

Form	ACO1 - Well Completion
Operator	Ritchie Exploration, Inc.
Well Name	WHITHAM 35ABD 1
Doc ID	1362024

Casing

Purpose Of String	Size Hole Drilled	Size Casing Set	Weight	Setting Depth	Type Of Cement	Number of Sacks Used	Type and Percent Additives
Surface	12.25	8.63	24	259	Common	180	2% gel, 3% cc



#1 Whitham 35ABD
 335' FNL & 2470' FEL
 5' S & 160' W of NW NW NE Section 35-16S-37W
 Wichita County, Kansas
 API# 15-203-20315-0000
 Elevation: 3340' GL, 3345' KB

Sample Tops			Ref. Well
Anhydrite	2516'	+829	-3
B/Anhydrite	2536'	+809	-5
Stotler	2596'	-251	-4
Heebner	3981'	-636	-5
Toronto	3998'	-653	-5
Lansing	4032'	-687	-8
Muncie	4216'	-871	-7
Stark	4305'	-960	-8
Hush	4352'	-1007	-7
BKC	4396'	-1051	-7
Marmaton	4437'	-1092	-6
Altamont	4453'	-1108	-7
Pawnee	4553'	-1208	-11
Myrick	4580'	-1235	-9
Fort Scott	4592'	-1247	-9
Cherokee	4621'	-1276	-10
Johnson	4714'	-1369	-10
Morrow	4778'	-1433	-7
Mississippian	4868'	-1523	-19
RTD	4950'	-1605	



CONSOLIDATED
Oil Well Services, LLC

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

**FIELD TICKET & TREATMENT REPORT
CEMENT**

TICKET NUMBER 51768
LOCATION Ch. Kley KS
FOREMAN Jerry V

Invoice # 810047 KS

DATE	CUSTOMER #	WELL NAME & NUMBER	SECTION	TOWNSHIP	RANGE	COUNTY
4-11-17	7173	Whitham #1	35	-16S	37W	Wichita
CUSTOMER Ritchie Exp			Russell Spgs Sout to F Yew Sinto			
MAILING ADDRESS P.O. BOX 783188			TRUCK #	DRIVER	TRUCK #	DRIVER
CITY Wichita			731	Cory D		
STATE KS			5766	Steven O		
ZIP CODE 67278-3188			639			

JOB TYPE Surface HOLE SIZE 12 1/4 HOLE DEPTH 259 CASING SIZE & WEIGHT 8 3/8 23#
CASING DEPTH 259 DRILL PIPE _____ TUBING _____ OTHER _____
SLURRY WEIGHT 14.8 SLURRY VOL 124 WATER gal/sk _____ CEMENT LEFT In CASING 20'
DISPLACEMENT 15661 DISPLACEMENT PSI _____ MIX PSI _____ RATE _____

REMARKS: Safety meeting & rig upon W/LIO break circulation with rig free
mix 180 SKS surface blend II wash up & displace with 15661 fresh water & shut
in circulated approx 2661 to pt

Cement did circulate

Thank you
Jerry & crew

ACCOUNT CODE	QUANTITY or UNITS	DESCRIPTION of SERVICES or PRODUCT	UNIT PRICE	TOTAL
CE0491	1	PUMP CHARGE	1150.00	1150.00
CE0002	45	MILEAGE	7.2	321.75
CE0710	8.46		1.75	666.23
CE5871	180 SKS	surface blend II	23.00	4140.00
			Subtotal	6277.98
			-35%	2197.29
			Subtotal	4080.69
			SALES TAX	228.74
			ESTIMATED TOTAL	4309.43

Ravin 3737

AUTHORIZATION Rich Hagan

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.



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

FIELD TICKET & TREATMENT REPORT CEMENT

TICKET NUMBER 51802
LOCATION Oakley Hs
FOREMAN Walt Dunkel

INVOICE #810138

DATE	CUSTOMER #	WELL NAME & NUMBER	SECTION	TOWNSHIP	RANGE	COUNTY
4-21-17	7173	Witham, 35 ABD #1	35	16S	37 W	Wichita
CUSTOMER Ritchie Exploration <i>(Note: Russell Springs south on Hwy 25 to Field - 1)</i>						
MAILING ADDRESS P.O. BOX 783 KES			TRUCK # 753-	DRIVER Travis Williams	TRUCK # 460-	DRIVER Miles Shaw
CITY Wichita	STATE KS	ZIP CODE 67278-3188	697			

JOB TYPE	PTA	HOLE SIZE	12 1/2	HOLE DEPTH	4950'	CASING SIZE & WEIGHT	
CASING DEPTH		DRILL PIPE	4 1/2 x 4	TUBING		OTHER	
SLURRY WEIGHT		SLURRY VOL		WATER gal/sk		CEMENT LEFT in CASING	
DISPLACEMENT		DISPLACEMENT PSI		MIX PSI		RATE	

REMARKS: Safety Meeting, Rig up on WW#10, Plug as ordered.

50 SKs @ 2540'
80 SKs @ 1600'
50 SKs @ 800'
50 SKs @ 290'
20 SKs @ 60'
30 SKs in Rth

280 SKs 60% por, 4% gel, 1/4" Flo-Sac

Thank You
Walt & Crew

[illegible]

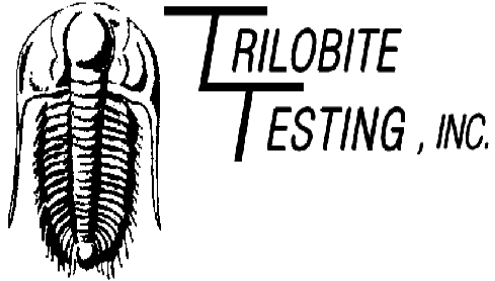
Ravin 3737

AUTHORIZATION

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.



DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration**

8100 E 22nd St N #700
Wichita, KS 67278

ATTN: Max Lovely

Whitham 35ABD #1

36-16-37w Wichita,KS

Start Date: 2017.04.16 @ 12:31:02

End Date: 2017.04.16 @ 18:12:02

Job Ticket #: 63790 DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2017.04.21 @ 07:54:25

Ritchie Exploration

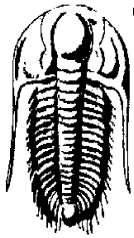
36-16-37w Wichita,KS

Whitham 35ABD #1

DST # 1

LKC I

2017.04.16



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration
8100 E 22nd St N #700
Wichita, KS 67278
ATTN: Max Lovely

36-16-37w Wichita, KS

Whitham 35ABD #1

Job Ticket: 63790

DST#: 1

Test Start: 2017.04.16 @ 12:31:02

GENERAL INFORMATION:

Formation: **LKC I**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 14:08:02

Time Test Ended: 18:12:02

Test Type: Conventional Bottom Hole (Initial)

Tester: Brandon Turley

Unit No: 79

Interval: 4241.00 ft (KB) To 4275.00 ft (KB) (TVD)

Reference Elevations: 3345.00 ft (KB)

Total Depth: 4275.00 ft (KB) (TVD)

3340.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

Serial #: 8166 Outside

Press@RunDepth: 42.12 psig @ 4242.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2017.04.16

End Date:

2017.04.16

Last Calib.: 2017.04.16

Start Time: 12:31:07

End Time:

18:12:01

Time On Btm: 2017.04.16 @ 14:07:02

Time Off Btm: 2017.04.16 @ 16:41:32

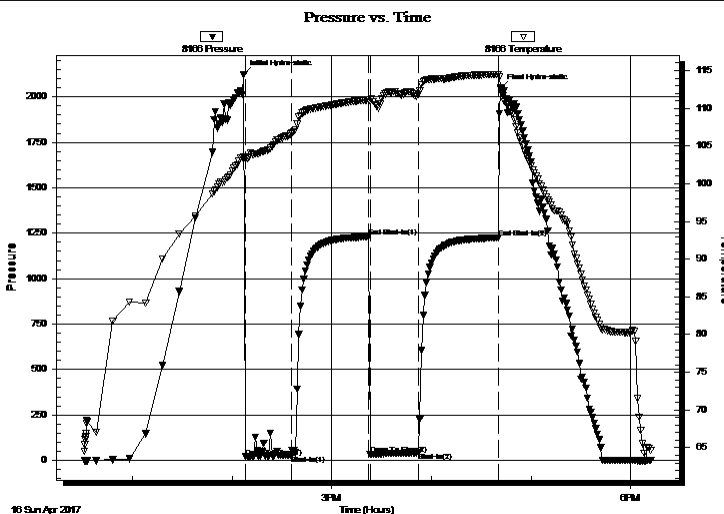
TEST COMMENT: IF: Surface blow built to 1/2"

IS: No return.

FF: Weak surface blow.

FS: No return.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2123.65	103.52	Initial Hydro-static
1	19.64	103.25	Open To Flow (1)
29	29.75	106.72	Shut-In(1)
75	1229.63	111.12	End Shut-In(1)
76	33.17	110.89	Open To Flow (2)
105	42.12	111.81	Shut-In(2)
153	1224.36	114.49	End Shut-In(2)
155	2043.82	112.76	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	mcw 60%w 40%m	0.30

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration
8100 E 22nd St N #700
Wichita, KS 67278
ATTN: Max Lovely

36-16-37w Wichita, KS

Whitham 35ABD #1

Job Ticket: 63790

DST#: 1

Test Start: 2017.04.16 @ 12:31:02

GENERAL INFORMATION:

Formation: **LKC I**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 14:08:02

Time Test Ended: 18:12:02

Test Type: Conventional Bottom Hole (Initial)

Tester: Brandon Turley

Unit No: 79

Interval: 4241.00 ft (KB) To 4275.00 ft (KB) (TVD)

Reference Elevations: 3345.00 ft (KB)

Total Depth: 4275.00 ft (KB) (TVD)

3340.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

Serial #: 8875 Inside

Press@RunDepth: psig @ 4242.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2017.04.16

End Date:

2017.04.16

Last Calib.:

2017.04.16

Start Time: 12:31:19

End Time:

18:12:13

Time On Btm:

Time Off Btm:

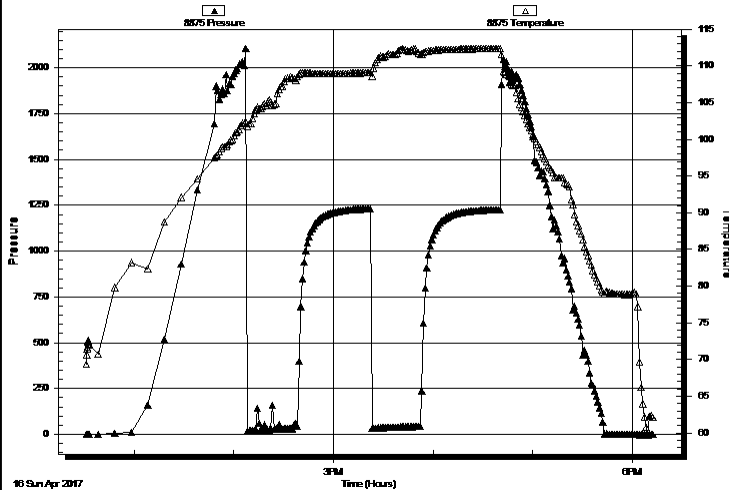
TEST COMMENT: IF: Surface blow built to 1/2"

IS: No return.

FF: Weak surface blow.

FS: No return.

Pressure vs. Time



PRESSURE SUMMARY

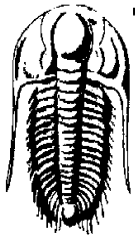
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
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Recovery

Length (ft)	Description	Volume (bbl)
60.00	mcw 60%w 40%m	0.30

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration

36-16-37w Wichita, KS

8100 E 22nd St N #700
Wichita, KS 67278

Whitham 35ABD #1

Job Ticket: 63790

DST#: 1

ATTN: Max Lovely

Test Start: 2017.04.16 @ 12:31:02

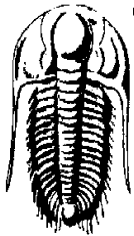
Tool Information

Drill Pipe:	Length:	4101.00 ft	Diameter:	3.80 inches	Volume:	57.53 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	0.00 inches	Volume:	0.00 bbl	Weight set on Packer:	30000.00 lb
Drill Collar:	Length:	119.00 ft	Diameter:	2.25 inches	Volume:	0.59 bbl	Weight to Pull Loose:	65000.00 lb
					Total Volume:	58.12 bbl	Tool Chased	0.00 ft
Drill Pipe Above KB:		6.00 ft					String Weight: Initial	60000.00 lb
Depth to Top Packer:		4241.00 ft					Final	60000.00 lb
Depth to Bottom Packer:		ft						
Interval between Packers:		34.00 ft						
Tool Length:		61.00 ft						
Number of Packers:		2	Diameter:	6.75 inches				
Tool Comments:								

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Stubb	1.00			4215.00	
Shut In Tool	5.00			4220.00	
Hydraulic tool	5.00			4225.00	
Jars	5.00			4230.00	
Safety Joint	2.00			4232.00	
Packer	5.00			4237.00	27.00 Bottom Of Top Packer
Packer	4.00			4241.00	
Stubb	1.00			4242.00	
Recorder	0.00	8875	Inside	4242.00	
Recorder	0.00	8166	Outside	4242.00	
Perforations	28.00			4270.00	
Bullnose	5.00			4275.00	34.00 Bottom Packers & Anchor

Total Tool Length: 61.00



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration

36-16-37w Wichita,KS

8100 E 22nd St N #700
Wichita, KS 67278

Whitham 35ABD #1

Job Ticket: 63790

DST#: 1

ATTN: Max Lovely

Test Start: 2017.04.16 @ 12:31:02

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

17500 ppm

Viscosity: 67.00 sec/qt

Cushion Volume:

bbl

Water Loss: 7.99 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 5600.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
60.00	mcw 60%w 40%m	0.295

Total Length: 60.00 ft

Total Volume: 0.295 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

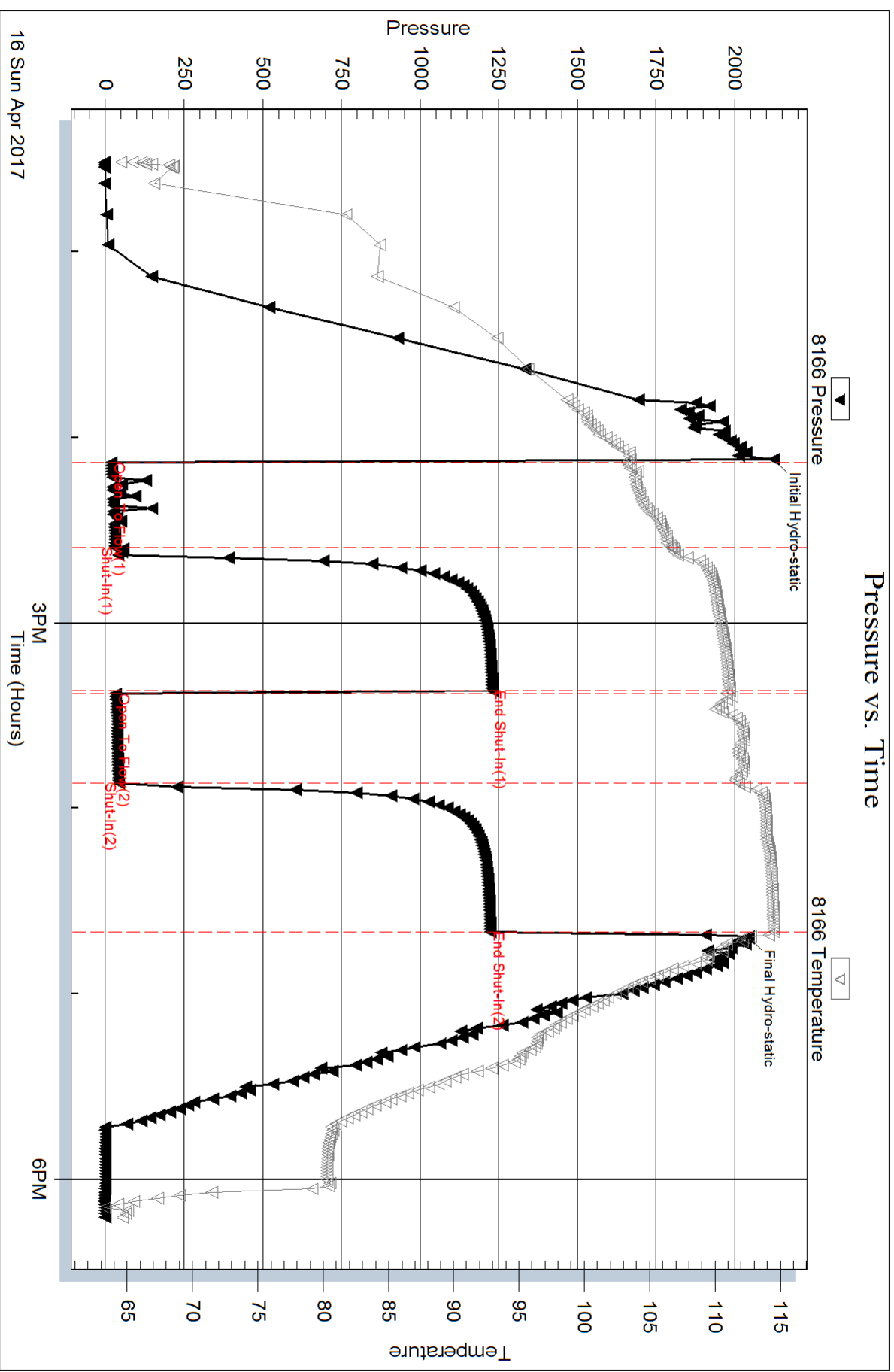
Recovery Comments: .44@62=17500

Serial #: 8166

Outside Ritchie Exploration

Whitham 35ABD #1

DST Test Number: 1



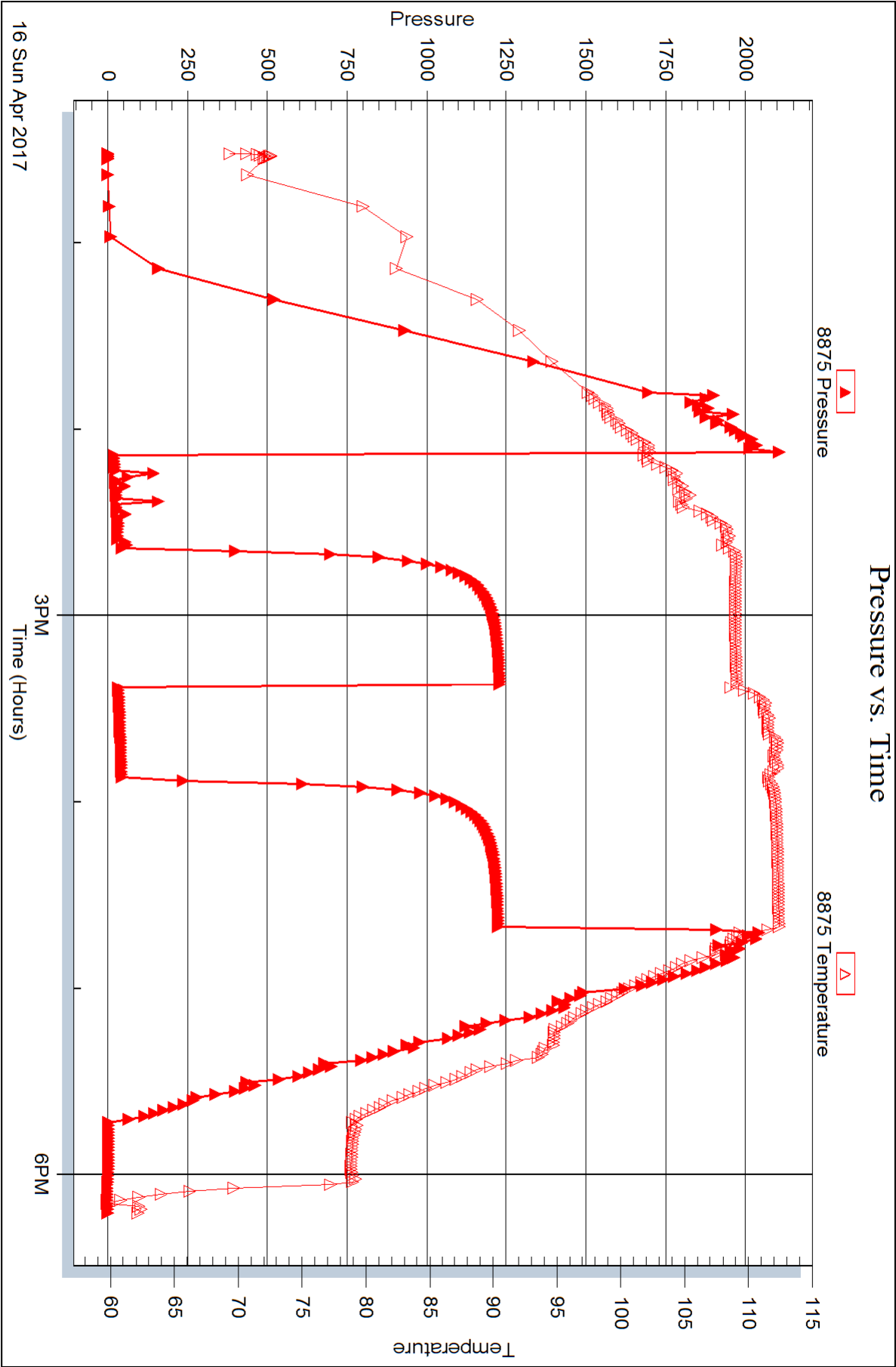
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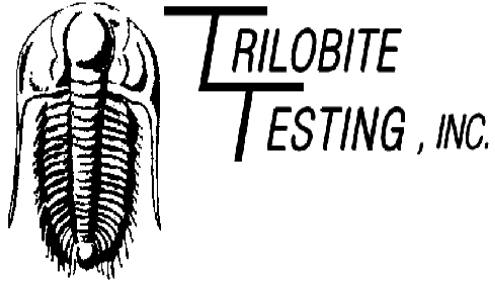
Inside

Ritchie Exploration

Whitham 35ABD #1

DST Test Number: 1





DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration**

8100 E 22nd St N #700
Wichita, KS 67278

ATTN: Max Lovely

Whitham 35ABD #1

36-16-37w Wichita,KS

Start Date: 2017.04.17 @ 17:37:36

End Date: 2017.04.17 @ 23:32:06

Job Ticket #: 63791 DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2017.04.21 @ 07:53:38

Ritchie Exploration

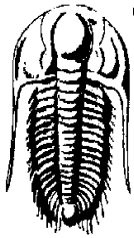
36-16-37w Wichita,KS

Whitham 35ABD #1

DST # 2

Altamont

2017.04.17



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration
8100 E 22nd St N #700
Wichita, KS 67278
ATTN: Max Lovely

36-16-37w Wichita, KS

Whitham 35ABD #1

Job Ticket: 63791

DST#: 2

Test Start: 2017.04.17 @ 17:37:36

GENERAL INFORMATION:

Formation: **Altamont**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 19:22:06

Time Test Ended: 23:32:06

Test Type: Conventional Bottom Hole (Reset)

Tester: Brandon Turley

Unit No: 79

Interval: 4420.00 ft (KB) To 4472.00 ft (KB) (TVD)

Total Depth: 4472.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 3345.00 ft (KB)

3340.00 ft (CF)

KB to GR/CF: 5.00 ft

Serial #: 8166 Outside

Press@RunDepth: 27.93 psig @ 4421.00 ft (KB)

Start Date: 2017.04.17

End Date:

2017.04.17

Start Time: 17:37:41

End Time:

23:32:05

Capacity: 8000.00 psig

Last Calib.: 2017.04.17

Time On Btm: 2017.04.17 @ 19:20:36

Time Off Btm: 2017.04.17 @ 21:53:06

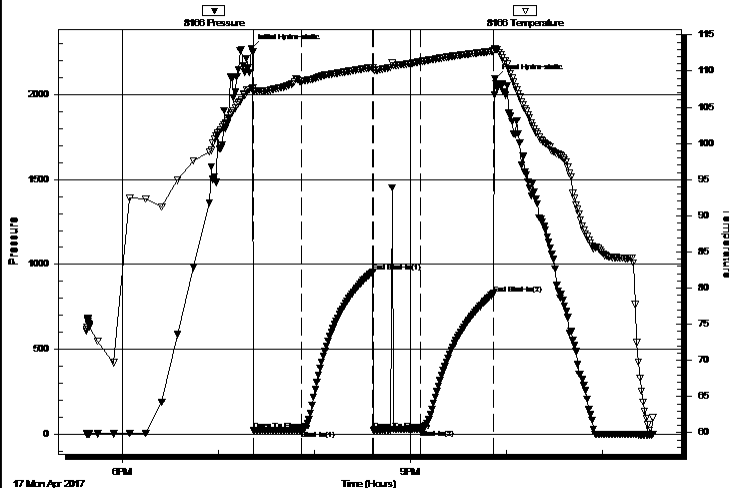
TEST COMMENT: IF: 1/4" blow died to surging surface blow .

IS: No return.

FF: No blow . Flushed tool no blow .

FS: No return.

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2273.30	107.56	Initial Hydro-static
2	20.43	107.15	Open To Flow (1)
32	23.84	108.70	Shut-In(1)
76	956.22	110.50	End Shut-In(1)
77	24.20	110.15	Open To Flow (2)
106	27.93	111.32	Shut-In(2)
152	827.91	112.77	End Shut-In(2)
153	2095.31	113.05	Final Hydro-static

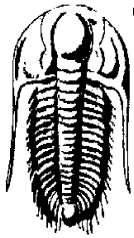
Recovery

Length (ft)	Description	Volume (bbl)
10.00	mud 100% m	0.05

Gas Rates

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



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration
8100 E 22nd St N #700
Wichita, KS 67278
ATTN: Max Lovely

36-16-37w Wichita, KS

Whitham 35ABD #1

Job Ticket: 63791

DST#: 2

Test Start: 2017.04.17 @ 17:37:36

GENERAL INFORMATION:

Formation: **Altamont**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 19:22:06

Time Test Ended: 23:32:06

Test Type: Conventional Bottom Hole (Reset)

Tester: Brandon Turley

Unit No: 79

Interval: **4420.00 ft (KB) To 4472.00 ft (KB) (TVD)**

Total Depth: 4472.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 3345.00 ft (KB)

3340.00 ft (CF)

KB to GR/CF: 5.00 ft

Serial #: 8875 Inside

Press@RunDepth: psig @ 4421.00 ft (KB)

Start Date: 2017.04.17

End Date:

2017.04.17

Start Time: 17:37:14

End Time:

23:31:38

Capacity: 8000.00 psig

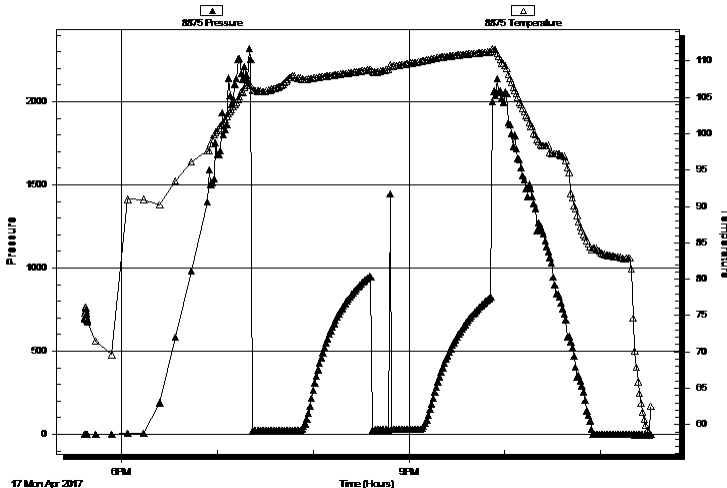
Last Calib.: 2017.04.17

Time On Btm:

Time Off Btm:

TEST COMMENT: IF: 1/4" blow died to surging surface blow .
IS: No return.
FF: No blow . Flushed tool no blow .
FS: No return.

Pressure vs. Time



PRESSURE SUMMARY

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

Length (ft)	Description	Volume (bbl)
10.00	mud 100% m	0.05

Gas Rates

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



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration

36-16-37w Wichita,KS

8100 E 22nd St N #700
Wichita, KS 67278

Whitham 35ABD #1

Job Ticket: 63791

DST#: 2

ATTN: Max Lovely

Test Start: 2017.04.17 @ 17:37:36

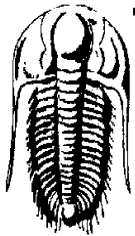
Tool Information

Drill Pipe:	Length:	4294.00 ft	Diameter:	3.80 inches	Volume:	60.23 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	0.00 inches	Volume:	0.00 bbl	Weight set on Packer:	30000.00 lb
Drill Collar:	Length:	119.00 ft	Diameter:	2.25 inches	Volume:	0.59 bbl	Weight to Pull Loose:	75000.00 lb
					Total Volume:	60.82 bbl	Tool Chased	0.00 ft
Drill Pipe Above KB:		20.00 ft					String Weight: Initial	60000.00 lb
Depth to Top Packer:		4420.00 ft					Final	60000.00 lb
Depth to Bottom Packer:		ft						
Interval between Packers:		52.00 ft						
Tool Length:		79.00 ft						
Number of Packers:		2	Diameter:	6.75 inches				
Tool Comments:								

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Stubb	1.00			4394.00	
Shut In Tool	5.00			4399.00	
Hydraulic tool	5.00			4404.00	
Jars	5.00			4409.00	
Safety Joint	2.00			4411.00	
Packer	5.00			4416.00	27.00 Bottom Of Top Packer
Packer	4.00			4420.00	
Stubb	1.00			4421.00	
Recorder	0.00	8875	Inside	4421.00	
Recorder	0.00	8166	Outside	4421.00	
Perforations	13.00			4434.00	
Change Over Sub	1.00			4435.00	
Drill Pipe	31.00			4466.00	
Change Over Sub	1.00			4467.00	
Bullnose	5.00			4472.00	52.00 Bottom Packers & Anchor

Total Tool Length: 79.00



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration

36-16-37w Wichita, KS

8100 E 22nd St N #700
Wichita, KS 67278

Whitham 35ABD #1

Job Ticket: 63791

DST#: 2

ATTN: Max Lovely

Test Start: 2017.04.17 @ 17:37:36

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 64.00 sec/qt

Cushion Volume:

bbl

Water Loss: 8.79 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 5600.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	mud 100%m	0.049

Total Length: 10.00 ft

Total Volume: 0.049 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

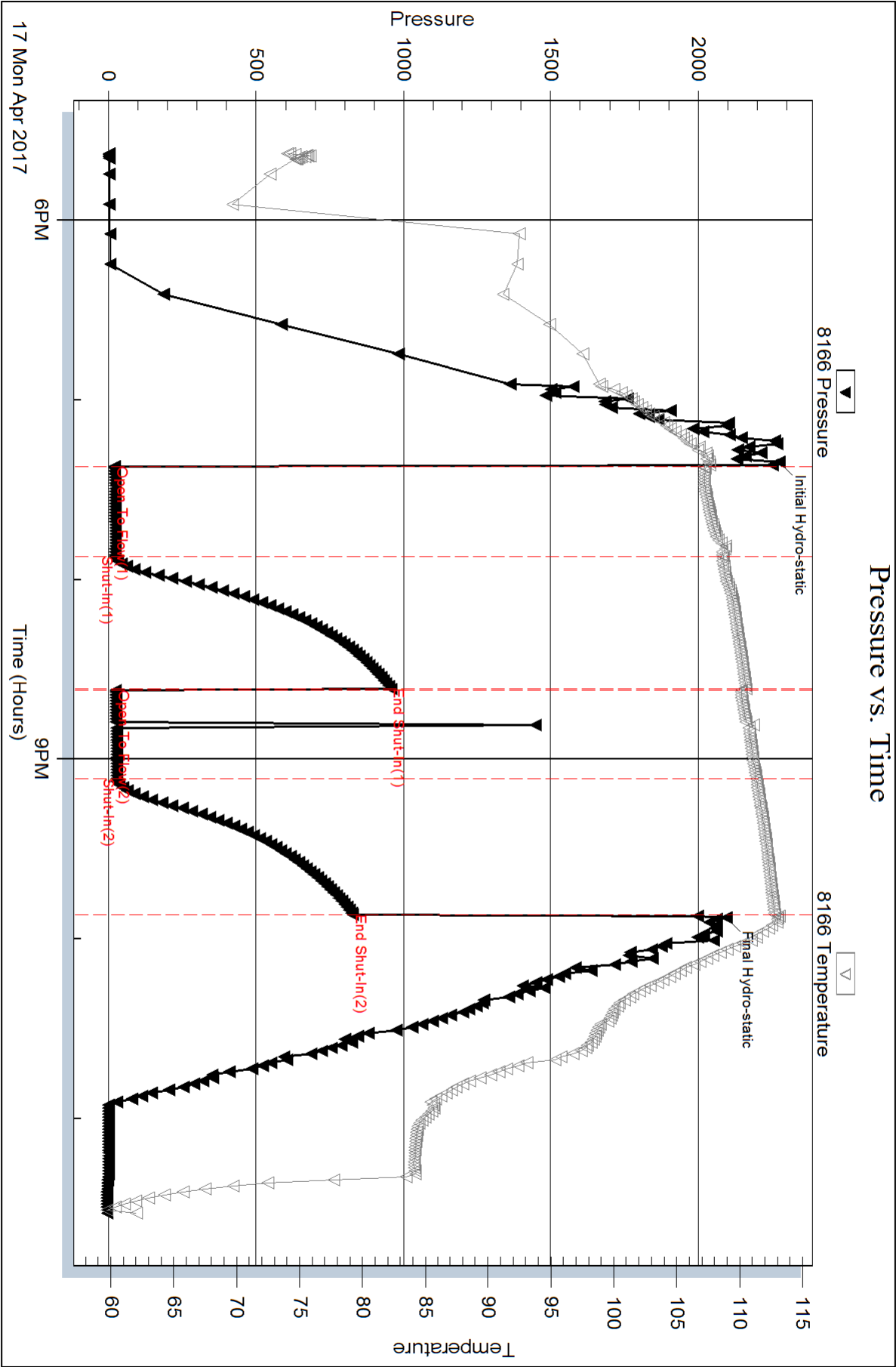
Recovery Comments:

Serial #: 8166

Outside Ritchie Exploration

Whitham 35ABD #1

DST Test Number: 2



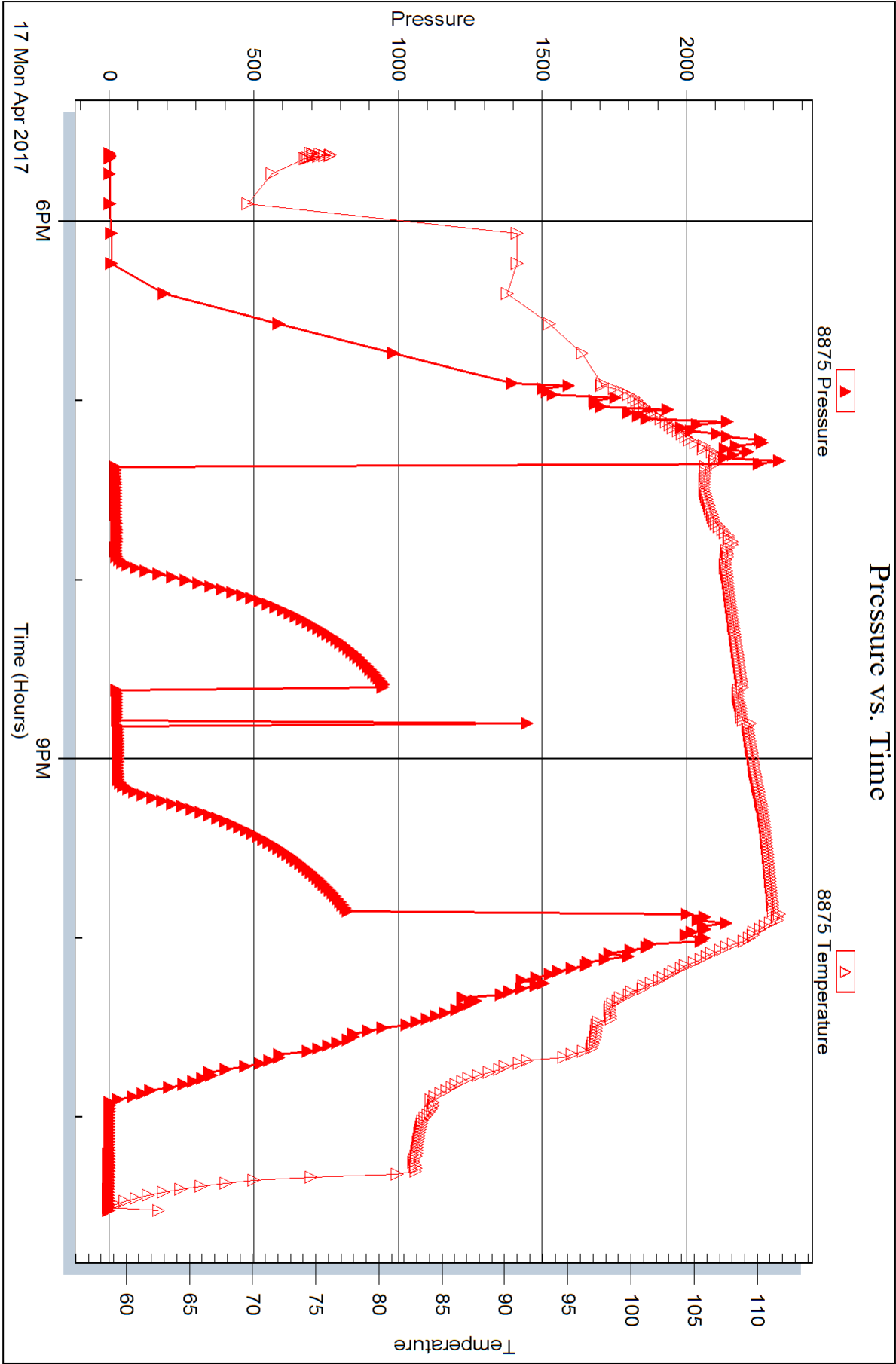
Serial #: 8875

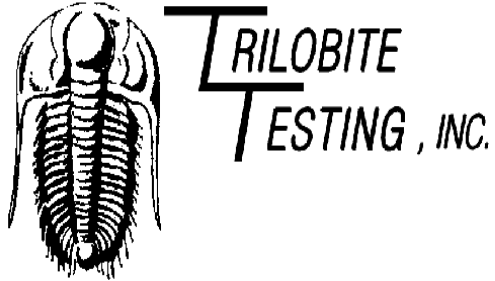
Inside

Ritchie Exploration

Whitham 35ABD #1

DST Test Number: 2





DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration**

8100 E 22nd St N #700
Wichita, KS 67278

ATTN: Max Lovely

Whitham 35ABD #1

36-16-37w Wichita,KS

Start Date: 2017.04.18 @ 13:04:41

End Date: 2017.04.18 @ 18:31:11

Job Ticket #: 63792 DST #: 3

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2017.04.21 @ 07:52:42



Ritchie Exploration

ATTN: Max Lovely

Whitham 35ABD #1

DST#: 3

Test Start: 2017.04.18 @ 13:04:41

KB to GR/CF: 5.00 ft

Time Off Btm: 2017.04.18 @ 16:51:11

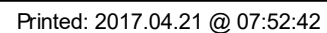
Printed: 2017.04.21 @ 07:52:42

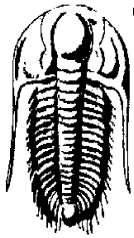


Test Start: 2017.04.18 @ 13:04:41

KB to GR/CF: 5.00 ft

FS: No return.





TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration

36-16-37w Wichita,KS

8100 E 22nd St N #700
Wichita, KS 67278

Whitham 35ABD #1

Job Ticket: 63792

DST#: 3

ATTN: Max Lovely

Test Start: 2017.04.18 @ 13:04:41

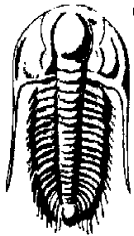
Tool Information

Drill Pipe:	Length: 4348.00 ft	Diameter: 3.80 inches	Volume: 60.99 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 119.00 ft	Diameter: 2.25 inches	Volume: 0.59 bbl	Weight to Pull Loose: 75000.00 lb
		Total Volume:	61.58 bbl	Tool Chased 0.00 ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial 64000.00 lb
Depth to Top Packer:	4464.00 ft			Final 64000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	84.00 ft			
Tool Length:	111.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		
Tool Comments:				

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

Stubb	1.00			4438.00	
Shut In Tool	5.00			4443.00	
Hydraulic tool	5.00			4448.00	
Jars	5.00			4453.00	
Safety Joint	2.00			4455.00	
Packer	5.00			4460.00	27.00 Bottom Of Top Packer
Packer	4.00			4464.00	
Stubb	1.00			4465.00	
Recorder	0.00	8875	Inside	4465.00	
Recorder	0.00	8166	Outside	4465.00	
Perforations	13.00			4478.00	
Change Over Sub	1.00			4479.00	
Drill Pipe	63.00			4542.00	
Change Over Sub	1.00			4543.00	
Bullnose	5.00			4548.00	84.00 Bottom Packers & Anchor

Total Tool Length: 111.00



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration

36-16-37w Wichita, KS

8100 E 22nd St N #700
Wichita, KS 67278

Whitham 35ABD #1

Job Ticket: 63792

DST#: 3

ATTN: Max Lovely

Test Start: 2017.04.18 @ 13:04:41

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 54.00 sec/qt

Cushion Volume:

bbl

Water Loss: 9.59 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 7000.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	mud oil spots 100%m	0.025

Total Length: 5.00 ft

Total Volume: 0.025 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

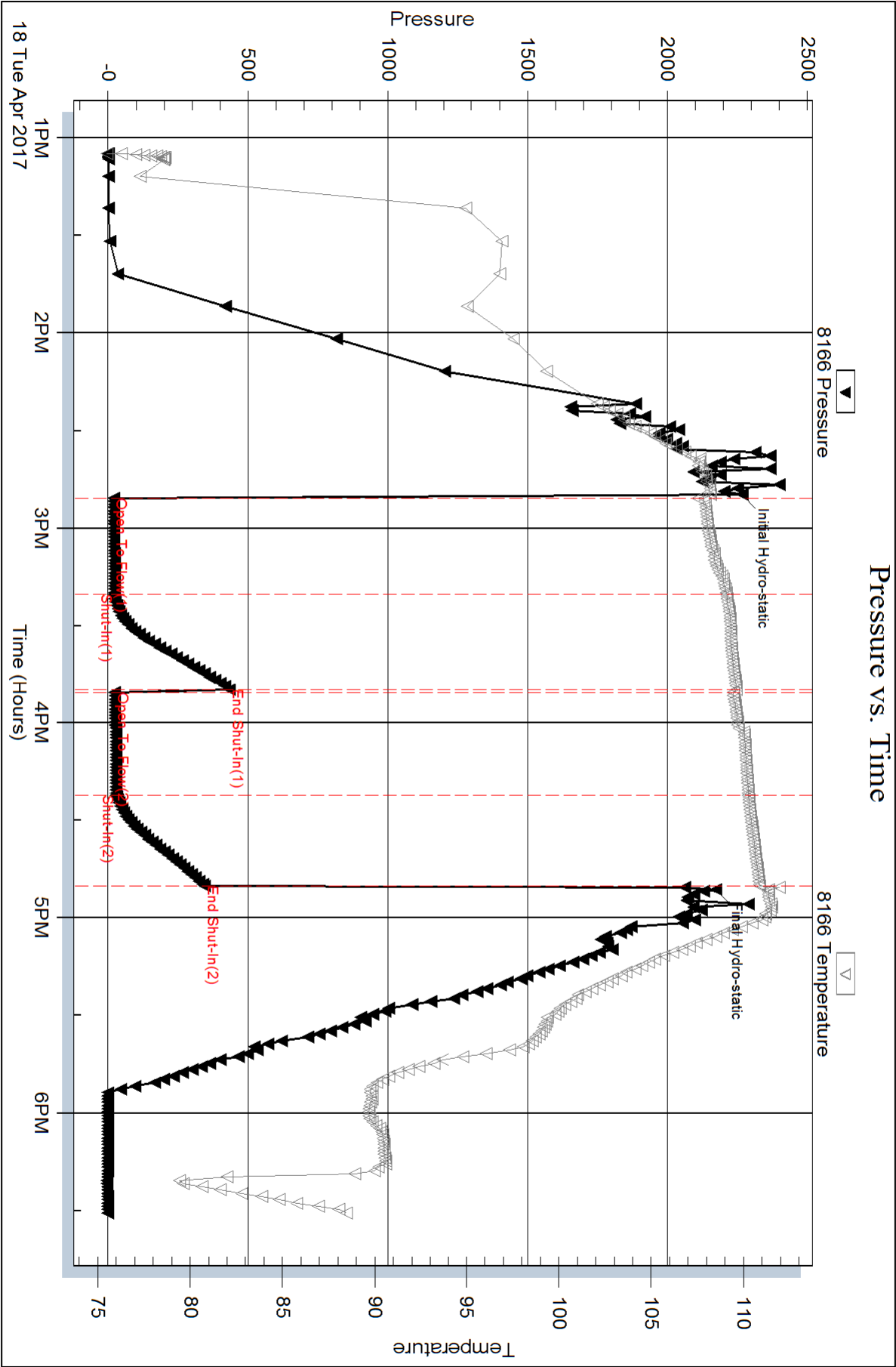
Recovery Comments:

Serial #: 8166

Outside Ritchie Exploration

Whitham 35ABD #1

DST Test Number: 3



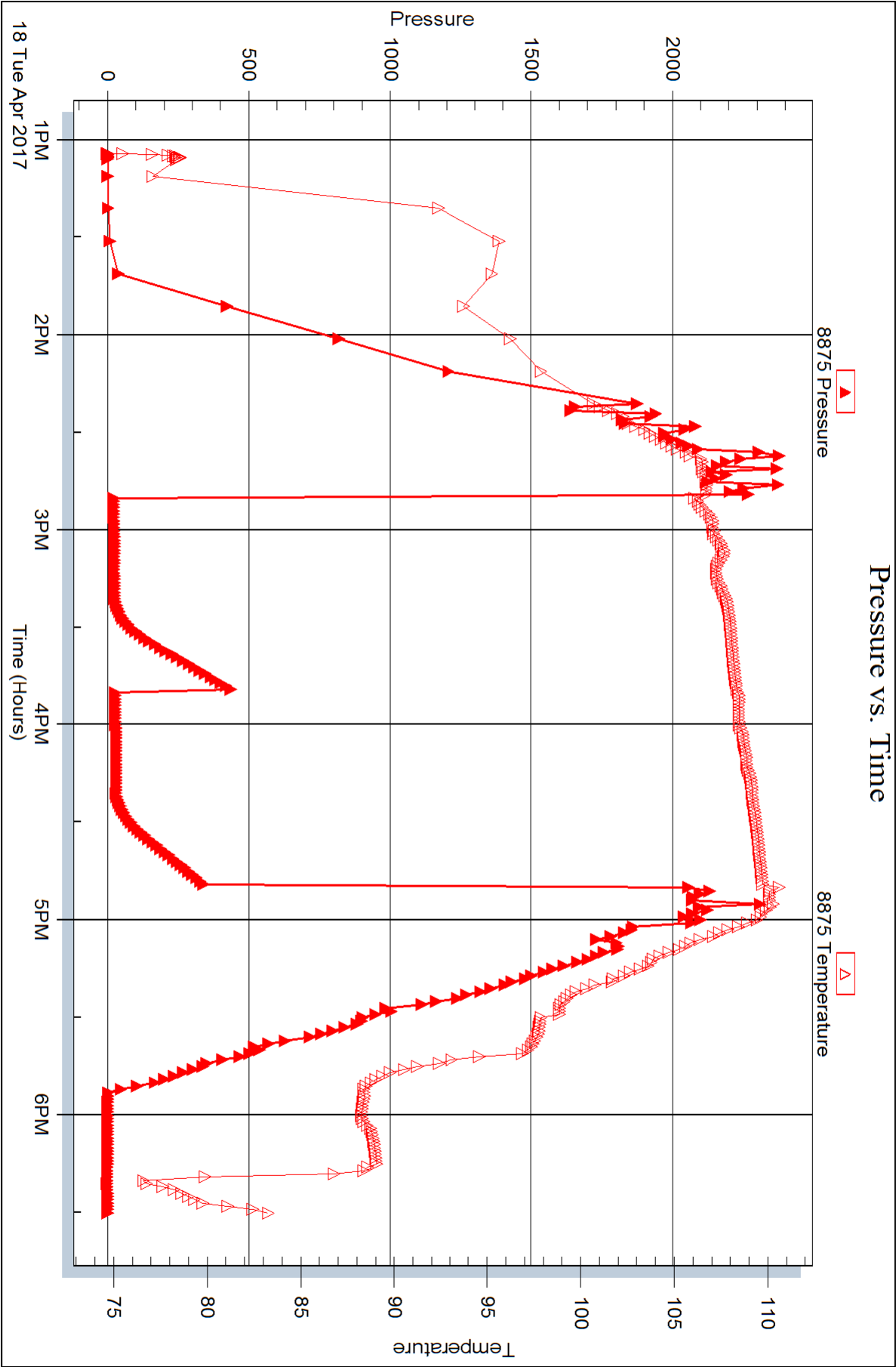
Serial #: 8875

Inside

Ritchie Exploration

Whitham 35ABD #1

DST Test Number: 3





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **63790**

Well Name & No. Whitham 35ABD #1 Test No. 1 Date 4-16-19
 Company Ritchie Exploration Elevation 3345 KB 3346 GL
 Address 8160 E 22ND St N #700 Wichita, KS 67278
 Co. Rep / Geo. Max Lovely Rig WW #10
 Location: Sec. 35 Twp. 16 Rge. 37W Co. Wichita State KS

Interval Tested 4241 4275 Zone Tested Lmsing ±
 Anchor Length 34 Drill Pipe Run 4101 Mud Wt. 9.3
 Top Packer Depth 4236 Drill Collars Run 119 Vis 67
 Bottom Packer Depth 4241 Wt. Pipe Run — WL 8.0
 Total Depth 4275 Chlorides 5600 ppm System LCM 1 ? 4 1/2

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

Rec	Feet of	%gas	%oil	%water	%mud
<u>60</u>	<u>MCW</u>			<u>60</u>	<u>40</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

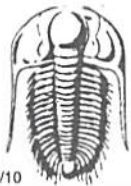
Rec Total 60 BHT 114 Gravity — API RW 44 @ 62 °F Chlorides 17,500 ppm
 (A) Initial Hydrostatic 2123 ☒ Test 1150 T-On Location 11:50
 (B) First Initial Flow 19 ☒ Jars 250 T-Started 12:31
 (C) First Final Flow 29 ☒ Safety Joint 75 T-Open 14:07
 (D) Initial Shut-In 1229 ☒ Circ Sub NK T-Pulled 16:37
 (E) Second Initial Flow 33 ☐ Hourly Standby — T-Out 18:12
 (F) Second Final Flow 42 ☒ Mileage 78 - 58.50
 (G) Final Shut-In 1224 ☐ Sampler —
 (H) Final Hydrostatic 2043 ☐ Straddle —

Initial Open 30 ☐ Shale Packer — ☐ Ruined Shale Packer —
 Initial Shut-In 45 ☐ Extra Packer — ☐ Ruined Packer —
 Final Flow 30 ☐ Extra Recorder — ☐ Extra Copies —
 Final Shut-In 45 ☐ Day Standby — Sub Total 0
 Sub Total 1533.50 ☐ Accessibility — Total 1533.50
 MP/DST Disc't —

Approved By Max Lovely

Our Representative [Signature]

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



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **63791**

Well Name & No. Whithorn 35 ABD #1 Test No. 2 Date 4-17-17
 Company Ritchie Exploration Elevation 3345 KB 3340 GL
 Address _____
 Co. Rep / Geo. Max Lovely Rig WW #10
 Location: Sec. 35 Twp. 16 Rge. 37W Co. Wichita State KS

Interval Tested 4420 4472 Zone Tested Altamont
 Anchor Length 52 Drill Pipe Run _____ Mud Wt. 9.1
 Top Packer Depth 4415 Drill Collars Run 119 Vis 64
 Bottom Packer Depth 4420 Wt. Pipe Run — WL 8.8
 Total Depth 4472 Chlorides _____ ppm System LCM 5

Blow Description IF: 1/4 blow died to surging surface blow.

IS: No return.

FF: No blow. Flushed tool no blow.

FS: No return.

Rec	Feet of	%gas	%oil	%water	%mud
<u>10</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	Feet of	%gas	%oil	%water	%mud

Rec Total 10 BHT 112 Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic 2273 ☒ Test 1150
 (B) First Initial Flow 20 ☒ Jars 250
 (C) First Final Flow 23 ☒ Safety Joint 75
 (D) Initial Shut-In 956 ☒ Circ Sub NIL
 (E) Second Initial Flow 24 ☐ Hourly Standby _____
 (F) Second Final Flow 27 ☒ Mileage 78- 58.50
 (G) Final Shut-In 827 ☐ Sampler _____
 (H) Final Hydrostatic 2095 ☐ Straddle _____

T-On Location 17:20
 T-Started 17:37
 T-Open 19:20
 T-Pulled 21:50
 T-Out 23:38

Comments _____

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

☐ Ruined Shale Packer _____
☐ Ruined Packer _____
☐ Extra Copies _____
 Sub Total 0
 Total 1533.50
 MP/DST Disc't _____
 Sub Total 1533.50

Approved By

Max Lovely

Our Representative

[Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **63792**

Well Name & No. Whithm 35 ABD #1 Test No. 3 Date 4-18-17
 Company Ritchie Exploration Elevation 3345 KB 3340 GL
 Address _____
 Co. Rep / Geo. Max Lovely Rig WW #10
 Location: Sec. 35 Twp. 16 Rge. 37W Co. Wichita State KS

Interval Tested 4464 4548 Zone Tested Altmont B-c
 Anchor Length 84 Drill Pipe Run 4348 Mud Wt. 9.3
 Top Packer Depth 4459 Drill Collars Run 119 Vis 54
 Bottom Packer Depth 4464 Wt. Pipe Run — WL 9.6
 Total Depth 4548 Chlorides 7000 ppm System LCM 4

Blow Description IFI Surface blow died in 7 min.
ISI No return.
FFI No blow, Flashed tool no blow.
FBI No return.

Rec	Feet of	%gas	%oil	%water	%mud
<u>5</u>	<u>mud oil spots</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 5 BHT 110 Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic <u>2266</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>12:45</u>
(B) First Initial Flow <u>20</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>13:04</u>
(C) First Final Flow <u>23</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>14:50</u>
(D) Initial Shut-In <u>434</u>	<input checked="" type="checkbox"/> Circ Sub <u>N/L</u>	T-Pulled <u>16:50</u>
(E) Second Initial Flow <u>24</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>18:32</u>
(F) Second Final Flow <u>29</u>	<input checked="" type="checkbox"/> Mileage <u>78-x2</u> <u>117</u>	Comments <u>Released on</u>
(G) Final Shut-In <u>345</u>	<input type="checkbox"/> Sampler	<u>4-21-17 at 4:36pm</u>
(H) Final Hydrostatic <u>2172</u>	<input type="checkbox"/> Straddle	<u>loaded 4/20 15:00</u>

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

<input type="checkbox"/> Ruined Shale Packer	Sub Total <u>800</u>
<input type="checkbox"/> Ruined Packer	Total <u>1592</u>
<input type="checkbox"/> Extra Packer	MP/DST Disc't
<input type="checkbox"/> Extra Recorder	
<input checked="" type="checkbox"/> Day Standby <u>1.5d 8.5</u>	
<input type="checkbox"/> Accessibility	
Sub Total <u>1592</u>	

Approved By Max Lovely Our Representative [Signature]

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Max R. Lovely

GEOLOGIST'S REPORT

DRILLING TIME AND SAMPLE LOG

ANY Ritchie Exploration ELEV 004

KB 004 E # William Cobb

	DF
Unknown	

NEW NINE 334

35 TWSP 165 RGE 3/W Measurement

From **KB** **KS** **STATE** **Wicnita** **TY**

1A/1A/ D-12 #10	CA
-----------------	----

IMMOLATION SURFACE $2\frac{3}{8}$

4-1-1 COMP 4-21-2017 PRODUCTION -

4.950	TD 4.951	ELECTRIC
-------	----------	----------

3411 TYOT MUD Chrom PL, Comb

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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[illegible]

Anydrite Salt Sandstone Shale Carb sh Limestone Ool. Lime Chert Dolomite

DRILLING TIME IN MINUTES
Rate of Penetration Decreases

5" 10" 15" 20" 25"

DEPTH

LITHOLOGY

SAMPLE DESCRIPTIONS

OIL SHOWS

REMARKS

2500

ANHYDRITE
2517 +828

BASE
ANHYDRITE
2535 +810

3500

CHART CHANGE

3600

STOTLER
3596 -251

3700

3800

3900

HEEBNER
3981 -636

TORONTO
4000
3998 -653

4100

4200

4300

4400

4500

4600

4700

4800

4900

5000

5100

5200

5300

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8200

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8600

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12100

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12900

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13100

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40600

40700

40800

40900

41000

41100

41200

41300

41400

41500

41600

41700

41800

41900

42000

42100

42200

42300

42400

42500

42600

5" 10" 15" 20" 25"	DEPTH	SAMPLE DESCRIPTIONS	THICKNESS	REMARKS
DRILLING TIME Minutes/Foot  Rate of Penetration Decreases	LITHOLOGY 14			