



Confidentiality Requested:

Yes  No

KANSAS CORPORATION COMMISSION 1149423  
OIL & GAS CONSERVATION DIVISION

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 # \_\_\_\_\_

Name: \_\_\_\_\_

Address 1: \_\_\_\_\_

Address 2: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_ + \_\_\_\_\_

Contact Person: \_\_\_\_\_

Phone: ( \_\_\_\_\_ ) \_\_\_\_\_

CONTRACTOR: License # \_\_\_\_\_

Name: \_\_\_\_\_

Wellsite Geologist: \_\_\_\_\_

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 #: \_\_\_\_\_

Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date
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API No. 15 - \_\_\_\_\_

Spot Description: \_\_\_\_\_

\_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West

\_\_\_\_\_ Feet from  North /  South Line of Section

\_\_\_\_\_ Feet from  East /  West Line of Section

Footages Calculated from Nearest Outside Section Corner:

- NE       NW       SE       SW

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

Datum:  NAD27       NAD83       WGS84

County: \_\_\_\_\_

Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Field Name: \_\_\_\_\_

Producing Formation: \_\_\_\_\_

Elevation: Ground: \_\_\_\_\_ Kelly Bushing: \_\_\_\_\_

Total Vertical Depth: \_\_\_\_\_ Plug Back Total Depth: \_\_\_\_\_

Amount of Surface Pipe Set and Cemented at: \_\_\_\_\_ 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: \_\_\_\_\_ ppm Fluid volume: \_\_\_\_\_ bbls

Dewatering method used: \_\_\_\_\_

Location of fluid disposal if hauled offsite:

Operator Name: \_\_\_\_\_

Lease Name: \_\_\_\_\_ License #: \_\_\_\_\_

Quarter \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West

County: \_\_\_\_\_ Permit #: \_\_\_\_\_

AFFIDAVIT

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

Submitted Electronically

KCC Office Use ONLY

- Confidentiality Requested  
Date: \_\_\_\_\_
- Confidential Release Date: \_\_\_\_\_
- Wireline Log Received
- Geologist Report Received
- UIC Distribution
- ALT  I  II  III Approved by: \_\_\_\_\_ Date: \_\_\_\_\_



1149423

Operator Name: \_\_\_\_\_ Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West County: \_\_\_\_\_

**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](mailto: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 <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i>  Samples Sent to Geological Survey <input type="checkbox"/> Yes <input type="checkbox"/> No  Cores Taken <input type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Run <input type="checkbox"/> Yes <input type="checkbox"/> No  List All E. Logs Run: _____	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample  Name Top Datum
--	---

CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> 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

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate <input type="checkbox"/> Protect Casing <input type="checkbox"/> Plug Back TD <input type="checkbox"/> 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 <i>(Amount and Kind of Material Used)</i>	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

<b>DISPOSITION OF GAS:</b> <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	<b>METHOD OF COMPLETION:</b> <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <input type="checkbox"/> Other <i>(Specify)</i> _____ <input type="checkbox"/> Other <i>(Specify)</i> _____	<b>PRODUCTION INTERVAL:</b> _____ _____
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Form	ACO1 - Well Completion
Operator	Samuel Gary Jr. & Associates, Inc.
Well Name	HARLAN ET AL 1-26
Doc ID	1149423

All Electric Logs Run

DEN-NEUT
INDUCTION
MICRO
SONIC
SPECTRAL

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



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

Mark Sievers, Chairman  
Thomas E. Wright, Commissioner  
Shari Feist Albrecht, Commissioner

Sam Brownback, Governor

June 25, 2013

CHRISTOPHER MITCHELL  
Samuel Gary Jr. & Associates, Inc.  
1515 WYNKOOP, STE 700  
DENVER, CO 80202

Re: ACO1  
API 15-051-26479-00-00  
HARLAN ET AL 1-26  
NW/4 Sec.26-14S-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,  
CHRISTOPHER MITCHELL



**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: 3/8/2013  
 Invoice # 6454

P.O.#:  
 Due Date: 4/7/2013  
 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:**  
 HARLAN ETAL 1-26

**Description of Work:**  
 LONG SURFACE JOB

**RECEIVED**

MAR 15 2013

**SAMUEL GARY JR.  
 & ASSOCIATES, INC.**

DRLG  COMP  W/O  LOE  GG

Account	8200.138
Well/Prospect	
Deck	
AFE	<i>[Signature]</i>
Approval	
Description	

Services / Items Included:	Quantity	Price	Taxable	Item	Quantity	Price	Taxable
Labor		\$ 991.39	No				
Common-Class A	375	\$ 5,105.57	Yes				
8 5/8" Basket	3	\$ 1,029.26	Yes				
Bulk Truck Matl-Material Service Charge	396	\$ 859.89	No				
Calcium Chloride	14	\$ 724.43	Yes				
8 5/8" Centralizer	3	\$ 208.46	Yes				
Premium Gel (Bentonite)	7	\$ 123.73	Yes				
8 5/8" Top Rubber Plug	1	\$ 115.09	Yes				
Pump Truck Mileage-Job to Nearest Camp	11	\$ 119.19	No				
Baffle Plate Aluminum, 8 5/8"	1	\$ 97.71	Yes				
Bulk Truck Mileage-Job to Nearest Bulk Plant	11	\$ 69.75	No				

**Invoice Terms:**

Net 30

SubTotal: \$ 9,444.45  
 Discount Available ONLY if Invoice is Paid & Received within listed terms of invoice: \$ (1,416.67)

SubTotal for Taxable Items: \$ 6,293.61  
 SubTotal for Non-Taxable Items: \$ 1,734.18  
 Total: \$ 8,027.78  
 Tax: \$ 396.50  
**Amount Due: \$ 8,424.28**  
**Applied Payments:**  
**Balance Due: \$ 8,424.28**

6.30% Ellis County Sales Tax

**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.  
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# 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. 6454

Date <u>3-6-13</u>	Sec. <u>24</u>	Twp. <u>14</u>	Range <u>17</u>	County <u>Rails</u>	State <u>KS</u>	On Location	Finish <u>7:45 A.M.</u>
				Location <u>Victoria 2w 2 1/2 S Pinto</u>			

Lease <u>Harker E.TAL</u>	Well No. <u>1-26</u>	Owner
Contractor <u>D. Sweeney #2</u>		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 <u>Surface</u>		
Hole Size <u>12 1/4</u>	T.D. <u>852</u>	Charge To <u>Sam Leary</u>
Csg. <u>8 5/8</u>	Depth <u>851</u>	Street
Tbg. Size	Depth	City
Tool	Depth	State
Cement Left in Csg. <u>41.17</u>	Shoe Joint <u>41.17</u>	The above was done to satisfaction and supervision of owner agent or contractor.
Meas Line	Displace <u>51 1/2 B2L</u>	Cement Amount Ordered <u>375 com 3% CC 2% DEL</u>

**EQUIPMENT**

Pumptrk <u>9</u>	No. Cementer <u>Craig</u>	Helper	Common <u>375</u>
Bulktrk	No. Driver <u>Coody</u>	Driver	Poz. Mix
Bulktrk <u>4</u>	No. Driver <u>Heath</u>	Driver	Gel. <u>7</u>
			Calcium <u>14</u>


**JOB SERVICES & REMARKS**

Remarks:	Hulls
Rat Hole	Salt
Mouse Hole	Flowseal
Centralizers	Kol-Seal
Baskets	Mud CLR 48
D/V or Port Collar	CFL-117 or CD110 CAF 38
<u>8 5/8 on bottom. Est. Circulation.</u>	Sand
<u>Mix 375 skt Displace Plug.</u>	Handling <u>396</u>
<u>(Cement Circulate).</u>	Mileage

**FLOAT EQUIPMENT**

Guide Shoe <u>8 5/8</u>
Centralizer <u>3</u>
Baskets <u>3</u>
AEU Inserts <u>Rubber Plug</u>
Float Shoe <u>Baffle Plate</u>
Latch Down

Pumptrk Charge <u>Long Surface</u>
Mileage <u>11</u>

Signature 	Tax
	Discount
	Total Charge



**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: 3/13/2013  
 Invoice # 6581

P.O.#:  
 Due Date: 4/12/2013  
 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:**  
 HARLAN ETAL 1-26

**Description of Work:**  
 PLUG JOB

**RECEIVED**

**MAR 20 2013**

**SAMUEL GARY JR.  
 & ASSOCIATES, INC.**

DPLG  COMP  W/O  LOE  GG

Account	8200-145
Well/Prospect	
Deck	
AFE	<i>[Signature]</i>
Approval	
Description	

Services / Items Included:	Quantity	Price	Taxable	Item	Quantity	Price	Taxable
Labor		\$ 991.39	Yes				
Common-Class A	150	\$ 2,042.23	Yes				
Bulk Truck Matl-Material Service Charge	259	\$ 562.40	Yes				
POZ Mix-Standard	100	\$ 499.43	Yes				
Premium Gel (Bentonite)	9	\$ 159.08	Yes				
Flo Seal	62	\$ 134.63	Yes				
Pump Truck Mileage-Job to Nearest Camp	11	\$ 119.19	Yes				
Bulk Truck Mileage-Job to Nearest Bulk Plant	11	\$ 69.75	Yes				
Dry Hole Plug	1	\$ 60.80	Yes				

**Invoice Terms:**

Net 30

SubTotal: \$ 4,638.89  
 Discount Available ONLY if Invoice is Paid & Received within listed terms of invoice: \$ (695.83)

SubTotal for Taxable Items:	\$ 3,943.05
SubTotal for Non-Taxable Items:	\$ -
Total:	\$ 3,943.06
Tax:	\$ 248.41

6.30% Ellis County Sales Tax

**Thank You For Your Business!**

**Amount Due: \$ 4,191.47**  
**Applied Payments:**  
**Balance Due: \$ 4,191.47**

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

Federal Tax I.D.# 20-2886107

Phone 785-483-2025

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

No. 6581

Date	3-11-13	Sec.	26	Twp.	14	Range	17	County	Ellis	State	KS	On Location		Finish	10:30	
Lease	Harlan ETAL							Well No.	1-26	Owner	Victoria 2 W Stomant Joe RD <del>940</del> 1 W 1/2 S Einto					
Contractor	Discroby 2							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 506							Charge To								
Hole Size	7 7/8							T.D.	3630	Street						
Csg.	Dill pipe							Depth	3446	Sam GARY Jr.						
Tbg. Size								Depth		City						
Tool								Depth		State						
Cement Left in Csg.								Shoe Joint		The above was done to satisfaction and supervision of owner agent or contractor.						
Meas Line								Displace		Cement Amount Ordered 250 6% 40 4% gel						
<b>EQUIPMENT</b>																
Pumptrk	5	No.		Cementer	Mott		Common								150	
Bulktrk	10	No.		Helper	Boett		Poz. Mix								100	
Bulktrk	pa	No.		Driver	Lonnie m		Gel.								9	
<b>JOB SERVICES &amp; REMARKS</b>																
Remarks:	1/4 flowseal															
Rat Hole	30 5X															
Mouse Hole	15 5X															
Centralizers																
Baskets																
D/V or Port Collar																
1st	3446 ft			50	5	Ks	Hulls									
2nd	1135 ft			25	5	Ks	Salt									
3rd	900 ft			40	5	Ks	Flowseal 62#									
4th	540 ft			80	5	Ks	Kol-Seal									
5th	40 ft w/ plug			10	3	Ks	Mud CLR 48									
<b>FLOAT EQUIPMENT</b>																
Handing 259																
Mileage																
Guide Shoe																
Centralizer																
Baskets																
AFU Inserts																
Float Shoe																
Latch Down																
8 3/4 Wood Plug																
Pumptrk Charge Plug																
Mileage 11																
Tax																
Discount																
Total Charge																
Signature <i>[Signature]</i>																





**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Sam Gary Jr. & Associates Inc.

**26-14-17, Ellis, KS**

1515 Wynkoop STE 700  
Denver CO 80202

**Harlan #1-26**

Job Ticket: 52035

**DST#: 1**

ATTN: Chris M

Test Start: 2013.03.09 @ 14:20:00

## GENERAL INFORMATION:

Formation: **KC"C-D"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 16:39:00

Time Test Ended: 22:06:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Brett Dickinson

Unit No: 59

**Interval: 3243.00 ft (KB) To 3295.00 ft (KB) (TVD)**

Reference Elevations: 1969.00 ft (KB)

Total Depth: 3295.00 ft (KB) (TVD)

1961.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 8.00 ft

**Serial #: 8319**

**Inside**

Press @ Run Depth: 53.47 psig @ 3248.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.03.09

End Date:

2013.03.09

Last Calib.:

2013.03.09

Start Time: 14:20:05

End Time:

22:05:59

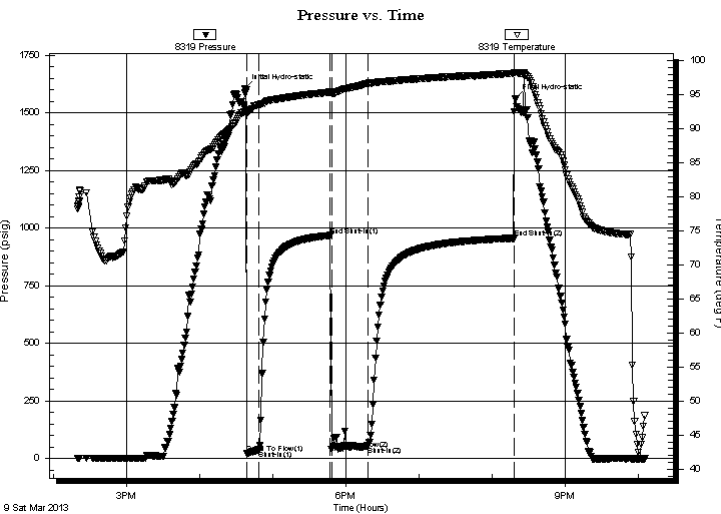
Time On Btm:

2013.03.09 @ 16:37:00

Time Off Btm:

2013.03.09 @ 20:19:30

**TEST COMMENT:** 10min IF-1.5in blow  
60min ISI-No blow  
30min FF-.25in blow  
120min FSI-No blow



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1603.79	92.50	Initial Hydro-static
2	20.13	92.37	Open To Flow (1)
12	37.24	93.49	Shut-In(1)
71	967.86	95.34	End Shut-In(1)
72	40.36	95.11	Open To Flow (2)
102	53.47	96.64	Shut-In(2)
221	955.93	98.09	End Shut-In(2)
223	1560.18	98.23	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
60.00	Mud	0.57

## Gas Rates

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



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Sam Gary Jr. & Associates Inc.

**26-14-17, Ellis, KS**

1515 Wynkoop STE 700  
Denver CO 80202

**Harlan #1-26**

Job Ticket: 52035

**DST#: 1**

ATTN: Chris M

Test Start: 2013.03.09 @ 14:20:00

### 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: 60.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.99 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4000.00 ppm

Filter Cake: inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
60.00	Mud	0.568

Total Length: 60.00 ft      Total Volume: 0.568 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

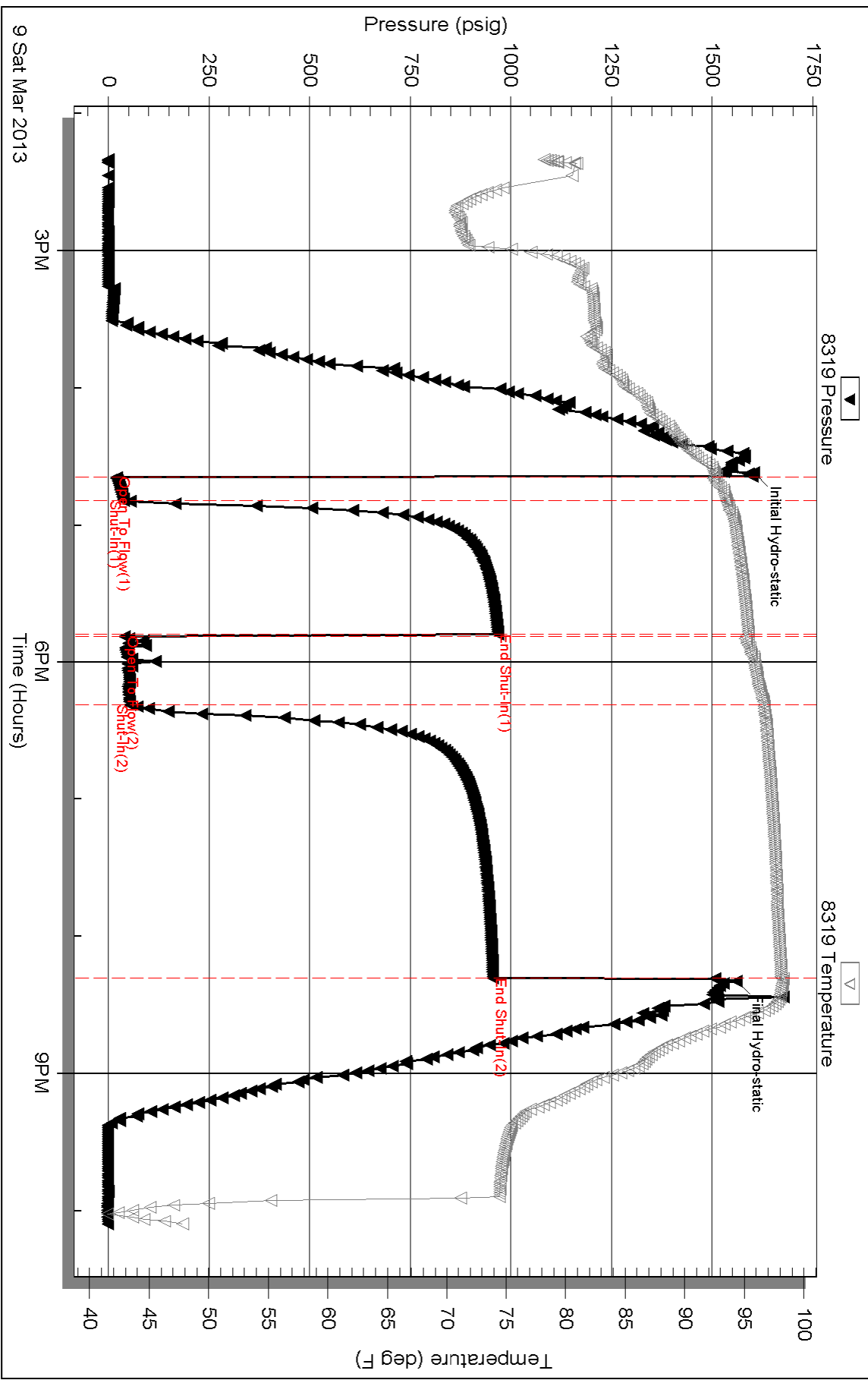
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Sampler Data 190psi 2000 ml mud

### Pressure vs. Time





**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Sam Gary Jr. & Associates Inc.

**26-14-17, Ellis, KS**

1515 Wynkoop STE 700  
Denver CO 80202

**Harlan #1-26**

Job Ticket: 52036

**DST#: 2**

ATTN: Chris M

Test Start: 2013.03.10 @ 13:55:05

## GENERAL INFORMATION:

Formation: **KC"H-J"**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 16:18:00  
 Time Test Ended: 22:09:59  
 Interval: **3357.00 ft (KB) To 3444.00 ft (KB) (TVD)**  
 Total Depth: 3444.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Brett Dickinson  
 Unit No: 59  
 Reference Elevations: 1969.00 ft (KB)  
 1961.00 ft (CF)  
 KB to GR/CF: 8.00 ft

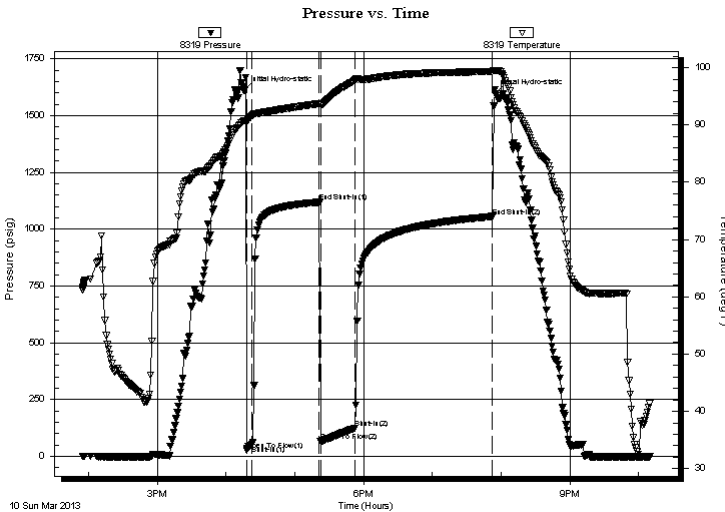
## Serial #: 8319

Inside

Press @ Run Depth: 124.91 psig @ 3362.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2013.03.10 End Date: 2013.03.10 Last Calib.: 2013.03.10  
 Start Time: 13:55:05 End Time: 22:09:59 Time On Btm: 2013.03.10 @ 16:16:00  
 Time Off Btm: 2013.03.10 @ 19:55:00

TEST COMMENT: 5min IF-7in blow  
 60min ISI-w eak surface blow  
 30min FF-BOB in 5min  
 120min FSI-1/2in blow

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1610.59	90.77	Initial Hydro-static
2	28.48	90.41	Open To Flow (1)
7	51.17	91.59	Shut-In(1)
65	1118.97	93.71	End Shut-In(1)
67	66.43	93.51	Open To Flow (2)
97	124.91	97.88	Shut-In(2)
217	1056.08	99.34	End Shut-In(2)
219	1595.37	99.48	Final Hydro-static

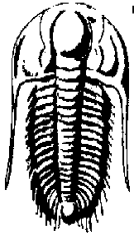
## Recovery

Length (ft)	Description	Volume (bbl)
120.00	V SOMCW 2%O 78%W 20%M	1.41
110.00	SGWOCM 5%G 20%O 5%W 70%M	1.54
0.00	120ft GIP	0.00

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Sam Gary Jr. & Associates Inc.

**26-14-17, Ellis, KS**

1515 Wynkoop STE 700  
Denver CO 80202

**Harlan #1-26**

Job Ticket: 52036

**DST#: 2**

ATTN: Chris M

Test Start: 2013.03.10 @ 13:55:05

## GENERAL INFORMATION:

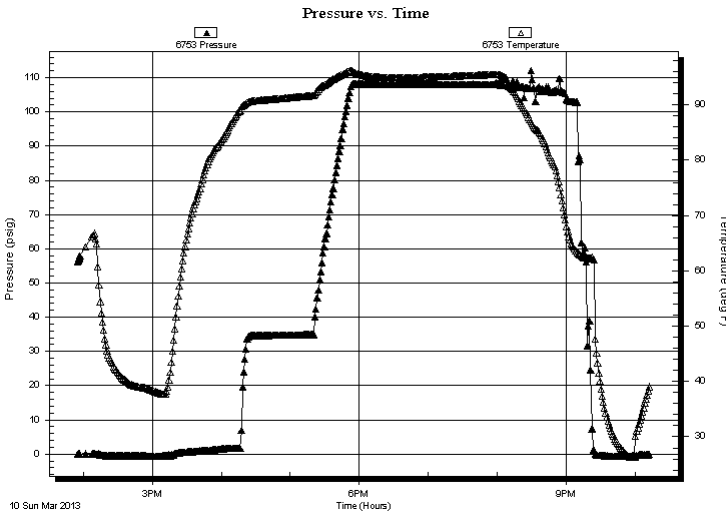
Formation: **KC"H-J"**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 16:18:00  
 Time Test Ended: 22:09:59  
 Interval: **3357.00 ft (KB) To 3444.00 ft (KB) (TVD)**  
 Total Depth: 3444.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Brett Dickinson  
 Unit No: 59  
 Reference Elevations: 1969.00 ft (KB)  
 1961.00 ft (CF)  
 KB to GR/CF: 8.00 ft

## Serial #: 6753 Fluid

Press @ RunDepth: psig @ 3328.00 ft (KB)  
 Start Date: 2013.03.10 End Date: 2013.03.10  
 Start Time: 13:55:05 End Time: 22:12:59  
 Capacity: 8000.00 psig  
 Last Calib.: 2013.03.10  
 Time On Btm:  
 Time Off Btm:

TEST COMMENT: 5min IF-7in blow  
 60min ISI-w eak surface blow  
 30min FF-BOB in 5min  
 120min FSI-1/2in blow

## PRESSURE SUMMARY



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

## Recovery

Length (ft)	Description	Volume (bbl)
120.00	V SOMCW 2%O 78%W 20%M	1.41
110.00	SGWOCM 5%G 20%O 5%W 70%M	1.54
0.00	120ft GIP	0.00

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Sam Gary Jr. & Associates Inc.

**26-14-17, Ellis, KS**

1515 Wynkoop STE 700  
Denver CO 80202

**Harlan #1-26**

Job Ticket: 52036

**DST#: 2**

ATTN: Chris M

Test Start: 2013.03.10 @ 13:55:05

## 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: 100000 ppm

Viscosity: 55.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.98 in<sup>3</sup>

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 bbbl
120.00	VSOMCW 2%O 78%W 20%M	1.410
110.00	SGWOCM 5%G 20%O 5%W 70%M	1.543
0.00	120ft GIP	0.000

Total Length: 230.00 ft      Total Volume: 2.953 bbl

Num Fluid Samples: 0

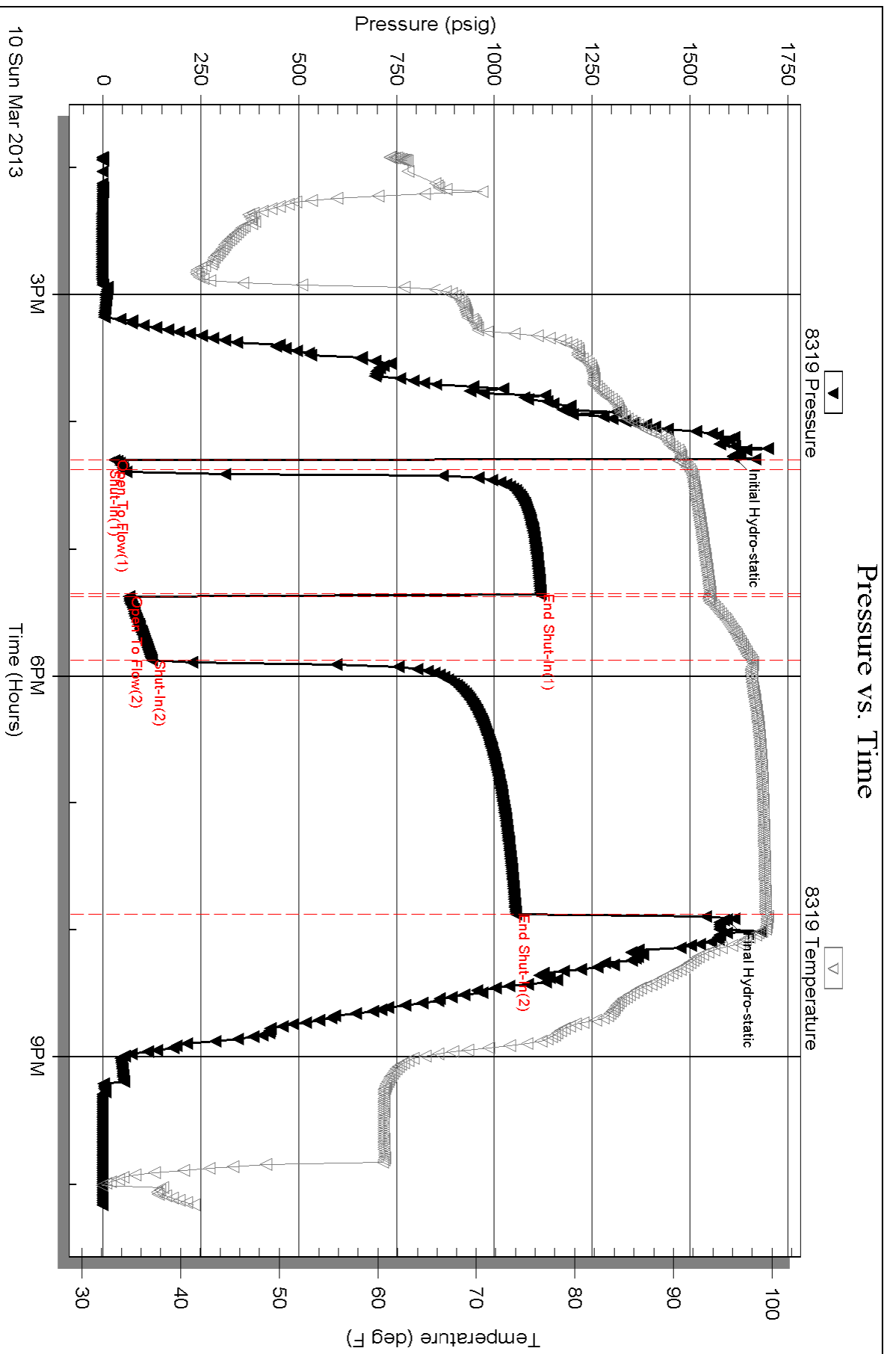
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW .16 @ 35 10000 Sampler Data 475psi 500ml O 1500ml W



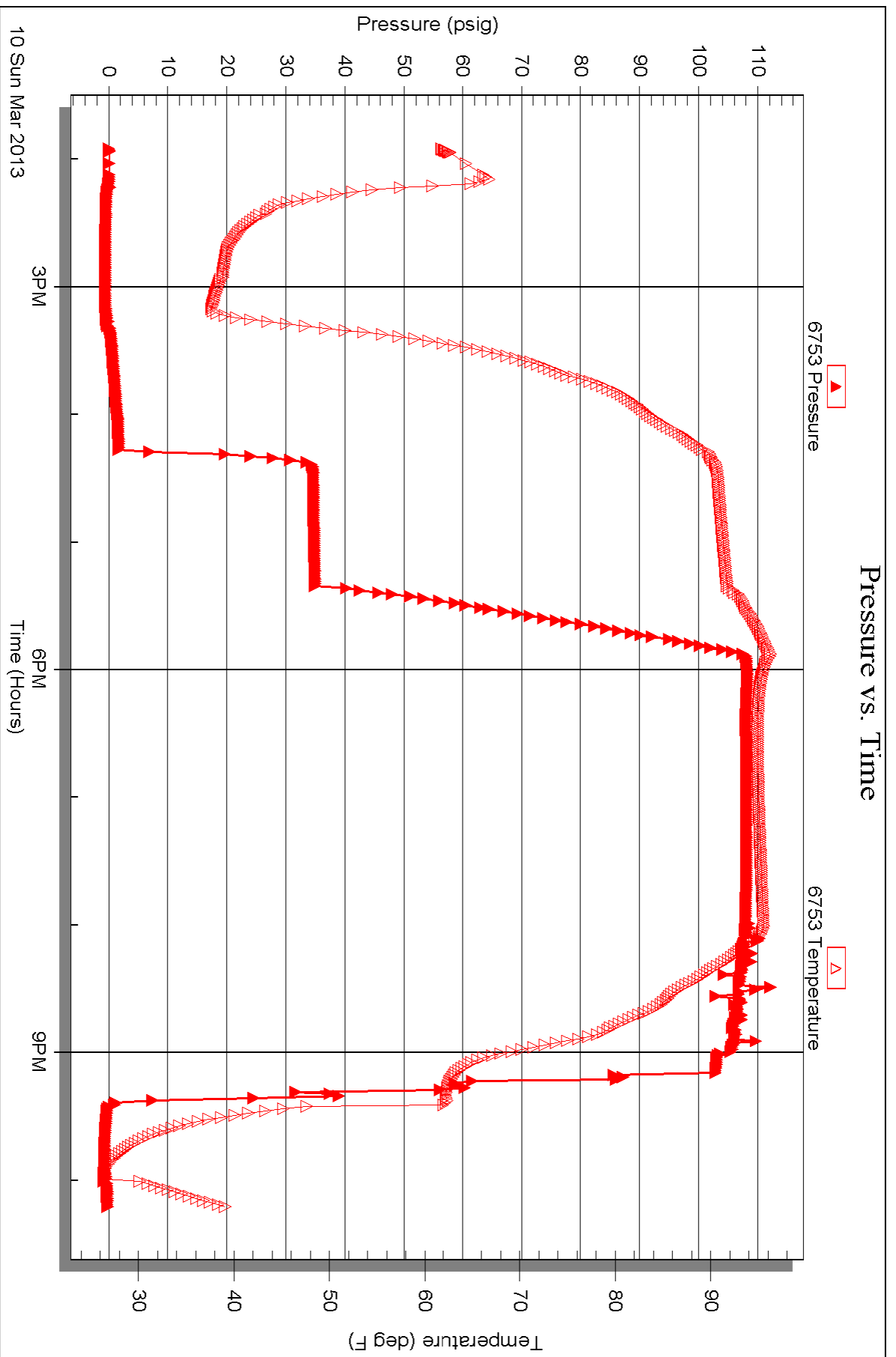
Serial #: 6753

Fluid

Sam Gary Jr. & Associates Inc.

Harlan #1-26

DST Test Number: 2







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

Well Name: Harlan Et Al 1-26  
 Location: Sec. 26-14S-17W  
 License Number: 15-051-26479-0000  
 Spud Date: 3/05/13  
 Surface Coordinates: 2025 FNL/ 1320 FWL

Ellis County, Kansas  
 Region: WILDCAT  
 Drilling Completed: 3/11/13

Bottom Hole Coordinates:  
 Ground Elevation (ft): 1959' K.B. Elevation (ft): 1967'  
 Logged Interval (ft): 2925' To: 3630' Total Depth (ft): 3630'  
 Formation: Lansing/ Arbuckle  
 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: Chris Mitchell

**GEOLOGIST**

Name: Schuyler Hedrick  
 Company: Earth Tech OGL, Inc.  
 Address: PO Box 683  
 Hooker, Okla. 73945  
 Off. 888-543-8378 Cell: 580-754-0231



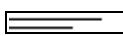

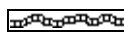



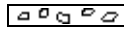



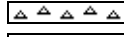

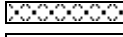
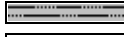

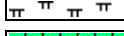

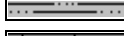



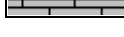

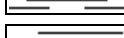



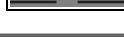
**DST's Report**

DST# 1 3243'-3293' 10-60-30-120  
 IF- 1 1/2" BLOW, ISI- NO BLOW, FF- 1/4" BLOW, FSI- NO BLOW  
 IH- 1604, FH- 1560/ IF- 20 TO 37, FF- 40 TO 53/ ISI- 968, FSI- 956  
 REC. 60' OF TF./ 60' OF MUD/ BHT 98, CHLOR.- 4,000 PPM

**DST's Report**

DST# 2 3357'-3444' 5-60-30-120  
 IF- 7" BLOW, ISI- WK SURF. BLW, FF- B.O.B. IN 5 MIN, FSI- 1/2" BLOW  
 IH-1611, FH-1595/ IF-28 TO 51, FF- 66 TO 125/ ISI- 1119, FSI- 1056  
 REC. 230' OF TF./ 120' VSOMCW 2% OIL, 78% WATER, 20% MUD/ 110' OF SGWOCM 5% GAS, 20% OIL, 5%  
 WATER, 70% MUD/ BHT-99, API RW .16 @ 35 DEG./ CHLOR.- 100,000 PPM

**ROCK TYPES**

 Anhy	 Gyp	 Shgy	 Sandylms
 Bent	 Igne	 Sltst	 Shale
 Brec	 Lmst	 Ss	 Sltstn
 Cht	 Meta	 Till	 Shlyslts
 Clyst	 Mrlst	 Carb sh	 SltysH
 Coal	 Salt	 Dol	 Lms
 Congl	 Shale	 Dtd	
 Dol	 Shcol	 Gry sh	

### ACCESSORIES

#### MINERAL

- Anhy
- Arggrn
- Arg
- Bent
- Bit
- Brefracg
- 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
- Sandyms
- 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

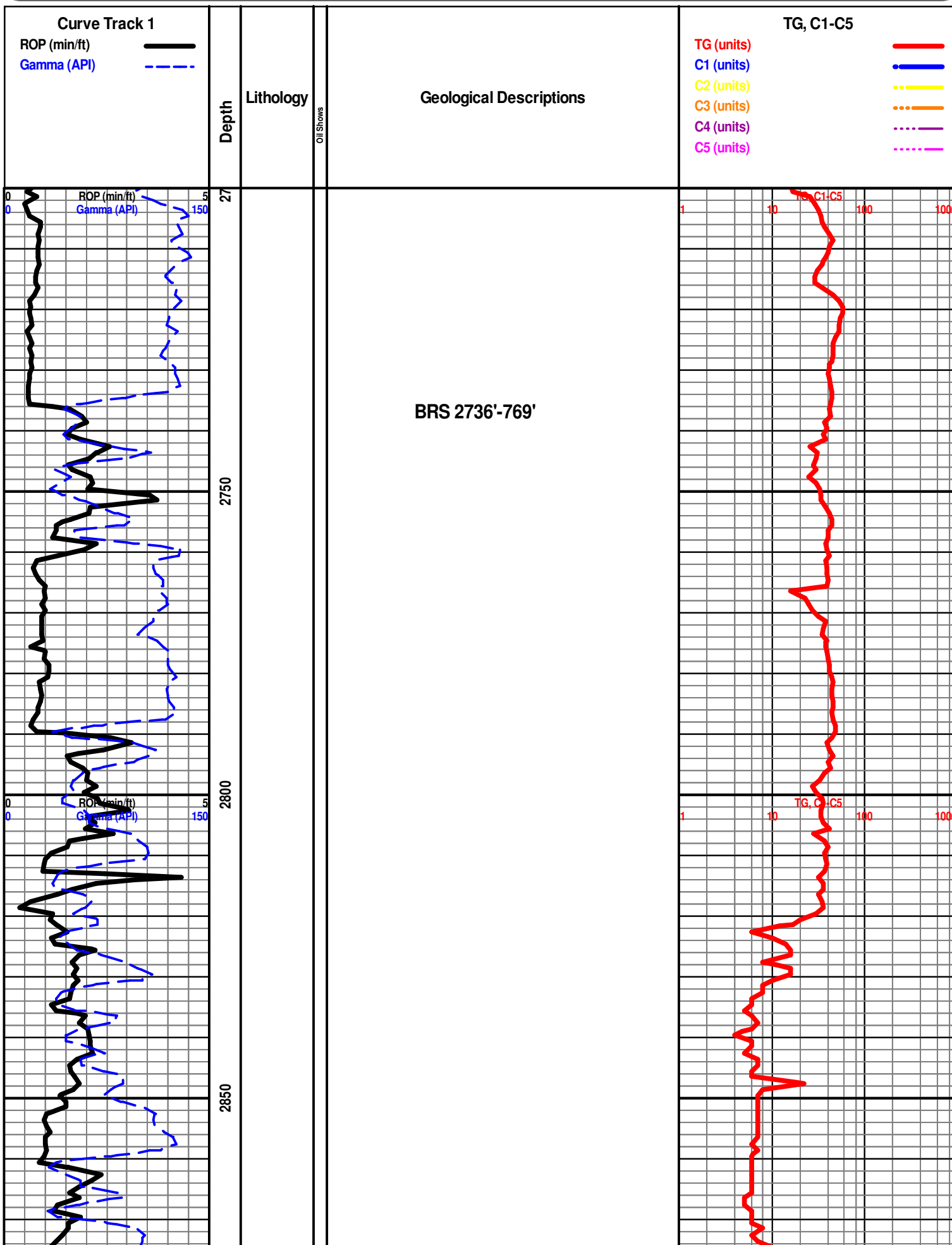
- Even
- Spotted
- Ques
- Dead
- Gas show

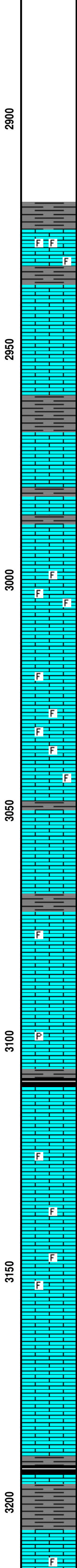
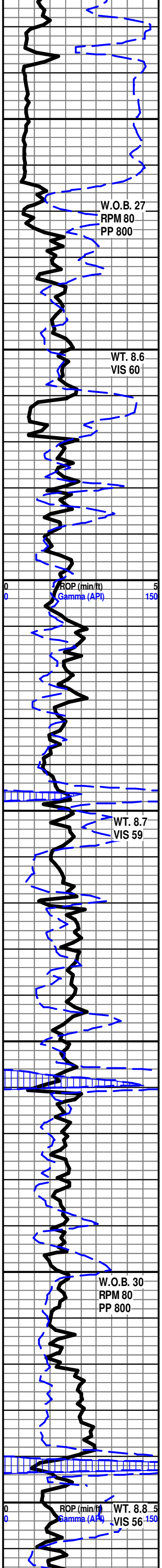
#### INTERVALS

- Core
- Dst
- Dst

#### EVENTS

- Rft
- Sidewall





**HOWARD 2914'-947'**  
**START 24 HR. MANNED UNIT 3/8/13**

LS- CRM TO LT TN, HD DNS TO BRTT IP, MD/F-XLN MTRX, SLI RE-XLN IP, SLI TR S-SUCRO, SCAT IMB FOSS FRAGS THRU, V DUL YEL FLO IP, NO VIS POR, NO VIS CUT OR SHOW

LS- OFF WHT TO LT GY, HD DNS TO TR BRTT IP, F/XLN MTRX, S-SUCRO, SLI TR IMB CALC-XLS, TR V DUL YEL FLO IN 10%, NO VIS POR, NO VIS CUT OR SHOW

**SEVERY 2961'-994'**  
**TOPEKA 2969'-1002'**

LS- CRM TO LT TN, HD DNS TO BRTT IP, MD/F-XLN, SUCRO THRU, TR S-CHLKY IP, SCAT IBM CALC-XLS IP, TR IMB SFT WHT CHLK IP, BRT YEL FLO IN 40%, DUL YEL FLO IN 20%, NO VIS POR, NO VIS CUT OR SHOW

LS- LT TN TO TN, HD DNS TO BRTT, MD-XLN MTRX, S-SUCRO IP, ABDT IMB FOSS FRAGS THRU, SCAT IMB CALC-XLS THRU, DUL YEL FLO IP, NO VIS POR, NO VIS CUT OR SHOW

LS- OFF WHT TO CRM, HD DNS TO BRTT, MD/F-XLN MTRX, ABDT IMB FOSS FRAGS THRU, SLI TR IMB SFT WHT CHLK IP, NO VIS FLO, NO VIS POR, NO VIS SHOW

LS- OFF WHT TO CRM IP, HD DNS TO BRTT IP, F/VF-XLN MTRX, RE-XLN IP, SLI TR S-CHLKY, TR IMB CALC-XLS, YEL FLO IN 70%, NO VIS POR, NO VIS CUT OR SHOW

**LECOMPTON 3071'-1104'**

LS- LT TN TO TN, V HD DNS TO TR BRTT, VF/XLN MTRX, IMB LG FOSS FRAGS IP, TR V DUL YEL FLO IP, NO VIS POR, NO VIS CUT OR SHOW

LS- WHT TO OFF WHT, V HD DNS, F/VF-XLN MTRX, S-CHLKY IP, IMB PYR, SCAT PYR IN TRAY, DUL YEL FLO IN 30%, NO VIS POR, NO VIS CUT OR SHOW

SH- BLCK SFT CARB

LS- LT TN TO TN, HD DNS TO BRTT IP, MD/F/VF-XLN MTRX, RE-XLN, SLI TR S-CHLKY IP, IMB CALC-XLS ON ONE FACES OF ROCK, SLI TR IMB FOSS FRAGS, V DUL YEL FLO IN 20%, SLI TR YEL FLO IP, NO VIS POR, NO VIS CUT OR SHOW

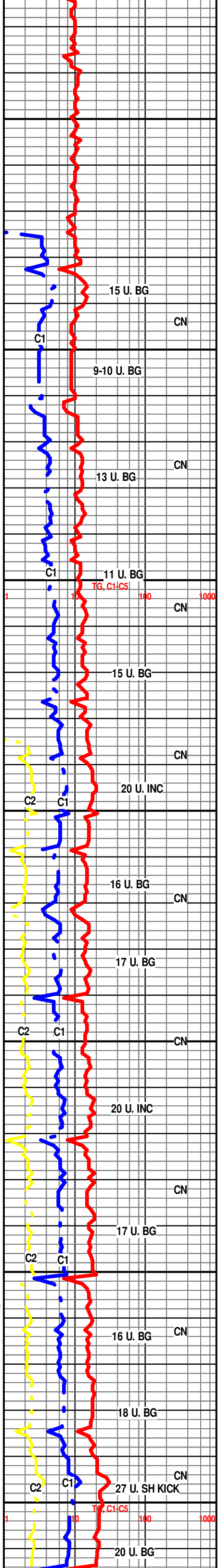
3146'-3150' LS- OFF WHT TO CRM LT TN IP ( W/ DK BRN TO BLCK OIL STN SCAT IN 40-50%) (LIVE OIL STN IN 10%), HD DNS TO BRTT IP, MD/F-XLN MTRX, RE-XLN, S-CHLKY, TR IMB FOSS FRAGS IP, SCAT IMB SFT WHT CHLK IP, DUL YEL GLD FLO IN 50%, SPTTD BRT YEL GLD FLO IP, PR TO FR MICRO VUG POR SCAT IN 3%, FR TO GD FLSH CUT IN 50%, FR SLW STRM CUT IN 50%, DK BRWN LCH ON DSH, LT OIL ODOR

**HEEBNER 3189'-1222'**

SH- BLCK SFT CARB

SH- LT GY TO GY, FRM TO SFT, BLCK SMTH TXT

LS- CRM TO LT TN, HD DNS TO BRTT IP, MD/F-XLN MTRX, SLI TR S-CHLKY IP, IMB CALC-XLS, SLI TR IMB FOSS



FRAGS IP, NO VIS FLO, NO VIS POR, NO VIS SHOW

**DOUGLAS 3223'-1256'**

**LANSING 3235'-1268'**

3237'-3241' LS- OFF WHT TO CRM ( W/ TN OIL STN IN 30%), HD DNS TO BRTT IP, MD/F-XLN MTRX, RE-XLN, S-CHLKY, S-SUCRO IP, SCAT IMB CALC-XLS THRU, IMB SFT WHT CHLK, V DUL YEL GLD FLO IN 20%, SLI TR YEL GLD FLO IP, PR TO FR TO TR GD MICRO VUG POR IN 6%, PR INTER-XLN POR IP, FR FLSH CUT IN 40%, FR TO GD SLW STRM CUT IN 50%, TN LCH ON DSH, FR OIL ODOR

**LANSING "C" 3259'-1292'**

3261'-3266' LS- CRM TO LT TN ( W/ TN OIL STN IN 30%), DNS TO V BRTT, V RE-XLN MTRX, MD-XLN IP, S-SUCRO THRU, ABDT IMB OOL THRU, V OOLITIC, SLI OOLMOLDIC IP, OOL @ POINT MATRIX IP, DUL YEL GLD FLO IN 40%, SPTTD BRT YEL GLD FLO SCAT IN 20%, FR TO GD INTER-OOL POR IN 4%, FR MICRO VUG POR IN 2%, TR GD OOLMOLDIC POR IN 2%, GD FLSH CUT IN 60%, GD SLW STRM CUT IN 60%, TN LCH ON DSH, GD OIL ODOR

3280'-3283' LS- LT TN TO TN ( W/ TN TO DK TN OIL STN IN 40%), HD DNS TO BRTT IP, MD/F-XLN MTRX, RE-XLN IP, S-SUCRO IP, SLI TR IMB OOL IP, DUL YEL GLD FLO IN 30-40%, PR TO FR INTER-XLN POR IN 2%, TR FR MICRO VUG POR IN 1%, FR FLSH CUT IN 30%, FR TO GD SLW STRM CUT IN 40%, LT TN LCH ON DSH, FR TO GD OIL ODOR

**LANSING "F" 3305'-1338'**

3307'-3309' LS- WHT TO OFF WHT (W/ LT TN TO TN OIL STN SCAT IN 10-20%), HD DNS TO BRTT, MD-XLN, RE-XLN, S-CHLKY, ABDT IMB OOLITES THRU, V-OOLITIC, SCAT SFT WHT THRU TRAY, TR IMB SM FOSS FRAGS IP, DUL YEL GLD FLO IN 30%, TR YEL GLD FLO IP, V PR TO PR TO TR FR INTER-OOLITIC POR IN 1%, PR WK FLSH CUT IN 20%, PR TO TR FR SLW STRM CUT IN 30%, SLI TR V LT TN LCH ON DSH, V WK OIL ODOR

3319'-3323' LS- CRM TO LT TN (W/ TN OIL STN IN 50%), HD DNS TO TR BRTT IP, MD/F-XLN MTRX, S-SUCRO, S-CHLKY IP, SCAT IMB SM CALC-XLS, BRT YEL GLD FLO IN 30%, DUL YEL GLD FLO IN 10%, V PR TO PR MICRO VUG POR SCAT IN 1%, TR V PR VUG POR IP, FR TO GD FLSH CUT IN 50%, GD SLW STRM CUT IN 50%, LT TN TO TN LCH ON DSH, FR OIL ODOR

3324'-3330' LS- CRM TO LT TN (W/ LT TN TO TN OIL STN IN 20%), HD DNS TO V BRTT, MD/XLN, S-SUCRO, TR S-CHLKY, SCAT IMB OOLITES, V-OOLMOLDIC, SLI TR SFT WHT CHLK IN TRAY, V DUL YEL GLD FLO IN 20%, V PR TO PR TO TR FR OOLMOLDIC POR IN 6%, V PR VUG POR SCAT IN 1%, GD FLSH CUT IN 30%, FR TO GD SLW STRM CUT IN 20-30%, LT TN LCH ON DSH, V WK OIL ODOR

LS- OFF WHT TO CRM, V HD DNS TO SLI TR BRTT IP, F/VF-XLN MTRX, TR S-CHLKY IP, TR SCAT IMB OOL IP, NO VIS FLO, NO VIS POR, NO VIS SHOW

**LANSING "H" 3369'-1402'**

3373'-3375' LS- LT TN TO TN (DUE TO OIL STN IN 40-50%), HD DNS TO BRTT IP, MD/F-XLN MTRX, S-SUCRO, IMB SM TO MD FOSS FRAGS THRU, TR SCAT IMB OOL, FREE FOSSIL SCAT IN TRAY DUL YEL GLD FLO IN 30%, YEL GLD FLO SCAT IN 30%, BRT YEL GLD FLO IN 10%, PR TO TR FR MICRO VUG POR IN 3%, PR INTER-FOSS POR IN 1%, FR FLSH CUT IN 40%, FR TO TR GD SLW STRM CUT IN 50%, LT TN TO TN LCH ON DSH, FR TO TR GD OIL ODOR

LS- OFF WHT TO CRM LT TN IP, V HD DNS, F/VF-XLN, CRYPTO/XLN IP, SLI TR IMB OOL IP, V DUL YEL FLO IN 20%, NO VIS POR, NO VIS CUT OR SHOW

3409'-3414' LS- OFF WHT TO CRM (W/ TN TO DK TN OIL STN IN 30%) (LIVE OIL STAIN IN 15%), HD DNS TO BRTT, MD/XLN, RE-XLN, S-SUCRO, TR SCAT IMB OOL, OOLMOLDIC THRU, DUL YEL GLD FLO IN 60%, YEL GLD FLO IN 20%, PR TO FR OOLMOLDIC POR IN 5%, FR VUG POR IN 2%, GD INST FLSH CUT IN 70%, EXCEL SLW STRM CUT IN 70%, DK TN LCH ON DSH, GD OIL ODOR

LS- CRM TO LT TN TO TN, HD DNS TO TR BRTT IP, F/VF-XLN MTRX, RE-XLN IP, S-CHLKY, SCAT SFT WHT CHLK IN TRAY, SLI TR PYR IN TRAY, DUL YEL FLO IN 30-40%, TR YEL FLO IN 10%, NO VIS POR, NO VIS CUT OR SHOW

LS- WHT TO OFF WHT, V HD DNS, VF/CRYPTO-XLN MTRX, SLI TR S-CHLKY IP, SCAT WHT & ORANGE MOTT CHRT, DUL YEL FLO IN 10%, NO VIS POR, NO VIS CUT OR SHOW

**BKC 3479'-1512'**

SH- GY TO GRN TO RD MOTT, FRM TO SFT GMMY IP, BLCK SMTH TXT

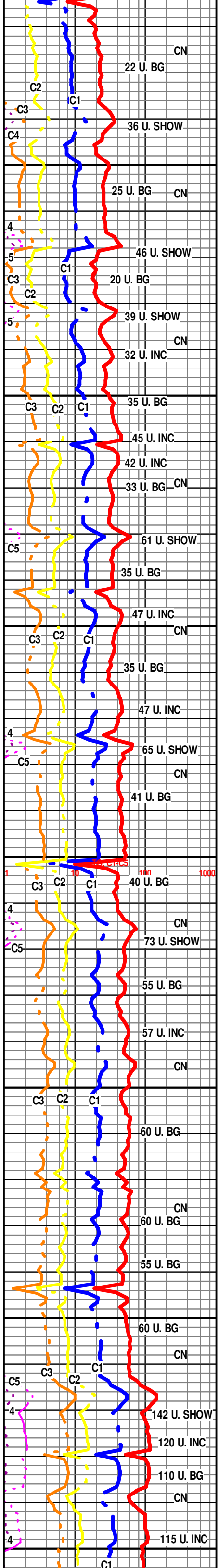
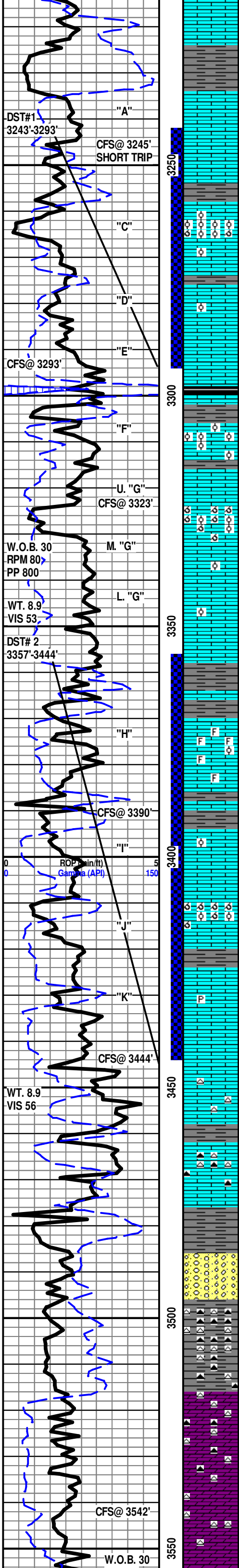
CONG- LS- OFF WHT TO CRM, V HD DNS, VF/XLN, MOTT CHRTS, NO VIS FLO, NO VIS POR, NO VIS SHOW, RD TO DK RD GMMY SHALES

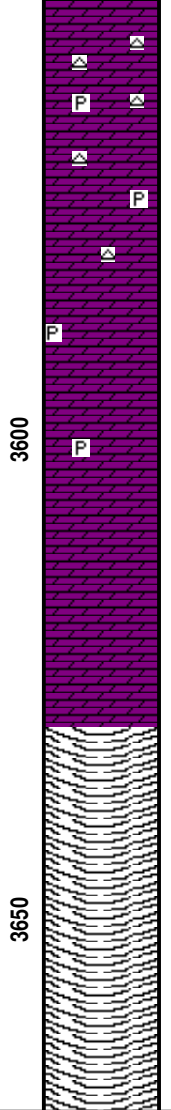
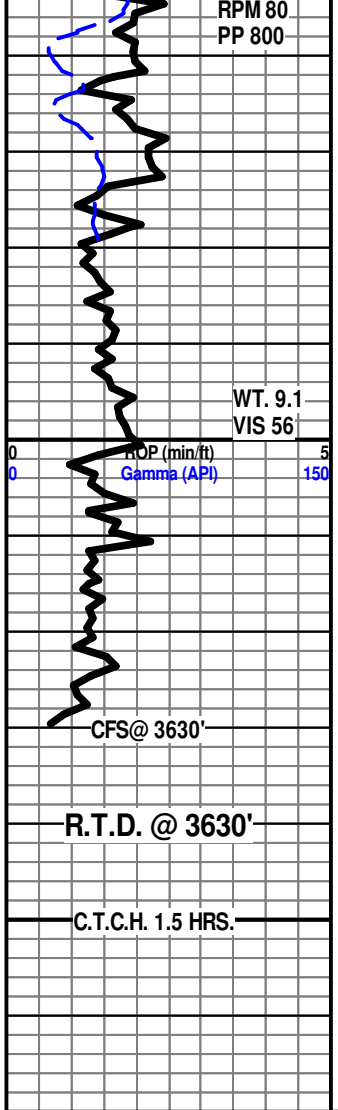
SH- RD TO DK RD BRWN IP, FRM SFT TO GMMY, ABDT MOTT CHRTS THRU

**ARBUCKLE 3516'-1549'**

3517'-3522' DOLO- OFF WHT TO CRM (W/ DK BRWN TO BLCK OIL STN IN 40%) (LIVE OIL STAIN IN 10%), HD DNS TO BRTT IP, V RE-XLN MTRX, S-SUCRO IP, ABDT IMB SM TO MD ANG TO S-ANG DOLO GRNS THRU, SCAT MOTT CHRTS IN TRAY, SLI TR SFT WHT CHLK IN TRAY, DUL YEL GLD FLO IN 30%, SPTTD BRT YEL GLD FLO IP, PR TO TR FR INTER-GRN POR IN 2%, TR V PR VUG POR IP, FR TO GD FLSH CUT IN 40%, GD SLW STRM CUT IN 50%, DK TN LCH ON DSH, LT WK OIL ODOR

3523'-3528' DOLO- CRM TO LT TN (W/ LIVE OIL STN SCAT IN 30%), HD DNS TO BRTT IP, MD/XLN, RE-XLN MTRX, S-SUCRO IP, SLI TR S-CHLKY, ABDT IMB SM S-ANG DOLO GRNS THRU, IMB SM ANG CLR QRTZ GRNS, SCAT WHT CHRT IN TRAY, SLI TR PYR IN TRAY, V DUL YEL GLD FLO IN 30%, SPTTD YEL GLD FLO IP, V PR TO PR INTER-GRN POR IN 1%, EXCEL FLSH CUT IN 70%, EXCEL SLW STRM CUT IN 70%, DK TN LCH ON DSH, V





WK OIL ODOR

DOLO- OFF WHT TO CRM, HD DNS TO TR BRTT IP,  
MD/F-XLN MTRX, RE-XLN, S-SUCRO, TR S-CHLKY IP,  
SCAT IMB SM S-ANG TO RND DOLO GRNS, DISS PYR  
THRU, SCAT WHT CHRT THRU TRAY, TR SFT WHT CHLK,  
DUL YEL MIN FLO IN 40%, YEL MIN FLO IN 30%, NO VIS  
POR, NO VIS CUT OR SHOW

DOLO- OFF WHT TO CRM, HD DNS TO TR BRTT IP,  
MD/XLN MTRX, RE-XLN, S-SUCRO IP, IMB SM S-ANG TO  
S-RND TO RND DOL GRNS THRU, TR IMB SM S-ANG CLR  
QRTZ GRNS IP, TR PYR IN TRAY, YEL MIN FLO IN 40%,  
BRT YEL MIN FLO IN 20%, NO VIS POR, NO VIS CUT OR  
SHOW

R.T.D. @ 8:30 A.M. 3/11/13

DROP SURVEY

T.O.F.L @ 10:00 A.M.

WEATHERFORD/ LIBERAL, KANSAS

