Confidentiality Requested:
☐ Yes ☐ No

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

1113880

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 # 5144
Name: Mull Drilling Company, Inc.
Address 1: 1700 N WATERFRONT PKWY
Address 2: BLDG 1200
City: WICHITA State: KS Zip: 67206 + ____
Contact Person: Mark Shreve
Phone: (316) 264-6366
CONTRACTOR: License # 5929
Name: Duke Drilling Co., Inc.
Wellsite Geologist: Macklin Armstrong
Purchaser: N/A

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 #:

11/03/2012	11/10/2012	11/11/2012
Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date

API No. 15 - 15-135-25482-00-00
Spot Description:
NE - NW - SW - NE Sec. 4 Twp. 19 S. R. 24 ☐ East ☑ West
1500 Feet from ☑ North / ☐ South Line of Section
2300 Feet from ☑ East / ☐ West Line of Section
Footages Calculated from Nearest Outside Section Corner:
☑ NE ☐ NW ☐ SE ☐ SW
GPS Location: Lat: *(e.g. xx.xxxxx)* , Long: *(e.g. -xxx.xxxxx)*
Datum: ☐ NAD27 ☐ NAD83 ☐ WGS84
County: Ness
Lease Name: Benson Well #: 1-4
Field Name:
Producing Formation: N/A
Elevation: Ground: 2333 Kelly Bushing: 2342
Total Vertical Depth: 4500 Plug Back Total Depth:
Amount of Surface Pipe Set and Cemented at: 233 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: 17500 ppm Fluid volume: 825 bbls
Dewatering method used: Evaporated
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: 02/06/2013
☑ **Confidential Release Date:** 02/06/2015
☑ **Wireline Log Received**
☑ **Geologist Report Received**
☐ **UIC Distribution**
ALT ☐ I ☑ II ☐ III **Approved by:** NAOMI JAMES **Date:** 02/07/2013

1113880

Operator Name: Mull Drilling Company, Inc. Lease Name: Benson Well #: 1-4

Sec. 4 Twp. 19 S. R. 24 ☐ East ☑ West County: Ness

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 ☑ Yes ☐ No
(Attach Additional Sheets)

Samples Sent to Geological Survey ☑ Yes ☐ No

Cores Taken ☐ Yes ☑ No

Electric Log Run ☑ Yes ☐ No

List All E. Logs Run:

CDL/CNL/PE
DIL
MEL

☑ Log Formation (Top), Depth and Datum ☐ Sample

Name: Attached Top: Attached Datum: Attached

CASING RECORD ☑ New ☐ 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
Surface	12.2500	8.6250	23	233	Common	165	3% cc, 2% gel

ADDITIONAL CEMENTING / SQUEEZE RECORD

Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
___ Perforate				
___ Protect Casing	-			
___ Plug Back TD				
___ 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 *(Amount and Kind of Material Used)*	Depth

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

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

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

DISPOSITION OF GAS: ☐ Vented ☐ Sold ☐ Used on Lease
(If vented, Submit ACO-18.)

METHOD OF COMPLETION: ☐ Open Hole ☐ Perf. ☐ Dually Comp. *(Submit ACO-5)* ☐ Commingled *(Submit ACO-4)* ☐ Other *(Specify)* _____

PRODUCTION INTERVAL:

Mail to: KCC - Conservation Division, 130 S. Market - Room 2078, Wichita, Kansas 67202

Form	ACO1 - Well Completion
Operator	Mull Drilling Company, Inc.
Well Name	Benson 1-4
Doc ID	1113880

Tops

Name	Top	Datum
Anhydrite	1620	+ 722
B/Anhydrite	1658	+ 684
Heebner Shale	3734	- 1392
Lansing	3776	- 1434
Stark Shale	4016	- 1674
B/KC	4082	- 1740
Pawnee	4202	- 1860
Ft. Scott	4272	- 1930
Cherokee Shale	4302	- 1960
Mississippian	4393	- 2051

Conservation Division
Finney State Office Building
130 S. Market, Rm. 2078
Wichita, KS 67202-3802

Kansas
Corporation Commission

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

February 06, 2013

Mark Shreve
Mull Drilling Company, Inc.
1700 N WATERFRONT PKWY
BLDG 1200
WICHITA, KS 67206

Re: ACO1
API 15-135-25482-00-00
Benson 1-4
NE/4 Sec.04-19S-24W
Ness 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,
Mark Shreve

CONSOLIDATED
Oil Well Services, LLC

TICKET NUMBER 37243
LOCATION Oakley
FOREMAN Fuzzy

PO Box 884, Chanute, KS 66720
620-431-9210 or 800-467-8676

FIELD TICKET & TREATMENT REPORT
CEMENT

DATE	CUSTOMER #	WELL NAME & NUMBER	SECTION	TOWNSHIP	RANGE	COUNTY
11-3-12	5659	Beeuson 1-4	4	19	24	Ness

CUSTOMER: Mull Drlg
MAILING ADDRESS:
CITY | STATE | ZIP CODE:

Ness City 4 1/2 W Rd N 1 S - 1/2 E S in

TRUCK #	DRIVER	TRUCK #	DRIVER
463	Jerry Y		
693	Jordan L		

JOB TYPE Surface HOLE SIZE 12 1/4 HOLE DEPTH 233' CASING SIZE & WEIGHT 8 5/8
CASING DEPTH 233' DRILL PIPE TUBING OTHER
SLURRY WEIGHT 14.7 SLURRY VOL 1.36 WATER gal/sk 6.5 CEMENT LEFT in CASING 20'
DISPLACEMENT 13.5 DISPLACEMENT PSI MIX PSI RATE

REMARKS: Safety meeting on Duke #4. Rig up and circulate. Mix 165 sks Class A 3% cc 2% gel. Drop plug and displace 13 1/2 BBL and shut in. Cement did circulate approx 4 BBLs to pit.

Thanks Fuzzy & Crew

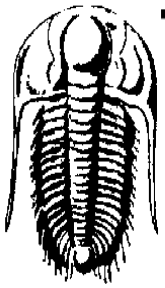
ACCOUNT CODE	QUANITY or UNITS	DESCRIPTION of SERVICES or PRODUCT	UNIT PRICE	TOTAL
54015	1	PUMP CHARGE	1085.00	1085.00
5406	5	MILEAGE	5.00	25.00
5407	7.8 ton	Ton mileage Delivery (min)	410.00	410.00
11045	165 sks	Class A cement	17.65	2912.25
1102	465 #	Calcium Chloride	.89	413.85
1118 B	310 #	Bentonite	.25	77.50
4432	1	8 5/8 wood cup plug	96.00	96.00
		subtotal		5019.60
		less 10%		501.96
		subtotal		4517.64
			SALES TAX	198.42
			ESTIMATED TOTAL	4716.06

Ravin 3737

AUTHORIZTION Rich Wheeler TITLE DATE

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

25121.7



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Prepared For: **Mull Drilling Company, Inc.**

1700 N. Waterfront PKWY
BLDG 1200
Wichita, KS 67206

ATTN: Mac Armstrong

Benson #1-4

4-19s-24w Ness,KS

Start Date: 2012.11.09 @ 07:03:30
End Date: 2012.11.09 @ 15:33:00
Job Ticket #: 48614 DST #: 1

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

Printed: 2012.11.20 @ 15:43:54

DRILL STEM TEST REPORT

Mull Drilling Company, Inc.

1700 N. Waterfront PKWY
BLDG 1200
Wichita, KS 67206
ATTN: Mac Armstrong

4-19s-24w Ness,KS

Benson #1-4

Job Ticket: 48614 **DST#: 1**

Test Start: 2012.11.09 @ 07:03:30

GENERAL INFORMATION:

Formation: **Fort Scott**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 09:28:00
Time Test Ended: 15:33:00

Test Type: Conventional Bottom Hole (Initial)
Tester: Dustin Rash
Unit No: 66

Interval: 4253.00 ft (KB) To 4301.00 ft (KB) (TVD)
Total Depth: 4301.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

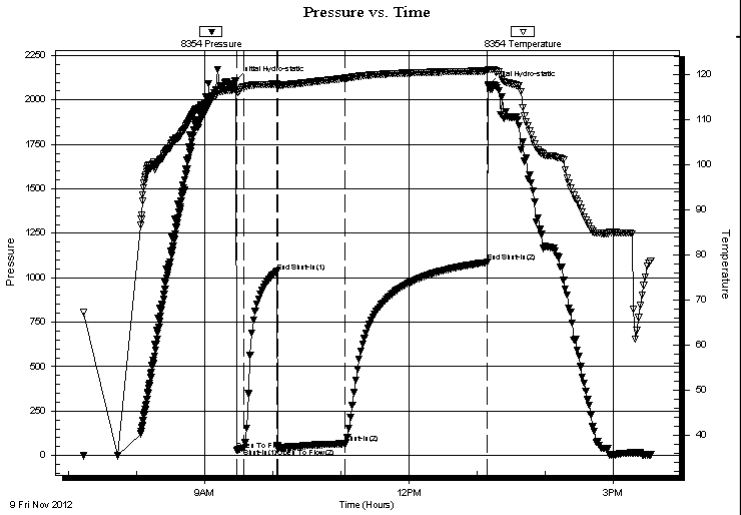
Reference Elevations: 2342.00 ft (KB)
2331.00 ft (CF)
KB to GR/CF: 11.00 ft

Serial #: 8354 **Inside**

Press@RunDepth: 67.09 psig @ 4293.00 ft (KB)
Start Date: 2012.11.09 End Date: 2012.11.09
Start Time: 07:13:30 End Time: 15:33:00

Capacity: 8000.00 psig
Last Calib.: 2012.11.09
Time On Btm: 2012.11.09 @ 09:27:30
Time Off Btm: 2012.11.09 @ 13:09:30

TEST COMMENT: IF-Weak building blow . Built to 2 inches.
ISI-No Return.
FF-Weak building blow . BOB in 60 minutes.
FSI-No Return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2106.32	116.52	Initial Hydro-static
1	27.96	116.05	Open To Flow (1)
7	41.96	117.16	Shut-In(1)
36	1034.99	117.83	End Shut-In(1)
37	38.19	117.60	Open To Flow (2)
96	67.09	119.08	Shut-In(2)
221	1086.44	120.72	End Shut-In(2)
222	2082.59	121.03	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
105.00	20%Gas/5%Oil/25%Water/50%Mud	1.47
0.00	140' G.I.P.	0.00

Gas Rates

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

DRILL STEM TEST REPORT

Mull Drilling Company, Inc.

1700 N. Waterfront PKWY
BLDG 1200
Wichita, KS 67206
ATTN: Mac Armstrong

4-19s-24w Ness,KS

Benson #1-4

Job Ticket: 48614 **DST#: 1**

Test Start: 2012.11.09 @ 07:03:30

GENERAL INFORMATION:

Formation: **Fort Scott**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 09:28:00
Time Test Ended: 15:33:00

Test Type: Conventional Bottom Hole (Initial)
Tester: Dustin Rash
Unit No: 66

Interval: 4253.00 ft (KB) To 4301.00 ft (KB) (TVD)
Total Depth: 4301.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

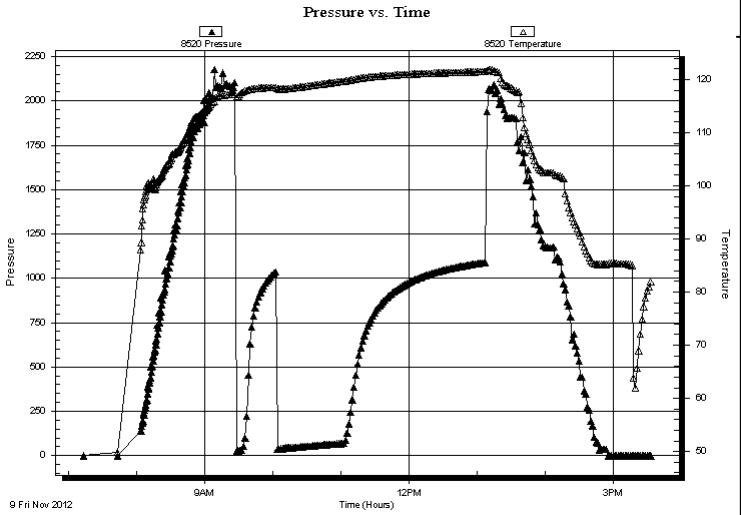
Reference Elevations: 2342.00 ft (KB)
2331.00 ft (CF)
KB to GR/CF: 11.00 ft

Serial #: 8520 **Outside**

Press@RunDepth: psig @ 4293.00 ft (KB)
Start Date: 2012.11.09 End Date: 2012.11.09
Start Time: 07:13:45 End Time: 15:32:45

Capacity: 8000.00 psig
Last Calib.: 2012.11.09
Time On Btm:
Time Off Btm:

TEST COMMENT: IF-Weak building blow . Built to 2 inches.
ISI-No Return.
FF-Weak building blow . BOB in 60 minutes.
FSI-No Return.



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
105.00	20%Gas/5%Oil/25%Water/50%Mud	1.47
0.00	140' G.I.P.	0.00

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

Mull Drilling Company, Inc.

1700 N. Waterfront PKWY
BLDG 1200
Wichita, KS 67206
ATTN: Mac Armstrong

4-19s-24w Ness,KS

Benson #1-4

Job Ticket: 48614 **DST#: 1**

Test Start: 2012.11.09 @ 07:03:30

Tool Information

Drill Pipe:	Length:	4255.00 ft	Diameter:	3.80 inches	Volume:	59.69 bbl	Tool Weight:		3000.00 lb
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	2.70 inches	Volume:	0.00 bbl	Weight set on Packer:		24000.00 lb
Drill Collar:	Length:	0.00 ft	Diameter:	2.25 inches	Volume:	0.00 bbl	Weight to Pull Loose:		5000.00 lb
					Total Volume:	59.69 bbl	Tool Chased		0.00 ft
Drill Pipe Above KB:		30.00 ft					String Weight:	Initial	48000.00 lb
Depth to Top Packer:		4253.00 ft						Final	48000.00 lb
Depth to Bottom Packer:		ft							
Interval between Packers:		48.00 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	
Change Over Sub	1.00			4226.00		
Shut In Tool	5.00			4231.00		
Hydraulic tool	5.00			4236.00		
Jars	5.00			4241.00		
Safety Joint	3.00			4244.00		
Packer	5.00			4249.00	28.00	Bottom Of Top Packer
Packer	4.00			4253.00		
Stubb	1.00			4254.00		
Perforations	5.00			4259.00		
Change Over Sub	1.00			4260.00		
Drill Pipe	32.00			4292.00		
Change Over Sub	1.00			4293.00		
Recorder	0.00	8354	Inside	4293.00		
Recorder	0.00	8520	Outside	4293.00		
Perforations	5.00			4298.00		
Bullnose	3.00			4301.00	48.00	Bottom Packers & Anchor
Total Tool Length:	**76.00**					

DRILL STEM TEST REPORT

FLUID SUMMARY

Mull Drilling Company, Inc.

1700 N. Waterfront PKWY
BLDG 1200
Wichita, KS 67206

ATTN: Mac Armstrong

4-19s-24w Ness,KS

Benson #1-4

Job Ticket: 48614 **DST#: 1**

Test Start: 2012.11.09 @ 07:03:30

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:	12000 ppm
Viscosity:	43.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	7.98 in³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	3700.00 ppm				
Filter Cake:	inches				

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
105.00	20%Gas/5%Oil/25%Water/50%Mud	1.473
0.00	140' G.I.P.	0.000

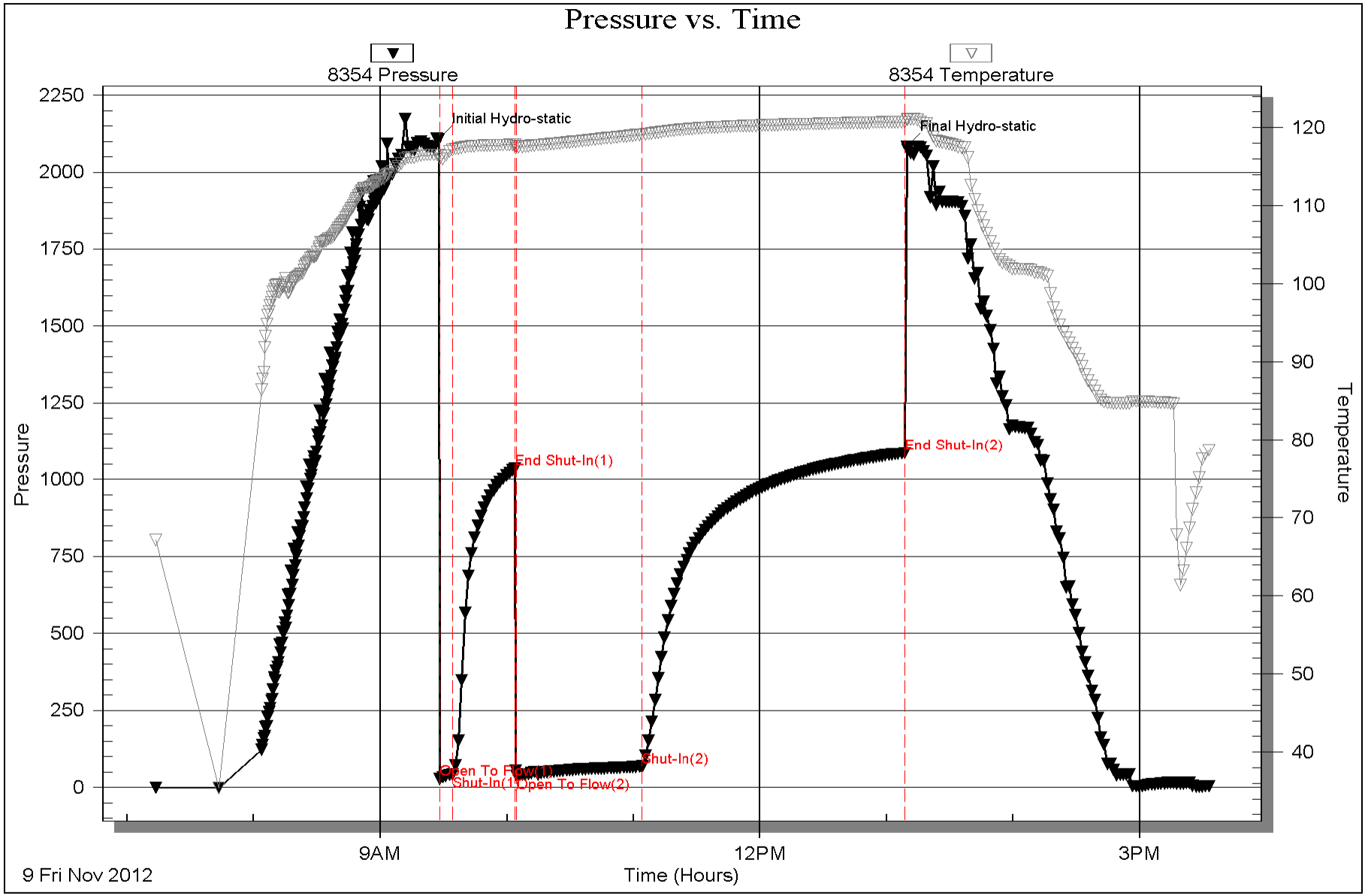
Total Length: 105.00 ft Total Volume: 1.473 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

Laboratory Name: Laboratory Location:

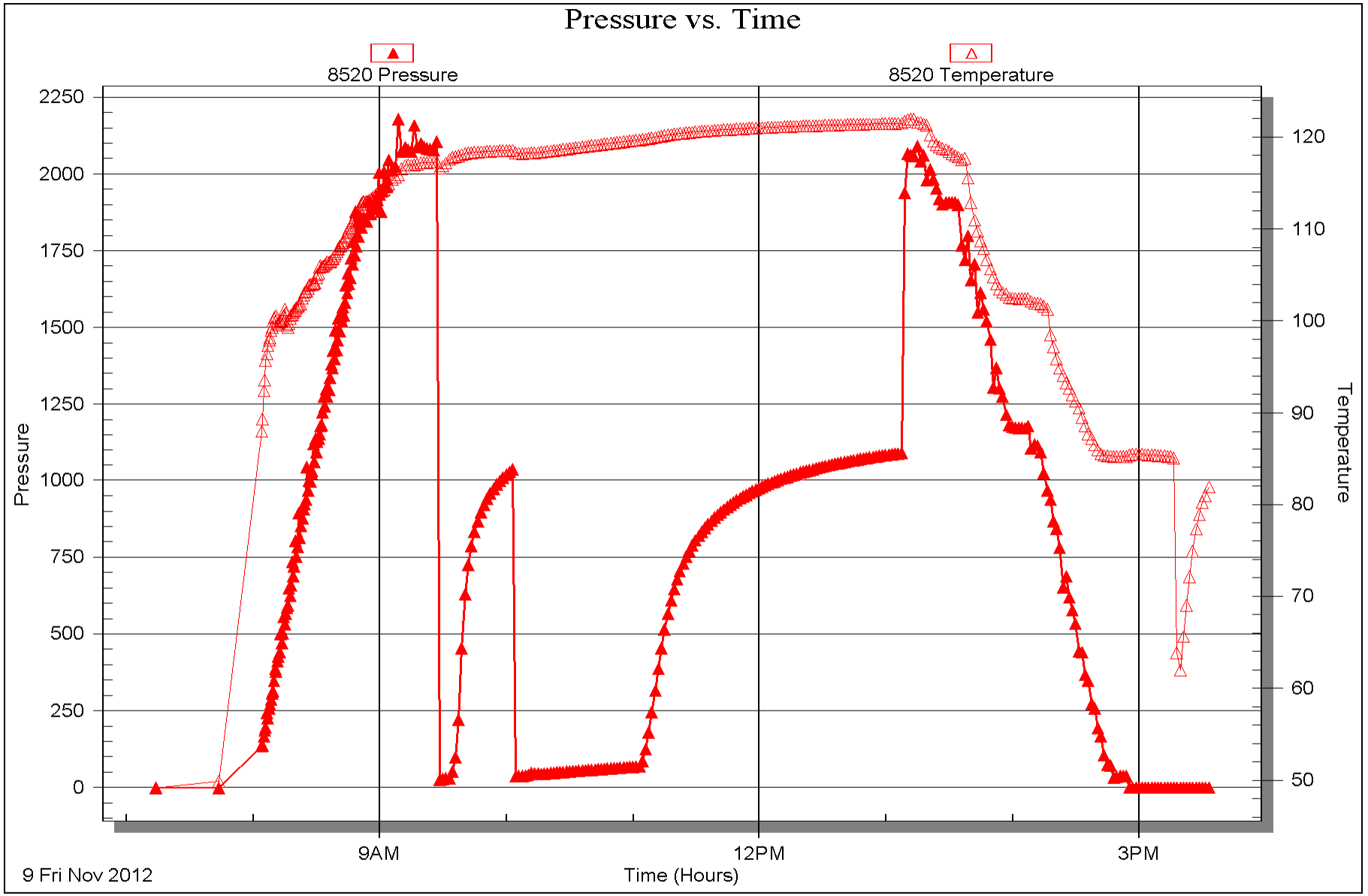
Recovery Comments:

Serial #: 8354 **Inside** Mull Drilling Company, Inc. Benson #1-4 DST Test Number: 1



Trilobite Testing, Inc Ref. No: 48614 Printed: 2012.11.20 @ 15:43:58

Serial #: 8520 **Outside** Mull Drilling Company, Inc. Benson #1-4 DST Test Number: 1



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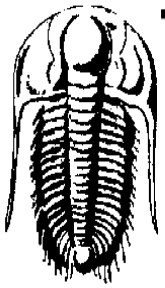


TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Prepared For: **Mull Drilling Company, Inc.**

1700 N. Waterfront PKWY
BLDG 1200
Wichita, KS 67206

ATTN: Mac Armstrong

Benson #1-4

4-19s-24w Ness,KS

Start Date: 2012.11.10 @ 00:40:30
End Date: 2012.11.10 @ 07:33:30
Job Ticket #: 48615 DST #: 2

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

Printed: 2012.11.20 @ 15:42:59

DRILL STEM TEST REPORT

Mull Drilling Company, Inc.

1700 N. Waterfront PKWY
BLDG 1200
Wichita, KS 67206
ATTN: Mac Armstrong

4-19s-24w Ness,KS

Benson #1-4

Job Ticket: 48615 **DST#: 2**

Test Start: 2012.11.10 @ 00:40:30

GENERAL INFORMATION:

Formation: **Cherokee Sand**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 03:05:30
Time Test Ended: 07:33:30

Test Type: Conventional Bottom Hole (Initial)
Tester: Dustin Rash
Unit No: 38

Interval: 4318.00 ft (KB) To 4380.00 ft (KB) (TVD)
Total Depth: 4380.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

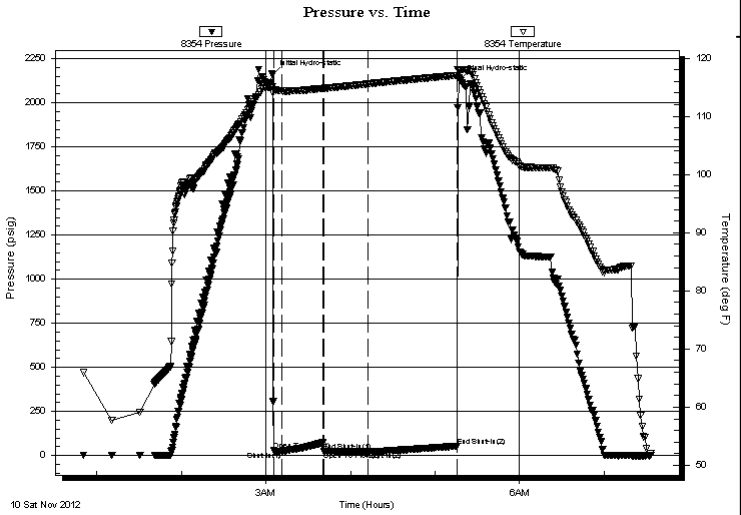
Reference Elevations: 2342.00 ft (KB)
2331.00 ft (CF)
KB to GR/CF: 11.00 ft

Serial #: 8354 **Inside**

Press@RunDepth: 22.14 psig @ 4357.00 ft (KB)
Start Date: 2012.11.10 End Date: 2012.11.10
Start Time: 00:50:30 End Time: 07:33:30

Capacity: 8000.00 psig
Last Calib.: 2012.11.10
Time On Btm: 2012.11.10 @ 03:04:30
Time Off Btm: 2012.11.10 @ 05:17:30

TEST COMMENT: IF-Weak surface blow .
ISI-No Return.
FF-Few bubbles then died.
FSI-No Return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2159.83	115.06	Initial Hydro-static
1	27.17	114.62	Open To Flow (1)
7	23.35	114.35	Shut-In(1)
36	73.13	114.78	End Shut-In(1)
37	25.47	114.78	Open To Flow (2)
68	22.14	115.57	Shut-In(2)
131	53.61	117.03	End Shut-In(2)
133	2133.54	117.89	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
3.00	100%Mud	0.04
0.50	100%Oil	0.01

Gas Rates

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

DRILL STEM TEST REPORT

Mull Drilling Company, Inc.

1700 N. Waterfront PKWY
BLDG 1200
Wichita, KS 67206
ATTN: Mac Armstrong

4-19s-24w Ness,KS

Benson #1-4

Job Ticket: 48615 **DST#: 2**

Test Start: 2012.11.10 @ 00:40:30

GENERAL INFORMATION:

Formation: **Cherokee Sand**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 03:05:30
Time Test Ended: 07:33:30

Test Type: Conventional Bottom Hole (Initial)
Tester: Dustin Rash
Unit No: 38

Interval: 4318.00 ft (KB) To 4380.00 ft (KB) (TVD)
Total Depth: 4380.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

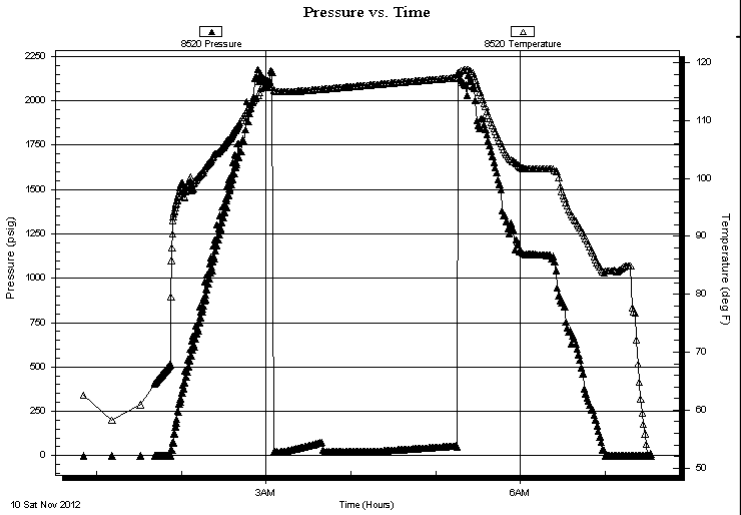
Reference Elevations: 2342.00 ft (KB)
2331.00 ft (CF)
KB to GR/CF: 11.00 ft

Serial #: 8520 **Outside**

Press@RunDepth: psig @ 4357.00 ft (KB)
Start Date: 2012.11.10 End Date: 2012.11.10
Start Time: 00:50:45 End Time: 07:32:45

Capacity: 8000.00 psig
Last Calib.: 2012.11.10
Time On Btm:
Time Off Btm:

TEST COMMENT: IF-Weak surface blow .
ISI-No Return.
FF-Few bubbles then died.
FSI-No Return.



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
3.00	100%Mud	0.04
0.50	100%Oil	0.01

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

Mull Drilling Company, Inc.

1700 N. Waterfront PKWY
BLDG 1200
Wichita, KS 67206
ATTN: Mac Armstrong

4-19s-24w Ness,KS

Benson #1-4

Job Ticket: 48615 **DST#: 2**

Test Start: 2012.11.10 @ 00:40:30

Tool Information

Drill Pipe:	Length:	4318.00 ft	Diameter:	3.80 inches	Volume:	60.57 bbl	Tool Weight:		3000.00 lb
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	2.70 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:		5000.00 lb
					Total Volume:	60.57 bbl	Tool Chased		0.00 ft
Drill Pipe Above KB:		28.00 ft					String Weight:	Initial	48000.00 lb
Depth to Top Packer:		4318.00 ft						Final	48000.00 lb
Depth to Bottom Packer:		ft							
Interval between Packers:		62.00 ft							
Tool Length:		90.00 ft							
Number of Packers:		2	Diameter:	6.75 inches					

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Change Over Sub	1.00			4291.00		
Shut In Tool	5.00			4296.00		
Hydraulic tool	5.00			4301.00		
Jars	5.00			4306.00		
Perforations	3.00			4309.00		
Packer	5.00			4314.00	28.00	Bottom Of Top Packer
Packer	4.00			4318.00		
Stubb	1.00			4319.00		
Perforations	5.00			4324.00		
Change Over Sub	1.00			4325.00		
Drill Pipe	31.00			4356.00		
Change Over Sub	1.00			4357.00		
Recorder	0.00	8354	Inside	4357.00		
Recorder	0.00	8520	Outside	4357.00		
Perforations	20.00			4377.00		
Bullnose	3.00			4380.00	62.00	Bottom Packers & Anchor
Total Tool Length:	**90.00**					

DRILL STEM TEST REPORT

FLUID SUMMARY

Mull Drilling Company, Inc.

1700 N. Waterfront PKWY
BLDG 1200
Wichita, KS 67206

ATTN: Mac Armstrong

4-19s-24w Ness,KS

Benson #1-4

Job Ticket: 48615 **DST#: 2**

Test Start: 2012.11.10 @ 00:40:30

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:	53.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	7.19 in³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	3300.00 ppm				
Filter Cake:	inches				

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
3.00	100%Mud	0.042
0.50	100%Oil	0.007

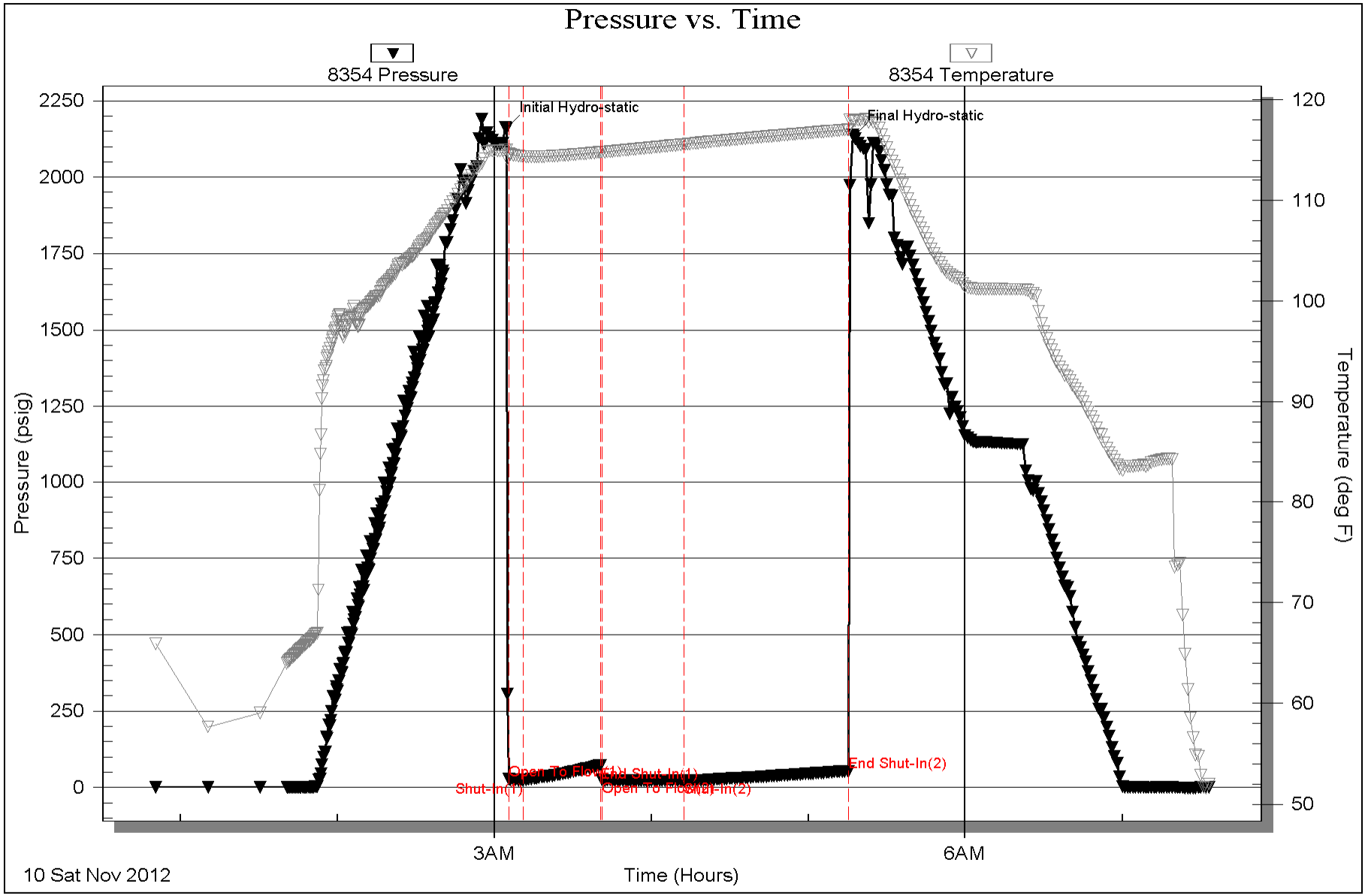
Total Length: 3.50 ft Total Volume: 0.049 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

Laboratory Name: Laboratory Location:

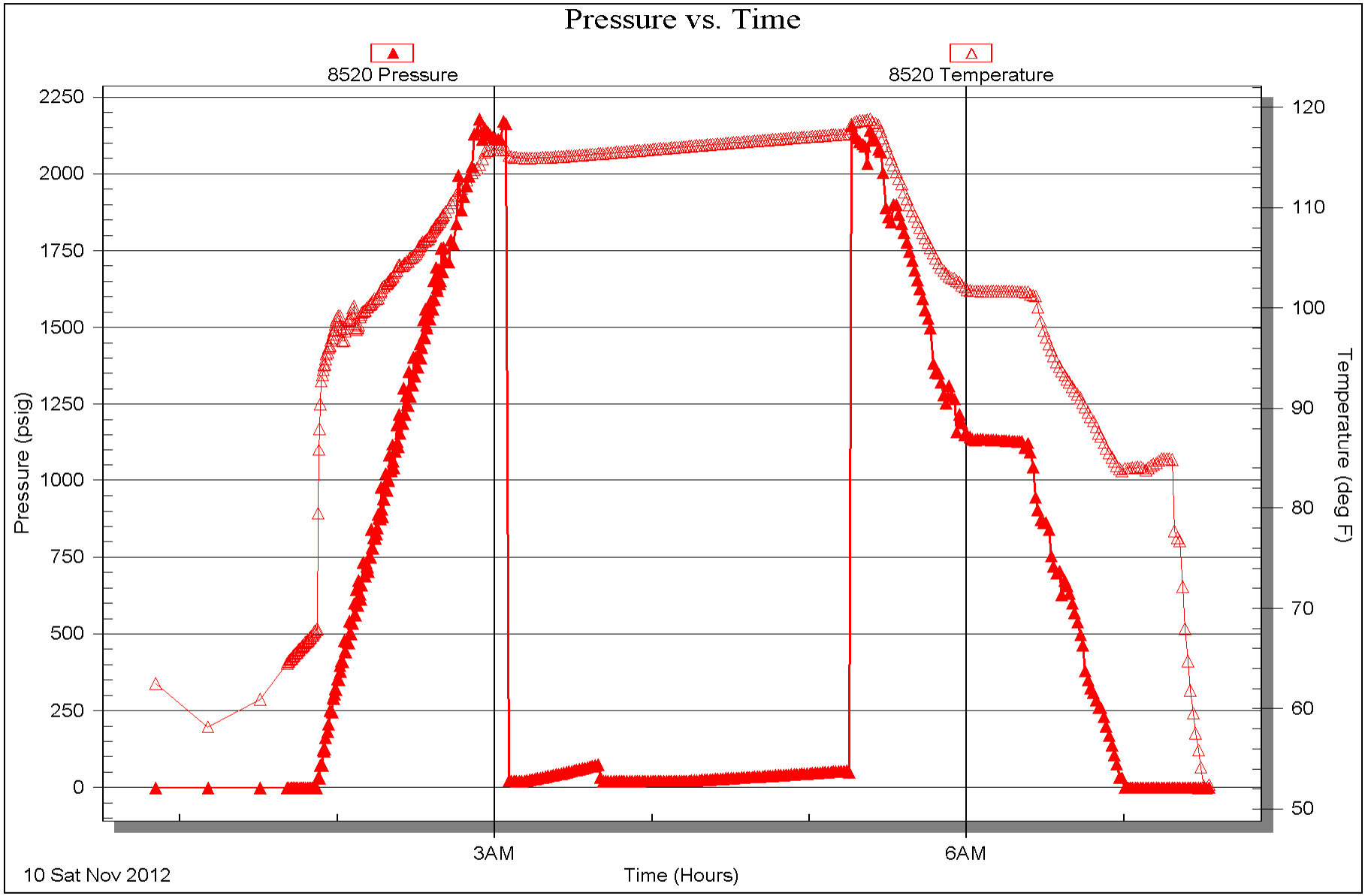
Recovery Comments:

Serial #: 8354 **Inside** Mull Drilling Company, Inc. Benson #1-4 DST Test Number: 2



Trilobite Testing, Inc Ref. No: 48615 Printed: 2012.11.20 @ 15:43:04

Serial #: 8520 **Outside** Mull Drilling Company, Inc. Benson #1-4 DST Test Number: 2



Trilobite Testing, Inc Ref. No: 48615 Printed: 2012.11.20 @ 15:43:04

TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

4/10

Test Ticket

NO. 48614

Well Name & No. Benson #1-4 Test No. 1 Date 11-9-12

Company Mull Drilling Company, Inc. Elevation 2342 KB 2331 GL

Address 1700 N. Waterfront PKWY BLDG 1200 Wichita, KS 67206

Co. Rep / Geo. Mac Armstrong Rig Duke 4

Location: Sec. 4 Twp. 19S Rge. 24W Co. Ness State KS

Interval Tested 4253-4301 Zone Tested Fort Scott

Anchor Length 48' Drill Pipe Run Mud Wt. 9.0

Top Packer Depth 4248 Drill Collars Run 0 Vis 43

Bottom Packer Depth 4253 Wt. Pipe Run 0 WL 8.0

Total Depth 4301 Chlorides 3700 ppm System LCM Tr

Blow Description IF- Weak building blow. Built to 2 inches.
ISI- No Return.
FF- Weak building blow. BOB in 60 minutes.
FSI- No Return.

Rec 105	Feet of VSGOCWM	20 %gas	5 %oil	25 %water	50 %mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of 140' G.I.P.	%gas	%oil	%water	%mud

Rec Total 105 BHT 121 Gravity API RW .421 @ 86 °F Chlorides 12000 ppm

(A) Initial Hydrostatic 2106
(B) First Initial Flow 28
(C) First Final Flow 42
(D) Initial Shut-In 1035
(E) Second Initial Flow 38
(F) Second Final Flow 67
(G) Final Shut-In 1086
(H) Final Hydrostatic 2083

Initial Open 5
Initial Shut-In 30
Final Flow 60
Final Shut-In 120

- [x] Test 1250
- [x] Jars 250
- [x] Safety Joint 75
- [ ] Circ Sub
- [ ] Hourly Standby
- [x] Mileage 68X2 210.80
- [ ] Sampler
- [ ] Straddle
- [ ] Shale Packer
- [ ] Extra Packer
- [ ] Extra Recorder
- [ ] Day Standby
- [ ] Accessibility

Sub Total 1785.80

T-On Location 0515
T-Started 0730
T-Open 0928
T-Pulled 1305
T-Out 1530
Comments Batt 0703

- [ ] Ruined Shale Packer
- [ ] Ruined Packer
- [ ] Extra Copies

Sub Total 0
Total 1785.80
MP/DST Disc't

Approved By Our Representative D Rash

TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

4/10

Test Ticket

NO. 48615

Well Name & No. Berson #1-4 Test No. 2 Date 11-10-12

Company Mull Drilling Company, Inc. Elevation 2342 KB 2331 GL

Address 1700 N. Waterfront PKWY · BLDG 1200 Wichita, KS 67206

Co. Rep / Geo. Mac Armstrong Rig Duke 4

Location: Sec. 4 Twp. 19S Rge. 24W Co. Ness State KS

Interval Tested 4318-4380 Zone Tested Cherokee Sand

Anchor Length 62' Drill Pipe Run 4318 Mud Wt. 9.3

Top Packer Depth 4313 Drill Collars Run 0 Vis 53

Bottom Packer Depth 4318 Wt. Pipe Run 0 WL 7.2

Total Depth 4380 Chlorides 3300 ppm System LCM Tr

Blow Description IF- Weak surface blow.
ISI- No Return.
FF- Few bubbles Then died.
FSI- No Return.

Rec 6"	Feet of Oil	%gas	100 %oil	%water	%mud	
Rec 3'	Feet of Mud	%gas	%oil	%water	100 %mud	
Rec	Feet of	%gas	%oil	%water	%mud	
Rec	Feet of	%gas	%oil	%water	%mud	
Rec	Feet of	%gas	%oil	%water	%mud	

Rec Total 3'6" BHT 118 Gravity ____ API RW ____ @ ____ °F Chlorides ____ ppm

(A) Initial Hydrostatic 2160	☑ Test 1250	T-On Location 0015	
(B) First Initial Flow 27	☑ Jars 250	T-Started 0115	
(C) First Final Flow 23	☑ Safety Joint 75	T-Open 0305	
(D) Initial Shut-In 73	☐ Circ Sub	T-Pulled 0515	
(E) Second Initial Flow 26	☐ Hourly Standby	T-Out 0730	
(F) Second Final Flow 22	☑ Mileage 68x2 210.80	Comments Bott - 0040	
(G) Final Shut-In 54	☐ Sampler		
(H) Final Hydrostatic 2134	☐ Straddle	☐ Ruined Shale Packer	
	☐ Shale Packer	☐ Ruined Packer	
Initial Open 5	☐ Extra Packer	☐ Extra Copies	
Initial Shut-In 30	☐ Extra Recorder	Sub Total 0	
Final Flow 30	☐ Day Standby	Total 1785.80	
Final Shut-In 60	☐ Accessibility	MP/DST Disc't	
	Sub Total 1785.80	D. Rash	

Approved By ____ Our Representative ____

Mull Drilling Company, Inc.
Benson No.1-4
1500' FNL and 2300' FEL
NE NW SW NE
Sec 4 T19S R24W
Ness County, Kansas

Geological Report
by

Macklin M. Armstrong, P.G.
License Number 743

Scale 1:240 Imperial

Well Name:	Benson No. 1-4		
Surface Location:	Sec 4 T19S R24W		
Bottom Location:	1500' FNL and 2300' FEL		
API:	15-135-25482		
License Number:	5144		
Spud Date:	11/3/2012	Time:	1:15 PM
Region:	Ness County, Kansas		
Drilling Completed:	11/10/2012	Time:	2:29 PM
Surface Coordinates:			
Bottom Hole Coordinates:			
Ground Elevation:	2333.00ft		
K.B. Elevation:	2342.00ft		
Logged Interval:	3600.00ft	To:	4504.00ft
Total Depth:	4500.00ft		
Formation:	Mississippi		
Drilling Fluid Type:	Chemical/Fresh Water Gel		

OPERATOR

Company:	Mull Drilling Company, Inc.		
Address:	1700 North Waterfront Parkway, Building 1200 Wichita, Kansas 67206		
Contact Geologist:	Ernie Morrison		
Contact Phone Nbr:	316-264-6366		
Well Name:	Benson No. 1-4		
Location:	Sec 4 T19S R24W	API:	15-135-25482
Pool:	Oil	Field:	McDonald
State:	Kansas	Country:	USA

SURFACE CO-ORDINATES

Well Type:	Vertical		
Longitude:	99° 58' 47.954"	Latitude:	38° 25' 53.291"
N/S Co-ord:			
E/W Co-ord:			

CONTRACTOR

Contractor:	Duke Drilling Company		
Rig #:	4		
Rig Type:	mud rotary		
Spud Date:	11/3/2012	Time:	1:15 PM
TD Date:	11/10/2012	Time:	2:29 PM
Rig Release:	11/11/2012	Time:	6:00 AM

ELEVATIONS

K.B. Elevation:	2342.00ft	Ground Elevation:	2333.00ft
K.B. to Ground:	9.00ft		

NOTES

Date	Depth at 7 am	Activity
11-03-12	MIRT	Spud at 1:15 pm
11-04-12	620	Drilling
11-05-12	2279	Drilling
11-06-12	2930	Drilling
11-07-12	3442	Drilling
11-08-12	3941	Drilling
11-09-12	4301	TOH for DST No. 1
11-10-12	4380	TOH after DST No. 2
11-11-12	4500	P & A

Surface Casing: 8 5/8" 23# at 222'
Production Casing: None set

Deviation: 233' - zero, 942' - 3/4°, 1441' - 3/4°, 1938' - 1/2°, 2489' - 3/4°, 2994' - 3/4°, 3525' - 1/2°
4301' - 3/4°, 4500' - 3/4°

Bit Record:	Make	Type	Depth In	Depth Out	Hours
	Varel	F-27	222	4500	94 1/4

Drill Stem Tests:

DST No. 1 4253 to 4301 Formation: Fort Scott
5-30-60-120
Recovery: 140' GIP
105' VSGOCWM (20%G, 5%O, 25%W, 50%M - Chl 12,000 ppm)
IHP 2106 FHP 2083
IFP 28-42 FFP 38-67
ISIP 1035 FSIP 1086
Temp 121°

DST No. 2 4318 to 4380 Formation: Cherokee Sand
5-30-30-60
Recovery: 6" Oil
3' Mud
IHP 2160 FHP 2134
IFP 27-23 FFP 26-22
ISIP 73 FSIP 54
Temp 118°

Formation	Sample	E-Log	Datum	Well 1	Well 2	Well 3
Anhydrite	1621	1621	+721	+4	+1	-1

Anhydrite	1621	1621	+721	+4	+1	-1
B/Anhydrite	1656	1657	+685			-2
Heebner	3732	3733	-1391	+11	-3	+6
Lansing	3775	3776	-1434	+10	-4	+6
Stark	4014	4016	-1674			+5
Hushpuckney	4051	4054	-1712			+4
B/Kansas City	4081	4082	-1740	+22	-6	+4
Marmaton	4114	4117	-1775			+6
Pawnee	4200	4202	-1860	+23	-3	+3
Fort Scott	4275	4276	-1934	+28	-1	+7
Cherokee Shale	4301	4302	-1960	+27	-1	-3
Base Cherokee Lime	4346	4347	-2005		+3	+8
Mississippi	4404	4406	-2064	+12	-33	+4
Osage	4466	4468	-2126			
Total Depth	4500	4504	-2162			

Well 1: Mull Drilling Company, Inc. Doll No. 1 C SE NW Sec 4 T19S R24W
Well 2: Mull Drilling Company, Inc. Doebbeling 'A' No. 1 C NW NE Sec 4 T19S R24W
Well 3: Sunburst Exploration Company Davison 'K' No. 1 C S2 SE NE Sec 4 T29S R24W

Due to the low structural position, the results of the Drill Stem Tests, and the electric log calculations, it was decided to plug this test well.

Respectfully submitted,
Macklin M. Armstrong

ROCK TYPES

Cht, Cht vari, Dolprim, Lmst fw7>, shale, grn, shale, gry, Carbon Sh, shale, red

ACCESSORIES

MINERAL
- Chert, dark
- Chert White

FOSSIL
- F Fossils < 20%
- Oolite
- Oomoldic

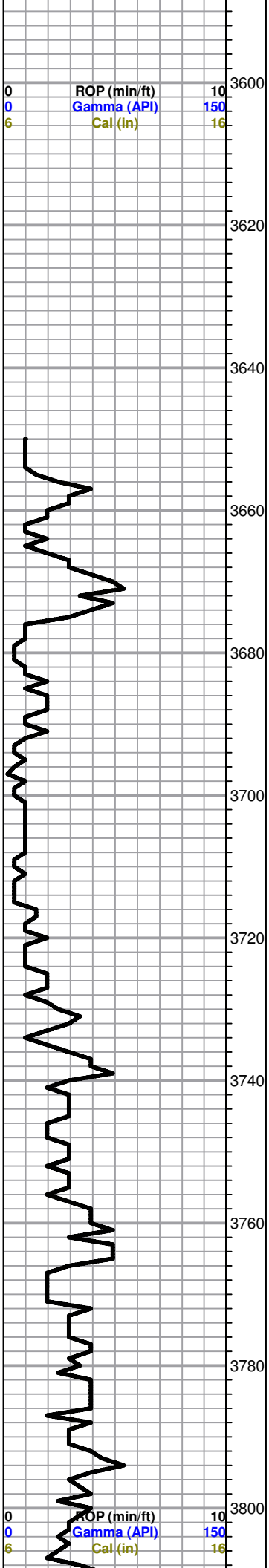
TEXTURE
- C Chalky
- MX MicroxIn

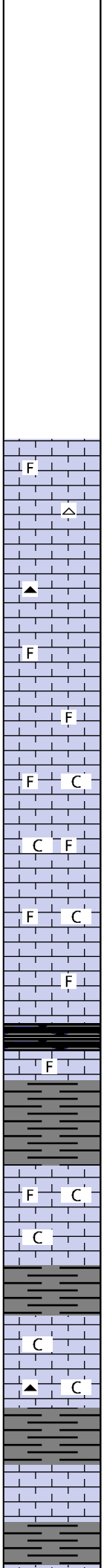
OTHER SYMBOLS

DST
- DST Int
- DST alt
- Core

Curve Track #1
ROP (min/ft)
Gamma (API)
Cal (in)
1:240 Imperial

Depth | Intervals	DST	Lithology	Oil Show	Geological Descriptions	Comment
Cored Interval / DST Interval					
0 ROP (min/ft) 10 0 Gamma (API) 150 6 Cal (in) 16 3560 3580				**Mull Drilling Company** **Benson No. 1-4** **1500' FNL and 2300' FEL** **NE NW SW NE** **Sec 4 T19S R24W** **Ness County, Kansas** **GL 2333 KB 2342**	Mud Program: Mud Co/Service Mud, Inc. Chemical Gel/Premix Sample Cuttings: KGS Well Sample Library Testing: Trilobite Testing





Ls-crm/tan/lt gry f/mxln soft/mhd fos fr inter xln por nsfo

Ls-crm/tan /lt gry fxln dns no por sm Cht-crm fsh opaq

Ls-crm/tanf/mxln soft/mdh fr inter xln por nsfo

Ls-crm/tan fxln dns no por sm Cht-lt gry fsh opaq

Ls-crm/tan/lt gry fxln soft sl fos fr inter xln por nsfo

Ls-crm/tan fxln soft/mhd sl fos no por

Ls-crm/tan fxln soft fos clky fr inter xln por nsfo

Ls-crm/tan fxln soft/mhd sl fos sl clky no por

Ls-crm/tan fxln soft fos clky fr inter xln por nsfo

Ls-crm/tan/lt gry sxln soft/mhd sl fos sl clky no por sm Cht-lt gry fsh opaq

Ls-crm/tan fxln sl fos mhd/dns no por

----------Heebner 3732 -1390----------

Sh-blk carb

Ls-tan/gry fxln mhd fos no por

Sh-gry/dk gry

Ls-crm/tan f/mxln mhd sl fos sl clky no por

Ls-crm/lt gry fxln dns sl clky no por

Sh-gry/dk gry

----------Lansing 3775 -1433----------

Ls-crm fxln mhd/dns sl clky no por

Ls-AA sm Cht-tan fsh opaq lt gry fsh semi trans

Sh-gry/dk gry

Ls-crm/tan fxln dns no por

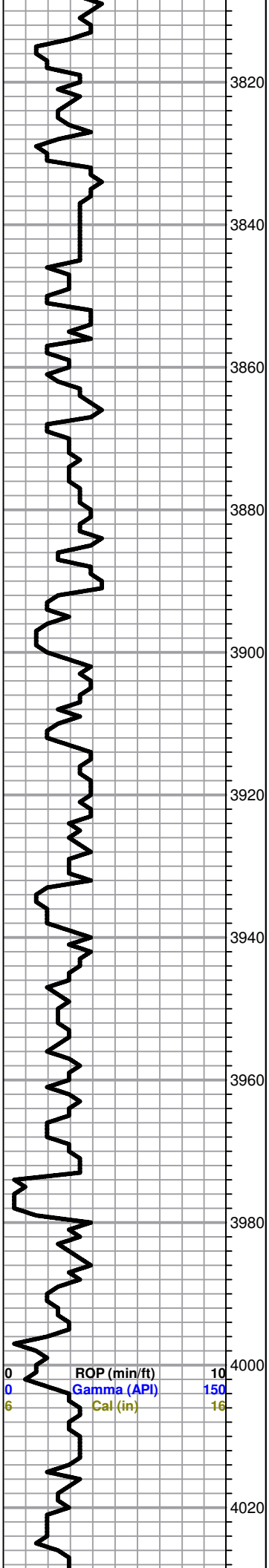
Sh-gry/dk gry

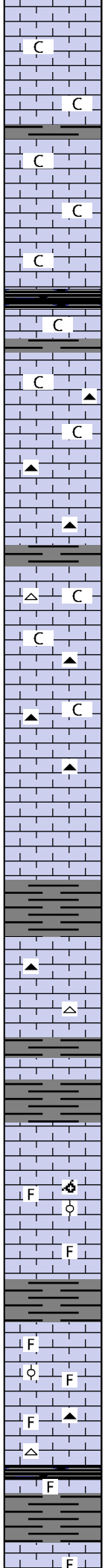
Testing: Trilobite Testing

Electric Logs:
Nabors Completion & Production Services Company:
- DIL
- CNL/CDL
- MEL

Deviation:
- 233' - Zero
- 942' - 3/4°
- 1441' - 3/4°
- 1938' - 1/2°
- 2489' - 3/4°
- 2994' - 3/4°
- 3525' - 1/2°
- 4301' - 3/4°
- 4500' - 3/4°

All formation tops on this geo log have been correlated back to the e-log for accuracy





Ls-crm/lt tan f/mxln dns no por

Ls-crm/tan f/mxln mhd sl clky trc inter xln por nsfo

Ls-crm/tan fxln dns sl clky no por

Sh-gry/dk gry

Ls-crm/tan f/mxln mhd sl clky trc inter xln por nsfo

Ls-crm/tan fxln dns sl clky no por

Ls-AA

Ls-AA

Sh-blk carb

Ls-crm/tan fxln dns sl clky no por

Sh-gry/dk gry

Ls-crm/tan f/mxln mhd sl clky no por

Ls-crm/tan fxln dns sl clky no por sm Cht-gry/brn fsh opaq

Ls-crm/tan fxln mhd clky trc inter xln por nsfo

Ls-crm/tan fxln dns no por sm Cht-lt gry fsh opaq

Ls-AA sm Cht-lt gry/tan fsh opaq

Sh-gry/dk gry

Ls-crm/tan fxln mhd sl clky no por sm Cht-wt fsh opaq

Ls-crm fxln soft/mhd clky trc inter xln por nsfo

Ls-crm/tan fxln dns no por sm Cht-gry/brn fsh opaq

Ls-crm/tan fxln mhd sl clky no por cm Cht-AA

Ls-crm/tan/lt gry fxln dns no por sm Cht-tan/gry fsh opaq

Ls-AA

Ls-crm/tan/lt gry fxln dns no por

Sh-gry/dk gry

Ls-crm/tan/lt gry fxln dns no por sm Cht-tan/gry fsh opaq

Ls-AA cm Cht-tan/wt fsh opaq fos ool

Sh-gry/dk gry

Ls-crm/tan fxln dns no por

Sh-gry/dk gry

Ls-crm/tan fxln mhd no por

Ls-crm/tan fxln dns no por

Ls-crm fxln soft fos ool and oom fr inter fos/inter xln por nsfo

Ls-tan fxln dns sl fos no por

Ls-AA

Sh-gry/dk gry

Ls-tan fxln dns sl fos no por

Ls-crm fxln soft/mhd fos sl ool and ooc fr ooc por nsfo

Ls-tan/lt gry f/mxln dns sl fos no por

Ls-AA sm Cht-lt gry fsh opaq fos

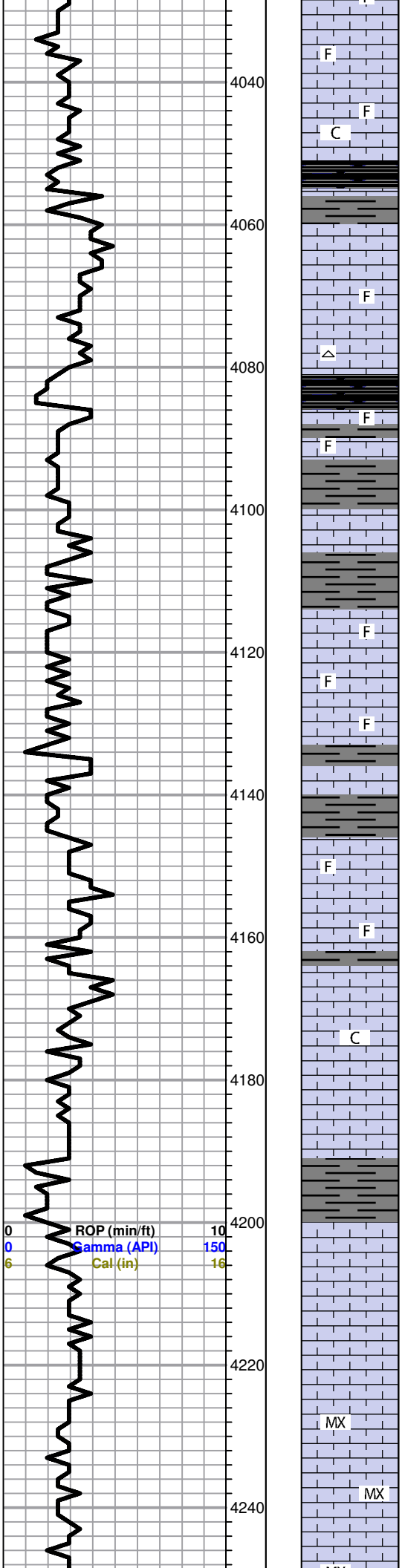
----------Stark 4014 -1672----------

Ls-crm/tan f/mxln mhd sl fos no por

Sh-gry/dk gry

Ls-crm/tan/lt gry f/mxln mhd/dns fos no por

Mud Data at 4003'
9:45 am 11-08-12
Wt 9
Vis 43
WL 8
pH 10.5
Chl 3700
Sol 4.8%
YP 15
LCM trc



Ls-AA

Ls-tan/lt brn f/mxln mhd/dns fos no por

Ls-tan/brn sm mottled gry f/mxln mhd sl clky sl fos no por

----------Hushpuckney 4051 -1709----------

Sh-blk carb

Sh-gry/dk gry

Ls-crm/lt gry fxln dns no por

Ls-AA with sm Ls-tan mxln to blky mhd fos no por

Ls-AA sm Cht-wt/lt gry fsh opaq

----------B/Kansas City 4081 -1739----------

Sh-gry/dk gry/blk

Ls-tan/brn f/mxln dns sl fos no por

Sh-gry/dk gry

Ls-tan/brn f/mxln mhd sl fos no por

Sh-gry/dk gry

Ls-tan/brn fxln dns no por

Sh-gry/dk gry

----------Marmaton 4114 -1772----------

Ls-lt gry/tan f/mxln dns sl fos no por

Ls-AA

Ls-AA

Sh-gry/dk gry

Ls-crm/tan fxln mhd/dns no por

Sh-gry/dk gry

Ls-crm/tan fxln dns sl fos no por

Ls-AA

Sh-gry/dk gry

Ls-crm/tan fxln dns no por

Ls-crm/lt tan mhd/dns sl clky no por

Ls-tan/brn fxln mhd/dns no por

Ls-AA

Sh-gry/dk gry

----------Pawnee 4200 -1857----------

Ls-crm/tan fxln dns no por

Ls-tan/grn fxln dns no por

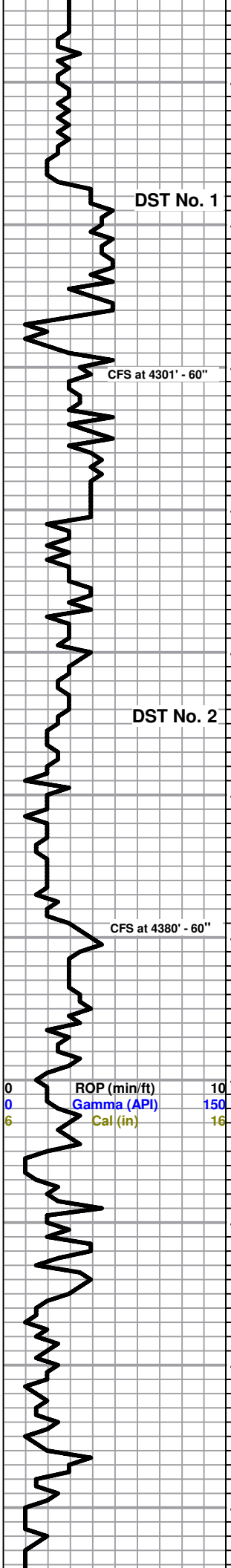
Ls-AA

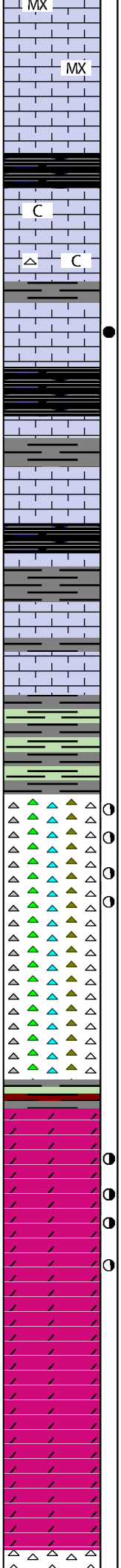
Ls-gry/brn micro dns no por

Ls-AA

Ls-gry micro dns no por

DST No 1





Ls-AA

Ls-AA

Sh-blk carb

----------Fort Scott 4275 -1933----------

Ls-crm/tan fxln dns sl clky no por

Ls-AA sm Cht-wt/gry fsh opaq

Sh-gry/dk gry

Ls-tan fxln soft/mhd fr/gd inter xln/vug por sl odor gd cut gd fluor gsfo

----------Cherokee Shale 4301 -1959----------

Sh-blk carb

Ls-tan/gry fxln dns no por

Sh-gry/dk gry

Ls-tan/lt gry fxln dns no por

Sh-blk carb

Ls-tan/lt gry fxln mhd/dns no por

Sh-gry/dk gry

Ls-tan/lt gry fxln dns no por

Sh-gry/dk gry

Ls-tan/lt gry/lt brn fxln dns no por

----------Base Cherokee Lime 4346 -2004----------

Sh-gry/dk gry/grn

Sh-AA

Cht-tan/crm weat highly gils trc vug por gd cut ssfo on brk

Cht-tan/crm fsh and weat highly gils gd cut ssfo on brk

Cht-AA and Cht-tan/brn/crm/lt org fsh opaq and semi trans nsfo

Cht-crm/tan weat fr vug por gils blk sat stn gd cut faint odor ssfo on brk

Cht-crm/tan/brn sm lt org fsh opaq and weat sl gils no por

Cht-tan/crm/brn fsh opaq and weat sl gils no por

Cht-AA

Cht-tan/crm/brn fsh opaq no por

Sh-gry/grn/red/mar sm yel

----------Mississippi 4404 -2062----------

Dolo-lt gry/gry fxln mhd/dns no por

Dolo-lt gry/gry fxln mhd fr vug por brn stn fr odor fsfo

Dolo-lt gry/gry/tan fxln to fsuc mhd fr vug por fr odor fsfo

Dolo-AA

Dolo-gry/tan fxln to fsuc mhd no por

Dolo-lt gry/tan/brn fxln to fsuc mhd ssfo

Dolo-lt gry/tan/brn fxln to fsuc mhd/dns no por

Dolo-lt gry/tan fxln to fsuc mhd fr vug por nsfo

Dolo-crm/tan fsuc mhd no por

Dolo-AA

Dolo-crm/tan fsuc dns no por

Dolo-crm/tan fsuc mhd no por

----------Osage 4466 -2124----------

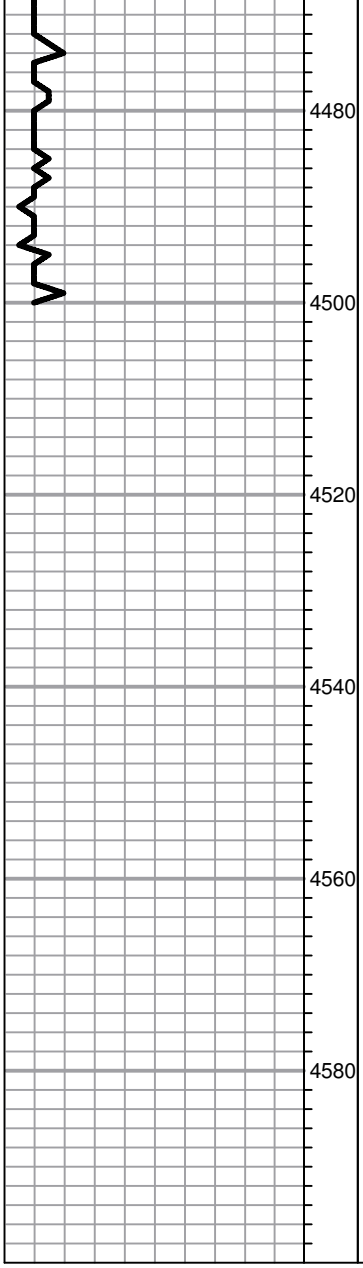
4253 to 4301
5-30-60-120
1st Open: Weak building blow, built to 2"
2nd Open: Weak building blow, BOB in 60"
Recovery:
140' GIP
105' VSGOCWM (20%G 5%O, 25%W, 50%M
Chl 12,000 ppm)
IHP 2106 FHP 2083
IFP 28-42 FFP 38-67
ISIP 1035 FSIP 1086
Temp 121°

Pipe strap at 4301'
Long 1.28'

Mud Data at 4301'
9:50 am 11-09-12
Wt 9.3
Vis 53
WL 7.2
pH 10
Chl 3300
Sol 7%
YP 23
LCM trc

DST No 2
4318 to 4380
5-30-30-60
1st Open: Weak sur blow
2nd Open: Few bubbles, then died
Recovery:
6" Oil
3' Mud
IHP 2160 FHP 2134
IFP 27-23 FFP 26-22
ISIP 73 FSIP 54
Temp 118°

Mud Data at 4380'
9:55 am 11-10-12
Wt 9
Vis 74
WL 8
pH 10.5
Chl 5200
Sol 4.7%
YP 21
LCM trc



Cht-lt tan fsh opaq no por

Cht-AA

Cht-lt tan/crm fsh opaq no por

Cht-AA

----------RTD 4500 -2158----------

Finished Drilling at 2:29 pm on 11-10-12. Cir for Log - 90"

Finished Logging at 11:15 pm on 11-10-12