KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

1060876

Form ACO-1
June 2009
Form Must Be Typed
Form must be Signed
All blanks must be Filled

WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # 3882
Name: Samuel Gary Jr. & Associates, Inc.
Address 1: 1515 WYNKOOP, STE 700
Address 2:
City: DENVER State: CO Zip: 80202 + __ __ __ __
Contact Person: CLAYTON CAMOZZI
Phone: (303) 831-4673
CONTRACTOR: License # 31548
Name: Discovery Drilling
Wellsite Geologist: TIM HEDRICK
Purchaser:

Designate Type of Completion:

- [x] New Well
- [ ] Re-Entry
- [ ] Workover

- [ ] Oil
- [ ] WSW
- [ ] SWD
- [ ] SIOW
- [ ] Gas
- [x] 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
- [ ] Conv. to GSW
- [ ] Plug Back: Plug Back Total Depth
- [ ] Commingled Permit #:
- [ ] Dual Completion Permit #:
- [ ] SWD Permit #:
- [ ] ENHR Permit #:
- [ ] GSW Permit #:

04/12/2011	04/20/2011	04/20/2011
Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date

API No. 15 - 15-051-26130-00-00
Spot Description:
NE - NE - NW - NW Sec. 5 Twp. 15 S. R. 16 [ ] East [x] West
220 Feet from [x] North / [ ] South Line of Section
1050 Feet from [ ] East / [x] West Line of Section
Footages Calculated from Nearest Outside Section Corner:
[ ] NE [x] NW [ ] SE [ ] SW
County: Ellis
Lease Name: RAJEWSKI ET AL Well #: 1-5
Field Name:
Producing Formation: N/A
Elevation: Ground: 1881 Kelly Bushing: 1889
Total Depth: 3548 Plug Back Total Depth:
Amount of Surface Pipe Set and Cemented at: 1025 Feet
Multiple Stage Cementing Collar Used? [ ] Yes [x] 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: 59000 ppm Fluid volume: 560 bbls
Dewatering method used: Hauled to Disposal

Location of fluid disposal if hauled offsite:

Operator Name: TDI INC
Lease Name: DREILING B License #: 4787
Quarter SW Sec. 22 Twp. 14 S. R. 16 [ ] East [x] West
County: ELLIS Permit #: D25112

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

- [x] **Letter of Confidentiality Received**
  Date: 08/05/2011
- [x] **Confidential Release Date:** 08/04/2013
- [x] **Wireline Log Received**
- [ ] **Geologist Report Received**
- [ ] **UIC Distribution**

ALT [x] I [ ] II [ ] III **Approved by:** NAOMI JAMES **Date:** 08/08/2011

Side Two

1060876

Operator Name: Samuel Gary Jr. & Associates, Inc. Lease Name: RAJEWSKI ET AL Well #: 1-5

Sec. 5 Twp. 15 S. R. 16 ☐ East ☑ West County: Ellis

INSTRUCTIONS: Show important tops and base 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. Attach complete copy of all Electric Wire-line Logs surveyed. Attach final geological well site report.

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

Electric Log Submitted Electronically ☑ Yes ☐ No
(If no, Submit Copy)

List All E. Logs Run:
Attached

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

Name	Top	Datum
TOPEKA	2893	-1004
HEEBNER	3116	-1227
DOUGLAS	3149	-1260
LANSING	3166	-1277
ARBUCKLE	3442	-1553
TD	3548	

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	12.25	8.625	23	1025	CLASS A	370	2%GEL, 3%CC

ADDITIONAL CEMENTING / SQUEEZE RECORD

Purpose:
☐ Perforate
☐ Protect Casing
☐ Plug Back TD
☐ Plug Off Zone

Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
-			
-			

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	Samuel Gary Jr. & Associates, Inc.
Well Name	RAJEWSKI ET AL 1-5
Doc ID	1060876

All Electric Logs Run

DIL
MICRO
POR
SONIC
SPECTRAL

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/

August 05, 2011

CLAYTON CAMOZZI
Samuel Gary Jr. & Associates, Inc.
1515 WYNKOOP, STE 700
DENVER, CO 80202

Re: ACO1
API 15-051-26130-00-00
RAJEWSKI ET AL 1-5
NW/4 Sec.05-15S-16W
Ellis 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 at 303-831-4673.

Respectfully,
CLAYTON CAMOZZI

Notice: *Fill out COMPLETELY and return to Conservation Division at the address below within 60 days from plugging date.*

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

1055244

Form CP-4
March 2009
Type or Print on this Form
Form must be Signed
All blanks must be Filled

WELL PLUGGING RECORD

K.A.R. 82-3-117

OPERATOR: License #: 3882
Name: Samuel Gary Jr. & Associates, Inc.
Address 1: 1515 WYNKOOP, STE 700
Address 2:
City: DENVER State: CO Zip: 80202 + ____
Contact Person: CLAYTON CAMOZZI
Phone: (303) 831-4673
Type of Well: *(Check one)* ☐ Oil Well ☐ Gas Well ☐ OG ☑ D&A ☐ Cathodic
☐ Water Supply Well ☐ Other: ☐ SWD Permit #:
☐ ENHR Permit #: ☐ Gas Storage Permit #:
Is ACO-1 filed? ☐ Yes ☑ No If not, is well log attached? ☐ Yes ☐ No
Producing Formation(s): List All *(If needed attach another sheet)*
Depth to Top: Bottom: T.D.
Depth to Top: Bottom: T.D.
Depth to Top: Bottom: T.D.

API No. 15 - 15-051-26130-00-00
Spot Description:
NE - NE - NW - NW Sec. 5 Twp. 15 S. R. 16 ☐ East ☑ West
220 Feet from ☑ North / ☐ South Line of Section
1,050 Feet from ☐ East / ☑ West Line of Section
Footages Calculated from Nearest Outside Section Corner:
☐ NE ☑ NW ☐ SE ☐ SW
County: Ellis
Lease Name: RAJEWSKI ET AL Well #: 1-5
Date Well Completed: 4/19/2011
The plugging proposal was approved on: *(Date)*
by: CASE MORRIS *(KCC **District** Agent's Name)*
Plugging Commenced: 4/19/2011
Plugging Completed: 4/19/2011

Show depth and thickness of all water, oil and gas formations.

Oil, Gas or Water Records		*Casing Record (Surface, Conductor & Production)*			
Formation	Content	Casing	Size	Setting Depth	Pulled Out
		SURFACE	8.6250	1025	0

Describe in detail the manner in which the well is plugged, indicating where the mud fluid was placed and the method or methods used in introducing it into the hole. If cement or other plugs were used, state the character of same depth placed from (bottom), to (top) for each plug set.

CEMENT PLUGS SET THROUGH DRILL PIPE (185 SX 60/40 POZ 4% GEL, 1/4 #/SK FLOW SEAL)
25 SX @ 3424', 25 SX @ 1100', 80 SX @ 650', 10 SX @ 40' TO THE SURFACE
30 SX RATHOLE, 15 SX MOUSEHOLE

Plugging Contractor License #: 31548 Name: Discovery Drilling
Address 1: PO BOX 763 Address 2:
City: HAYS State: KS Zip: 67601 + 0763
Phone: (785) 623-2920
Name of Party Responsible for Plugging Fees: SAMUEL GARY JR. & ASSOCIATES, INC.
State of COLORADO County, DENVER , ss.
CLAYTON CAMOZZI ☑ Employee of Operator or ☐ Operator on above-described well,
(Print Name)
being first duly sworn on oath, says: That I have knowledge of the facts statements, and matters herein contained, and the log of the above-described well is as filed, and the same are true and correct, so help me God.

Submitted Electronically

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

QUALITY OILWELL CEMENTING, INC.
PO Box 32 - 740 West Wichita Ave, Russell KS 67665
Phone:785-324-1041 fax:785-483-1087
Email: cementing@ruraltel.net

Date: 4/14/2011
Invoice # 4418

P.O.#:

Due Date: 5/14/2011
Division: *Russell*

Invoice

Contact:
Samuel Gary Jr & Associates Inc
Address/Job Location:
Samuel Gary Jr & Associates Inc
3111 W. 10th Street
Great Bend, KS 67503

☑ DRLG ☐ COMP ☐ W/O ☐ LOE ☐ GG

Account	8200-138
Well/Prospect	RAJEWSKI ET AL 1-5
Deck	
AFE	
Approval	
Description	

Reference:
RAJEWSKI ET AL 1-5

Description of Work:
LONG SURFACE JOB

Services / Items Included:	Quantity	Price	Taxable
Labor		$ 712.98	No
Common-Class A	370	$ 4,699.51	Yes
8 5/8" Basket	3	$ 986.96	Yes
Bulk Truck Matl-Material Service Charge	390	$ 812.05	No
Calcium Chloride	13	$ 509.70	Yes
8 5/8" Centralizer	3	$ 199.89	Yes
Flo Seal	90	$ 187.40	Yes
Pump Truck Mileage-Job to Nearest Camp	15	$ 155.85	No
Premium Gel (Bentonite)	7	$ 118.64	Yes
8 5/8" Top Rubber Plug	1	$ 110.36	Yes
Baffle Plate Aluminum, 8 5/8"	1	$ 93.70	Yes

Item	Quantity	Price	Taxable
Bulk Truck Mileage-Job to Nearest Bulk Plant	15	$91.20	No

Invoice Terms:
Net 30

SubTotal:	$	*8,678.24*
Discount Available ONLY if Invoice is Paid & Received within listed terms of invoice:	$	(1,301.74)
SubTotal for Taxable Items:	$	5,870.23
SubTotal for Non-Taxable Items:	$	900.24
Total:	$	7,376.51
6.30% Ellis County Sales Tax Tax:	$	369.82
Amount Due:	**$**	**7,746.33**
Applied Payments:		
Balance Due:	**$**	**7,746.33**

Thank You For Your Business!

Past Due Invoices are subject to a service charge (annual rate of 24%)
This does not include any applicable taxes unless it is listed.

QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025
Cell 785-324-1041
Home Office P.O. Box 32 Russell, KS 67665

No. 4418

Date	Sec.	Twp.	Range	County	State	On Location	Finish
4-13-11	5	15	16	Ellis	KS		1:45 PM

Lease Rajewski et al Well No. 1-5 Location Victoria S. To Antonino rd 1¼ E S into

Contractor	Discovery #2	Owner	
Type Job	Long Surface	To Quality Oilwell Cementing, Inc. You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.	
Hole Size	12¼	T.D.	1025
Csg.	8 5/8 (23 lb)	Depth	1025.11
Charge To	Sam Gary Jr.		
Tbg. Size		Depth	
Street			
Tool		Depth	
City		State	
Cement Left in Csg.	33.52	Shoe Joint	33.52
The above was done to satisfaction and supervision of owner agent or contractor.			
Meas Line		Displace	63.06 bbls
Cement Amount Ordered	370 com 3% cc 2% gel		

EQUIPMENT

	No.		
Pumptrk	1	Cementer / Helper	Brandon
Bulktrk	13	Driver / Driver	Cisco
Bulktrk	P4	Driver / Driver	Cory

JOB SERVICES & REMARKS

Remarks:	
Rat Hole	
Mouse Hole	
Centralizers	
Baskets	
D/V or Port Collar	

Mix 370sk and cement did circ. Shut in @ 650psi

Thank You

Common	370
Poz. Mix	
Gel.	7
Calcium	13
Hulls	
Salt	
Flowseal	90#
Kol-Seal	
Mud CLR 48	
CFL-117 or CD110 CAF 38	
Sand	
Handling	390
Mileage	

FLOAT EQUIPMENT

Guide Shoe	
Centralizer	- 3
Baskets	- 3
AFU Inserts	
Float Shoe	
Latch Down	
1 - Baffle plate	
1 - 8 5/8 head & manifold	
Pumptrk Charge	
Mileage	15
Tax	
Discount	
Total Charge	

X Signature

Date: 4/22/2011
Invoice # 5069

P.O.#:

Due Date: 5/22/2011
Division: *Russell*

QUALITY OILWELL CEMENTING, INC.
PO Box 32 - 740 West Wichita Ave, Russell KS 67665
Phone:785-324-1041 fax:785-483-1087
Email: cementing@ruraltel.net

Invoice

V105-AP-2/2 6/2

Contact:
Samuel Gary Jr & Associates Inc
Address/Job Location:
Samuel Gary Jr & Associates Inc
3111 W. 10th Street
Great Bend, KS 67503

Reference:
REJEWSKI ET. AL. 1-5

Description of Work:
PLUG JOB

☑ DRLG ☐ COMP ☐ W/O ☐ LOE ☐ GG

Account	8200-145
Well/Prospect	REJEWSKI ET AL 1-5
Deck	
AFE	
Approval	
Description	

Services / Items Included:	Quantity	Price	Taxable
Labor		$ 991.39	No
Common-Class A	120	$ 1,589.49	Yes
Bulk Truck Matl-Material Service Charge	207	$ 449.49	No
POZ Mix-Standard	80	$ 399.54	Yes
Pump Truck Mileage-Job to Nearest Camp	15	$ 162.53	No
Premium Gel (Bentonite)	7	$ 123.73	Yes
Flo Seal	50	$ 108.57	Yes
Bulk Truck Mileage-Job to Nearest Bulk Plant	15	$ 95.11	No
Dry Hole Plug	1	$ 60.80	Yes

Item	Quantity	Price	Taxable

Invoice Terms:
Net 30

SubTotal:	$	*3,980.64*
Discount Available ONLY if Invoice is Paid & Received within listed terms of invoice:	$	(597.10)
SubTotal for Taxable Items:	$	1,939.81
SubTotal for Non-Taxable Items:	$	601.06
Total:	$	3,383.54
6.30% Ellis County Sales Tax Tax:	$	122.21
Amount Due:	**$**	**3,505.75**
Applied Payments:		
Balance Due:	**$**	**3,505.75**

Thank You For Your Business!

Past Due Invoices are subject to a service charge (annual rate of 24%)
This does not include any applicable taxes unless it is listed.

RECEIVED
MAY 04 2011
SAMUEL GARY JR.
& ASSOCIATES, INC.

QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

3-2025
24-1041

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

No. 5069

	Sec.	Twp.	Range	County	State	On Location	Finish
Date 4-19-11	5	15	16	Ellis	Kansas		6:00pm

Lease Kajewski Ft A1 Well No. 1-5 Location Victoria 6S 1/4E

Contractor Discovery Drilling Rig 2

Type Job Plug

Hole Size 7⅞ T.D. 3550

Csg. Depth

Tbg. Size Depth

Tool Depth

Cement Left in Csg. Shoe Joint

Meas Line Displace

EQUIPMENT

Pumptrk 9 No. Cementer Helper Steve

Bulktrk 3 No. Driver Driver Paul

Bulktrk No. Driver Driver Doug

JOB SERVICES & REMARKS

Remarks:

Rat Hole

Mouse Hole

Centralizers

Baskets

D/V or Port Collar

1st Plug @ 3424 — 25sx

2nd " " 1100 — 40sx

3rd " " 650 — 80sx

4th " " 40 — 10sx

Rat Hole — 30sx

Mouse Hole — 15sx

Thank You

X Signature

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

Owner

Charge To Samuel Gray Sr. & Associates

Street

City State

The above was done to satisfaction and supervision of owner agent or contractor.

Cement Amount Ordered 200 60/40 4% Gel 1/4# Flo-Seal per sk

Common 120

Poz. Mix 80

Gel. 7

Calcium

Hulls

Salt

Flowseal 50#

Kol-Seal

Mud CLR 48

CFL-117 or CD110 CAF 38

Sand

Handling 207

Mileage

FLOAT EQUIPMENT

Guide Shoe

Centralizer

Baskets

AFU Inserts

Float Shoe

Latch Down

1-8⅝ Wood Plug

Pumptrk Charge Plug

Mileage 15

Tax

Discount

Total Charge

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

Well Name:	RAHEWSKI 1-5		
Location:	SEC 5, 15S, 16W, Ellis Co. Kansas		
License Number:	15-051-26130-0000	**Region:**	Wildcat
Spud Date:	04/12/2011	**Drilling Completed:**	04/18/2011
Surface Coordinates:	220 FNL / 1050 FWL		
Bottom Hole Coordinates:			
Ground Elevation (ft):	1881'	**K.B. Elevation (ft):**	1889'
Logged Interval (ft):	1700' **To:** 3550'	**Total Depth (ft):**	3550'
Formation:	Lansing, Arbuckle		
Type of Drilling Fluid:			

OPERATOR

Company: Samuel Gary Jr, & Assoc.
Address: 1515 Wykoop, Ste. # 700
Denver, Colo. 80202
Geo: Clayton Camozzi

GEOLOGIST

Name: JASON MARSHALL
Company: Earth Tech OGL, Inc.
Address: PO Box 683
Hooker, Okla . 73945
Off. 888-543-8378 Cell: 620-655-1298

Circulating Report

DST's Report

DST #1, 3149'-3200', 10,60,30,90
IFP-WEAK BLOW THROUGHOUT 1/4", ISI-NO BLOW BACK, FF-WEAK BLOW THROUGHOUT 1", FSI-NO BLOW BACK, IH-1531, FH-1486, FIF-35, FFF-40, SIF-43, SFF-53, ISI-764, FSI-741, 100% MUD

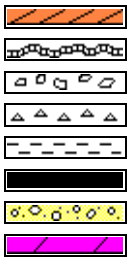
DST #2, 3220'-3268', 10,60,30,90
IFP-WEAK BLOW THROUGHOUT 1/4", ISI-NO BLOW BACK, FF-WEAK BLOW THROUGHOUT 1 1/2", FSI-NO BLOW BACK, IH-1577, FH-1527, FIF-34, FFF-43, SIF-47, SFF-55, ISI-746, FSI-734, 100% MUD

DST #3, 3286'-3372', 10,60,20,70
IFP-1/4" BLOW THROUGHOUT, ISI-NO BLOW BACK, FF-NO BLOW, FSI-NO BLOW BACK, IH-1636, FH-1591, FIF-48, FFF-50, SIF-51, SFF-53, ISI-140, FSI-97, 100% MUD

DST #4, NO PAPERWORK FROM TESTER

DST's Report

ROCK TYPES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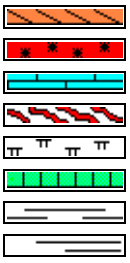
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Meta
Mrlst
Salt
Shale
Shcol


Shgy
Sltst
Ss
Till
Carb sh
Dol
Dtd
Gry sh


Sandylms
Shale
Sltstn
Shlyslts
Sltysh
Lms

ACCESSORIES

MINERAL
- Anhy
- Arggrn
- Arg
- Bent
- Bit
- Brecfrag
- Calc
- Carb
- Chtdk
- Chtlt
- Dol
- Feldspar
- Ferrpel
- Ferr
- Glau
- Gyp
- Hvymin
- Kaol
- Marl
- Minxl
- Nodule
- Phos
- Pyr
- Salt
- Sandy
- Silt
- Sil
- Sulphur
- Tuff
- Chlorite
- Dol
- Sand
- Slty

FOSSIL
- Algae
- Amph
- Belm
- Bioclst
- Brach
- Bryozoa
- Cephal
- Coral
- Crin
- Echin
- Fish
- Foram
- Fossil
- Gastro
- Oolite
- Ostra
- Pelec
- Pellet
- Pisolite
- Plant
- Strom
- Fuss
- Oomold

STRINGER
- Anhy
- Arg
- Bent
- Coal
- Dol
- Gyp
- Ls
- Mrst
- Sltstrg
- Ssstrg
- Carbsh
- Clystn
- Dol
- Grysh
- Gryslt
- Lms
- Sandylms
- Sh
- Sltstn

TEXTURE
- Boundst
- Chalky
- Cryxln
- Earthy
- Finexln
- Grainst
- Lithogr
- Microxln
- Mudst
- Packst
- Wackest

OTHER SYMBOLS

POROSITY TYPE
- Earthy
- Fenest
- Fracture
- Inter
- Moldic
- Organic
- Pinpoint
- Vuggy

SORTING
- Well
- Moderate
- Poor

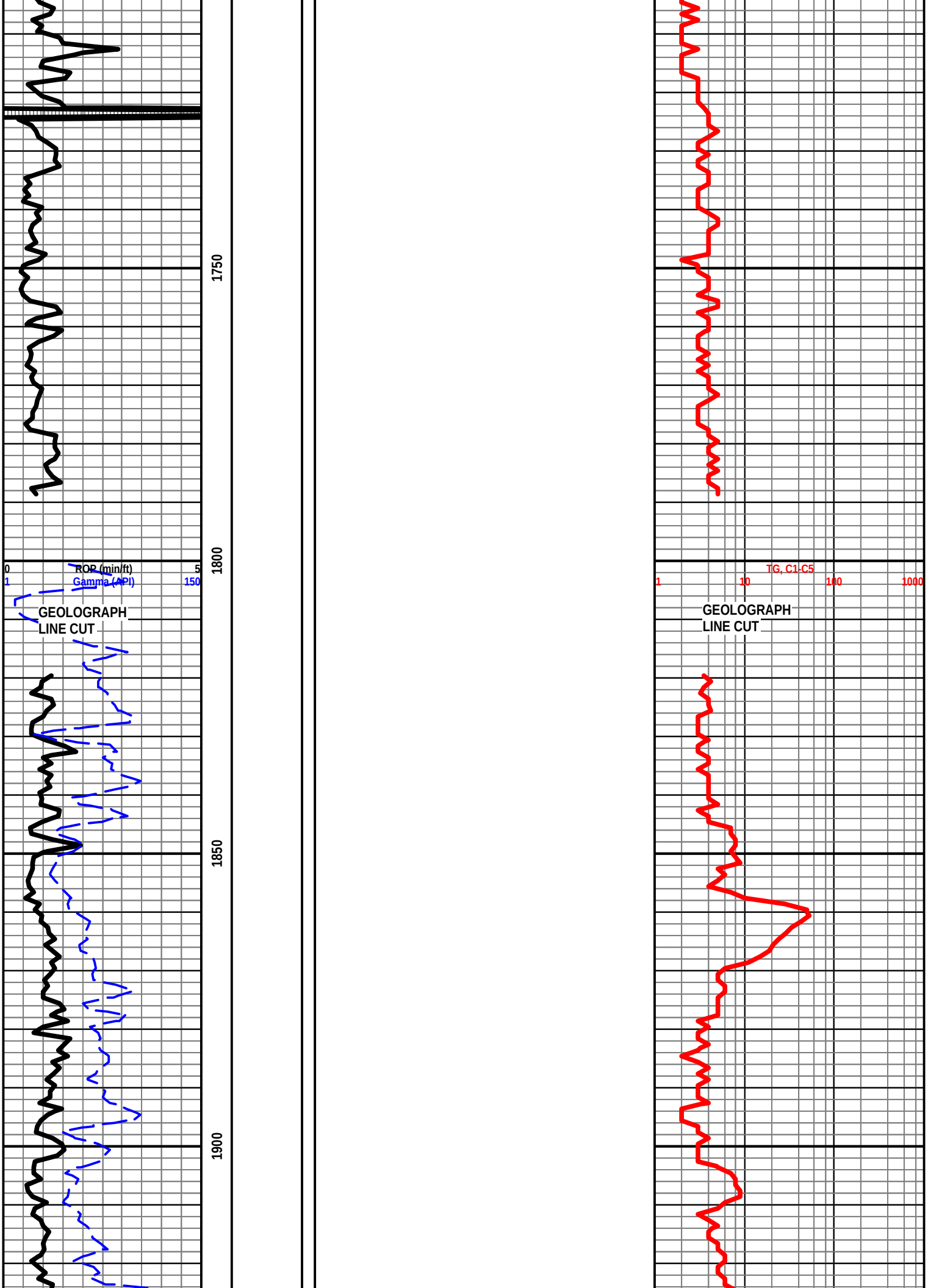
ROUNDING
- Rounded
- Subrnd
- Subang
- Angular

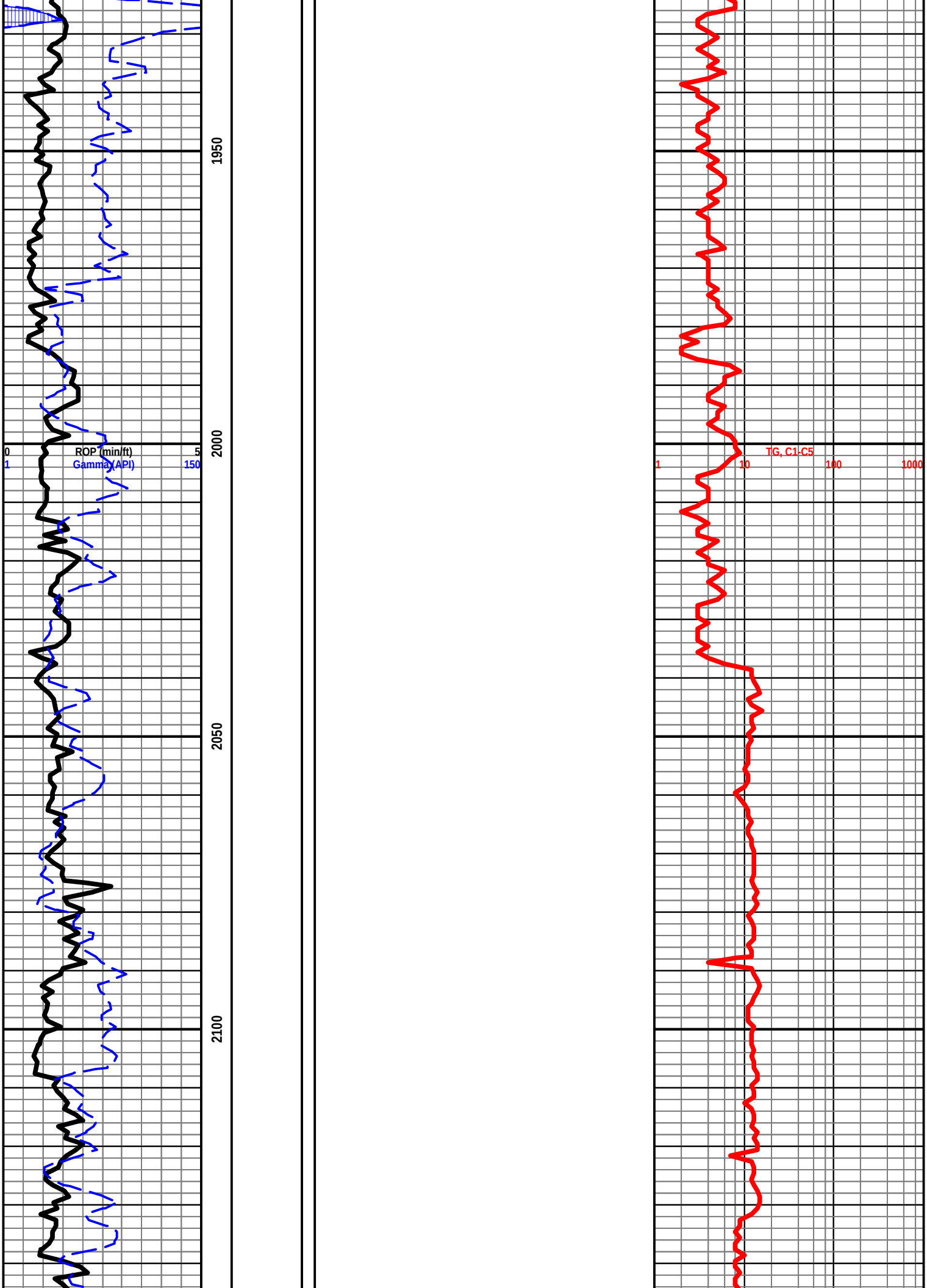
OIL SHOWS
- Even
- Spotted
- Ques
- Dead
- Gas show

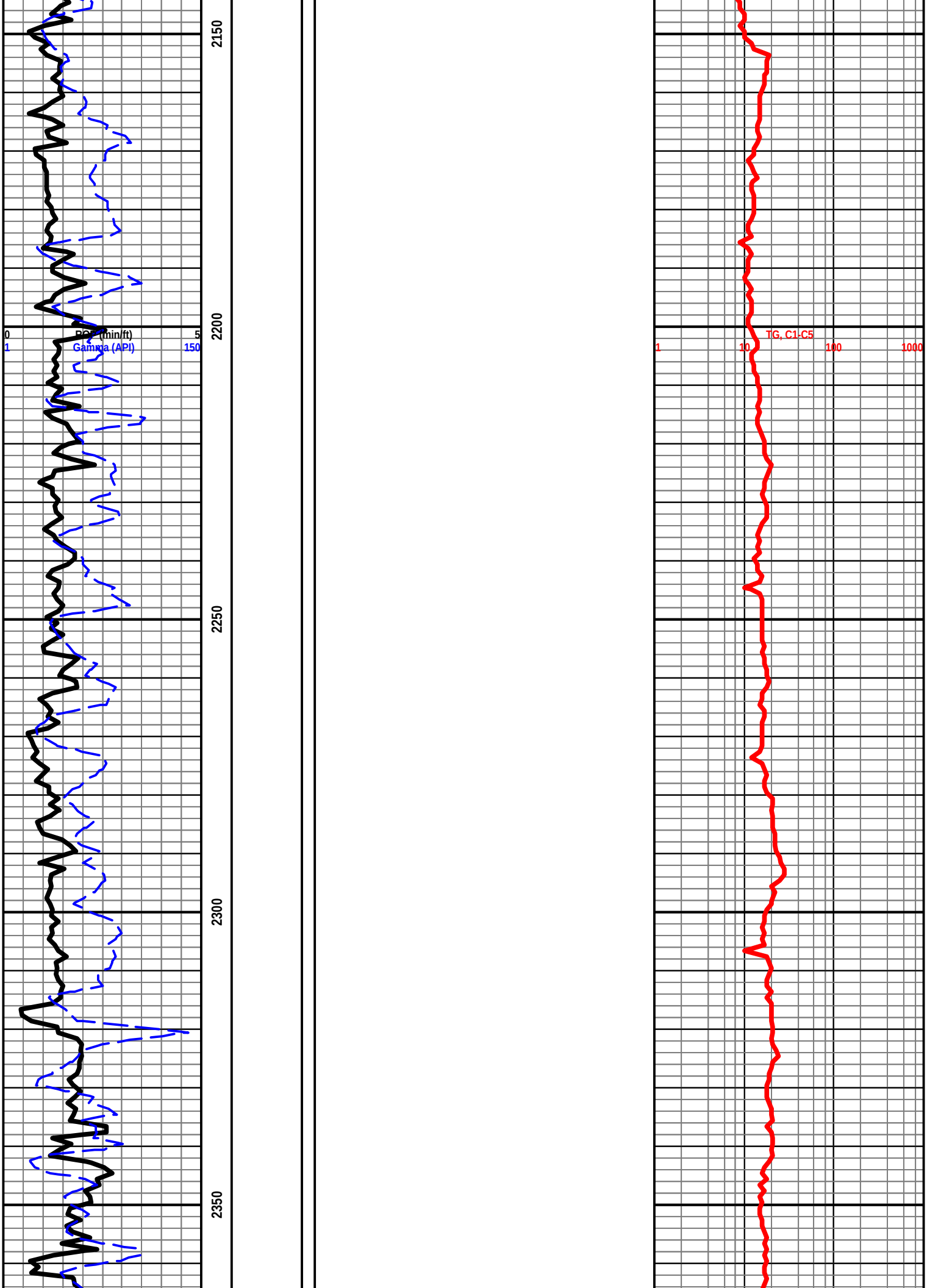
INTERVALS
- Core
- Dst
- Dst

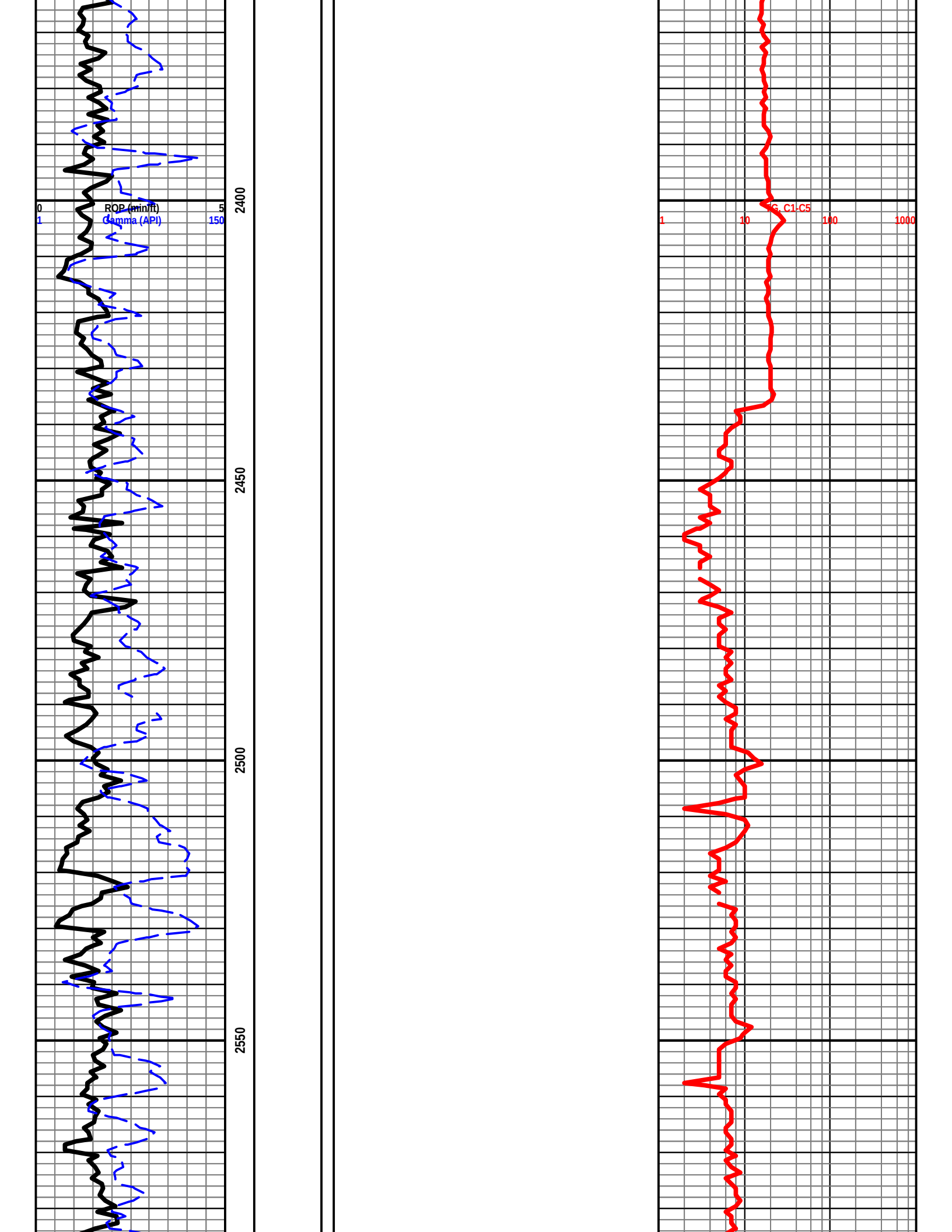
EVENTS
- Rft
- Sidewall

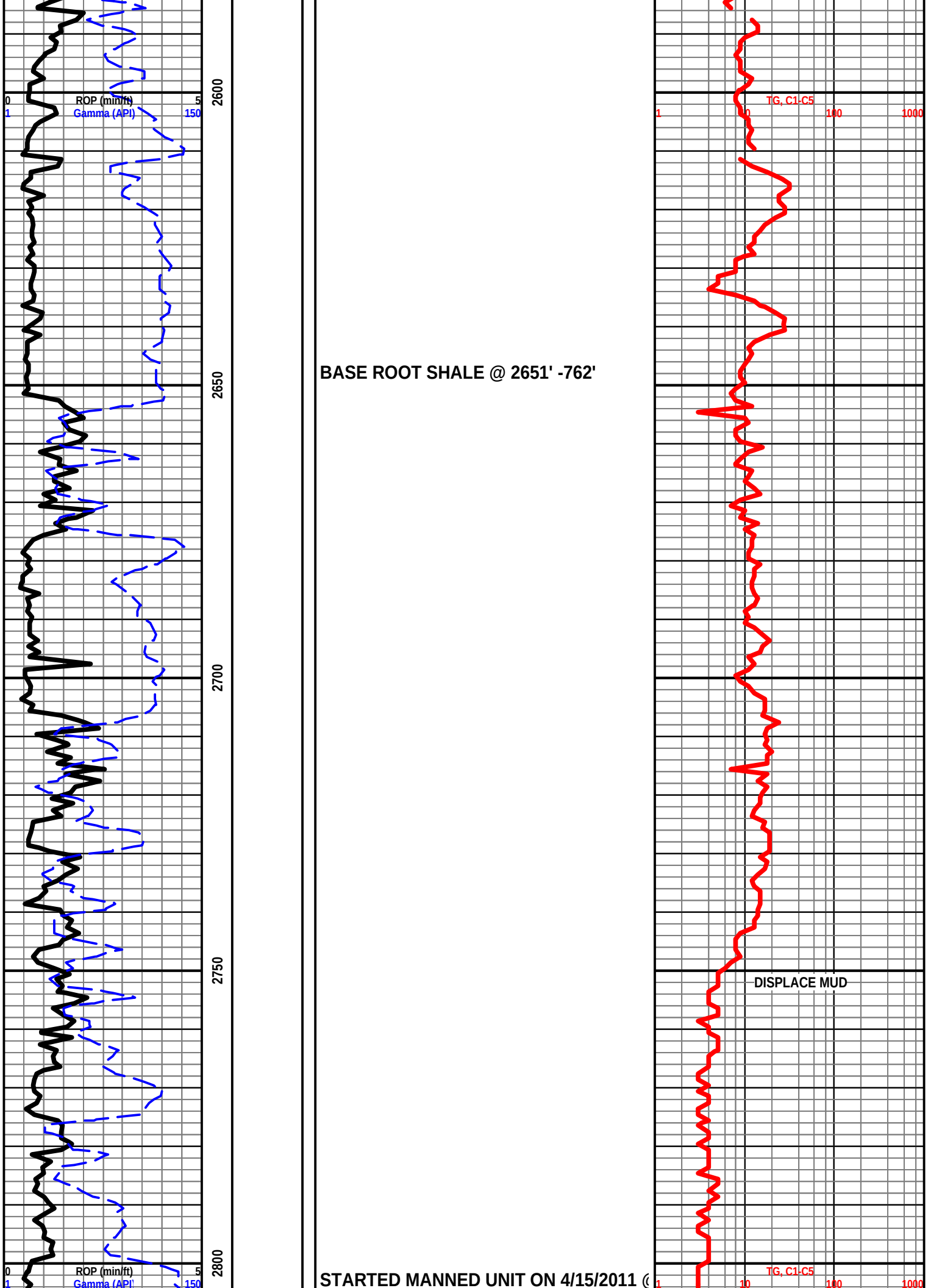
Curve Track 1 ROP (min/ft) Gamma (API)	Depth	Lithology	Oil Shows	Geological Descriptions	TG, C1-C5 TG (units) C1 (units) C2 (units) C3 (units) C4 (units) C5 (units)
0 ROP (min/ft) 5 1 Gamma (API) 150 DRILLING CONTRACTOR DISCOVERY #2	16			START UNMANNED UNIT 04/14/11 @ 2:15 P.M.	1 TG, C1-C5 10 100 1000 DRILLING CONTRACTOR DISCOVERY #2
	1700				

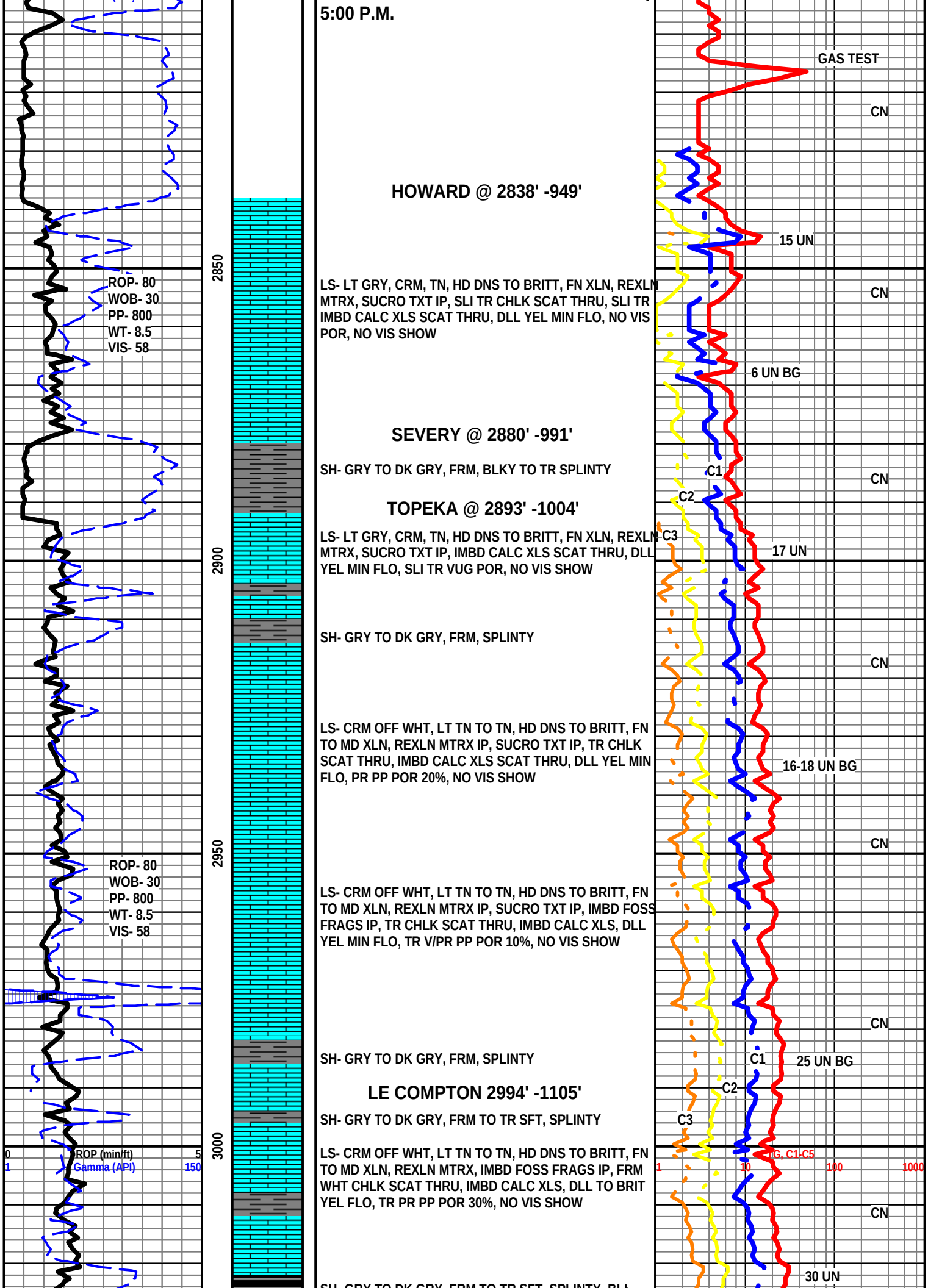

0
ROP (min/ft)
5
1
Gamma (API)
150
GEOLOGRAPH
LINE CUT
1750
1800
1850
1900
TG, C1-C5
1
10
100
1000
GEOLOGRAPH
LINE CUT

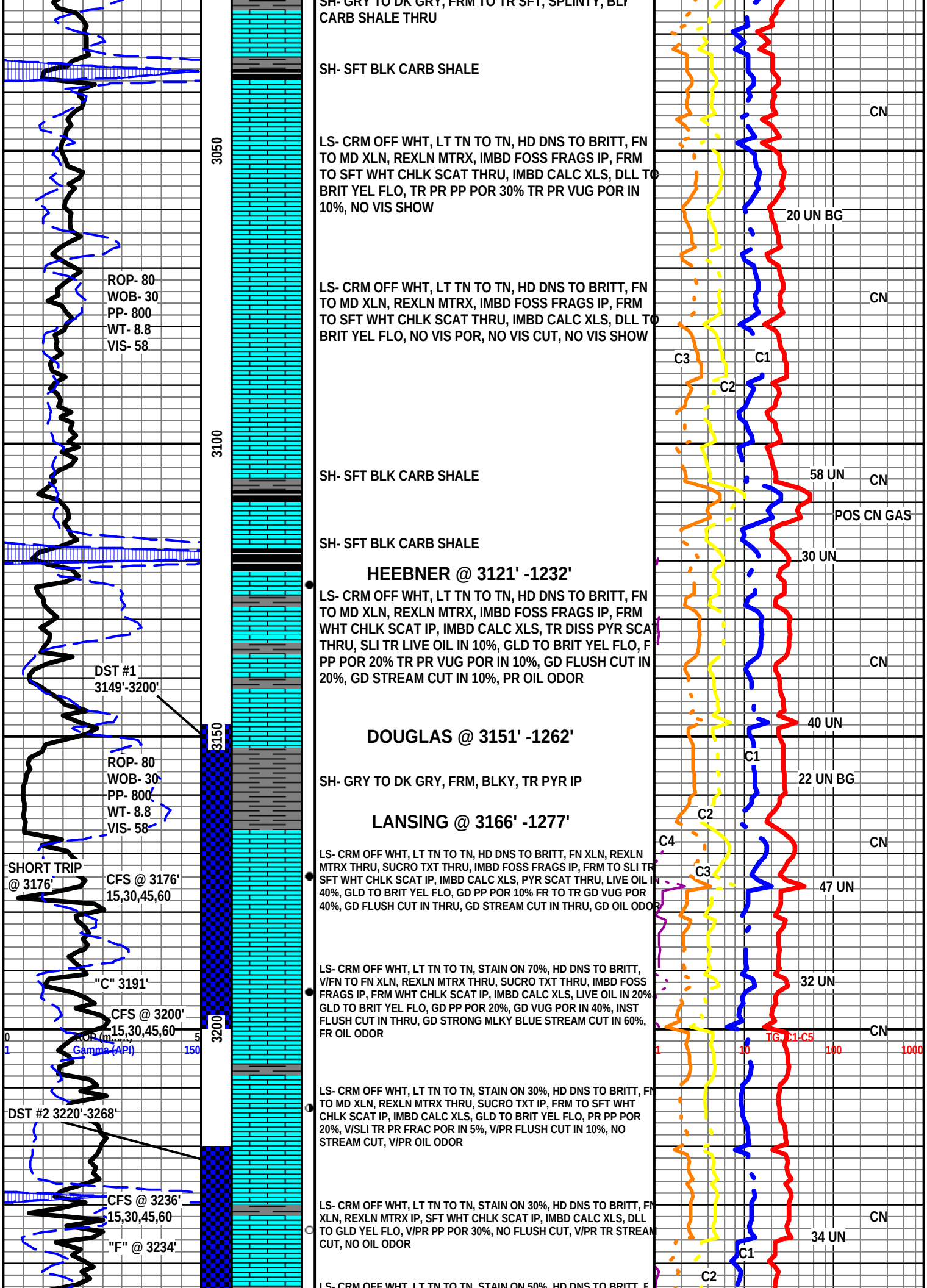

1950
2000
2050
2100
0
ROP (min/ft)
5
1
Gamma(API)
150
TG, C1-C5
1
10
100
1000

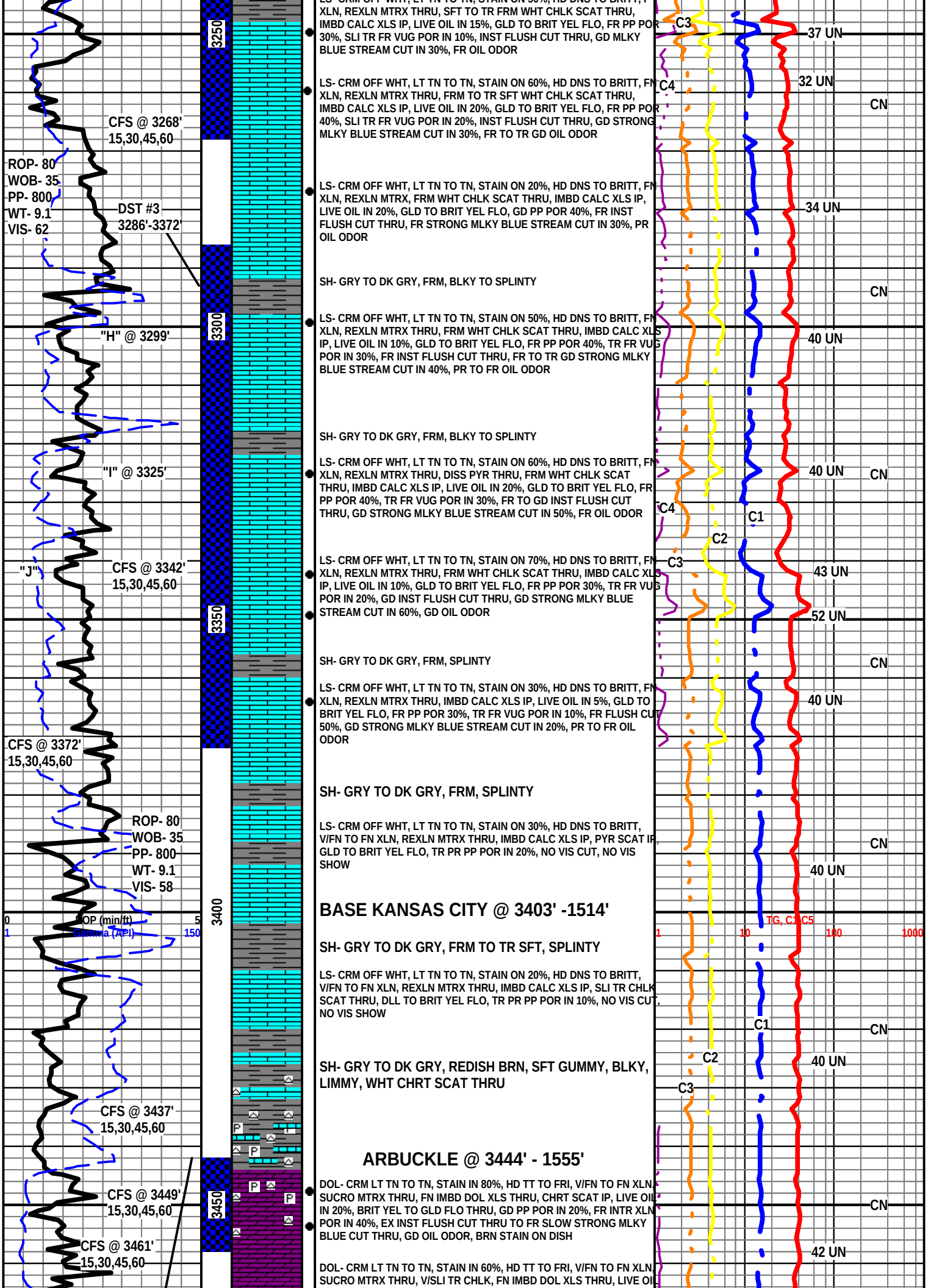

0
ROP (min/ft)
5
1
Gamma (API)
150
2150
2200
2250
2300
2350
TG, C1-C5
1
10
100
1000


0
ROP (min/ft)
5
1
Gamma (API)
150
2400
2450
2500
2550
TG, C1-C5
1
10
100
1000


0
ROP (min/ft)
5
1
Gamma (API)
150
2600
2650
2700
2750
2800
BASE ROOT SHALE @ 2651' -762'
TG, C1-C5
1
10
100
1000
DISPLACE MUD
STARTED MANNED UNIT ON 4/15/2011 @


5:00 P.M.
GAS TEST
CN
HOWARD @ 2838' -949'
15 UN
ROP- 80
WOB- 30
PP- 800
WT- 8.5
VIS- 58
LS- LT GRY, CRM, TN, HD DNS TO BRITT, FN XLN, REXLN MTRX, SUCRO TXT IP, SLI TR CHLK SCAT THRU, SLI TR IMBD CALC XLS SCAT THRU, DLL YEL MIN FLO, NO VIS POR, NO VIS SHOW
6 UN BG
SEVERY @ 2880' -991'
SH- GRY TO DK GRY, FRM, BLKY TO TR SPLINTY
C1
C2
TOPEKA @ 2893' -1004'
C3
LS- LT GRY, CRM, TN, HD DNS TO BRITT, FN XLN, REXLN MTRX, SUCRO TXT IP, IMBD CALC XLS SCAT THRU, DLL YEL MIN FLO, SLI TR VUG POR, NO VIS SHOW
17 UN
SH- GRY TO DK GRY, FRM, SPLINTY
LS- CRM OFF WHT, LT TN TO TN, HD DNS TO BRITT, FN TO MD XLN, REXLN MTRX IP, SUCRO TXT IP, TR CHLK SCAT THRU, IMBD CALC XLS SCAT THRU, DLL YEL MIN FLO, PR PP POR 20%, NO VIS SHOW
16-18 UN BG
ROP- 80
WOB- 30
PP- 800
WT- 8.5
VIS- 58
LS- CRM OFF WHT, LT TN TO TN, HD DNS TO BRITT, FN TO MD XLN, REXLN MTRX IP, SUCRO TXT IP, IMBD FOSS FRAGS IP, TR CHLK SCAT THRU, IMBD CALC XLS, DLL YEL MIN FLO, TR V/PR PP POR 10%, NO VIS SHOW
SH- GRY TO DK GRY, FRM, SPLINTY
C1
25 UN BG
LE COMPTON 2994' -1105'
C2
C3
SH- GRY TO DK GRY, FRM TO TR SFT, SPLINTY
LS- CRM OFF WHT, LT TN TO TN, HD DNS TO BRITT, FN TO MD XLN, REXLN MTRX, IMBD FOSS FRAGS IP, FRM WHT CHLK SCAT THRU, IMBD CALC XLS, DLL TO BRIT YEL FLO, TR PR PP POR 30%, NO VIS SHOW
30 UN
2850
2900
2950
3000
0
ROP (min/ft)
5
1
Gamma (API)
150
1
10
100
1000


SH- GRY TO DK GRY, FRM TO TR SFT, SPLINTY, BLY CARB SHALE THRU
SH- SFT BLK CARB SHALE
LS- CRM OFF WHT, LT TN TO TN, HD DNS TO BRITT, FN TO MD XLN, REXLN MTRX, IMBD FOSS FRAGS IP, FRM TO SFT WHT CHLK SCAT THRU, IMBD CALC XLS, DLL TO BRIT YEL FLO, TR PR PP POR 30% TR PR VUG POR IN 10%, NO VIS SHOW
ROP- 80
WOB- 30
PP- 800
WT- 8.8
VIS- 58
LS- CRM OFF WHT, LT TN TO TN, HD DNS TO BRITT, FN TO MD XLN, REXLN MTRX, IMBD FOSS FRAGS IP, FRM TO SFT WHT CHLK SCAT THRU, IMBD CALC XLS, DLL TO BRIT YEL FLO, NO VIS POR, NO VIS CUT, NO VIS SHOW
SH- SFT BLK CARB SHALE
SH- SFT BLK CARB SHALE
HEEBNER @ 3121' -1232'
LS- CRM OFF WHT, LT TN TO TN, HD DNS TO BRITT, FN TO MD XLN, REXLN MTRX, IMBD FOSS FRAGS IP, FRM WHT CHLK SCAT IP, IMBD CALC XLS, TR DISS PYR SCAT THRU, SLI TR LIVE OIL IN 10%, GLD TO BRIT YEL FLO, F PP POR 20% TR PR VUG POR IN 10%, GD FLUSH CUT IN 20%, GD STREAM CUT IN 10%, PR OIL ODOR
DST #1
3149'-3200'
DOUGLAS @ 3151' -1262'
ROP- 80
WOB- 30
PP- 800
WT- 8.8
VIS- 58
SH- GRY TO DK GRY, FRM, BLKY, TR PYR IP
LANSING @ 3166' -1277'
SHORT TRIP
@ 3176'
CFS @ 3176'
15,30,45,60
LS- CRM OFF WHT, LT TN TO TN, HD DNS TO BRITT, FN XLN, REXLN MTRX THRU, SUCRO TXT THRU, IMBD FOSS FRAGS IP, FRM TO SLI TR SFT WHT CHLK SCAT IP, IMBD CALC XLS, PYR SCAT THRU, LIVE OIL IN 40%, GLD TO BRIT YEL FLO, GD PP POR 10% FR TO TR GD VUG POR 40%, GD FLUSH CUT IN THRU, GD STREAM CUT IN THRU, GD OIL ODOR
"C" 3191'
CFS @ 3200'
15,30,45,60
LS- CRM OFF WHT, LT TN TO TN, STAIN ON 70%, HD DNS TO BRITT, V/FN TO FN XLN, REXLN MTRX THRU, SUCRO TXT THRU, IMBD FOSS FRAGS IP, FRM WHT CHLK SCAT IP, IMBD CALC XLS, LIVE OIL IN 20%, GLD TO BRIT YEL FLO, GD PP POR 20%, GD VUG POR IN 40%, INST FLUSH CUT IN THRU, GD STRONG MLKY BLUE STREAM CUT IN 60%, FR OIL ODOR
ROP (m/hr)
Gamma (API)
DST #2 3220'-3268'
LS- CRM OFF WHT, LT TN TO TN, STAIN ON 30%, HD DNS TO BRITT, FN TO MD XLN, REXLN MTRX THRU, SUCRO TXT IP, FRM TO SFT WHT CHLK SCAT IP, IMBD CALC XLS, GLD TO BRIT YEL FLO, PR PP POR 20%, V/SLI TR PR FRAC POR IN 5%, V/PR FLUSH CUT IN 10%, NO STREAM CUT, V/PR OIL ODOR
CFS @ 3236'
15,30,45,60
LS- CRM OFF WHT, LT TN TO TN, STAIN ON 30%, HD DNS TO BRITT, FN XLN, REXLN MTRX IP, SFT WHT CHLK SCAT IP, IMBD CALC XLS, DLL TO GLD YEL FLO, V/PR PP POR 30%, NO FLUSH CUT, V/PR TR STREAM CUT, NO OIL ODOR
"F" @ 3234'
LS- CRM OFF WHT, LT TN TO TN, STAIN ON 50%, HD DNS TO BRITT, F
3050
3100
3150
3200
0
1
5
150
CN
20 UN BG
CN
C3
C1
C2
58 UN
CN
POS CN GAS
30 UN
CN
40 UN
C1
22 UN BG
C2
C4
CN
C3
47 UN
32 UN
CN
TG, C1-C5
1
10
100
1000
CN
34 UN
C1
C2


3250
3300
3350
3400
3450
CFS @ 3268'
15,30,45,60
ROP- 80
WOB- 35
PP- 800
WT- 9.1
VIS- 62
DST #3
3286'-3372'
"H" @ 3299'
"I" @ 3325'
"J"
CFS @ 3342'
15,30,45,60
CFS @ 3372'
15,30,45,60
ROP- 80
WOB- 35
PP- 800
WT- 9.1
VIS- 58
0
ROP (min/ft)
5
1
Gamma (API)
150
CFS @ 3437'
15,30,45,60
CFS @ 3449'
15,30,45,60
CFS @ 3461'
15,30,45,60
LS- CRM OFF WHT, LT TN TO TN, STAIN ON 80%, HD DNS TO BRITT, FN XLN, REXLN MTRX THRU, SFT TO TR FRM WHT CHLK SCAT THRU, IMBD CALC XLS IP, LIVE OIL IN 15%, GLD TO BRIT YEL FLO, FR PP POR 30%, SLI TR FR VUG POR IN 10%, INST FLUSH CUT THRU, GD MLKY BLUE STREAM CUT IN 30%, FR OIL ODOR
LS- CRM OFF WHT, LT TN TO TN, STAIN ON 60%, HD DNS TO BRITT, FN XLN, REXLN MTRX THRU, FRM TO TR SFT WHT CHLK SCAT THRU, IMBD CALC XLS IP, LIVE OIL IN 20%, GLD TO BRIT YEL FLO, FR PP POR 40%, SLI TR FR VUG POR IN 20%, INST FLUSH CUT THRU, GD STRONG MLKY BLUE STREAM CUT IN 30%, FR TO TR GD OIL ODOR
LS- CRM OFF WHT, LT TN TO TN, STAIN ON 20%, HD DNS TO BRITT, FN XLN, REXLN MTRX, FRM WHT CHLK SCAT THRU, IMBD CALC XLS IP, LIVE OIL IN 20%, GLD TO BRIT YEL FLO, GD PP POR 40%, FR INST FLUSH CUT THRU, FR STRONG MLKY BLUE STREAM CUT IN 30%, PR OIL ODOR
SH- GRY TO DK GRY, FRM, BLKY TO SPLINTY
LS- CRM OFF WHT, LT TN TO TN, STAIN ON 50%, HD DNS TO BRITT, FN XLN, REXLN MTRX THRU, FRM WHT CHLK SCAT THRU, IMBD CALC XLS IP, LIVE OIL IN 10%, GLD TO BRIT YEL FLO, FR PP POR 40%, TR FR VUG POR IN 30%, FR INST FLUSH CUT THRU, FR TO TR GD STRONG MLKY BLUE STREAM CUT IN 40%, PR TO FR OIL ODOR
SH- GRY TO DK GRY, FRM, BLKY TO SPLINTY
LS- CRM OFF WHT, LT TN TO TN, STAIN ON 60%, HD DNS TO BRITT, FN XLN, REXLN MTRX THRU, DISS PYR THRU, FRM WHT CHLK SCAT THRU, IMBD CALC XLS IP, LIVE OIL IN 20%, GLD TO BRIT YEL FLO, FR PP POR 40%, TR FR VUG POR IN 30%, FR TO GD INST FLUSH CUT THRU, GD STRONG MLKY BLUE STREAM CUT IN 50%, FR OIL ODOR
LS- CRM OFF WHT, LT TN TO TN, STAIN ON 70%, HD DNS TO BRITT, FN XLN, REXLN MTRX THRU, FRM WHT CHLK SCAT THRU, IMBD CALC XLS IP, LIVE OIL IN 10%, GLD TO BRIT YEL FLO, FR PP POR 30%, TR FR VUG POR IN 20%, GD INST FLUSH CUT THRU, GD STRONG MLKY BLUE STREAM CUT IN 60%, GD OIL ODOR
SH- GRY TO DK GRY, FRM, SPLINTY
LS- CRM OFF WHT, LT TN TO TN, STAIN ON 30%, HD DNS TO BRITT, FN XLN, REXLN MTRX THRU, IMBD CALC XLS IP, LIVE OIL IN 5%, GLD TO BRIT YEL FLO, FR PP POR 30%, TR FR VUG POR IN 10%, FR FLUSH CUT 50%, GD STRONG MLKY BLUE STREAM CUT IN 20%, PR TO FR OIL ODOR
SH- GRY TO DK GRY, FRM, SPLINTY
LS- CRM OFF WHT, LT TN TO TN, STAIN ON 30%, HD DNS TO BRITT, V/FN TO FN XLN, REXLN MTRX THRU, IMBD CALC XLS IP, PYR SCAT IP, GLD TO BRIT YEL FLO, TR PR PP POR IN 20%, NO VIS CUT, NO VIS SHOW
BASE KANKAS CITY @ 3403' -1514'
SH- GRY TO DK GRY, FRM TO TR SFT, SPLINTY
LS- CRM OFF WHT, LT TN TO TN, STAIN ON 20%, HD DNS TO BRITT, V/FN TO FN XLN, REXLN MTRX THRU, IMBD CALC XLS IP, SLI TR CHLK SCAT THRU, DLL TO BRIT YEL FLO, TR PR PP POR IN 10%, NO VIS CUT, NO VIS SHOW
SH- GRY TO DK GRY, REDISH BRN, SFT GUMMY, BLKY, LIMMY, WHT CHRT SCAT THRU
ARBUCKLE @ 3444' - 1555'
DOL- CRM LT TN TO TN, STAIN IN 80%, HD TT TO FRI, V/FN TO FN XLN, SUCRO MTRX THRU, FN IMBD DOL XLS THRU, CHRT SCAT IP, LIVE OIL IN 20%, BRIT YEL TO GLD FLO THRU, GD PP POR IN 20%, FR INTR XLN POR IN 40%, EX INST FLUSH CUT THRU TO FR SLOW STRONG MLKY BLUE CUT THRU, GD OIL ODOR, BRN STAIN ON DISH
DOL- CRM LT TN TO TN, STAIN IN 60%, HD TT TO FRI, V/FN TO FN XLN, SUCRO MTRX THRU, V/SLI TR CHLK, FN IMBD DOL XLS THRU, LIVE OIL
C3
37 UN
C4
32 UN
CN
34 UN
CN
40 UN
C4
C1
C2
C3
43 UN
52 UN
CN
40 UN
CN
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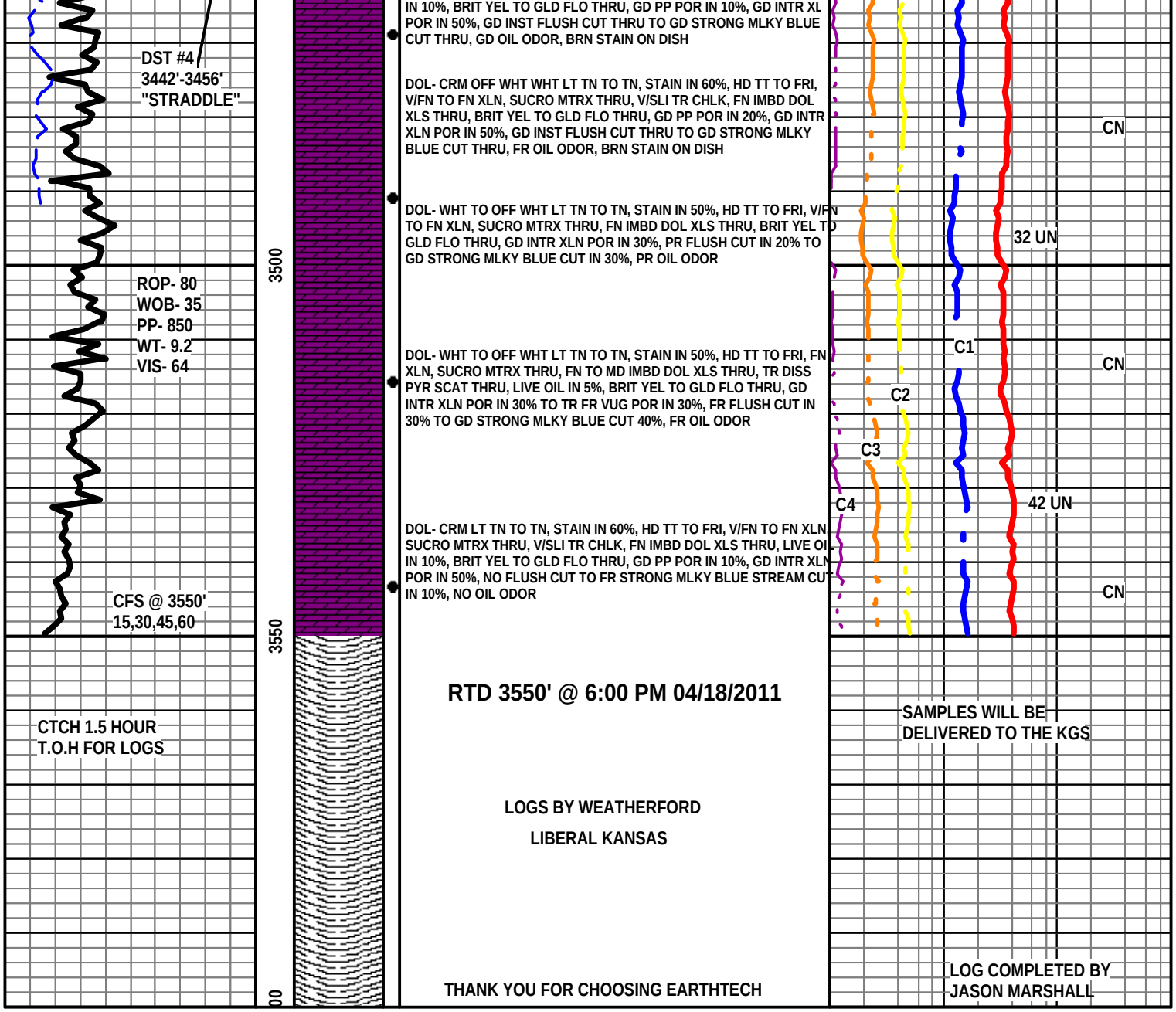
TG, C1-C5
1
10
100
1000
C1
CN
C2
40 UN
C3
CN
42 UN


DST #4
3442'-3456'
"STRADDLE"
ROP- 80
WOB- 35
PP- 850
WT- 9.2
VIS- 64
CFS @ 3550'
15,30,45,60
CTCH 1.5 HOUR
T.O.H FOR LOGS
3500
3550
00
IN 10%, BRIT YEL TO GLD FLO THRU, GD PP POR IN 10%, GD INTR XL POR IN 50%, GD INST FLUSH CUT THRU TO GD STRONG MLKY BLUE CUT THRU, GD OIL ODOR, BRN STAIN ON DISH
DOL- CRM OFF WHT WHT LT TN TO TN, STAIN IN 60%, HD TT TO FRI, V/FN TO FN XLN, SUCRO MTRX THRU, V/SLI TR CHLK, FN IMBD DOL XLS THRU, BRIT YEL TO GLD FLO THRU, GD PP POR IN 20%, GD INTR XLN POR IN 50%, GD INST FLUSH CUT THRU TO GD STRONG MLKY BLUE CUT THRU, FR OIL ODOR, BRN STAIN ON DISH
DOL- WHT TO OFF WHT LT TN TO TN, STAIN IN 50%, HD TT TO FRI, V/FN TO FN XLN, SUCRO MTRX THRU, FN IMBD DOL XLS THRU, BRIT YEL TO GLD FLO THRU, GD INTR XLN POR IN 30%, PR FLUSH CUT IN 20% TO GD STRONG MLKY BLUE CUT IN 30%, PR OIL ODOR
DOL- WHT TO OFF WHT LT TN TO TN, STAIN IN 50%, HD TT TO FRI, FN XLN, SUCRO MTRX THRU, FN TO MD IMBD DOL XLS THRU, TR DISS PYR SCAT THRU, LIVE OIL IN 5%, BRIT YEL TO GLD FLO THRU, GD INTR XLN POR IN 30% TO TR FR VUG POR IN 30%, FR FLUSH CUT IN 30% TO GD STRONG MLKY BLUE CUT 40%, FR OIL ODOR
DOL- CRM LT TN TO TN, STAIN IN 60%, HD TT TO FRI, V/FN TO FN XLN, SUCRO MTRX THRU, V/SLI TR CHLK, FN IMBD DOL XLS THRU, LIVE OIL IN 10%, BRIT YEL TO GLD FLO THRU, GD PP POR IN 10%, GD INTR XLN POR IN 50%, NO FLUSH CUT TO FR STRONG MLKY BLUE STREAM CUT IN 10%, NO OIL ODOR
CN
32 UN
C1
CN
C2
C3
C4
42 UN
CN
RTD 3550' @ 6:00 PM 04/18/2011
SAMPLES WILL BE DELIVERED TO THE KGS
LOGS BY WEATHERFORD
LIBERAL KANSAS
THANK YOU FOR CHOOSING EARTHTECH
LOG COMPLETED BY
JASON MARSHALL

DRILL STEM TEST REPORT

Prepared For: **Sam Gary**

1515 Wynkoop St. Ste 700
Denver, CO
80202

ATTN: Clayton Camozzi

5-15-16/Ellis

Rajewski et al 1-5

Start Date: 2011.04.16 @ 11:17:27
End Date: 2011.04.16 @ 17:56:26
Job Ticket #: 41873 DST #: 1

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

DRILL STEM TEST REPORT

Sam Gary

1515 Wynkoop St. Ste 700
Denver, CO
80202

ATTN: Clayton Camozzi

Rajewski et al 1-5

5-15-16/Ellis

Job Ticket: 41873 **DST#: 1**

Test Start: 2011.04.16 @ 11:17:27

GENERAL INFORMATION:

Formation: **LKC "A-C"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 13:07:26
Time Test Ended: 17:56:26

Test Type: Conventional Bottom Hole
Tester: Brian Fairbank
Unit No: 41

Interval: 3149.00 ft (KB) To 3200.00 ft (KB) (TVD)
Total Depth: 3200.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition:

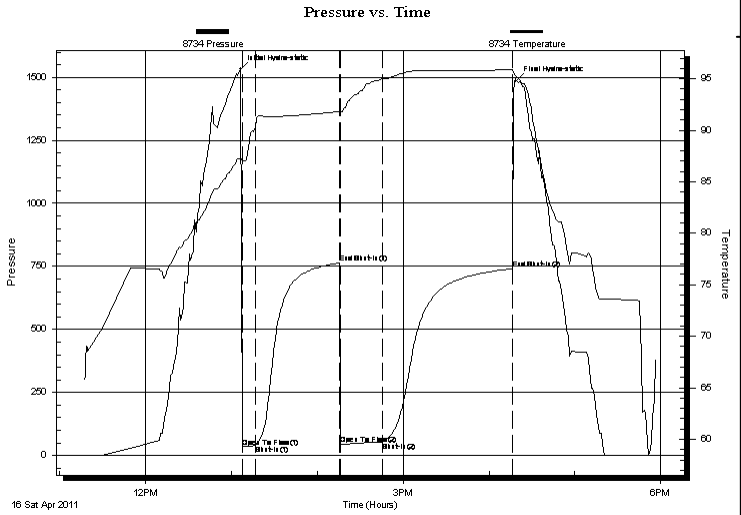
Reference Elevations: 1889.00 ft (KB)
1881.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8734 **Outside**

Press@RunDepth: 52.70 psig @ 3154.00 ft (KB)
Start Date: 2011.04.16 End Date: 2011.04.16
Start Time: 11:17:27 End Time: 17:56:26

Capacity: 8000.00 psig
Last Calib.: 2011.04.16
Time On Btm: 2011.04.16 @ 13:06:26
Time Off Btm: 2011.04.16 @ 16:18:56

TEST COMMENT: 10 - IFP - weak blow throughout 1/4" - 3/4"
60 - ISI - no blow back
30 - FFP - weak blow throughout sur - 1"
90 - FSI - no blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1531.26	87.33	Initial Hydro-static
1	34.54	87.00	Open To Flow (1)
10	39.86	90.23	Shut-In(1)
69	763.89	91.84	End Shut-In(1)
70	43.39	91.55	Open To Flow (2)
99	52.70	94.98	Shut-In(2)
190	741.16	95.91	End Shut-In(2)
193	1486.23	95.21	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
30.00	mud w / scum O on top M100%	0.15

Gas Rates

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

DRILL STEM TEST REPORT

Sam Gary

1515 Wynkoop St. Ste 700
Denver, CO
80202

ATTN: Clayton Camozzi

Rajewski et al 1-5

5-15-16/Ellis

Job Ticket: 41873 **DST#: 1**

Test Start: 2011.04.16 @ 11:17:27

GENERAL INFORMATION:

Formation: **LKC "A-C"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 13:07:26
Time Test Ended: 17:56:26

Test Type: Conventional Bottom Hole
Tester: Brian Fairbank
Unit No: 41

Interval: 3149.00 ft (KB) To 3200.00 ft (KB) (TVD)
Total Depth: 3200.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition:

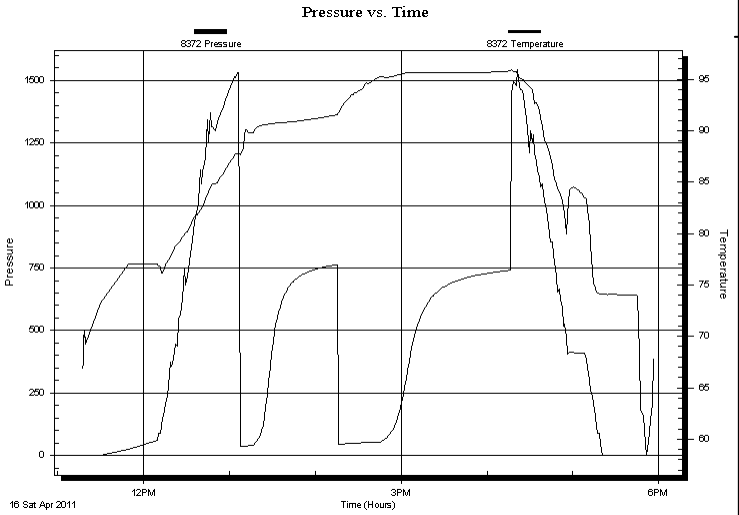
Reference Elevations: 1889.00 ft (KB)
1881.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8372 **Inside**

Press@RunDepth: psig @ 3154.00 ft (KB)
Start Date: 2011.04.16 End Date: 2011.04.16
Start Time: 11:17:25 End Time: 17:56:24

Capacity: 8000.00 psig
Last Calib.: 2011.04.16
Time On Btm:
Time Off Btm:

TEST COMMENT: 10 - IFP - weak blow throughout 1/4" - 3/4"
60 - ISI - no blow back
30 - FFP - weak blow throughout sur - 1"
90 - FSI - no blow back



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
30.00	mud w / scum O on top M100%	0.15

Gas Rates

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

DRILL STEM TEST REPORT

Sam Gary

1515 Wynkoop St. Ste 700
Denver, CO
80202

ATTN: Clayton Camozzi

Rajewski et al 1-5

5-15-16/Ellis

Job Ticket: 41873 **DST#: 1**

Test Start: 2011.04.16 @ 11:17:27

GENERAL INFORMATION:

Formation: **LKC "A-C"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 13:07:26
Time Test Ended: 17:56:26

Test Type: Conventional Bottom Hole
Tester: Brian Fairbank
Unit No: 41

Interval: 3149.00 ft (KB) To 3200.00 ft (KB) (TVD)
Total Depth: 3200.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition:

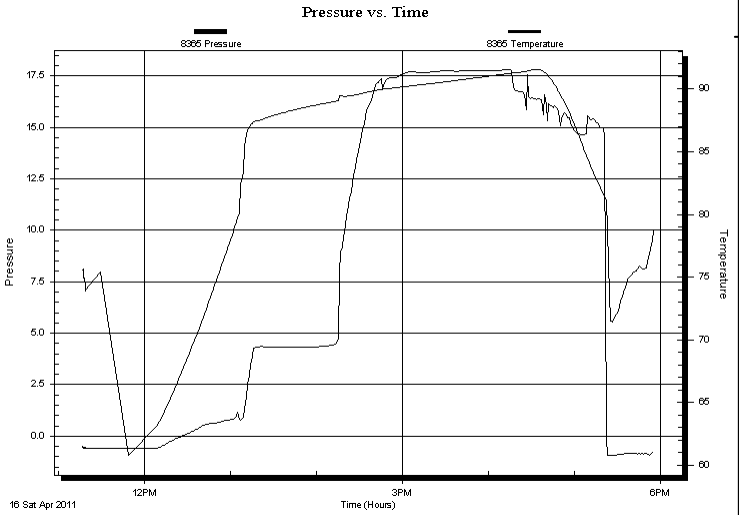
Reference Elevations: 1889.00 ft (KB)
1881.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8365 **Fluid**

Press@RunDepth: psig @ 3115.00 ft (KB)
Start Date: 2011.04.16 End Date: 2011.04.16
Start Time: 11:17:03 End Time: 17:55:32

Capacity: 8000.00 psig
Last Calib.: 2011.04.16
Time On Btm:
Time Off Btm:

TEST COMMENT: 10 - IFP - weak blow throughout 1/4" - 3/4"
60 - ISI - no blow back
30 - FFP - weak blow throughout sur - 1"
90 - FSI - no blow back



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
30.00	mud w / scum O on top M100%	0.15

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

Sam Gary

1515 Wynkoop St. Ste 700
Denver, CO
80202

ATTN: Clayton Camozzi

Rajewski et al 1-5

5-15-16/Ellis

Job Ticket: 41873 **DST#: 1**

Test Start: 2011.04.16 @ 11:17:27

Tool Information

Drill Pipe:	Length:	3103.00 ft	Diameter:	3.80 inches	Volume:	43.53 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:	31.00 ft	Diameter:	2.25 inches	Volume:	0.15 bbl	Weight to Pull Loose:		45000.00 lb
					Total Volume:	43.68 bbl	Tool Chased		0.00 ft
Drill Pipe Above KB:		19.00 ft					String Weight:	Initial	43000.00 lb
Depth to Top Packer:		3149.00 ft						Final	43000.00 lb
Depth to Bottom Packer:		ft							
Interval betw een Packers:		51.00 ft							
Tool Length:		85.00 ft							
Number of Packers:		2	Diameter:	6.75 inches					

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Recorder	0.00	8365	Fluid	3115.00		
Blank Spacing	5.00			3120.00		
Shut In Tool	5.00			3125.00		
Sampler	2.00			3127.00		
Hydraulic tool	5.00			3132.00		
Jars	5.00			3137.00		
Safety Joint	2.00			3139.00		
Packer	5.00			3144.00	34.00	Bottom Of Top Packer
Packer	5.00			3149.00		
Stubb	1.00			3150.00		
Perforations	3.00			3153.00		
Change Over Sub	1.00			3154.00		
Recorder	0.00	8372	Inside	3154.00		
Recorder	0.00	8734	Outside	3154.00		
Blank Spacing	32.00			3186.00		
Change Over Sub	1.00			3187.00		
Perforations	10.00			3197.00		
Bullnose	3.00			3200.00	51.00	Bottom Packers & Anchor
Total Tool Length:	**85.00**					

DRILL STEM TEST REPORT

FLUID SUMMARY

Sam Gary

1515 Wynkoop St. Ste 700
Denver, CO
80202

ATTN: Clayton Camozzi

Rajewski et al 1-5

5-15-16/Ellis

Job Ticket: 41873 **DST#: 1**

Test Start: 2011.04.16 @ 11:17:27

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:	48.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	8.75 in³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	5500.00 ppm				
Filter Cake:	inches				

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
30.00	mud w / scum O on top M100%	0.148

Total Length: 30.00 ft Total Volume: 0.148 bbl

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

Laboratory Name: Laboratory Location:

Recovery Comments:

Sam Gary

1515 Wynkoop St. Ste 700
Denver, CO
80202

ATTN: Clayton Camozzi

Rajewski et al 1-5

5-15-16/Ellis

Job Ticket: 41873 **DST#: 1**

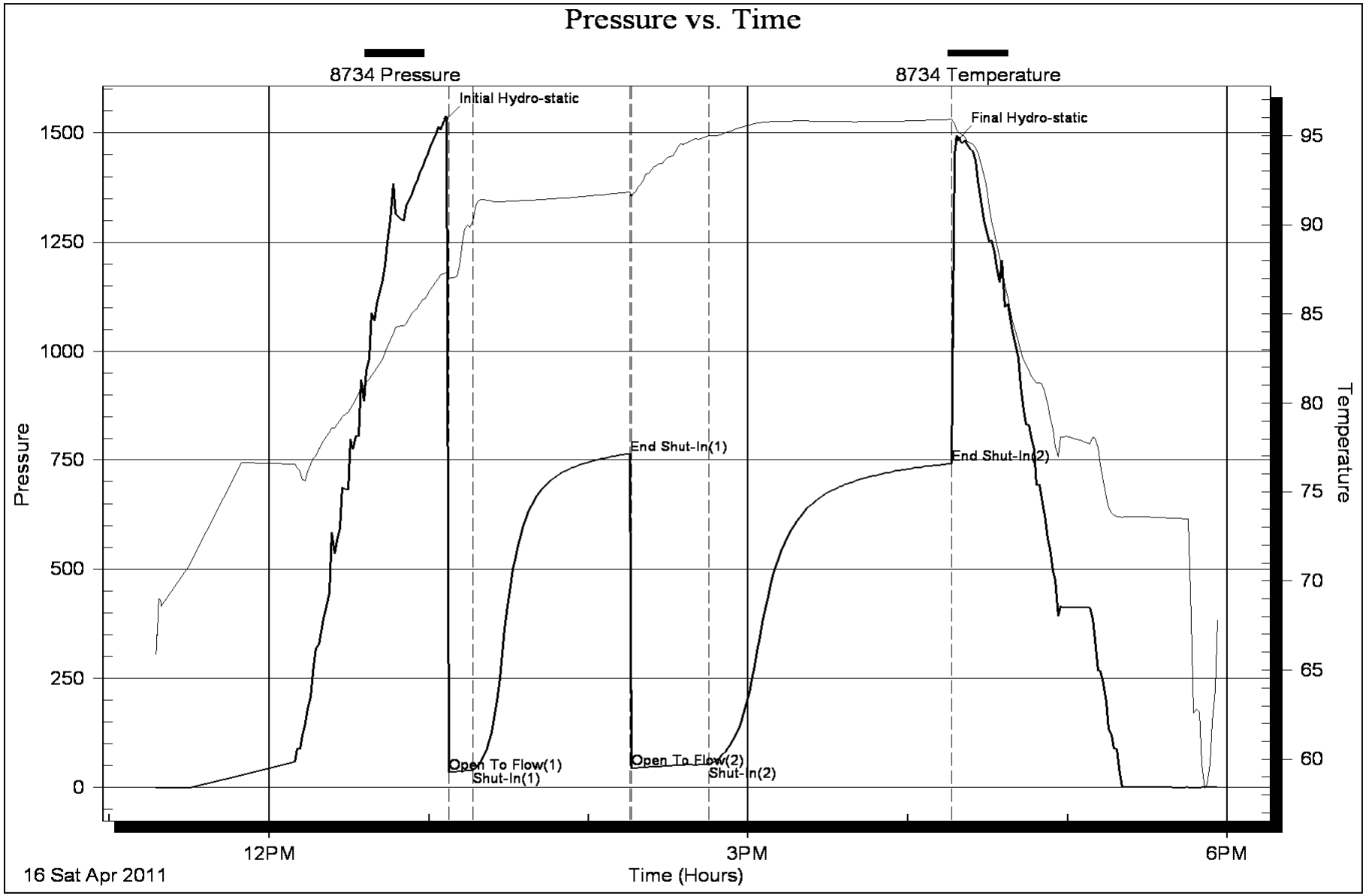
Test Start: 2011.04.16 @ 11:17:27

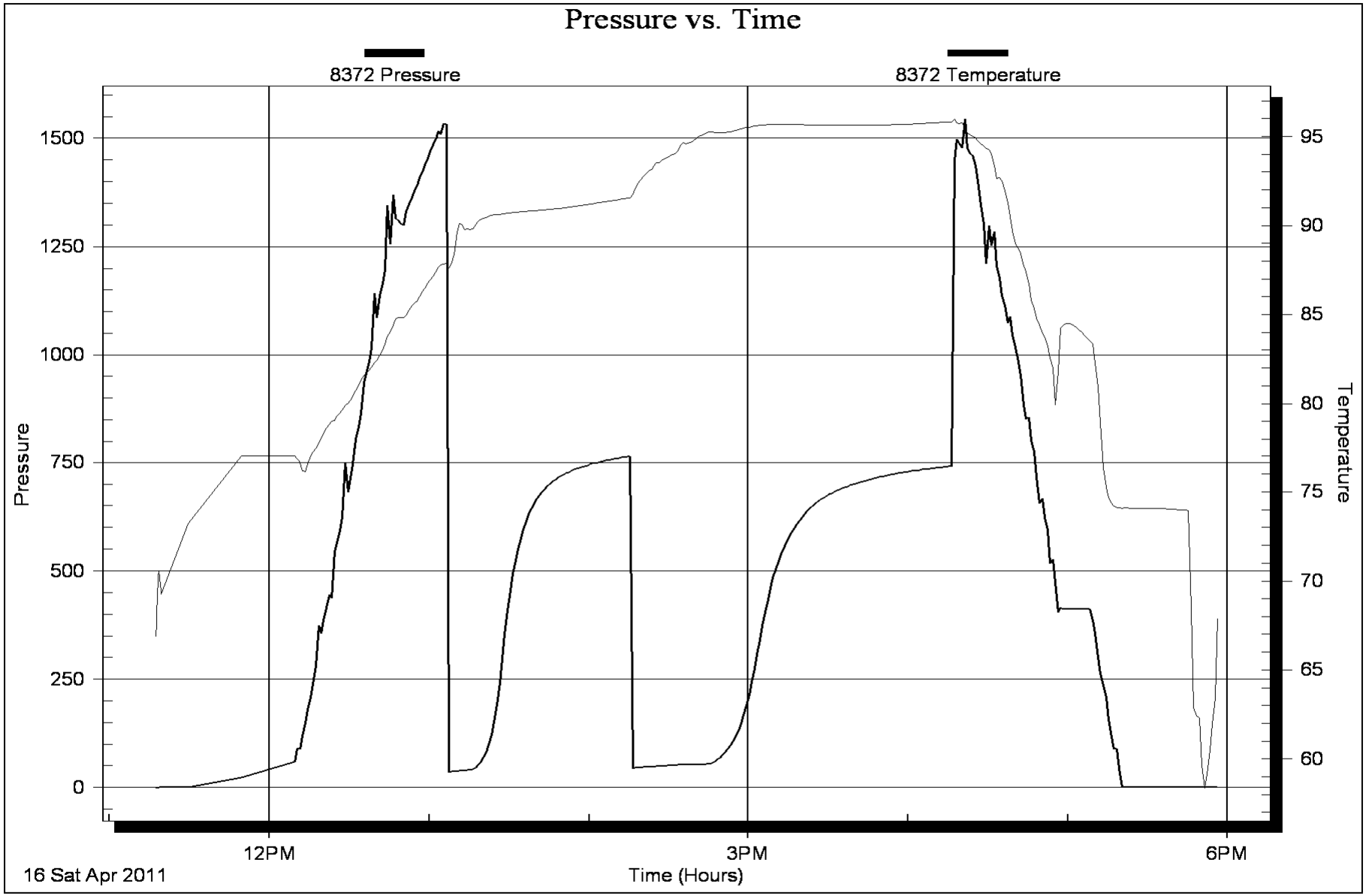
Gas Rates Information

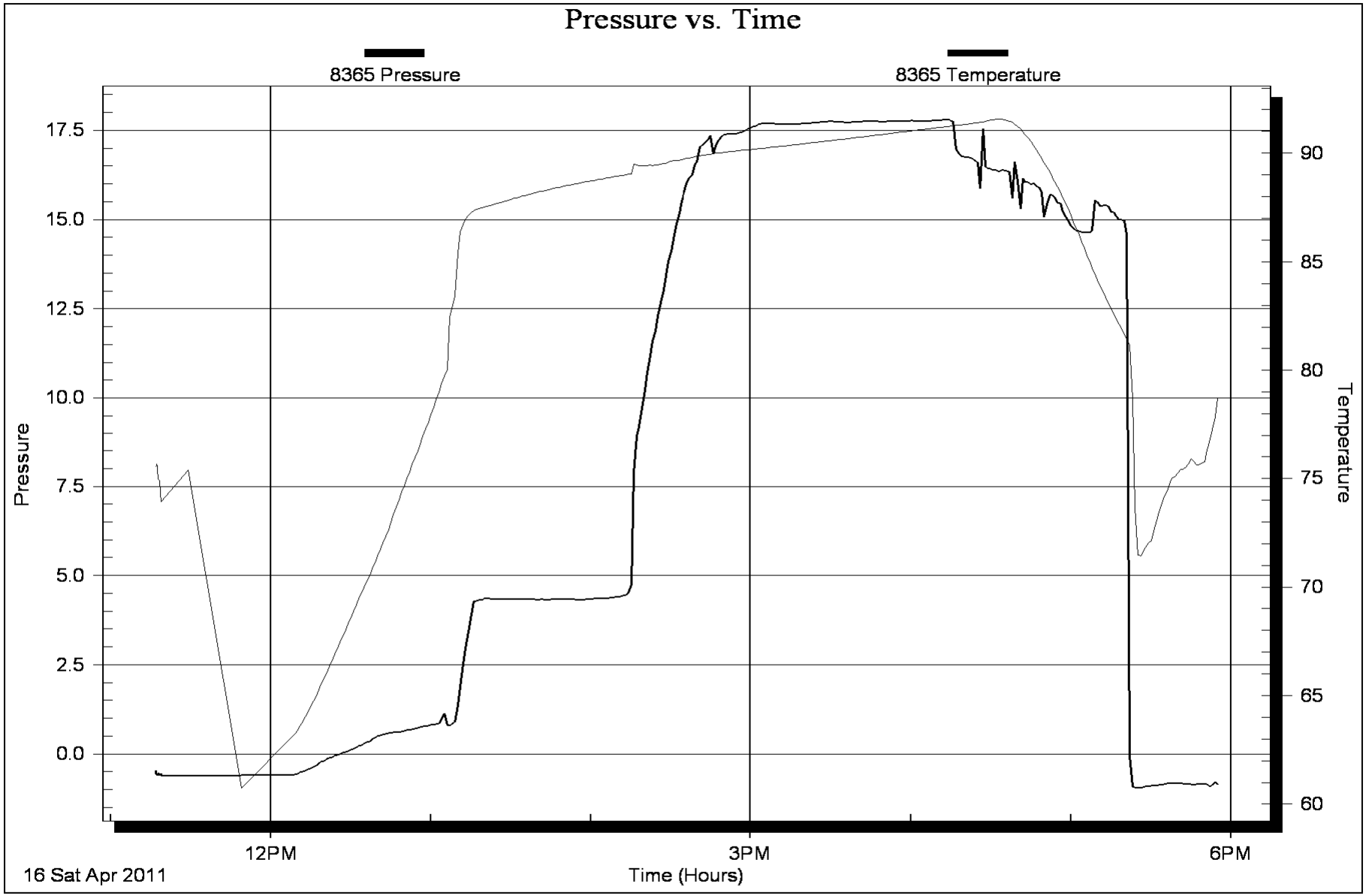
Temperature: 59 deg C
Relative Density: 0.65
Z Factor: 0.8

Gas Rates Table

Flow Period	Elapsed Time	Choke (mm)	Pressure (kPaa)	Gas Rate (m^3/d)
		0.00	0.00	0.00

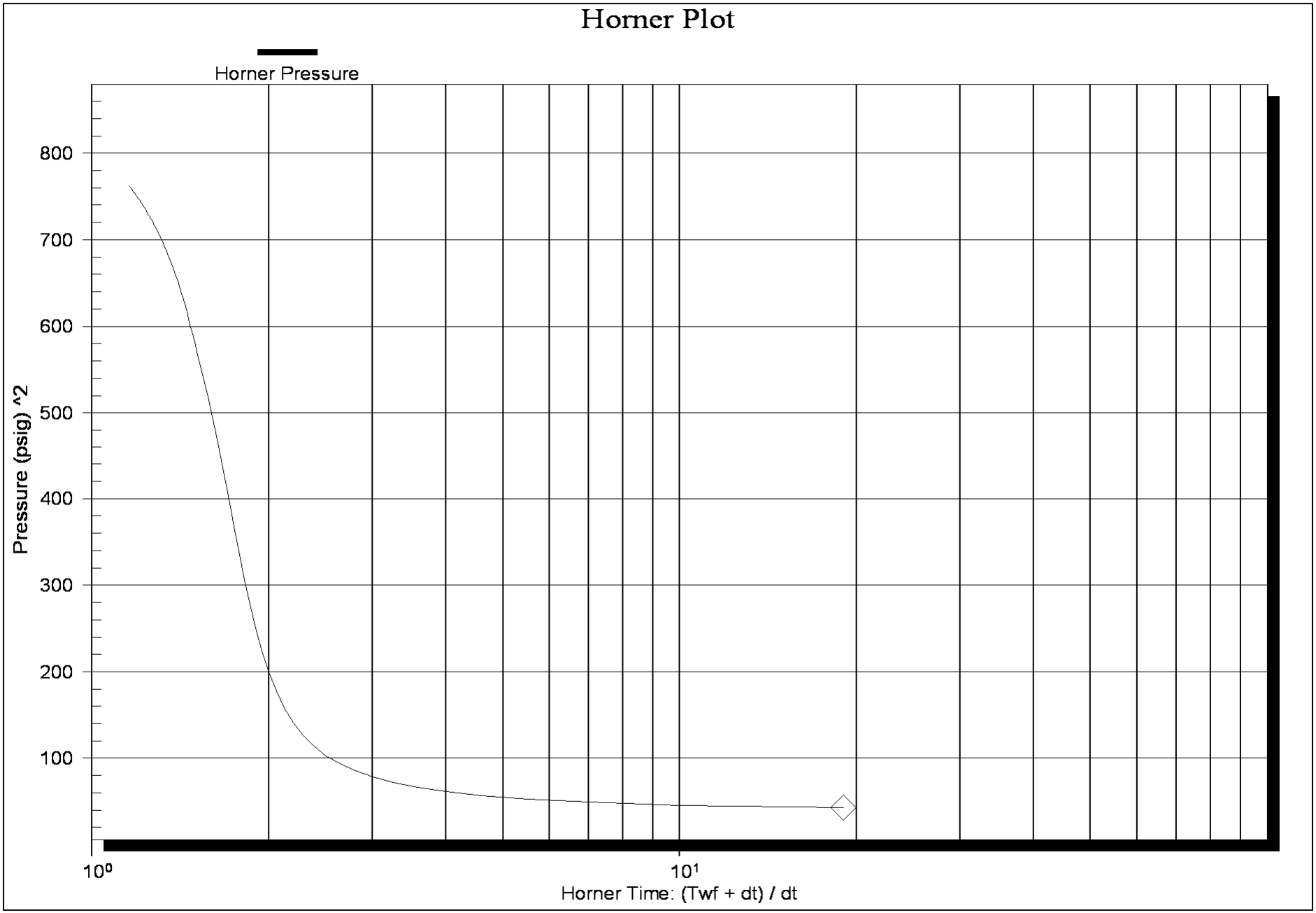

Pressure vs. Time
8734 Pressure
8734 Temperature
Initial Hydro-static
Final Hydro-static
End Shut-In(1)
End Shut-In(2)
Open To Flow(1)
Shut-In(1)
Open To Flow(2)
Shut-In(2)
Pressure
Temperature
1500
1250
1000
750
500
250
0
95
90
85
80
75
70
65
60
12PM
3PM
6PM
16 Sat Apr 2011
Time (Hours)


Pressure vs. Time
8372 Pressure
8372 Temperature
1500
1250
1000
750
500
250
0
Pressure
95
90
85
80
75
70
65
60
Temperature
12PM
3PM
6PM
16 Sat Apr 2011
Time (Hours)


Pressure vs. Time
8365 Pressure
8365 Temperature
17.5
15.0
12.5
10.0
7.5
5.0
2.5
0.0
Pressure
90
85
80
75
70
65
60
Temperature
12PM
3PM
6PM
16 Sat Apr 2011
Time (Hours)

Sam Gary 2011.04.16 @ 11:17:27 5-15-16/Ellis

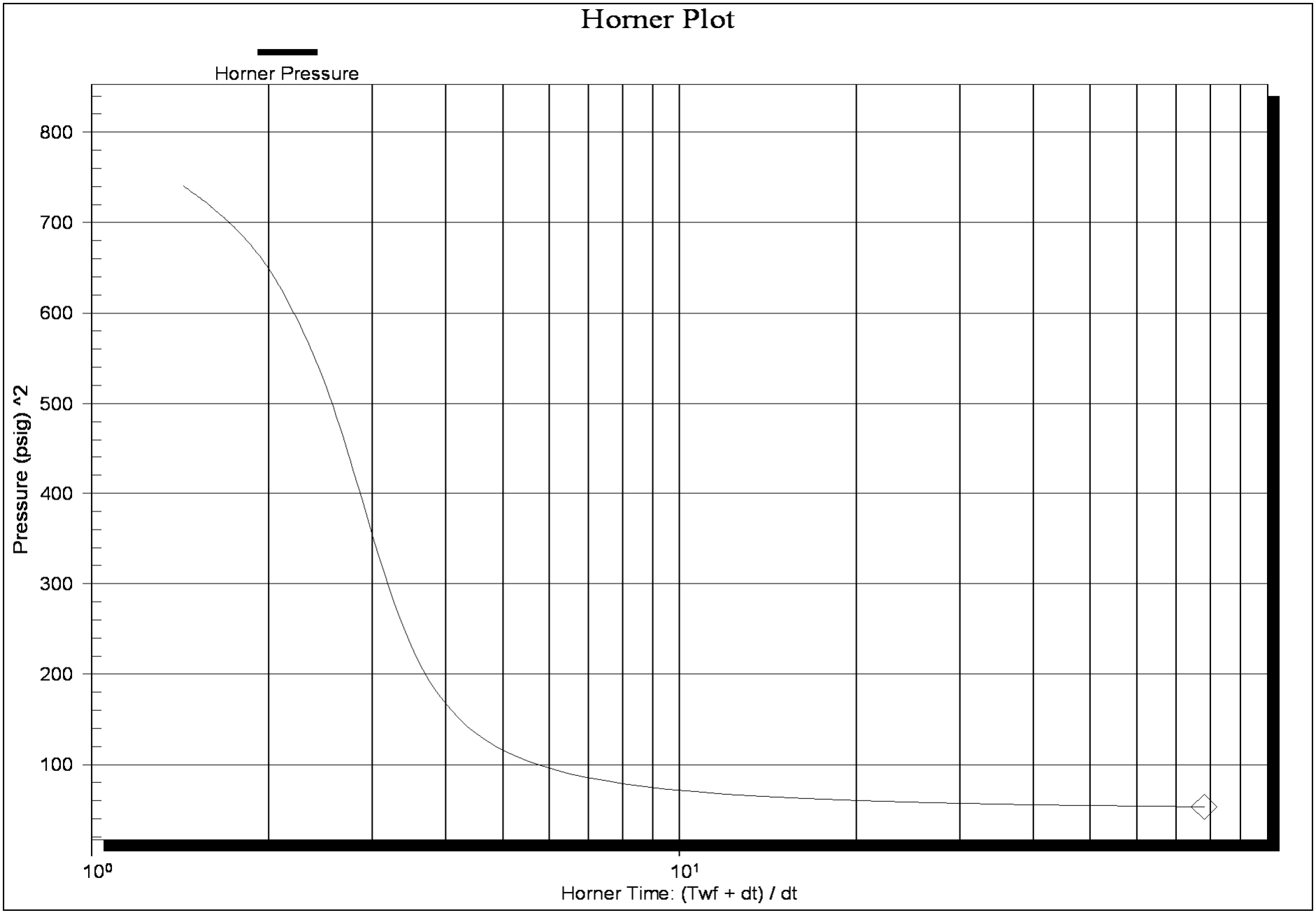
Horner Plot



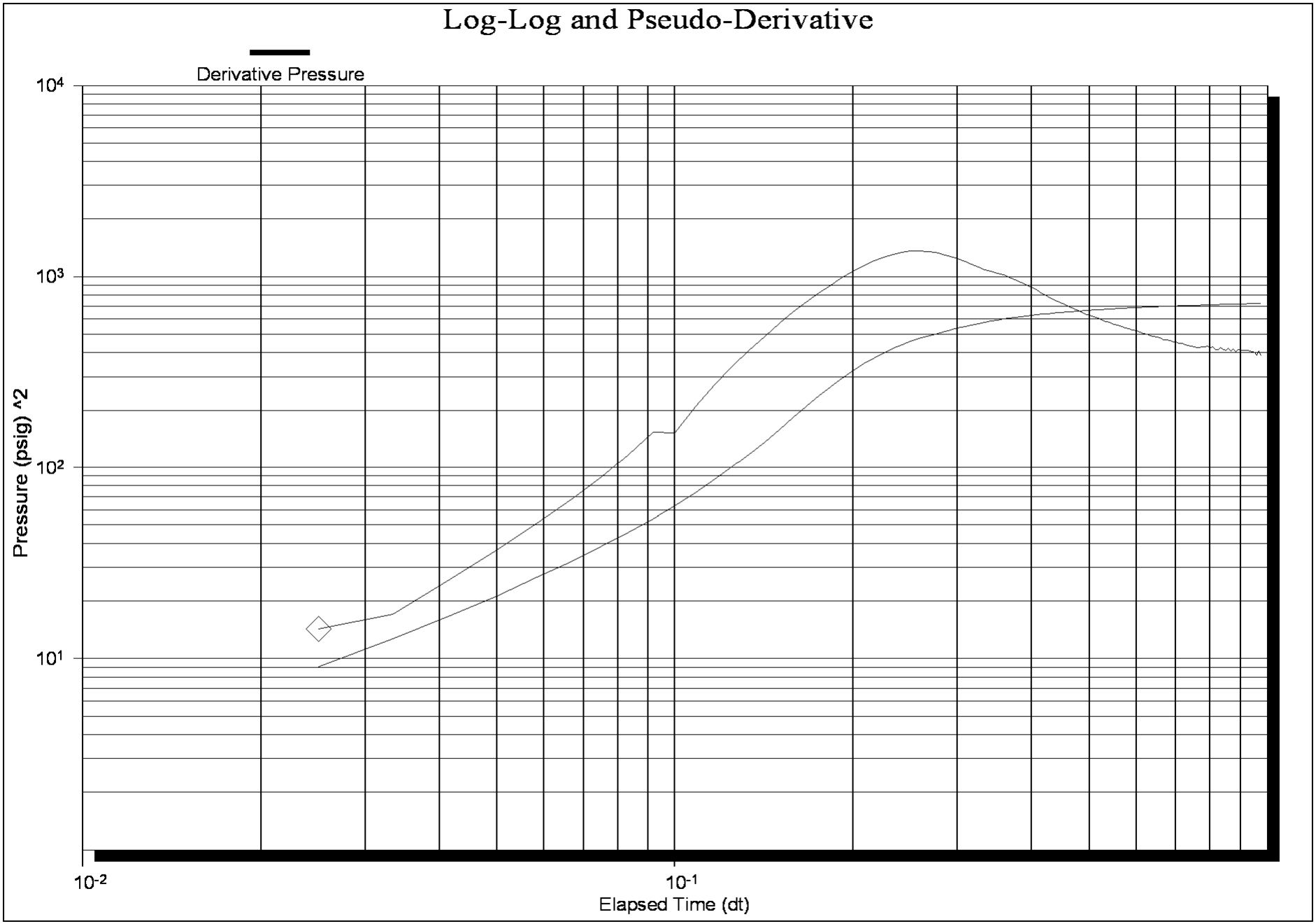
Serial Number: 8734 (Outside) P* : Slope (m) : kpa/log cycle Flow Cycle: 1

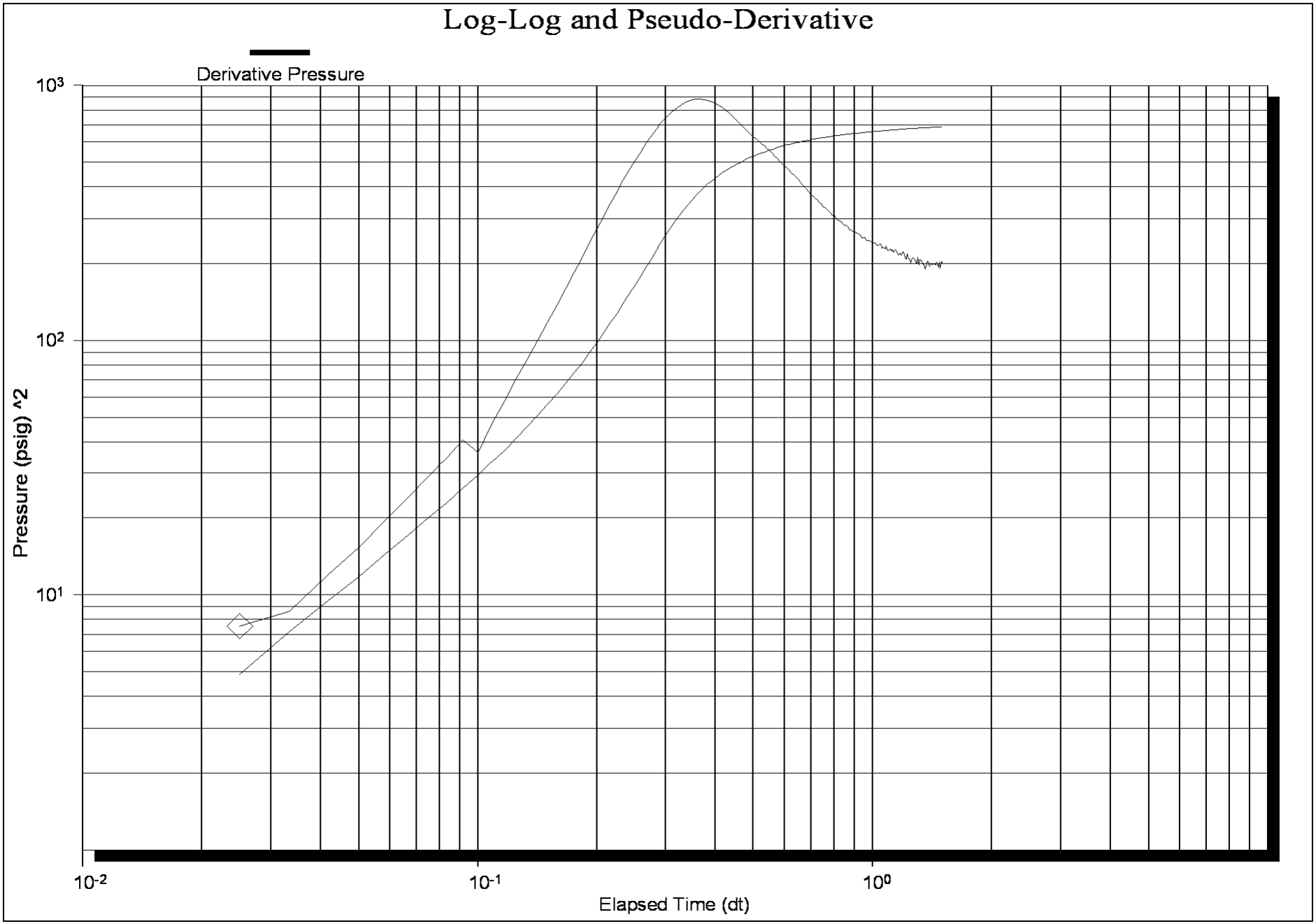
Sam Gary 2011.04.16 @ 11:17:27 5-15-16/Ellis

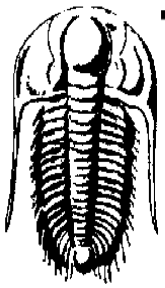
Horner Plot



Serial Number: 8734 (Outside) P* : Slope (m) : kpa/log cycle Flow Cycle: 2


Log-Log and Pseudo-Derivative
Derivative Pressure
10^4
10^3
10^2
10^1
Pressure (psig) ^2
10^-2
10^-1
Elapsed Time (dt)


Log-Log and Pseudo-Derivative
Derivative Pressure
10³
10²
10¹
Pressure (psig) ^2
10⁻²
10⁻¹
10⁰
Elapsed Time (dt)



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Prepared For: **Sam Gary**

1515 Wynkoop St. Ste 700
Denver, CO
80202

ATTN: Clayton Camozzi

5-15-16/Ellis

Rajewski et al 1-5

Start Date: 2011.04.17 @ 03:52:30

End Date: 2011.04.17 @ 10:11:29

Job Ticket #: 41874 DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

DRILL STEM TEST REPORT

Sam Gary

1515 Wynkoop St. Ste 700
Denver, CO
80202

ATTN: Clayton Camozzi

Rajewski et al 1-5

5-15-16/Ellis

Job Ticket: 41874 **DST#: 2**

Test Start: 2011.04.17 @ 03:52:30

GENERAL INFORMATION:

Formation: **LKC "F-G"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 05:30:29
Time Test Ended: 10:11:29

Test Type: Conventional Bottom Hole
Tester: Brian Fairbank
Unit No: 41

Interval: 3220.00 ft (KB) To 3268.00 ft (KB) (TVD)
Total Depth: 3268.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition:

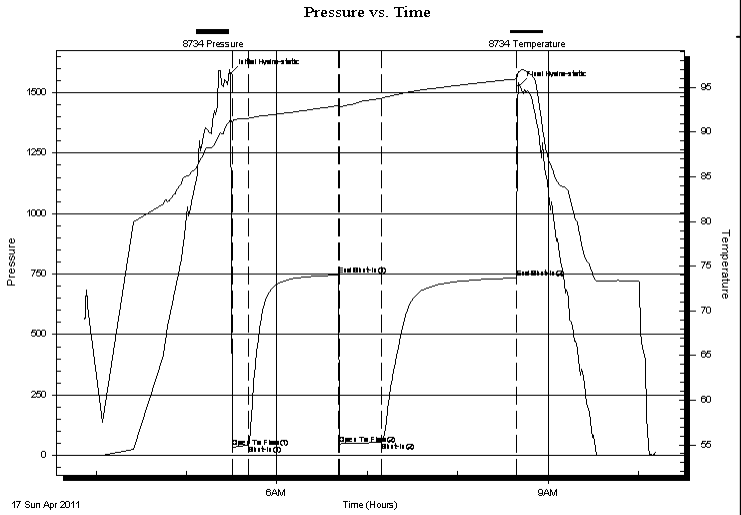
Reference Elevations: 1889.00 ft (KB)
1881.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8734 **Outside**

Press@RunDepth: 54.62 psig @ 3223.00 ft (KB)
Start Date: 2011.04.17 End Date: 2011.04.17
Start Time: 03:52:30 End Time: 10:11:29

Capacity: 8000.00 psig
Last Calib.: 2011.04.17
Time On Btm: 2011.04.17 @ 05:29:29
Time Off Btm: 2011.04.17 @ 08:40:59

TEST COMMENT: 10 - IFP - weak blow throughout 1/4" - 1 3/4"
60 - ISI - no blow back
30 - FFP - weak blow throughout sur - 1 1/2"
90 - FSI - no blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1577.19	91.44	Initial Hydro-static
1	34.06	91.11	Open To Flow (1)
12	43.23	91.56	Shut-In(1)
72	745.97	92.98	End Shut-In(1)
72	47.05	92.77	Open To Flow (2)
100	54.62	93.80	Shut-In(2)
190	733.92	95.97	End Shut-In(2)
192	1527.46	96.83	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
45.00	MUD 100%	0.35

Gas Rates

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

DRILL STEM TEST REPORT

Sam Gary

1515 Wynkoop St. Ste 700
Denver, CO
80202

ATTN: Clayton Camozzi

Rajewski et al 1-5

5-15-16/Ellis

Job Ticket: 41874 **DST#: 2**

Test Start: 2011.04.17 @ 03:52:30

GENERAL INFORMATION:

Formation: **LKC "F-G"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 05:30:29
Time Test Ended: 10:11:29

Test Type: Conventional Bottom Hole
Tester: Brian Fairbank
Unit No: 41

Interval: 3220.00 ft (KB) To 3268.00 ft (KB) (TVD)
Total Depth: 3268.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition:

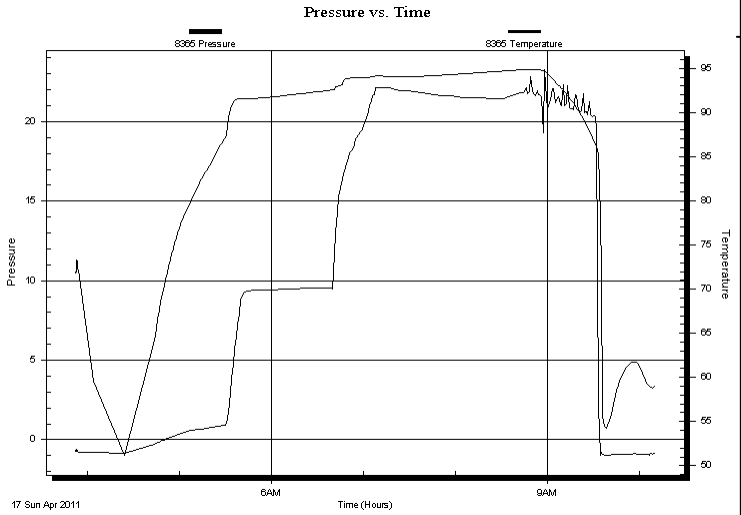
Reference Elevations: 1889.00 ft (KB)
1881.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8365 **Fluid**

Press@RunDepth: psig @ 3186.00 ft (KB)
Start Date: 2011.04.17 End Date: 2011.04.17
Start Time: 03:52:12 End Time: 10:10:41

Capacity: 8000.00 psig
Last Calib.: 2011.04.17
Time On Btm:
Time Off Btm:

TEST COMMENT: 10 - IFP - weak blow throughout 1/4" - 1 3/4"
60 - ISI - no blow back
30 - FFP - weak blow throughout sur - 1 1/2"
90 - FSI - no blow back



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
45.00	MUD 100%	0.35

Gas Rates

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

DRILL STEM TEST REPORT

Sam Gary

1515 Wynkoop St. Ste 700
Denver, CO
80202

ATTN: Clayton Camozzi

Rajewski et al 1-5

5-15-16/Ellis

Job Ticket: 41874 **DST#: 2**

Test Start: 2011.04.17 @ 03:52:30

GENERAL INFORMATION:

Formation: **LKC "F-G"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 05:30:29
Time Test Ended: 10:11:29

Test Type: Conventional Bottom Hole
Tester: Brian Fairbank
Unit No: 41

Interval: 3220.00 ft (KB) To 3268.00 ft (KB) (TVD)
Total Depth: 3268.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition:

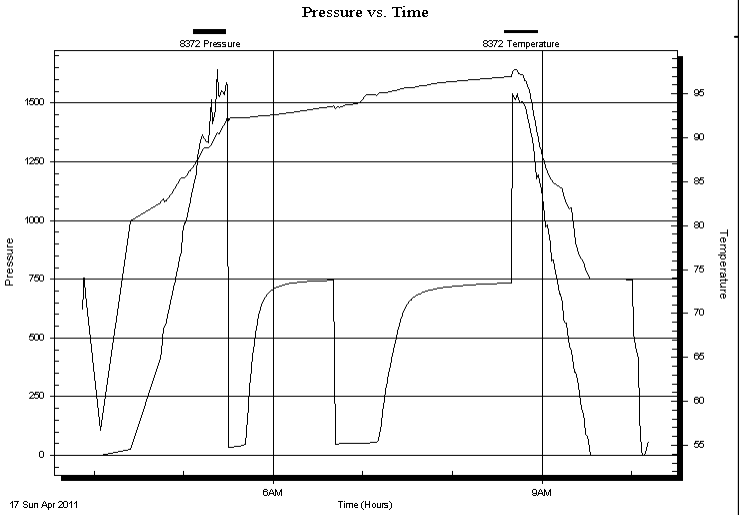
Reference Elevations: 1889.00 ft (KB)
1881.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8372 **Inside**

Press@RunDepth: psig @ 3223.00 ft (KB)
Start Date: 2011.04.17 End Date: 2011.04.17
Start Time: 03:52:24 End Time: 10:11:23

Capacity: 8000.00 psig
Last Calib.: 2011.04.17
Time On Btm:
Time Off Btm:

TEST COMMENT: 10 - IFP - weak blow throughout 1/4" - 1 3/4"
60 - ISI - no blow back
30 - FFP - weak blow throughout sur - 1 1/2"
90 - FSI - no blow back



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
45.00	MUD 100%	0.35

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

Sam Gary

1515 Wynkoop St. Ste 700
Denver, CO
80202

ATTN: Clayton Camozzi

Rajewski et al 1-5

5-15-16/Ellis

Job Ticket: 41874 **DST#: 2**

Test Start: 2011.04.17 @ 03:52:30

Tool Information

Drill Pipe:	Length:	3166.00 ft	Diameter:	3.80	inches	Volume:	44.41	bbl	
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	0.00	inches	Volume:	0.00	bbl	
Drill Collar:	Length:	31.00 ft	Diameter:	2.25	inches	Volume:	0.15	bbl	
						Total Volume:	44.56	bbl	

Drill Pipe Above KB:	11.00 ft
Depth to Top Packer:	3220.00 ft
Depth to Bottom Packer:	ft
Interval betw een Packers:	48.00 ft
Tool Length:	82.00 ft
Number of Packers:	2
Diameter:	6.75 inches

Tool Weight:		2500.00 lb
Weight set on Packer:		25000.00 lb
Weight to Pull Loose:		48000.00 lb
Tool Chased		0.00 ft
String Weight:	Initial	44000.00 lb
	Final	44000.00 lb

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Recorder	0.00	8365	Fluid	3186.00		
Blank Spacing	5.00			3191.00		
Shut In Tool	5.00			3196.00		
Sampler	2.00			3198.00		
Hydraulic tool	5.00			3203.00		
Jars	5.00			3208.00		
Safety Joint	2.00			3210.00		
Packer	5.00			3215.00	34.00	Bottom Of Top Packer
Packer	5.00			3220.00		
Stubb	1.00			3221.00		
Perforations	1.00			3222.00		
Change Over Sub	1.00			3223.00		
Recorder	0.00	8372	Inside	3223.00		
Recorder	0.00	8734	Outside	3223.00		
Blank Spacing	31.00			3254.00		
Change Over Sub	1.00			3255.00		
Perforations	10.00			3265.00		
Bullnose	3.00			3268.00	48.00	Bottom Packers & Anchor
Total Tool Length:	**82.00**					

DRILL STEM TEST REPORT

FLUID SUMMARY

Sam Gary

1515 Wynkoop St. Ste 700
Denver, CO
80202

ATTN: Clayton Camozzi

Rajewski et al 1-5

5-15-16/Ellis

Job Ticket: 41874 **DST#: 2**

Test Start: 2011.04.17 @ 03:52:30

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:	48.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	8.74 in³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	5500.00 ppm				
Filter Cake:	inches				

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
45.00	MUD 100%	0.349

Total Length: 45.00 ft Total Volume: 0.349 bbl

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

Laboratory Name: Laboratory Location:

Recovery Comments:

Sam Gary

1515 Wynkoop St. Ste 700
Denver, CO
80202

ATTN: Clayton Camozzi

Rajewski et al 1-5

5-15-16/Ellis

Job Ticket: 41874 **DST#: 2**

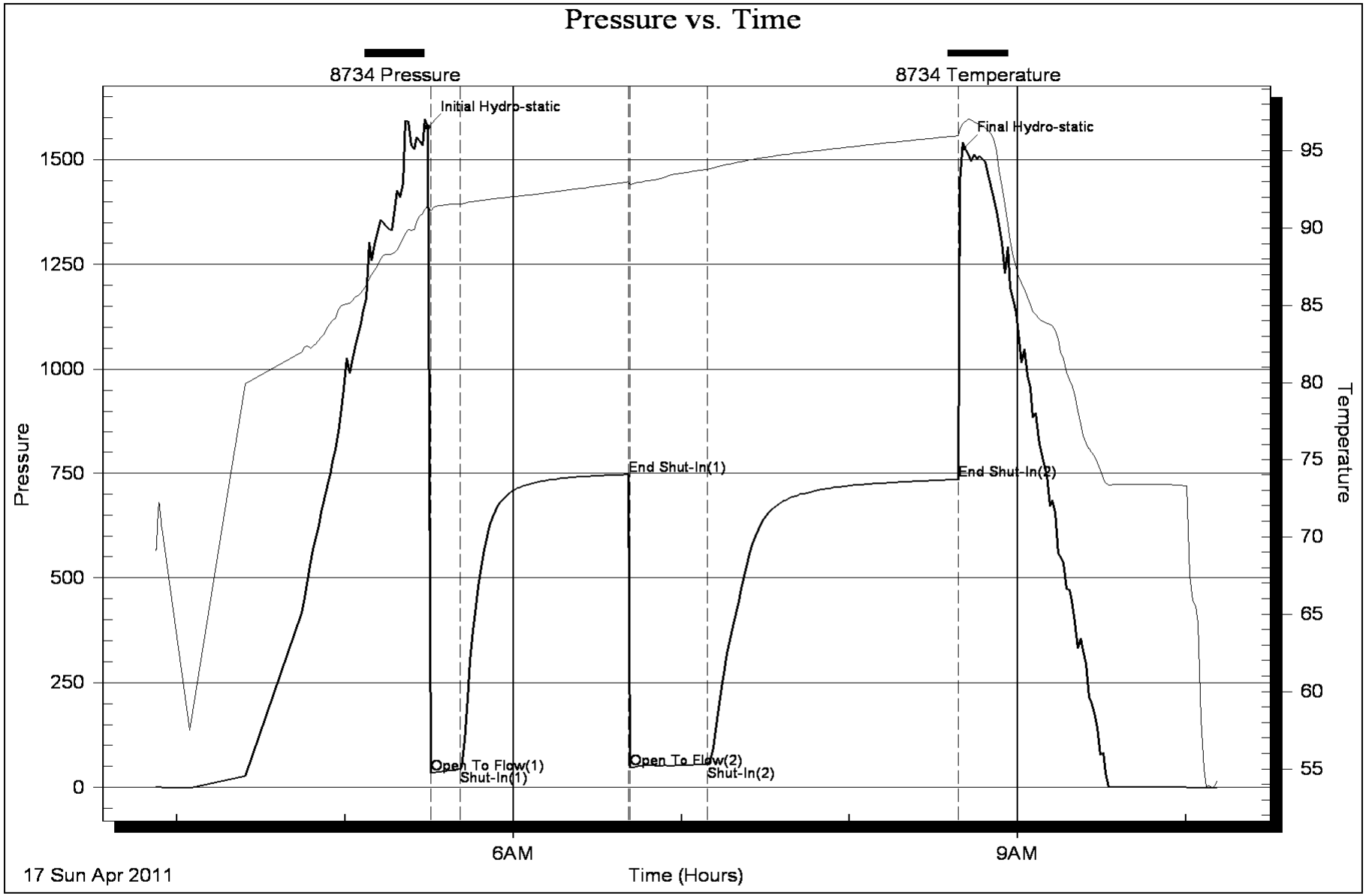
Test Start: 2011.04.17 @ 03:52:30

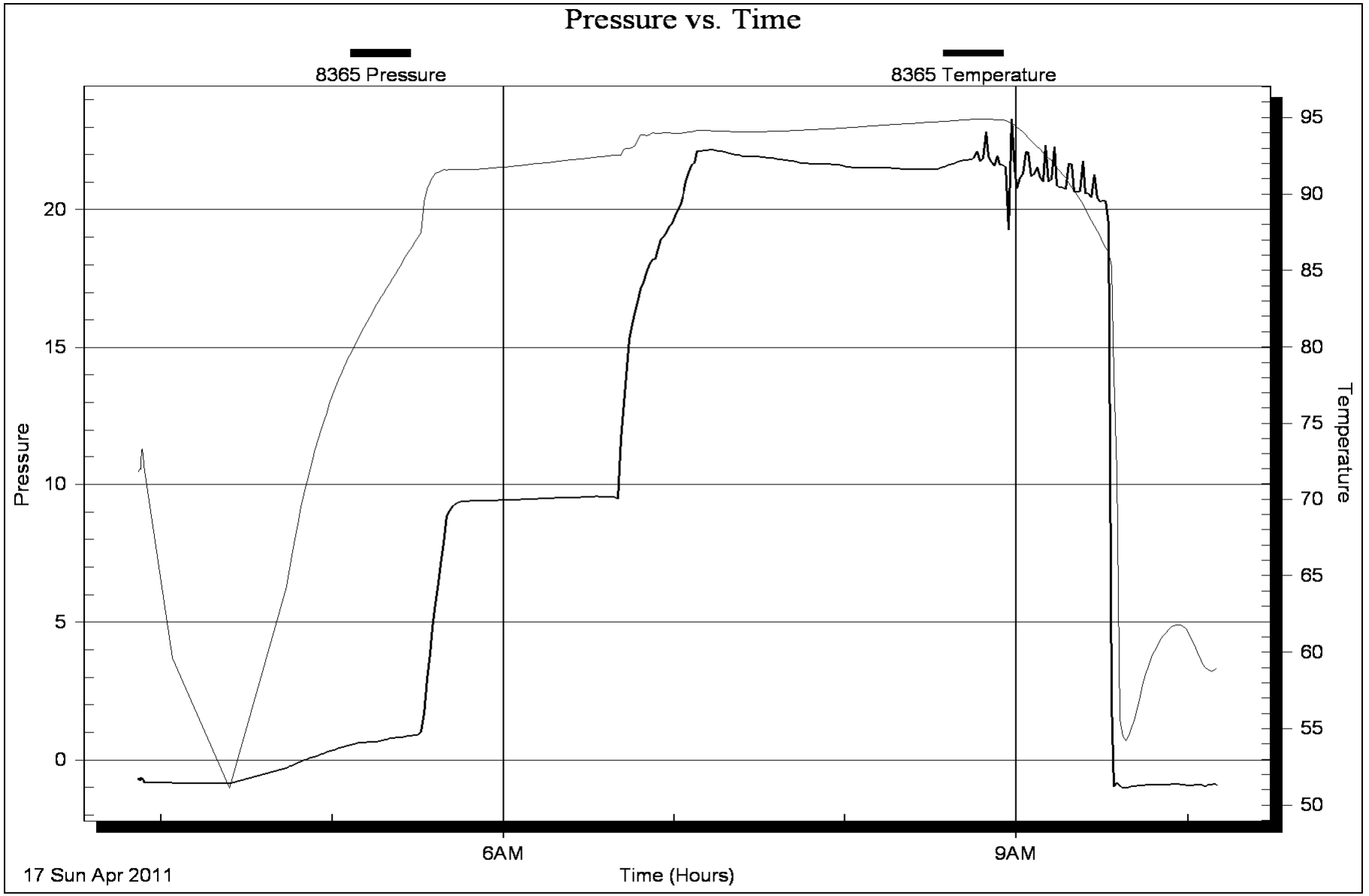
Gas Rates Information

Temperature: 59 deg C
Relative Density: 0.65
Z Factor: 0.8

Gas Rates Table

Flow Period	Elapsed Time	Choke (mm)	Pressure (kPaa)	Gas Rate (m^3/d)
		0.00	0.00	0.00


Pressure vs. Time
8734 Pressure
8734 Temperature
Initial Hydro-static
Final Hydro-static
End Shut-In(1)
End Shut-In(2)
Open To Flow(1)
Shut-In(1)
Open To Flow(2)
Shut-In(2)
Pressure
Temperature
1500
1250
1000
750
500
250
0
95
90
85
80
75
70
65
60
55
6AM
9AM
17 Sun Apr 2011
Time (Hours)


Pressure vs. Time
8365 Pressure
8365 Temperature
Pressure
Temperature
20
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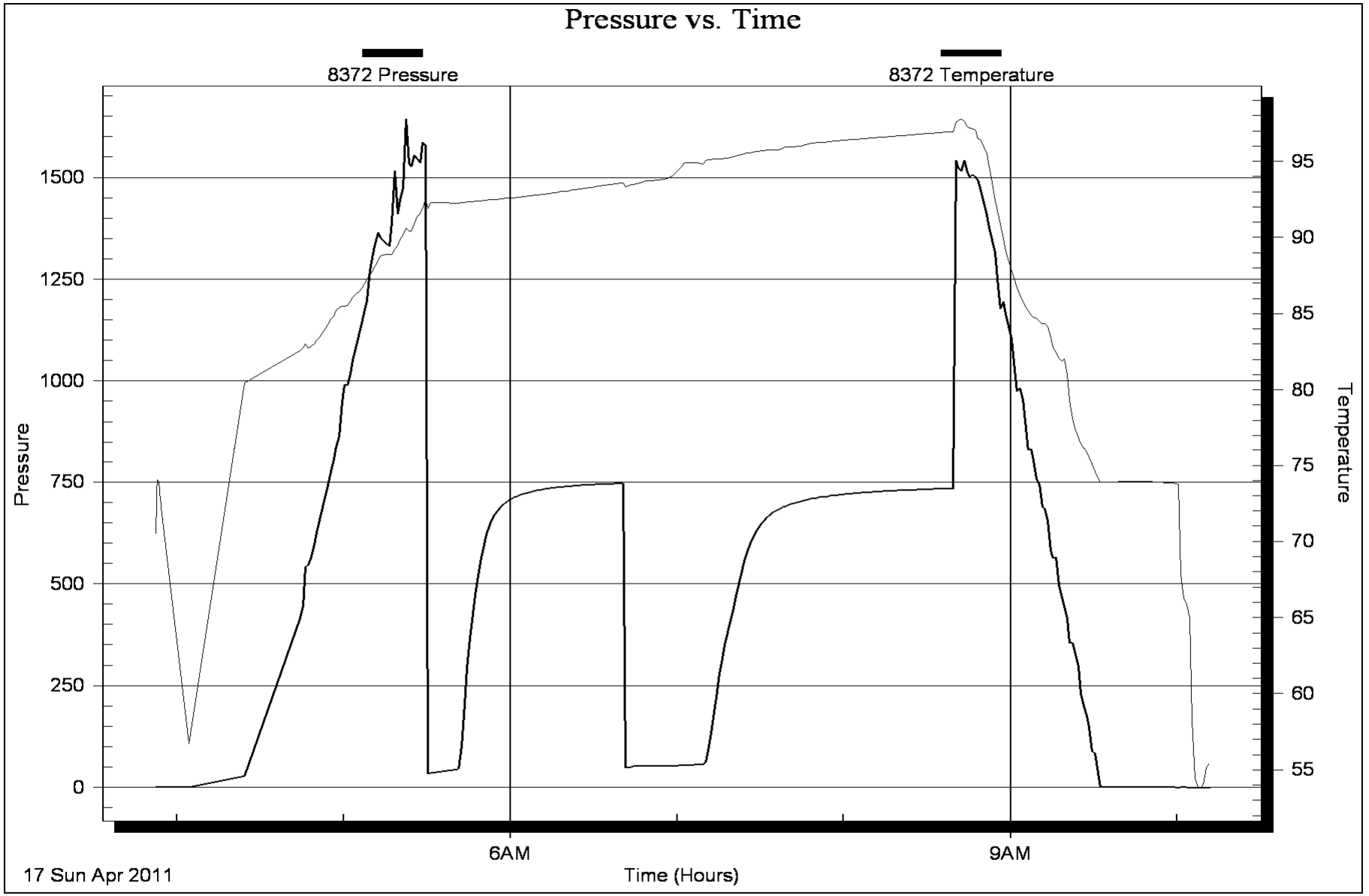
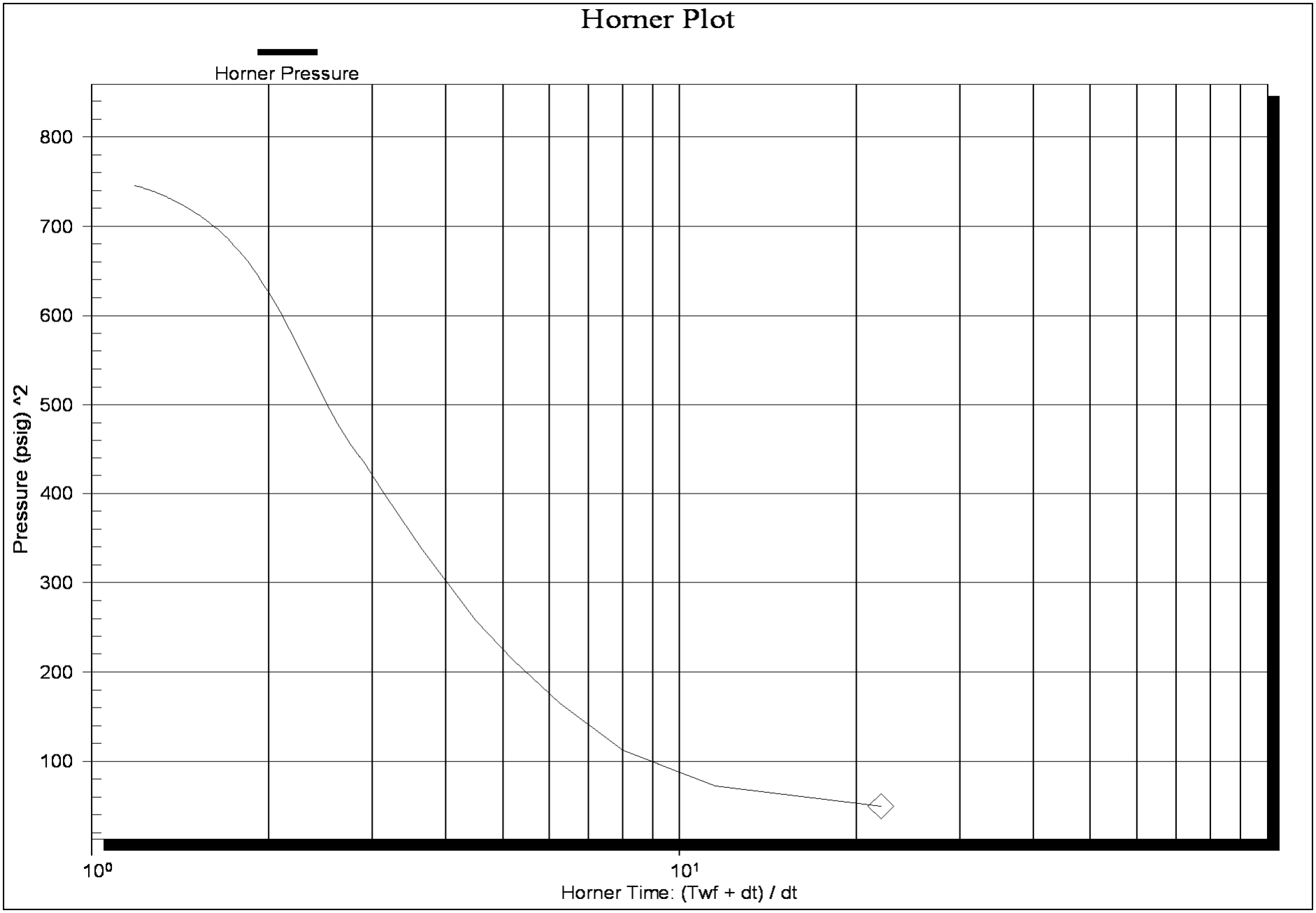
90
85
80
75
70
65
60
55
50
6AM
9AM
17 Sun Apr 2011
Time (Hours)

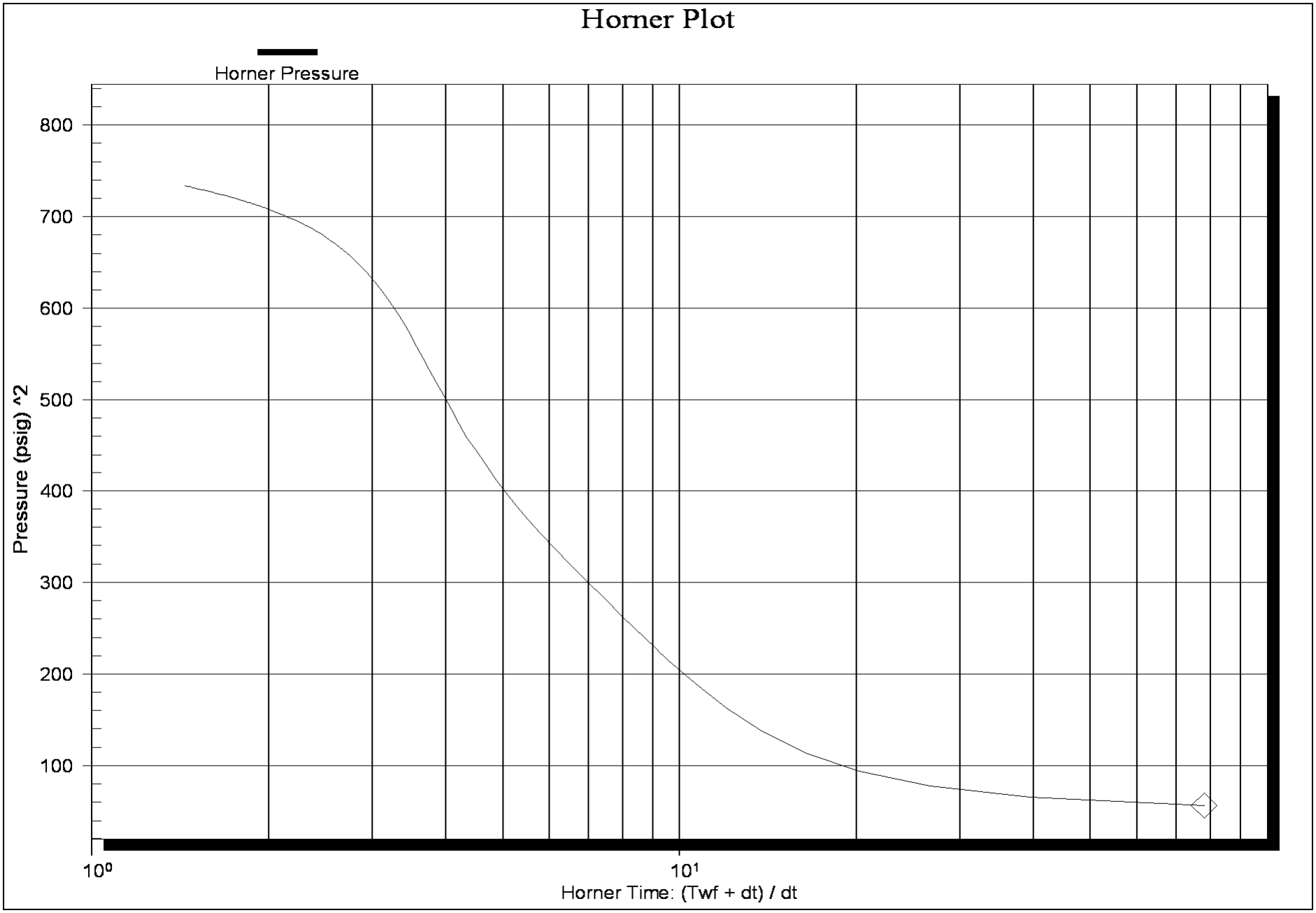

Pressure vs. Time
8372 Pressure
8372 Temperature
1500
1250
1000
750
500
250
0
Pressure
95
90
85
80
75
70
65
60
55
Temperature
6AM
9AM
17 Sun Apr 2011
Time (Hours)

Sam Gary 2011.04.17 @ 03:52:30 5-15-16/Ellis

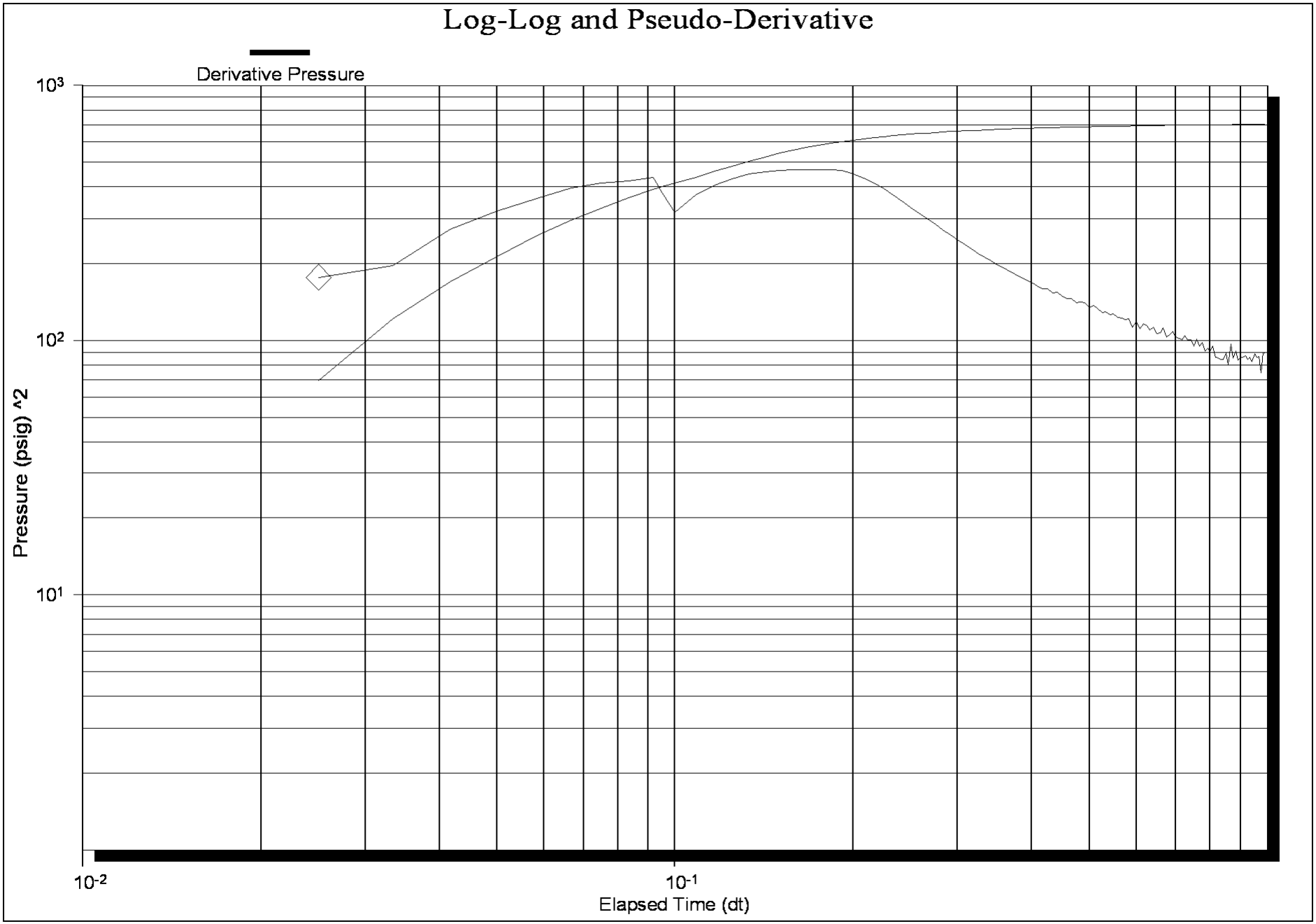


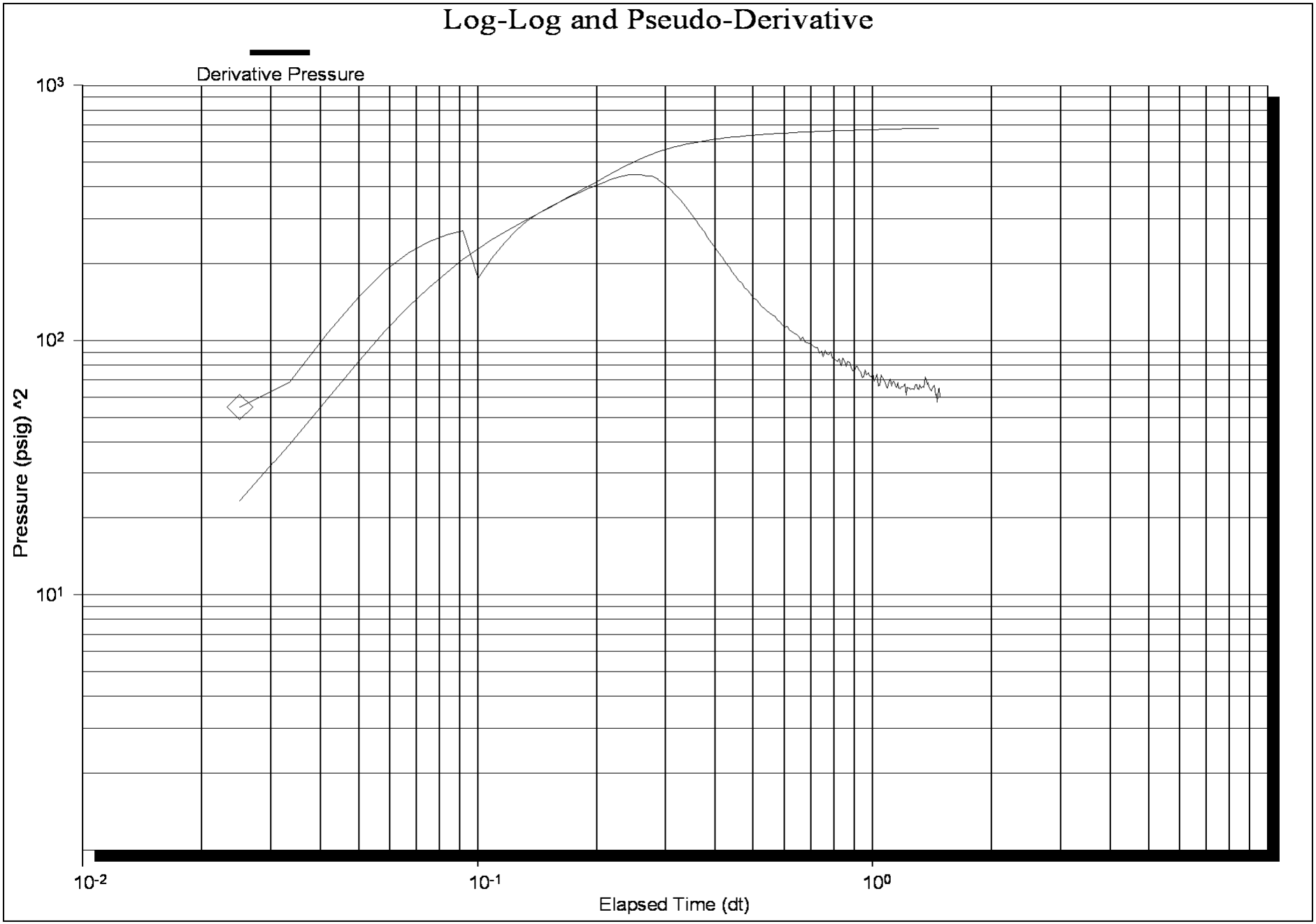
Serial Number: 8734 (Outside) P* : Slope (m) : kpa/log cycle Flow Cycle: 1

Sam Gary 2011.04.17 @ 03:52:30 5-15-16/Ellis



Serial Number: 8734 (Outside) P* : Slope (m) : kpa/log cycle Flow Cycle: 2


Log-Log and Pseudo-Derivative
Derivative Pressure
10^3
10^2
10^1
Pressure (psig) ^2
10^-2
10^-1
Elapsed Time (dt)


Log-Log and Pseudo-Derivative
Derivative Pressure
10³
10²
10¹
Pressure (psig) ^2
10-2
10-1
10⁰
Elapsed Time (dt)

DRILL STEM TEST REPORT

Prepared For: **Sam Gary**

1515 Wynkoop St. Ste 700
Denver, CO
80202

ATTN: Clayton Camozzi

5-15-16/Ellis

Rajewski et al 1-5

Start Date: 2011.04.17 @ 21:34:46
End Date: 2011.04.18 @ 03:42:45
Job Ticket #: 41875 DST #: 3

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

DRILL STEM TEST REPORT

Sam Gary

1515 Wynkoop St. Ste 700
Denver, CO
80202

ATTN: Clayton Camozzi

Rajewski et al 1-5

5-15-16/Ellis

Job Ticket: 41875 **DST#: 3**

Test Start: 2011.04.17 @ 21:34:46

GENERAL INFORMATION:

Formation: **LKC "H-K"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 23:26:45
Time Test Ended: 03:42:45

Test Type: Conventional Bottom Hole
Tester: Brian Fairbank
Unit No: 41

Interval: 3286.00 ft (KB) To 3372.00 ft (KB) (TVD)
Total Depth: 3372.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition:

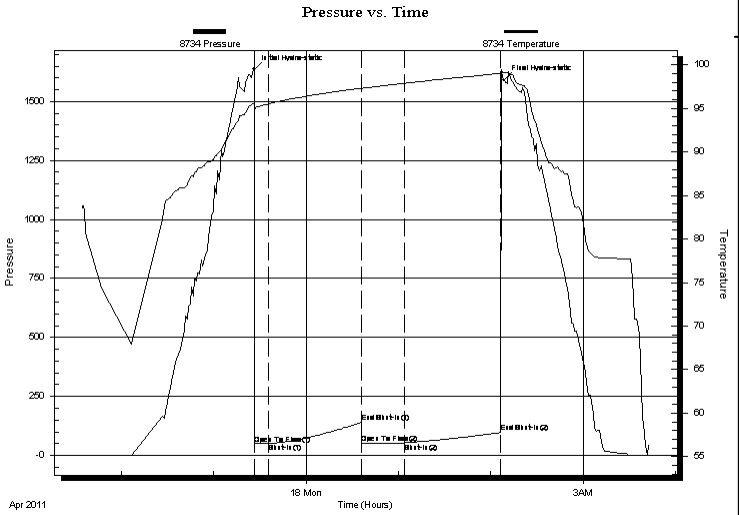
Reference Elevations: 1889.00 ft (KB)
1881.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8734 **Outside**

Press@RunDepth: 53.48 psig @ 3291.00 ft (KB)
Start Date: 2011.04.17 End Date: 2011.04.18
Start Time: 21:34:46 End Time: 03:42:45

Capacity: 8000.00 psig
Last Calib.: 2011.04.18
Time On Btm: 2011.04.17 @ 23:26:15
Time Off Btm: 2011.04.18 @ 02:08:45

TEST COMMENT: 10 - IFP - 1/4" blow throughout
60 - ISI - no blow back
20 - FFP - no blow
70 - FSI - no blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1635.84	95.47	Initial Hydro-static
1	48.44	94.84	Open To Flow (1)
10	50.28	95.51	Shut-In(1)
70	140.35	97.31	End Shut-In(1)
70	50.54	97.27	Open To Flow (2)
98	53.48	97.88	Shut-In(2)
160	97.04	99.00	End Shut-In(2)
163	1591.41	99.12	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
2.00	mud 100%	0.01

Gas Rates

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

DRILL STEM TEST REPORT

Sam Gary

1515 Wynkoop St. Ste 700
Denver, CO
80202

ATTN: Clayton Camozzi

Rajewski et al 1-5

5-15-16/Ellis

Job Ticket: 41875 **DST#: 3**

Test Start: 2011.04.17 @ 21:34:46

GENERAL INFORMATION:

Formation: **LKC "H-K"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 23:26:45
Time Test Ended: 03:42:45

Test Type: Conventional Bottom Hole
Tester: Brian Fairbank
Unit No: 41

Interval: 3286.00 ft (KB) To 3372.00 ft (KB) (TVD)
Total Depth: 3372.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition:

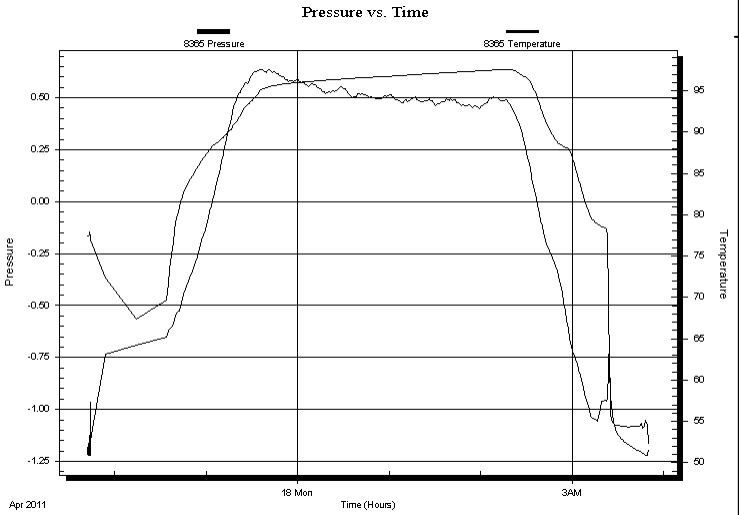
Reference Elevations: 1889.00 ft (KB)
1881.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8365 **Fluid**

Press@RunDepth: psig @ 3252.00 ft (KB)
Start Date: 2011.04.17 End Date: 2011.04.18
Start Time: 21:42:12 End Time: 03:50:11

Capacity: 8000.00 psig
Last Calib.: 2011.04.18
Time On Btm:
Time Off Btm:

TEST COMMENT: 10 - IFP - 1/4" blow throughout
60 - ISI - no blow back
20 - FFP - no blow
70 - FSI - no blow back



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
2.00	mud 100%	0.01

Gas Rates

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

DRILL STEM TEST REPORT

Sam Gary

1515 Wynkoop St. Ste 700
Denver, CO
80202

ATTN: Clayton Camozzi

Rajewski et al 1-5

5-15-16/Ellis

Job Ticket: 41875 **DST#: 3**

Test Start: 2011.04.17 @ 21:34:46

GENERAL INFORMATION:

Formation: **LKC "H-K"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 23:26:45
Time Test Ended: 03:42:45

Test Type: Conventional Bottom Hole
Tester: Brian Fairbank
Unit No: 41

Interval: 3286.00 ft (KB) To 3372.00 ft (KB) (TVD)
Total Depth: 3372.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition:

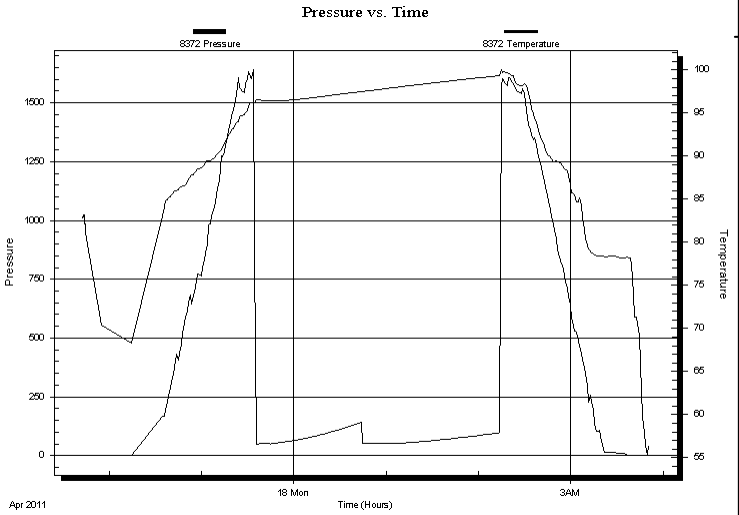
Reference Elevations: 1889.00 ft (KB)
1881.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8372 **Inside**

Press@RunDepth: psig @ 3291.00 ft (KB)
Start Date: 2011.04.17 End Date: 2011.04.18
Start Time: 21:42:43 End Time: 03:50:42

Capacity: 8000.00 psig
Last Calib.: 2011.04.18
Time On Btm:
Time Off Btm:

TEST COMMENT: 10 - IFP - 1/4" blow throughout
60 - ISI - no blow back
20 - FFP - no blow
70 - FSI - no blow back



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
2.00	mud 100%	0.01

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

Sam Gary

1515 Wynkoop St. Ste 700
Denver, CO
80202

ATTN: Clayton Camozzi

Rajewski et al 1-5

5-15-16/Ellis

Job Ticket: 41875 **DST#: 3**

Test Start: 2011.04.17 @ 21:34:46

Tool Information

Drill Pipe:	Length:	3230.00 ft	Diameter:	3.80	inches	Volume:	45.31	bbl	
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	0.00	inches	Volume:	0.00	bbl	
Drill Collar:	Length:	31.00 ft	Diameter:	2.25	inches	Volume:	0.15	bbl	
						Total Volume:	45.46	bbl	

Drill Pipe Above KB:	9.00 ft
Depth to Top Packer:	3286.00 ft
Depth to Bottom Packer:	ft
Interval betw een Packers:	86.00 ft
Tool Length:	120.00 ft
Number of Packers:	2 Diameter: 6.75 inches

Tool Weight:	2500.00 lb
Weight set on Packer:	25000.00 lb
Weight to Pull Loose:	48000.00 lb
Tool Chased	0.00 ft
String Weight: Initial	44000.00 lb
Final	44000.00 lb

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Recorder	0.00	8365	Fluid	3252.00		
Blank Spacing	5.00			3257.00		
Shut In Tool	5.00			3262.00		
Sampler	2.00			3264.00		
Hydraulic tool	5.00			3269.00		
Jars	5.00			3274.00		
Safety Joint	2.00			3276.00		
Packer	5.00			3281.00	34.00	Bottom Of Top Packer
Packer	5.00			3286.00		
Stubb	1.00			3287.00		
Perforations	3.00			3290.00		
Change Over Sub	1.00			3291.00		
Recorder	0.00	8372	Inside	3291.00		
Recorder	0.00	8734	Outside	3291.00		
Blank Spacing	62.00			3353.00		
Change Over Sub	1.00			3354.00		
Perforations	15.00			3369.00		
Bullnose	3.00			3372.00	86.00	Bottom Packers & Anchor
Total Tool Length:	**120.00**					

DRILL STEM TEST REPORT

FLUID SUMMARY

Sam Gary

1515 Wynkoop St. Ste 700
Denver, CO
80202

ATTN: Clayton Camozzi

Rajewski et al 1-5

5-15-16/Ellis

Job Ticket: 41875 **DST#: 3**

Test Start: 2011.04.17 @ 21:34:46

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:	52.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	7.96 in³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	6100.00 ppm				
Filter Cake:	inches				

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
2.00	mud 100%	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:

Sam Gary

1515 Wynkoop St. Ste 700
Denver, CO
80202

ATTN: Clayton Camozzi

Rajewski et al 1-5

5-15-16/Ellis

Job Ticket: 41875 **DST#: 3**

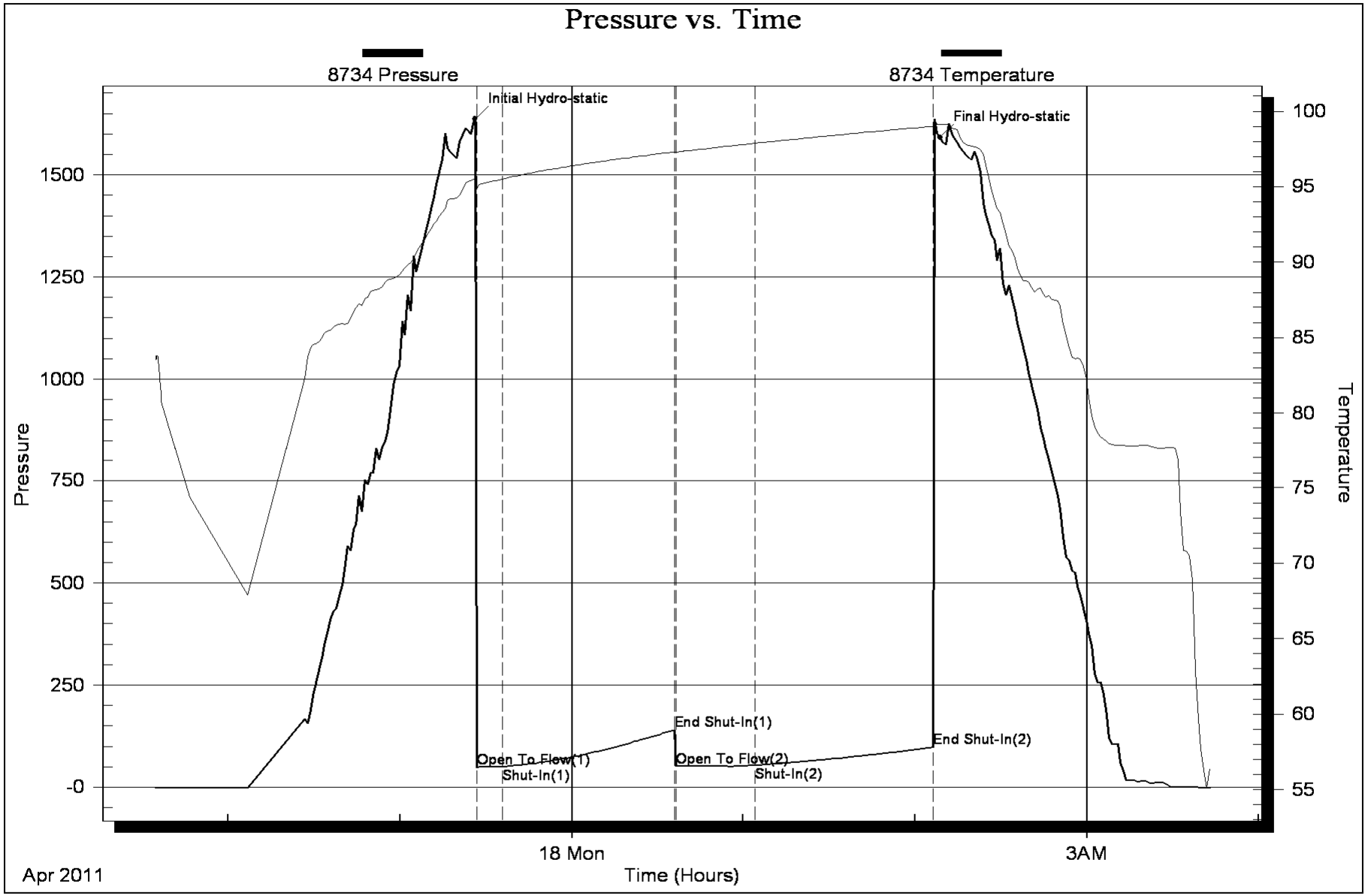
Test Start: 2011.04.17 @ 21:34:46

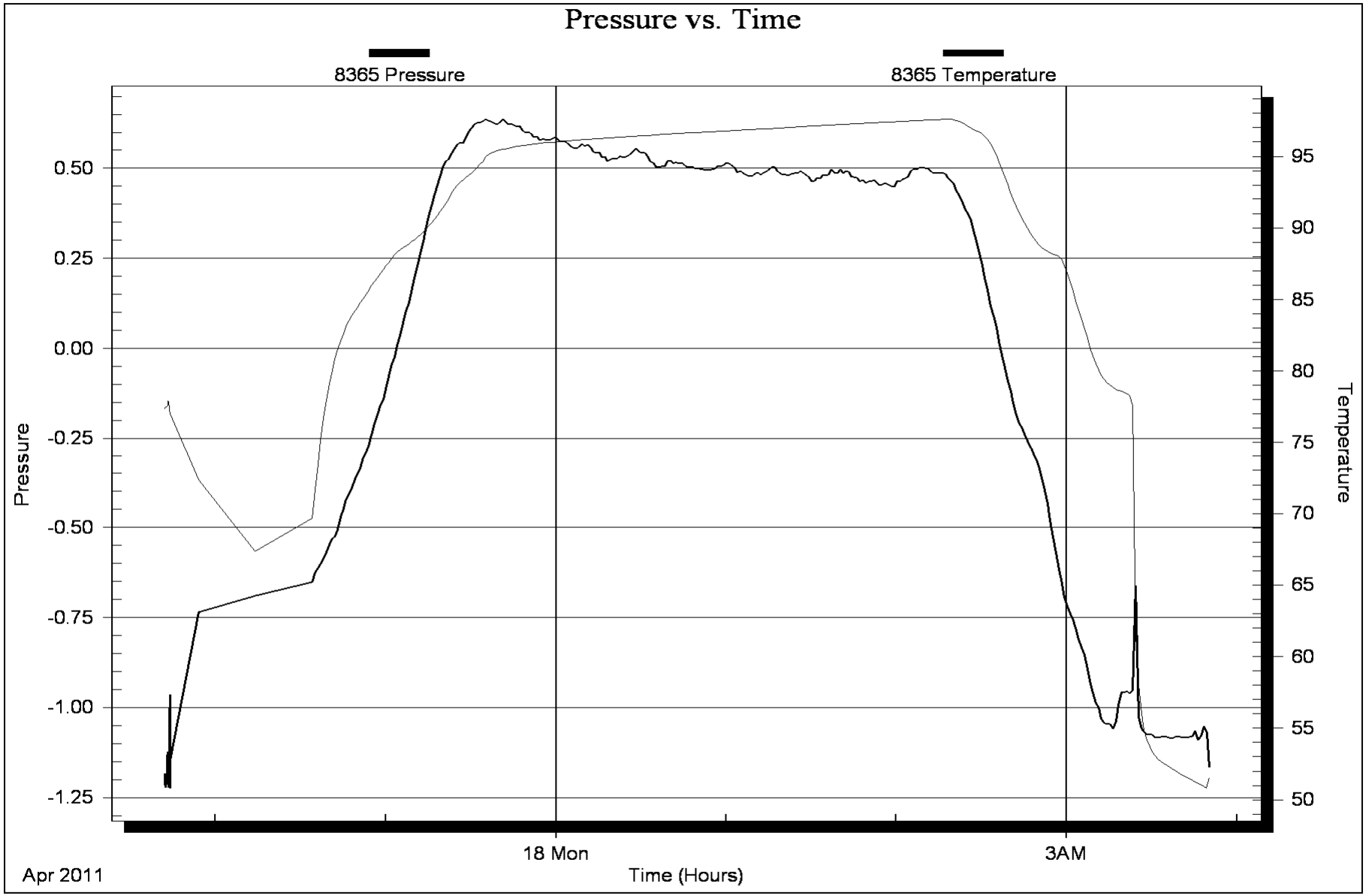
Gas Rates Information

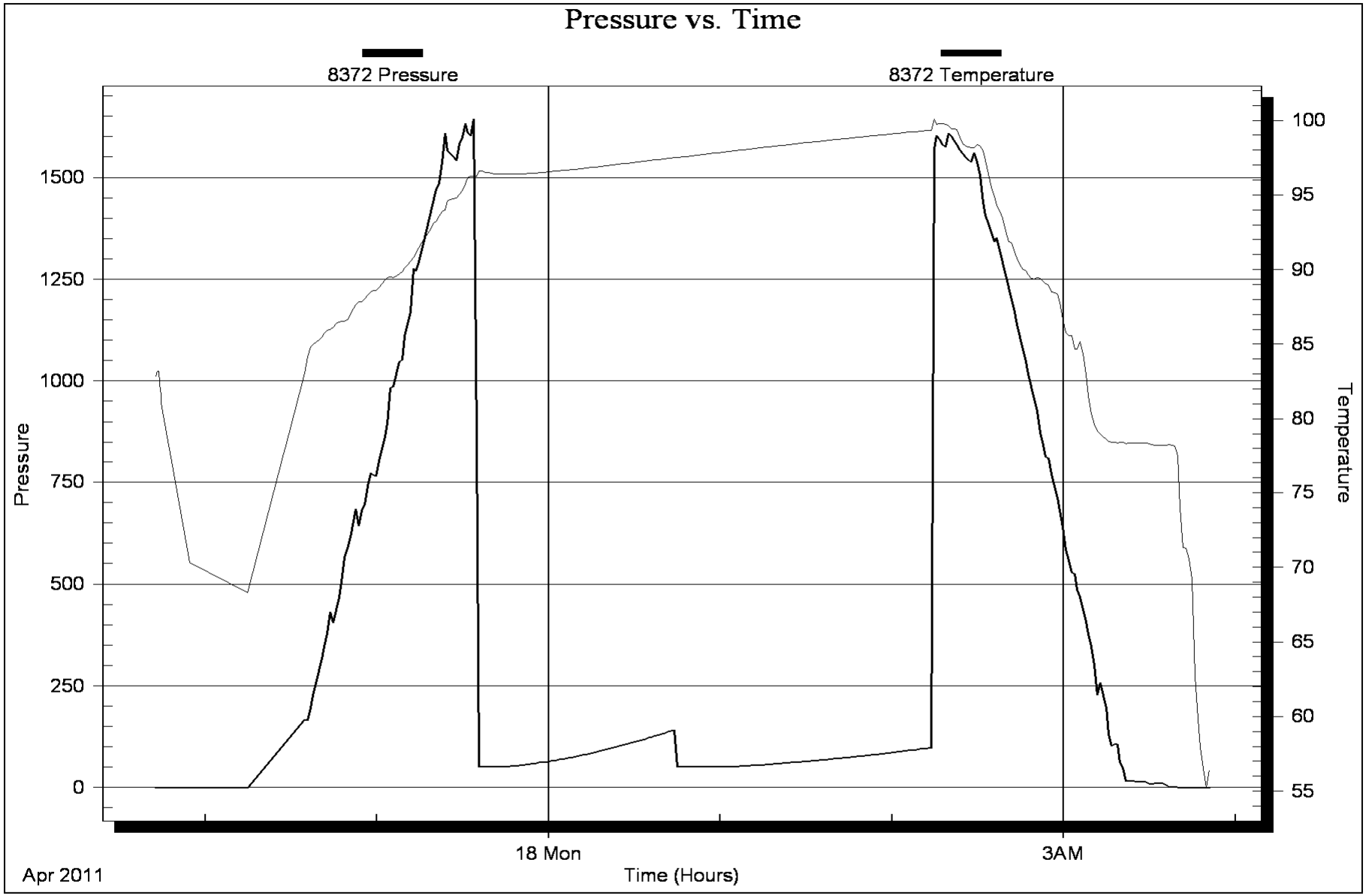
Temperature: 59 deg C
Relative Density: 0.65
Z Factor: 0.8

Gas Rates Table

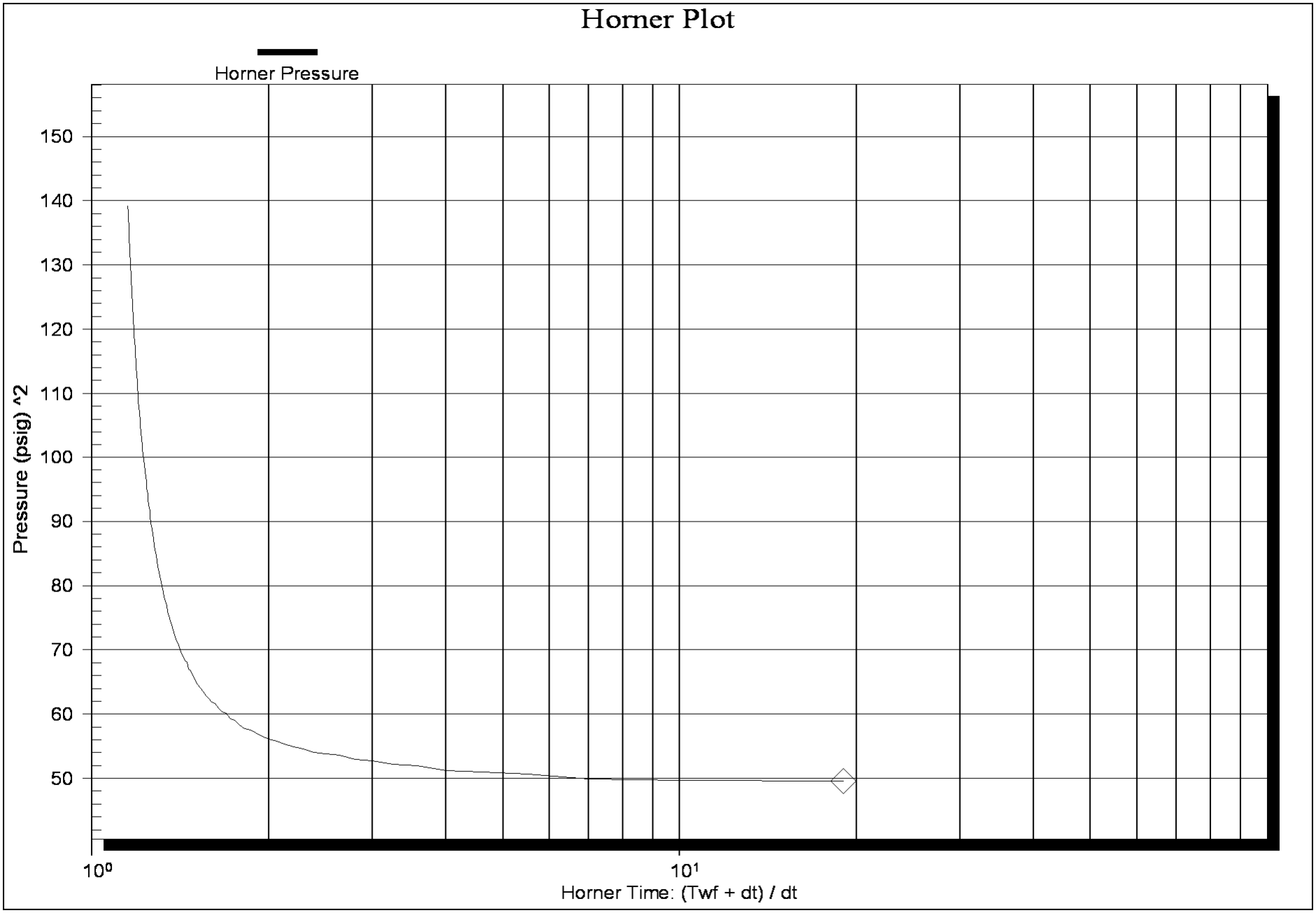
Flow Period	Elapsed Time	Choke (mm)	Pressure (kPaa)	Gas Rate (m^3/d)
		0.00	0.00	0.00


Pressure vs. Time
8734 Pressure
8734 Temperature
Initial Hydro-static
Final Hydro-static
End Shut-In(1)
End Shut-In(2)
Open To Flow(1)
Shut-In(1)
Open To Flow(2)
Shut-In(2)
Pressure
Temperature
1500
1250
1000
750
500
250
-0
100
95
90
85
80
75
70
65
60
55
18 Mon
3AM
Apr 2011
Time (Hours)


Pressure vs. Time
8365 Pressure
8365 Temperature
0.50
0.25
0.00
-0.25
-0.50
-0.75
-1.00
-1.25
Pressure
95
90
85
80
75
70
65
60
55
50
Temperature
18 Mon
3AM
Apr 2011
Time (Hours)


Pressure vs. Time
8372 Pressure
8372 Temperature
1500
1250
1000
750
500
250
0
Pressure
100
95
90
85
80
75
70
65
60
55
Temperature
18 Mon
3AM
Apr 2011
Time (Hours)

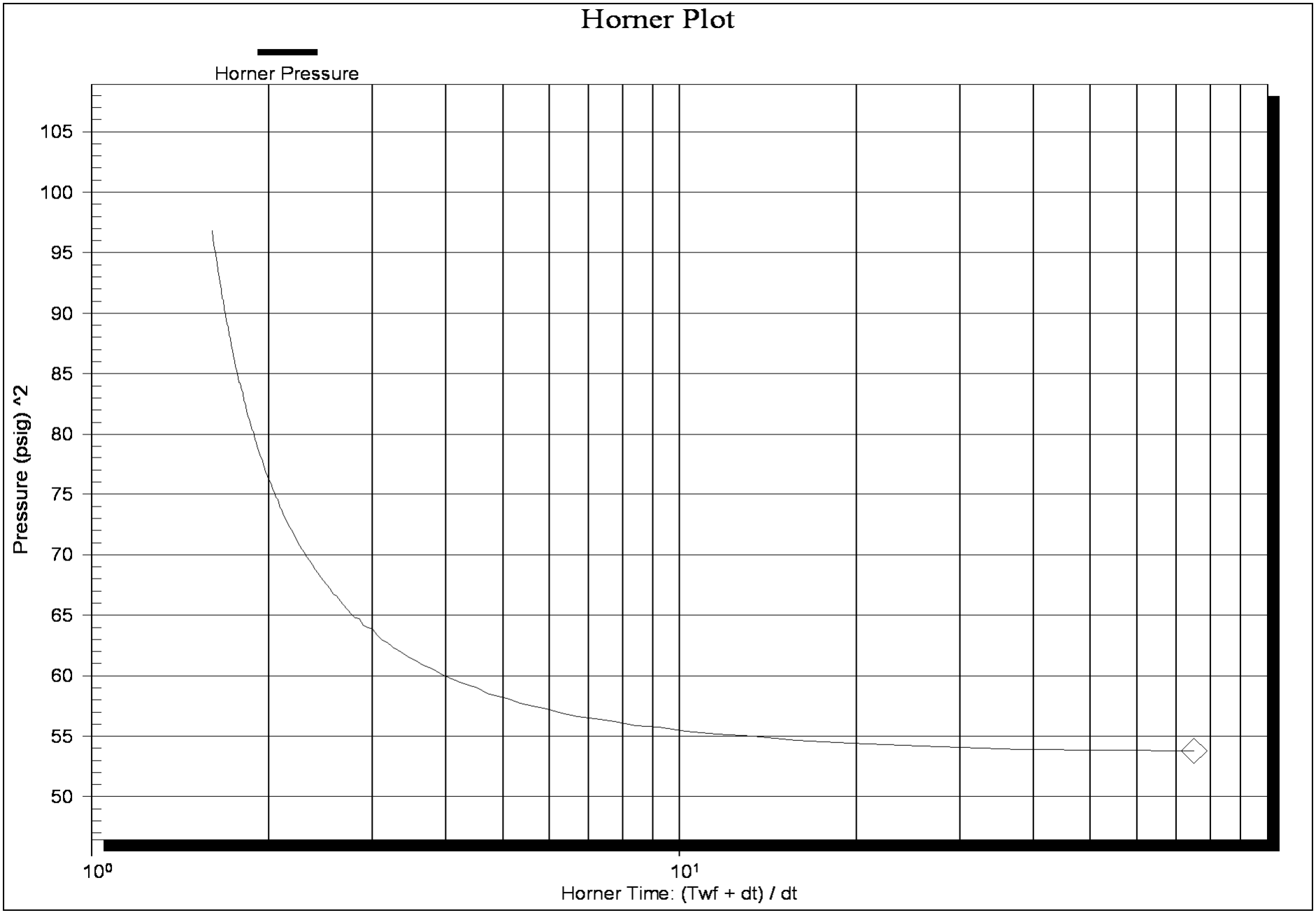
Sam Gary 2011.04.17 @ 21:34:46 5-15-16/Ellis



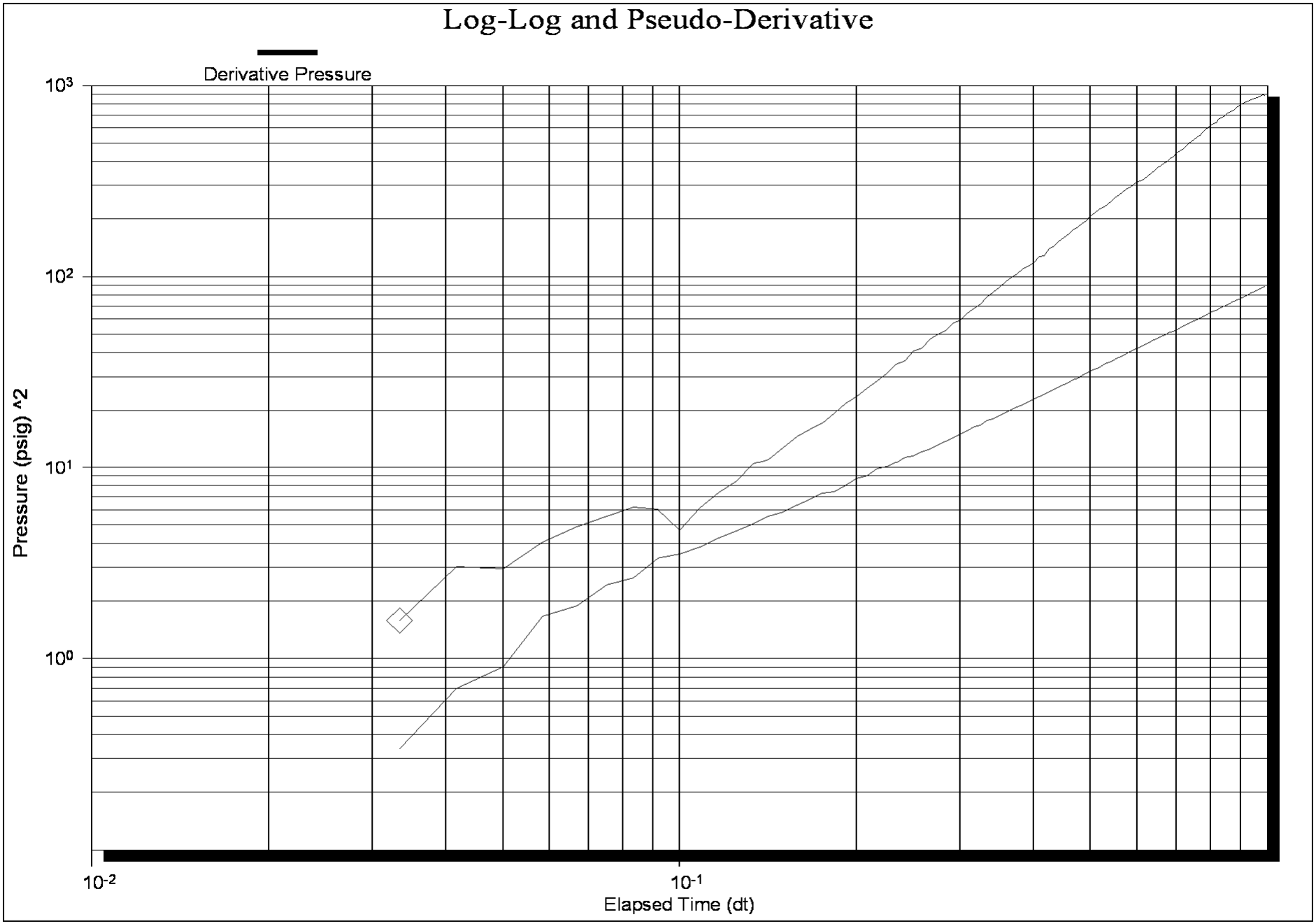
Serial Number: 8734 (Outside) P* : Slope (m) : kpa/log cycle Flow Cycle: 1

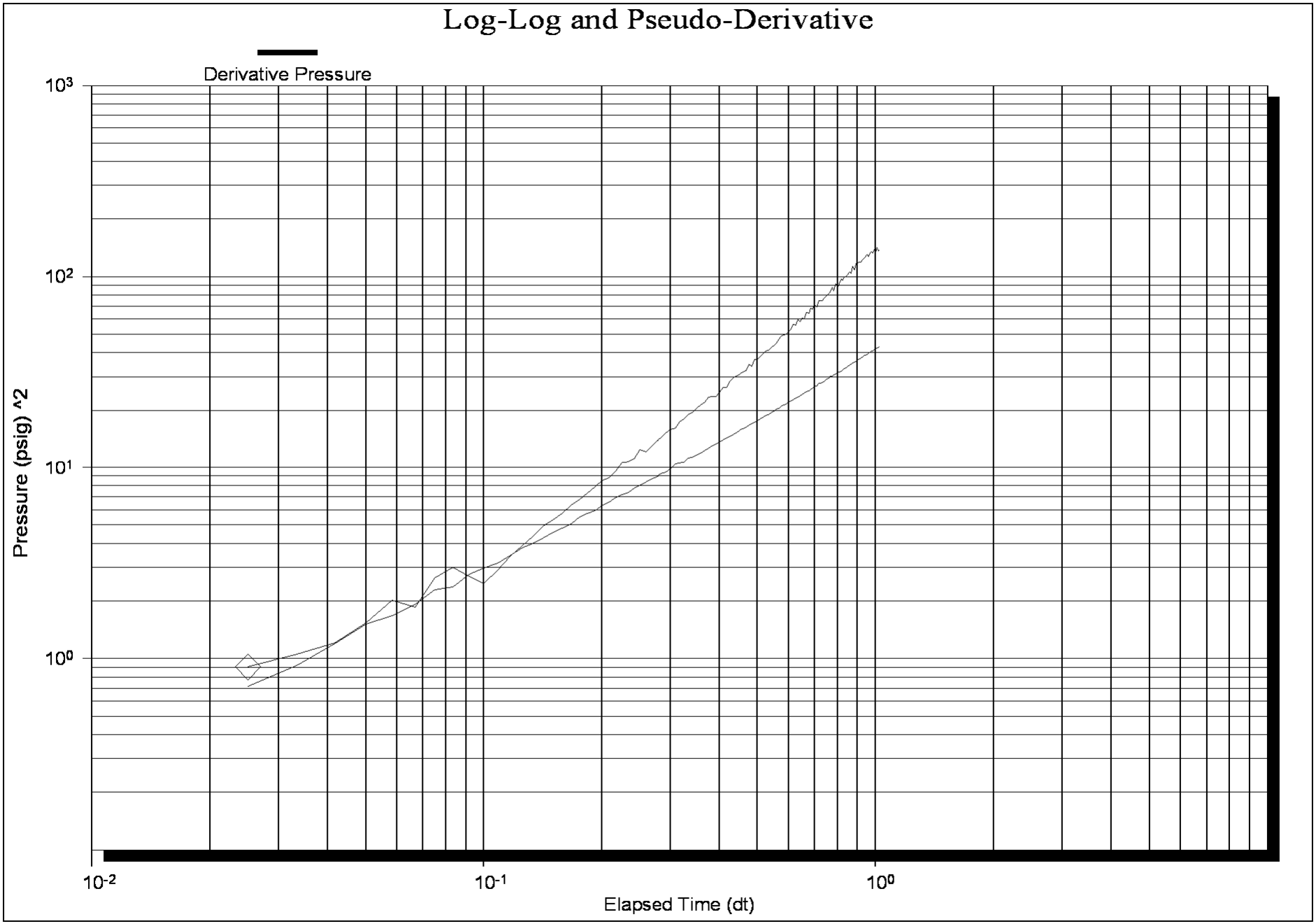
Sam Gary 2011.04.17 @ 21:34:46 5-15-16/Ellis

Horner Plot



Serial Number: 8734 (Outside) P* : Slope (m) : kpa/log cycle Flow Cycle: 2


Log-Log and Pseudo-Derivative
Derivative Pressure
10^3
10^2
10^1
10^0
Pressure (psig) ^2
10^-2
10^-1
Elapsed Time (dt)


Log-Log and Pseudo-Derivative
Derivative Pressure
10^3
10^2
10^1
10^0
Pressure (psig) ^2
10^{-2}
10^{-1}
10^0
Elapsed Time (dt)

DRILL STEM TEST REPORT

Sam Gary

1515 Wynkoop St. Ste 700
Denver, CO
80202

ATTN: Clayton Camozzi

Rajewski et al 1-5

5-15-16/Ellis

Job Ticket: 42796 **DST#: 4**

Test Start: 2011.04.19 @ 02:34:48

GENERAL INFORMATION:

Formation: **Arbuckle**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 04:27:18
Time Test Ended: 10:24:18

Test Type: Conventional Bottom Hole
Tester: Dustin Rash
Unit No: 41

Interval: 3442.00 ft (KB) To 3456.00 ft (KB) (TVD)
Total Depth: 3548.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Poor

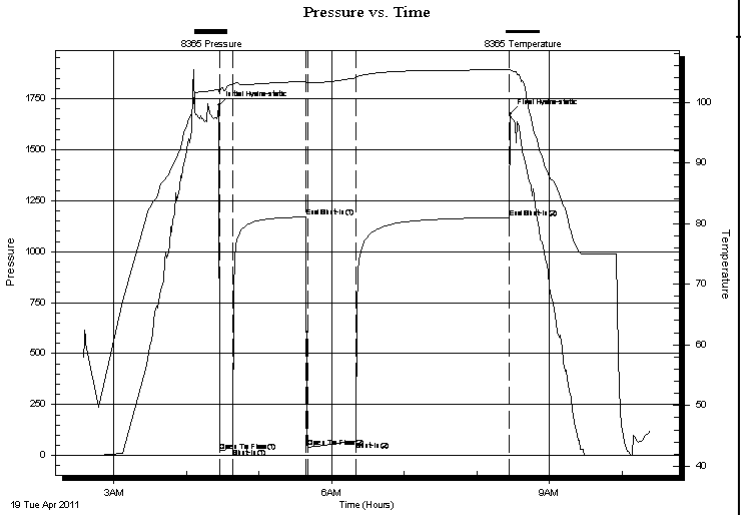
Reference Elevations: 1889.00 ft (KB)
1881.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8365 **Fluid**

Press@RunDepth: 72.25 psig @ 3414.00 ft (KB)
Start Date: 2011.04.19 End Date: 2011.04.19
Start Time: 02:34:49 End Time: 10:24:18

Capacity: 8000.00 psig
Last Calib.: 2011.04.19
Time On Btm: 2011.04.19 @ 04:26:48
Time Off Btm: 2011.04.19 @ 08:27:48

TEST COMMENT: IF-Weak building blow . Built to 2&1/4 inches.
ISI-No Return.
FF-Weak building blow . Built to 7&1/2 inches.
FSI-No Return. Time Intervals-10-60-40-120



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1717.22	102.02	Initial Hydro-static
1	20.33	101.47	Open To Flow (1)
11	36.01	102.87	Shut-In(1)
72	1170.08	103.43	End Shut-In(1)
74	40.01	103.21	Open To Flow (2)
113	72.25	103.99	Shut-In(2)
240	1166.83	105.29	End Shut-In(2)
241	1675.89	105.40	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
62.00	90%Water/10%Mud	0.59
62.00	60%Water/40%Mud	0.87

Gas Rates

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

DRILL STEM TEST REPORT

Sam Gary

1515 Wynkoop St. Ste 700
Denver, CO
80202

ATTN: Clayton Camozzi

Rajewski et al 1-5

5-15-16/Ellis

Job Ticket: 42796 **DST#: 4**

Test Start: 2011.04.19 @ 02:34:48

GENERAL INFORMATION:

Formation: **Arbuckle**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 04:27:18
Time Test Ended: 10:24:18

Test Type: Conventional Bottom Hole
Tester: Dustin Rash
Unit No: 41

Interval: 3442.00 ft (KB) To 3456.00 ft (KB) (TVD)
Total Depth: 3548.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Poor

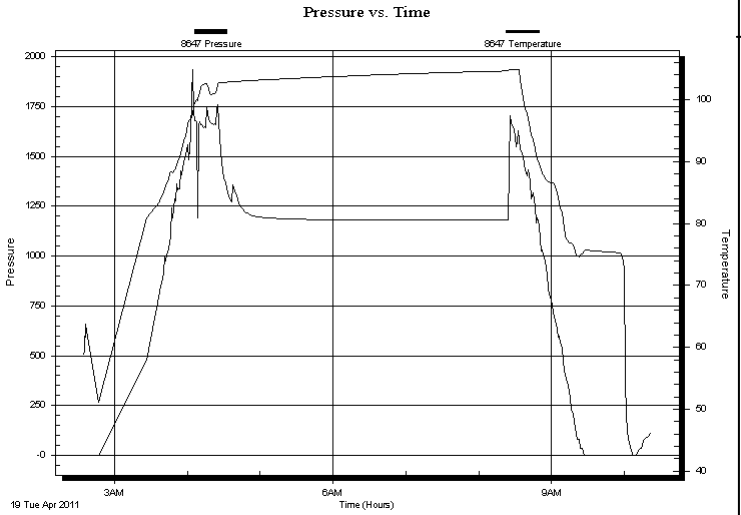
Reference Elevations: 1889.00 ft (KB)
1881.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8647 **Below (Straddle)**

Press@RunDepth: psig @ 3486.00 ft (KB)
Start Date: 2011.04.19 End Date: 2011.04.19
Start Time: 02:34:42 End Time: 10:21:21

Capacity: 8000.00 psig
Last Calib.: 2011.04.19
Time On Btm:
Time Off Btm:

TEST COMMENT: IF-Weak building blow . Built to 2&1/4 inches.
ISI-No Return.
FF-Weak building blow . Built to 7&1/2 inches.
FSI-No Return. Time Intervals-10-60-40-120



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
62.00	90%Water/10%Mud	0.59
62.00	60%Water/40%Mud	0.87

Gas Rates

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

DRILL STEM TEST REPORT

Sam Gary

1515 Wynkoop St. Ste 700
Denver, CO
80202

ATTN: Clayton Camozzi

Rajewski et al 1-5

5-15-16/Ellis

Job Ticket: 42796 **DST#: 4**

Test Start: 2011.04.19 @ 02:34:48

GENERAL INFORMATION:

Formation: **Arbuckle**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 04:27:18
Time Test Ended: 10:24:18

Test Type: Conventional Bottom Hole
Tester: Dustin Rash
Unit No: 41

Interval: 3442.00 ft (KB) To 3456.00 ft (KB) (TVD)
Total Depth: 3548.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Poor

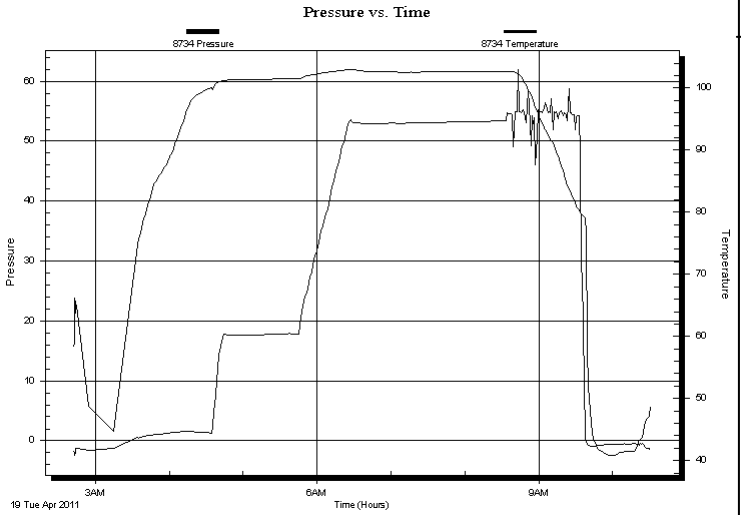
Reference Elevations: 1889.00 ft (KB)
1881.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8734 **Outside**

Press@RunDepth: psig @ 3451.00 ft (KB)
Start Date: 2011.04.19 End Date: 2011.04.19
Start Time: 02:42:30 End Time: 10:30:29

Capacity: 8000.00 psig
Last Calib.: 2011.04.19
Time On Btm:
Time Off Btm:

TEST COMMENT: IF-Weak building blow . Built to 2&1/4 inches.
ISI-No Return.
FF-Weak building blow . Built to 7&1/2 inches.
FSI-No Return. Time Intervals-10-60-40-120



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
62.00	90%Water/10%Mud	0.59
62.00	60%Water/40%Mud	0.87

Gas Rates

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

DRILL STEM TEST REPORT

FLUID SUMMARY

Sam Gary

1515 Wynkoop St. Ste 700
Denver, CO
80202

ATTN: Clayton Camozzi

Rajewski et al 1-5

5-15-16/Ellis

Job Ticket: 42796 **DST#: 4**

Test Start: 2011.04.19 @ 02:34:48

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:	26500 ppm
Viscosity:	53.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	9.18 in³	Gas Cushion Type:			
Resistivity:	0.40 ohm.m	Gas Cushion Pressure:	psig		
Salinity:	6700.00 ppm				
Filter Cake:	inches				

Recovery Information

Recovery Table

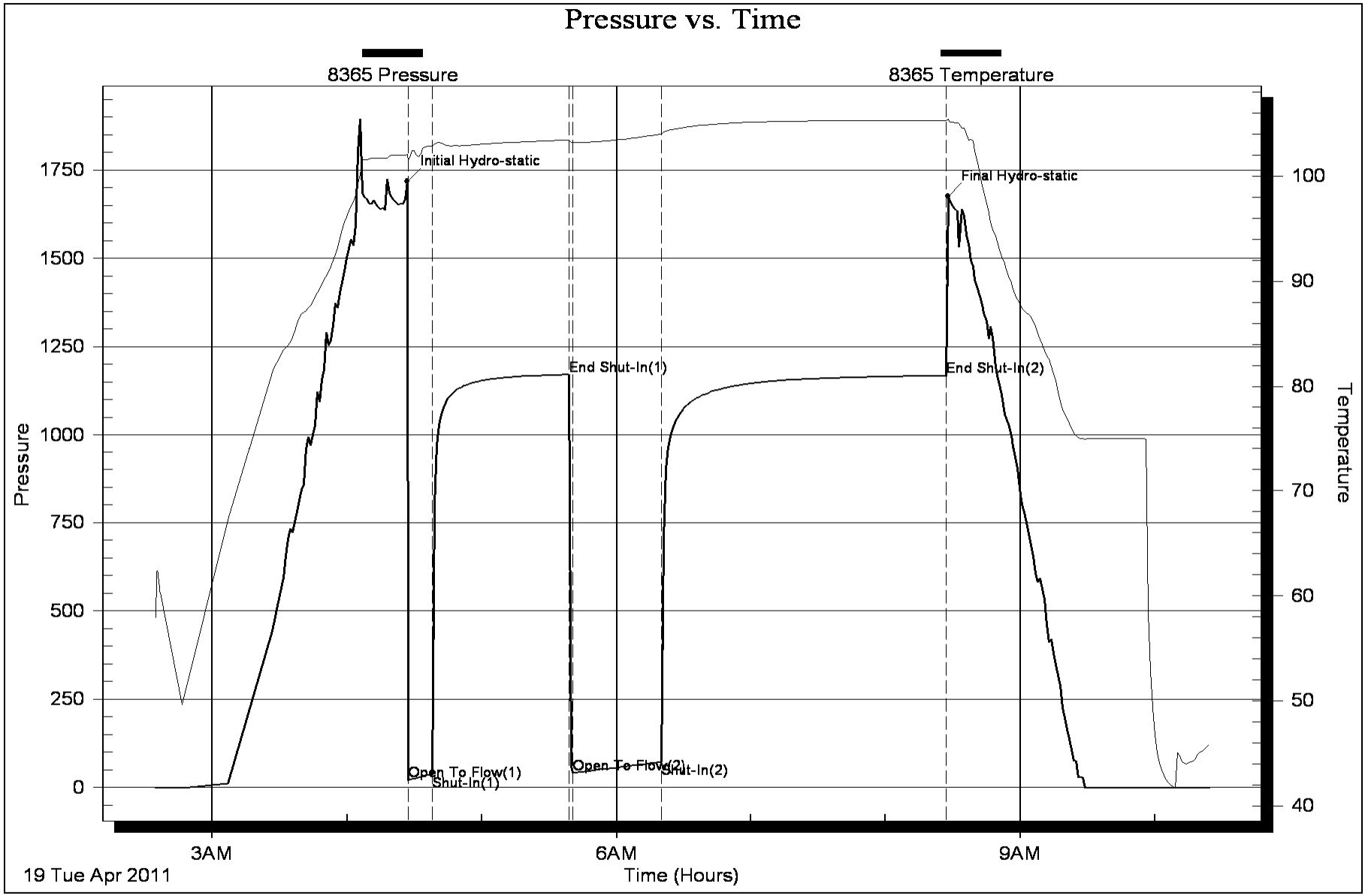
Length ft	Description	Volume bbl
62.00	90%Water/10%Mud	0.587
62.00	60%Water/40%Mud	0.870

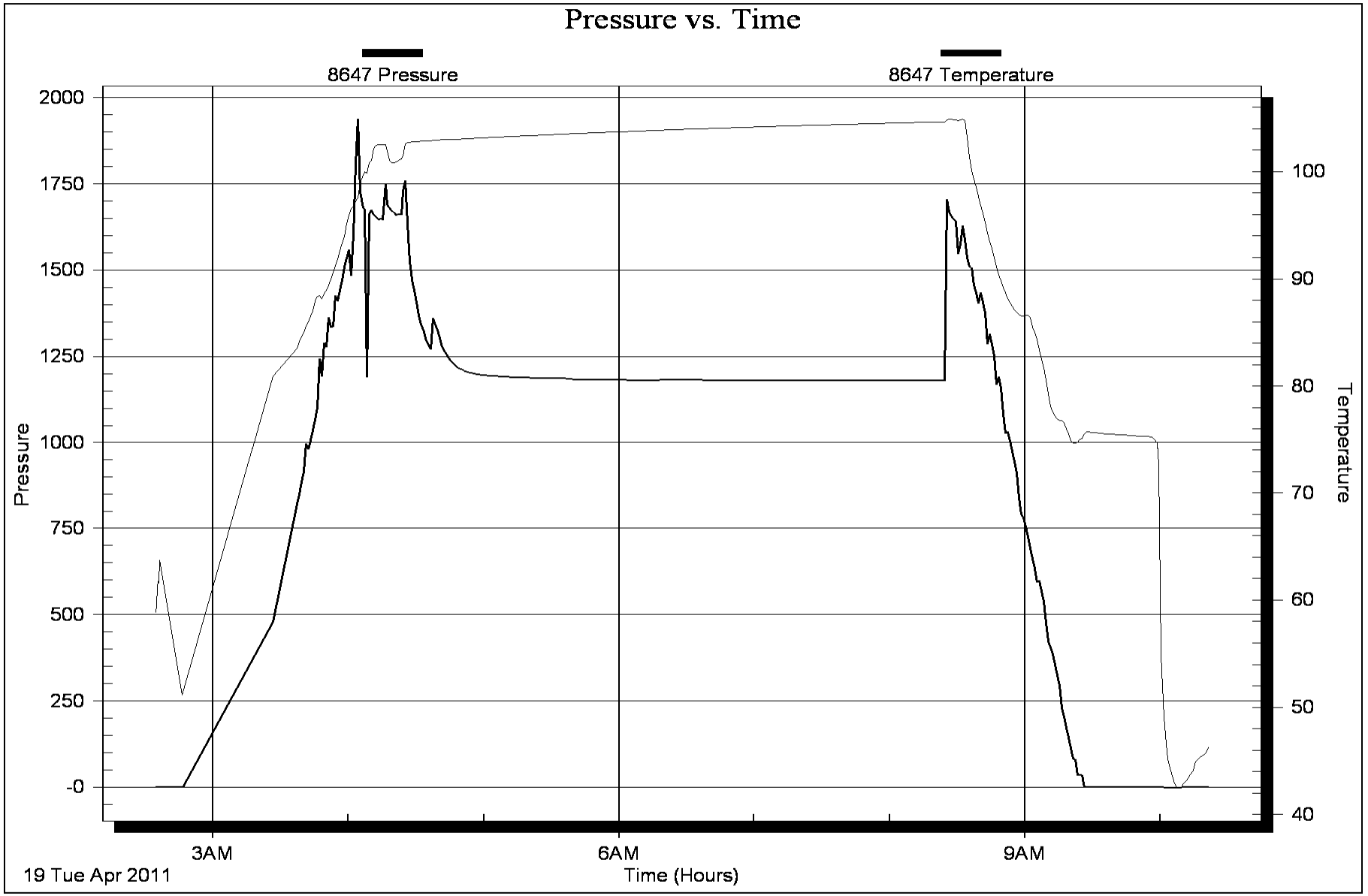
Total Length: 124.00 ft Total Volume: 1.457 bbl

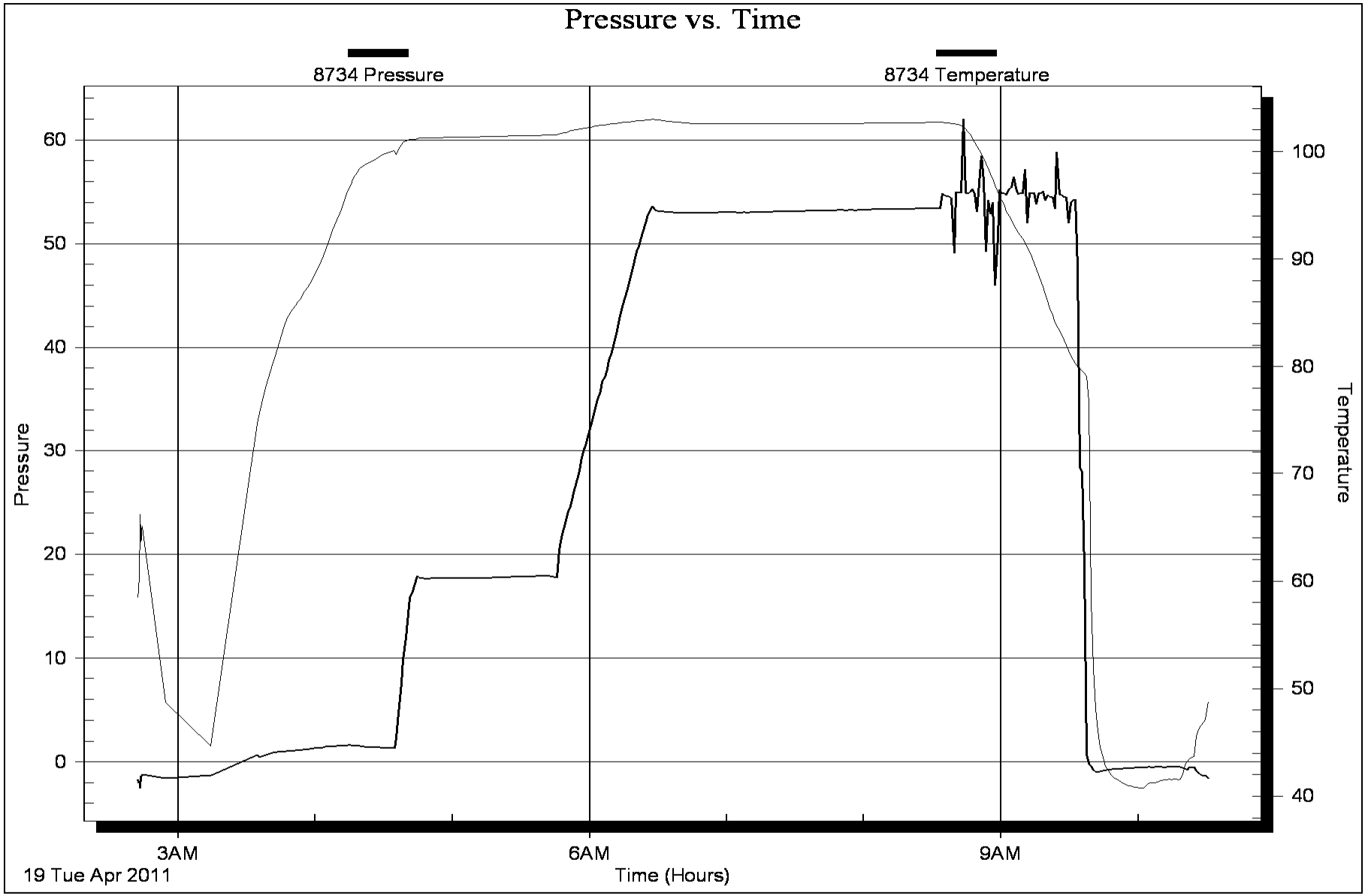
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

Laboratory Name: Laboratory Location:

Recovery Comments: Sampler- 1900ML-Water 100ML-Mud
Pressure- 850# Resistivity- .441@44=24,500ppm


Pressure vs. Time
8365 Pressure
8365 Temperature
Initial Hydro-static
Final Hydro-static
End Shut-In(1)
End Shut-In(2)
Open To Flow(1)
Shut-In(1)
Open To Flow(2)
Shut-In(2)
Pressure
Temperature
1750
1500
1250
1000
750
500
250
0
100
90
80
70
60
50
40
3AM
6AM
9AM
19 Tue Apr 2011
Time (Hours)


Pressure vs. Time
8647 Pressure
8647 Temperature
2000
1750
1500
1250
1000
750
500
250
-0
Pressure
100
90
80
70
60
50
40
Temperature
3AM
6AM
9AM
19 Tue Apr 2011
Time (Hours)


Pressure vs. Time
8734 Pressure
8734 Temperature
Pressure
Temperature
60
50
40
30
20
10
0
100
90
80
70
60
50
40
3AM
6AM
9AM
19 Tue Apr 2011
Time (Hours)