



Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION 1148940
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
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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: _____



1148940

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

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

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

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

Drill Stem Tests Taken <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i> Samples Sent to Geological Survey <input type="checkbox"/> Yes <input type="checkbox"/> No Cores Taken <input type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Run <input type="checkbox"/> Yes <input type="checkbox"/> No List All E. Logs Run: _____	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample Name Top Datum
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CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives

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

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: <input type="checkbox"/> Yes <input type="checkbox"/> No
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Date of First, Resumed Production, SWD or ENHR.	Producing Method: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other <i>(Explain)</i> _____
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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> _____	PRODUCTION INTERVAL: _____ _____
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Conservation Division
Finney State Office Building
130 S. Market, Rm. 2078
Wichita, KS 67202-3802



Phone: 316-337-6200
Fax: 316-337-6211
<http://kcc.ks.gov/>

Mark Sievers, Chairman
Thomas E. Wright, Commissioner
Shari Feist Albrecht, Commissioner

Sam Brownback, Governor

June 20, 2013

Leon Rodak
Murfin Drilling Co., Inc.
250 N WATER STE 300
WICHITA, KS 67202-1216

Re: ACO1
API 15-153-20913-00-00
Antholz 1-9
SW/4 Sec.09-03S-36W
Rawlins County, Kansas

Dear Production Department:

We are herewith requesting that the Well Completion Form ACO-1 and attached information for the subject well be held confidential for a period of two years.

Should you have any questions or need additional information regarding subject well, please contact our office.

Respectfully,
Leon Rodak

MDCI Antholz #1-9 1780' FSL 700'FWL Sec. 9-3S-36W 3345' KB							MDCI CWA 'B' #1-5 330' FNL 2310'FWL Sec. 5-3S-36W 3369' KB	
Formation	Sample top	Datum	Ref	Log tops	Datum	Ref	Log tops	Datum
Anhydrite	3165	+180	+39	3162	+183	+42	3228	+141
B/Anhydrite	3198	+147	+40	3199	+146	+39	3262	+107
Neva	3700	-355	+4	3676	-331	+28	3728	-359
Foraker	3821	-476	+3	3797	-452	+27	3848	-479
Topeka	4056	-711	+10	4050	-705	+16	4090	-721
Oread	4173	-828	+14	4168	-823	+19	4211	-842
Lansing	4257	-912	+17	4254	-909	+20	4298	-929
Stark	4476	-1161	+21	4470	-1125	+27	4521	-1152
BKC	4531	-1186	+13	4524	-1179	+20	4568	-1199
Pawnee	4656	-1311	+16	4651	-1306	+21	4696	-1327
Cherokee	4725	-1380	+18	4724	-1379	+19	4767	-1398
Mississippi							4958	-1589
RTD	4830						5100	
LTD				4832			5102	

ROBERT STOLZLE

CONSULTING PETROLEUM GEOLOGIST

APPG Cert. 03224

6214 O. 201st CT.W. Olathe, MO 67222 - 66240

(910) 704-8400

DRILLING TIME AND SAMPLE LOG

OPERATOR: Murfin Drilling Co., Inc.

LEASE: Antholz WELL NO.: 19

FIELD: Wildcat

LOCATION: 1780' FSL, 700' FWL (NW 5E, NW 5W)

SEC.: 9 TWP.: 35 RANGE: 36W

COUNTY: Rawlins STATE: KS

API NO.: 15-153-20913-00-00

CONTRACTOR: Murfin Drilling Co, Rtg # 14

COMPLETED: February 23, 2013 DEPLETED: March 3, 2013

POHARY TOTAL DEPTH: 4830' LOG TOTAL DEPTH: 4832'

GEOLOGICAL SUPERVISION FROM: 3600' to: T.D.

LOG-UP DEPTH: 3619' LOG TYPE: Chemical Polymer

FORMATION

FORMATION	DEPTH		LOG		STRUCTURAL POSITION
	TOP	SECS	TYP	SECS	
Stone Corral Anhy.	3160 (4185)		3162 (4183)		442'
Base of Anhydrite	3198 (4147)		3199 (4146)		439'
Nava Ls.	3676 (-331)		3676 (-331)		428'
Foraker Ls.	3803 (-458)		3798 (-453)		426'
Topeka fm.	4048 (-703)		4050 (-705)		416'
Oread Ls.	4168 (-823)		4168 (-823)		419'
Lansing Group	4254 (-909)		4256 (-911)		418'
Stark Shale	4473 (-1128)		4470 (-1125)		427'
Base of Stark Shale	4526 (-1181)		4524 (-1179)		420'
Marmaton Gp.	4560 (-1215)		4562 (-1217)		419'
Rawnel Ls.	4653 (-1308)		4652 (-1307)		420'
Cherokee Sh.	4725 (-1380)		4729 (-1379)		419'
Total Depth	4830		4832		

ELEVATIONS

KB 3345'
GL 3335'

Measurements are all from KB

CASING RECORD

SURFACE: NW 23E
85/8" @ 351' circ.

PRODUCTION: None
R.A.

WIRELINE SERVICES

Pioneer/Log Tech
Dual Comp. Porosity,
Dual Induction,
BHC Sonic and
Microresistivity
logs were run.

LOCATION MAP

Location			
01-9 Antholz			

Reference Well for Structural Comparison: Murfin CW 181 B L 5 N 4 W 5 T 35 - R 36 W
Comments and Recommendations: Recommended well to be plugged and abandoned

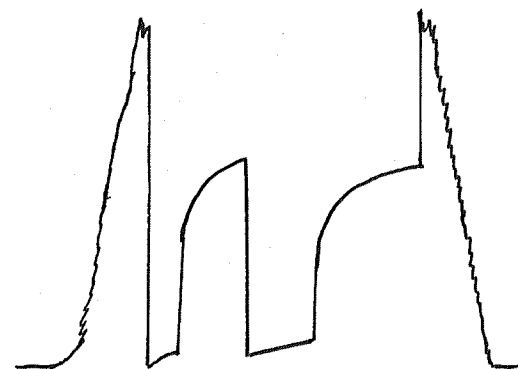
DST # 1 ZONE: Foraker Ls.
INTERVAL: 3771'-3840'

Pressure:	Time	Press.	RECOVERY
1. Initial Hydrostatic		1829 psi	200' Drilling Mud
2. Initial Flow: Start	0	16 psi	(100% Mud)
3. Initial Flow: End	30	57 psi	
4. Initial Shut-in: End	60	1095 psi	Blow Desc.
5. Final Flow: Start	0	60 psi	I.F. - 4"
6. Final Flow: End	60	127 psi	I.S.I. - No blow
7. Final Shut-in: End	90	1060 psi	F.F. - 3"
8. Final Hydrostatic		1793 psi	F.S.I. - No blow

BHT: 120°F

Rv: _____

DST # 1 8353 Chert
Interval: 3771-3840 Depth: 3772'



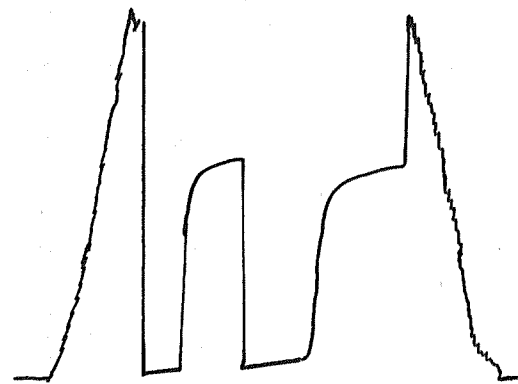
DST # 2 ZONE: Lansing 'A' Zone (up. + lwr.)
INTERVAL: 4245'-4295'

Pressure: _____ Time: _____ Press.: _____ RECOVERY

DST # 2 8353 Chert
Interval: 4245-95' Depth: 4246'

Pressures:	Time	Press.	RECOVERY
1. Initial Hydrostatic		2055 psi	112' Mud Cut Oil
2. Initial Flow: Start	0	18 psi	(95% Oil)
3. Initial Flow: End	30	52 psi	93' Oil Cut Mud
4. Initial Shut-in: End	60	1254 psi	(10% Oil)
5. Final Flow: Start	0	57 psi	Blow Desc.
6. Final Flow: End	60	113 psi	I.F. - 4"
7. Final Shut-in: End	90	1211 psi	I.S.I. - No blow
8. Final Hydrostatic		2031 psi	F.F. - 3 1/2"
			F.S.I. - Surface blow

BHT: 129°F
Rv: _____

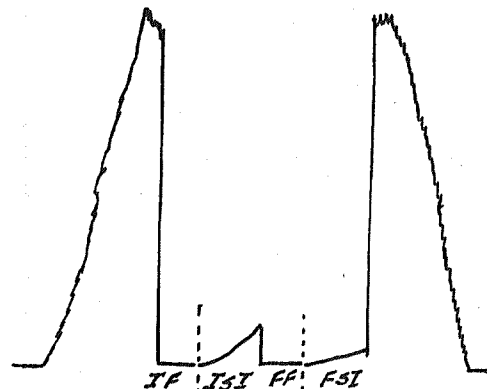


DST # 3 ZONE: Lansing-K.S. City J' Zone
INTERVAL: 4431'-4480'

Pressures:	Time	Press.	RECOVERY
1. Initial Hydrostatic		2115 psi	Rec. 2' Mud
2. Initial Flow: Start	0	15 psi	
3. Initial Flow: End	30	17 psi	Blow Desc:
4. Initial Shut-in: End	60	290 psi	I.F. - surf. blow - 20 min.
5. Final Flow: Start	0	17 psi	I.S.I. - No blow
6. Final Flow: End	30	18 psi	F.F. - No blow
7. Final Shut-in: End	60	102 psi	F.S.I. - No blow
8. Final Hydrostatic		2108 psi	

BHT: 126°F
Rv: _____

DST # 3 8353 Chart
Interval: 4451'-80' Depth: 4432'

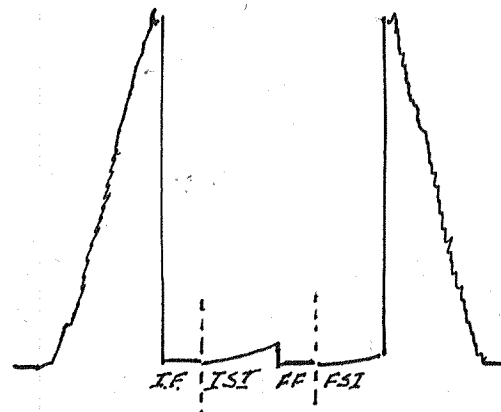


DST # 4 ZONE: Verdigris Ls.
INTERVAL: 4694'-4765'

Pressures:	Time	Press.	RECOVERY
1. Initial Hydrostatic		2291 psi	2' Drilling Mud
2. Initial Flow: Start	0	16 psi	
3. Initial Flow: End	30	18 psi	Blow Desc:
4. Initial Shut-in: End	60	111 psi	I.F. - 1/2" died to 1/8"
5. Final Flow: Start	0	19 psi	I.S.I. - No blow
6. Final Flow: End	30	21 psi	F.F. - No blow
7. Final Shut-in: End	60	61 psi	F.S.I. - No blow
8. Final Hydrostatic		2333 psi	

BHT: 131°F
Rv: _____

DST # 4 8353 Chart
Interval: 4694'-4765' Depth: 4695'



ABBREVIATIONS USED

ROCK TYPES:

Ls - Limestone

Ss - Sandstone

FABRIC:

Fn. grn - Fine grained

VEG - Very fine grained

MODIFIERS:

gd - Good

fr - Fair

3200

Base of
Anhydrite
(+147')

3250

3600

TRP to replace
PDC bit at 3619'

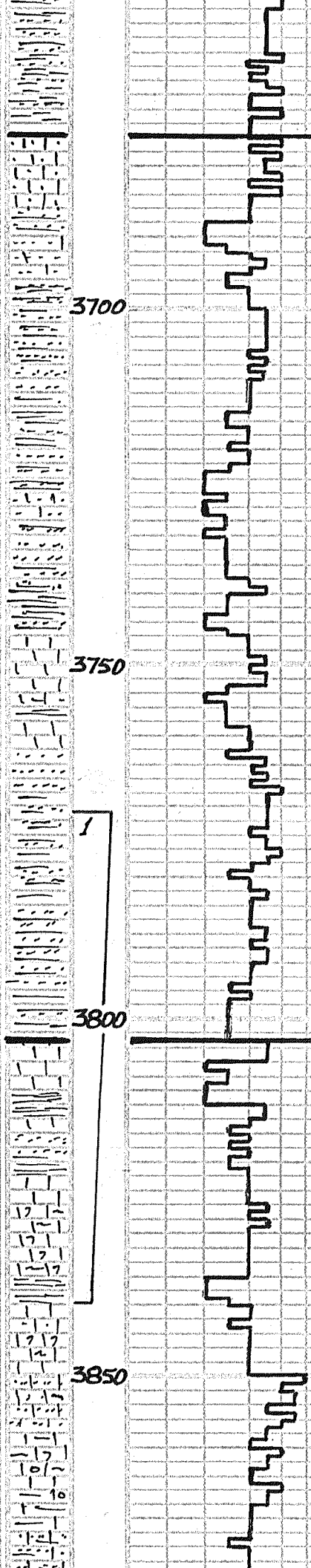
Start 1' drilling time and
10' wet and dry samples
at 3600'

Strap .03' short
to board
Deviation 1/2°

3650

Sh: rd.-rd. brn. 1 sft. - m. sft. 1 dns.
occ. sht. - sandy, earthy
tr. ss: cm, m. sft. 1 dns. vfg, mod.
pr. sft. 1, No Vis. P. NSFOC
tr. ss: A.A., occ. sht. 1, sp. A., 70
NSFOC
Shts: sh: rd.-rd. brn. 1 m. sft. -
sft. 1, occ. v. sandy, earthy

Shts: sh: rd.-rd. brn. m. sft. 1
dns. 1, occ. v. sandy, earthy
tr. ls: cm, hr d. 1 dns. NO NSFOC
tr. ls: A.A. NO NSFOC
sh: - shts: rd.-rd. brn. 1 v. sft. -
m. sft. 1, occ. v. sandy, earthy



Sh: sfs. rd. - rd. brn., m. sft. -
 sft. dns., occ. v. sandy, earthy
 tr. gry. - dk. gry., earthy
 Ls: crm. - lt. gry., sft. + chiky. - hrd.,
 dns., v. fg. - mxln., occ. sandy -
 v. sandy., rare foss. NΦNSFOC
 Ls: A.A. NΦNSFOC
 Sh: rd. brn., sft., clayey - earthy
 Sh: rd. - rd. brn., sft. + clay. - m. sft.
 sandy, earthy.
 Ls: crm. - lt. gry., hrd., dns., v. fg. -
 mxln., occ. v. sandy. NΦNSFOC
 Ls: A.A., sandy, tr. foss. NΦNSFOC
 Sh: rd. brn., m. sft. - sft., v. sandy.
 earthy - clayey
 Sh: A.A., tr. gry. grn. - dk. gry.
 tr. ss: crm., hrd., dns., fr. grnd.,
 mod. sftd., w. cmtd. NΦNSFOC
 Sh: A.A., monu. clayey.
 tr. ss: A.A., occ. sft. - sft. stn.
 NΦNSFOC
 tr. Ls: wh., sft., chik., NΦNSFOC
 Sh: rd. brn., v. sft., clay. - sandy.
 occ. Ls: crm. - tan, hrd., dns., v. fg.
 - mxln., foss. NΦNSFOC
 Ls: crm., hrd., dns., v. fg. - mxln.
 occ. chiky. - clayey, sandy -
 calc. ss., occ. foss. NΦNSFOC
 Ls: A.A. NΦNSFOC
 occ. Sh: rd. brn., v. sft., clayey
 - earthy
 tr. Sh: A.A.
 occ. Ls: crm. - gry., hrd., dns., sandy
 ss: gry. - crm., hrd., dns., v. fg. -
 v. fg., w. cmtd., rare sftd. NΦNSFOC
 tr. ss. + Ls: A.A. NΦNSFOC
 Sh: rd. brn., sft. + clay. - m. sft.
 earthy., sandy - v. sandy
 Sh: rd. brn. - tr. gry. grn., sft. +
 clayey. - m. sft., earthy,
 sandy - v. sandy - sft. stn.
 Sh: A.A.
 Ls: wh. - crm., sft. + chiky. - hrd.,
 dns., occ. v. sandy, tr. foss.
 NΦNSFOC
 Ls: A.A., tr. rd. chf., tr. v. sftd.
 less sandy, tr. foss. NΦNSFOC
 Sh: gry. - rd. brn. - mar. m. sft. - m. hrd.
 dns., tr. sandy, earthy
 Ls: crm. - gry., hrd., dns., v. fg. -
 mxln., foss. + sh. stnd., tr.
 sandy. NΦNSFOC
 Ls: crm. - gry., hrd. - m. sft. + chiky.,
 v. fg. - mxln., occ. foss., occ.
 sh. stnd. NΦNSFOC
 Ls: A.A., occ. pr. - tr. vug. φ (mg/dic?)
 w/ qd. bik., hvy. stn., ex. cut
 fl., ?perm., No odor, No F.D.
 Ls: crm. - lt. gry., m. sft. + chik. -
 hrd., dns., v. fg. - mxln., occ.
 sh. stnd., tr. foss. NΦNSFOC
 Ls: gry. - dk. gry., m. sft. - hrd., dns.,
 v. fg. - mxln., tr. chik., sh. stnd.,
 sandy - v. sandy. - calc. ss.
 NΦNSFOC
 Ls: A.A. NΦNSFOC
 Sh: rd. brn. - gry. - bik., m. sft. -
 m. hrd., dns., earthy - hackly
 tr. Sh: A.A.
 Ls: crm., hrd., dns., v. fg. - mxln.,
 mic., occ. foss. + act.

Nova Ls.
 (-331')

Mud Check @ 3725'
 M.W. 8.9 lb/gal.
 Vis. 55 sec. 1 qt.
 W.L. 4.8 cc/30 min.
 Chl. 600 ppm
 Solids 4.3%
 L.C.M. 4 lb/bbl.

DST #1 3771-
 3840'
 Rec. 200' Mud

Foraker Ls.
 (-458')

Weak Show



3900

3950

4000

4050

Ls: cr.m., hrd., dns., VEG-mxln.,
foss.-v.foss. NΦNSFOC
Ls: gry., m.sft.-m.hrd., dns., sndy,
v.sndy-calc.ss. NΦNSFOC
Ls: cr.m.-lt.gry., hrd., dns., VEG-
mxln., mic. foss.-v.foss. NΦNSFOC
tr. sh: rd. brn.-dk.gry., sft.-m.
hrd., earthy-hackly
Ls: A.A., more sndy NΦNSFOC

Sh: rd. brn., sft.-m.sft., occ. sndy
earthy-clayey
Sh: rd. brn., sft.-m.sft., clayey-
earthy, occ. sndy, tr. dk.
gry. sh. itt. Ls: A.A. NΦNSFOC
Sh: A.A.
Ls: cr.m., sft. tech. hrd. dns.,
VEG-mxln., occ. foss. NΦNSFOC

Ls: A.A. w/ Ls: gry.-dk.gry., hrd.
dns., sh. stnd., occ. sndy, tr. foss
NΦNSFOC
Sh: dk.gry., m.hrd. dns., tr. sndy, hack.
Sh: A.A., Ls: A.A., v.sndy, NΦNSFOC
occ. ss: gry., m.hrd.-m.sft., VEG.
mod.-w.c.mtd, mod. sft., calc. cat.
No Vis. Φ NSFOC

Sh: rd. brn.-mar.-dk.gry., m.sft.-
m.hrd., dns., earthy-hackly
Ls: cr.m., hrd.-m.sft., dns., VEG-mxln.
rd. sh. stnd. tr. sndy. NΦNSFOC
Ls: cr.m.-gry., m.sft.-hrd., dns.,
VEG-mxln., occ. foss. sh.
stnd., tr. sndy. NΦNSFOC

Stot/Gr Ls.
(-617)

Ls: A.A. NΦNSFOC
Sh: rd. brn., sft., sft., clayey, occ.
dk.gry., m.hrd., dns., hack.
occ. Sh: A.A.
Ls: cr.m., hrd., dns., VEG-mxln.
foss.-v.foss., rd. sh. stnd.,
NΦNSFOC

Mud Check @ 3980'
M.W. 8.9
Vis. 55
WL. 5.2
Chl. 900
Solids 4.3%
LCM 4#

Ls: A.A., occ. sft. schik. NΦNSFOC
Sh: rd. brn.-dk.gry., sft. earthy-
m.hrd., dns., hackly
Ls: cr.m., hrd., dns., occ. wh. sft.
schiky., VEG-mxln., foss.-
v.foss. NΦNSFOC

Ls: A.A., Abun. rd. sh. stnd.
NΦNSFOC
Sh: rd. brn., sft.-v.sft., earthy
-clayey
Ls: cr.m., hrd., dns., VEG-mxln.,
mic. foss., Abun. rd. sh.
stnd. NΦNSFOC
Sh: A.A.

Ls: cr.m.-lt.gry., hrd., dns., VEG-
mxln., mic. occ. foss. occ.
rd. sh. stnd. tr. ylw. stnd.
NΦNSFOC
Ls: A.A. NΦNSFOC

Sh: rd. brn., sft., clayey, tr. grn-
blk., m.sft., hackly
Ls: wh.-cr.m., hrd.-m.sft., VEG
xln. occ. foss. w. occ. VEG pp.
vug. moldic. dk. blk. dd. str.
wk. cut. fl. No odor, No F.O.
Ls: cr.m., sft.-hrd., dns., VEG-
mxln., foss.-v.foss. +ool.,
Abun. rd. sh. stnd. NΦNSFOC

Topka Fm.
(-703)
Very weak show

Ls: cr.m., hrd., dns., VEG-mxln., mic.
occ. foss. +ool. w. rd. sh. stnd.
around foss. grns. NΦNSFOC

Ls: A.A. NΦNSFOC
Sh: rd. brn., sft., sndy, earthy
tr. ss: ylw-brn., m.hrd., dns., VEG,
pr. sft., w.-pr. c.mtd. No Vis. Φ NSFOC
Sh: rd. brn., sft., sndy, earthy
Ls: cr.m.-lan., m.hrd.-sft., dns.,
foss. +rd. sh. stnd. NΦNSFOC

4100

4150

4200

4250

4300

Sh: rd. brn. - dk. gry., m. sft. - m. hrd.,
dns., earthy - blackly
Ls: crm. - tan, hrd., dns., VFG - mxln,
mic., occ. foss., 001. NΦNSFOC
Ls: crm. - lt. gry., hrd., dns., VFG
- mxln, tr. foss., occ. sandy.
V. sandy. NΦNSFOC

Ls: crm. - gry., hrd., dns., VFG - mxln,
mic., occ. foss., occ. sandy.
V. sandy. - calc. ss: VFG, NΦNSFOC

Ls: A.A., more gry., tr. sh. stand.
NΦNSFOC

Sh: gry. - mar., m. sft., dns.,
occ. silty, earthy
Sh: A.A.

Ls: gry., hrd., dns., VFG - mxln, mic.
occ. sandy., tr. foss. NΦNSFOC
Ls: A.A. NΦNSFOC

Sh: dk. gry., m. hrd. - m. sft., dns.,
occ. silty, occ. mica, earthy
Sh: A.A.

Ls: crm. - gry., hrd., dns., VFG - mxln,
mic., rare foss. NΦNSFOC

Ls: wh. - crm., sft. + chik. - hrd., dns.,
VFG - mxln, tr. pr. Vug, φ w/ l. brn. stn.
ipc. chik. bldg. oil. No odor. 15-6
pc. tot. fr. cut + fl. V. perm.
Ls: crm. - lt. gry., hrd., dns., VFG -
mxln, mic., 1-2 pc. w/ pr. Vug. φ
w/ dk. brn. - blk. stn., tr. wk. cut
+ fl., tr. dd. oil stn. Very v. wk. show

Ls: crm. - tan - gry., hrd., dns., VFG -
mxln, mic., rare foss. NΦNSFOC

Ls: A.A. NΦNSFOC

Sh: dk. gry. - blk., m. hrd., dns.,
carb., earthy
Sh: A.A.

Ls: crm., hrd., dns., occ. sft. + chik.
VFG - mxln, mic. NΦNSFOC

Ss: gry., m. sft. - m. hrd. pr. Vug, VFG
sub ang., mod. - w. sand. tr. pr.
Vis. φ, blk. dd. + (aky. oil stn.),
wk. cut + fl., No odor. V. wk. show
tr. ss: A.A. w/ show A.A.
Sh: sft. brn. - m. sft., dns.,
sandy. - V. sandy., earthy

Sh: lt. gry. - rd. brn., clayey - earthy
Ls: crm., hrd., m. sft., 001. w/ pr.
tr. wk. part, φ w/ dk. oil stn., tr. dd.
oil, 1.9d. cut + fl., No odor, No F.O.

Ls: crm., hrd., dns., VFG - mxln, 001. - 001.
pr. - tr. int. 001. φ w/ dk. brn. stn.
gd. cut + fl., wk. odor, No F.O.

Ls: crm., hrd., dns., VFG - mxln,
mic., rare foss. 001., 1-2 pc.
w/ pr. Vug φ, dk. brn. stn., tr. cut
+ fl., No odor, No F.O. V. wk. show

Ls: crm., hrd., dns., mxln, mic.
NΦNSFOC

Ls: crm., hrd., dns., VFG - mxln, occ. gd.
- pr. Vug φ, dk. stn., wk. odor, gd. - cut
Ls: A.A., tr. pr. Vug φ w/ dk. stn.
fl. - gd. cut + fl., very weak show

Sh: rd. brn., sft. - clayey - earthy
tr. ss: gry., m. sft. No vis. φ NΦNSFOC

Sh: A.A., tr. ss: A.A. NΦNSFOC
Ls: A.A., tr. Vug φ w/ show A.A.

Sh: rd. brn., m. hrd., dns., sandy. - V. sandy.
earthly

Sh: A.A., occ. sft. + clayey
Ls: crm., hrd., dns., VFG - mxln, mic.
rare foss., tr. pr., occ. pebb. surf.
sh. stand. NΦNSFOC

Ls: crm. - lt. gry., hrd., dns., VFG -
mxln, mic., occ. sft. + chik., occ.
foss., occ. sandy. NΦNSFOC

Orled Ls.
(-823')
Very weak show

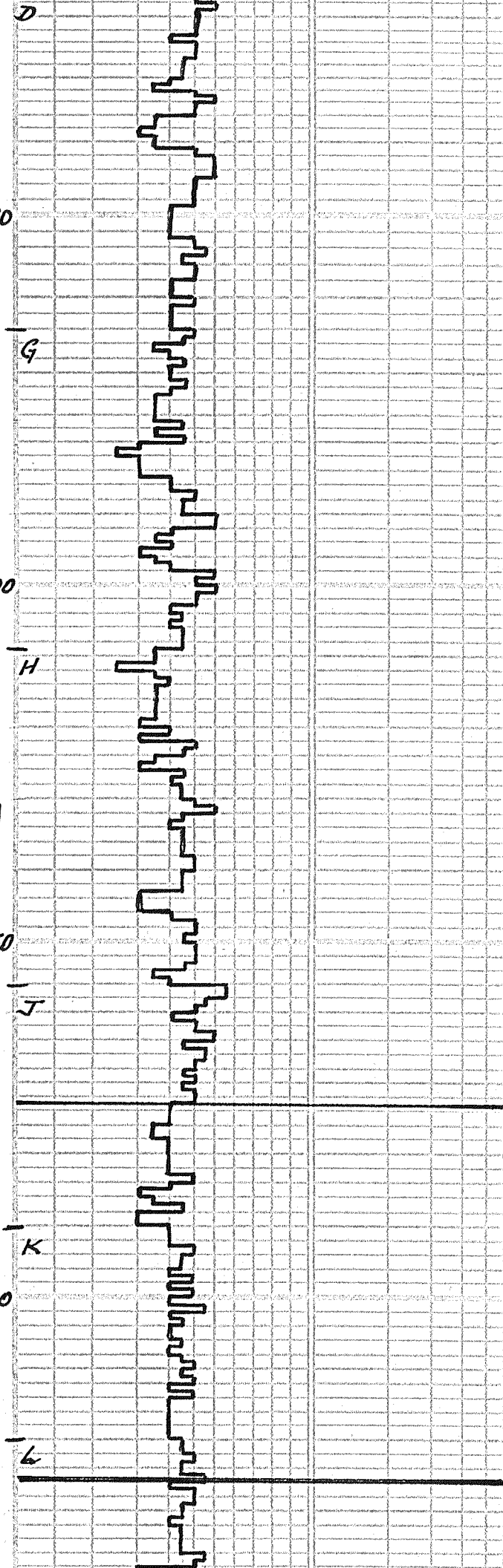
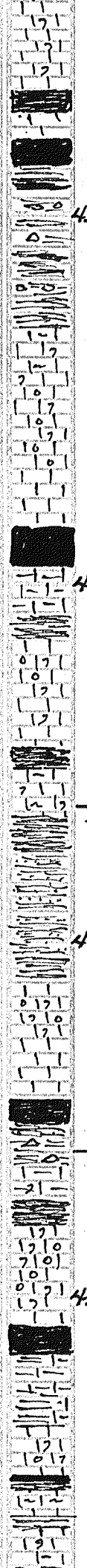
DST #2 4245-95'
REC: 112' MCO
93' OCM

Heebner Sh.
(-856')

Weak show
Lansing Co.
(-909')
Good show

Fair show

Mud Check @ 4295'
M.w. 9.3 Chl. 900 ppm
Vis. 68 Solids 7.1%
w.L. 5.6 LCM 6#



Ls: crm. - lt. gry., hrd., dns., VFG - mxln.,
mic., occ. sft. + chiky., occ. foss.
NΦNSFOC

Ls: A.A., occ. gry. - dk. gry., NΦNSFOC

Sh: gry. - dk. gry. - blk., m. sft. - m. hrd.,
occ. carb., clayey. - earthy

Sh: A.A.
Ls: crm. - gry., hrd., dns., VFG - mxln.,
mic., occ. foss. + sh. std., occ.
sft. + chiky. NΦNSFOC

Ls: A.A., tr. pebb. surf., fr. rexld.
NΦNSFOC

Sh: rd. brn. - dk. gry., m. sft., dns.,
earthy - hackly

Ls: crm., hrd., dns., VFG - mxln.,
mic., fr. rexld., tr. foss., tr.
sh. std., occ. chiky. NΦNSFOC

Ls: crm. - gry., hrd., dns., VFG - mxln.,
mic., occ. sft. + chiky., tr. foss. +
ool. w/ tr. vug. moldic
NSFOC

Ls: crm. - lt. gry., hrd., sft. + chiky.,
VFG - mxln., mic., tr. rexld.,
rare foss., tr. pr. vug. moldic
NSFOC

Sh: dk. gry. - blk., m. sft. - m. hrd.,
dns., carb., earthy

Ls: gry. - dk. gry., hrd., dns., VFG - mxln.,
foss. + sh. std. NΦNSFOC

Sh: A.A., occ. rd. brn., earthy

Ls: crm. - brn., hrd., dns., VFG -
mxln., mic., foss. + ool., tr.
rexld. NΦNSFOC

tr. Sh: A.A.
Ls: wh. - crm., sft. + chiky. (50%) -
hrd., dns., VFG - mxln., mic.
tr. foss. NΦNSFOC

Ls: crm. - tan, A. brn. wh. + chiky.,
hrd., dns., VFG - mxln., mic.,
occ. foss. NΦNSFOC

Ls: crm. - gry., hrd., dns., VFG - mxln.,
mic., tr. chiky., occ. foss. +
sh. std. NΦNSFOC

Sh: gry. - rd. brn., m. hrd., dns., hack.

Sh: A.A., sandy - v. sandy

Ls: crm., hrd., dns., occ. chiky., VFG -
mxln., occ. foss. + ool.
NΦNSFOC

Ls: crm. - lt. gry., hrd., dns., VFG - mxln.,
mic., tr. chiky., 1-2 pc. w/ VFG
pp. vug. φ, dk. brn. sft., wk. cut +
fl., No F.O., No odor. V. Very Weak Show

Ls: crm., hrd., sft. + chiky., VFG - mxln.,
tr. ool. + foss. w/ tr. pr. - fr. vug.
moldic φ, brn. sft., wk. - fr. cut + fl.
mott. sft., th. F.O., No odor. ? perm

occ. Ls: show A.A., 1 pc. qd. φ ? perm

Sh: rd. brn., sft., earthy - clayey

Sh: blk., m. sft. - m. hrd., dns.,
carb., earthy - hackly

Sh: rd. brn. - blk. gry. - blk., m. hrd.
sft., dns., earthy - hackly

Ls: crm., hrd., dns., VFG - mxln., mic.,
occ. foss. + ool. w/ tr. moldic
NSFOC

Ls: wh. - crm., hrd., dns., occ. m. sft. +
chiky., VFG - mxln., foss. + ool. w/ tr.
VFG pp. φ w/ blk. sft., wk. cut +
fl., 1-2 pc. tr. ray, No odor. V. WK Show

Sh: rd. brn. - gry. - grn. - blk., m. hrd.
- v. sft. + clayey, occ. carb.
hackly - earthy

Ls: crm., hrd., dns., VFG - mxln., mic.,
foss. - v. foss., 1-2 pc. pp. vug. φ
NSFOC

Ls: crm. - lt. gry., hrd., dns., VFG -
mxln., mic., foss. + ool., tr.
sney, tr. sh. std. NΦNSFOC

Ls: A.A., more sh. std. NΦNSFOC

occ. Sh: gry. - rd. brn., m. hrd., dns.

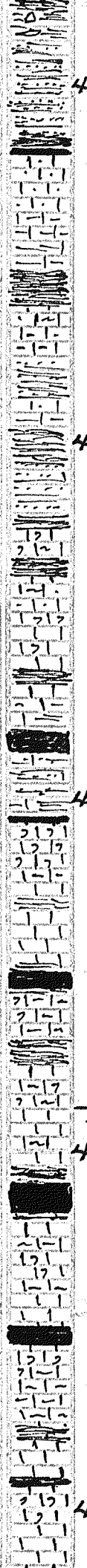
Ls: A.A., more sh. std. NΦNSFOC

Mud Check @ 4480'
M.W. 9.2 Solids 56.4%
Vis. 57 LCM 4#
Wt. 5.6
Chl. 900ppm

DST # 3-4431-80'
Rec. 2' Mud

Weak Show
Very Weak Show
Stark Shale
(-1128')

Base of Kansas
City Group
(-1181')



4550

4600

4650

4700

4750

earthy
 Ls: A.A., sh. stand, occ. pebb. surf.
 NØNSFOC
 Sh: rd. brn.-gry., m. sft., dns.,
 earthy
 Sh: rd. brn.-gry., m. sft., dns., earthy
 Ls: crm.-tan, hrd.-m. sft., dns., VEG
 xln., tr. foss., abun. sh. stand,
 occ. pebb. surf. NØNSFOC
 Sh: gry.-rd. brn., m. sft., m. hrd., dns.
 sily.-sandy, earthy
 Ls: crm.-tan-gry., hrd., dns.,
 sandy-sily., marl. NØNSFOC
 Sh: gry.-mar., m. sft., dns., sily.,
 earthy
 Ls: gry.-tr. rd. brn., hrd., dns., chky
 sandy, pebb. surf. NØNSFOC
 Sh: rd. brn.-mar., m. sft., sily.-
 sandy, earthy
 Ls: crm.-tan, hrd., dns., rd. sh. stand.
 VEG-mxln., rare foss. NØNSFOC
 Sh: rd. brn., m. sft., sandy.-v. sandy,
 tr. gry., earthy, occ. Ls: pebb.
 sh. stand. NØNSFOC

Marmaton Gr.
 (-1215')

Ls: gry., hrd.-m. sft., dns., VEG xln.
 sily.-sandy, sh. stand. NØNSFOC
 tr. Sh: gry., m. sft., dns., earthy-
 hackly
 Ls: gry.-tr. crm., hrd.-m. hrd.,
 dns., VEG xln., occ. sandy, tr.
 foss., tr. sh. stand. NØNSFOC
 Ls: A.A., marly/sily. NØNSFOC
 Sh: lt.-dk. gry., m. sft., dns., sily.,
 earthy
 Sh: dk. gry.-blk., m. sft.-m. hrd., dns.
 carb., earthy-hackly
 tr. Ls: crm., hrd., dns., VEG-mxln.
 mic., rare foss. NØNSFOC
 Ls: crm., hrd., dns., VEG-mxln.,
 mic., occ. foss.-v. foss.
 NØNSFOC

Sh: gry.-dk. gry., m. sft., earthy
 Sh: A.A.
 Ls: crm.-tan, hrd., dns., VEG-
 mxln., mic., tr. chky, occ. foss.
 tr. pyr. NØNSFOC
 Ls: crm.-lt. gry., hrd., dns., VEG-mxln.
 tr. mic., occ. chky, tr. m. sft., occ.
 foss.-v. foss., tr. pyr. NØNSFOC
 tr. sh. stand.
 Ls: A.A., less chky, NØNSFOC
 Sh: blk., m. sft.-m. hrd., carb., earthy
 Sh: A.A., occ. dk. gry., earthy
 Ls: crm.-brn., hrd.-m. sft., chky.,
 occ. foss., VEG-mxln., mic.,
 abun. sh. stand., pyr. NØNSFOC
 Ls: crm.-gry., hrd., dns., VEG-mxln.
 mic., abun. sh. stand., occ. foss.
 Sh: dk. gry., m. sft., dns., earthy-
 hackly
 Sh: blk., m. hrd., dns., carb.,
 earthy
 Sh: A.A.
 Ls: crm.-gry., hrd., dns., VEG-mxln.
 mic., occ. chky., NØNSFOC

Pawnee Ls.
 (-1308')

Ls: crm.-tan-lt. gry., hrd., dns., VEG-
 mxln., mic., sh. stand., tr. foss.,
 tr. pyr. NØNSFOC
 Sh: blk., m. hrd., dns., carb., hack.
 Ls: crm.-tan, hrd., dns., VEG-mxln.
 mic., occ. foss., sh. stand., occ.
 sft. & chky. NØNSFOC

Mud Check @ 4699'
 M.W. 9.2
 V.S. 62
 W.L. 5.6
 Chl. 600
 Solids 6.4%
 LCM 4#

Ls: crm.-tan-gry., hrd., dns., VEG-
 mxln., mic., occ. sft. & chky., occ.
 foss. & sh. stand. NØNSFOC

Cherokee Sh.
 (-1380')

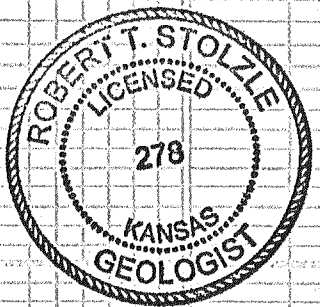
Ls: wh.-crm., hrd., dns., sily.-VEG xln.,
 occ. sft. & chky., occ. tr. pyr. w/ brn.
 moth. stn in VEG int xln. tr. pyr. VEG.
 No odor, No F.O. str - wk ch & fl.
 Ls: wh.-brn., hrd., dns., sily.-VEG xln. w/
 tr. mxln., mic., rare foss., table
 pg. brn. moth. stn. tr. pyr. VEG. No foss

Very weak show



4800

4850



frac., blk. cut off, No. O., No. O.
 sh. gry - blk, m. sst., dns., i. pack - earthy.
 Fr. Calc. ss: wh. v. w. cmtd. No NSFOC
 cfs- sh. rd brn - gry grn - dk. gry, m. sst. - m. hrd
 dns., earthy - hack. sandy
 sh. A, A, sandy - v. sandy
 ss: cl., m. sst., fria. - m. hrd, dns., fri.
 gnd., mod. sst., mod. - w. cmtd.,
 sub ang. fr. - pr. phi, sh. sst. NSFOC
 Cgl: sh. A, A, mot., sandy.
 occ. ss: A, A, w. cmtd., NSFOC
 Ls: cr. m. hrd, dns., veg. - mx. in, m. c.,
 sh. sst. nd., occ. pebb. surf. No NSFOC
 Ls: A, A, abun. sh. sst. nd. pebbles, sandy
 occ. sh. variegated, m. hrd., earthy
 occ. ss: wh. - y. w. m. hrd. - pr. dns.:
 veg. - fria. gnd., w. cmtd. No NSFOC
 sh: A, A, ss: cl., rd. sh. sst. nd. hrd. - m. hrd.
 dns.: med. crs. gnd., pr. sst. nd., sub
 ang. - sub. r. nd., w. cmtd., pr. - No
 vis. phi NSFOC
 tr. ss: A, A, occ. sh. ly. No NSFOC
 sh. rd brn - gry. grn. m. hrd - m. sst.
 sandy - v. sandy, earthy, occ.
 lg. sub rd. sd. gns.
 occ. ss: A, A, mod. pr. sst. nd., sh. ly.,
 w. cmtd. No NSFOC
 cgl: sh. rd - y. w. - gry. grn., m. sst. -
 m. hrd., dns., sandy, earthy

cfs

DST #4
 4694' - 4765'
 Rec. 2' Mud

Mud Check @ 4830'
 M. W. - N.C. Solids - N.C.
 V. S. - N.C. LCM - N.C.
 W. L. - N.C.
 Chl. - N.C.

D.T.D. 4830'
 L.T.D. 4832'

Deviation 1°

Robert Stolze
 313113



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co**

250 N Water STE 300
Wichita KS 67202

ATTN: Bob Stolze

Antholz #1-9

9-3s-36w Rawlins,KS

Start Date: 2013.02.26 @ 17:40:00

End Date: 2013.06.27 @ 01:31:30

Job Ticket #: 49022 DST #: 1

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

Printed: 2013.03.07 @ 11:43:50



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Murfin Drilling Co
250 N Water STE 300
Wichita KS 67202
ATTN: Bob Stolzle

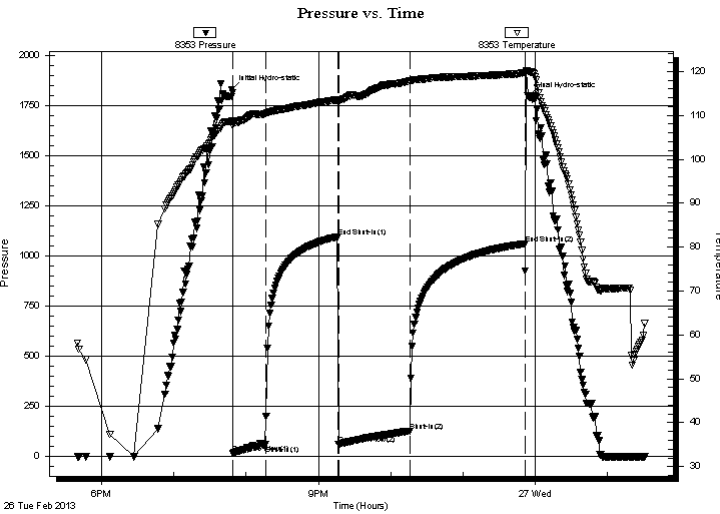
9-3s-36w Rawlins,KS
Antholz #1-9
Job Ticket: 49022 **DST#: 1**
Test Start: 2013.02.26 @ 17:40:00

GENERAL INFORMATION:

Formation: **Foraker**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 19:49:00
Time Test Ended: 01:31:30
Interval: **3771.00 ft (KB) To 3840.00 ft (KB) (TVD)**
Total Depth: 3840.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Test Type: Conventional Bottom Hole (Initial)
Tester: Wilbur Steinbeck
Unit No: 150
Reference Elevations: 3345.00 ft (KB)
3335.00 ft (CF)
KB to GR/CF: 10.00 ft

Serial #: 8353 Outside
Press @ RunDepth: 126.70 psig @ 3772.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2013.02.26 End Date: 2013.02.27 Last Calib.: 2013.02.27
Start Time: 17:40:15 End Time: 01:31:30 Time On Btm: 2013.02.26 @ 19:48:15
Time Off Btm: 2013.02.26 @ 23:54:15

TEST COMMENT: 30 IF; Built to 4"
60 IS; No Blow
60 FF; Built to 3"
90 FS; No Blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1828.56	108.67	Initial Hydro-static
1	15.67	107.65	Open To Flow (1)
28	57.29	110.33	Shut-In(1)
88	1095.03	113.51	End Shut-In(1)
89	60.25	113.40	Open To Flow (2)
148	126.70	117.83	Shut-In(2)
243	1060.19	119.76	End Shut-In(2)
246	1792.54	119.91	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
200.00	Mud 100%	0.98

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co

9-3s-36w Rawlins, KS

250 N Water STE 300
Wichita KS 67202

Antholz #1-9

Job Ticket: 49022

DST#: 1

ATTN: Bob Stolzle

Test Start: 2013.02.26 @ 17:40:00

GENERAL INFORMATION:

Formation: **Foraker**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 19:49:00

Time Test Ended: 01:31:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Wilbur Steinbeck

Unit No: 150

Interval: **3771.00 ft (KB) To 3840.00 ft (KB) (TVD)**

Total Depth: 3840.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 3345.00 ft (KB)

3335.00 ft (CF)

KB to GR/CF: 10.00 ft

Serial #: 8360 Inside

Press @ Run Depth: psig @ 3772.00 ft (KB)

Start Date: 2013.02.26

End Date: 2013.02.27

Capacity: 8000.00 psig

Last Calib.: 2013.02.27

Start Time: 17:40:15

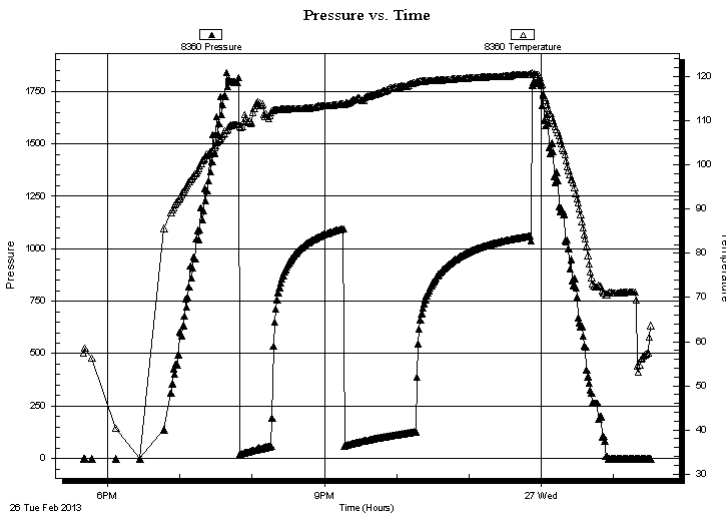
End Time: 01:31:30

Time On Btm:

Time Off Btm:

TEST COMMENT: 30 IF; Built to 4"
60 ISI; No Blow
60 FF; Built to 3"
90 FSI; No Blow

PRESSURE SUMMARY



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

Recovery

Gas Rates

Length (ft)	Description	Volume (bbl)
200.00	Mud 100%	0.98

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co

9-3s-36w Rawlins,KS

250 N Water STE 300
Wichita KS 67202

Antholz #1-9

Job Ticket: 49022

DST#: 1

ATTN: Bob Stolzle

Test Start: 2013.02.26 @ 17:40:00

Tool Information

Drill Pipe:	Length: 3227.00 ft	Diameter: 3.80 inches	Volume: 45.27 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: 534.00 ft	Diameter: 2.25 inches	Volume: 2.63 bbl	Weight to Pull Loose: 75000.00 lb
			<u>Total Volume: 47.90 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	17.00 ft			String Weight: Initial 70000.00 lb
Depth to Top Packer:	3771.00 ft			Final 70000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	69.00 ft			
Tool Length:	96.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Length (ft) Serial No. Position Depth (ft) Accum. Lengths

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3745.00	
Shut In Tool	5.00			3750.00	
Hydraulic tool	5.00			3755.00	
Jars	5.00			3760.00	
Safety Joint	2.00			3762.00	
Packer	5.00			3767.00	27.00 Bottom Of Top Packer
Packer	4.00			3771.00	
Stubb	1.00			3772.00	
Recorder	0.00	8360	Inside	3772.00	
Recorder	0.00	8353	Outside	3772.00	
Perforations	29.00			3801.00	
Change Over Sub	1.00			3802.00	
Drill Pipe	32.00			3834.00	
Change Over Sub	1.00			3835.00	
Bullnose	5.00			3840.00	69.00 Bottom Packers & Anchor

Total Tool Length: 96.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co

9-3s-36w Rawlins,KS

250 N Water STE 300
Wichita KS 67202

Antholz #1-9

Job Ticket: 49022

DST#: 1

ATTN: Bob Stolzle

Test Start: 2013.02.26 @ 17:40:00

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: 55.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 4.78 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
200.00	Mud 100%	0.984

Total Length: 200.00 ft Total Volume: 0.984 bbl

Num Fluid Samples: 0

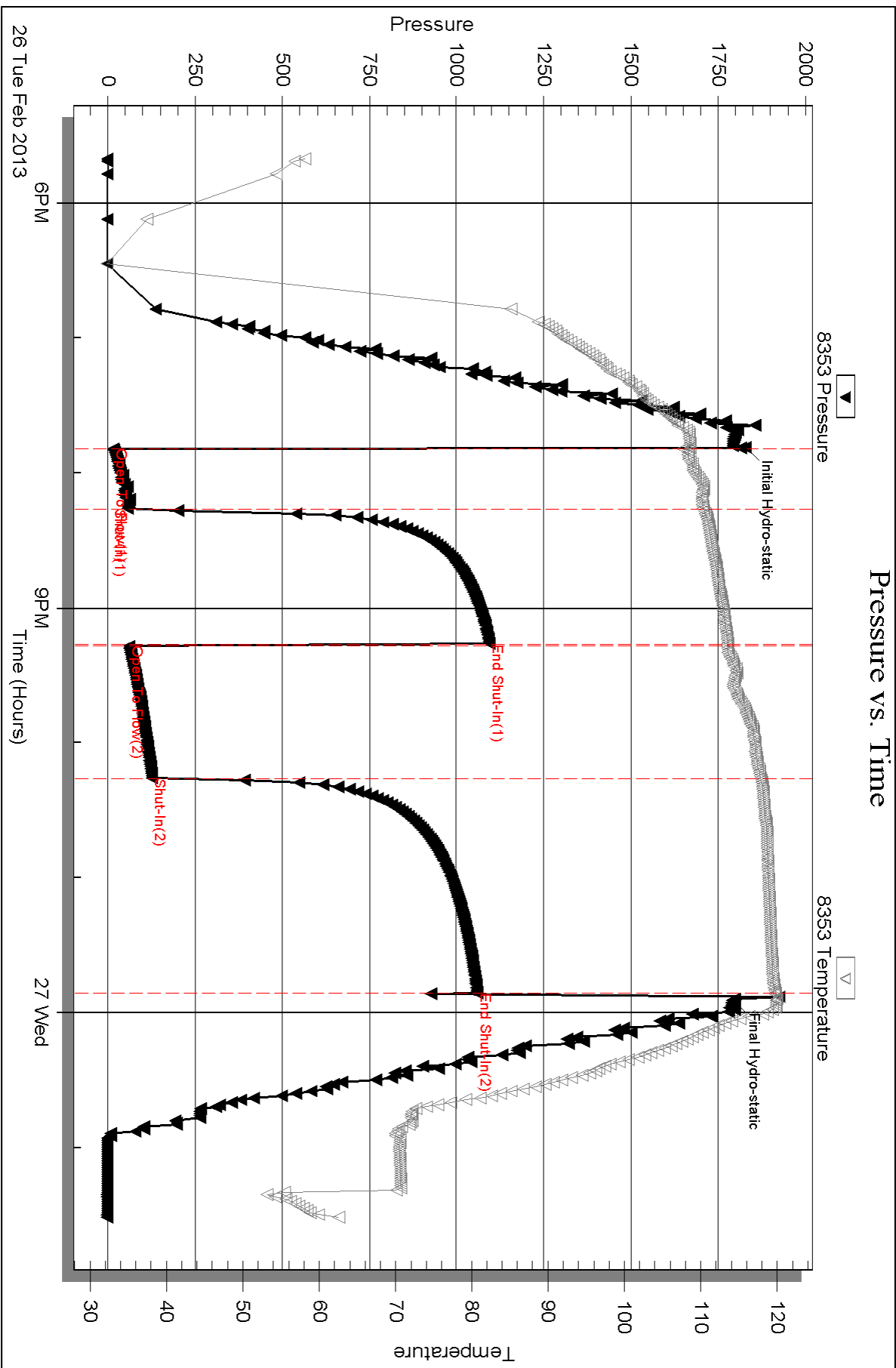
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



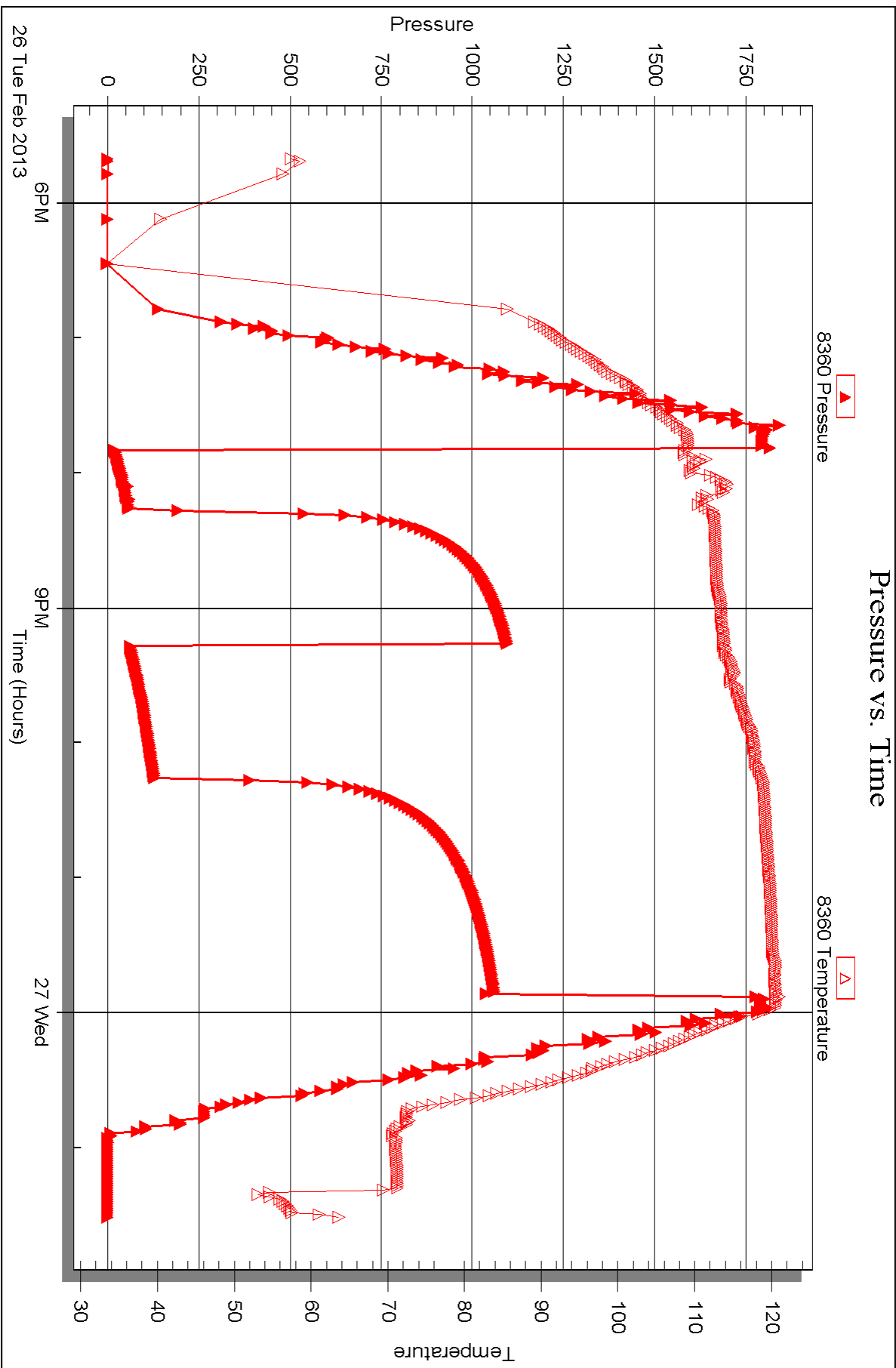
Serial #: 8360

Inside

Murfin Drilling Co

Antholz #1-9

DST Test Number: 1





DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co**

250 N Water STE 300
Wichita KS 67202

ATTN: Bob Stolze

Antholz #1-9

9-3s-36w Rawlins,KS

Start Date: 2013.02.28 @ 06:35:00

End Date: 2013.02.28 @ 15:00:30

Job Ticket #: 49023 DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2013.03.07 @ 11:40:51



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co
 250 N Water STE 300
 Wichita KS 67202
 ATTN: Bob Stolzle

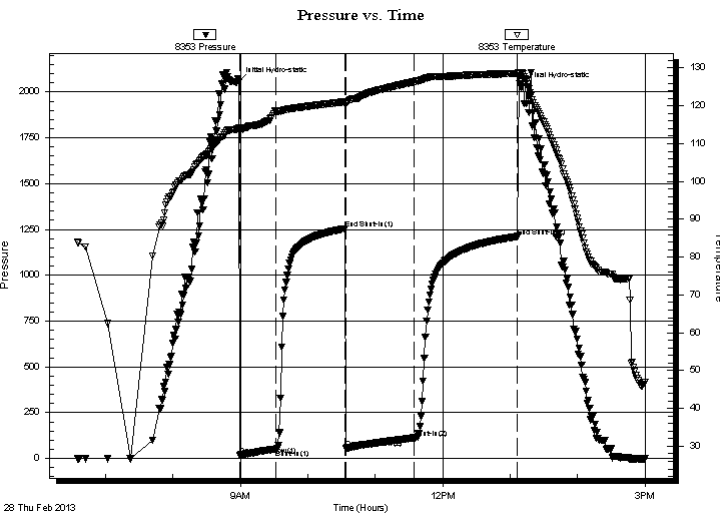
9-3s-36w Rawlins,KS
Antholz #1-9
 Job Ticket: 49023 **DST#: 2**
 Test Start: 2013.02.28 @ 06:35:00

GENERAL INFORMATION:

Formation: **Lan A**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Reset)
 Time Tool Opened: 08:59:45
 Tester: Wilbur Steinbeck
 Time Test Ended: 15:00:30
 Unit No: 150
 Interval: **4245.00 ft (KB) To 4295.00 ft (KB) (TVD)**
 Reference Elevations: 3345.00 ft (KB)
 Total Depth: 4295.00 ft (KB) (TVD)
 3335.00 ft (CF)
 Hole Diameter: 7.88 inches
 Hole Condition: Fair
 KB to GR/CF: 10.00 ft

Serial #: 8353 Outside
 Press @ Run Depth: 112.63 psig @ 4246.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2013.02.28 End Date: 2013.02.28 Last Calib.: 2013.02.28
 Start Time: 06:35:15 End Time: 15:00:30 Time On Btm: 2013.02.28 @ 08:58:45
 Time Off Btm: 2013.02.28 @ 13:10:45

TEST COMMENT: 30 IF; Built to 4"
 60 ISI; No Blow
 60 FF; Built to 3 1/2"
 90 FSI; Surface Blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2054.94	114.08	Initial Hydro-static
1	17.51	113.46	Open To Flow (1)
33	51.86	118.56	Shut-In(1)
94	1253.70	121.05	End Shut-In(1)
95	56.94	120.81	Open To Flow (2)
156	112.63	126.40	Shut-In(2)
248	1211.29	128.55	End Shut-In(2)
252	2031.29	128.73	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
93.00	OCM 10%O 90%M	0.46
112.00	MCO 95%O 5%M	0.55

* Recovery from multiple tests

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co

9-3s-36w Rawlins,KS

250 N Water STE 300
Wichita KS 67202

Antholz #1-9

Job Ticket: 49023

DST#: 2

ATTN: Bob Stolzle

Test Start: 2013.02.28 @ 06:35:00

GENERAL INFORMATION:

Formation: **Lan A**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 08:59:45

Time Test Ended: 15:00:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Wilbur Steinbeck

Unit No: 150

Interval: **4245.00 ft (KB) To 4295.00 ft (KB) (TVD)**

Reference Elevations: 3345.00 ft (KB)

Total Depth: 4295.00 ft (KB) (TVD)

3335.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 10.00 ft

Serial #: **8360** Inside

Press @ Run Depth: psig @ 4246.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.02.28

End Date:

2013.02.28

Last Calib.:

2013.02.28

Start Time: 06:35:01

End Time:

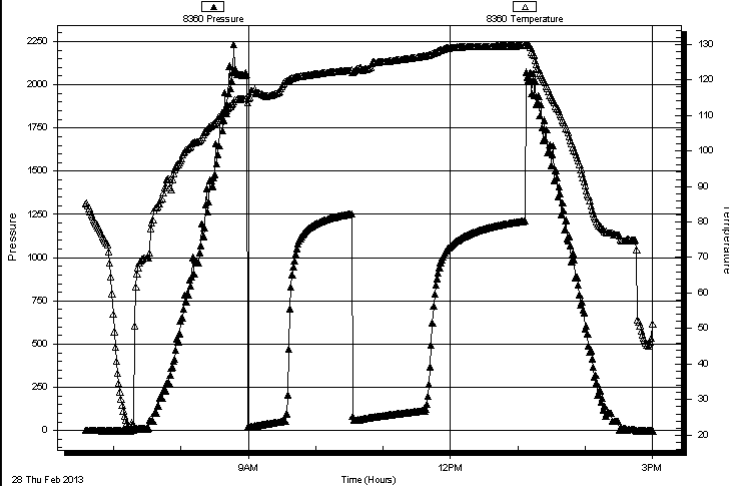
15:00:30

Time On Btm:

Time Off Btm:

TEST COMMENT: 30 IF; Built to 4"
60 ISI; No Blow
60 FF; Built to 3 1/2"
90 FSI; Surface Blow

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
93.00	OCM 10%O 90%M	0.46
112.00	MCO 95%O 5%M	0.55

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co

9-3s-36w Rawlins,KS

250 N Water STE 300
Wichita KS 67202

Antholz #1-9

Job Ticket: 49023

DST#: 2

ATTN: Bob Stolzle

Test Start: 2013.02.28 @ 06:35:00

Tool Information

Drill Pipe:	Length: 3711.00 ft	Diameter: 3.80 inches	Volume: 52.06 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: 534.00 ft	Diameter: 2.25 inches	Volume: 2.63 bbl	Weight to Pull Loose:	80000.00 lb
			<u>Total Volume: 54.69 bbl</u>	Tool Chased	1.00 ft
Drill Pipe Above KB:	27.00 ft			String Weight: Initial	76000.00 lb
Depth to Top Packer:	4245.00 ft			Final	77000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	50.00 ft				
Tool Length:	77.00 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			4219.00	
Shut In Tool	5.00			4224.00	
Hydraulic tool	5.00			4229.00	
Jars	5.00			4234.00	
Safety Joint	2.00			4236.00	
Packer	5.00			4241.00	27.00 Bottom Of Top Packer
Packer	4.00			4245.00	
Stubb	1.00			4246.00	
Recorder	0.00	8360	Inside	4246.00	
Recorder	0.00	8353	Outside	4246.00	
Perforations	10.00			4256.00	
Change Over Sub	1.00			4257.00	
Drill Pipe	32.00			4289.00	
Change Over Sub	1.00			4290.00	
Bullnose	5.00			4295.00	50.00 Bottom Packers & Anchor

Total Tool Length: 77.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co

9-3s-36w Rawlins,KS

250 N Water STE 300
Wichita KS 67202

Antholz #1-9

Job Ticket: 49023

DST#: 2

ATTN: Bob Stolzle

Test Start: 2013.02.28 @ 06:35:00

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: 55.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 4.79 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
93.00	OCM 10%O 90%M	0.457
112.00	MCO 95%O 5%M	0.551

Total Length: 205.00 ft Total Volume: 1.008 bbl

Num Fluid Samples: 0

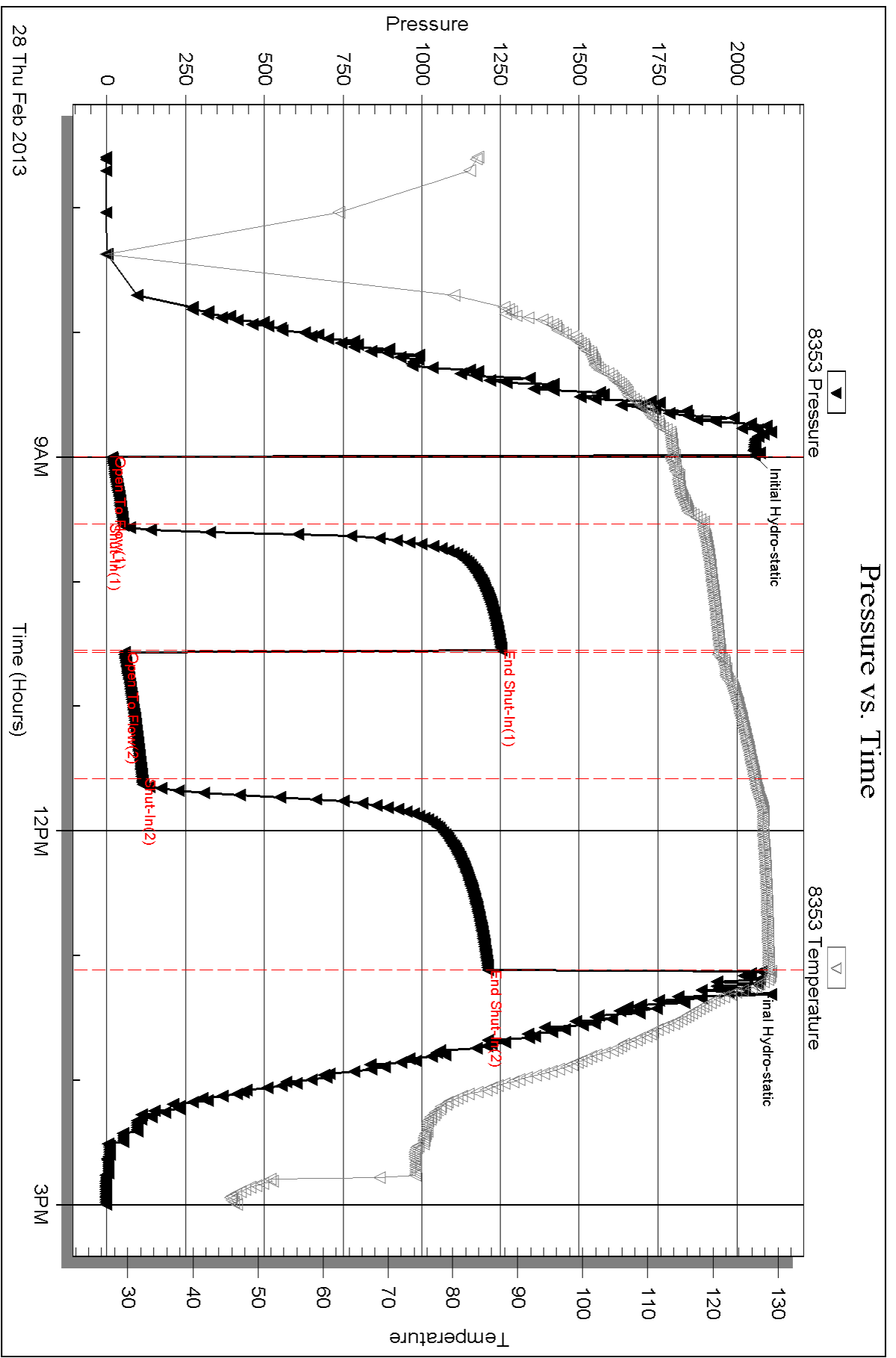
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



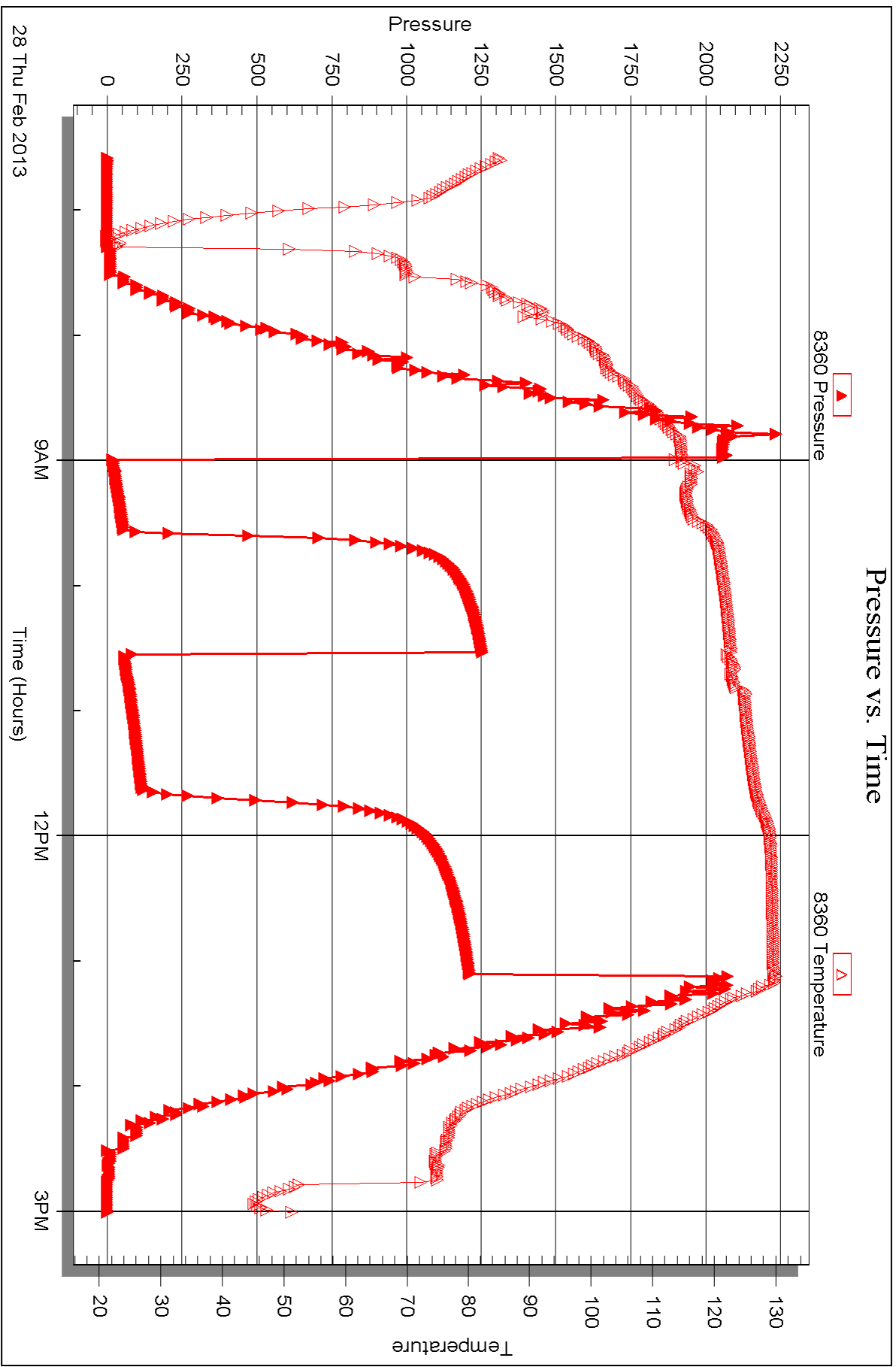
Serial #: 8360

Inside

Murfin Drilling Co

Antholz #1-9

DST Test Number: 2





DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co**

250 N Water STE 300
Wichita KS 67202

ATTN: Bob Stolze

Antholz #1-9

9-3s-36w Rawlins,KS

Start Date: 2013.03.01 @ 10:00:00

End Date: 2013.03.01 @ 17:44:15

Job Ticket #: 49024 DST #: 3

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

Printed: 2013.03.07 @ 11:40:10



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co
 250 N Water STE 300
 Wichita KS 67202
 ATTN: Bob Stolzle

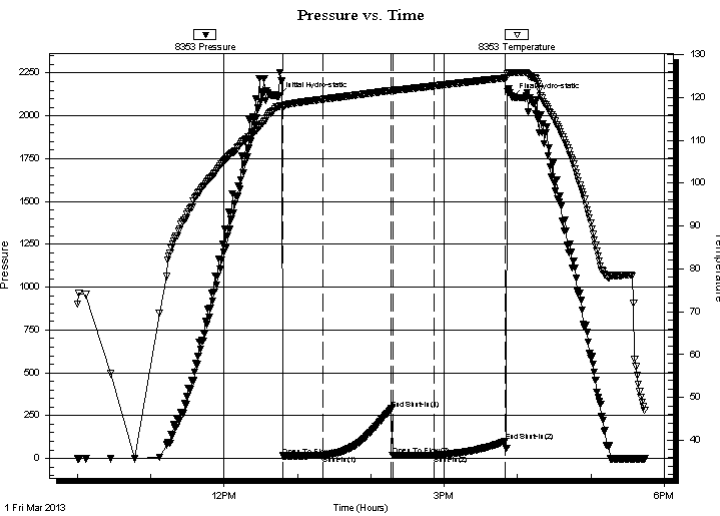
9-3s-36w Rawlins,KS
Antholz #1-9
 Job Ticket: 49024 **DST#: 3**
 Test Start: 2013.03.01 @ 10:00:00

GENERAL INFORMATION:

Formation: **Lan J**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 12:47:45
 Time Test Ended: 17:44:15
 Interval: **4431.00 ft (KB) To 4480.00 ft (KB) (TVD)**
 Total Depth: 4480.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Wilbur Steinbeck
 Unit No: 150
 Reference Elevations: 3345.00 ft (KB)
 3335.00 ft (CF)
 KB to GR/CF: 10.00 ft

Serial #: 8353 Outside
 Press @ Run Depth: 17.87 psig @ 4432.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2013.03.01 End Date: 2013.03.01 Last Calib.: 2013.03.01
 Start Time: 10:00:15 End Time: 17:44:15 Time On Btm: 2013.03.01 @ 12:44:45
 Time Off Btm: 2013.03.01 @ 15:55:45

TEST COMMENT: 30 IF; Surface Blow died in 20 min
 60 IS; No Blow
 30 FF; No Blow
 60 FS; No Blow



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2115.30	117.88	Initial Hydro-static
3	15.35	117.81	Open To Flow (1)
36	16.99	119.58	Shut-In(1)
92	289.92	121.65	End Shut-In(1)
93	16.58	121.65	Open To Flow (2)
127	17.87	122.69	Shut-In(2)
185	101.74	124.55	End Shut-In(2)
191	2108.07	125.80	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
2.00	Mud	0.01

* Recovery from multiple tests

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co
250 N Water STE 300
Wichita KS 67202
ATTN: Bob Stolzle

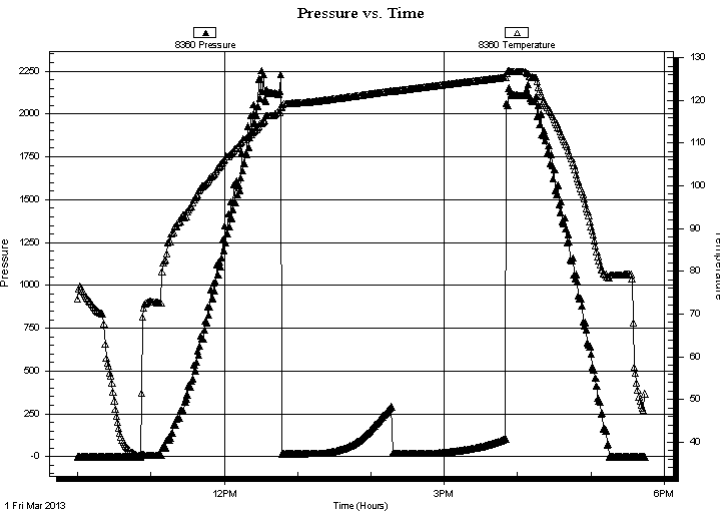
9-3s-36w Rawlins,KS
Antholz #1-9
Job Ticket: 49024 **DST#: 3**
Test Start: 2013.03.01 @ 10:00:00

GENERAL INFORMATION:

Formation: **Lan J**
Deviated: No Whipstock: ft (KB) Test Type: Conventional Bottom Hole (Reset)
Time Tool Opened: 12:47:45 Tester: Wilbur Steinbeck
Time Test Ended: 17:44:15 Unit No: 150
Interval: 4431.00 ft (KB) To 4480.00 ft (KB) (TVD) Reference Elevations: 3345.00 ft (KB)
Total Depth: 4480.00 ft (KB) (TVD) 3335.00 ft (CF)
Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 10.00 ft

Serial #: 8360 Inside
Press @ Run Depth: psig @ 4432.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2013.03.01 End Date: 2013.03.01 Last Calib.: 2013.03.01
Start Time: 10:00:01 End Time: 17:44:05 Time On Btm:
Time Off Btm:

TEST COMMENT: 30 IF; Surface Blow died in 20 min
60 IS; No Blow
30 FF; No Blow
60 FS; No Blow



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
2.00	Mud	0.01

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co

9-3s-36w Rawlins,KS

250 N Water STE 300
Wichita KS 67202

Antholz #1-9

Job Ticket: 49024

DST#: 3

ATTN: Bob Stolzle

Test Start: 2013.03.01 @ 10:00:00

Tool Information

Drill Pipe:	Length: 3902.00 ft	Diameter: 3.80 inches	Volume: 54.73 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: 534.00 ft	Diameter: 2.25 inches	Volume: 2.63 bbl	Weight to Pull Loose: 85000.00 lb
			<u>Total Volume: 57.36 bbl</u>	Tool Chased 5.00 ft
Drill Pipe Above KB:	32.00 ft			String Weight: Initial 77000.00 lb
Depth to Top Packer:	4431.00 ft			Final 77000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	49.00 ft			
Tool Length:	76.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Length (ft) Serial No. Position Depth (ft) Accum. Lengths

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4405.00	
Shut In Tool	5.00			4410.00	
Hydraulic tool	5.00			4415.00	
Jars	5.00			4420.00	
Safety Joint	2.00			4422.00	
Packer	5.00			4427.00	27.00 Bottom Of Top Packer
Packer	4.00			4431.00	
Stubb	1.00			4432.00	
Recorder	0.00	8360	Inside	4432.00	
Recorder	0.00	8353	Outside	4432.00	
Perforations	9.00			4441.00	
Change Over Sub	1.00			4442.00	
Drill Pipe	32.00			4474.00	
Change Over Sub	1.00			4475.00	
Bullnose	5.00			4480.00	49.00 Bottom Packers & Anchor

Total Tool Length: 76.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co

9-3s-36w Rawlins,KS

250 N Water STE 300
Wichita KS 67202

Antholz #1-9

Job Ticket: 49024

DST#: 3

ATTN: Bob Stolzle

Test Start: 2013.03.01 @ 10:00:00

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: 68.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.59 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 900.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
2.00	Mud	0.010

Total Length: 2.00 ft Total Volume: 0.010 bbl

Num Fluid Samples: 0

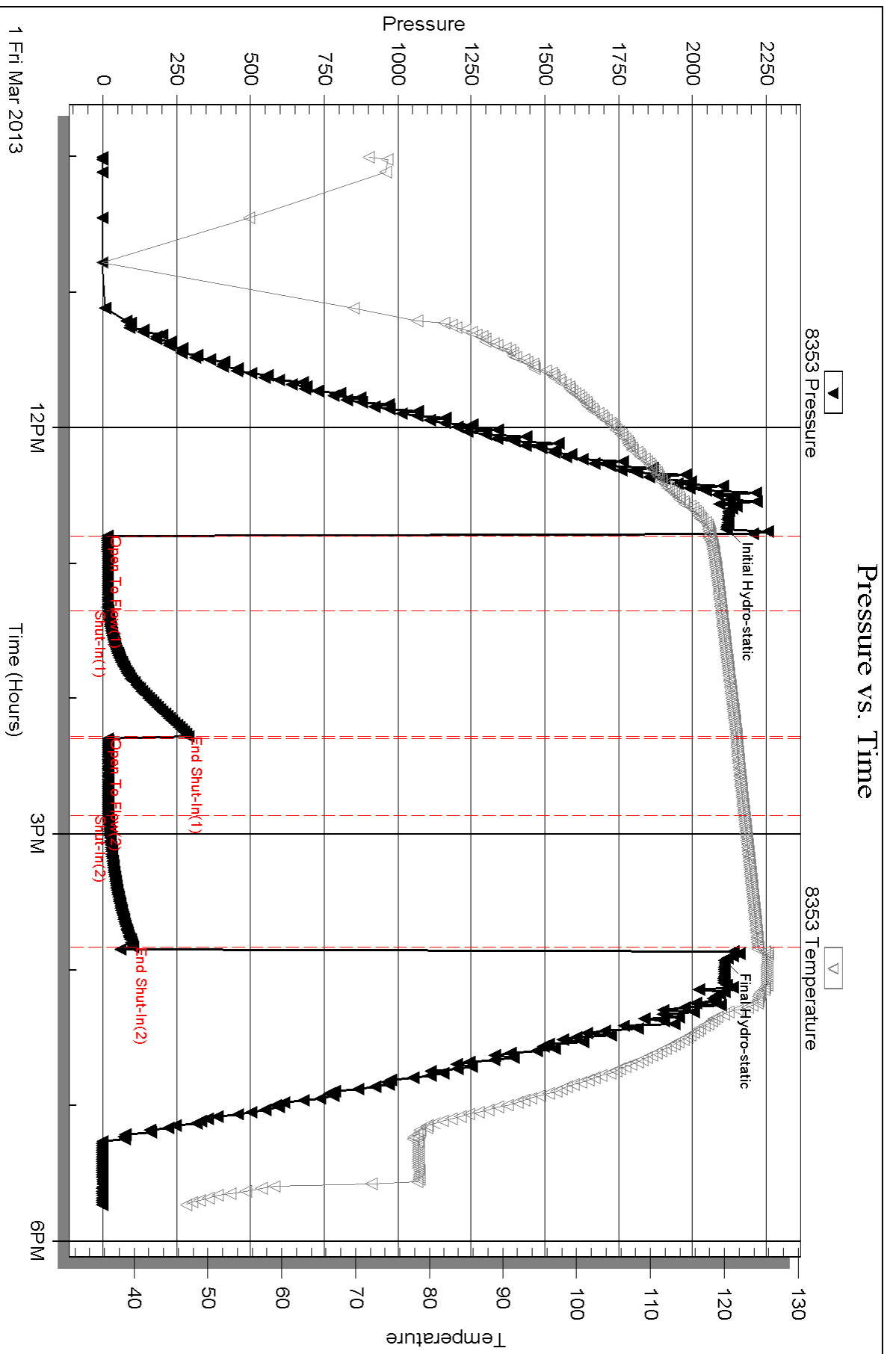
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



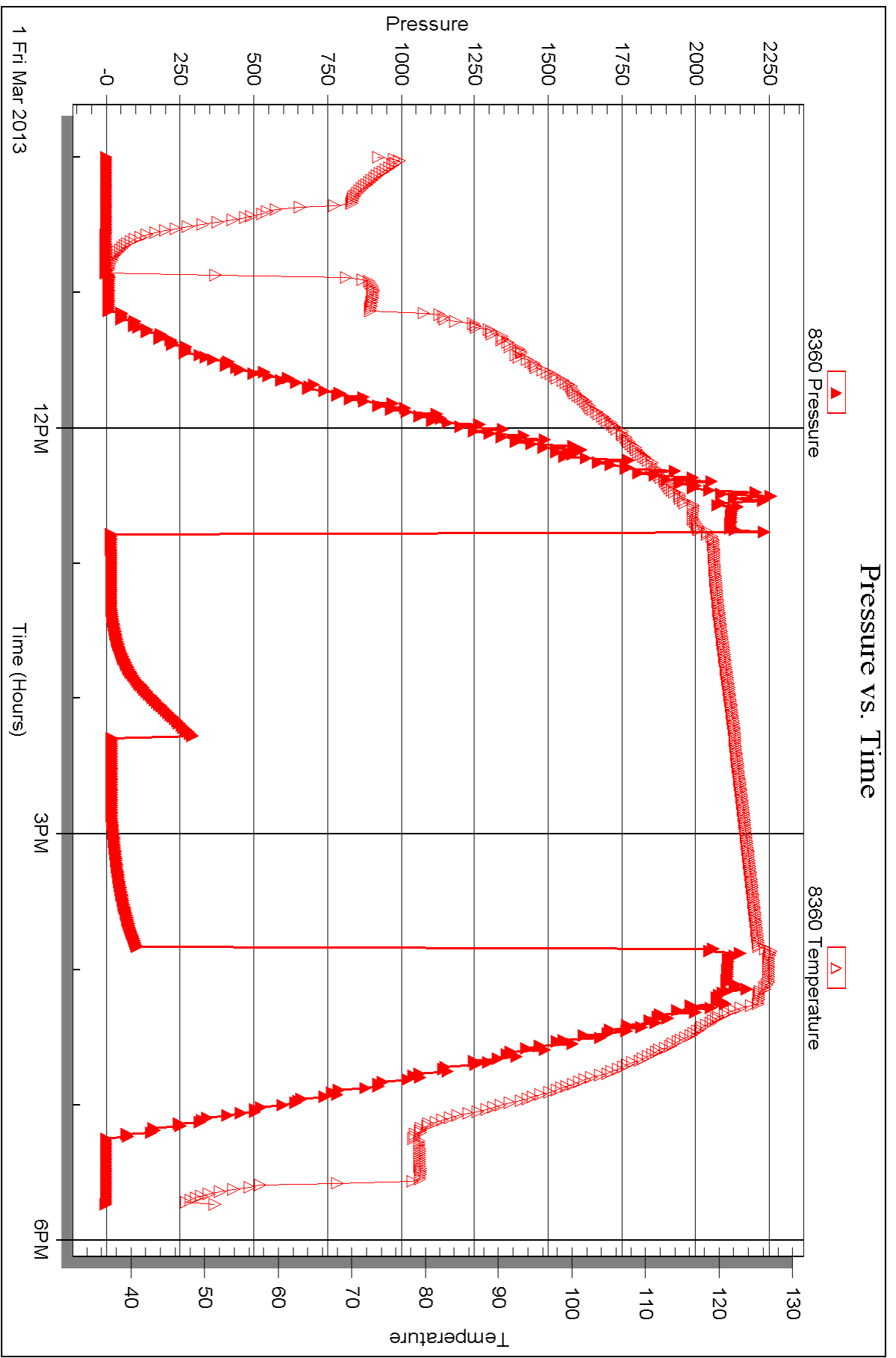
Serial #: 8360

Inside

Murfin Drilling Co

Antholz #1-9

DST Test Number: 3



Triobite Testing, Inc

Ref. No: 49024

Printed: 2013.03.07 @ 11:40:13



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co**

250 N Water STE 300
Wichita KS 67202

ATTN: Bob Stolze

Antholz #1-9

9-3s-36w Rawlins,KS

Start Date: 2013.03.02 @ 19:50:00

End Date: 2013.03.03 @ 03:14:45

Job Ticket #: 49025 DST #: 4

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

Printed: 2013.03.07 @ 11:39:28



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Murfin Drilling Co
250 N Water STE 300
Wichita KS 67202
ATTN: Bob Stolzle

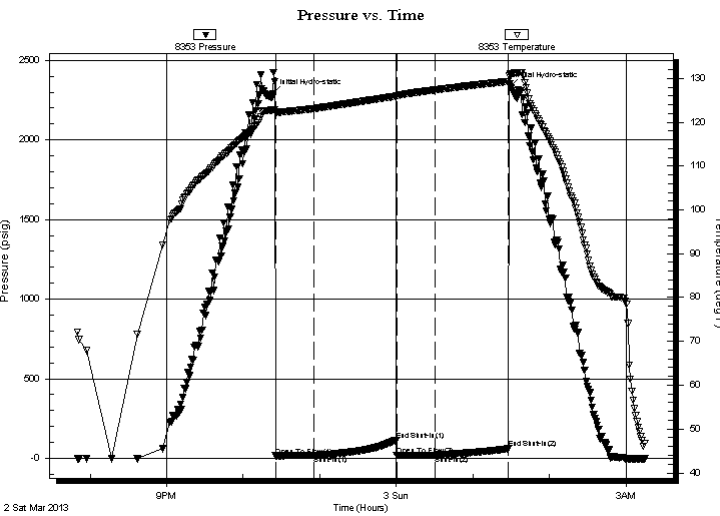
9-3s-36w Rawlins,KS
Antholz #1-9
Job Ticket: 49025 **DST#: 4**
Test Start: 2013.03.02 @ 19:50:00

GENERAL INFORMATION:

Formation: **Verdigris**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 22:25:15
Time Test Ended: 03:14:45
Interval: **4694.00 ft (KB) To 4765.00 ft (KB) (TVD)**
Total Depth: 4765.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Test Type: Conventional Bottom Hole (Reset)
Tester: Wilbur Steinbeck
Unit No: 150
Reference Elevations: 3345.00 ft (KB)
3335.00 ft (CF)
KB to GR/CF: 10.00 ft

Serial #: 8353 Outside
Press @ Run Depth: 20.69 psig @ 4695.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2013.03.02 End Date: 2013.03.03 Last Calib.: 2013.03.03
Start Time: 19:50:15 End Time: 03:14:45 Time On Btm: 2013.03.02 @ 22:23:15
Time Off Btm: 2013.03.03 @ 01:29:15

TEST COMMENT: 30 IF; Built to 1/2" died back to 1/8"
60 IS; No Blow
30 FF; No Blow
60 FS; No Blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2291.33	122.82	Initial Hydro-static
2	16.33	122.28	Open To Flow (1)
33	18.28	123.13	Shut-In(1)
97	111.47	125.93	End Shut-In(1)
97	18.56	125.96	Open To Flow (2)
127	20.69	127.35	Shut-In(2)
185	60.98	129.31	End Shut-In(2)
186	2333.49	130.86	Final Hydro-static

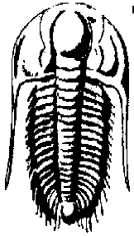
Recovery

Length (ft)	Description	Volume (bbl)
2.00	Mud	0.01

* Recovery from multiple tests

Gas Rates

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



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co
250 N Water STE 300
Wichita KS 67202
ATTN: Bob Stolzle

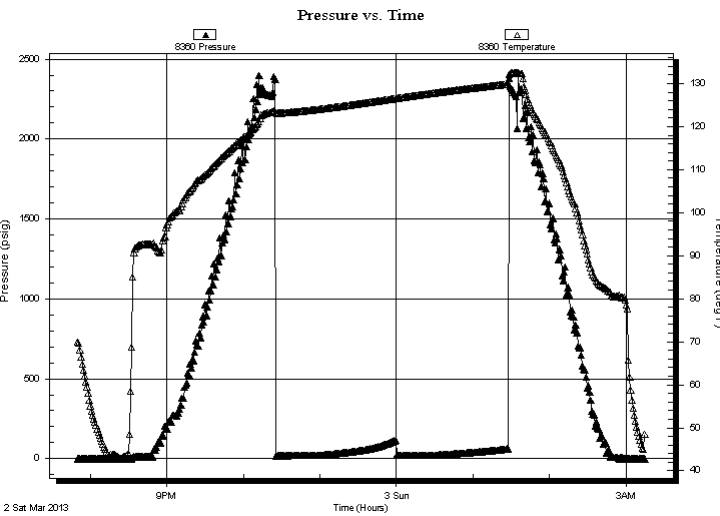
9-3s-36w Rawlins,KS
Antholz #1-9
Job Ticket: 49025 **DST#: 4**
Test Start: 2013.03.02 @ 19:50:00

GENERAL INFORMATION:

Formation: **Verdigris**
Deviated: No Whipstock: ft (KB) Test Type: Conventional Bottom Hole (Reset)
Time Tool Opened: 22:25:15 Tester: Wilbur Steinbeck
Time Test Ended: 03:14:45 Unit No: 150
Interval: 4694.00 ft (KB) To 4765.00 ft (KB) (TVD) Reference Elevations: 3345.00 ft (KB)
Total Depth: 4765.00 ft (KB) (TVD) 3335.00 ft (CF)
Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 10.00 ft

Serial #: 8360 Inside
Press @ Run Depth: psig @ 4695.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2013.03.02 End Date: 2013.03.03 Last Calib.: 2013.03.03
Start Time: 19:50:01 End Time: 03:14:40 Time On Btm:
Time Off Btm:

TEST COMMENT: 30 IF; Built to 1/2" died back to 1/8"
60 IS; No Blow
30 FF; No Blow
60 FS; No Blow



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
2.00	Mud	0.01

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co

9-3s-36w Rawlins,KS

250 N Water STE 300
Wichita KS 67202

Antholz #1-9

Job Ticket: 49025

DST#: 4

ATTN: Bob Stolzle

Test Start: 2013.03.02 @ 19:50:00

Tool Information

Drill Pipe:	Length: 4151.00 ft	Diameter: 3.80 inches	Volume: 58.23 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: 534.00 ft	Diameter: 2.25 inches	Volume: 2.63 bbl	Weight to Pull Loose: 85000.00 lb
			<u>Total Volume: 60.86 bbl</u>	Tool Chased 1.00 ft
Drill Pipe Above KB:	18.00 ft			String Weight: Initial 82000.00 lb
Depth to Top Packer:	4694.00 ft			Final 82000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	71.00 ft			
Tool Length:	98.00 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			4668.00	
Shut In Tool	5.00			4673.00	
Hydraulic tool	5.00			4678.00	
Jars	5.00			4683.00	
Safety Joint	2.00			4685.00	
Packer	5.00			4690.00	27.00 Bottom Of Top Packer
Packer	4.00			4694.00	
Stubb	1.00			4695.00	
Recorder	0.00	8360	Inside	4695.00	
Recorder	0.00	8353	Outside	4695.00	
Perforations	31.00			4726.00	
Change Over Sub	1.00			4727.00	
Drill Pipe	32.00			4759.00	
Change Over Sub	1.00			4760.00	
Bullnose	5.00			4765.00	71.00 Bottom Packers & Anchor

Total Tool Length: 98.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co

9-3s-36w Rawlins,KS

250 N Water STE 300
Wichita KS 67202

Antholz #1-9

Job Ticket: 49025

DST#: 4

ATTN: Bob Stolzle

Test Start: 2013.03.02 @ 19:50:00

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: 62.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.59 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
2.00	Mud	0.010

Total Length: 2.00 ft Total Volume: 0.010 bbl

Num Fluid Samples: 0

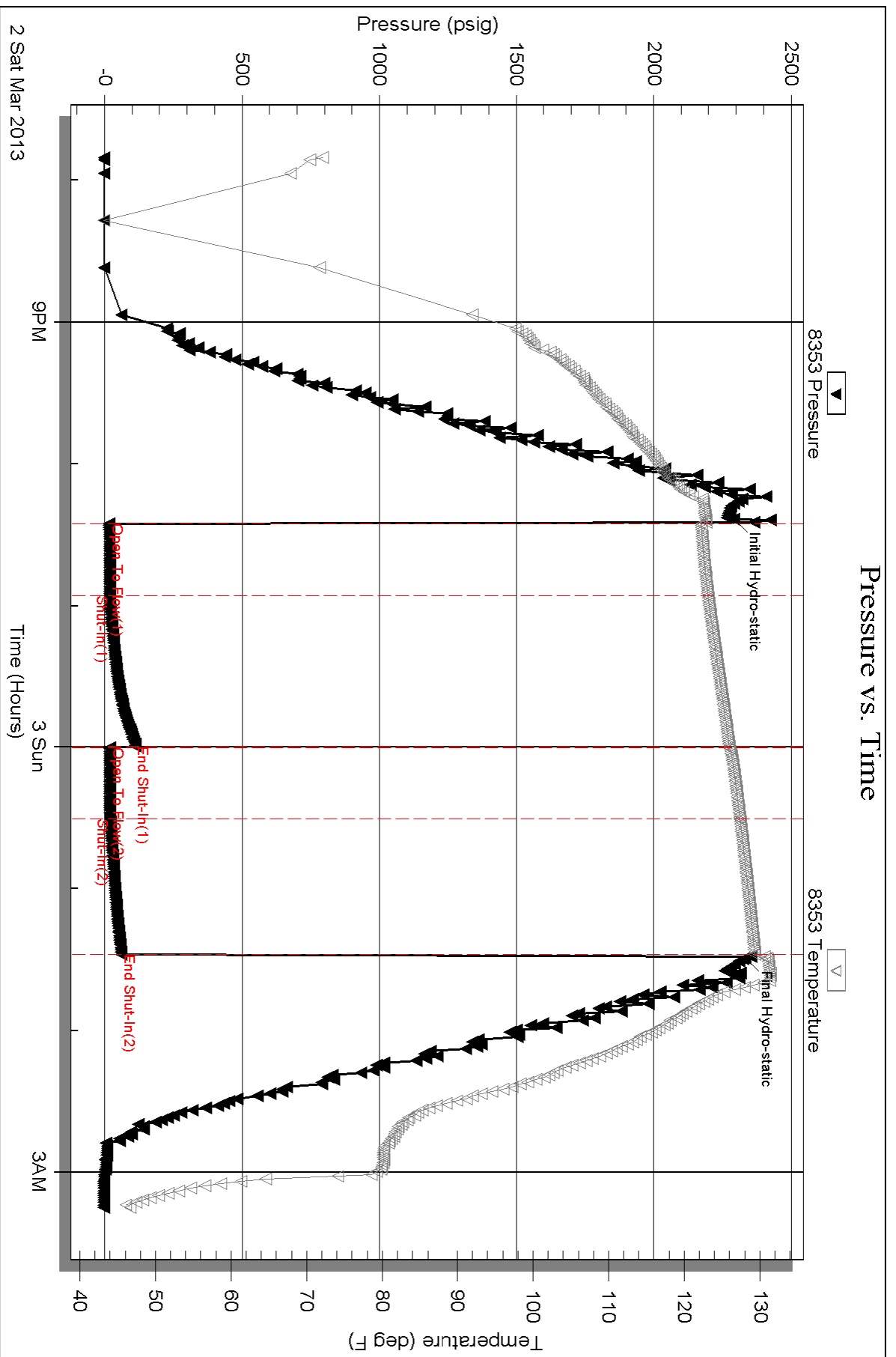
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



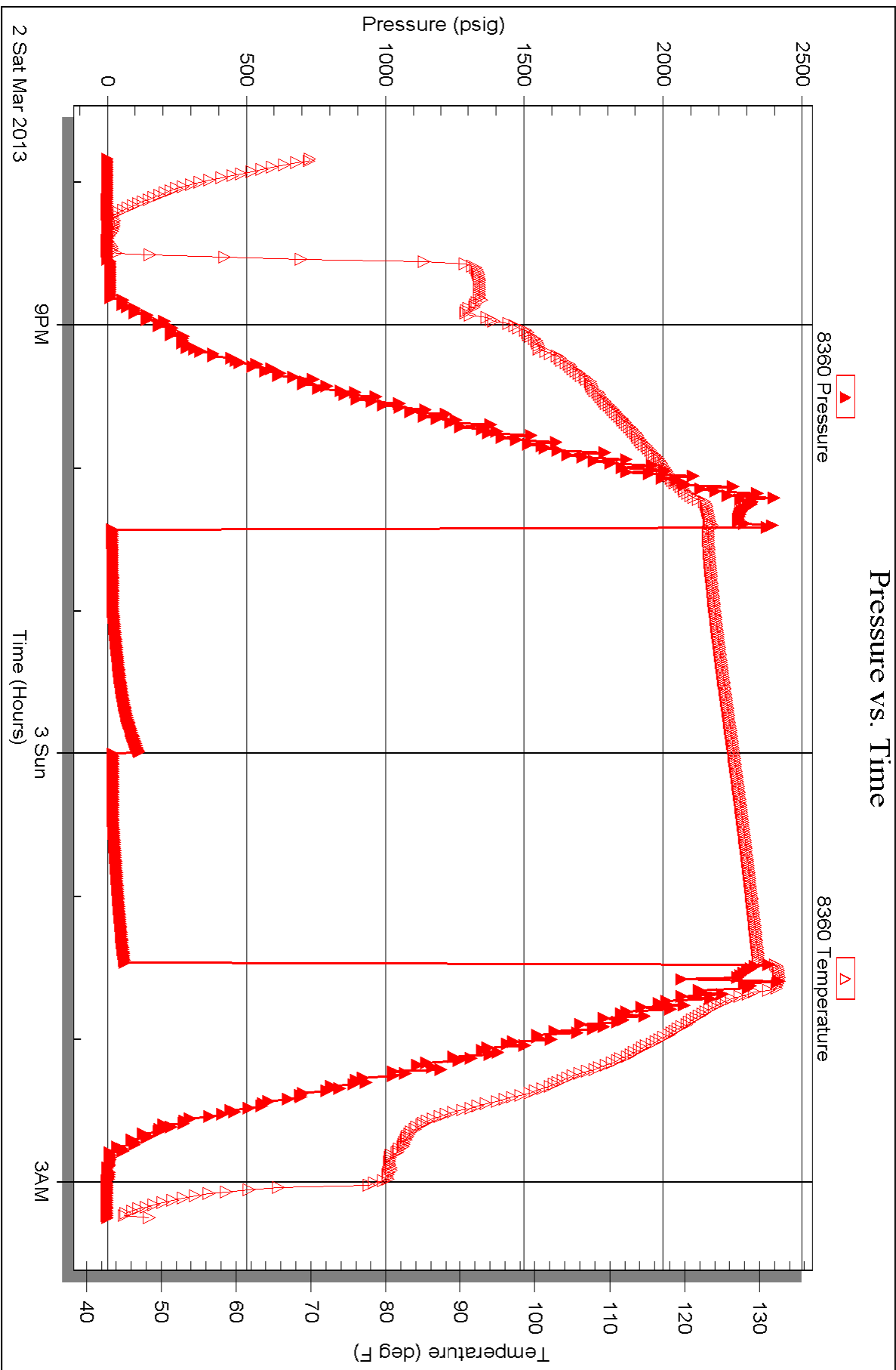
Serial #: 8360

Inside

Murfin Drilling Co

Antholz #1-9

DST Test Number: 4





TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

Test Ticket

NO. 49022

Well Name & No. Antholz 1-9 Test No. 1 Date 2-26-13
 Company Martin Drilling Co Elevation 3345 KB 3335 GL
 Address 250 N Water St. 300 Wichita KS 67202
 Co. Rep / Geo. Bob Stoltzle Rig Martin 14
 Location: Sec. 9 Twp. 3s Rge. 36W Co. Rawlins State KS

Interval Tested 3771 3840 Zone Tested Foraker
 Anchor Length 69 Drill Pipe Run 3227 Mud Wt. 8.9
 Top Packer Depth 3766 Drill Collars Run 534 Vis 55
 Bottom Packer Depth 3771 Wt. Pipe Run 0 WL 4.8
 Total Depth 3840 Chlorides 600 ppm System LCM 4

Blow Description 1F Built to 4in
ISI No Blow
FF Built to 3in
ISI No Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>200</u>	<u>Mod</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 200 BHT _____ Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1,829 Test 1150 T-On Location 15:45
 (B) First Initial Flow 16 Jars 250 T-Started 17:40
 (C) First Final Flow 57 Safety Joint 75 T-Open 19:45
 (D) Initial Shut-In 1,089 Circ Sub NA T-Pulled 23:45
 (E) Second Initial Flow 60 Hourly Standby _____ T-Out 1:30
 (F) Second Final Flow 127 Mileage 100 RT 155 Comments _____
 (G) Final Shut-In 1,060 Sampler _____
 (H) Final Hydrostatic 1,793 Straddle _____

Initial Open 30 Shale Packer _____ Ruined Shale Packer _____
 Initial Shut-In 60 Shale Packer _____ Ruined Packer _____
 Final Flow 60 Extra Packer _____ Extra Copies _____
 Final Shut-In 90 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 1630
 Accessibility _____ MP/DST Disc't _____
 Sub Total 1630

Approved By _____ Our Representative [Signature]

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



TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

Test Ticket

NO. 49023

Well Name & No. Aatholz 1-9 Test No. 2 Date 2-28-13
 Company Murfin Drilling Co Elevation 3345 KB 3335 GL
 Address 250 N Water STE 300 W. White KS 67202
 Co. Rep / Geo. Bob Stolz Rig Murfin 14
 Location: Sec. 9 Twp. 35 Rge. 36W Co. Rawlins State KS

Interval Tested 4245 4295 Zone Tested Lan 'A'
 Anchor Length 50 Drill Pipe Run 3711 Mud Wt. 93
 Top Packer Depth 4240 Drill Collars Run 534 Vis 68
 Bottom Packer Depth 4245 Wt. Pipe Run 0 WL 56
 Total Depth 4295 Chlorides 900 ppm System LCM 6
 Blow Description IF; Built to 4"
IST; No Blow
FF; Built to 3 1/2"
FST; Surface Blow

Rec	Feet of	%gas	%oil	%water	%mud
112	MCO	95		5	
93	OCM	10		90	

Rec Total 205 BHT _____ Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic <u>2055</u>	<input checked="" type="checkbox"/> Test 1250	T-On Location <u>4:55</u>
(B) First Initial Flow <u>18</u>	<input checked="" type="checkbox"/> Jars 250	T-Started <u>6:35</u>
(C) First Final Flow <u>52</u>	<input checked="" type="checkbox"/> Safety Joint 75	T-Open <u>9:05</u>
(D) Initial Shut-In <u>1254</u>	<input checked="" type="checkbox"/> Circ Sub <u>NA</u>	T-Pulled <u>13:05</u>
(E) Second Initial Flow <u>57</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>15:00</u>
(F) Second Final Flow <u>113</u>	<input checked="" type="checkbox"/> Mileage <u>100 RT</u> 155	Comments _____
(G) Final Shut-In <u>1211</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2031</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Packer
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
Final Flow <u>60</u>	<input type="checkbox"/> Extra Recorder	Sub Total <u>116.67</u>
Final Shut-In <u>90</u>	<input type="checkbox"/> Day Standby 1d 3.5h	Total <u>1846.67</u>
	<input type="checkbox"/> Accessibility	MP/DST Disc't _____
	Sub Total <u>1730</u>	

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.

P.O. Box 1733 • Hays, Kansas 67601

Test Ticket

NO. 49024

Well Name & No. Antholz 1-9 Test No. 3 Date 3-1-13
 Company Murfin Drilling Co. Elevation 3345 KB 3335 GL
 Address 250 N Water Stc 300 Wichita Ks 67202
 Co. Rep / Geo. Bob Stoltz Rig Murfin 14
 Location: Sec. 9 Twp. 35 Rge. 36W Co. Rawlins State Ks

Interval Tested 4451 4480 Zone Tested Layer 'J'
 Anchor Length 49 Drill Pipe Run 3902 Mud Wt. 9.3
 Top Packer Depth 4426 Drill Collars Run 534 Vis 68
 Bottom Packer Depth 4431 Wt. Pipe Run 0 WL 56
 Total Depth 4480 Chlorides 900 ppm System LCM 6

Blow Description IF; Surface Blow Died in 20m. 7
ISI; No Blow
FF; No Blow
FSI; No Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>2</u>	<u>Mod</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 2 BHT 126 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2,115 Test 1250 T-On Location 9:10
 (B) First Initial Flow 15 Jars 250 T-Started 10:00
 (C) First Final Flow 17 Safety Joint 75 T-Open 12:50
 (D) Initial Shut-In 290 Circ Sub NA T-Pulled 15:50
 (E) Second Initial Flow 17 Hourly Standby _____ T-Out 17:45
 (F) Second Final Flow 18 Mileage 100 RT 155
 (G) Final Shut-In 102 Sampler _____
 (H) Final Hydrostatic 2108 Straddle _____

Initial Open 30 Shale Packer _____ Ruined Shale Packer _____
 Initial Shut-In 60 Shale Packer _____ Ruined Packer _____
 Final Flow 30 Extra Packer _____ Extra Copies _____
 Final Shut-In 60 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 1730
 Accessibility _____ MP/DST Disc't _____

Sub Total 1730

Approved By _____

Our Representative [Signature]

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TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

Test Ticket

NO. 49025

Well Name & No. Antholz 1-9 Test No. 4 Date 3-2-13
 Company Martin Drilling Co. Elevation 3345 KB 3335 GL
 Address 250 N Water St. 300 Wichita KS 67202
 Co. Rep / Geo. Bob Stolze Rig Martin 14
 Location: Sec. 9 Twp. 3s Rge. 36w Co. Rawlins State Ks

Interval Tested 4694 4765 Zone Tested verdigris
 Anchor Length 71 Drill Pipe Run 4151 Mud Wt. 9.2
 Top Packer Depth 4489 Drill Collars Run 534 Vis 62
 Bottom Packer Depth 4494 Wt. Pipe Run 0 WL 5.6
 Total Depth 4765 Chlorides 600 ppm System LCM 4

Blow Description 1F Built to 1/2" die & ~~Back to 1/8"~~ Back to 1/8"
1st No Blow
FF No Blow
FSL No Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>2</u>	<u>Mud</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 2 BHT 131°F Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic <u>2,291</u>	<input checked="" type="checkbox"/> Test 1250	T-On Location <u>18:00 18:00</u>
(B) First Initial Flow <u>16</u>	<input checked="" type="checkbox"/> Jars 250	T-Started <u>19:50</u>
(C) First Final Flow <u>18</u>	<input checked="" type="checkbox"/> Safety Joint 75	T-Open <u>22:25</u>
(D) Initial Shut-In <u>111</u>	<input checked="" type="checkbox"/> Circ Sub <u>MA</u>	T-Pulled <u>1:25</u>
(E) Second Initial Flow <u>19</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>3:15</u>
(F) Second Final Flow <u>21</u>	<input checked="" type="checkbox"/> Mileage <u>100RT</u> 155	Comments _____
(G) Final Shut-In <u>61</u>	<input type="checkbox"/> Sampler	_____
(H) Final Hydrostatic <u>2,333</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer

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

Shale Packer
 Extra Packer
 Extra Recorder
 Day Standby
 Accessibility

Sub Total 1730

MP/DST Disc't _____

Approved By _____ Our Representative [Signature]

TriLOBITE TESTING INC. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



PO Box 93999
Southlake, TX 76092

Voice: (817) 546-7282
Fax: (817) 246-3361

*acet
Prod-Liz*

INVOICE

Invoice Number: 135034

Invoice Date: Feb 24, 2013

Page: 1

Bill To:
Murfin Drtg. Co., Inc. 250 N. Water STE #300 Wichita, KS 67202

Now Includes:



Customer ID	Field Ticket #	Payment Terms	
Murfin	60059	Net 30 Days	
Job Location	Camp Location	Service Date	Due Date
KS1-01	Oakley	Feb 24, 2013	3/26/13

Quantity	Item	Description	Unit Price	Amount
310.00	MAT	Class A Common	17.90	5,549.00
11.00	MAT	Chloride <i>Antholz 1-9</i>	64.00	704.00
325.50	SER	Cubic Feet	2.48	807.24
1,057.00	SER	Ton Mileage	2.60	2,748.20
1.00	SER	Surface	1,512.25	1,512.25
70.00	SER	Pump Truck Mileage	7.70	539.00
1.00	SER	Manifold Swedge Rental	275.00	275.00
70.00	SER	Light Vehicle Mileage	4.40	308.00
1.00	CEMENTER	LaRene Wentz		
1.00	OPER ASSIST	Paul Beaver		
1.00	OPER ASSIST	Ty Schrock		

Subtotal	12,442.69
Sales Tax	503.37
Total Invoice Amount	12,946.06
Payment/Credit Applied	
TOTAL	12,946.06

ALL PRICES ARE NET, PAYABLE
30 DAYS FOLLOWING DATE OF
INVOICE. 1 1/2% CHARGED
THEREAFTER. IF ACCOUNT IS
CURRENT, TAKE DISCOUNT OF

\$ 4,354.94 *MA*

ONLY IF PAID ON OR BEFORE
Mar 21, 2013

11
- 4354.94

8591.12

ALLIED OIL & GAS SERVICES, LLC 060059

Federal Tax I.D. # 20-8661475

REMIT TO P.O. BOX 93999
SOUTHLAKE, TEXAS 76092

SERVICE POINT:

Dakley, KS

DATE <u>2-24-13</u>	SEC. <u>9</u>	TWP. <u>3</u>	RANGE <u>36</u>	CALLED OUT	ON LOCATION <u>12:00m</u>	JOB START <u>4:00pm</u>	JOB FINISH <u>4:30am</u>
LEASE <u>Ant 2.01a</u>	WELL # <u>1-9</u>		LOCATION <u>McDonald, KS 1/2 rd. E into</u>			COUNTY <u>Racine</u>	STATE <u>KS</u>
OLD OR NEW (Circle one)							

CONTRACTOR Murfin 14
 TYPE OF JOB Surface
 HOLE SIZE 12 1/4 T.D. 3541
 CASINO SIZE 8 7/8 DEPTH 3541
 TUBING SIZE DEPTH
 DRILL PIPE DEPTH
 TOOL DEPTH
 PRES. MAX MINIMUM
 MEAS. LINE SHOE JOINT
 CEMENT LEFT IN CSG. 151
 PERFS.
 DISPLACEMENT 21.7 bbl
 EQUIPMENT
 PUMP TRUCK # 431 CEMENTER Lakana B. Wank
 HELPER Paul Beaver
 BULK TRUCK # 376/306 DRIVER Ty Schrock
 BULK TRUCK # DRIVER

OWNER Same
 CEMENT AMOUNT ORDERED 310 sks com 300
 COMMON 310 sks @ 17.90 5548.00
 POZMIX @ _____
 GEL @ _____
 CHLORIDE 11 sks @ 64.00 704.00
 ASC @ _____
 @ _____
 @ _____
 @ _____
 @ _____
 @ _____
 @ _____
 @ _____
 @ _____
 @ _____
 HANDLING 325.58 @ 2.48 807.29
 MILBAGE 15000 @ 2.60 39000.00
 TOTAL 9888.49

REMARKS:
Mix 310 sks cement
Displace with water.
Cement did circulate
Thank you

SERVICE
 DEPTH OF JOB 3541
 PUMP TRUCK CHARGE 1512.25
 EXTRA FOOTAGE @ _____
 MILBAGE MI 110 70 @ 2.70 539.00
 MANIFOLD swedge @ _____ 2.75.00
MILV 70 @ 4.70 328.00
 TOTAL 2634.25

CHARGE TO: Murfin Drilling Co
 STREET _____
 CITY _____ STATE _____ ZIP _____

PLUG & FLOAT EQUIPMENT
 @ _____
 @ _____
 @ _____
 @ _____
 @ _____
 TOTAL _____

To: Allied Oil & Gas Services, LLC.
 You are hereby requested to rent cementing equipment and furnish cementer and helper(s) to assist owner or contractor to do work as is listed. The above work was done to satisfaction and supervision of owner agent or contractor. I have read and understand the "GENERAL TERMS AND CONDITIONS" listed on the reverse side.

SALES TAX (if Any) _____
 TOTAL CHARGES 12,442.69
 DISCOUNT 4,354.94 IF PAID IN 30 DAYS
8,087.74 Net.

PRINTED NAME Coreco Unsub
 SIGNATURE [Signature]



acct.
Prod-LH

INVOICE

PO Box 93999
Southlake, TX 76092

Invoice Number: 135104

Invoice Date: Mar 3, 2013

Voice: (817) 546-7282
Fax: (817) 246-3361

Page: 1

Bill To:
Murfin Drlg. Co., Inc.
250 N. Water
STE #300
Wichita, KS 67202

Now Includes:



Customer ID	Field Ticket #	Payment Terms	
Murfin	60063	Net 30 Days	
Job Location	Camp Location	Service Date	Due Date
KS1-03	Oakley	Mar 3, 2013	4/2/13

Quantity	Item	Description	Unit Price	Amount
132.00	MAT	Antholz #1-9		
		Class A Common	17.90	2,362.80
88.00	MAT	Pozmix	9.35	822.80
8.00	MAT	Gel	23.40	187.20
55.00	MAT	Flo Seal	2.97	163.35
236.28	SER	Cubic Feet	2.48	585.97
690.90	SER	Ton Mileage	2.60	1,796.34
1.00	SER	Plug to Abandon	2,600.47	2,600.47
70.00	SER	Pump Truck Mileage	7.70	539.00
70.00	SER	Light Vehicle Mileage	4.40	308.00
1.00	EQP	8.5/8 Wooden Plug	107.64	107.64
1.00	CEMENTER	LaRene Wentz		
1.00	OPER ASSIST	Paul Beaver		
1.00	OPER ASSIST	Darrin Hoeb		

ALL PRICES ARE NET, PAYABLE 30 DAYS FOLLOWING DATE OF INVOICE. 1 1/2% CHARGED THEREAFTER. IF ACCOUNT IS CURRENT, TAKE DISCOUNT OF

\$ **3,694.69**

ONLY IF PAID ON OR BEFORE **Mar 28, 2013**

Subtotal	9,473.57
Sales Tax	762.62
Total Invoice Amount	10,236.19
Payment/Credit Applied	
TOTAL	10,236.19

OK

3,694.69

6,541.50

ALLIED OIL & GAS SERVICES, LLC 060063

Federal Tax I.D. # 20-8651475

REMIT TO P.O. BOX 93999
SOUTHLAKE, TEXAS 76092

SERVICE POINT:
Dakley, TX

DATE <i>3-3-13</i>	SEC. <i>9</i>	TWP. <i>3</i>	RANGE <i>36</i>	CALLED OUT	ON LOCATION <i>9:30pm</i>	JOB START <i>10:00am</i>	JOB FINISH <i>11:00am</i>
LEASE <i>Authal + 2</i>	VELL # <i>1-9</i>	LOCATION <i>McDonald, TX 1/2 N</i>		COUNTY <i>Kearney</i>	STATE <i>TX</i>		
OLD OR NEW (Circle one) <u>NEW</u>				Emit			

CONTRACTOR *Meyfin 14*

TYPE OF JOB *PTA*

HOLE SIZE *7 7/8* T.D. *4830'*

CASING SIZE DEPTH

TUBING SIZE DEPTH

DRILL PIPE *4 1/2* DEPTH *3195'*

TOOL DEPTH

PRES. MAX MINIMUM

MEAS. LINE SHOE JOINT

CEMENT LEFT IN CSG.

PERFS.

DISPLACEMENT *4188 661*

OWNER *same*

CEMENT AMOUNT ORDERED *8205 lbs - 6940.49 gal of 14 1/2 gal*

COMMON	<i>132 SK</i>	@ <i>12.90</i>	<i>2362.80</i>
POZMIX	<i>88 SK</i>	@ <i>9.35</i>	<i>822.80</i>
GEL	<i>85 SK</i>	@ <i>21.96</i>	<i>1872.00</i>
CHLORIDE		@	
ASC		@	
<i>float</i>	<i>554</i>	@ <i>2.97</i>	<i>163.35</i>
		@	
		@	
		@	
		@	
		@	
		@	
HANDLING	<i>2362.8 SK</i>	@ <i>2.48</i>	<i>585.97</i>
MILEAGE	<i>7.87 hrs X 70 X 2.50</i>		<i>1796.34</i>
TOTAL			<i>5918.46</i>

EQUIPMENT

PUMP TRUCK CEMENTER *Lakewood*

423/281 HELPER *Paul Beaver*

BULK TRUCK DRIVER *Darin Hoob*

549/287

BULK TRUCK DRIVER

REMARKS:

MIX 25 SK cement 3195'

MIX 100 SK cement 2495'

MIX 40 SK cement 400'

MIX 10 SK cement apply 40'

MIX 15 SK cement 40'

MIX 30 SK cement 40'

THANK YOU

CHARGE TO: *Meyfin Drilling Co*

STREET

CITY STATE ZIP

To: Allied Oil & Gas Services, LLC.
You are hereby requested to rent cementing equipment and furnish cementer and helper(s) to assist owner or contractor to do work as is listed. The above work was done to satisfaction and supervision of owner agent or contractor. I have read and understand the "GENERAL TERMS AND CONDITIONS" listed on the reverse side.

PRINTED NAME *Lynn Uwar*

SIGNATURE *Lynn Uwar*

SERVICE

DEPTH OF JOB *3195'*

PUMP TRUCK CHARGE *2650.47*

EXTRA FOOTAGE

MILEAGE *MTRD 70 @ 2.20 538.00*

MANIFOLD *MTRD 70 @ 4.80 308.00*

TOTAL *2908.47*

PLUG & FLOAT EQUIPMENT

wooden plug @ 102.64

TOTAL *102.64*

SALES TAX (if Any)

TOTAL CHARGES *8,924.51*

DISCOUNT *3,484.48* IF PAID IN 30 DAYS

5,450.03 Net.