

Confidentiality Requested:

Yes No

**KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION**

Form ACO-1

January 2018

Form must be Typed

Form must be Signed

All blanks must be Filled

**WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE**

OPERATOR: License # _____

Name: _____

Address 1: _____

Address 2: _____

City: _____ State: _____ Zip: _____ + _____

Contact Person: _____

Phone: (_____) _____

CONTRACTOR: License # _____

Name: _____

Wellsite Geologist: _____

Purchaser: _____

Designate Type of Completion:

New Well Re-Entry Workover

Oil WSW SWD

Gas DH EOR

OG GSW

CM (Coal Bed Methane)

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

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

Operator: _____

Well Name: _____

Original Comp. Date: _____ Original Total Depth: _____

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

Plug Back Liner Conv. to GSW Conv. to Producer

Commingled Permit #: _____

Dual Completion Permit #: _____

SWD Permit #: _____

EOR Permit #: _____

GSW Permit #: _____

Spud Date or Recompletion Date _____ Date Reached TD _____ Completion Date or Recompletion Date _____

API No.: _____

Spot Description: _____

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

_____ Feet from North / South Line of Section

_____ Feet from East / West Line of Section

Footages Calculated from Nearest Outside Section Corner:

NE NW SE SW

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

Datum: NAD27 NAD83 WGS84

County: _____

Lease Name: _____ Well #: _____

Field Name: _____

Producing Formation: _____

Elevation: Ground: _____ Kelly Bushing: _____

Total Vertical Depth: _____ Plug Back Total Depth: _____

Amount of Surface Pipe Set and Cemented at: _____ Feet

Multiple Stage Cementing Collar Used? Yes No

If yes, show depth set: _____ Feet

If Alternate II completion, cement circulated from: _____

feet depth to: _____ w/ _____ sx cmt.

Drilling Fluid Management Plan

(Data must be collected from the Reserve Pit)

Chloride content: _____ ppm Fluid volume: _____ bbls

Dewatering method used: _____

Location of fluid disposal if hauled offsite:

Operator Name: _____

Lease Name: _____ License #: _____

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

County: _____ Permit #: _____

AFFIDAVIT

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

Submitted Electronically

KCC Office Use ONLY

Confidentiality Requested

Date: _____

Confidential Release Date: _____

Wireline Log Received Drill Stem Tests Received

Geologist Report / Mud Logs Received

UIC Distribution

ALT I II III Approved by: _____ Date: _____

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

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

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

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

Drill Stem Tests Taken <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i> Samples Sent to Geological Survey <input type="checkbox"/> Yes <input type="checkbox"/> No Cores Taken <input type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Run <input type="checkbox"/> Yes <input type="checkbox"/> No Geologist Report / Mud Logs <input type="checkbox"/> Yes <input type="checkbox"/> No List All E. Logs Run:	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample Name Top Datum
--	---

CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives

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

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

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

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

TUBING RECORD:	Size:	Set At:	Packer At:	
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Form	ACO1 - Well Completion
Operator	Larson Engineering, Inc. dba Larson Operating Company
Well Name	HUCK 2-6
Doc ID	1418574

Tops

Name	Top	Datum
Anhydrite	2261	+707
B Anhydrite	2322	+646
Heebner	3899	+931
Lansing	3942	-974
Stark Sh	4211	-1243
Ft Scott	4463	-1495
Cher Sh	4488	-1520
Mississippi	4569	-1601



CHARGE TO: ~~SWIFT~~ Larson Engineering
 ADDRESS:
 CITY, STATE, ZIP CODE:

TICKET 031398

SERVICE LOCATIONS: 1. Ness City KS
 WELL/PROJECT NO.: 2-4 LEASE: Huck COUNTY/PARISH: Scott STATE: KS CITY: Grinston DATE: 10 MAY 18 OWNER:
 2. TICKET TYPE: SERVICE SALES CONTRACTOR: RIG NAME/NO.: SHIPPED VIA: DELIVERED TO: ORDER NO.:
 3. WELL TYPE: oil WELL CATEGORY: Development JOB PURPOSE: cement surface pipe WELL PERMIT NO.: WELL LOCATION: 6-18-31
 4. REFERRAL LOCATION: INVOICE INSTRUCTIONS:

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING			DESCRIPTION	QTY. U/M		UNIT PRICE	AMOUNT
		LOC	ACCT	DF		QTY.	U/M		
575		1			MILEAGE TRK 114	60	mi	5.00	300.00
576.5		1			Pump Charge shallow surface	1	sq	875.00	875.00
325		1			Standard cement	165	sk	13.00	2145.00
279		1			Bentnite gel	7	sk	30.00	90.00
278		1			Calcium chloride	7	sk	40.00	280.00
290		1			D-AIR	1	gal	42.00	42.00
581		1			Service charge	165	sk	1.75	288.75
583		1			Drayage	16160	4848 T/M	0.25	4040.00

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: TIME SIGNED: A.M. P.M. 5/20

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

SURVEY	AGREE	UNDECIDED	DISAGREE	PAGE TOTAL	
OUR EQUIPMENT PERFORMED WITHOUT BREAKDOWN?				4432.83	
WE UNDERSTOOD AND MET YOUR NEEDS?				-443.28	
OUR SERVICE WAS PERFORMED WITHOUT DELAY?				102.00	
WE OPERATED THE EQUIPMENT AND PERFORMED JOB CALCULATIONS SATISFACTORILY?				39.7	
ARE YOU SATISFIED WITH OUR SERVICE? <input type="checkbox"/> YES <input type="checkbox"/> NO				5000	
<input type="checkbox"/> CUSTOMER DID NOT WISH TO RESPOND				8590	
TOTAL				4185.16	

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

SWIFT OPERATOR: *ABM* APPROVAL:

Thank You!

JOB LOG

SWIFT Services, Inc.

DATE 10 MAY 18 PAGE NO. 1

CUSTOMER Larson Engineering WELL NO. 2-6 LEASE Huck JOB TYPE Cement surface pipe TICKET NO. 31398

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
								165 sk STANDARD cement 2% gel 3% CC 8 5/8" x 20# casing & joints 256' TD = 256'
	1330							on loc TRK 114 Running casing in well
	1406							CIRCULATE well
	1420	3 1/2	41				100	MIX STD. 2% 3% 165 sk @ 14.7 ppg
	1437	3 1/2	15				200	Displace w/ H ₂ O → Cement to surface ← (165 sk wired 20 sk to pit)
	1445		15					Kickout (plug down) shot in 8 5/8" Release pressure to truck
	1450							wash truck
	1515							Back up
	1520							job complete Thanks Blaine, Flint & souatch



CHARGE TO: Larson Engineering
 ADDRESS _____
 CITY, STATE, ZIP CODE _____

TICKET U31522

PAGE 1 OF 1

SERVICE LOCATIONS 1. <u>Ness City KS</u>	WELL/PROJECT NO. <u># 2-6</u>	LEASE <u>Huck</u>	COUNTY/PARISH <u>Scott</u>	STATE <u>KS</u>	CITY <u>Grigsby</u>	DATE <u>5-20-18</u>	OWNER <u>Same</u>	
2.	TICKET TYPE <input checked="" type="checkbox"/> SERVICE SALES	CONTRACTOR <u>Southwind Drilling</u>	RIG NAME/NO.	SHIPPED VIA <u>ET</u>	DELIVERED TO <u>Location</u>	ORDER NO.		
3.	WELL TYPE <u>Oil</u>	WELL CATEGORY <u>Development</u>	JOB PURPOSE <u>PTA</u>	WELL PERMIT NO.	WELL LOCATION <u>Grigsby - 4 1/2 mi 2 1/2 mi E end</u>			
4.	REFERRAL LOCATION	INVOICE INSTRUCTIONS						

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING			DESCRIPTION	QTY.		UNIT PRICE	AMOUNT
		LOC	ACCT	DF		U/M	U/M		
<u>575</u>		<u>1</u>			MILEAGE <u>Trk # 112</u>		<u>60 mi</u>	<u>5.00</u>	<u>300.00</u>
<u>576P</u>		<u>1</u>			<u>Pump Charge - PTA</u>		<u>1 job</u>	<u>875.00</u>	<u>875.00</u>
<u>328-4</u>		<u>1</u>			<u>60/40 Pozmix (4% gel)</u>		<u>300 sks</u>	<u>10.60</u>	<u>3180.00</u>
<u>276</u>		<u>1</u>			<u>Flocc</u>	<u>14 lb</u>	<u>75 lbs</u>	<u>2.50</u>	<u>187.50</u>
<u>290</u>		<u>1</u>			<u>D-Air</u>		<u>5 gal</u>	<u>42.00</u>	<u>210.00</u>
<u>581</u>		<u>1</u>			<u>Service Charge Cement</u>		<u>300 sks</u>	<u>1.75</u>	<u>525.00</u>
<u>583</u>		<u>1</u>			<u>Drayage</u>	<u>25285 lbs</u>	<u>758.55 TM</u>	<u>00.85</u>	<u>644.77</u>

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 Way Roberts
 DATE SIGNED 5-20-18 TIME SIGNED 1530 A.M. P.M.

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

SURVEY	AGREE	UNDECIDED	DISAGREE
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 type="checkbox"/> YES	<input type="checkbox"/> NO	
<input type="checkbox"/> CUSTOMER DID NOT WISH TO RESPOND			

PAGE TOTAL	<u>5922.27</u>
<u>10% Disc.</u>	<u>-592.23</u>
<u>ScotCo. TAX</u>	<u>5330.04</u>
<u>8.5%</u>	<u>273.68</u>
TOTAL	<u>5603.72</u>

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

SWIFT OPERATOR David Kuhn APPROVAL _____

Thank You!

JOB LOG

SWIFT Services, Inc.

DATE 5-20-18 PAGE NO. 1

CUSTOMER Larson Engineering WELL NO. 2-6 LEASE Huck JOB TYPE PTA TICKET NO. #31522

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	1100							on location 4 1/2" x 7 7/8"
								RTD - 4640' DP - 2350'
	1250	4 1/2	13		✓	200		mix 50 sks @ 2350'
		4 1/2	30		✓	100		Displace Cement
	1300							Pull D.P.
	1345	4 1/2	21		✓	200		mix 80 sks @ 1530'
		4 1/2	16		✓	100		Displace Cement
	1355							Pull D.P.
	1415	4 1/2	13		✓	100		mix 50 sks @ 775'
		4 1/2	8		✓	100		Displace Cement
	1420							Pull D.P.
	1440	4 1/2	13		✓	100		mix 50 sks @ 290'
		4 1/2	1		✓	∅		Displace Cement
	1450							Pull D.P.
	1500	4 1/2	5		✓	∅		mix 20 sks @ 60'
								TOH
	1505	3	8-5		✓	∅		Plug RH-MH (30 sks - 20 sks)
								300 sks 60/40 Pozemix 4% Gel 1/4" Fls Total
								wash up Truck
	1545							Job Complete Thank You Dawe Prosten Kirby



DRILL STEM TEST REPORT

Prepared For: **Larson Engineering Inc.**

562 West State Rd. 4
Olmitz KS 67564

ATTN: Vern Schrag

Huck #2-6

6-18s-31w Scott,KS

Start Date: 2018.05.15 @ 08:37:15

End Date: 2018.05.15 @ 14:47:00

Job Ticket #: 63593 DST #: 1

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2018.05.21 @ 09:35:22



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering Inc.
 562 West State Rd. 4
 Olmitz KS 67564
 ATTN: Vern Schrag

6-18s-31w Scott,KS

Huck #2-6

Job Ticket: 63593

DST#: 1

Test Start: 2018.05.15 @ 08:37:15

GENERAL INFORMATION:

Formation: **LKC K**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:09:00

Time Test Ended: 14:47:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Mike Roberts

Unit No: 81

Interval: 4192.00 ft (KB) To 4227.00 ft (KB) (TVD)

Reference Elevations: 2968.00 ft (KB)

Total Depth: 4227.00 ft (KB) (TVD)

2958.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 10.00 ft

Serial #: 8374

Outside

Press@RunDepth: 28.22 psig @ 4193.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2018.05.15

End Date:

2018.05.15

Last Calib.:

2018.05.15

Start Time: 08:37:15

End Time:

14:47:00

Time On Btm:

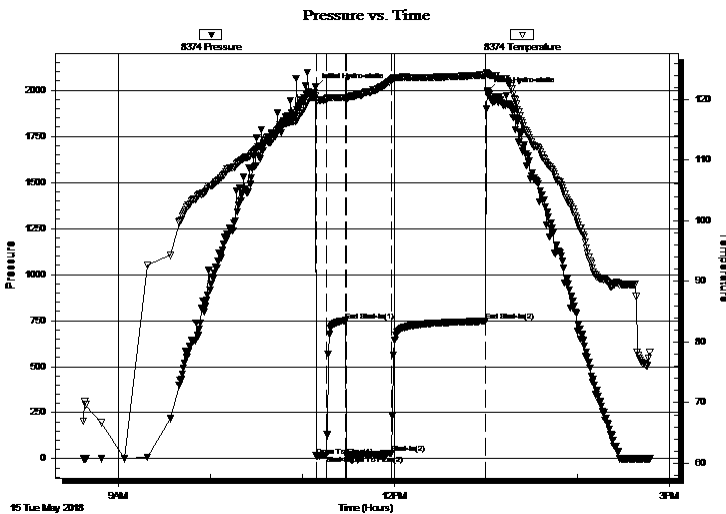
2018.05.15 @ 11:08:45

Time Off Btm:

2018.05.15 @ 13:01:00

TEST COMMENT: IF: Built to 1" blow
 IS: No return blow
 FF: Built to 1 3/4" blow
 FS: No return blow

PRESSURE SUMMARY



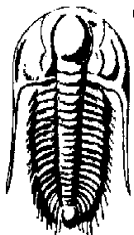
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2016.95	120.57	Initial Hydro-static
1	15.97	119.96	Open To Flow (1)
7	18.54	120.04	Shut-In(1)
20	749.58	120.33	End Shut-In(1)
20	20.67	119.83	Open To Flow (2)
50	28.22	123.23	Shut-In(2)
112	746.82	124.03	End Shut-In(2)
113	1995.07	124.21	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
30.00	mud w ith oil spots	0.42

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Larson Engineering Inc.

6-18s-31w Scott,KS

562 West State Rd. 4
Olmitz KS 67564

Huck #2-6

Job Ticket: 63593

DST#: 1

ATTN: Vern Schrag

Test Start: 2018.05.15 @ 08:37:15

GENERAL INFORMATION:

Formation: **LKC K**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:09:00

Time Test Ended: 14:47:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Mike Roberts

Unit No: 81

Interval: 4192.00 ft (KB) To 4227.00 ft (KB) (TVD)

Reference Elevations: 2968.00 ft (KB)

Total Depth: 4227.00 ft (KB) (TVD)

2958.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 10.00 ft

Serial #: 8647

Inside

Press@RunDepth: psig @ 4193.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2018.05.15 End Date: 2018.05.15

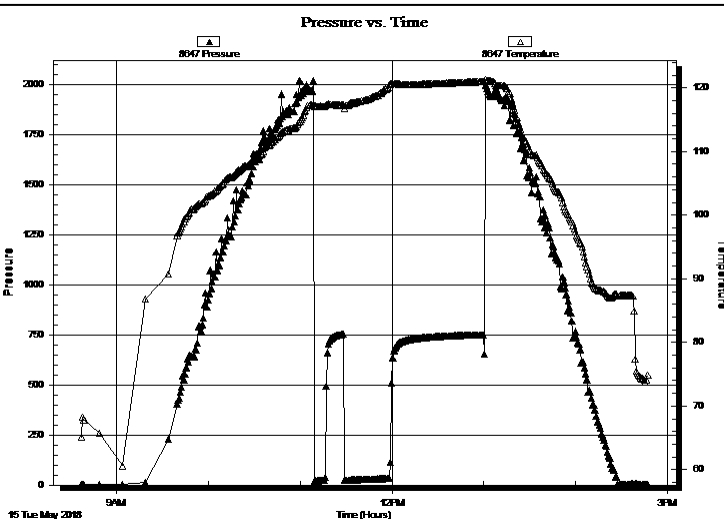
Last Calib.: 2018.05.15

Start Time: 08:37:15 End Time: 14:47:15

Time On Btm:

Time Off Btm:

TEST COMMENT: IF: Built to 1" blow
IS: No return blow
FF: Built to 1 3/4" blow
FS: No return blow



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
30.00	mud w ith oil spots	0.42

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering Inc.

6-18s-31w Scott,KS

562 West State Rd. 4
Olmitz KS 67564

Huck #2-6

Job Ticket: 63593

DST#: 1

ATTN: Vern Schrag

Test Start: 2018.05.15 @ 08:37:15

Tool Information

Drill Pipe:	Length: 4196.00 ft	Diameter: 3.80 inches	Volume: 58.86 bbl	Tool Weight:	1500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose:	70000.00 lb
			<u>Total Volume: 58.86 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	27.00 ft			String Weight: Initial	52000.00 lb
Depth to Top Packer:	4192.00 ft			Final	52000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	23.00 ft				
Tool Length:	46.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			
Tool Comments:					

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4170.00	
Shut In Tool	5.00			4175.00	
Hydraulic tool	5.00			4180.00	
Safety Joint	3.00			4183.00	
Packer	5.00			4188.00	23.00 Bottom Of Top Packer
Packer	4.00			4192.00	
Stubb	1.00			4193.00	
Recorder	0.00	8647	Inside	4193.00	
Recorder	0.00	8374	Outside	4193.00	
Perforations	17.00			4210.00	
Bullnose	5.00			4215.00	23.00 Bottom Packers & Anchor

Total Tool Length: 46.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering Inc.

6-18s-31w Scott,KS

562 West State Rd. 4
Olmitz KS 67564

Huck #2-6

Job Ticket: 63593

DST#: 1

ATTN: Vern Schrag

Test Start: 2018.05.15 @ 08:37:15

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 51.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.12 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
30.00	mud w ith oil spots	0.421

Total Length: 30.00 ft Total Volume: 0.421 bbl

Num Fluid Samples: 0

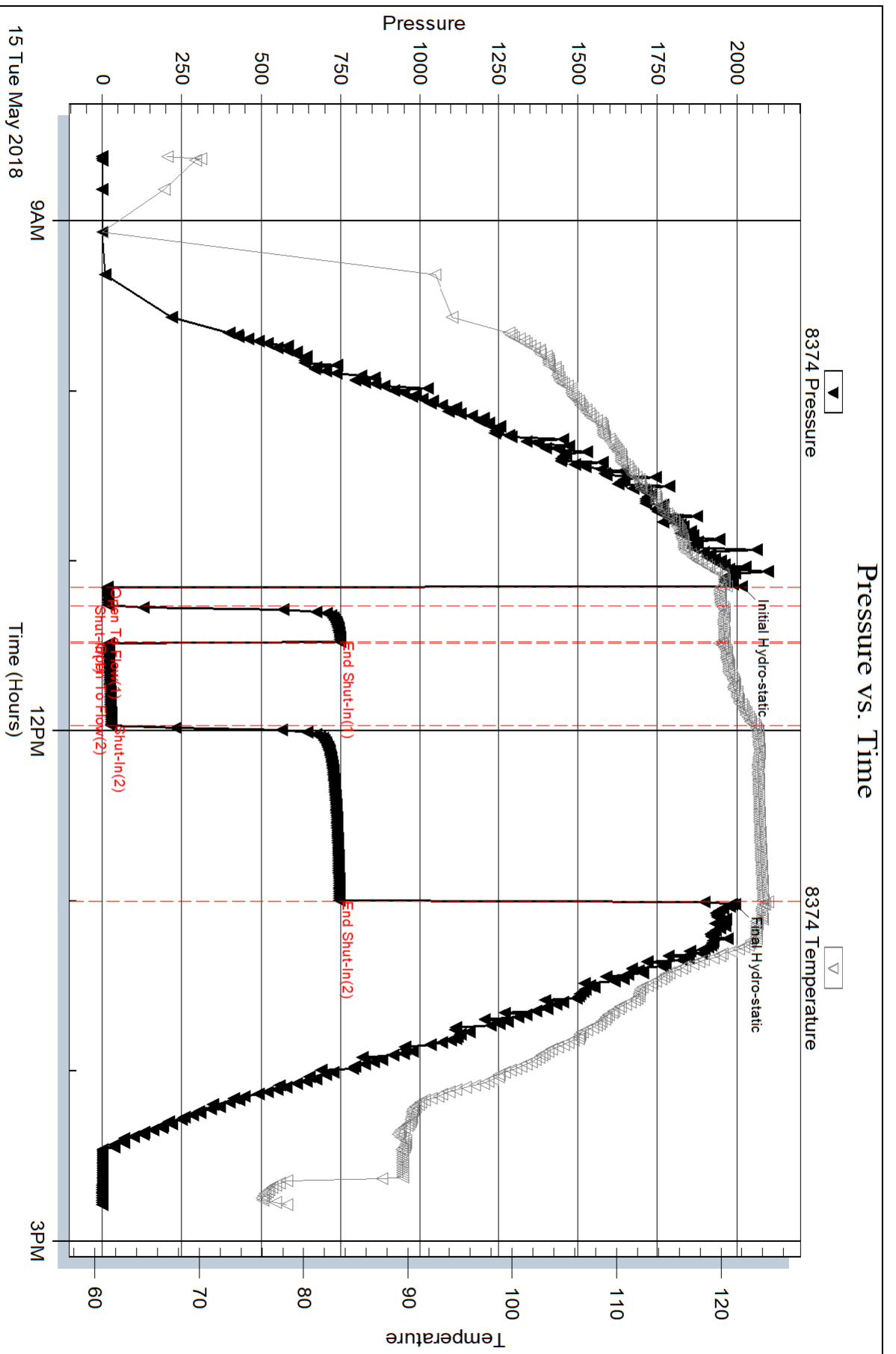
Num Gas Bombs: 0

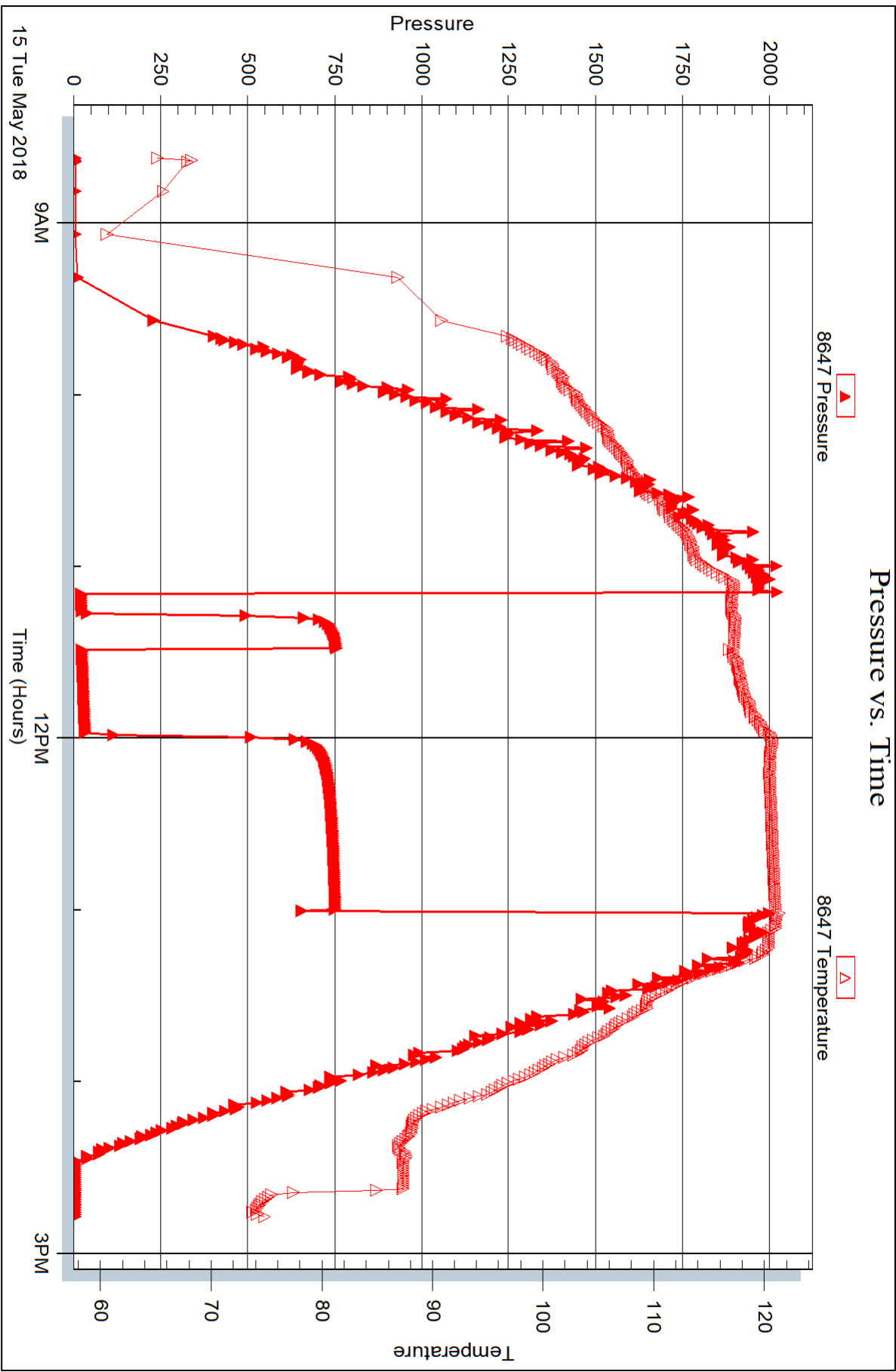
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering Inc.**

562 West State Rd. 4
Olmitz KS 67564

ATTN: Vern Schrag

Huck #2-6

6-18s-31w Scott,KS

Start Date: 2018.05.15 @ 23:04:15

End Date: 2018.05.16 @ 04:25:00

Job Ticket #: 63594 DST #: 2

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2018.05.21 @ 09:34:54



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Larson Engineering Inc.
562 West State Rd. 4
Olmitz KS 67564
ATTN: Vern Schrag

6-18s-31w Scott,KS

Huck #2-6

Job Ticket: 63594

DST#: 2

Test Start: 2018.05.15 @ 23:04:15

GENERAL INFORMATION:

Formation: **LKC L**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 01:23:30
 Time Test Ended: 04:25:00
 Interval: **4228.00 ft (KB) To 4258.00 ft (KB) (TVD)**
 Total Depth: 4258.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Mike Roberts
 Unit No: 81
 Reference Elevations: 2968.00 ft (KB)
 2958.00 ft (CF)
 KB to GR/CF: 10.00 ft

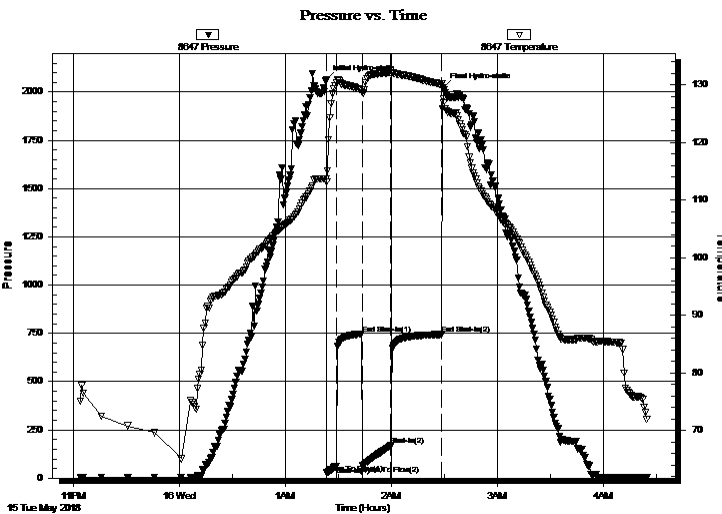
Serial #: 8647

Inside

Press@RunDepth: 168.07 psig @ 4229.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2018.05.15 End Date: 2018.05.16 Last Calib.: 2018.05.16
 Start Time: 23:04:15 End Time: 04:25:00 Time On Btm: 2018.05.16 @ 01:23:15
 Time Off Btm: 2018.05.16 @ 02:29:30

TEST COMMENT: IF: Built to 8" blow (ipro)
 IS: No return blow
 FF: Built to 21" blow (ipro)
 FS: No return blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2063.19	113.81	Initial Hydro-static
1	26.85	113.22	Open To Flow (1)
6	62.61	130.46	Shut-In(1)
21	745.92	129.13	End Shut-In(1)
21	67.85	128.65	Open To Flow (2)
37	168.07	132.18	Shut-In(2)
66	743.96	130.12	End Shut-In(2)
67	2023.60	127.70	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
67.00	w cm 3%w 97%m	0.94
124.00	mcw 20%m 80%w	1.74
124.00	sw 100% sw	1.74

Gas Rates

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

* Recovery from multiple tests



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering Inc.
562 West State Rd. 4
Olmitz KS 67564
ATTN: Vern Schrag

6-18s-31w Scott,KS
Huck #2-6
Job Ticket: 63594 **DST#: 2**
Test Start: 2018.05.15 @ 23:04:15

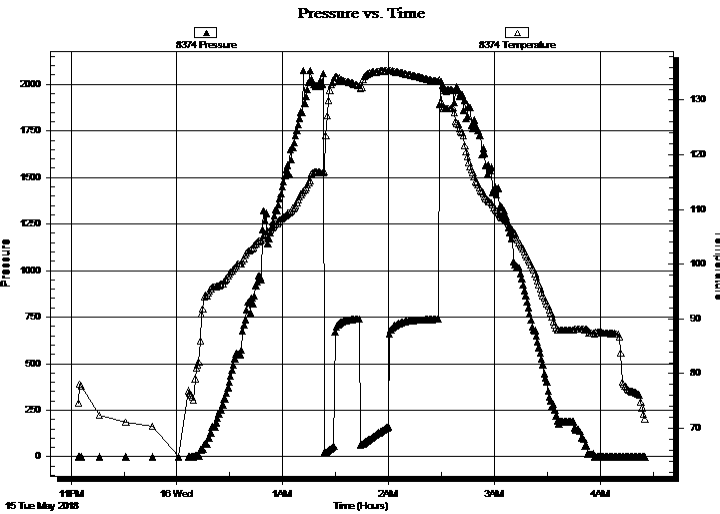
GENERAL INFORMATION:

Formation: LKC L		Test Type: Conventional Bottom Hole (Reset)
Deviated: No Whipstock: ft (KB)		Tester: Mike Roberts
Time Tool Opened: 01:23:30		Unit No: 81
Time Test Ended: 04:25:00		
Interval: 4228.00 ft (KB) To 4258.00 ft (KB) (TVD)		Reference Elevations: 2968.00 ft (KB)
Total Depth: 4258.00 ft (KB) (TVD)		2958.00 ft (CF)
Hole Diameter: 7.88 inches	Hole Condition: Fair	KB to GR/CF: 10.00 ft

Serial #: 8374 Outside

Press@RunDepth: psig @ 4229.00 ft (KB)	Capacity: 8000.00 psig
Start Date: 2018.05.15 End Date: 2018.05.16	Last Calib.: 2018.05.16
Start Time: 23:04:15 End Time: 04:25:15	Time On Btm:
	Time Off Btm:

TEST COMMENT: IF: Built to 8" blow (ipro)
IS: No return blow
FF: Built to 21" blow (ipro)
FS: No return blow



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
67.00	w cm 3%w 97% m	0.94
124.00	mcw 20% m 80% w	1.74
124.00	sw 100% sw	1.74

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering Inc.

6-18s-31w Scott,KS

562 West State Rd. 4
Olmitz KS 67564

Huck #2-6

Job Ticket: 63594

DST#: 2

ATTN: Vern Schrag

Test Start: 2018.05.15 @ 23:04:15

Tool Information

Drill Pipe:	Length: 4232.00 ft	Diameter: 3.80 inches	Volume: 59.36 bbl	Tool Weight: 1500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 59.36 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	27.00 ft			String Weight: Initial 50000.00 lb
Depth to Top Packer:	4228.00 ft			Final 54000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	23.00 ft			
Tool Length:	46.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4206.00	
Shut In Tool	5.00			4211.00	
Hydraulic tool	5.00			4216.00	
Safety Joint	3.00			4219.00	
Packer	5.00			4224.00	23.00 Bottom Of Top Packer
Packer	4.00			4228.00	
Stubb	1.00			4229.00	
Recorder	0.00	8647	Inside	4229.00	
Recorder	0.00	8374	Outside	4229.00	
Perforations	17.00			4246.00	
Bullnose	5.00			4251.00	23.00 Bottom Packers & Anchor

Total Tool Length: 46.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering Inc.

6-18s-31w Scott,KS

562 West State Rd. 4
Olmitz KS 67564

Huck #2-6

Job Ticket: 63594

DST#: 2

ATTN: Vern Schrag

Test Start: 2018.05.15 @ 23:04:15

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

16000 ppm

Viscosity: 50.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.93 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 3000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
67.00	w cm 3%w 97%m	0.940
124.00	mcw 20%m 80%w	1.739
124.00	sw 100% sw	1.739

Total Length: 315.00 ft Total Volume: 4.418 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

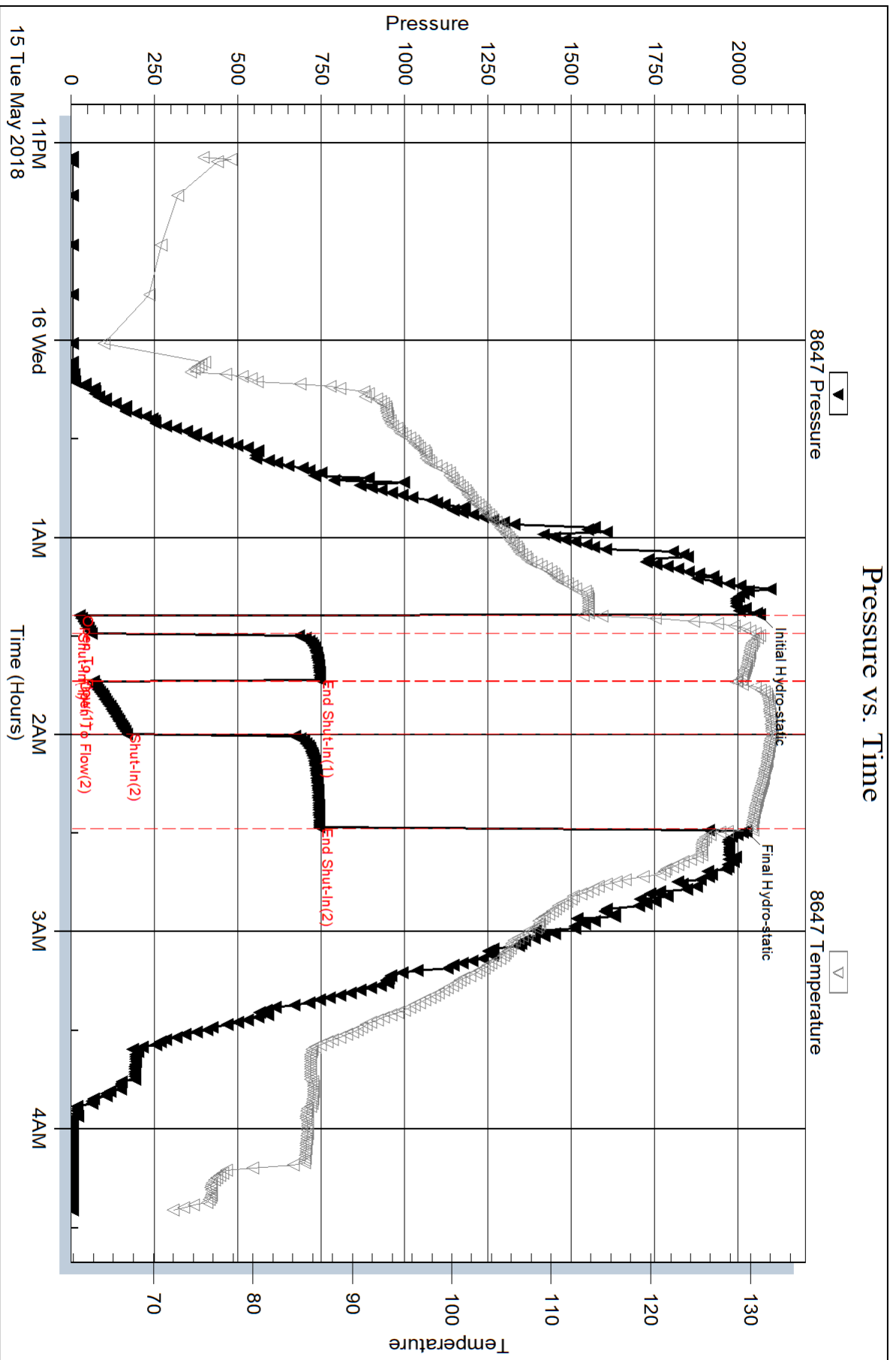
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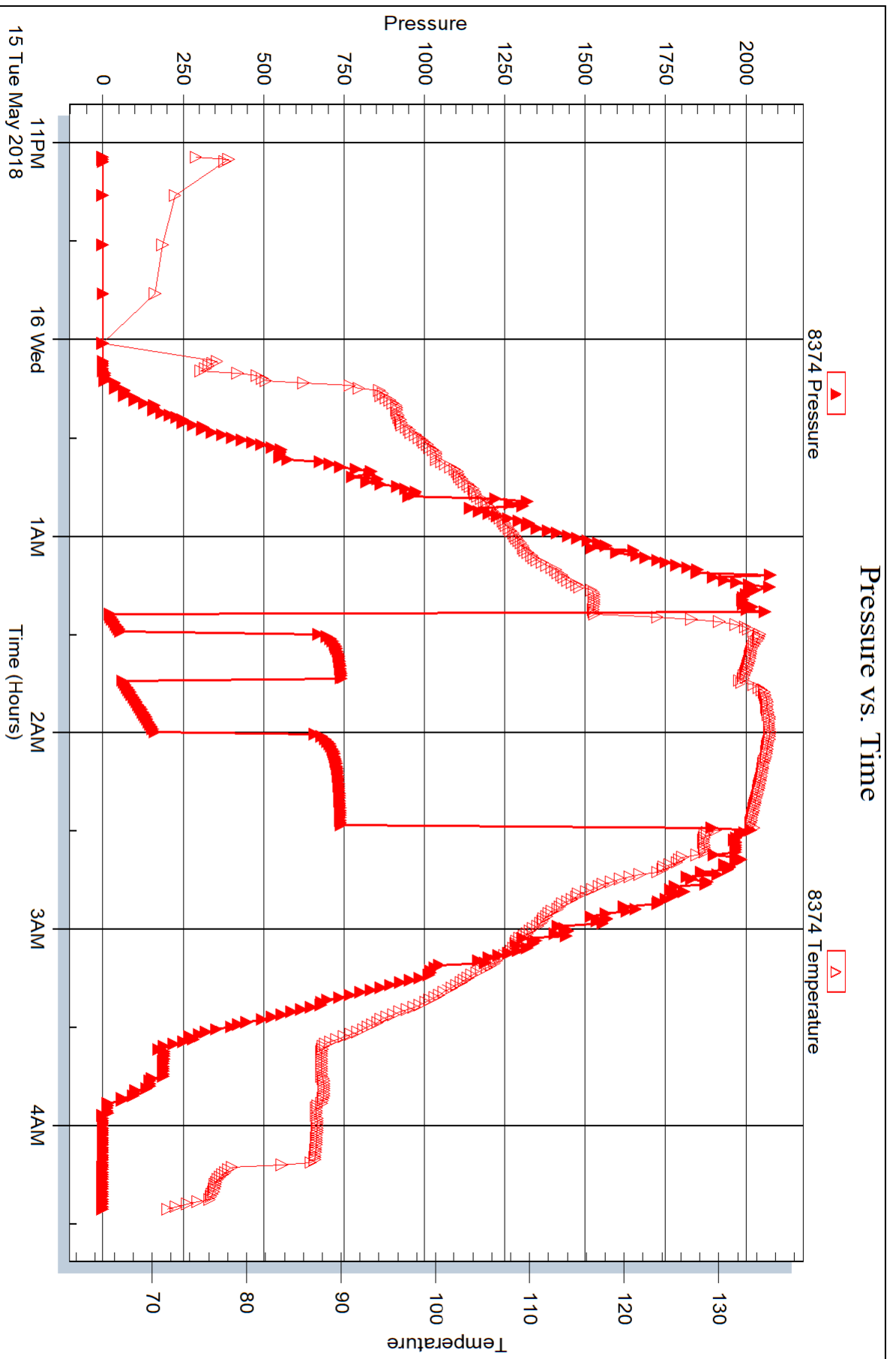
Laboratory Name:

Laboratory Location:

Recovery Comments: RW= .574@ 56.2 = 16,000 ppm

Pressure vs. Time







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering Inc.**

562 West State Rd. 4
Olmitz KS 67564

ATTN: Vern Schrag

Huck #2-6

6-18s-31w Scott,KS

Start Date: 2018.05.16 @ 18:12:15

End Date: 2018.05.16 @ 22:53:30

Job Ticket #: 63595 DST #: 3

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2018.05.21 @ 09:34:11



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Larson Engineering Inc.

6-18s-31w Scott,KS

562 West State Rd. 4
Olmitz KS 67564

Huck #2-6

Job Ticket: 63595

DST#: 3

ATTN: Vern Schrag

Test Start: 2018.05.16 @ 18:12:15

GENERAL INFORMATION:

Formation: **Marmaton**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 20:04:00

Time Test Ended: 22:53:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Mike Roberts

Unit No: 81

Interval: 4274.00 ft (KB) To 4347.00 ft (KB) (TVD)

Reference Elevations: 2968.00 ft (KB)

Total Depth: 4347.00 ft (KB) (TVD)

2958.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 10.00 ft

Serial #: 8647

Inside

Press@RunDepth: 39.07 psig @ 4313.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2018.05.16

End Date: 2018.05.16

Last Calib.: 2018.05.16

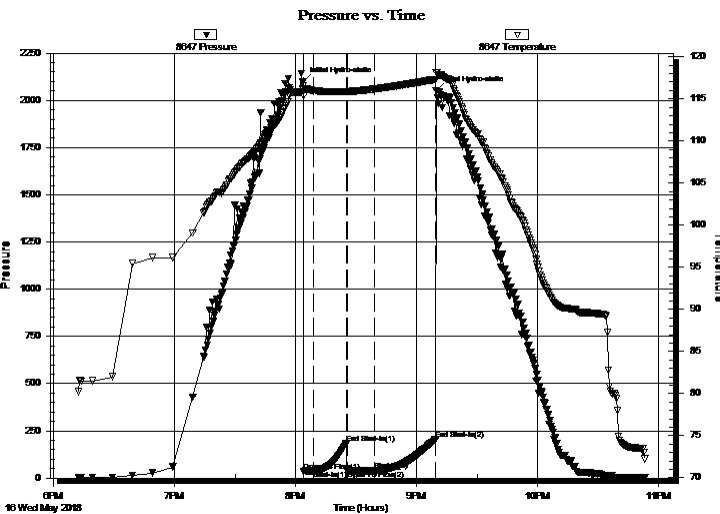
Start Time: 18:12:15

End Time: 22:53:30

Time On Btm: 2018.05.16 @ 20:03:45

Time Off Btm: 2018.05.16 @ 21:09:45

TEST COMMENT: IF: Built to 1" blow
IS: No return blow
FF: No blow
FS: No return blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2099.78	116.59	Initial Hydro-static
1	37.42	115.39	Open To Flow (1)
6	38.69	115.98	Shut-In(1)
22	181.87	115.91	End Shut-In(1)
22	38.64	115.88	Open To Flow (2)
36	39.07	116.17	Shut-In(2)
66	206.98	117.33	End Shut-In(2)
66	2051.64	118.10	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	mud w ith oil spots 100%m	0.07

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering Inc.

6-18s-31w Scott,KS

562 West State Rd. 4
Olmitz KS 67564

Huck #2-6

Job Ticket: 63595

DST#: 3

ATTN: Vern Schrag

Test Start: 2018.05.16 @ 18:12:15

Tool Information

Drill Pipe:	Length: 4252.00 ft	Diameter: 3.80 inches	Volume: 59.64 bbl	Tool Weight: 1500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 75000.00 lb
			<u>Total Volume: 59.64 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	6.00 ft			String Weight: Initial 55000.00 lb
Depth to Top Packer:	4274.00 ft			Final 55000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	73.00 ft			
Tool Length:	101.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
------------------	-------------	------------	----------	------------	----------------

Change Over Sub	1.00			4247.00	
Shut In Tool	5.00			4252.00	
Hydraulic tool	5.00			4257.00	
Jars	5.00			4262.00	
Safety Joint	3.00			4265.00	
Packer	5.00			4270.00	28.00 Bottom Of Top Packer
Packer	4.00			4274.00	
Stubb	1.00			4275.00	
Perforations	4.00			4279.00	
Change Over Sub	1.00			4280.00	
Drill Pipe	32.00			4312.00	
Change Over Sub	1.00			4313.00	
Recorder	0.00	8647	Inside	4313.00	
Recorder	0.00	8374	Outside	4313.00	
Perforations	29.00			4342.00	
Bullnose	5.00			4347.00	73.00 Bottom Packers & Anchor
Total Tool Length:	101.00				



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering Inc.

6-18s-31w Scott,KS

562 West State Rd. 4
Olmitz KS 67564

Huck #2-6

Job Ticket: 63595

DST#: 3

ATTN: Vern Schrag

Test Start: 2018.05.16 @ 18:12:15

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 51.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.92 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2600.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	mud w ith oil spots 100%m	0.070

Total Length: 5.00 ft Total Volume: 0.070 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

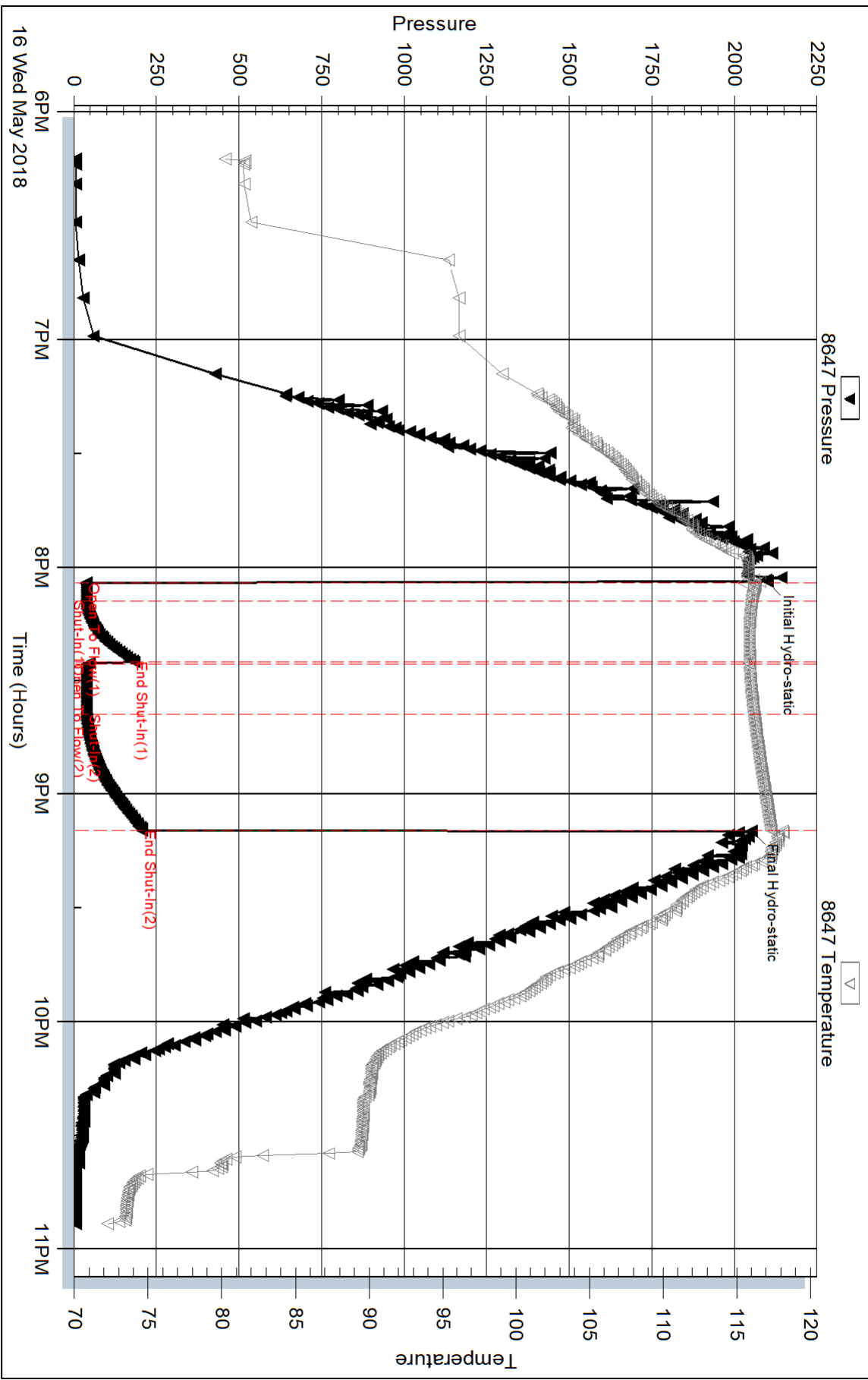
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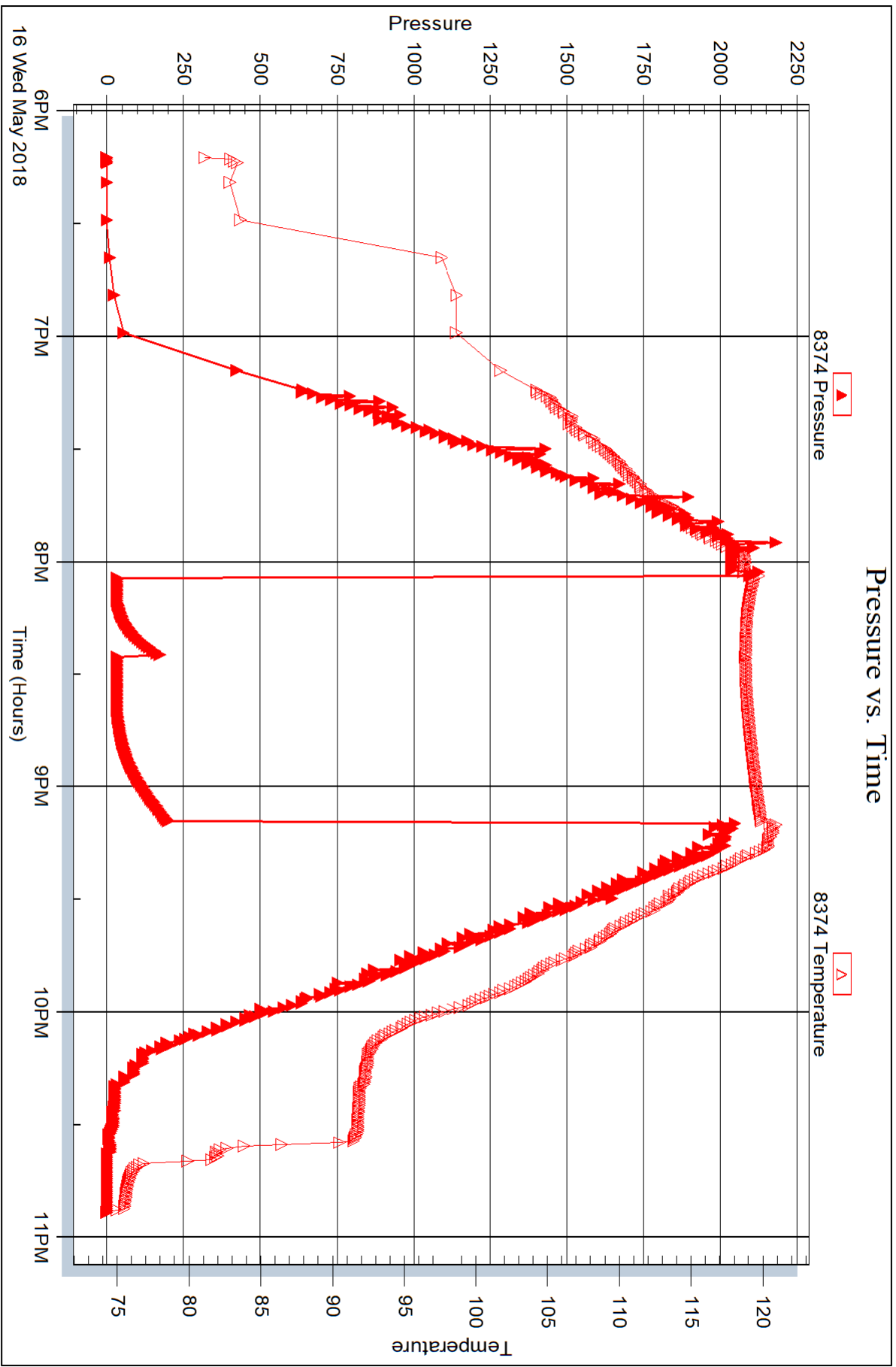
Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering Inc.**

562 West State Rd. 4
Olmitz KS 67564

ATTN: Vern Schrag

Huck #2-6

6-18s-31w Scott,KS

Start Date: 2018.05.17 @ 07:51:15

End Date: 2018.05.17 @ 13:57:45

Job Ticket #: 63596 DST #: 4

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2018.05.21 @ 09:33:37

Larson Engineering Inc.
6-18s-31w Scott,KS
Huck #2-6
DST # 4
Altamont
2018.05.17



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering Inc.
 562 West State Rd. 4
 Olmitz KS 67564
 ATTN: Vern Schrag

6-18s-31w Scott,KS
Huck #2-6
 Job Ticket: 63596 **DST#: 4**
 Test Start: 2018.05.17 @ 07:51:15

GENERAL INFORMATION:

Formation: **Altamont**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 10:11:45
 Time Test Ended: 13:57:45
 Interval: **4358.00 ft (KB) To 4385.00 ft (KB) (TVD)**
 Total Depth: 4385.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Mike Roberts
 Unit No: 81
 Reference Elevations: 2968.00 ft (KB)
 2958.00 ft (CF)
 KB to GR/CF: 10.00 ft

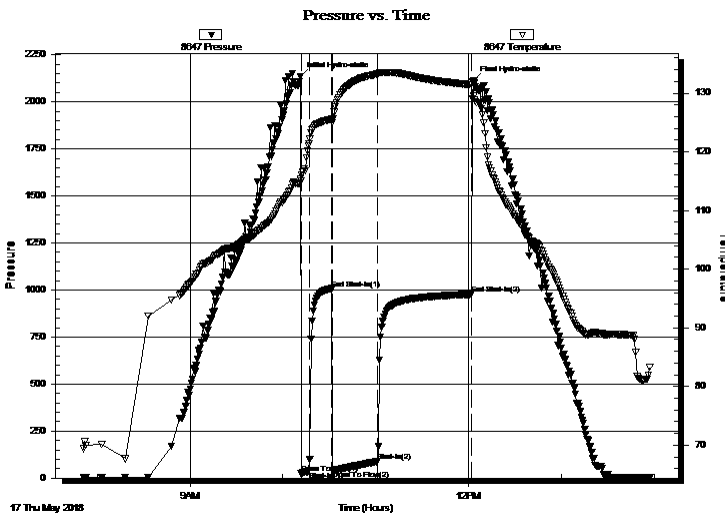
Serial #: 8647

Inside

Press@RunDepth: 88.18 psig @ 4359.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2018.05.17 End Date: 2018.05.17 Last Calib.: 2018.05.17
 Start Time: 07:51:15 End Time: 13:57:45 Time On Btm: 2018.05.17 @ 10:11:30
 Time Off Btm: 2018.05.17 @ 12:03:30

TEST COMMENT: IF: Built to 3" blow
 IS: No return blow
 FF: Built to 11 1/2" blow
 FS: No return blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2135.54	115.39	Initial Hydro-static
1	23.71	115.04	Open To Flow (1)
6	35.71	121.39	Shut-In(1)
21	1008.08	125.53	End Shut-In(1)
21	39.41	124.96	Open To Flow (2)
50	88.18	133.22	Shut-In(2)
111	977.33	131.40	End Shut-In(2)
112	2113.36	129.48	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	free oil	0.14
82.00	ocm 20%o 80%m	1.15
62.00	ocw m 10%o 40%w 50%m	0.87

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering Inc.

6-18s-31w Scott,KS

562 West State Rd. 4
Olmitz KS 67564

Huck #2-6

Job Ticket: 63596

DST#: 4

ATTN: Vern Schrag

Test Start: 2018.05.17 @ 07:51:15

Tool Information

Drill Pipe:	Length: 4356.00 ft	Diameter: 3.80 inches	Volume: 61.10 bbl	Tool Weight: 1500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 61.10 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	21.00 ft			String Weight: Initial 53000.00 lb
Depth to Top Packer:	4358.00 ft			Final 55000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	27.00 ft			
Tool Length:	50.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4336.00	
Shut In Tool	5.00			4341.00	
Hydraulic tool	5.00			4346.00	
Safety Joint	3.00			4349.00	
Packer	5.00			4354.00	23.00 Bottom Of Top Packer
Packer	4.00			4358.00	
Stubb	1.00			4359.00	
Recorder	0.00	8647	Inside	4359.00	
Recorder	0.00	8374	Outside	4359.00	
Perforations	21.00			4380.00	
Bullnose	5.00			4385.00	27.00 Bottom Packers & Anchor

Total Tool Length: 50.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering Inc.

6-18s-31w Scott,KS

562 West State Rd. 4
Olmitz KS 67564

Huck #2-6

Job Ticket: 63596

DST#: 4

ATTN: Vern Schrag

Test Start: 2018.05.17 @ 07:51:15

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

32 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

16000 ppm

Viscosity: 51.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.96 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2600.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	free oil	0.140
82.00	ocm 20%o 80%m	1.150
62.00	ocw m 10%o 40%w 50%m	0.870

Total Length: 154.00 ft Total Volume: 2.160 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

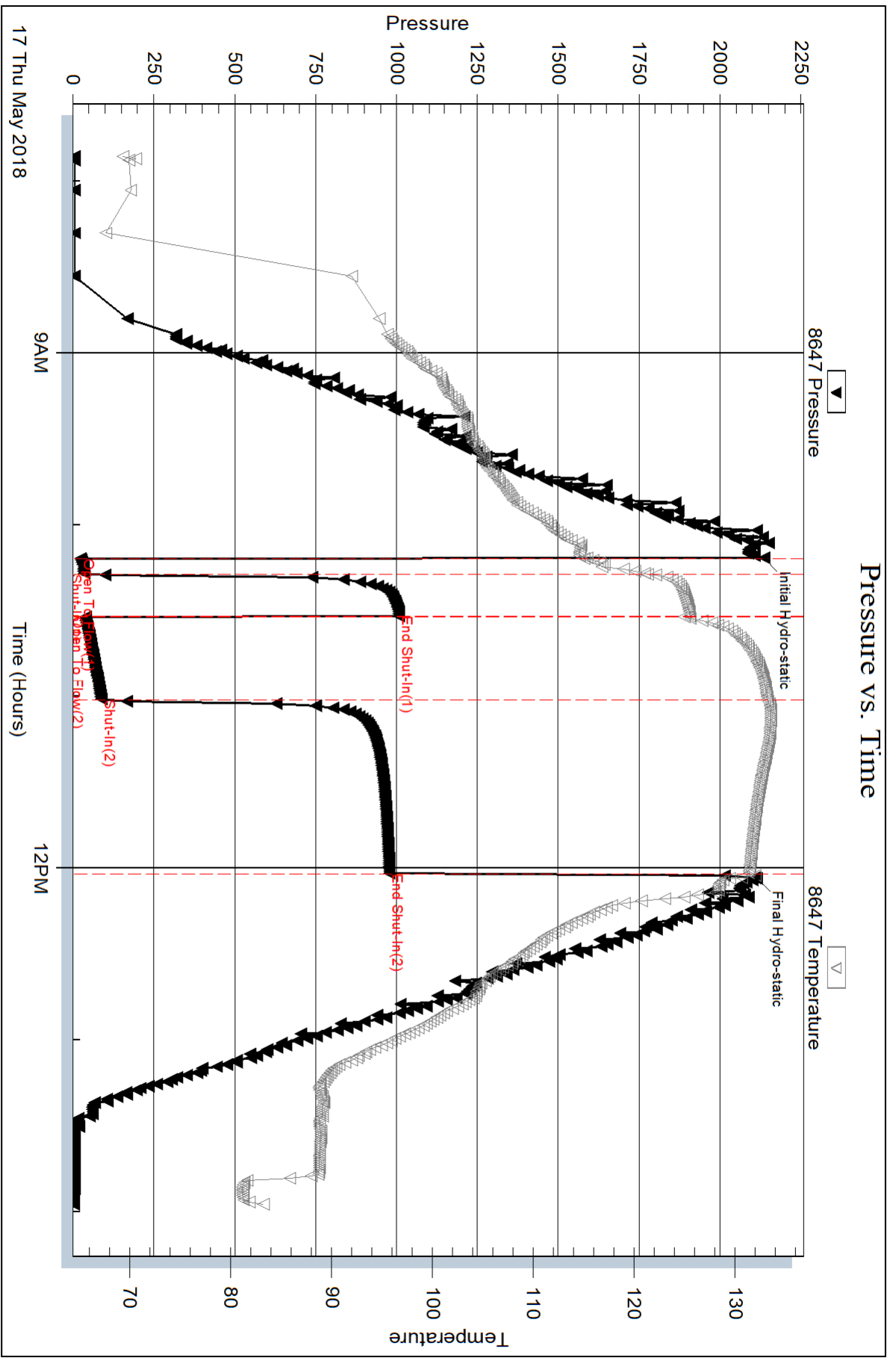
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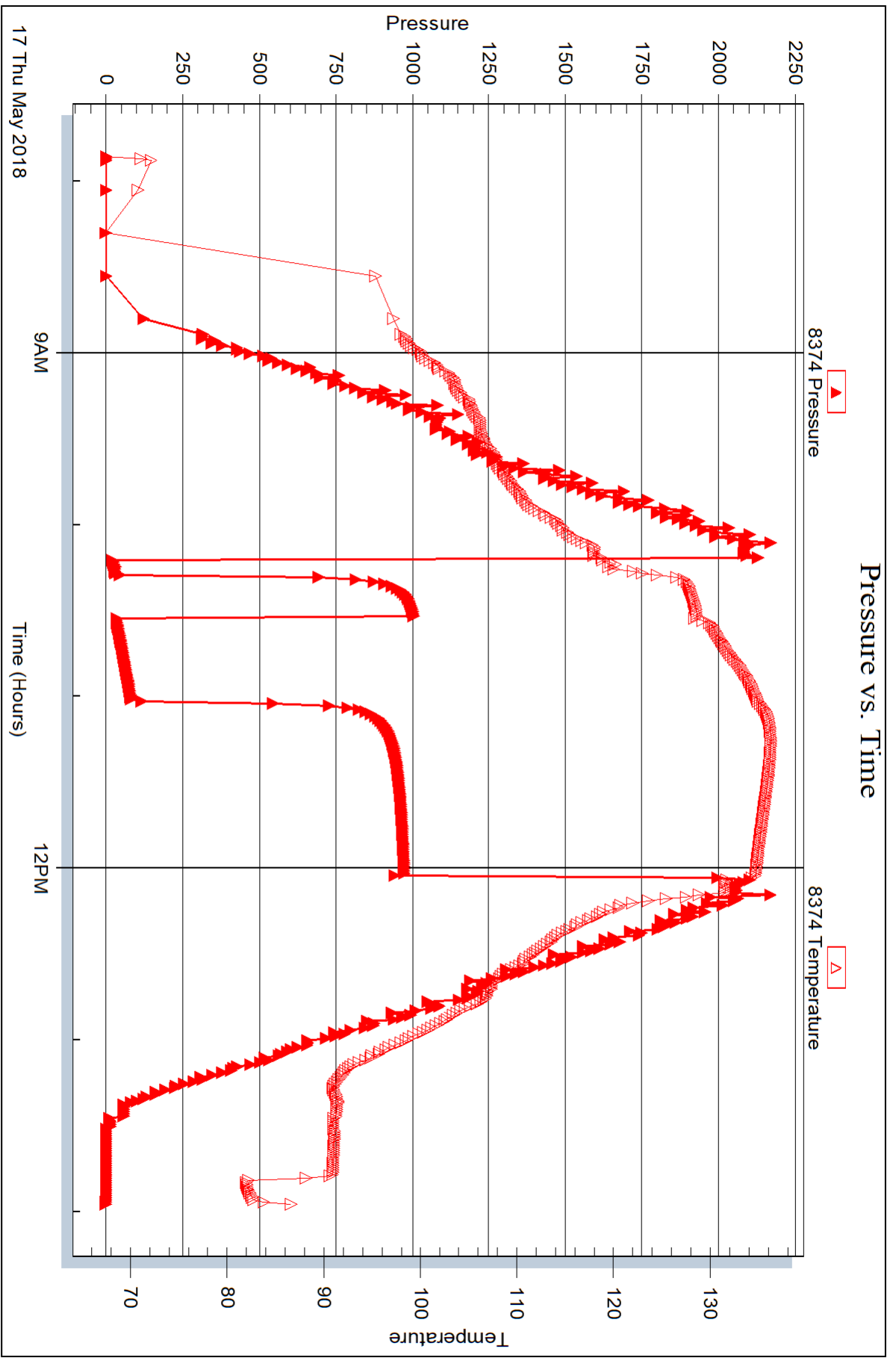
Laboratory Name:

Laboratory Location:

Recovery Comments: API= 32 @ 60

RW= .422@ 85.9=16,000 ppm







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering Inc.**

562 West State Rd. 4
Olmitz KS 67564

ATTN: Vern Schrag

Huck #2-6

6-18s-31w Scott,KS

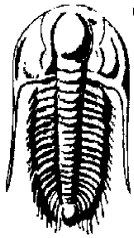
Start Date: 2018.05.18 @ 13:56:15

End Date: 2018.05.18 @ 19:03:15

Job Ticket #: 63597 DST #: 5

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2018.05.21 @ 09:33:10



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Larson Engineering Inc.

6-18s-31w Scott,KS

562 West State Rd. 4
Olmitz KS 67564

Huck #2-6

Job Ticket: 63597

DST#: 5

ATTN: Vern Schrag

Test Start: 2018.05.18 @ 13:56:15

GENERAL INFORMATION:

Formation: **Cherokee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 15:56:15

Time Test Ended: 19:03:15

Test Type: Conventional Bottom Hole (Reset)

Tester: Mike Roberts

Unit No: 81

Interval: 4547.00 ft (KB) To 4576.00 ft (KB) (TVD)

Reference Elevations: 2968.00 ft (KB)

Total Depth: 4576.00 ft (KB) (TVD)

2958.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 10.00 ft

Serial #: 8647 Inside

Press@RunDepth: 57.67 psig @ 4548.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2018.05.18 End Date: 2018.05.18

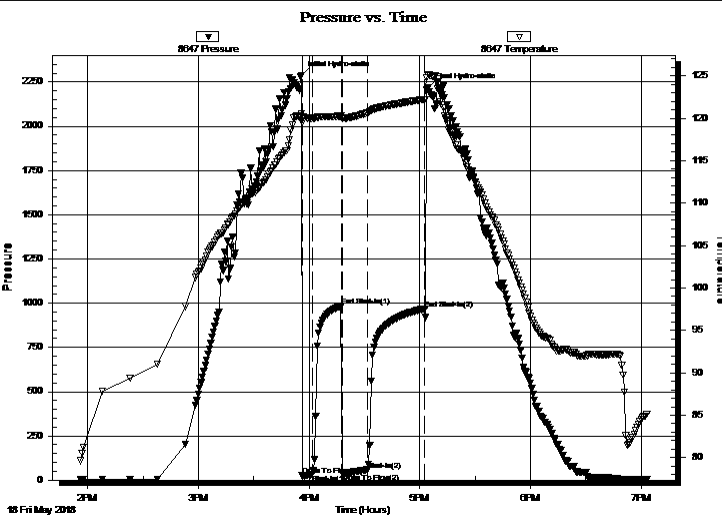
Last Calib.: 2018.05.18

Start Time: 13:56:15 End Time: 19:03:15

Time On Btm: 2018.05.18 @ 15:56:00

Time Off Btm: 2018.05.18 @ 17:04:30

TEST COMMENT: IF: Built to 11 3/4" blow (ipro)
IS: No return blow
FF: Built to 30" (ipro)
FS: Built from 14 1/2" to 20 3/4"



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2287.74	120.58	Initial Hydro-static
1	25.22	119.52	Open To Flow (1)
6	31.19	119.97	Shut-In(1)
22	984.51	120.26	End Shut-In(1)
22	39.24	120.01	Open To Flow (2)
36	57.67	120.64	Shut-In(2)
67	969.05	122.24	End Shut-In(2)
69	2219.35	125.17	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
0.00	GIP= 620 Ft.	0.00
92.00	Free Oil	1.29
32.00	gcom 5%g 25%o 70%m	0.45

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering Inc.

6-18s-31w Scott,KS

562 West State Rd. 4
Olmitz KS 67564

Huck #2-6

Job Ticket: 63597

DST#: 5

ATTN: Vern Schrag

Test Start: 2018.05.18 @ 13:56:15

Tool Information

Drill Pipe:	Length: 4545.00 ft	Diameter: 3.80 inches	Volume: 63.75 bbl	Tool Weight: 1500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 63.75 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	21.00 ft			String Weight: Initial 58000.00 lb
Depth to Top Packer:	4547.00 ft			Final 60000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	29.00 ft			
Tool Length:	52.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Change Over Sub	1.00			4525.00	
Shut In Tool	5.00			4530.00	
Hydraulic tool	5.00			4535.00	
Safety Joint	3.00			4538.00	
Packer	5.00			4543.00	23.00 Bottom Of Top Packer
Packer	4.00			4547.00	
Stubb	1.00			4548.00	
Recorder	0.00	8647	Inside	4548.00	
Recorder	0.00	8374	Outside	4548.00	
Perforations	23.00			4571.00	
Bullnose	5.00			4576.00	29.00 Bottom Packers & Anchor

Total Tool Length: 52.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering Inc.

6-18s-31w Scott,KS

562 West State Rd. 4
Olmitz KS 67564

Huck #2-6

Job Ticket: 63597

DST#: 5

ATTN: Vern Schrag

Test Start: 2018.05.18 @ 13:56:15

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

32 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.76 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2700.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
0.00	GIP= 620 Ft.	0.000
92.00	Free Oil	1.291
32.00	gcom 5%g 25%o 70%m	0.449

Total Length: 124.00 ft Total Volume: 1.740 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

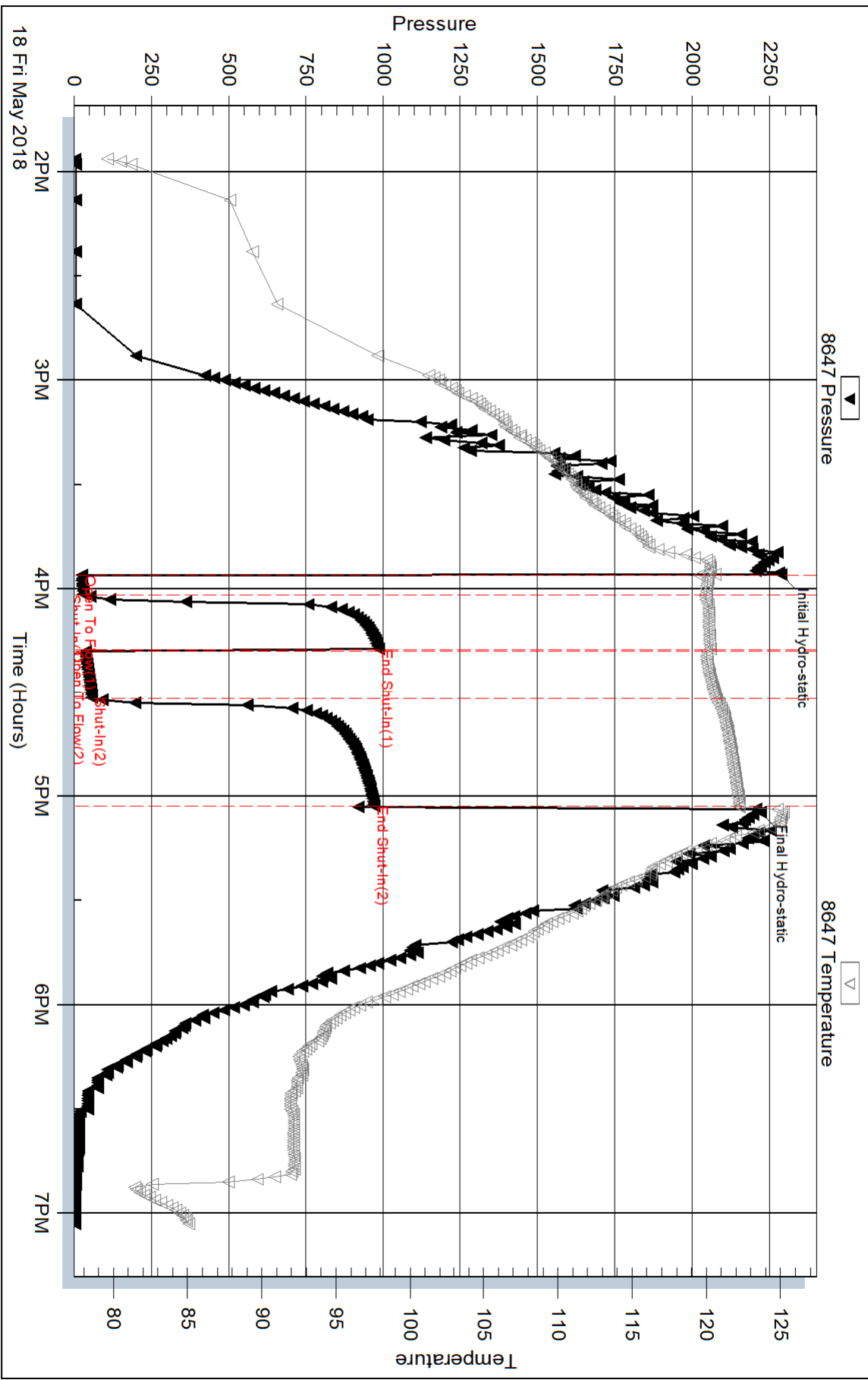
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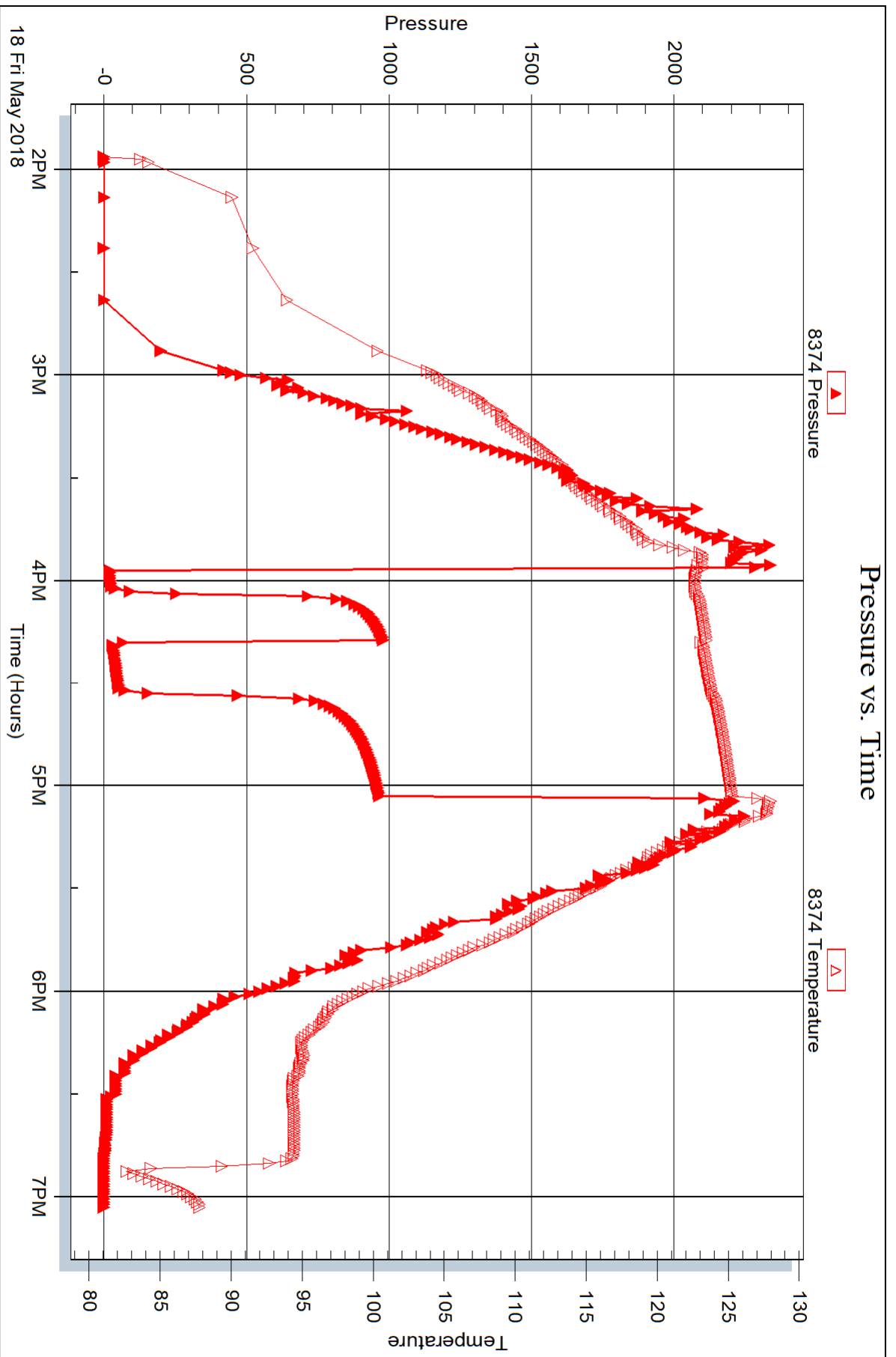
Laboratory Name:

Laboratory Location:

Recovery Comments: API= 29@ 90 corrected to 32@ 60

Pressure vs. Time







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering Inc.**

562 West State Rd. 4
Olmitz KS 67564

ATTN: Vern Schrag

Huck #2-6

6-18s-31w Scott,KS

Start Date: 2018.05.19 @ 23:34:15

End Date: 2018.05.20 @ 05:38:45

Job Ticket #: 63598 DST #: 6

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2018.05.21 @ 09:32:42



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering Inc.
 562 West State Rd. 4
 Olmitz KS 67564
 ATTN: Vern Schrag

6-18s-31w Scott,KS

Huck #2-6

Job Ticket: 63598

DST#: 6

Test Start: 2018.05.19 @ 23:34:15

GENERAL INFORMATION:

Formation: **Altamont**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Reset)
 Time Tool Opened: 01:37:15
 Tester: Mike Roberts
 Time Test Ended: 05:38:45
 Unit No: 81
 Interval: **4385.00 ft (KB) To 4411.00 ft (KB) (TVD)**
 Reference Elevations: 2968.00 ft (KB)
 Total Depth: 4640.00 ft (KB) (TVD)
 2958.00 ft (CF)
 Hole Diameter: 7.88 inches
 Hole Condition: Fair
 KB to GR/CF: 10.00 ft

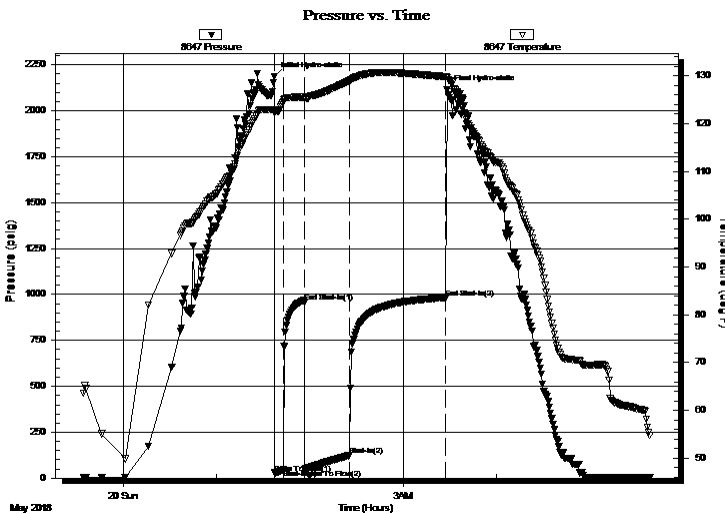
Serial #: 8647

Inside

Press@RunDepth: 123.67 psig @ 4407.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2018.05.19 End Date: 2018.05.20 Last Calib.: 2018.05.20
 Start Time: 23:34:15 End Time: 05:38:45 Time On Btm: 2018.05.20 @ 01:37:00
 Time Off Btm: 2018.05.20 @ 03:28:15

TEST COMMENT: IF: Built to 4" blow (lpro)
 IS: No return blow
 FF: Built to 15" blow (lpro)
 FS: No return blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2187.43	122.96	Initial Hydro-static
1	27.90	122.23	Open To Flow (1)
6	47.91	124.51	Shut-In(1)
20	956.47	125.51	End Shut-In(1)
20	47.23	125.21	Open To Flow (2)
49	123.67	128.91	Shut-In(2)
111	982.99	129.82	End Shut-In(2)
112	2115.10	129.67	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	free oil 100%o	0.07
97.00	ocm 20%o 80%m	1.36
124.00	mcw 5%m 95%w	1.74

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering Inc.

6-18s-31w Scott,KS

562 West State Rd. 4
Olmitz KS 67564

Huck #2-6

Job Ticket: 63598

DST#: 6

ATTN: Vern Schrag

Test Start: 2018.05.19 @ 23:34:15

Tool Information

Drill Pipe:	Length: 4394.00 ft	Diameter: 3.80 inches	Volume: 61.64 bbl	Tool Weight: 1500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 61.64 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	32.00 ft			String Weight: Initial 55000.00 lb
Depth to Top Packer:	4385.00 ft			Final 57000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	264.00 ft			
Tool Length:	287.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
------------------	-------------	------------	----------	------------	----------------

Change Over Sub	1.00			4363.00	
Shut In Tool	5.00			4368.00	
Hydraulic tool	5.00			4373.00	
Safety Joint	3.00			4376.00	
Packer	5.00			4381.00	23.00 Bottom Of Top Packer
Packer	4.00			4385.00	
Stubb	1.00			4386.00	
Perforations	21.00			4407.00	
Recorder	0.00	8647	Inside	4407.00	
Recorder	0.00	8374	Outside	4407.00	
Blank Off Sub	1.00			4408.00	264.00 Tool Interval
Packer	3.00			4411.00	
Stubb	1.00			4412.00	
Perforations	7.00			4419.00	
Change Over Sub	1.00			4420.00	
Recorder	0.00	8968	Below	4420.00	
Drill Pipe	223.00			4643.00	
Change Over Sub	1.00			4644.00	
Bullnose	5.00			4649.00	1000286.00 Bottom Packers & Anchor

Total Tool Length: 287.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering Inc.

6-18s-31w Scott,KS

562 West State Rd. 4
Olmitz KS 67564

Huck #2-6

Job Ticket: 63598

DST#: 6

ATTN: Vern Schrag

Test Start: 2018.05.19 @ 23:34:15

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

32 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

17000 ppm

Viscosity: 56.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.38 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2700.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	free oil 100%o	0.070
97.00	ocm 20%o 80%m	1.361
124.00	mcw 5%m 95%w	1.739

Total Length: 226.00 ft Total Volume: 3.170 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

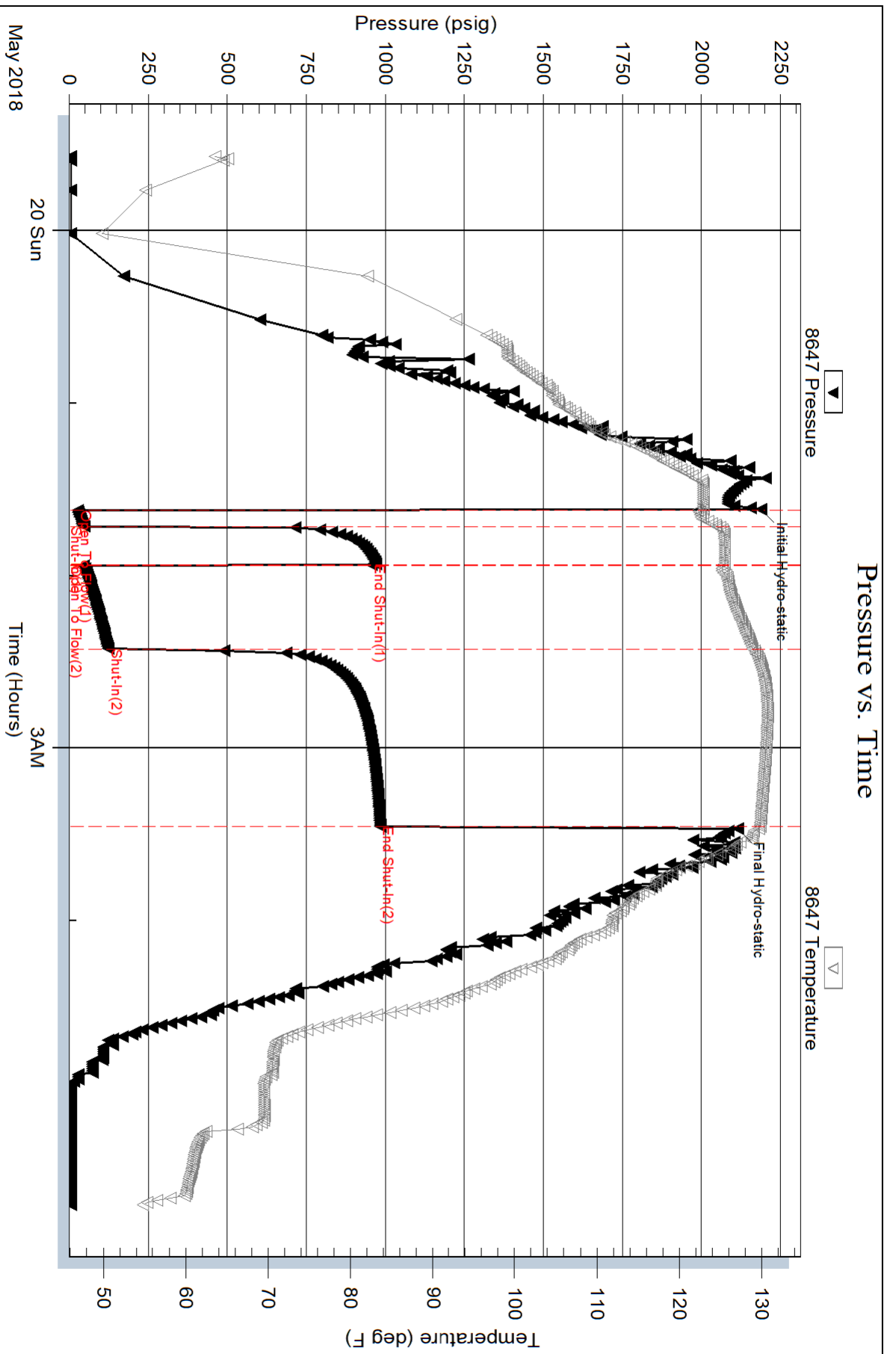
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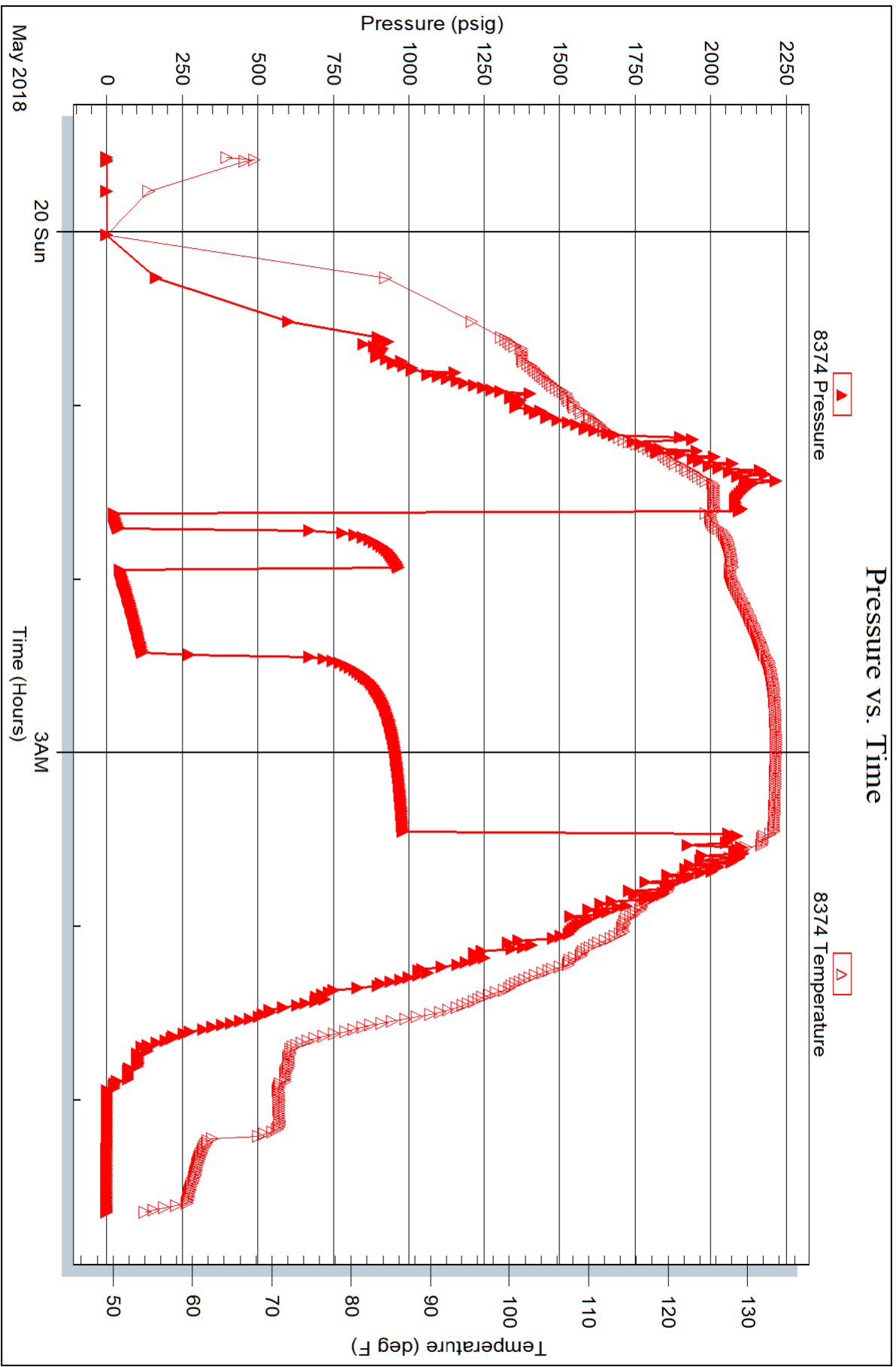
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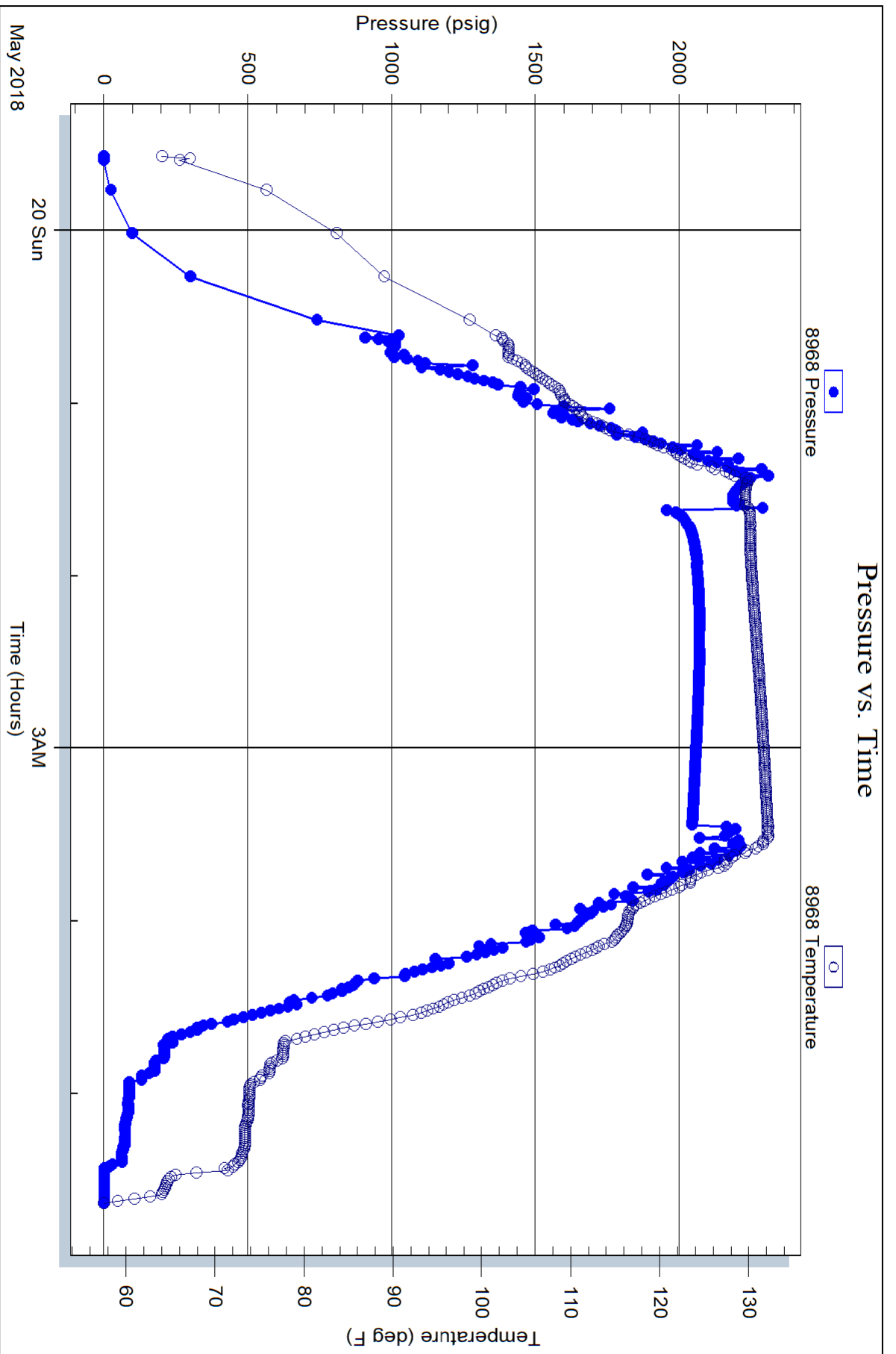
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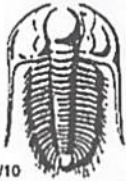
Recovery Comments: API= 30@80 corrected to 32 @ 60

RW= .517@82.7*= 17,000 ppm









TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 63593

Well Name & No. Huck 2-6 Test No. 1 Date 5-15-18
 Company Larson Engineering Inc Elevation 2958 KB 2968 GL
 Address 562 West State Rd 4 Olmitz KS 67564
 Co. Rep / Geo. Vern Schrag Rig Southwind 8
 Location: Sec. 6 Twp 18S Rge. 31W Co. Scott State KS

Interval Tested 4192-4227 Zone Tested K
 Anchor Length 35 Drill Pipe Run 4196 Mud Wt. 8.7
 Top Packer Depth 4187 Drill Collars Run 0 Vis 51
 Bottom Packer Depth 4192 Wt. Pipe Run 0 WL 7.2
 Total Depth 4227 Chlorides 2500 ppm System LCM 2
 Blow Description IF: Built to 1"

IS: No Return Blow
FF: Built to 1 3/4"
FS: No Return Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>30</u>	<u>MUD with oil spots</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 30 BHT 124 Gravity — API RW — @ — °F Chlorides — ppm
 (A) Initial Hydrostatic 2016 Test 1150 T-On Location 07:00
 (B) First Initial Flow 15 Jars _____ T-Started 08:37
 (C) First Final Flow 18 Safety Joint 75 T-Open 11:09
 (D) Initial Shut-In 749 Circ Sub NC T-Pulled 12:59
 (E) Second Initial Flow 20 Hourly Standby _____ T-Out 14:47
 (F) Second Final Flow 28 Mileage RT 16 Comments _____
 (G) Final Shut-In 246 Sampler _____
 (H) Final Hydrostatic 1995 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 1241
 Accessibility _____ MP/DST Disc't _____
 Sub Total 1241

Initial Open 5
 Initial Shut-In 15
 Final Flow 30
 Final Shut-In 60
 Approved By Vern Schrag Our Representative Mike Bolato

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 63595

Well Name & No. Huck 2-6 Test No. 3 Date 5-16-18
 Company Larson Engineering Inc. Elevation 2958 KB 2968 GL
 Address 562 West State Rd 4 Olmitz 67564
 Co. Rep / Geo. Vern Schrag Rig Southwind 8
 Location: Sec. 6 Twp 18S Rge. 3W Co. Scott State KS

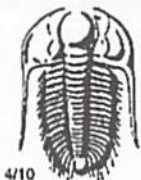
Interval Tested 4274-4347 Zone Tested Marmaton
 Anchor Length 73 Drill Pipe Run 4252 Mud Wt. 9.0
 Top Packer Depth 4269 Drill Collars Run 0 Vis 51
 Bottom Packer Depth 4274 Wt. Pipe Run 0 WL 8.0
 Total Depth 4347 Chlorides 2600 ppm System LCM 1
 Blow Description IF: Built to 1" Blow
TS: No Return Blow
FF: No Blow
FS: No Return Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>5</u>	<u>mud with oil spots</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 5 BHT 118 Gravity _____ API RW _____ @ _____ F Chlorides _____ ppm
 (A) Initial Hydrostatic 2099 Test 1150 T-On Location 17:15
 (B) First Initial Flow 37 Jars _____ T-Started 18:12
 (C) First Final Flow 38 Safety Joint 75 T-Open 20:04
 (D) Initial Shut-In 181 Circ Sub NC T-Pulled 21:09
 (E) Second Initial Flow 38 Hourly Standby _____ T-Out 22:53
 (F) Second Final Flow 39 Mileage 16RT 16 Comments _____
 (G) Final Shut-In 206 Sampler _____
 (H) Final Hydrostatic 2057 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Initial Open 5 Extra Recorder _____ Sub Total 0
 Initial Shut-In 15 Day Standby _____ Total 1241
 Final Flow 15 Accessibility _____ MP/DST Disc't _____
 Final Shut-In 30 Sub Total 1241

Approved By [Signature] Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 63596

Well Name & No. Huck 2-6 Test No. 4 Date 5-17-188
 Company Larson Engineering Inc Elevation 2958 KB 2968 GL
 Address 562 West State Rd 4 Olmitz KS 67564
 Co. Rep / Geo. Vern Schrag Rig Southwind 8
 Location: Sec. 6 Twp 18S Rge. 31w Co. Scott State KS

Interval Tested 4358-4385 Zone Tested Altamont
 Anchor Length 27 Drill Pipe Run 4356 Mud Wt. 9.0
 Top Packer Depth 4353 Drill Collars Run 0 Vis 51
 Bottom Packer Depth 4358 Wt. Pipe Run 0 WL 8.0
 Total Depth 4385 Chlorides 2600 ppm System LCM 1
 Blow Description IF: Built to 3" Blow
IS: NO Return Blow
FF: Built to 1 1/2 Blow
FS: NO Return Blow

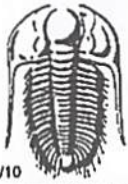
Rec	Feet of	%gas	%oil	%water	%mud
<u>10</u>	<u>Free Oil</u>				
<u>82</u>	<u>DCM</u>		<u>20</u>		<u>80</u>
<u>62</u>	<u>OCWM</u>		<u>10</u>	<u>40</u>	<u>50</u>

Rec Total 154 BHT 132 Gravity 132 API RW .922 @ 85.9° F Chlorides 16000 ppm
 (A) Initial Hydrostatic 2135 Test 1150 T-On Location 06:40
 (B) First Initial Flow 23 Jars T-Started 07:51
 (C) First Final Flow 35 Safety Joint 75 T-Open 10:12
 (D) Initial Shut-In 1008 Circ Sub NC T-Pulled 12:02
 (E) Second Initial Flow 39 Hourly Standby T-Out 13:57
 (F) Second Final Flow 88 Mileage 10RT Comments _____
 (G) Final Shut-In 977 Sampler _____
 (H) Final Hydrostatic 2133 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 1241
 Accessibility _____ MP/DST Disc't _____
 Sub Total 1241

Initial Open 5
 Initial Shut-In 15
 Final Flow 30
 Final Shut-In 60

Approved By Vern Schrag Our Representative Mike Roberts

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TRIBOLITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 63597

Well Name & No. Huck 2-6 Test No. 5 Date 5-18-18
 Company Larson Engineering Inc. Elevation 2958 KB 2968 GL
 Address 562 West St. Rd #4 Omitz KS 67564
 Co. Rep / Geo. Vern Schrag Rig Southwind 8
 Location: Sec. 6 Twp 18S Rge. 31W Co. Scott State KS

Interval Tested 4547-4576 Zone Tested Cherokee
 Anchor Length 29 Drill Pipe Run 4545 Mud Wt. 9.1
 Top Packer Depth 4542 Drill Collars Run 0 Vis 53
 Bottom Packer Depth 4547 Wt. Pipe Run 0 WL 8.8
 Total Depth 4576 Chlorides 2700 ppm System LCM 1
 Blow Description IF: Built to 11 3/4" Blow (Ipro)
IS: ~~Build~~ No Return Blow
FF: Built to 30" Blow (Ipro)
FS: Built from 14 1/2" to 20 3/4" Blow 6 1/4" Return Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>0</u>	Feet of <u>GIP = 620'</u>	<u>100</u>	<u>0</u>	<u>0</u>	<u>0</u>
<u>92</u>	Feet of <u>Free Oil</u>	<u>100</u>	<u>0</u>	<u>0</u>	<u>0</u>
<u>32</u>	Feet of <u>gcom</u>	<u>5</u>	<u>25</u>	<u>70</u>	<u>0</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 124 BHT 125 Gravity 32 API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic 2287 Test 1150 T-On Location 12:35
 (B) First Initial Flow 25 Jars T-Started 13:56
 (C) First Final Flow 31 Safety Joint 75 T-Open 15:56
 (D) Initial Shut-In 984 Circ Sub NC T-Pulled 17:01
 (E) Second Initial Flow 39 Hourly Standby T-Out 19:03
 (F) Second Final Flow 57 Mileage 16 RT Comments _____
 (G) Final Shut-In 969 Sampler _____
 (H) Final Hydrostatic 2219 Straddle _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____

Initial Open 5
 Initial Shut-In 15
 Final Flow 15
 Final Shut-In 30

Sub Total 1241 MP/DST Disc't _____

Approved By Vern Schrag Our Representative Mike Bolats
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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 63598

Well Name & No. Huck 2-6 Test No. 6 Date 5-19-18
 Company Larson Engineering Inc Elevation 2958 KB 2968 GL
 Address 562 West St. Rd. 4 Olmitz KS 67564
 Co. Rep / Geo. Vern Schrag Rig Southwind 8
 Location: Sec. 6 Twp 18S Rge. 31W Co. Scott State KS

Interval Tested 4385-4411 Zone Tested Altamont
 Anchor Length 26 Drill Pipe Run 4394 Mud Wt. 9.2
 Top Packer Depth 4380 Drill Collars Run 0 Vis 56
 Bottom Packer Depth 4385 Wt. Pipe Run 0 WL 8.4
 Total Depth 4640 Chlorides 2700 ppm System LCM 1
 Blow Description IF: Built to 4"
FS: No Return Blow
FF: Built to 15"
FS: No Return Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>5</u>	Feet of <u>Free Oil</u>	<u>100</u>	<u>0</u>	<u>0</u>	<u>0</u>
<u>97</u>	Feet of <u>OCM</u>	<u>20</u>	<u>0</u>	<u>80</u>	<u>0</u>
<u>124</u>	Feet of <u>MCW</u>	<u>0</u>	<u>95</u>	<u>5</u>	<u>0</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 226 BHT 130 Gravity — API RW 517 @ 82.7°F Chlorides 17000 ppm
 (A) Initial Hydrostatic 2187 Test 1150 T-On Location 22:30
 (B) First Initial Flow 27 Jars _____ T-Started 23:34
 (C) First Final Flow 47 Safety Joint 75 T-Open 01:36
 (D) Initial Shut-In 956 Circ Sub NC T-Pulled 03:25
 (E) Second Initial Flow 47 Hourly Standby _____ T-Out 05:38
 (F) Second Final Flow 123 Mileage 16 RT 16 Comments _____
 (G) Final Shut-In 982 Sampler _____
 (H) Final Hydrostatic 2115 Straddle 600 Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 1841
 Accessibility _____ MP/DST Disc't _____
 Sub Total 1841

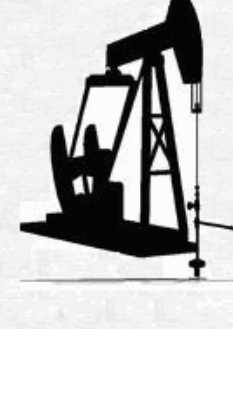
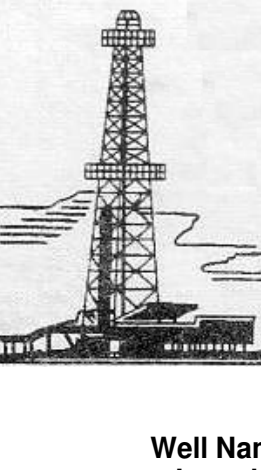
Initial Open 5
 Initial Shut-In 15
 Final Flow 30
 Final Shut-In 60
 Approved By Vern Schrag Our Representative Mike Rode

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WELLSITE GEOLOGIST'S REPORT

VERNON C. SCHRAG
CONSULTANT GEOLOGIST

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



Well Name: **HUCK #2-6**
 Location: **NE SW SW SW SEC 06-18S-31W**
 Licence Number: **API: 15-171-21223**
 Spud Date: **May 10, 2018**
 Surface Coordinates: **474' FSL & 515' FWL**

Region: **Scott Co., KS**
 Drilling Completed: **May 20, 2018**

Bottom Hole Coordinates:
 Ground Elevation (ft): **2958'**
 Logged Interval (ft): **3800'**
 Formation: **D&A Mississippi (St. Louis).**
 Type of Drilling Fluid: **Chemical Premix (Displaced)**

K.B. Elevation (ft): **2968'**
 To: **RTD** Total Depth (ft): **4640'**
 Printed by **MUD.LOG** from WellSight Systems 1-800-447-1534 www.WellSight.com

OPERATOR:

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

DRILLING CONTRACTOR:

Southwind Drilling Co., Rig #8

DP 4.5" XH (16.6#); DC 6-1/4" x 2-3/8" x 487.57', Kelly 40.00', Tool Joint 5.5" ; Bit: Varel HE29H, 7-7/8" , standard jets 3/14; rpm 60-80, WOB 35k; Kelly Bushing 10' above ground level; Bill Sanders (tool pusher).

CASING:

Ran 6 jts new 8-5/8" 20# R3 STC 8rd csg. Tallied 243', set @ 255' KB.

CIRCULATION SYSTEM:

EMSCO D-375, duplex, 6 x 14, 58 spm, 320 gpm, Chemical, premix, earth pits, start displacement 3739' after lost circulation, MudCo/Service Mud, Inc., Reid Atkins.

GAS DETECTION SYSTEM:

USB-1208LS-41, portable hot-wire, Delphian 3.0 volt catalytic bead combustible gas detector.

OPEN HOLE LOGS:

DN, DI (SP), ML, No Sonic; 5" detail LTD-3600; 2" DI to surface casing; LogTech-Pioneer Wireline, Hays, KS, Log total depth (4649') was nine feet long to rotary total depth (4640').

DRILL STEM TESTS:

Trilobite Testing, Inc., Scott City, Kansas, Mike Roberts.

