Confidentiality Requested:
☑ Yes ☐ No

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

1189312

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: DANIEL PRITCHARD
Phone: (3003) 831-4673
CONTRACTOR: License # 31548
Name: Discovery Drilling
Wellsite Geologist: SCHUYLER HEDRICK
Purchaser:

Designate Type of Completion:

☑ New Well ☐ Re-Entry ☐ Workover

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

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

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

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

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

10/25/2013	11/1/2013	11/2/2013
Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date

API No. 15 - 15-065-23981-00-00
Spot Description:
NW SE NW SE Sec. 4 Twp. 10 S. R. 22 ☐ East ☑ West
1900 Feet from ☐ North / ☑ South Line of Section
1750 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: Graham
Lease Name: BOLLIG Well #: 1-4
Field Name:
Producing Formation: N/A
Elevation: Ground: 2341 Kelly Bushing: 2349
Total Vertical Depth: 4092 Plug Back Total Depth:
Amount of Surface Pipe Set and Cemented at: 433 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: 11000 ppm Fluid volume: 320 bbls
Dewatering method used: Hauled to Disposal

Location of fluid disposal if hauled offsite:

Operator Name: AMERICAN TANK SERVICE, LLC
Lease Name: STAAB OGALLAH FRANK 1 License #: 34590
Quarter SW Sec. 20 Twp. 12 S. R. 22 ☐ East ☑ West
County: TREGO Permit #: D31526

AFFIDAVIT

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

Submitted Electronically

KCC Office Use ONLY

☑ **Confidentiality Requested**
Date: 02/14/2014
☑ **Confidential Release Date:** 02/14/2016
☑ **Wireline Log Received**
☑ **Geologist Report Received**
☐ **UIC Distribution**
ALT ☐ I ☑ II ☐ III **Approved by:** NAOMI JAMES **Date:** 02/14/2014

[redacted] 1189312

Operator Name: Samuel Gary Jr. & Associates, Inc. Lease Name: BOLLIG Well #: 1-4

Sec. 4 Twp. 10 S. R. 22 ☐ East ☑ West County: Graham

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	3342	-993
HEEBNER	3558	-1209
LANSING	3598	-1249
ARBUCKLE	3984	-1635
TD	4092	

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	433	COMMON CLASS A	225	2% GEL, 3% CC

ADDITIONAL CEMENTING / SQUEEZE RECORD

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

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

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

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

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

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

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

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

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

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

PRODUCTION INTERVAL:

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

Form	ACO1 - Well Completion
Operator	Samuel Gary Jr. & Associates, Inc.
Well Name	BOLLIG 1-4
Doc ID	1189312

All Electric Logs Run

DEN-NEUT
INDUCTION
MICRO
SONIC
SPECTRAL

Form	ACO1 - Well Completion
Operator	Samuel Gary Jr. & Associates, Inc.
Well Name	BOLLIG 1-4
Doc ID	1189312

Casing

Purpose Of String	Size Hole Drilled	Size Casing Set	Weight	Setting Depth	Type Of Cement	Number of Sacks Used	Type and Percent Additives
SURFACE	12.25	8.625	23	433	COMMON CLASS A	225	2% GEL, 3% CC

Date: 10/25/2013
Invoice # 7223

P.O.#:

Due Date: 11/24/2013
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

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

RECEIVED
NOV 04 2013
SAMUEL GARY JR.
& ASSOCIATES, INC.

☐ DRLG ☐ COMP ☐ W/O ☐ LOE ☐ GG

Account	5200.138
Well/Prospect	
Deck	
AFE	
Approval	
Description	

Reference:
BOLLIG 1-4

Description of Work:
SURFACE JOB

Services / Items Included:	Quantity	Price	Taxable
Labor		$ 991.39	No
Common-Class A	225	$ 3,664.29	Yes
Bulk Truck Matl-Material Service Charge	237	$ 514.63	No
Pump Truck Mileage-Job to Nearest Camp	45	$ 487.59	No
Calcium Chloride	8	$ 413.96	Yes
8 5/8" Basket	1	$ 343.09	Yes
Bulk Truck Mileage-Job to Nearest Bulk Plant	45	$ 285.33	No
8 5/8" Centralizer	2	$ 138.97	Yes
8 5/8" Top Rubber Plug	1	$ 115.09	Yes
Baffle Plate Aluminum, 8 5/8"	1	$ 97.71	Yes
Premium Gel (Bentonite)	4	$ 70.70	Yes

Item	Quantity	Price	Taxable

Invoice Terms:
Net 30

SubTotal:	$	*7,122.74*
Discount Available ONLY if Invoice is Paid & Received within listed terms of invoice:	$	(1,068.41)
SubTotal for Taxable Items:	$	4,117.23
SubTotal for Non-Taxable Items:	$	1,937.10
Total:	$	6,054.33
7.40% Graham County Sales Tax Tax:	$	304.68
Amount Due:	**$**	**6,359.01**
Applied Payments:		
Balance Due:	**$**	**6,359.01**

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 **Home Office P.O. Box 32 Russell, KS 67665** **No.** 7223

Cell 785-324-1041

Date	Sec.	Twp.	Range	County	State	On Location	Finish
10-25-13	4	10	22	Graham	KS		2:30

Location Wakeeny N to Redline E to 310 Rd 1 ½S

Lease Bollig	Well No. 1-4	Owner Wn2
Contractor Discovery #4		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.
Type Job Surface		
Hole Size 12¼	T.D. 433	Charge To Sam Gary Jr. & Associates
Csg. 8 5/8	Depth 433	Street
Tbg. Size	Depth	City State
Tool	Depth	The above was done to satisfaction and supervision of owner agent or contractor.
Cement Left in Csg.	Shoe Joint 42.32	Cement Amount Ordered 225 Com 3%cc 2%gel
Meas Line	Displace 24.84bbl	

EQUIPMENT

Pumptrk 5	No. Cementer Helper Lonnie W.	
Bulktrk 19	No. Driver Driver Lonnie M.	
Bulktrk P4	No. Driver Driver Travis	

JOB SERVICES & REMARKS

Remarks: Cement did circulate

Rat Hole

Mouse Hole

Centralizers 1,9

Baskets 2

D/V or Port Collar

Common	225
Poz. Mix	
Gel.	4
Calcium	8
Hulls	
Salt	
Flowseal	
Kol-Seal	
Mud CLR 48	
CFL-117 or CD110 CAF 38	
Sand	
Handling	237
Mileage	

FLOAT EQUIPMENT

Guide Shoe	
Centralizer	2
Baskets	1
AFU Inserts	
Float Shoe	
Latch Down	
	1 Baffle Plate
	1 Rubber Plug
Pumptrk Charge	Surface
Mileage	43
Tax	
Discount	
Total Charge	

X Signature James H Pummill

Date: 11/2/2013
Invoice # 7550

P.O.#:

Due Date: 12/2/2013
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

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

RECEIVED
NOV 18 2013
SAMUEL GARY JR.
& ASSOCIATES, INC.

Reference:
~~BOLLIE 1-4~~
Bollig
Description of Work:
PLUG JOB

☐ DRLG ☐ COMP ☐ W/O ☐ LOE ☐ GG

Account	8200.145
Well/Prospect	
Deck	
AFE	
Approval	RB
Description	

Services / Items Included:

	Quantity		Price	Taxable
Labor		$	991.39	Yes
Common-Class A	162	$	2,638.29	Yes
POZ Mix-Standard	108	$	738.72	Yes
Bulk Truck Matl-Material Service Charge	280	$	608.00	Yes
Pump Truck Mileage-Job to Nearest Camp	45	$	487.59	Yes
Bulk Truck Mileage-Job to Nearest Bulk Plant	45	$	285.33	Yes
Premium Gel (Bentonite)	10	$	176.75	Yes
Flo Seal	62	$	134.63	Yes
Dry Hole Plug	1	$	60.80	Yes

Item	Quantity	Price	Taxable

Invoice Terms:
Net 30

SubTotal:	$	*6,121.50*
Discount Available ONLY if Invoice is Paid & Received within listed terms of invoice:	$	(918.22)
SubTotal for Taxable Items:	$	5,203.27
SubTotal for Non-Taxable Items:	$	-
Total:	$	5,203.28
7.40% Graham County Sales Tax Tax:	$	385.04
Amount Due:	**$**	**5,588.32**
Applied Payments:		
Balance Due:	**$**	**5,588.32**

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. 7550

Date	Sec.	Twp.	Range	County	State	On Location	Finish
11-2-13	4	10	22	Graham	KS		7:30 AM

Location Wakeeny N to Redline E to 3rd 1½S

Lease Bollie	Well No. 1-4	Owner	
Contractor Discovery #4		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.	
Type Job Plug			
Hole Size 7 7/8	T.D. 4094'	Charge To Sam Gary & Associates	
Csg. Drill Pipe	Depth	Street	
Tbg. Size	Depth	City	State
Tool	Depth	The above was done to satisfaction and supervision of owner agent or contractor.	
Cement Left in Csg.	Shoe Joint	Cement Amount Ordered 270 60/40 4% Gel	
Meas Line	Displace		

EQUIPMENT

Pumptrk 15	No.	Cementer Helper	Matt
Bulktrk 1	No.	Driver Driver	Doug
Bulktrk Pu	No.	Driver Driver	Brett

JOB SERVICES & REMARKS

Remarks:

Rat Hole - 30sx

Mouse Hole 15sx

Centralizers

Baskets

D/V or Port Collar

1st Plug 50 sx @ 3960'
2nd Plug 25 sx @ 1875'
3rd Plug 100 sx @ 1025'
4th Plug 40 sx @ 475'
5th Plug 10 sx @ 40'

Common	162
Poz. Mix	108
Gel.	10
Calcium	
Hulls	
Salt	
Flowseal	67#
Kol-Seal	
Mud CLR 48	
CFL-117 or CD110 CAF 38	
Sand	
Handling	280
Mileage	8 5/4

FLOAT EQUIPMENT

Guide Shoe	
Centralizer	
Baskets	
AFU Inserts	
Float Shoe	
Latch Down	
	Wood Plug - 1
Pumptrk Charge	plug
Mileage	43
Tax	
Discount	
Total Charge	

X Signature

DRILL STEM TEST REPORT

Samuel Gary Jr. & Associates. Inc

1515 Wynkoop STE 700
Denver CO 80202

ATTN: Dan Pritchard

4-10s-22w Graham KS

Bollig 1-4

Job Ticket: 54490 **DST#: 1**

Test Start: 2013.10.30 @ 01:34:00

GENERAL INFORMATION:

Formation: **LKC "F-G"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 03:50:00
Time Test Ended: 08:38:15

Test Type: Conventional Bottom Hole (Initial)
Tester: Cody Bloedorn
Unit No: 53

Interval: 3657.00 ft (KB) To 3692.00 ft (KB) (TVD)
Total Depth: 3692.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

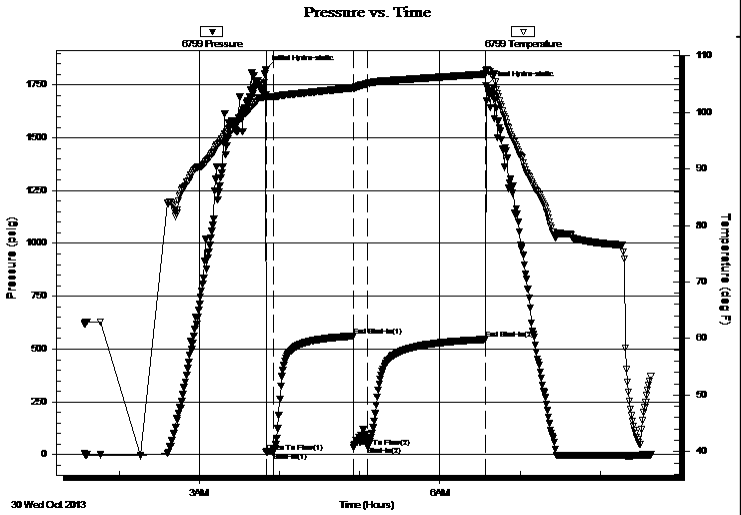
Reference Elevations: 2349.00 ft (KB)
2341.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 6799 **Inside**

Press@RunDepth: 37.93 psig @ 3660.00 ft (KB)
Start Date: 2013.10.30 End Date: 2013.10.30
Start Time: 01:34:05 End Time: 08:38:14

Capacity: 8000.00 psig
Last Calib.: 2013.10.30
Time On Btm: 2013.10.30 @ 03:49:45
Time Off Btm: 2013.10.30 @ 06:34:30

TEST COMMENT: 05 - IF- 2" blow
60 - ISI- No return
10 - FF- 1 1/2" blow
75 - FSI- No return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1823.30	103.00	Initial Hydro-static
1	11.45	102.50	Open To Flow (1)
6	13.90	102.75	Shut-In(1)
66	561.41	104.31	End Shut-In(1)
66	35.87	104.15	Open To Flow (2)
77	37.93	105.06	Shut-In(2)
165	546.10	106.75	End Shut-In(2)
165	1746.56	107.28	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
20.00	HOCM, 30%O, 70%M	0.28

Gas Rates

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

DRILL STEM TEST REPORT

Samuel Gary Jr. & Associates. Inc

1515 Wynkoop STE 700
Denver CO 80202

ATTN: Dan Pritchard

4-10s-22w Graham KS

Bollig 1-4

Job Ticket: 54490 **DST#: 1**

Test Start: 2013.10.30 @ 01:34:00

GENERAL INFORMATION:

Formation: **LKC "F-G"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 03:50:00
Time Test Ended: 08:38:15

Test Type: Conventional Bottom Hole (Initial)
Tester: Cody Bloedorn
Unit No: 53

Interval: 3657.00 ft (KB) To 3692.00 ft (KB) (TVD)
Total Depth: 3692.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

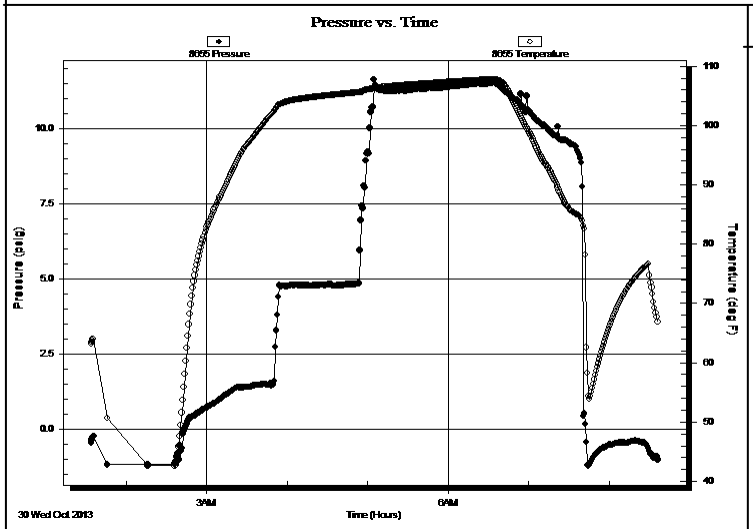
Reference Elevations: 2349.00 ft (KB)
2341.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8655 **Fluid**

Press@RunDepth: psig @ 3621.00 ft (KB)
Start Date: 2013.10.30 End Date: 2013.10.30
Start Time: 01:34:05 End Time: 08:36:29

Capacity: 8000.00 psig
Last Calib.: 2013.10.30
Time On Btm:
Time Off Btm:

TEST COMMENT: 05 - IF- 2" blow
60 - ISI- No return
10 - FF- 1 1/2" blow
75 - FSI- No return



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
20.00	HOCM, 30%O, 70%M	0.28

Gas Rates

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

DRILL STEM TEST REPORT

FLUID SUMMARY

Samuel Gary Jr. & Associates. Inc

1515 Wynkoop STE 700
Denver CO 80202

ATTN: Dan Pritchard

4-10s-22w Graham KS

Bollig 1-4

Job Ticket: 54490 **DST#: 1**

Test Start: 2013.10.30 @ 01:34:00

Mud and Cushion Information

Mud Type:	Gel Chem		Cushion Type:			Oil API:	deg API
Mud Weight:		lb/gal	Cushion Length:		ft	Water Salinity:	ppm
Viscosity:		sec/qt	Cushion Volume:		bbl		
Water Loss:		in³	Gas Cushion Type:				
Resistivity:		ohm.m	Gas Cushion Pressure:		psig		
Salinity:		ppm					
Filter Cake:		inches					

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
20.00	HOCM, 30%O, 70%M	0.281

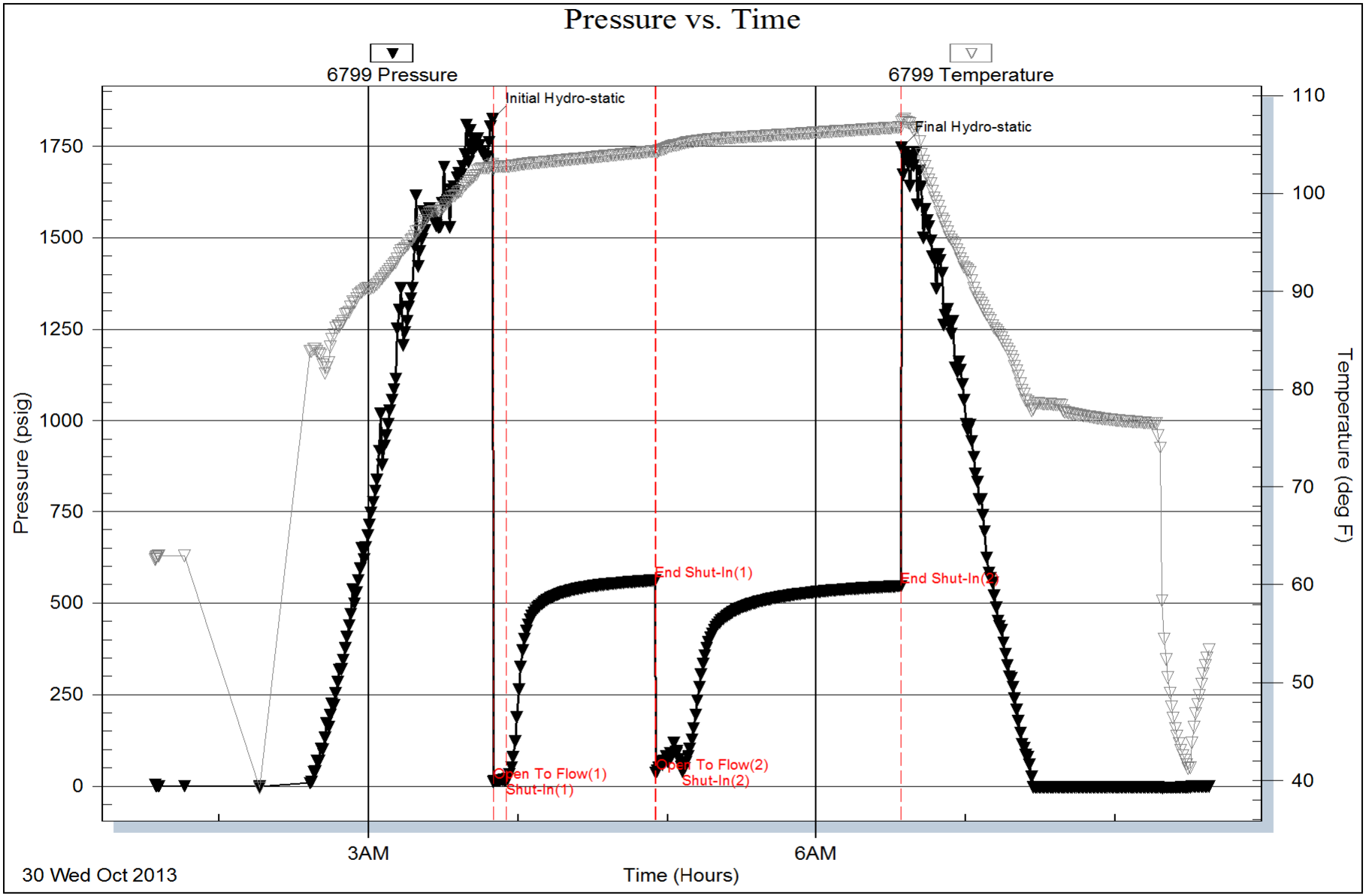
Total Length: 20.00 ft Total Volume: 0.281 bbl

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

Laboratory Name: Laboratory Location:

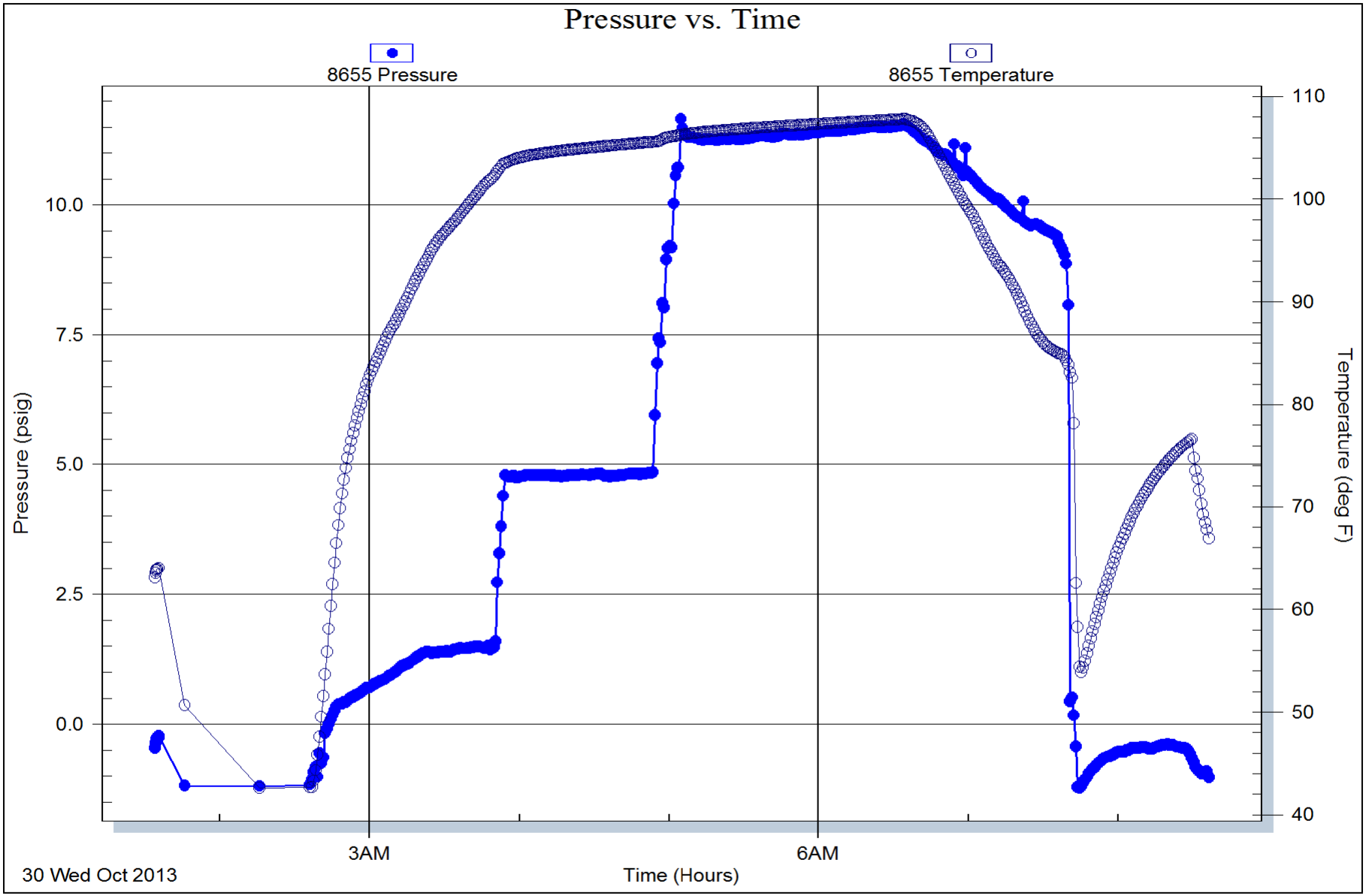
Recovery Comments: Sampler: PSI 45, 1500ml Mud, 100 ml Oil

Serial #: 6799 **Inside** Samuel Gary Jr. & Associates. Inc Bollig 1-4 DST Test Number: 1



Trilobite Testing, Inc Ref. No: 54490 Printed: 2013.10.30 @ 09:03:37

Serial #: 8655 **Fluid** Samuel Gary Jr. & Associates. Inc Bollig 1-4 DST Test Number: 1



Trilobite Testing, Inc Ref. No: 54490 Printed: 2013.10.30 @ 09:03:37

DRILL STEM TEST REPORT

Samuel Gary Jr. & Assoc. Inc

1515 Wynkoop STE 700
Denver CO 80202

ATTN: Dan Pritchard

4-10s-22w Graham KS

Bollig 1-4

Job Ticket: 54491 **DST#: 2**

Test Start: 2013.10.30 @ 23:45:00

GENERAL INFORMATION:

Formation: **LKC "H,I,J"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 01:51:45
Time Test Ended: 07:48:00

Test Type: Conventional Bottom Hole (Reset)
Tester: Cody Bloedorn
Unit No: 53

Interval: 3718.00 ft (KB) To 3780.00 ft (KB) (TVD)
Total Depth: 3780.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

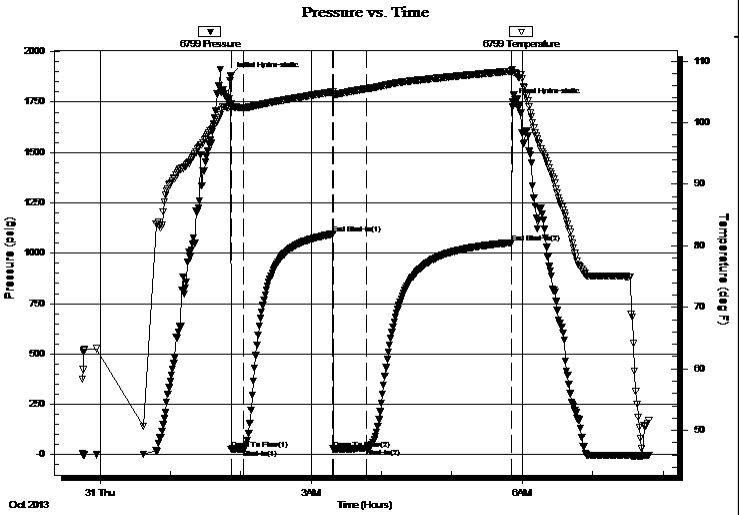
Reference Elevations: 2349.00 ft (KB)
2341.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 6799 **Inside**

Press@RunDepth: 29.71 psig @ 3754.00 ft (KB)
Start Date: 2013.10.30 End Date: 2013.10.31
Start Time: 23:45:05 End Time: 07:47:59

Capacity: 8000.00 psig
Last Calib.: 2013.10.31
Time On Btm: 2013.10.31 @ 01:51:30
Time Off Btm: 2013.10.31 @ 05:51:30

TEST COMMENT: 10 - IF - 3/4" blow
75 - ISI - No return
30 - FF - 1/2" blow
120 - FSI - No return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1878.86	103.12	Initial Hydro-static
1	28.37	102.61	Open To Flow (1)
11	29.10	102.44	Shut-In(1)
87	1094.42	104.98	End Shut-In(1)
88	28.83	104.42	Open To Flow (2)
116	29.71	105.49	Shut-In(2)
240	1052.54	108.36	End Shut-In(2)
240	1749.06	108.64	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
7.00	VSOCM, 2%O, 98%M	0.10

* Recovery from multiple tests

Gas Rates

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

DRILL STEM TEST REPORT

Samuel Gary Jr. & Assoc. Inc

1515 Wynkoop STE 700
Denver CO 80202

ATTN: Dan Pritchard

4-10s-22w Graham KS

Bollig 1-4

Job Ticket: 54491 **DST#: 2**

Test Start: 2013.10.30 @ 23:45:00

GENERAL INFORMATION:

Formation: **LKC "H,I,J"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 01:51:45
Time Test Ended: 07:48:00

Test Type: Conventional Bottom Hole (Reset)
Tester: Cody Bloedorn
Unit No: 53

Interval: 3718.00 ft (KB) To 3780.00 ft (KB) (TVD)
Total Depth: 3780.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

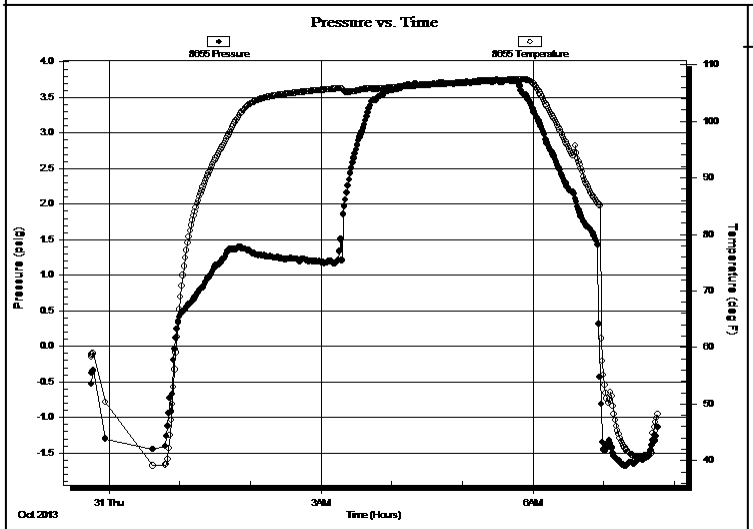
Reference Elevations: 2349.00 ft (KB)
2341.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8655 **Fluid**

Press@RunDepth: psig @ 3682.00 ft (KB)
Start Date: 2013.10.30 End Date: 2013.10.31
Start Time: 23:45:05 End Time: 07:46:29

Capacity: 8000.00 psig
Last Calib.: 2013.10.31
Time On Btm:
Time Off Btm:

TEST COMMENT: 10 - IF - 3/4" blow
75 - ISI - No return
30 - FF - 1/2" blow
120 - FSI - No return



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
7.00	VSOCM, 2%O, 98%M	0.10

* Recovery from multiple tests

Gas Rates

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

DRILL STEM TEST REPORT

FLUID SUMMARY

Samuel Gary Jr. & Assoc. Inc

1515 Wynkoop STE 700
Denver CO 80202

ATTN: Dan Pritchard

4-10s-22w Graham KS

Bollig 1-4

Job Ticket: 54491 **DST#: 2**

Test Start: 2013.10.30 @ 23:45:00

Mud and Cushion Information

Mud Type:	Gel Chem	Cushion Type:		Oil API:	deg API
Mud Weight:	9.00 lb/gal	Cushion Length:	ft	Water Salinity:	ppm
Viscosity:	58.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	8.79 in³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	1000.00 ppm				
Filter Cake:	inches				

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
7.00	VSOCM, 2%O, 98%M	0.098

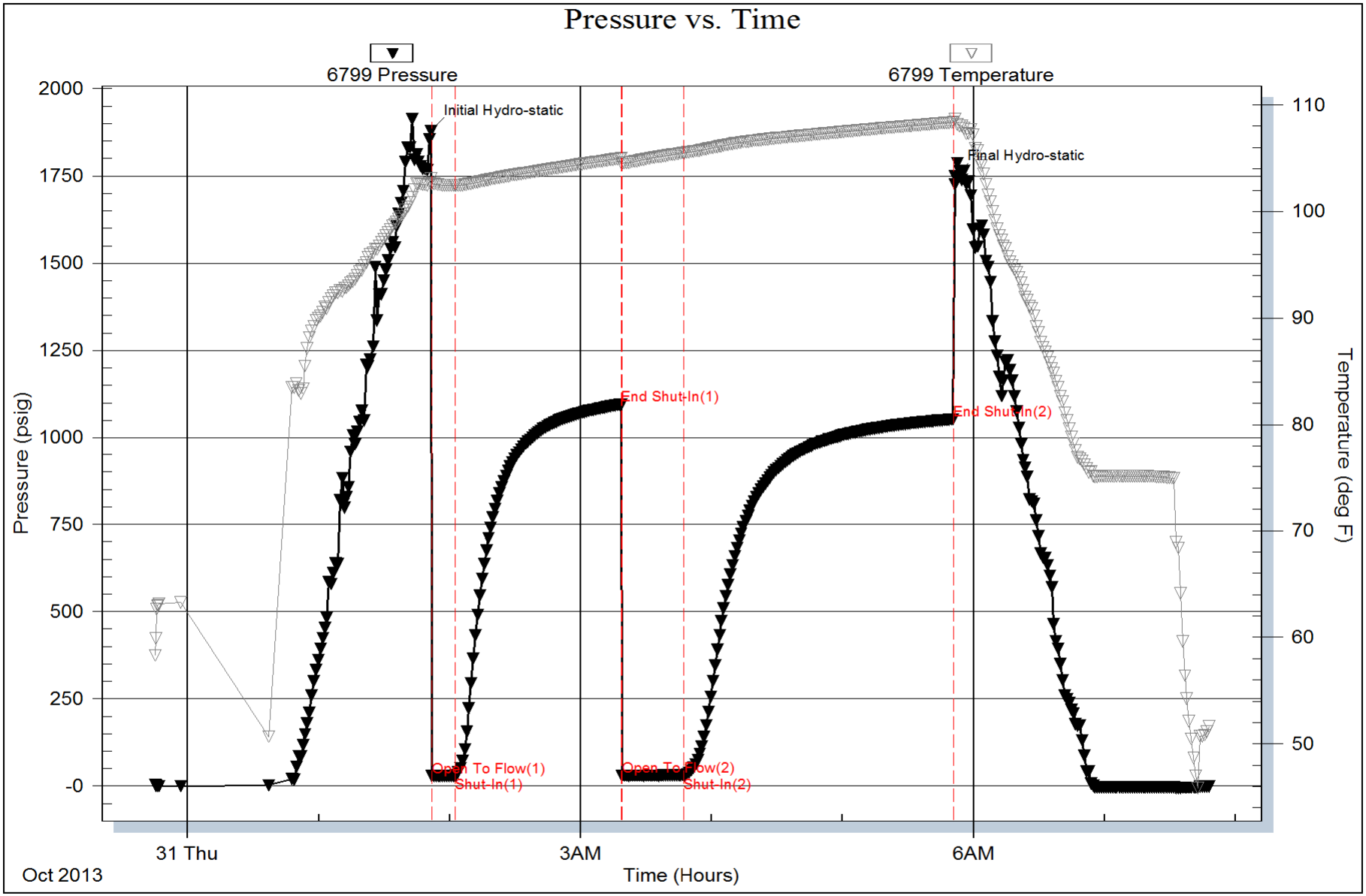
Total Length: 7.00 ft Total Volume: 0.098 bbl

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

Laboratory Name: Laboratory Location:

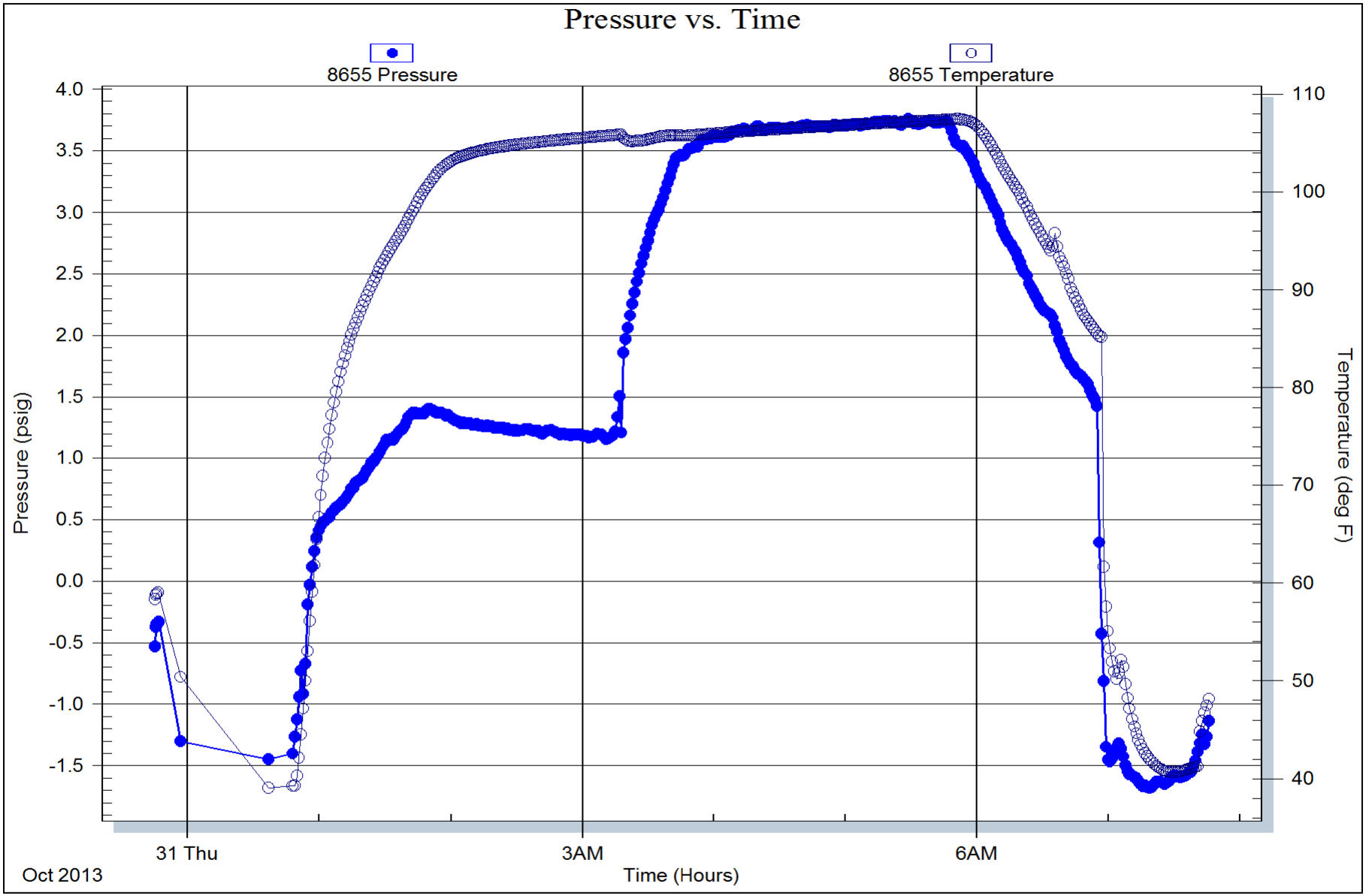
Recovery Comments: Sampler: No pressure on it.

Serial #: 6799 **Inside** Samuel Gary Jr. & Assoc. Inc Bollig 1-4 DST Test Number: 2



Trilobite Testing, Inc Ref. No: 54491 Printed: 2013.10.31 @ 08:34:53

Serial #: 8655 **Fluid** Samuel Gary Jr. & Assoc. Inc Bollig 1-4 DST Test Number: 2



Trilobite Testing, Inc Ref. No: 54491 Printed: 2013.10.31 @ 08:34:53

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

Well Name:	BOLLIG 1-4		
Location:	SEC. 4-10S-22W		
License Number:	15-065-23981-0000	Region:	Wildcat
Spud Date:	10/25/2013	Drilling Completed:	11/1/2013
Surface Coordinates:	1900 FSL/ 1750 FEL		
Bottom Hole Coordinates:			
Ground Elevation (ft):	2341'	K.B. Elevation (ft):	2349'
Logged Interval (ft):	3290' To: 4090'	Total Depth (ft):	4090'
Formation:	Lansing/ Arbuckle		
Type of Drilling Fluid:	Natural Chemical		

OPERATOR

Company: Sam Gar Jr. & Associates
Address: 1515 Wynkoop, Ste. # 700
Denver, Co. 80202
Co. Geo: Dan Pritchard

GEOLOGIST

Name: Schuyler Hedrick/ Tom Flowers
Company: Earth Tech OGL, Inc.
Address: PO Box 683
Hooker, Okla. 73945
1-(888)- 543-8378 Cell-(580)-754-0062

DST's Report

DST #1 3657'-3692' 5-60-10-75
IF- 2" BLOW, ISI- NO RETURN, FF- 1 1/2", FSI- NO RETURN
IH- 1823, FH- 1746/ IF- 11 TO 13, FF- 35 TO 37/ ISI- 561, FSI- 546
REC. 20' TF/ 20' OF HOCM 30% OIL, 70% MUD/ BHT- 106, CHLOR.- 500 PPM SYSTEM

DST's Report

DST #2 3718'-3780' 10-75-30-120
IF-3/4', ISI- NO RETURN, FF- 1/2' BLOW, FSI- NO RETURN
IH- 1878, FH- 1749/ IF- 28 TO 29, FF- 28 TO 29/ ISI- 1094. FSI-1052
REC. 7' TF/ 7' VSOCM 2% OIL, 98% MUD/ BHT-108, CHLOR.-1000 PPM SYSTEM

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

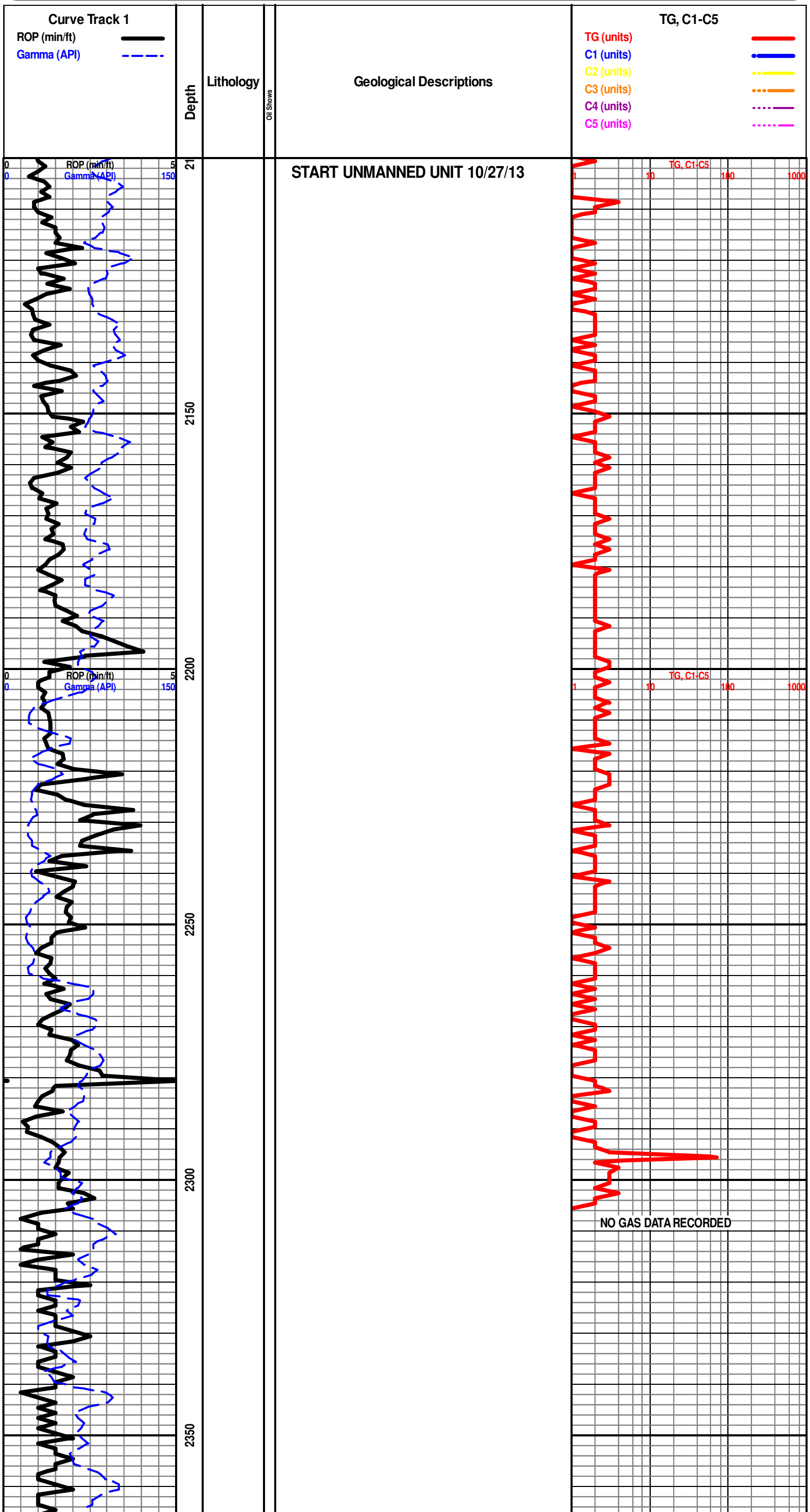
ROUNDING
- Rounded
- Subrnd
- Subang

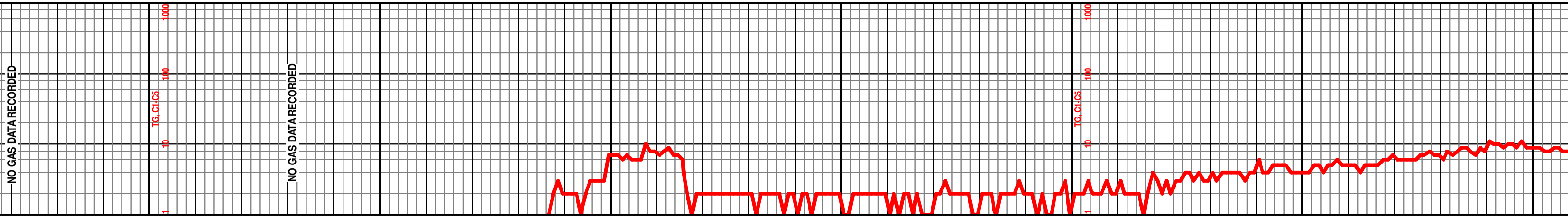
- Angular

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

INTERVALS
- Core
- Dst
- Dst

EVENTS
- Rft
- Sidewall

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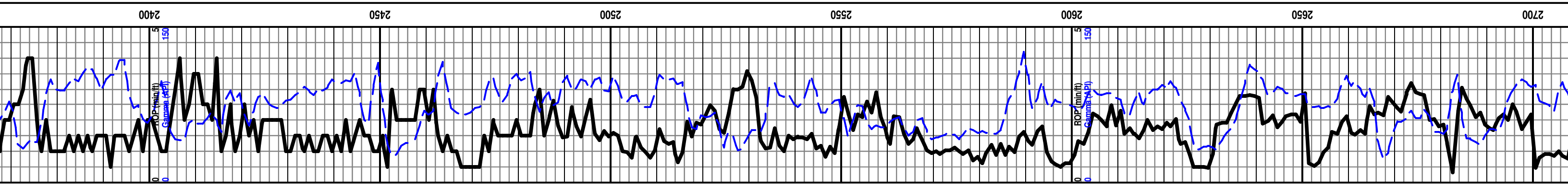
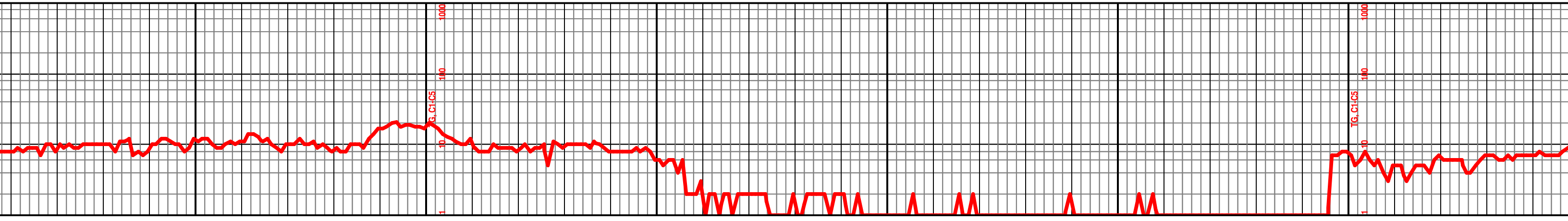
1000
100
10
1
NO GAS DATA RECORDED
TG, C1-C5
1000
100
10
1


2400
2450
2500
2550
2600
2650
2700
ROP (min/ft)
Gamma (API)
5
150
0
0
ROP (min/ft)
Gamma (API)
5
150
0
0


TG, C1-C5
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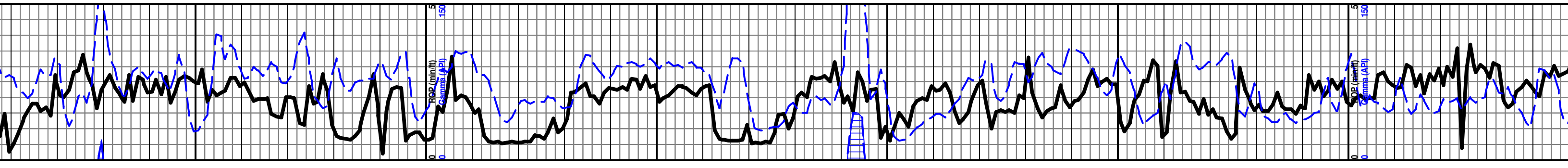
100
10
1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2800
2850
2900
2950
3000
ROP (min/ft)
Gamma (API)
5
150
0

3050
3100
3150
3200
3250
3300
3350

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

1 TG, C1-C5 1000

WT. 8.8
VIS 53

WOB 35
RPM 70
PP 650

C1
C1

CN
CN
CN

13 U. BG
15 U. BG
17 U. BG
22 U. INC.

ELMONT 3180' -831

START 24 HR. MANNED UNIT 10/28/13

SH- LT GRY TO GRY TRS GRN, SFT GUMMY TO TRS HRD, BLKY SLTY TXT, SLI TRS IMBD LMS

LS- CRM TO OFF WHT LT GRY, HD DNS TO BRTT, F/VF-XLN, S-SUCRO IP, TRS IMBD FOSS FRGS & SCATT FOSS FRGS THRU TRAY, TRS IMBD SH THRU, DUL YEL MIN FLO 50% BRT YEL MIN FLO IN 10%, NO VIS POR, NO VIS CUT OR SHOW

SH- LT GRY TO GRY TRS RD, SFT GUMMY BRTT, BLKY SLTY TXT, TRS IMBD LMS

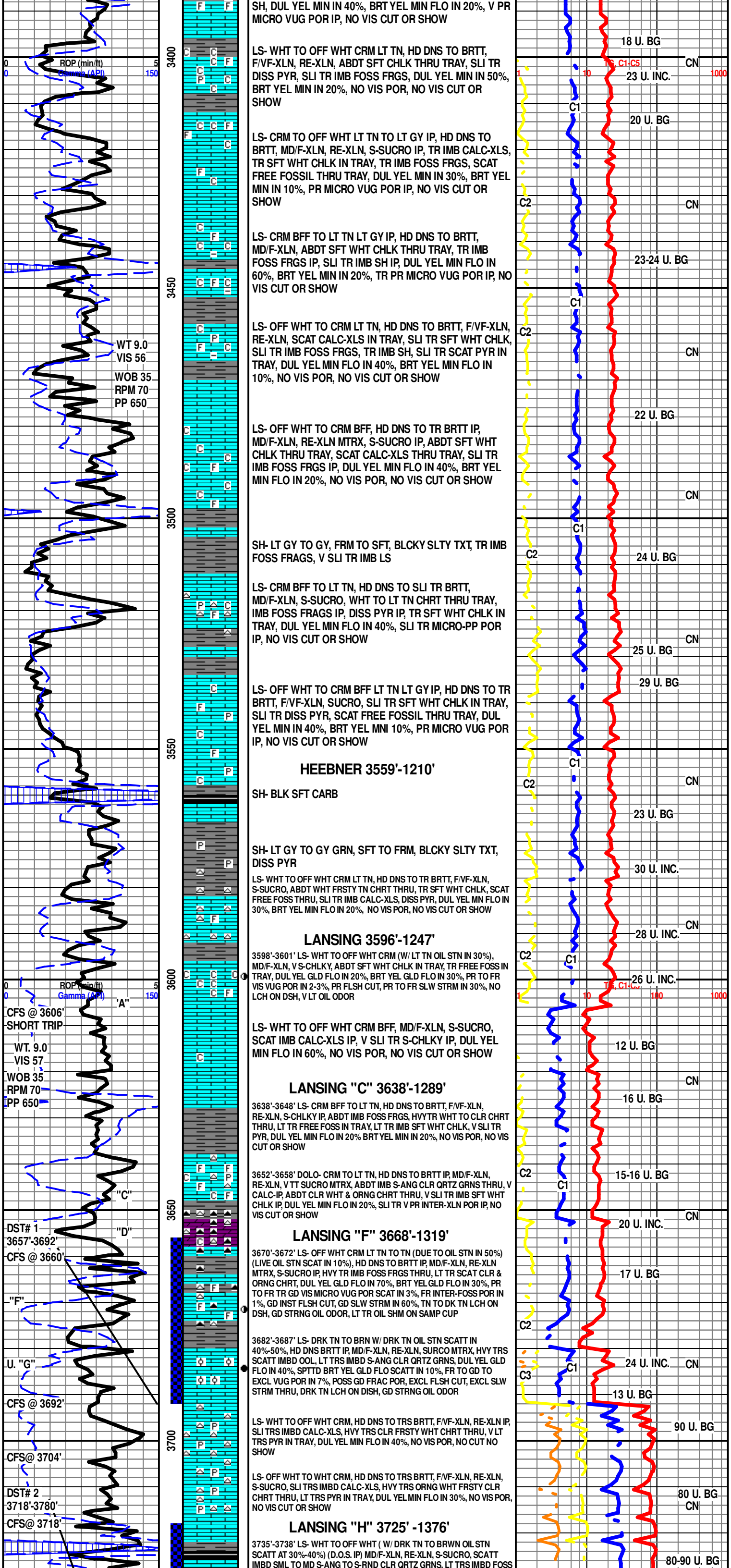
LS- WHT TO OFF WHT CRM LT TN, HD DNS TO BRITT, MD/F-XLN, RE-XLN MTRX, S-SUCRO, IMBD CALC XLS, SCATT FOSS FRGS THRU TRAY, SLI TRS PYR, SLI TRS IMBD SH, DUL YEL MIN FLO IN 40%, BRT YEL MIN FLO IN 20%, NO VIS POR, NO VIS CUT OR SHOW

TOPEKA 3342' -993

LS- CRM TO OFF WHT LT TN, HD DNS TO BRTT, MD/F-XLN, RE-XLN MTRX, S-SUCRO IP, TRS IMBD CALC XLS, SLI TRS SFT WHT CHLK IN TRAY TRS IMBD FOSS FRGS W/ SCATT FOSS FRGS THRU TRAY, SLI TRS PYR, DUL YEL MIN FLO IN 30%, BRT YEL FLO IN 10%, NO VIS POR, NO VIS CUT OR SHOW

LS- OFF WHT TO CRM LT TN TO LT GY, HD DNS TO BRTT, F/VF-XLN, S-SUCRO IP, IMB FOSS FRGS, IMB SH, SLI TR IMB CALC-XLS, SLI TR DISS PYR IP, V SLI TR SFT WHT CHLK, DUL YEL FLO IN 30%, NO VIS POR, NO VIS CUT OR SHOW

LS- CRM TO OFF WHT LT TN TO LT GY IP, HD DNS TO BRTT, MD/F/VF-XLN, S-SUCRO IP, TR SFT WHT CHLK THRU TRAY, SCAT FREE FOSSIL THRU TRAY, SLI TR IMB


0
ROP (min/ft)
5
0
Gamma (API)
150
3400
3450
3500
3550
3600
3650
3700
WT 9.0
VIS 56
WOB 35
RPM 70
PP 650
CFS @ 3606'
SHORT TRIP
WT. 9.0
VIS 57
WOB 35
RPM 70
PP 650
DST# 1
3657'-3692'
CFS @ 3660'
CFS @ 3692'
CFS@ 3704'
DST# 2
3718'-3780'
CFS@ 3718'
'A"
"C"
"D"
"F"
U. "G"
SH, DUL YEL MIN IN 40%, BRT YEL MIN FLO IN 20%, V PR MICRO VUG POR IP, NO VIS CUT OR SHOW
LS- WHT TO OFF WHT CRM LT TN, HD DNS TO BRTT, F/VF-XLN, RE-XLN, ABDT SFT CHLK THRU TRAY, SLI TR DISS PYR, SLI TR IMB FOSS FRGS, DUL YEL MIN IN 50%, BRT YEL MIN IN 20%, NO VIS POR, NO VIS CUT OR SHOW
LS- CRM TO OFF WHT LT TN TO LT GY IP, HD DNS TO BRTT, MD/F-XLN, RE-XLN, S-SUCRO IP, TR IMB CALC-XLS, TR SFT WHT CHLK IN TRAY, TR IMB FOSS FRGS, SCAT FREE FOSSIL THRU TRAY, DUL YEL MIN IN 30%, BRT YEL MIN IN 10%, PR MICRO VUG POR IP, NO VIS CUT OR SHOW
LS- CRM BFF TO LT TN LT GY IP, HD DNS TO BRTT, MD/F-XLN, ABDT SFT WHT CHLK THRU TRAY, TR IMB FOSS FRGS IP, SLI TR IMB SH IP, DUL YEL MIN FLO IN 60%, BRT YEL MIN IN 20%, TR PR MICRO VUG POR IP, NO VIS CUT OR SHOW
LS- OFF WHT TO CRM LT TN, HD DNS TO BRTT, F/VF-XLN, RE-XLN, SCAT CALC-XLS IN TRAY, SLI TR SFT WHT CHLK, SLI TR IMB FOSS FRGS, TR IMB SH, SLI TR SCAT PYR IN TRAY, DUL YEL MIN FLO IN 40%, BRT YEL MIN FLO IN 10%, NO VIS POR, NO VIS CUT OR SHOW
LS- OFF WHT TO CRM BFF, HD DNS TO TR BRTT IP, MD/F-XLN, RE-XLN MTRX, S-SUCRO IP, ABDT SFT WHT CHLK THRU TRAY, SCAT CALC-XLS THRU TRAY, SLI TR IMB FOSS FRGS IP, DUL YEL MIN FLO IN 40%, BRT YEL MIN FLO IN 20%, NO VIS POR, NO VIS CUT OR SHOW
SH- LT GY TO GY, FRM TO SFT, BLCKY SLTY TXT, TR IMB FOSS FRAGS, V SLI TR IMB LS
LS- CRM BFF TO LT TN, HD DNS TO SLI TR BRTT, MD/F-XLN, S-SUCRO, WHT TO LT TN CHRT THRU TRAY, IMB FOSS FRAGS IP, DISS PYR IP, TR SFT WHT CHLK IN TRAY, DUL YEL MIN FLO IN 40%, SLI TR MICRO-PP POR IP, NO VIS CUT OR SHOW
LS- OFF WHT TO CRM BFF LT TN LT GY IP, HD DNS TO TR BRTT, F/VF-XLN, SUCRO, SLI TR SFT WHT CHLK IN TRAY, SLI TR DISS PYR, SCAT FREE FOSSIL THRU TRAY, DUL YEL MIN IN 40%, BRT YEL MNI 10%, PR MICRO VUG POR IP, NO VIS CUT OR SHOW
HEEBNER 3559'-1210'
SH- BLK SFT CARB
SH- LT GY TO GY GRN, SFT TO FRM, BLCKY SLTY TXT, DISS PYR
LS- WHT TO OFF WHT CRM LT TN, HD DNS TO TR BRTT, F/VF-XLN, S-SUCRO, ABDT WHT FRSTY TN CHRT THRU, TR SFT WHT CHLK, SCAT FREE FOSS THRU, SLI TR IMB CALC-XLS, DISS PYR, DUL YEL MN FLO IN 30%, BRT YEL MIN FLO IN 20%, NO VIS POR, NO VIS CUT OR SHOW
LANSING 3596'-1247'
3598'-3601' LS- WHT TO OFF WHT CRM (W/ LT TN OIL STN IN 30%), MD/F-XLN, V S-CHLKY, ABDT SFT WHT CHLK IN TRAY, TR FREE FOSS IN TRAY, DUL YEL GLD FLO IN 20%, BRT YEL GLD FLO IN 30%, PR TO FR VIS VUG POR IN 2-3%, PR FLSH CUT, PR TO FR SLW STRM IN 30%, NO LCH ON DSH, V LT OIL ODOR
LS- WHT TO OFF WHT CRM BFF, MD/F-XLN, S-SUCRO, SCAT IMB CALC-XLS IP, V SLI TR S-CHLKY IP, DUL YEL MIN FLO IN 60%, NO VIS POR, NO VIS CUT OR SHOW
LANSING "C" 3638'-1289'
3638'-3648' LS- CRM BFF TO LT TN, HD DNS TO BRTT, F/VF-XLN, RE-XLN, S-CHLKY IP, ABDT IMB FOSS FRGS, HVYTR WHT TO CLR CHRT THRU, LT TR FREE FOSS IN TRAY, LT TR IMB SFT WHT CHLK, V SLI TR PYR, DUL YEL MIN FLO IN 20% BRT YEL MIN IN 20%, NO VIS POR, NO VIS CUT OR SHOW
3652'-3658' DOLO- CRM TO LT TN, HD DNS TO BRTT IP, MD/F-XLN, RE-XLN, V TT SUCRO MTRX, ABDT IMB S-ANG CLR QRTZ GRNS THRU, V CALC-IP, ABDT CLR WHT & ORNG CHRT THRU, V SLI TR IMB SFT WHT CHLK IP, DUL YEL MIN FLO IN 20%, SLI TR V PR INTER-XLN POR IP, NO VIS CUT OR SHOW
LANSING "F" 3668'-1319'
3670'-3672' LS- OFF WHT CRM LT TN TO TN (DUE TO OIL STN IN 50%) (LIVE OIL STN SCAT IN 10%), HD DNS TO BRTT IP, MD/F-XLN, RE-XLN MTRX, S-SUCRO IP, HVY TR IMB FOSS FRGS THRU, LT TR SCAT CLR & ORNG CHRT, DUL YEL GLD FLO IN 70%, BRT YEL GLD FLO IN 30%, PR TO FR TR GD VIS MICRO VUG POR SCAT IN 3%, FR INTER-FOSS POR IN 1%, GD INST FLSH CUT, GD SLW STRM IN 60%, TN TO DK TN LCH ON DSH, GD STRNG OIL ODOR, LT TR OIL SHM ON SAMP CUP
3682'-3687' LS- DRK TN TO BRN W/ DRK TN OIL STN SCATT IN 40%-50%, HD DNS BRTT IP, MD/F-XLN, RE-XLN, SURCO MTRX, HVY TRS SCATT IMBD OOL, LT TRS IMBD S-ANG CLR QRTZ GRNS, DUL YEL GLD FLO IN 40%, SPTTD BRT YEL GLD FLO SCATT IN 10%, FR TO GD TO EXCL VUG POR IN 7%, POSS GD FRAC POR, EXCL FLSH CUT, EXCL SLW STRM THRU, DRK TN LCH ON DISH, GD STRNG OIL ODOR
LS- WHT TO OFF WHT CRM, HD DNS TO TRS BRTT, F/VF-XLN, RE-XLN IP, SLI TRS IMBD CALC-XLS, HVY TRS CLR FRSTY WHT CHRT THRU, V LT TRS PYR IN TRAY, DUL YEL MIN FLO IN 40%, NO VIS POR, NO CUT NO SHOW
LS- OFF WHT TO WHT CRM, HD DNS TO TRS BRTT, F/VF-XLN, RE-XLN, S-SUCRO, SLI TRS IMBD CALC-XLS, HVY TRS ORNG WHT FRSTY CLR CHRT THRU, LT TRS PYR IN TRAY, DUL YEL MIN FLO IN 30%, NO VIS POR, NO VIS CUT OR SHOW
LANSING "H" 3725' -1376'
3735'-3738' LS- WHT TO OFF WHT (W/ DRK TN TO BRWN OIL STN SCATT AT 30%-40%) (D.O.S. IP) MD/F-XLN, RE-XLN, S-SUCRO, SCATT IMBD SML TO MD S-ANG TO S-RND CLR QRTZ GRNS, LT TRS IMBD FOSS
18 U. BG
TG, C1-C5
1
10
1000
CN
23 U. INC.
C1
20 U. BG
C2
23-24 U. BG
22 U. BG
C3
24 U. BG
25 U. BG
29 U. BG
30 U. INC.
28 U. INC.
26 U. INC.
100
12 U. BG
16 U. BG
15-16 U. BG
17 U. BG
13 U. BG
90 U. BG
80 U. BG
80-90 U. BG

"H"

WT 9.1
VIS 55

WOB 35
RPM 70
PP 650

"I"

CFS@ 3764'

"J"

CFS@ 3780'

"K"

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

CFS@ 3803'

WT 8.9
VIS 56

WOB 35
RPM 70
PP 700

CFS@ 3918'

WT 9.0
VIS 55

WOB 35
RPM 70
PP 700

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

CFS@ 4034'

WT 9.0
VIS 62

3750
3800
3850
3900
3950
4000
4050

FRGS IP, BRT YEL GLD FLO IN 25%, DUL YEL GLD FLO IN 10%, PR TO TRS FR INTER-XLN POR IN 4%, POSS FRACT POR, FR TO GD FLSH CUT, FR SLW STRM IN 50%, V LT TN LCH ON DISH, LT FR OIL ODOR

3756'-3758' LS- WHT TO OFF WHT CRM (W/ DRK TN OIL STN IN 40%) (LIVE OIL STN IP) HD DNS TO BRTT, MD-XLN, RE-XLN MTRX, V S-CHLKY, SCATT IMBD MD LM GRNS THRU, HVY TRS IMBD SFT WHT CHLK, LT TRS CLR CHRT IN TRAY, YEL GLD FLO IN 30%, DUL YEL GLD SCATTED IN 10%, V PR TO PR TRS FR VUG POR IN 2%, GD FLSH CUT, GD TO EXCL SLW STRM IN 40%, LT TN LCH ON DISH, NO OIL ODOR

3761'-3766' LS- OFF WHT TO LT GRY, (W/ BLK LIVE OIL STN IN 50%) HD DNS TO SLI TRS BRTT IP, F-XLN, CRS SUCRO MTRX, SCATT IMBD S-ANG V SML QRTZ GRNS THRU, DUL YEL GLD FLO IN 50%-60%. YEL GLD FLO IN 10%, V PR TO PR INTER-XLN POR IN 2% POSS FRACT POR, GD INST FLSH CUT, EXCL SLW STRM, TN LCH ON DISH, LT TRS OIL ODOR

3770'-3773' LS- CRM BFF LT TN TO TN, (DUE TO OIL STN SCATT IN 30%) HD DNS, F/VF-XLN, S-CHLKY, LT TRS S-SURCO IP, SCATT IMBD CALC-XLS THRU, V LT TRS PYR IN TRAY, DUL YEL GLD FLO IN 30%, YEL GLD FLO IN 10%, V LT TRS SPTTD YEL GLD FLO IP, PR TO FR INTER-XLN POR IN 3%, EXCL FLSH CUT, EXCL SLW STRM IN 50%, V LT TN LCH ON DISH, FR OIL ODOR

3792'-3796' LS- WHT TO OFF WHT (TN TO DRK TN OIL STN IN 80%), HD DNS TO SLI TRS BRTT IP, MD-XLN RE-XLN, TT SUCRO MTRX, SCATT IMBD OOL, HVY TRS CHRT CLR TO FRSTY, LT TRS DISS PYR, V DUL YEL GLD FLO IN 60%, SPTTD BRT YEL GLD FLO IP, V PR TO PR VUG POR IN 2-3%, EXCL FLSH CUT, EXCL SLW STRM THRU, DRK BRWN LCH ON DISH, EXCL OIL ODOR

3800'-3803' LS- WHT TO OFF WHT CRM IP, (W/ TN TO DRK TN LIVE OIL STN SCATT IN 20%, HD DNS TO BRTT, F/VF-XLN, V S-CHLKY, ABDT SFT WHT CHLK THRU TRAY, V LT TRS PYR, DUL YEL GLD FLO IN 20%, V PR INTER-XLN POR IP, GD FLSH CUT, GD SLW STRM IN 30%, TN LCH ON DISH, GD OIL ODOR

X SHALE 3804' -1455'

LS- CRM BFF TO LT TN, HR DNS TO SLI TRS BRTT, F/VF-XLN, CRYPTO-XLN, HVYTRS SFT WHT CHLK, LT TRS IMBD CALC-XLS, V DUL YEL MIN FLO IP, NO VIS POR, NO VIS SHOW

SH- RD GRN GRY TO DRK GRY, FRM BLKY SFT SPLNTY, CALC IP, SLI TRS DISS PYR, HVY TRS LMS INTERBEDS

LS- WHT TO OFF WHT CRM IP, HD DNS TO BRTT IP, MD TO F/VF-XLN, S-CHLKY, SCATT IMBD S-RND TO RND CLR QRTZ GRNS, HVY TRS CLR CHRT, LT TRS IMBD FOSS FRGS, SLI TRS IMBD GLAUC, DUL YEL MIN FLO IN 20%, NO VIS POR, NO VIS CUT OR SHOW

SH- RD LT GRY TO GRY GRN, FRM TO V SFT, SILTY IP, SLI TRS CALC IP, HVY TRS CLR TO WHT CHRT, LT TRS PYR

CONG- LS- WHT TO CRM, HD DNS TO BRTT IP, MD/F-XLN, S-CHLKY, ABDT IMBD V SML RND CLR QRTZ GRNS, LT TRS IMBD CLR CHRT, INTERBED RD GRY SH, NO VIS FLO, NO VIS POR, NO VIS CUT OR SHOW

SH- RD TO DRK RD GRN, SFT TO V GUMMY, HVY TRS CLR WHT CHRT, LT TRS LMS INTERBEDS

MARMATON 3895' -1546'

LS- WHT TO OFF WHT, V HD DNS, F/VF-XLN, S-SUCRO, ABDT ORNG & TRNS CHRT THRU, HVY TRS IMBD ORNG CHRT, V DUL YEL MIN FLO IN 30%, NO VIS POR, NO VIS CUT OR SHOW

CHRT- ORNG TO WHT, V HD DNS, F-XLN, V TT SUCRO MTRX, WTHRD IP, V CALC, ABDT IMBD ORNG CHRT, HVY TRS SFT WHT CHLK THRU TRAY, IMBD CLR QRTZ GRNS ON ONE FACES OF ROCK, NO VIS FLO, NO VIS POR, NO VIS CUT OR SHOW

LS- LT GRY TO OFF WHT, V HD DNS TO SLI TRS BRTT IP, F/VF-XLN, CRYPTO-XLN IP, S-SUCRO, HVY TRS ORNG CHRT THRU TRAY, LT TRS IMBD SFT WHT CHLK IP, V SLI TRS IMBD ORNG CHRT, NO VIS FLO, NO VIS POR, NO VIS CUT OR SHOW

SH-RD DRK RD LT GRY TO GRY, FRM TO V SFT, ABDT ORNG CHRT THRU

LS- WHT TO OFF WHT, HD DNS TO BRITT IP, F/VF-XLN, S-CHLKY, ABDT WHT ORNG CHRT THRU, NO VIS FLO, NO VIS POR, NO VIS CUT OR SHOW

SH RD TO DRK RD PRP, SFT TO GUMMY, ABDT CLR ORNG CHRT, HVY TRS SFT WHT CHLK

ARBUCKLE 3989' -1640'

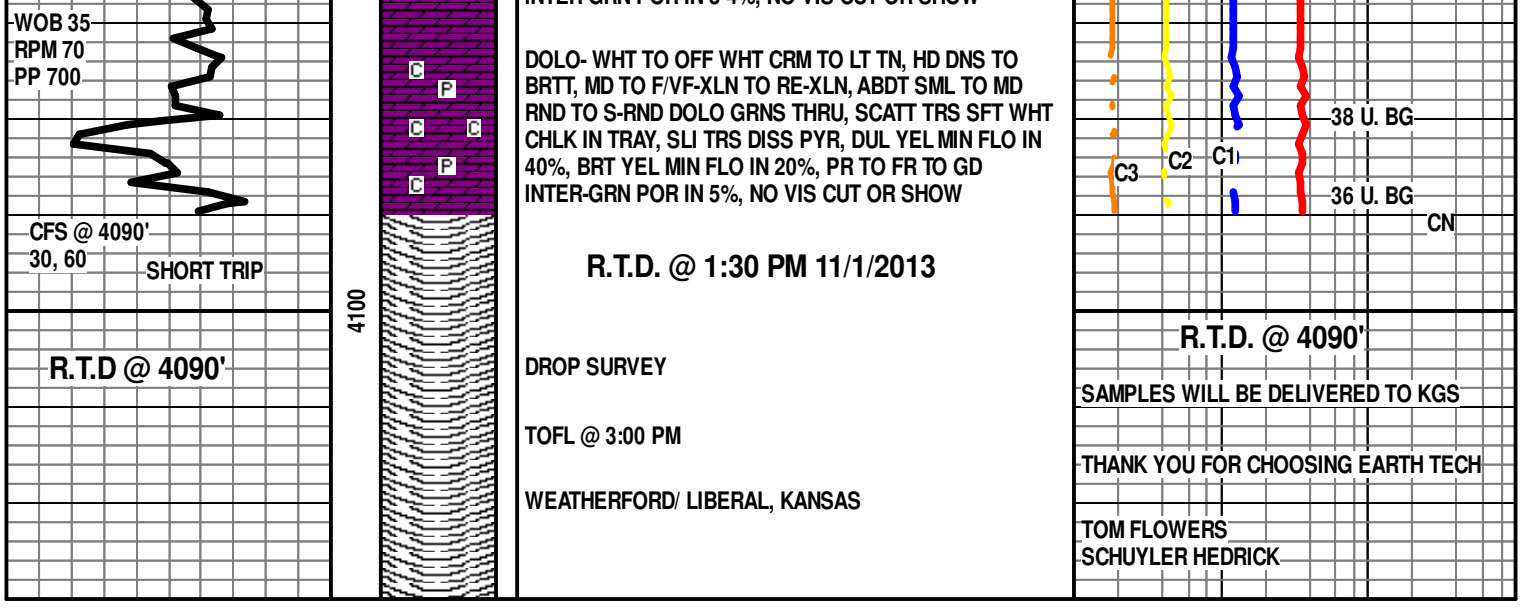
DOLO- WHT TO OFF WHT, HD DNS TO BRTT IP, MD-XLN TO RE-XLN, S-CHLKY, ABDT IMBD SML TO MD S-ANG TO S-RND DOLO GRNS THRU, LT TRS SCATT IMBD SFT WHT CHLK, DUL YEL MIN FLO IN 40%, TRS V PR INTER-GRN POR IP, NO VIS CUT OR SHOW

DOLO- TN TO OFF WHT, HD DNS TO BRTT, V RE-XLN MTRX, SUCRO, ABDT IMBD SML TO MD ANG TO S-ANG DOLO GRNS THRU, HVY TRS SML ANG CLR QRTZ GRN, DUL YEL GLD MIN FLO IN 70%, PR TO FR TRS GD INTER-GRN POR IN 6-7%, NO VIS CUT OR SHOW

DOLO- WHT TO OFF WHT TN, HRD DNS TO BRTT, MD/F-XLN, RE-XLN MTRX, S-SUCRO, ABDT IMBD SML TO MD ANG TO S-ANG CLR QRTZ GRNS, SLI TRS SFT WHT CHLK, V SLI TRS DISS PYR IP, DUL YEL MIN FLO IN 40%, SPTTD BRT YEL MIN FLO IN 20%, V PR TO PR INTER-GRN POR IN 2%, NO CUT OR SHOW

DOLO- OFF WHT CRM LT TN TO TN, HD DNS TO TRS BRTT, MD/F-XLN TO RE-XLN, TRS SML TO MD S-ANG DOLO GRNS, ABDT TRS S-ANG TO S-RND CLR QRTZ GRNS, SLI TRS SCATT SFT WHT CHLK IN TRAY, SLI TRS DISS PYR, DUL YEL MIN FLO IN 50%, PR TO FR INTER-GRN POR IN 3-4%, NO VIS CUT OR SHOW

C1
C2
C3
43 U. INC.
CN
30 U. BG
53 U. INC
55 U. INC
TG, C1+C2
1 10 100 1000
40 U. BG
40 U. INC
35 U. BG
33 U. BG
25 U. BG
23 U. BG
36 U. BG


WOB 35
RPM 70
PP 700
CFS @ 4090'
30, 60
SHORT TRIP
R.T.D @ 4090'
4100
C
P
C
C
P
C
DOLO- WHT TO OFF WHT CRM TO LT TN, HD DNS TO BRTT, MD TO F/VF-XLN TO RE-XLN, ABDT SML TO MD RND TO S-RND DOLO GRNS THRU, SCATT TRS SFT WHT CHLK IN TRAY, SLI TRS DISS PYR, DUL YEL MIN FLO IN 40%, BRT YEL MIN FLO IN 20%, PR TO FR TO GD INTER-GRN POR IN 5%, NO VIS CUT OR SHOW
R.T.D. @ 1:30 PM 11/1/2013
DROP SURVEY
TOFL @ 3:00 PM
WEATHERFORD/ LIBERAL, KANSAS
C3
C2
C1
38 U. BG
36 U. BG
CN
R.T.D. @ 4090'
SAMPLES WILL BE DELIVERED TO KGS
THANK YOU FOR CHOOSING EARTH TECH
TOM FLOWERS
SCHUYLER HEDRICK