



Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION 1183606
OIL & GAS CONSERVATION DIVISION

Form ACO-1

August 2013

Form must be Typed
Form must be Signed
All blanks must be Filled

WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # _____

Name: _____

Address 1: _____

Address 2: _____

City: _____ State: _____ Zip: _____ + _____

Contact Person: _____

Phone: (_____) _____

CONTRACTOR: License # _____

Name: _____

Wellsite Geologist: _____

Purchaser: _____

Designate Type of Completion:

- New Well Re-Entry Workover
- Oil WSW SWD SIOW
- Gas D&A ENHR SIGW
- OG GSW Temp. Abd.
- CM (Coal Bed Methane)
- Cathodic Other (Core, Expl., etc.): _____

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

Operator: _____

Well Name: _____

Original Comp. Date: _____ Original Total Depth: _____

- Deepening Re-perf. Conv. to ENHR Conv. to SWD
- Plug Back Conv. to GSW Conv. to Producer
- Commingled Permit #: _____
- Dual Completion Permit #: _____
- SWD Permit #: _____
- ENHR Permit #: _____
- GSW Permit #: _____

Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date
-----------------------------------	-----------------	---

API No. 15 - _____

Spot Description: _____

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

_____ Feet from North / South Line of Section

_____ Feet from East / West Line of Section

Footages Calculated from Nearest Outside Section Corner:

- NE NW SE SW

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

Datum: NAD27 NAD83 WGS84

County: _____

Lease Name: _____ Well #: _____

Field Name: _____

Producing Formation: _____

Elevation: Ground: _____ Kelly Bushing: _____

Total Vertical Depth: _____ Plug Back Total Depth: _____

Amount of Surface Pipe Set and Cemented at: _____ Feet

Multiple Stage Cementing Collar Used? Yes No

If yes, show depth set: _____ Feet

If Alternate II completion, cement circulated from: _____

feet depth to: _____ w/ _____ sx cmt.

Drilling Fluid Management Plan

(Data must be collected from the Reserve Pit)

Chloride content: _____ ppm Fluid volume: _____ bbls

Dewatering method used: _____

Location of fluid disposal if hauled offsite:

Operator Name: _____

Lease Name: _____ License #: _____

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

County: _____ Permit #: _____

AFFIDAVIT

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

Submitted Electronically

KCC Office Use ONLY

- Confidentiality Requested
Date: _____
- Confidential Release Date: _____
- Wireline Log Received
- Geologist Report Received
- UIC Distribution
- ALT I II III Approved by: _____ Date: _____

1183606

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

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				

Did you perform a hydraulic fracturing treatment on this well? Yes No *(If No, skip questions 2 and 3)*

Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons? Yes No *(If No, skip question 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)*

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record <i>(Amount and Kind of Material Used)</i>	Depth

TUBING RECORD: Size: _____ Set At: _____ Packer At: _____ Liner Run: Yes No

Date of First, Resumed Production, SWD or ENHR: _____ Producing Method:
 Flowing Pumping Gas Lift Other *(Explain)* _____

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> <input type="checkbox"/> Other <i>(Specify)</i> _____ <input type="checkbox"/> Other <i>(Specify)</i> _____	PRODUCTION INTERVAL: _____ _____
--	---	---

Form	ACO1 - Well Completion
Operator	Grady Bolding Corporation
Well Name	Armbruster 5
Doc ID	1183606

All Electric Logs Run

Compensated density/neutron
dual induction
micro
sonic
bond

QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025
Cell 785-324-1041

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

No. 1627

Date	11-22-13	Sec.	Twp.	Range	Called Out	On Location	Job Start	Finish
Lease	Armbruster	Well No.	5	Location	Ellis 4N int	Ellis County	KS	1:00 PM
Contractor				Owner	To Quality Oilwell Cementing, Inc. You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.			
Type Job	port collar 2209?			Charge To	Grady Baldwin Corp			
Hole Size	5 1/2	T.D.						
Csg.	5 1/2	Depth						
Tbg. Size	2 1/2	Depth						
Drill Pipe		Depth						
Tool		Depth						
Cement Left in Csg.		Shoe Joint						
Press Max.		Minimum						
Meas Line		Displace						
Perf.			4 gallon side CEMENT					
EQUIPMENT			Amount Ordered	250 DMDC 1/4 Flow				
Pumptrk	5	No. Cementer	Lon W					
		Helper	David L					
Bulktrk	9	No. Driver	Dave					
		Driver						
Bulktrk	PU	No. Driver						
		Driver						
JOB SERVICES & REMARKS			Consisting of	Common				
Pumptrk Charge			Poz. Mix	Gel. 4				
Mileage			Chloride					
Footage			Hulls					
			Salt					
		Total	Flowseal	62#				
Remarks:	pressured casing @ 800 psi							
	mixed 4 gal opened							
	tool got cir mixed							
	50 + Cir cement							
	closed tool pressured							
	to 800 psi + held							
	Ran 5 ft & wash							
	clean							
	Frank							
X Signature	[Signature]			Handling	\$50.254			
				Mileage	21			
				Sales Tax				
				Sub Total				
				Total				
				Floating Equipment & Plugs				
				Squeeze Manifold				
				Rotating Head				
					port collar job			
					@ 21			
				Tax				
				Discount				
				Total Charge				

QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025
Cell 785-324-1041

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

No. 7000

Date	11-3-13	Sec.	17	Twp.	12	Range	20	County	Ellis	State	KS	On Location		Finish	1:15 AM
------	---------	------	----	------	----	-------	----	--------	-------	-------	----	-------------	--	--------	---------

Location Ellis NW of Black Top Curve W into

Lease	<u>Armbuster</u>	Well No.	<u>5</u>	Owner	To Quality Oilwell Cementing, Inc. You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.
Contractor	<u>Southwind #8</u>			Charge To	<u>Grady Balding</u>
Type Job	<u>Surface</u>			Street	
Hole Size	<u>12 1/4</u>	T.D.	<u>262'</u>	City	
Csg.	<u>8 5/8</u>	Depth	<u>262'</u>	State	
Tbg. Size		Depth		The above was done to satisfaction and supervision of owner agent or contractor.	
Tool		Depth		Cement Amount Ordered	<u>150 3% cc 2% Gel</u>
Cement Left in Csg.	<u>25'</u>	Shoe Joint			
Meas Line		Displace	<u>15 bbl</u>		

EQUIPMENT

Pumptrk	<u>15</u>	No.		Cementer		Common	<u>150</u>
				Helper	<u>Matt</u>	Poz. Mix	
Bulktrk	<u>14</u>	No.		Driver	<u>Heath</u>	Gel.	<u>3</u>
				Driver	<u>Brett</u>	Calcium	<u>5</u>

JOB SERVICES & REMARKS

Remarks:		Hulls	
Rat Hole		Salt	
Mouse Hole		Flowseal	
Centralizers		Kol-Seal	
Baskets		Mud CLR 48	
DV or Port Collar		CFL-117 or CD110 CAF 38	

Handling	<u>150</u>
Mileage	

FLOAT EQUIPMENT

Guide Shoe	
Centralizer	
Baskets	
AFU Inserts	
Float Shoe	
Latch-Down	

Pumptrk Charge	<u>Surface</u>
Mileage	<u>21</u>

X Signature [Signature]

Tax	
Discount	
Total Charge	

Cement

Quality Oilwell
Cementing

QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025
Cell 785-324-1041

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

No. 7801

Date	11-10-13	Sec.	17	Twp.	12	Range	20	County	Ellis	State	KS	On Location	11:30 AM	Finish	
------	----------	------	----	------	----	-------	----	--------	-------	-------	----	-------------	----------	--------	--

Lease Armbruster Location Ellis N to Curve 1 N

Well No. 5 Owner West into

Contractor Southwind S To Quality Oilwell Cementing, Inc.
You are hereby requested to rent cementing equipment and furnish
cement and helper to assist owner or contractor to do work as listed.

Type Job Long string
Hole Size 7 7/8 T.D. 4040
Csg. 5 1/2 Depth 4034

Tbg. Size _____ Depth _____
Tool _____ Depth _____

Cement Left in Csg. 42.12 Shoe Joint 42.12 Cement Amount Ordered 175sx pro-c 10% salt

Meas Line _____ Displace 95 BBL 5% gilsonite
Common 175 pro-c

Pumptrk 15 No. _____ Cementer Math
Bulktrk 9 No. _____ Driver Johnie W
Bulktrk 4 No. _____ Driver Dave

JOB SERVICES & REMARKS
Remarks: _____
Rat Hole 30 Sks
Mouse Hole 15 Sks
Centralizers 12, 3, 4, 8, 9, 10, 40
Baskets 44, 45
DV or Port Collar 45 1717

Droped Ball 1 hour
Plug 135 Sks down
Rate displace 1600 PSI
Rigged down

Equipment
Common 175 pro-c
Poz. Mix _____
Gel. _____
Calcium _____
Hairs 5 gal
Salt 16

Material 6150#
Mud CLR 48 500 gal
CFL-117 or CD110 CAF 38
Sand _____
Handling 100
Mileage 21

Float Equipment
Guide Shoe _____
Centralizer 8 tubos
Baskets 2
AFU inserts _____
Float Shoe _____
Latch Down 1

Port collar _____
Pumptrk Charge pro-c long string
Mileage 21

Signature _____
Tax _____
Discount _____
Total Charge _____



James C. Musgrove
 Petroleum Geologist
 Office (620) 588-4250 212 Main St. • P.O. Box 215 • Clarin, KS 67525 Home (620) 587-3444

GEOLOGIST'S REPORT

DRILLING TIME AND SAMPLE LOG

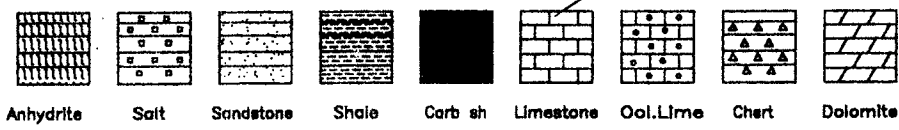
COMPANY <u>Grady Building Corp</u>	ELEVATIONS
LEASE <u>Armbruster #5</u>	KB <u>2299</u>
FIELD <u>Dist. 57 North</u>	DF <u>2290</u>
LOCATION <u>E2-NE-NW-SE(2310 B&L+1620 7&L)</u>	GL <u>2290</u>
SEC <u>17</u> TWP <u>12</u> RGE <u>30</u>	Measurements Are All From <u>KB</u>
COUNTY <u>Ellis</u> STATE <u>KS</u>	
CONTRACTOR <u>Southern #9</u>	CASING <u>262'</u>
SPUD <u>11/21/2013</u> COMP <u>11/10/2013</u>	SURFACE <u>8520'</u>
RTD <u>1090</u> LTD <u>4100</u>	PRODUCTION <u>57210-4137</u>
MUD UP <u>3200</u> TYPE MUD <u>Displaced</u>	ELECTRICAL SURVEYS By <u>Primer</u> <u>DL, AW, G, Micro</u>
SAMPLES SAVED FROM <u>3300</u> TO <u>TO</u>	
DRILLING TIME KEPT FROM <u>3300</u> TO <u>TO</u>	
SAMPLES EXAMINED FROM <u>3300</u> TO <u>TO</u>	
GEOLOGICAL SUPERVISION FROM <u>3300</u> TO <u>TO</u>	
GEOLOGIST ON WELL <u>Clint Musgrove & James C. Musgrove</u>	
FORMATION TOPS	LOG
<u>Galudite</u> <u>1668</u> <u>1631</u>	
<u>East anhydrite</u> <u>1714</u> <u>1585</u>	
<u>Leahner</u> <u>1871</u> <u>1872</u>	
<u>Tarranta</u> <u>1891</u> <u>1892</u>	
<u>Hansing</u> <u>1808</u> <u>1809</u>	
<u>Base Kansas City</u> <u>1882</u> <u>1555</u>	
<u>Wernston</u> <u>1904</u> <u>1809</u>	
<u>Comlawick</u> <u>1920</u> <u>1851</u>	
<u>Gubavick</u> <u>1981</u> <u>1882</u>	
<u>RTD</u> <u>4040</u> <u>174</u>	

REMARKS

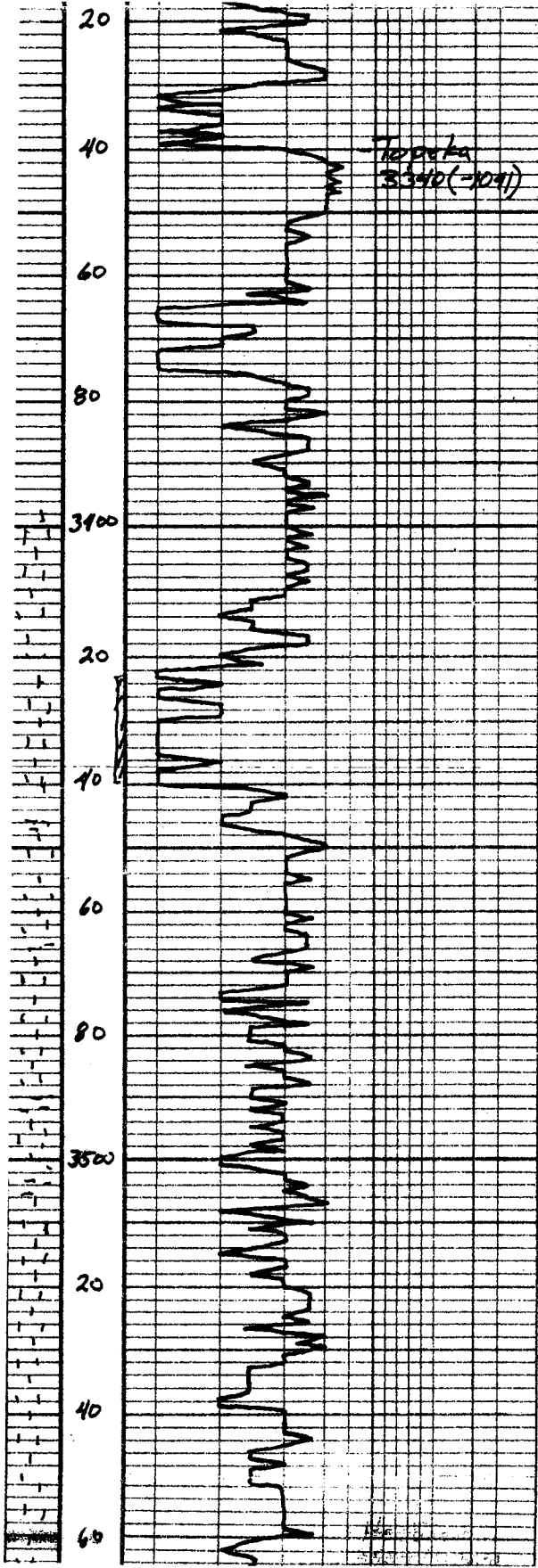
Recommendations; 5 1/2" products in casing was set & cemented on the Armbruster #5.

*Respectfully submitted,
 James C. Musgrove & Clint Musgrove
 Petroleum Geologists*

LEGEND



LITHOLOGY	DEPTH	DRILLING TIME (Logarithmic Scale)		SAMPLE DESCRIPTIONS	REMARKS
		5	10		
	3300				



-2299KB-

LS, cm, Pass, Fil, scatter

LS, gr, scatter Pass
spotty down

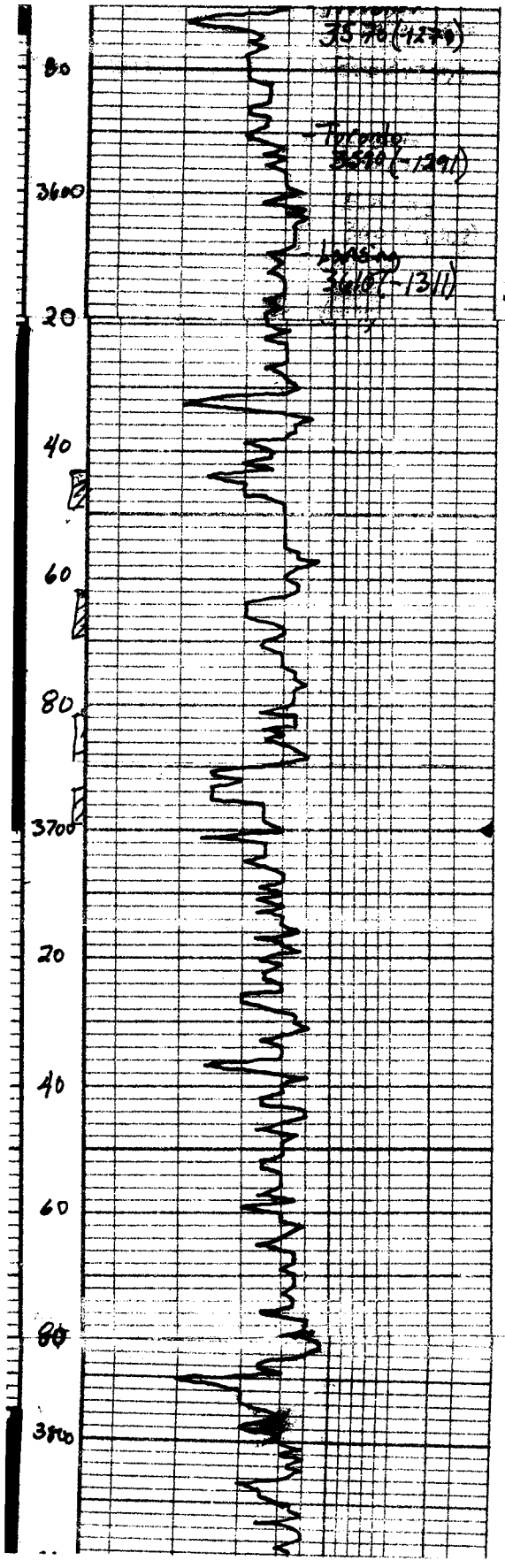
LS, cm, Fil, scatter
N/S

LS, gr, cool, brown, green

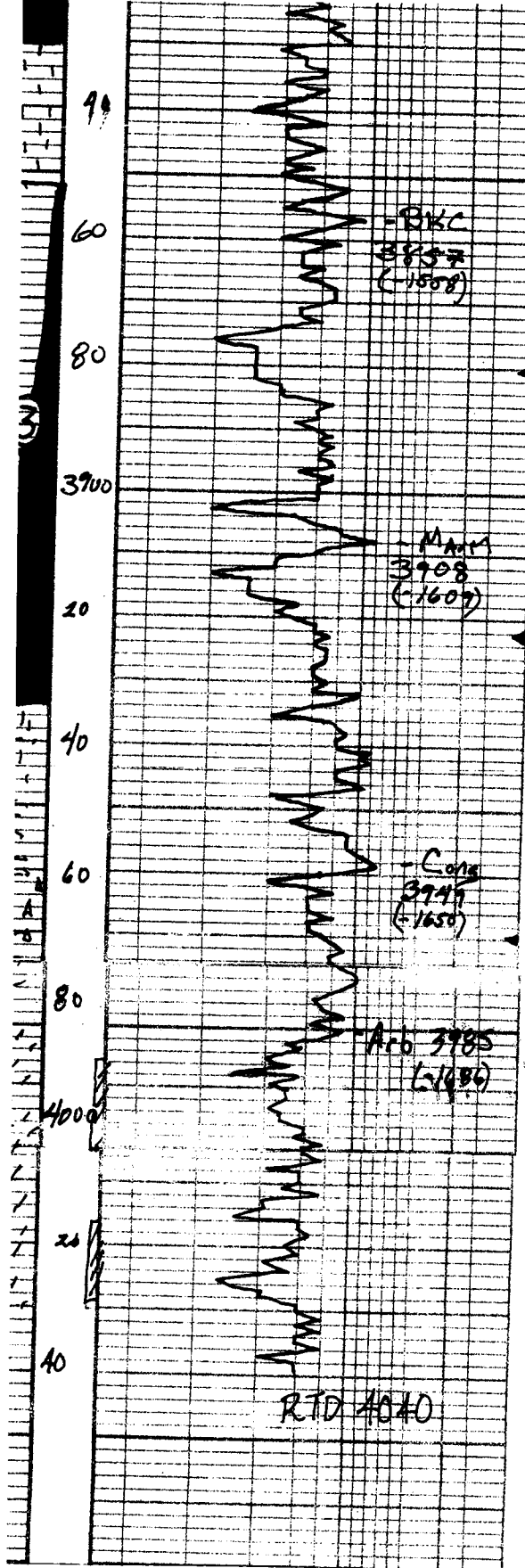
LS, cm, Fil, dy N/S

SS
AA

LS, wh cm, Pass, Fil
dy N/S



D1K-2476 Sh	
LS, wh, chky, w/gr st.	
LS, wh, fss, slightly ool Very slender 280	
LS, wh, slightly ool/fss Very faint odor 230	Dst #1 3620-3700
LS, wh, D'y fat, n/s	30-30-45-60 Blow; strong (Bob 14 min)
LS, wh, fss, poor, o n/s	2nd opening; strong (Bob 19 min)
Chalky LS	Recovery; 75' gas in pipe 50' Heavy oil cut muddy water (45% oily 20% water, 35% mud) 130' muddy water
LS, wh, ool, fat, faint odor sto	pressures; 5510 559 ps 55.0 538 "
LS, wh, ool, ool, n/s needed 37, 36	55.7 31-100 " 54.7 105-114 " 15M 1769-1766'
LS, wh, D'y, poor, o n/s	
LS, wh, D'y fat n/s	
LS, wh, D'y fat, scrub fss of light brown gas	
LS, gr, tan, fss, chky, D'y	
LS, wh, fat, light stain n/s	Dst #2 3796-3830 30-30-30-30 Blow; fair (4") 2nd opening; fair (5")



40' clay, oil, dol. sandstone
 SFO
 1/3 fine fat, fine n/s
 light brown sh
 1/3 clay, wh, fine, oil, fat
 SFO
 Bl, gr, Mar sh
 }
 + Maroon sh
 mar, bristal - green sh
 A y, light dolomite, scallo
 light brown sh, no odor
 SFO
 A, wh, br, tan, dol, brown sh
 no odor, n/s
 }
 A, gr + var. color shale
 Yellow - orange sh, opaque A
 red, pyrite, sand, G.A.F.
 Dol, dol, med xlv SFO
 slighty A, good odor
 }
 dol, wh, cream, f-med xlv
 SFO, fat, oil
 x. wh A, fat, odor
 }
 red, fair chalky luster
 }
 dol, wh, (f-med xlv) Poor

mu, 40 gas in pipe
 20' slightly oil
 cut mud
 (5% oil, 95% mud)
 pressures; ISIP 625 psi
 SSIP 681
 ISIP 20-20
 SSIP 20-23
 HSH
 1964-1923
 Dist # 3 3952-3934
 38-30-45-60
 Blow, strong
 (Bob 18 mins)
 2nd string
 opening (Bob 14 mins)
 Rec; 240' gas in pipe
 200' Heavy oil cut
 mud
 (45% oil, 55% mud)
 pressures; ISIP 748 psi
 SSIP 740
 ISIP 26-70
 SSIP 13-106
 HSH
 1991-1929



DRILL STEM TEST REPORT

Prepared For: **Grady Bolding Corp.**

PO Box 486
Ellinwood, KS 67526

ATTN: Clint Musgrove

Armbruster #5

17-12s-20w Ellis,KS

Start Date: 2013.11.07 @ 02:17:41

End Date: 2013.11.07 @ 11:41:11

Job Ticket #: 55770 DST #: 1

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2013.11.13 @ 11:15:44



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Grady Bolding Corp.

17-12s-20w Ellis,KS

PO Box 486
Ellinwood, KS 67526

Armbruster #5

Job Ticket: 55770

DST#: 1

ATTN: Clint Musgrove

Test Start: 2013.11.07 @ 02:17:41

GENERAL INFORMATION:

Formation: **LKC**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 06:30:41
 Time Test Ended: 11:41:11
 Interval: **3620.00 ft (KB) To 3700.00 ft (KB) (TVD)**
 Total Depth: 3700.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Brannan L
 Unit No: 68
 Reference Elevations: 2299.00 ft (KB)
 2290.00 ft (CF)
 KB to GR/CF: 9.00 ft

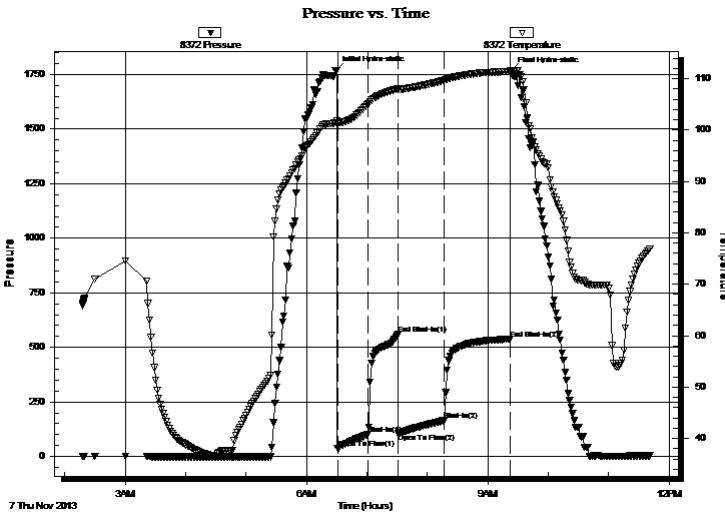
Serial #: 8372

Inside

Press@RunDepth: 164.41 psig @ 3621.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2013.11.07 End Date: 2013.11.07 Last Calib.: 2013.11.07
 Start Time: 02:17:42 End Time: 11:41:11 Time On Btm: 2013.11.07 @ 06:28:41
 Time Off Btm: 2013.11.07 @ 09:23:11

TEST COMMENT: 30- IF- BOB 14 mins
 30- IS- Surface blow
 45- FF- BOB 19 mins
 60- FSI- No blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1768.84	101.50	Initial Hydro-static
2	37.21	101.49	Open To Flow (1)
33	100.32	105.07	Shut-In(1)
62	559.08	108.04	End Shut-In(1)
63	105.44	107.87	Open To Flow (2)
108	164.41	109.65	Shut-In(2)
173	538.36	111.36	End Shut-In(2)
175	1765.86	111.40	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
50.00	WMCO, 20%W 35%M 45%O	0.68
190.00	MW, 35%M 65%W	2.60
0.00	75' GIP	0.00

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Grady Bolding Corp.

17-12s-20w Ellis,KS

PO Box 486
Ellinwood, KS 67526

Armbruster #5

Job Ticket: 55770

DST#: 1

ATTN: Clint Musgrove

Test Start: 2013.11.07 @ 02:17:41

Tool Information

Drill Pipe:	Length: 3632.00 ft	Diameter: 3.75 inches	Volume: 49.62 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.75 inches	Volume: - bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose:	50000.00 lb
			<u>Total Volume:</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	32.00 ft			String Weight: Initial	45000.00 lb
Depth to Top Packer:	3620.00 ft			Final	48000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	80.00 ft				
Tool Length:	100.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3601.00	
Shut In Tool	5.00			3606.00	
Hydraulic tool	5.00			3611.00	
Packer	5.00			3616.00	20.00 Bottom Of Top Packer
Packer	4.00			3620.00	
Stubb	1.00			3621.00	
Recorder	0.00	8372	Inside	3621.00	
Recorder	0.00	8321	Outside	3621.00	
Perforations	11.00			3632.00	
Change Over Sub	1.00			3633.00	
Drill Pipe	63.00			3696.00	
change Over Sub	1.00			3697.00	
Bullnose	3.00			3700.00	80.00 Bottom Packers & Anchor

Total Tool Length: 100.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Grady Bolding Corp.

17-12s-20w Ellis,KS

PO Box 486
Ellinwood, KS 67526

Armbruster #5

Job Ticket: 55770

DST#: 1

ATTN: Clint Musgrove

Test Start: 2013.11.07 @ 02:17:41

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

90000 ppm

Viscosity: 61.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.39 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1900.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
50.00	WMCO, 20%W 35%M 45%O	0.683
190.00	MW, 35%M 65%W	2.596
0.00	75' GIP	0.000

Total Length: 240.00 ft Total Volume: 3.279 bbl

Num Fluid Samples: 0

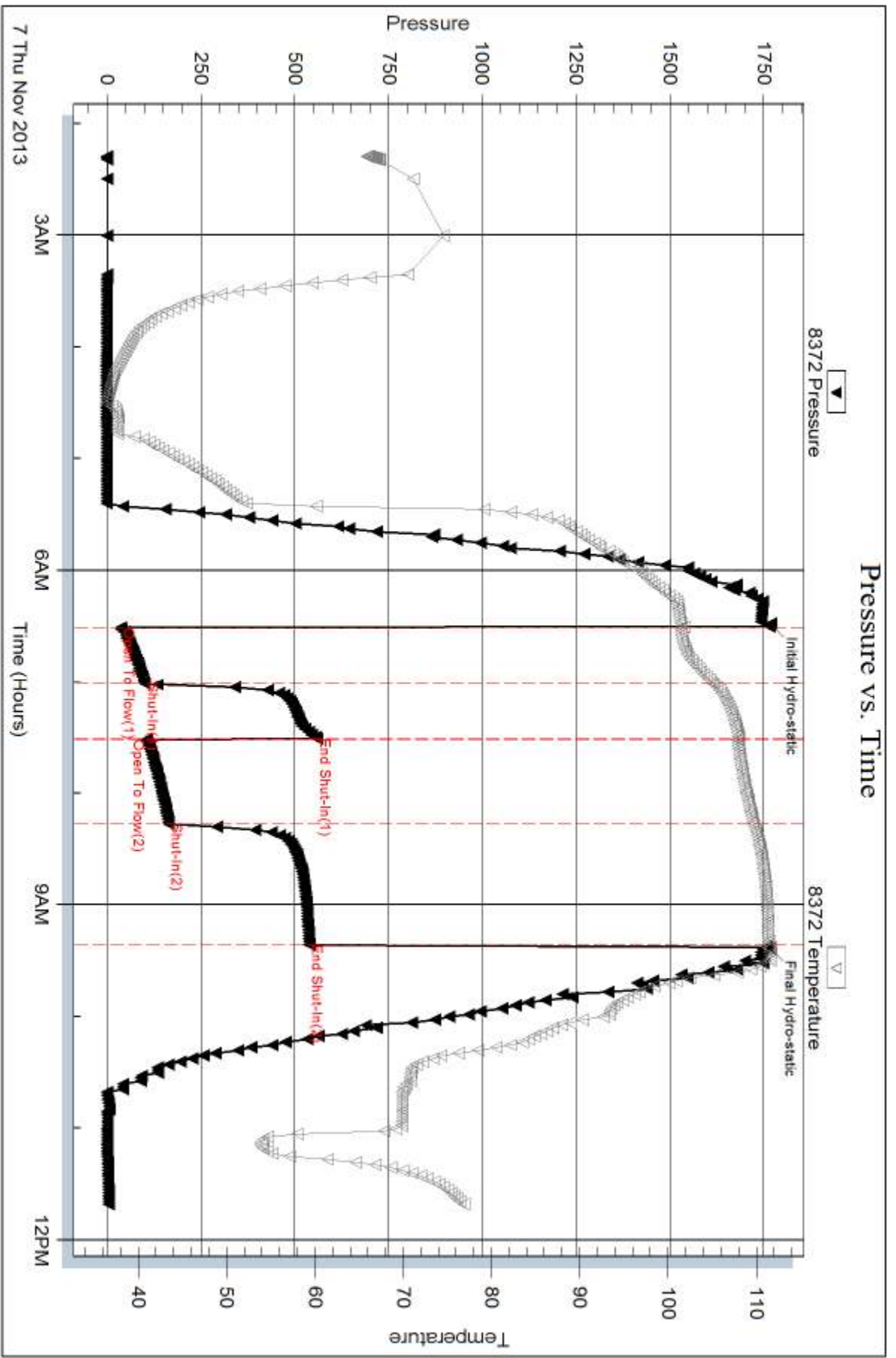
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

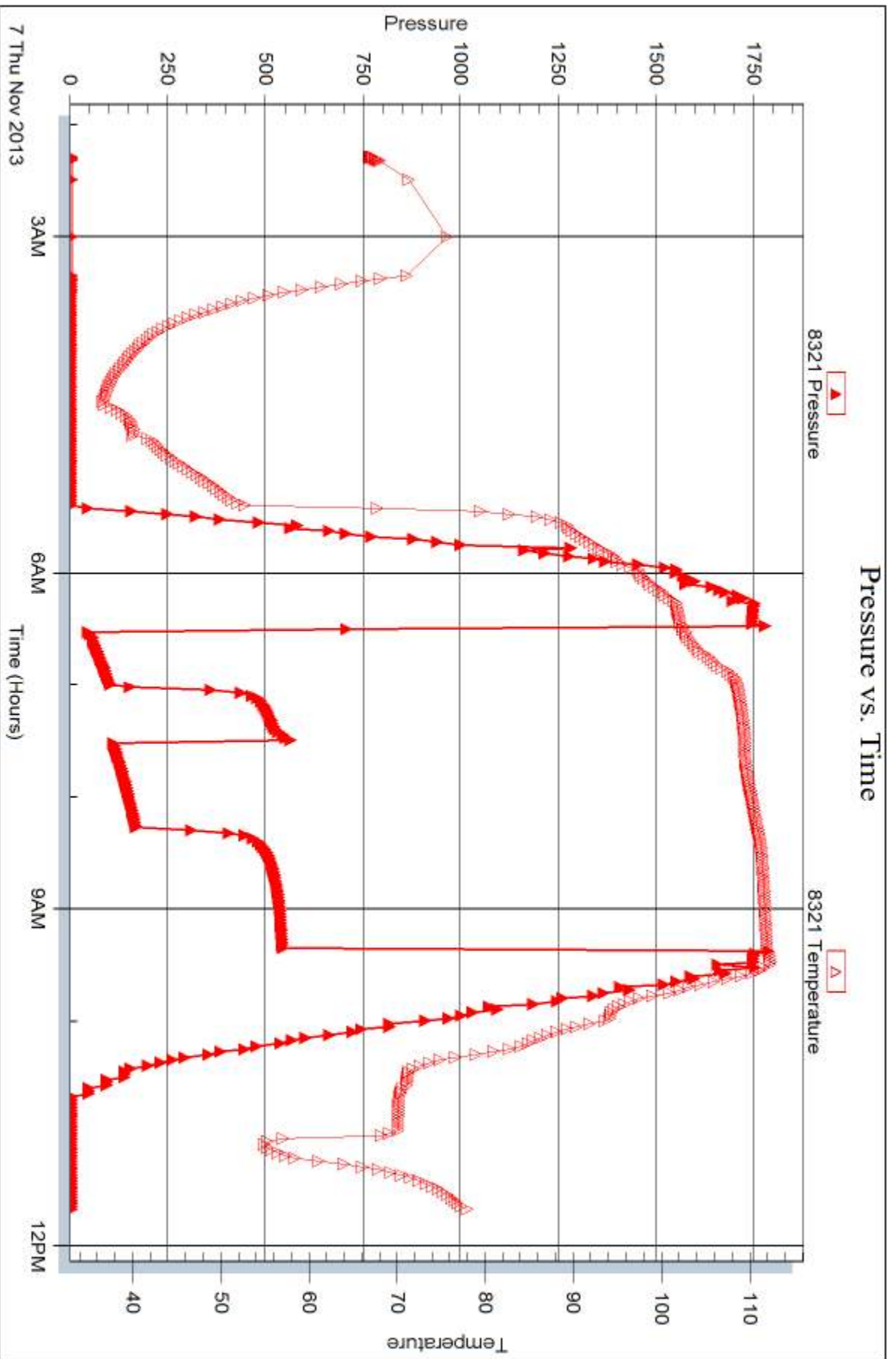


Serial #: 8321

Outside Grady Bolding Corp.

Amburster #5

DST Test Number: 1





DRILL STEM TEST REPORT

Prepared For: **Grady Bolding Corp.**

PO Box 486
Ellinwood, KS 67526

ATTN: Clint Musgrove

Armbruster #5

17-12s-20w Ellis,KS

Start Date: 2013.11.07 @ 22:37:34

End Date: 2013.11.08 @ 04:43:04

Job Ticket #: 55771 DST #: 2

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2013.11.13 @ 11:14:39



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Grady Bolding Corp.

17-12s-20w Ellis,KS

PO Box 486
Ellinwood, KS 67526

Armbruster #5

Job Ticket: 55771

DST#: 2

ATTN: Clint Musgrove

Test Start: 2013.11.07 @ 22:37:34

GENERAL INFORMATION:

Formation: **LKC**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 00:37:04

Time Test Ended: 04:43:04

Test Type: Conventional Bottom Hole (Reset)

Tester: Brannan L

Unit No: 68

Interval: 3796.00 ft (KB) To 3830.00 ft (KB) (TVD)

Reference Elevations: 2299.00 ft (KB)

Total Depth: 3830.00 ft (KB) (TVD)

2290.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 9.00 ft

Serial #: 8372

Inside

Press@RunDepth: 22.92 psig @ 3797.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.11.07

End Date:

2013.11.08

Last Calib.: 2013.11.08

Start Time: 22:37:35

End Time:

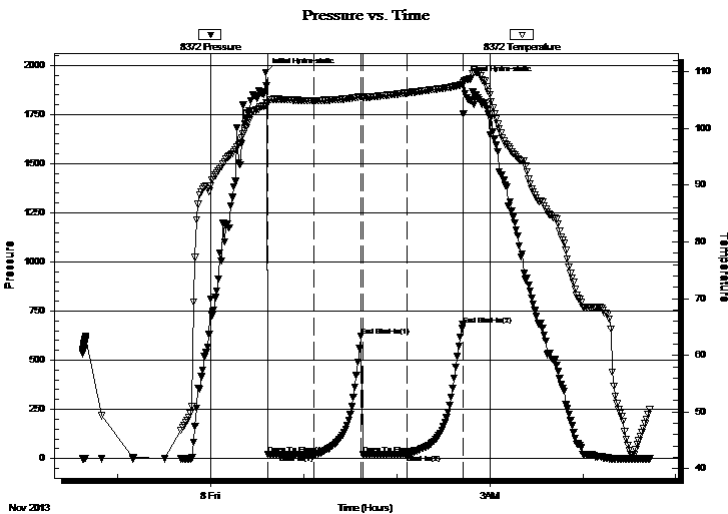
04:43:04

Time On Btm: 2013.11.08 @ 00:35:34

Time Off Btm: 2013.11.08 @ 02:43:34

TEST COMMENT: 30- IF- Slowly built to 4"
30- IS- No blow
30- FF- Slowly built to 5"
30- FS- No blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1963.67	104.09	Initial Hydro-static
2	20.18	104.36	Open To Flow (1)
31	19.80	104.96	Shut-In(1)
62	622.58	105.66	End Shut-In(1)
63	20.06	105.51	Open To Flow (2)
91	22.92	106.30	Shut-In(2)
127	681.25	107.74	End Shut-In(2)
128	1923.06	108.45	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
20.00	OCM, 5%O	0.27

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Grady Bolding Corp.

17-12s-20w Ellis,KS

PO Box 486
Ellinwood, KS 67526

Armbruster #5

Job Ticket: 55771

DST#: 2

ATTN: Clint Musgrove

Test Start: 2013.11.07 @ 22:37:34

Tool Information

Drill Pipe:	Length: 3789.00 ft	Diameter: 3.75 inches	Volume: 51.76 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.75 inches	Volume: - bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose:	50000.00 lb
			<u>Total Volume:</u>	Tool Chased	0.00 ft
				String Weight: Initial	47000.00 lb
Drill Pipe Above KB:	13.00 ft			Final	47000.00 lb
Depth to Top Packer:	3796.00 ft				
Depth to Bottom Packer:	ft				
Interval between Packers:	34.00 ft				
Tool Length:	54.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			
Tool Comments:					

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3777.00	
Shut In Tool	5.00			3782.00	
Hydraulic tool	5.00			3787.00	
Packer	5.00			3792.00	20.00 Bottom Of Top Packer
Packer	4.00			3796.00	
Stubb	1.00			3797.00	
Recorder	0.00	8372	Inside	3797.00	
Recorder	0.00	8321	Outside	3797.00	
Perforations	30.00			3827.00	
Bullnose	3.00			3830.00	34.00 Bottom Packers & Anchor
Total Tool Length:	54.00				



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Grady Bolding Corp.

17-12s-20w Ellis,KS

PO Box 486
Ellinwood, KS 67526

Armbruster #5

Job Ticket: 55771

DST#: 2

ATTN: Clint Musgrove

Test Start: 2013.11.07 @ 22:37:34

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 58.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.78 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2100.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
20.00	OCM, 5%O	0.273

Total Length: 20.00 ft Total Volume: 0.273 bbl

Num Fluid Samples: 0

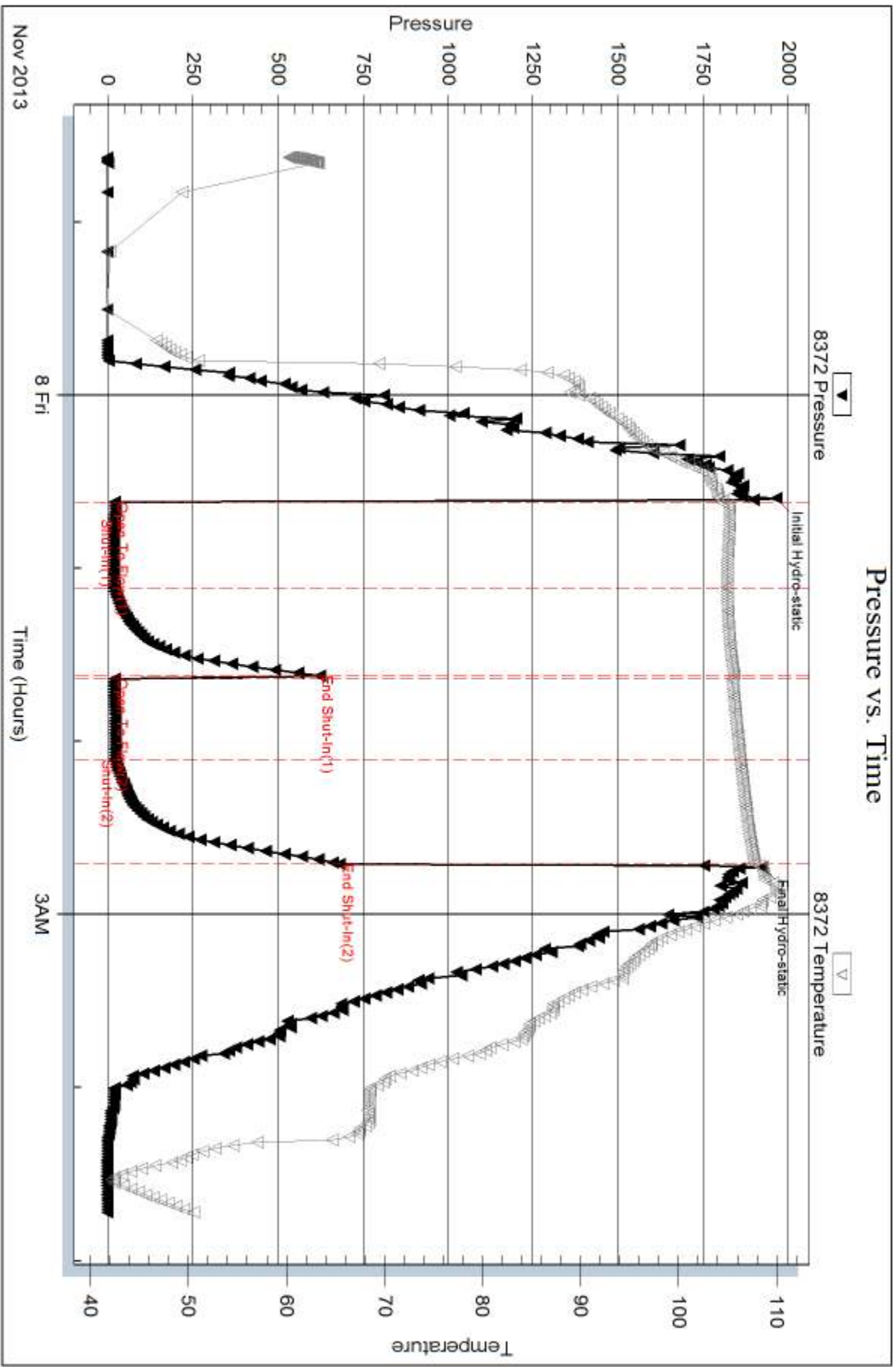
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

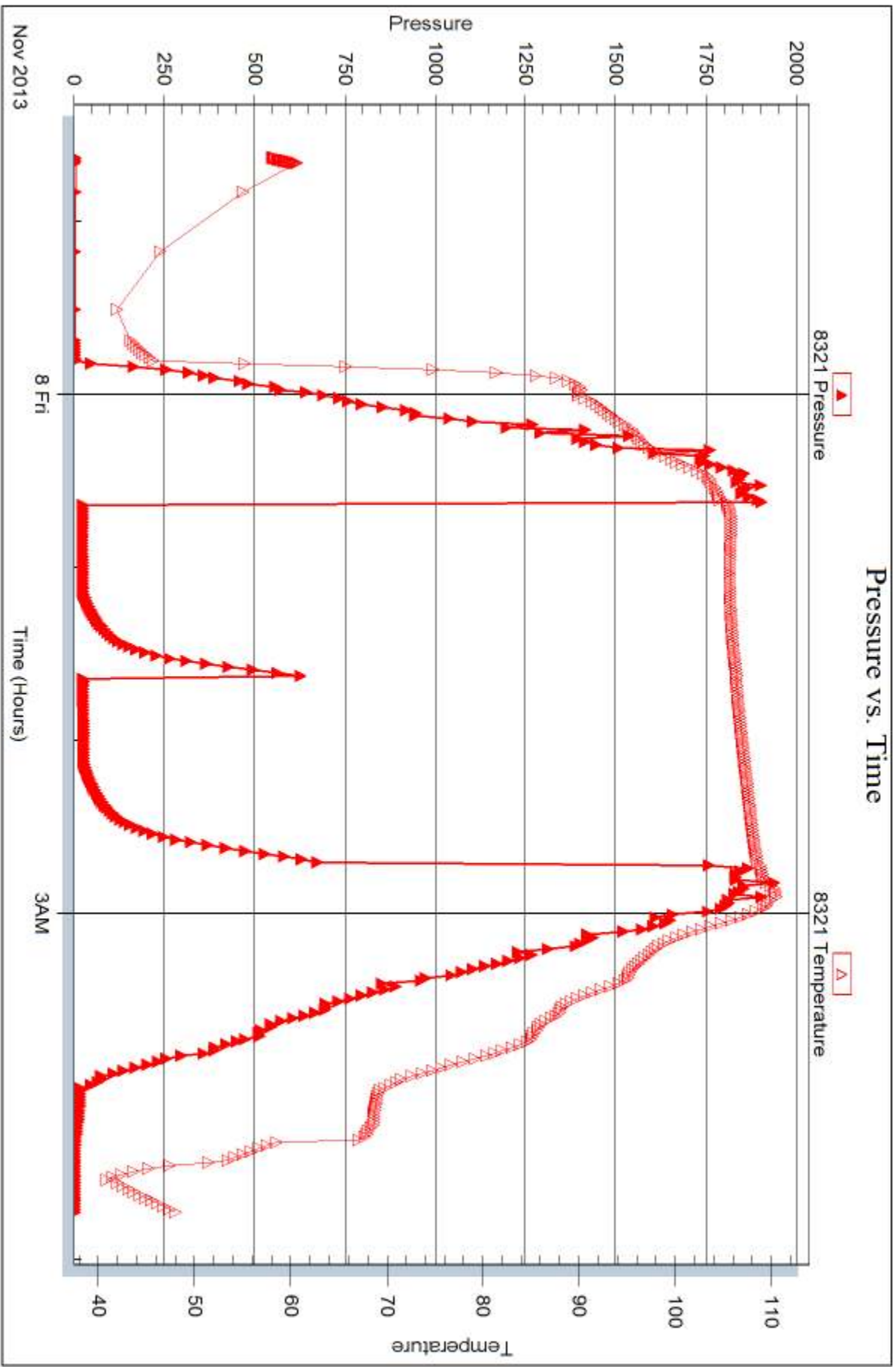


Serial #: 8321

Outside Grady Bolding Corp.

Amburster #5

DST Test Number: 2





DRILL STEM TEST REPORT

Prepared For: **Grady Bolding Corp.**

PO Box 486
Ellinwood, KS 67526

ATTN: Clint Musgrove

Armbruster #5

17-12s-20w Ellis,KS

Start Date: 2013.11.08 @ 16:05:30

End Date: 2013.11.08 @ 23:51:00

Job Ticket #: 55772 DST #: 3

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2013.11.13 @ 11:13:41



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Grady Bolding Corp.

17-12s-20w Ellis,KS

PO Box 486
Ellinwood, KS 67526

Armbruster #5

Job Ticket: 55772

DST#: 3

ATTN: Clint Musgrove

Test Start: 2013.11.08 @ 16:05:30

GENERAL INFORMATION:

Formation: **Marmaton**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 18:47:30

Time Test Ended: 23:51:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Brannan L

Unit No: 68

Interval: 3852.00 ft (KB) To 3934.00 ft (KB) (TVD)

Reference Elevations: 2299.00 ft (KB)

Total Depth: 3934.00 ft (KB) (TVD)

2290.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Poor

KB to GR/CF: 9.00 ft

Serial #: 8372

Inside

Press@RunDepth: 105.84 psig @ 3853.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.11.08

End Date:

2013.11.08

Last Calib.:

2013.11.08

Start Time: 16:05:31

End Time:

23:51:00

Time On Btm:

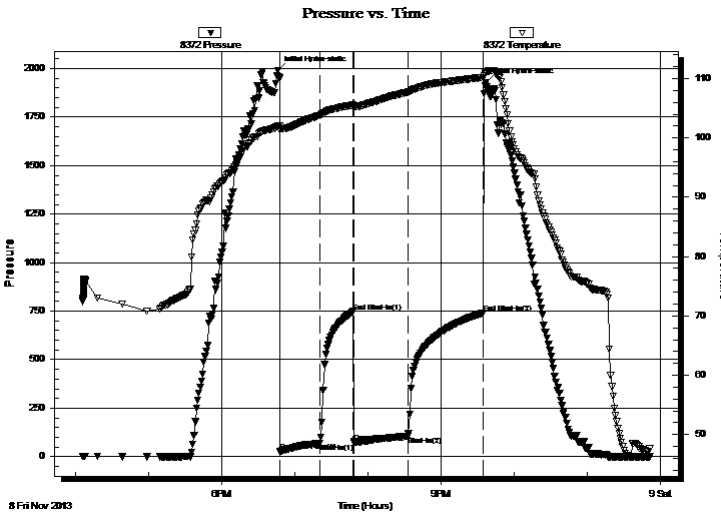
2013.11.08 @ 18:45:30

Time Off Btm:

2013.11.08 @ 21:36:30

TEST COMMENT: 30- IF- BOB 18 mins
30- IS- No blow
45- FF- BOB 14 mins
60- FSI- No blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1990.63	101.97	Initial Hydro-static
2	25.62	101.44	Open To Flow (1)
35	69.52	103.80	Shut-In(1)
62	747.66	105.55	End Shut-In(1)
63	73.30	105.34	Open To Flow (2)
107	105.84	107.72	Shut-In(2)
169	740.38	110.21	End Shut-In(2)
171	1929.32	110.97	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
200.00	OCM, 55%M	2.73
0.00	240' 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

Grady Bolding Corp.

17-12s-20w Ellis,KS

PO Box 486
Ellinwood, KS 67526

Armbruster #5

Job Ticket: 55772

DST#: 3

ATTN: Clint Musgrove

Test Start: 2013.11.08 @ 16:05:30

Tool Information

Drill Pipe:	Length: 3853.00 ft	Diameter: 3.75 inches	Volume: 52.63 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.75 inches	Volume: - bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 60000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	21.00 ft			String Weight: Initial 49000.00 lb
Depth to Top Packer:	3852.00 ft			Final 49000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	82.00 ft			
Tool Length:	102.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3833.00	
Shut In Tool	5.00			3838.00	
Hydraulic tool	5.00			3843.00	
Packer	5.00			3848.00	20.00 Bottom Of Top Packer
Packer	4.00			3852.00	
Stubb	1.00			3853.00	
Recorder	0.00	8372	Inside	3853.00	
Recorder	0.00	8321	Outside	3853.00	
Perforations	13.00			3866.00	
Change Over Sub	1.00			3867.00	
Drill Pipe	63.00			3930.00	
change Over Sub	1.00			3931.00	
Bullnose	3.00			3934.00	82.00 Bottom Packers & Anchor

Total Tool Length: 102.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Grady Bolding Corp.

17-12s-20w Ellis,KS

PO Box 486
Ellinwood, KS 67526

Armbruster #5

Job Ticket: 55772

DST#: 3

ATTN: Clint Musgrove

Test Start: 2013.11.08 @ 16:05:30

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

38 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.79 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2900.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
200.00	OCM, 55%M	2.732
0.00	240' GIP	0.000

Total Length: 200.00 ft Total Volume: 2.732 bbl

Num Fluid Samples: 0

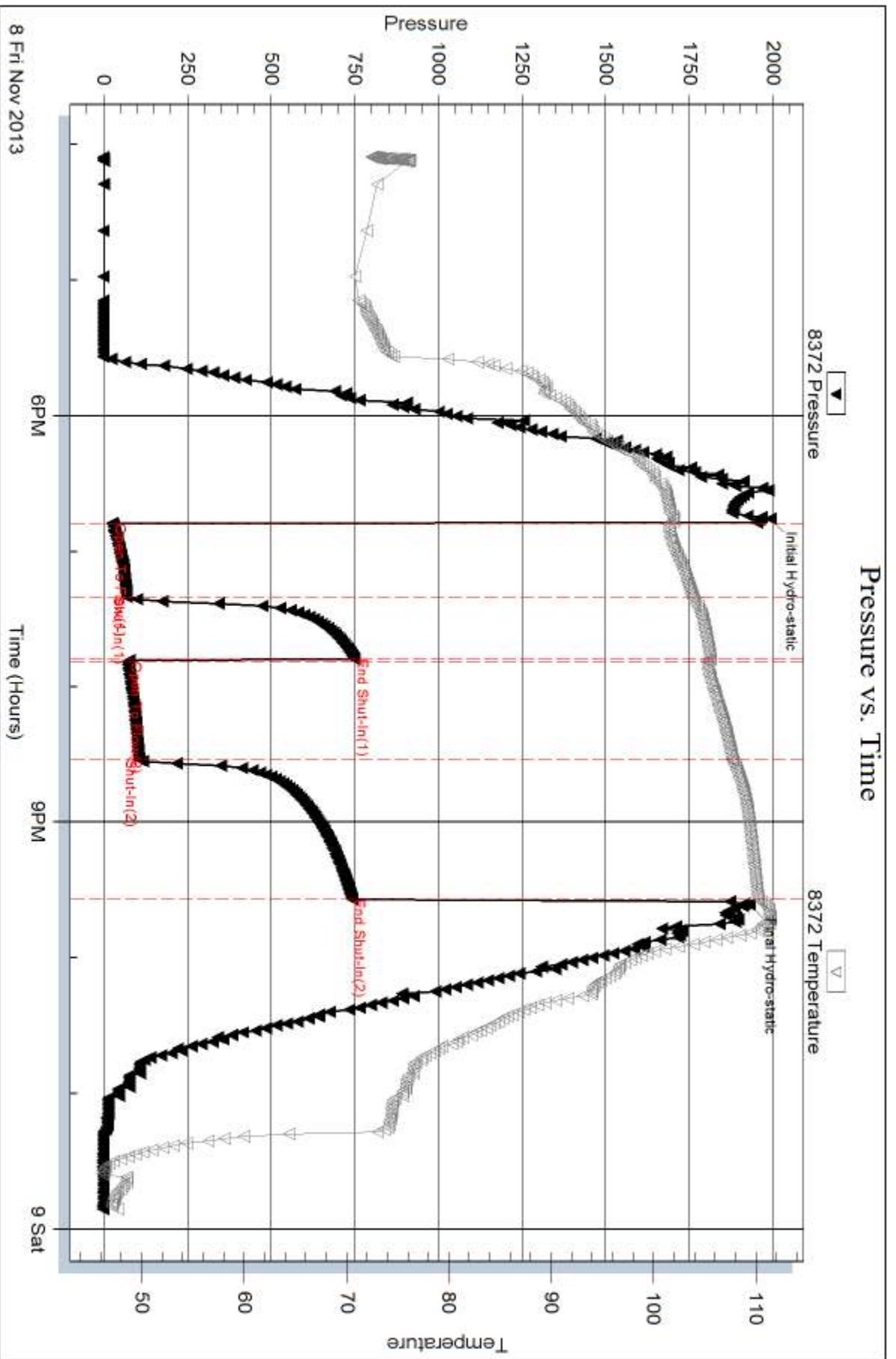
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

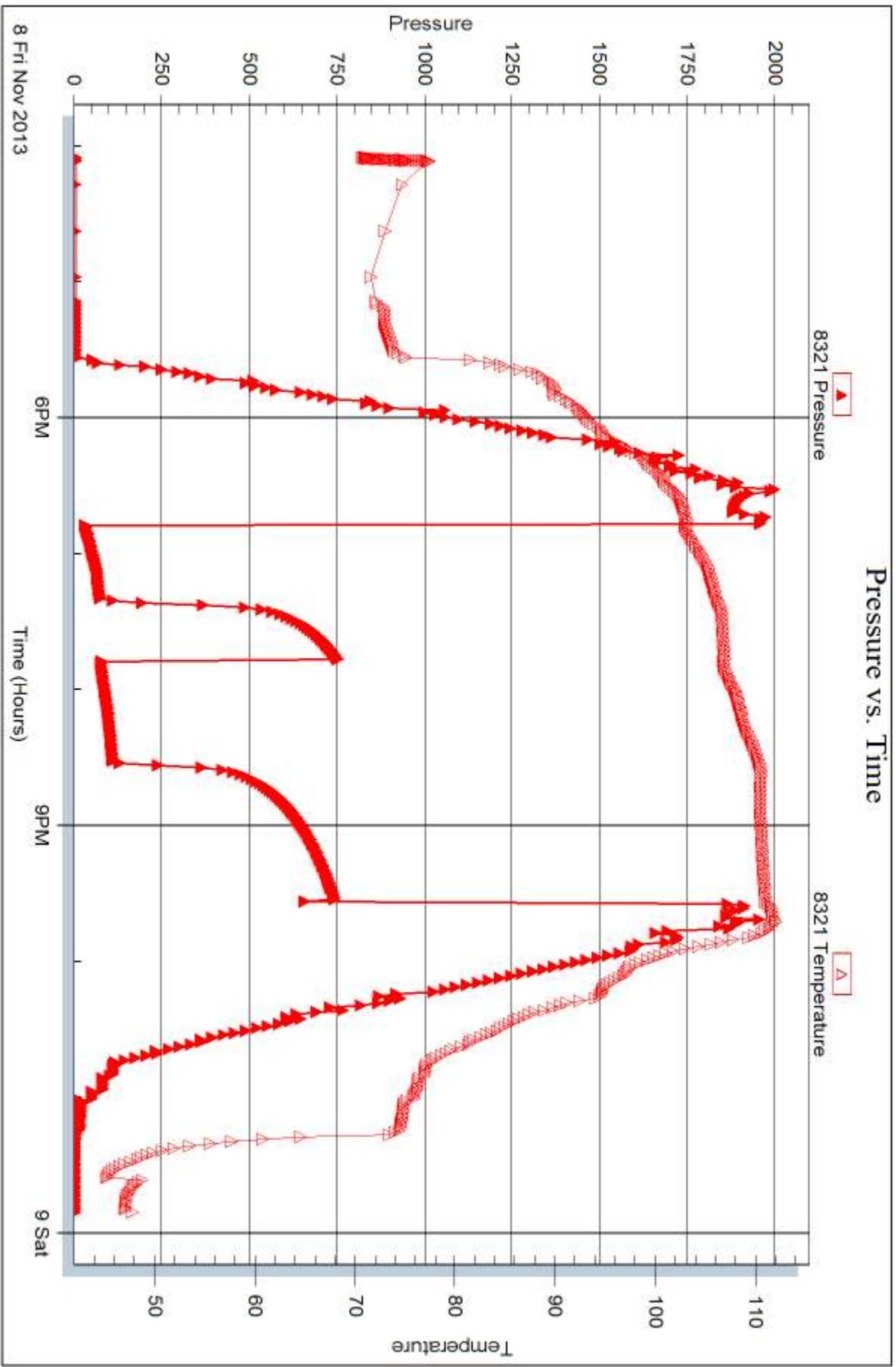


Serial #: 8321

Outside Grady Bolding Corp.

Amburster #5

DST Test Number: 3



Trilobite Testing, Inc

Ref. No: 55772

Printed: 2013.11.13 @ 11:13:42



DRILL STEM TEST REPORT

Prepared For: **Grady Bolding Corp.**

PO Box 486
Ellinwood, KS 67526

ATTN: Clint Musgrove

Armbruster #5

17-12s-20w Ellis,KS

Start Date: 2013.11.09 @ 10:32:28

End Date: 2013.11.09 @ 16:56:58

Job Ticket #: 55773 DST #: 4

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2013.11.13 @ 11:12:07



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Grady Bolding Corp.

17-12s-20w Ellis,KS

PO Box 486
Ellinwood, KS 67526

Armbruster #5

Job Ticket: 55773

DST#: 4

ATTN: Clint Musgrove

Test Start: 2013.11.09 @ 10:32:28

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 12:24:58

Time Test Ended: 16:56:58

Test Type: Conventional Bottom Hole (Reset)

Tester: Brannan L

Unit No: 68

Interval: 3987.00 ft (KB) To 3995.00 ft (KB) (TVD)

Reference Elevations: 2299.00 ft (KB)

Total Depth: 3995.00 ft (KB) (TVD)

2290.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 9.00 ft

Serial #: 8372

Inside

Press@RunDepth: 79.75 psig @ 3988.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.11.09

End Date:

2013.11.09

Last Calib.:

2013.11.09

Start Time: 10:32:29

End Time:

16:56:58

Time On Btm:

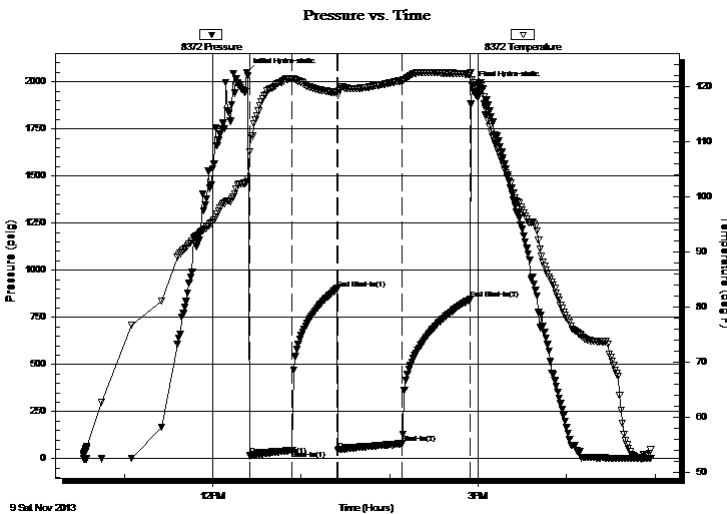
2013.11.09 @ 12:22:58

Time Off Btm:

2013.11.09 @ 14:55:58

TEST COMMENT: 30- IF- Built to 5"
30- IS- No blow
45- FF- Built to 5"
45- FS- No blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2049.90	102.75	Initial Hydro-static
2	15.64	108.19	Open To Flow (1)
31	44.83	121.35	Shut-In(1)
62	902.36	118.90	End Shut-In(1)
62	45.62	118.49	Open To Flow (2)
106	79.75	121.13	Shut-In(2)
152	845.43	122.27	End Shut-In(2)
153	1980.16	121.23	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
140.00	MW, 85%W	1.91

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Grady Bolding Corp.

17-12s-20w Ellis,KS

PO Box 486
Ellinwood, KS 67526

Armbruster #5

Job Ticket: 55773

DST#: 4

ATTN: Clint Musgrove

Test Start: 2013.11.09 @ 10:32:28

Tool Information

Drill Pipe:	Length: 3979.00 ft	Diameter: 3.75 inches	Volume: 54.36 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.75 inches	Volume: - bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose:	52000.00 lb
			<u>Total Volume:</u>	Tool Chased	0.00 ft
				String Weight: Initial	48000.00 lb
Drill Pipe Above KB:	12.00 ft			Final	48000.00 lb
Depth to Top Packer:	3987.00 ft				
Depth to Bottom Packer:	ft				
Interval between Packers:	8.00 ft				
Tool Length:	28.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			
Tool Comments:					

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3968.00	
Shut In Tool	5.00			3973.00	
Hydraulic tool	5.00			3978.00	
Packer	5.00			3983.00	20.00 Bottom Of Top Packer
Packer	4.00			3987.00	
Stubb	1.00			3988.00	
Recorder	0.00	8372	Inside	3988.00	
Recorder	0.00	8321	Outside	3988.00	
Perforations	4.00			3992.00	
Bullnose	3.00			3995.00	8.00 Bottom Packers & Anchor
Total Tool Length:	28.00				



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Grady Bolding Corp.

17-12s-20w Ellis,KS

PO Box 486
Ellinwood, KS 67526

Armbruster #5

Job Ticket: 55773

DST#: 4

ATTN: Clint Musgrove

Test Start: 2013.11.09 @ 10:32:28

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

28000 ppm

Viscosity: 59.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 9.59 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 6000.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
140.00	MW, 85%W	1.912

Total Length: 140.00 ft

Total Volume: 1.912 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

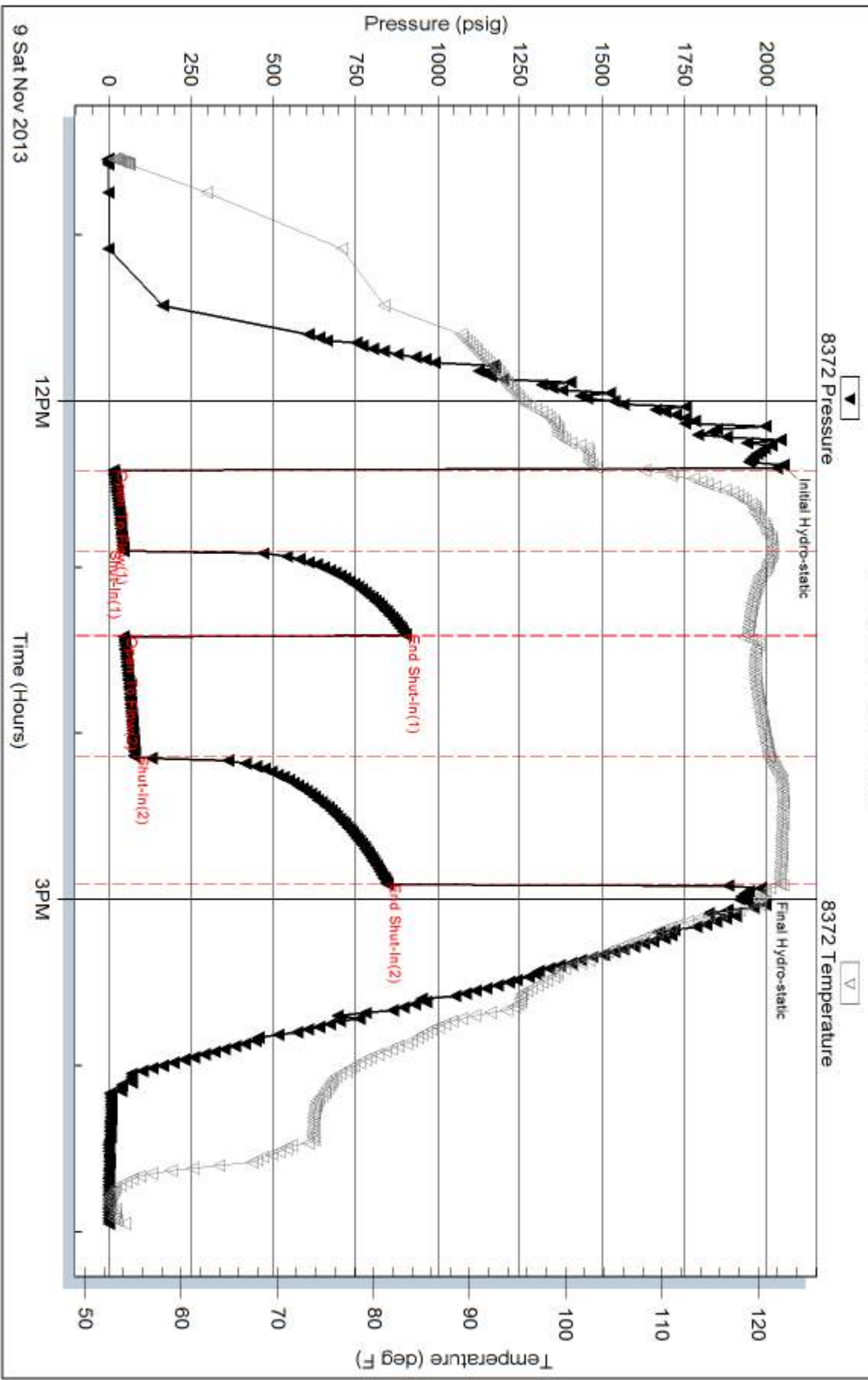
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time

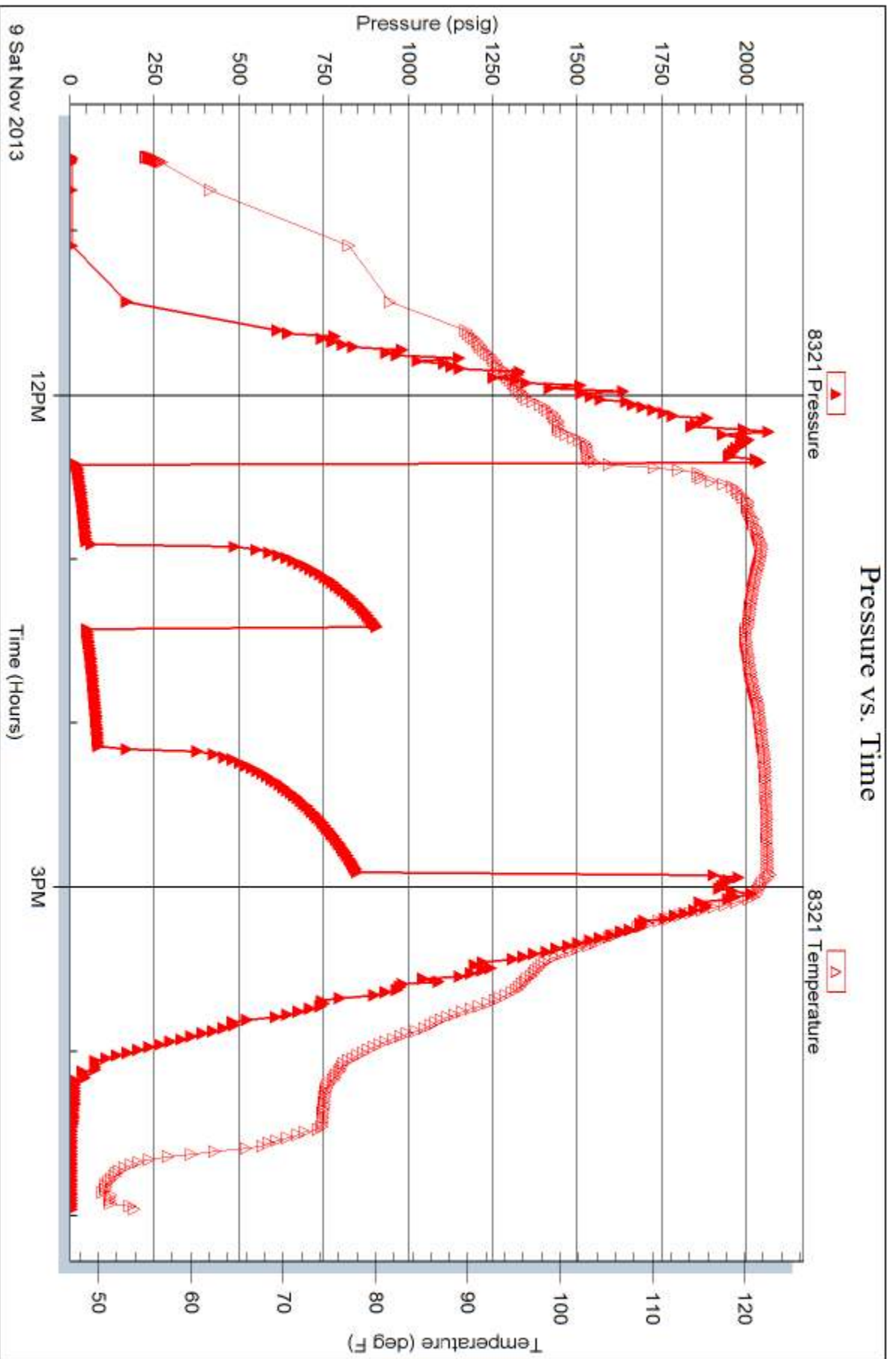


Serial #: 8321

Outside Grady Bolding Corp.

Amburster #5

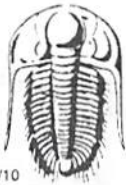
DST Test Number: 4



Tribble Testing, Inc

Ref. No: 55773

Printed: 2013.11.13 @ 11:12:06



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 55770

Well Name & No. Armbruster #5 Test No. 1 Date 11/7/13
 Company Amy Bolding Corp. Elevation 2299 KB 2290 GL
 Address PO Box 486 114th N. Main Billinwood, KS 67526
 Co. Rep / Geo. Clint Musgrove Rig Southwind #8
 Location: Sec. 17 Twp. R2S Rge. 20W Co. Ellis State KS

Interval Tested 3620-3700 Zone Tested LKC
 Anchor Length 80' Drill Pipe Run 3632 Mud Wt. 8.7
 Top Packer Depth 3615 Drill Collars Run ———— Vis 61
 Bottom Packer Depth 3620 Wt. Pipe Run ———— WL 5.4
 Total Depth 3700 Chlorides 1900 ppm System LCM 3#

Blow Description IF-BOB 14 mins
ISI - Surface blow
FF-BOB 19 mins
FSI - No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>30</u>	<u>WNICO</u>	<u>45</u>	<u>20</u>	<u>35</u>	<u>35</u>
<u>190</u>	<u>MW</u>		<u>65</u>	<u>35</u>	<u>35</u>
	<u>75' GIP</u>				

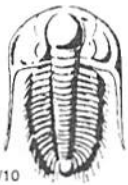
Rec Total 240 BHT 111° Gravity ———— API RW .15 @ 36° F Chlorides 90,000 ppm

(A) Initial Hydrostatic 1769 Test 1150 T-On Location 0214
 (B) First Initial Flow 37 Jars ———— T-Started 0217
 (C) First Final Flow 100 Safety Joint ———— T-Open 0630
 (D) Initial Shut-In 559 Circ Sub ———— T-Pulled 0915
 (E) Second Initial Flow 105 Hourly Standby ———— T-Out 1141
 (F) Second Final Flow 164 Mileage 46 RT 71.30
 (G) Final Shut-In 538 Sampler ————
 (H) Final Hydrostatic 1766 Straddle ———— Ruined Shale Packer ————
 Shale Packer ———— Ruined Packer ————

Initial Open 30 Extra Packer ———— Extra Copies ————
 Initial Shut-In 30 Extra Recorder ———— Sub Total 0
 Final Flow 45 Day Standby ———— Total 1221.30
 Final Shut-In 60 Accessibility ———— MP/DST Disc't ————
 Sub Total 1221.30

Approved By _____ Our Representative Brannan L

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. 55771

Well Name & No. Armbruster #5 Test No. 2 Date 11/7/13
 Company Grady Bolding Corp. Elevation 2299 KB 2290 GL
 Address PO Box 486 114 N. Main Ellinwood, KS 67526
 Co. Rep / Geo. Clint Musgrove Rig Southwind #8
 Location: Sec. 17 Twp. D25 Rge. 20w Co. Ellis State KS

Interval Tested 3796-3830 Zone Tested ~~3789~~ Lansing
 Anchor Length 34' Drill Pipe Run 3789 Mud Wt. 9.1
 Top Packer Depth 3791 Drill Collars Run --- Vis 58
 Bottom Packer Depth 3796 Wt. Pipe Run --- WL 6.8
 Total Depth 3830 Chlorides 2100 ppm System LCM 2[#]
 Blow Description IF - Slowly built to 4"
ISF - No blow
FF - Slowly built to 5"
FSI - No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>20</u>	<u>OCM</u>		<u>5</u>		<u>95</u>
	<u>40' GIP</u>				

Rec Total 20' BHT 1080 Gravity --- API RW --- @ --- °F Chlorides --- ppm

(A) Initial Hydrostatic 1964 Test 1150 T-On Location 2230
 (B) First Initial Flow 20 Jars --- T-Started 2237
 (C) First Final Flow 20 Safety Joint --- T-Open 0037
 (D) Initial Shut-In 623 Circ Sub --- T-Pulled 0237
 (E) Second Initial Flow 20 Hourly Standby --- T-Out 0443
 (F) Second Final Flow 23 Mileage 46 RT 71.30 Comments ---
 (G) Final Shut-In 681 Sampler ---
 (H) Final Hydrostatic 1923 Straddle --- Ruined Shale Packer ---
 Shale Packer --- Ruined Packer ---
 Extra Packer --- Extra Copies ---
 Extra Recorder --- Sub Total 0
 Day Standby --- Total 1221.30
 Accessibility --- MP/DST Disc't ---
 Sub Total 1221.30

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

Approved By _____ Our Representative Brennan L

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. 55772

Well Name & No. Armbruster #5 Test No. 3 Date 11/8/13
 Company Grady Bolding Corp. Elevation 2299 KB 2290 GL
 Address PO Box 486 114 N. Main Ellinwood, KS 67526
 Co. Rep / Geo. Clint Musgrave Rig Southwind #8
 Location: Sec. 17 Twp. 12s Rge. 20w Co. Ellis State KS

Interval Tested 3852-3934 Zone Tested Marmaton
 Anchor Length 82' Drill Pipe Run 3853 Mud Wt. 91
 Top Packer Depth 3847 Drill Collars Run --- Vis 53
 Bottom Packer Depth 3852 Wt. Pipe Run --- WL 28
 Total Depth 3934 Chlorides 2900 ppm System LCM 2#

Blow Description IF-BOB 18mins
ISI- No blow
FF-BOB 14mins
FSI- No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>200</u>	<u>CCM</u>	<u>45</u>		<u>55</u>	
	<u>240 GIP</u>				

Rec Total 200 BHT 110° Gravity 38 API RW --- @ --- °F Chlorides --- ppm

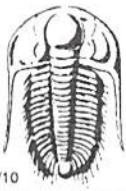
(A) Initial Hydrostatic 1991 Test 1150 T-On Location 1600
 (B) First Initial Flow 26 Jars --- T-Started 1605
 (C) First Final Flow 70 Safety Joint --- T-Open 1847
 (D) Initial Shut-In 748 Circ Sub --- T-Pulled 2132
 (E) Second Initial Flow 73 Hourly Standby --- T-Out 2350
 (F) Second Final Flow 106 Mileage 46 RT 71.30 Comments ---
 (G) Final Shut-In 740 Sampler ---
 (H) Final Hydrostatic 1929 Straddle ---
 Shale Packer ---
 Extra Packer ---
 Extra Recorder ---
 Day Standby ---
 Accessibility ---

Initial Open 30
 Initial Shut-In 30
 Final Flow 45
 Final Shut-In 60

Sub Total 1221.30

Approved By _____ Our Representative Brannan L

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. 55773

4/10

Well Name & No. Armbruster #5 Test No. 4 Date 11/9/13
 Company Crady Bolding Corp. Elevation 2299 KB 2290 GL
 Address PO Box 486 114 N. Main Ellonwood, KS 67526
 Co. Rep / Geo. Clint Musgrove Rig Southwind #8
 Location: Sec. 17 Twp. Ds Rge. 20w Co. Ellis State KS

Interval Tested 3987-3995 Zone Tested Arbuckle
 Anchor Length 8' Drill Pipe Run 3979 Mud Wt. 9.3
 Top Packer Depth 3982 Drill Collars Run — Vis 59
 Bottom Packer Depth 3987 Wt. Pipe Run — WL 9.6
 Total Depth 3995 Chlorides 6000 ppm System LCM 2~~nd~~
 Blow Description IF - Built to 5"
ISI - No blow
FF - Built to 5"
FSI - No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>140</u>	<u>MW</u>			<u>85</u>	<u>15</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 140 BHT 122° Gravity — API RW 27 @ 59 °F Chlorides 28000 ppm

(A) Initial Hydrostatic 2050 Test 1150 T-On Location 1020
 (B) First Initial Flow 16 Jars — T-Started 1032
 (C) First Final Flow 45 Safety Joint — T-Open 1224
 (D) Initial Shut-In 902 Circ Sub — T-Pulled 1454
 (E) Second Initial Flow 46 Hourly Standby — T-Out 1657
 (F) Second Final Flow 80 Mileage 46 RT 71.30 Comments —
 (G) Final Shut-In 845 Sampler —
 (H) Final Hydrostatic 1980 Straddle — Ruined Shale Packer —
 Shale Packer — Ruined Packer —
 Extra Packer — Extra Copies —
 Extra Recorder — Sub Total 0
 Day Standby — Total 1221.30
 Accessibility — MP/DST Disc't —
 Sub Total 1221.30

Initial Open 30
 Initial Shut-In 30
 Final Flow 45
 Final Shut-In 45

Approved By _____ Our Representative Brannan L

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.