emergency of law, any governmental action, acts of public enemy, war, insurrection, riot, explosion, contamination, flood, failure of transportation, natural strikes, strike or unusual labor, material or equipment shortages, or any other or similar cause beyond the reasonable control of either Party. The Party so affected, will be deemed to have waived or waived account promptly notify the other Party in writing of the nature of the cause and the estimated effect on its performance obligations with proper details to remedy the condition. In the event Customer declares a force majeure occurrence, QES will be compensated at the standard daily rate for the material and personnel that are standing on site as a consequence of the force majeure occurrence until force majeure terminates the work order or work operation.

12. Governing Law. This Agreement will be governed by the laws of the State of Texas, without regard to its conflict of law provisions. The Parties agree to submit to the exclusive jurisdiction of the federal or state courts located in Houston, Harris County, Texas with respect to any and all disputes that arise out of or are related in any way to the subject matter of this Agreement. This Section 12 will survive the termination or expiration of this Agreement.

13. Independent Contractor. QES will be an independent contractor who supports the Services performed and nothing QES nor anyone employed by QES will be deemed an employee or agent of the customer. It is not an agent, authorized agent or representative of Customer.

14. Severability. If in any event any provision of this Agreement is inconsistent with or contrary to a applicable law, rule or regulation, a provision will be deemed modified to the extent such law, rule, and the remaining terms as modified will remain in full force and effect.

15. Waiver. A waiver on the part of either Party of any breach of any term, provision or condition of this Agreement will not constitute a precedent and not bind either Party, except to a waiver of any wrongdoing or other breach of the terms of any other term, provision or condition of this Agreement.

16. Entire Agreement. This Agreement contains the entire agreement of the Parties with regard to the subject matter hereof and supersedes any prior and all written agreements, contracts, representations of liability between the Parties relating to the subject matter hereof. No amendment or modification of this Agreement will be effective unless it is in writing and signed by an authorized representative of each Party. If the Parties enter into a Master Service Agreement, then any term or condition hereof which conflicts with the provisions of such Master Service Agreement will be deemed null and void.



Services, Inc.

CHARGE TO: Ritchie Exploration
 ADDRESS
 CITY, STATE, ZIP CODE

PAGE 1 OF 2

TICKET 032138

1. SERVICE LOCATIONS <u>Ness City, KS</u>	WELL/PROJECT NO. <u>1</u>	LEASE <u>Andersen Schwartz Trust Lane</u>	COUNTY/PARISH <u>Leone</u>	STATE <u>KS</u>	CITY <u>Dighton</u>	DATE <u>3-15-19</u>	OWNER <u>Dighton, Co. W. Co. S.</u>
2. TICKET TYPE <input checked="" type="checkbox"/> SERVICE <input type="checkbox"/> SALES	CONTRACTOR <u>WW</u>	RIG NAME/NO. <u>12</u>	JOB PURPOSE <u>Development</u>	SHIPPED VIA <u>GT Location</u>	DELIVERED TO <u>Location</u>	ORDER NO.	
3. WELL TYPE <u>Oil</u>	WELL CATEGORY <u>Development</u>	WELL PERMIT NO.					
4. REFERRAL LOCATION	INVOICE INSTRUCTIONS						

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING			DESCRIPTION	QTY.	U/M	QTY.	U/M	UNIT PRICE	AMOUNT
		LOC	ACCT	DF							
575					MILEAGE Trk # 112			55	mi	5.00	275.00
578					Pump Change - Long String			1	job	1300.00	1300.00
404					Part Collar			5 1/2	in	2500.00	2500.00
403					CMT Baskets			4	ea	275.00	1100.00
406					Latch down Plug + Balls			1	ea	250.00	250.00
407					Insert float shoe w/ Hubs AND Tubulizer			1	ea	325.00	325.00
409					Limit Clamp			10	ea	85.00	850.00
414					Limit Clamp			1	ea	25.00	25.00

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 3-15-2019 TIME SIGNED 10:30 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?	AGREE	UNDECODED	DISAGREE
WE UNDERSTOOD AND MET YOUR NEEDS?			
OUR SERVICE WAS PERFORMED WITHOUT DELAY?			
WE OPERATED THE EQUIPMENT AND PERFORMED JOB CALCULATIONS SATISFACTORILY?			
ARE YOU SATISFIED WITH OUR SERVICE?	<input type="checkbox"/> YES	<input type="checkbox"/> NO	
<input type="checkbox"/> CUSTOMER DID NOT WISH TO RESPOND			

PAGE TOTAL 1
 TAX 11788.01
 TOTAL 18507.04

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

SWIFT OPERATOR Andersen Trucks APPROVAL Thank You!



Services, Inc.

PO Box 466
Ness City, KS 67560
Off: 785-798-2300

TICKET CONTINUATION

TICKET No. 032138

CUSTOMER Ritchie
WELL Anderson Schwartz #1
DATE 3-15-19
PAGE 2 OF 2

PRICE REFERENCE	SECONDARY REFERENCE / PART NUMBER	ACCOUNTING			TITLE	DESCRIPTION	QTY			UNIT PRICE	AMOUNT									
		LOC	ACCT	OF			QTY	UNIT	QTY			UNIT								
325						Standard CMT														
279						Bentone Gel						4	sk	30.00	120.00					
283						Salt						1100	lbs	0.20	220.00					
292						Holed 322						100	lbs	8.00	800.00					
277						Coal Sed T/Calscraper						1025	lbs	0.85	871.25					
221						Liquid KCl						2	gal	25.00	50.00					
281						Mud Flush						500	gal	1.50	750.00					
290						D-Air						3	gal	42.00	126.00					
581						SERVICE CHARGE						1		358.00	358.00					
583						MILEAGE CHARGE						1		511.00	511.00					
						TOTAL WEIGHT	LOADED MILES		CUBIC FEET		TON MILES									
						21895	55		206		602.11									
											CONTINUATION TOTAL		6472.29							

JOB LOG

SWIFT Services, Inc.

DATE 3/15/19 PAGE NO. 1

CUSTOMER: Ritchie Exploration WELL NO. 1 LEASE: Anderson Schwartz Tract JOB TYPE: Long Strim TICKET NO. 032138

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	0230							On Location 5 1/2" 15.5lb RTD: 4725' LTD: 4725' TP: 4714' PC: #60 2240'
								Turbo: 1, 2, 3, 4, 5, 7, 8, 10, 13, 59, 61 Baskets: 5, 60 [clamped], 80, 97
	0446							Start 5 1/2 15.5" Casing in well
	0740							Drop ball - Circulate
	0840	6 1/2 6 1/2						Pump 500 gal Mud Flush Pump 20 bbl KCL Flush
	0910	1/2	7					Plug RH [30 sks]
	0915	4 1/2	44					Mix 175 sks of Standard 2% gel, 10% Salt, 1/2% Hald 322, 5# gilsante CMT @ 14.9g PPG
	0935							Wash Pump + Lines Release latch down Plug
	0940	6 1/2 6 1/2 6 1/2	0 87 111				200 400 800	Start Displacement Lift Pressure Max Lift Pressure
	1000	6 1/2	112				1600	Land Latch down Plug
								Release Pressure * Plug Hold * Wash-up Trk
	1020							Job Complete 205 sks Standard 2% gel, 10% Salt, 1/2% Hald 322, 5# gilsante used -Thank You Gideon, Preston, Kirby



Services, Inc.

CHARGE TO: Ritchie Exploration

ADDRESS

CITY, STATE, ZIP CODE

TICKET 032140

PAGE 1 OF 1

1. <u>Ness City, KS</u>	WELL/PROJECT NO. <u>1</u>	LEASE	COUNTY/PARISH	STATE	CITY	DATE	OWNER
2. <u>Anderson Schwaartz Trust</u>	TICKET TYPE <input checked="" type="checkbox"/> SERVICE <input type="checkbox"/> SALES	CONTRACTOR	RIG NAME/NO. <u>Lease</u>	KS	<u>Amey</u>	3-19-2019	
3. <u>Oil</u>	WELL TYPE	WELL CATEGORY	JOB PURPOSE	SHIPPED VIA <u>CT</u>	DELIVERED TO <u>Location</u>	ORDER NO.	
4. <u>Oil</u>	INVOICE INSTRUCTIONS	<u>Workover</u>	<u>Port Collar</u>		WELL PERMIT NO.		
							<u>Amey, L-W, 8-S, 216-W</u>

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	LOC	ACCT	DF	DESCRIPTION	QTY. U/M		UNIT PRICE	AMOUNT
576		1			MILEAGE <u>Tk #112</u>			5.00	261.00
576D		1			<u>Pump Change - Port Collar</u>			1300.00	1300.00
329-8		1			<u>60/40 Pozmix 8% gel</u>			11.10	3794.00
275		1			<u>Cotton Seed Hills</u>			30.00	30.00
290		1			<u>D-Air</u>			42.00	168.00
581		1			<u>CMT Service Charge</u>			76.00	787.00
583		1			<u>Drayage</u>			85.00	841.00

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.

X

DATE SIGNED 3-19-2019 TIME SIGNED 5:00 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?	WE UNDERSTOOD AND MET YOUR NEEDS?	OUR SERVICE WAS PERFORMED WITHOUT DELAY?	WE OPERATED THE EQUIPMENT AND PERFORMED JOB CALCULATIONS SATISFACTORILY?	ARE YOU SATISFIED WITH OUR SERVICE?
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
AGREE	UNDECIDED	DISAGREE			
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CUSTOMER DID NOT WISH TO RESPOND					

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

SWIFT OPERATOR

Gudrun Fuchs

APPROVAL

[Signature]

Thank You!

TOTAL 6918.59

JOB LOG

SWIFT Services, Inc.

DATE 3-19-2019 PAGE NO. 1

CUSTOMER Ritchie Exploration WELL NO. 1 LEASE Anderson Schwartz Trust JOB TYPE Port Collar TICKET NO. 032140

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	1330							On Location 2 7/8" 5 1/2" PC: 2240'
	1435	-	-		✓		1200	Pressure test open PC
	1440	2	5	✓			100	Injection Rate
	1450	4 1/2	112	✓			350	Mix 340 sks of 60/40 Pozmix @ 12.24 ppg w/ 100# of hulls
	1515	4 1/2	12	✓			400	Displace CMT
	1525							Close PC
	1540							Run 5 joints
	1540							
	1545	4 1/2	28		✓		400	Reverse Clean
	1600							Wash-up Trk TOH
	1700				✓		500	Pressure up Casing to 200 300 lbs *Shut in*
	1715							Job Complete 340 sks of 60/40 Pozmix 8 legs w/ 100# hulls used
								Thanks
								Cudeon, Preston, Kirby



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

Well Name: ANDERSON-SCHWARTZ TRUST
Well Id: #1
Location: 107' FNL, 775' FWL, Sec 32-T19S-R30W, Lane County, Kansas
License Number: API: 15-101-22621 Region: Lane County
Spud Date: 02/27/2019 Drilling Completed: 03/13/2019
Surface Coordinates: Lat: 38.3657751
Long: -100.6644372
Bottom Hole Vertical hole
Coordinates:
Ground Elevation (ft): 2927' K.B. Elevation (ft): 2935'
Logged Interval (ft): 3700' To: RTD Total Depth (ft): 4725'
Formation: Mississippian at RTD
Type of Drilling Fluid: Chemical

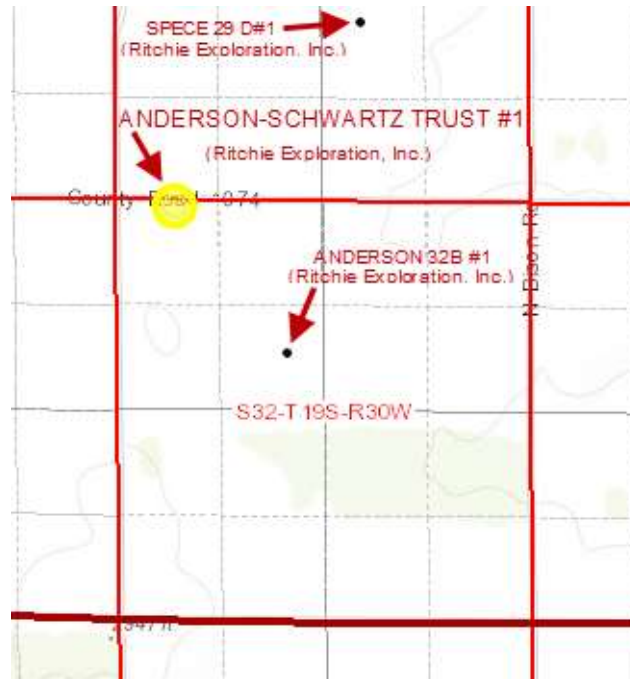
Printed by MUD.LOG from WellSight Systems 1-800-447-1534 www.WellSight.com

OPERATOR

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

GEOLOGIST

Name: Kent R. Matson
Company: Matson Geological Services, LLC
Address: 33300 W. 15th Street S.
Garden Plain, Kansas 67050
316-644-1975; kent4m@hotmail.com



COMMENTS

Ritchie Exploration Company Geologist: John Goldsmith, 316-640-0236 (cell).

Contractor: WW Drilling Company, Rig #12.

Tool Pusher: Calvin Pfannenstiel, 785-743-8120 (cell).

Surface Casing: 8 5/8" set at 221' (KB) w/165sx cement by QES.

Production Casing: Based on field observations of drill cuttings, DST results and electric log evaluation, production casing was installed.

Mud by: Mud-Co/Service Mud, Inc., Reid Atkins, 785-694-3741 (cell).

DST's by: Diamond Testing, Tim Venters, 620-388-6333 (cell).

Logs by: Pioneer (DI w/GR, CND, Micro, and Sonic), Ian Mabb, 785-623-9741 (cell).

RTD= 4725'

LTD= 4725'

FORMATION TOPS

FORMATION	SAMPLE TOPS		LOG TOPS	
	Depth	Datum	Depth	Datum
Stotler	3549'	-614	3548'	-613
Heebner Shale	3940'	-1005	3940'	-1005
Lansing	3987'	-1052	3988'	-1053
Muncie Creek Shale	4170'	-1235	4170'	-1235
Stark Shale	4276'	-1341	4274'	-1339
Hushpuckney Shale	4316'	-1381	4212'	-1377
Base of KC	4360'	-1425	4356'	-1421
Marmaton	4398'	-1463	4395'	-1460
Altamont	4412'	-1477	4408'	-1473
Pawnee	4488'	-1436	4486'	-1434
Myrick Station	4517'	-1582	4515'	-1580
Fort Scott	4531'	-1596	4530'	-1595
Cherokee Shale	4551'	-1616	4552'	-1617
Johnson	4589'	-1654	4588'	-1653
Mississippian	4616'	-1681	4614'	-1679
RTD	4725'	-1790		
LTD			4725'	-1790

ROCK TYPES

LITHOLOGY

	Anhy
	Cht
	Coal
	Congl
	Dol
	Gyp
	Lmst
	Salt
	Shale
	Shcol
	Shgy
	Sltst
	Ss
	Carb sh
	Dol
	Dtd
	Gry sh
	Sandy lms
	Shale
	Sltstn
	Shlyslts

	Sitysh
	Sdy dolo
	Silty dolo
	Shy dolo
	Shaly ls

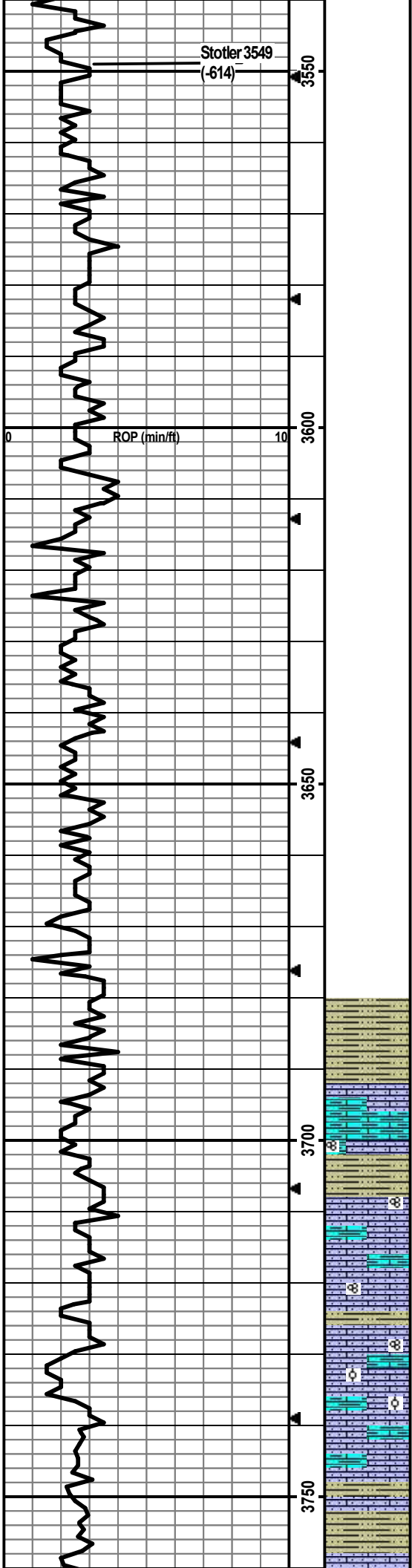
FOSSIL

	Algae
	Amph
	Belm
	Bioclst
	Brach
	Bryozoa
	Cephal
	Coral
	Crin
	Echin
	Fish
	Foram
	Fossil
	Gastro
	Oolite

MINERAL

	Ostra
	Pelec
	Pellet
	Pisolite
	Plant
	Strom
	Fuss
	Oomold
	Ferrpel
	Ferr
	Glau
	Gyp
	Hvymin
	Kaol
	Marl
	Minxl
	Nodule
	Phos
	Pyr
	Salt
	Sandy
	Silt
	Sil
	Sulphur
	Tuff
	Chlorite
	Dol
	Sand
	Sly
	Anhy
	Arggrn
	Arg
	Bent
	Bit
	Brecfrag
	Calc
	Carb
	Chtdk
	Chtlt
	Dol
	Feldspar

Rate of Penetration (ROP) ROP (min/ft)	Depth	Lithology	CFS Point	Oil Shows	Geological Descriptions	Remarks
	0 10 33				Morning Report Depth/Activity (7:00 am) 02/27/2019, MIRU/Spud. 02/28, drilling @ 221'. 03/01, drilling @ 1541'. 03/02, drilling @ 2703'. 03/03, drilling @ 3275'. 03/04, drilling @ 3707'. 03/05, drilling @ 4086'. 03/06, DST #1 @ 4240'. 03/07, drilling @ 4374'. 03/08, DST #2 @ 4450'. 03/09, DST #3 @ 4500'. 03/10, On the bank, depth @ 4525', working on site flooding problem. 03/11, DST#4 @ 4610'. 03/12, DST#5 @ 4632'. 03/13, DST#6 @ 4648'. TD @ 4725'. Electric logged.	Mud-Co/Service Mud Inc. Check #1 @ 0' 02/27/19, predrilling instructions. Mud-Co/Service Mud Inc. Check #3 @ 1724' 03/01/19 09:40am wt vis pH chl 8.9 30 7.0 320 Filt LCM n/c tr Mud-Co/Service Mud Inc. Check #4 @ 2813' 03/02/19 10:45am wt vis pH chl 9.6 32 7.0 25000 Filt LCM n/c 2 Mud-Co/Service Mud Inc. Check #5 @ 3295' 03/03/19 08:00am wt vis pH chl 9.2 29 7.0 22000 Filt LCM n/c 2
	0 10 3400				Anhydrite: Top @ 2249', Base @ 2265' (based on drill time). Conducted 740 bbls drilling mud displacement @ 3430'-3449'.	Mud-Co/Service Mud Inc. Check #6 @ 3732' 03/04/19 08:00am wt vis pH chl 8.9 48 11.0 2400 Filt LCM 6.4 3 Mud-Co/Service Mud Inc. Check #7 @ 4097' 03/05/19 09:00am wt vis pH chl 9.3 49 10.0 3000 Filt LCM 8.0 2 Mud-Co/Service Mud Inc. Check #8 @ 4240' 03/06/19 08:00am wt vis pH chl 9.3 48 9.5 4000 Filt LCM 11.2 1
	0 10 3450				Formation tops and lithologies have been adjusted to correlate to the electric log. ROP Data began @ 3500' on 03/03/2019	Mud-Co/Service Mud Inc. Check #9 @ 4416' 03/07/19 09:40am wt vis pH chl 9.6 47 10.5 3000 Filt LCM 9.6 1 Mud-Co/Service Mud Inc. Check #10 @ 4450' 03/08/19 07:50am wt vis pH chl 9.3 53 10.5 4000 Filt LCM 7.2 1 Mud-Co/Service Mud Inc. Check #11 @ 4500' 03/09/19 07:45am wt vis pH chl 9.0 46 10.0 3400 Filt LCM 8.8 2
	0 10 3500					Mud-Co/Service Mud Inc. Check #12 @ 4525' 03/10/19 05:50pm wt vis pH chl 8.6 55 11.0 2500 Filt LCM 7.2 2 Mud-Co/Service Mud Inc. Check #13 @ 4610' 03/11/19 09:15am wt vis pH chl 8.8 58 10.5 3000 Filt LCM n/c 2



8.0 2
 Mud-Co/Service Mud Inc. Check
 #14 @ 4632' 03/12/19 10:20am
 wt vis pH chl
 8.9 52 10.0 4000
 Filt LCM
 8.0 2

Mud-Co/Service Mud Inc. Check
 #15 @ 4648' 03/13/19 09:15am
 wt vis pH chl
 8.8 48 9.5 4400
 Filt LCM
 8.0 2

Survey Record
Deg @ Ft
 0.5 @ 221'
 0.25 @ 4240'
 0.75 @ 4725'

Drill cutting samples at 10' intervals start at 3700'.

SH: lt-dk gry, vry silty, carb, soft-firm, no odor, ns.

LS: lt bm/lt gry, f-med xtal, vry silty/sndy, arg, some chalky, foss frags, no vis por, no odor, ns.

LS: cm/lt bm/lt gry, micro-m xtal, vry silty/sndy, foss frags/fush, min ppt-vf in-xtal por, no odor, ns.

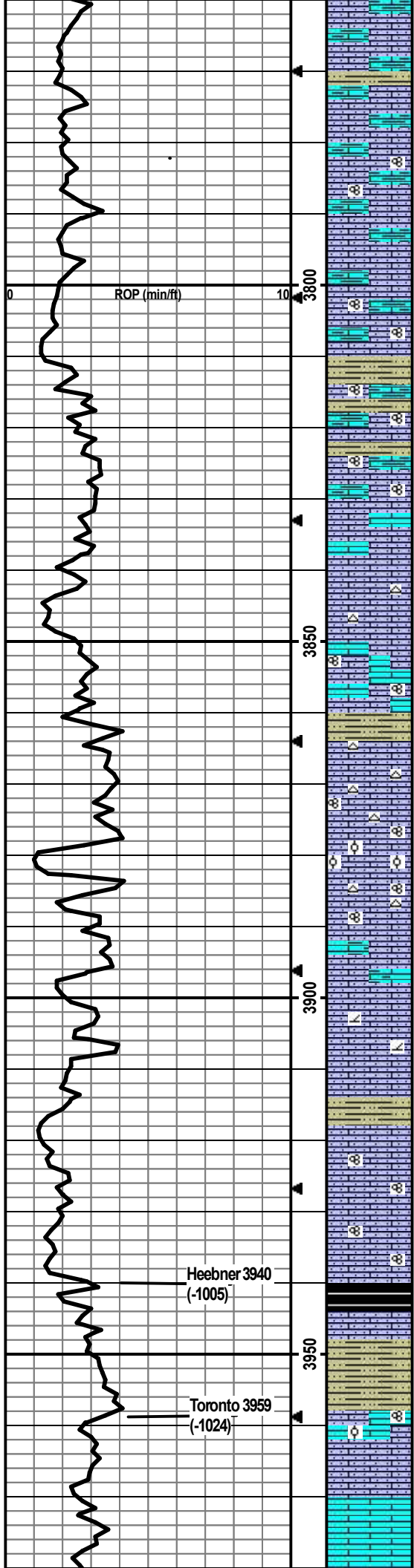
LS: cm/lt-m bm/gry, micro-m xtal, vry silty/sndy, some arg, min chalky, no vis por, no odor, ns.

LS: lt-m bm/gry, vf-m xtal, silty/sndy, chalky, arg, foss frags/fush, no vis por, no odor, ns. Some SH: gry, some silty, firm, no odor, ns.

LS: cm/lt bm/lt gry-bm, f-m xtal, silty/sndy, chalky, arg, foss frags/ool, ppt-m in-xtal/oo-castic por, no odor, ns.

LS: lt-m bm/gry-bm, vf-f xtal, vry silty/sndy, chalky, arg, foss frags, no vis por, no odor, ns.

LS: lt bm/lt gry-bm/gry, f-m xtal, vry silty/sndy, arg, foss frags, no vis por, no odor, ns. SH: lt-dk gry, some vry silty, carb, firm.



LS: cm/lt bm/lt gry-bm, micro-med xtal, some vry silty/sndy, some chalky, some arg, foss frags, no vis por, no odor, ns.

LS: cm/lt gry/lt bm, micro-m xtal, silty/sndy, some vry chalky, arg, foss frags, no vis por, no odor, ns.

LS: lt gry/lt gry-bm, micro-med xtal, silty/sndy, vry chalky, some arg, foss frags/fusln, no vis por, no odor, ns.

LS: cm/lt gry-bm/lt bm, micro-fn xtal, chalky, silty/sndy,, arg, foss frags, no vis por, no odor, ns.

LS: cm/lt-m bm/some gry mottling, micro-med xtal, vry silty, some chalky, arg, foss frags/fusln, no vis por, no odor, ns.

SH: m-dk gry/blk, silty, silt carb, firm.

LS: lt-m bm/lt gry-bm, micro-fn xtal, vry silty, chalky, foss frags/fusln, min por w/in fusln, no odor, ns.

LS: cm/lt-m bm, vf-m xtal, silty/sndy, some chalky, arg, foss frags/fusln, no vis por, no odor, ns.

LS: lt gry/lt gry-bm, micro-m xtal, some silty/sndy, min chalky, no vis por, no odor, ns.

LS: cm/lt bm/lt gry-bm, micro-f xtal, some silty, some chalky, wht chert, foss frags, no vis por, no odor, ns.

LS: lt-m bm, micro-f xtal, min silty/sndy, some chalky, foss frags/fusln, min ppt-f in-xtal por, no odor, ns.

LS: cm/lt bm/lt gry-bm, micro-med xtal, silty/sndy, chalky, wht chert, foss frags/fusln, some ppt-f in-xtal por, no odor, ns.

LS: cm/lt-med bm, micro-m xtal, some silty/sndy, min chalky, wht/cm chert, foss frags/fusln/dense crs ool, min ppt-m in-xtal por, no odor, ns.

LS: cm/lt-m bm/lt gry-bm, micro-m xtal, silty/sndy, wht chert, foss frags/fusln, min ppt-f in-xtal por, no odor, ns.

LS: lt-m bm, micro-med xtal, some silty/sndy, some chalky, arg, foss frags, no vis por, no odor, ns.

LS: cm/lt-m bm, micro-m xtal, some chalky, silty, some dolomitic, foss frags, min ppt-vf in-xtal por, no odor, ns.

LS: cm/lt-m bm, micro-m xtal, some silty/sndy, foss frags, min ppt-f in-xtal por, no odor, ns. SH: m-dk gry/blk, min silty, silt carb, firm.

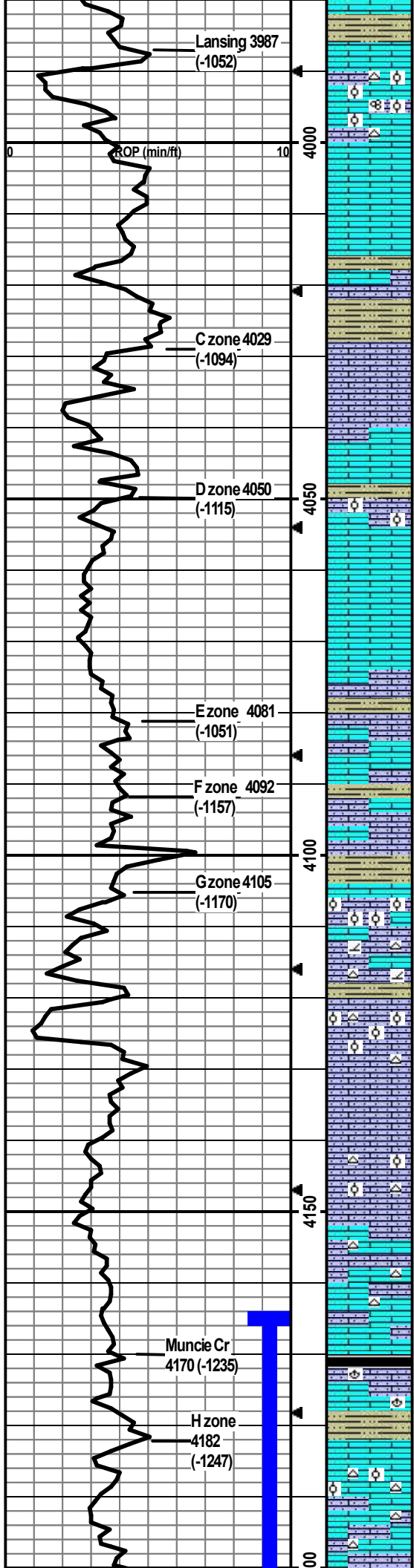
LS: cm/lt-m bm w/dk bm inclusions, f-m xtal, silty/sndy, some chalky, arg, foss frags/fusln, min in-fusln por, no odor, ns.

SH: lt-dk gry/blk, silt carb, some vry silty/sndy, firm, fissile.

SH: lt-dk gry, some vry silty/sndy, soft-firm. LS: cm/lt-m bm, micro-med xtal, some chalky, min foss frags/fusln/min dense ool, ppt-f in-xtal por, no odor, ns.

LS: cm/lt-m bm/lt gry, micro-med xtal, some chalky, some silty/sndy, foss frags, no vis por, no odor, ns.

LS: wht/cm, micro-f xtal, some chalky, foss frags, min ppt-f in-xtal por, no odor, ns.



LS: lt-m gry-cm, micro-f xtal, min foss frags, no vis por, no odor, ns. SH: lt-m gry/lt green-gry/dk maroon, slit carb, min silty, firm.

LS: cm/lt bm, micro-m xtal, some silty, wht chert, foss frags/fusin/abund ool, f-crs in-xtal por w/med oo-castic por, no odor, ns.

LS: cm/lt gry, micro-f xtal w/some 2ndary xtals, min foss frags/dense ool, no vis por, no odor, ns. Sample has flood of m-dk gry SH assumed from above.

LS: cm/lt-m bm/lt gry-bm, micro-f xtal w/some 2ndary xtals, min foss frags, dense no vis por, no odor, ns.

LS: cm/lt bm, micro-med xtal, foss frags/fusin, silty/sndy, chalky, Some SH: med-dk gry, some silty, slit carb, firm.

LS: cm/lt bm/lt gry, micro-med xtal, some silty/sndy, smpl vry chalky, foss frags/grainy, min ppt-f in-xtal por, no odor, ns.

LS: cm/min lt gry, micro-m xtal, some chalky, foss frags, no vis por, no odor, ns.

LS: cm/lt bm, micro-f w/some med xtal, slit silty/sndy, some chalky, some foss frags/min dense ool, no vis por, no odor, ns.

LS: cm/min lt bm, micro-f w/some med xtal, some chalky, min foss frags, no vis por, no odor, ns.

LS: cm/lt-m bm/lt gry, micro-m xtal, some 2ndry xtals, some silty/sndy, some chalky, min foss frags, no vis por, no odor, ns. Min SH: lt-m gry, vry silty/sndy, carb, firm.

LS: cm/lt-m bm/lt gry, micro-m xtal w/some 2ndry xtals, silty/sndy, some chalky, min foss frags, no vis por, no odor, ns.

LS: cm/lt bm, micro-m xtal, some chalky, some silty/sndy, foss frags, no vis por, no odor, ns.

SH: med-dk gry/blk, silty, slit carb, firm.

LS: cm/lt brn, micro-med xtal, some silty/sndy, some chalky, foss frags w/abund dense ool, min ppt in-xtal por, no odor, ns.

LS: cm/lt bm, micro-med xtal, some silty/sndy, some chalky, some dolomitic, foss frags, cm/lt gry chert, ppt-vf in-xtal por, no odor, ns.

LS: cm/lt-med bm, micro-med xtal, some chalky, silty/sndy, wht/lt gry chert some ool, foss frags w/abund med ool, abund med oo-castic por, no odor, ns.

4150' sample not collected.

LS: cm/lt bm, micro-med xtal, some chalky, some silty, wht chert, foss frags/dense ool, min ppt-f in-xtal por, no odor, ns.

LS: cm/lt bm/min lt gry, micro-f xtal, some silty, wht chert, min foss frags, no vis por, ns.

LS: cm/lt bm/lt gry, micro-med, some silty/sndy, some chalky, min wht chert, foss frags, no vis por, no odor, ns.

SH: dk gry/blk, slit silty, slit carb, firm.

LS: cm/lt-m bm, micro-med w/some 2ndry xtals, some silty, some chalky, foss frags/brac, no vis por, no odor, ns.

SH: lt-dk gry, some silty, slit carb, soft-firm.

LS: cm/lt brn/lt-m gry, micro-med xtal, some chalky, abund wht/lt gry/lt brn chert, foss frags/dense ool, 3 pcs w/ppt-m in-xtal por w/sfo, slit odor, dul yel flor, sfo.

LS: cm/lt-med bm/lt gry, micro-m xtal, some silty/sndy, some chalky, wht/lt gry chert, some ppt-f in-xtal por, no odor, ns.

Stop/30"/60"

CFS @ 4010'
Stop/30"/60"

CFS @ 4040'
Stop/30"/60"

CFS @ 4070'
Stop/30"/60"

CFS @ 4090'
Stop/30"/60"

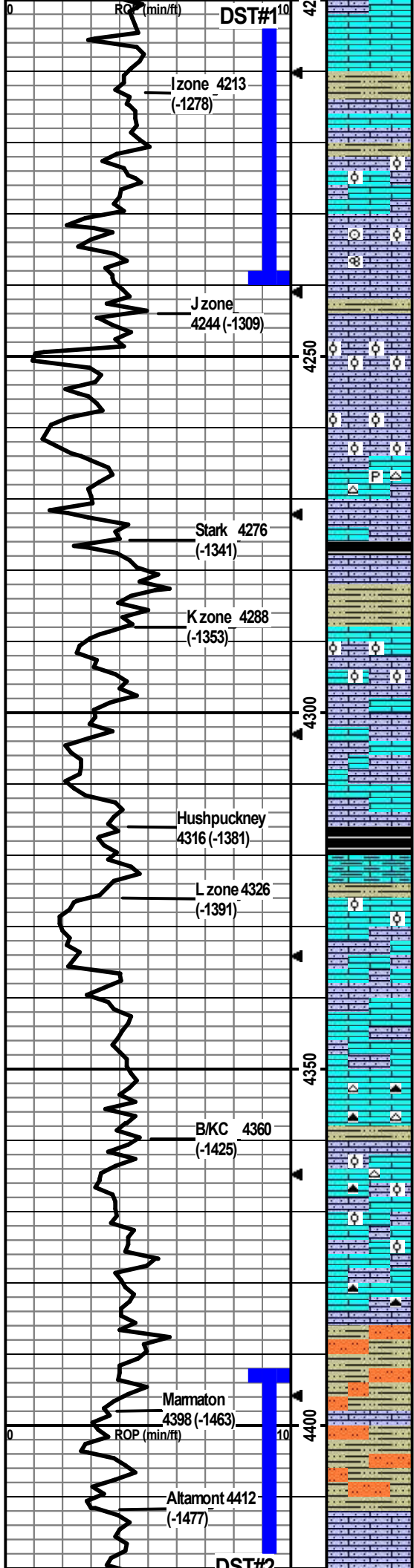
CFS @ 4100'
30"/60"

CFS @ 4130'
Stop/30"/60"

Conducted 10 stand short trip at the 4147' connection to replace seals in mud pump.

**DST1) 4164-4240
Lansing H & I**

Zones
30/45/30/30
1st) 1/4" blow built to 2.1"; no BB.
2nd) SB built to 1.5"; no BB.
IFP 12-41#
ISIP 887#
FFP 42-66#
FSIP 836#
HP 2039-2009#
Recvd: 30' M/w/trace oil, 60' M.



LS: cm/lt bm/lt gry, micro-f xtal, some chalky, wht/lt gry chert, no vis por, no odor, ns.

SH: lt-dk gry, slt silty, slt carb, firm.

LS: lt-m bm, micro-f xtal, some silty, some chalky, no vis por, no odor, ns.

LS: cm/lt-m bm/lt gry, micro-f xtal, some silty, some chalky, min foss frags/dense ool, no vis por, no odor, ns.

LS: cm/lt-m bm/lt gry, micro-m xtal, silty/sndy/chalky, abund foss frags/fusln/crin/dense ool, min ppt-f in-xtal por, slt crush odor, 2 pcs w/sfo w/ppt-m in-xtal, dul yel flor, ssfo.

SH: lt-dk gry/blk, some vry silty, firm.

LS: cm/lt bm, micro-med xtal, silty, some chalky, foss frags, no vis por, no odor, ns.

LS: cm/lt gry/lt bm, micro-m xtal, some chalky, some sndy, foss frags w/abund f-crs ool, f-crs oo-castic por, no odor, ns.

LS: cm/lt gry/lt bm, micro-m xtal, some silty, some chalky, min pyritic, wht chert, foss frags, no vis por, no odor, ns.

LS: cm/lt-m bm, micro-m xtal, some silty, some chalky, foss frags, no vis por, no odor, ns.

SH: blk, slt carb, platy, fissile, firm.

LS: crm/med brn, micro-m xtal, some silty/sndy, some chalky, foss frags, min ppt-f in-xtal por, no odor, ns.

SH: lt gry, vry silty, some friable, carb, firm.

LS: cm/lt gry, micro-m xtal, some vry silty/sndy, some chalky, foss frags some w/abund ool, mostly dense wf-crs oo-castic por, no odor, ns.

LS: cm/lt bm/lt gry, micro-m xtal, some silty/sndy, abund chalk, min wht chert, foss frags/fusln, no vis por, no odor, ns.

LS: cm/lt-m bm, micro-m xtal, some silty, some chalky, foss frags, 3 pcs w/ppt-f in-xtal por w/sfo, yel flor, no odor, sfo.

SH: m-dk gry/blk, some silty, slt carb, firm.

LS: cm/lt bm/dk gry-bm, micro-m xtal, sample vry chalky, some sndy, some arg, foss frags/dense ool, no vis por, no odor, ns.

LS: cm/lt gry/lt gry-bm, micro-f xtal, sample vry chalky, some silty, foss frags some grainy, min ppt-f in-xtal por, no odor, ns.

LS: cm/lt gry, micro-f xtal, less chalk than above, some silty, foss frags, no vis por, no odor, ns.

LS: cm/lt-m bm/lt gry, micro-med xtal, some chalky, lt-dk gry-bm chert, foss frags, no vis por, no odor, ns. Min SH: dk bm/dk gry, vry silty, firm.

LS: cm/lt-m bm/lt gry, micro-med xtal, chalky, some silty, min bm chert, foss frags/dense ool, no vis por, no odor, ns.

LS: cm/lt-m bm, micro-m xtal, some chalky, some silty, dk bm chert, foss frags/dense ool, no vis por, no odor, ns.

LS: lt-m bm, micro-m xtal, chalky, silty, dk bm chert, foss frags, no vis por, no odor, ns.

SH: m-dk gry/green-gry/brn, vry silty, slt carb; Sltstn: gry, pred qtz, arg, friable, no odor, ns.

SH: lt-dk gry/green-gry/brn, vry silty, slt carb, firm. Sltstn: lt-m gry, pred qtz, arg, friable, no odor.

LS: cm/brn, micro-med xtal, some silty, some chalky, no vis por, no odor, ns.

LS: cm/lt-m bm, micro-f xtal, some vry silty/chalky, foss frags/grainy, no vis por, no odor, ns. Flood of SH/Sltstn as above.

LS: cm/lt-m bm, micro-f xtal, some chalky, silty, foss frags/grainy, no vis por, no odor.

CFS @ 4210'
Stop/30"/60"

For DST #1 at 4240', conducted 32 stand wiper trip, then cir hole clean for 1 hr. Attempted pipe strap when TOH for DST #1 but was too windy.

CFS @ 4240'
Stop/30"/60"

CFS @ 4261'
Stop/30"/60"

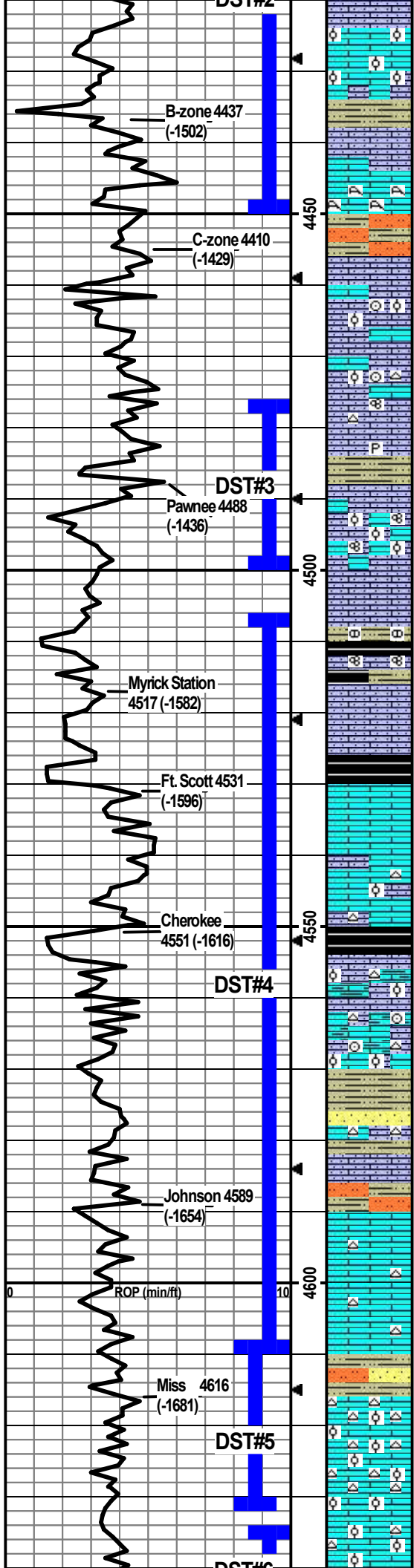
CFS @ 4310'
Stop/30"/60"

CFS @ 4350'
Stop/30"/60"

DST2) 4392-4450 Altamont A & B zones

30/56/45/60
Blocks stuck on 1st shut so ran long on time from 45min.
1st) 1" blow built to BOB in 3min; built to 7" BB.
2nd) 1/4" blow built to BOB in 5min; no BB.
IFP 55-369#
ISIP 852#
FFP 415-622#
FSIP 842#
HP 2121-2110#
Recvd: 485' GIP; 1345' GCO (3%G, 97%O); 190' GCMCO (18%G, 28%M, 54%O); 120' MCGCO (2%M, 3%G, 95%O).

CFS @ 4420'



LS: cm, micro-med xtal, some chalky, foss frags/abund dense ool, no vis por, no odor, ns.

LS: cm/lt brn, micro-med, some vry chalky, some silty/sndy, foss frags/dense ool, min ppt-f in-xtal/med oo-castic por, 7 pcs w/fm in-xtal por, dul flor, no odor, sfo. SH: m-dk gry, silty, firm.

LS: crm/lt brn, micro-m xtal, silty/sndy, some chalky, foss frags/abund lattice coral, no vis por except in coral w/med columnar por, no odor, ns. Some SH: m-dk gry/blk, silty, slt carb, firm.

SH: m-dk gry/lt green-gry, slt carb, firm-hard, fissile. Min Slstn: lt-m gry, pred qtz, arg, hard but friable, no odor, ns.

LS: crm/lt-m brn, micro-med xtal, some silty/sndy/arg/chalky, foss frags, no vis por, no odor, ns.

LS: cm/lt brn, micro-m xtal, some silty/sndy, chalky, foss frags/crin/ool, min ppt-f in-xtal por, no odor, ns.

LS: crm/lt-m brn/lt gry-brn, micro-m xtal, some silty/sndy, some chalky, crm/lt brn chert, foss frags w/min crin/fusin/ool, no vis por, no odor, ns.

LS: crm/lt-m brn, micro-m xtal, silty/sndy, some chalky, min pyritic, foss frags, no odor, ns.

SH: m-dk gry/blk/min lt green-gry, some vry silty/sndy, soft-firm. Some Slstn: gry/crm, pred qtz, arg, firm, friable, no odor, ns.

LS: wht/crm/lt brn, micro-m xtal, some silty/sndy, some chalky, foss frags/fusin/ool, 17 pcs w/fm in-xtal/in-ool por w/bm oil staining and fo when crushed, dul yel flor, slt cup odor, gsfo.

LS: lt-m brn/lt gry-brn, micro-med xtal, silty/sndy, foss frags, no vis por, no odor, ns. Flood of SH: m-dk gry/blk/dk red-brn/lt brn/green-gry, some vry silty, slt carb, LS nodules, firm-hard.

LS: lt-m brn/gry-brn, micro-f xtal, silty, min foss frags/fusin, no vis por, no odor, ns. Cont flood of SH as above w/blk SH.

(NOTE: Myrick samples were bad due to snow melt water diluting mud.)

LS: crm/lt-m brn, micro-m xtal, some silty/chalky, min foss frags, no vis por, no odor, ns.

SH: dk gry/blk, slt carb, firm, fissile.

Sample all hulls and SH, no LS. Borehole damage due to flood conditions at the site. See side note.

Sample mostly SH due to borehole damage. LS: crm/lt-m brn/lt gry, micro-m xtal, some chalky/silty, lt brn chert, foss frags/min chalky ool, no vis por, no odor, ns.

SH: dk gry/blk, slt carb, firm, fissile.

LS: crm/lt-m brn/gry, vf-m xtal, silty, some chalky/arg, lt brn chert, foss frags/some chalky ool, no vis por, no odor, ns.

LS: crm/lt-m brn, m-dk gry, f-m xtal, some chalky, some silty/sndy, some arg, brn chert, some w/abund foss frags/crin/grainy, no vis por, no odor, 60min sample w/chalky ool, 1 pce in 60min w/staining and blk tar oil and brn fo when crushed w/ppt-f in-xtal por, ssfo.

SH: m-dk gry/blk, some vry silty, firm. Min SS: gry, vf-f, pred qtz, arg, hard, friable, no odor, ns.

LS: crm/lt-m brn/lt gry, f-m xtal, some chalky, some silty/sndy, brn chert, foss frags, 5 pcs w/staining and fo w/crush w/ppt-f, dull yel flor, no odor, sfo.

LS: crm/lt-m brn/lt gry-brn, micro-m xtal, some chalky/silty, crm/lt brn chert, 3 pcs w/staining and fo on break w/ppt-f por, dul yel flor, no odor, 2 pcs in 60min, ssfo. SH: lt-dk gry/green-gry, silty, slt carb, firm. Min Slstn: lt gry, arg, friable, no odor, ns.

LS: lt-m brn, micro-f xtal, some chalky, some lt brn chert, min foss frags, 9 pcs w/ppt in-xtal por w/staining, dul yel flor w/crush cut, no odor, sfo.

LS: crm/lt-m brn, micro-f xtal, some chalky, some lt brn chert, min foss frags, 17 pcs w/staining, dul yel flor w/crush cut, ppt in-xtal por, good odor, sfo.

SH: lt-dk gry/green-gry, some silty, firm. Slstn/SS: lt gry/lt brn, vf-f, pred qtz, some arg, friable, no show.

LS: crm/lt-m brn, micro-m xtal, wht chalky w/blk tar oil, abund wht/lt gry chert, dense ool and loose LS nodules/ool, blk tar oil does not flor/cut, 3 pcs of chert w/staining and flor/cut, min ppt-f in-xtal/frac por in chert, slt odor, ssfo.

LS: lt brn, micro-f xtal, abund wht chert, chalky some w/blk tar oil w/some flor/cut, 11 pcs LS/2 pcs chert w/staining and flor cut w/ppt in-xtal por, gd odor, sfo.

LS: crm/lt brn, micro-m xtal, some chalky, wht chert, some foss frags w/abund ool, 6 pcs w/staining and sfo on crush w/ppt in-xtal/in-ool por, dul yel flor/cut, slt odor, sfo.

CFS @ 4424 Stop/30"/60"
For DST #2 at 4450', conducted 12 stand wiper trip, then cir hole clean for 1 hr. Conducted pipe strap while TOH; was 2.40' short to the board.
CFS @ 4450' Stop/30"/60"

DST3) 4477-4500 Pawnee
30/45/45/60
1st) SB built to 6"; no BB.
2nd) SB built to 7.75"; no BB.
IFP 11-70#
ISIP 639#
FFP 76-109#
FSIP 638#
HP 2116-2116#
Recvd: 105' GIP; 312' Total Fluid:
2' CO; 25' WCOCM (7%W, 37%O, 56%M); 60' OCWCM (4%O, 7%W, 89%M); 60' OCWCM (8%O, 34%W, 58%M); 60' OCWCM (5%O, 13%M, 82%W).

CFS @ 4480' Stop/30"/60"
CFS @ 4500' Stop/30"/60"
(NOTE: Myrick samples bad due to snow melt water diluting mud.)
CFS @ 4525' Stop/30"/60"

At 4525': From approx 12:00pm 03/09/19 thru 07:00pm 03/10/19 drilling was suspended due to flooding of the entire drill pad area from melting snow. Entire area was covered with as least 1' of water. Mud pits were completely covered. TOH with drill string and mitigated flooding with pumping off site and dozer work. Displaced complete mud system.

CFS @ 4570' Stop/30"/60"

CFS @ 4570' Stop/30"/60"

CFS @ 4590' Stop/30"/60"

CFS @ 4610' Stop/30"/60"

CFS @ 4632' Stop/30"/60"

Spergen 4643 JSI #6
(-1708)

LS: crm/lt brn, micro-m xtal, some chalky, wh/lt gry pyritic chert, some foss frags/abund ool, slit odor but no show, few pcs DOLO: crm, vff, sugary, hard, no show.

CFS @ 4648'
Stop/30"/60"

**DST4) 4506-4610
Myrick thru
Johnson**

30/45/45/60
1st) 1/2" built to 3.25"; no BB.
2nd) SB built to 1.5"; no BB.
IFP 16-39#
ISIP 1101#
FFP 42-58#
FSIP 924#
HP 2083-2082#
Recvd: 70' total fluid; 5' O, 65' OCM (6%O, 94%M).

**DST5) 4608-4632
Upper
Mississippian**

30/30/30/30
1st) 1/4" built to 3/4"; no BB.
2nd) SB thru out; no BB.
IFP 11-12#
ISIP 22#
FFP 12-12#
FSIP 21#
HP 2136-2135#
Recvd: 5' M w/trc of oil.

**DST6) 4634-4648
Spergen**

30/45/45/65
1st) SB built to 3.75"; no BB.
2nd) SB built to 3"; no BB.
IFP 11-41#
ISIP 1210#
FFP 43-78#
FSIP 1209#
HP 2171-2138#
Recvd: 155' total fluid; 10' O, 85' OCM (8%O, 92%M), 60' OCWCM (6%O, 42%W, 52%M).

DOLO: crm/lt brn/lt gry, vff xtal, sugary, 6 pcs w/sfo w/fcrs in-xtal por; dul yel flor/cut, slit odor, sfo.

DOLO: crm/lt brn/lt gry, vf-f xtal, sugary, ppt-m w/min crs in-xtal por; 7 pcs w/sfo, dul yel flor/cut, slit odor, sfo.

DOLO: crm/lt gry, vf-f xtal, sugary, ppt-m in-xtal por; 10-15% of sample w/sfo, dul yel flor, gd odor, gsfo.

DOLO: crm/lt brn, vf-f xtal, sugary, ppt-crs in-xtal por, ~10% of sample w/sfo, dul yel flor, gd odor, gsfo.

DOLO: crm/lt brn/lt gry, vf-f xtal, sugary, ppt-crs in-xtal por; 6 pcs w/sfo 1 pcs with blk tar oil, dul yel flor/cut, slit odor, sfo.

DOLO: lt brn/lt-m gry/some w/dk gry mottling, vf-f xtal, sugary, some LS inclusions, foss frags, ppt-crs w/some vug por, no vis oil but got oil cut from several pcs, 4 pcs w/blk tar, dul yel flor/cut, slit odor, sfo.

DOLO: crm/lt brn/lt gry w/some dk gry mottling, vf-f xtal, sugary, some LS and chert inclusions, ppt-crs w/some vug por, no odor, ns.

DOLO: lt brn/lt gry-brn/lt gry/some dk gry mottling, vf-f xtal, sugary, some LS and chert inclusions, some oolitic, ppt-crs in-xtal por, no odor, ns. Min LS: crm, vf-m xtal, foss frags/ool, chalky, no vis por, no odor, ns.

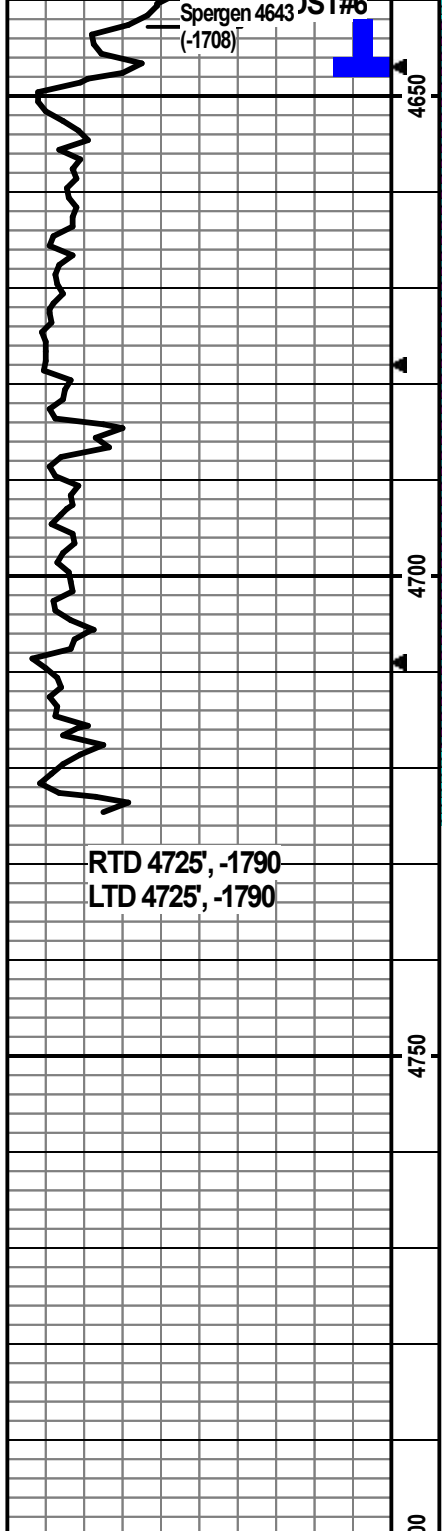
Sample mostly DOLO as above. LS: lt brn/lt gry mottled, some chalky, foss frags/crin/fusln/ool, no vis por, no odor, ns.

TD @4725'

CFS @4725'
Stop/30"/60"

Cir 1.5 hr to collect samples and condition hole then TOH for logging.

RTD 4725', -1790
LTD 4725', -1790



Log text area containing detailed descriptions of geological layers (DOLO, LS) and well data (CFS, TD, DST). Includes depth markers and sample descriptions.

Well data area containing DST information (DST4, DST5, DST6), completion details (CFS, Stop), and fluid recovery data (Recvd).



Company: Ritchie Exploration, Inc.

Lease: Anderson-Schwartz Trust #1

SEC: 32 TWN: 19S RNG: 30W
County: LANE
State: Kansas
Drilling Contractor: WW Drilling, LLC - Rig 12
Elevation: 2930 EGL
Field Name: Sutton Township
Pool: Infield
Job Number: 312

Operation:
Uploading recovery & pressures

DATE
March
06
2019

DST #1 **Formation: Lansing "H&I"** **Test Interval: 4164 - 4240'** **Total Depth: 4240'**
Time On: 07:21 03/06 Time Off: 15:02 03/06
Time On Bottom: 10:27 03/06 Time Off Bottom: 12:42 03/06

Electronic Volume Estimate:
127'

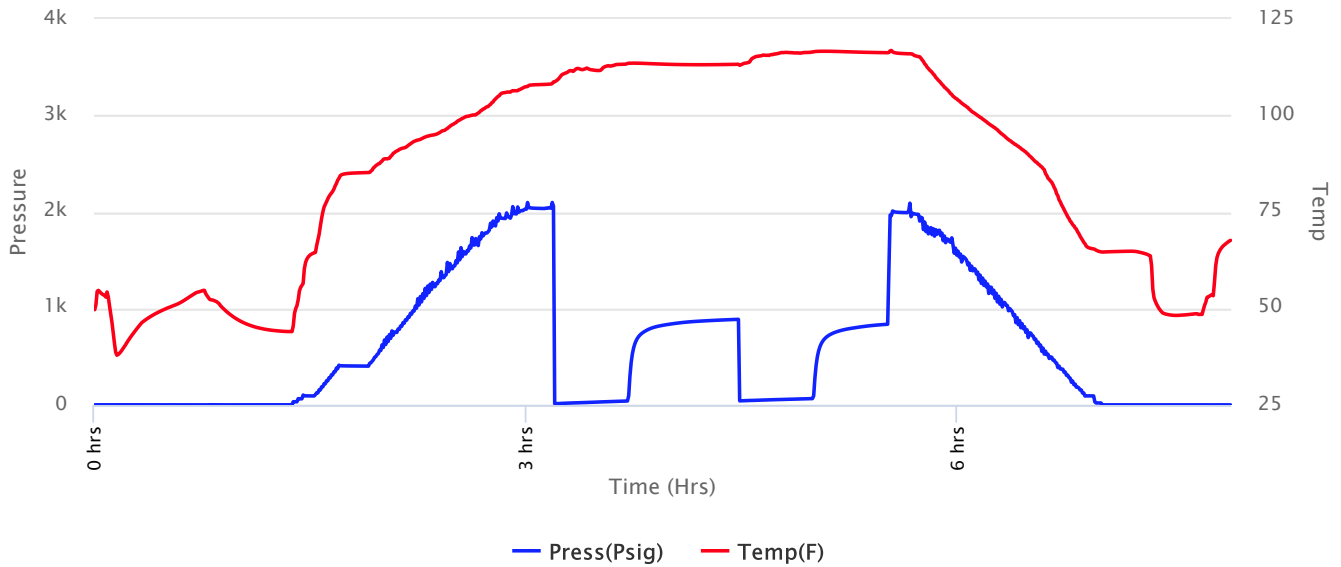
1st Open
Minutes: 30
Current Reading: 2.1" at 30 min
Max Reading: 2.1"

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

2nd Open
Minutes: 30
Current Reading: 1.9" at 30 min
Max Reading: 1.9"

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

Inside Recorder





Company: Ritchie Exploration, Inc.

Lease: Anderson-Schwartz Trust #1

SEC: 32 TWN: 19S RNG: 30W
County: LANE
State: Kansas
Drilling Contractor: WW Drilling, LLC - Rig 12
Elevation: 2930 EGL
Field Name: Sutton Township
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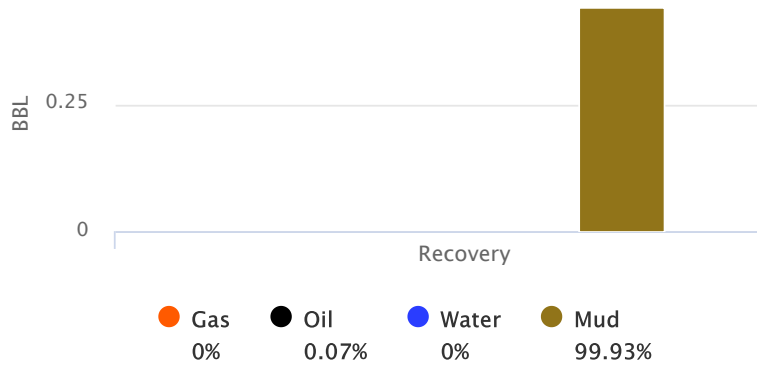
Recovered		Description of Fluid	Gas %	Oil %	Water %	Mud %
Foot	BBLs					
30	0.1476	M (trace O)	0	.2	0	99.8
60	0.2952	M	0	0	0	100

Total Recovered: 90 ft
Total Barrels Recovered: 0.4428

Reversed Out
NO

Recovery at a glance

Initial Hydrostatic Pressure	2039	PSI
Initial Flow	12 to 41	PSI
Initial Closed in Pressure	887	PSI
Final Flow Pressure	42 to 66	PSI
Final Closed in Pressure	836	PSI
Final Hydrostatic Pressure	2009	PSI
Temperature	117	°F
Pressure Change Initial Close / Final Close	5.7	%



GIP cubic foot volume: 0



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Elevation: 2930 EGL
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Operation:
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Time On: 07:21 03/06 Time Off: 15:02 03/06
Time On Bottom: 10:27 03/06 Time Off Bottom: 12:42 03/06

BUCKET MEASUREMENT:

Diesel in Bucket

1st Open: 1/4" blow building to 2 14"

1st Close: No BB

2nd Open: Surface blow building to 1 12"

2nd Close: No BB

REMARKS:

Tool Sample: 0% Gas 1% Oil 0% Water 99% Mud



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Lease: Anderson-Schwartz Trust #1

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Drilling Contractor: WW Drilling, LLC - Rig 12
Elevation: 2930 EGL
Field Name: Sutton Township
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DST #1 **Formation: Lansing "H&I"** **Test Interval: 4164 - 4240'** **Total Depth: 4240'**
Time On: 07:21 03/06 Time Off: 15:02 03/06
Time On Bottom: 10:27 03/06 Time Off Bottom: 12:42 03/06

Down Hole Makeup

Heads Up: 10.68 FT	Packer 1: 4158.84 FT
Drill Pipe: 3955.74 FT <i>ID-3 1/2</i>	Packer 2: 4163.84 FT
Weight Pipe: 0 FT <i>ID-2 7/8</i>	Top Recorder: 4148.26 FT
Collars: 186.21 FT <i>ID-2 1/4</i>	Bottom Recorder: 4202 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: 76.16	Surface Choke: 1"
Anchor Makeup	Bottom Choke: 5/8"
Packer Sub: 1 FT	
Perforations: (top): 3 FT <i>4 1/2-FH</i>	
Change Over: 1 FT	
Drill Pipe: (in anchor): 31.16 FT <i>ID-3 1/2</i>	
Change Over: 1 FT	
Perforations: (below): 39 FT <i>4 1/2-FH</i>	



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Elevation: 2930 EGL
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Pool: Infield
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Operation:
Uploading recovery & pressures

DATE
March
06
2019

DST #1 Formation: Lansing "H&I" Test Interval: 4164 - 4240' Total Depth: 4240'
Time On: 07:21 03/06 Time Off: 15:02 03/06
Time On Bottom: 10:27 03/06 Time Off Bottom: 12:42 03/06

Gas Volume Report

1st Open			
Time	Orifice	PSI	MCF/D

2nd Open			
Time	Orifice	PSI	MCF/D



Company: Ritchie Exploration, Inc.

Lease: Anderson-Schwartz Trust #1

SEC: 32 TWN: 19S RNG: 30W
County: LANE
State: Kansas
Drilling Contractor: WW Drilling, LLC - Rig 12
Elevation: 2927 EGL
Field Name: Sutton Township
Pool: Infield
Job Number: 312

Operation:
Test Complete

DATE
March
07
2019

DST #2 **Formation: Altamont "A&B"** **Test Interval: 4392 - 4450'** **Total Depth: 4450'**

Time On: 20:08 03/07 Time Off: 08:08 03/08
Time On Bottom: 23:37 03/07 Time Off Bottom: 02:48 03/08

Electronic Volume Estimate:
2023'

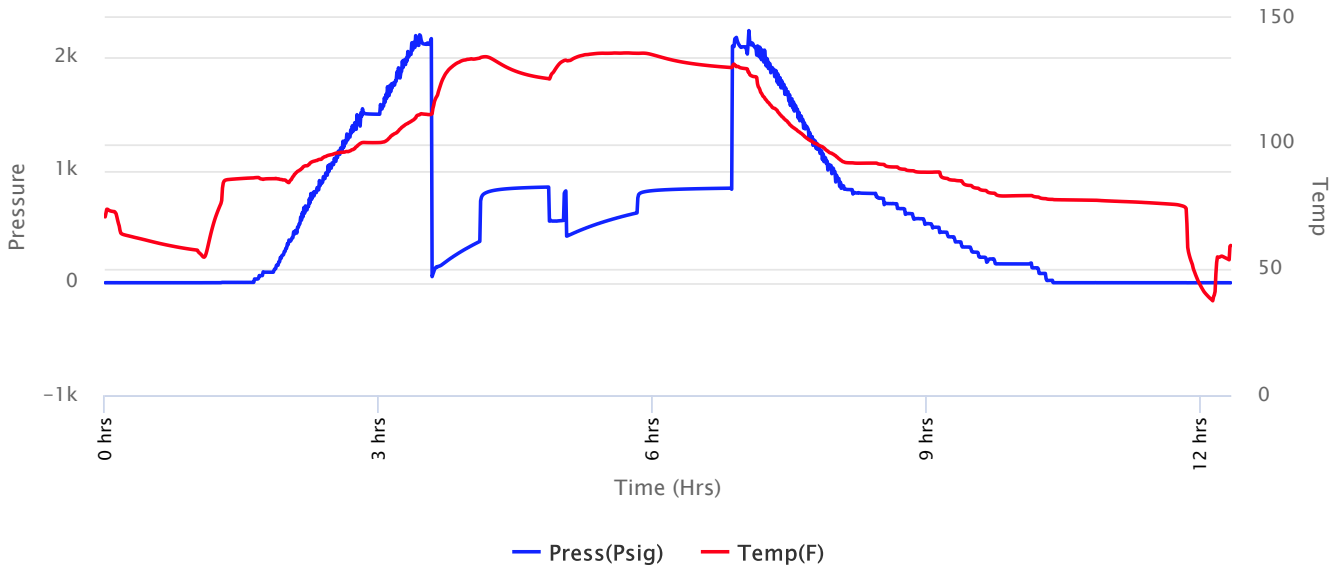
1st Open
Minutes: 30
Current Reading:
107.1" at 30 min
Max Reading: 107.1"

1st Close
Minutes: 56
Current Reading:
6.2" at 56 min
Max Reading: 6.2"

2nd Open
Minutes: 45
Current Reading:
73.7" at 45 min
Max Reading: 73.7"

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

Inside Recorder





Company: Ritchie Exploration, Inc.

Lease: Anderson-Schwartz Trust #1

SEC: 32 TWN: 19S RNG: 30W
 County: LANE
 State: Kansas
 Drilling Contractor: WW Drilling, LLC - Rig 12
 Elevation: 2927 EGL
 Field Name: Sutton Township
 Pool: Infield
 Job Number: 312

Operation:
 Test Complete

DATE
 March
07
 2019

DST #2 **Formation: Altamont "A&B"** **Test Interval: 4392 - 4450'** **Total Depth: 4450'**
 Time On: 20:08 03/07 Time Off: 08:08 03/08
 Time On Bottom: 23:37 03/07 Time Off Bottom: 02:48 03/08

Recovered

Foot	BBLs	Description of Fluid	Gas %	Oil %	Water %	Mud %
485	6.90155	G	100	0	0	0
1345	19.13935	SLGCO	3	97	0	0
190	2.0872849	SLGCMCO	18	54	0	28
120	0.5904	SLMCSLGCO	3	95	0	2

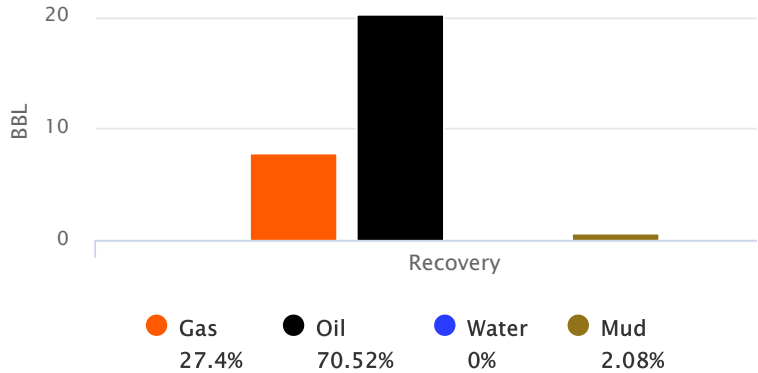
Total Recovered: 2140 ft

Total Barrels Recovered: 28.7185849

Reversed Out
NO

Initial Hydrostatic Pressure	2121	PSI
Initial Flow	55 to 369	PSI
Initial Closed in Pressure	852	PSI
Final Flow Pressure	415 to 622	PSI
Final Closed in Pressure	842	PSI
Final Hydrostatic Pressure	2110	PSI
Temperature	137	°F
Pressure Change Initial Close / Final Close	1.2	%

Recovery at a glance



GIP cubic foot volume: 44.18136



Company: Ritchie Exploration, Inc.

Lease: Anderson-Schwartz Trust #1

SEC: 32 TWN: 19S RNG: 30W
County: LANE
State: Kansas
Drilling Contractor: WW Drilling, LLC - Rig 12
Elevation: 2927 EGL
Field Name: Sutton Township
Pool: Infield
Job Number: 312

Operation:
Test Complete

DATE
March
07
2019

DST #2 **Formation: Altamont "A&B"** **Test Interval: 4392 - 4450'** **Total Depth: 4450'**
Time On: 20:08 03/07 Time Off: 08:08 03/08
Time On Bottom: 23:37 03/07 Time Off Bottom: 02:48 03/08

BUCKET MEASUREMENT:

Diesel in Bucket

1st Open: 1 blow building to BOB 3 min.

1st Close: 7. BB

2nd Open: 1/4" blow building to BOB 5 min.

2nd Close: No BB

REMARKS:

The blocks were stuck so we couldn't turn tool on initial shut-in that's why extra time.

Tool Sample: 0% Gas 100% Oil 0% Water 0% Mud

Gravity: 34.9 @ 60 °F



Company: Ritchie Exploration, Inc.

Lease: Anderson-Schwartz Trust #1

SEC: 32 TWN: 19S RNG: 30W
County: LANE
State: Kansas
Drilling Contractor: WW Drilling, LLC - Rig 12
Elevation: 2927 EGL
Field Name: Sutton Township
Pool: Infield
Job Number: 312

Operation:
Test Complete

DATE
March
07
2019

DST #2 **Formation: Altamont "A&B"** **Test Interval: 4392 - 4450'** **Total Depth: 4450'**
Time On: 20:08 03/07 Time Off: 08:08 03/08
Time On Bottom: 23:37 03/07 Time Off Bottom: 02:48 03/08

Down Hole Makeup

Heads Up: 31.77 FT	Packer 1: 4386.81 FT
Drill Pipe: 4204.8 FT <i>ID-3 1/2</i>	Packer 2: 4391.81 FT
Weight Pipe: 0 FT <i>ID-2 7/8</i>	Top Recorder: 4376.23 FT
Collars: 186.21 FT <i>ID-2 1/4</i>	Bottom Recorder: 4430 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: 58.19	Surface Choke: 1"
Anchor Makeup	Bottom Choke: 5/8"
Packer Sub: 1 FT	
Perforations: (top): 3 FT <i>4 1/2-FH</i>	
Change Over: 1 FT	
Drill Pipe: (in anchor): 31.19 FT <i>ID-3 1/2</i>	
Change Over: 1 FT	
Perforations: (below): 21 FT <i>4 1/2-FH</i>	



Company: Ritchie Exploration, Inc.

Lease: Anderson-Schwartz Trust #1

SEC: 32 TWN: 19S RNG: 30W
County: LANE
State: Kansas
Drilling Contractor: WW Drilling, LLC - Rig 12
Elevation: 2927 EGL
Field Name: Sutton Township
Pool: Infield
Job Number: 312

Operation:
Uploading recovery & pressures

DATE
March
08
2019

DST #3 **Formation: Pawnee** **Test Interval: 4477 - 4500'** **Total Depth: 4500'**

Time On: 19:58 03/08 Time Off: 04:57 03/09
Time On Bottom: 23:02 03/08 Time Off Bottom: 02:02 03/09

Electronic Volume Estimate:
269'

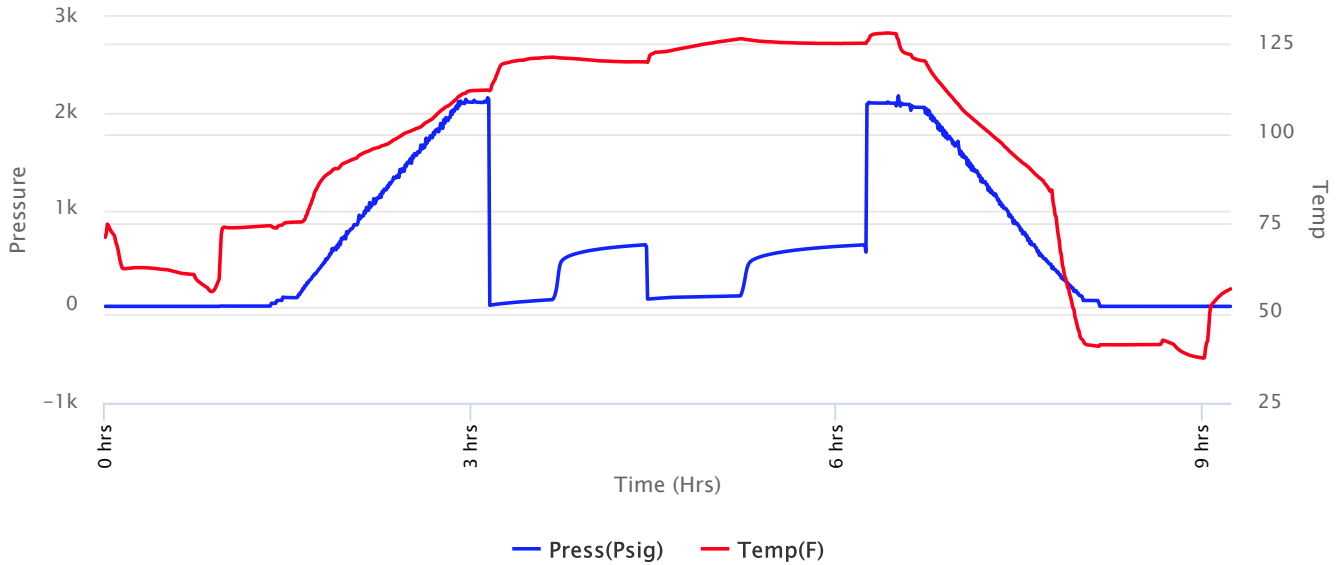
1st Open
Minutes: 30
Current Reading:
5.5" at 30 min
Max Reading: 5.5"

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

2nd Open
Minutes: 45
Current Reading:
7.0" at 45 min
Max Reading: 7.0"

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

Inside Recorder





Company: Ritchie Exploration, Inc.

Lease: Anderson-Schwartz Trust #1

SEC: 32 TWN: 19S RNG: 30W
 County: LANE
 State: Kansas
 Drilling Contractor: WW Drilling, LLC - Rig 12
 Elevation: 2927 EGL
 Field Name: Sutton Township
 Pool: Infield
 Job Number: 312

Operation:
 Uploading recovery & pressures

DATE
 March
08
 2019

DST #3 **Formation: Pawnee** **Test Interval: 4477 - 4500'** **Total Depth: 4500'**
 Time On: 19:58 03/08 Time Off: 04:57 03/09
 Time On Bottom: 23:02 03/08 Time Off Bottom: 02:02 03/09

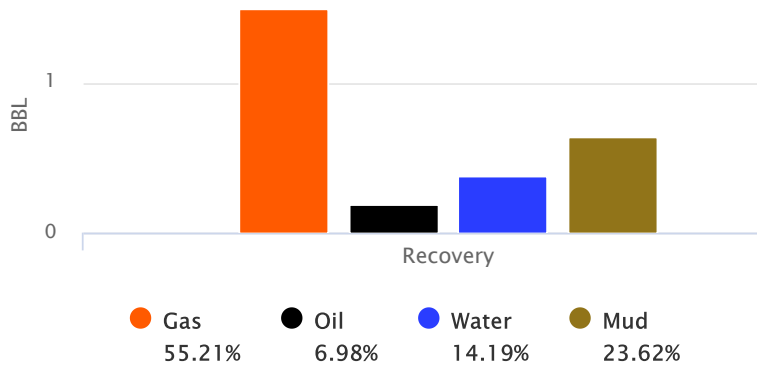
Recovered		Description of Fluid	Gas %	Oil %	Water %	Mud %
Foot	BBLs					
105	1.49415	G	100	0	0	0
2	0.02846	O	0	100	0	0
25	0.2979349	SLWCHOCM	0	37	7	56
60	0.2952	SLOC SLWCM	0	4	7	89
60	0.2952	SLOCHWCM	0	8	34	58
60	0.2952	SLOC SLMCW	0	5	82	13

Total Recovered: 312 ft
 Total Barrels Recovered: 2.7061449

Reversed Out
 NO

Initial Hydrostatic Pressure	2116	PSI
Initial Flow	11 to 70	PSI
Initial Closed in Pressure	639	PSI
Final Flow Pressure	76 to 109	PSI
Final Closed in Pressure	638	PSI
Final Hydrostatic Pressure	2116	PSI
Temperature	127	°F
Pressure Change Initial Close / Final Close	0.1	%

Recovery at a glance



GIP cubic foot volume: 8.38891



**Company: Ritchie Exploration,
Inc.**

**Lease: Anderson-Schwartz
Trust #1**

SEC: 32 TWN: 19S RNG: 30W
County: LANE
State: Kansas
Drilling Contractor: WW Drilling, LLC -
Rig 12
Elevation: 2927 EGL
Field Name: Sutton Township
Pool: Infield
Job Number: 312

Operation:
Uploading recovery &
pressures

DATE
March
08
2019

DST #3 Formation: Pawnee Test Interval: 4477 - Total Depth: 4500'
4500'
Time On: 19:58 03/08 Time Off: 04:57 03/09
Time On Bottom: 23:02 03/08 Time Off Bottom: 02:02 03/09

BUCKET MEASUREMENT:

Diesel in Bucket

1st Open: Surface blow building to 6"

1st Close: No BB

2nd Open: Surface blow building to 7 3/4"

2nd Close: Surface BB

REMARKS:

Tool Sample: 0% Gas 10% Oil 72% Water 18% Mud

Ph: 7.5

Measured RW: .35 @ 68 degrees °F

RW at Formation Temp: 0.196 @ 127 °F

Chlorides: 69,000 ppm



Company: Ritchie Exploration, Inc.

Lease: Anderson-Schwartz Trust #1

SEC: 32 TWN: 19S RNG: 30W
County: LANE
State: Kansas
Drilling Contractor: WW Drilling, LLC - Rig 12
Elevation: 2927 EGL
Field Name: Sutton Township
Pool: Infield
Job Number: 312

Operation:
Uploading recovery & pressures

DATE
March
08
2019

DST #3 Formation: Pawnee Test Interval: 4477 - 4500' Total Depth: 4500'
Time On: 19:58 03/08 Time Off: 04:57 03/09
Time On Bottom: 23:02 03/08 Time Off Bottom: 02:02 03/09

Down Hole Makeup

Heads Up: 9.04000000000001 FT	Packer 1: 4472 FT
Drill Pipe: 4267.26 FT <i>ID-3 1/2</i>	Packer 2: 4477 FT
Weight Pipe: 0 FT <i>ID-2 7/8</i>	Top Recorder: 4461.42 FT
Collars: 186.21 FT <i>ID-2 1/4</i>	Bottom Recorder: 4479 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: 23	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): 22 FT <i>4 1/2-FH</i>	



**Company: Ritchie Exploration,
Inc.**

**Lease: Anderson-Schwartz
Trust #1**

SEC: 32 TWN: 19S RNG: 30W
County: LANE
State: Kansas
Drilling Contractor: WW Drilling, LLC -
Rig 12
Elevation: 2927 EGL
Field Name: Sutton Township
Pool: Infield
Job Number: 312

Operation:
Uploading recovery &
pressures

DATE
March
08
2019

DST #3 Formation: Pawnee Test Interval: 4477 - Total Depth: 4500'
4500'
Time On: 19:58 03/08 Time Off: 04:57 03/09
Time On Bottom: 23:02 03/08 Time Off Bottom: 02:02 03/09

Mud Properties

Mud Type: Chemical **Weight:** 9.3 **Viscosity:** 53 **Filtrate:** 7.2 **Chlorides:** 4,000 ppm



Company: Ritchie Exploration, Inc.

Lease: Anderson-Schwartz Trust #1

SEC: 32 TWN: 19S RNG: 30W
County: LANE
State: Kansas
Drilling Contractor: WW Drilling, LLC - Rig 12
Elevation: 2927 EGL
Field Name: Sutton Township
Pool: Infield
Job Number: 312

Operation:
Uploading recovery & pressures

DATE
March
08
2019

DST #3 Formation: Pawnee Test Interval: 4477 - 4500' Total Depth: 4500'
Time On: 19:58 03/08 Time Off: 04:57 03/09
Time On Bottom: 23:02 03/08 Time Off Bottom: 02:02 03/09

Gas Volume Report

1st Open			
Time	Orifice	PSI	MCF/D

2nd Open			
Time	Orifice	PSI	MCF/D



Company: Ritchie Exploration, Inc.

Lease: Anderson-Schwartz Trust #1

SEC: 32 TWN: 19S RNG: 30W
County: LANE
State: Kansas
Drilling Contractor: WW Drilling, LLC - Rig 12
Elevation: 2927 EGL
Field Name: Sutton Township
Pool: Infield
Job Number: 312

Operation:
Uploading recovery & pressures

DATE
March
11
2019

DST #4 **Formation: Myric Station-Johnson** **Test Interval: 4506 - 4610'** **Total Depth: 4610'**
Time On: 12:05 03/11 Time Off: 20:40 03/11
Time On Bottom: 14:45 03/11 Time Off Bottom: 17:45 03/11

Electronic Volume Estimate:
165'

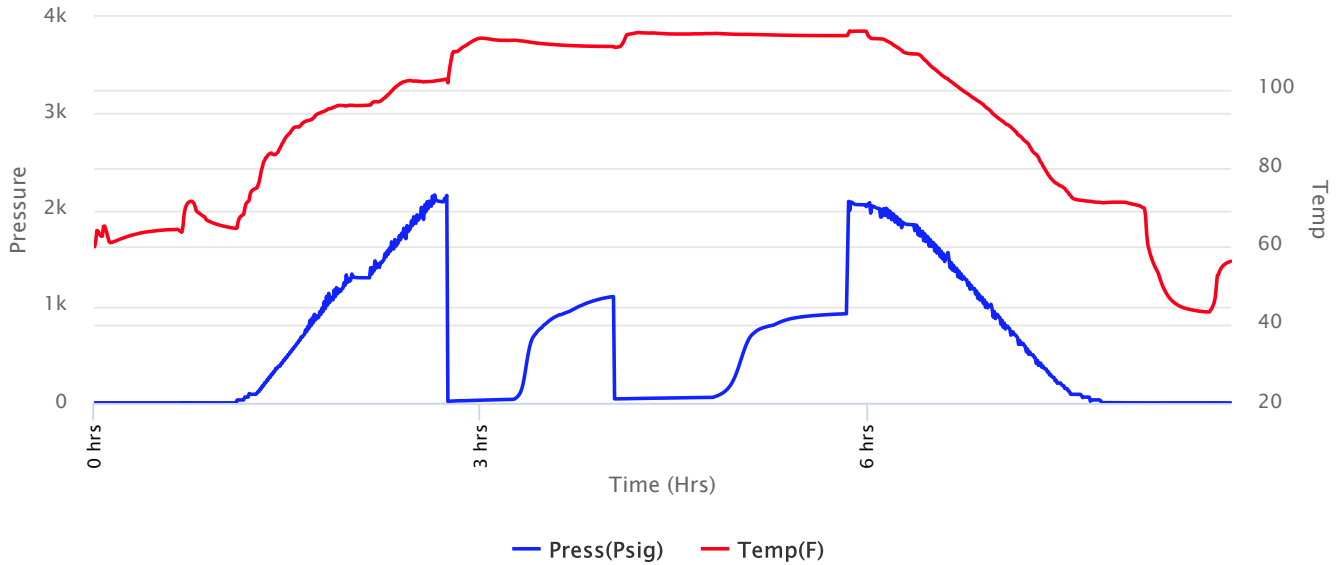
1st Open
Minutes: 30
Current Reading:
3.1" at 30 min
Max Reading: 3.1"

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

2nd Open
Minutes: 45
Current Reading:
1.7" at 45 min
Max Reading: 1.7"

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

Inside Recorder





Company: Ritchie Exploration, Inc.

Lease: Anderson-Schwartz Trust #1

SEC: 32 TWN: 19S RNG: 30W
 County: LANE
 State: Kansas
 Drilling Contractor: WW Drilling, LLC - Rig 12
 Elevation: 2927 EGL
 Field Name: Sutton Township
 Pool: Infield
 Job Number: 312

Operation:
 Uploading recovery & pressures

DATE
 March
11
 2019

DST #4 **Formation: Myric Station-Johnson** **Test Interval: 4506 - 4610'** **Total Depth: 4610'**
 Time On: 12:05 03/11 Time Off: 20:40 03/11
 Time On Bottom: 14:45 03/11 Time Off Bottom: 17:45 03/11

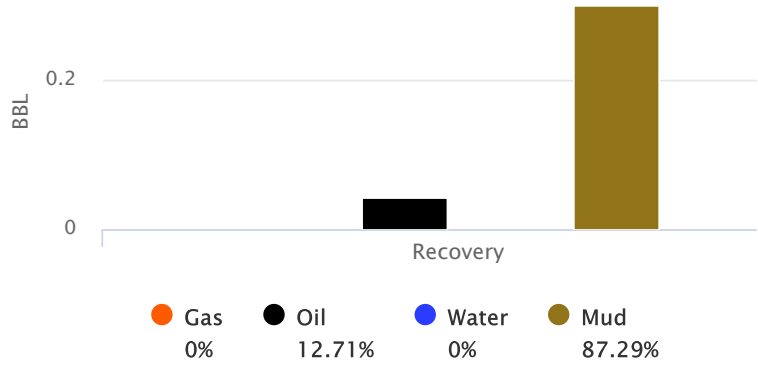
Recovered		Description of Fluid	Gas %	Oil %	Water %	Mud %
Foot	BBLs					
5	0.0246	O	0	100	0	0
65	0.3198	SLOCM	0	6	0	94

Total Recovered: 70 ft
 Total Barrels Recovered: 0.3444

Reversed Out
 NO

Initial Hydrostatic Pressure	2083	PSI
Initial Flow	16 to 39	PSI
Initial Closed in Pressure	1101	PSI
Final Flow Pressure	42 to 58	PSI
Final Closed in Pressure	924	PSI
Final Hydrostatic Pressure	2082	PSI
Temperature	115	°F
Pressure Change Initial Close / Final Close	16.1	%

Recovery at a glance



GIP cubic foot volume: 0



**Company: Ritchie Exploration,
Inc.**

**Lease: Anderson-Schwartz
Trust #1**

SEC: 32 TWN: 19S RNG: 30W
County: LANE
State: Kansas
Drilling Contractor: WW Drilling, LLC -
Rig 12
Elevation: 2927 EGL
Field Name: Sutton Township
Pool: Infield
Job Number: 312

Operation:
Uploading recovery &
pressures

DATE
March
11
2019

DST #4 **Formation: Myric
Station-Johnson** **Test Interval: 4506 -
4610'** **Total Depth: 4610'**
Time On: 12:05 03/11 Time Off: 20:40 03/11
Time On Bottom: 14:45 03/11 Time Off Bottom: 17:45 03/11

BUCKET MEASUREMENT:

Diesel in Bucket

1st Open: 1/2" blow building to 3 1/4"

1st Close: No BB

2nd Open: Surface blow building to 1 1/2"

2nd Close: No BB

REMARKS:

Tool Sample: 0% Gas 8% Oil 0% Water 92% Mud



Company: Ritchie Exploration, Inc.

Lease: Anderson-Schwartz Trust #1

SEC: 32 TWN: 19S RNG: 30W
County: LANE
State: Kansas
Drilling Contractor: WW Drilling, LLC - Rig 12
Elevation: 2927 EGL
Field Name: Sutton Township
Pool: Infield
Job Number: 312

Operation:
Uploading recovery & pressures

DATE
March
11
2019

DST #4 **Formation: Myric Station-Johnson** **Test Interval: 4506 - 4610'** **Total Depth: 4610'**
Time On: 12:05 03/11 Time Off: 20:40 03/11
Time On Bottom: 14:45 03/11 Time Off Bottom: 17:45 03/11

Down Hole Makeup

Heads Up: 12.07 FT	Packer 1: 4500.68 FT
Drill Pipe: 4298.97 FT <i>ID-3 1/2</i>	Packer 2: 4505.68 FT
Weight Pipe: 0 FT <i>ID-2 7/8</i>	Top Recorder: 4490.1 FT
Collars: 186.21 FT <i>ID-2 1/4</i>	Bottom Recorder: 4575 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: 104.32	Surface Choke: 1"
Anchor Makeup	Bottom Choke: 5/8"
Packer Sub: 1 FT	
Perforations: (top): 3 FT <i>4 1/2-FH</i>	
Change Over: 1 FT	
Drill Pipe: (in anchor): 62.32 FT <i>ID-3 1/2</i>	
Change Over: 1 FT	
Perforations: (below): 36 FT <i>4 1/2-FH</i>	



**Company: Ritchie Exploration,
Inc.**

**Lease: Anderson-Schwartz
Trust #1**

SEC: 32 TWN: 19S RNG: 30W
County: LANE
State: Kansas
Drilling Contractor: WW Drilling, LLC -
Rig 12
Elevation: 2927 EGL
Field Name: Sutton Township
Pool: Infield
Job Number: 312

Operation:
Uploading recovery &
pressures

DATE
March
11
2019

DST #4 **Formation: Myric
Station-Johnson** **Test Interval: 4506 -
4610'** **Total Depth: 4610'**
Time On: 12:05 03/11 Time Off: 20:40 03/11
Time On Bottom: 14:45 03/11 Time Off Bottom: 17:45 03/11

Mud Properties

Mud Type: Chemical **Weight:** 8.8 **Viscosity:** 58 **Filtrate:** 8.0 **Chlorides:** 3,000 ppm



Company: Ritchie Exploration, Inc.

Lease: Anderson-Schwartz Trust #1

SEC: 32 TWN: 19S RNG: 30W
County: LANE
State: Kansas
Drilling Contractor: WW Drilling, LLC - Rig 12
Elevation: 2927 EGL
Field Name: Sutton Township
Pool: Infield
Job Number: 312

Operation:
Uploading recovery & pressures

DATE
March
11
2019

DST #4 **Formation: Myric Station-Johnson** **Test Interval: 4506 - 4610'** **Total Depth: 4610'**
Time On: 12:05 03/11 Time Off: 20:40 03/11
Time On Bottom: 14:45 03/11 Time Off Bottom: 17:45 03/11

Gas Volume Report

1st Open			
Time	Orifice	PSI	MCF/D

2nd Open			
Time	Orifice	PSI	MCF/D



Company: Ritchie Exploration, Inc.

Lease: Anderson-Schwartz Trust #1

SEC: 32 TWN: 19S RNG: 30W
County: LANE
State: Kansas
Drilling Contractor: WW Drilling, LLC - Rig 12
Elevation: 2927 EGL
Field Name: Sutton Township
Pool: Infield
Job Number: 312

Operation:
Uploading recovery & pressures

DATE
March
12
2019

DST #5 **Formation: Upper Mississippian** **Test Interval: 4608 - 4632'** **Total Depth: 4632'**
Time On: 07:56 03/12 Time Off: 14:45 03/12
Time On Bottom: 10:30 03/12 Time Off Bottom: 12:30 03/12

Electronic Volume Estimate:
39'

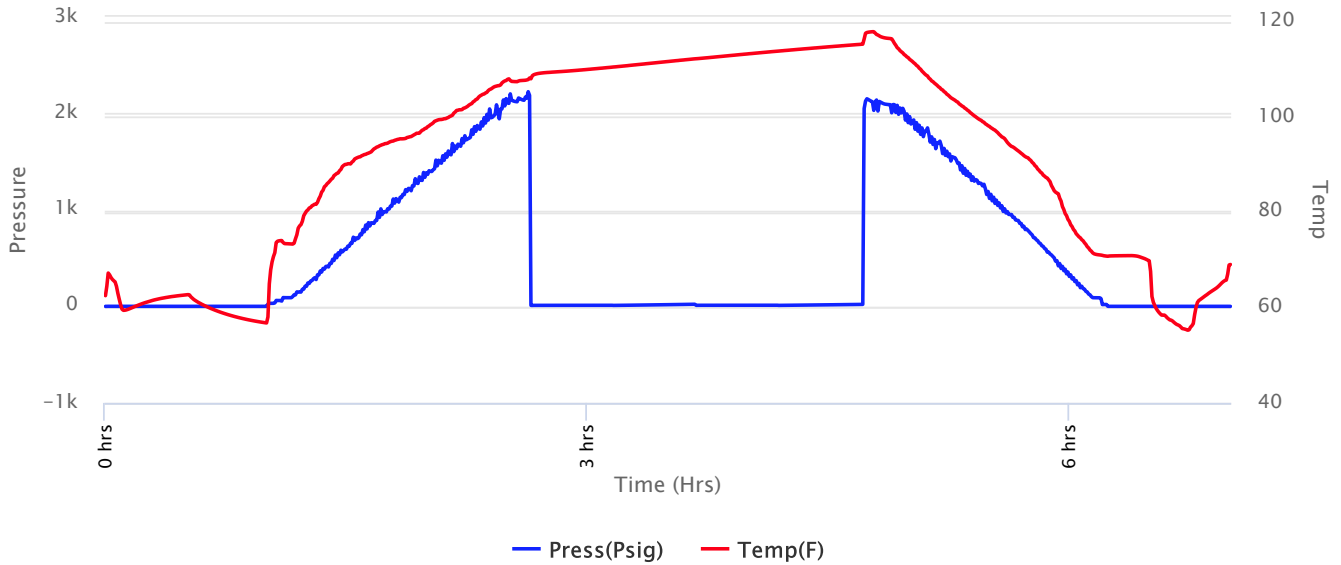
1st Open
Minutes: 30
Current Reading: 1.0" at 30 min
Max Reading: 1.1"

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

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

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

Inside Recorder





Company: Ritchie Exploration, Inc.

Lease: Anderson-Schwartz Trust #1

SEC: 32 TWN: 19S RNG: 30W
County: LANE
State: Kansas
Drilling Contractor: WW Drilling, LLC - Rig 12
Elevation: 2927 EGL
Field Name: Sutton Township
Pool: Infield
Job Number: 312

Operation:
Uploading recovery & pressures

DATE
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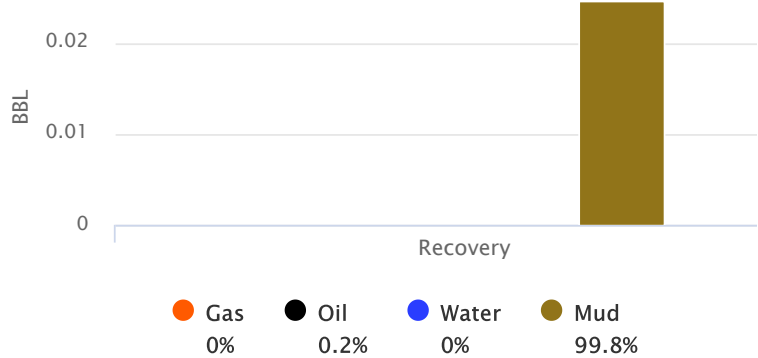
DST #5 **Formation: Upper Mississippian** **Test Interval: 4608 - 4632'** **Total Depth: 4632'**
Time On: 07:56 03/12 Time Off: 14:45 03/12
Time On Bottom: 10:30 03/12 Time Off Bottom: 12:30 03/12

Recovered		Description of Fluid	Gas %	Oil %	Water %	Mud %
Foot	BBLs					
5	0.0246	M (trace O)	0	.2	0	99.8

Total Recovered: 5 ft
Total Barrels Recovered: 0.0246

Reversed Out
NO

Recovery at a glance



Initial Hydrostatic Pressure	2136	PSI
Initial Flow	11 to 12	PSI
Initial Closed in Pressure	22	PSI
Final Flow Pressure	12 to 12	PSI
Final Closed in Pressure	21	PSI
Final Hydrostatic Pressure	2135	PSI
Temperature	116	°F
Pressure Change Initial Close / Final Close	6.4	%

GIP cubic foot volume: 0



**Company: Ritchie Exploration,
Inc.**

**Lease: Anderson-Schwartz
Trust #1**

SEC: 32 TWN: 19S RNG: 30W
County: LANE
State: Kansas
Drilling Contractor: WW Drilling, LLC -
Rig 12
Elevation: 2927 EGL
Field Name: Sutton Township
Pool: Infield
Job Number: 312

Operation:
Uploading recovery &
pressures

DATE
March
12
2019

DST #5 **Formation: Upper
Mississippian** **Test Interval: 4608 -
4632'** **Total Depth: 4632'**
Time On: 07:56 03/12 Time Off: 14:45 03/12
Time On Bottom: 10:30 03/12 Time Off Bottom: 12:30 03/12

BUCKET MEASUREMENT:

Diesel in Bucket

1st Open: 1/4" blow building to 3/4"

1st Close: No BB

2nd Open: Surface blow throughout period

2nd Close: No BB

REMARKS:

Tool Sample: 0% Gas 1% Oil 0% Water 99% Mud



Company: Ritchie Exploration, Inc.

Lease: Anderson-Schwartz Trust #1

SEC: 32 TWN: 19S RNG: 30W
County: LANE
State: Kansas
Drilling Contractor: WW Drilling, LLC - Rig 12
Elevation: 2927 EGL
Field Name: Sutton Township
Pool: Infield
Job Number: 312

Operation:
Uploading recovery & pressures

DATE
March
12
2019

DST #5 **Formation: Upper Mississippian** **Test Interval: 4608 - 4632'** **Total Depth: 4632'**
Time On: 07:56 03/12 Time Off: 14:45 03/12
Time On Bottom: 10:30 03/12 Time Off Bottom: 12:30 03/12

Down Hole Makeup

Heads Up: 3.85000000000005 FT	Packer 1: 4603 FT
Drill Pipe: 4393.07 FT <i>ID-3 1/2</i>	Packer 2: 4608 FT
Weight Pipe: 0 FT <i>ID-2 7/8</i>	Top Recorder: 4592.42 FT
Collars: 186.21 FT <i>ID-2 1/4</i>	Bottom Recorder: 4610 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: 24	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): 23 FT <i>4 1/2-FH</i>	



**Company: Ritchie Exploration,
Inc.**

**Lease: Anderson-Schwartz
Trust #1**

SEC: 32 TWN: 19S RNG: 30W
County: LANE
State: Kansas
Drilling Contractor: WW Drilling, LLC -
Rig 12
Elevation: 2927 EGL
Field Name: Sutton Township
Pool: Infield
Job Number: 312

Operation:
Uploading recovery &
pressures

DATE
March
12
2019

DST #5 **Formation: Upper** **Test Interval: 4608 -** **Total Depth: 4632'**
Mississippian **4632'**
Time On: 07:56 03/12 Time Off: 14:45 03/12
Time On Bottom: 10:30 03/12 Time Off Bottom: 12:30 03/12

Mud Properties

Mud Type: Chemical **Weight:** 8.8 **Viscosity:** 58 **Filtrate:** 8.0 **Chlorides:** 3,000 ppm



Company: Ritchie Exploration, Inc.

Lease: Anderson-Schwartz Trust #1

SEC: 32 TWN: 19S RNG: 30W
County: LANE
State: Kansas
Drilling Contractor: WW Drilling, LLC - Rig 12
Elevation: 2927 EGL
Field Name: Sutton Township
Pool: Infield
Job Number: 312

Operation:
Uploading recovery & pressures

DATE
March
12
2019

DST #5 **Formation: Upper Mississippian** **Test Interval: 4608 - 4632'** **Total Depth: 4632'**
Time On: 07:56 03/12 Time Off: 14:45 03/12
Time On Bottom: 10:30 03/12 Time Off Bottom: 12:30 03/12

Gas Volume Report

1st Open			
Time	Orifice	PSI	MCF/D

2nd Open			
Time	Orifice	PSI	MCF/D



Company: Ritchie Exploration, Inc.

Lease: Anderson-Schwartz Trust #1

SEC: 32 TWN: 19S RNG: 30W
County: LANE
State: Kansas
Drilling Contractor: WW Drilling, LLC - Rig 12
Elevation: 2927 EGL
Field Name: Sutton Township
Pool: Infield
Job Number: 312

Operation:
Uploading recovery & pressures

DATE
March
12
2019

DST #6 Formation: Spergen Test Interval: 4634 - 4648' Total Depth: 4648'

Time On: 23:12 03/12 Time Off: 08:31 03/13
Time On Bottom: 01:56 03/13 Time Off Bottom: 05:01 03/13

Electronic Volume Estimate:
196'

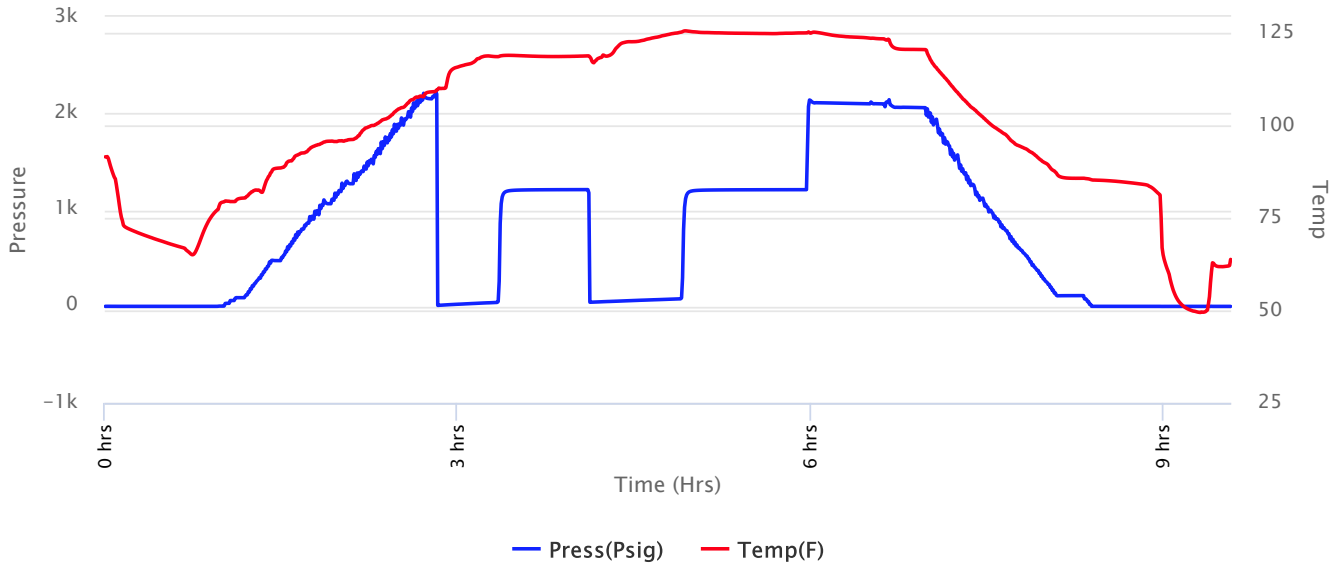
1st Open
Minutes: 30
Current Reading: 3.0" at 30 min
Max Reading: 3.0"

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

2nd Open
Minutes: 45
Current Reading: 3.1" at 45 min
Max Reading: 3.1"

2nd Close
Minutes: 65
Current Reading: 0" at 65 min
Max Reading: 0"

Inside Recorder





Company: Ritchie Exploration, Inc.

Lease: Anderson-Schwartz Trust #1

SEC: 32 TWN: 19S RNG: 30W
 County: LANE
 State: Kansas
 Drilling Contractor: WW Drilling, LLC - Rig 12
 Elevation: 2927 EGL
 Field Name: Sutton Township
 Pool: Infield
 Job Number: 312

Operation:
 Uploading recovery & pressures

DATE
 March
12
 2019

DST #6 **Formation: Spergen** **Test Interval: 4634 - 4648'** **Total Depth: 4648'**
 Time On: 23:12 03/12 Time Off: 08:31 03/13
 Time On Bottom: 01:56 03/13 Time Off Bottom: 05:01 03/13

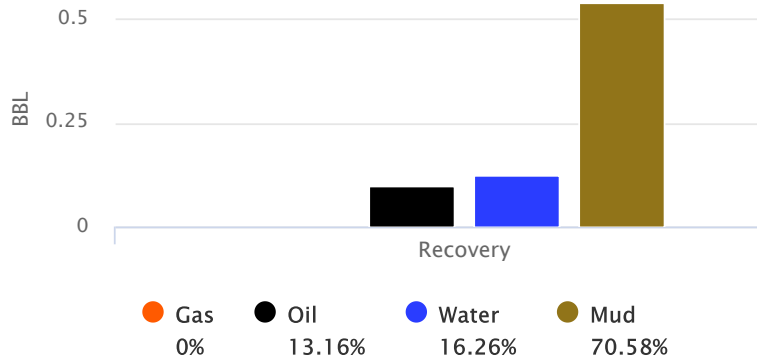
Recovered		Description of Fluid	Gas %	Oil %	Water %	Mud %
Foot	BBLs					
10	0.0492	O	0	100	0	0
85	0.4182	SLOCM	0	8	0	92
60	0.2952	SLOCHWCM	0	6	42	52

Total Recovered: 155 ft
 Total Barrels Recovered: 0.7626

Reversed Out
 NO

Initial Hydrostatic Pressure	2171	PSI
Initial Flow	11 to 41	PSI
Initial Closed in Pressure	1210	PSI
Final Flow Pressure	43 to 78	PSI
Final Closed in Pressure	1209	PSI
Final Hydrostatic Pressure	2138	PSI
Temperature	126	°F
Pressure Change Initial Close / Final Close	0.1	%

Recovery at a glance



GIP cubic foot volume: 0



Company: Ritchie Exploration, Inc.

Lease: Anderson-Schwartz Trust #1

SEC: 32 TWN: 19S RNG: 30W
County: LANE
State: Kansas
Drilling Contractor: WW Drilling, LLC - Rig 12
Elevation: 2927 EGL
Field Name: Sutton Township
Pool: Infield
Job Number: 312

Operation:
Uploading recovery & pressures

DATE
March
12
2019

DST #6 Formation: Spergen Test Interval: 4634 - 4648' Total Depth: 4648'
Time On: 23:12 03/12 Time Off: 08:31 03/13
Time On Bottom: 01:56 03/13 Time Off Bottom: 05:01 03/13

BUCKET MEASUREMENT:

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

REMARKS:

On final shut-in, it was 5 min. late because they were working on mud pump.

Tool Sample: 0% Gas 13% Oil 38% Water 49% Mud

Gravity: 27.6 @ 60 °F

Ph: 7.0

Measured RW: .62 @ 68 degrees °F

RW at Formation Temp: 0.349 @ 126 °F

Chlorides: 39,000 ppm



Company: Ritchie Exploration, Inc.

Lease: Anderson-Schwartz Trust #1

SEC: 32 TWN: 19S RNG: 30W
County: LANE
State: Kansas
Drilling Contractor: WW Drilling, LLC - Rig 12
Elevation: 2927 EGL
Field Name: Sutton Township
Pool: Infield
Job Number: 312

Operation:
Uploading recovery & pressures

DATE
March
12
2019

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Down Hole Makeup

Heads Up: 9.08 FT	Packer 1: 4629 FT
Drill Pipe: 4424.3 FT <i>ID-3 1/2</i>	Packer 2: 4634 FT
Weight Pipe: 0 FT <i>ID-2 7/8</i>	Top Recorder: 4618.42 FT
Collars: 186.21 FT <i>ID-2 1/4</i>	Bottom Recorder: 4636 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: 14	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): 13 FT <i>4 1/2-FH</i>	



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Gas Volume Report

1st Open			
Time	Orifice	PSI	MCF/D

2nd Open			
Time	Orifice	PSI	MCF/D