

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

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			
Geologist Report / Mud Logs	<input type="checkbox"/> Yes	<input type="checkbox"/> No			
List All E. Logs Run:					

<div style="text-align: center;"> CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> Used Report all strings set-conductor, surface, intermediate, production, etc. </div>							
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 (Explain) _____			
Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water	Bbls.	Gas-Oil Ratio Gravity

<p>DISPOSITION OF GAS:</p> <p><input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease</p> <p><i>(If vented, Submit ACO-18.)</i></p>	<p>METHOD OF COMPLETION:</p> <p><input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled</p> <p><i>(Submit ACO-5)</i> <i>(Submit ACO-5)</i> <i>(Submit ACO-4)</i></p>	<p>PRODUCTION INTERVAL:</p> <p>Top Bottom</p>	

Shots Per Foot	Perforation Top	Perforation Bottom	Bridge Plug Type	Bridge Plug Set At	Acid, Fracture, Shot, Cementing Squeeze Record (Amount and Kind of Material Used)

TUBING RECORD:	Size:	Set At:	Packer At:	
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Form	ACO1 - Well Completion
Operator	Abercrombie Energy, LLC
Well Name	GM 1-32
Doc ID	1461826

Tops

Name	Top	Datum
ANHY	2074	+615
B/ANHY	2107	+582
HEEB	3938	-1249
LANS	3974	-1285
MUN CK	4139	-1450
STRK	4237	-1548
HUSH	4275	-1586
BKC	4309	-1620
MARM	4337	-1648
PAW	4445	-1756
FT SCT	4484	-1795
CHER	4508	-1819
MISS	4618	-1929

Form	ACO1 - Well Completion
Operator	Abercrombie Energy, LLC
Well Name	GM 1-32
Doc ID	1461826

Casing

Purpose Of String	Size Hole Drilled	Size Casing Set	Weight	Setting Depth	Type Of Cement	Number of Sacks Used	Type and Percent Additives
Surface	12.25	8.625	23	343	COM	225	3% CC, 2% GEL



WESLEY D. HANSEN Consulting Petroleum Geologist

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Cellular: 316-772-6188
email: whansen4651@sbcglobal.net

**KGS
AAPG
Kansas License #418**

LITHOLOGY STRIP LOG

WellSight Systems

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

Well Name: Abercrombie Energy, LLC #1-32 GM

API: 15-101-22626

Location: 1320' FSL, 1650' FEL of Section 32-17S-27W

License Number: 32457

Region: Lane County, Kansas

Spud Date: 4-17-2019

Drilling Completed: 4-27-2019

Surface Coordinates: 1320' FSL, 1650' FEL of Section 32-17S-27W

Bottom Hole Vertical hole

Coordinates:

Ground Elevation (ft): 2682'

K.B. Elevation (ft): 2689'

Logged Interval (ft): 3600'

To: RTD

Total Depth (ft): 4660'

Formation: Mississippian at RTD

Type of Drilling Fluid: Chemical - displaced at 3570'

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

OPERATOR

Company: Abercrombie Energy, LLC

Address: 10209 W. Central

Suite 2

Wichita, KS 67212

GEOLOGIST

Name: Wesley D. Hansen

Company: Wesley D. Hansen - Consulting Petroleum Geologist

Address: 212 N. Market, Suite 257

Wichita, KS 67202

Cellular: 316-772-6188

COMMENTS

Contractor Pickrell Drilling Company, Inc. Rig 10
Pusher: Doug Budig

Surface Casing: 8 5/8" set at 343' w/225 sx
Production Casing: P&A

Mud by: MudCo - Gerald Adams was the engineer

DST's by: Trilobite Testing - Bradley "Walt" Walters was the tester

Logs by: ELI - Jeff Luebbers was the engineer (DIL, CN-CD-PE, ML)

Deviation Surveys: 1/2 deg. @ 343'; 3/4 deg. @ 1867'; 3/4 deg. @ 2861'; 3/4 deg. @ 4450'; 1/2 deg. @ 4660'

BIT RECORD

Bit #	Size	MFG	Type	Depth Out	Footage Cut	Hours on bit
1	12 1/4"	JZ	rr	343'	343'	4 1/2
2	7 7/8"	JZ	23C rr	2861'	2518'	35 (100 cum. hrs)
3	7 7/8"	JZ	23C	4450'	1589'	70 1/2
4	7 7/8"		retipped	4570'	120'	11
5	7 7/8"	JZ	23C(#3)	4660'	90'	5 1/2 (76 cum. hrs)

FORMATION TOPS AND STRUCTURAL COMPARISON

FORMATION	SAMPLE TOPS		LOG TOPS		COMPARISON WELL	
	Depth	Datum	Depth	Datum	Blue Goose Drlg. Co. Borell "G" 1	
	KB 2689'		KB 2689'		1947' FSL, 176' FEL KB 2682'	
					Sec. 32-17S-27W	
Anhydrite	2075'	+614	2076'	+613	2069'	+613
B/Anhydrite	2109'	+580	2107'	+582	2091'	+591
Heebner Shale	3936'	-1247	3938'	-1249	3914'	-1232
Lansing	3974'	-1285	3974'	-1285	3952'	-1270
Muncie Creek Shale	4137'	-1448	4138'	-1449	4120'	-1438
Stark Shale	4234'	-1545	4237'	-1548	4216'	-1536
Hushpuckney Shale	4272'	-1583	4275'	-1586	4254'	-1572
BKC	4306'	-1617	4308'	-1619	4289'	-1607
Marmaton	4332'	-1643	4336'	-1647	4318'	-1636
Pawnee	4438'	-1749	4444'	-1755	4415'	-1733
Fort Scott	4479'	-1790	4483'	-1794	4454'	-1772
Cherokee Shale	4500'	-1811	4507'	-1818	4476'	-1794
Cherokee Sand	4551'	-1862	4554'	-1865	4527'	-1845
Mississippian	4619'	-1930	4624'	-1935	4550'	-1868
RTD	4660'	-1971			4619'	-1937
LTD			4664'	-1975		

DRILL STEM TESTS

DST No. 1 Pawnee
Interval: 4431'-4450'
Times: 30-30-30-30
Recovery: 4' mud, oil spots in tool
FP: 21-22/22-22 SIP: 28-30
HP: 2261-2235 BHT: 119 deg. F

IFP: surface blow, died in 20 minutes
ISIP: no return blow
FFP: no blow
FSIP: no return blow

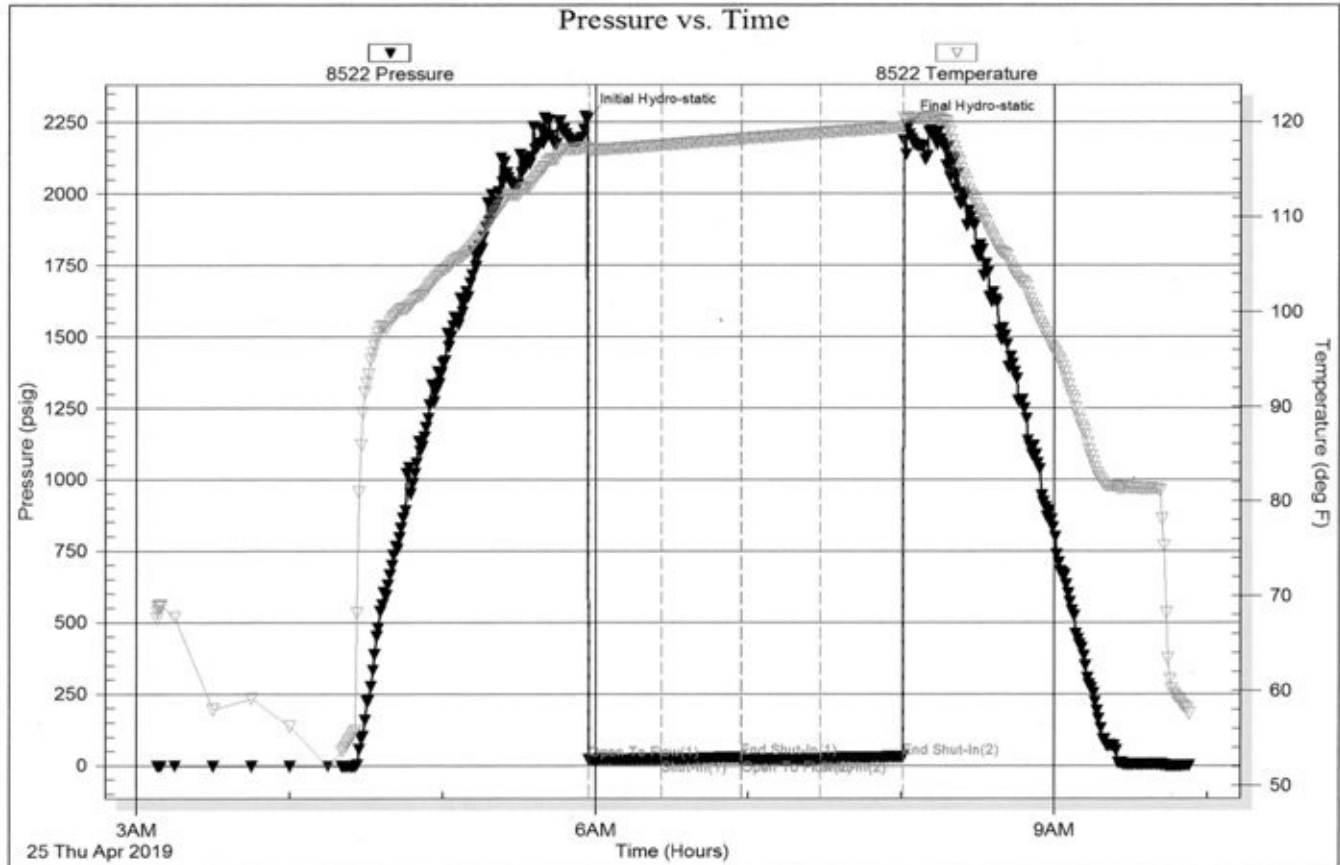
Serial #: 8522

Inside

Abercrombie Energy, LLC

GM#1-32

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 65218

Printed: 2019.04.25 @ 10:16:06

DRILL STEM TESTS

DST No. 2 Cherokee Sand
Interval: 4546'-4570'
Times: 30-45-60-90
Recovery: 10' oil, gravity 36; 65' MCW (50m, 50w) chl. 33,000
FP: 20-29/32-48 SIP: 1030-1055
HP: 2312-2230 BHT: 128 deg. F

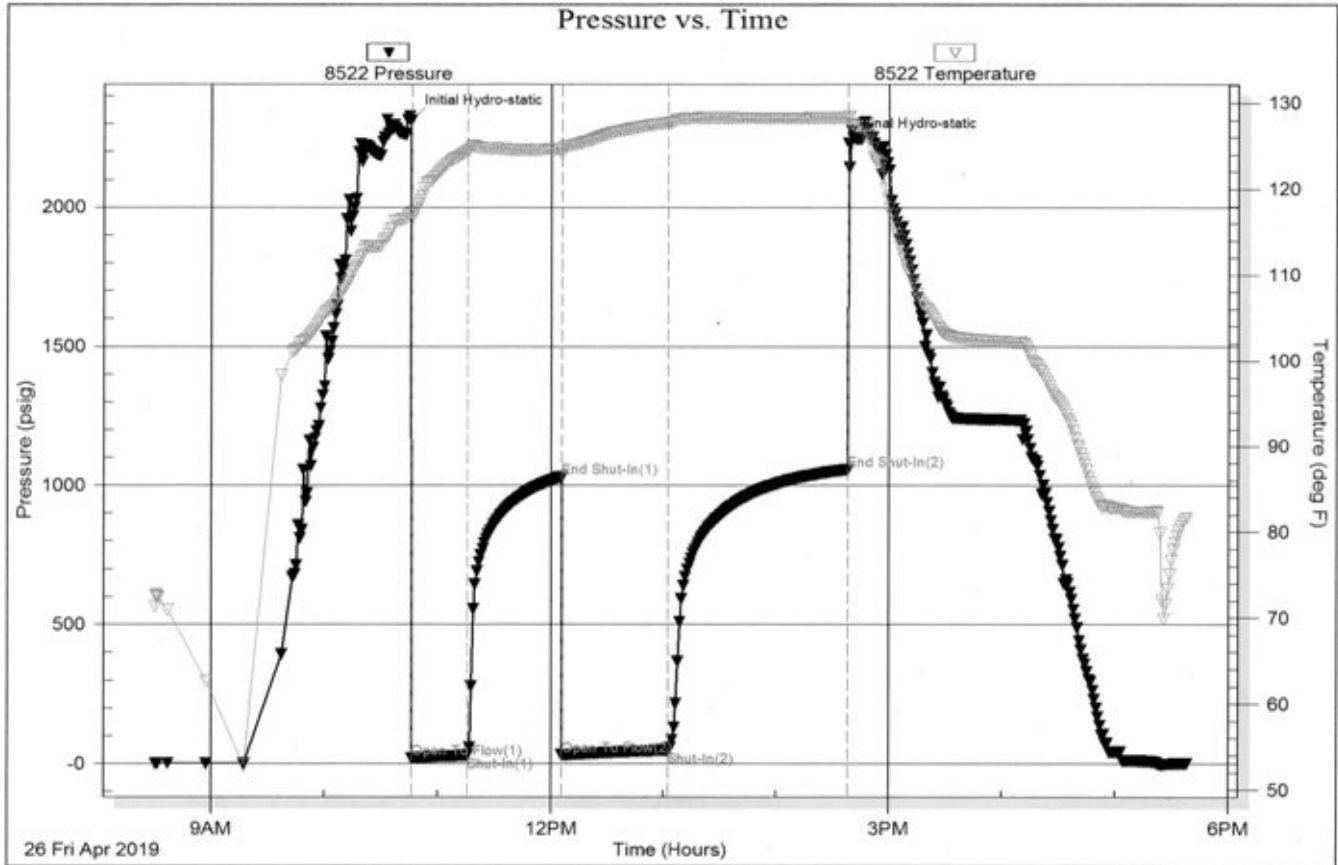
IFP: weak blow bldg. to 2 3/4 inches
ISIP: no return blow
FFP: weak blow bldg. to 2 inches
FSIP: no return blow

Serial #: 8522

Inside Abercrombie Energy, LLC

GM#1-32

DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 65220

Printed: 2019.04.26 @ 16:58:57

ROCK TYPES

Anhy
Cht
Coal
Congl
Gyp
Lmst
Salt

Shale
Shcol
Shale red
Sltst
Ss
Carb sh
Dol

Dtd
Gry sh
Sandylms
Shale green
Sltstn
Shlyslts
Sltys

Sdy dolo
Silty dolo
Shy dolo
Shaly ls

ACCESSORIES

FOSSIL

Algae

Amph

Belm

Bioclst

Brach

Bryozoa

Cephal

Coral

Crin

Echin

Fish

Foram

Fossil

Gastro

Oolite

Ostra

Pelec

Pellet

Pisolite

Plant

Strom

Fuss

Oomold

MINERAL

Anhy

Arggrn

Arg

Bent

Bit

Breclrag

Calc

Carb

Chtdk

Chtlt

Dol

Feldspar

Ferrpel

Ferr

Glau

Gyp

Hvymin

Kaol

Marl

Minxl

Nodule

Phos

Pyr

Salt

Sandy

Silt

Sil

Sulphur

Tuff

Chlorite

Dol

Sand

Slty

STRINGER

Anhy

Arg

Bent

Coal

Dol

Gyp

Ls

Mrst

Sltstrg

Ssstrg

Carbsh

Clystn

Dol

Grysh

Gryslt

Lms

Sandylms

Sh

Sltstn

OTHER SYMBOLS

INTERVALS

Core

Dst

Dst

EVENTS

Rft

Dst top/base

OIL SHOWS

Even

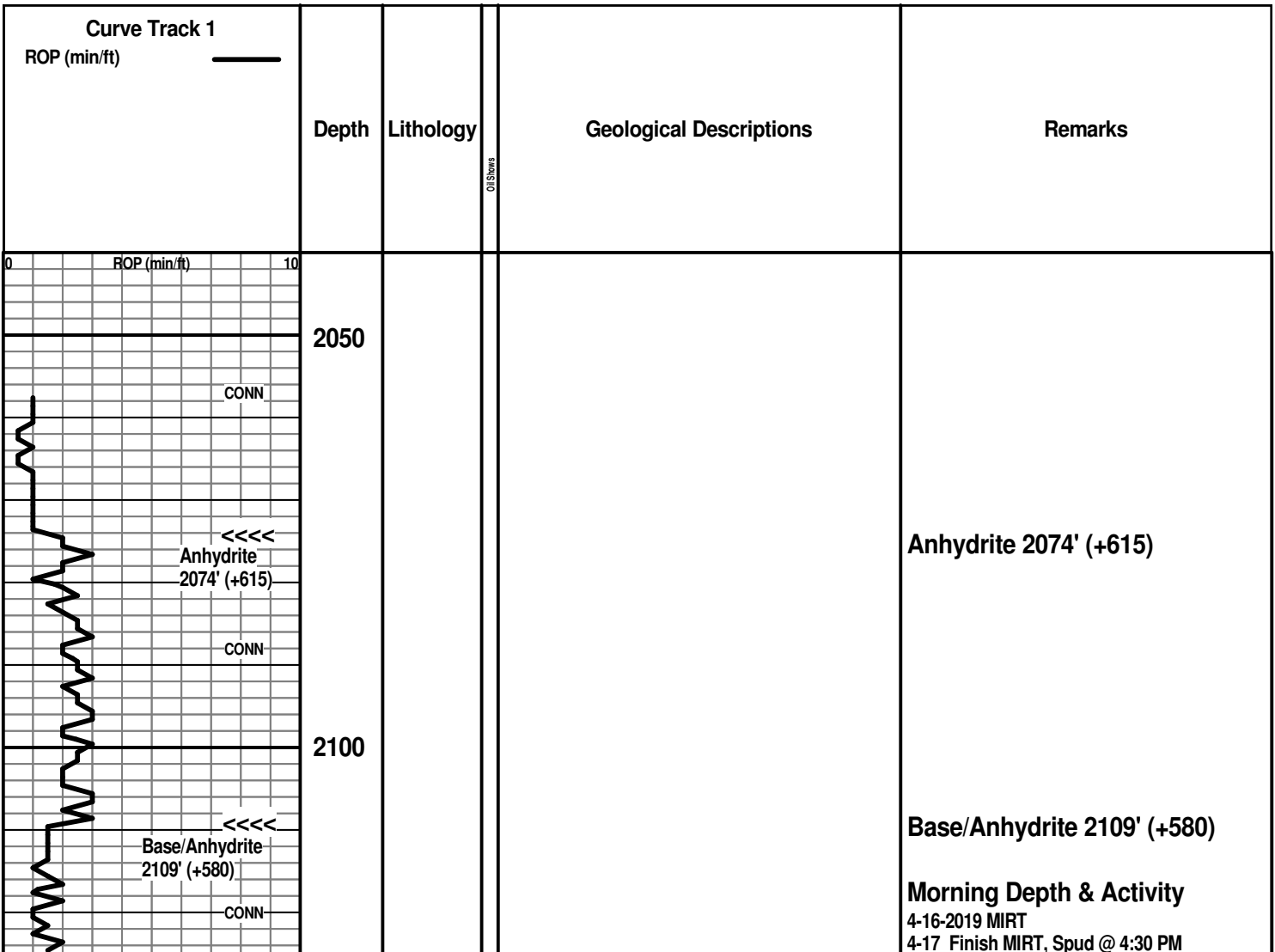
Spotted

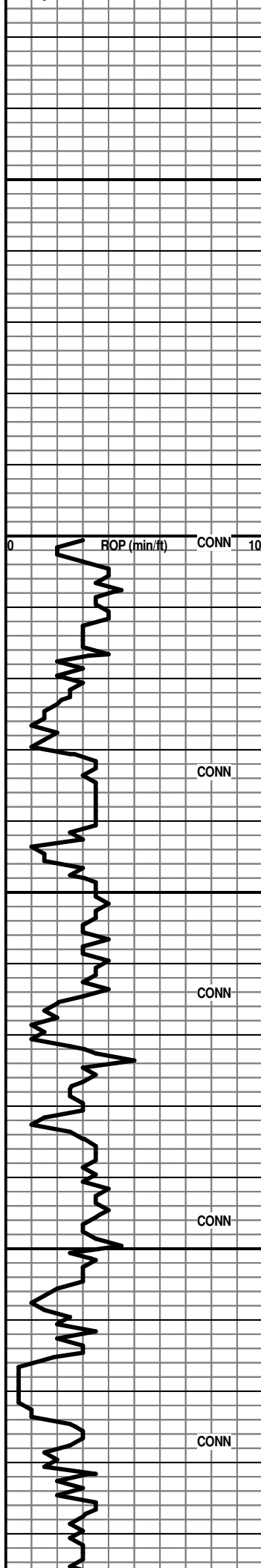
Quest.

Trace

Dead

Gas show





2150

3600

3650

3700

Ls: pred. mottled brn/gray gran. and foss.; lesser dark brn cryptoxin; Sh: lt to med gray and pale gray mushy

Ls: decr. mottled AA; pred. lt to med brn and gray vfxln, dense; Sh: med to dark gray, some black

Ls: mix AA; sl influx tan fn-vfxln, foss. IP, poor-NVP; shales AA

Ls: var. gray, tan, brn gran., foss. IP; some tan with poor-fair inter-particle por., most poor-NVP; Sh: gray

Ls: mix AA with incr. gray shale

Ls: brn, gray vfxln to gran., NVP; Sh: med to dark gray

4-18 WOC @ 343'
4-19 Drlg. @ 1488'
4-20 Drlg. @ 2720'
4-21 Drlg. @ 3072'
4-22 Drlg. @ 3570'
4-23 Drlg. @ 4020'
4-24 CFS @ 4306'
4-25 DST #1 @ 4450'
4-26 TOH for DST #2 @ 4570'
4-27 RTD @ 4660', logging complete

Pipe strap at 2861'

Board 2877.96'
Strap 2876.53

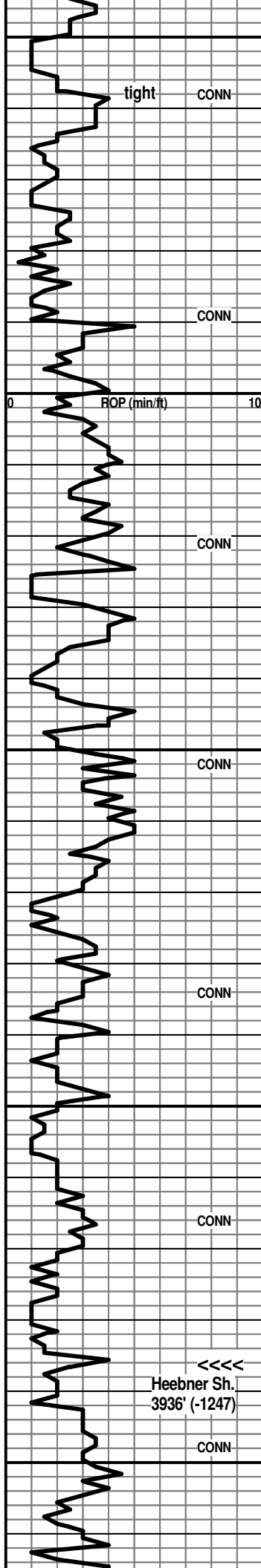
Short to board 1.43'
no correction

MudCo Mud Check at 3595'
8:15 AM on 4-22-2019
wt vis wl pH chl
8.6 58 6.4 11.0 4000
PV YP GelS lcn solids
18 20 16/32 2# 2.0%

vis 55 wt 8.6 lcn 2#

Start 10' samples - wet and dry

Sample quality generally poor to fair at best



3750

F

Ls: tan fn gran., foss. IP gen. poor por.; gray dense, foss., NVP; brn vf-cryptoxln, NVP

F

Ls: tan gran. foss. IP gen. poor-NVP; gray, brn vfxln NVP; Sh: gray, some red-brn

Ls: var. gray, tan, brn gran. IP, poor-NVP; Sh: AA

Ls: tan, lt brn fn-vfxln poor-NVP; gray, med brn vf-cryptoxln, NVP; Sh: gray

F

Ls: lt to med brn, gray mottled IP, gran. and foss. IP, poor-NVP

3800

Sh: incr. % med gray, gray-green, dark red-brn; Ls: mottled mix AA

F

Ls: mottled brn, gray, tan gran., foss. IP, NVP; Sh: med to dark gray, some black

shaly mix AA

Ls: tan fn gran. with ppt por., N.S.; pred. var. lt to med brn, gray gran., mottled, foss. IP, poor-NVP; Sh: gray, red-brn

F

F

F

Ls: mix tan, lt brn cryptoxln, NVP; other tan, lt brn with ppt por. and some fossil moldic por., N.S.

3850

Ls: tan, lt brn mic-vfxln dense and lt brn vf-cryptoxln, NVP; some offwhite subchalky

F

Ls: tan, lt gray, some offwhite mic-vfxln dense, some foss., scatt. fossil moldic por., N.S.; trace lt gray chert

Ls: mostly mix AA, more micxln, subchalky IP; some med brn cryptoxln

Ls: tan, lt brn mic-vfxln dense and lt to med brn vf-cryptoxln, NVP; Sh: some med gray

F

Ls: tan, lt brn mic-vfxln dense, foss. and sl mottled IP; offwhite, lt gray mic-vfxln dense; Sh: dark gray, some dark red-brn

3900

Ls: lt to med brn mottled, foss. IP, NVP; lt to med brn cryptoxln

F

Ls: tan, lt brn, lt gray mic-vfxln dense, occ sl foss., NVP; subchalky to occ chalky

Ls: mix AA with influx lt to med brn cryptoxln to sl mottled gran; some tan, lt brn with poor interxln por., N.S.

Ls: tan, lt brn fn-medxln, gran. with interparticle por., incr. white chalky; other med brn cryptoxln to mottled gran., NVP

Sh: black carbon., fissile

Ls: med brn cryptoxln

3950

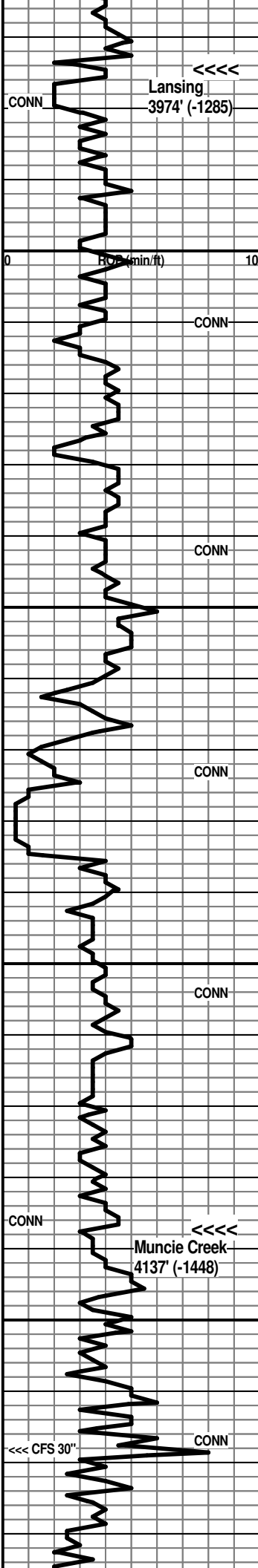
Sh: dark gray, black carbon.; Ls: tan, lt brn mic-vfxln dense, foss. IP; white chalky; lt brn, lt gray cryptoxln

F

Ls: influx tan, offwhite fnxln with interparticle and some vug. por., N.S.; more med brn, mottled, sl foss., NVP

samples much better

Heebner Sh. 3936' (-1247)



Sh: lt to med gray, silty gray; Ls: influx tan, offwhite mic-vfxln dense, subchalky IP; tan, lt gray cryptoxln, NVP; scatt. offwhite, lt gray opq chert

Ls: tan, lt brn cryptoxln, occ gran., NVP; offwhite, tan micxln subchalky to chalky; Sh: med to dark gray

Ls: tan vf-cryptoxln and offwhite micxln subchalky to chalky; some tan, lt gray gran. and foss.; scatt. offwhite opq chert

Ls: tan, lt brn mottled gran., foss., NVP

Ls: mottled mix AA with occ interparticle por.; sl incr. offwhite subchalky to chalky, foss.

Ls: tan, lt brn, lt gray gran/ool with spar matrix, NVP; Chert: offwhite opq

Sh: gray

Ls: gran/ool AA; some dark gray, med brn cryptoxln; spls are shaly

Ls: var. gran. to cryptoxln with some lt brn vfxln dolomite; samples very shaly (med to dark gray)

poor spls - Ls: var. AA; abund. shales: var. gray, black, red-brn

shales AA; Ls: new dark brn, gray-brn gran/foss. and tan foss. with some interparticle por.

Ls: influx offwhite micxln subchalky to chalky, sl foss. IP and tan, offwhite vf-cryptoxln, N.S.

Ls: flood lt to med brn oolitic with good to exc. oomoldic por., barren

Ls: offwhite, tan, lt gray vfxln dense

Ls: flood lt gray cryptoxln; scatt. tan gran. with interparticle por.; scatt. tan, offwhite oolitic, sucrosic with some interxln and oomoldic por., N.S.; scatt. chert AA

Ls: lt gray, tan cryptoxln; lesser offwhite, tan mic-vfxln dense; scatt. chert AA

Ls: mix AA; common shales

Ls: good influx med brn cryptoxln

Sh: black carbon.; Ls: AA with one small chip of brn gran. with dead black stain, no odor, NFO, faint cut

Ls: pred. med brn cryptoxln, mottled IP, NVP, N.S.; Sh: med to dark gray

Ls: mix med to dark brn cryptoxln and tan vf-cryptoxln, NVP; some brn gran. with imbedded dark gray shale

Ls: pred. lt to med brn, tan cryptoxln; lesser tan, offwhite mic-vfxln dense

Ls: tan, lt to med brn, some lt gray cryptoxln; tan, offwhite mic-vfxln dense, subchalky IP; Sh: med to dark gray, red-brn, gray-green; occ mottled oolitic chert; trace pyrite

Ls: mix AA: tan gran. with poor-NVP; common shales AA

Lansing 3974' (-1285)

MudCo Mud Check at 4015'

6:30 AM on 4-23-2019

wt vis wl pH chl

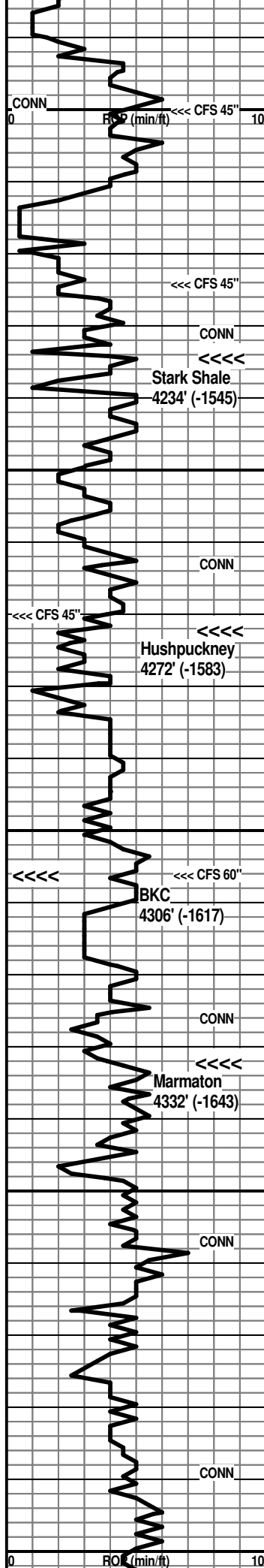
9.3 46 8.8 7.5 7600

PV YP GelS lcm solids

14 14 20/50 1.5# 6.7%

sample quality only fair, more shaly

Muncie Creek 4137' (-1448)



4200

4250

4300

4350

4400

Ls: med to dark brn, tan cryptoxln, mottled IP; shales still common AA; trace oolitic chert

Ls: tan, lt brn mottled gran., foss. IP, NVP, N.S.; scatt. tan, lt gray vfxln Dolomite, N.S.

Ls: tan, lt brn cryptoxln, foss. and mottled IP

Ls: tan oolitic with good to exc. oomoldic por, barren

Ls: oolitic/oomoldic AA; lt to med brn cryptoxln; trace brn opq chert

Ls: lt gray cryptoxln

Ls: tan, offwhite gran. IP, scatt. tan oolitic with fair oomoldic por., barren; pred. tan, lt brn cryptoxln

Sh: black carbon.

Ls: tan, lt to med brn cryptoxln and tan, offwhite mic-vfxln dense; Sh: black carbon. AA and influx gray-green, red-brn, med gray

very shaly mix AA with new dark brn cryptoxln Ls

CFS 4270' 20" spl - very shaly mix AA with Ls: pred. med brn cryptoxln, NVP, N.S.

CFS 45" spl - Ls: pred. tan, lt brn cryptoxln; common offwhite, tan mic-vfxln dense, subchalky; occ tan oolitic with fair oomoldic por., N.S.

Sh: flood black carbon.

Ls: dark brn cryptoxln

Sh: gray

Ls: med to dark brn cryptoxln and mottled brn/gray; common offwhite, tan mic-vfxln dense, subchalky; occ tan oolitic, sucrosic; influx lt gray, lt brn chert

CFS 4306' 30" spl - Ls: var. cryptoxln AA; lesser offwhite, tan dense AA; occ white chalky; Sh: common dark gray, black, some brn and gray-green

Ls: med to dark brn, gray cryptoxln, mottled IP, occ foss.; Sh: black, dark gray

30' spl - Ls: various cryptoxln and dense AA; 4-5 chips brn gran. to micro oolitic with spotty ppt and small vug. por. with dark black oily stain, nfo, nsg, no fluor.; poss. faint fleeting odor

Ls: var. brn, tan, gray pred. cryptoxln; scatt. chips with show AA; occ mottled brn chert; Sh: dark gray, black

Siltst: lt gray, lt brn, red-brn

Ls: flood tan, lt brn cryptoxln; other med brn cryptoxln, NVP, N.S.

Ls: tan, lt to med brn cryptoxln and lt gray, offwhite vfxln dense; Sh: med to dark gray

Ls: mix AA with influx of lt to med gray dolomitic shale and silty gray Ls

mix dolomitic shale and silty Ls AA; other Ls: lt to med brn cryptoxln; Sh: med gray

Ls: more med to dark brn, some gray-brn cryptoxln; scatt. fenestral bryozoan fragments, N.S.; one chip brn cryptoxln with sat stain (caving?); Sh: incr. dark gray

Ls: tan, lt to med brn cryptoxln to mottled gran., NVP, N.S.; 3 chips tan, brn cryptoxln to gran. with spotty dark dead stain, one chip brn cryptoxln with ppt por. on edge, dark stain, no odor, nfo

Ls: pred. tan, lt brn cryptoxln, sl mottled IP, occ tan fnxln with interparticle por., N.S.; one chip with patchy dark stain; minor Sh: med gray, gray-green

Ls: mix AA with influx lt brn smooth cryptoxln: offwhite, tan

Stark Shale 4234' (-1545)

Hushpuckney 4272' (-1583)

MudCo Mud Check at 4306'

7:15 AM on 4-24-2019

wt vis wl pH chl

9.3 49 7.6 10.0 4300

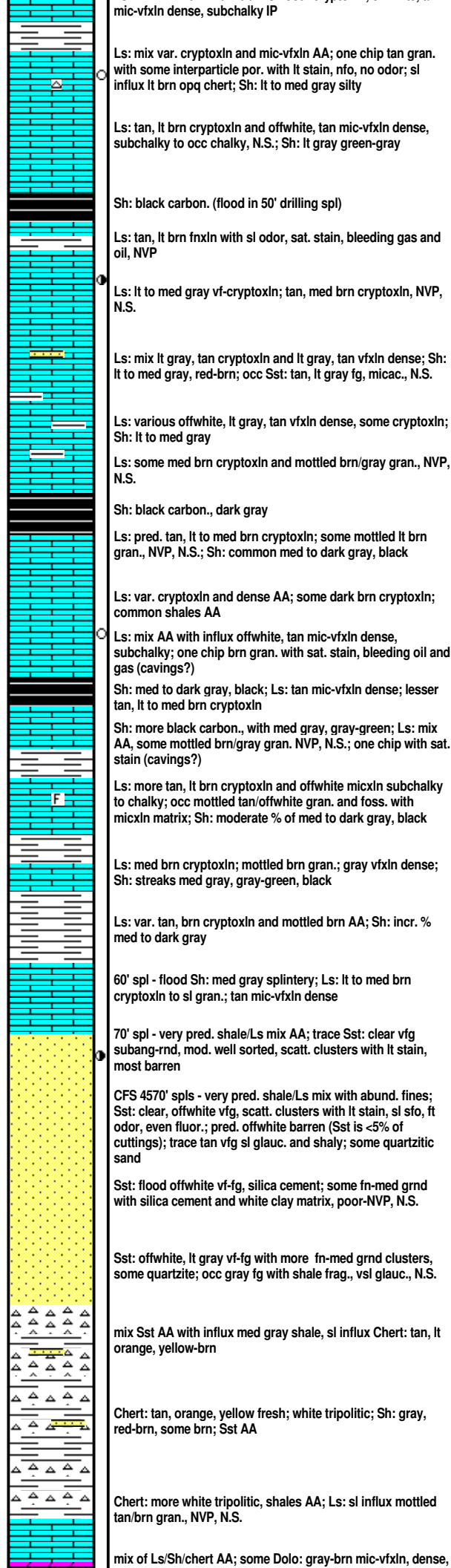
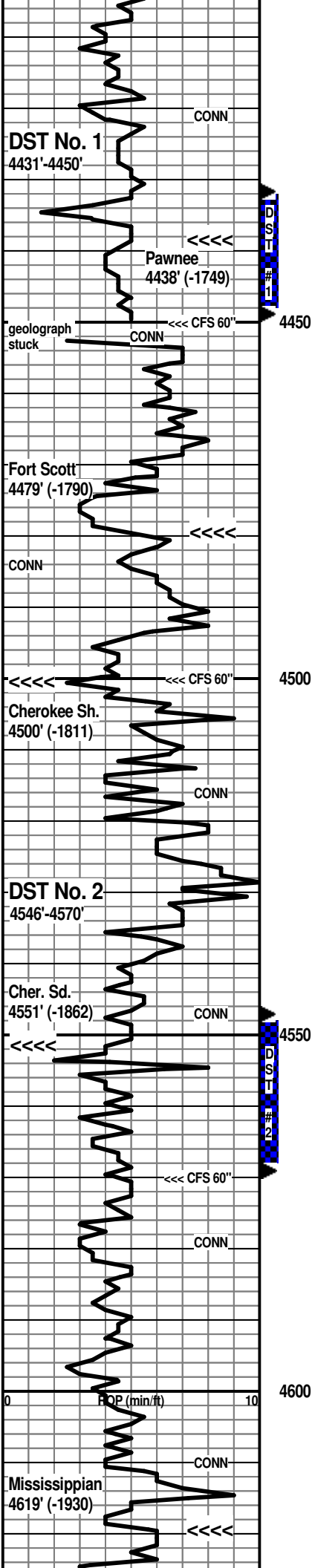
PV YP GelS lcm solids

16 14 11/40 2# 6.9%

CFS 4306' 60" spl - Ls: pred. tan, brn, lt gray cryptoxln; one chip brn cryptoxln with trace brn stain, weak cut, no odor, nfo

BKC 4306' (-1617)

Marmaton 4332' (-1643)



DST No. 1 Pawnee
Interval: 4431'-4450'
Times: 30-30-30-30
IFP: surface blow, died in 20 minutes
ISIP: no return blow
FFP: no blow
FSIP: no return blow
Recovery: 4' mud, oil spots in tool
FP: 21-22/22-22 SIP: 28-30
HP: 2261-2235 BHT: 119 deg. F

Pawnee 4438' (-1749)

pipe strap short to board 2.09'
changed bit at 4450' - ran retipped bit

MudCo Mud Check at 4450'
6:30 AM on 4-25-2019
wt vis wl pH chl
9.6 45 8.8 10.0 3500
PV YP GelS lcm solids
15 15 18/40 1.5# 9.1%

Fort Scott 4479' (-1790)

Cherokee Sh. 4500' (-1811)

DST No. 2 Cherokee Sand
Interval: 4546'-4570'
Times: 30-45-60-90
IFP: weak blow bldg. to 2 3/4 inches
ISIP: no return blow
FFP: weak blow bldg. to 2 inches
FSIP: no return blow
Recovery: 10' oil, gravity 36; 65' MCW (50m, 50w) chl.
33,000
FP: 20-29/32-48 SIP: 1030-1055
HP: 2312-2230 BHT: 128 deg. F

Cher. Sd. 4551' (-1862)

changed bit at 4570'

MudCo Mud Check at 4570'
7:00 AM on 4-26-2019
wt vis wl pH chl
9.4 58 8.0 11.0 4100
PV YP GelS lcm solids
17 16 10/38 1.5# 7.6%

Mississippian 4619' (-1930)



PRESSURE PUMPING LLC

REMIT TO

QES Pressure Pumping LLC
Dept:970
P.O.Box 4346
Houston, TX 77210-4346

MAIN OFFICE

P.O.Box884
Chanute, KS 66720
620/431-9210, 1-800/467-8676
Fax 620/431-0012

Invoice

Invoice#

900755

Invoice Date: 04/23/19

Terms: C.O.D.

Page 1

ABERCROMBIE ENERGY

5510 OIL CENTER ROAD SOUTH
GREAT BEND KS 67530

USA

6207938186

GM #1-32

RECEIVED
MAY - 1 2019
WICHITA

Part No	Description	Quantity	Discounted Unit Price	Discounted Total
CE0471	Cement Pump Charge 301' - 500' (Coalbed/Methane)	1.000	862.5000	862.50
CE0002	Equipment Mileage Charge - Heavy Equipment	30.000	5.3625	160.88
CE0711	Minimum Cement Delivery Charge	1.000	495.0000	495.00
CC5871	Surface Blend II, 2% Gel/3% CaCl	225.000	18.0000	4,050.00
SubTotal After Discount				5,568.38

Tax: 303.75

Total: 5,872.13

Amount Due 7,829.50 If paid after 04/23/19

VENDOR NUMBER

VOUCHER NUMBER

VERIF OF RECEIPT

CODE NUMBER

AMOUNT

1352062

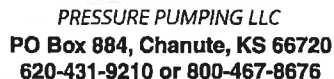
Gm #1-32

CEMENT SURFACE CSG

APPROVAL

VERIFIED ACCURACY

AK


$$\begin{array}{r} 100423 \\ \hline 40621 \end{array}$$

TICKET NUMBER 56103
LOCATION Oakley Ks.
FOREMAN Cory Davis
PORT Walt Drinkel
ice # 900155 Ks

FIELD TICKET & TREATMENT REPORT
CEMENT *Invoice:*

T REPORT
Invoice # 900755 ²¹²⁴

DATE	CUSTOMER #	WELL NAME & NUMBER	SECTION	TOWNSHIP	RANGE	COUNTY
4-17-19	1112	Gm # 1-32	32	17 ^s	27 ^w	Lane
CUSTOMER Abercrombie Energy			TRUCK # DRIVER TRUCK # DRIVER			
MAILING ADDRESS 5510 Oilcenter Road South			731 Neil White			
CITY Great Bend			70 Matadi, Warrick - Xavier Colby			
STATE KS			703 Cory Davis & Kaleb Pounton			
ZIP CODE 67530			1098 Walt Dunkel			

JOB TYPE	Surface	HOLE SIZE	12"4	HOLE DEPTH	343'	CASING SIZE & WEIGHT	8 5/8" - 23#
CASING DEPTH	343'	DRILL PIPE		TUBING		OTHER	
SLURRY WEIGHT	15.2	SLURRY VOL		WATER gal/sk		CEMENT LEFT In CASING	1.5 to 2.0'
DISPLACEMENT	20 1/2	DISPLACEMENT PSI		MIX PSI		RATE	4 BPM

REMARKS: Safety Meeting, rig up on Pickrell Dr., # , Circ Casing on to Hon
mix 225 sks comp 3% cc - 2% cal, Displace 20 1/2 BBL H₂O, Shot in

Cement Dial Crick

3 BBL to Pt

Thank You
Walt & Crew

[illegible]

Rayin 3737

AUTHORIZATION None TITLE Toolpusher DATE 4/18/2009

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

TERMS AND CONDITIONS

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

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

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

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

2. **Terms of Payment.** Customer will pay QES cash in advance for Services and Products unless QES has approved credit prior to the performance of the Services and/or delivery of the Products. Credit terms for approved accounts require full payment of the invoiced amount within 30 days from the date of invoice. All invoices not paid within 30 days will be charged an interest rate of 1 1/2% per month or the maximum rate allowed under applicable state law, whichever is higher. Customer will be responsible for any fees incurred by QES in the collection of any amounts owed to QES including but not limited to attorney's fees and/or collection fee costs.

3. **Proof of Services or Delivery of Products.** QES will furnish verification of proof of Services performed and Product delivered to Customer's representative at the time of performance of the Services or Product delivery. Customer agrees to sign and return such verification indicating Customer's acceptance of the Services or Products.

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

5. **Well or Service Site Conditions.** Customer, having custody and control of the well and/or service site, and having superior knowledge of the same and the conditions surrounding them, warrant that the well and/or service site will be in proper condition to receive and accommodate Services and Products. Upon QES' request, Customer will provide documentation to verify that the well or service site is adequate to support the Services and the delivery of Products. Customer also warrants that QES' personnel and equipment will be able to safely access the well and service site and that any special equipment or road improvements required for such access will be the responsibility of Customer, unless otherwise agreed to by the parties.

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

7. **Data, Data Transmission and Storage.** QES does not warrant or guarantee the accuracy of any research analysis, survey, or other data generated for the Services. QES is not responsible for any accidental or intentional interception of such data by third parties and it is the responsibility of the Customer to safeguard such data against loss including any need to secure digital or paper copies for storage.

8. WARRANTIES - LIMITATION OF LIABILITY.

a) QES warrants that the Services and Products will: (i) be free from defects in materials and workmanship; (ii) be performed in a good and workmanlike manner, in accordance with good oilfield servicing practices; and (iii) conform to the plans, specifications and technical information provided in writing by Customer until the Services or Products are accepted by Customer or QES' contractual obligations are met. In the event that Customer discovers a defect in the Services or Products within the warranty period specified above, Customer will notify QES of such defect. In the event that QES confirms that the Services or Products are defective, QES's liability and Customer's exclusive remedy in any cause of action (whether in tort, contract, breach of warranty or otherwise) arising out of the sale or use of any Services or Products is expressly limited to, at QES' option, the (i) replacement of such Services or Products upon their return to QES or (ii) a credit to Customer for the full price paid by Customer for the defective segment of the Services or Products upon their return to QES. In the case of products of parts not wholly of QES' manufacture, QES' liability will be limited to the extent of its recovery from the manufacturer of such products or parts under its liability to QES. QES will not be liable for any damages, claims, losses or expenses of Customer resulting from such defects or for damages resulting from delays, loss of use, or other direct, indirect, incidental, punitive or consequential damages of any kind. QES will not be responsible for: (i) failures of Services that have been in any way tampered with or altered by anyone other than an authorized representative of QES; (ii) failures due to lack of compliance with recommended maintenance procedures; and (iii) products requiring replacement due to normal wear and tear.

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

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

9. INDEMNIFICATION AND WAIVER OF CONSEQUENTIAL DAMAGES.

9.1 For purpose of this Section 9, the following definitions will apply: "QES Group" means QES Pressure Pumping LLC, its parent company, and affiliated companies, and its and their officers, directors, employees, contractors, subcontractors and invitees. "Customer Group" means Customer, its parent (if any), subsidiary and affiliated companies, co-owners, co-venturers, partners and any entity with whom Customer has an economic interest with respect to the Services, including Customer's joint interest owners and partners and its and their officers, directors, employees, contractors (not including QES), subcontractors and invitees.

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

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

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

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

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

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

(b) CUSTOMER WILL ASSUME RESPONSIBILITY FOR CONTROL AND REMOVAL OF AND WILL PROTECT, DEFEND AND INDEMNIFY QES GROUP FROM AND AGAINST ALL CLAIMS, DEMANDS AND CAUSES OF ACTION OF EVERY KIND AND CHARACTER ARISING FROM POLLUTION OTHER THAN THAT DESCRIBED IN SECTION 9.5(A) ABOVE, WHICH MAY OCCUR DURING THE CONDUCT OF OPERATIONS HEREUNDER, INCLUDING, BUT NOT LIMITED TO, POLLUTION RESULTING FROM FIRE, BLOWOUT, CRATERING, SEEPAGE OR OTHER UNCONTROLLED FLOW OF OIL, GAS OR OTHER SUBSTANCE.

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

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

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

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

10. **Insurance.** All insurance policies of either Party, in any way related to the Services, whether or not required by this Agreement, shall to the extent of the risks and liabilities assumed by such party: (i) name the other party group as additional insured (except for worker's compensation, OEE/COW, or professional liability policies), (ii) waive subrogation as to the other party group; and (iii) be primary and non-contributory to any insurance of the other party group.

11. **Force Majeure.** Except the obligation to make payments when due, neither QES nor Customer will be liable nor deemed to be in breach of this Agreement for any delay or failure in performance resulting from the acts of God, civil or military authority, material change of law, any governmental action, acts of public enemy, war, accidents, fires, explosions, earthquakes, floods, failure of transportation, national strikes, acute or unusual labor, material or equipment shortages, or any similar or dissimilar cause beyond the reasonable control of either Party. The Party so affected will as soon as such a cause or event occurs promptly notify the other Party in writing concerning the cause and the estimated effect and take reasonable measures with proper dispatch to remedy the condition. In the event Customer declares a force majeure occurrence, QES will be compensated at the standard daily rate for the materials and personnel that are standing idle as a consequence of the force majeure occurrence, until Customer terminates the work order, or work resumes.

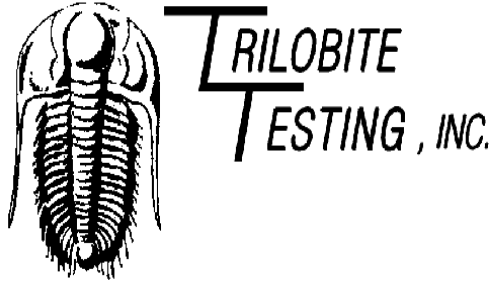
12. **Governing Law.** This Agreement will be governed by the laws of the State of Texas, without regard to its conflicts of law provisions. The Parties agree to submit to the exclusive jurisdiction of the federal or state courts located in Houston, Harris County, Texas with respect to any and all disputes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

13. **Independent Contractor.** QES will be an independent contractor with respect to the Services performed, and neither QES nor anyone employed by QES will be deemed for any purpose to be the employee, agent, servant, borrowed servant or representative of Customer.

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

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

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



DRILL STEM TEST REPORT

Prepared For: **Abercrombie Energy, LLC**

10209 W Central Ste 2
Wichita, KS 67212

ATTN: Wes Hanson

GM #1-32

32-17s-27w Lane,KS

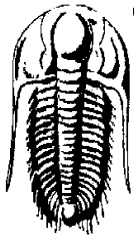
Start Date: 2019.04.25 @ 03:08:00

End Date: 2019.04.25 @ 09:53:00

Job Ticket #: 65219 DST #: 1

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

Printed: 2019.04.29 @ 13:20:23



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Abercrombie Energy, LLC

10209 W Central Ste 2
Wichita, KS 67212

ATTN: Wes Hanson

32-17s-27w Lane, KS

GM #1-32

Job Ticket: 65219

DST#: 1

Test Start: 2019.04.25 @ 03:08:00

GENERAL INFORMATION:

Formation: **Pawnee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 05:57:15

Time Test Ended: 09:53:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Bradley Walter

Unit No: 78

Interval: 4431.00 ft (KB) To 4450.00 ft (KB) (TVD)

Total Depth: 4450.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2689.00 ft (KB)

2682.00 ft (CF)

KB to GR/CF: 7.00 ft

Serial #: 8522 Inside

Press@RunDepth: 22.47 psig @ 4432.00 ft (KB)

Start Date: 2019.04.25

End Date:

2019.04.25

Start Time: 03:08:05

End Time:

09:52:59

Capacity: 8000.00 psig

Last Calib.: 2019.04.25

Time On Btm: 2019.04.25 @ 05:56:30

Time Off Btm: 2019.04.25 @ 08:02:15

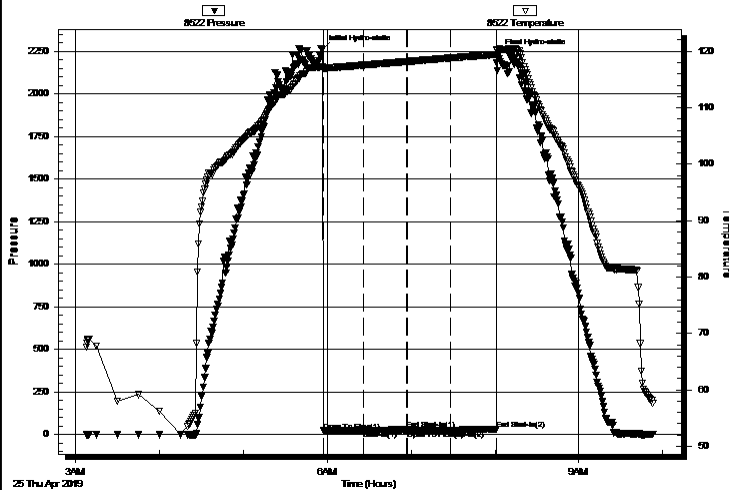
TEST COMMENT: 30- IF: Surface blow . died @ 20 min.

30- IS: No return.

30- FF: No blow .

30- FSI: No return

Pressure vs. Time



PRESSURE SUMMARY

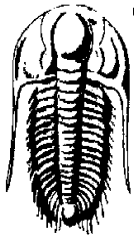
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2260.99	117.28	Initial Hydro-static
1	21.06	116.95	Open To Flow (1)
30	21.77	117.54	Shut-In(1)
61	27.76	118.18	End Shut-In(1)
61	21.98	118.18	Open To Flow (2)
92	22.47	118.81	Shut-In(2)
125	30.18	119.42	End Shut-In(2)
126	2234.81	120.31	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
4.00	Mud 100m (oil spots in tool)	0.02

Gas Rates

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



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Abercrombie Energy, LLC

10209 W Central Ste 2
Wichita, KS 67212

ATTN: Wes Hanson

32-17s-27w Lane, KS

GM #1-32

Job Ticket: 65219

DST#: 1

Test Start: 2019.04.25 @ 03:08:00

GENERAL INFORMATION:

Formation: **Pawnee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 05:57:15

Time Test Ended: 09:53:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Bradley Walter

Unit No: 78

Interval: 4431.00 ft (KB) To 4450.00 ft (KB) (TVD)

Reference Elevations: 2689.00 ft (KB)

Total Depth: 4450.00 ft (KB) (TVD)

2682.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 7.00 ft

Serial #: 8319 Outside

Press@RunDepth: psig @ 4432.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.04.25

End Date:

2019.04.25

Last Calib.:

2019.04.25

Start Time: 03:08:05

End Time:

09:52:59

Time On Btm:

Time Off Btm:

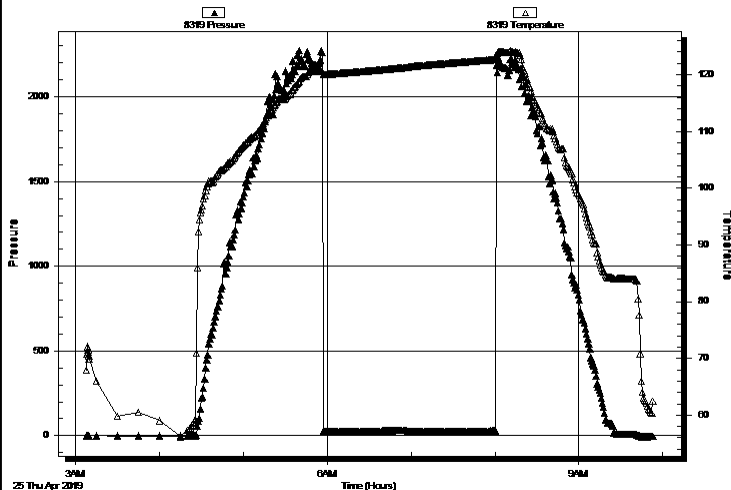
TEST COMMENT: 30- IF: Surface blow . died @ 20 min.

30- IS: No return.

30- FF: No blow .

30- FSI: No return

Pressure vs. Time



PRESSURE SUMMARY

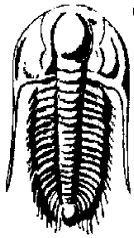
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
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Recovery

Length (ft)	Description	Volume (bbl)
4.00	Mud 100m (oil spots in tool)	0.02

Gas Rates

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



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

TOOL DIAGRAM

Abercrombie Energy, LLC

32-17s-27w Lane, KS

10209 W Central Ste 2
Wichita, KS 67212

GM #1-32

Job Ticket: 65219

DST#: 1

ATTN: Wes Hanson

Test Start: 2019.04.25 @ 03:08:00

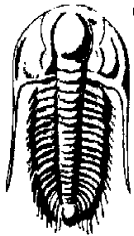
Tool Information

Drill Pipe:	Length:	4321.00 ft	Diameter:	3.80 inches	Volume:	60.61 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length:	ft	Diameter:	0.00 inches	Volume:	0.00 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length:	114.00 ft	Diameter:	2.25 inches	Volume:	0.56 bbl	Weight to Pull Loose:	95000.00 lb
					Total Volume:	61.17 bbl	Tool Chased	0.00 ft
Drill Pipe Above KB:		31.00 ft					String Weight: Initial	82000.00 lb
Depth to Top Packer:		4431.00 ft					Final	82000.00 lb
Depth to Bottom Packer:		ft						
Interval between Packers:		19.00 ft						
Tool Length:		46.00 ft						
Number of Packers:		2	Diameter:	6.75 inches				
Tool Comments:								

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4405.00	
Shut In Tool	5.00		Fluid	4410.00	
Hydraulic tool	5.00			4415.00	
Jars	5.00			4420.00	
Safety Joint	2.00			4422.00	
Packer	5.00		Inside	4427.00	27.00 Bottom Of Top Packer
Packer	4.00			4431.00	
Stubb	1.00			4432.00	
Recorder	0.00	8522	Inside	4432.00	
Recorder	0.00	8319	Outside	4432.00	
Perforations	15.00			4447.00	
Bullnose	3.00			4450.00	19.00 Bottom Packers & Anchor

Total Tool Length: 46.00



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Abercrombie Energy, LLC

32-17s-27w Lane, KS

10209 W Central Ste 2
Wichita, KS 67212

GM #1-32

Job Ticket: 65219

DST#: 1

ATTN: Wes Hanson

Test Start: 2019.04.25 @ 03:08:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 10.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 45.00 sec/qt

Cushion Volume:

bbl

Water Loss: 8.78 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3500.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
4.00	Mud 100m (oil spots in tool)	0.020

Total Length: 4.00 ft

Total Volume: 0.020 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 8522

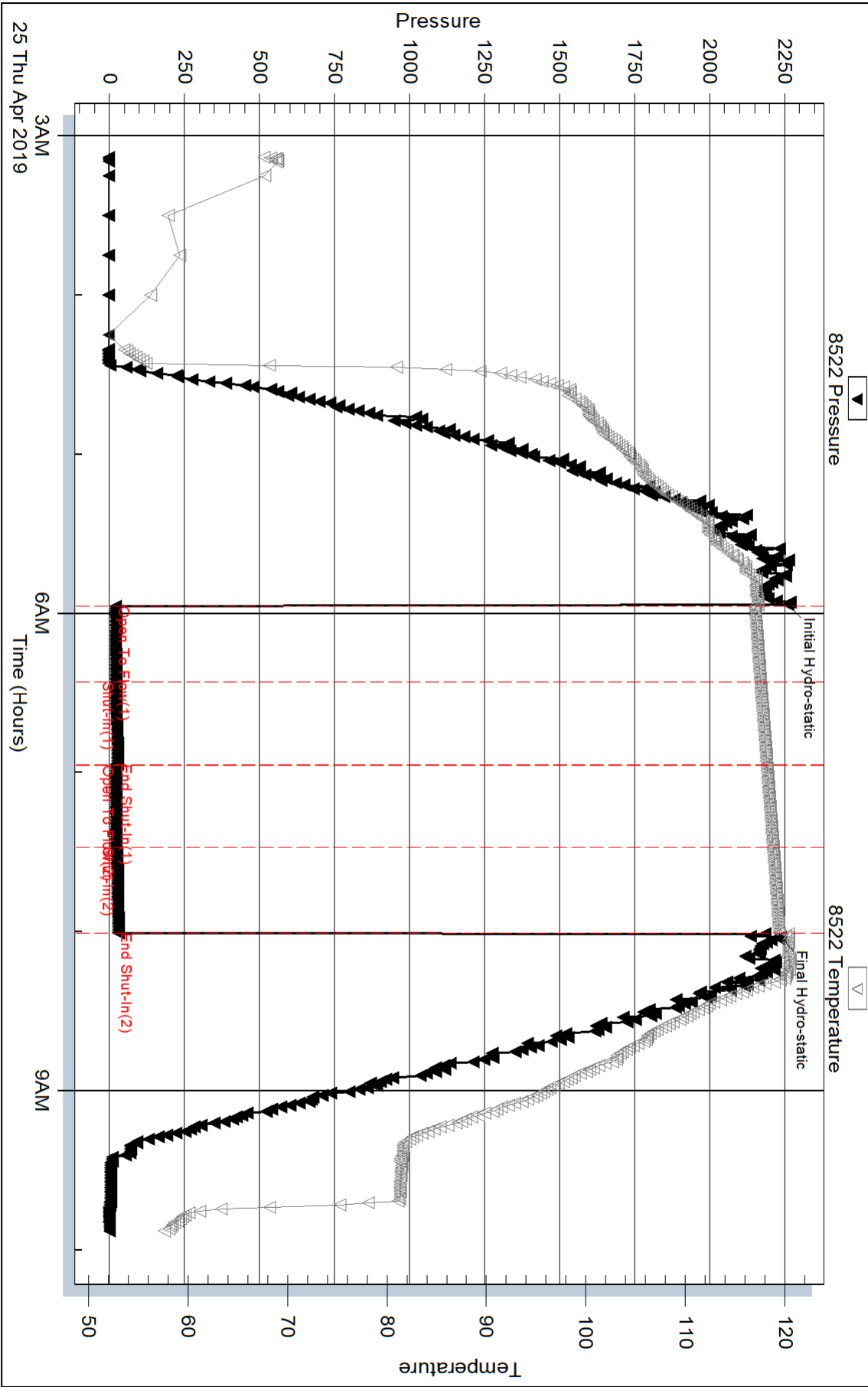
Inside

Abercrombie Energy, LLC

GM#1-32

DST Test Number: 1

Pressure vs. Time

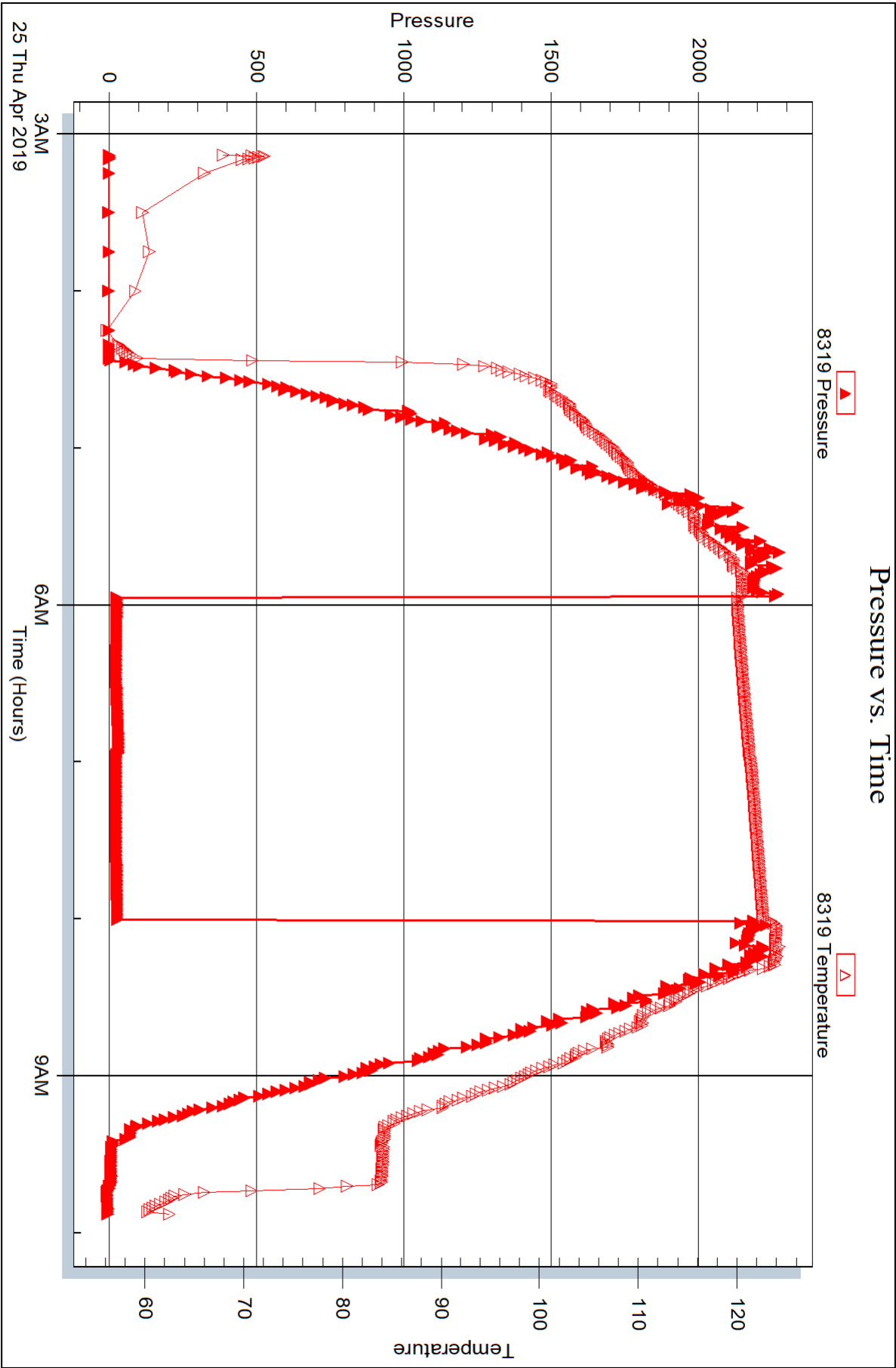


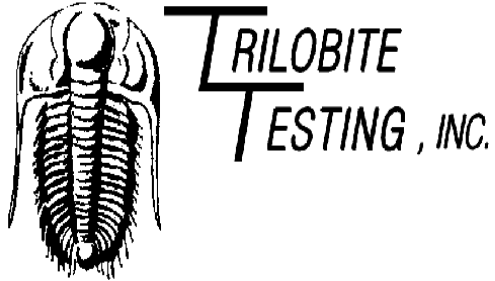
Serial #: 8319

Outside Abercrombie Energy, LLC

GM#1-32

DST Test Number: 1





DRILL STEM TEST REPORT

Prepared For: **Abercrombie Energy, LLC**

10209 W Central Ste 2
Wichita, KS 67212

ATTN: Wes Hanson

GM #1-32

32-17s-27w Lane,KS

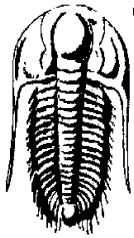
Start Date: 2019.04.26 @ 08:30:00

End Date: 2019.04.26 @ 17:38:30

Job Ticket #: 65220 DST #: 2

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

Printed: 2019.04.29 @ 13:19:48



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Abercrombie Energy, LLC

10209 W Central Ste 2
Wichita, KS 67212

ATTN: Wes Hanson

32-17s-27w Lane, KS

GM #1-32

Job Ticket: 65220

DST#: 2

Test Start: 2019.04.26 @ 08:30:00

GENERAL INFORMATION:

Formation: **Cherokee Sand**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:46:00

Time Test Ended: 17:38:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Bradley Walter

Unit No: 78

Interval: 4546.00 ft (KB) To 4570.00 ft (KB) (TVD)

Total Depth: 4570.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2689.00 ft (KB)

2682.00 ft (CF)

KB to GR/CF: 7.00 ft

Serial #: 8522 Inside

Press@RunDepth: 48.43 psig @ 4547.00 ft (KB)

Start Date: 2019.04.26

End Date:

2019.04.26

Start Time: 07:38:05

End Time:

16:46:30

Capacity: 8000.00 psig

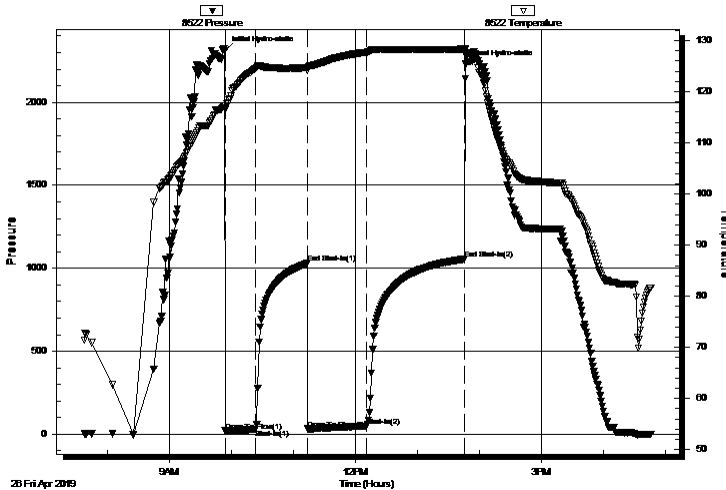
Last Calib.: 2019.04.26

Time On Btm: 2019.04.26 @ 09:53:45

Time Off Btm: 2019.04.26 @ 13:46:30

TEST COMMENT: 30- IF: 2 3/4" blow .
45- IS: No return.
60- FF: 2" blow .
90- FSI: No return.

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2312.03	117.25	Initial Hydro-static
1	20.01	116.46	Open To Flow (1)
30	29.46	124.53	Shut-In(1)
80	1030.21	124.67	End Shut-In(1)
80	31.71	124.11	Open To Flow (2)
137	48.43	127.68	Shut-In(2)
232	1055.16	128.30	End Shut-In(2)
233	2230.06	128.45	Final Hydro-static

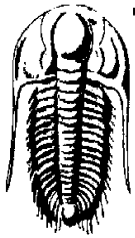
Recovery

Length (ft)	Description	Volume (bbl)
65.00	mcw 50m 50w	0.91
10.00	oil 100o	0.14

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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* Recovery from multiple tests



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TESTING, INC.

DRILL STEM TEST REPORT

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GM #1-32

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Serial #: 8319 Outside

Press@RunDepth: psig @ 4547.00 ft (KB)

Start Date: 2019.04.26

End Date:

2019.04.26

Start Time: 07:38:05

End Time:

16:46:30

Capacity: 8000.00 psig

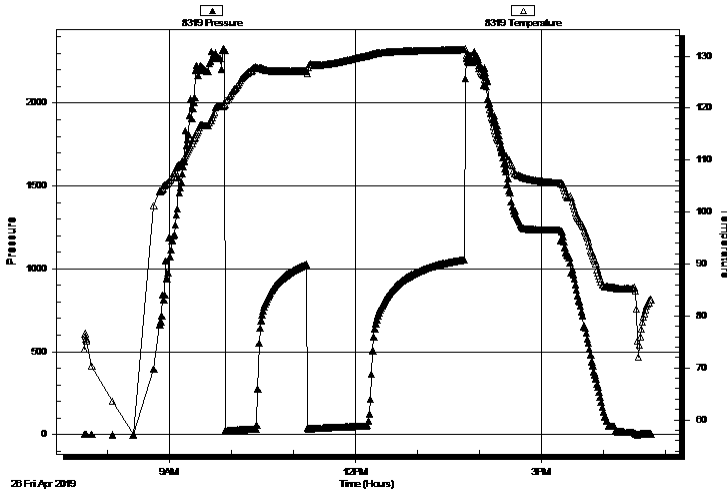
Last Calib.: 2019.04.26

Time On Btm:

Time Off Btm:

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45- IS: No return.
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Pressure vs. Time



PRESSURE SUMMARY

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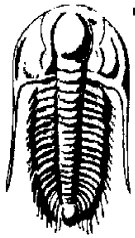
Recovery

Length (ft)	Description	Volume (bbl)
65.00	mcw 50m 50w	0.91
10.00	oil 100o	0.14

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

TOOL DIAGRAM

Abercrombie Energy, LLC

32-17s-27w Lane,KS

10209 W Central Ste 2
Wichita, KS 67212

GM #1-32

Job Ticket: 65220

DST#: 2

ATTN: Wes Hanson

Test Start: 2019.04.26 @ 08:30:00

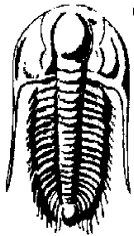
Tool Information

Drill Pipe:	Length:	4540.00 ft	Diameter:	3.80 inches	Volume:	63.68 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	0.00 inches	Volume:	0.00 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length:	0.00 ft	Diameter:	2.25 inches	Volume:	0.00 bbl	Weight to Pull Loose:	85000.00 lb
					Total Volume:	63.68 bbl	Tool Chased	0.00 ft
Drill Pipe Above KB:		21.00 ft					String Weight: Initial	74000.00 lb
Depth to Top Packer:		4546.00 ft					Final	74000.00 lb
Depth to Bottom Packer:		ft						
Interval between Packers:		24.00 ft						
Tool Length:		51.00 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			4520.00	
Shut In Tool	5.00		Fluid	4525.00	
Hydraulic tool	5.00			4530.00	
Jars	5.00			4535.00	
Safety Joint	2.00			4537.00	
Packer	5.00		Inside	4542.00	27.00 Bottom Of Top Packer
Packer	4.00			4546.00	
Stubb	1.00			4547.00	
Recorder	0.00	8522	Inside	4547.00	
Recorder	0.00	8319	Outside	4547.00	
Perforations	20.00			4567.00	
Bullnose	3.00			4570.00	24.00 Bottom Packers & Anchor

Total Tool Length: 51.00



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Abercrombie Energy, LLC

32-17s-27w Lane, KS

10209 W Central Ste 2
Wichita, KS 67212

GM #1-32

Job Ticket: 65220

DST#: 2

ATTN: Wes Hanson

Test Start: 2019.04.26 @ 08:30:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

36 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

33000 ppm

Viscosity: 58.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.99 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4100.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
65.00	mcw 50m 50w	0.912
10.00	oil 100o	0.140

Total Length: 75.00 ft

Total Volume: 1.052 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: rw is .189 @ 79f = 33000ppm

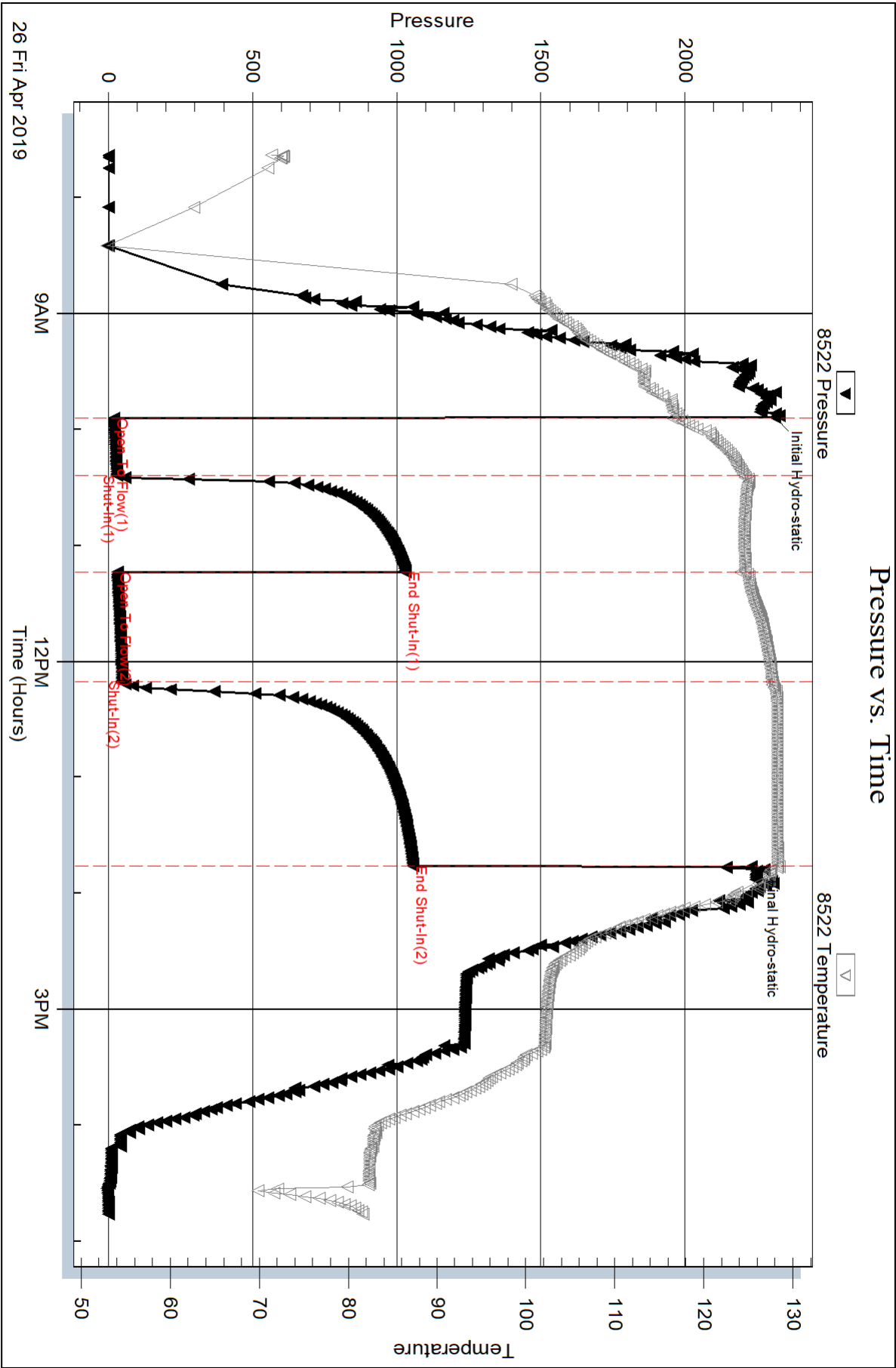
Serial #: 8522

Inside

Abercrombie Energy, LLC

GM#1-32

DST Test Number: 2

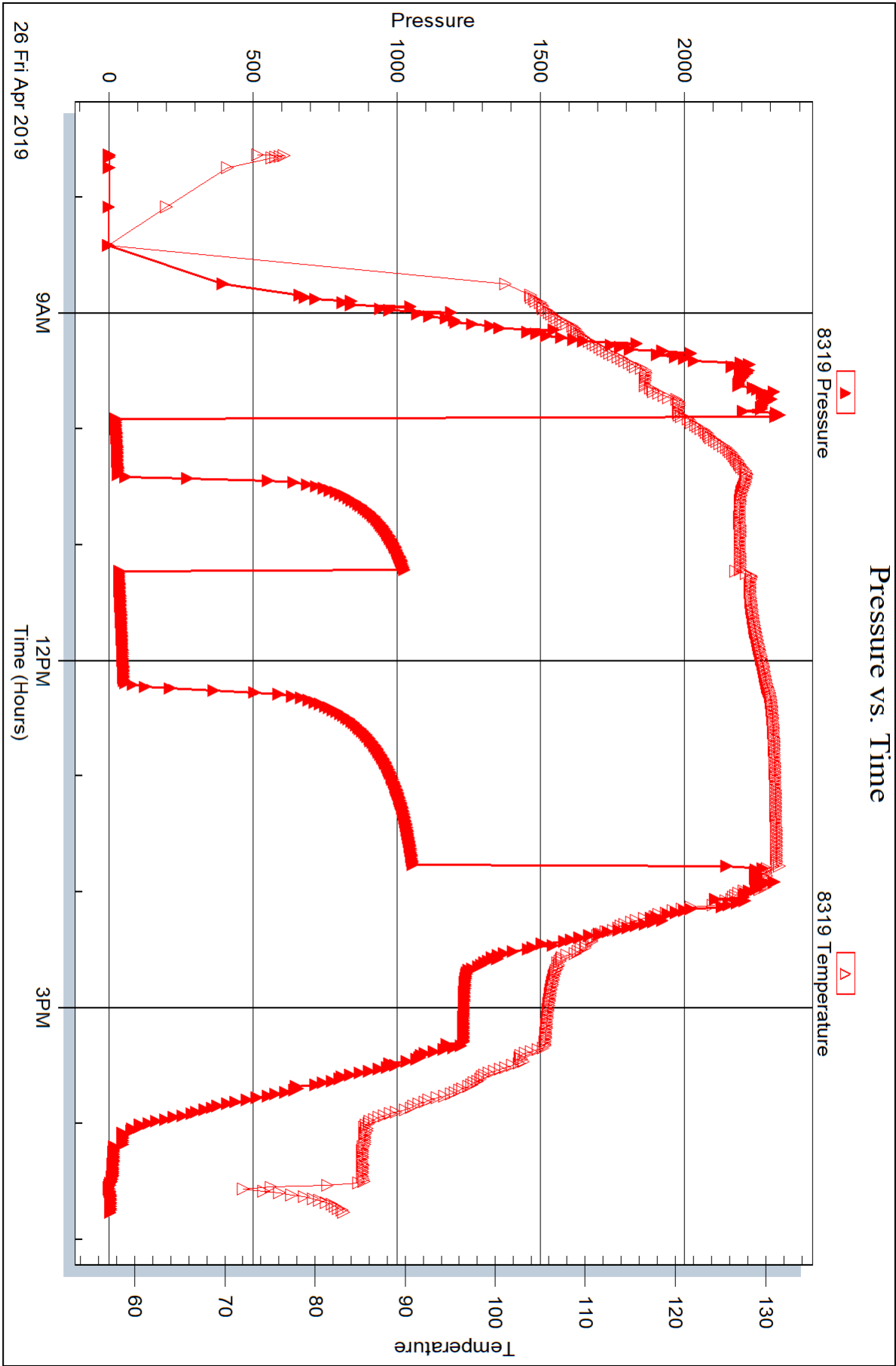


Serial #: 8319

Outside Abercrombie Energy, LLC

GM#1-32

DST Test Number: 2





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **65219**

Well Name & No. GM #1-32 Test No. 1 Date 4/25/2019
 Company Abercrombie Energy, LLC Elevation 2689 KB 2682 GL
 Address 10209 W Central Ste 2 67212 Wichita, KS 67212
 Co. Rep / Geo. Wes Hansen Rig Pickard 10
 Location: Sec. 32 Twp 17S Rge. 27W Co. Lane State KS

Interval Tested 4431 4450 Zone Tested Pawnee
 Anchor Length 19' Drill Pipe Run 4321 Mud Wt. 9.6
 Top Packer Depth 4426 Drill Collars Run 114 Vis 45
 Bottom Packer Depth 4431 Wt. Pipe Run 0 WL 8.8
 Total Depth 4450 Chlorides 3500 ppm System LCM 1 1/2

Blow Description IF Surface blow, died @ 20 min.
IST No return.
FF No blow
FSS No return.

Rec	Feet of	%gas	%oil	%water	%mud
<u>4</u>	<u>Mud</u>			<u>100</u>	
	<u>oil spots in tool</u>				

Rec Total 4 BHT 119 Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic 22.61
 (B) First Initial Flow 21
 (C) First Final Flow 22
 (D) Initial Shut-In 28
 (E) Second Initial Flow 22
 (F) Second Final Flow 22
 (G) Final Shut-In 30
 (H) Final Hydrostatic 22 35

☒ Test 1300
☒ Jars 250
☒ Safety Joint 75
☒ Circ Sub N/C
☐ Hourly Standby —
☒ Mileage 80 RT 80
☐ Sampler —
☐ Straddle —
☐ Shale Packer —
☐ Extra Packer —
☐ Extra Recorder —
☐ Day Standby —
☐ Accessibility —
 Sub Total 1705

T-On Location 2330
 T-Started 0306
 T-Open 0507
 T-Pulled 0807
 T-Out 0953
 Comments —

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

☐ EM Tool —
☐ Ruined Shale Packer —
☐ Ruined Packer —
☐ Extra Copies —
 Sub Total 0
 Total 1705
 MP/DST Disc't —

Approved By —

Our Representative —

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. 65220

Well Name & No. GM # 1-32 Test No. 2 Date 4/26/2019
 Company Abercrombie Energy, LLC Elevation 2689 KB 2682 GL
 Address 10209 W Central Ste #2 Wichita KS 67212
 Co. Rep / Geo. Wes Hansen Rig Pickrel #10
 Location: Sec. 32 Twp 17S Rge. 27W Co. Lane State KS

Interval Tested 4546 - 4570 Zone Tested Cherokee Sand
 Anchor Length 24' Drill Pipe Run 4540 Mud Wt. 9.4
 Top Packer Depth 4541 Drill Collars Run 0 Vis 58
 Bottom Packer Depth 4546 Wt. Pipe Run 0 WL 8.0
 Total Depth 4570 Chlorides 4100 ppm System LCM 1.5#

Blow Description IF 2 3/4" blow
ISI No return.
FF 2" blow
FSI No return.

Rec	Feet of	%gas	%oil	%water	%mud
<u>10</u>	<u>0.1</u>	<u>100</u>			
<u>25</u>	<u>mcw</u>		<u>50</u>	<u>50</u>	

Rec Total 75 BHT 128 Gravity 36 API RW 189 @ 79° F Chlorides 33,000 ppm
 (A) Initial Hydrostatic 2312 ☒ Test 1300 T-On Location 2700
 (B) First Initial Flow 20 ☒ Jars 250 T-Started 0738
 (C) First Final Flow 29 ☒ Safety Joint 75 T-Open 0953
 (D) Initial Shut-In 1030 ☒ Circ Sub 4/c T-Pulled 1340
 (E) Second Initial Flow - 32 ☐ Hourly Standby T-Out 1648
 (F) Second Final Flow 48 ☒ Mileage 80 RT 80 Comments
 (G) Final Shut-In 1055 ☐ Sampler
 (H) Final Hydrostatic 2230 ☐ Straddle
☐ Shale Packer
☐ Extra Packer
☐ Extra Recorder
☐ Day Standby
☐ Accessibility

Initial Open 30
 Initial Shut-In 45
 Final Flow 60
 Final Shut-In 90

Sub Total 1705

MP/DST Disc'l

Approved By

Our Representative

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REMIT P.O. Box 3423
TO Wichita, KS 67201-3423

INVOICE

Invoice Number: 680710

Invoice Date: 4/18/2019

Page: 1

SHIP GM #1-32
TO LANE CO, KS



SOLD ABERCROMBIE ENERGY LLC
TO 5510 OIL CENTER ROAD SOUTH
GREAT BEND, KS 67530

ORDER DATE:	4/17/2019	TERMS:	Net 30 Days	SHIP DATE:	4/18/2019
ORDER NUMBER:	0107527	DUE DATE:	5/18/2019	SHIP VIA:	Delivered
PO NUMBER:		BUYER:	MARK	SHIP TO ID:	LANE-NC
CUSTOMER ID:	10200	KEYED BY:	SAB_TC1-005		

ITEM	QTY	UOM	DESCRIPTION	LIST	DISC %	NET	AMOUNT	TAX
21277	335.80	FT	CSG LS 8-5/8 23 STC R3	16.95		16.95	5,691.81	Y
Notes: 8 JTS								

VEHICLE NUMBER
1353097
GM #1-32
NEW WELL SURFACE CSG
APPROX
TOTAL TO ACCOUNT

TAXABLE	NONTAXABLE	FREIGHT	SALES TAX	MISC	TOTAL
5,691.81	0.00	0.00	426.89	0.00	6,118.70
NET DUE					6,118.70

Corporate Office: 100 S. Main St., Suite 300, Wichita, KS 67202 Phone: (316) 263-6060