

1264985

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:	
----------------	-------	---------	------------	--

Form	ACO1 - Well Completion
Operator	Larson Engineering, Inc. dba Larson Operating Company
Well Name	Schoepf 1-15
Doc ID	1264985

Tops

Name	Top	Datum
Anhydrite	2175	+704
Base Anhydrite	2230	+649
Heebner	3899	-1020
Lansing	3937	-1058
Stark Sh	4214	-1335
Marmaton	4358	-1479
Pawnee	4420	-1541
Ft Scott	4470	-1591



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

TICKET 28612

PAGE 1 OF 1

SERVICE LOCATION: 1. Ness City KS
 WELLPROJECT NO: * 1-15
 LEASE: Schoepf
 COUNTY/PARISH: Lane
 STATE: KS
 CITY: Amy
 DATE: 6-22-15
 OWNER: Same
 TICKET TYPE: SERVICE
 CONTRACTOR: Wild West Well Service
 RIG NAME/NO.: # 1
 SHIPPED VIA: T
 DELIVERED TO: Location
 ORDER NO.:
 WELL TYPE: Oil
 WELL CATEGORY: Development
 JOB PURPOSE: Cement Port Collar
 WELL PERMIT NO.:
 WELL LOCATION: Amy KS - lay, lay, w info
 REFERRAL LOCATION:
 INVOICE INSTRUCTIONS:

PRICE REFERENCE	SECONDARY REFERENCE PART NUMBER	ACCOUNTING			DESCRIPTION	QTY		UM		CITY	UM	UNIT PRICE	AMOUNT
		LOC	ACCT	OF									
575		1			MILEAGE					40 mi		5 ⁰⁰	200 ⁰⁰
576 D		1			Pump Change - Port Collar	1				job		1250 ⁰⁰	1250 ⁰⁰
330		1			SMD Cement					170 lbs		15 ⁷⁵	2677 ¹⁵⁰
276		1			Floccle	1/4		16		60 lbs		2 ²⁵	135 ⁰⁰
290		1			D-Air					2 gal		42 ⁰⁰	84 ⁰⁰
581		1			Service Charge Cement					235 lbs		1 ⁵⁰	352 ⁵⁰
583		1			Drayage	2335		0716		467	TA	0 ⁷⁵	350 ²⁵

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: 6-22-15
 TIME SIGNED: 1500
 SIGNATURE: [Signature]

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

SURVEY	AGREE	UN-DECIDED	DIS-AGREE	PAGE TOTAL
OUR EQUIPMENT PERFORMED WITHOUT BREAKDOWN?				49
WE UNDERSTOOD AND MET YOUR NEEDS?				5044
OUR SERVICE WAS PERFORMED WITHOUT DELAY?				
WE OPERATED THE EQUIPMENT AND PERFORMED JOB CALCULATIONS SATISFACTORILY?				Lane TAX 7.15%
ARE YOU SATISFIED WITH OUR SERVICE?	<input type="checkbox"/> YES	<input type="checkbox"/> NO		207 ¹⁰
<input type="checkbox"/> CUSTOMER DID NOT WISH TO RESPOND				TOTAL
				5256 ³⁵

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

SWIFT OPERATOR: David Kuschy
 APPROVAL:

Thank You!

JOB LOG

SWIFT Services, Inc.

DATE 6-22-15 PAGE 1

CUSTOMER		WELL NO.		LEASE		JOB TYPE		TICKET NO.	
Larson Engineering		1-15		Schoepf		Cement Port Collar		28612	
CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS	
				T	C	TUBING	CASING		
	1300							on location	
								P.C. 2 3/8 x 5 1/2 235 sks SMD w/ 1/4" flo	
	1326	∅	∅		✓		1000	pressure test * Hold *	
								open Port Collar	
		4	3		✓		350	Injection Rate	
	1333	3 1/2	94		✓		400	mix 170 sks SMD w/ 1/4" flo @ 11.2 ppm circulate cement to pit * 20 sks *	
		3 1/2	8		✓		400	close Displace cement	
								close Port Collar	
	1409	∅	∅		✓		1000	Pressure test * Hold *	
								Run 5 jts	
	1433	3 1/2	25		✓		350	Reverse clean	
								wash up trucks	
	1500							Job Complete	

Thank You
Dave John Isaac



CHARGE TO: **LARSON ENGINEERING**
 ADDRESS:
 CITY, STATE, ZIP CODE:

TICKET 28522

PAGE 1 OF 2

1. WELL LOCATION: **Ness City, KS** | WELL PROJECT NO.: | LEASE: **SCHOEPH 1-15** | COUNTY: **LANE** | STATE: **KS** | CITY: **Amy, KS** | DATE: **16 JUN 15** | OWNER:
 2. TICKET TYPE: SERVICE SALES | CONTRACTOR: **H.D. DRILLING RIG #3** | RIG NAME: | SHIPPED VIA: | DELIVERED TO: | ORDER NO.:
 3. WELL TYPE: **OIL** | WELL CATEGORY: **DEVELOPMENT** | JOB PURPOSE: **5 1/2 LONGSTRING** | WELL PERMIT NO.: | WELL LOCATION: **1/2 W, 1 N W/S AUTO**
 4. REFERRAL LOCATION: | INVOICE INSTRUCTIONS:

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING			DESCRIPTION	QTY.		UM		UNIT PRICE	AMOUNT
		LOC	ACCT	DF							
575					MILEAGE #115	40	mi			5.00	200.00
578					Pump CHARGE			1	hr	1250.00	1250.00
280					FLOCHECK 21	500	gal			3.00	1500.00
281 221					LIQUID KCL	2	gal			25.00	50.00
419					ROTATING HEAD RENTAL			1	hr	200.00	200.00

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

X
 DATE SIGNED: **16 JUN 15** | TIME SIGNED: **1000** | A.M. P.M.

REMIT PAYMENT TO:

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

SURVEY	AGREE	UN-DECIDED	DIS-AGREE	PAGE TOTAL	AMOUNT
OUR EQUIPMENT PERFORMED WITHOUT BREAKDOWN?				1	3200.00
WE UNDERSTOOD AND MET YOUR NEEDS?				2	4939.65
OUR SERVICE WAS PERFORMED WITHOUT DELAY?				Subtotal	8139.65
WE OPERATED THE EQUIPMENT AND PERFORMED JOB CALCULATIONS SATISFACTORILY?				Late Tax 7.15%	443.07
ARE YOU SATISFIED WITH OUR SERVICE?	<input type="checkbox"/> YES <input type="checkbox"/> NO			TOTAL	8582.72

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

SWIFT OPERATOR: *[Signature]* | APPROVAL: *[Signature]*

Thank You!



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

TICKET CONTINUATION

TICKET No. 28522

CUSTOMER: LARSON ENGINEERING WEL: SCHOEPH 1-15 DATE: 7/6/15 PAGE: 21 OF 2

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING			TIME	DESCRIPTION	QTY		UNIT PRICE	AMOUNT
		LOC	ACCT	DF			WT	LN		
276						FLDCELE	40	lbs	2.25	90.00
283						SACT	800	lbs	1.30	1040.00
284						CALSEAL	7	sy	30.00	210.00
277						GILSONITE	1100	lbs	0.75	825.00
292						HALAD-322	150	lbs	8.00	1200.00
290						D-AIR	1 1/2	gal	42.00	63.00
325						STANDARD CEMENT EA-2	155	sq	12.25	1898.75
581						SERVICE CHARGE		CUBIC FEET	1.50	232.50
583						MILEAGE CHARGE	17360	TON MILES	0.75	260.40
						LOADED	70			
									CONTINUATION TOTAL	4939.65

JOB LOG

SWIFT Services, Inc.

DATE 10 JUN 15 PAGE NO.

CUSTOMER LARSON ENGINEERING

WELL NO.

LEASE SCHOEPH 1-15

JOB TYPE 5 1/2 LONGSTRING

TICKET NO. 28522

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	0715							ON LOCATION
								RIDE @ 4100 SET @ 4599 5 1/2 - 15.5# ST. 43.48 PORT COLLAR @ 2139
	0808				✓			DROP BALL - CIRCULATE
	0842	6	15		✓		300	Pump KCL
		6	12		✓		300	Pump FLOCHECK 21
		6	5		✓		300	Pump KCL SPACER
	0850		7					PLUG RH - 30 SX
	0853	4	30		✓			MIX 125 SX EA2
	0904							WASH OUT Pump & LINES
	0908	6			✓			START DISPLACING PLUG
	0924	6	108 1/2		✓		1500	PLUG DOWN - LATCH PLUG IN
	0926				✓			RELEASE PSI - DRY
	0928							WASH TRUCK
	1000							JOB COMPLETE
								THANKS #115
								JASON COLE ROIS



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

TICKET 28398

PAGE 1 OF 1

SERVICE LOCATIONS 1. <u>Ness City KS</u>	WELL/PROJECT NO. <u>1-15</u>	LEASE <u>Schoepf</u>	COUNTY/PARISH <u>Lane</u>	STATE <u>KS</u>	CITY <u>Dighton</u>	DATE <u>6-4-15</u>	OWNER <u>Same</u>
2. _____	TICKET TYPE <input checked="" type="checkbox"/> SERVICE <input type="checkbox"/> SALES	CONTRACTOR <u>H.O. Drilling</u>	RIG NAME/NO. <u>#3</u>	SHIPPED <input checked="" type="checkbox"/> WCT	DELIVERED TO <u>Location</u>	ORDER NO.	
3. _____	WELL TYPE <u>Oil</u>	WELL CATEGORY <u>Development</u>	JOB PURPOSE <u>Concret 8" Shallow Surface</u>	WELL PERMIT NO.	WELL LOCATION <u>Dighton KS - 8w 1w, Wink</u>		
4. REFERRAL LOCATION	INVOICE INSTRUCTIONS						

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING			DESCRIPTION	QTY.		UNIT		UNIT PRICE	AMOUNT
		LOC	ACCT	DF			UM		UM		
575		1			MILEAGE			40	m	5.00	200.00
576S		1			Pump Charge - Shallow Surface	1	job			800.00	800.00
325		1			Standard Cement			170	skts	12.25	2082.50
278		1			Calcium Chloride	3	%	8	skt	40.00	320.00
279		1			Bentonite Gel	2	%	3	skts	25.00	75.00
290		1			D-Air			2	gal	42.00	84.00
581		1			Service Charge Cement			170	skts	1.50	255.00
583		1			Drayage	16680	lbs	333.60	TN	0.75	250.20

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

X
 DATE SIGNED: 6-4-15 TIME SIGNED: 1000 SIGNATURE: _____

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

SURVEY	AGREE	UN-RECORDED	DIS-AGREE	PAGE TOTAL	4066.70
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				TOTAL	4249.85

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

SWIFT OPERATOR: David Kuehn

APPROVAL: [Signature]

Thank You!

JOB LOG

SWIFT Services, Inc.

DATE 6-4-15 PAGE NO.

CUSTOMER		WELL NO.		LEASE		JOB TYPE		TICKET NO.	
Larsen Engineering		1-15		Schoepf		Shallow Surface		28398	
CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS	
				T	C	TUBING	CASING		
	1000								on location
									TD - 258' TP - 258' Set @ - 255' 8 5/8 24"
	1105	4 1/2	5		✓			250	pump 5 bbl water spacer
	1108	4 1/2	41		✓			250	mix 170 sks 2% Gel 3% CC @ 14.7 ppg
									wash out Pump & Lines
	1121	4 1/2	0		✓			150	Start Displacement
		4 1/2	8		✓			150	circulate cement to surface
	1126	4 1/2	15.5		✓			150	Kick out pump
									15 sks to pit
									Shut in valve 150*
									wash up trucks
	1200								Job Complete
									Thank You Drew John Preston



DRILL STEM TEST REPORT

Prepared For: **Larson Engineering Inc**

562 W State Rd 4
Olmitz, KS 67564

ATTN: Rene Husted

Schoef #1-15

15-18s-30w Lane,KS

Start Date: 2015.06.09 @ 10:43:26

End Date: 2015.06.09 @ 15:55:56

Job Ticket #: 61545 DST #: 1

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

Printed: 2015.06.15 @ 13:44:46



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Larson Engineering Inc
 562 W State Rd 4
 Olmitz, KS 67564
 ATTN: Rene Husted

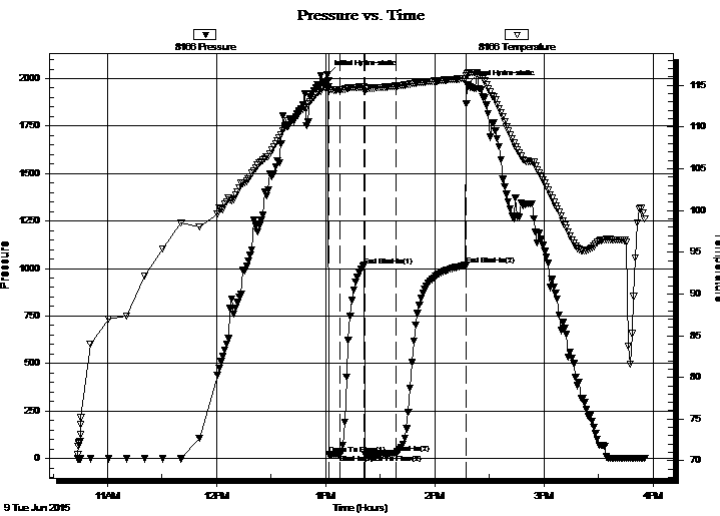
15-18s-30w Lane, KS
Schoef #1-15
 Job Ticket: 61545 **DST#: 1**
 Test Start: 2015.06.09 @ 10:43:26

GENERAL INFORMATION:

Formation: **LKC E-F**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 13:01:56
 Time Test Ended: 15:55:56
 Interval: **4010.00 ft (KB) To 4045.00 ft (KB) (TVD)**
 Total Depth: 4045.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Brandon Turley
 Unit No: 79
 Reference Elevations: 2879.00 ft (KB)
 2870.00 ft (CF)
 KB to GR/CF: 9.00 ft

Serial #: 8166 Outside
 Press@RunDepth: 27.24 psig @ 4011.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2015.06.09 End Date: 2015.06.09 Last Calib.: 2015.06.09
 Start Time: 10:43:31 End Time: 15:55:55 Time On Btm: 2015.06.09 @ 13:00:56
 Time Off Btm: 2015.06.09 @ 14:17:56

TEST COMMENT: IF: Surface blow .
 IS: No return.
 FF: No blow .
 FS: No return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2020.03	114.76	Initial Hydro-static
1	19.24	114.34	Open To Flow (1)
7	23.05	114.44	Shut-In(1)
20	1016.46	114.81	End Shut-In(1)
21	21.09	114.26	Open To Flow (2)
38	27.24	114.88	Shut-In(2)
76	1016.84	115.81	End Shut-In(2)
77	1966.76	116.43	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	ocm 10%o 90%o	0.02
1.00	free oil 100%o	0.00

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering Inc

15-18s-30w Lane,KS

562 W State Rd 4
Olmitz, KS 67564

Schoef #1-15

Job Ticket: 61545

DST#: 1

ATTN: Rene Husted

Test Start: 2015.06.09 @ 10:43:26

Tool Information

Drill Pipe:	Length: 3889.00 ft	Diameter: 3.80 inches	Volume: 54.55 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 124.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose: 75000.00 lb
			<u>Total Volume: 55.16 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	4010.00 ft			Final 60000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	35.00 ft			
Tool Length:	62.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

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

Stubb	1.00			3984.00	
Shut In Tool	5.00			3989.00	
Hydraulic tool	5.00			3994.00	
Jars	5.00			3999.00	
Safety Joint	2.00			4001.00	
Packer	5.00			4006.00	27.00 Bottom Of Top Packer
Packer	4.00			4010.00	
Stubb	1.00			4011.00	
Recorder	0.00	8373	Inside	4011.00	
Recorder	0.00	8166	Outside	4011.00	
Perforations	29.00			4040.00	
Bullnose	5.00			4045.00	35.00 Bottom Packers & Anchor

Total Tool Length: 62.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering Inc

15-18s-30w Lane, KS

562 W State Rd 4
Olmitz, KS 67564

Schoef #1-15

Job Ticket: 61545

DST#: 1

ATTN: Rene Husted

Test Start: 2015.06.09 @ 10:43:26

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: 58.00 sec/qt

Cushion Volume:

bbl

Water Loss: 7.16 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	ocm 10%o 90%m	0.025
1.00	free oil 100%o	0.005

Total Length: 6.00 ft Total Volume: 0.030 bbl

Num Fluid Samples: 0

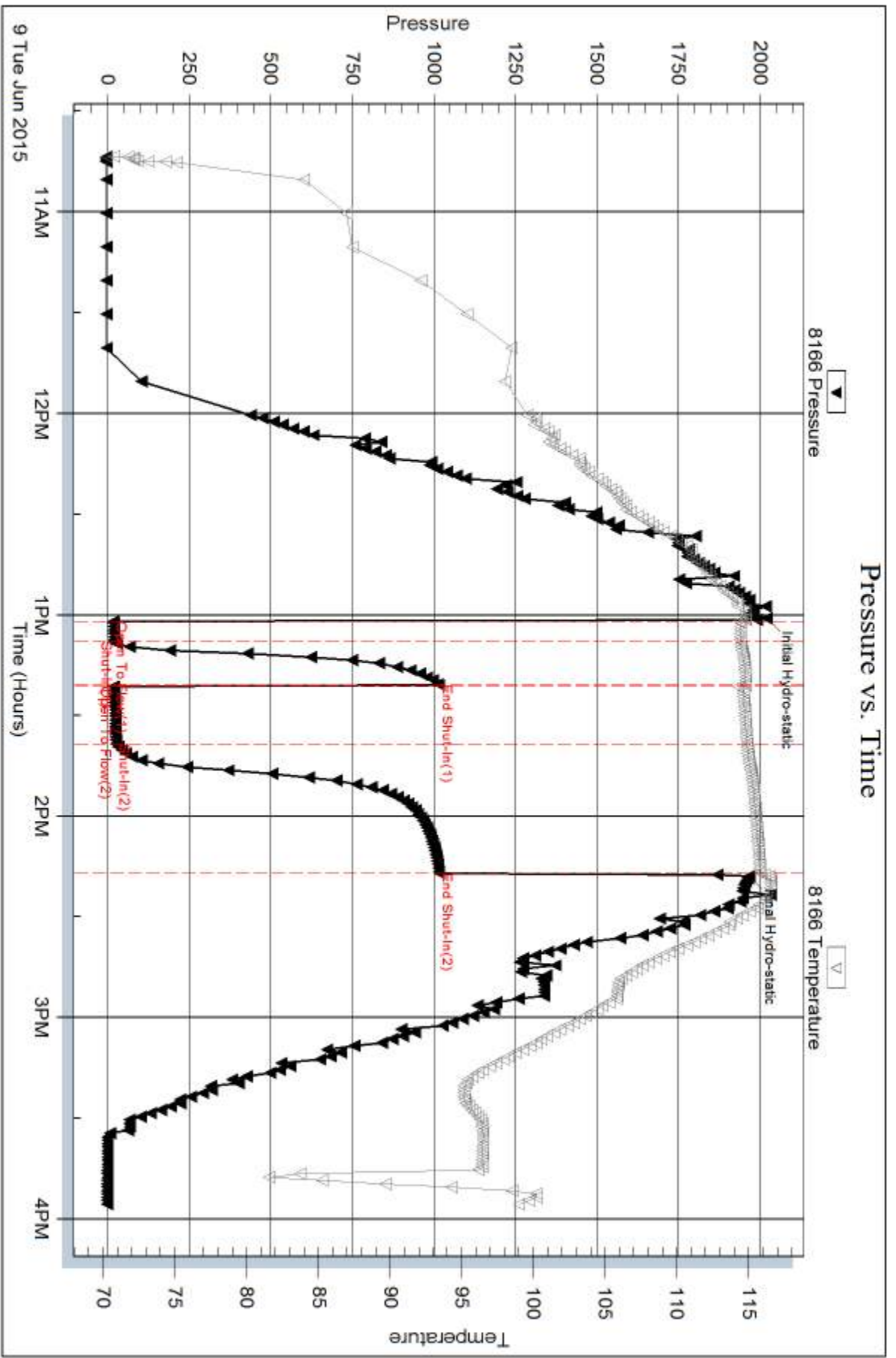
Num Gas Bombs: 0

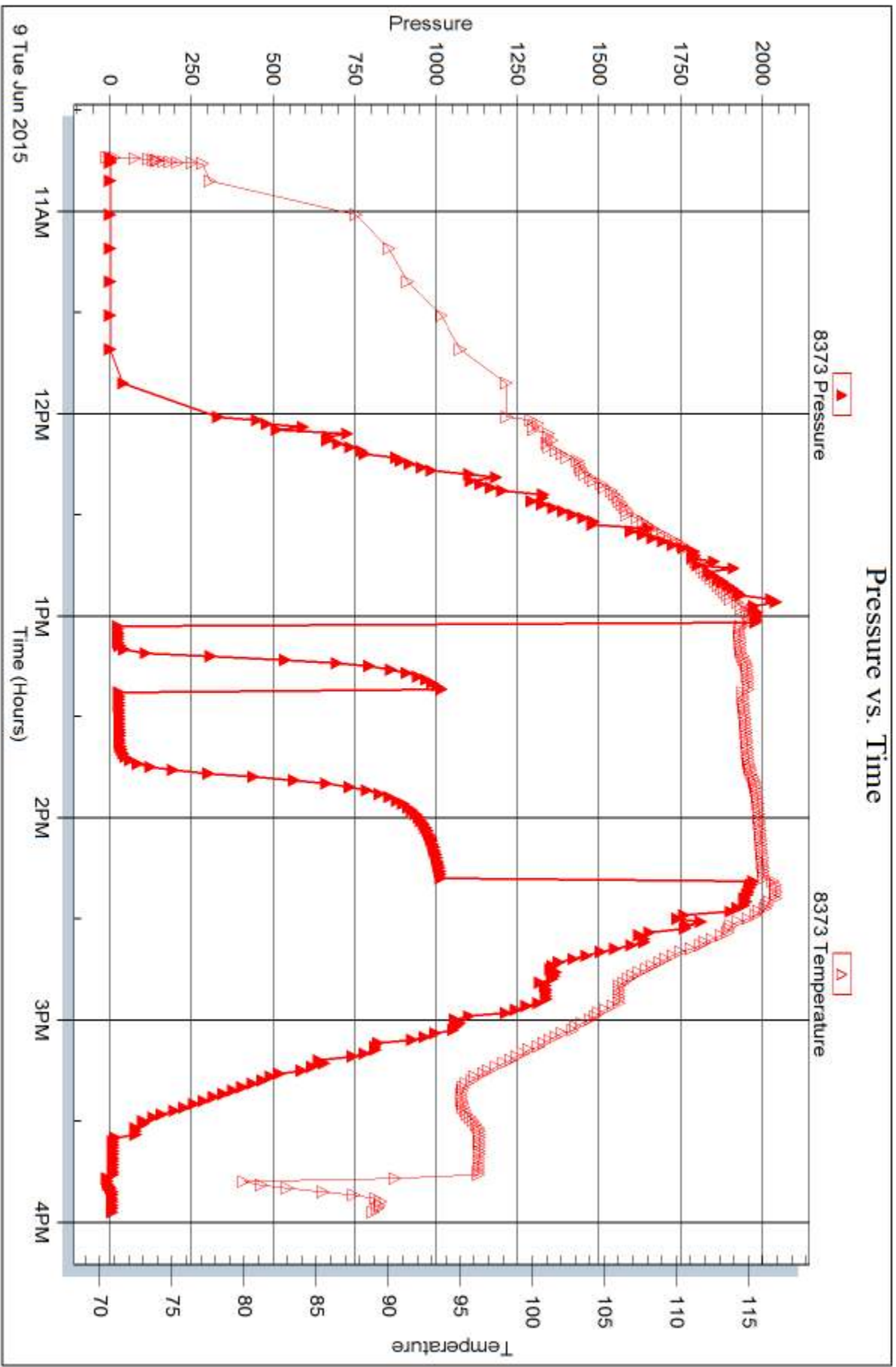
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering Inc**

562 W State Rd 4
Olmitz, KS 67564

ATTN: Rene Husted

Schoef #1-15

15-18s-30w Lane,KS

Start Date: 2015.06.10 @ 02:33:24

End Date: 2015.06.10 @ 08:33:54

Job Ticket #: 61546 DST #: 2

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

Printed: 2015.06.15 @ 13:44:26



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Larson Engineering Inc
 562 W State Rd 4
 Olmitz, KS 67564
 ATTN: Rene Husted

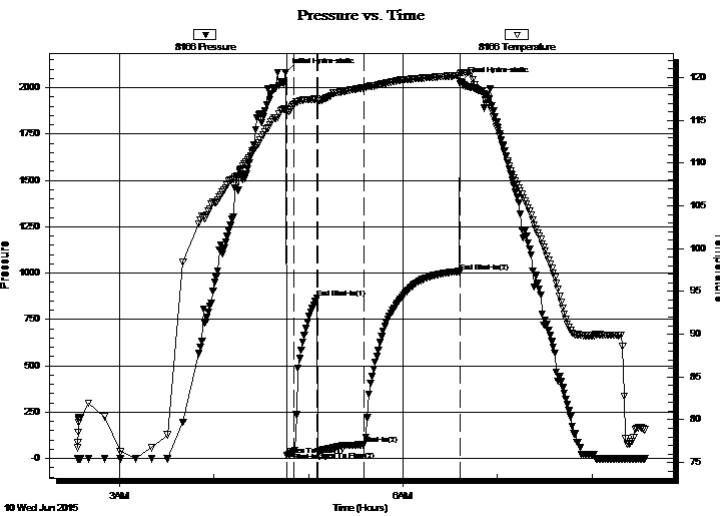
15-18s-30w Lane, KS
Schoef #1-15
 Job Ticket: 61546 **DST#: 2**
 Test Start: 2015.06.10 @ 02:33:24

GENERAL INFORMATION:

Formation: **LKC H**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 04:46:24
 Time Test Ended: 08:33:54
 Interval: **4114.00 ft (KB) To 4140.00 ft (KB) (TVD)**
 Total Depth: 4140.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Brandon Turley
 Unit No: 79
 Reference Elevations: 2879.00 ft (KB)
 2870.00 ft (CF)
 KB to GR/CF: 9.00 ft

Serial #: 8166 Outside
 Press@RunDepth: 74.51 psig @ 4115.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2015.06.10 End Date: 2015.06.10 Last Calib.: 2015.06.10
 Start Time: 02:33:29 End Time: 08:33:53 Time On Btm: 2015.06.10 @ 04:45:24
 Time Off Btm: 2015.06.10 @ 06:36:54

TEST COMMENT: IF: 1/4" blow built to 2"
 IS: No return.
 FF: Surface blow built to 5 1/2" in 30 min.
 FS: No return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2080.81	116.30	Initial Hydro-static
1	18.43	115.90	Open To Flow (1)
6	32.25	116.85	Shut-In(1)
20	865.29	117.49	End Shut-In(1)
21	37.64	117.23	Open To Flow (2)
50	74.51	118.79	Shut-In(2)
111	1007.41	120.25	End Shut-In(2)
112	2033.72	120.58	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
62.00	ocm 40%o 60%m	0.30
62.00	ocm 50%o 50%m	0.30
20.00	oil 100%	0.28

* 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

15-18s-30w Lane,KS

562 W State Rd 4
Olmitz, KS 67564

Schoef #1-15

Job Ticket: 61546

DST#: 2

ATTN: Rene Husted

Test Start: 2015.06.10 @ 02:33:24

Tool Information

Drill Pipe:	Length: 3993.00 ft	Diameter: 3.80 inches	Volume: 56.01 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	30000.00 lb
Drill Collar:	Length: 124.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose:	70000.00 lb
			<u>Total Volume: 56.62 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial	60000.00 lb
Depth to Top Packer:	4114.00 ft			Final	60000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	36.00 ft				
Tool Length:	63.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

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

Stubb	1.00			4088.00	
Shut In Tool	5.00			4093.00	
Hydraulic tool	5.00			4098.00	
Jars	5.00			4103.00	
Safety Joint	2.00			4105.00	
Packer	5.00			4110.00	27.00 Bottom Of Top Packer
Packer	4.00			4114.00	
Stubb	1.00			4115.00	
Recorder	0.00	8373	Inside	4115.00	
Recorder	0.00	8166	Outside	4115.00	
Perforations	30.00			4145.00	
Bullnose	5.00			4150.00	36.00 Bottom Packers & Anchor

Total Tool Length: 63.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering Inc

15-18s-30w Lane,KS

562 W State Rd 4
Olmitz, KS 67564

Schoef #1-15

Job Ticket: 61546

DST#: 2

ATTN: Rene Husted

Test Start: 2015.06.10 @ 02:33:24

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: 58.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.16 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
62.00	ocm 40%o 60%m	0.305
62.00	ocm 50%o 50%m	0.305
20.00	oil 100%o	0.281

Total Length: 144.00 ft Total Volume: 0.891 bbl

Num Fluid Samples: 0

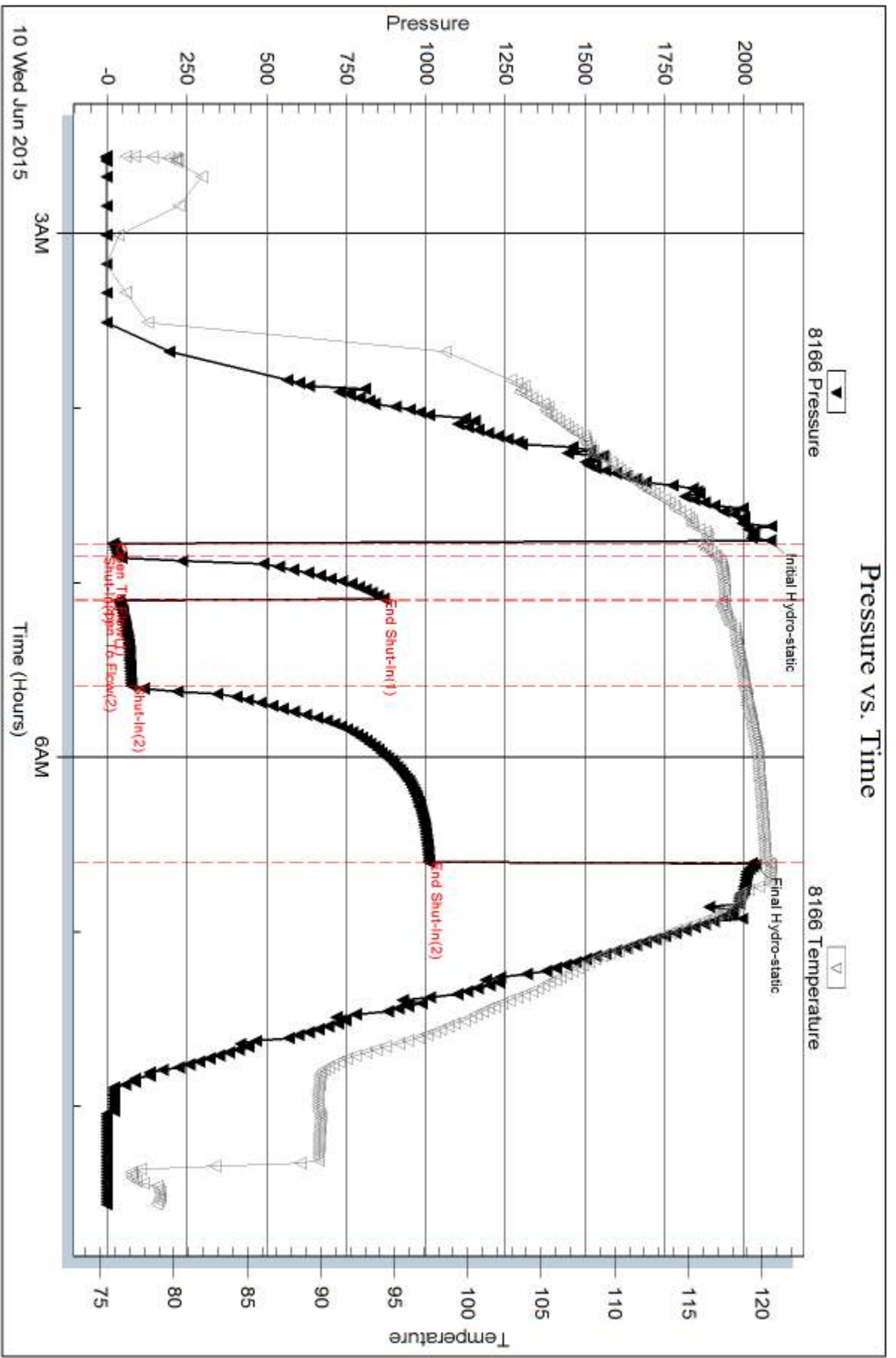
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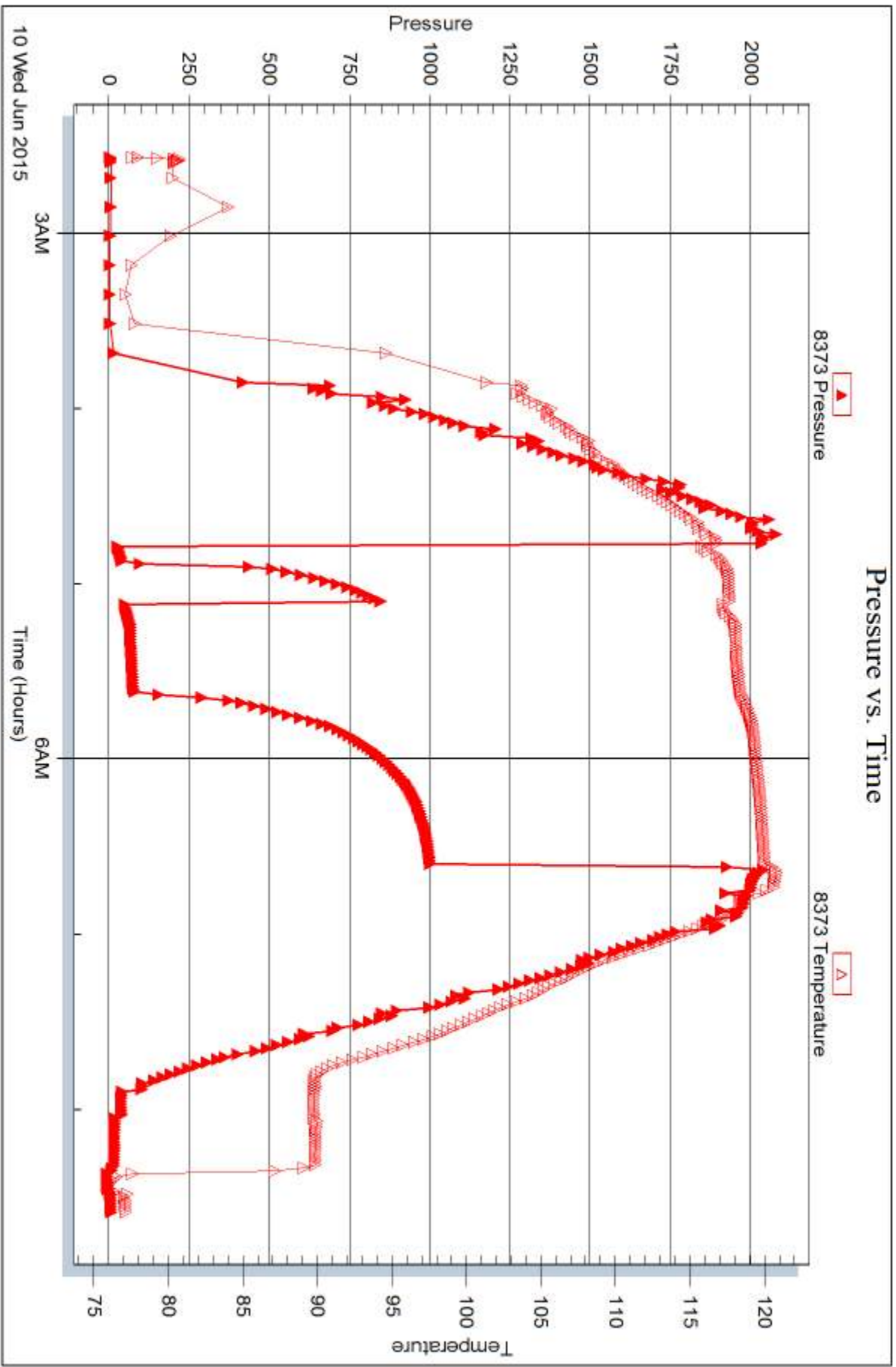
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: 34@80=32







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering Inc**

562 W State Rd 4
Olmitz, KS 67564

ATTN: Rene Husted

Schoef #1-15

15-18s-30w Lane,KS

Start Date: 2015.06.10 @ 19:00:41

End Date: 2015.06.11 @ 00:18:41

Job Ticket #: 61547 DST #: 3

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

Printed: 2015.06.15 @ 13:44:04



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Larson Engineering Inc
562 W State Rd 4
Olmitz, KS 67564
ATTN: Rene Husted

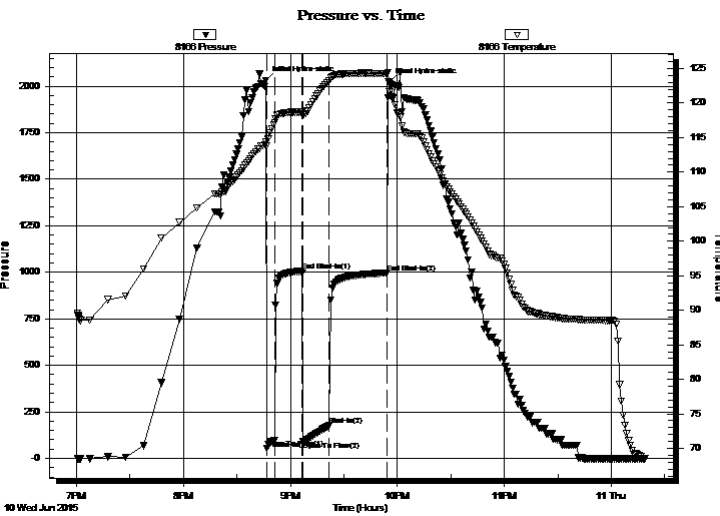
15-18s-30w Lane, KS
Schoef #1-15
Job Ticket: 61547 **DST#: 3**
Test Start: 2015.06.10 @ 19:00:41

GENERAL INFORMATION:

Formation: **LKC I**
Deviated: No Whipstock: ft (KB) Test Type: Conventional Bottom Hole (Reset)
Time Tool Opened: 20:46:41 Tester: Brandon Turley
Time Test Ended: 00:18:41 Unit No: 79
Interval: 4154.00 ft (KB) To 4184.00 ft (KB) (TVD) Reference Elevations: 2879.00 ft (KB)
Total Depth: 4184.00 ft (KB) (TVD) 2870.00 ft (CF)
Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 9.00 ft

Serial #: 8166 Outside
Press@RunDepth: 175.93 psig @ 4155.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2015.06.10 End Date: 2015.06.11 Last Calib.: 2015.06.11
Start Time: 19:00:46 End Time: 00:18:40 Time On Btm: 2015.06.10 @ 20:46:11
Time Off Btm: 2015.06.10 @ 21:55:11

TEST COMMENT: IF: BOB in 4 min.
IS: Surface blow built to 1"
FF: BOB in 4 min.
FS: Surface blow built to 5" in 30 min.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2030.19	114.30	Initial Hydro-static
1	52.91	113.79	Open To Flow (1)
5	97.27	117.17	Shut-In(1)
20	1005.82	118.70	End Shut-In(1)
21	93.37	118.34	Open To Flow (2)
36	175.93	123.18	Shut-In(2)
68	996.44	124.23	End Shut-In(2)
69	2021.28	123.12	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
186.00	mcgo 50%g 40%o 10%m	1.48
124.00	mcgo 50%g 45%o 5%m	1.74
129.00	go 10%g 90%o	1.81
0.00	434 GIP	0.00

* 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

15-18s-30w Lane, KS

562 W State Rd 4
Olmitz, KS 67564

Schoef #1-15

Job Ticket: 61547

DST#: 3

ATTN: Rene Husted

Test Start: 2015.06.10 @ 19:00:41

Tool Information

Drill Pipe:	Length: 4013.00 ft	Diameter: 3.80 inches	Volume: 56.29 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 124.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 56.90 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	10.00 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	4154.00 ft			Final 62000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	30.00 ft			
Tool Length:	57.00 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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Stubb	1.00			4128.00	
Shut In Tool	5.00			4133.00	
Hydraulic tool	5.00			4138.00	
Jars	5.00			4143.00	
Safety Joint	2.00			4145.00	
Packer	5.00			4150.00	27.00 Bottom Of Top Packer
Packer	4.00			4154.00	
Stubb	1.00			4155.00	
Recorder	0.00	8373	Inside	4155.00	
Recorder	0.00	8166	Outside	4155.00	
Perforations	24.00			4179.00	
Bullnose	5.00			4184.00	30.00 Bottom Packers & Anchor

Total Tool Length: 57.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering Inc

15-18s-30w Lane,KS

562 W State Rd 4
Olmitz, KS 67564

Schoef #1-15

Job Ticket: 61547

DST#: 3

ATTN: Rene Husted

Test Start: 2015.06.10 @ 19:00:41

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: 56.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.17 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2100.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
186.00	mcgo 50%g 40%o 10%m	1.480
124.00	mcgo 50%g 45%o 5%m	1.739
129.00	go 10%g 90%o	1.810
0.00	434 GIP	0.000

Total Length: 439.00 ft

Total Volume: 5.029 bbl

Num Fluid Samples: 0

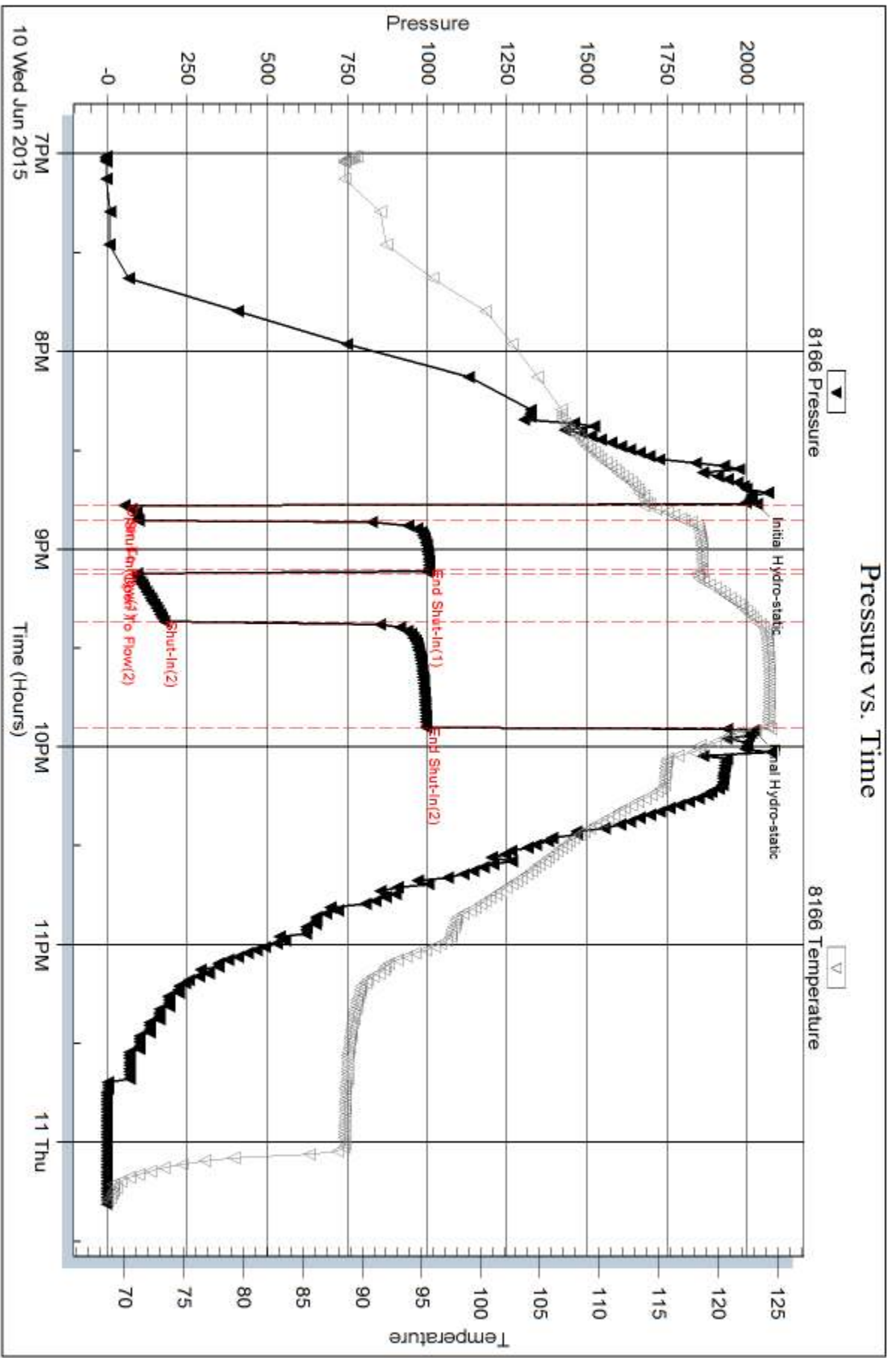
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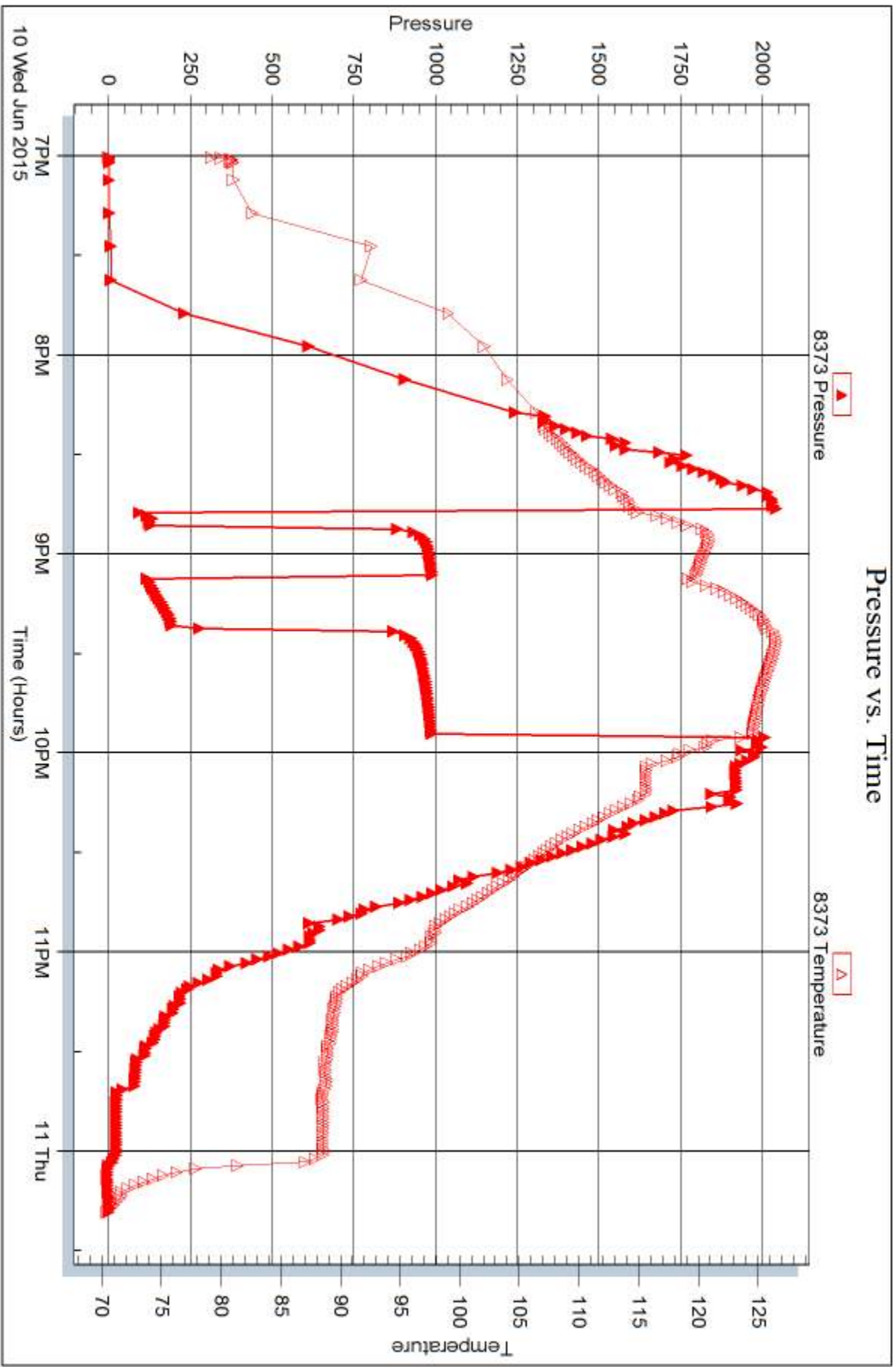
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: 32@60=32







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering Inc**

562 W State Rd 4
Olmitz, KS 67564

ATTN: Rene Husted

Schoef #1-15

15-18s-30w Lane,KS

Start Date: 2015.06.11 @ 07:34:38

End Date: 2015.06.11 @ 12:24:38

Job Ticket #: 61548 DST #: 4

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

Printed: 2015.06.15 @ 13:43:40



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Larson Engineering Inc
 562 W State Rd 4
 Olmitz, KS 67564
 ATTN: Rene Husted

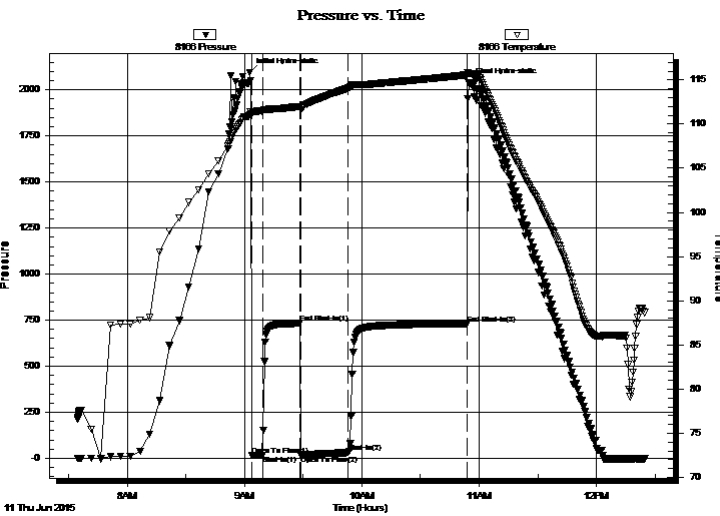
15-18s-30w Lane, KS
Schoef #1-15
 Job Ticket: 61548 **DST#: 4**
 Test Start: 2015.06.11 @ 07:34:38

GENERAL INFORMATION:

Formation: **LKC J**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Reset)
 Time Tool Opened: 09:03:38 Tester: Brandon Turley
 Time Test Ended: 12:24:38 Unit No: 79
Interval: 4182.00 ft (KB) To 4198.00 ft (KB) (TVD) Reference Elevations: 2879.00 ft (KB)
 Total Depth: 4198.00 ft (KB) (TVD) 2870.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 9.00 ft

Serial #: 8166 Outside
 Press@RunDepth: 31.86 psig @ 4183.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2015.06.11 End Date: 2015.06.11 Last Calib.: 2015.06.11
 Start Time: 07:34:43 End Time: 12:24:37 Time On Btm: 2015.06.11 @ 09:02:38
 Time Off Btm: 2015.06.11 @ 10:54:38

TEST COMMENT: IF: 1/4" blow built to 3/4"
 IS: No return.
 FF: Surface blow built to 1" in 30 min.
 FS: No return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2095.01	111.04	Initial Hydro-static
1	14.97	111.15	Open To Flow (1)
7	18.34	111.46	Shut-In(1)
26	733.36	112.00	End Shut-In(1)
26	18.99	111.60	Open To Flow (2)
51	31.86	114.09	Shut-In(2)
111	731.17	115.56	End Shut-In(2)
112	2037.31	115.70	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
20.00	ocm 5%o 95%m	0.10

* 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

15-18s-30w Lane,KS

562 W State Rd 4
Olmitz, KS 67564

Schoef #1-15

Job Ticket: 61548

DST#: 4

ATTN: Rene Hustedad

Test Start: 2015.06.11 @ 07:34:38

Tool Information

Drill Pipe:	Length: 4045.00 ft	Diameter: 3.80 inches	Volume: 56.74 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 124.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose: 65000.00 lb
			<u>Total Volume: 57.35 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	14.00 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	4182.00 ft			Final 60000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	16.00 ft			
Tool Length:	43.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

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

Stubb	1.00			4156.00	
Shut In Tool	5.00			4161.00	
Hydraulic tool	5.00			4166.00	
Jars	5.00			4171.00	
Safety Joint	2.00			4173.00	
Packer	5.00			4178.00	27.00 Bottom Of Top Packer
Packer	4.00			4182.00	
Stubb	1.00			4183.00	
Recorder	0.00	8373	Inside	4183.00	
Recorder	0.00	8166	Outside	4183.00	
Perforations	10.00			4193.00	
Bullnose	5.00			4198.00	16.00 Bottom Packers & Anchor

Total Tool Length: 43.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering Inc

15-18s-30w Lane, KS

562 W State Rd 4
Olmitz, KS 67564

Schoef #1-15

Job Ticket: 61548

DST#: 4

ATTN: Rene Husted

Test Start: 2015.06.11 @ 07:34:38

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: 56.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.18 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2100.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
20.00	ocm 5%o 95%m	0.098

Total Length: 20.00 ft Total Volume: 0.098 bbl

Num Fluid Samples: 0

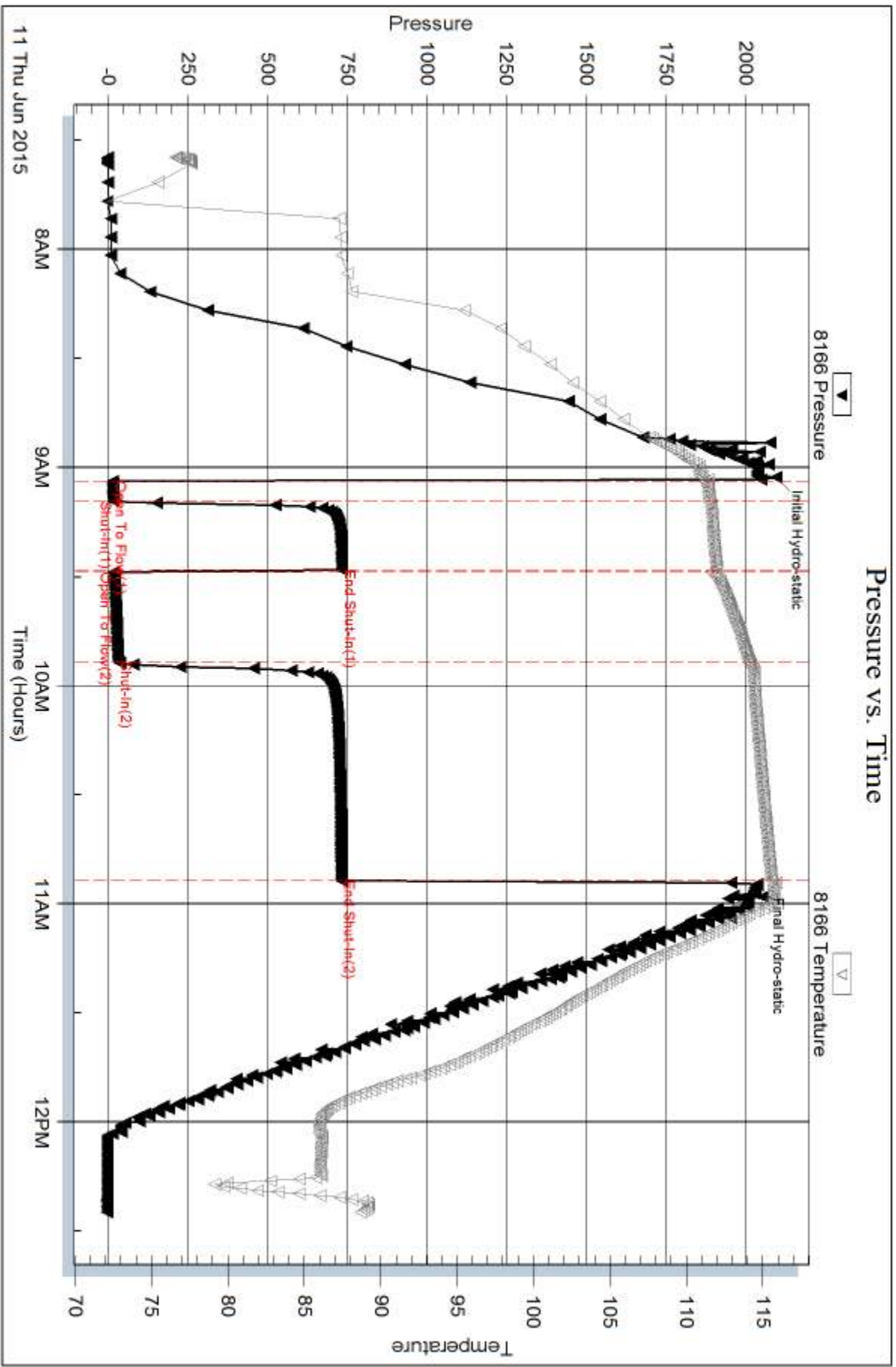
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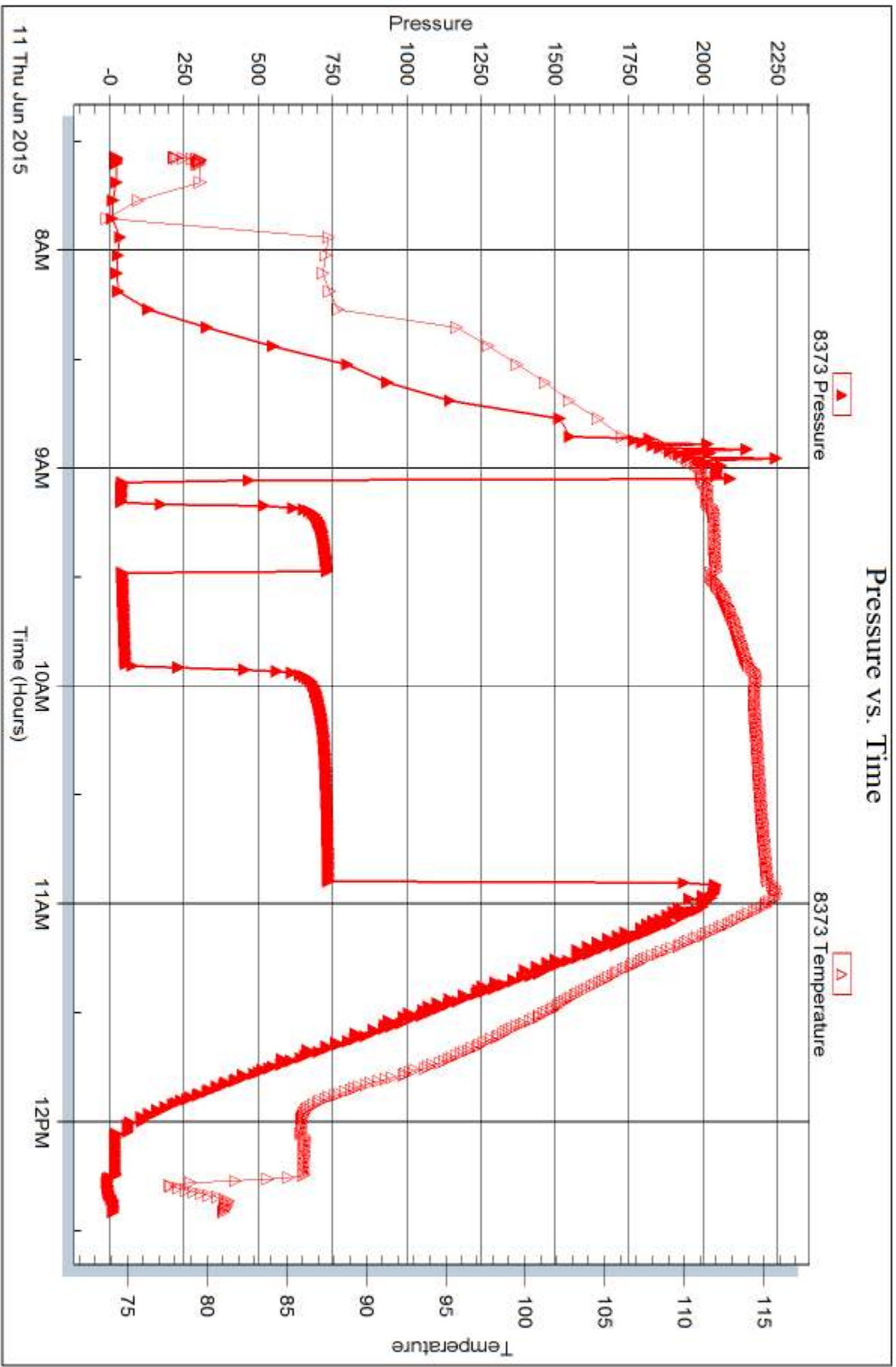
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering Inc**

562 W State Rd 4
Olmitz, KS 67564

ATTN: Rene Husted

Schoef #1-15

15-18s-30w Lane,KS

Start Date: 2015.06.11 @ 22:40:52

End Date: 2015.06.12 @ 03:12:22

Job Ticket #: 61549 DST #: 5

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

Printed: 2015.06.15 @ 13:43:13

Larson Engineering Inc
15-18s-30w Lane,KS
Schoef #1-15
DST # 5
LKC K
2015.06.11



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Larson Engineering Inc
 562 W State Rd 4
 Olmitz, KS 67564
 ATTN: Rene Husted

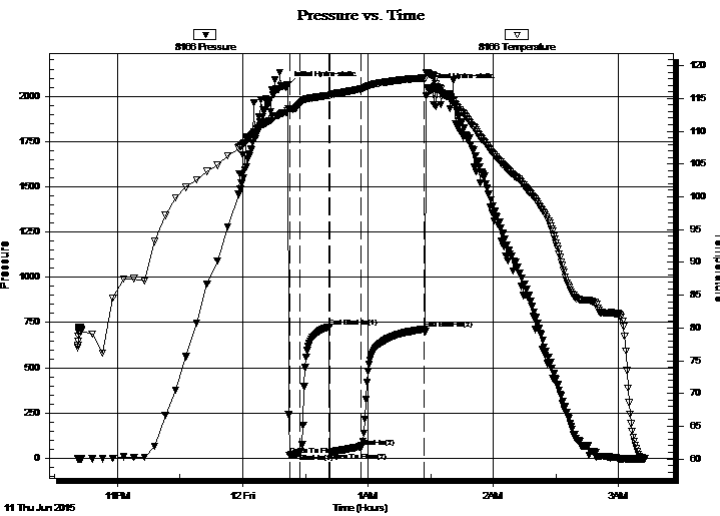
15-18s-30w Lane, KS
Schoef #1-15
 Job Ticket: 61549 **DST#: 5**
 Test Start: 2015.06.11 @ 22:40:52

GENERAL INFORMATION:

Formation: **LKC K**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 00:22:22
 Time Test Ended: 03:12:22
 Interval: **4211.00 ft (KB) To 4225.00 ft (KB) (TVD)**
 Total Depth: 4225.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Brandon Turley
 Unit No: 79
 Reference Elevations: 2879.00 ft (KB)
 2870.00 ft (CF)
 KB to GR/CF: 9.00 ft

Serial #: 8166 Outside
 Press@RunDepth: 63.73 psig @ 4212.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2015.06.11 End Date: 2015.06.12 Last Calib.: 2015.06.12
 Start Time: 22:40:57 End Time: 03:12:21 Time On Btm: 2015.06.12 @ 00:21:22
 Time Off Btm: 2015.06.12 @ 01:28:22

TEST COMMENT: IF: 1/4" blow built to 1 1/2"
 IS: No return.
 FF: Surface blow built to 3"
 FS: No return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2060.80	113.17	Initial Hydro-static
1	16.77	113.33	Open To Flow (1)
6	28.65	114.20	Shut-In(1)
20	727.17	115.48	End Shut-In(1)
21	34.20	115.45	Open To Flow (2)
35	63.73	116.44	Shut-In(2)
66	714.51	118.13	End Shut-In(2)
67	2046.52	118.97	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
62.00	ocm 10%o 90%m	0.30
60.00	oil 100%o	0.30

* 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

15-18s-30w Lane,KS

562 W State Rd 4
Olmitz, KS 67564

Schoef #1-15

Job Ticket: 61549

DST#: 5

ATTN: Rene Hustedad

Test Start: 2015.06.11 @ 22:40:52

Tool Information

Drill Pipe:	Length: 4078.00 ft	Diameter: 3.80 inches	Volume: 57.20 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	30000.00 lb
Drill Collar:	Length: 124.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose:	75000.00 lb
			<u>Total Volume: 57.81 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	18.00 ft			String Weight: Initial	65000.00 lb
Depth to Top Packer:	4211.00 ft			Final	65000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	14.00 ft				
Tool Length:	41.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

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

Stubb	1.00			4185.00	
Shut In Tool	5.00			4190.00	
Hydraulic tool	5.00			4195.00	
Jars	5.00			4200.00	
Safety Joint	2.00			4202.00	
Packer	5.00			4207.00	27.00 Bottom Of Top Packer
Packer	4.00			4211.00	
Stubb	1.00			4212.00	
Recorder	0.00	8373	Inside	4212.00	
Recorder	0.00	8166	Outside	4212.00	
Perforations	8.00			4220.00	
Bullnose	5.00			4225.00	14.00 Bottom Packers & Anchor

Total Tool Length: 41.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering Inc

15-18s-30w Lane, KS

562 W State Rd 4
Olmitz, KS 67564

Schoef #1-15

Job Ticket: 61549

DST#: 5

ATTN: Rene Husted

Test Start: 2015.06.11 @ 22:40:52

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

33 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 52.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.18 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2300.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
62.00	ocm 10%o 90%m	0.305
60.00	oil 100%o	0.295

Total Length: 122.00 ft Total Volume: 0.600 bbl

Num Fluid Samples: 0

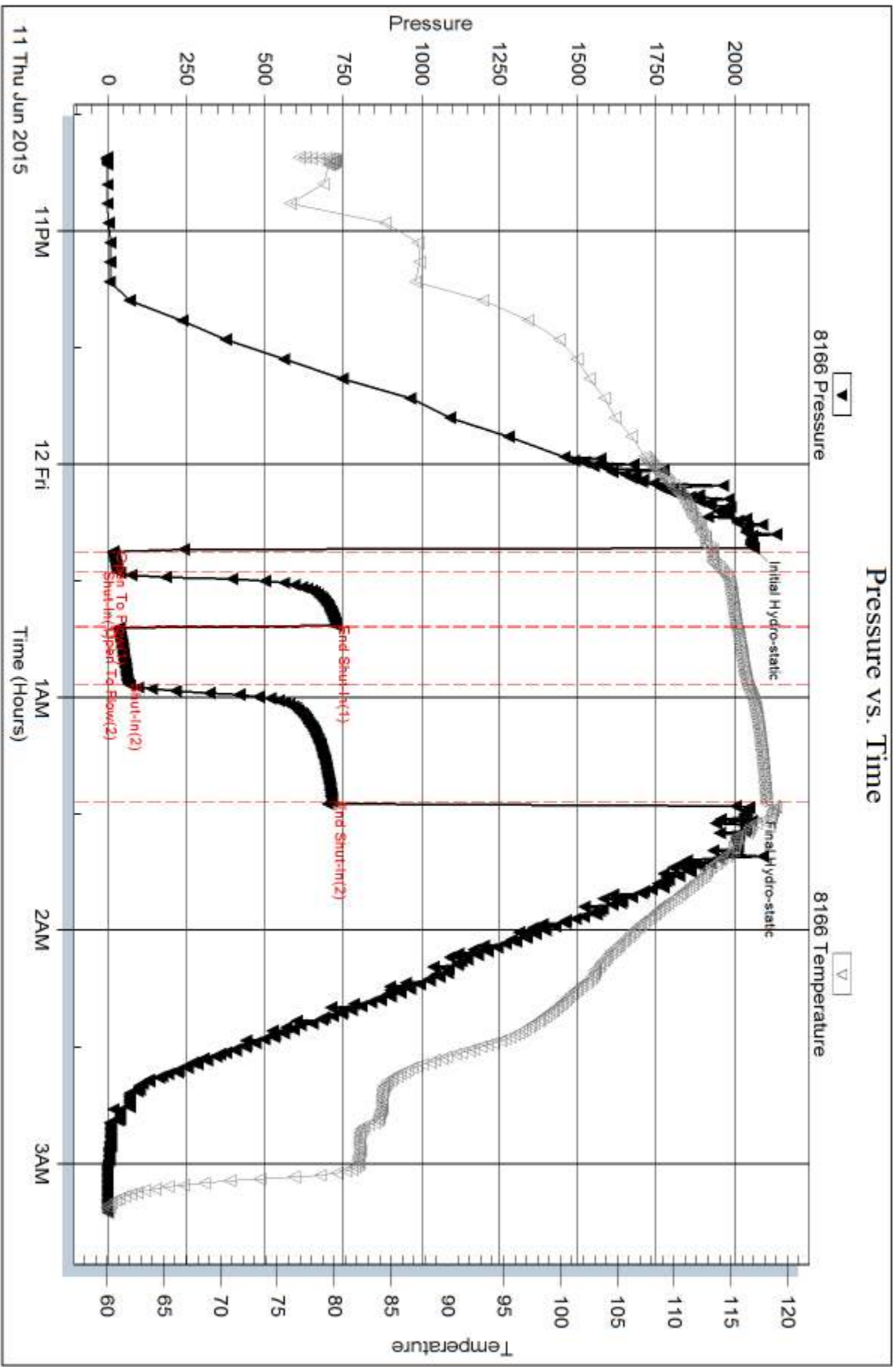
Num Gas Bombs: 0

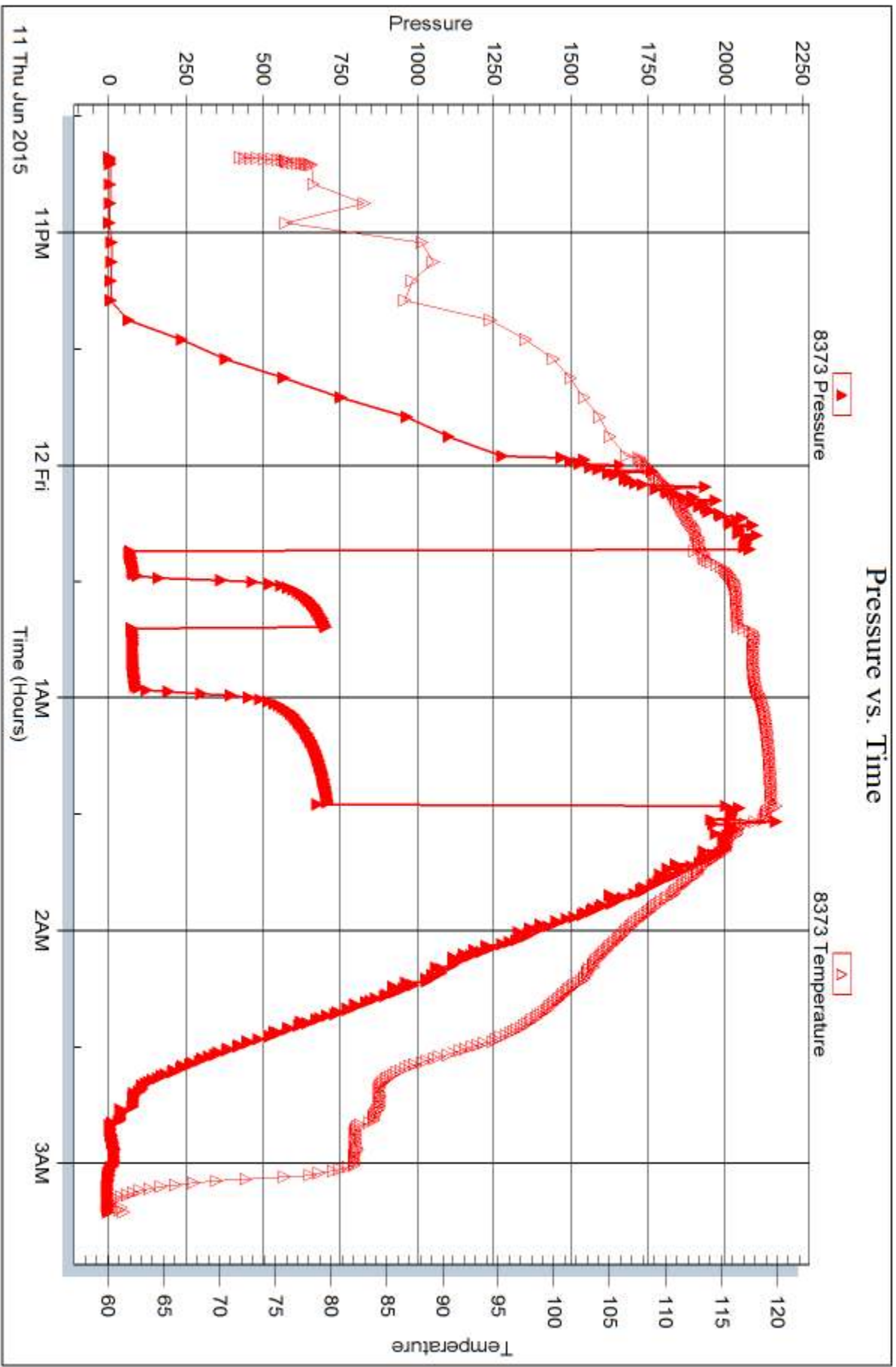
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: 32@50=33







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering Inc**

562 W State Rd 4
Olmitz, KS 67564

ATTN: Rene Husted

Schoef #1-15

15-18s-30w Lane,KS

Start Date: 2015.06.12 @ 12:55:04

End Date: 2015.06.12 @ 17:15:04

Job Ticket #: 61550 DST #: 6

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

Printed: 2015.06.15 @ 13:42:49



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Larson Engineering Inc

15-18s-30w Lane, KS

562 W State Rd 4
Olmitz, KS 67564

Schoef #1-15

Job Ticket: 61550

DST#: 6

ATTN: Rene Hustedad

Test Start: 2015.06.12 @ 12:55:04

GENERAL INFORMATION:

Formation: **Middle Creek**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 14:25:04

Time Test Ended: 17:15:04

Test Type: Conventional Bottom Hole (Reset)

Tester: Brandon Turley

Unit No: 79

Interval: 4249.00 ft (KB) To 4261.00 ft (KB) (TVD)

Reference Elevations: 2879.00 ft (KB)

Total Depth: 4261.00 ft (KB) (TVD)

2870.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 9.00 ft

Serial #: 8166 Outside

Press@RunDepth: 103.83 psig @ 4250.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.06.12

End Date:

2015.06.12

Last Calib.:

2015.06.12

Start Time: 12:55:09

End Time:

17:15:03

Time On Btm:

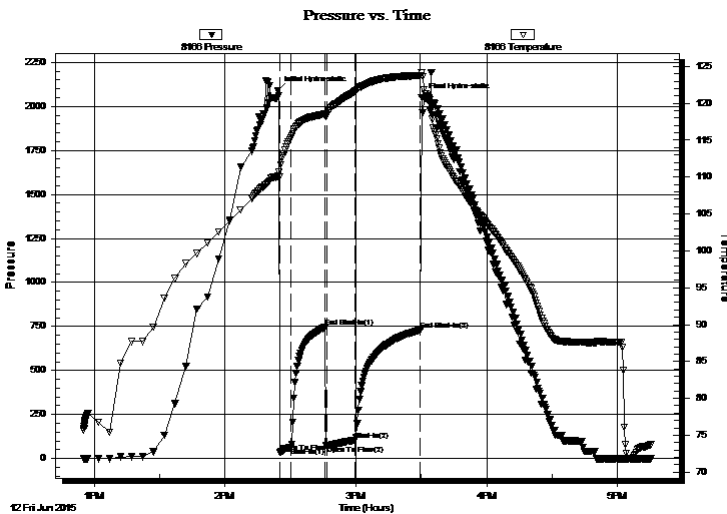
2015.06.12 @ 14:24:04

Time Off Btm:

2015.06.12 @ 15:30:04

TEST COMMENT: IF: 1" blow built to 8" in 5 min.
IS: Surface blow built to 1"
FF: BOB in 8 min.
FS: Surface built to 2" in 30 min.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2088.39	110.13	Initial Hydro-static
1	35.68	110.02	Open To Flow (1)
6	61.67	115.32	Shut-In(1)
22	744.36	118.54	End Shut-In(1)
23	73.44	118.38	Open To Flow (2)
36	103.83	121.65	Shut-In(2)
66	729.84	123.76	End Shut-In(2)
66	2049.84	124.20	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
62.00	gocm 10%g 30%o 60%m	0.30
62.00	mcco 10%g 80%o 10%m	0.30
134.00	go 30%g 70%o	1.88
0.00	186 GIP	0.00

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering Inc

15-18s-30w Lane,KS

562 W State Rd 4
Olmitz, KS 67564

Schoef #1-15

Job Ticket: 61550

DST#: 6

ATTN: Rene Husted

Test Start: 2015.06.12 @ 12:55:04

Tool Information

Drill Pipe:	Length: 4108.00 ft	Diameter: 3.80 inches	Volume: 57.62 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	30000.00 lb
Drill Collar:	Length: 124.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose:	75000.00 lb
			<u>Total Volume: 58.23 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	10.00 ft			String Weight: Initial	65000.00 lb
Depth to Top Packer:	4249.00 ft			Final	65000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	12.00 ft				
Tool Length:	39.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Stubb	1.00			4223.00	
Shut In Tool	5.00			4228.00	
Hydraulic tool	5.00			4233.00	
Jars	5.00			4238.00	
Safety Joint	2.00			4240.00	
Packer	5.00			4245.00	27.00 Bottom Of Top Packer
Packer	4.00			4249.00	
Stubb	1.00			4250.00	
Recorder	0.00	8373	Inside	4250.00	
Recorder	0.00	8166	Outside	4250.00	
Perforations	6.00			4256.00	
Bullnose	5.00			4261.00	12.00 Bottom Packers & Anchor

Total Tool Length: 39.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering Inc

15-18s-30w Lane, KS

562 W State Rd 4
Olmitz, KS 67564

Schoef #1-15

Job Ticket: 61550

DST#: 6

ATTN: Rene Husted

Test Start: 2015.06.12 @ 12:55:04

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

35 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 58.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.16 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
62.00	gocm 10%g 30%o 60%m	0.305
62.00	mcgo 10%g 80%o 10%m	0.305
134.00	go 30%g 70%o	1.880
0.00	186 GIP	0.000

Total Length: 258.00 ft

Total Volume: 2.490 bbl

Num Fluid Samples: 0

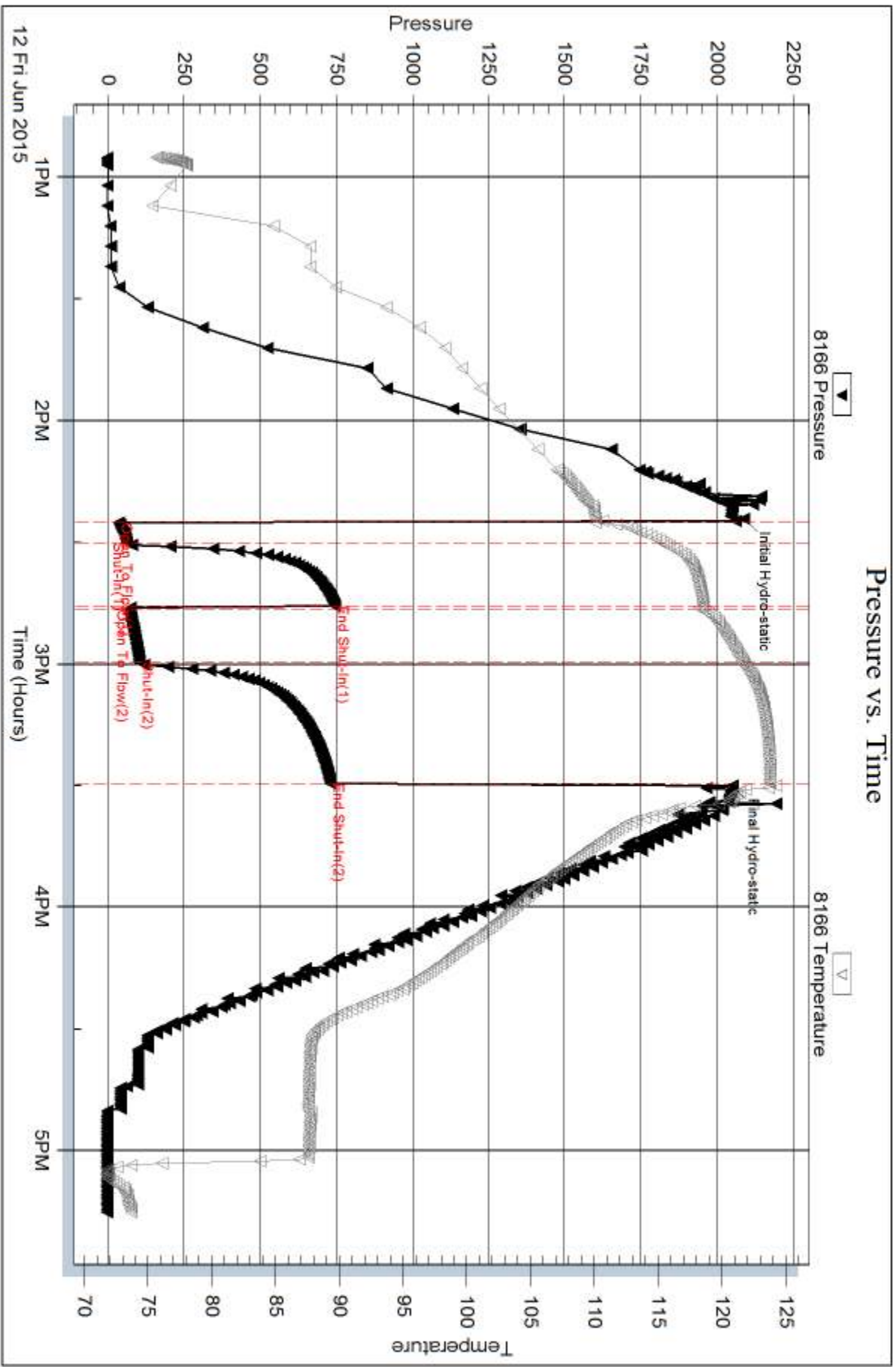
Num Gas Bombs: 0

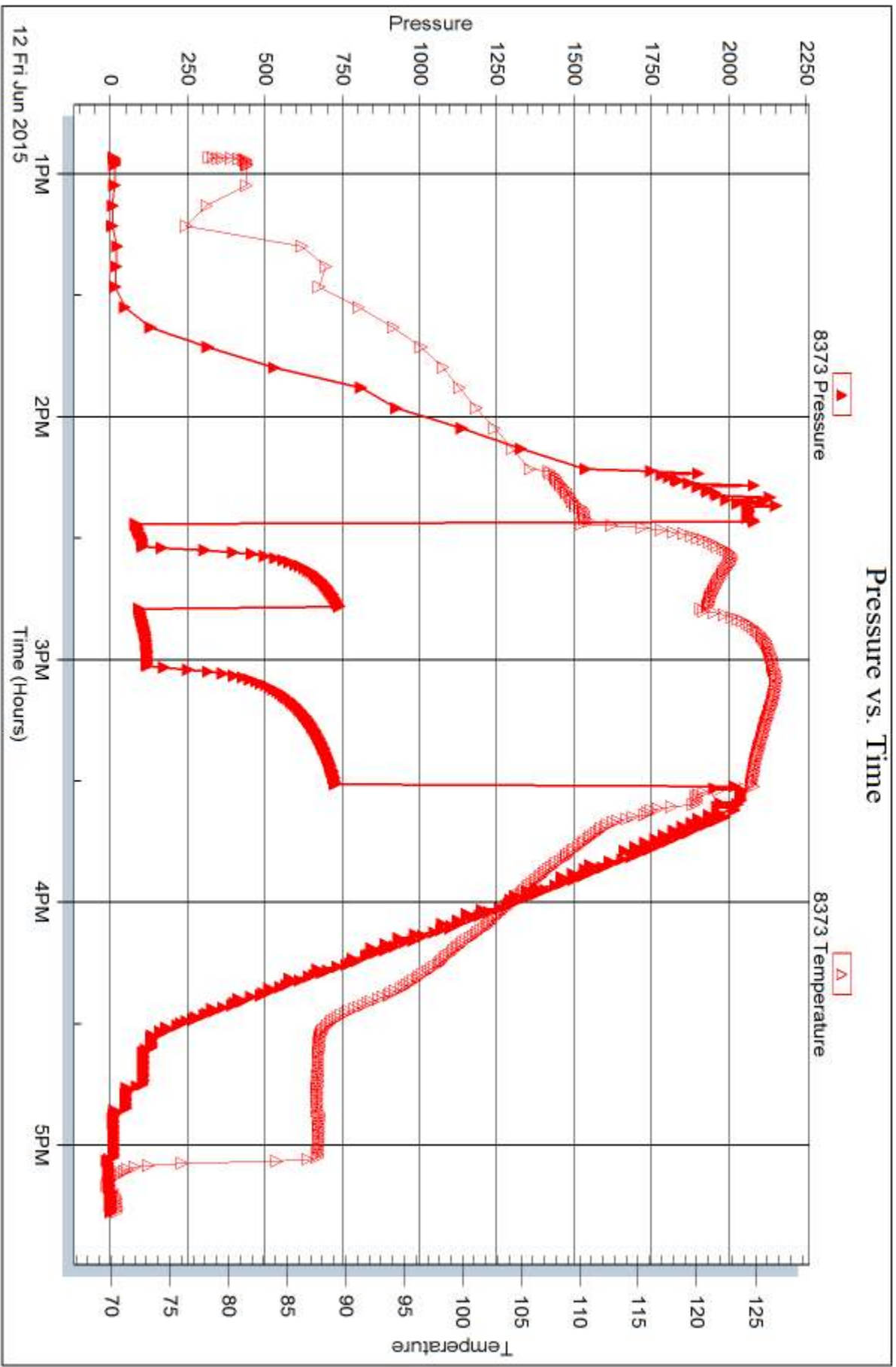
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: 37@80=35







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering Inc**

562 W State Rd 4
Olmitz, KS 67564

ATTN: Rene Husted

Schoef #1-15

15-18s-30w Lane,KS

Start Date: 2015.06.13 @ 02:30:57

End Date: 2015.06.13 @ 08:43:57

Job Ticket #: 61726 DST #: 7

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

Printed: 2015.06.15 @ 13:42:26



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Larson Engineering Inc
562 W State Rd 4
Olmitz, KS 67564
ATTN: Rene Husted

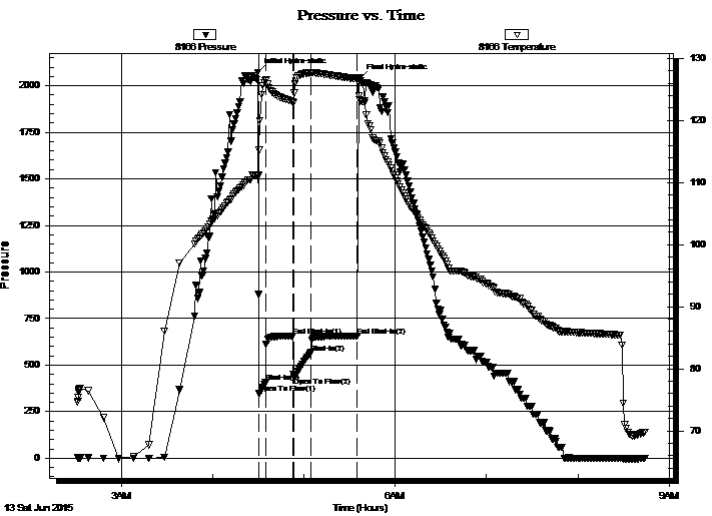
15-18s-30w Lane, KS
Schoef #1-15
Job Ticket: 61726 **DST#: 7**
Test Start: 2015.06.13 @ 02:30:57

GENERAL INFORMATION:

Formation: **LKC L**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 04:30:27
Time Test Ended: 08:43:57
Interval: **4262.00 ft (KB) To 4273.00 ft (KB) (TVD)**
Total Depth: 4273.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good
Test Type: Conventional Bottom Hole (Reset)
Tester: Brandon Turley
Unit No: 79
Reference Elevations: 2879.00 ft (KB)
2870.00 ft (CF)
KB to GR/CF: 9.00 ft

Serial #: 8166 Outside
Press@RunDepth: 566.66 psig @ 4263.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2015.06.13 End Date: 2015.06.13 Last Calib.: 2015.06.13
Start Time: 02:31:02 End Time: 08:43:56 Time On Btm: 2015.06.13 @ 04:29:27
Time Off Btm: 2015.06.13 @ 05:36:27

TEST COMMENT: IF: BOB in 30 sec.
IS: Surface blow built to 2"
FF: BOB in 30 sec.
FS: Surface blow built to 2"



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2071.73	111.13	Initial Hydro-static
1	348.07	115.21	Open To Flow (1)
5	405.71	126.37	Shut-In(1)
23	655.96	123.03	End Shut-In(1)
24	434.21	124.40	Open To Flow (2)
35	566.66	127.69	Shut-In(2)
66	656.19	126.70	End Shut-In(2)
67	2040.51	123.30	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
186.00	gocm 20%g 30%o 50%m	1.48
310.00	mcco 30%g 65%o 5%m	4.35
372.00	go 30%g 70%o	5.22
536.00	go 15%g 85%o	7.52
0.00	341 GIP	0.00

* 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

15-18s-30w Lane,KS

562 W State Rd 4
Olmitz, KS 67564

Schoef #1-15

Job Ticket: 61726

DST#: 7

ATTN: Rene Husted

Test Start: 2015.06.13 @ 02:30:57

Tool Information

Drill Pipe:	Length: 4141.00 ft	Diameter: 3.80 inches	Volume: 58.09 bbl	Tool Weight:	2000.00 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: 124.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose:	30000.00 lb
			<u>Total Volume: 58.70 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial	64000.00 lb
Depth to Top Packer:	4262.00 ft			Final	65000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	11.00 ft				
Tool Length:	38.00 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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Stubb	1.00			4236.00	
Shut In Tool	5.00			4241.00	
Hydraulic tool	5.00			4246.00	
Jars	5.00			4251.00	
Safety Joint	2.00			4253.00	
Packer	5.00			4258.00	27.00 Bottom Of Top Packer
Packer	4.00			4262.00	
Stubb	1.00			4263.00	
Recorder	0.00	8373	Inside	4263.00	
Recorder	0.00	8166	Outside	4263.00	
Perforations	5.00			4268.00	
Bullnose	5.00			4273.00	11.00 Bottom Packers & Anchor

Total Tool Length: 38.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering Inc

15-18s-30w Lane,KS

562 W State Rd 4
Olmitz, KS 67564

Schoef #1-15

Job Ticket: 61726

DST#: 7

ATTN: Rene Husted

Test Start: 2015.06.13 @ 02:30:57

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

28 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 45.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.98 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 3400.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
186.00	gocm 20%g 30%o 50%m	1.480
310.00	mcgo 30%g 65%o 5%m	4.348
372.00	go 30%g 70%o	5.218
536.00	go 15%g 85%o	7.519
0.00	341 GIP	0.000

Total Length: 1404.00 ft Total Volume: 18.565 bbl

Num Fluid Samples: 0

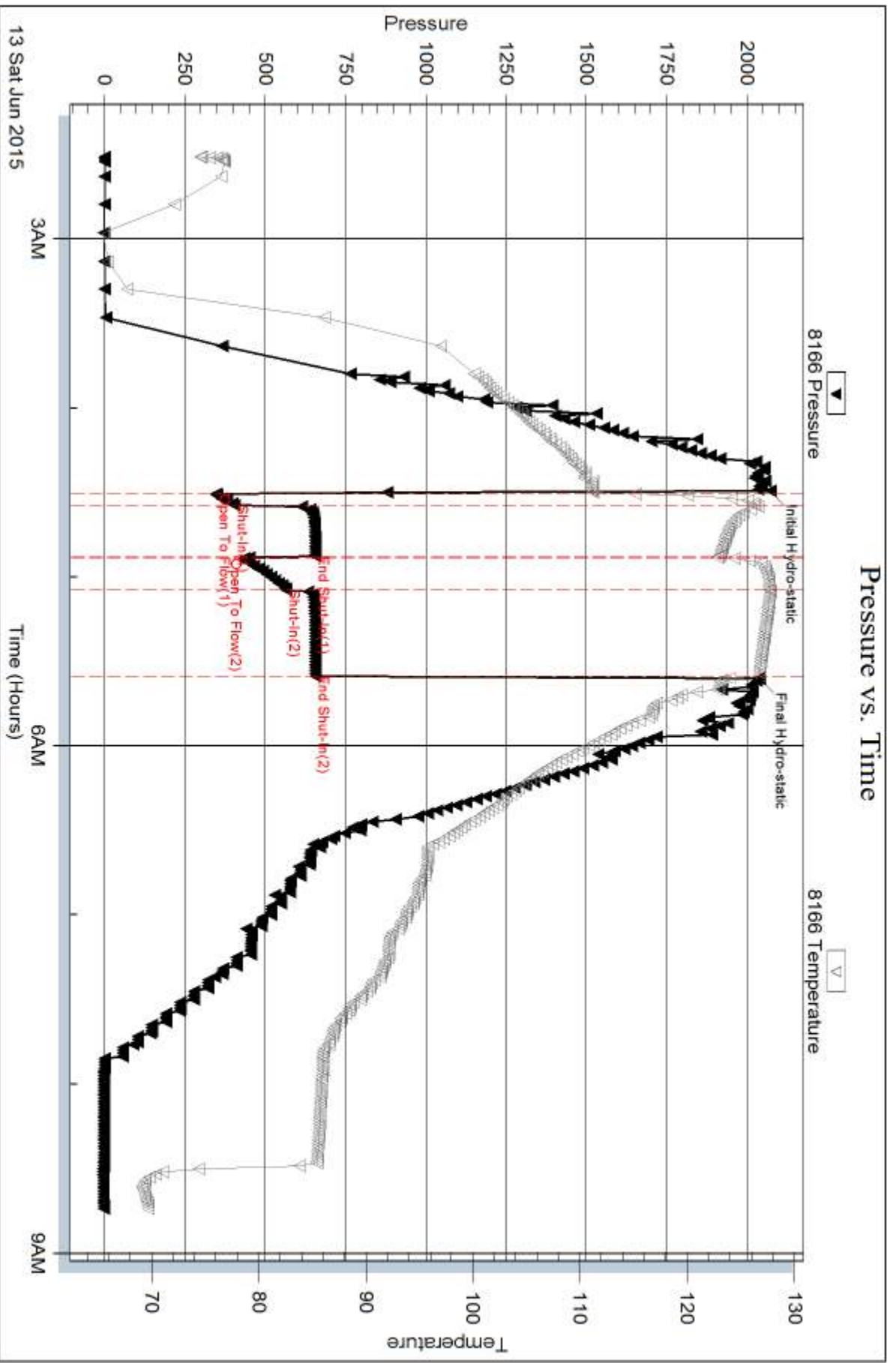
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: 29@70=28



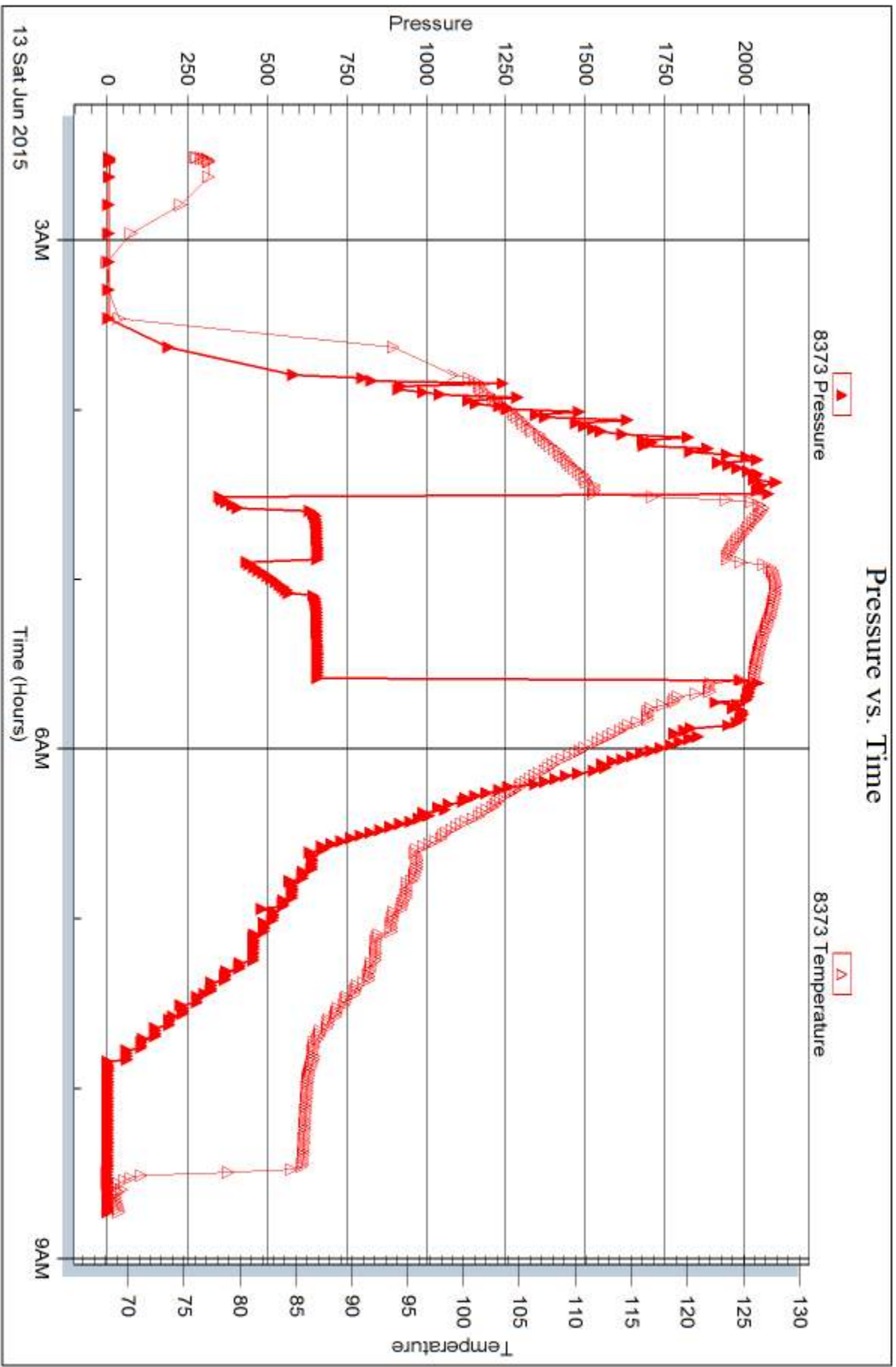
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Inside

Larson Engineering Inc

Schoef #1-15

DST Test Number: 7



Trilobite Testing, Inc

Ref. No: 61726

Printed: 2015.06.15 @ 13:42:27



DRILL STEM TEST REPORT

Prepared For: **Larson Engineering Inc**

562 W State Rd 4
Olmitz, KS 67564

ATTN: Rene Husted

Schoef #1-15

15-18s-30w Lane,KS

Start Date: 2015.06.13 @ 22:40:19

End Date: 2015.06.14 @ 03:19:49

Job Ticket #: 61727 DST #: 8

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

Printed: 2015.06.15 @ 13:42:00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Larson Engineering Inc
562 W State Rd 4
Olmitz, KS 67564
ATTN: Rene Husted

15-18s-30w Lane, KS
Schoef #1-15
Job Ticket: 61727 **DST#: 8**
Test Start: 2015.06.13 @ 22:40:19

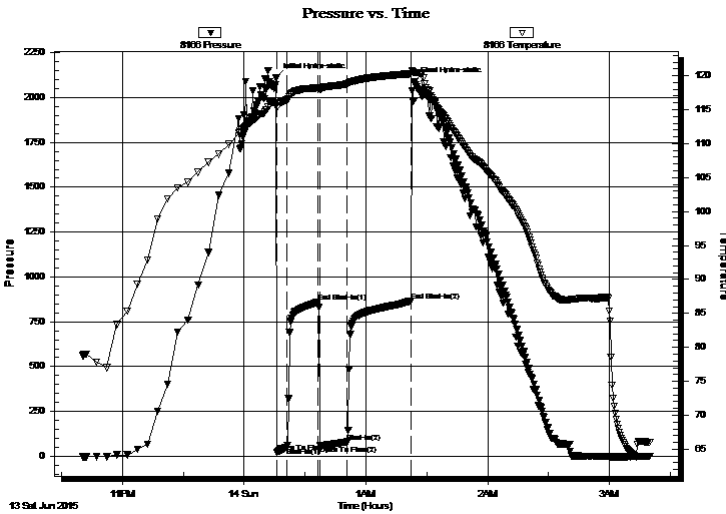
GENERAL INFORMATION:

Formation: **Pleasanton - Marmato**
Deviated: No Whipstock: ft (KB) Test Type: Conventional Bottom Hole (Reset)
Time Tool Opened: 00:16:19 Tester: Brandon Turley
Time Test Ended: 03:19:49 Unit No: 79
Interval: 4300.00 ft (KB) To 4384.00 ft (KB) (TVD) Reference Elevations: 2879.00 ft (KB)
Total Depth: 4384.00 ft (KB) (TVD) 2870.00 ft (CF)
Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 9.00 ft

Serial #: 8166 Outside
Press@RunDepth: 80.44 psig @ 4301.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2015.06.13 End Date: 2015.06.14 Last Calib.: 2015.06.14
Start Time: 22:40:24 End Time: 03:19:48 Time On Btm: 2015.06.14 @ 00:15:49
Time Off Btm: 2015.06.14 @ 01:23:49

TEST COMMENT: IF: 1" blow built to 3 1/2"
IS: No return.
FF: 1/4" blow BOB in 12 min.
FS: Surface blow built to 1"

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2109.36	116.30	Initial Hydro-static
1	23.67	115.25	Open To Flow (1)
5	50.82	116.39	Shut-In(1)
21	860.48	118.20	End Shut-In(1)
22	59.33	117.93	Open To Flow (2)
35	80.44	118.78	Shut-In(2)
67	866.66	120.28	End Shut-In(2)
68	2090.23	120.46	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
124.00	gocm 5%g 10%o 85%m	0.61
62.00	go 5%g 95%o	0.87
0.00	186 GIP	0.00

* 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

15-18s-30w Lane,KS

562 W State Rd 4
Olmitz, KS 67564

Schoef #1-15

Job Ticket: 61727

DST#: 8

ATTN: Rene Hustedad

Test Start: 2015.06.13 @ 22:40:19

Tool Information

Drill Pipe:	Length: 4169.00 ft	Diameter: 3.80 inches	Volume: 58.48 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 124.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose: 750000.0 lb
			<u>Total Volume: 59.09 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	20.00 ft			String Weight: Initial 65000.00 lb
Depth to Top Packer:	4300.00 ft			Final 68000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	84.00 ft			
Tool Length:	111.00 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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Stubb	1.00			4274.00	
Shut In Tool	5.00			4279.00	
Hydraulic tool	5.00			4284.00	
Jars	5.00			4289.00	
Safety Joint	2.00			4291.00	
Packer	5.00			4296.00	27.00 Bottom Of Top Packer
Packer	4.00			4300.00	
Stubb	1.00			4301.00	
Recorder	0.00	8373	Inside	4301.00	
Recorder	0.00	8166	Outside	4301.00	
Perforations	13.00			4314.00	
Change Over Sub	1.00			4315.00	
Drill Pipe	63.00			4378.00	
Change Over Sub	1.00			4379.00	
Bullnose	5.00			4384.00	84.00 Bottom Packers & Anchor

Total Tool Length: 111.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering Inc

15-18s-30w Lane,KS

562 W State Rd 4
Olmitz, KS 67564

Schoef #1-15

Job Ticket: 61727

DST#: 8

ATTN: Rene Husted

Test Start: 2015.06.13 @ 22:40:19

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

35 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 58.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.99 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 bbbl
124.00	gocm 5%g 10%o 85%m	0.610
62.00	go 5%g 95%o	0.870
0.00	186 GIP	0.000

Total Length: 186.00 ft

Total Volume: 1.480 bbl

Num Fluid Samples: 0

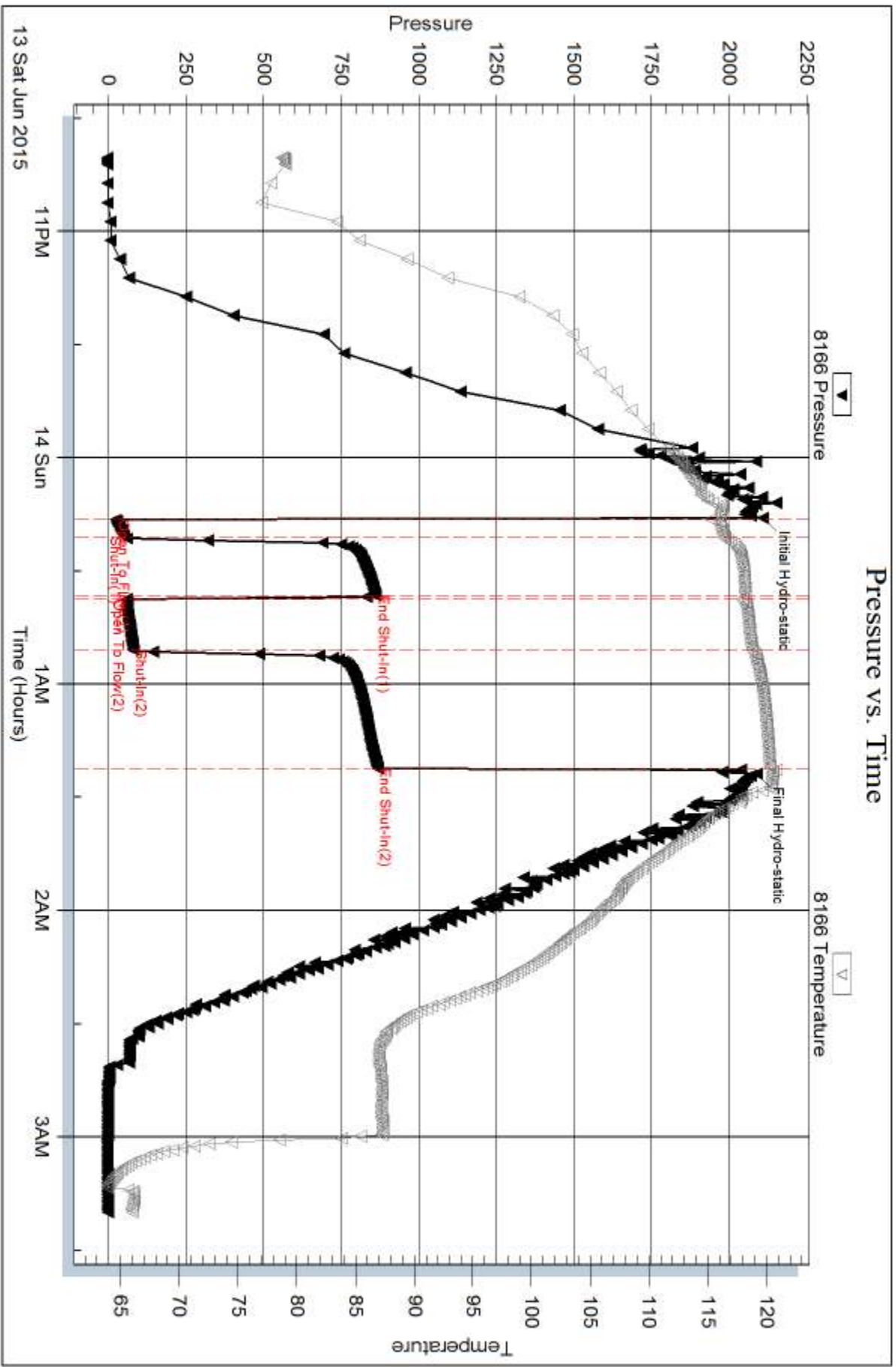
Num Gas Bombs: 0

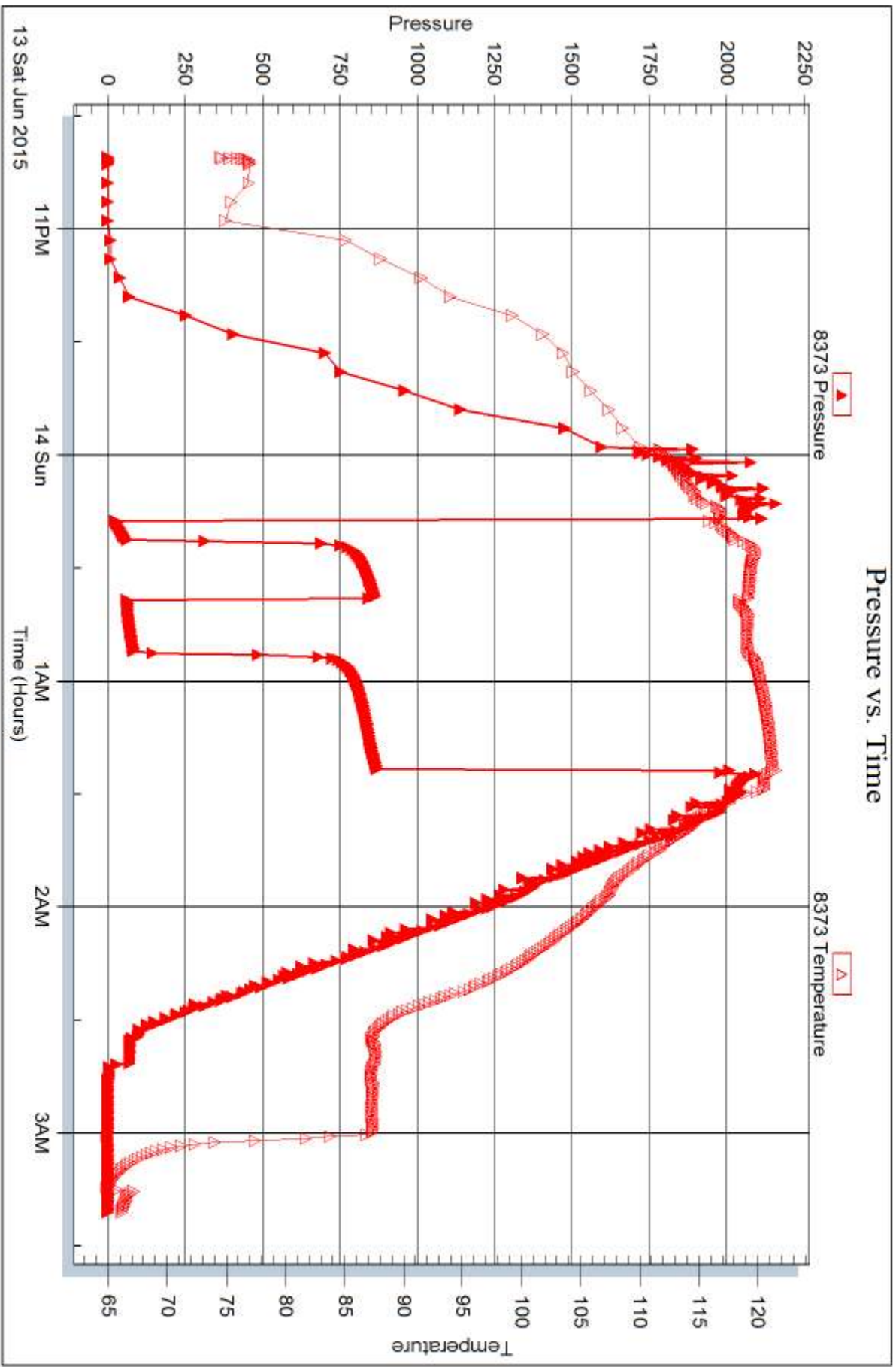
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: 35@60=35







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering Inc**

562 W State Rd 4
Olmitz, KS 67564

ATTN: Rene Husted

Schoef #1-15

15-18s-30w Lane,KS

Start Date: 2015.06.14 @ 16:50:28

End Date: 2015.06.14 @ 21:35:28

Job Ticket #: 61728 DST #: 9

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

Printed: 2015.06.15 @ 13:40:53



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Larson Engineering Inc
 562 W State Rd 4
 Olmitz, KS 67564
 ATTN: Rene Husted

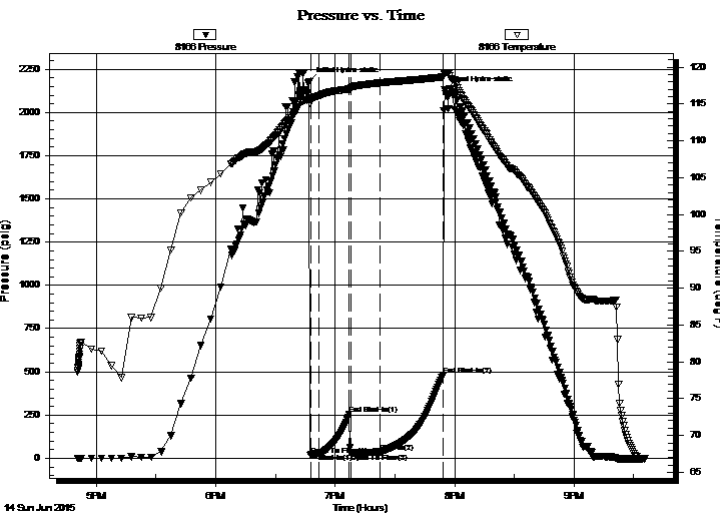
15-18s-30w Lane, KS
Schoef #1-15
 Job Ticket: 61728 **DST#: 9**
 Test Start: 2015.06.14 @ 16:50:28

GENERAL INFORMATION:

Formation: **Pawnee**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 18:47:28
 Time Test Ended: 21:35:28
 Interval: **4410.00 ft (KB) To 4494.00 ft (KB) (TVD)**
 Total Depth: 4494.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Brandon Turley
 Unit No: 79
 Reference Elevations: 2879.00 ft (KB)
 2870.00 ft (CF)
 KB to GR/CF: 9.00 ft

Serial #: 8166 Outside
 Press@RunDepth: 37.55 psig @ 4411.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2015.06.14 End Date: 2015.06.14 Last Calib.: 2015.06.14
 Start Time: 16:50:33 End Time: 21:35:27 Time On Btm: 2015.06.14 @ 18:46:58
 Time Off Btm: 2015.06.14 @ 19:54:58

TEST COMMENT: IF: 1/4" blow built to 1"
 IS: No return.
 FF: 1/4" blow built to 5"
 FS: No return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2180.81	115.87	Initial Hydro-static
1	18.48	115.12	Open To Flow (1)
5	27.24	116.11	Shut-In(1)
20	253.71	117.04	End Shut-In(1)
21	28.97	117.21	Open To Flow (2)
36	37.55	117.88	Shut-In(2)
67	478.36	118.67	End Shut-In(2)
68	2128.89	119.27	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
50.00	gocm 10%g 10%o 80%m	0.25
0.00	134 GIP	0.00

* 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

15-18s-30w Lane,KS

562 W State Rd 4
Olmitz, KS 67564

Schoef #1-15

Job Ticket: 61728

DST#: 9

ATTN: Rene Husted

Test Start: 2015.06.14 @ 16:50:28

Tool Information

Drill Pipe:	Length: 4265.00 ft	Diameter: 3.80 inches	Volume: 59.83 bbl	Tool Weight:	2000.00 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: 124.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose:	75000.00 lb
			<u>Total Volume: 60.44 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	6.00 ft			String Weight: Initial	65000.00 lb
Depth to Top Packer:	4410.00 ft			Final	65000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	84.00 ft				
Tool Length:	111.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Stubb	1.00			4384.00	
Shut In Tool	5.00			4389.00	
Hydraulic tool	5.00			4394.00	
Jars	5.00			4399.00	
Safety Joint	2.00			4401.00	
Packer	5.00			4406.00	27.00 Bottom Of Top Packer
Packer	4.00			4410.00	
Stubb	1.00			4411.00	
Recorder	0.00	8373	Inside	4411.00	
Recorder	0.00	8166	Outside	4411.00	
Perforations	13.00			4424.00	
Change Over Sub	1.00			4425.00	
Drill Pipe	63.00			4488.00	
Change Over Sub	1.00			4489.00	
Bullnose	5.00			4494.00	84.00 Bottom Packers & Anchor

Total Tool Length: 111.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering Inc

15-18s-30w Lane,KS

562 W State Rd 4
Olmitz, KS 67564

Schoef #1-15

Job Ticket: 61728

DST#: 9

ATTN: Rene Husted

Test Start: 2015.06.14 @ 16:50:28

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: 56.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.99 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
50.00	gocm 10%g 10%o 80%m	0.246
0.00	134 GIP	0.000

Total Length: 50.00 ft Total Volume: 0.246 bbl

Num Fluid Samples: 0

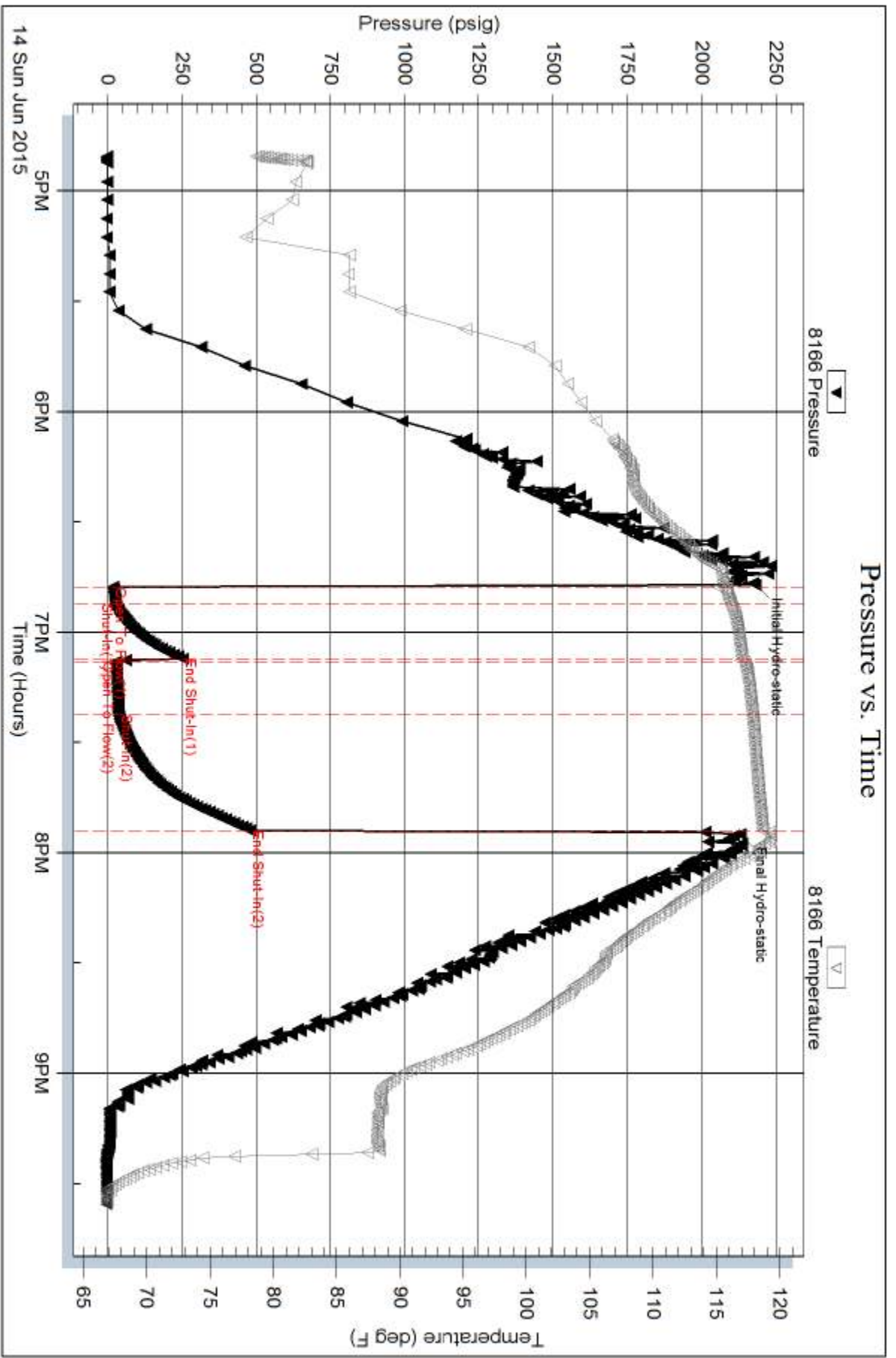
Num Gas Bombs: 0

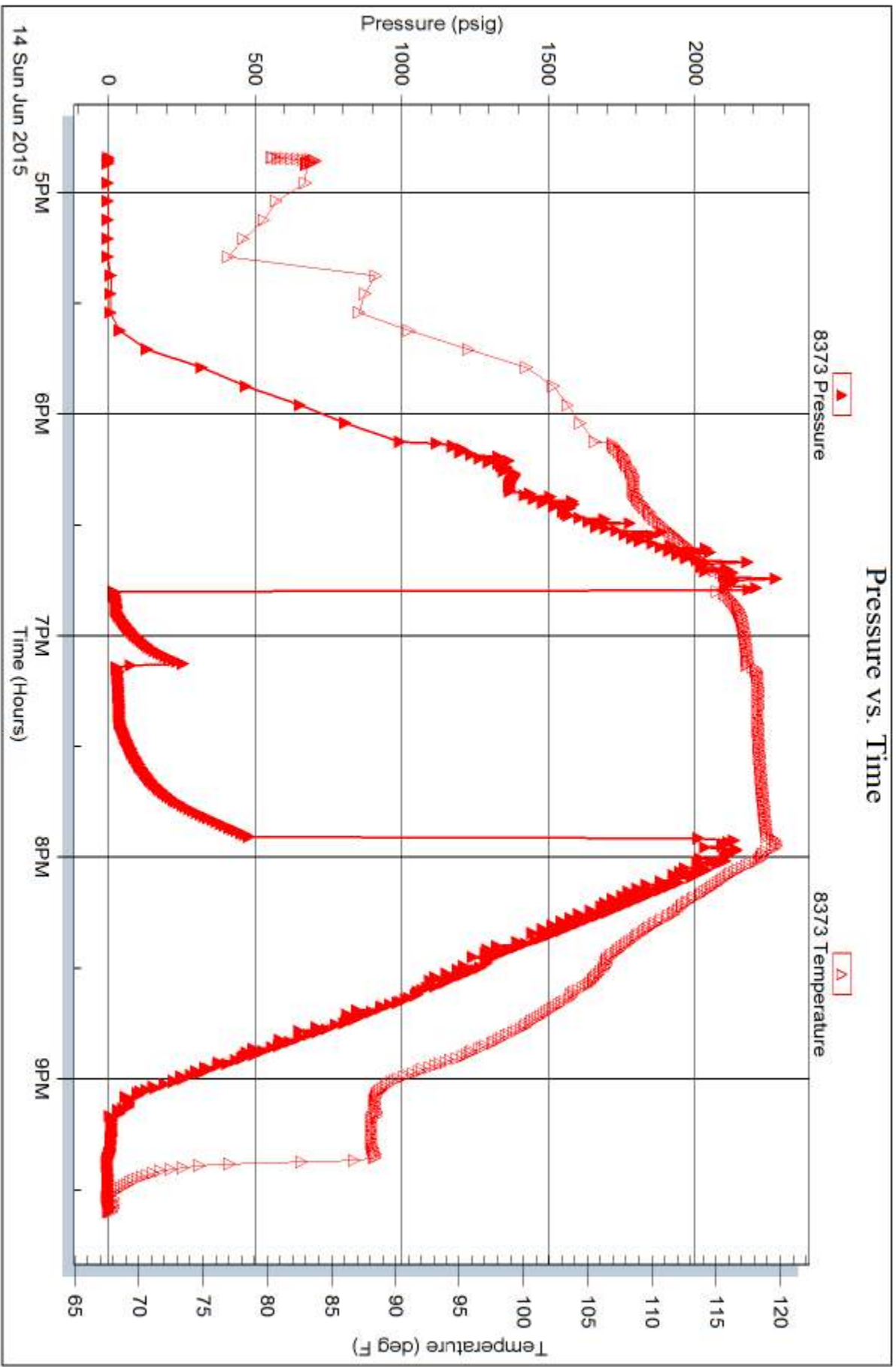
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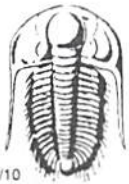
Laboratory Name:

Laboratory Location:

Recovery Comments:







TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 61545

Well Name & No. Schoef # 1-15 Test No. 1 Date 6-9-15
 Company Larson Engineering Inc Elevation 2875 KB 2869 GL
 Address 562 W state rd 4 Olathe, KS 67564
 Co. Rep / Geo. Rein Husted Rig HD #3
 Location: Sec. 15 Twp. 18 Rge. 30 Co. Lare State KS

Interval Tested 4010 4045 Zone Tested E-F
 Anchor Length 35 Drill Pipe Run 3889 Mud Wt. 9.3
 Top Packer Depth 4005 Drill Collars Run 124 Vis 58
 Bottom Packer Depth 4010 Wt. Pipe Run — WL 7.2
 Total Depth 4045 Chlorides 2000 ppm System LCM 1

Blow Description IF: surface blow.
IS: No return.
FF: No blow.
FS: No return.

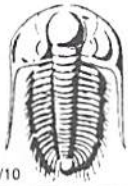
Rec	Feet of	%gas	%oil	%water	%mud
<u>1</u>	<u>Free oil</u>	<u>100</u>			
<u>5</u>	<u>OCM</u>	<u>10</u>		<u>90</u>	

Rec Total 6 BHT 115 Gravity — API RW — @ —°F Chlorides — ppm

(A) Initial Hydrostatic 2020 Test 1150 T-On Location 9:00
 (B) First Initial Flow 19 Jars 250 T-Started 10:43
 (C) First Final Flow 23 Safety Joint 75 T-Open 13:01
 (D) Initial Shut-In 10/6 Circ Sub NIL T-Pulled 14:06
 (E) Second Initial Flow 21 Hourly Standby _____ T-Out 16:00
 (F) Second Final Flow 27 Mileage 44 - 44
 (G) Final Shut-In 10/6 Sampler _____
 (H) Final Hydrostatic 1966 Straddle _____

Ruined Shale Packer _____
 Ruined Packer _____
 Extra Copies _____
 Initial Open 5 Extra Packer _____
 Initial Shut-In 15 Extra Recorder _____
 Final Flow 15 Day Standby _____
 Final Shut-In 30 Accessibility _____
 Sub Total 1519

Approved By J. Rein Husted Our Representative [Signature]
 Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 61546

Well Name & No. Schoef #1-15 Test No. 2 Date 6-10-15
 Company Larson Engineering Elevation 2879 KB 2889 GL
 Address _____
 Co. Rep / Geo. Rene Husted Rig 40#3
 Location: Sec. 15 Twp. 18 Rge. 30 Co. Lane State KS

Interval Tested 4114 4140 Zone Tested H
 Anchor Length 36 Drill Pipe Run 3993 Mud Wt. 9.3
 Top Packer Depth 4109 Drill Collars Run 124 Vis 58
 Bottom Packer Depth 4114 Wt. Pipe Run --- WL 7.2
 Total Depth 4140 Chlorides 20000 ppm System LCM 1

Blow Description IF: 1/4 blow built to 2,
IS: No return,
EF: surface blow built to 5 1/2 in 30 min,
FJ:

Rec	Feet of	%gas	%oil	%water	%mud
<u>20</u>	<u>oil</u>	<u>100</u>			
<u>62</u>	<u>ocm</u>	<u>50</u>		<u>50</u>	
<u>62</u>	<u>ocm</u>	<u>40</u>		<u>60</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 144 BHT 120 Gravity 32 API RW --- @ --- °F Chlorides --- ppm

(A) Initial Hydrostatic 2080 Test 1150
 (B) First Initial Flow 18 Jars 250
 (C) First Final Flow 32 Safety Joint 75
 (D) Initial Shut-In 865 Circ Sub NITE
 (E) Second Initial Flow 37 Hourly Standby _____
 (F) Second Final Flow 74 Mileage 44-44
 (G) Final Shut-In 1007 Sampler _____
 (H) Final Hydrostatic 2033 Straddle _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____

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

Sub Total 1519

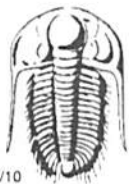
T-On Location 1:45
 T-Started 2:33
 T-Open 4:45
 T-Pulled 6:35
 T-Out 8:40

Comments _____
 Ruined Shale Packer _____
 Ruined Packer _____
 Extra Copies _____
 Sub Total 0
 Total 1519
 MP/DST Disc't _____

Approved By Rene Husted

Our Representative _____

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 61547

Well Name & No. Schoef #1-15 Test No. 3 Date 6-10-15
 Company Larson Engineering Elevation 2879 KB 2870 GL
 Address _____
 Co. Rep / Geo. Rene Husted Rig HD#3
 Location: Sec. 15 Twp. 18 Rge. 30 Co. Lame State KS

Interval Tested 4154 4184 Zone Tested I
 Anchor Length 30 Drill Pipe Run 4013 Mud Wt. 9.4
 Top Packer Depth 4149 Drill Collars Run 124 Vis 56
 Bottom Packer Depth 4154 Wt. Pipe Run _____ WL 7.2
 Total Depth 4184 Chlorides 2100 ppm System LCM 1

Blow Description IF: 4y blow BoB in 4 min.
IS: surface blow built to 1,
FK: BoB in 4 min.
KS: surface blow built to 5 in 30 min.

Rec	Feet of	%gas	%oil	%water	%mud
<u>129</u>	<u>90</u>	<u>10</u>	<u>90</u>		
<u>124</u>	<u>ML90</u>	<u>50</u>	<u>45</u>	<u>5</u>	
<u>186</u>		<u>50</u>	<u>40</u>	<u>10</u>	
	<u>434 GEP</u>				

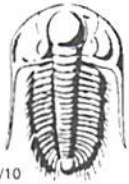
Rec Total 439 BHT 124 Gravity 32 API RW _____ @ _____ °F Chlorides _____ ppm

- (A) Initial Hydrostatic 2030 Test 1150
- (B) First Initial Flow 52 Jars 250
- (C) First Final Flow 97 Safety Joint 75
- (D) Initial Shut-In 1005 Circ Sub NIL
- (E) Second Initial Flow 93 Hourly Standby _____
- (F) Second Final Flow 175 Mileage 44-44
- (G) Final Shut-In 996 Sampler _____
- (H) Final Hydrostatic 2021 Straddle _____

Initial Open 5 Shale Packer _____
 Initial Shut-In 15 Extra Packer _____
 Final Flow 15 Extra Recorder _____
 Final Shut-In 30 Day Standby _____
 Accessibility _____

Sub Total 1519 MP/DST Disc't _____
 Approved By Rene Husted Our Representative _____

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 61548

Well Name & No. Schoof 1-15 Test No. 4 Date 6-11-15
 Company Larson Engineering Elevation 2879 KB 2870 GL
 Address _____
 Co. Rep / Geo. Rene Husted Rig HD #3
 Location: Sec. 15 Twp. 18 Rge. 30 Co. Larve State KS

Interval Tested 4182 4198 Zone Tested J
 Anchor Length 16 Drill Pipe Run 4645 Mud Wt. 9.4
 Top Packer Depth 4177 Drill Collars Run 124 Vis 56
 Bottom Packer Depth 4182 Wt. Pipe Run — WL 7.2
 Total Depth 4198 Chlorides 2100 ppm System LCM 1

Blow Description IF: 1/4 blow built to 3/4.
IS: NO return.
FF: surface blow built to 1 in 30 min.
FS: NO return.

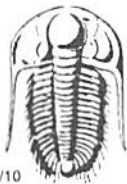
Rec	Feet of	%gas	%oil	%water	%mud
<u>20</u>	<u>ocm</u>	<u>5</u>		<u>95</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 20 BHT 115 Gravity — API RW — @ — °F Chlorides — ppm
 (A) Initial Hydrostatic 2095 Test 1150
 (B) First Initial Flow 14 Jars 250
 (C) First Final Flow 18 Safety Joint 75
 (D) Initial Shut-In 733 Circ Sub NIL
 (E) Second Initial Flow 18 Hourly Standby _____
 (F) Second Final Flow 36 Mileage 44 44
 (G) Final Shut-In 731 Sampler _____
 (H) Final Hydrostatic 2037 Straddle _____

Initial Open 5 Ruined Shale Packer _____
 Initial Shut-In 15 Ruined Packer _____
 Final Flow 30 Extra Packer _____
 Final Shut-In 60 Extra Recorder _____
 Sub Total 0 Day Standby _____
 Total 1519 Accessibility _____
 Sub Total 1519 MP/DST Disc't _____

Approved By [Signature] Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 61549

Well Name & No. Schoef 1-15 Test No. 5 Date 6-11-15
 Company Larson Engineering Elevation 2879 KB 2870 GL
 Address _____
 Co. Rep / Geo. Berre Husted Rig HD #3
 Location: Sec. 15 Twp. 18 Rge. 30 Co. LAME State KS

Interval Tested 4211 4225 Zone Tested K
 Anchor Length _____ Drill Pipe Run 4078 Mud Wt. 9.2
 Top Packer Depth _____ Drill Collars Run 124 Vis 52
 Bottom Packer Depth 4211 Wt. Pipe Run _____ WL 7.2
 Total Depth 4225 Chlorides 2300 ppm System LCM 1

Blow Description IF: 1/4 blow built to 1 1/2,
IS: No return,
FF: surface blow built to 3,
FS: No return.

Rec	Feet of	%gas	%oil	%water	%mud
<u>60</u>	<u>oil</u>	<u>100</u>			
<u>62</u>	<u>OCM</u>	<u>10</u>		<u>90</u>	
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

Rec Total 122 BHT 118 Gravity 33 API RW - @ - °F Chlorides _____ ppm

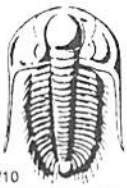
- (A) Initial Hydrostatic 2060 Test 1150
- (B) First Initial Flow 16 Jars 250
- (C) First Final Flow 28 Safety Joint 75
- (D) Initial Shut-In 727 Circ Sub N/C
- (E) Second Initial Flow 34 Hourly Standby _____
- (F) Second Final Flow 63 Mileage 44-44
- (G) Final Shut-In 714 Sampler _____
- (H) Final Hydrostatic 2046 Straddle _____
- Initial Open 5 Shale Packer _____
- Initial Shut-In 15 Extra Packer _____
- Final Flow 15 Extra Recorder _____
- Final Shut-In 30 Day Standby _____
- Accessibility _____

T-On Location 22:20
 T-Started 22:40
 T-Open 00:21
 T-Pulled 1:26
 T-Out 3:10

Comments _____
 Ruined Shale Packer _____
 Ruined Packer _____
 Extra Copies _____
 Sub Total 0
 Total 1519
 MP/DST Disc't _____

Approved By J. Husted Our Representative [Signature]
 Sub Total 1519

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 61550

Well Name & No. School 1-15 Test No. 6 Date 6-12-15
 Company Larson Engineering Elevation 2879 KB 2870 GL
 Address _____
 Co. Rep / Geo. Rene Husted Rig HD#3
 Location: Sec. 15 Twp. 18 Rge. 30 Co. Lmc State KS

Interval Tested 4249 4261 Zone Tested Middle creek
 Anchor Length _____ Drill Pipe Run 4108 Mud Wt. 9.2
 Top Packer Depth _____ Drill Collars Run 124 Vis 45
 Bottom Packer Depth _____ Wt. Pipe Run _____ WL 8.0
 Total Depth 4261 Chlorides 3400 ppm System LCM 1
 Blow Description IF: 1" blow built to 8 in 5 min.
IS: surface blow built to 1,
FF: BoB in 8 min.
FS: surface built to 2 in 30 min.

Rec	Feet of	%gas	%oil	%water	%mud
<u>134</u>	<u>90</u>	<u>30</u>	<u>70</u>		
<u>62</u>	<u>mc90</u>	<u>10</u>	<u>80</u>	<u>10</u>	
<u>62</u>	<u>90cm</u>	<u>10</u>	<u>30</u>	<u>60</u>	
Rec	Feet of <u>186 GIP</u>	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 258 BHT 123 Gravity 35 API RW _____ @ _____ ° F Chlorides _____ ppm

(A) Initial Hydrostatic 2088 Test 1150
 (B) First Initial Flow 35 Jars 250
 (C) First Final Flow 61 Safety Joint 75
 (D) Initial Shut-In 744 Circ Sub NIL
 (E) Second Initial Flow 73 Hourly Standby _____
 (F) Second Final Flow 103 Mileage 44-44
 (G) Final Shut-In 729 Sampler _____
 (H) Final Hydrostatic 2049 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 1519

T-On Location 12:20
 T-Started 12:55
 T-Open 14:25
 T-Pulled 15:30
 T-Out 17:15

Comments _____
 Ruined Shale Packer _____
 Ruined Packer _____
 Extra Copies _____
 Sub Total 0
 Total 1519
 MP/DST Disc't _____

Approved By [Signature] Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 61726

Well Name & No. Schoef 1-15 Test No. 7 Date 6-13-15
 Company Larson Engineering Elevation 2879 KB 2870 GL
 Address _____
 Co. Rep / Geo. Rene Husterd Rig HD #3
 Location: Sec. 15 Twp. 18 Rge. 30 Co. Lane State KS

Interval Tested 4262 4273 Zone Tested L
 Anchor Length _____ Drill Pipe Run 4141 Mud Wt. 9.2
 Top Packer Depth 4257 Drill Collars Run 124 Vis 45
 Bottom Packer Depth 4262 Wt. Pipe Run _____ WL 8.0
 Total Depth 4273 Chlorides 3400 ppm System LCM 1

Blow Description IF: BoB in 30 sec.
IS: surface blow built to 2,
FF: BoB in 30 sec.
FS: surface blow built to 2,

Rec	Feet of	%gas	%oil	%water	%mud
<u>536</u>	<u>90</u>	<u>15</u>	<u>85</u>		
<u>372</u>	<u>90</u>	<u>30</u>	<u>70</u>		
<u>310</u>	<u>1490</u>	<u>30</u>	<u>65</u>		<u>5</u>
<u>186</u>	<u>90CM</u>	<u>20</u>	<u>30</u>		<u>50</u>
Rec	Feet of <u>341 GIP</u>	%gas	%oil	%water	%mud

Rec Total 1404 BHT 127 Gravity 28 API RW _____ @ _____ ° F Chlorides _____ ppm

- (A) Initial Hydrostatic 2071 Test 1150
- (B) First Initial Flow 348 Jars 250
- (C) First Final Flow 405 Safety Joint 75
- (D) Initial Shut-In 655 Circ Sub _____
- (E) Second Initial Flow 434 Hourly Standby _____
- (F) Second Final Flow 566 Mileage 44 44
- (G) Final Shut-In 656 Sampler _____
- (H) Final Hydrostatic 2040 Straddle _____
- Shale Packer _____
- Extra Packer _____
- Extra Recorder _____
- Day Standby _____
- Accessibility _____

T-On Location 1:50
 T-Started 2:30
 T-Open 4:30
 T-Pulled 5:35
 T-Out 8:40

Comments _____
 Ruined Shale Packer _____
 Ruined Packer _____
 Extra Copies _____
 Sub Total 0
 Total 1519
 MP/DST Disc't _____

Initial Open 5
 Initial Shut-In 15
 Final Flow 15
 Final Shut-In 30
 Sub Total 1519

Approved By Rene Husterd Our Representative _____

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 61727

Well Name & No. Schoef 1-15 Test No. 8 Date 6-13-15
 Company Larson Engineering Elevation 2879 KB 2870 GL
 Address _____
 Co. Rep / Geo. Rene Husted Rig HP #3
 Location: Sec. 15 Twp. 18 Rge. 30 Co. Lawe State KS

Interval Tested 4300 4384 Zone Tested Plc.anton - Mxmaton
 Anchor Length _____ 84 Drill Pipe Run 4169 Mud Wt. 8.8
 Top Packer Depth _____ 4295 Drill Collars Run 124 Vis 58
 Bottom Packer Depth _____ 4300 Wt. Pipe Run _____ WL 8.0
 Total Depth _____ 4384 Chlorides 2600 ppm System LCM /
 Blow Description IF: 1" blow built to 3 1/2.
IS: No return.
IF: 1/4 blow BoB in 12 min.
FS: surface blow built to 1.

Rec	Feet of	%gas	%oil	%water	%mud
<u>62</u>	<u>90</u>	<u>5</u>	<u>95</u>		
<u>124</u>	<u>90CM</u>	<u>5</u>	<u>10</u>		<u>85</u>
	<u>186 GIP</u>				

Rec Total 186 BHT 120 Gravity 35 API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2109 Test 1150
 (B) First Initial Flow 23 Jars 250
 (C) First Final Flow 50 Safety Joint 75
 (D) Initial Shut-In 860 Circ Sub NIC
 (E) Second Initial Flow 59 Hourly Standby _____
 (F) Second Final Flow 80 Mileage 44 44
 (G) Final Shut-In 866 Sampler _____
 (H) Final Hydrostatic 2090 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 1519

T-On Location 21:50
 T-Started 22:40
 T-Open 00:15
 T-Pulled 1:10
 T-Out 3:20

Comments _____
 Ruined Shale Packer _____
 Ruined Packer _____
 Extra Copies _____
 Sub Total 0
 Total 1519
 MP/DST Disc't _____

Approved By Rene Husted Our Representative [Signature]
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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 61728

Well Name & No. Schoef 1-15 Test No. 9 Date 6-13-15
 Company Larson Engineering Elevation 2879 KB 2870 GL
 Address _____
 Co. Rep / Geo. Rene Husted Rig HD #3
 Location: Sec. 15 Twp. 18 Rge. 30 Co. Lane State KS

Interval Tested 4410 4494 Zone Tested Pawnee
 Anchor Length _____ 84 Drill Pipe Run 4265 Mud Wt. 9.2
 Top Packer Depth _____ 4405 Drill Collars Run 124 Vis 56
 Bottom Packer Depth _____ 4410 Wt. Pipe Run _____ WL 8.0
 Total Depth _____ 4494 Chlorides 2500 ppm System LCM 1
 Blow Description IF: 1/4 blow built to 1.
IS: NO return.
FF: 1/4 blow built to 5.
FS: NO return.

Rec	Feet of	%gas	%oil	%water	%mud
<u>50</u>	<u>90cm</u>	<u>10</u>	<u>10</u>	<u>80</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 50 BHT 118 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2180 Test 1150 T-On Location 16:15
 (B) First Initial Flow 18 Jars 250 T-Started 16:50
 (C) First Final Flow 27 Safety Joint 75 T-Open 18:47
 (D) Initial Shut-In 253 Circ Sub N/C T-Pulled 19:52
 (E) Second Initial Flow 28 Hourly Standby _____ T-Out 21:35
 (F) Second Final Flow 37 Mileage 44-44 Comments _____
 (G) Final Shut-In 478 Sampler _____
 (H) Final Hydrostatic 2128 Straddle _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____

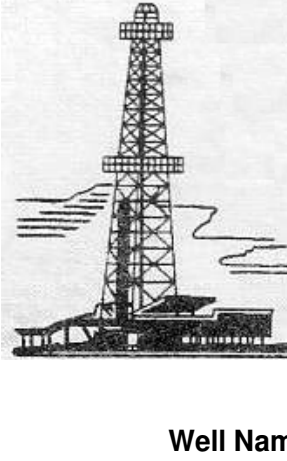
Initial Open 5
 Initial Shut-In 15
 Final Flow 15
 Final Shut-In 30

Sub Total 1519
 Sub Total 0
 Total 1519
 MP/DST Disc't _____

Approved By Rene Husted

Our Representative _____

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WELLSITE GEOLOGIST'S REPORT

RENE HUSTEAD
CONSULTANT GEOLOGIST



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

Well Name: **SCHOEPF #1-15**
 Location: **NE NW SE NW SEC. 15-18S-30W**
 Licence Number: **API: 15-101-22564**
 Spud Date: **June 4, 2015**
 Surface Coordinates: **1648' FNL & 1714' FWL**

Region: **Lane Co., KS**
 Drilling Completed: **June 15, 2015 Oil**

Bottom Hole Coordinates: **VERTICAL**
 Ground Elevation (ft): **2870'** K.B. Elevation (ft): **2879'**
 Logged Interval (ft): **3800'** To: **4600'** Total Depth (ft): **4600'**
 Formation: **Mississippi**
 Type of Drilling Fluid: **Chemical Premix (Displaced)**

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

OPERATOR:

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

DRILLING CONTRACTOR:

H. D. Drilling, LLC, Rig #3 (Co. Tools)

DP 4.5" XH (16.6#); DC 6-1/4" x 2-3/8" x 556', Kelly 40.30', Tool Joint 5.5" ; Bit: JZ-HA20Q, 7-7/8", standard jets 15-15-15; rpm 80, WOB 35k; Kelly Bushing 9' above ground level; LeWayne "Lew" Tresner (tool pusher).

CASING:

Set 8-5/8" casing at 255.51'
 Set 5-1/2" production casing at 4600'

CIRCULATION SYSTEM:

Continental EMSCO D-300, duplex, 6 x 14, 60-62 spm, Chemical, premix, earth pits, Mud Co/ Service Mud Inc, Jason Whiting

OPEN HOLE LOGS:

DN, DI (SP) (Run-1); ML (Run-2); No Sonic; 5" detail LTD-3600; 2" DI to surface casing; LogTech-Pioneer Wireline, Hays, KS, Jerrod Long, Log total depth (4600') was equal to rotary total depth (4600').

ROP (min/ft)	DST	Lithology	Depth	Geological Descriptions	Total Gas
0			3800	LS-CRM/GRY-F-XLN-FOSS-TR GLAU-HD-DNS W/ CHRT-OFF WHT-OPQ-FRSH	JUNE 7, 2015
0			3850	SH-BLK-CARB LS-CRM-F-GRN-BRIT-V-SM OOL-PR TO FR SM OOL-MOLDIC POR-NO VIS FLOR-NO VIS CUT LS-TN-F-GRN-BRIT-SHLY IP-TR PR INTER-GRN POR-NO VIS FLOR-NO VIS CUT LS-CRM-V-F-GRN-BRIT-SLI CHLKY-SM OOL AND FOSS FRAGS-V-DULL YEL/WHT MIN FLOR W/ CHRT-OFF WHT-FRSH-OPQ SH-GRY-GRN-SPLNTY SH-GRY-GRN-SPLNTY LS-CRM-F-GRN-CHLKY-TR FOSS-TR SH LT GRY IMBD-SCATT DULL WHT FLOR LS-CRM-F-GRN-BRIT-SM OOL-PR TO FR OOL-MOLDIC POR-NO VIS FLOR LS A.A. LS-CRM-F-GRN-BRIT-SH DK GRY DISS THRU-FOSS FRAGS-TR DULL YEL FLOR-NO VIS CUT	MUD DATA AT 3800' WT. 8.9 VIS 50 LCM 2#
0			3900	HEEBNER 3899' (-1020') SH-BLK-CARB LS-LT BRN-F-GRN-HD-FOSS FRAGS-DNS-NO VIS FLOR LS-OFF WHT-V-F-XLN-BRIT-SLI CHLKY IP-SCATT WHT FLOR-NO VIS CUT-N/S LS-OFF WHT-F-XLN-BRIT-CHLKY IP-BRITE WHT FLOR-NO VIS CUT-N/S	
0			3950	LANSING/KC 3937' (-1058') SH-GRY/GRN-SPLNTY-SILTY LS-CRM/LT GRY-V-F-XLN-FOSS-TR GLAU-HD-DNS W/ CHRT-OFF WHT-OPQ-FRSH LS-OFF WHT-F-XLN-BRIT-DNS-TR SM PYR XLS IMBD-DULL YEL/WHT MIN FLOR SH-GRY-SPLNTY AND LS-CRM-F-XLN-OOL-HD-DNS-BRITE WHT FLOR-NO VIS CUT W/ CHRT-GRY-FOSS-OPQ-FRSH LS-CRM/GRY-F-XLN-BRIT-CHLKY IP-TR FOSS-PR PP AND ISO VUG POR-SCATT YEL FLOR-NO VIS CUT-N/S LS-TN-F-XLN-BRIT-FR INTER-GRN/SM VUG POR-TR DK BRN STN-NO VIS FLOR-NO VIS CUT-NO ODOR W/ CHRT-GRY-TRANS-FRSH SH-RED-SILTY	STRAP=3491.94 BOARD=3450.07 LONG TO THE BOARD = 1.87' LONG
0			4000	LS-OFF WHT-F-XLN-MSTLY DNS W/ TR SM VUG POR-BRITE YEL FLOR-NO VIS CUT-N/S SH-GRY-PLATY-SILTY W/ PYR XLS LS-OFF WHT-F-XLN-OOL-PR PP POR-NO VIS SHOW LS-CRM-F-XLN-OOL-TR PP POR-SLI TR LT BRN STN-SPOTTED FLOR-GD FLSH CUT WHEN CRUSHED-GD ODOR LS-CRM-F-XLN-OOL-FR INTER-XLN-AND SM VUG POR-LT BRN STN-SPOTTED YEL FLOR-FR STRM CUT-GD ODOR SH-GRY/GRN-SFT-GUMMY W/ LS-TN-F-XLN-OOL-HD-DNS POOR SAMPLES LS-TN-F-XLN-BRIT-OOL-PR TO FR OOL-MOLDIC POR-NO SHOW LS-TN-F-XLN-TR FOSS-HD-DNS W/ CHLK IN TRAY LS A.A. W/ CHLK AND CHRT-GRY-OPQ-FRSH IN TRAY LS-CRM-F-XLN-FOSS IP-HD-DNS W/ CHRT-OFF WHT-OPQ-FRSH SOME CHLK IN TRAY	DST #1 4010-4045 REC-1 FT OIL AND FT OCM 10% OIL/90% MUD 5' IF-SURFACE IS-NO RETURN FF-NO BLW FS-NO RETURN SIP-1016.46-1016.84 IF-19.24-23.05 FF-21.09-27.24 HP-2020.03-1966.76
0			4050	LS-OFF WHT-F-XLN-MSTLY DNS W/ TR SM VUG POR-BRITE YEL FLOR-NO VIS CUT-N/S SH-GRY-PLATY-SILTY W/ PYR XLS LS-OFF WHT-F-XLN-OOL-PR PP POR-NO VIS SHOW LS-CRM-F-XLN-OOL-TR PP POR-SLI TR LT BRN STN-SPOTTED FLOR-GD FLSH CUT WHEN CRUSHED-GD ODOR LS-CRM-F-XLN-OOL-FR INTER-XLN-AND SM VUG POR-LT BRN STN-SPOTTED YEL FLOR-FR STRM CUT-GD ODOR SH-GRY/GRN-SFT-GUMMY W/ LS-TN-F-XLN-OOL-HD-DNS POOR SAMPLES LS-TN-F-XLN-BRIT-OOL-PR TO FR OOL-MOLDIC POR-NO SHOW LS-TN-F-XLN-TR FOSS-HD-DNS W/ CHLK IN TRAY LS A.A. W/ CHLK AND CHRT-GRY-OPQ-FRSH IN TRAY LS-CRM-F-XLN-FOSS IP-HD-DNS W/ CHRT-OFF WHT-OPQ-FRSH SOME CHLK IN TRAY	JUNE 8 2015
0			4100	SH-BLK-CARB LS-GRY/TN MOTT-F-XLN-HD-DNS MUNCIE CREEK 4117' (-1238') SH-BLK-CARB LS-GRY/TN-F-XLN-HD-DNS W/ CHRT-GRY-OPQ-FRSH LS-CRM-F-XLN/GRN-BRIT-CHLKY-V-SM FOSS FRAGS IP-V LT BRN STN-BRITE YEL FLOR-GD FLSH CUT UPON CRUSHING-GD ODOR-CHRT-GRY-OPQ-FRSH IN TRAY LS-CRM-F-XLN/GRN-BRIT-CHLKY IP-BRITE YEL FLOR-TR FLSH CUT WHEN CRSHED-GD ODOR LS-CRM-V-F-GRN-BRIT-SM FOSS FRAGS-PR INTER-XLN/GRN POR-BRITE YEL FLOR-FR FLSH CUT WHEN CRSHED-GD ODOR-SSFO LS-LT BRN-V-F-XLN-BRIT TO HD-TR FOSS-TR PR INTER-XLN POR-V-LT BRN STN-FR FLSH CUT WHEN CRUSHED-V-FNT ODOR LS-LT BRN-V-F-XLN-HD-FOSS-SH-DK BRN IMBD IP-TR BRITE YEL FLOR-NO VIS SHOW LS-TN-F-XLN-V-OOL-FOSS-PR INTER-PRT POR-LT BRN STN-GD FLSH CUT WHEN CRUSHED-GD ODOR-SSFO LS-TN-GRY-F-XLN-FOSS-FR VUG POR-LT BRN STN-SPOTTED GLD FLOR-GD STRM CUT-GD ODOR SH-BLK-BLKY-WAXEY LS-CRM-M-XLN-LG OOL-GD INTER-PRT POR-LT BRN STN-SCATT YEL GLD STN-GD-STRM CUT-STRNG ODOR LS-CRM-F-XLN-OOL-GD OOL-MOLDIC POR-TR LT BRN STN-SCATT YEL GLD FLOR-NO VIS CUT LS-TN-F-GRN/XLN-HD-DNS V-DULL YEL FLOR-NO VIS CUT W/ PYR XLS IN TRAY	STRAP=3491.94 BOARD=3450.07 LONG TO THE BOARD = 1.87' LONG DST #1 4010-4045 REC-1 FT OIL AND FT OCM 10% OIL/90% MUD 5' IF-SURFACE IS-NO RETURN FF-NO BLW FS-NO RETURN SIP-1016.46-1016.84 IF-19.24-23.05 FF-21.09-27.24 HP-2020.03-1966.76
0			4150	SH-BLK-CARB LS-GRY/TN MOTT-F-XLN-HD-DNS MUNCIE CREEK 4117' (-1238') SH-BLK-CARB LS-GRY/TN-F-XLN-HD-DNS W/ CHRT-GRY-OPQ-FRSH LS-CRM-F-XLN/GRN-BRIT-CHLKY-V-SM FOSS FRAGS IP-V LT BRN STN-BRITE YEL FLOR-GD FLSH CUT UPON CRUSHING-GD ODOR-CHRT-GRY-OPQ-FRSH IN TRAY LS-CRM-F-XLN/GRN-BRIT-CHLKY IP-BRITE YEL FLOR-TR FLSH CUT WHEN CRSHED-GD ODOR LS-CRM-V-F-GRN-BRIT-SM FOSS FRAGS-PR INTER-XLN/GRN POR-BRITE YEL FLOR-FR FLSH CUT WHEN CRSHED-GD ODOR-SSFO LS-LT BRN-V-F-XLN-BRIT TO HD-TR FOSS-TR PR INTER-XLN POR-V-LT BRN STN-FR FLSH CUT WHEN CRUSHED-V-FNT ODOR LS-LT BRN-V-F-XLN-HD-FOSS-SH-DK BRN IMBD IP-TR BRITE YEL FLOR-NO VIS SHOW LS-TN-F-XLN-V-OOL-FOSS-PR INTER-PRT POR-LT BRN STN-GD FLSH CUT WHEN CRUSHED-GD ODOR-SSFO LS-TN-GRY-F-XLN-FOSS-FR VUG POR-LT BRN STN-SPOTTED GLD FLOR-GD STRM CUT-GD ODOR SH-BLK-BLKY-WAXEY LS-CRM-M-XLN-LG OOL-GD INTER-PRT POR-LT BRN STN-SCATT YEL GLD STN-GD-STRM CUT-STRNG ODOR LS-CRM-F-XLN-OOL-GD OOL-MOLDIC POR-TR LT BRN STN-SCATT YEL GLD FLOR-NO VIS CUT LS-TN-F-GRN/XLN-HD-DNS V-DULL YEL FLOR-NO VIS CUT W/ PYR XLS IN TRAY	DST #2 4114'-4140' REC-62 FT OCM-40% OIL AND 60% MUD 62 FT OCM 50% OIL AND 50% MUD 20 FT OIL IF-1/4 IN BLW BLT TO 2/NO BLWBK FF-SURF BLW 5 1/2 INCHES IN 30 MIN SIP-865.29-1007.41 IF-18.43-32.25 FF-37.64-74.51 HP-2080.81-2033.72
0			4200	LS-LT BRN-V-F-XLN-BRIT TO HD-TR FOSS-TR PR INTER-XLN POR-V-LT BRN STN-FR FLSH CUT WHEN CRUSHED-V-FNT ODOR LS-LT BRN-V-F-XLN-HD-FOSS-SH-DK BRN IMBD IP-TR BRITE YEL FLOR-NO VIS SHOW LS-TN-F-XLN-V-OOL-FOSS-PR INTER-PRT POR-LT BRN STN-GD FLSH CUT WHEN CRUSHED-GD ODOR-SSFO LS-TN-GRY-F-XLN-FOSS-FR VUG POR-LT BRN STN-SPOTTED GLD FLOR-GD STRM CUT-GD ODOR SH-BLK-BLKY-WAXEY LS-CRM-M-XLN-LG OOL-GD INTER-PRT POR-LT BRN STN-SCATT YEL GLD STN-GD-STRM CUT-STRNG ODOR LS-CRM-F-XLN-OOL-GD OOL-MOLDIC POR-TR LT BRN STN-SCATT YEL GLD FLOR-NO VIS CUT LS-TN-F-GRN/XLN-HD-DNS V-DULL YEL FLOR-NO VIS CUT W/ PYR XLS IN TRAY	DST #3 4114'-4140' REC-62 FT OCM-40% OIL AND 60% MUD 62 FT OCM 50% OIL AND 50% MUD 20 FT OIL IF-1/4 IN BLW BLT TO 2/NO BLWBK FF-SURF BLW 5 1/2 INCHES IN 30 MIN SIP-865.29-1007.41 IF-18.43-32.25 FF-37.64-74.51 HP-2080.81-2033.72
0			4250	STARK SH 4214' (-1335') LS-DK BRN-F-XLN-W/ CRS XLN POR-TR FREE CRYSTALS-LT BRN STN-SPOTTED YEL GLD FLOR-GD CUT-GD ODOR LS-CRM-F-XLN-W/ ABUNDNT CHLK IN TRAY-NO VIS FLOR-NO VIS CUT-FNT ODOR LS-TN-F-XLN-W/CHLK IN TRAY-TR SPOTTED FLOR TO MSTLY NO FLOR-NO VIS CUT-V-FNT ODOR LS-TN-F-XLN-TR PYR-HD-DNS HUSH SH 4253' (-1374') SH-BLK-CARB LS-DK BRN-F-XLN-W/ GD CRS XLN VUG POR-BRN STN-SPOTTED YEL GLD FLOR-GD STRM CUT-GD ODOR LS-CRM-GRY-F-XLN-TR V-SM XLN AND PP POR-BRN STN-PR DELAYED CUT-V-FNT ODOR LS-CRM-F-XLN W/M-XLN SM VUG POR-BRN STN-GD STRM CUT-GD ODOR LS-TN-F-XLN-TR PYR IMBD-TR ISO VUG POR-LT BRN STN-TR SPOTTED FLOR IP TO NO FLOR-PR FLSH CUT-FNT ODOR -ABUNDNT FLOR-CHLK IN TRAY	DST #4 4182 FT-4198 FT REC-20 FT OCM 5% OIL/95% MUD IF-BLW BLT TO 3/4 INCHES NO BLWBK FF-SURF BLW BLT TO 1 INCH IN 30 MIN SIP-733.36-731.17 IF-14.97-18.34 FF-18.99-31.86 HP-2095.01-2037.31
0			4300	STARK SH 4214' (-1335') LS-DK BRN-F-XLN-W/ CRS XLN POR-TR FREE CRYSTALS-LT BRN STN-SPOTTED YEL GLD FLOR-GD CUT-GD ODOR LS-CRM-F-XLN-W/ ABUNDNT CHLK IN TRAY-NO VIS FLOR-NO VIS CUT-FNT ODOR LS-TN-F-XLN-W/CHLK IN TRAY-TR SPOTTED FLOR TO MSTLY NO FLOR-NO VIS CUT-V-FNT ODOR LS-TN-F-XLN-TR PYR-HD-DNS HUSH SH 4253' (-1374') SH-BLK-CARB LS-DK BRN-F-XLN-W/ GD CRS XLN VUG POR-BRN STN-SPOTTED YEL GLD FLOR-GD STRM CUT-GD ODOR LS-CRM-GRY-F-XLN-TR V-SM XLN AND PP POR-BRN STN-PR DELAYED CUT-V-FNT ODOR LS-CRM-F-XLN W/M-XLN SM VUG POR-BRN STN-GD STRM CUT-GD ODOR LS-TN-F-XLN-TR PYR IMBD-TR ISO VUG POR-LT BRN STN-TR SPOTTED FLOR IP TO NO FLOR-PR FLSH CUT-FNT ODOR -ABUNDNT FLOR-CHLK IN TRAY	DST #5 4211'-4225' REC-60 FT OIL/62 FT OCM 10% OIL + 90% MUD FF-SURF BLW BLT TO 1 1/2 INCHES NO BLWBK FF-SURF BLW BLT TO 3 INCHES NO BLWBK SIP-1515.30 SIP-727.17-714.51 IF-16.77-28.65 FF-34.2-63.73 HP-2060.8-2046.52
0			4350	B/KC 4302' (-1423') LS-TN-GRY MOTT-F-XLN-TR CRS XLN, SM VUG AND PP POR-LT BRN STN WHEN DRIED-NO VIS FLOR-GD STRM CUT-FNT ODOR LS-TN-F-XLN-HD-DNS W/ 1 PC CRS XLN POR-LT BRN STN-SPOTTED FLOR-FLSH CUT-FNT ODOR LS-TN-F-XLN-FOSS-HD-DNS IN TRAY 4 PC-SM EDGE XLS POR-LT BRN STN-SPOTTED FLOR-STRM CUT FNT ODOR LS-DK BRN-F-XLN-HD-DNS SM PYR XLS IMBD SH-BLK-CARB MARMATON 4358' (-1479) SH-GRY-BLKY LS-CRM-F-XLN-FOSS-OOL-PR-INTER-XLN AND SM VUG POR-NO VIS FLOR-NO VIS CUT-NO ODOR LS-TN-F-XLN-CHALKY-HD-DNS W/ NO VIS POR-BRITE YEL FLOR-GD STRM CUT-W/ TR CHRT-RED-OPQ-FRSH IN TRAY SH-LT BLU-BLKY-LMY LS-OFF WHT-F-XLN-OOL-CHLKY IP-HD-DNS W/ CHRT-RED-OPQ IMBD IP LS-TN-GRY-F-XLN-FOSS-SH-LT BRN IMBD-TR YEL FLOR-NO VIS CUT-NO ODOR LS-OFF WHT-F-XLN-OOL-NO VIS FLOR-NO VIS SHOW PAWNEE 4420' (-1541) LS-CRM-F-XLN-FR EDGE VUG AND PP POR-BRITE YEL FLOR-GD STRM CUT-WITH CHRT-RED-OPQ-FRSH IN TRAY LS-OFF WHT-F-XLN-FOSS-CHLKY-TR ISO VUG POR-BRITE WHT FLOR-LT BRN STN-GD FLSH CUT-TR CHRT-BRN-TRANS-FOSS-FRSH LS-OFF WHT-F-XLN-CHLKY IP-SM PYR XLS IMBD IP-TR INTER-XLN-PP POR-DULL YEL FLOR-TR LT BRN STN-GD STRM CUT SH-BLK-CARB MYRICK STATION 4452' (-1573') LS-DK BRN-F-XLN-HD-DNS LS-OFF WHT-F-XLN-CHLKY-TR DK BLK SH IMBD IP-DULL WHT MIN FLOR-NO VIS SHOW LS-BLK-CARB W/ PYR XLS IMBD FORT SCOTT 4470' (-1591') LS-TN-V-F-XLN-HD-DNS LS-TN-F-XLN-V-OOL-TR INTER-PRT POR-DK BLK STN-NO VIS FLOR-GD STRM CUT-GD ODOR W/ CHRT-GRY-OPQ-FRSH LS-GRY-F-XLN-CHLKY IP-PR-PP POR-LT BRN STN-NO VIS FLOR-PR FLSH CUT-FNT ODOR LS-TN-F-XLN-W/ PP AND SM VUG POR-LT BRN STN-SPOTTED YEL GLD FLOR-PR-FLSH CUT-FNT ODOR LS-TN-F-XLN-HD-TR FOSS FRAGS-SM PYR XLS IMBD IP-DNS -W/ CHRT-OFF WHT-TRANS-OOL-FRSH LS-TN-GRY-F-XLN-HD-DNS LS-OFF WHT-F-XLN-HD-DNS LS-OFF WHT-F-XLN-V-OOL-HD-DNS W/ CHRT-OFF WHT-OPQ-FRSH LS-OFF WHT-F-XLN-OOL-CHLKY-PP AND SM VUG POR-DK BRN STN-NO VIS FLOR-PR-FLSH CUT-FNT ODOR	DST #6 4182 FT-4198 FT REC-20 FT OCM 5% OIL/95% MUD IF-BLW BLT TO 3/4 INCHES NO BLWBK FF-SURF BLW BLT TO 1 INCH IN 30 MIN SIP-733.36-731.17 IF-14.97-18.34 FF-18.99-31.86 HP-2095.01-2037.31
0			4400	LS-TN-GRY MOTT-F-XLN-TR CRS XLN, SM VUG AND PP POR-LT BRN STN WHEN DRIED-NO VIS FLOR-GD STRM CUT-FNT ODOR LS-TN-F-XLN-HD-DNS W/ 1 PC CRS XLN POR-LT BRN STN-SPOTTED FLOR-FLSH CUT-FNT ODOR LS-TN-F-XLN-FOSS-HD-DNS IN TRAY 4 PC-SM EDGE XLS POR-LT BRN STN-SPOTTED FLOR-STRM CUT FNT ODOR LS-DK BRN-F-XLN-HD-DNS SM PYR XLS IMBD SH-BLK-CARB MARMATON 4358' (-1479) SH-GRY-BLKY LS-CRM-F-XLN-FOSS-OOL-PR-INTER-XLN AND SM VUG POR-NO VIS FLOR-NO VIS CUT-NO ODOR LS-TN-F-XLN-CHALKY-HD-DNS W/ NO VIS POR-BRITE YEL FLOR-GD STRM CUT-W/ TR CHRT-RED-OPQ-FRSH IN TRAY SH-LT BLU-BLKY-LMY LS-OFF WHT-F-XLN-OOL-CHLKY IP-HD-DNS W/ CHRT-RED-OPQ IMBD IP LS-TN-GRY-F-XLN-FOSS-SH-LT BRN IMBD-TR YEL FLOR-NO VIS CUT-NO ODOR LS-OFF WHT-F-XLN-OOL-NO VIS FLOR-NO VIS SHOW PAWNEE 4420' (-1541) LS-CRM-F-XLN-FR EDGE VUG AND PP POR-BRITE YEL FLOR-GD STRM CUT-WITH CHRT-RED-OPQ-FRSH IN TRAY LS-OFF WHT-F-XLN-FOSS-CHLKY-TR ISO VUG POR-BRITE WHT FLOR-LT BRN STN-GD FLSH CUT-TR CHRT-BRN-TRANS-FOSS-FRSH LS-OFF WHT-F-XLN-CHLKY IP-SM PYR XLS IMBD IP-TR INTER-XLN-PP POR-DULL YEL FLOR-TR LT BRN STN-GD STRM CUT SH-BLK-CARB MYRICK STATION 4452' (-1573') LS-DK BRN-F-XLN-HD-DNS LS-OFF WHT-F-XLN-CHLKY-TR DK BLK SH IMBD IP-DULL WHT MIN FLOR-NO VIS SHOW LS-BLK-CARB W/ PYR XLS IMBD FORT SCOTT 4470' (-1591') LS-TN-V-F-XLN-HD-DNS LS-TN-F-XLN-V-OOL-TR INTER-PRT POR-DK BLK STN-NO VIS FLOR-GD STRM CUT-GD ODOR W/ CHRT-GRY-OPQ-FRSH LS-GRY-F-XLN-CHLKY IP-PR-PP POR-LT BRN STN-NO VIS FLOR-PR FLSH CUT-FNT ODOR LS-TN-F-XLN-W/ PP AND SM VUG POR-LT BRN STN-SPOTTED YEL GLD FLOR-PR-FLSH CUT-FNT ODOR LS-TN-F-XLN-HD-TR FOSS FRAGS-SM PYR XLS IMBD IP-DNS -W/ CHRT-OFF WHT-TRANS-OOL-FRSH LS-TN-GRY-F-XLN-HD-DNS LS-OFF WHT-F-XLN-HD-DNS LS-OFF WHT-F-XLN-V-OOL-HD-DNS W/ CHRT-OFF WHT-OPQ-FRSH LS-OFF WHT-F-XLN-OOL-CHLKY-PP AND SM VUG POR-DK BRN STN-NO VIS FLOR-PR-FLSH CUT-FNT ODOR	DST #7 4282'-4273' REC-341 GIP GO-536' -15% GAS/85% OIL 372'-60'-30% GAS/70% OIL-310' -MCGO-30% GAS/65% OIL-5' MUD 186 FT-GOCM-20% GAS/30% OIL/50% MUD IF-BOB IN 30 SEC-SURF BLW BLT TO 2" FF-BOB IN 30 SEC-SURF BLW BLT TO 2" SIP-1515.30 SIP-655.96-656.19 IF-348.07-405.71 FF-434.21-566.66 HP-2071.73-2040.51
0			4450	LS-TN-GRY MOTT-F-XLN-TR CRS XLN, SM VUG AND PP POR-LT BRN STN WHEN DRIED-NO VIS FLOR-GD STRM CUT-FNT ODOR LS-TN-F-XLN-HD-DNS W/ 1 PC CRS XLN POR-LT BRN STN-SPOTTED FLOR-FLSH CUT-FNT ODOR LS-TN-F-XLN-FOSS-HD-DNS IN TRAY 4 PC-SM EDGE XLS POR-LT BRN STN-SPOTTED FLOR-STRM CUT FNT ODOR LS-DK BRN-F-XLN-HD-DNS SM PYR XLS IMBD SH-BLK-CARB MARMATON 4358' (-1479) SH-GRY-BLKY LS-CRM-F-XLN-FOSS-OOL-PR-INTER-XLN AND SM VUG POR-NO VIS FLOR-NO VIS CUT-NO ODOR LS-TN-F-XLN-CHALKY-HD-DNS W/ NO VIS POR-BRITE YEL FLOR-GD STRM CUT-W/ TR CHRT-RED-OPQ-FRSH IN TRAY SH-LT BLU-BLKY-LMY LS-OFF WHT-F-XLN-OOL-CHLKY IP-HD-DNS W/ CHRT-RED-OPQ IMBD IP LS-TN-GRY-F-XLN-FOSS-SH-LT BRN IMBD-TR YEL FLOR-NO VIS CUT-NO ODOR LS-OFF WHT-F-XLN-OOL-NO VIS FLOR-NO VIS SHOW PAWNEE 4420' (-1541) LS-CRM-F-XLN-FR EDGE VUG AND PP POR-BRITE YEL FLOR-GD STRM CUT-WITH CHRT-RED-OPQ-FRSH IN TRAY LS-OFF WHT-F-XLN-FOSS-CHLKY-TR ISO VUG POR-BRITE WHT FLOR-LT BRN STN-GD FLSH CUT-TR CHRT-BRN-TRANS-FOSS-FRSH LS-OFF WHT-F-XLN-CHLKY IP-SM PYR XLS IMBD IP-TR INTER-XLN-PP POR-DULL YEL FLOR-TR LT BRN STN-GD STRM CUT SH-BLK-CARB MYRICK STATION 4452' (-1573') LS-DK BRN-F-XLN-HD-DNS LS-OFF WHT-F-XLN-CHLKY-TR DK BLK SH IMBD IP-DULL WHT MIN FLOR-NO VIS SHOW LS-BLK-CARB W/ PYR XLS IMBD FORT SCOTT 4470' (-1591') LS-TN-V-F-XLN-HD-DNS LS-TN-F-XLN-V-OOL-TR INTER-PRT POR-DK BLK STN-NO VIS FLOR-GD STRM CUT-GD ODOR W/ CHRT-GRY-OPQ-FRSH LS-GRY-F-XLN-CHLKY IP-PR-PP POR-LT BRN STN-NO VIS FLOR-PR FLSH CUT-FNT ODOR LS-TN-F-XLN-W/ PP AND SM VUG POR-LT BRN STN-SPOTTED YEL GLD FLOR-PR-FLSH CUT-FNT ODOR LS-TN-F-XLN-HD-TR FOSS FRAGS-SM PYR XLS IMBD IP-DNS -W/ CHRT-OFF WHT-TRANS-OOL-FRSH LS-TN-GRY-F-XLN-HD-DNS LS-OFF WHT-F-XLN-HD-DNS LS-OFF WHT-F-XLN-V-OOL-HD-DNS W/ CHRT-OFF WHT-OPQ-FRSH LS-OFF WHT-F-XLN-OOL-CHLKY-PP AND SM VUG POR-DK BRN STN-NO VIS FLOR-PR-FLSH CUT-FNT ODOR	DST #8 4300'-4384' REC-186' GIP/134'-GO 30% GAS AND 70% OIL 62 FT-MCGO-10% GAS/80% OIL/10% MUD 62 FT-GOCM-10% GAS/30% OIL/60% MUD IF-1 INCH BLW BLT TO 8 INCHES IN 5 MIN-SURF BLW BLT TO 1 INCH FF-BOB IN 8 MIN-BLWBK-SURF BLW BLT 2 INCHES IN 30 MIN SIP-1515.30 SIP-860.48-866.66 IF-23.67-50.82 FF-59.33-50.44 HP-2109.36-2090.23
0			4500	LS-TN-GRY MOTT-F-XLN-TR CRS XLN, SM VUG AND PP POR-LT BRN STN WHEN DRIED-NO VIS FLOR-GD STRM CUT-FNT ODOR LS-TN-F-XLN-HD-DNS W/ 1 PC CRS XLN POR-LT BRN STN-SPOTTED FLOR-FLSH CUT-FNT ODOR LS-TN-F-XLN-FOSS-HD-DNS IN TRAY 4 PC-SM EDGE XLS POR-LT BRN STN-SPOTTED FLOR-STRM CUT FNT ODOR LS-DK BRN-F-XLN-HD-DNS SM PYR XLS IMBD SH-BLK-CARB MARMATON 4358' (-1479) SH-GRY-BLKY LS-CRM-F-XLN-FOSS-OOL-PR-INTER-XLN AND SM VUG POR-NO VIS FLOR-NO VIS CUT-NO ODOR LS-TN-F-XLN-CHALKY-HD-DNS W/ NO VIS POR-BRITE YEL FLOR-GD STRM CUT-W/ TR CHRT-RED-OPQ-FRSH IN TRAY SH-LT BLU-BLKY-LMY LS-OFF WHT-F-XLN-OOL-CHLKY IP-HD-DNS W/ CHRT-RED-OPQ IMBD IP LS-TN-GRY-F-XLN-FOSS-SH-LT BRN IMBD-TR YEL FLOR-NO VIS CUT-NO ODOR LS-OFF WHT-F-XLN-OOL-NO VIS FLOR-NO VIS SHOW PAWNEE 4420' (-1541) LS-CRM-F-XLN-FR EDGE VUG AND PP POR-BRITE YEL FLOR-GD STRM CUT-WITH CHRT-RED-OPQ-FRSH IN TRAY LS-OFF WHT-F-XLN-FOSS-CHLKY-TR ISO VUG POR-BRITE WHT FLOR-LT BRN STN-GD FLSH CUT-TR CHRT-BRN-TRANS-FOSS-FRSH LS-OFF WHT-F-XLN-CHLKY IP-SM PYR XLS IMBD IP-TR INTER-XLN-PP POR-DULL YEL FLOR-TR LT BRN STN-GD STRM CUT SH-BLK-CARB MYRICK STATION 4452' (-1573') LS-DK BRN-F-XLN-HD-DNS LS-OFF WHT-F-XLN-CHLKY-TR DK BLK SH IMBD IP-DULL WHT MIN FLOR-NO VIS SHOW LS-BLK-CARB W/ PYR XLS IMBD FORT SCOTT 4470' (-1591') LS-TN-V-F-XLN-HD-DNS LS-TN-F-XLN-V-OOL-TR INTER-PRT POR-DK BLK STN-NO VIS FLOR-GD STRM CUT-GD ODOR W/ CHRT-GRY-OPQ-FRSH LS-GRY-F-XLN-CHLKY IP-PR-PP POR-LT BRN STN-NO VIS FLOR-PR FLSH CUT-FNT ODOR LS-TN-F-XLN-W/ PP AND SM VUG POR-LT BRN STN-SPOTTED YEL GLD FLOR-PR-FLSH CUT-FNT ODOR LS-TN-F-XLN-HD-TR FOSS FRAGS-SM PYR XLS IMBD IP-DNS -W/ CHRT-OFF WHT-TRANS-OOL-FRSH LS-TN-GRY-F-XLN-HD-DNS LS-OFF WHT-F-XLN-HD-DNS LS-OFF WHT-F-XLN-V-OOL-HD-DNS W/ CHRT-OFF WHT-OPQ-FRSH LS-OFF WHT-F-XLN-OOL-CHLKY-PP AND SM VUG POR-DK BRN STN-NO VIS FLOR-PR-FLSH CUT-FNT ODOR	DST #9 4418 FT-4484 FT REC-134 GIP-50 FT-GOCM 10% GAS AND 10% OIL-80% MUD IF-1 INCH BLW BLT TO 1 INCH IN 30 MIN FF-BOB IN 30 SEC-SURF BLW BLT TO 2" SIP-1515.30 SIP-253.71-478.35 IF-18.48-27.24 FF-26.97-37.55 HP-2180.81-2128.89
0			4550	LS-TN-GRY MOTT-F-XLN-TR CRS XLN, SM VUG AND PP POR-LT BRN STN WHEN DRIED-NO VIS FLOR-GD STRM CUT-FNT ODOR LS-TN-F-XLN-HD-DNS W/ 1 PC CRS XLN POR-LT BRN STN-SPOTTED FLOR-FLSH CUT-FNT ODOR LS-TN-F-XLN-FOSS-HD-DNS IN TRAY 4 PC-SM EDGE XLS POR-LT BRN STN-SPOTTED FLOR-STRM CUT FNT ODOR LS-DK BRN-F-XLN-HD-DNS SM PYR XLS IMBD SH-BLK-CARB MARMATON 4358' (-1479) SH-GRY-BLKY LS-CRM-F-XLN-FOSS-OOL-PR-INTER-XLN AND SM VUG POR-NO VIS FLOR-NO VIS CUT-NO ODOR LS-TN-F-XLN-CHALKY-HD-DNS W/ NO VIS POR-BRITE YEL FLOR-GD STRM CUT-W/ TR CHRT-RED-OPQ-FRSH IN TRAY SH-LT BLU-BLKY-LMY LS-OFF WHT-F-XLN-OOL-CHLKY IP-HD-DNS W/ CHRT-RED-OPQ IMBD IP LS-TN-GRY-F-XLN-FOSS-SH-LT BRN IMBD-TR YEL FLOR-NO VIS CUT-NO ODOR LS-OFF WHT-F-XLN-OOL-NO VIS FLOR-NO VIS SHOW PAWNEE 4420' (-1541) LS-CRM-F-XLN-FR EDGE VUG AND PP POR-BRITE YEL FLOR-GD STRM CUT-WITH CHRT-RED-OPQ-FRSH IN TRAY LS-OFF WHT-F-XLN-FOSS-CHLKY-TR ISO VUG POR-BRITE WHT FLOR-LT BRN STN-GD FLSH CUT-TR CHRT-BRN-TRANS-FOSS-FRSH LS-OFF WHT-F-XLN-CHLKY IP-SM PYR XLS IMBD IP-TR INTER-XLN-PP POR-DULL YEL FLOR-TR LT BRN STN-GD STRM CUT SH-BLK-CARB MYRICK STATION 4452' (-1573') LS-DK BRN-F-XLN-HD-DNS LS-OFF WHT-F-XLN-CHLKY-TR DK BLK SH IMBD IP-DULL WHT MIN FLOR-NO VIS SHOW LS-BLK-CARB W/ PYR XLS IMBD FORT SCOTT 4470' (-1591') LS-TN-V-F-XLN-HD-DNS LS-TN-F-XLN-V-OOL-TR INTER-PRT POR-DK BLK STN-NO VIS FLOR-GD STRM CUT-GD ODOR W/ CHRT-GRY-OPQ-FRSH LS-GRY-F-XLN-CHLKY IP-PR-PP POR-LT BRN STN-NO VIS FLOR-PR FLSH CUT-FNT ODOR LS-TN-F-XLN-W/ PP AND SM VUG POR-LT BRN STN-SPOTTED YEL GLD FLOR-PR-FLSH CUT-FNT ODOR LS-TN-F-XLN-HD-TR FOSS FRAGS-SM PYR XLS IMBD IP-DNS -W/ CHRT-OFF WHT-TRANS-OOL-FRSH LS-TN-GRY-F-XLN-HD-DNS LS-OFF WHT-F-XLN-HD-DNS LS-OFF WHT-F-XLN-V-OOL-HD-DNS W/ CHRT-OFF WHT-OPQ-FRSH LS-OFF WHT-F-XLN-OOL-CHLKY-PP AND SM VUG POR-DK BRN STN-NO VIS FLOR-PR-FLSH CUT-FNT ODOR	DST #10 4418 FT-4484 FT REC-134 GIP-50 FT-GOCM 10% GAS AND 10% OIL-80% MUD IF-1 INCH BLW BLT TO 1 INCH IN 30 MIN FF-BOB IN 30 SEC-SURF BLW BLT TO 2" SIP-1515.30 SIP-253.71-478.35 IF-18.48-27.24 FF-26.97-37.55 HP-2180.81-2128.89
0			4600	B/JOHNSON 4546' (-1667) SLTSS-LT GRN-V-F-GRN-V-SHLY SLTSS-LT GRN-V-F-GRN-V-SHLY SS-FRSTY WHT-V-F-GRN-MSTLY TT WITH SOME SM PC'S-FRI-ENDED AND WELL SRTEED-TR PYR XL IMBD-PR-FR INTER	