

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

**Well Name:** WHITHAM LAND  
**Well Id:** #1  
**Location:** 1213' FSL, 645' FEL, Sec 09-T17S-R36W, Wichita County, Kansas  
**License Number:** API: 15-203-20364 **Region:** Wichita County  
**Spud Date:** 02/18/2021 **Drilling Completed:** 02/27/2021  
**Surface Coordinates:** Lat: 38.6157902  
Long: -101.3150551  
**Bottom Hole Coordinates:** Vertical hole  
**Ground Elevation (ft):** 3295' **K.B. Elevation (ft):** 3300'  
**Logged Interval (ft):** 3700' **To:** RTD **Total Depth (ft):** 4910'  
**Formation:** Mississippian at RTD  
**Type of Drilling Fluid:** Chemical

Printed by MudLog from WellSight Systems 1-800-447-1534 [www.WellSight.com](http://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](mailto:kent4m@hotmail.com)

22, -101.30815 (WGS84)



#### COMMENTS

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

Contractor: Murfin Drilling Company Inc., Rig #110.

Tool Pusher: Ricky Hilgers, 785-743-8492 (cell).

Surface Casing: 8 5/8" set at 258' (KB) w/160sx cement.

Production Casing: Based on field observations of drill cuttings, DST results and electric log evaluation, production casing was not installed.

Mud by: Mud-Co/Service Mud, Inc., Tony Maestas, 316-772-6679 (cell) and Reid Atkins, 785-694-3741 (cell).

DST's by: Trilobite Testing, Martine Salinas, 785-639-2040 (cell).

Logs by: Midwest Wireline (DI w/GR, CND, Micro, and Sonic), Tim Martin, 785-625-3858 (office).

RTD= 4910'

LTD= 4912'

## FORMATION TOPS

FORMATION	SAMPLE TOPS		LOG TOPS	
	Depth	Datum	Depth	Datum
Stotler	3579'	-279	3580'	-280
Heebner Shale	3948'	-648	3951'	-651
Lansing	3999'	-699	3998'	-698
Muncie Creek Shale	4170'	-870	4173'	-873
Stark Shale	4262'	-962	4265'	-965
Hushpuckney Shale	4307'	-1007	4310'	-1010
Base of KC	4348'	-1048	4348'	-1048
Marmaton	4398'	-1098	4398'	-1098
Altamont	4411'	-1111	4412'	-1112
Pawnee	4488'	-1188	4491'	-1191
Myrick Station	4528'	-1228	4529'	-1229
Fort Scott	4548'	-1248	4546'	-1246
Cherokee Shale	4573'	-1273	4574'	-1274
Johnson	4660'	-1360	4663'	-1363
Morrow	4722'	-1422	4723'	-1423
Mississippian	4801'	-1501	4800'	-1500
RTD	4910'	-1610		
LTD			4912'	-1612

## 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

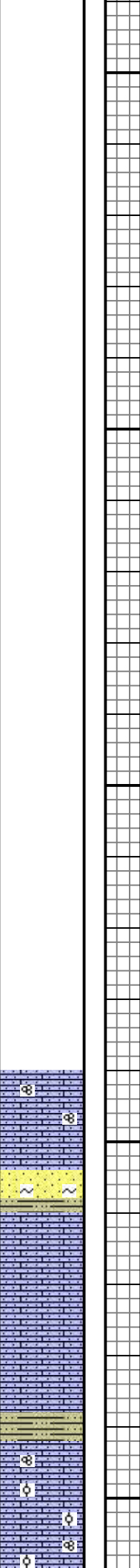
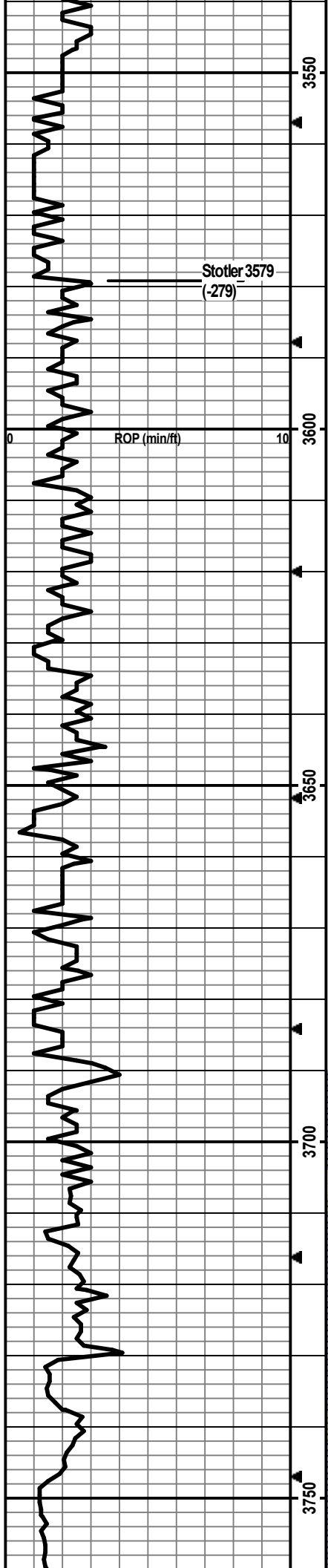
	Algae
	Amph
	Belm
	Bioclst
	Brach
	Bryozoa
	Cephal
	Coral
	Crin
	Echin
	Fish
	Foram
	Fossil
	Gastro
	Oolite

### MINERAL

	Ostra
	Pelec
	Pellet
	Pisolite
	Plant
	Strom
	Fuss
	Oomold
	Anhy
	Arggrn
	Arg
	Bent
	Bit
	Brecfrag
	Calc
	Carb
	Chtdk
	Chtlit
	Dol
	Feldspar

	Ferrpel
	Ferr
	Glau
	Gyp
	Hvymin
	Kaol
	Marl
	Minxl
	Nodule
	Phos
	Pyr
	Salt
	Sandy
	Silt
	Sil
	Sulphur
	Tuff
	Chlorite
	Dol
	Sand
	Sity

Rate of Penetration (ROP) ROP (min/ft) ———	DEPTH	Lithology	CFS Point	Oil Shows	Geological Descriptions	Remarks
	33				<p><b>Morning Report Depth/Activity (7:00 am)</b>            02/18/2021, Finished MIRU/Spud; set surface casing @258'KB.            02/19, drilling @ 763'.            02/20, drilling @ 2668'.            02/21, drilling @ 3494'.            02/22, drilling @ 3980'.            02/23, CFS @ 4060'.            02/24, CFS @ 4350'.            02/25, TOH for DST#3 @ 4460'.            02/26, TIH after DST#4 @ 4520'.            02/27, CFS @ 4750'; TD @ 4910'.            02/28, Electric logged.</p>	<p>Mud-Co/Service Mud Inc. Check #1 @ 0' 02/09/21, predrilling instructions.             Mud-Co/Service Mud Inc. Check #2 @ 1011' 02/19/21 09:40am            wt vis pH chl            9.1 31 7 300            Filt LCM            n/c 0             Mud-Co/Service Mud Inc. Check #3 @ 2761' 02/20/21 09:10am            wt vis pH chl            9.3 33 7 43000            Filt LCM            n/c 2</p>
	3400				<p><b>Anhydrite: Top @ 2479', Base @ 2495' (based on drill time).</b></p>	<p>Mud-Co/Service Mud Inc. Check #4 @ 3541' 02/21/21 09:30am            wt vis pH chl            8.6 44 11 4000            Filt LCM            7.2 1             Mud-Co/Service Mud Inc. Check #5 @ 4115' 02/22/21 09:30am            wt vis pH chl            8.8 49 11 4500            Filt LCM            7.2 1</p>
	3450				<p>Oil Shows indicator: Left Block 0-10 tray pcs w/show, Middle Block 10-20 tray pcs w/show, Right Block 20+ tray pcs w/show.</p>	<p>Mud-Co/Service Mud Inc. Check #6 @ 4260' 02/23/21 09:30am            wt vis pH chl            9.1 50 11 5000            Filt LCM            7.2 3             Mud-Co/Service Mud Inc. Check #7 @ 4390' 02/24/21 08:30am            wt vis pH chl            9.2 50 11 6400            Filt LCM            8.0 4</p>
	3500				<p>Formation tops and lithologies have been adjusted to correlate to the electric log.</p> <p>ROP Data begins @ 3500' on 02/21/2021</p>	<p>Displaced drilling mud @ 3462'-3500'; 560 bbls.</p> <p>Mud-Co/Service Mud Inc. Check #8 @ 4460' 02/25/21 08:30am            wt vis pH chl            9.2 49 11.5 6800            Filt LCM            8.0 3             Mud-Co/Service Mud Inc. Check #9 @ 4520' 02/26/21 08:10am            wt vis pH chl            9.3 47 10.5 7000            Filt LCM            9.6 3             Mud-Co/Service Mud Inc. Check #10 @ 4783' 02/27/21 09:10am            wt vis pH chl            9.3 63 11 6000            Filt LCM            8.8 2</p>

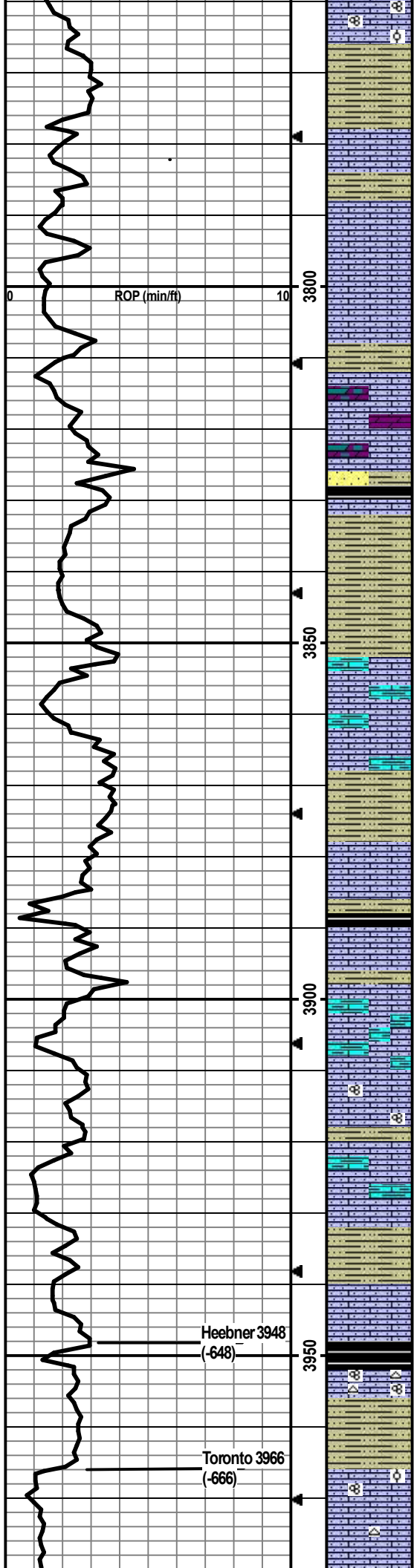


Drill cutting samples at 10' intervals start at 3700'.

- LS: cm/lt-m bm/gry, micro-med xtal, silty, abund foss frags/grainy/fusin, some vf-f in-xtal por, no odor, ns.
- SH: lt-dk gry, vry silty/sndy, slt carb, firm, fissile, no odor, ns. SS: lt bm/lt gry, vf-m, sr-wr, some glauc, hard-friable, ns.
- LS: cm/lt bm/lt gry, micro-med xtal, vry silty/sndy, some chalky, abund foss frags, min ppt-vf in-xtal por, no odor, ns.
- LS: cm/lt bm/lt-m gry, micro-m xtal, vry silty/sndy, min chalky, abund foss frags, min ppt-f in-xtal por, no odor, ns.
- SH: lt-dk gry, vry silty/sndy, carb, soft-firm, no odor, ns.
- LS: cm/lt-m bm/lt gry, micro-med xtal, vry silty, some chalky, abund foss frags/fusin/dense ool, min ppt-vf in-xtal por, no odor, ns.

Survey Record  
 Deg @ Ft  
 0.25 @ 258'  
 1.00 @ 4260'  
 1.00 @ 4910'





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

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

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

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

SH: lt-m gry/bm, silty, slt carb, soft-firm, no odor, ns.

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

SH: lt-dk gry, silty, carb, soft-firm, no odor, ns. Some SS: lt gry, f-m, sr-wr, friable, no odor, ns.

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

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

LS: wht/cm/lt bm, vf-m xtal, silty/sndy/arg/chalky, foss frags/grainy, some ppt-f in-xtal por, no odor, ns.

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

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

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

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

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

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

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

SH: lt-m gry/min dk gry/bm, vry silty, soft-firm, no odor, ns.

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

SH: dk gry/blk, slt carb, firm, fissile, no odor, ns.

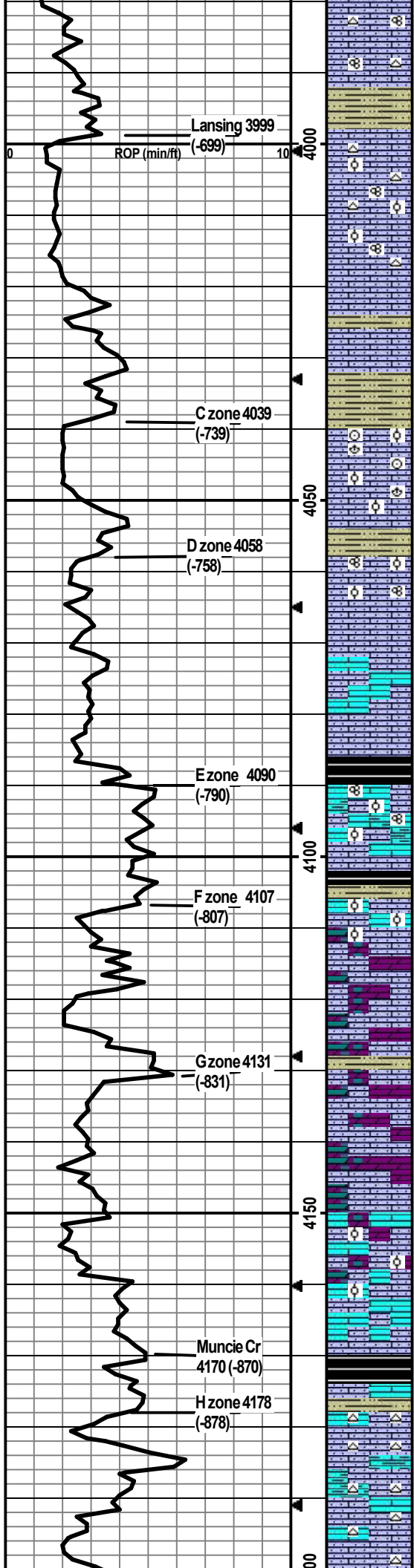
LS: cm/lt bm/lt gry/some gry mottling, micro-m xtal, vry silty/sndy, some arg/chalky, wht chert, foss frags/fusln, min ppt-f in-xtal por, no odor, ns.

SH: lt-dk gry/bm, slt carb, silty, soft-firm, no odor, ns.

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

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

CFS @ 39380'  
Stop/20"/40"  
Made 20-stand wiper/short trip at the 3938' connection.



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

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

LS: cm/lt bm/min lt gry, micro-m xtal, some silty/sndy, some chalky, wht chert (some ool), foss frags/grainy/fusln/ool, f-m in-xtal por, no odor, ns.

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

SH: lt-dk gry/lt green-gry/bm, some vry silty/sndy, carb, soft-firm, no odor, ns.

LS: cm/lt bm, micro-m xtal, some 2ndry xtals, silty/sndy, chalky, foss frags/dense ool/brac/crin, min vf-f in-xtal por, no odor, ns.

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

SH: lt-m gry/green-gry/bm, silty, slt carb, soft-firm, no odor, ns.

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

LS: cm/lt bm, micro-med xtal/some 2ndry xtal, some silty/sndy, some chalky, foss frags, some f-m in-xtal por, no odor, ns.

LS: cm/lt bm, micro-med xtal/some 2ndry xtal, some silty, some chalky, min foss frags, mostly dense w/some f-m in-xtal por, no odor, ns.

SH: m-dk gry/blk, silty, slt carb, soft-firm, no odor, ns.

LS: cm/lt-m bm/lt gry, micro-med xtal/some 2ndry xtal, some silty/sndy, some chalky, min arg, foss frags/fusln/dense ool, no vis por, no odor, ns.

SH: flood in smp, m-dk gry/blk/dk bm, silty, carb, soft-firm, no odor, ns.

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

LS: cm/lt bm, micro-m xtal, silty, some chalky, dolomitic, foss frags/ool, 3 pcs w/sfo w/ppt-f in-xtal por/f-m in-ool por, slt crush odor, slt dull yel flor, sfo.

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

SH: lt-dk gry/bm/green-gry, some vry silty, slt carb, soft-firm, fissile.

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

LS: cm/lt bm, vf-med xtal, silty/sndy, some chalky, some dolomitic, min foss frags, 3 dolo pcs w/sfo w/ppt-f in-xtal por, no fluor, no odor, sfo.

LS: wht/cm/tan, micro-f w/min med xtal, some silty/sndy, some chalky, dolomitic, min foss frags/ool, 4 pcs w/ppt-f in-xtal/in-ool por, no fluor, no odor, sfo.

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

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

LS: cm/lt bm/min lt gry, micro-f xtal, some silty, some chalky, abund wht chert, min foss frags, min ppt-f in-xtal por, 1 chert pce w/sfo in min frac por, no odor, ns.

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

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

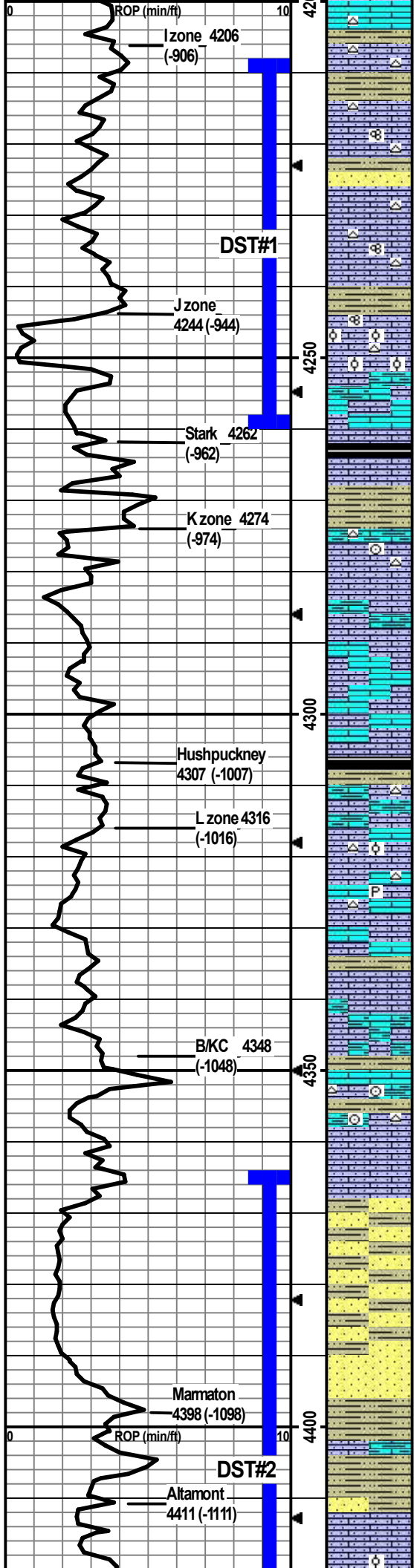
CFS @ 4015'  
Stop/30"/60"

CFS @ 4050'  
Stop/30"/60"

CFS @ 4070'  
Stop/30"/60"

CFS @ 4110'  
Stop/30"/60"

CFS @ 4191'  
Stop/30"/60"



LS: cm/lt brn/lt gry, micro-med, some silty/sndy, some chalky, wht/lt gry/lt brn chert, foss frags, no vis, no odor, ns.  
 Flood of SH: lt-dk gry/green-gry/brn, vry silty, slt carb, firm, fissile.

SH: lt-dk gry/green-gry/red-brn, vry silty, carb, soft-firm.  
 LS: cm/lt brn, fm xtal, vry silty/sndy, wht chert, foss frags/fusln/some grainy, no vis por, no odor, ns.  
 SH: lt-dk gry/red-brn, silty, slt carb, soft-firm; min SS: gry, f-m, pred qtz, sr-wr, arg, friable, ns.

LS: crm/lt brn, micro-m xtal, silty, chalky, wht chert, foss frags, 2 pcs w/sfo w/ppt-f in-xtal por, good odor, dull yel fluor, sfo.

LS: cm/lt-m brn, micro-med xtal, silty/sndy, chalky, foss frags/fusln, wht chert, no vis por, slt cup odor, ns.  
 SH: lt-dk gry/green-gry/red-brn, silty, slt carb, soft-firm.

LS: crm/lt brn/lt gry, f-med xtal, silty/sndy, some chalky/arg, foss frags/fusln/dense ool, min wht chert, min ppt-f in-xtal por, slt odor, ns.

LS: cm/lt-m brn, micro-med xtal, vry silty/sndy, some chalky, some arg, foss frags/grainy/fusln/ool, 3 pcs w/sfo wf-m in-xtal por/vf-m in-ool por, strong odor, dull yel fluor, sfo.  
 SH: lt-dk gry/lt green-gry/blk, silty, slt carb, soft-firm, no odor, ns.  
 LS: crm/lt-m brn, micro-m xtal, some silty/sndy, some chalky, some wht/orange chert, foss frags/crin, few gry LS nod, 2 pcs w/brn staining w/sfo on break, no fluor, ppt-f in-xtal por, no odor, ssfo.

LS: cm/lt brn, micro-med xtal, silty/sndy, smpl vry chalky, arg, foss frag/grainy, 2 pcs w/sfo wf-m in-xtal por, gd odor, sfo. Few oil sat chalk balls.

LS: cm/lt brn, micro-med xtal, some silty/sndy, smpl vry chalky, foss frags/grainy, slt odor, some soft oil sat chalk balls, ssfo.

LS: wht/crm/lt brn, micro-med xtal, some silty/sndy, some chalky, wht/lt gry chert, foss frags/grainy, min fm in-xtal por, no odor, ns.  
 SH: m-dk gry/blk, some vry silty, soft-firm, no odor, ns.

LS: cm/lt-m brn/lt-m gry, micro-med xtal, chalky, silty/sndy, arg, foss frags/min dense ool, min wht/lt gry chert, 1 pcs sfo wf-crs in-xtal por, slt odor, ssfo.

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

LS: crm/lt-m brn/, micro-med xtal, some vry chalky/arg, silty/sndy, foss frags/fusln, min wht/lt gry chert, 3 pcs w/med-crs in-xtal por brn staining on por, slt odor, ssfo.  
 SH: lt-m gry/dk brn, vry silty, slt carb, soft-firm, fissile.

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

LS: crm/lt-m brn/lt gry, micro-m xtal, some silty/sndy, some chalky/arg, some wht chert, foss frags/crin, no vis por, no odor, ns.  
 SH: m-dk gry/lt green-gry/blk, some vry silty/sndy, slt carb, soft-firm, no odor, ns.

LS: crm/lt-m brn/lt gry-brn, micro-med xtal, silty/sndy, some chalky, foss frags, no vis por, no odor, ns.  
 SH: lt-dk gry, silty/sndy, carb, soft-firm. Min SS: gry, f-m, sr-wr, pred qtz, hard, no odor, ns.

SH: lt-dk gry, vry silty/sndy, carb, firm. SS: wht/lt-m gry, vf-f, sr-wr, some arg, hard to friable, no odor, ns.

SS: lt-m gry, vf-f, sr-wr, arg, hard-friable, no odor, ns.

SH: lt-m gry, vry silty/sndy, carb, some vry sndy is friable, no odor, ns.  
 LS: crm/lt-m brn/ lt gry, micro-med xtal, some vry silty/sndy, some vry arg, foss frags, no vis por, no odor.

SH: lt-dk gry/dk brn, vry silty/sndy, carb, firm. SS: lt-m gry, vf-f, sr-wr, pred qtz, arg, hard-friable, no odo, ns.  
 LS: crm/lt brn/lt gry, micro-m xtal, some vry silty/sndy, some chalky, foss frags/ool, 5 pcs wf-vf-m in-xtal/in-ool por, dull yel fluor, no odor, sfo.

CFS @ 4220'  
 Stop/30"/60"

**DST1) 4208-4260**  
**Lansing I & J-zones**  
 30/30/30/30  
 1st) BOB in 4min; no BB.  
 2nd) BOB in 5min; no BB.  
 IFP 67-458#  
 ISIP 1192#  
 FFP 464-697#  
 FSIP 1190#  
 HP 2078-2060#  
 Recvd: 1430' MSW w/trace O (2%M, 98%W), 120' OSMW (3%O, 35%M, 62%W).

CFS @ 4260'  
 Stop/30"/60"

Made 10 std wiper trip prior to DST#1.

Pipe strap TOH for DST #1 at 4260' was 0.45' short to the board.

CFS @ 4300'  
 Stop/30"/60"

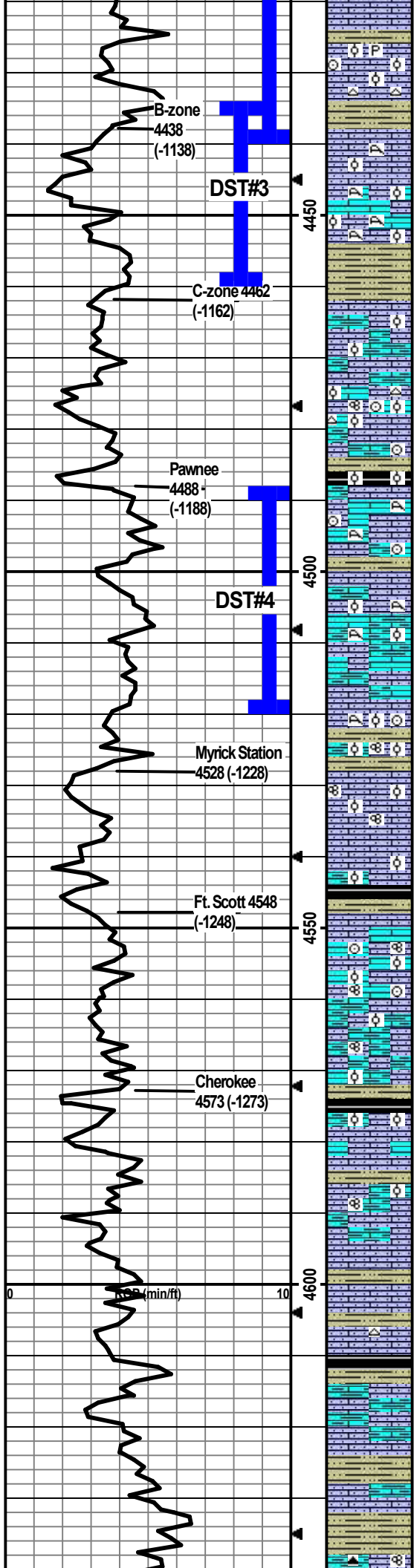
CFS @ 4330'  
 Stop/30"/60"

CFS @ 4350'  
 Stop/30"/60"

Made 10 std wiper trip prior to DST#2.

**DST2) 4365-4440**  
**Altamont A-zone**  
 30/30/30/30  
 1st) SB built to 0.5" at 5min and maintained; no BB.  
 2nd) No blow; no BB.  
 IFP 29-36#  
 ISIP 1059#  
 FFP 38-42#  
 FSIP 1012#  
 HP 2194-2133#  
 Recvd: 15' OSM (3%O, 97%M).

**DST3) 4435-4460**  
**Altamont B-zone**  
 30/30/30/30  
 1st) SB built to 1/2" at 10min and maintained; no BB.  
 2nd) No blow; no BB.



SH: m-dk gry/brn, vry silty/sndy, carb, firm.  
 LS: crm/lt-m brn, micro-m xtal, some vry silty/sndy, pyritic foss frags/crin/ool, 7 pce w/staining and sfo, fcrs in-xtal/in-ool por, no odor, sfo.

LS: crm/lt brn, micro-m xtal, vry silty/sndy, some chalky, min wht chert, foss frags/mostly dense ool, 4 pcs w/sfo w/f-crs in-xtal/in-ool por, no odor, sfo.

SH: lt-dk gry/lt green-gry, vry silty, carb, soft-firm, fissile.  
 LS: crm/lt brn, micro-med xtal, min chalky, some silty/sndy, foss frags/coral/abund dense ool, mostly dense w/m-crs laminar por in the lattice coral, no odor, ns.

LS: crm/lt-m brn/lt gry, micro-med xtal, some silty/sndy, some chalky/arg, foss frags/dense ool/wht lattice coral, coral has m-crs laminar por, no odor, ns.

SH: lt-dk gry/m-dk brn/red-brn, some vry silty, carb, firm, no odor, ns.

LS: crm/lt-m brn, micro-m xtal, some vry silty/sndy, some chalky/arg, foss frags/crin/dense ool, no vis por, no odor, 1 pcs w/liquid oil on xtal surface.

LS: crm/lt-med brn, micro-m, some silty, some chalky, lt brn chert, abund foss frags/crin/fusln/dense ool, no vis por, no odor, ns.

LS: lt-dk brn/m-dk gry, micro-m xtal, vry silty/sndy, vry arg, foss frags/crin/dense ool, no vis por, no odor, ns. Flood of SH: lt-dk gry/blk/brn, vry silty, carb, firm, no odor, ns.

LS: crm/lt-m brn, micro-m xtal, some silty/sndy, some chalky, foss frags/crin/coral, 18 pcs w/sfo w/ppt-crs in-xtal por, dul yel fluor, slt odor, sfo.

SH: lt-dk gry/maroon brn/green-gry, silty, carb, soft-firm.  
 LS: crm/lt-m brn, micro-m xtal, some silty, some chalky/arg, foss frags/coral/dense ool, 7 pcs w/sfo/staining w/ppt-f in-xtal por, dull yel fluor, no odor, sfo.

LS: crm/lt-m brn, micro-m xtal, silty/sndy, some chalky/arg, foss frags, 7 pcs w/sfo w/mostly ppt-vf in-xtal por w/min f-m por, no odor, sfo.

SH: lt-dk gry/maroon brn/green-gry/blk, some silty, slt carb, soft-firm.  
 LS: crm/lt-dk brn/gry-brn, micro-m w/some crs xtal, some silty/chalky/arg, abund foss/frags/dense ool/crin/fusln/coral, no vis por, no odor, ns.

LS: crm/lt brn, micro-m xtal, some silty/sndy, chalky, abund foss frags/fusln/dense ool, no vis por, no odor, ns.

Smp flood of SH: lt-dk brn/maroon/green, silty, carb, firm. LS: crm/lt-dk brn, micro-m xtal, some silty/sndy, some chalky/arg, foss frags/dense ool, no vis por, no odor, 1 pce w/o on break w/ppt-vf por.

LS: crm/lt-m brn/gry-brn, micro-m xtal, some silty/sndy, some chalky, foss frags/crin/fusln/dense ool, no vis por, no odor, ns. Cont flood of SH.

LS: lt-dk brn/gry-brn, micro-med xtal, some silty/sndy, some chalky/arg, foss frags/fusln/ool, no vis por, no odor, ns. Cont flood of SH.

SH: lt-dk gry/blk/green-gry/red-brn, some vry silty/sndy, slt carb, soft-firm, no odor, ns.

LS: crm/lt-m brn/lt gry-brn, micro-m xtal, some silty/sndy, some chalky/arg, foss frags/dense ool, 2 pcs w/sfo w/mostly ppt-vf min f-m, dul yel fluor, no odor, ssfo.

LS: crm/lt-m brn/lt gry, micro-med, some silty/sndy, some chalky/arg, foss frags/fusln/dense ool, no vis por, no odor, 1 pce w/staining oil on break, vf-m por, ssfo.

SH: m-dk gry/blk/brn/green-gry, slt carb, silty, firm, no odor, ns.

LS: crm/lt-m brn/lt gry, micro-m, some silty, some chalky, min lt brn chert, foss frags, no vis por, no odor, ns.  
 SH: lt-dk gry/blk, slt carb, some vry silty/sndy, firm, fissile, no odor, ns.

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

SH: m-dk gry, some silty, slt carb, soft-firm, fissile, no odor, ns.  
 LS: crm/lt-m brn/lt gry, micro-m xtal, some vry silty, some chalky/arg, foss frags/grainy/dense ool, no vis por, no odor, ns.

SH: wht/lt-dk gry, some vry silty, carb, firm, fissile, no odor, ns.

LS: lt-m brn/lt gry, micro-m xtal, some vry silty, some chalky/arg, dk brn chert,

IFP 29-30#  
 ISIP 327#  
 FFP 31-31#  
 FSP 136#  
 HP 2183-2186#  
 Recvd: 10' OSM (100%M).

CFS @ 4440'  
 Stop/30"/60"

CFS @ 4460'  
 Stop/30"/60"

CFS @ 4474'  
 Stop/30"/60"

CFS @ 4490'  
 Stop/30"/60"

**DST4) 4489-4520**  
**Pawnee**  
 30/30/30/30  
 1st SB built to 1/2"; no BB.  
 2nd) No blow; no BB.  
 IFP 26-27#  
 ISIP 100#  
 FFP 27-28#  
 FSP 60#  
 HP 2282-2238#  
 Recvd: 2' OSM (100%M).

CFS @ 4520'  
 Stop/30"/60"

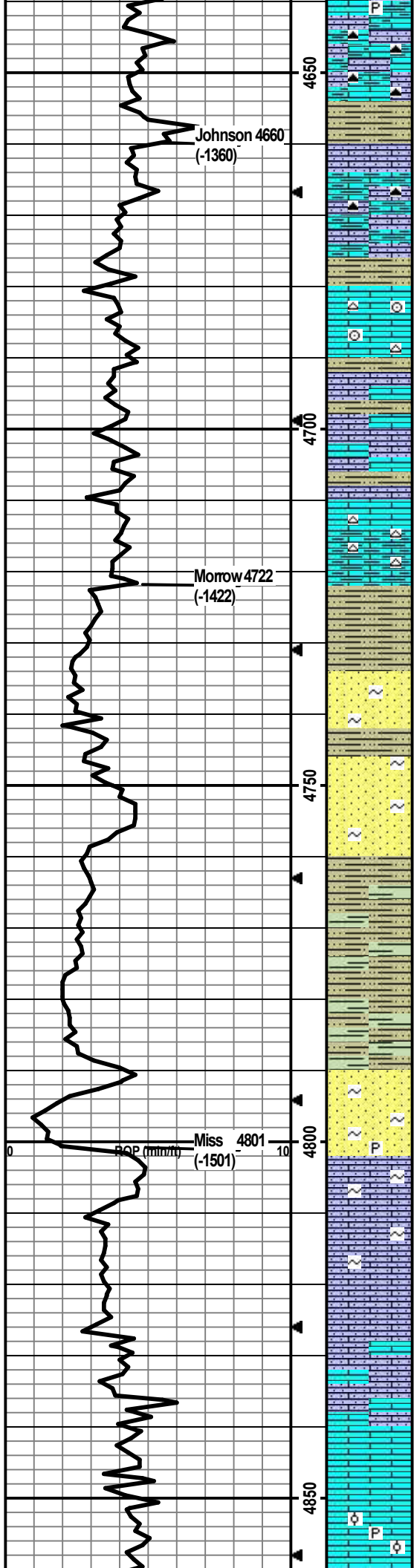
CFS @ 4530'  
 Stop/30"/60"

CFS @ 4550'  
 Stop/30"/60"

Mixed in new tank of mud to bring up vis.

CFS @ 4578'  
 Stop/30"/60"

CFS @ 4590'  
 Stop/30"/60"



min pyritic, foss frags/fusln, no vis por, no odor, ns.

LS: lt-m bm/lt gry, micro-med xtal, some silty/arg, gd amt m-dk bm chert, foss frags, no vis por, no odor, ns.

SH: lt-dk gry/dk maroon/green-gry, some vry silty/sndy, slt carb, firm.

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

SH: m-dk gry/lt green-gry, some silty, soft-firm, fissile, no odor, ns.

LS: lt-m bm, micro-m xtal, min chalky, lt bm chert, min foss frags/crin, no vis por, no odor, ns.

SH: m-dk gry/blk, slt silty, slt carb, firm, no odor, ns.

LS: lt-m bm/lt gry, micro-m xtal, some silty/chalky, foss frags, no vis por, no odor, 1 pce w/sfo crs oo-castic por assum not from this zone.

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

LS: cm/lt-med bm, min silty/chalky, min foss frags, min dk bm chert, no vis por, no odor, ns.

SH: lt-dk gry/blk/red-bm/min green-gry, some vry silty, slt carb, soft-firm, no odor, ns.

SH: lt-dk gry/bm/maroon/lt green-gry, some silty, slt carb, firm, no odor, ns.

SS: lt gry, vf-f, sr-r, glauc, pyritic, hard, friable, no odor, ns.

SS: lt gry/lt green, vf-f, sr-wr, glauc, vry arg, soft-hard, friable, no odor, ns.

SH: m-dk gry/lt green-gry/maroon, some vry silty, slt carb, firm, no odor, ns.

SS: lt gry/lt-m green, vf-crs, sr-wr, pred qtz, arg, glauc, carb matrix, some hard, some friable, no odor, ns.

SH: lt-dk gry/green-gry, some silty, carb, firm, no odor, ns.

SH: lt-dk gry/lt green-gry/dk maroon, some silty, firm, no odor, ns.

SH: m-dk gry/blk/lt gry-green, some vry silty/sndy, slt carb, soft-firm. Some SS as above.

SS: wht/lt gry, f-crs, sr-wr, pred qtz, some glauc, slt carb matrix, hard, some friable, no odor, ns.

SS: wht/lt gry, vf-crs, pred qtz, slt glauc, some pyritic, vry carb matrix, hard, some friable, no vis por, no odor, ns. SH: lt-dk gry/green-gry/bm, some vry silty/sndy, some pyritic, firm/hard, no odor, ns.

LS: lt-m bm, f-m xtal, some vry sndy, glauc, min foss frags, no vis por, no odor, ns. (Flood of SH/SS from above.)

LS: wht/lt-m bm, vf-m xtal, some vry sndy, some friable, min foss frags, no vis por, no odor, ns. (Flood of SH and SS from above.)

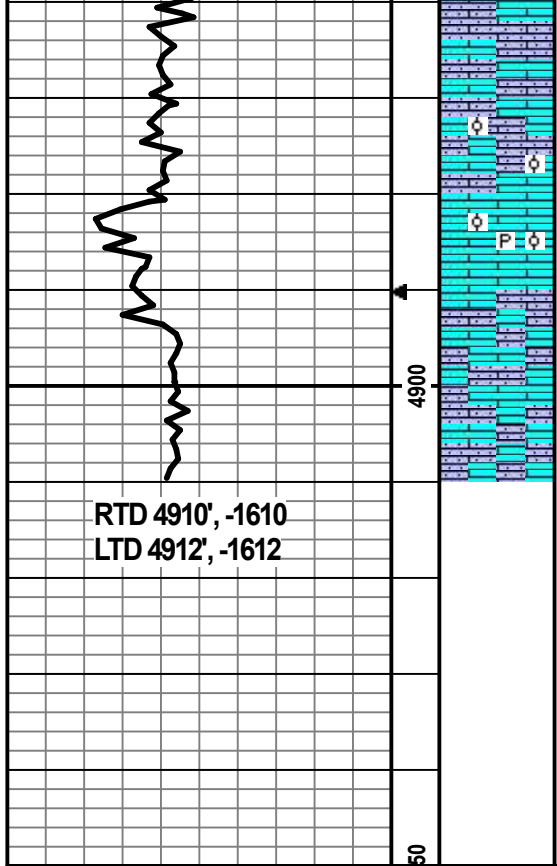
LS: med bm/med bm-gry, micro-f xtal, glassy, min foss frags, no vis por, no odor, ns. (Cont flood of SH/SS as above.)

LS: lt-m bm/med gry-bm, micro-f xtal, min pyritic, foss frags/min dense oolgrainy, no vis por, no odor, ns. (Cont flood of SH/SS from above.)

CFS @ 4680'  
Stop/30"/60"

CFS @ 4750'  
Stop/30"/60"

CFS @ 4810'  
Stop/30"/60"



RTD 4910', -1610  
 LTD 4912', -1612

LS: cm/lt-m bm, micro-med xtal, some vry silty/sndy, some chalky, foss frags/grainy, no vis por, no odor, ns. (Cont flood of SH/SS from above.)

LS: cm/lt-bm, micro-med xtal, some vry silty/sndy/chalky, foss frags/dense vf-f ool, no vis por, no odor, ns. (Cont flood of SH/SS from above.)

LS: cm/lt-m bm, micro-med xtal, min pyritic, foss frags/dense ool/grainy, no vis por, no odor, ns. (Cont flood SH/SS flood from above.)

LS: lt-m bm/gry, micro-med xtal, some silty, foss frags, no vis por, no odor, ns. (Cont SH/SS flood from above.)

LS: lt-bm/min gry-bm, micro-med, some silty, foss frags, no vis por, no odor, ns. (Cont SH/SS flood from above.)

TD @4910'

CFS @4910'  
 Stop/30'/60"  
 Did 10 Std short trip, CTCH 1.5 hr, TOH for logging.



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Ritchie Exploration Inc  
 8100 E 22 nd ST  
 N. #700  
 Wichita, KS 67278  
 ATTN: Kent Matson

**32-16-36**

**Whitham Land #1**

Job Ticket: 66574

**DST#: 1**

Test Start: 2021.02.23 @ 11:32:00

## GENERAL INFORMATION:

Formation: **Lansing "I & J"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 13:41:50

Time Test Ended: 18:37:39

Test Type: Conventional Bottom Hole (Initial)

Tester: Martine Salinas

Unit No: 82

Interval: **4208.00 ft (KB) To 4260.00 ft (KB) (TVD)**

Total Depth: 4260.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 3300.00 ft (KB)

3295.00 ft (CF)

KB to GR/CF: 5.00 ft

**Serial #: 8734 Outside**

Press@RunDepth: 696.57 psig @ 4209.00 ft (KB)

Start Date: 2021.02.23

End Date: 2021.02.23

Start Time: 11:32:01

End Time: 18:37:40

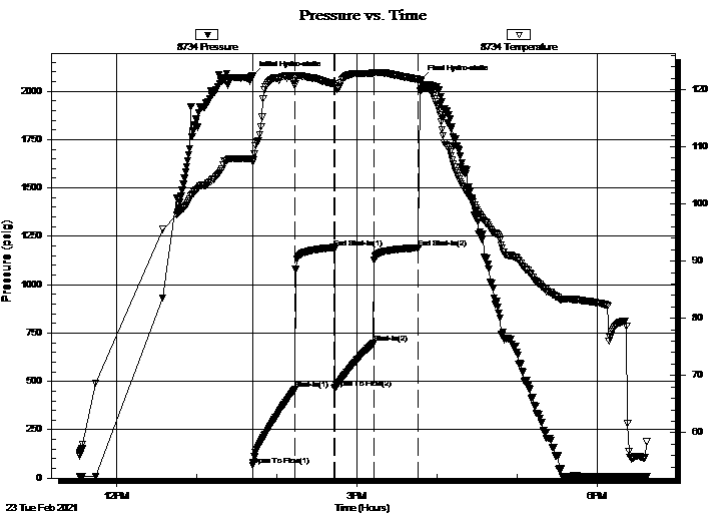
Capacity: 8000.00 psig

Last Calib.: 2021.02.23

Time On Btm: 2021.02.23 @ 13:41:30

Time Off Btm: 2021.02.23 @ 15:47:50

TEST COMMENT: 30-IF-B.O.B (11 inches) @ 4 mins (blow increased to 70 1/2")  
 45-ISI-No Return  
 45-FF-B.O.B @ (11 inches) @ 5 mins (blow increased to 48 1/2")  
 60-FSI-No Return



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2078.35	107.87	Initial Hydro-static
1	67.66	107.30	Open To Flow (1)
32	458.48	120.74	Shut-In(1)
62	1192.01	120.98	End Shut-In(1)
62	463.81	120.61	Open To Flow (2)
91	696.57	122.85	Shut-In(2)
125	1190.34	121.76	End Shut-In(2)
127	2059.90	119.79	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
1430.00	MSW with Trace Oil 2%M, 98%W	18.44
120.00	OSMW 3%O, 35%M, 62%W	1.68

## Gas Rates

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



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Ritchie Exploration Inc

**32-16-36**

8100 E 22 nd ST  
N. #700  
Wichita, KS 67278  
ATTN: Kent Matson

**Whitham Land #1**

Job Ticket: 66574 **DST#: 1**  
Test Start: 2021.02.23 @ 11:32:00

## GENERAL INFORMATION:

Formation: **Lansing "I & J"**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 13:41:50  
 Time Test Ended: 18:37:39  
 Interval: **4208.00 ft (KB) To 4260.00 ft (KB) (TVD)**  
 Total Depth: 4260.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Good  
 Test Type: Conventional Bottom Hole (Initial)  
 Tester: Martine Salinas  
 Unit No: 82  
 Reference Elevations: 3300.00 ft (KB)  
 3295.00 ft (CF)  
 KB to GR/CF: 5.00 ft

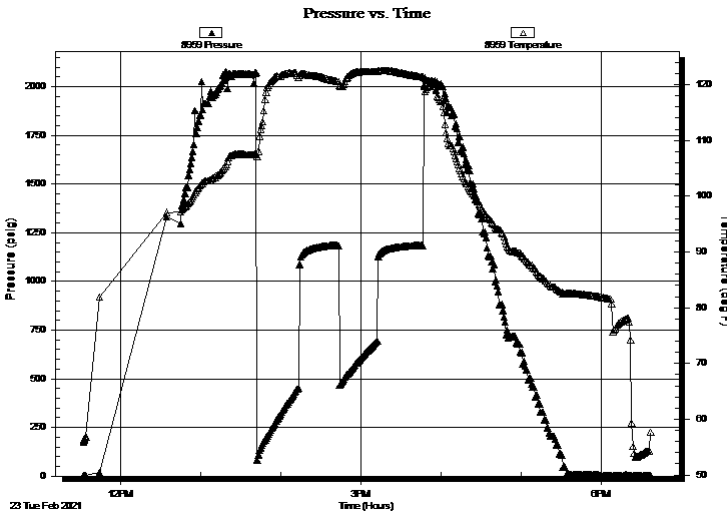
## Serial #: 8959

Inside

Press@RunDepth: psig @ 4209.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2021.02.23 End Date: 2021.02.23 Last Calib.: 2021.02.23  
 Start Time: 11:32:01 End Time: 18:37:40 Time On Btm:  
 Time Off Btm:

TEST COMMENT: 30-IF-B.O.B (11 inches) @ 4 mins (blow increased to 70 1/2")  
 45-ISI-No Return  
 45-FF-B.O.B @ (11 inches) @ 5 mins (blow increased to 48 1/2")  
 60-FSI-No Return

## PRESSURE SUMMARY



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

## Recovery

Length (ft)	Description	Volume (bbl)
1430.00	MSW w ith Trace Oil 2%M, 98%W	18.44
120.00	OSMW 3%O, 35%M, 62%W	1.68

## Gas Rates

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





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Ritchie Exploration Inc

**32-16-36**

8100 E 22 nd ST  
N. #700  
Wichita, KS 67278  
ATTN: Kent Matson

**Whitham Land #1**

Job Ticket: 66574

**DST#: 1**

Test Start: 2021.02.23 @ 11:32:00

### Mud and Cushion Information

Mud Type: Gel Chem  
Mud Weight: 9.00 lb/gal  
Viscosity: 49.00 sec/qt  
Water Loss: 7.20 in<sup>3</sup>  
Resistivity: ohm.m  
Salinity: 5000.00 ppm  
Filter Cake: 1.00 inches

Cushion Type:  
Cushion Length: ft  
Cushion Volume: bbl  
Gas Cushion Type:  
Gas Cushion Pressure: psig

Oil API: deg API  
Water Salinity: 34000 ppm

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
1430.00	MSW w ith Trace Oil 2%M, 98%W	18.438
120.00	OSMW 3%O, 35%M, 62%W	1.683

Total Length: 1550.00 ft      Total Volume: 20.121 bbl

Num Fluid Samples: 0

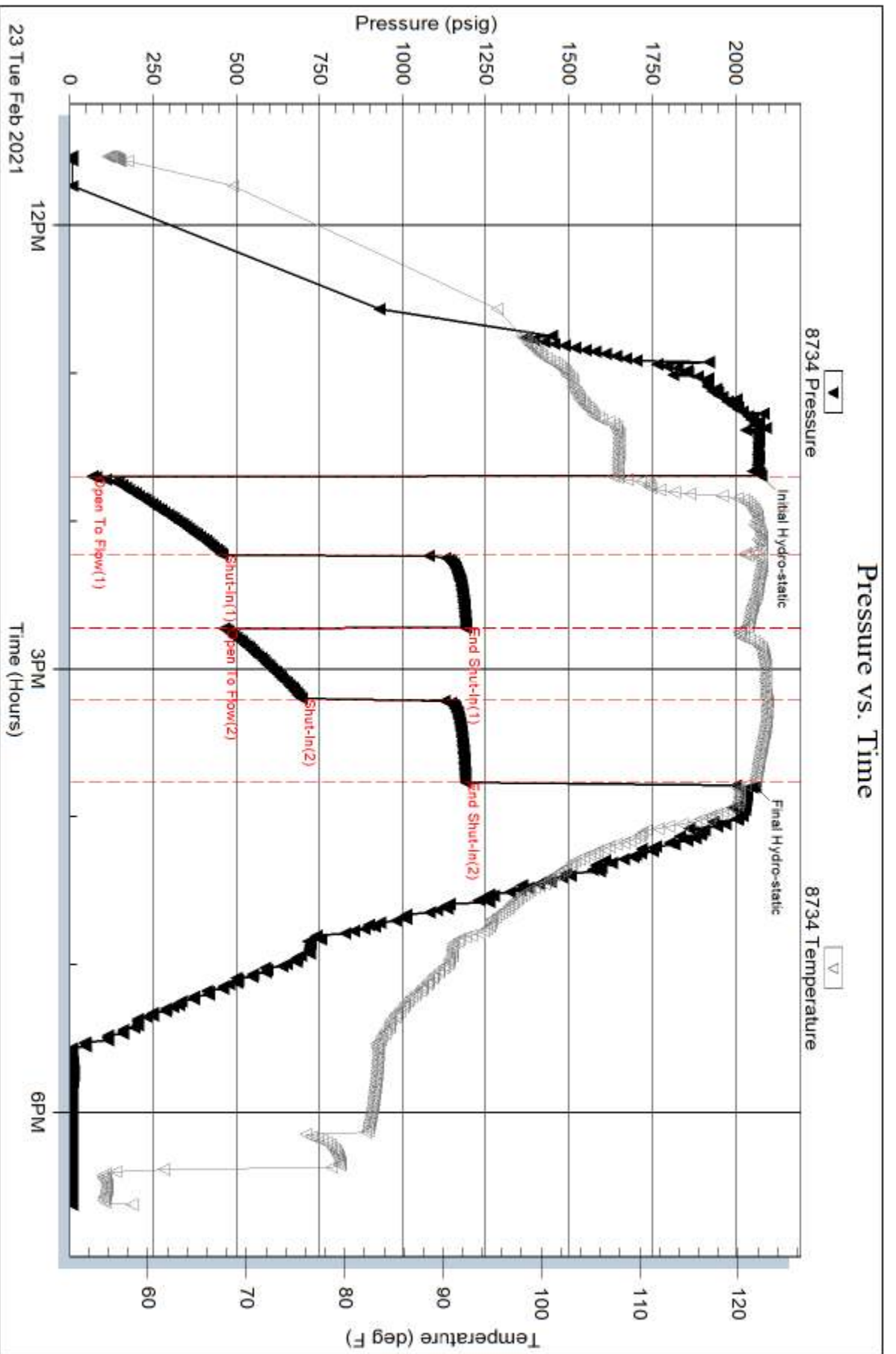
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW = .212 @ 70.0 degs = 34,000PPM



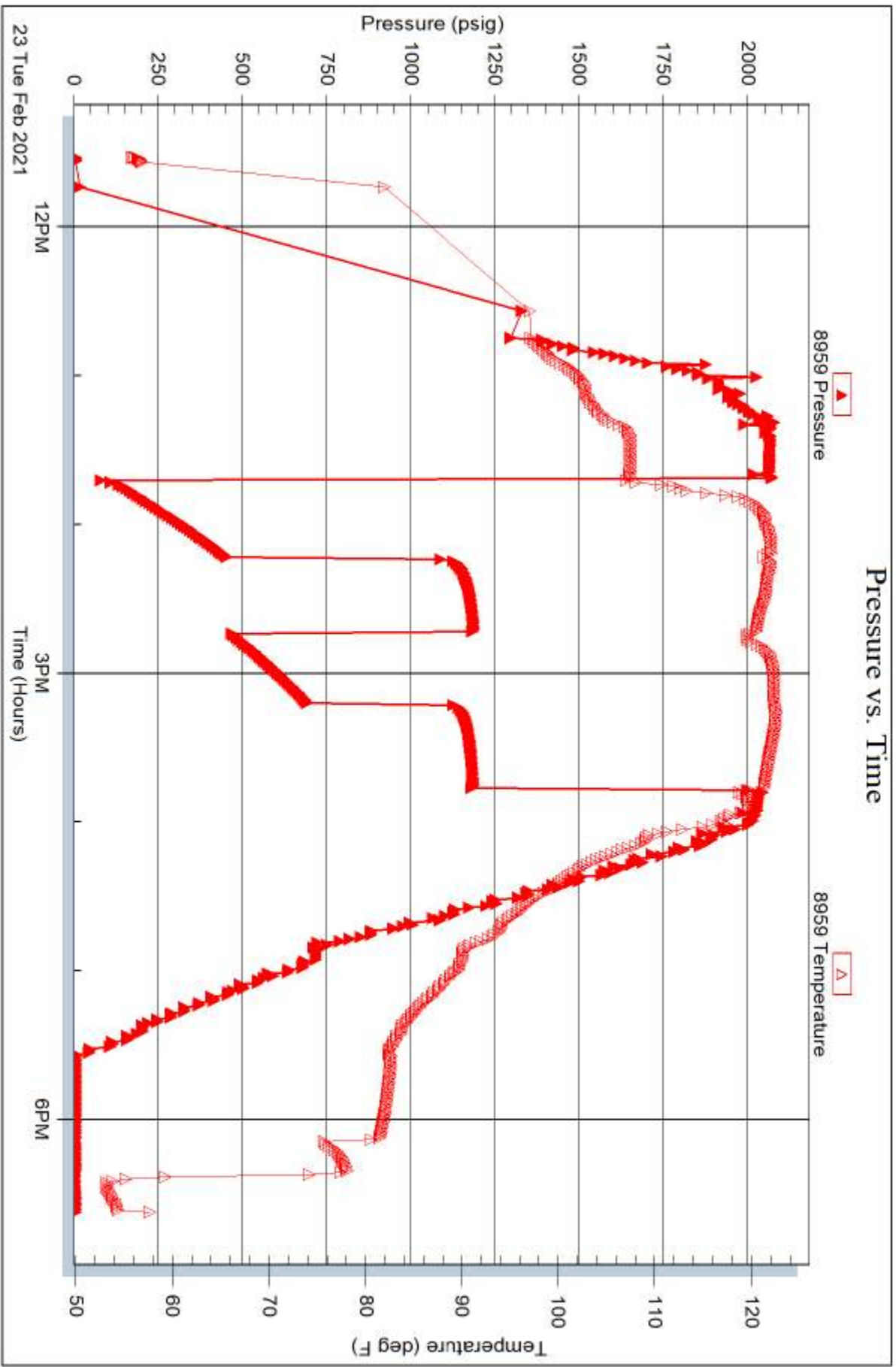
Serial #: 8959

Inside

Richie Exploration Inc

Whitham Land #1

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 66574

Printed: 2021.02.23 @ 19:50:54



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Ritchie Exploration Inc  
8100 E 22 nd ST  
N. #700  
Wichita, KS 67278  
ATTN: Kent Matson

**32-16-36**

**Whitham Land #1**

Job Ticket: 66575

**DST#: 2**

Test Start: 2021.02.24 @ 16:46:00

## GENERAL INFORMATION:

Formation: **Altamont**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 19:15:30

Time Test Ended: 23:18:39

Test Type: Conventional Bottom Hole (Reset)

Tester: Martine Salinas

Unit No: 82

**Interval: 4365.00 ft (KB) To 4440.00 ft (KB) (TVD)**

Total Depth: 4440.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 3300.00 ft (KB)

3295.00 ft (CF)

KB to GR/CF: 5.00 ft

**Serial #: 8734 Outside**

Press@RunDepth: 42.15 psig @ 4366.00 ft (KB)

Start Date: 2021.02.24

End Date: 2021.02.24

Start Time: 16:46:01

End Time: 23:18:40

Capacity: 8000.00 psig

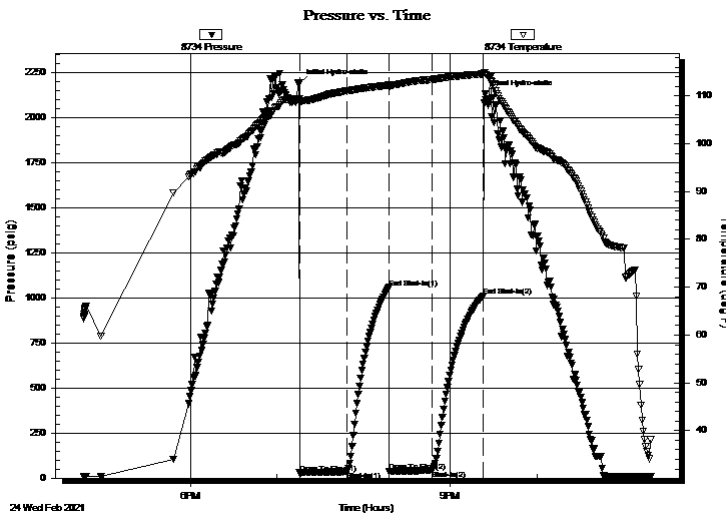
Last Calib.: 2021.02.24

Time On Btm: 2021.02.24 @ 19:15:20

Time Off Btm: 2021.02.24 @ 21:23:50

**TEST COMMENT:** 30-IF-S.blow built to 1/2" @ 5 mins @ maintained blow  
30-ISI-No return  
30-FF-No blow  
30-FSI-No return

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2193.51	109.42	Initial Hydro-static
1	28.87	108.67	Open To Flow (1)
33	35.82	111.08	Shut-In(1)
62	1058.78	112.25	End Shut-In(1)
63	38.14	111.87	Open To Flow (2)
92	42.15	113.45	Shut-In(2)
128	1012.45	114.58	End Shut-In(2)
129	2132.54	114.84	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
15.00	OSM 3% O, 97% Mud	0.07

\* Recovery from multiple tests

## Gas Rates

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





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Ritchie Exploration Inc

**32-16-36**

8100 E 22 nd ST  
N. #700  
Wichita, KS 67278  
ATTN: Kent Matson

**Whitham Land #1**

Job Ticket: 66575

**DST#: 2**

Test Start: 2021.02.24 @ 16:46:00

### Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 53.00 sec/qt

Water Loss: 7.98 in<sup>3</sup>

Resistivity: ohm.m

Salinity: 6400.00 ppm

Filter Cake: 1.00 inches

Cushion Type:

Cushion Length: ft

Cushion Volume: bbl

Gas Cushion Type:

Gas Cushion Pressure: psig

Oil API:

Water Salinity: deg API

ppm

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
15.00	OSM 3% O, 97% Mud	0.074

Total Length: 15.00 ft      Total Volume: 0.074 bbl

Num Fluid Samples: 0

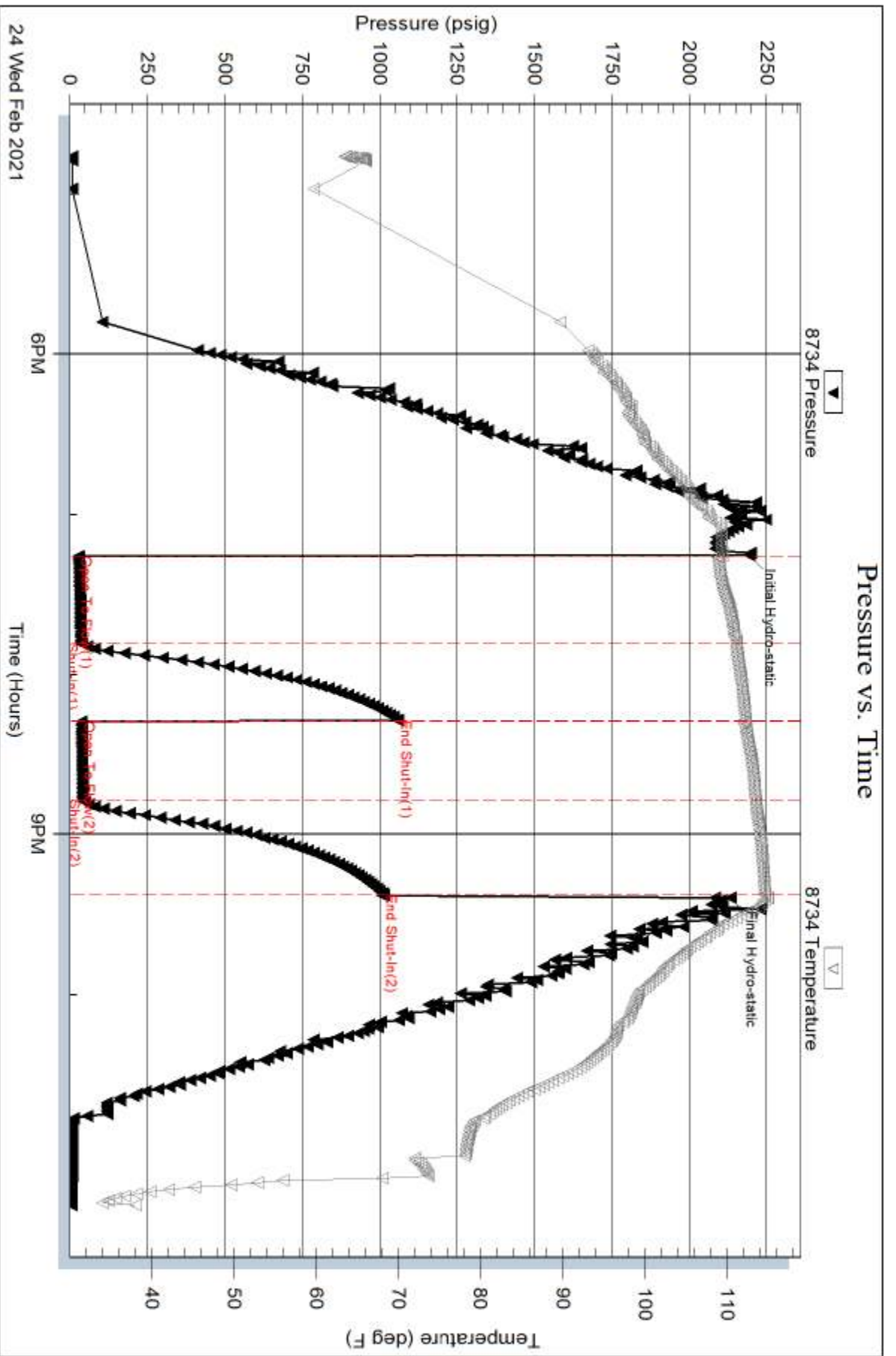
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



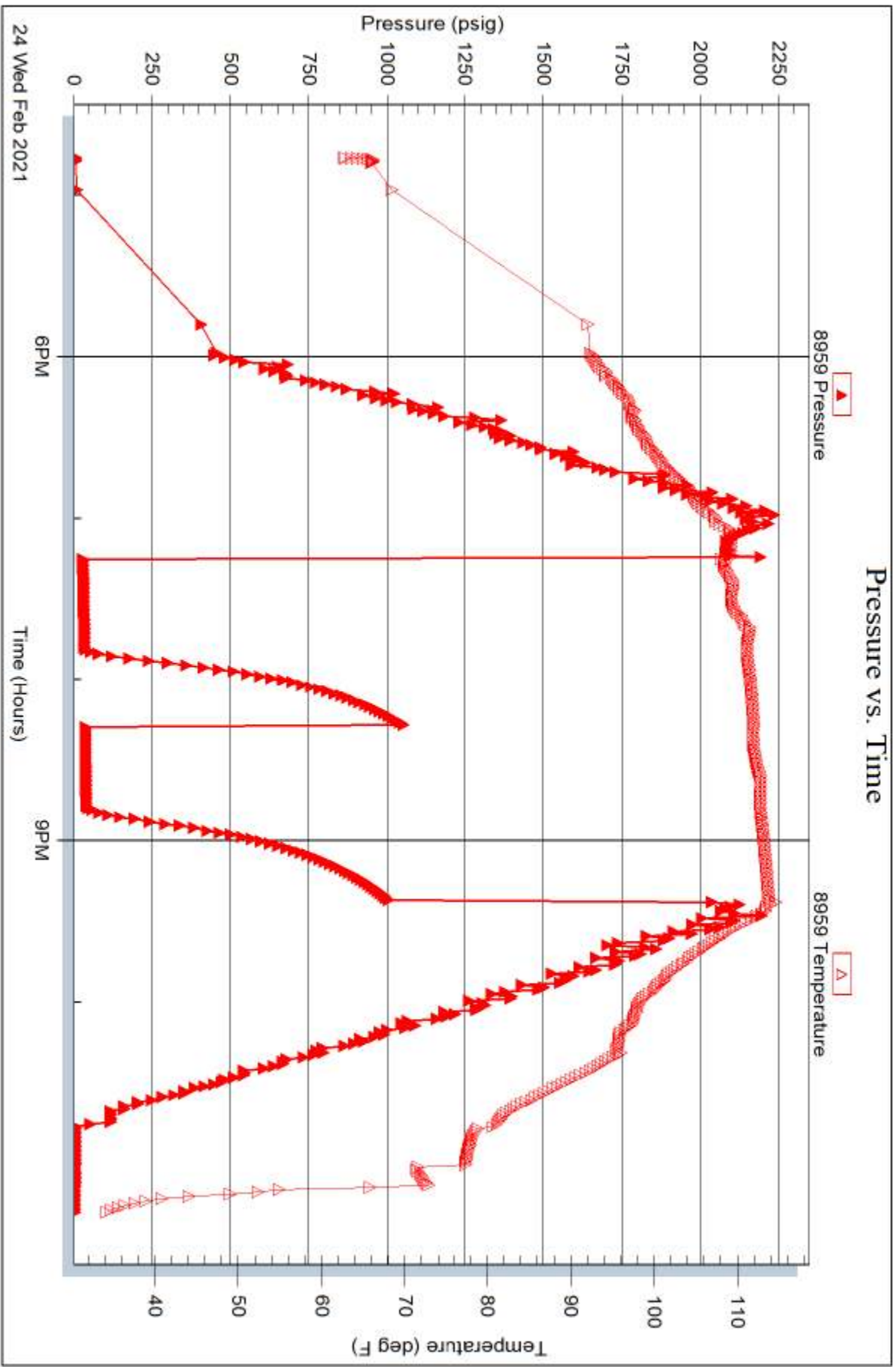
Serial #: 8959

Inside

Richie Exploration Inc

Whitham Land #1

DST Test Number: 2







**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Ritchie Exploration Inc  
8100 E 22 nd ST  
N. #700  
Wichita, KS 67278  
ATTN: Kent Matson

**32-16-36**

**Whitham Land #1**

Job Ticket: 67501

**DST#: 3**

Test Start: 2021.02.25 @ 06:36:00

## GENERAL INFORMATION:

Formation: **Altamont " B "**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 08:15:20

Time Test Ended: 11:58:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Martine Salinas

Unit No: 82

Interval: **4435.00 ft (KB) To 4460.00 ft (KB) (TVD)**

Total Depth: 4460.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 3300.00 ft (KB)

3295.00 ft (CF)

KB to GR/CF: 5.00 ft

**Serial #: 8734 Outside**

Press@RunDepth: 31.11 psig @ 4436.00 ft (KB)

Start Date: 2021.02.25

End Date: 2021.02.25

Start Time: 06:36:01

End Time: 11:58:30

Capacity: 8000.00 psig

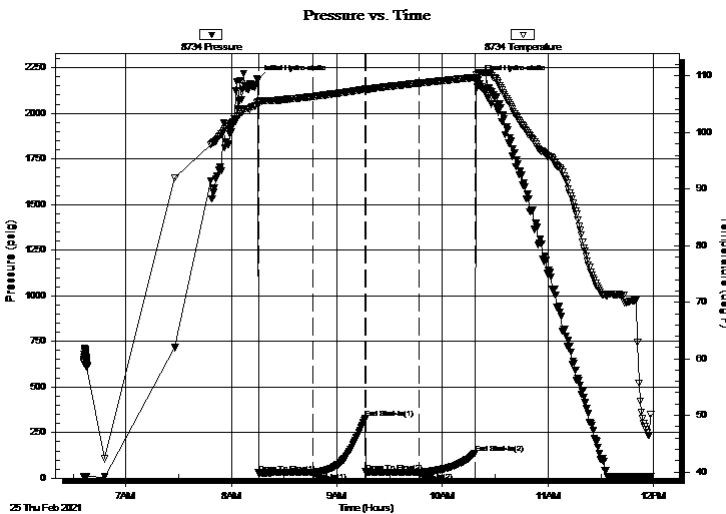
Last Calib.: 2021.02.25

Time On Btm: 2021.02.25 @ 08:15:00

Time Off Btm: 2021.02.25 @ 10:20:10

TEST COMMENT: 30-IF-S.blow built to 1/2" @ 10 mins & maintained blow  
30-ISI-No return  
30-FF-No blow  
30-FSI-No blow

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2182.97	105.52	Initial Hydro-static
1	28.78	104.99	Open To Flow (1)
32	29.81	106.39	Shut-In(1)
62	326.57	107.68	End Shut-In(1)
62	30.73	107.57	Open To Flow (2)
92	31.11	108.75	Shut-In(2)
124	136.24	109.75	End Shut-In(2)
126	2186.15	110.17	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
10.00	100% Mud w /Oil spots	0.05

## Gas Rates

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

\* Recovery from multiple tests



# DRILL STEM TEST REPORT

Ritchie Exploration Inc  
 8100 E 22 nd ST  
 N. #700  
 Wichita, KS 67278  
 ATTN: Kent Matson

**32-16-36**

**Whitham Land #1**

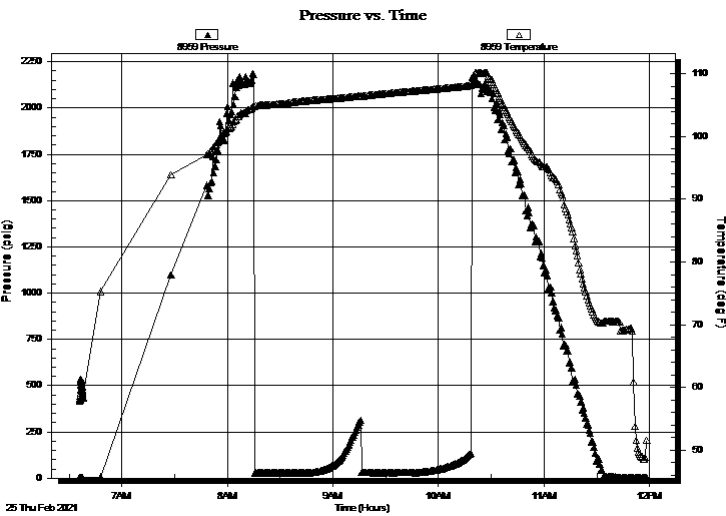
Job Ticket: 67501      **DST#: 3**  
 Test Start: 2021.02.25 @ 06:36:00

## GENERAL INFORMATION:

Formation: **Altamont " B "**  
 Deviated: No Whipstock: ft (KB)      Test Type: Conventional Bottom Hole (Reset)  
 Time Tool Opened: 08:15:20      Tester: Martine Salinas  
 Time Test Ended: 11:58:30      Unit No: 82  
**Interval: 4435.00 ft (KB) To 4460.00 ft (KB) (TVD)**      Reference Elevations: 3300.00 ft (KB)  
 Total Depth: 4460.00 ft (KB) (TVD)      3295.00 ft (CF)  
 Hole Diameter: 7.88 inches Hole Condition: Good      KB to GR/CF: 5.00 ft

**Serial #: 8959      Inside**  
 Press@RunDepth:      psig @ 4436.00 ft (KB)      Capacity: 8000.00 psig  
 Start Date: 2021.02.25      End Date: 2021.02.25      Last Calib.: 2021.02.25  
 Start Time: 06:36:01      End Time: 11:58:30      Time On Btm:  
    Time Off Btm:

**TEST COMMENT:** 30-IF-S.blow built to 1/2" @ 10 mins & maintained blow  
 30-ISI-No return  
 30-FF-No blow  
 30-FSI-No blow



## PRESSURE SUMMARY

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

## Recovery

Length (ft)	Description	Volume (bbl)
10.00	100% Mud w /Oil spots	0.05

## Gas Rates

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

\* Recovery from multiple tests



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Ritchie Exploration Inc

**32-16-36**

8100 E 22 nd ST  
N. #700  
Wichita, KS 67278  
ATTN: Kent Matson

**Whitham Land #1**

Job Ticket: 67501

**DST#: 3**

Test Start: 2021.02.25 @ 06:36:00

### Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 46.00 sec/qt

Water Loss: 7.99 in<sup>3</sup>

Resistivity: ohm.m

Salinity: 6400.00 ppm

Filter Cake: 1.00 inches

Cushion Type:

Cushion Length: ft

Cushion Volume: bbl

Gas Cushion Type:

Gas Cushion Pressure: psig

Oil API:

Water Salinity: deg API

ppm

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	100% Mud w /Oil spots	0.049

Total Length: 10.00 ft      Total Volume: 0.049 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

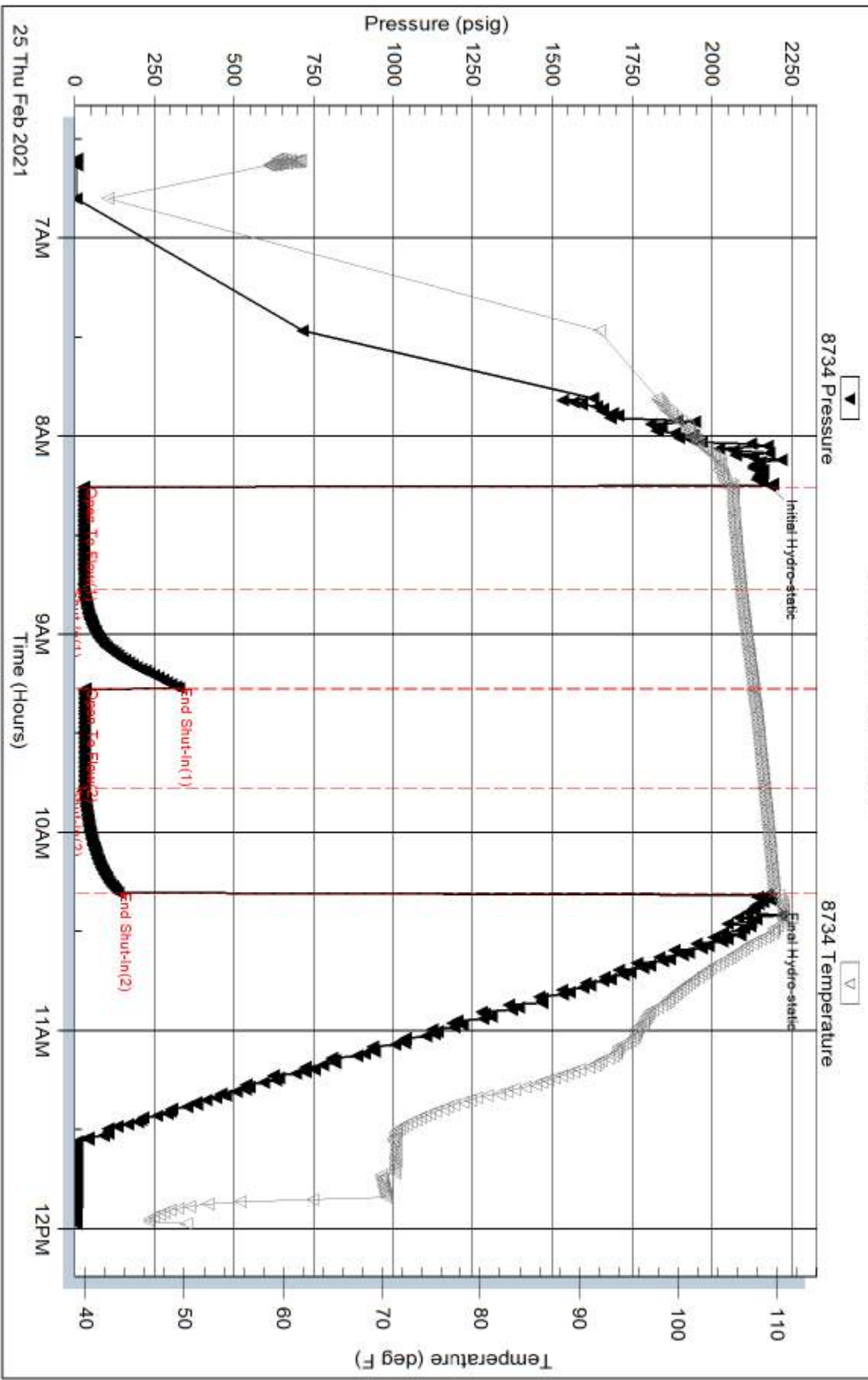
Serial #:

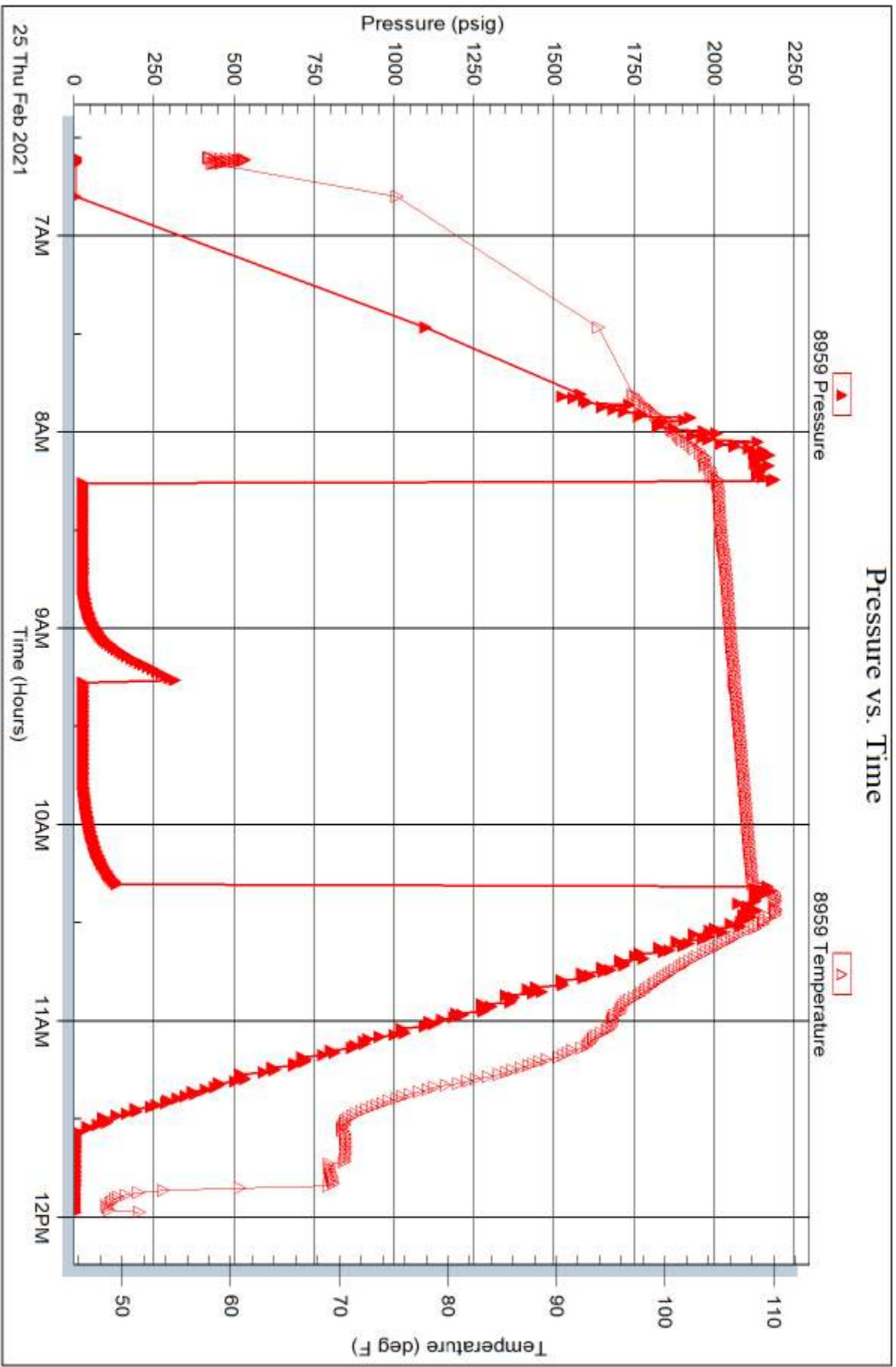
Laboratory Name:

Laboratory Location:

Recovery Comments:

### Pressure vs. Time







**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Ritchie Exploration Inc  
8100 E 22 nd ST  
N. #700  
Wichita, KS 67278  
ATTN: Kent Matson

**32-16-36**

**Whitham Land #1**

Job Ticket: 67502

**DST#: 4**

Test Start: 2021.02.26 @ 00:07:00

## GENERAL INFORMATION:

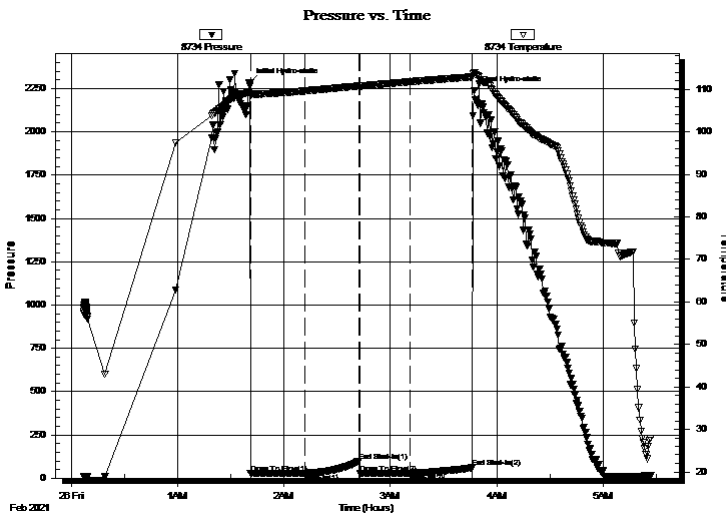
Formation: **Pawnee**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 01:41:00  
 Time Test Ended: 05:27:09  
 Interval: **4489.00 ft (KB) To 4520.00 ft (KB) (TVD)**  
 Total Depth: 4520.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Good  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Martine Salinas  
 Unit No: 82  
 Reference Elevations: 3300.00 ft (KB)  
 3295.00 ft (CF)  
 KB to GR/CF: 5.00 ft

**Serial #: 8734 Outside**

Press@RunDepth: 27.59 psig @ 4490.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2021.02.26 End Date: 2021.02.26 Last Calib.: 2021.02.26  
 Start Time: 00:07:01 End Time: 05:27:10 Time On Btm: 2021.02.26 @ 01:40:50  
 Time Off Btm: 2021.02.26 @ 03:47:20

TEST COMMENT: 30-IF-S.blow built to 1/2"  
 30-ISI-No return  
 30-FF-No blow  
 30-FSI-No blow

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2281.97	109.56	Initial Hydro-static
1	26.19	108.67	Open To Flow (1)
31	26.80	109.66	Shut-In(1)
62	99.91	110.82	End Shut-In(1)
62	26.88	110.80	Open To Flow (2)
91	27.59	111.83	Shut-In(2)
126	60.26	112.96	End Shut-In(2)
127	2238.05	114.02	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
2.00	100% Mud w /Oil specks	0.01

\* Recovery from multiple tests

## Gas Rates

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





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Ritchie Exploration Inc

**32-16-36**

8100 E 22 nd ST  
N. #700  
Wichita, KS 67278  
ATTN: Kent Matson

**Whitham Land #1**

Job Ticket: 67502

**DST#: 4**

Test Start: 2021.02.26 @ 00:07:00

### Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 40.00 sec/qt

Water Loss: 7.99 in<sup>3</sup>

Resistivity: ohm.m

Salinity: 6800.00 ppm

Filter Cake: 1.00 inches

Cushion Type:

Cushion Length: ft

Cushion Volume: bbl

Gas Cushion Type:

Gas Cushion Pressure: psig

Oil API:

Water Salinity: deg API

ppm

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
2.00	100% Mud w /Oil specks	0.010

Total Length: 2.00 ft      Total Volume: 0.010 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

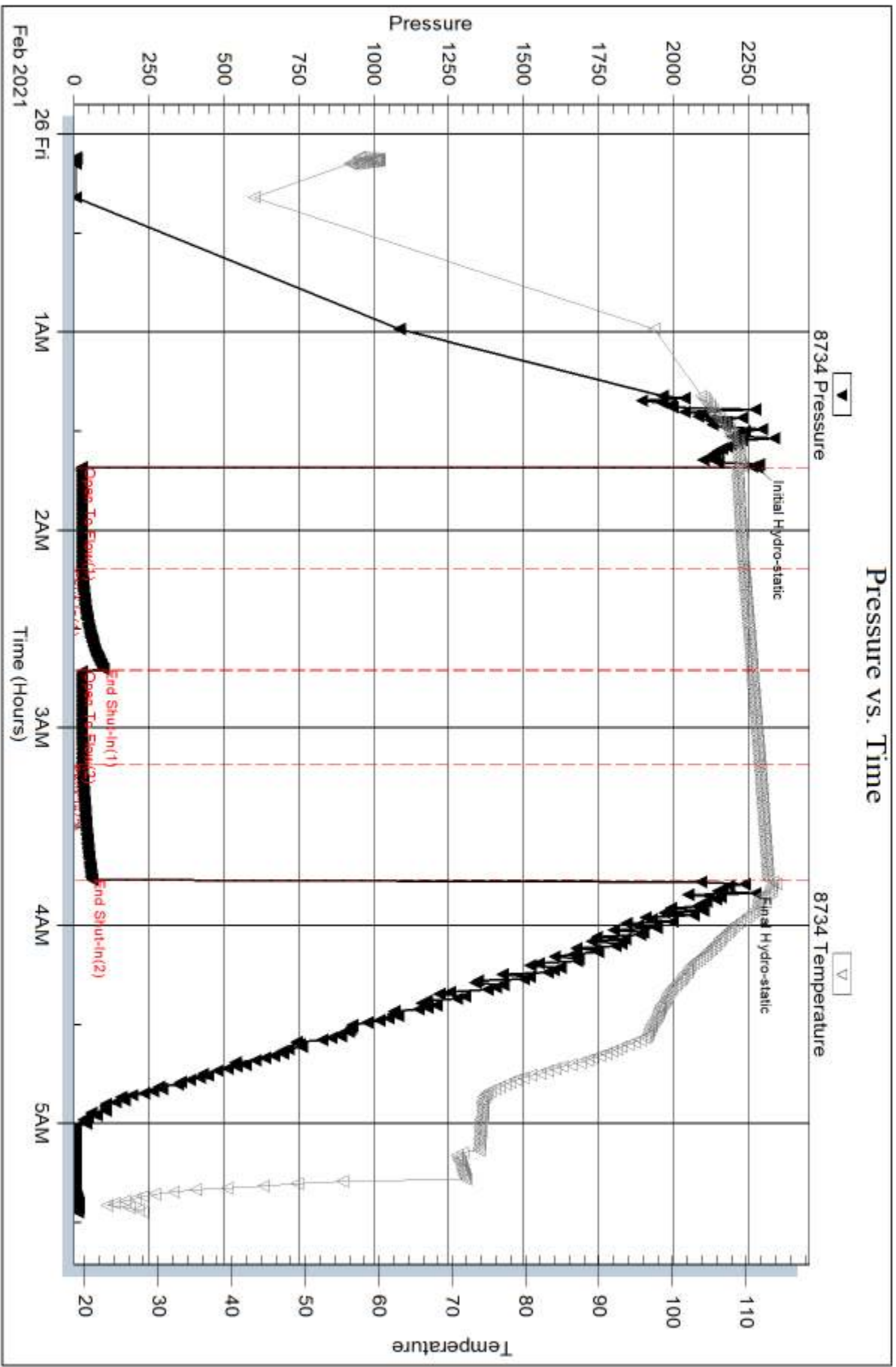
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:





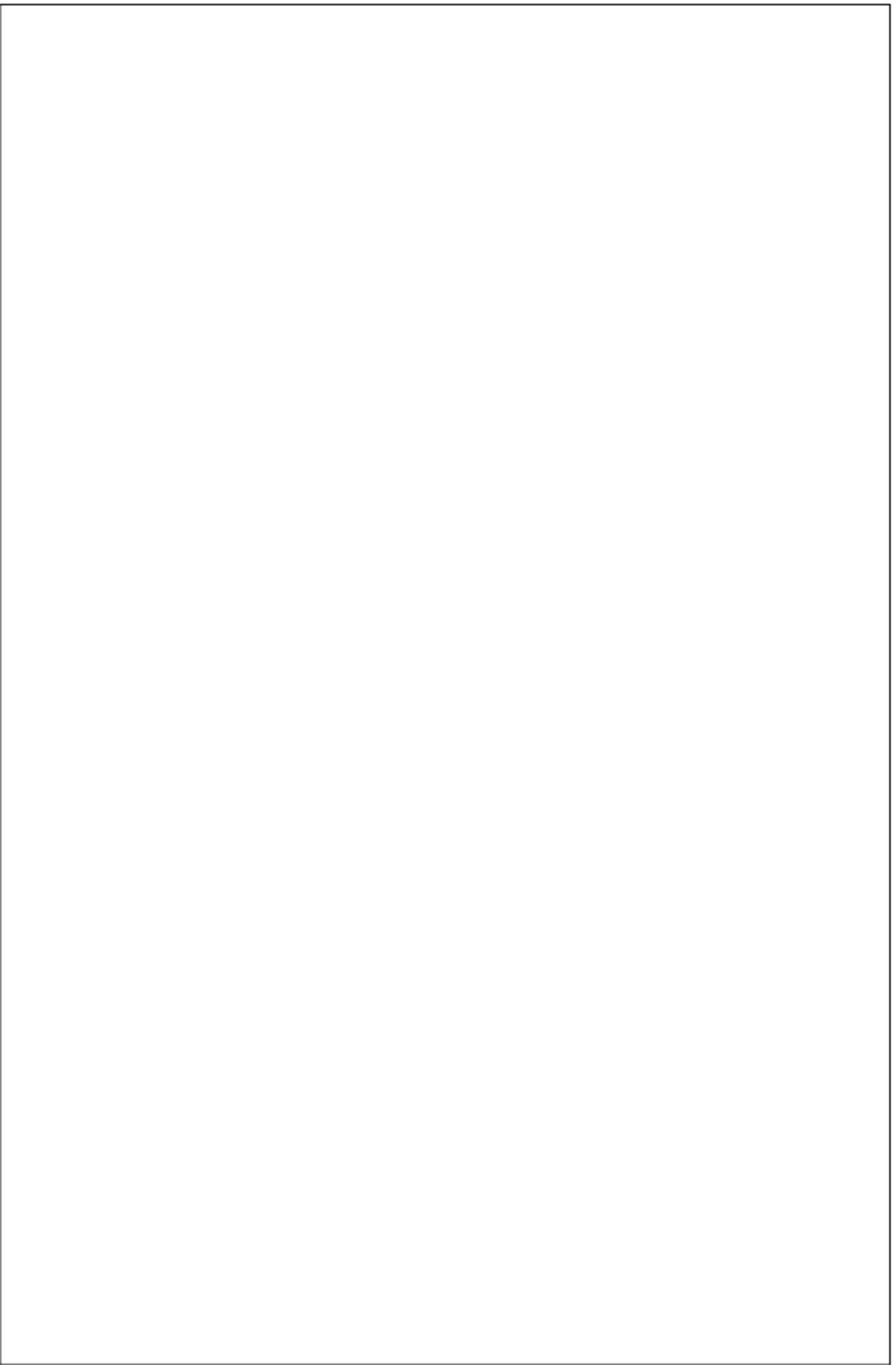
Serial #: 8959

Inside

Ritchie Exploration Inc

Whitham Land #1

DST Test Number: 4



Triobite Testing, Inc

Ref. No: 67502

Printed: 2021.02.26 @ 06:55:00



EXPLORATION, INC.  
Wichita, Kansas

### #1 Whitham Land

1,213' FNL & 645' FEL

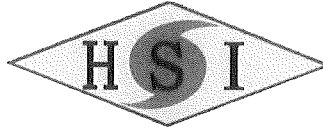
107' S & 15' E of E/2 SE Section 32-16S-36W

Wichita County, Kansas

API# 15-203-20364-0000

Elevation: GL: 3,295', KB: 3,300'

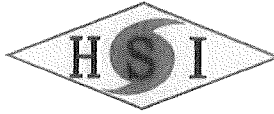
Sample Tops			Ref. Well
Anhydrite	2478	+822	-7
B/Anhydrite	2495	+805	-6
Stotler	3579	-279	-5
Heebner	3948	-648	-3
Toronto	3966	-666	-5
Lansing	3999	-699	-8
Muncie	4170	-870	-6
Stark	4261	-961	-6
Hushpuckney	4307	-1007	-6
BKC	4354	-1054	-9
Marmaton	4404	-1104	-8
Altamont	4418	-1118	-7
Pawnee	4498	-1198	-2
Myrick	4538	-1238	-2
Ft Scott	4548	-1248	+1
Cherokee	4573	-1273	+3
Johnson	4667	-1367	-2
Morrow	4729	-1429	-3
Mississippi	4827	-1527	-1
RTD	4910	-1610	



<b>Customer</b> Ritchie Exploration Inc.		<b>Lease &amp; Well #</b> Whitham Land #1		<b>Date</b> 2/18/2021	
<b>Service District</b> Oakley		<b>County &amp; State</b> Wichita KS		<b>Legals S/T/R</b> 32-16a-36w	
<b>Job Type</b> 8.625 surface		<input type="checkbox"/> PROD <input type="checkbox"/> INJ <input type="checkbox"/> SWD		<b>Legals S/T/R</b> New Well? <input checked="" type="checkbox"/> YES <input type="checkbox"/> No	
<b>Equipment #</b>		<b>Driver</b>		<b>Ticket #</b> ICT 4530	
78		Fennis		<b>Job Safety Analysis - A Discussion of Hazards &amp; Safety Procedures</b> <input checked="" type="checkbox"/> Hard hat <input checked="" type="checkbox"/> Gloves <input type="checkbox"/> Lockout/Tagout <input type="checkbox"/> Warning Signs & Flagging <input checked="" type="checkbox"/> H2S Monitor <input checked="" type="checkbox"/> Eye Protection <input type="checkbox"/> Required Permits <input type="checkbox"/> Fall Protection <input checked="" type="checkbox"/> Safety Footwear <input type="checkbox"/> Respiratory Protection <input checked="" type="checkbox"/> Slip/Trip/Fall Hazards <input type="checkbox"/> Specific Job Sequence/Expectations <input checked="" type="checkbox"/> FRC/Protective Clothing <input type="checkbox"/> Additional Chemical/Acid PPE <input checked="" type="checkbox"/> Overhead Hazards <input type="checkbox"/> Muster Point/Medical Locations <input checked="" type="checkbox"/> Hearing Protection <input checked="" type="checkbox"/> Fire Extinguisher <input checked="" type="checkbox"/> Additional concerns or issues noted below	
230		Mike R			
194/254		Kale			
<b>Comments</b>					
Be mindful of ice, stay hydrated, 2 person lift, communicate, don't stand behind or in between trucks while spotting equipment.					
<b>Product/Service Code</b>					
		<b>Description</b>		<b>Unit of Measure</b>	
				<b>Quantity</b>	
				<b>Net Amount</b>	
cp070	60/40/2 Pozmix		sack	160.00	\$1,664.00
cp100	Calcium Chloride		lb	414.00	\$248.40
cp120	Cello-flake		lb	41.00	\$57.40
m015	Light Equipment Mileage		mi	70.00	\$112.00
m010	Heavy Equipment Mileage		mi	70.00	\$224.00
m020	Ton Mileage		tm	483.00	\$579.60
c010	Cement Pump Service		ea	1.00	\$600.00
Customer Section: On the following scale how would you rate Hurricane Services Inc.?					
Based on this job, how likely is it you would recommend HSI to a colleague?				<b>Total Taxable</b>	\$ -
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>				<b>Tax Rate:</b>	
Unlikely 1   2   3   4   5   6   7   8   9   10   Extremely Likely				State tax laws deem certain products and services used on new wells to be sales tax exempt. Hurricane Services relies on the customer provided well information above to make a determination if services and/or products are tax exempt.	
				<b>Net:</b>	\$3,485.40
				<b>Safe Tax:</b>	\$ -
				<b>Total:</b>	\$ 3,485.40
HSI Representative: <i>Fennis Garduno</i>					

**TERMS:** Cash in advance unless Hurricane Services Inc. (HSI) has approved credit prior to sale. Credit terms of sale for approved accounts are total invoice due on or before the 30th day from the date of invoice. Past due accounts shall pay interest on the balance past due at the rate of 1 1/2% per month or the maximum allowable by applicable state or federal laws. In the event it is necessary to employ an agency and/or attorney to affect the collection, Customer hereby agrees to pay all fees directly or indirectly incurred for such collection. In the event that Customer's account with HSI becomes delinquent, HSI has the right to revoke any discounts previously applied in arriving at net invoice price. Upon revocation, the full invoice price without discount is immediately due and subject to collection. Prices quoted are estimates only and are good for 30 days from the date of issue. Pricing does not include federal, state, or local taxes, or royalties and stated price adjustments. Actual charges may vary depending upon time, equipment, and material ultimately required to perform these services. Any discount is based on 30 days net payment terms or cash. **DISCLAIMER NOTICE:** Technical data is presented in good faith, but no warranty is stated or implied. HSI assumes no liability for advice or recommendations made concerning the results from the use of any product or service. The information presented is a best estimate of the actual results that may be achieved and should be used for comparison purposes and HSI makes no guarantee of future production performance. Customer represents and warrants that well and all associated equipment in acceptable condition to receive services by HSI. Likewise, the customer guarantees proper operational care of all customer owned equipment and property while HSI is on location performing services. The authorization below acknowledges the receipt and acceptance of all terms/conditions stated above, and Hurricane has been provided accurate well information in determining taxable services.

X \_\_\_\_\_ **CUSTOMER AUTHORIZATION SIGNATURE**



**CEMENT TREATMENT REPORT**

Customer: Ritchle Exploration Inc.	Well: Whitham Land #1	Ticket: WP 1162
City, State:	County: Wichita KS	Date: 2/18/2021
Field Rep: Fennis Garduno	S-T-R: 32-16s-36w	Service: 8.625 surface

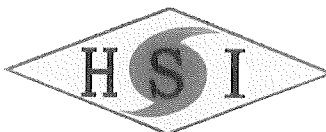
Downhole Information	
Hole Size:	12.25 in
Hole Depth:	258 ft
Casing Size:	8 5/8 in
Casing Depth:	258 ft
Tubing / Liner:	in
Depth:	ft
Tool / Packer:	
Tool Depth:	ft
Displacement:	15.0 bbls

Calculated Slurry - Lead	
Blend:	
Weight:	14.8 ppg
Water / Sx:	5.2 gal / sx
Yield:	1.21 ft <sup>3</sup> / sx
Annular Bbls / Ft.:	0.0735 bbs / ft.
Depth:	258 ft
Annular Volume:	18.9 bbls
Excess:	
Total Slurry:	35.5 bbls
Total Sacks:	160 sx

Calculated Slurry - Tail	
Blend:	
Weight:	ppg
Water / Sx:	gal / sx
Yield:	ft <sup>3</sup> / sx
Annular Bbls / Ft.:	bbs / ft.
Depth:	ft
Annular Volume:	0 bbls
Excess:	
Total Slurry:	0.0 bbls
Total Sacks:	0 sx

TIME	RATE	PSI	BBLs	TOTAL BBLs	REMARKS
12:45 PM			-	-	Journey management meeting
1:00 PM				-	Convoy to location
2:20 PM				-	Arrive on location
2:25 PM				-	Safety meeting
2:30 PM				-	Spot in / rig up equipment
5:00 PM		50.0		-	Rig land casing, circulate hole
5:15 PM	3.5	100.0	5.0	5.0	Hook up to landing joint, establish circulation
5:17 PM	4.0	210.0	34.5	39.5	Mix & pump 160 sx 60/40/2 @ 14.8 ppg y-1.21 ft <sup>3</sup> /sk H2Oreq- 6.18 gal/sk
5:26 PM	3.0	80.0	15.0	54.5	Displace with freshwater leaving 20' cement shoe
5:27 PM				64.5	Wash up pump
5:45 PM				54.5	Rig down equipment
6:00 PM					Leave location
					Saw cement @ surface 9 bbls into displacement = 6 bbls cement to pit
					HOC- 258 TOC - surface

CREW		UNIT	SUMMARY		
Cementer:	Fennis	78	Average Rate	Average Pressure	Total Fluid
Pump Operator:	Mike R	230	3.5 bpm	110 psi	65 bbls
Bulk #1:	Kale	194/254			
Bulk #2:					



Customer	Ritchie Exploration Inc	Lease & Well #	# 1 Whitham Land	Date	2/28/2021
Service District	Oakley Ks	County & State	Wichita Ks	Legals S/T/R	32-16-36W
Job Type	Rotary Plug	<input type="checkbox"/> PROD	<input type="checkbox"/> INJ	<input type="checkbox"/> SWD	New Well? <input checked="" type="checkbox"/> YES <input type="checkbox"/> No
Equipment #	Driver	Job Safety Analysis - A Discussion of Hazards & Safety Procedures			

73	Josh	<input checked="" type="checkbox"/> Hard hat	<input checked="" type="checkbox"/> Gloves	<input checked="" type="checkbox"/> Lockout/Tagout	<input checked="" type="checkbox"/> Warning Signs & Flagging
208	John	<input checked="" type="checkbox"/> H2S Monitor	<input checked="" type="checkbox"/> Eye Protection	<input checked="" type="checkbox"/> Required Permits	<input checked="" type="checkbox"/> Fall Protection
205	Finnes	<input checked="" type="checkbox"/> Safety Footwear	<input type="checkbox"/> Respiratory Protection	<input checked="" type="checkbox"/> Slip/Trip/Fall Hazards	<input type="checkbox"/> Specific Job Sequence/Expectations
		<input checked="" type="checkbox"/> FRC/Protective Clothing	<input type="checkbox"/> Additional Chemical/Acid PPE	<input checked="" type="checkbox"/> Overhead Hazards	<input checked="" type="checkbox"/> Muster Point/Medical Locations
		<input type="checkbox"/> Hearing Protection	<input checked="" type="checkbox"/> Fire Extinguisher	<input type="checkbox"/> Additional concerns or issues noted below	
<b>Comments</b>					

Product/ Service Code	Description	Unit of Measure	Quantity	List Price/Unit	Gross Amount	Item Discount	Net Amount
C010	Cement Pump Service	ea	1.00				\$600.00
M010	Heavy Equipment Mileage	mi	60.00				\$192.00
M015	Light Equipment Mileage	mi	60.00				\$96.00
M020	Ton Mileage	tm	779.40				\$935.28
CP055	H-Plug	sack	280.00				\$2,912.00
CP120	Cello-flake	lb	65.00				\$91.00
FE290	8 5/8" Wooden Plug	ea	1.00				\$120.00

<b>Customer Section: On the following scale how would you rate Hurricane Services Inc.?</b>				<b>Gross:</b> \$6,182.85		<b>Net:</b> \$4,946.28	
Based on this job, how likely is it you would recommend HSI to a colleague?				<b>Total Taxable</b> \$ -	<b>Tax Rate:</b>	<b>Sale Tax:</b> \$ -	
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>				State tax laws deem certain products and services used on new wells to be sales tax exempt. Hurricane Services relies on the customer provided well information above to make a determination if services and/or products are tax exempt.			
Unlikely 1 2 3 4 5 6 7 8 9 10 Extremely Likely							
				HSI Representative: <i>Josh Master</i>			

**TERMS:** Cash in advance unless Hurricane Services Inc. (HSI) has approved credit prior to sale. Credit terms of sale for approved accounts are total invoice due on or before the 30th day from the date of invoice. Past due accounts shall pay interest on the balance past due at the rate of 1 1/2% per month or the maximum allowable by applicable state or federal laws. In the event it is necessary to employ an agency and/or attorney to affect the collection, Customer hereby agrees to pay all fees directly or indirectly incurred for such collection. In the event that Customer's account with HSI becomes delinquent, HSI has the right to revoke any discounts previously applied in arriving at net invoice price. Upon revocation, the full invoice price without discount is immediately due and subject to collection. Prices quoted are estimates only and are good for 30 days from the date of issue. Pricing does not include federal, state, or local taxes, or royalties and stated price adjustments. Actual charges may vary depending upon time, equipment, and material ultimately required to perform these services. Any discount is based on 30 days net payment terms or cash. **DISCLAIMER NOTICE:** Technical data is presented in good faith, but no warranty is stated or implied. HSI assumes no liability for advice or recommendations made concerning the results from the use of any product or service. The information presented is a best estimate of the actual results that may be achieved and should be used for comparison purposes and HSI makes no guarantee of future production performance. Customer represents and warrants that well and all associated equipment in acceptable condition to receive services by HSI. Likewise, the customer guarantees proper operational care of all customer owned equipment and property while HSI is on location performing services. The authorization below acknowledges the receipt and acceptance of all terms/conditions stated above, and Hurricane has been provided accurate well information in determining taxable services.

X \_\_\_\_\_ **CUSTOMER AUTHORIZATION SIGNATURE**

