Confidentiality Requested:
☐ Yes ☐ No

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

1098196

Form ACO-1
August 2013
Form must be Typed
Form must be Signed
All blanks must be Filled

WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE

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

Designate Type of Completion:

☑ New Well ☐ Re-Entry ☐ Workover

☑ Oil ☐ WSW ☐ SWD ☐ SIOW
☐ Gas ☐ D&A ☐ ENHR ☐ SIGW
☐ OG ☐ GSW ☐ Temp. Abd.
☐ CM *(Coal Bed Methane)*
☐ Cathodic ☐ Other *(Core, Expl., etc.)*:

If Workover/Re-entry: Old Well Info as follows:

Operator:
Well Name:
Original Comp. Date: Original Total Depth:

☐ Deepening ☐ Re-perf. ☐ Conv. to ENHR ☐ Conv. to SWD
☐ Plug Back ☐ Conv. to GSW ☐ Conv. to Producer

☐ Commingled Permit #:
☐ Dual Completion Permit #:
☐ SWD Permit #:
☐ ENHR Permit #:
☐ GSW Permit #:

6/27/2012	7/2/2012	7/4/2012
Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date

API No. 15 - 15-051-26330-00-00
Spot Description:
NE - NW - SW - SE Sec. 30 Twp. 14 S. R. 17 ☐ East ☑ West
1025 Feet from ☐ North / ☑ South Line of Section
2050 Feet from ☑ East / ☐ West Line of Section

Footages Calculated from Nearest Outside Section Corner:
☐ NE ☐ NW ☑ SE ☐ SW

GPS Location: Lat: *(e.g. xx.xxxxx)* , Long: *(e.g. -xxx.xxxxx)*

Datum: ☐ NAD27 ☐ NAD83 ☐ WGS84

County: Ellis
Lease Name: COPPER Well #: 1-30
Field Name:
Producing Formation: LANSING
Elevation: Ground: 1934 Kelly Bushing: 1942
Total Vertical Depth: 3613 Plug Back Total Depth:
Amount of Surface Pipe Set and Cemented at: 987 Feet
Multiple Stage Cementing Collar Used? ☐ Yes ☑ No
If yes, show depth set: Feet
If Alternate II completion, cement circulated from:
feet depth to: w/ sx cmt.

Drilling Fluid Management Plan
(Data must be collected from the Reserve Pit)

Chloride content: 82000 ppm Fluid volume: 160 bbls
Dewatering method used: Hauled to Disposal

Location of fluid disposal if hauled offsite:

Operator Name: KARLIN, GENE DBA GENE KARLIN COMPANY
Lease Name: NUSS License #: 3444
Quarter SW Sec. 5 Twp. 13 S. R. 17 ☐ East ☑ West
County: ELLIS Permit #: D25588

AFFIDAVIT

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

KCC Office Use ONLY

☑ **Confidentiality Requested**
Date: 10/22/2012
☑ **Confidential Release Date:** 10/22/2014
☑ **Wireline Log Received**
☐ **Geologist Report Received**
☐ **UIC Distribution**
ALT ☑ **I** ☐ **II** ☐ **III** **Approved by:** NAOMI JAMES **Date:** 10/23/2012

1098196

Operator Name: Samuel Gary Jr. & Associates, Inc. Lease Name: COPPER Well #: 1-30

Sec. 30 Twp. 14 S. R. 17 ☐ East ☑ West County: Ellis

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

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

Drill Stem Tests Taken ☑ Yes ☐ No
(Attach Additional Sheets)

Samples Sent to Geological Survey ☑ Yes ☐ No

Cores Taken ☐ Yes ☑ No

Electric Log Run ☑ Yes ☐ No

List All E. Logs Run:

Attached

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

Name	Top	Datum
TOPEKA	2951	-1009
HEEBNER	3173	-1231
DOUGLAS	3206	-1264
LANSING	3219	-1277
ARBUCKLE	3527	-1585
TD	3613	

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	987	COMMON CLASS A	425	3% CC, 2% GEL, 1/4#/SK FLOW SEAL
PRODUCTION	7.875	5.5	15.5	3607	Q-PRO-C	225	10% SALT, 5% GILSONITE

ADDITIONAL CEMENTING / SQUEEZE RECORD

Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
___ Perforate ___ Protect Casing ___ Plug Back TD ___ Plug Off Zone	-			
	-			

Did you perform a hydraulic fracturing treatment on this well? ☐ Yes ☐ No *(If No, skip questions 2 and 3)*

Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons? ☐ Yes ☐ No *(If No, skip question 3)*

Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry? ☐ Yes ☐ No *(If No, fill out Page Three of the ACO-1)*

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record *(Amount and Kind of Material Used)*	Depth
Attached	Attached	Attached	Attached

TUBING RECORD: Size: 2.875 Set At: 3320 Packer At:

Liner Run: ☐ Yes ☐ No

Date of First, Resumed Production, SWD or ENHR. 7/19/2012

Producing Method: ☐ Flowing ☑ Pumping ☐ Gas Lift ☐ Other *(Explain)*

Estimated Production Per 24 Hours	Oil	Bbls.	Gas	Mcf	Water	Bbls.	Gas-Oil Ratio	Gravity
	20				3			

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:
3220-3426 OA

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	COPPER 1-30
Doc ID	1098196

All Electric Logs Run

DEN-NEUT
INDUCTION
MICRO
SONIC
SPECTRAL GR

Form	ACO1 - Well Completion
Operator	Samuel Gary Jr. & Associates, Inc.
Well Name	COPPER 1-30
Doc ID	1098196

Perforations

Shots Per Foot	Perforation Record	Material Record	Depth
4	3220-3227	500 GAL 28% MCA W/ 3% MAS	3220-3227
4	3239-3247	1000 GAL 28% MCA W/ 3% MAS	3239-3247
4	3259-3267		3259-3267
	3365	CIBP	3365
4	3376-3382		3376-3382
4	3404-3408	250 GAL 28% MCA W/ 3% MAS	3404-3408
4	3418-3426	250 GAL 28% MCA W/ 3% MAS	3418-3426

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/

October 22, 2012

TOM FERTAL
Samuel Gary Jr. & Associates, Inc.
1515 WYNKOOP, STE 700
DENVER, CO 80202

Re: ACO1
API 15-051-26330-00-00
COPPER 1-30
SE/4 Sec.30-14S-17W
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.

Respectfully,
TOM FERTAL

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: 7/4/2012
Invoice # 696
P.O.#:
Due Date: 8/3/2012
Division: *Russell*

Invoice

Contact:
Samuel Gary Jr & Associates Inc
Address/Job Location:
Samuel Gary Jr & Associates Inc
1815 11th Street
Great Bend, KS 67530

Reference: Copper
~~COOPER~~ 1-30

Description of Work:
LONG SURFACE JOB

Services / Items Included:	Quantity		Price	Taxable	Item	Quantity	Price	Taxable
Labor		$	963.85	No	Bulk Truck Mileage-Job to Nearest Bulk Plant	8	$49.32	No
Common-Class A	425	$	5,473.06	Yes				
8 5/8" Basket	3	$	1,000.67	Yes				
Bulk Truck Matl-Material Service Charge	448	$	945.78	No				
Calcium Chloride	15	$	754.62	Yes				
Flo Seal	106	$	223.78	Yes				
3 5/8" Centralizer	3	$	202.67	Yes				
Premium Gel (Bentonite)	8	$	137.48	Yes				
8 5/8" Top Rubber Plug	1	$	111.89	Yes				
Baffle Plate Aluminum, 8 5/8"	1	$	95.00	Yes				
Pump Truck Mileage-Job to Nearest Camp	8	$	84.28	No				

Invoice Terms:
Net 30

SubTotal:	$	*10,042.37*
Discount Available ONLY if Invoice is Paid & Received within listed terms of invoice:	$	(1,506.35)
SubTotal for Taxable Items:	$	6,799.28
SubTotal for Non-Taxable Items:	$	1,736.74
Total:	$	8,536.01
6.30% Ellis County Sales Tax Tax:	$	428.35
Amount Due:	**$**	**8,964.37**
Applied Payments:		
Balance Due:	**$**	**8,964.37**

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
JUL 11 2012
SAMUEL GARY JR. & ASSOCIATES, INC.

☑ DRLG ☐ COMP ☐ W/O ☐ LOE ☐ GG

Account	820.138
Well/Prospect	
Deck	
AFE	
Approval	
Description	

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. 696

Date	Sec.	Twp.	Range	County	State	On Location	Finish
6-28-12	30	14	17	Ellis	KS		10:30 am

Lease Cooper Well No. 1-30 Location Munjor 1s 1/2E 2nto

Contractor Discovery #2 Owner

Type Job 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 12 1/4 T.D. 987

Csg. 8 5/8 Depth 987 Charge To Sam Coon/ Jr & Assoc.

Tbg. Size Depth Street

Tool Depth City State

Cement Left in Csg. 41.54 Shoe Joint 41.54 The above was done to satisfaction and supervision of owner agent or contractor.

Meas Line Displace 60 1/4 BL Cement Amount Ordered 425 com 3% cc 2% gel 1/4# flo

EQUIPMENT

Pumptrk 9	No.	Cementer Helper	Craig
Bulktrk	No.	Driver Driver	Matt
Bulktrk 13	No.	Driver Driver	Lonnie

JOB SERVICES & REMARKS

Remarks:

Rat Hole

Mouse Hole

Centralizers

Baskets

D/V or Port Collar

8 5/8 on bottom. Est. Circulation. Pump 10 BL water Space then Mix 425 SK Cement Displace Plug Cement Circulated Plug landed 500#

Common	425
Poz. Mix	
Gel.	8
Calcium	15
Hulls	
Salt	
Flowseal	106#
Kol-Seal	
Mud CLR 48	
CFL-117 or CD110 CAF 38	
Sand	
Handling	448
Mileage	

FLOAT EQUIPMENT

Guide Shoe	8 5/8
Centralizer	3
Baskets	3
AFU Inserts	Baffle Plate
Float Shoe	Rubber Plug
Latch Down	

Pumptrk Charge	Long Surface
Mileage	8
Tax	
Discount	
Total Charge	

x Signature

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: 7/9/2012
Invoice # 892
P.O.#:
Due Date: 8/8/2012
Division: *Russell*

Invoice

Contact:
Samuel Gary Jr & Associates Inc
Address/Job Location:
Samuel Gary Jr & Associates Inc
1815 11th Street
Great Bend, KS 67530

☐ DRLG ☑ COMP ☐ W/O ☐ LOE ☐ GG

Account	8200.238
Well/Prospect	
Deck	
AFE	
Approval	
Description	

Reference:
COPPER 1-30

Description of Work:
PROD LONG STRING

Services / Items Included:	Quantity	Price	Taxable
Labor		$ 963.85	No
Common-Class A	225	$ 2,897.50	Yes
Gilsonite	1057	$ 1,673.58	Yes
CFL 117	176	$ 1,144.39	Yes
5 1/2" Basket	3	$ 728.33	Yes
Bulk Truck Matl-Material Service Charge	254	$ 536.22	No
CD-110	117	$ 494.00	Yes
5 1/2" Turbolizer	8	$ 489.78	Yes
Mud Clear	500	$ 390.56	Yes
Defoamer A or CAF-38	50	$ 369.44	Yes
Auto Fill Float Shoe, 5 1/2"	1	$ 323.00	Yes

Item	Quantity	Price	Taxable
Salt (Fine)	19	$279.98	Yes
Latch Down Plug & Baffle, 5 1/2"	1	$236.44	Yes
Flo Seal	56	$118.22	Yes
Pump Truck Mileage-Job to Nearest Camp	8	$84.28	No
KCL	2	$63.04	Yes
Bulk Truck Mileage-Job to Nearest Bulk Plant	8	$49.32	No

Invoice Terms:
Net 30

SubTotal:	$	*10,841.93*
Discount Available ONLY if Invoice is Paid & Received within listed terms of invoice:	$	(1,626.29)
SubTotal for Taxable Items:	$	7,827.03
SubTotal for Non-Taxable Items:	$	1,388.61
Total:	$	9,215.64
6.30% Ellis County Sales Tax Tax:	$	493.10
Amount Due:	**$**	**9,708.74**
Applied Payments:		
Balance Due:	**$**	**9,708.74**

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. 892

Date	Sec.	Twp.	Range	County	State	On Location	Finish
7-3-12	30	14	17	ELLIS	KANSAS		12:30 AM

Lease COPPER Well No. #1-30 Location MUNJOR KS, S TO BLOOMFIELD TRAIL 1/2 E N INTO

Contractor DISCOVERY #2		Owner SAM GARY JR	
Type Job PROD. STRING		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 7 7/8"	T.D. 3610'		
Csg. 5 1/2" 15 1/2 NEW	Depth 3606.67	Charge To SAM GARY JR & ASSOC.	
Tbg. Size	Depth	Street 1515 WYNKOOP STE 700	
Tool	Depth	City DENVER	State CO, 80202
Cement Left in Csg.	Shoe Joint 42.47	The above was done to satisfaction and supervision of owner agent or contractor.	
Meas Line	Displace 85 BBLS	Cement Amount Ordered 225 com 10% salt 1/4 flow 5% gil/sonite .3% CD-110 .8% CFL-117 .25% CAF38 10 BBL KCL	

EQUIPMENT

	No.		
Pumptrk #15	No.	Cementer / Helper	NICK
Bulktrk #13	No.	Driver / Driver	DOUG
Bulktrk PU	No.	Driver / Driver	CISCO

JOB SERVICES & REMARKS

Remarks:

Rat Hole 30 SKS

Mouse Hole 15 SKS

Centralizers 1, 3, 5, 7, 11, 13, 15

Baskets 3, 9, 15

D/V or Port Collar

ESTABLISH CIRCULATION 45 MIN ON BOTTOM - PUMPED 500 GAL MUD FLUSH 20 BBLS KCL - DISCONNECTED & PLUGGED RAT HOLE 30 SKS & MOUSE HOLE 15 SKS - CONNECTED TO HEAD AND MIXED 180 SKS DOWN HOLE - DISCONNECTED WASHED UP & DROPPED PLUG - RE-CONNECTED DISPLACED, PLUG LANDED PLUG HELD.

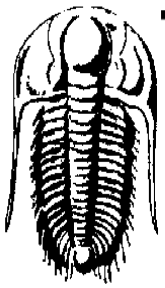
LIFT @ 1000 LBS

PLUG LANDED @ 1400 LBS

THANK YOU!

X Signature [signature]

Common .25% CAF38		
Poz. Mix		
~~Gel.~~ CD 110 117#		
Calcium		
~~Hulls~~ KCL 2 gal		
Salt 19		
Flowseal 56#		
Kol-Seal 1057#		
Mud CLR 48 500 GAL		
CFL-117 or CD110 CAF 38 56#		
Sand 176#		
Handling		
Mileage		
FLOAT EQUIPMENT		
Guide Shoe		
Centralizer 8 - 5 1/2" CENTRALIZERS		
Baskets 3 - 5 1/2"		
AFU Inserts		
Float Shoe 1 - 5 1/2"		
Latch Down 1 - 5 1/2" w/ PLUG		
Pumptrk Charge Prod Long String		
Mileage 8		
	Tax	
	Discount	
	Total Charge	



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Prepared For: **Samuel Gary Jr. & Associates**

1515 Wynkoop
Denver, CO. 80202

ATTN: Tom Fertal

Copper #1-30

30-14s-17w-Ellis

Start Date: 2012.07.01 @ 10:12:47
End Date: 2012.07.01 @ 19:57:32
Job Ticket #: 47823 DST #: 1

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

Printed: 2012.07.01 @ 20:11:58

DRILL STEM TEST REPORT

Samuel Gary Jr. & Associates

1515 Wynkoop
Denver, CO. 80202

ATTN: Tom Fertal

30-14s-17w-Ellis

Copper #1-30

Job Ticket: 47823 **DST#: 1**

Test Start: 2012.07.01 @ 10:12:47

GENERAL INFORMATION:

Formation: **A-B-C-D**
Deviated: No Whipstock: 0.00 ft (KB)
Time Tool Opened: 12:24:17
Time Test Ended: 19:57:32

Test Type: (Initial)
Tester: Jason McLemore
Unit No: 54

Interval: 3197.00 ft (KB) To 3273.00 ft (KB) (TVD)
Total Depth: 3273.00 ft (KB) (TVD)
Hole Diameter: 7.80 inches Hole Condition: Good

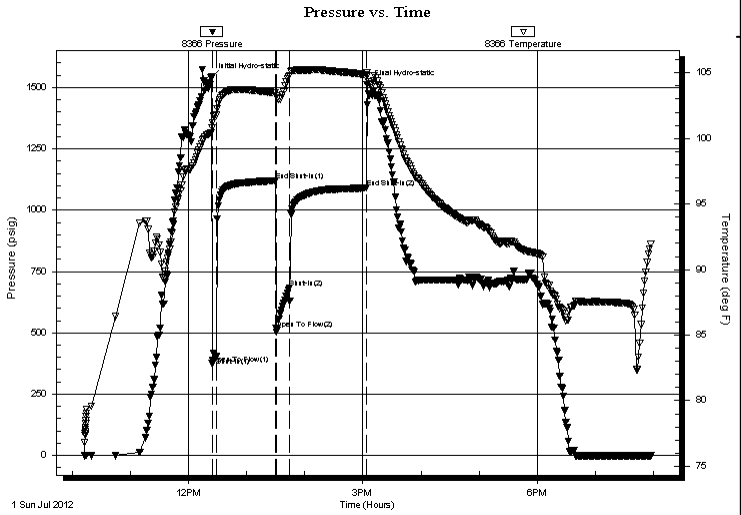
Reference Elevations: 1942.00 ft (KB)
1934.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8366 **Inside**

Press@RunDepth: 684.09 psig @ 3265.00 ft (KB)
Start Date: 2012.07.01 End Date: 2012.07.01
Start Time: 10:12:49 End Time: 19:57:32

Capacity: 8000.00 psig
Last Calib.: 2012.07.01
Time On Btm 2012.07.01 @ 12:23:32
Time Off Btm 2012.07.01 @ 15:04:17

TEST COMMENT: IFP-Strong,BOB in 1 Min.
ISI-Blowback BOB in 3 Min.
FFP-Strong, BOB in 1 Min. Gas To Surface in 13 Min.
FSI-Blowback BOB in 2 Min.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1542.04	100.48	Initial Hydro-static
1	374.04	100.81	Open To Flow(1)
5	402.45	101.80	Shut-In(1)
67	1120.07	103.49	End Shut-In(1)
67	516.96	103.23	Open To Flow(2)
81	684.09	104.78	Shut-In(2)
161	1090.72	104.87	End Shut-In(2)
161	1511.84	105.04	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
1562.00	Gassy Oil	21.64

Gas Rates

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

DRILL STEM TEST REPORT

Samuel Gary Jr. & Associates

1515 Wynkoop
Denver, CO. 80202

ATTN: Tom Fertal

30-14s-17w-Ellis

Copper #1-30

Job Ticket: 47823 **DST#: 1**

Test Start: 2012.07.01 @ 10:12:47

GENERAL INFORMATION:

Formation: **A-B-C-D**
Deviated: No Whipstock: 0.00 ft (KB)
Time Tool Opened: 12:24:17
Time Test Ended: 19:57:32

Test Type: (Initial)
Tester: Jason McLemore
Unit No: 54

Interval: 3197.00 ft (KB) To 3273.00 ft (KB) (TVD)
Total Depth: 3273.00 ft (KB) (TVD)
Hole Diameter: 7.80 inches Hole Condition: Good

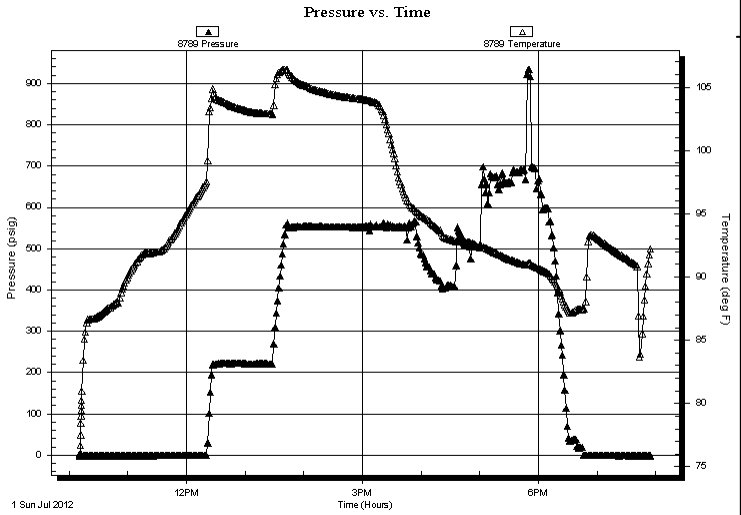
Reference Elevations: 1942.00 ft (KB)
1934.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8789 **Outside**

Press@RunDepth: psig @ 3265.00 ft (KB)
Start Date: 2012.07.01 End Date: 2012.07.01
Start Time: 10:10:58 End Time: 19:55:11

Capacity: 8000.00 psig
Last Calib.: 2012.07.01
Time On Btm:
Time Off Btm:

TEST COMMENT: IFP-Strong,BOB in 1 Min.
ISI-Blowback BOB in 3 Min.
FFP-Strong, BOB in 1 Min. Gas To Surface in 13 Min.
FSI-Blowback BOB in 2 Min.



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
1562.00	Gassy Oil	21.64

Gas Rates

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

DRILL STEM TEST REPORT

Samuel Gary Jr. & Associates

1515 Wynkoop
Denver, CO. 80202

ATTN: Tom Fertal

30-14s-17w-Ellis

Copper #1-30

Job Ticket: 47823 **DST#: 1**

Test Start: 2012.07.01 @ 10:12:47

GENERAL INFORMATION:

Formation: **A-B-C-D**
Deviated: No Whipstock: 0.00 ft (KB)
Time Tool Opened: 12:24:17
Time Test Ended: 19:57:32

Test Type: (Initial)
Tester: Jason McLemore
Unit No: 54

Interval: 3197.00 ft (KB) To 3273.00 ft (KB) (TVD)
Total Depth: 3273.00 ft (KB) (TVD)
Hole Diameter: 7.80 inches Hole Condition: Good

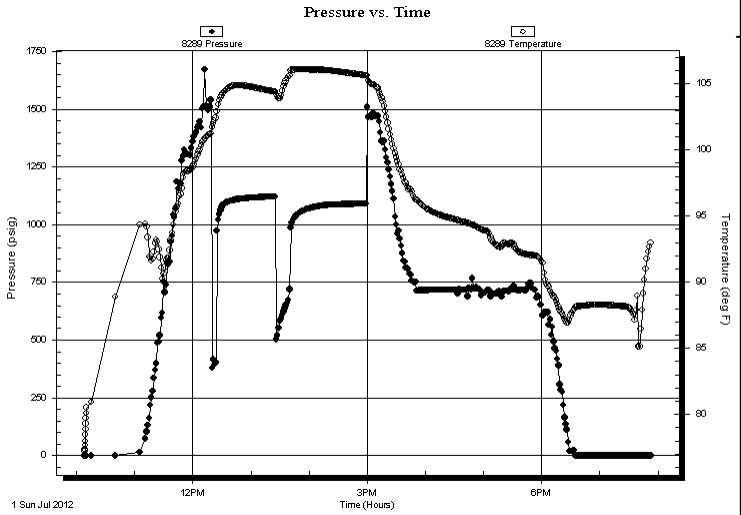
Reference Elevations: 1942.00 ft (KB)
1934.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8289 **Fluid**

Press@RunDepth: psig @ 3162.00 ft (KB)
Start Date: 2012.07.01 End Date: 2012.07.01
Start Time: 10:08:14 End Time: 19:52:57

Capacity: 8000.00 psig
Last Calib.: 2012.07.01
Time On Btm:
Time Off Btm:

TEST COMMENT: IFP-Strong,BOB in 1 Min.
ISI-Blowback BOB in 3 Min.
FFP-Strong, BOB in 1 Min. Gas To Surface in 13 Min.
FSI-Blowback BOB in 2 Min.



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
1562.00	Gassy Oil	21.64

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

Samuel Gary Jr. & Associates

1515 Wynkoop
Denver, CO. 80202

ATTN: Tom Fertal

30-14s-17w-Ellis

Copper #1-30

Job Ticket: 47823 **DST#: 1**

Test Start: 2012.07.01 @ 10:12:47

Tool Information

Drill Pipe:	Length:	3154.00 ft	Diameter:	3.80 inches	Volume:	44.24 bbl	Tool Weight:		2000.00 lb
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	2.70 inches	Volume:	0.00 bbl	Weight set on Packer:		25000.00 lb
Drill Collar:	Length:	30.00 ft	Diameter:	2.25 inches	Volume:	0.15 bbl	Weight to Pull Loose:		52000.00 lb
					Total Volume:	44.39 bbl	Tool Chased		0.00 ft
Drill Pipe Above KB:		22.00 ft					String Weight:	Initial	46000.00 lb
Depth to Top Packer:		3197.00 ft						Final	48000.00 lb
Depth to Bottom Packer:		ft							
Interval between Packers:		76.00 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	
Recorder	0.00	8289	Fluid	3162.00		
Change Over Sub	5.00			3167.00		
Shut In Tool	5.00			3172.00		
Sampler	3.00			3175.00		
Hydraulic tool	5.00			3180.00		
Jars	5.00			3185.00		
Safety Joint	2.00			3187.00		
Packer	5.00			3192.00	35.00	Bottom Of Top Packer
Packer	5.00			3197.00		
Stubb	1.00			3198.00		
Perforations	2.00			3200.00		
Change Over Sub	1.00			3201.00		
Blank Spacing	63.00			3264.00		
Change Over Sub	1.00			3265.00		
Recorder	0.00	8366	Inside	3265.00		
Recorder	0.00	8789	Outside	3265.00		
Perforations	5.00			3270.00		
Bullnose	3.00			3273.00	76.00	Bottom Packers & Anchor
Total Tool Length:	**111.00**					

DRILL STEM TEST REPORT

FLUID SUMMARY

Samuel Gary Jr. & Associates

1515 Wynkoop
Denver, CO. 80202

ATTN: Tom Fertal

30-14s-17w-Ellis

Copper #1-30

Job Ticket: 47823 **DST#: 1**

Test Start: 2012.07.01 @ 10:12:47

Mud and Cushion Information

Mud Type:	Gel Chem	Cushion Type:		Oil API:	38 deg API
Mud Weight:	9.00 lb/gal	Cushion Length:	ft	Water Salinity:	ppm
Viscosity:	55.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	8.00 cm³	Gas Cushion Type:			
Resistivity:	ohm m	Gas Cushion Pressure:	psig		
Salinity:	5000.00 ppm				
Filter Cake:	inches				

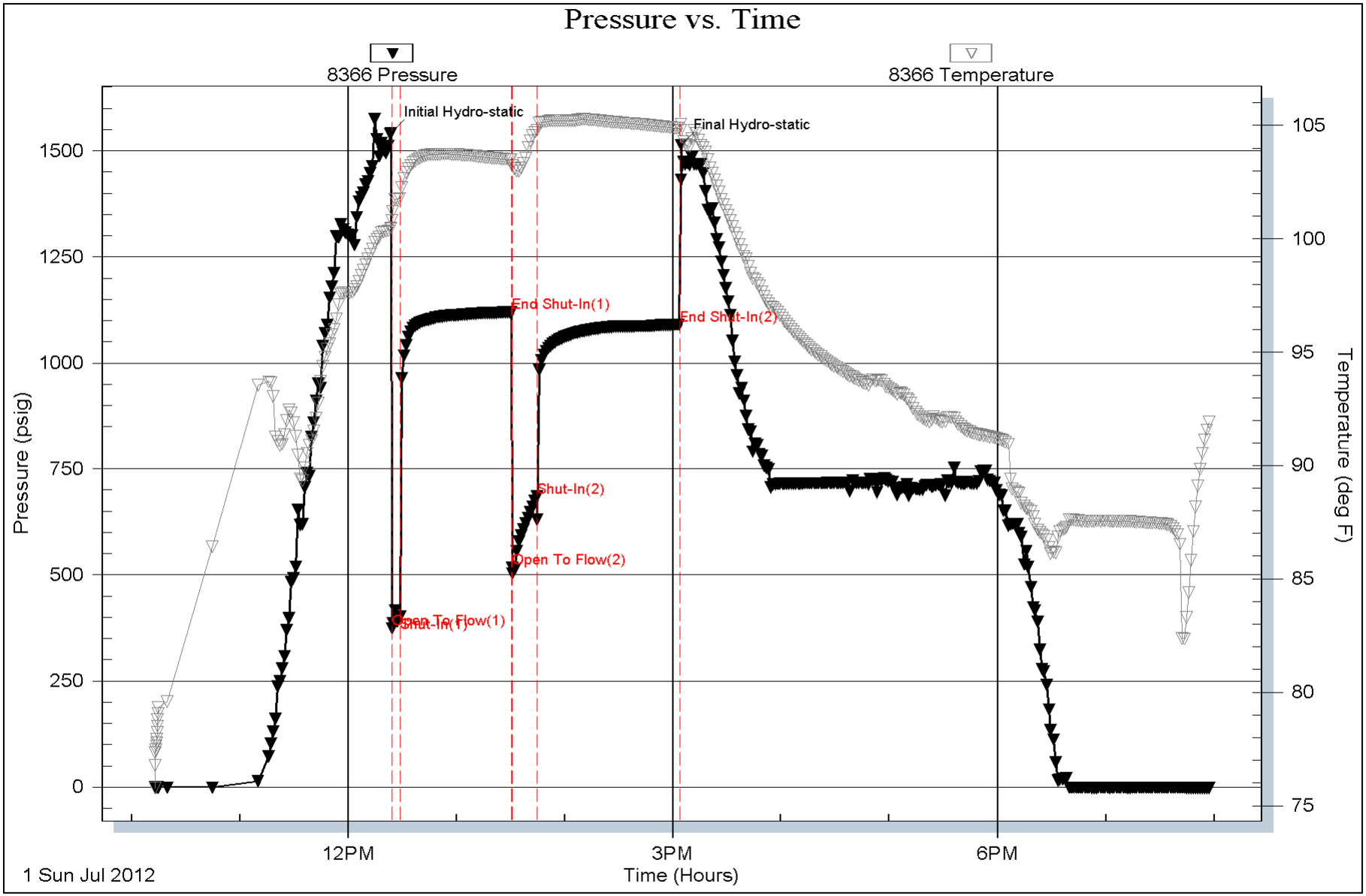
Recovery Information

Recovery Table

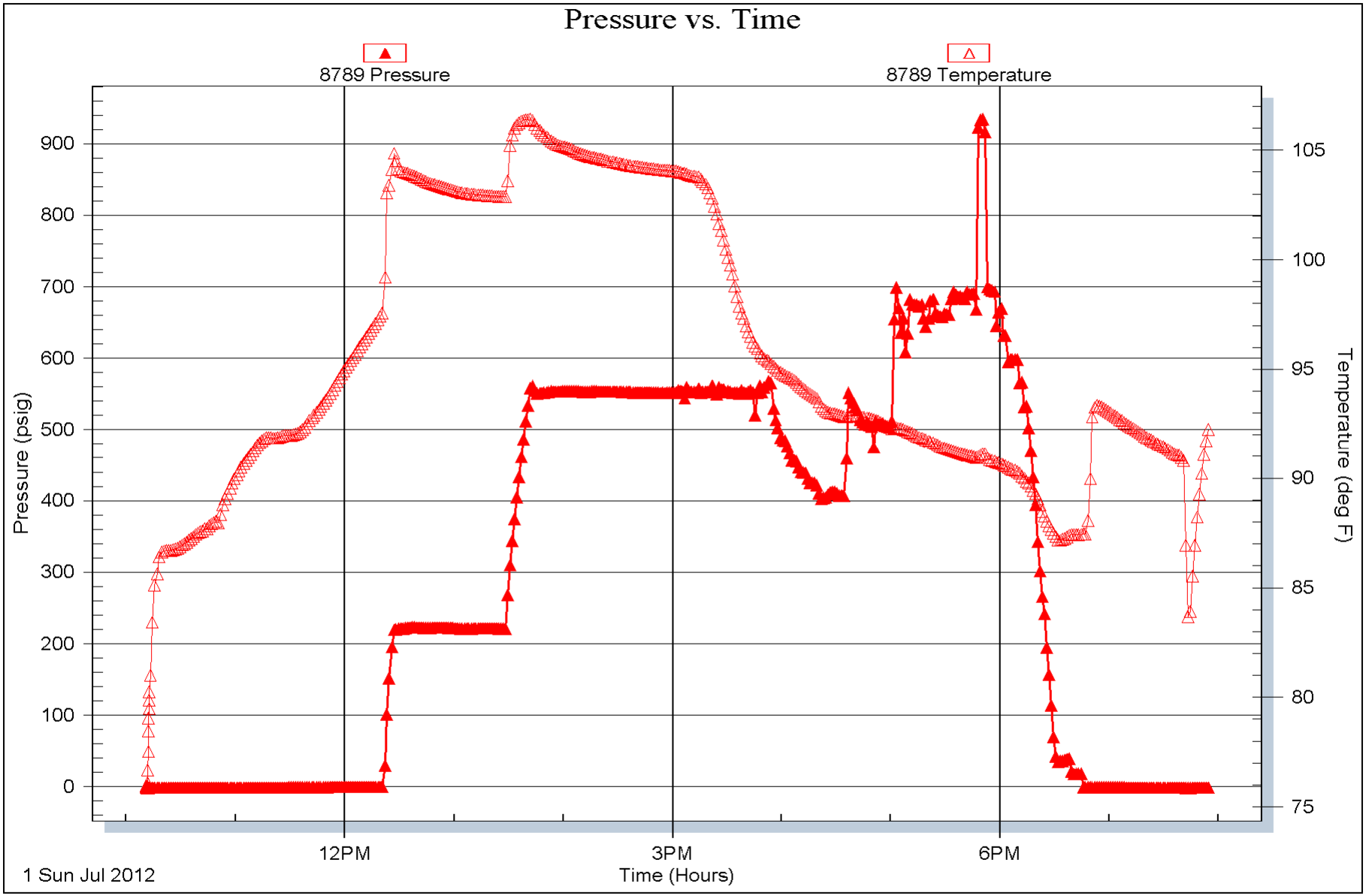
Length ft	Description	Volume bbl
1562.00	Gassy Oil	21.637

Total Length: 1562.00 ft Total Volume: 21.637 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments: Sampler: 75#, 4000ml Gassy Oil, point 8 CF Gas

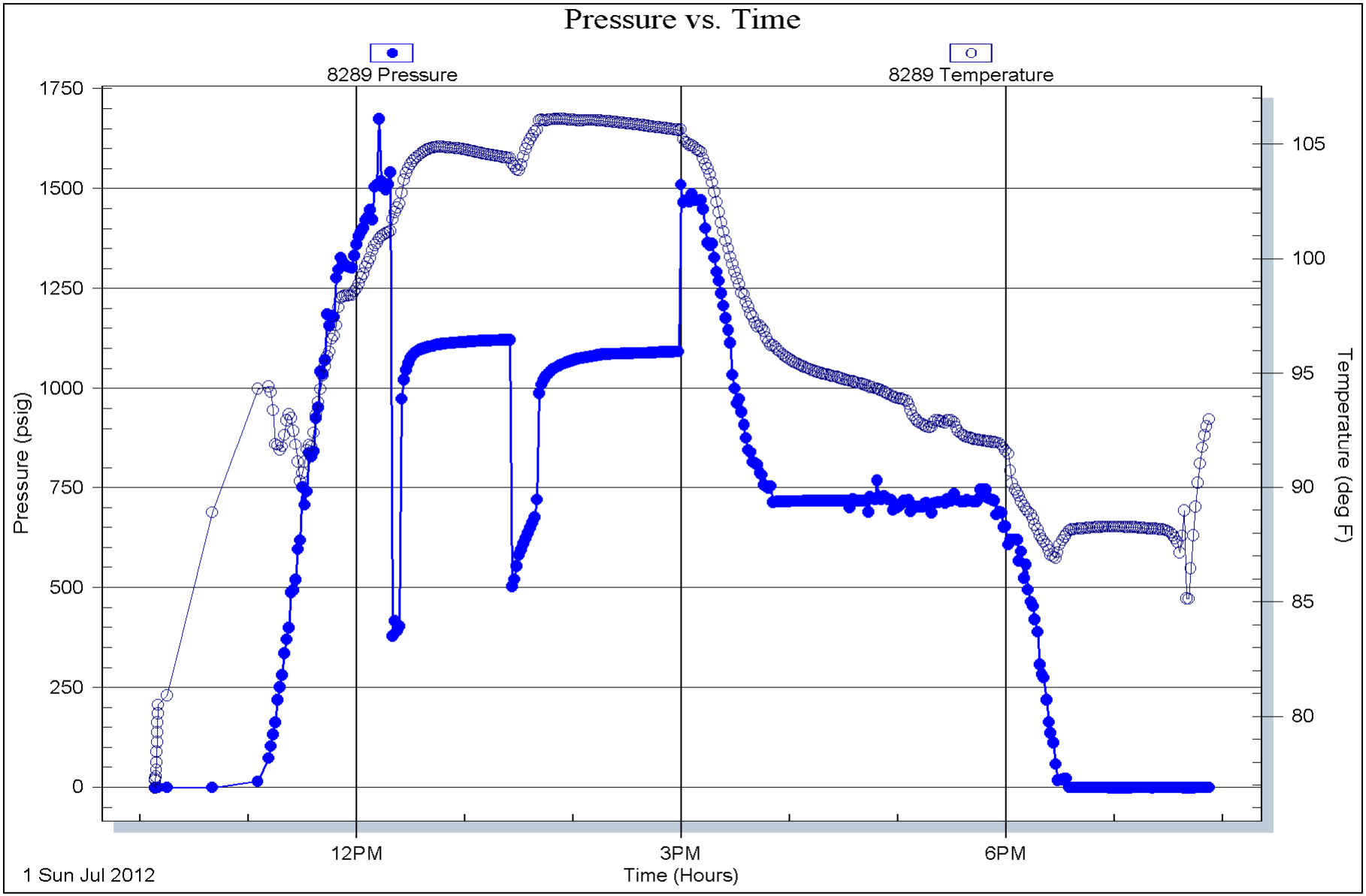

Pressure vs. Time
8366 Pressure
8366 Temperature
Initial Hydro-static
Final Hydro-static
End Shut-In(1)
End Shut-In(2)
Shut-In(2)
Open To Flow(2)
Open To Flow(1)
Shut-In(1)
Pressure (psig)
Temperature (deg F)
1500
1250
1000
750
500
250
0
105
100
95
90
85
80
75
12PM
3PM
6PM
1 Sun Jul 2012
Time (Hours)

Serial #: 8789 Outside Samuel Gary Jr. & Associates Copper #1-30 DST Test Number: 1



Trilobite Testing, Inc Ref. No: 47823 Printed: 2012.07.01 @20:12:01

Serial #: 8289 Fluid Samuel Gary Jr. & Associates Copper #1-30 DST Test Number: 1



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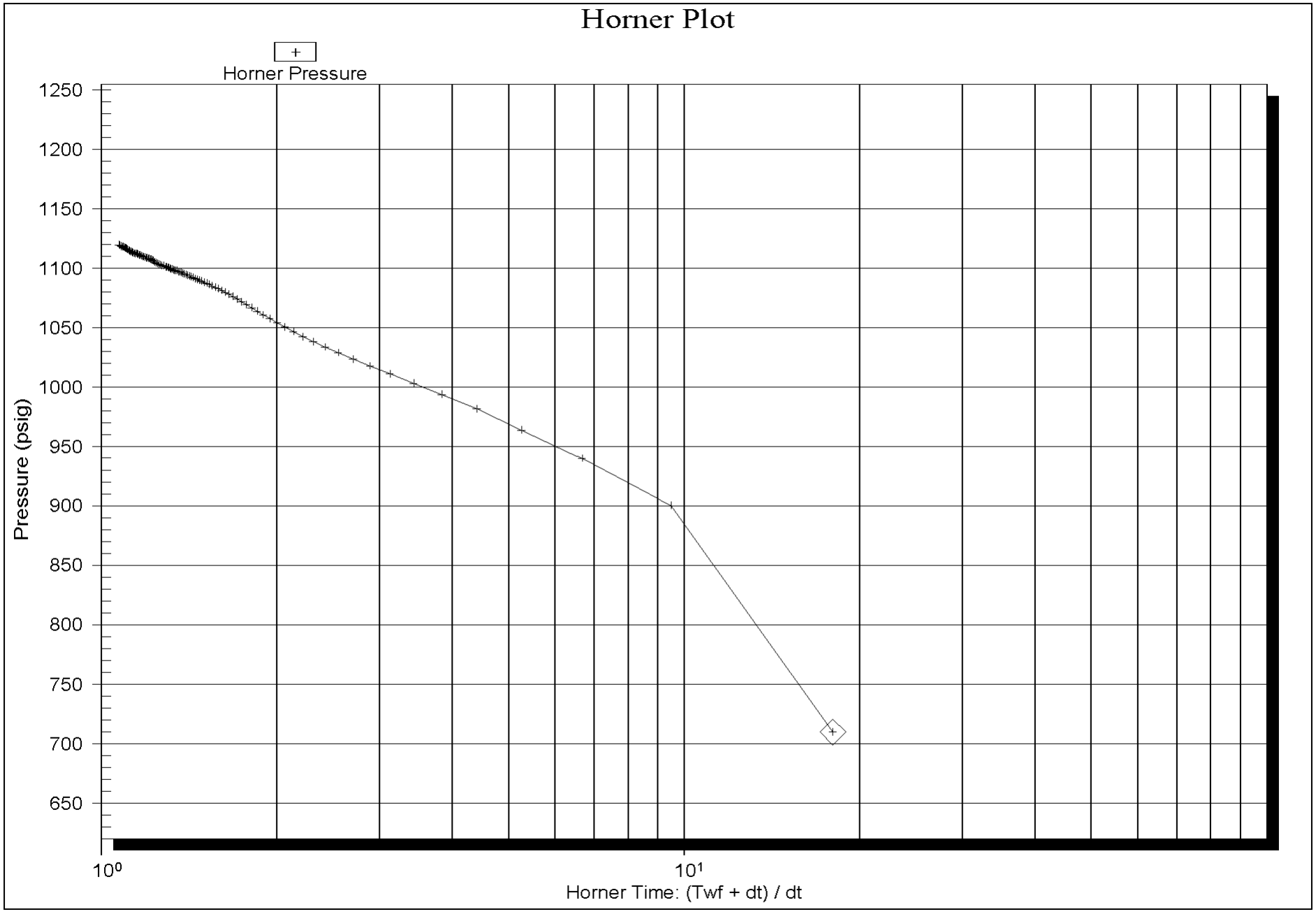
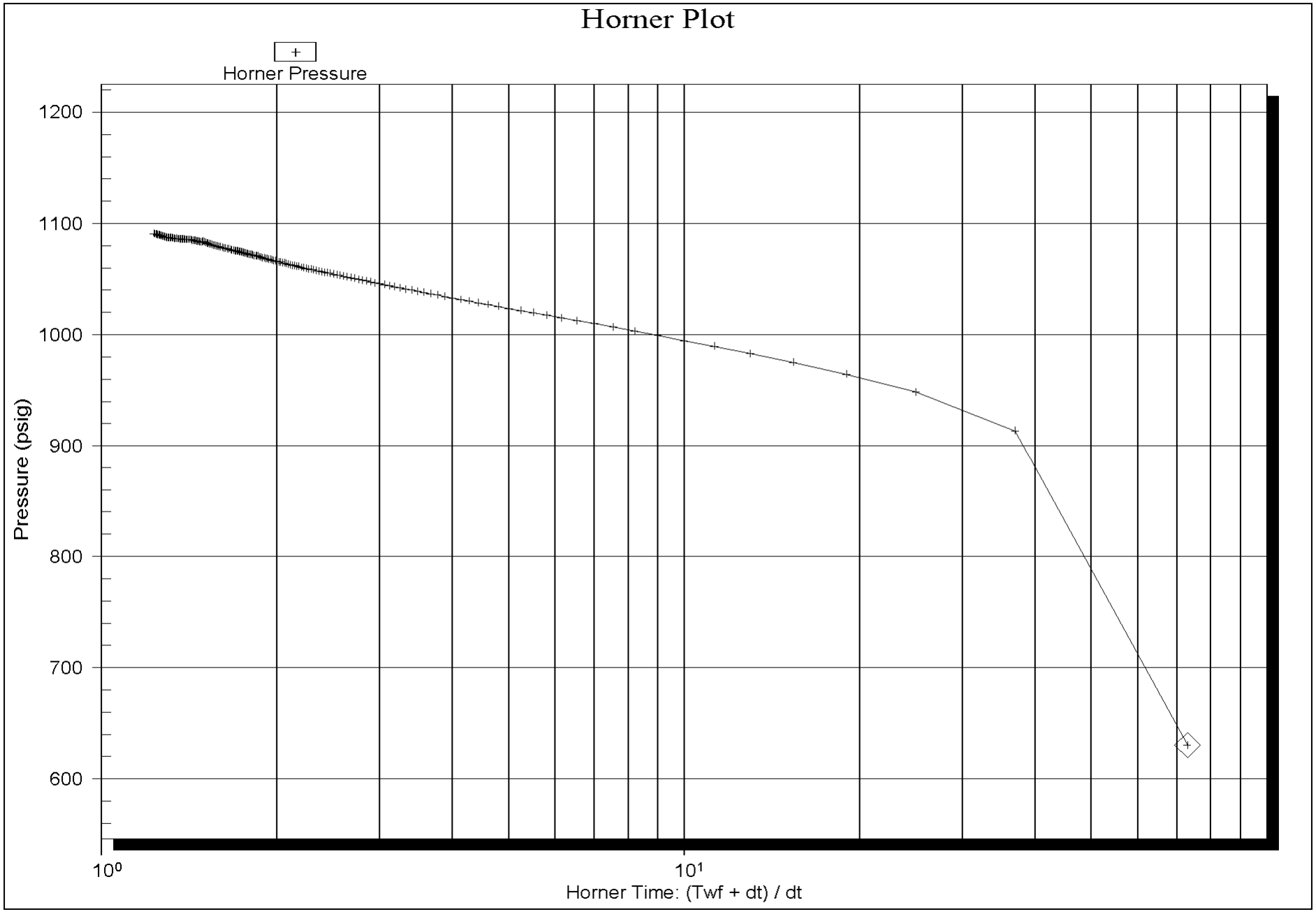
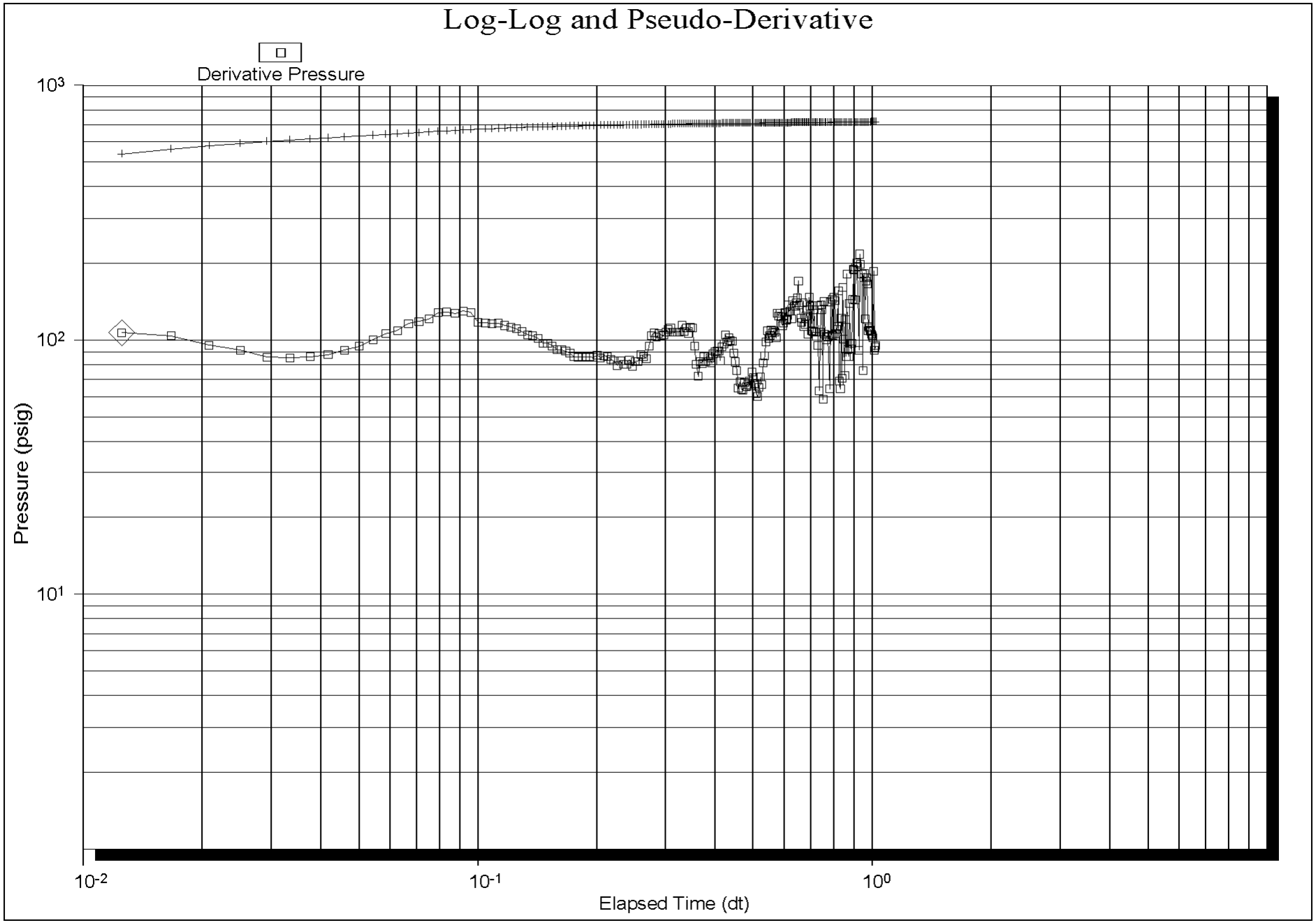
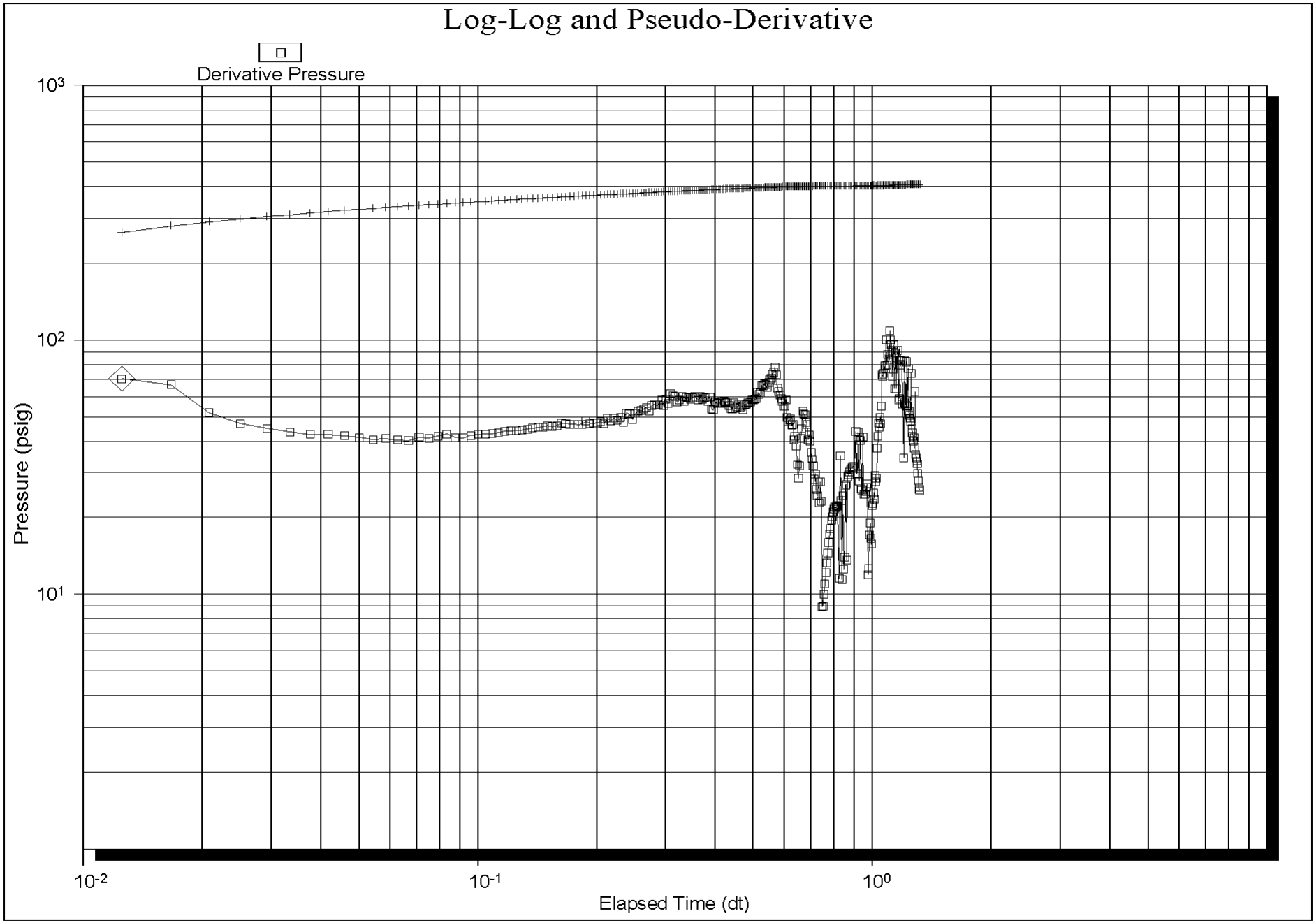
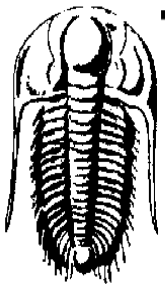

Horner Plot
Horner Pressure
1250
1200
1150
1100
1050
1000
950
900
850
800
750
700
650
Pressure (psig)
10⁰
10¹
Horner Time: (Twf + dt) / dt


Horner Plot
Horner Pressure
1200
1100
1000
900
800
700
600
Pressure (psig)
10⁰
10¹
Horner Time: (Twf + dt) / dt


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


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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Prepared For: **Samuel Gary Jr. & Associates**

1515 Wynkoop
Denver, CO. 80202

ATTN: Tom Fertal

Copper #1-30

30-14s-17w-Ellis

Start Date: 2012.07.02 @ 04:05:22

End Date: 2012.07.02 @ 13:04:37

Job Ticket #: 47824 DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2012.07.02 @ 14:09:13

DRILL STEM TEST REPORT

Samuel Gary Jr. & Associates

1515 Wynkoop
Denver, CO. 80202

ATTN: Tom Fertal

30-14s-17w-Ellis

Copper #1-30

Job Ticket: 47824 **DST#: 2**

Test Start: 2012.07.02 @ 04:05:22

GENERAL INFORMATION:

Formation: **F-G**
Deviated: No Whipstock: 0.00 ft (KB)
Time Tool Opened: 06:21:52
Time Test Ended: 13:04:37

Test Type: (Reset)
Tester: Jason McLemore
Unit No: 54

Interval: 3275.00 ft (KB) To 3324.00 ft (KB) (TVD)
Total Depth: 3324.00 ft (KB) (TVD)
Hole Diameter: 7.80 inches Hole Condition: Good

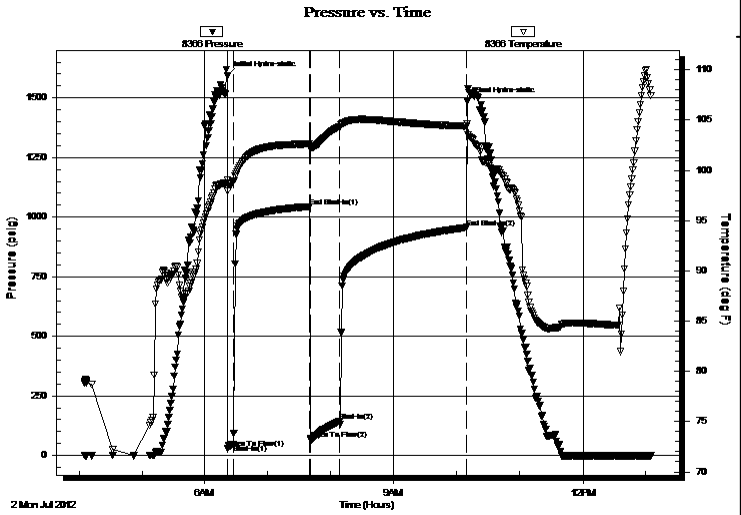
Reference Elevations: 1942.00 ft (KB)
1934.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8366 **Inside**

Press@RunDepth: 141.64 psig @ 3343.00 ft (KB)
Start Date: 2012.07.02 End Date: 2012.07.02
Start Time: 04:05:24 End Time: 13:04:37

Capacity: 8000.00 psig
Last Calib.: 2012.07.02
Time On Btm: 2012.07.02 @ 06:21:37
Time Off Btm: 2012.07.02 @ 10:09:37

TEST COMMENT: IFP-Strong Blow , BOB in 3 Min.
ISI-Blow back Built to 1"
FFP-Good Blow , BOB in 6 Min.
FSI-Blow back Built to 3"



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1591.88	99.06	Initial Hydro-static
1	30.87	98.00	Open To Flow (1)
6	46.91	98.84	Shut-In(1)
79	1044.61	102.64	End Shut-In(1)
79	66.73	102.14	Open To Flow (2)
107	141.64	104.34	Shut-In(2)
228	956.41	104.41	End Shut-In(2)
228	1486.62	104.66	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
120.00	Muddy Water-95%W-5%M	1.41
150.00	HOCMW-20%G-30%O-45%W-5%M	2.10
0.00	300' Gas In Pipe	0.00

* Recovery from multiple tests

Gas Rates

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

DRILL STEM TEST REPORT

Samuel Gary Jr. & Associates

1515 Wynkoop
Denver, CO. 80202

ATTN: Tom Fertal

30-14s-17w-Ellis

Copper #1-30

Job Ticket: 47824 **DST#: 2**

Test Start: 2012.07.02 @ 04:05:22

GENERAL INFORMATION:

Formation: **F-G**
Deviated: No Whipstock: 0.00 ft (KB)
Time Tool Opened: 06:21:52
Time Test Ended: 13:04:37

Test Type: (Reset)
Tester: Jason McLemore
Unit No: 54

Interval: 3275.00 ft (KB) To 3324.00 ft (KB) (TVD)
Total Depth: 3324.00 ft (KB) (TVD)
Hole Diameter: 7.80 inches Hole Condition: Good

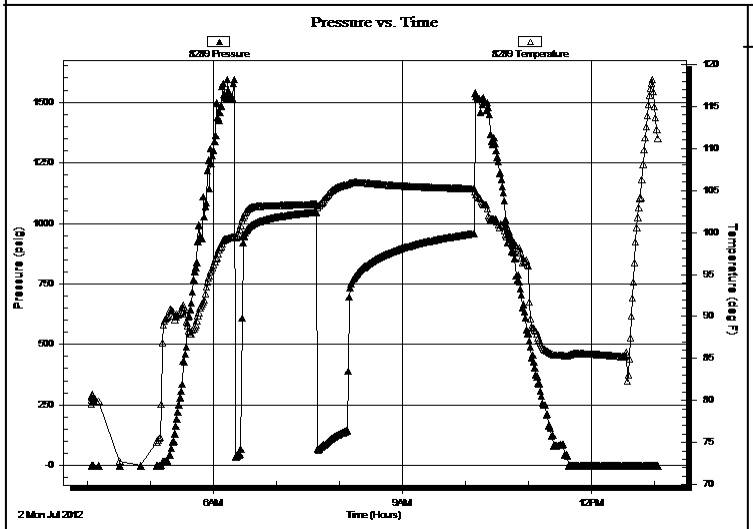
Reference Elevations: 1942.00 ft (KB)
1934.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8289 **Fluid**

Press@RunDepth: psig @ 3240.00 ft (KB)
Start Date: 2012.07.02 End Date: 2012.07.02
Start Time: 04:03:32 End Time: 13:03:00

Capacity: 8000.00 psig
Last Calib.: 2012.07.02
Time On Btm:
Time Off Btm:

TEST COMMENT: IFP-Strong Blow , BOB in 3 Min.
ISI-Blow back Built to 1"
FFP-Good Blow , BOB in 6 Min.
FSI-Blow back Built to 3"



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
120.00	Muddy Water-95%W-5%M	1.41
150.00	HOCMW-20%G-30%O-45%W-5%M	2.10
0.00	300' Gas In Pipe	0.00

* Recovery from multiple tests

Gas Rates

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

DRILL STEM TEST REPORT

Samuel Gary Jr. & Associates

1515 Wynkoop
Denver, CO. 80202

ATTN: Tom Fertal

30-14s-17w-Ellis

Copper #1-30

Job Ticket: 47824 **DST#: 2**

Test Start: 2012.07.02 @ 04:05:22

GENERAL INFORMATION:

Formation: **F-G**
Deviated: No Whipstock: 0.00 ft (KB)
Time Tool Opened: 06:21:52
Time Test Ended: 13:04:37

Test Type: (Reset)
Tester: Jason McLemore
Unit No: 54

Interval: 3275.00 ft (KB) To 3324.00 ft (KB) (TVD)
Total Depth: 3324.00 ft (KB) (TVD)
Hole Diameter: 7.80 inches Hole Condition: Good

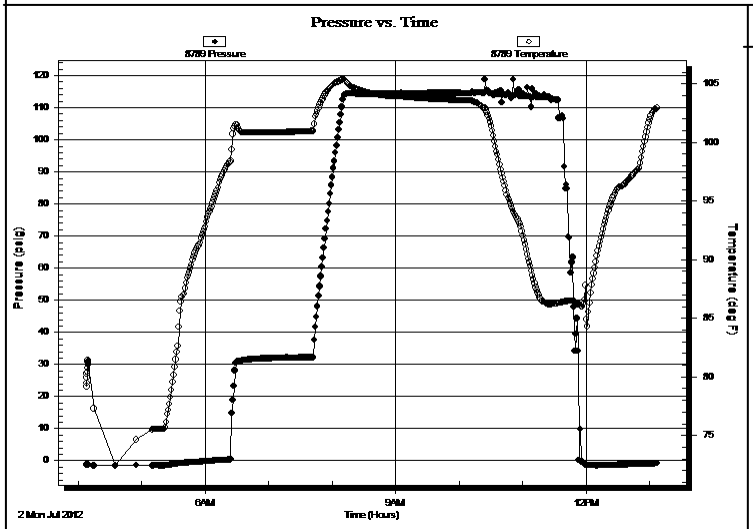
Reference Elevations: 1942.00 ft (KB)
1934.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8789 **Outside**

Press@RunDepth: psig @ 3343.00 ft (KB)
Start Date: 2012.07.02 End Date: 2012.07.02
Start Time: 04:08:01 End Time: 13:07:14

Capacity: 8000.00 psig
Last Calib.: 2012.07.02
Time On Btm:
Time Off Btm:

TEST COMMENT: IFP-Strong Blow , BOB in 3 Min.
ISI-Blow back Built to 1"
FFP-Good Blow , BOB in 6 Min.
FSI-Blow back Built to 3"



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
120.00	Muddy Water-95%W-5%M	1.41
150.00	HOCMW-20%G-30%O-45%W-5%M	2.10
0.00	300' Gas In Pipe	0.00

* Recovery from multiple tests

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

Samuel Gary Jr. & Associates

1515 Wynkoop
Denver, CO. 80202

ATTN: Tom Fertal

30-14s-17w-Ellis

Copper #1-30

Job Ticket: 47824 **DST#: 2**

Test Start: 2012.07.02 @ 04:05:22

Tool Information

Drill Pipe:	Length:	3221.00 ft	Diameter:	3.80 inches	Volume:	45.18 bbl	Tool Weight:		2000.00 lb
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	2.70 inches	Volume:	0.00 bbl	Weight set on Packer:		25000.00 lb
Drill Collar:	Length:	30.00 ft	Diameter:	2.25 inches	Volume:	0.15 bbl	Weight to Pull Loose:		46000.00 lb
					Total Volume:	45.33 bbl	Tool Chased		0.00 ft
Drill Pipe Above KB:		11.00 ft					String Weight:	Initial	35000.00 lb
Depth to Top Packer:		3275.00 ft						Final	45000.00 lb
Depth to Bottom Packer:		ft							
Interval between Packers:		76.00 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	
Recorder	0.00	8289	Fluid	3240.00		
Change Over Sub	5.00			3245.00		
Shut In Tool	5.00			3250.00		
Sampler	3.00			3253.00		
Hydraulic tool	5.00			3258.00		
Jars	5.00			3263.00		
Safety Joint	2.00			3265.00		
Packer	5.00			3270.00	35.00	Bottom Of Top Packer
Packer	5.00			3275.00		
Stubb	1.00			3276.00		
Perforations	2.00			3278.00		
Change Over Sub	1.00			3279.00		
Blank Spacing	63.00			3342.00		
Change Over Sub	1.00			3343.00		
Recorder	0.00	8366	Inside	3343.00		
Recorder	0.00	8789	Outside	3343.00		
Perforations	5.00			3348.00		
Bullnose	3.00			3351.00	76.00	Bottom Packers & Anchor
Total Tool Length:	**111.00**					

DRILL STEM TEST REPORT

FLUID SUMMARY

Samuel Gary Jr. & Associates

1515 Wynkoop
Denver, CO. 80202

ATTN: Tom Fertal

30-14s-17w-Ellis

Copper #1-30

Job Ticket: 47824 **DST#: 2**

Test Start: 2012.07.02 @ 04:05:22

Mud and Cushion Information

Mud Type:	Gel Chem	Cushion Type:		Oil API:	32 deg API
Mud Weight:	9.00 lb/gal	Cushion Length:	ft	Water Salinity:	35000 ppm
Viscosity:	62.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	10.39 cm³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	8000.00 ppm				
Filter Cake:	inches				

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
120.00	Muddy Water-95%W-5%M	1.410
150.00	HOCMW-20%G-30%O-45%W-5%M	2.104
0.00	300' Gas In Pipe	0.000

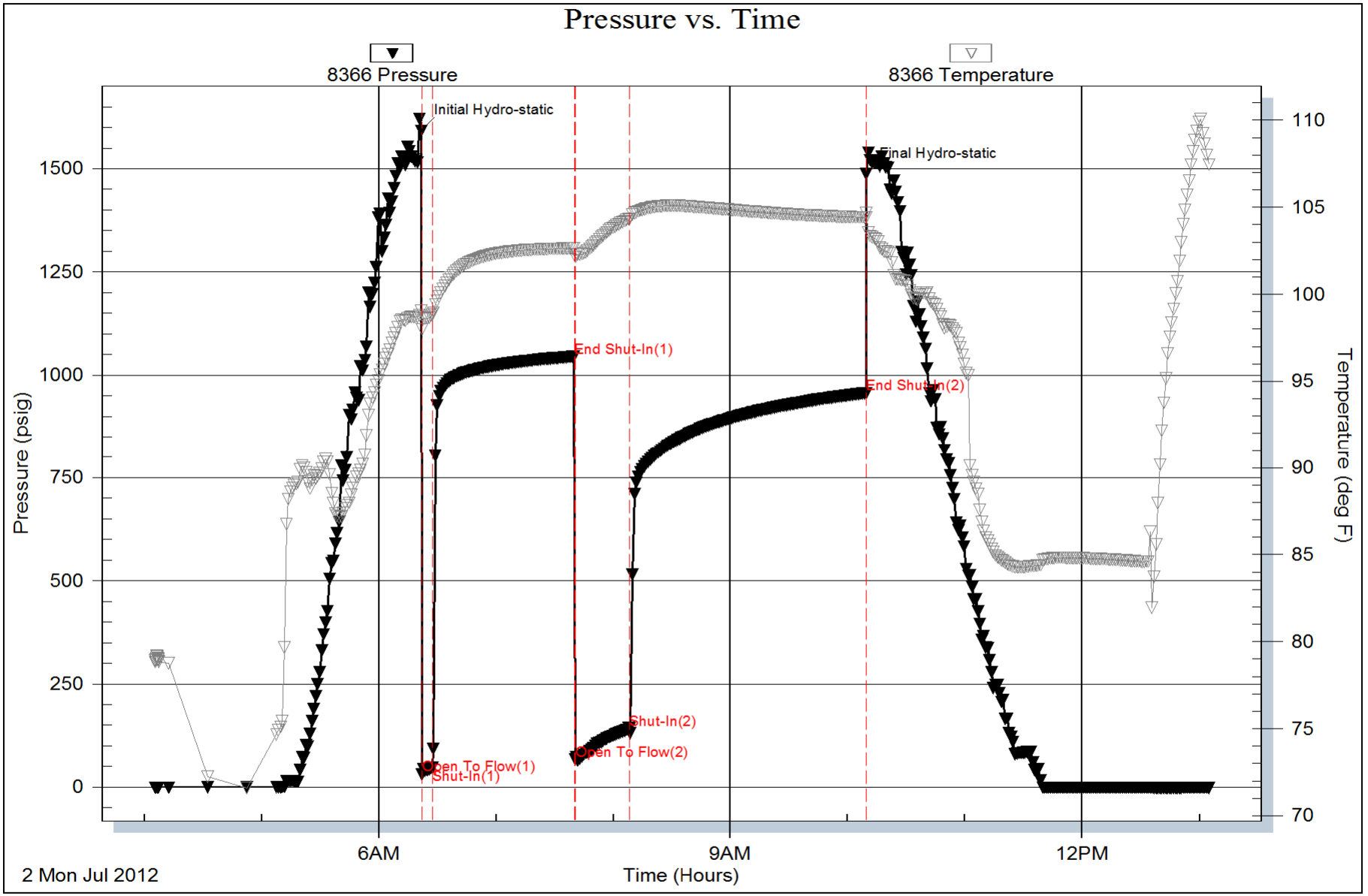
Total Length: 270.00 ft Total Volume: 3.514 bbl

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

Laboratory Name: Laboratory Location:

Recovery Comments: Sampler: 275#,300ml Oil,3700ml Water

Serial #: 8366 **Inside** Samuel Gary Jr. & Associates Copper #1-30 DST Test Number: 2



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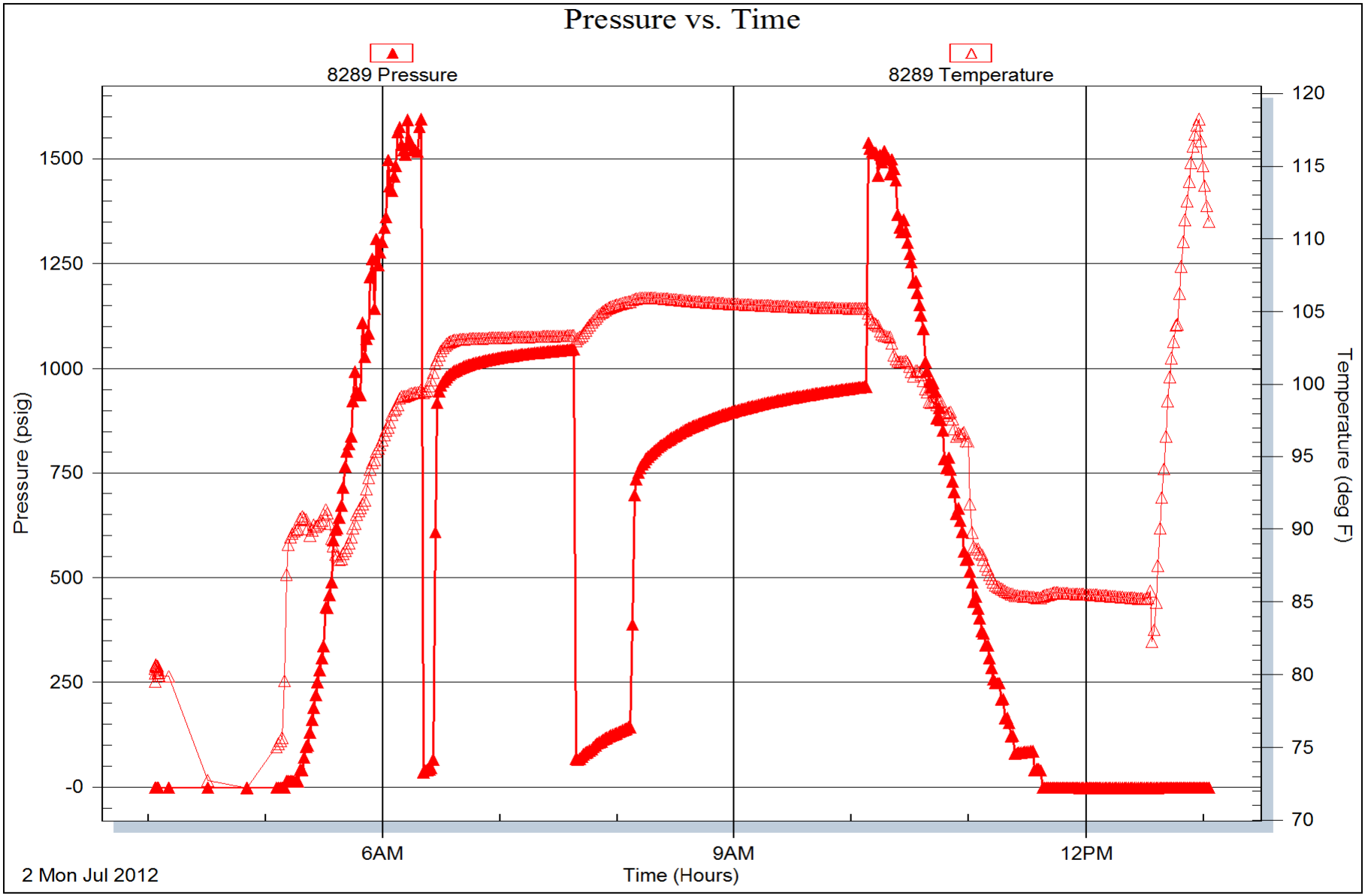
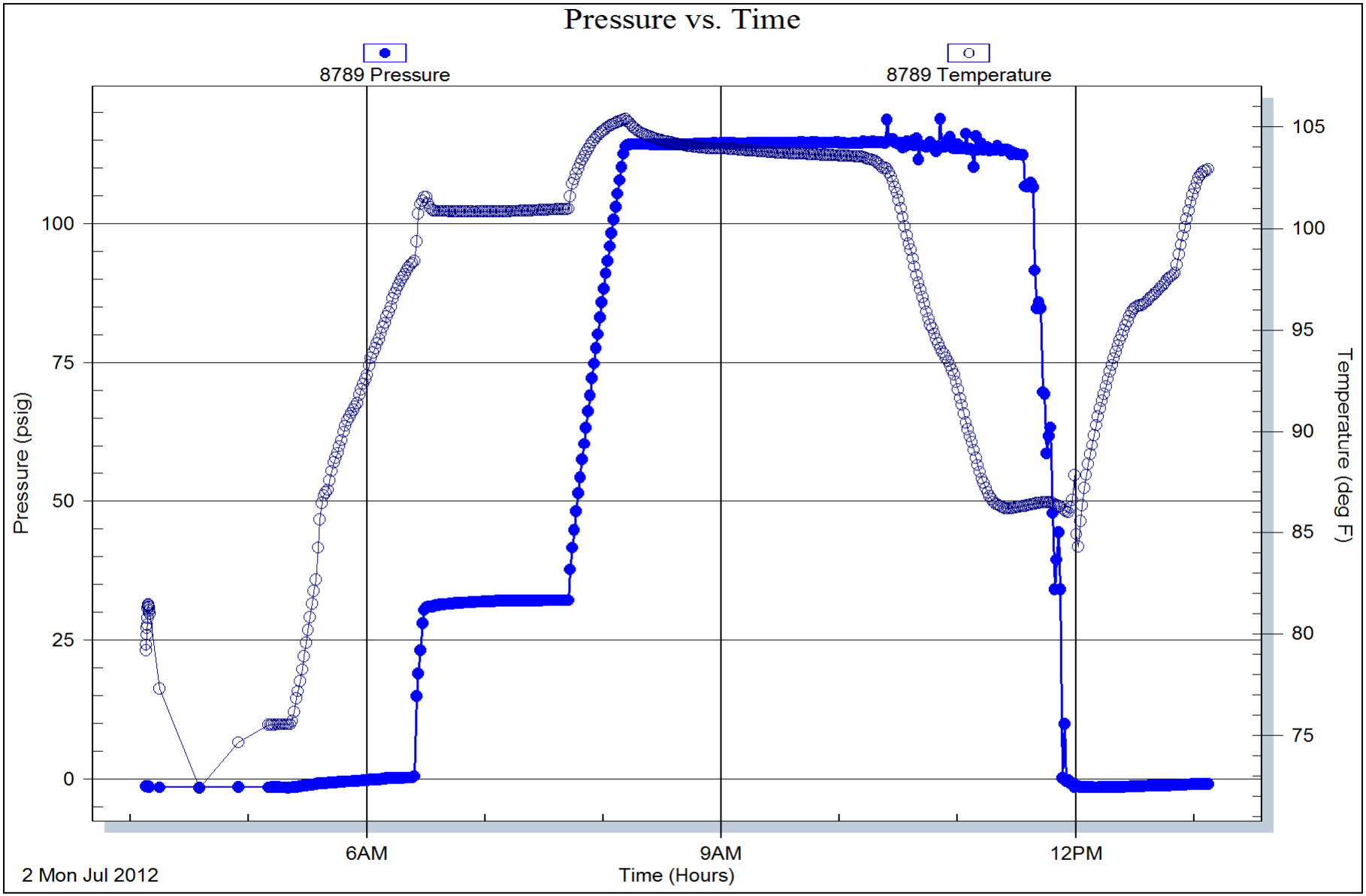
Serial #: 8289 **Fluid** Samuel Gary Jr. & Associates Copper #1-30 DST Test Number: 2



Trilobite Testing, Inc Ref. No: 47824 Printed: 2012.07.02 @ 14:09:15

Serial #: 8789 **Outside** Samuel Gary Jr. & Associates Copper #1-30 DST Test Number: 2



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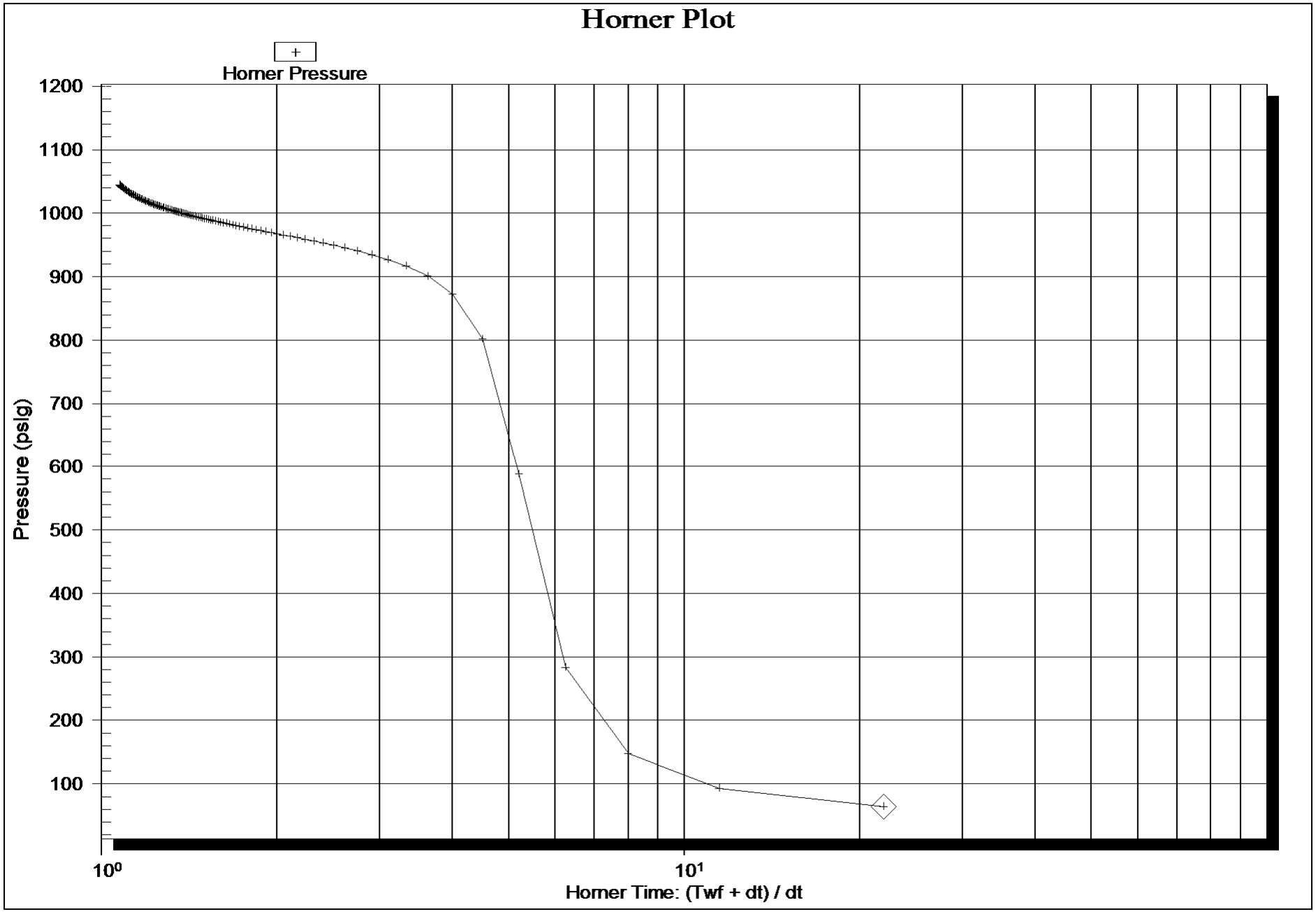
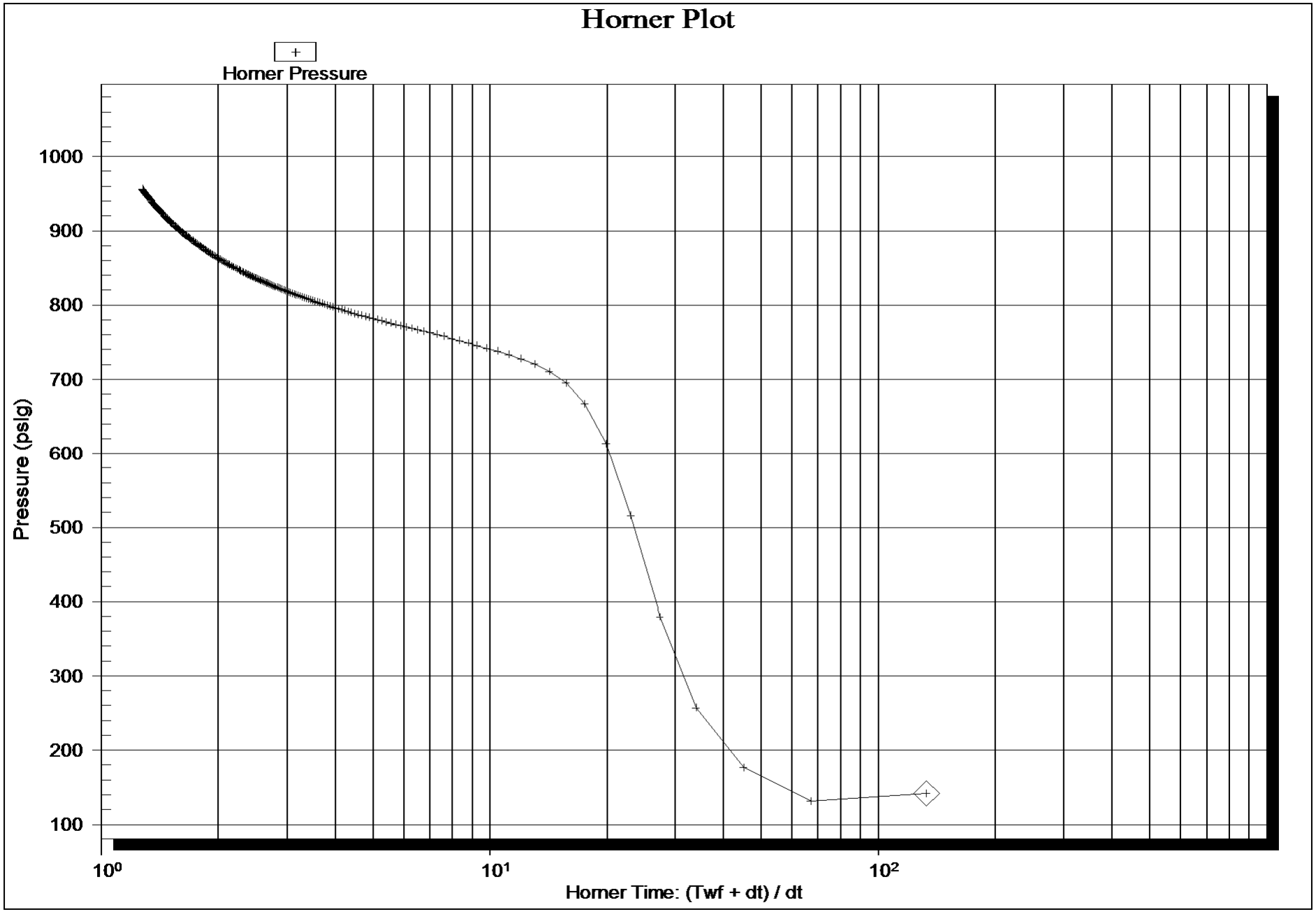
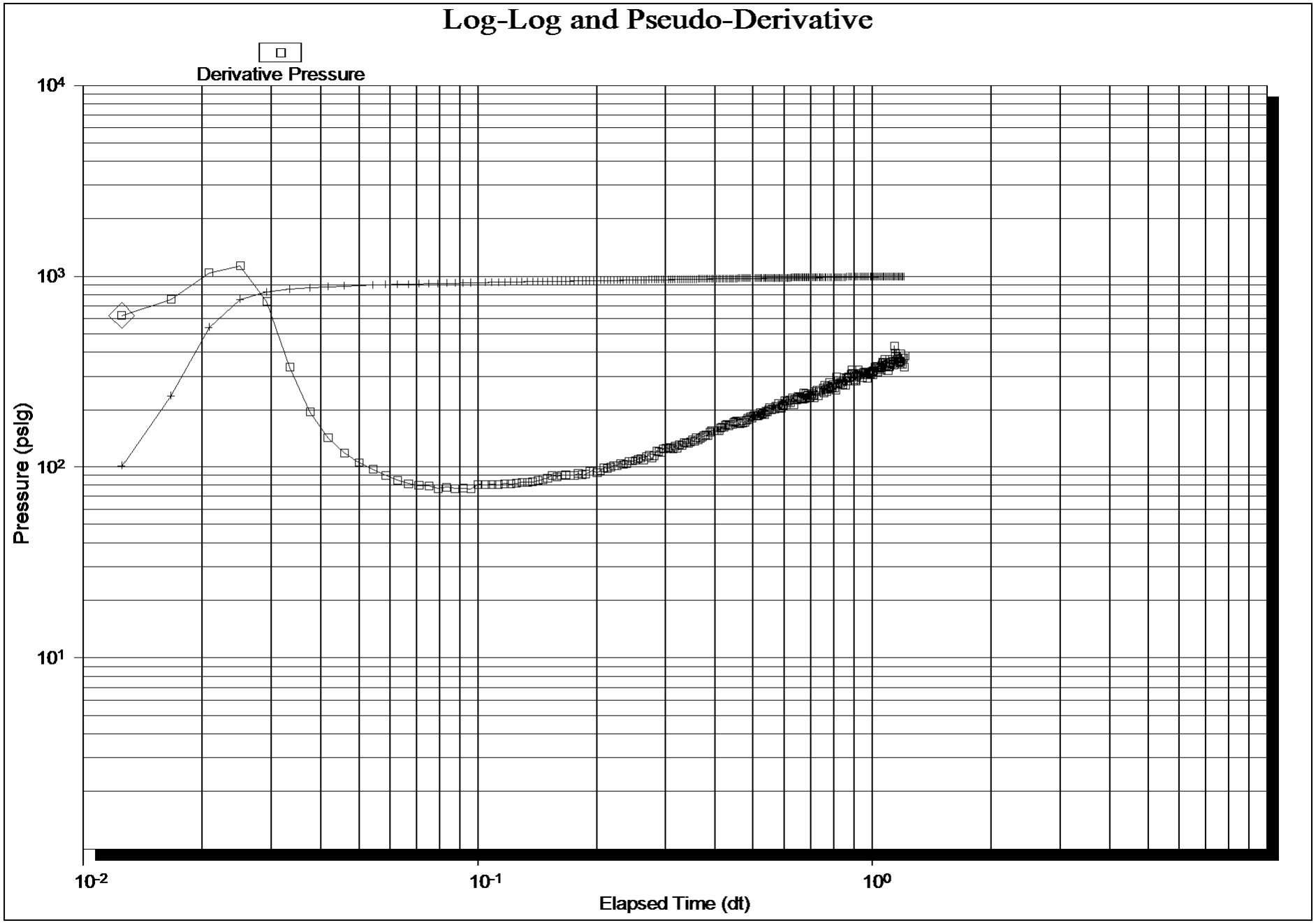
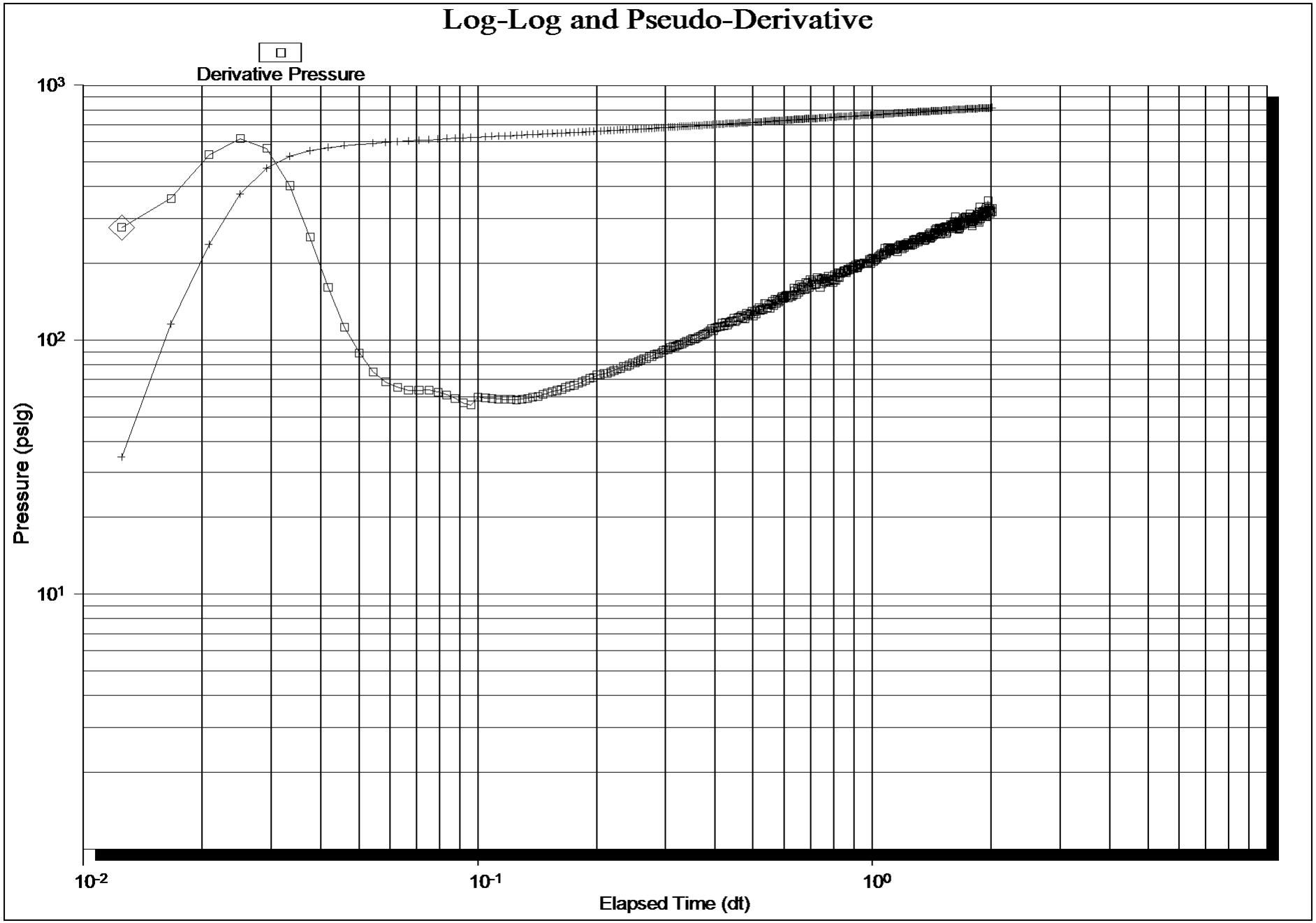

Horner Plot
Horner Pressure
1200
1100
1000
900
800
700
600
500
400
300
200
100
Pressure (pslg)
10⁰
10¹
Horner Time: (Twf + dt) / dt


Horner Plot
Horner Pressure
Pressure (pslg)
1000
900
800
700
600
500
400
300
200
100
10⁰
10¹
10²
Horner Time: (Twf + dt) / dt


Log-Log and Pseudo-Derivative
Derivative Pressure
10^4
10^3
10^2
10^1
Pressure (psig)
10^-2
10^-1
10^0
Elapsed Time (dt)


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

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

Well Name:	Copper 1-30		
Location:	Sec. 30-14S-17W Ellis County, Kansas		
License Number:	15-051-26330-0000	Region:	WILDCAT
Spud Date:	June 28, 2012	Drilling Completed:	July 3, 2012
Surface Coordinates:	1025 FSL/ 2050 FEL		
Bottom Hole Coordinates:			
Ground Elevation (ft):	1934'	K.B. Elevation (ft):	1942'
Logged Interval (ft):	2900' To: 3610'	Total Depth (ft):	3610'
Formation:			
Type of Drilling Fluid:			

Printed by WellSight Log Viewer from WellSight Systems 1-800-447-1534 www.WellSight.com

OPERATOR

Company: Samuel Gary Jr. & Assoc.
Address: 1515 Wynkoop, Ste. # 700
Denver, Colo. 80202
Geo: TOM FERTAL

GEOLOGIST

Name: Aaron Suelter
Company: Earth Tech OGL, Inc.
Address: PO Box 683
Hooker, Okla . 73945
Off. 888-543-8378 Cell: 785-531-2406

DST's Report

DST#1 3197'-3273' 5 60 15 75
IF- STRONG, BOB IN 1 MIN/ ISI- BB BOB IN 3 MIN/ FF- STRONG, BOB IN 1 MIN, GAS TO SURFAVE IN 13 MIN/ FS- BB BOB IN 2 MIN
IH-1542, FH-1512/ IF- 374 TO 517/ FF- 402 TO 684/ ISI-1120, FSI- 1091
RECOVERY- 1562' GASSY OIL/ BHT-105/ GRAVITY 38
SAMPLER- 75#, 4000 ML G.O.

DST's Report

DST#2 3274'-3324'
IF- STRONG BLOW BOB IN 3 MIN/ ISI BB BUILT TO 1"/ FF- GOOD BLOW BOB IN 6 MIN/ FSI- BB BUILT TO 3"
IH- 1591, FH- 1486/ IF- 30 TO 66/ FF- 46 TO 141/ ISI- 1044, FSI- 956
RECOVERY 120' MUDDY WATER 95% WATER, 5% MUD/ 150' HOCMW 20%GAS, 30%OIL, 45% WATER, 5% MUD/ 300' GAS IN PIPE/ BHT 102

ROCK TYPES

Anhy
Bent
Brec
Cht
Clyst
Coal
Congl
Dol
Gyp
Igne
Lmst
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

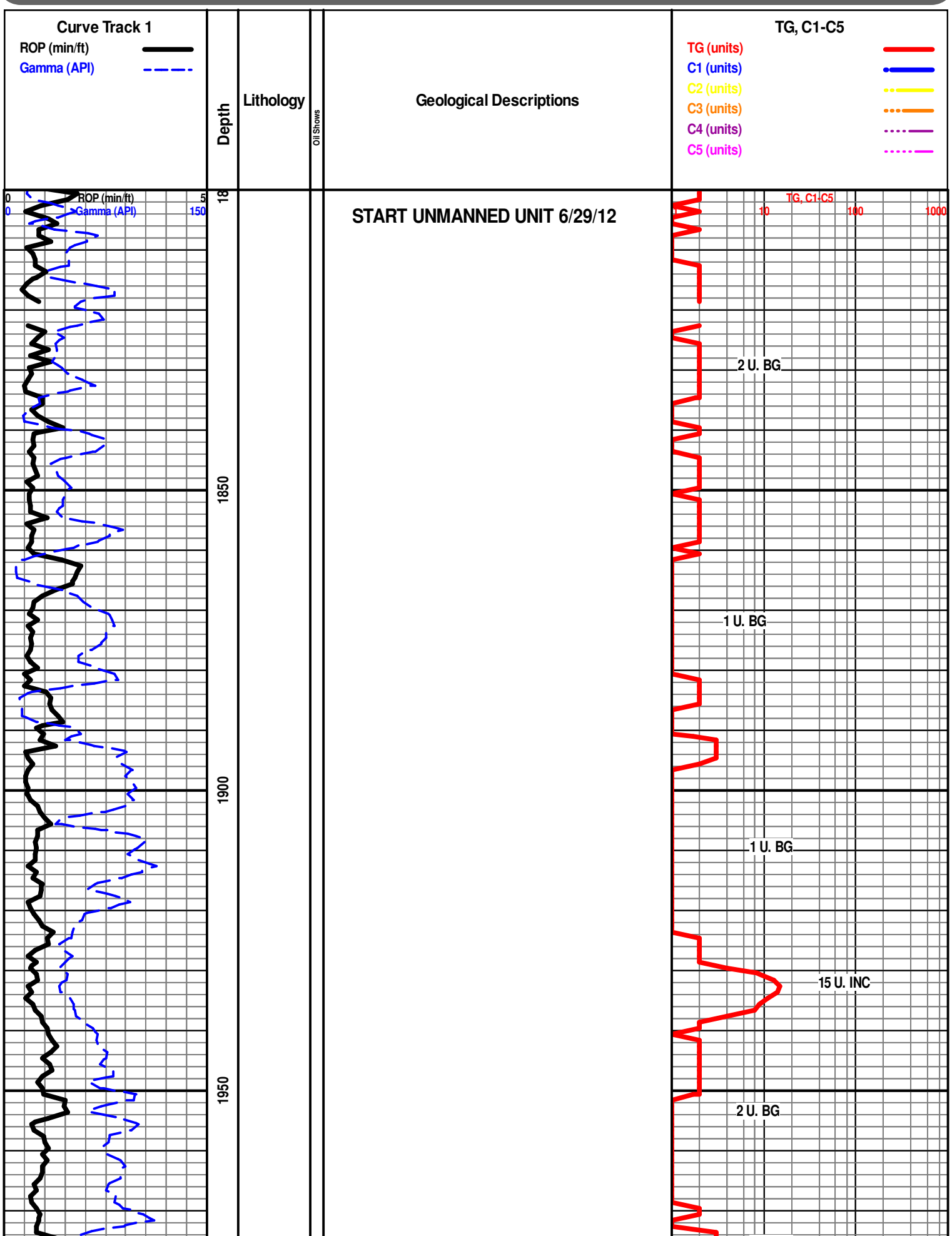
SORTING
- Well
- Moderate
- Poor

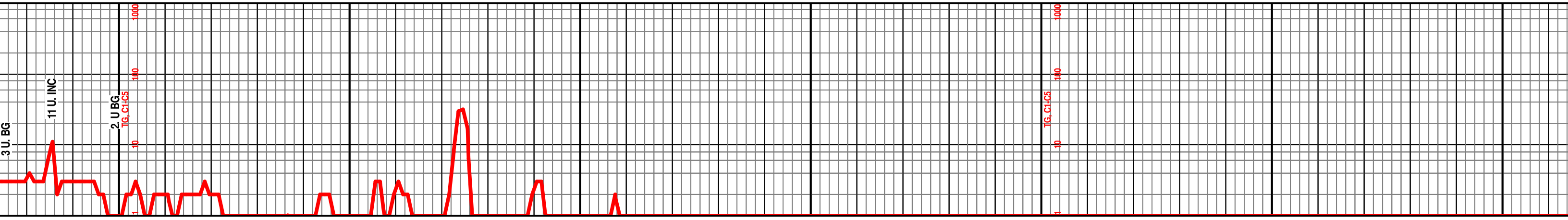
ROUNDING
- Rounded
- Subrnd
- Subang
- Angular

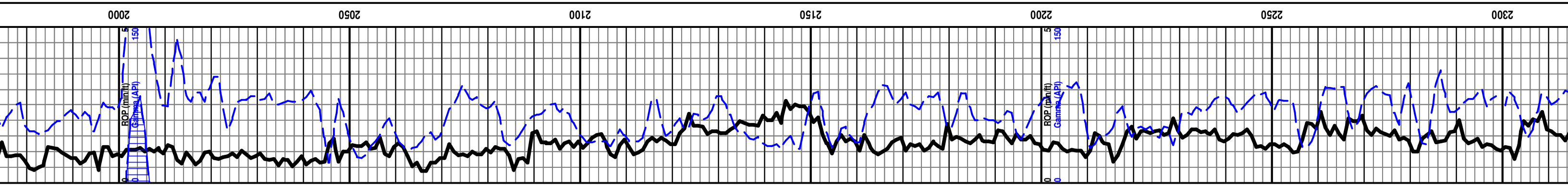
OIL SHOWS
- Even
- Spotted
- Ques
- Dead
- Gas show

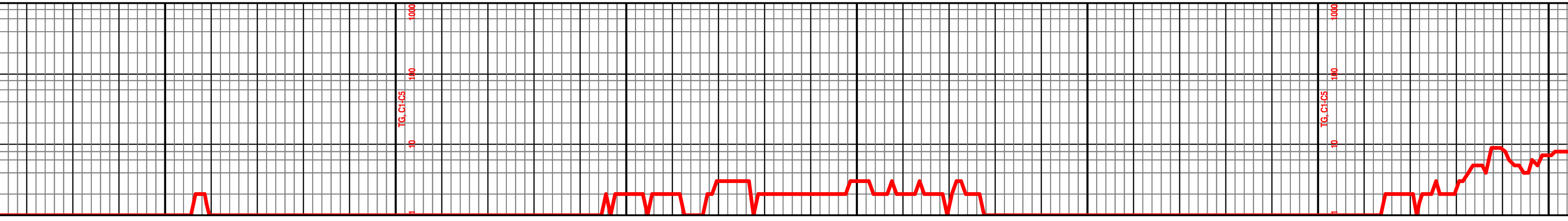
INTERVALS
- Core
- Dst
- Dst

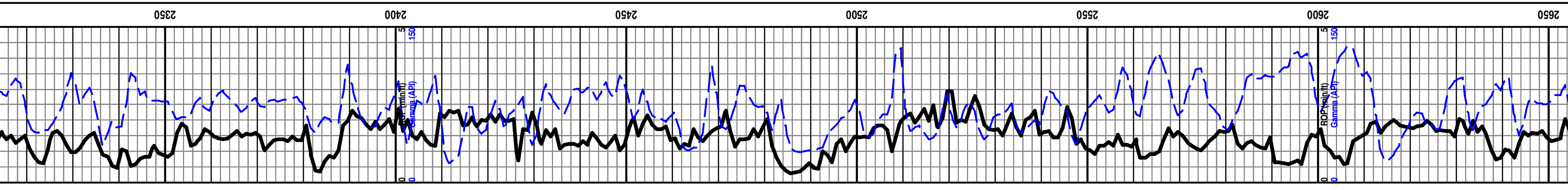
EVENTS
- Rft
- Sidewall




3 U. BG
11 U. INC
2 U BG
TG, C1-C5
1000
100
10
1
TG, C1-C5
1000
100
10
1


2000
2050
2100
2150
2200
2250
2300
ROP (min/ft)
Gamma (API)
5
150
0
0
ROP (min/ft)
Gamma (API)
5
150
0
0


TG, C1-C5
1000
100
10
1
TG, C1-C5
1000
100
10
1


2350
2400
2450
2500
2550
2600
2650
ROP (min/ft)
Gamma (API)
5
150
0
0
ROP (min/ft)
Gamma (API)
5
150
0
0

2700

2750

2800

0 ROP (min/ft) 5
0 Gamma (API) 150

2850

2900

2950

WT 8.6
VIS 65

WOB 25
RPM 80
PP 850

BRS 2717' -775'

TG, C1-C5
1 10 100 1000

HOWARD 2895' -953'

START 24 HOUR MANNED UNIT 6/30/12

LS- TN TO GY MOTT, HD DNS TO BRIT IP, MD XLN RE-XLN MTRX, TR S-CHLKY IP, TR IMBD FOSS FRG THRU, TR IMBD CALC XLS IP, NO VIS FLO, NO VIS POR, NO VIS SHOW

LS- LT TN TO TN, HD DNS TO V/BRIT, F TO MD XLN RE-XLN MTRX, S-CHLKY IP, SLI TR IMBD FOSS FRG THRU, NO VIS FLO, NO VIS POR, NO VIS SHOW

LS-TN TO GY, HD DNS, F TO MD XLN RE-XLN MTRX, ABDT IMBD FOSS FRGS THRU, NO VIS FLO, NO VIS POR, NO VIS SHOW

TOPEKA 2946'-1004'

LS- LT TN TO TN, HD DNS TO V/ BRIT, F TO MD XLN RE-XLN MTRX, S-CHLKY, SCAT IMBD FOSS FRG THRU, SCAT SFT WHT CHLK IN TRAY , NO VIS FLO, NO VIS POR, NO VIS SHOW

SH- LT GY TO GY, FRM BLKY, SMTH TXT

LS- TN TO GY, HD DNS TO BRIT IP, F XLN RE-XLN MTRX, TR IMBD LG FOSS FRG SCAT THRU, SLI TR SFT WHT CHLK IN TRAY, NO VIS FLO, NO VIS POR, NO VIS SHOW

LS- TN TO DK TN, HD DNS TO BRIT, F XLN SUCRO MTRX, S-CHLKY IP, SLI TR IMBD FOSS FRG IP, NO VIS FLO, NO VIS POR, NO VIS SHOW

2 U. BG

CN

5 U. BG

CN

6 U. BG

C1

CN

3 U. BG

ROP (min/ft) 0 5
Gamma (API) 0 150

3000
3050
3100
3150
3200
3250
3300

WT 8.6
VIS 64
WOB 30
RPM 80
PP 850

DST#1
(3197'-3273'
WOB 25
RPM 80
PP 850
WT 8.8
VIS 52
"A"
CFS@3228'
SHORT TRIP
"B"
"C"
WT 8.8
VIS48
CFS@3252'
WOB 30
RPM 80
PP 850
"D"
DST#2
3275'-3324'
CFS@3273'
"F"
WT 8.9
VIS 55
U."G"
WOB 30
RPM 80
PP 850
M."G"
CFS@3324'

LS- TN TO GY, HD DNS, F TO MD XLN RE-XLN MTRX, ABDT IMBD SM TO LG FOSS FRG THRU, NO VIS FLO, NO VIS POR, NO VIS SHOW

LS- TN, HD DNS, MD XLN RE-XLN MTRX, ABDT IMBD FOSS FRGS THRU, TR SCAT IMBD CALC XLS IP, NO VIS FLO, NO VIS POR, NO VIS SHOW

LS- LT TN TO GY, HD DNS TO V/BRIT, F TO MD XLN RE-XLN MTRX, S-SUCRO, S-CHLKY IP, TR SCAT IMBD FOSS FRGS THRU, SLI TR SCAT SFT WHT CHLK IN TRAY, NO VIS FLO, NO VIS POR, NO VIS SHOW

LS- TN TO GY MOTT, HD DNS TO BRIT IP, F TO MD XLN RE-XLN MTRX, S- SUCRO IP, SCAT IMBD FOSS FRG THRU, NO VIS FLO, NO VIS POR, NO VIS SHOW

LE COMPTON 3050' -1108'

LS- OFF WHT TO CRM, HD DNS, V/F TO F XLN MTRX, NO VIS FLO, NO VIS POR, NO VIS SHOW

LS- CRM TO TN, HD DNS TO BRIT, F TO MD XLN RE-XLN MTRX, SLI TR IMBD CALC XLS IP, NO VIS FLO, NO VIS POR, NO VIS SHOW

LS- TN TO DK GY, HD DNS, V/F TO F XLN, S-SUCRO IP, ABDT IMBD LG FOSS FRG THRU, NO VIS FLO, NO VIS POR, NO VIS SHOW

SH- BLCK, SFT, CARB

LS- LT TN TO LT GY, HD DNS TO BRIT, MD XLN RE-XLN MRTX, SLI TR IMBD FOSS FRG IP, NO VIS FLO, NO VIS POR, NO VIS SHOW

LS- LT TN TO TN, HD DNS TO BRIT IP, F TO MD XLN MTRX, SLI TR IMBD FOSS FRG IP, NO VIS FLO, NO VIS POR, NO VIS SHOW

LS- LT TN, HD DNS TO BRIT, V/F TO F XLN SUCRO MTRX, S-CHLKY IP, SLI TR IMBD FOSS FRG IP, NO VIS FLO, NO VIS POR, NO VIS SHOW

3138'-3140' LS- OFF WHT TO CRM W/ V/ LT TN OIL STN IN 30%, HD DNS TO BRIT IP, F TO MD XLN RE-XLN MTRX, S-SUCRO IP, SLI TR IMBD FOSS FRG IP, SLI TR IMBD CALC XLS IP, BRT YEL GLD FLO IN 65%, NO FLO IN 35%, V/ PR INTR XLN POR IN 5%, FR FLSH CUT IN 60%, FR TO GD MLKY BLU SLW STRM IN 60%, LT TN LCH ON DISH, FR OIL ODOR

LS- OFF WHT CRM TO LT GY, HD DNS TO BRIT IP, V/F TO F XLN MTRX, SLI TR IMBD FOSS FRG IP, NO VIS FLO, NO VIS POR, NO VIS SHOW

HEEBNER 3171' -1229'

SH- BLCK, SFT, CARB

LS- LT TN TO TN, HD DNS, V/F TO CRYPTO XLN, NO VIS FLO, NO VIS POR, NO VIS SHOW

SH- GRN BRW TO DK GY, FRM BLKY, SMTH TXT

3192'-3195' LS- OFF WHT TO CRM W/ TN OIL STN IN 50%, LIVE OIL IN 5%, HD DNS TO BRIT, F XLN RE-XLN MTRX, S-SUCRO IP, SCAT SFT WHT CHLK IN TRAY, DUL YEL GLD FLO IN 50%, NO FLO IN 50%, V/V/PR INTR XLN POR IN 10%, PR VUG POR IN 1%, WK FLSH CUT IN 50%, FR SLW STRM IN 30%, TN LCH ON DISH, WK OIL ODOR

DOUGLAS 3207' -1265'

SH RED BRWN TO LT GY, SFT GMMY, SMTH TXT

LANSING 3217'-1275'

3218'-3220' LS- LT TN TO TN W/ TN OIL STN IN 70%, HD DNS TO BRIT, MD TO CRS XLN RE-XLN MTRX, SCAT IMBD CALC XLS THRU, BRT YEL GLD FLO IN 80%, FR INTR XLN POR IN 20%, POSS FRCT POR, FR FLSH CUT IN 80%, GD SLW STRM IN 70%, TN LCH ON DISH, GD OIL ODOR

3222'-3225' LS- CRM TO LT TN W/ LT TN OIL STN IN 40%, HD DNS, V/F TO F XLN SUCRO MTRX, DUL YEL GLD FLO IN 60%, GD VUG POR IN 5%, WK FLSH CUT IN 50%, FR SLW STRM IN 40%, TN LCH ON DISH, GD OIL ODOR

LANSING "C" 3240' -1298'

3240'-3244' LS- OFF WHT, HD DNS TO BRIT, V/F TO F XLN SUCRO MTRX, V/ OOLMLD THRU, DUL YEL GLD FLO IN 80%, BRT YEL GLD FLO IN 10%, GD OOLMLD POR IN 35%, GD VUG POR IN 5%, GD FLSH CUT THRU, MLKY BLU GASSY CUT IN 90%, DK TN LCH ON DISH, V/ STRNG OIL ODOR OIL DROPLETS FLOATING IN DISH

3259'-3264' LS- CRM TO LT TN W/ TN OIL STN IN 85%, HD DNS TO BRIT IP, F TO MD XLN SUCRO MTRX, TR RE-XLN MTRX IP, ABDT OOLMLD THRU, TR SCAT IMBD OOL THRU, SLI TR SFT WHT CHLK IN TRAY, DUL YEL GLD FLO THRU, GD OOLMLD POR IN 70%, PR INTR XLN POR IN 1%, GD FLSH CUT THRU, GD SLW STRM IN 90%, DK TN LCH ON DISH, V/ STRNG OIL ODOR

3267'-3269' LS- LT TN W/ DK TN OIL STN IN 80%, HD DNS TO V/BRIT, F TO MD XLN RE-XLN MTRX, S-SUCRO IP, SCAT IMBD OOL IP, TR WHT CHRT IN TRAY, DUL YEL GLD FLO IN 80%, BRT YEL GLD FLO IN 15%, PR INTR XLN POR IN 15%, FR INTR OOL POR IN 5%, GD INSTNT FLUSH CUT THRU, GD GASSY SLW STRM THRU, DK TN LCH ON DISH, V/ STRNG OIL ODOR

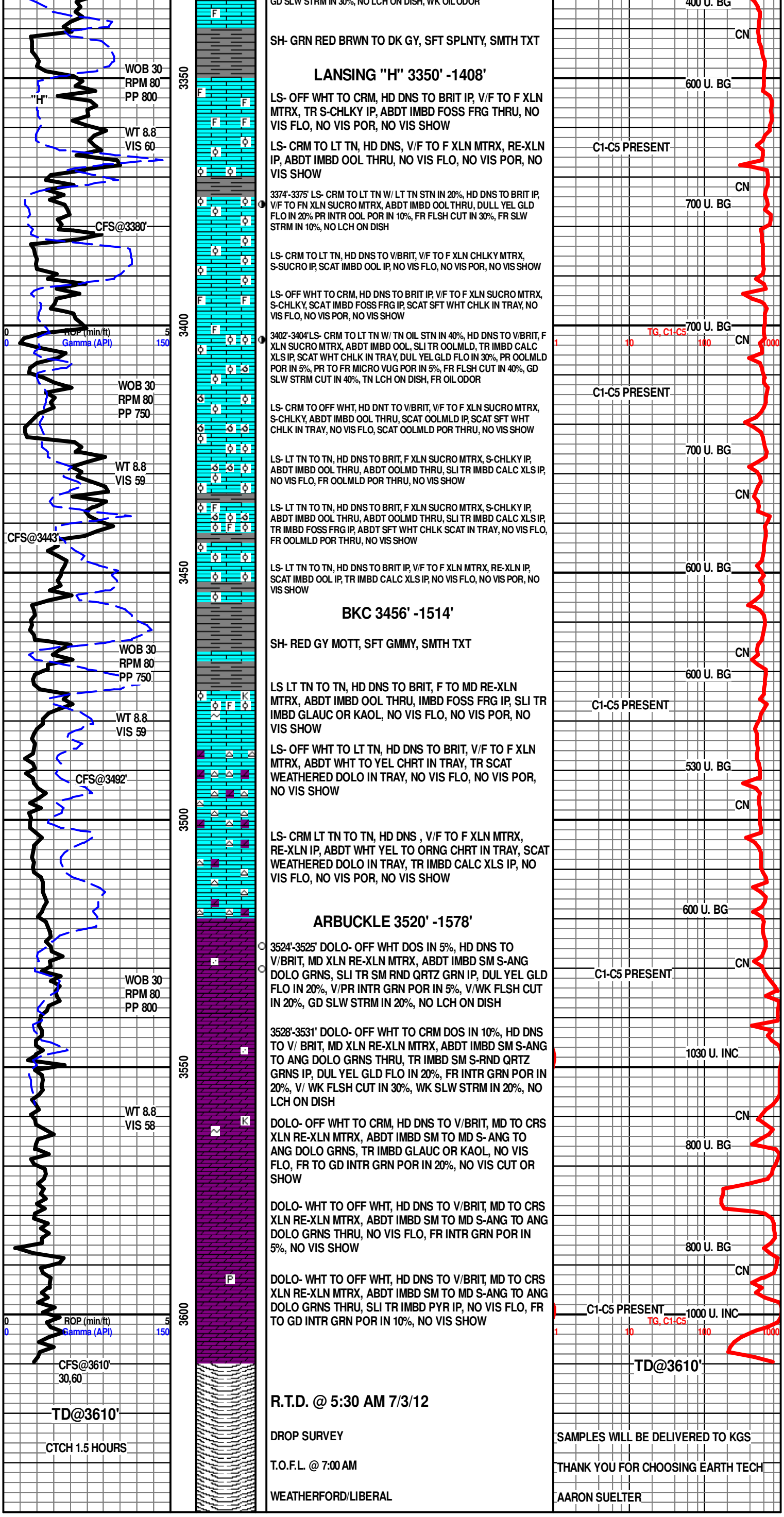
LANSING "F" 3286' - 1344'

3286'-3288' LS- WHT TO OFF WHT W/ LT TN STN IN 40%, HD DNS TO V/BRIT, V/F TO F XLN SUCRO MTRX, IMBD FOSS FRG IP, DUL YEL GLD FLO IN 40%, BRT YEL GLD FLO IN 10%, FR TO GD VUG POR IN 20%, WK FLSH CUT IN 50%, FR TO GD SLW STRM IN 30%, V/ LT TN LCH ON DISH FR OIL ODOR, TR OIL DROPLETS FLOATING IN DISH

3296'-3298' LS- OFF WHT TO CRM W/ TN OIL STN IN 70%, HD DNS, V/F TO F XLN SUCRO MTRX, S-CHLKY IP, SCAT IMBD OOL IP, SLI TR OOLMLD IP,SLI TR IMBD CALC XLS IP, DUL YEL GLD FLO IN 40%, BRT YEL GLD FLO IN 15%, FR MICRO VUG POR IN 10%, GD OOLMLD POR IN 5%, WK FLSH CUT IN 40%, WK SLW STRM IN 10% NO LCH ON DISH, WK OIL ODOR

3310'-3313' LS CRM W/ TN OIL STN IN 40%, HD DNS TO BRIT IP, F XLN SUCRO MTRX, ABDT IMBD OOL THRU, TR OOLMLD IP, TR IMBD CALC XLS IP, BRT YEL GLD FLO IN 30%, PR TO FR INTR OOL POR IN 10%, PR OOLMLD POR IN 20%, PR MICRO VUG POR IN 1%, WK FLSH CUT IN 30%,

2U. BG
CN
TG, C1-C5
1 10 100 1000
LINE & AGITATOR CHECK
AGITATOR REPLACED
8 U. BG
CN
10 U. BG
CN
C2 C1
15 U. BG
CN
21 U. SH INC
18 U. BG
CN
20 U. BG
CN
21 U. BG
C1
C2
30 U. SH INC
C3
CN
20 U. BG
TG, C1-C5
1 10 100 1000
CN
55 U. SHOW
C5 C3 C2 C1
EQUIPMENT MALFUNCTION GAS NOT RECORDED 3228'-3252'
POSS 232 U. SHOW C4 & C5
CN
120 U. BG
180 U. SHOW
C5 C4 C3 C2 C1
35 U. BG
PITS CONTAMINATED CHROMAT OFF
CN
580 U. BG
C1-C5 PRESENT
CN
560 U. BG
CN


WOB 30
RPM 80
PP 800
"H"
WT 8.8
VIS 60
CFS@3380'
0
ROP (min/ft)
5
0
Gamma (API)
150
WOB 30
RPM 80
PP 750
WT 8.8
VIS 59
CFS@3443'
WOB 30
RPM 80
PP 750
WT 8.8
VIS 59
CFS@3492'
WOB 30
RPM 80
PP 800
WT 8.8
VIS 58
0
ROP (min/ft)
5
0
Gamma (API)
150
CFS@3610'
30,60
TD@3610'
CTCH 1.5 HOURS
3350
3400
3450
3500
3550
3600
F
K
P
GD SLW STRM IN 30%, NO LCH ON DISH, WK OIL ODOR
SH- GRN RED BRWN TO DK GY, SFT SPLNTY, SMTH TXT
LANSING "H" 3350' -1408'
LS- OFF WHT TO CRM, HD DNS TO BRIT IP, V/F TO F XLN MTRX, TR S-CHLKY IP, ABDT IMBD FOSS FRG THRU, NO VIS FLO, NO VIS POR, NO VIS SHOW
LS- CRM TO LT TN, HD DNS, V/F TO F XLN MTRX, RE-XLN IP, ABDT IMBD OOL THRU, NO VIS FLO, NO VIS POR, NO VIS SHOW
3374'-3375' LS- CRM TO LT TN W/ LT TN STN IN 20%, HD DNS TO BRIT IP, V/F TO FN XLN SUCRO MTRX, ABDT IMBD OOL THRU, DULL YEL GLD FLO IN 20% PR INTR OOL POR IN 10%, FR FLSH CUT IN 30%, FR SLW STRM IN 10%, NO LCH ON DISH
LS- CRM TO LT TN, HD DNS TO V/BRIT, V/F TO F XLN CHLKY MTRX, S-SUCRO IP, SCAT IMBD OOL IP, NO VIS FLO, NO VIS POR, NO VIS SHOW
LS- OFF WHT TO CRM, HD DNS TO BRIT IP, V/F TO F XLN SUCRO MTRX, S-CHLKY, SCAT IMBD FOSS FRG IP, SCAT SFT WHT CHLK IN TRAY, NO VIS FLO, NO VIS POR, NO VIS SHOW
3402'-3404'LS- CRM TO LT TN W/ TN OIL STN IN 40%, HD DNS TO V/BRIT, F XLN SUCRO MTRX, ABDT IMBD OOL, SLI TR OOLMLD, TR IMBD CALC XLS IP, SCAT WHT CHLK IN TRAY, DUL YEL GLD FLO IN 30%, PR OOLMLD POR IN 5%, PR TO FR MICRO VUG POR IN 5%, FR FLSH CUT IN 40%, GD SLW STRM CUT IN 40%, TN LCH ON DISH, FR OIL ODOR
LS- CRM TO OFF WHT, HD DNT TO V/BRIT, V/F TO F XLN SUCRO MTRX, S-CHLKY, ABDT IMBD OOL THRU, SCAT OOLMLD IP, SCAT SFT WHT CHLK IN TRAY, NO VIS FLO, SCAT OOLMLD POR THRU, NO VIS SHOW
LS- LT TN TO TN, HD DNS TO BRIT, F XLN SUCRO MTRX, S-CHLKY IP, ABDT IMBD OOL THRU, ABDT OOLMD THRU, SLI TR IMBD CALC XLS IP, NO VIS FLO, FR OOLMLD POR THRU, NO VIS SHOW
LS- LT TN TO TN, HD DNS TO BRIT, F XLN SUCRO MTRX, S-CHLKY IP, ABDT IMBD OOL THRU, ABDT OOLMD THRU, SLI TR IMBD CALC XLS IP, TR IMBD FOSS FRG IP, ABDT SFT WHT CHLK SCAT IN TRAY, NO VIS FLO, FR OOLMLD POR THRU, NO VIS SHOW
LS- LT TN TO TN, HD DNS TO BRIT IP, V/F TO F XLN MTRX, RE-XLN IP, SCAT IMBD OOL IP, TR IMBD CALC XLS IP, NO VIS FLO, NO VIS POR, NO VIS SHOW
BKC 3456' -1514'
SH- RED GY MOTT, SFT GMMY, SMTH TXT
LS LT TN TO TN, HD DNS TO BRIT, F TO MD RE-XLN MTRX, ABDT IMBD OOL THRU, IMBD FOSS FRG IP, SLI TR IMBD GLAUC OR KAOL, NO VIS FLO, NO VIS POR, NO VIS SHOW
LS- OFF WHT TO LT TN, HD DNS TO BRIT, V/F TO F XLN MTRX, ABDT WHT TO YEL CHRT IN TRAY, TR SCAT WEATHERED DOLO IN TRAY, NO VIS FLO, NO VIS POR, NO VIS SHOW
LS- CRM LT TN TO TN, HD DNS , V/F TO F XLN MTRX, RE-XLN IP, ABDT WHT YEL TO ORNG CHRT IN TRAY, SCAT WEATHERED DOLO IN TRAY, TR IMBD CALC XLS IP, NO VIS FLO, NO VIS POR, NO VIS SHOW
ARBUCKLE 3520' -1578'
3524'-3525' DOLO- OFF WHT DOS IN 5%, HD DNS TO V/BRIT, MD XLN RE-XLN MTRX, ABDT IMBD SM S-ANG DOLO GRNS, SLI TR SM RND QRTZ GRN IP, DUL YEL GLD FLO IN 20%, V/PR INTR GRN POR IN 5%, V/WK FLSH CUT IN 20%, GD SLW STRM IN 20%, NO LCH ON DISH
3528'-3531' DOLO- OFF WHT TO CRM DOS IN 10%, HD DNS TO V/ BRIT, MD XLN RE-XLN MTRX, ABDT IMBD SM S-ANG TO ANG DOLO GRNS THRU, TR IMBD SM S-RND QRTZ GRNS IP, DUL YEL GLD FLO IN 20%, FR INTR GRN POR IN 20%, V/ WK FLSH CUT IN 30%, WK SLW STRM IN 20%, NO LCH ON DISH
DOLO- OFF WHT TO CRM, HD DNS TO V/BRIT, MD TO CRS XLN RE-XLN MTRX, ABDT IMBD SM TO MD S- ANG TO ANG DOLO GRNS, TR IMBD GLAUC OR KAOL, NO VIS FLO, FR TO GD INTR GRN POR IN 20%, NO VIS CUT OR SHOW
DOLO- WHT TO OFF WHT, HD DNS TO V/BRIT, MD TO CRS XLN RE-XLN MTRX, ABDT IMBD SM TO MD S-ANG TO ANG DOLO GRNS THRU, NO VIS FLO, FR INTR GRN POR IN 5%, NO VIS SHOW
DOLO- WHT TO OFF WHT, HD DNS TO V/BRIT, MD TO CRS XLN RE-XLN MTRX, ABDT IMBD SM TO MD S-ANG TO ANG DOLO GRNS THRU, SLI TR IMBD PYR IP, NO VIS FLO, FR TO GD INTR GRN POR IN 10%, NO VIS SHOW
R.T.D. @ 5:30 AM 7/3/12
DROP SURVEY
T.O.F.L. @ 7:00 AM
WEATHERFORD/LIBERAL
400 U. BG
CN
600 U. BG
C1-C5 PRESENT
CN
700 U. BG
700 U. BG
TG, C1-C5
1
10
100
1000
CN
C1-C5 PRESENT
700 U. BG
CN
600 U. BG
CN
600 U. BG
C1-C5 PRESENT
530 U. BG
CN
600 U. BG
CN
C1-C5 PRESENT
1030 U. INC
CN
800 U. BG
800 U. BG
CN
C1-C5 PRESENT
1000 U. INC
TG, C1-C5
1
10
100
1000
TD@3610'
SAMPLES WILL BE DELIVERED TO KGS
THANK YOU FOR CHOOSING EARTH TECH
AARON SUELTER