



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
- Conv. to GSW
- Plug Back: \_\_\_\_\_ Plug Back Total Depth \_\_\_\_\_
- 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

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

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

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

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

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

Total 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

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



1049884

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

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

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

Drill Stem Tests Taken <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 Electric Log Submitted Electronically <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(If no, Submit Copy)</i>  List All E. Logs Run:	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample  Name Top Datum
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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
_____ Perforate _____ Protect Casing _____ Plug Back TD _____ Plug Off Zone				

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
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DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <i>(Submit ACO-4)</i> <input type="checkbox"/> Other (Specify) _____	PRODUCTION INTERVAL: _____ _____
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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/>

Thomas E. Wright, Chairman  
Vice President, Conservation

Corporation Commission

Sam Brownback, Governor

January 25, 2011

DEAN PATTISSON  
Woolsey Operating Company, LLC  
125 N MARKET STE 1000  
WICHITA, KS 67202-1729

Re: ACO1  
API 15-007-23599-00-00  
GATES 1  
NE/4 Sec.27-34S-10W  
Barber 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,  
DEAN PATTISSON

# ALLIED CEMENTING CO., LLC. 042216

Federal Tax I.D.# 20-5975804

REMIT TO P.O. BOX 31  
RUSSELL, KANSAS 67665

SERVICE POINT:  
*Medicine Lodge, KS*

DATE <u>09 29 10</u>	SEC. <u>27</u>	TWP. <u>34s</u>	RANGE <u>10 w</u>	CALLED OUT	ON LOCATION	JOB START	JOB FINISH <u>8:15 AM</u>
LEASE <u>Gates</u>	WELL # <u>1</u>	LOCATION <u>Hazleton, KS, 2s, 3/4e, spinto</u>			COUNTY <u>Barber</u>	STATE <u>KS</u>	
OLD OR NEW (Circle one)							

CONTRACTOR Tomcat #1

TYPE OF JOB Surface

HOLE SIZE 14 3/4 T.D. 218

CASING SIZE 10 3/4 DEPTH 216

TUBING SIZE DEPTH

DRILL PIPE DEPTH

TOOL DEPTH

PRES. MAX 250 MINIMUM —

MEAS. LINE SHOE JOINT N/A

CEMENT LEFT IN CSG. 20'

PERFS.

DISPLACEMENT 19 1/2 Bbls Fresh H<sub>2</sub>O

OWNER Woolsey Oper.

CEMENT AMOUNT ORDERED 230 sk class "A" + 3% cc + 2% gel

COMMON A 230 sk @ 15.45 3553.50

POZMIX @

GEL 5 sk @ 20.80 104.00

CHLORIDE 8 sk @ 58.20 465.60

ASC @

EQUIPMENT

PUMP TRUCK CEMENTER D. Felix

# 471-302 HELPER R. Golly

BULK TRUCK

# 356-252 DRIVER J. Thimesch

BULK TRUCK

# DRIVER

HANDLING 243 @ 2.40 583.20

MILEAGE 243 / 10 / 25 607.50

TOTAL 5313.80

REMARKS:

Pipe on Bottom, Break Circ., Pump Spacers, Mix 230 sk A 3% cement, Start Dis. w/ Fresh H<sub>2</sub>O, See increase in PSI, Slow Rate, Stop Pump at 19 1/2 Bbls total Disp., Shut in, Cement Did Circ.

SERVICE

DEPTH OF JOB 218

PUMP TRUCK CHARGE 1018.00

EXTRA FOOTAGE @

MILEAGE 25 @ 7 = 175.00

MANIFOLD N/A @

TOTAL 1193.00

CHARGE TO: Woolsey.

STREET

CITY STATE ZIP

PLUG & FLOAT EQUIPMENT

None @

@

@

@

TOTAL

SALES TAX (If Any)

TOTAL CHARGES ~~5313.80~~

DISCOUNT IF PAID IN 30 DAYS ~~2000.00~~

To Allied Cementing Co., LLC.  
You are hereby requested to rent cementing equipment and furnish cementer and helper(s) to assist owner or contractor to do work as is listed. The above work was done to satisfaction and supervision of owner agent or contractor. I have read and understand the "GENERAL TERMS AND CONDITIONS" listed on the reverse side.

PRINTED NAME MIKE THOR.

SIGNATURE Mike Thor

# ALLIED CEMENTING CO., LLC. 042222

Federal Tax I.D.# 20-5975804

REMIT TO P.O. BOX 31  
RUSSELL, KANSAS 67665

SERVICE POINT:  
*Medicine Lodge, KS*

DATE <i>10/2/11</i>	SEC. <i>27</i>	TWP. <i>34s</i>	RANGE <i>10w</i>	CALLED OUT	ON LOCATION	JOB START	JOB FINISH <i>5:00 PM</i>
LEASE <i>Gates</i>	WELL # <i>1</i>	LOCATION <i>Hazelton KS, 2s, 3/4 w, S into</i>			COUNTY <i>Barber</i>	STATE <i>KS</i>	
OLD OR NEW (Circle one)							

CONTRACTOR *Tornest #1*  
 TYPE OF JOB *Production Casing*  
 HOLE SIZE *7 7/8* T.D. *5380*  
 CASING SIZE *4 1/2* DEPTH *5131*  
 TUBING SIZE DEPTH  
 DRILL PIPE DEPTH  
 TOOL DEPTH  
 PRES. MAX *1500* MINIMUM *—*  
 MEAS. LINE SHOE JOINT *42.23*  
 CEMENT LEFT IN CSG. *42'*  
 PERFS.  
 DISPLACEMENT *79 Bbls 2% KCL Water*

OWNER *Woolsey Oper.*  
 CEMENT  
 AMOUNT ORDERED *90 sx 60:40:4% gel & 160 sx class H + 10% salt + 10% gyp + 6 # Kalseal + 4 # Flo Seal + 8 # FU 160 & 8 gals Clapro*  

COMMON <i>A</i>	<i>54 sx</i>	@ <i>15.45</i>	<i>834.30</i>
POZMIX	<i>36 sx</i>	@ <i>8.00</i>	<i>288.00</i>
GEL	<i>3 sx</i>	@ <i>20.80</i>	<i>62.40</i>
CHLORIDE		@	
ASC		@	
<i>H</i>	<i>160 sx</i>	@ <i>16.75</i>	<i>2680.00</i>
<i>Bypseal</i>	<i>15 sx</i>	@ <i>29.20</i>	<i>438.00</i>
<i>SHIT</i>	<i>17 sx</i>	@ <i>12.00</i>	<i>204.00</i>
<i>Kalseal</i>	<i>960 #</i>	@ <i>.89</i>	<i>854.40</i>
<i>FL-160</i>	<i>120.32 #</i>	@ <i>13.30</i>	<i>1600.25</i>
<i>Flo Seal</i>	<i>40 #</i>	@ <i>2.50</i>	<i>100.00</i>
<i>Clapro</i>	<i>8 Gal</i>	@ <i>31.25</i>	<i>250.00</i>
		@	
HANDLING	<i>309</i>	@ <i>2.40</i>	<i>741.60</i>
MILEAGE	<i>.10/25/309 sx</i>		<i>772.50</i>
			TOTAL <i>8825.45</i>

EQUIPMENT

PUMP TRUCK CEMENTER *D. Fed*  
 # *414 302* HELPER *M. Thimesch*  
 BULK TRUCK  
 # *356-292* DRIVER *Robert*  
 BULK TRUCK  
 # DRIVER *Regulatory Correspondence*  
*Drig. Comp Workovers*  
*Tests / Meters Operations*

REMARKS:

*Pipe on Bttn, Break Circ, Plug Rat & Mouse Holes w/ 40 sx 60:40 cement Blend, Pump 50 sx Saveren Cement, Mix 160 sx tail Cement, Stop Pump, Wash Pump & Lines, Release Plug, Start Disp. w/ 2% KCL Water, See Steady increase in PSI, Slow Rate, Bump Plug to 1500 PSI at 79 Bbls total Disp., Release PSI, Floats Did Hold*

SERVICE

DEPTH OF JOB	<i>5131</i>		
PUMP TRUCK CHARGE			<i>2185.00</i>
EXTRA FOOTAGE		@	
MILEAGE	<i>25</i>	@ <i>7.00</i>	<i>175.00</i>
MANIFOLD <i>Head Rental</i>		@	
		@	
		@	
			TOTAL <i>2360.00</i>

CHARGE TO: *Woolsey Oper.*  
 STREET \_\_\_\_\_  
 CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

PLUG & FLOAT EQUIPMENT

<i>1 - AFU Float Shoe</i>	@	<i>205.00</i>
<i>1 - Catch down Plug Assy.</i>	@	<i>145.00</i>
<i>10 - turbolizers</i>	@ <i>37.80</i>	<i>378.00</i>
<i>15 - Recip. Scratchers</i>	@ <i>55.65</i>	<i>834.75</i>
	@	
TOTAL <i>1562.75</i>		

To Allied Cementing Co., LLC.  
 You are hereby requested to rent cementing equipment and furnish cementer and helper(s) to assist owner or contractor to do work as is listed. The above work was done to satisfaction and supervision of owner agent or contractor. I have read and understand the "GENERAL TERMS AND CONDITIONS" listed on the reverse side.

SALES TAX (If Any) \_\_\_\_\_  
 TOTAL CHARGES ~~8825.45~~  
 DISCOUNT \_\_\_\_\_ IF PAID IN 30 DAYS ~~8825.45~~

PRINTED NAME *MARIE J. LAMP*  
 SIGNATURE *MARIE J. LAMP*

*4 1/2"*



## DRILL STEM TEST REPORT

Prepared For: **WOOLSEY OPERATING COMPANY L.L.C**

125 N MARKET STE 1000 WICHITA KS  
67202+1729

ATTN: CURTIS COVEY

### **27-34-10W BARBER**

#### **GATES #1**

Start Date: 2010.10.06 @ 02:35:00

End Date: 2010.10.06 @ 15:15:00

Job Ticket #: 16065                      DST #: 1

Superior Testers Enterprises LLC  
PO Box 138 Great Bend KS 67530  
1-800-792-6902

Printed: 2010.10.06 @ 15:35:31



# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

WOOLSEY OPERATING COMPANY L.L.C

**GATES #1**

125 N MARKET STE 1000 WICHITA KS  
67202+1729

**27-34-10W BARBER**

Job Ticket: 16065

**DST#: 1**

ATTN: CURTIS COVEY

Test Start: 2010.10.06 @ 02:35:00

**Tool Information**

Drill Pipe:	Length: 4356.00 ft	Diameter: 3.80 inches	Volume: 61.10 bbl	Tool Weight: 1000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 180.00 ft	Diameter: 2.25 inches	Volume: 0.89 bbl	Weight to Pull Loose: 75000.00 lb
			<u>Total Volume: 61.99 bbl</u>	Tool Chased 2.00 ft
Drill Pipe Above KB:	15.00 ft			String Weight: Initial 68000.00 lb
Depth to Top Packer:	4550.00 ft			Final 68000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	137.00 ft			
Tool Length:	166.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4522.00	
Shut-In Tool	5.00			4527.00	
Hydraulic Tool	5.00			4532.00	
Jars	6.00			4538.00	
Safety Joint	2.00			4540.00	
Packer	5.00			4545.00	29.00 Bottom Of Top Packer
Packer	5.00			4550.00	
Change Over Sub	0.75			4550.75	
Drill Pipe	90.50			4641.25	
Change Over Sub	0.75			4642.00	
Perforations	40.00			4682.00	
Recorder	1.00	8405	Inside	4683.00	
Recorder	1.00	8419	Outside	4684.00	
Bullnose	3.00			4687.00	137.00 Bottom Packers & Anchor

**Total Tool Length: 166.00**



# DRILL STEM TEST REPORT

**FLUID SUMMARY**

WOOLSEY OPERATING COMPANY L.L.C

**GATES #1**

125 N MARKET STE 1000 WICHITA KS  
67202+1729

**27-34-10W BARBER**

Job Ticket: 16065

**DST#: 1**

ATTN: CURTIS COVEY

Test Start: 2010.10.06 @ 02:35:00

## 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: 65.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 9.00 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psia

Salinity: 3500.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
60.00	WATERY MUD 30%WATER 70%MUD	0.295
60.00	MUD 100%	0.295
0.00	CHLORIDES 25,000	0.000
0.00	RESISTIVITY .15 @ 72 DEGREES	0.000

Total Length: 120.00 ft      Total Volume: 0.590 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

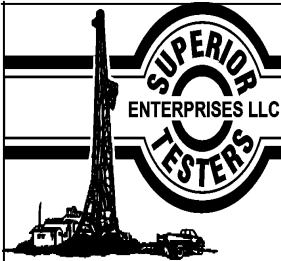
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: CHLORIDES 25,000





# DRILL STEM TEST REPORT

**GAS RATES**

WOOLSEY OPERATING COMPANY L.L.C

**GATES #1**

125 N MARKET STE 1000 WICHITA KS  
67202+1729

**27-34-10W BARBER**

Job Ticket: 16065

**DST#: 1**

ATTN: CURTIS COVEY

Test Start: 2010.10.06 @ 02:35:00

## Gas Rates Information

Temperature: 59 (deg F)

Relative Density: 0.65

Z Factor: 0.8

Gas Rates Table

Flow Period	Elapsed Time	Choke (inches)	Pressure (psia)	Gas Rate (Mcf/d)
2	20	0.13	4.50	1.68
2	30	0.13	5.00	1.87
2	40	0.13	6.00	2.25
2	50	0.13	7.00	2.62



## DRILL STEM TEST REPORT

Prepared For: **WOOLSEY OPERATING COMPANY L.L.C**

125 N MARKET STE 1000 WICHITA KS  
67202+1729

ATTN: CURTIS COVEY

### **27-34-10W BARBER**

#### **GATES #1**

Start Date: 2010.10.07 @ 04:38:00

End Date: 2010.10.07 @ 14:32:00

Job Ticket #: 16066                      DST #: 2

Superior Testers Enterprises LLC  
PO Box 138 Great Bend KS 67530  
1-800-792-6902

Printed: 2010.10.07 @ 15:04:56



# DRILL STEM TEST REPORT

WOOLSEY OPERATING COMPANY L.L.C

**GATES #1**

125 N MARKET STE 1000 WICHITA KS  
67202+1729

**27-34-10W BARBER**

Job Ticket: 16066

**DST#: 2**

ATTN: CURTIS COVEY

Test Start: 2010.10.07 @ 04:38:00

## GENERAL INFORMATION:

Formation: **MISSISSIPPI**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 07:27:00

Time Test Ended: 14:32:00

Test Type: Conventional Bottom Hole (Initial)

Tester: JARED SCHECK

Unit No: 3320-PRATT-112

**Interval: 4688.00 ft (KB) To 4703.00 ft (KB) (TVD)**

Reference Elevations: 1333.00 ft (KB)

Total Depth: 4703.00 ft (KB) (TVD)

1324.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 9.00 ft

**Serial #: 8419**

**Inside**

Press@RunDepth: 91.57 psia @ 4699.00 ft (KB)

Capacity: 5000.00 psia

Start Date: 2010.10.07

End Date: 2010.10.07

Last Calib.: 2010.10.07

Start Time: 04:38:00

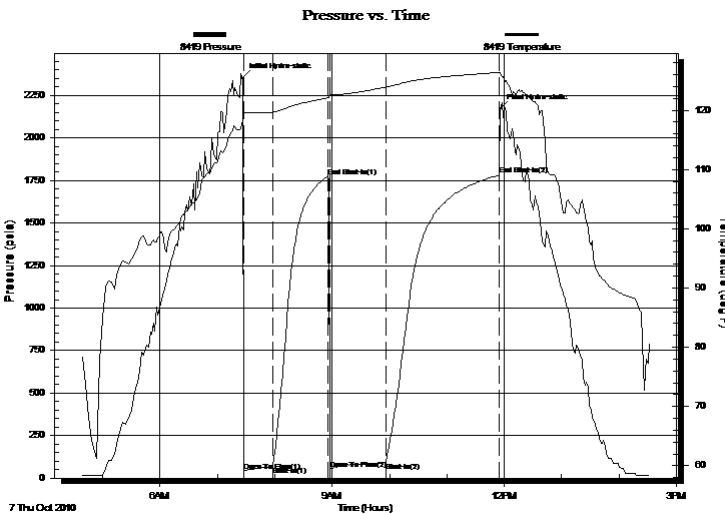
End Time: 14:32:00

Time On Btm: 2010.10.07 @ 07:26:00

Time Off Btm: 2010.10.07 @ 11:56:00

**TEST COMMENT:** 30/INITIAL OPEN:STRONG BLOW BUILT BOTTOM OF BUCKET IN 9 MINUTES  
60/INITIAL SHUT IN:VERY WEAK SURFACE BLOW  
60/FINAL OPEN:STRONG BLOW BUILT BOTTOM OF BUCKET IN 1 MINUTE  
120/FINAL SHUT IN:NO BLOW BACK

## PRESSURE SUMMARY



Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	2352.40	118.49	Initial Hydro-static
1	41.99	119.21	Open To Flow (1)
32	68.83	119.66	Shut-In(1)
90	1773.14	122.08	End Shut-In(1)
92	50.08	122.53	Open To Flow (2)
150	91.57	123.89	Shut-In(2)
269	1781.32	126.40	End Shut-In(2)
270	2170.45	126.36	Final Hydro-static

## Recovery

## Gas Rates

Length (ft)	Description	Volume (bbl)
80.00	SLIGHTLY GASSEY OIL CUT WATERY	10.39
0.00	10%GAS 10%WATER 30%MUD 50%OIL	0.00
120.00	OIL CUT MUDDY WATER	0.77
0.00	10%MUD 20%WATER 70%OIL	0.00
0.00	3640 GAS IN PIPE	0.00
0.00	CHLORIDES 25,000	0.00

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



# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

WOOLSEY OPERATING COMPANY L.L.C

**GATES #1**

125 N MARKET STE 1000 WICHITA KS  
67202+1729

**27-34-10W BARBER**

Job Ticket: 16066

**DST#: 2**

ATTN: CURTIS COVEY

Test Start: 2010.10.07 @ 04:38:00

**Tool Information**

Drill Pipe:	Length: 4483.00 ft	Diameter: 3.80 inches	Volume: 62.88 bbl	Tool Weight: 1000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 180.00 ft	Diameter: 2.25 inches	Volume: 0.89 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 63.77 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	4.00 ft			String Weight: Initial 62000.00 lb
Depth to Top Packer:	4688.00 ft			Final 63000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	15.00 ft			
Tool Length:	44.00 ft			
Number of Packers:	2	Diameter: 6.88 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4660.00	
Shut-In Tool	5.00			4665.00	
Hydraulic Tool	5.00			4670.00	
Jars	6.00			4676.00	
Safety Joint	2.00			4678.00	
Packer	5.00			4683.00	29.00 Bottom Of Top Packer
Packer	5.00			4688.00	
Perforations	10.00			4698.00	
Recorder	1.00	8419	Inside	4699.00	
Recorder	1.00	4005	Outside	4700.00	
Bullnose	3.00			4703.00	15.00 Bottom Packers & Anchor

**Total Tool Length: 44.00**



# DRILL STEM TEST REPORT

**FLUID SUMMARY**

WOOLSEY OPERATING COMPANY L.L.C

**GATES #1**

125 N MARKET STE 1000 WICHITA KS  
67202+1729

**27-34-10W BARBER**

Job Ticket: 16066

**DST#: 2**

ATTN: CURTIS COVEY

Test Start: 2010.10.07 @ 04:38:00

## Mud and Cushion Information

Mud Type: Gel Chem  
Mud Weight: 9.00 lb/gal  
Viscosity: 65.00 sec/qt  
Water Loss: 9.00 in<sup>3</sup>  
Resistivity: ohm.m  
Salinity: 3500.00 ppm  
Filter Cake: 1.00 inches

Cushion Type:  
Cushion Length: ft  
Cushion Volume: bbl  
Gas Cushion Type:  
Gas Cushion Pressure: psia

Oil API: deg API  
Water Salinity: ppm

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
80.00	SLIGHTLEY GASSEY OIL CUT WATERY MUD	0.393
0.00	10%GAS 10%WATER 30%MUD 50%OIL	0.000
120.00	OIL CUT MUDDY WATER	0.772
0.00	10%MUD 20%WATER 70%OIL	0.000
0.00	3640 GAS IN PIPE	0.000
0.00	CHLORIDES 25,000	0.000
0.00	RESISTIVITY .15 @72 DEGREES	0.000

Total Length: 200.00 ft      Total Volume: 1.165 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

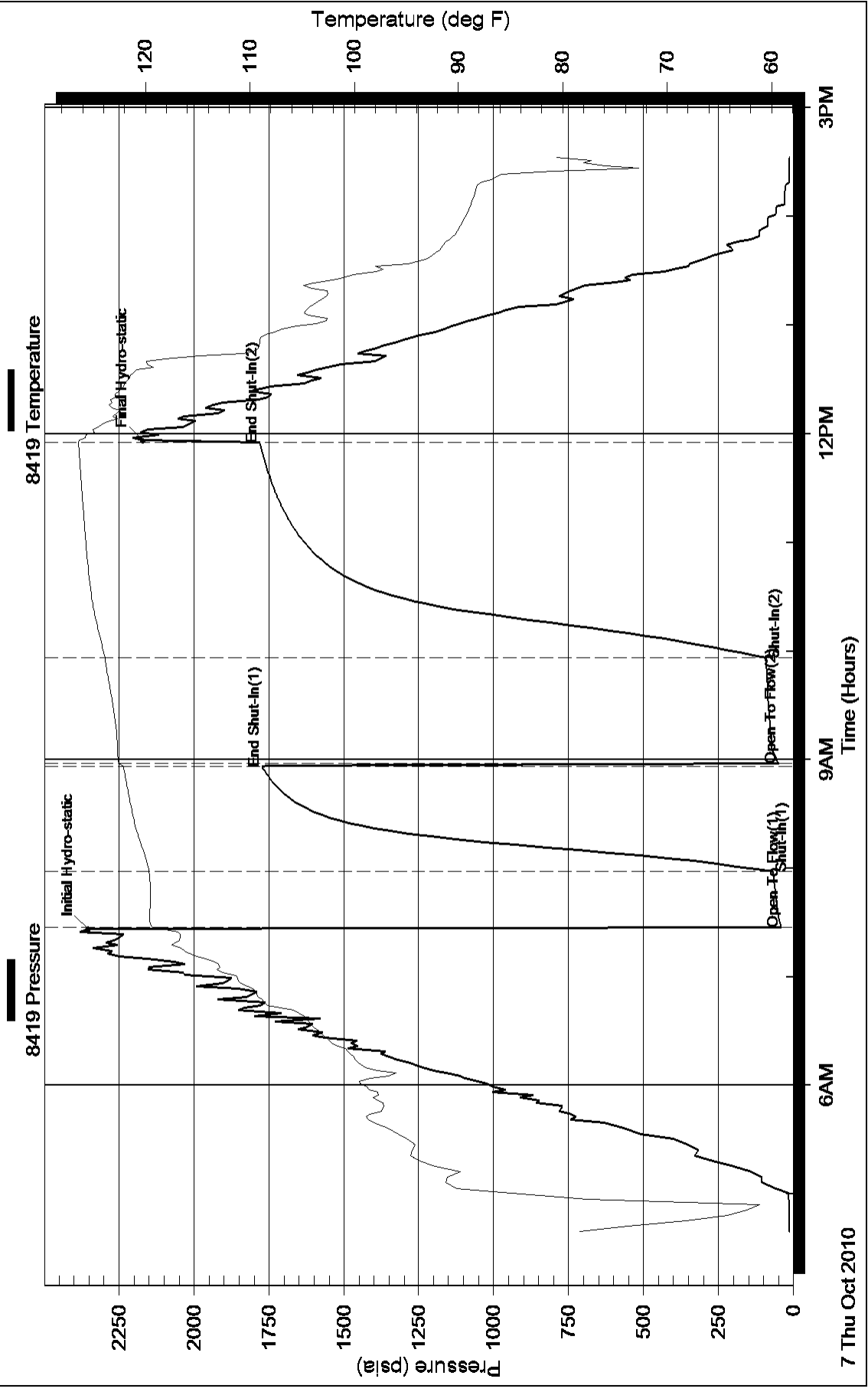
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

### Pressure vs. Time





## DRILL STEM TEST REPORT

Prepared For: **WOOLSEY OPERATING COMPANY L.L.C**

125 N MARKET STE 1000 WICHITA KS  
67202+1729

ATTN: CURTIS COVEY

### **27-34-10W BARBER**

#### **GATES #1**

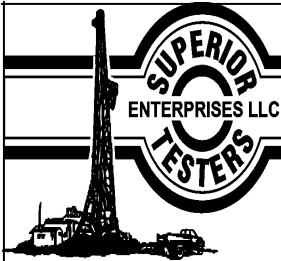
Start Date: 2010.10.08 @ 03:08:00

End Date: 2010.10.08 @ 14:04:00

Job Ticket #: 16067                      DST #: 3

Superior Testers Enterprises LLC  
PO Box 138 Great Bend KS 67530  
1-800-792-6902

Printed: 2010.10.11 @ 14:11:56



# DRILL STEM TEST REPORT

WOOLSEY OPERATING COMPANY L.L.C

**GATES #1**

125 N MARKET STE 1000 WICHITA KS  
67202+1729

**27-34-10W BARBER**

Job Ticket: 16067

**DST#: 3**

ATTN: CURTIS COVEY

Test Start: 2010.10.08 @ 03:08:00

## GENERAL INFORMATION:

Formation: **MISSISSIPPI**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 06:16:30

Time Test Ended: 14:04:00

Test Type: Conventional Bottom Hole (Initial)

Tester: JARED SCHECK

Unit No: 3320-112-PRATT

**Interval: 4704.00 ft (KB) To 4723.00 ft (KB) (TVD)**

Reference Elevations: 1333.00 ft (KB)

Total Depth: 3723.00 ft (KB) (TVD)

1324.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 9.00 ft

**Serial #: 8419**

**Inside**

Press@RunDepth: 123.97 psia @ 4719.00 ft (KB)

Capacity: 5000.00 psia

Start Date: 2010.10.08

End Date: 2010.10.08

Last Calib.: 2010.10.11

Start Time: 03:08:00

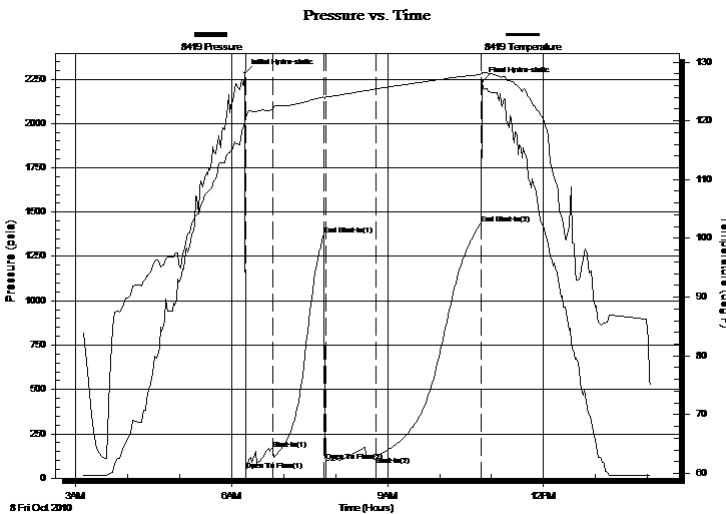
End Time: 14:04:00

Time On Btm: 2010.10.08 @ 06:15:30

Time Off Btm: 2010.10.08 @ 10:49:00

TEST COMMENT: 30/INITIAL OPEN:VERY WEAK SURFACE BLOW BUILT 1/2 INCH INTO WATER  
60/INITIAL SHUT IN:NO BLOW BACK  
60/FINAL OPEN:VERY WEAK SURFACE BLOW BUILT 3 1/2 INCHES INTO WATER  
120/FINAL SHUT IN:NO BLOW BACK

## PRESSURE SUMMARY



Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	2283.19	119.71	Initial Hydro-static
1	46.63	120.46	Open To Flow (1)
32	162.56	121.88	Shut-In(1)
91	1371.30	124.07	End Shut-In(1)
93	95.68	124.04	Open To Flow (2)
151	123.97	125.41	Shut-In(2)
272	1435.10	127.85	End Shut-In(2)
274	2234.24	128.11	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
120.00	SLIGHTLEY OIL CUT MUDDY WATER	0.59
0.00	5%OIL 30%MUD 65%WATER	0.00
60.00	SLIGHTLEY OIL CUT WATERY MUD	0.30
0.00	5%OIL 1%WATER 80%MUD	0.00
0.00	CHLORIDES 45,000 RESISTIVITY .1 @72	0.00

## Gas Rates

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





# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

WOOLSEY OPERATING COMPANY L.L.C

**GATES #1**

125 N MARKET STE 1000 WICHITA KS  
67202+1729

**27-34-10W BARBER**

Job Ticket: 16067

**DST#: 3**

ATTN: CURTIS COVEY

Test Start: 2010.10.08 @ 03:08:00

## Tool Information

Drill Pipe:	Length: 4508.00 ft	Diameter: 3.80 inches	Volume: 63.24 bbl	Tool Weight: 1000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 180.00 ft	Diameter: 2.25 inches	Volume: 0.89 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 64.13 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	13.00 ft			String Weight: Initial 62000.00 lb
Depth to Top Packer:	4704.00 ft			Final 62000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	19.00 ft			
Tool Length:	48.00 ft			
Number of Packers:	2	Diameter: 6.88 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4676.00	
Shut-In Tool	5.00			4681.00	
Hydraulic Tool	5.00			4686.00	
Jars	6.00			4692.00	
Safety Joint	2.00			4694.00	
Packer	5.00			4699.00	29.00 Bottom Of Top Packer
Packer	5.00			4704.00	
Perforations	14.00			4718.00	
Recorder	1.00	8419	Inside	4719.00	
Recorder	1.00	4005	Outside	4720.00	
Bullnose	3.00			4723.00	19.00 Bottom Packers & Anchor

**Total Tool Length: 48.00**



# DRILL STEM TEST REPORT

## FLUID SUMMARY

WOOLSEY OPERATING COMPANY L.L.C

**GATES #1**

125 N MARKET STE 1000 WICHITA KS  
67202+1729

**27-34-10W BARBER**

Job Ticket: 16067

**DST#: 3**

ATTN: CURTIS COVEY

Test Start: 2010.10.08 @ 03:08:00

### Mud and Cushion Information

Mud Type: Gel Chem  
Mud Weight: 9.00 lb/gal  
Viscosity: 52.00 sec/qt  
Water Loss: 12.80 in<sup>3</sup>  
Resistivity: ohm.m  
Salinity: 14000.00 ppm  
Filter Cake: 1.00 inches

Cushion Type:  
Cushion Length: ft  
Cushion Volume: bbl  
Gas Cushion Type:  
Gas Cushion Pressure: psia

Oil API: deg API  
Water Salinity: ppm

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
120.00	SLIGHTLEY OIL CUT MUDDY WATER	0.590
0.00	5%OIL 30%MUD 65%WATER	0.000
60.00	SLIGHTLEY OIL CUT WATERY MUD	0.295
0.00	5%OIL 1%WATER 80%MUD	0.000
0.00	CHLORIDES 45,000 RESISTIVITY .1 @72	0.000

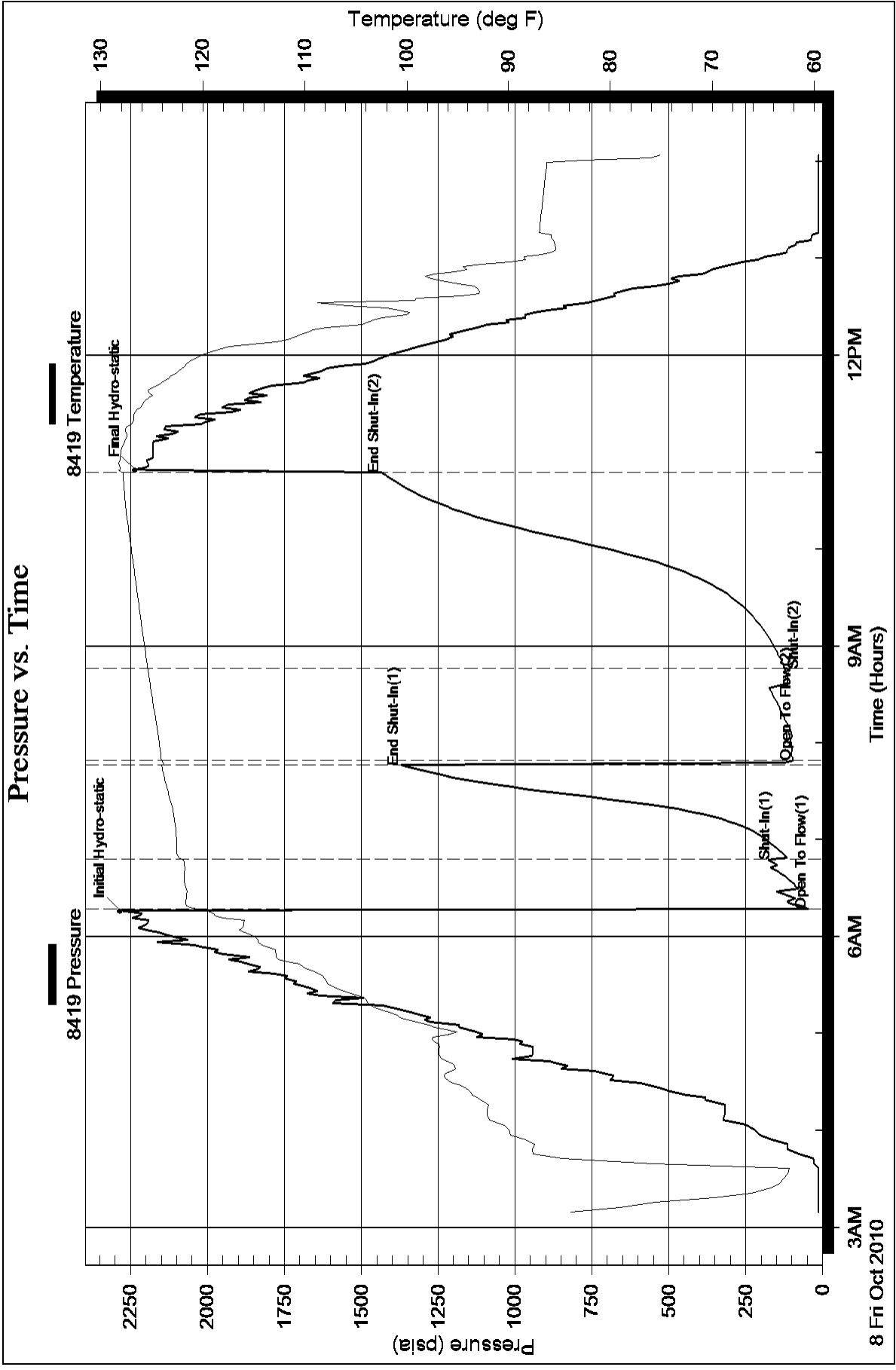
Total Length: 180.00 ft      Total Volume: bbl

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

Laboratory Name:      Laboratory Location:

Recovery Comments:

### Pressure vs. Time



# Covey

## The Well Watchers

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

Well Name: GATES #1

Location: Section 27 - Township 34 South - Range 10 West

License Number: 15-007-23,599 - 00-00

Region: Barber County, KS.

Spud Date: 29 September 2010

Drilling Completed: 11 October 2010

Surface Coordinates: 660' FNL & 1,980' FEL  
( C NW NE )

Bottom Hole Coordinates:

Ground Elevation (ft): 1,323' K.B. Elevation (ft): 1,332'

Logged Interval (ft): 3,400' To: 5,380' Total Depth (ft): 5,380'

Formation: Kanwaka Shale -----> Arbuckle

Type of Drilling Fluid: Chemical; Low Solids (non-dispersed)

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

### OPERATOR

Company: WOOLSEY OPERATING COMPANY, LLC

Address: 125 North Water, Suite 1000

Wichita, Kansas 67202

(316) 267-4379

Geologist:

Brian Wilhite

### GEOLOGIST

Name: Curtis Covey

Company: COVEY - The Well Watchers

Address: 6548 Bedford Circle

Derby, Kansas 67037

Office: (316) 776 - 0367

wellsitegeo1@gmail.com

Cell: (316) 217-4679

KB: 1,332'

**FORMATION TOPS**

GL: 1,323'

Formation	Rotary Sample Depth (Datum)	E-log Depth (Datum)
Heebner SH .....	3,590' (-2,258') .....	3,584' (-2,252')
Toronto LS .....	3,608' (-2,276') .....	3,600' (-2,268')
Douglas Gp .....	3,627' (-2,295') .....	3,620' (-2,288')
Haskell Lm .....	3,853' (-2,521') .....	3,846' (-2,514')
Stalnakner Sd .....	3,901' (-2,569') .....	3,894' (-2,562')
KC .....	4,175' (-2,843') .....	4,170' (-2,838')
Stark SH .....	4,325' (-2,993') .....	4,316' (-2,984')
Hushpuckney SH .....	4,369' (-4,037') .....	4,360' (-3,028')
B / KC .....	4,424' (-3,092') .....	4,413' (-3,081')
Pawnee LS .....	4,527' (-3,195') .....	4,522' (-3,190')
Cherokee Gp .....	4,576' (-3,244') .....	4,566' (-3,234')
Mississippian .....	4,674' (-3,342') .....	4,666' (-3,334')
Kinderhook Sh .....	NC .....	4,916' (-3,584')
Woodford Sh .....	5,006' (-3,674') .....	4,996' (-3,664')
Viola .....	5,070' (-3,738') .....	5,060' (-3,728')
Wilcox Sand .....	5,296' (-3,864') .....	5,184' (-3,852')
McLish Sand .....	5,294' (-3,962') .....	5,283' (-3,951')
Arbuckle .....	5,321' (-3,989') .....	5,312' (-3,980')

RTD: 5,380' LTD: 5,370' ATD: 5,370'

E-Loggers: Halliburton  
Liberal, Kansas

Rotary sample depth is 5' to 10' low to E-logger's depth.

2010

**DAILY DRILLING STATUS -- SEPTEMBER & OCTOBER**

2010

14-3/4" Hole	7-7/8" Hole	7-7/8" Hole
29 Sept -- Spud @ 11:30am. Drill to 218'. Run 10-3/4" casing. Set casing @ 218'. Cemented w/ 230 sx 60/40 Poz (2% gel+3%CC). [Allied] Cement did circulate. Plug down @ 8:15pm. WOC.	30 Sept -- WOC. 7am @ 218'. Under surface casing @ 8am with PDC bit. 1 Oct -- 7am @ 1,749'. 2 -- 7am @ 3,034'. Bit Trip @ 3,379'. Resumed Drilling @ 9pm. Drilling with Tri-Cone Bit. 3 -- 7am @ 3,614'. 4 -- 7am @ 4,186'. 5 -- S/T: 15 stands. 7am @ 4,550'. Start & ... 6 -- 7am @ 4,687'. Finish DST #1: MISS (4,550'-4,687'). Relevel Rig. Resumed Drilling @ 9:32am.	7 Oct -- DST #2: MISS (4,688'-4,703'). Resumed Drilling @ 7:30pm. 7am @ 4,703'. Start & ... 8 -- 7am @ 4,723'. Finish DST #3: MISS (4,704'-4,723'). Resumed Drilling @ 7pm. 9 -- 7am @ 4,883'. 10 -- 7am @ 5,206'. Bit Trip @ 5,332'. 11 -- Resumed Drilling @ 3:40am. 7am @ 5,360. RTD (5,380') @ 8:10am. Work on Drawwork chain.  E-LOG .... (Halliburton)

### DST #1 - MISS CHERT

Rotary Depth: 4,550' - 4,687'  
Logger's Depth: 4,541' - 4,678'

Recovery: GTS 15" 2OP  
60' Wtr Mud (30%M,70%W)  
60' Mud

Recovery Water: (35,000 ppm)  
System Water: (3,500 ppm)

IFP: 138# -130# /30"  
ISIP: 1,278# / 60"  
FFP: 117# -121# / 60"  
FSIP: 1,621# / 120"  
129 deg F  
MH: 2,328# - 2,058#

IF: Strong Blow. BOB in 15 minutes.  
ISI: Very Weak Surface Blow back.  
FF: Strong Blow. BOB in 1 minutes. GTS in 15 minutes.  
FSI: No Blow back.

Total Fluid: 120'

Reported Rw =  
0.15 ohms @ 72 deg F

Gas Guage -- 2OP  
15" Gas to Surface  
20" - 1.68 MCF/D  
30" - 1.87 MCF/D  
40" - 2.25 MCF/d  
50" - 2.62 MCF/D

Superior Testing, Inc.  
Great Bend, KS.

### DST #2 - MISS CHERT

Rotary Depth: 4,688' - 4,703'  
Logger's Depth: 4,679 - 4,694'

Recovery: 3,640' Gas in Pipe  
120' SI Wtr cut Muddy OIL (10%M, 20%W,70%O)  
80' SI Wtr cut Muddy OIL (10%G,10%W,30%M,50%O)

Recovery Water: (25,000 ppm)  
System Water: (3,500 ppm)

IFP: 41# -68# / 30"  
ISIP: 1,773# / 60"  
FFP: 50# -91# / 60"  
FSIP: 1,781# / 120"  
126 deg F  
MH: 2,352# - 2,170#

IF: Strong Blow. BOB in 9 minutes.  
ISI: Very Weak Surface Blow back.  
FF: Strong Blow. BOB in 1 minutes. GTS in 15 minutes.  
FSI: No Blow back.

Total Fluid: 200'

Reported Rw =  
0.15 ohms @ 72 deg F

Superior Testing, Inc.  
Great Bend, KS.

### DST #3 - MISS

Rotary Depth: 4,704' - 4,723'  
Logger's Depth: 4,795' - 4,714'

Recovery:  
120' SI OIL cut Muddy Wtr (5%O, 30%M,65%W)  
60' SI OIL cut Wtry Mud (5%O,15%W,80%M)

Recovery Water: (45,000 ppm)  
System Water: (14,000 ppm)

IFP: 48# -110# / 30"  
ISIP: 1,371# / 60"  
FFP: 95# -127# / 60"  
FSIP: 1,435# / 120"  
127 deg F  
MH: 2,284# - 2,234#

IF: Very Weak Surface Blow building to 1/2 inch in 30 minutes.  
ISI: No Blow back.  
FF: Strong Blow. BOB in 1 minutes. .  
FSI: Very Weak Surface Blow building to 3-1/2 inches in 60 minutes.

Total Fluid: 180'

Recovery Water -  
Mud Engineer: (35,000 ppm)

Reported Rw =  
0.1 ohms @ 72 deg F

Superior Testing, Inc.  
Great Bend, KS.

Note: Intermittent Plugging on both flow periods.

## HOLE DEVIATION (218' - 5,380')

DEPTH / TVD	— INCLINATION	AZIMUTH	NORTH	SOUTH	EAST	WEST	DOGLEG deg/100'
218' /	-- 0.50 (Surface)						
1,058' /	-- 0.75						
1,496' /	-- 0.50						
1,998' /	-- 0.75						
2,504' /	-- 0.25						
3,034' /	-- 0.25						
3,379' /	-- 0.25 (Bit Trip)						
4,007' /	-- 0.75						
4,569' /	-- 0.25						
4,687' /	-- 1.00 (DST #1)						
5,332' /	-- 1.25 (Bit Trip)						
5,380' /	-- 1.00 (RTD)						

### TOMCAT DRILLING, LLC.

100 South Main, # 508  
Wichita, Kansas 67202

(316) 262-8554

Drilling Rig #1 - (620) 309-8164

Toolpusher: Glenn Payne (620) 282-9164

Mud Pump(s):  
Main: Ideco MM-550  
6" x 15" @ 60 SPM.

Standby: National K-538  
6-1/2" x 14 @ 48 SPM.

Pump Pressure: 900 psi @ standpipe.

Weight Indicator Check @ 4,514':  
String Weight calculates 112,297#.

Weight Indicator shows 110M; therefore,  
weight indicator light by about 2 %.

Dry Wt of Collars: 52,239#  
[547" x 95.5#/ft = 52,239#]  
Drill Collars: 6-7/16" OD x 2-3/8" ID  
Buoyancy Wt of Collars: 45,160#  
[51,212# x .860 (9.2ppg) = 45,160#]  
Available WOB: 38,386#  
[45,160# x .85 = 38,386#]  
Contractor reports running  
38M/40M on bit  
[At & See Conc @ 3,671' for details]  
Tension on drill string - 6,774#  
[15% Design Factor]  
to keep drill string straight.

Weight Indicator light by 17.6%; therefore,  
38M/40M showing has true WOB 44+/47M

On main hole (tri-cone), 70 - 90 RPM.

### BIT RECORD

DATE	SIZE	TYPE	JET SIZE	DEPTH IN / OUT	CUM. FT.	HOURS	ROP
29 Sept	14-3/4"	HTC GTX-91	16 - 16 - 16	0' / 218'	218'	6.25	34.9
30 Sept	7-7/8"	HTC DP506E	6 / 15's	218' / 3,379'	3,161'	48.50	65.2
2 Oct	7-7/8"	HTC GXE-28C	15 - 15 - 15	3,379' / 5,332'	1,953'	100.00	19.5
11 Oct	7-7/8"	HTC GXE-28C	15 - 15 - 15	5,332' / 5,380'	48'	4.50	10.7

## ROCK TYPES

### POROSITY

	Earthy
	Fenest
	Fracture
	Inter
	Moldic
	Organic
	Pinpoint
	Vuggy

### LITHOLOGY

	Anhy
	Bent
	Brec
	Cht
	Clyst
	Coal
	Granite wash
	Congl
	Dol lmst
	Silty dol
	Calc dol
	Dol 2
	Dol
	Gyp
	Igne
	Lmst 2

	Lmst
	Meta
	Mrlst
	Salt
	Shale 3
	Shale 3
	Shale
	Shcol
	Shgy
	Sltst
	Ss
	Till
	Ss 2

### MINERAL

	Mica
	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
	Copper
	Ooliticastic
	Oolite
	Sucrosic
	Dark specks

	Silty dol
	Anhy
	Arg
	Bent
	Coal
	Dol
	Dol ls
	Gyp
	Ls
	Mrst
	Calc dol
	Sltstrg
	Ssstrg
	Chalk
	New symbol

### SHOW

	Oil
	Spotted
	Ques
	Dead
	Gas
	Oil/gas
	Bed contact

### STRINGER

	Calc dol
--	----------

## ACCESSORIES

	Algae
	Amph
	Belm
	Bioclst
	Brach
	Bryozoa

	Cephal
	Coral
	Spore
	Crin
	Echin
	Fish

	Foram
	Fossil
	Gastro
	Oolite
	Ostra
	Pelec

	Pellet
	Pisolite
	Plant
	Strom

## OTHER SYMBOLS

### ACTIVITY

	Lost circulation
	Circulate for sample 2
	Circulate for samples
	Rtd

Bit trip

### INTERVAL

	Core
	Dst

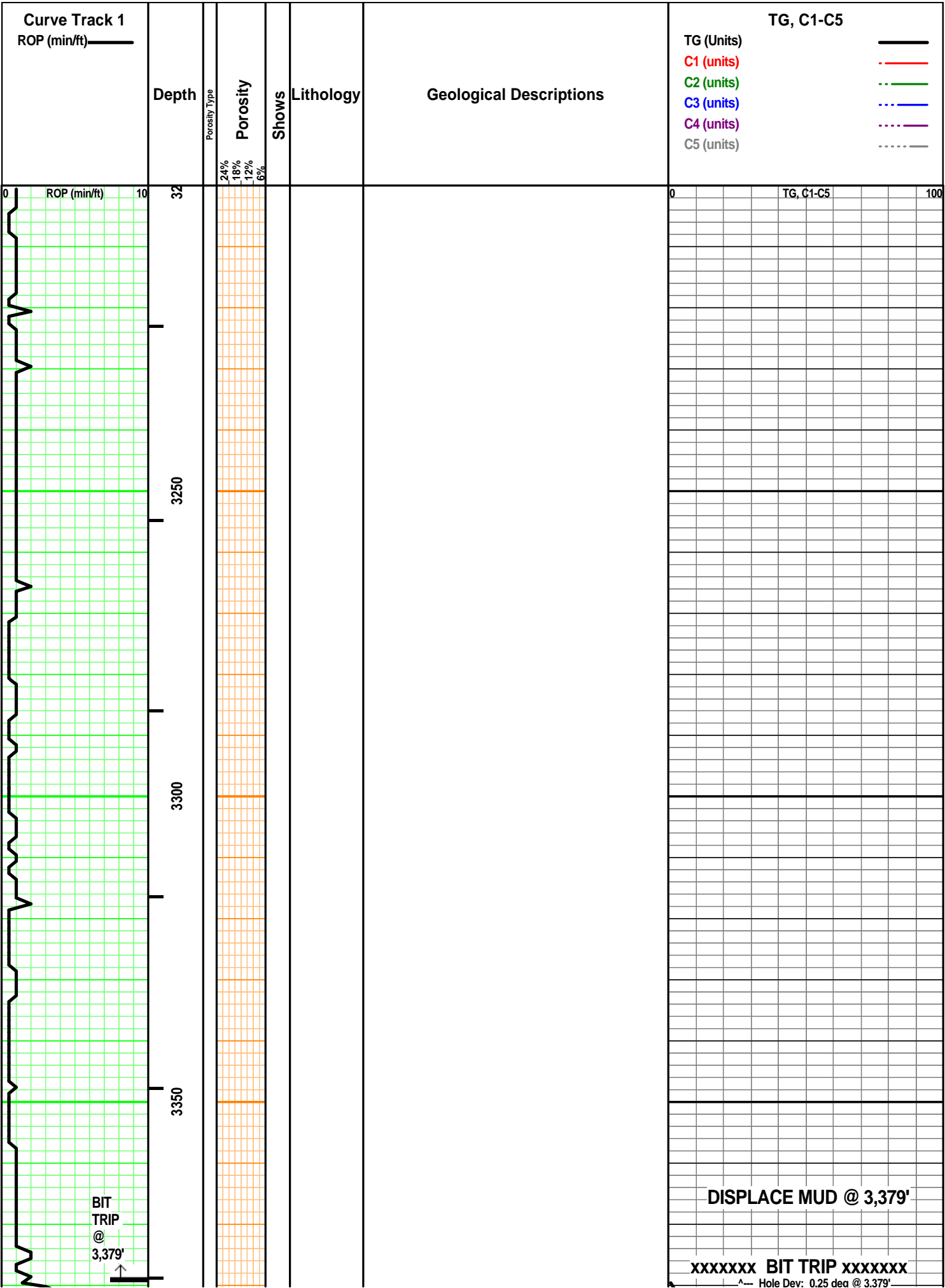
Jammed core

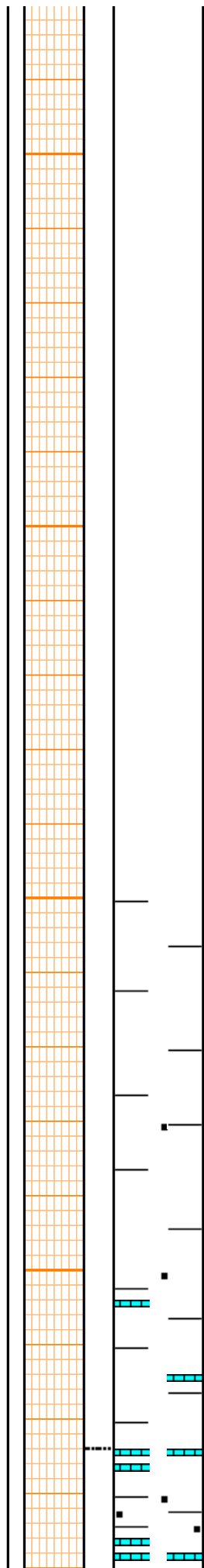
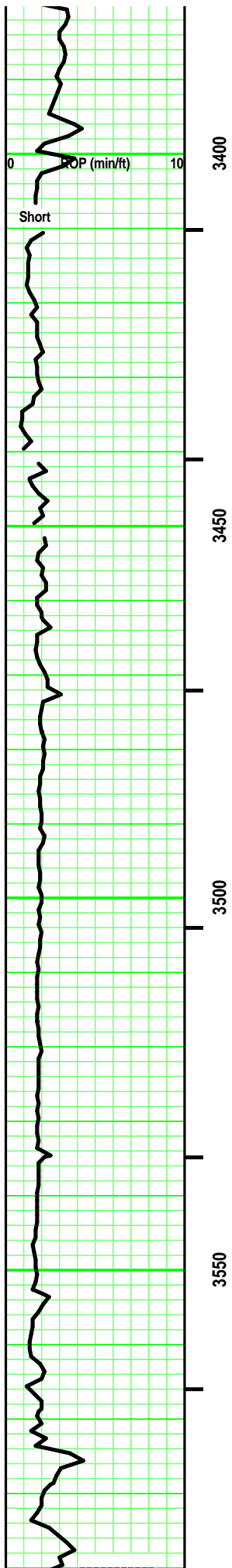
Sidewall

### EVENT

	Connection
	Rft







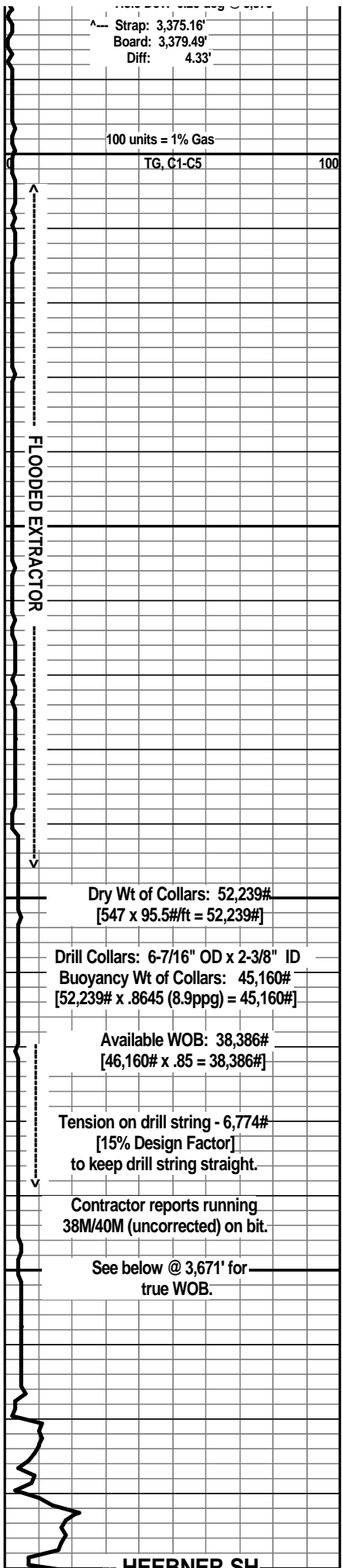
Misc Caving

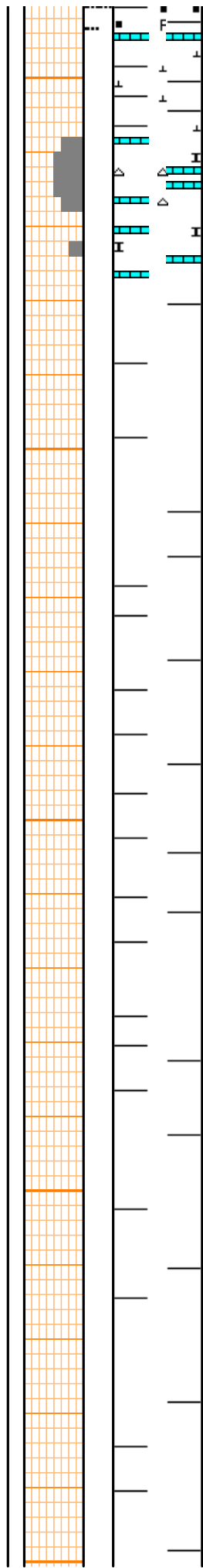
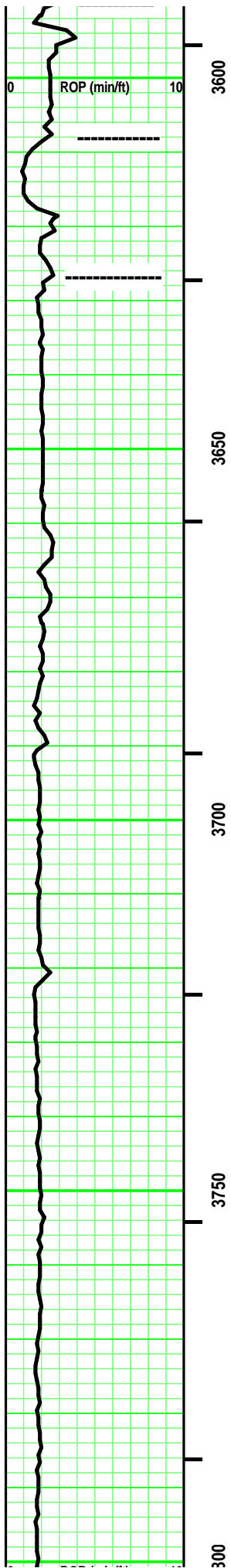
Misc Caving

SH - Med/ Dark Gray. Sing. silty & soft. Massive. limy streaks at depth.

Misc Caving

Interbedded SH & LS:  
 SH - Med / Dark Gray. Black, carb with depth. Sing. tr calc. some Black & carb with depth. tr pyritic.  
 LS - some Off Tan, mostly Grays - Mot. Micro-some XF-xln. xln por. argil/shaly in part. rare Re-xln. Firm. No/ tr vis por.





SH - Black. Carb. Fissile. tr pyritic. Grays, limy streaks & in part with depth.

Misc Caving

few pcs LS - Off White/ Tan. Sing/ tr Mot. tr Crypto-, few Micro- few XF-xln. xln por. some Re-xln. [CHERT - Tan/ White. Sing. Opaque. No Inclusions. No tripolitic. Fresh.] Chalky in part. Argil/ shaly in part near top. No/ tr vis por.

SH - Med/ Dark Gray. Sing. Massive. Silty in part. few dark specks in part.

Misc Caving

few pcs SS - Clear/ Off White/ Pale Lt Gray. Mot. rare Sil/ mostly VF qtz/ tr F qtz grains. SR. Hi/ tr mod sort. Mod sph. some Vitreous/ mostly Frosted luster. Calc/Si cement. argil infill in part. Soft. No/ most tr vis por.

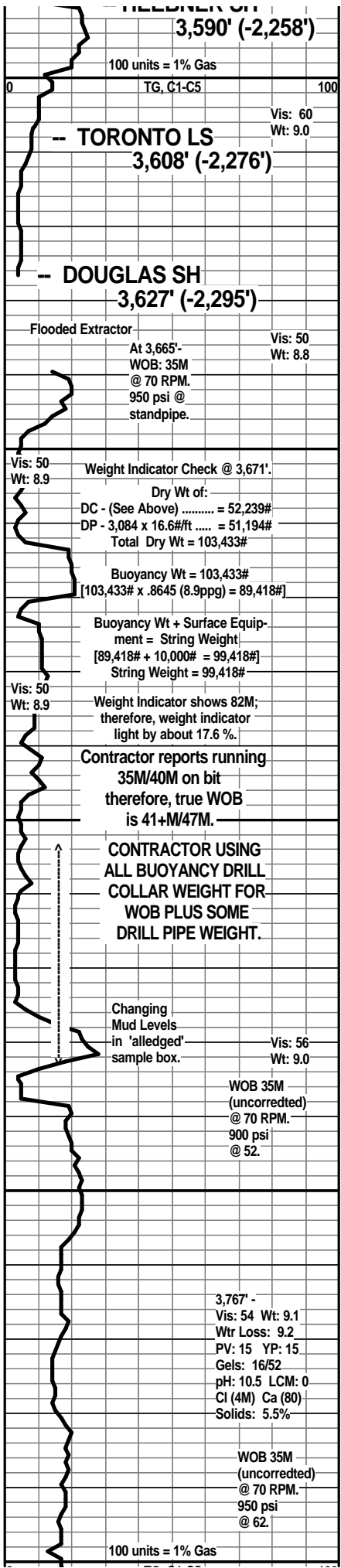
SH - Med/ Dark Gray. Sing. Massive. Silty in part. few dark specks in part.

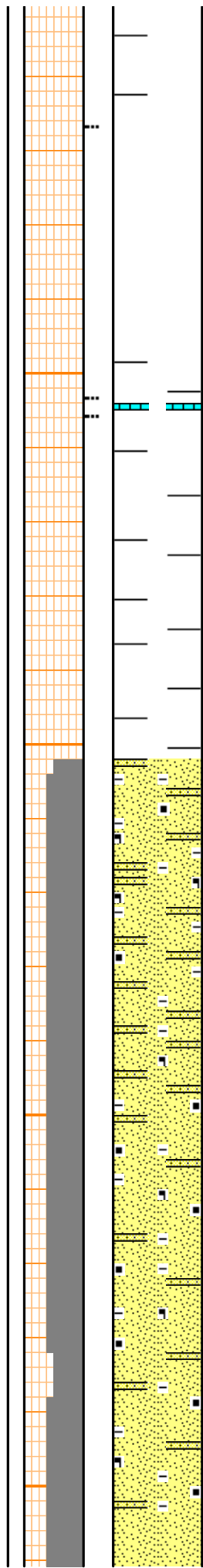
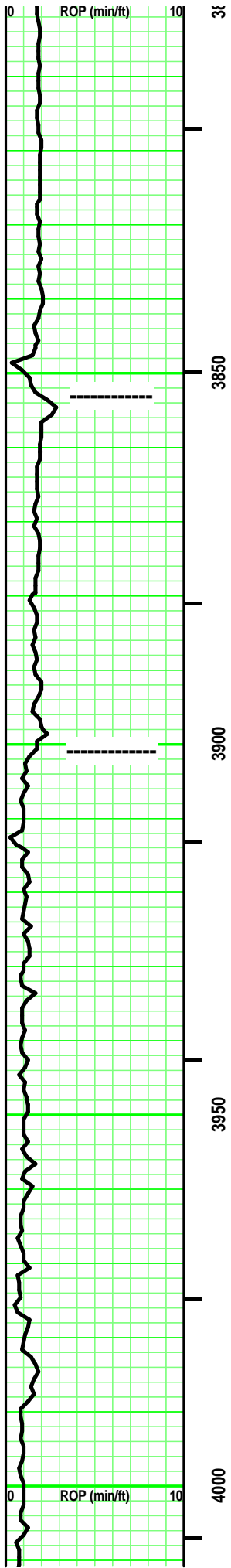
Misc Caving

SH - Med/ Dark Gray. Sing. Massive. Silty in part. few dark specks in part.

Misc Caving

SH - Med/ Dark Gray. Sing. Massive. Silty in part. few dark specks in part.





Misc Caving

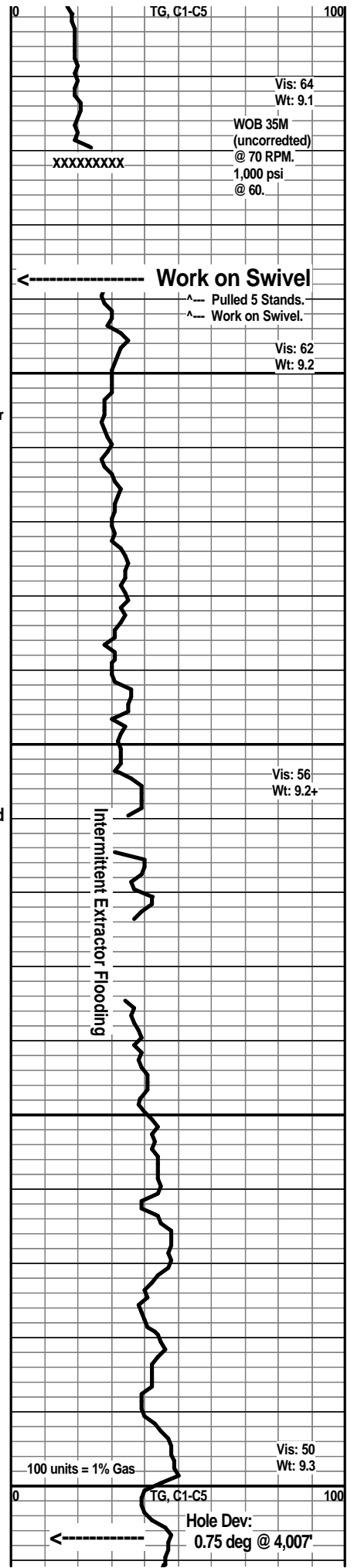
**HASKELL LM 3,853' (-2,521')**

few pcs: LS - Tan/Dark Tan. Sing. Crypto/Micro-xln. xln por. tr Re-xln. Dense. No/ tr vis por.

SH - Med/ Dark Gray, Silverish Gray. Sing. Soft. Massive. misc minute inclusions. tr silty in part.

**STALNAKER SD 3,901' (-2,569')**

SS - Clear/ Lt Gray/ some Off White. some Sing/ mostly Mot. Silt/ XF qtz grains. SA/SR. Hi sort to Mod sort with depth. Mod sph. tr Vit/ mostly frosted luster. Hi argil/ shaly. tr minute dark specks/ some carb flecks. some micaeous mat'l. rare pyritic in part. Si & some Calc cement. Point/ some sutured grain contact. Tr/ mostly Fair vis por. mostly clusters/ some grains.



Vis: 64  
Wt: 9.1

WOB 35M  
(uncorrected)  
@ 70 RPM.  
1,000 psi  
@ 60.

XXXXXXXXXX

**Work on Swivel**

^-- Pulled 5 Stands.  
^-- Work on Swivel.

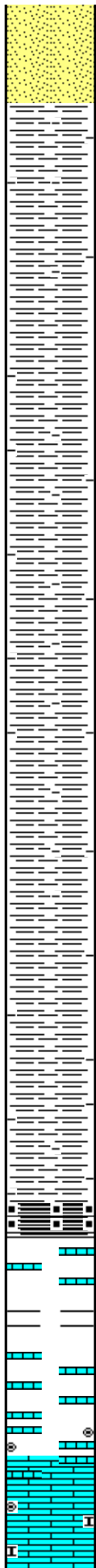
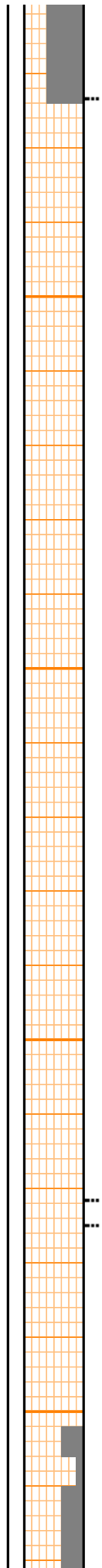
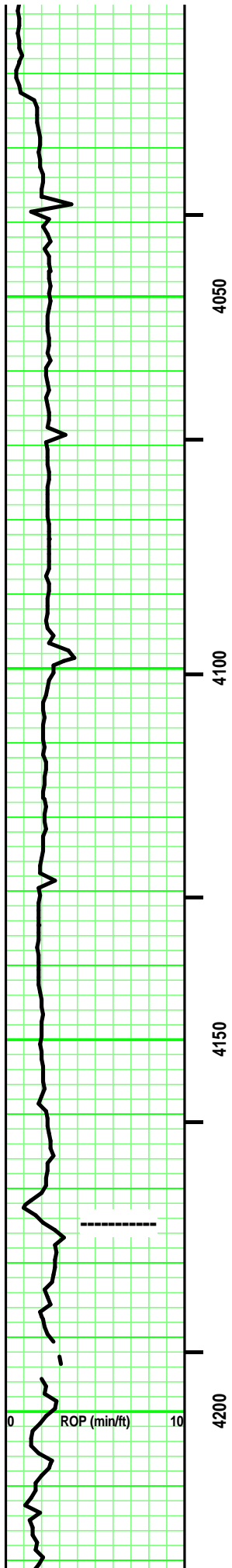
Vis: 62  
Wt: 9.2

Vis: 56  
Wt: 9.2+

Intermittent Extractor Flooding

Vis: 50  
Wt: 9.3

Hole Dev:  
0.75 deg @ 4,007'



SH - Med/ Dark Gray, some Silver Gray/ tr Greenish Gray. Sing. Soft. Massive. misc minute inclusions. tr silty in part.

SH - Med/ Dark Gray, some Silver Gray/ tr Greenish Gray. Sing. Soft. Massive. tr/ some misc minute inclusions. Blocky in part.

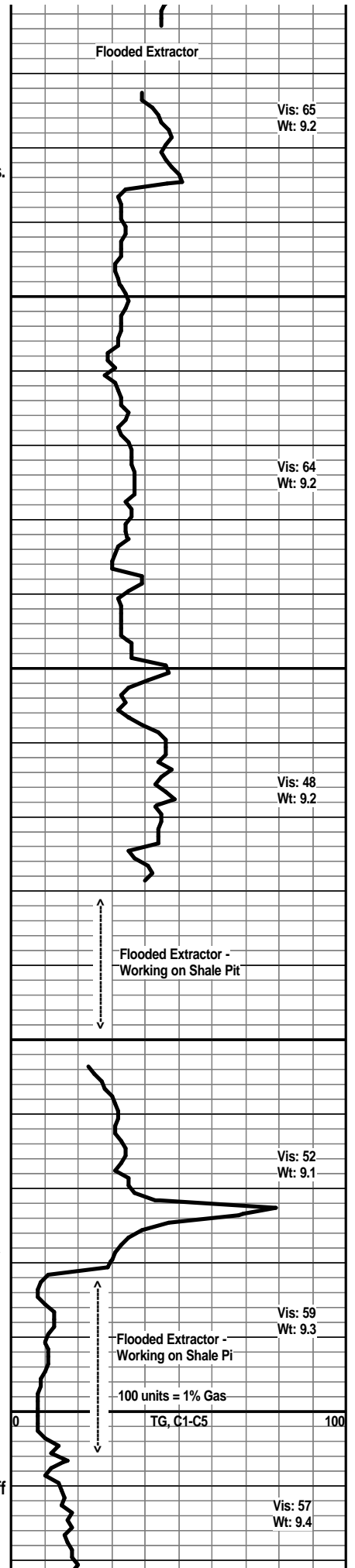
SH - Med/ Dark Gray, some Silver Gray/ tr Greenish Gray. Sing. Soft. Massive. tr/ some misc minute inclusions.

----- KC 4,175' (-2,843')  
 few pcs: LS - Med/ Dark Tan. Sing. XF/ Micro-xln. xln por. tr argil in part. Firm. No/ tr vis por.

SH - Med/ Dark Gray. Sing.

Intermixed / Interbedded LS's  
 LS - Tan/ Off White. Mot. Micro- VF Oolites and tr to some Oolcasts. rare Clear/ mostly Tan Matrix (mostly Opaque). tr/ some subchalky in part. Fair/ Good vis por.

LS - Tans/ some Off White. Sing/ tr Mot. VF/ Micro-xln. xln por. rare Re-xln. [tr CHERT - Tan/ Off White. Sing. Opaque to semitransparent. No tripolitic.] Firm in part. No/ tr vis por.



Vis: 65  
Wt: 9.2

Vis: 64  
Wt: 9.2

Vis: 48  
Wt: 9.2

Flooded Extractor - Working on Shale Pit

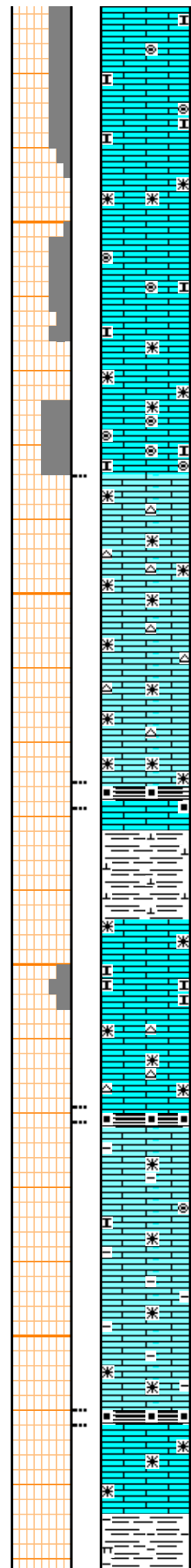
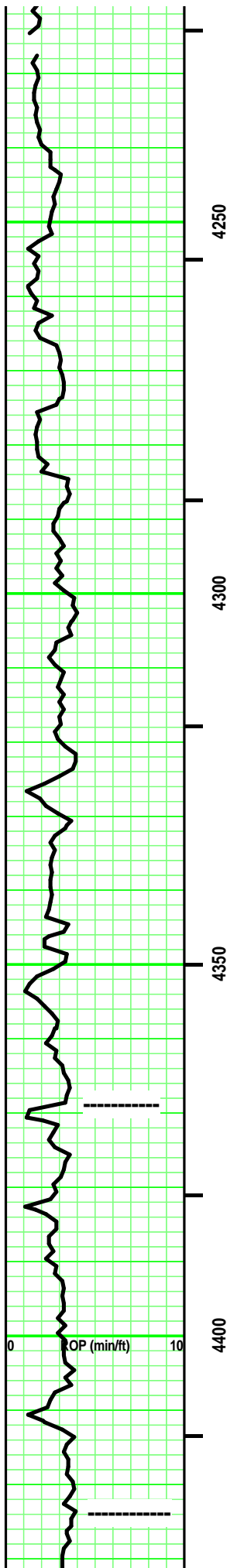
Vis: 52  
Wt: 9.1

Flooded Extractor - Working on Shale Pi

Vis: 59  
Wt: 9.3

-100 units = 1% Gas  
TG, C1-C5

Vis: 57  
Wt: 9.4



LS - Tans (Grayish, Greenish, Lt & Dark) / Off White. tr Light Gray. Sing/ mostly Mottled. mixture of Crypto-/ Micro-/ tr XF - xln. xln por. (some Chert: Clear/ Tan/ Lt Gray. Mot. Opaque to Transparent. tr Inclusions. No tripolitic.) Subchalky / VF Oolites in part. some Re-xln. tr/ some argil in part or interbedded. mostly Firm. No/ tr vis por.

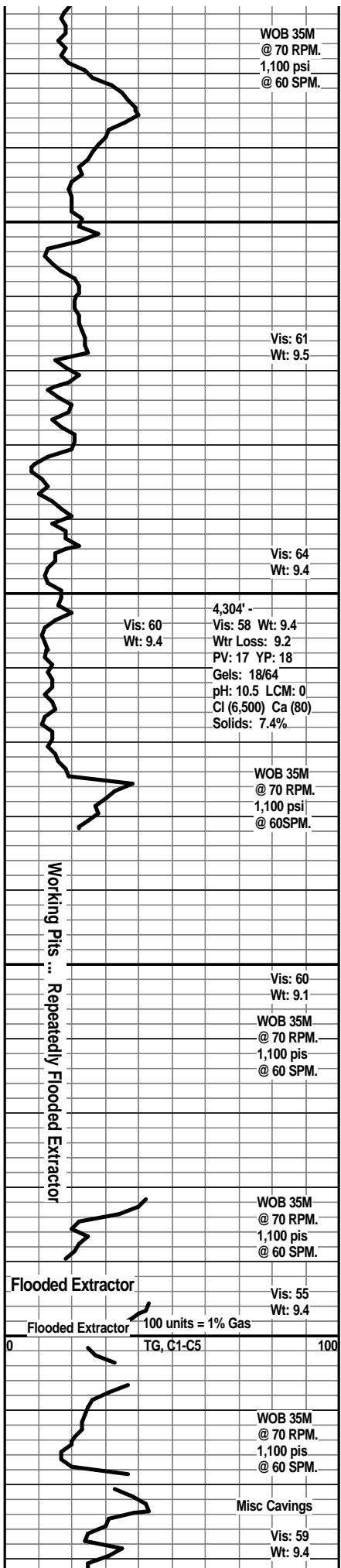
----- STARK SH 4,325' (-2,993')  
 SH - Black. Sing. Carb. Soft.  
 LS - Similar to (1) below.  
 SH - Med Gray. Sing. calc in part. Firm.

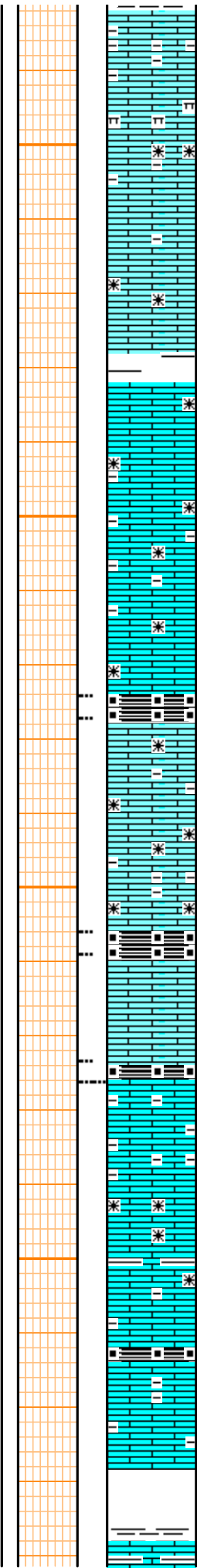
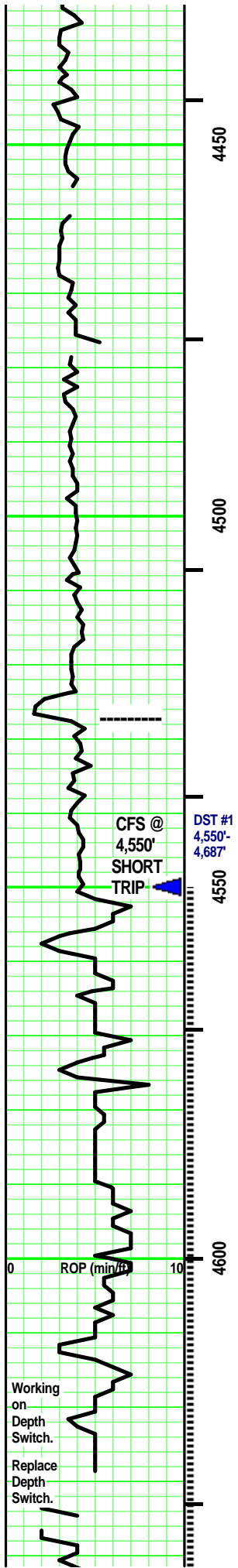
LS (1) - Tan/ Off White. Sing/ tr Mot. Micro-/ XF-xln. xln por. tr subchalky. some Re-xln. rare fossil frag. tr argil/ shale interbedded. (some Chert: Clear/ Tan/ Lt Gray. Mot. Opaque to Transparent. No Inclusions. No tripolitic.) Firm. No/ tr vis por.

----- HUSHPUCKNEY SH 4,369' (-3,037')  
 SH - Black. Sing. Carb. Soft. tr pyritic.  
 LS - Tans/ Off White. tr/ some Lt/ Med Gray. Sing/ some Mot. XF-/ Micro-xln. xln por. some argil/ shaly in part. [rare chalky/ VF Oolites (ghost) in part.] some Re-xln. Firm. No/ tr vis por.

SH - Black. Sing. Carb.  
 LS - Tans/ Lt Gray. Mot. VF-/ XF-xln. xln por. argil in part. Firm. No/ tr vis por.

----- B / KC 4,424' (-3,092')  
 Interbedded / Intermixed LS & SH





LS - Tan/ Grays. Sing/ Mot. XF-/ Micro-xln. xln por. argil/ shaly in part. misc 'rubble' inclusions. Marly in part. No/ tr vis por.

SH - Lt / Med Gray, some Greenish Gray. some limy streaks.

SH - Black. Sing. carb. tr fissile.

LS - Tans/ some Lt Gray & tr Off White. Sing/ some Mot. XF-/ Micro-xln. xln por. some Re-xln. some argil/ shaly in part. Firm. No/ tr vis por.

SH - Black. Sing. Carb. Soft. PAWNEE 4,527' (3,195')

LS - Med & Dark Tan/ Lt Gray. Sing/ some Mot. XF-/ some Micro-xln. xln por. some Re-xln. some argil/ shaly in part. No/ tr vis por.

SH - Black, Carb. Sing. Soft.

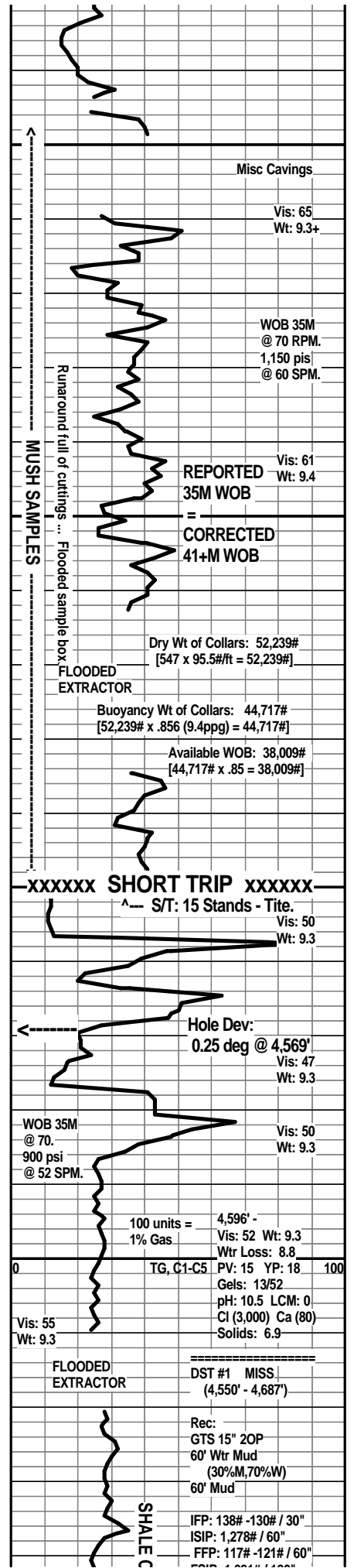
LS - Tan/ some Lt Gray. Sing. Micro-/ XF-xln. xln por. Re-xln. tr argil/shale. mostly Firm. No/ tr vis por.

SH - Black, Carb. Sing. Soft. CHEROKEE GP 4,576' (-3,244')

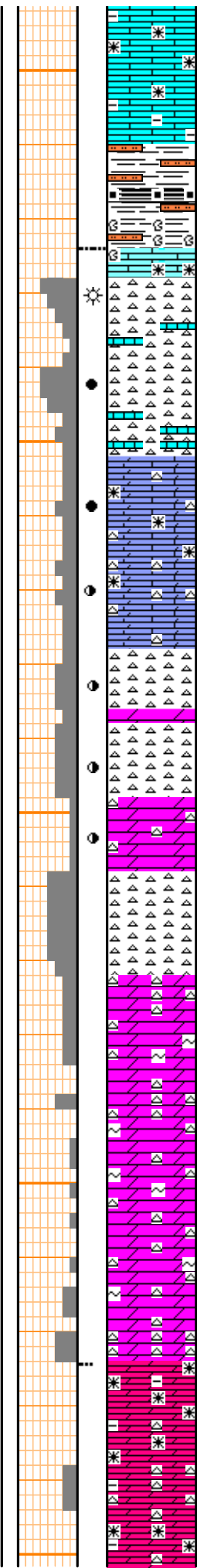
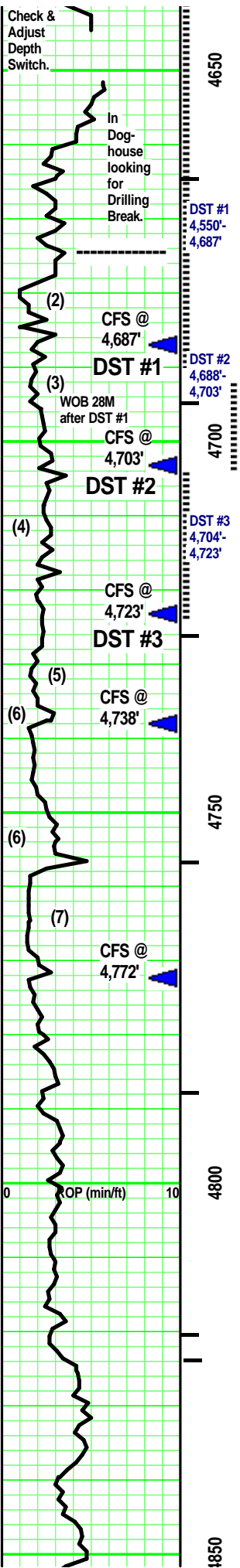
Interbedded & Intermixed SH & LS

SH - Med/ Dark Gray, some Greenish Gray. some Black, carb. soft. tr pyritic. some limy streaks in part.

LS - Tans/ some Lt Gray, Med Gray with depth. Sing/ tr Mot. XF-/ Micro-xln. xln por. some Re-xln. argil in part. tr fossil frags. some, minute limy frags. mostly Firm. mostly No/ tr vis por.







Siltstone - Pale Blue/ tr Greenish Blue. Sing. some highly limy. misc inclusions minute (pellets/ nodules/ rare fossil frags).

Add Siltstone at depth - Dark Green/ some orangish tan, greenish brown. rare brownish red, brown. Grays (mixed).

**MISS 4.674' (-3.342')**

CHERT (2) - Tans/ Off White. Mot. Opaque to some semi-transparent. mostly No/ rare inclusions (fossil frags, tr glauc frags. Spotted/ some Uniform Tripolitic. Fair/ Good vis por on trip por. ?/ Faint odor. Barren/ some Spotted/ rare Uniform Yellow fluorescence. No free oil. two minute gas bubble. Mixture of: some Barren, some spotted & rare Uniform Lt Brown stain on tripolitic porosity. No/ some cut & residual. No/ some acid & residual.

CHERT (3) - similar to (2) above. No glauc. ?/ Faint odor. Barren/ some Spotted/ rare Uniform Yellow fluorescence. some minute spheres of Black free oil & tr minute gas bubbles in tripolitic por. Mixture of: some Barren, some spotted & rare Uniform Lt Brown stain on tripolitic porosity. No/ some cut & residual. No/ some acid & residual.

LS (Dol) (4) - Off White/ Lt Tan. Sing. Micro-xln. xln & mostly sucrosic por. (CHERT - White/ Tan. some Barren/ some spotted & uniform tripolitic. Opaque to semitransparent. tr/ some fossil frags.) partly Firm. tr/ Fair vis por.

?/ Faint odor. some spotted/ some uniform Yellow fluorescence. A/C, some minute Dark Brown to Black free oil spheres on por. No free gas. some spotted/ some uniform Lt Brown Stain. tr Med Brown 'tarry' smears. Weak Pos/ Pos cut & residual. Weak Pos/ Pos acid/ residual.

CHERT (5) - White/ Tan/ some Dark Tan, some Lt Silverish Gray. Sing/ Mot. some Barren/ some spotted & uniform tripolitic. Opaque to semitransparent. some/ lots white fossil frags. ? odor. some spotted/ rare uniform Yellow fluorescence. No free oil or gas. some spotted/ some uniform Lt Brown Stain. Weak Pos/ Pos cut & residual. Weak Pos/ Pos acid/ residual.

DOL (6) - Off White/ Tan. Sing. tr XF-/ Micro-Re-xln. xln por. (few pcs with Lt Tan irregular, spotted stain. No other show.) Firm. [intermixed/ interbedded with CHERT (5). rare pcs with irregular, spotted Lt Tan stain. No other show.] tr/ some Fair vis por.

CHERT (7) - Tan/ Off White. Sing/ tr Mot. Opaque to some semitransparent. mixture of No tripolitic and some Spotted Tripolitic. misc fossil white inclusions. mostly Fresh, sharp edges.

DOL - Off White/ Tan. Sing. tr XF-/ Micro-Re-xln. xln por. Firm. [intermixed/ interbedded with CHERT (5). rare pcs with irregular, spotted Lt Tan stain. No other show.] rare, (silt sized, SA) glauc grains. tr/ some Fair vis por

DOL - mostly Lt & some Med Gray/ tr Tan. Sing/ tr Mot. XF-/ Micro-Re-xln. xln por. tr argil. [some CHERT - Off White/ Brownish Gray, Drusy Gray. Silvery Blue. Sing/ mostly Mot. Opaque to some semitransparent. tr/ some tripolitic. mixture of: No/ some fossil frags. Fresh/Angular.] Firm. No/ tr vis por.

Vis: 65  
Wt: 9.3

FSIP: 1,621# / 120"  
129 deg F  
MH: 2,328# - 2,058#

**FLOODED EXTRACTOR - PLUGGED BUBBLE JAR, CANISTER, & SAMPLE LINE TO GAS DETECTION TRAILER.**

DERRICK MAN FLOODED EXTRACTOR AGAIN DUE TO RAISING MUD LEVEL IN SAMPLE BOX.

Vis: 52  
Wt: 9.3

Vis: 65  
Wt: 9.3

Vis: 69  
Wt: 9.2+

WOB 35M @ 70 RPM.  
900 psi @ 50 SPM.

**<- CFS @ 4,687': 60" & DST #1**

After DST #1, bottoms up 331u.

Hole Dev: 1 deg @ 4,687'

Board: 4,694.59'  
Strap: 4,689.99  
Diff: 4.6'

**<- CFS @ 4,703': 60" & DST #2**

4,687' (DST #1) - Vis: 65 Wt: 9.3  
Wtr Loss: 9.0  
PV: 24 YP: 20 Gels: 18/44  
pH: 10.5 LCM: 0#  
Cl (3,500) Ca (80)  
Solids: 6.9%

After DST #2, bottoms up 238u.

**<- CFS @ 4,723': 60" & DST #3**

DST #3 - See 4,860' for details.

After DST #3, bottoms up 118u.

4,703' (DST #2) - Vis: 45 Wt: 9.0  
Wtr Loss: 12.0  
PV: 14 YP: 16  
Gels: 9/28  
pH: 10.0  
LCM: 5#  
Cl (10,000)\*  
Ca (200)  
Solids: 4.4%  
\* Driller not keeping hole full on trips.

Vis: 50  
Wt: 9.0  
LCM: 5#

**<- CFS @ 4,738': 60"**

4,723' (DST #3) - Vis: 52 Wt: 9.0  
Wtr Loss: 12.8  
PV: 11 YP: 31  
Gels: 24/52  
pH: 10.0  
LCM: 4#  
Cl (14,000)\*  
Ca (200)  
Solids: 4.2%

**<- CFS @ 4,772': 30"**

**<- CFS @ 4,790': 60"**

100 units = 1% Gas

TG, C1-C5

Vis: 52  
Wt: 9.1  
LCM: 4#

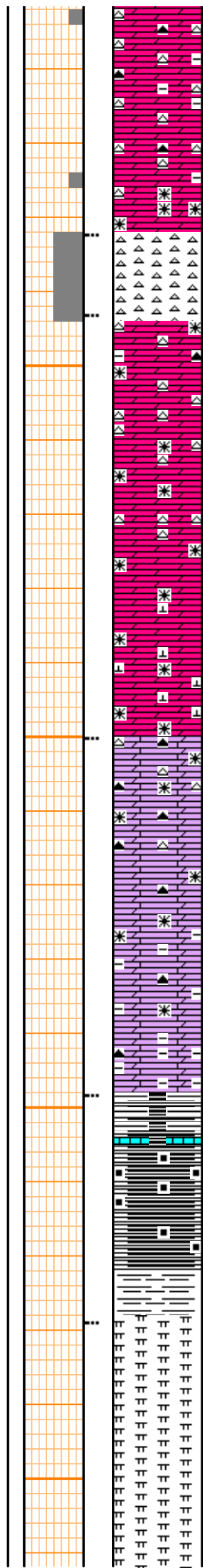
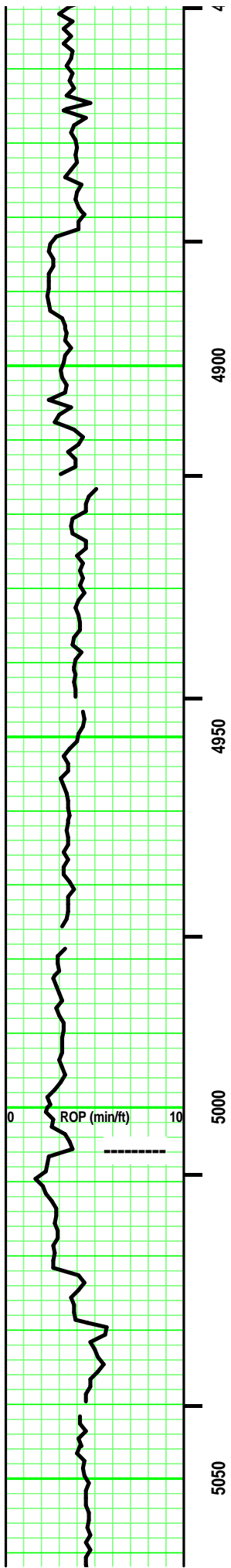
DST #2 MISS (4,688' - 4,703')

Rec:  
3,640' Gas in Pipe  
120' SI Wtr cut  
Muddy OIL (10%M, 20%W, 70%O)  
80' SI Wtr cut  
Muddy OIL (10%G, 10%W, 30%M, 50%O)

Vis: 52  
Wt: 9.1  
LCM: 5#

IFP: 41# - 68# / 30"  
ISIP: 1,773# / 60"  
FFP: 50# - 91# / 60"  
FSIP: 1,781# / 120"  
126 deg F  
MH: 2,352# - 2,170#





**CHERT** - rare Clear/ mostly Lt Grays/ Brownish Tan/ Brownish Gray. Mot. Opaque to semi-transparent. misc minute fossil frags. No/ tr tripolitic.

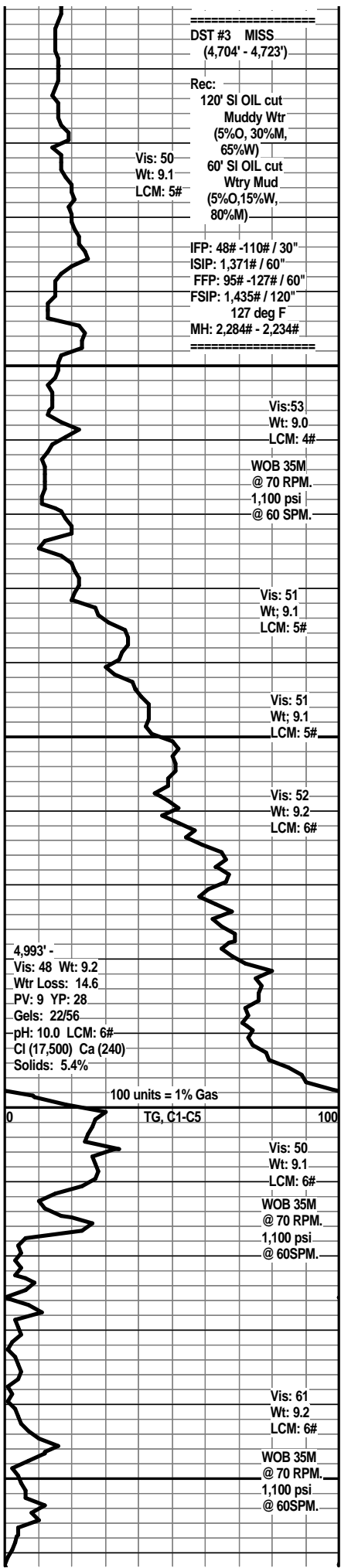
**DOL** - mostly Lt & some Med Gray/ tr Tan. Sing/ tr Mot. XF-/ Micro-Re-xln. xln por. tr argil. [some CHERT - Off White/ Brownish Gray, Drusy Gray. Sing/ mostly Mot. Opaque to some semitransparent. tr/ some tripolitic. mixture of: No/ some fossil frags. Fresh/Angular.] Firm. No/ tr vis por.

Add: calc streaks.

**DOL (Calc)** - Tans/ Grays/ 'Drusy' Gray/ Tannish Gray, tr Tannish Off White. Sing/ mostly Tan. XF-/ Micro-Re-xln. xln por. [some CHERT - Off White/ Brownish Gray, Drusy Gray. Sing/ mostly Mot. Opaque to some semitransparent. tr tripolitic. mixture of: No/ tr fossil frags. Fresh/Angular.] argil/ shaly (Greenish Gray) in part increasing with depth. tr vis por.

**WOODFORD SH 5.006' (-3.674')**  
SH - Black. Sing. carb. (Brown hue scratch.) Massive. some blocky. some hi argil at top. tr hi limy interbedded.

**MARL** - Pale Lt Brown/ Lt Gray. Sing/ some Mot. Micro-xln. xln por. 65% carbonate/ 35% argil. After HCl acid, 'fluffy' argil sludge. Massive.



DST #3 MISS  
(4,704' - 4,723')

Rec:  
120' SI OIL cut  
Muddy Wtr  
(5%O, 30%M,  
65%W)

Vis: 50  
Wt: 9.1  
LCM: 5#

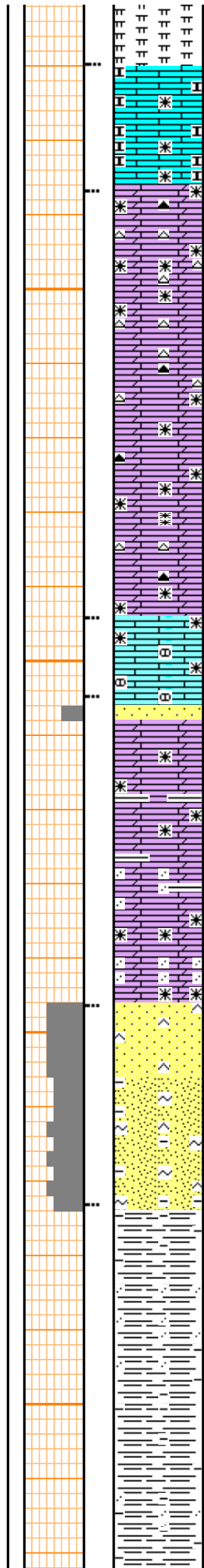
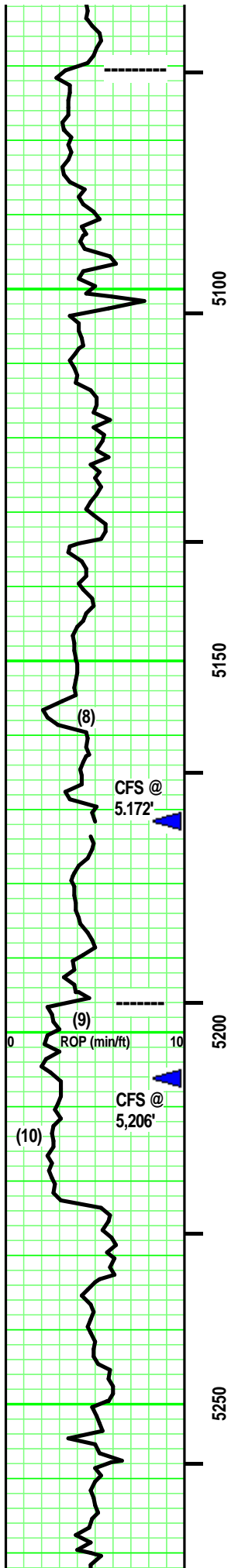
60' SI OIL cut  
Wtry Mud  
(5%O, 15%W,  
80%M)

IFP: 48# - 110# / 30"  
ISIP: 1,371# / 60"  
FFP: 95# - 127# / 60"  
FSIP: 1,435# / 120"  
127 deg F  
MH: 2,284# - 2,234#

4,993' -  
Vis: 48 Wt: 9.2  
Wtr Loss: 14.6  
PV: 9 YP: 28  
Gels: 22/56  
pH: 10.0 LCM: 6#  
Cl (17,500) Ca (240)  
Solids: 5.4%

100 units = 1% Gas

TG, C1-C5



**VIOLA 5070' (-3,738')**  
 LS - Tans. Mot. VF-/XF-xln. xln & part por. Dark Tan (VF, RA) carbonate frags/ nodules. some Re-xln. [White. Sing. Micro-xln. xln por. Chalky. soft. Friable. No vis por. -intermixed-] partly Firm. No/ tr vis por.

DOL (Calc in part) - Off White/ Tans. Sing/ Mot. mixture of Crypto- Micro-xln. adding F-xln with depth. xln por. some Re-xln. (some CHERT - Clear/ White, Mottled -or- Tan, Grays, White, Clear - Mottled. Opaque to mixed Transparent. misc Inclusions: sponge, fossil hash/ fragments. No/ some tripolitic.) Firm. No/ tr vis por. some mineral fluorescence.

LS - Lt Brownish Tan. Sing. VF/F-xln. xln & tr part por. Re-xln. tr VF, SR nodules. Firm. No/ tr vis por.

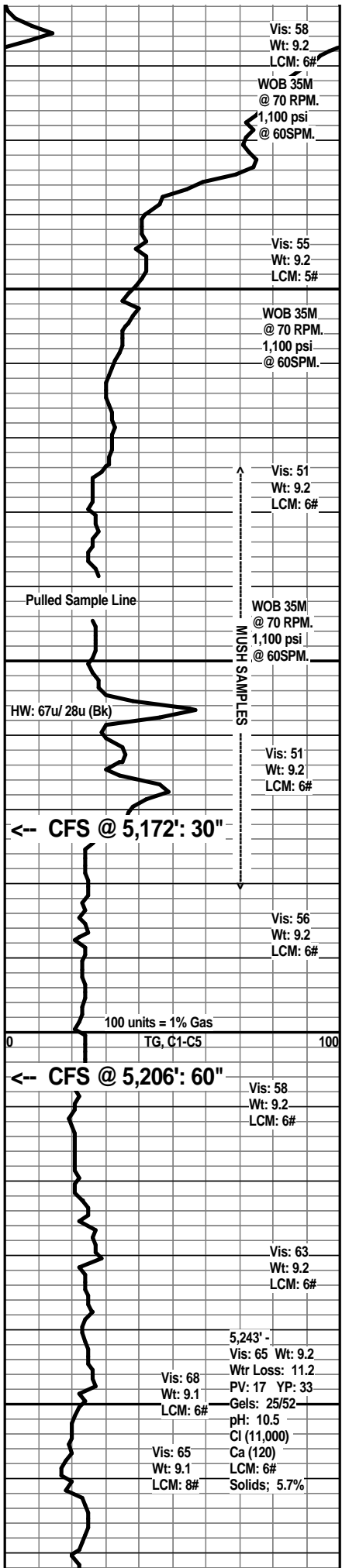
SS (8) - Clear/ Lt Gray. Mot. Mixture of Silt/ some VF qtz grains. SA/SR. Mod sort. Mod sph. tr Vitreous/ mostly Frosted luster. tr Point/ mostly Sutured grain contact. argil in part. Calc Dol/ Si cement. Dolomitic infill in part. Partly Friable to Firm. Tr vis por.

DOL (Calc) - Brown/ some Lt Gray & Tan. Sing/ som Mot. XF-/ Micro-Re-xln. xln por. [some interbedded SH - Blue Green, Grayish Green.] tr Sandy similar to (8) above. Firm. No/ tr vis por.

**Wilcox Sd 5,196' (-3,864')**  
 SS (9) - Clear/ Off White/ Lt Gray mixed with some Greenish Gray. Mot/ Mixed. Mixture of some Silt/ mostly VF qtz grains. SA/SR. Mod sort. Mod sph. tr Vitreous/ mostly Frosted luster. tr Point/ mostly Sutured grain contact. argil in part. Dol/ Si cement. Dolomitic infill in part. Partly Friable to Firm. Tr/ Fair vis por.

SS (10) - Clear/ mostly Off White. Mot. Lt Green speckled. tr to some Lt Greenish Gray at depth. Mot/ Mixed. Mixture of some Silt/ mostly VF qtz grains. Silt/ rare VF glauc grains. SA/SR. Mod sort. Mod sph. tr Vitreous/ mostly Frosted luster. tr Point/ mostly Sutured grain contact. argil in part. Si cement. argil/shaly in part. Partly Friable to Firm. Tr/ Fair/ tr Good vis por.

SH - Med/ Dark Gray, some Greenish-Gray. rare Tannish-Grays. some sandy lensing in part (similar to above). Ductile. Blocky to tr splintery. mostly Massive with depth.



Vis: 58  
 Wt: 9.2  
 LCM: 6#  
 WOB 35M @ 70 RPM. 1,100 psi @ 60SPM.

Vis: 55  
 Wt: 9.2  
 LCM: 5#

WOB 35M @ 70 RPM. 1,100 psi @ 60SPM.

Vis: 51  
 Wt: 9.2  
 LCM: 6#

WOB 35M @ 70 RPM. 1,100 psi @ 60SPM.

Vis: 51  
 Wt: 9.2  
 LCM: 6#

<-- CFS @ 5,172': 30"

Vis: 56  
 Wt: 9.2  
 LCM: 6#

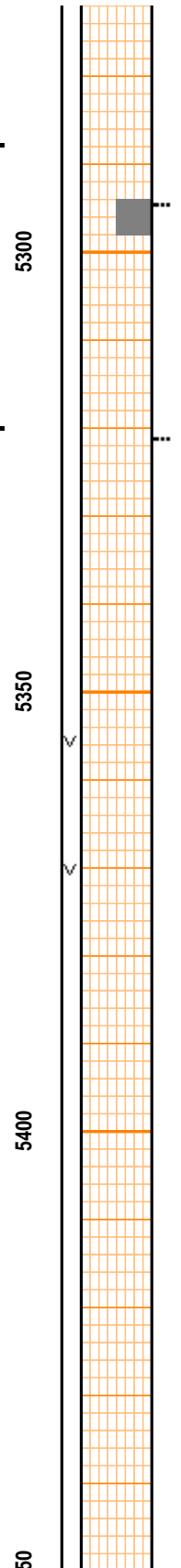
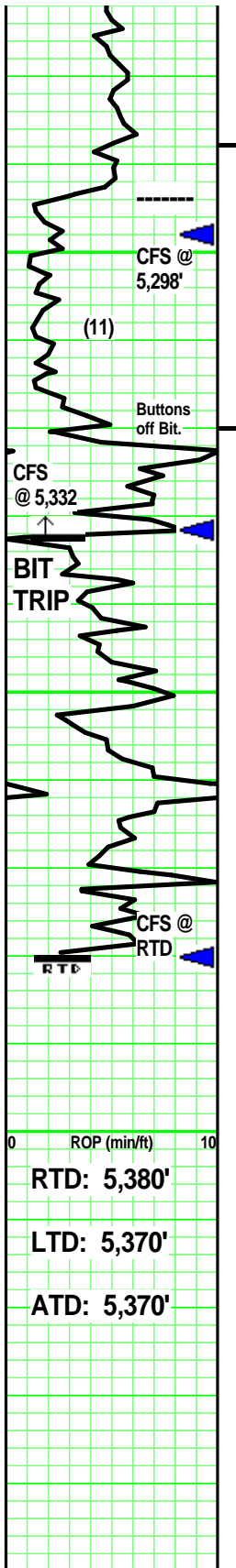
100 units = 1% Gas TG, C1-C5

<-- CFS @ 5,206': 60"

Vis: 58  
 Wt: 9.2  
 LCM: 6#

Vis: 63  
 Wt: 9.2  
 LCM: 6#

5,243' -  
 Vis: 65 Wt: 9.2 Wtr Loss: 11.2  
 PV: 17 YP: 33  
 Gels: 25/52  
 pH: 10.5  
 Cl (11,000)  
 Ca (120)  
 LCM: 6#  
 Solids: 5.7%  
 Vis: 68 Wt: 9.1 LCM: 6#  
 Vis: 65 Wt: 9.1 LCM: 8#



McLish Sh 5,294' (-3,962')

ARBuckle 5,321' (-3,989')

Add: Dark Brown. Sing. VF/XF- Re-xln. xln & tr vuggy (some resealed) por. Firm. No/ tr/ some Fair por.

**GATES #1**  
 660' FNL & 1,980' FEL 27-T34S-T10W  
 Barber County, Kansas

**WOOLSEY OPERATING CO.**  
 Wichita, Kansas

