



Confidentiality Requested:

Yes  No

KANSAS CORPORATION COMMISSION 1090957  
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: \_\_\_\_\_

1090957

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. 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 <i>(Attach Additional Sheets)</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Log	Formation (Top), Depth and Datum	<input type="checkbox"/> Sample
Samples Sent to Geological Survey	<input type="checkbox"/> Yes <input type="checkbox"/> No	Name	Top	Datum
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:				

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	Woolsey Operating Company, LLC
Well Name	RICKE 4 H
Doc ID	1090957

Casing

Purpose Of String	Size Hole Drilled	Size Casing Set	Weight	Setting Depth	Type Of Cement	Number of Sacks Used	Type and Percent Additives
CONDUCTOR	30	20	53	40	GROUT	4	4 YDS, not sx
SURFACE	17.5	13.375	48	270	CLASS A	240	3%CC, 2% GEL
INTERMEDIATE	8.75	7	23	5071	60/40 POZ	30	4% GEL
INTERMEDIATE	8.75	7	23	5074	CLASS H	200	10% gyp, 10% salt, .5% FL-160, ¼# flow seal

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

Sam Brownback, Governor

August 16, 2012

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

Re: ACO1  
API 15-007-23861-01-00  
RICKE 4 H  
NW/4 Sec.05-35S-11W  
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

P.O. # \_\_\_\_\_

**BIG BUCKETS RATHOLE DRILLING**

No 4916

ORDERED BY

*Niko Karp*

P.O. Box 5252  
Enid, Oklahoma 73702  
Phone (580) 233-9850  
Fax (580) 233-4588

Date *4/18/12*

Bill To

*Hasksey Operating LLC*

Lease

*Ricke # 4-H*

Address

Legal

*Sec 5-355-11W*

County

*Barber, KS*

Rig

*Dan D Drey # 11*

DESCRIPTION	AMOUNT
Furnish Men & Equipment To	
<i>Drill rat mouse holes 5' of 60" cellar 40 ft. of 30" hole &amp; remove dirt from loc</i>	
Materials Furnished	
<i>40 ft. of 30" pipe - 4 yds of 8 pk grout 5' of 60" timber (cellar) 50' of 15" timber (Best R&amp;M) Welder &amp; materials - mud hole w/ dreg mud K Strip permits (2 hrs)</i>	<i>\$ 7800.00</i>
	<i>5</i>
Operator <i>Sean Whittington</i>	Total <i>\$ 7800.00</i>
Approved By _____	

# ALLIED OIL & GAS SERVICES, LLC 054026

Federal Tax I.D.# 20-5975804

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

SERVICE POINT:  
*Med Lodge #1*

DATE <i>6-18-12</i>	SEC. <i>5</i>	TWP. <i>35S</i>	RANGE <i>11W</i>	CALLED OUT	ON LOCATION	JOB START <i>4:00 pm</i>	JOB FINISH <i>5:00 pm</i>
LEASE <i>Ridde</i>		WELL # <i>4</i>		LOCATION <i>281 + Krouns. 1 1/2 East, N into</i>		COUNTY <i>Baker</i>	STATE <i>KS</i>
OLD OR <input checked="" type="radio"/> NEW (Circle one)				<i>at Ry sign</i>			

CONTRACTOR *Ran #11*  
 TYPE OF JOB *Surface*  
 HOLE SIZE *17 1/2"* T.D. *275'*  
 CASING SIZE *13 3/8"* DEPTH *270'*  
 TUBING SIZE DEPTH  
 DRILL PIPE DEPTH  
 TOOL DEPTH  
 PRES. MAX MINIMUM  
 MEAS. LINE SHOE JOINT  
 CEMENT LEFT IN CSG. *20'*  
 PERFS.  
 DISPLACEMENT *38666 H2O*

OWNER *Woolsey Operating*  
 CEMENT  
 AMOUNT ORDERED *240 sx A+3 1/2 cc + 2 1/2 gal*

**EQUIPMENT**

PUMP TRUCK CEMENTER *Matt Mesch*  
 # *5 / 1555* HELPER *Derrell Gibbons*  
 BULK TRUCK  
 # *421/252* DRIVER *Joe Hawk*  
 BULK TRUCK  
 # DRIVER

COMMON <i>A 240</i>	@	<i>16.25</i>	<i>3900.00</i>
POZMIX	@		
GEL <i>5 sx</i>	@	<i>21.25</i>	<i>106.25</i>
CHLORIDE <i>9 sx</i>	@	<i>58.20</i>	<i>523.80</i>
ASC	@		
	@		
	@		
	@		
	@		
	@		
	@		
HANDLING <i>254</i>	@	<i>2.25</i>	<i>571.50</i>
MILEAGE <i>254/11/20</i>			<i>558.80</i>
TOTAL			<i>5660.35</i>

**REMARKS:**  
*Thank You*  
**WIRE FILE**  
 Regulatory Correspondence  
 Drg / Comp Workovers  
 Tests / Meters Operations

**SERVICE**

DEPTH OF JOB <i>270'</i>		
PUMP TRUCK CHARGE	<i>1125.00</i>	
EXTRA FOOTAGE	@	
MILEAGE <i>20</i>	@	<i>7.00 140.00</i>
MANIFOLD	@	
<i>Light vehicle 20</i>	@	<i>4.00 80.00</i>
	@	
TOTAL		<i>1345.00</i>

CHARGE TO: *Woolsey Operating*  
 STREET \_\_\_\_\_  
 CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

**13 3/8 PLUG & FLOAT EQUIPMENT**

<i>1-Wooden plug</i>	@	<i>173.00</i>
	@	
	@	
	@	
	@	
TOTAL		<i>173.00</i>

To: Allied Oil & Gas Services, 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 *7178.35*  
 DISCOUNT \_\_\_\_\_ IF PAID IN 30 DAYS  
*NET 5742.68*

PRINTED NAME *MIKE THARP*  
 SIGNATURE *M. Tharp*

JUN - 8 2012

# ALLIED OIL & GAS SERVICES, LLC 053957

Federal Tax I.D.# 20-5975804

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

SERVICE POINT:  
Medicine Lodge, KS

DATE <u>6-4-2012</u>	SEC. <u>5</u>	TWP. <u>35S</u>	RANGE <u>11W</u>	CALLED OUT	ON LOCATION <u>12:00pm</u>	JOB START <u>8:00pm</u>	JOB FINISH <u>9:00pm</u>
LEASE <u>Rickie</u>	WELL# <u>4-14</u>	LOCATION <u>2812 Kiowa Jct, 1 1/2 east</u>		COUNTY <u>Berber</u>	STATE <u>KS</u>		
OLD OR (NEW) (Circle one)		to Rig Sign, herin into					

CONTRACTOR Dend #11  
 TYPE OF JOB Production Intermediate  
 HOLE SIZE 8 3/4" T.D. 5071'  
 CASING SIZE 7" 23# DEPTH 5081'  
 TUBING SIZE DEPTH  
 DRILL PIPE DEPTH  
 TOOL DEPTH  
 PRES. MAX MINIMUM  
 MEAS. LINE SHOE JOINT 43'  
 CEMENT LEFT IN CSG.  
 PERFS.  
 DISPLACEMENT 195 bbls of Fresh water

OWNER Woolsey operating  
 CEMENT  
 AMOUNT ORDERED 300sx 60' 40' 4% Gcl  
200sx Class H + 10% Express + 10% SS1  
6# Kolsesl + .5% FL160 + 1/4# Floresl  
 COMMON Class H 200sx @ 19.25 3850.00  
 POZMIX 12sx @ 8.50 102.00  
 GEL 1sx @ 21.25 21.25  
 CHLORIDE @  
 ASC @  
 Gypses 19sx @ 34.20 649.80  
 SS12 22sx @ 23.95 526.90  
 Kolsesl 1200# @ 0.89 1068.00  
 FL160 94# @ 17.20 1616.80  
 Floresl 50# @ 2.70 135.00  
 Class A 18sx @ 16.25 292.50  
 @  
 @  
 HANDLING 300sx @ 2.25 675.00  
 MILEAGE 300.11/20 660.00  
 TOTAL 9597.25

EQUIPMENT  
 PUMP TRUCK CEMENTER Darin F.  
#548-545 HELPER Eddie P.  
 BULK TRUCK  
#356-290 DRIVER Troy L.  
 BULK TRUCK  
 # DRIVER

**REMARKS:**

Pipe on bottom & break circulation  
mix 30% of sevens cement, 200sx of  
9.1 cement, shut down, wash pump lines  
Release plug, start displacement, lift  
pressure to 120 bbls, slow rate to 3 bpm  
to 190 bbls, bump plug to 195 bbls  
1000-1500 psi, plug & d. hole

**SERVICE**

DEPTH OF JOB 5081'  
 PUMP TRUCK CHARGE 2695.00  
 EXTRA FOOTAGE @  
 MILEAGE 20 @ 7.00 140.00  
 MANIFOLD Heed renter @ 200.00  
 Light vehicle 20 @ 4.00 80.00  
 @  
 TOTAL 3115.00

CHARGE TO: Woolsey operating  
 STREET \_\_\_\_\_  
 CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

**WELL FILE**  
 Regulatory Correspondence  
 Drig / Comp Workovers  
 Tests / Meters Operations

**PLUG & FLOAT EQUIPMENT**

7"  
 1-Rubber Plug @ 85.00  
 1-Sure seal Plug shoe @ 609.00  
 1-Sure seal Plug collar @ 158.00  
 2-Centersizers @ 56.00 280.00  
 10-Stop Rings @ 48.00 480.00  
 TOTAL 2212.00

To: Allied Oil & Gas Services, 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 \$14,924.25  
 DISCOUNT \_\_\_\_\_ IF PAID IN 30 DAYS  
 Field Estimate  
 Net # 11,939.40

PRINTED NAME X MIKE THARP  
 SIGNATURE X Mike Tharp  
 Thank you!!!

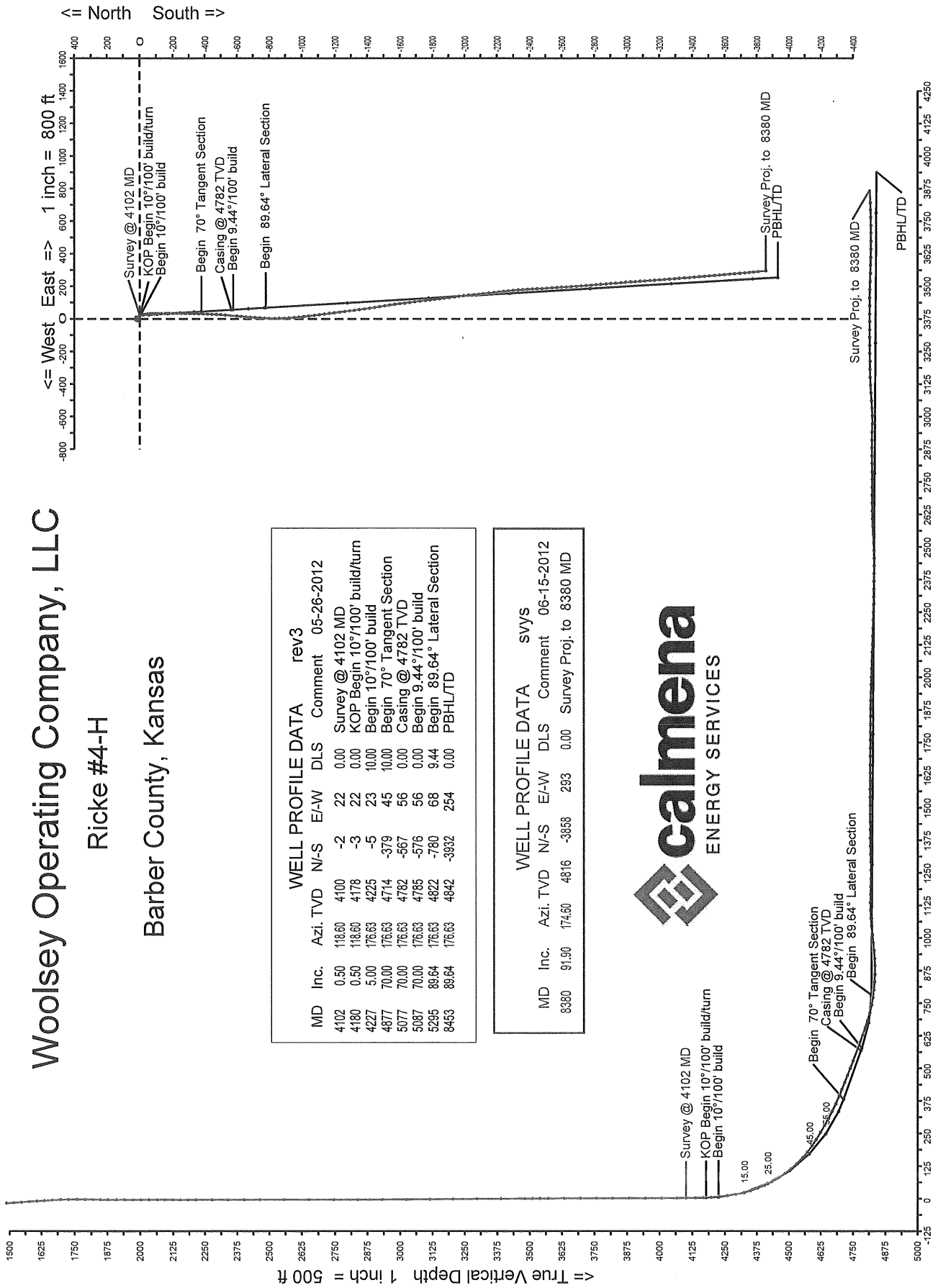
# Woolsey Operating Company, LLC

Ricke #4-H

Barber County, Kansas

WELL PROFILE DATA rev3						
MD	Inc.	Azi.	TVD	NI-S	E-W	DLS Comment
4102	0.50	118.60	4100	-2	22	0.00 Survey @ 4102 MD
4180	0.50	118.60	4178	-3	22	0.00 KOP Begin 10°/100' build/turn
4227	5.00	176.63	4225	-5	23	10.00 Begin 10°/100' build
4877	70.00	176.63	4714	-379	45	10.00 Begin 70° Tangent Section
5077	70.00	176.63	4782	-567	56	0.00 Casing @ 4782 TVD
5087	70.00	176.63	4785	-576	56	0.00 Begin 9.44°/100' build
5295	89.64	176.63	4622	-780	68	9.44 Begin 89.64° Lateral Section
8453	89.64	176.63	4842	-3932	254	0.00 PBHL/TD

WELL PROFILE DATA svys						
MD	Inc.	Azi.	TVD	NI-S	E-W	DLS Comment
8380	91.90	174.60	4816	-3858	293	0.00 Survey Proj. to 8380 MD





# Calmena Energy Services

Company: Woolsey Operating Company, LLC  
 Well: Ricke #4-H  
 Location: Barber County, Kansas

Date: 14-Jun-2012  
 Surveys  
 Page 1

Job#: 6425  
 NAD83 Ks South gr elev=1370 RKB=1392

MD (feet)	Inclination (degrees)	Azimuth (degrees)	TVD RKB (feet)	N/S (feet)	E/W (feet)	DLS (deg/100')	VS @ 176.30° Az (feet)	Grid Y	Grid X	Comments
<b>Surface Location</b>										
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1445743.09	1298492.65	
847.00	2.30	33.30	846.77	14.21	9.33	0.27	-13.58	1445743.09	1298492.65	
876.00	2.30	27.90	875.75	15.21	9.92	0.75	-14.54	1445757.29	1298501.98	
907.00	2.10	23.30	906.73	16.28	10.44	0.86	-15.57	1445758.29	1298502.57	
966.00	1.50	343.70	965.70	18.01	10.65	2.28	-17.29	1445759.37	1298503.09	
								1445761.10	1298503.30	
998.00	1.60	323.30	997.69	18.77	10.27	1.74	-18.07	1445761.86	1298502.91	
1029.00	1.70	322.30	1028.68	19.48	9.73	0.34	-18.82	1445762.57	1298502.37	
1092.00	2.00	292.80	1091.64	20.65	8.14	1.56	-20.08	1445763.74	1298500.79	
1122.00	2.20	293.10	1121.62	21.08	7.13	0.67	-20.57	1445764.17	1298499.78	
1184.00	3.30	285.60	1183.55	22.03	4.32	1.86	-21.70	1445765.11	1298496.96	
1213.00	3.60	281.80	1212.50	22.44	2.62	1.30	-22.22	1445765.52	1298495.27	
1245.00	3.70	283.40	1244.43	22.88	0.63	0.45	-22.79	1445765.97	1298493.28	
1276.00	3.70	280.30	1275.37	23.29	-1.32	0.65	-23.33	1445766.38	1298491.32	
1307.00	3.30	271.10	1306.31	23.49	-3.20	2.22	-23.64	1445766.57	1298489.45	
1337.00	3.00	254.60	1336.27	23.30	-4.82	3.17	-23.56	1445766.38	1298487.83	
1367.00	3.00	236.40	1366.23	22.65	-6.23	3.16	-23.01	1445765.74	1298486.42	
1397.00	3.50	215.50	1396.18	21.47	-7.42	4.26	-21.91	1445764.56	1298485.23	
1426.00	4.10	206.70	1425.12	19.83	-8.40	2.88	-20.33	1445762.91	1298484.25	
1458.00	4.40	204.10	1457.03	17.68	-9.41	1.11	-18.25	1445760.77	1298483.23	
1487.00	4.30	203.00	1485.94	15.67	-10.29	0.45	-16.30	1445758.75	1298482.36	
1516.00	4.30	201.80	1514.86	13.66	-11.12	0.31	-14.35	1445756.74	1298481.53	
1547.00	4.00	198.50	1545.78	11.55	-11.89	1.24	-12.30	1445754.64	1298480.75	
1578.00	4.20	195.10	1576.70	9.43	-12.53	1.02	-10.22	1445752.52	1298480.11	
1608.00	4.30	188.70	1606.62	7.26	-12.99	1.61	-8.08	1445750.35	1298479.66	
1637.00	4.20	184.90	1635.54	5.13	-13.24	1.03	-5.97	1445748.21	1298479.40	
1668.00	3.30	178.30	1666.47	3.10	-13.32	3.22	-3.96	1445746.19	1298479.33	
1700.00	2.30	174.60	1698.43	1.54	-13.23	3.17	-2.39	1445744.63	1298479.42	
1729.00	1.00	173.20	1727.42	0.71	-13.14	4.48	-1.56	1445743.80	1298479.50	
1760.00	0.40	325.40	1758.42	0.53	-13.17	4.41	-1.38	1445743.62	1298479.47	
1790.00	0.70	340.60	1788.42	0.79	-13.29	1.10	-1.65	1445743.88	1298479.35	

**Calmena Energy Services**

Company: Woolsey Operating Company, LLC  
 Well: Ricke #4-H  
 Location: Barber County, Kansas

Date: 14-Jun-2012  
 Surveys  
 Page 2

Job#: 6425  
 NAD83 Ks South gr elev=1370 RKB=1392

MD (feet)	Inclination (degrees)	Azimuth (degrees)	TVD RKB (feet)	N/-S (feet)	E/-W (feet)	DLS (deg/100')	VS @ 176.30° Az (feet)	Grid Y	Grid X	Comments
1819.00	0.80	353.00	1817.42	1.16	-13.38	0.66	-2.02	1445744.25	1298479.27	
1848.00	0.70	22.40	1846.41	1.52	-13.33	1.35	-2.38	1445744.61	1298479.31	
1879.00	0.80	53.70	1877.41	1.83	-13.09	1.34	-2.67	1445744.91	1298479.56	
1911.00	1.00	73.90	1909.41	2.04	-12.64	1.16	-2.85	1445745.12	1298480.01	
1942.00	1.10	80.50	1940.40	2.16	-12.09	0.51	-2.94	1445745.25	1298480.56	
1973.00	1.20	85.30	1971.40	2.24	-11.47	0.45	-2.97	1445745.32	1298481.18	
2003.00	1.10	84.40	2001.39	2.29	-10.87	0.34	-2.99	1445745.38	1298481.78	
2034.00	1.10	82.70	2032.39	2.36	-10.28	0.11	-3.02	1445745.44	1298482.37	
2065.00	1.00	80.60	2063.38	2.44	-9.72	0.35	-3.06	1445745.53	1298482.93	
2094.00	1.00	84.40	2092.38	2.51	-9.21	0.23	-3.10	1445745.59	1298483.43	
2125.00	1.00	83.40	2123.37	2.56	-8.68	0.06	-3.12	1445745.65	1298483.97	
2154.00	1.00	89.30	2152.37	2.60	-8.17	0.35	-3.12	1445745.68	1298484.48	
2183.00	1.10	91.60	2181.36	2.59	-7.64	0.37	-3.08	1445745.68	1298485.01	
2215.00	1.10	88.40	2213.36	2.59	-7.03	0.19	-3.04	1445745.68	1298485.62	
2278.00	1.00	87.00	2276.34	2.64	-5.87	0.16	-3.01	1445745.72	1298486.77	
2340.00	0.90	90.80	2338.34	2.66	-4.85	0.19	-2.97	1445745.75	1298487.80	
2403.00	1.00	94.80	2401.33	2.61	-3.80	0.19	-2.85	1445745.69	1298488.84	
2464.00	0.90	90.80	2462.32	2.55	-2.79	0.20	-2.73	1445745.64	1298489.85	
2558.00	1.00	89.90	2556.31	2.55	-1.23	0.11	-2.62	1445745.63	1298491.41	
2652.00	0.90	87.30	2650.29	2.58	0.32	0.12	-2.56	1445745.67	1298492.97	
2746.00	0.90	82.00	2744.28	2.72	1.79	0.09	-2.60	1445745.81	1298494.44	
2839.00	1.00	88.60	2837.27	2.84	3.33	0.16	-2.62	1445745.93	1298495.97	
2933.00	1.00	100.70	2931.25	2.71	4.95	0.22	-2.38	1445745.80	1298497.60	
3024.00	1.10	110.70	3022.24	2.25	6.55	0.23	-1.82	1445745.34	1298499.20	
3115.00	0.90	125.40	3113.23	1.53	7.95	0.36	-1.01	1445744.62	1298500.60	
3206.00	1.00	118.70	3204.21	0.73	9.23	0.16	-0.14	1445743.82	1298501.88	
3299.00	1.00	110.70	3297.20	0.06	10.70	0.15	0.63	1445743.14	1298503.35	
3390.00	1.00	97.70	3388.19	-0.33	12.23	0.25	1.12	1445742.76	1298504.88	
3482.00	0.80	105.00	3480.17	-0.60	13.64	0.25	1.48	1445742.48	1298506.29	
3513.00	0.80	118.50	3511.17	-0.76	14.04	0.61	1.67	1445742.32	1298506.69	

**Calmena Energy Services**

Company: Woolsey Operating Company, LLC  
 Well: Ricke #4-H  
 Location: Barber County, Kansas

Date: 14-Jun-2012  
 Surveys  
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Job#: 6425  
 NAD83 Ks South gr elev=1370 RKB=1392

MD (feet)	Inclination (degrees)	Azimuth (degrees)	TVD RKB (feet)	N/-S (feet)	E/-W (feet)	DLS (deg/100')	VS @ 176.30° Az (feet)	Grid Y	Grid X	Comments
3542.00	0.90	98.30	3540.17	-0.89	14.45	1.08	1.82	1445742.19	1298507.09	
3573.00	0.80	98.90	3571.16	-0.96	14.90	0.32	1.92	1445742.13	1298507.55	
3635.00	0.90	110.10	3633.16	-1.20	15.79	0.31	2.21	1445741.89	1298508.43	
3697.00	0.70	105.30	3695.15	-1.46	16.61	0.34	2.53	1445741.62	1298509.26	
3758.00	1.00	98.50	3756.15	-1.64	17.50	0.52	2.77	1445741.45	1298510.14	
3821.00	1.00	94.60	3819.14	-1.77	18.59	0.11	2.96	1445741.32	1298511.23	
3884.00	0.60	100.20	3882.13	-1.87	19.46	0.65	3.12	1445741.22	1298512.11	
3946.00	0.60	98.40	3944.13	-1.97	20.10	0.03	3.27	1445741.11	1298512.75	
4008.00	0.60	99.20	4006.12	-2.07	20.74	0.01	3.41	1445741.02	1298513.39	
4069.00	0.80	116.30	4067.12	-2.31	21.44	0.47	3.69	1445740.78	1298514.09	
4102.00	0.50	118.60	4100.12	-2.48	21.77	0.91	3.88	1445740.60	1298514.42	
4137.00	1.00	132.00	4135.11	-2.76	22.13	1.50	4.18	1445740.33	1298514.78	
4168.00	2.00	153.30	4166.10	-3.42	22.58	3.64	4.87	1445739.66	1298515.22	
4199.00	3.70	162.20	4197.06	-4.86	23.13	5.65	6.34	1445738.23	1298515.77	
4230.00	5.80	166.00	4227.95	-7.33	23.81	6.85	8.85	1445735.75	1298516.46	
4261.00	7.90	168.70	4258.73	-10.94	24.61	6.85	12.51	1445732.15	1298517.25	
4292.00	10.40	170.60	4289.33	-15.79	25.48	8.12	17.40	1445727.29	1298518.13	
4323.00	13.10	172.80	4319.68	-22.04	26.38	8.83	23.70	1445721.05	1298519.03	
4352.00	16.50	173.90	4347.72	-29.40	27.23	11.76	31.09	1445713.69	1298519.88	
4384.00	20.60	172.10	4378.05	-39.50	28.49	12.94	41.25	1445703.59	1298521.13	
4413.00	24.20	172.40	4404.85	-50.44	29.97	12.42	52.27	1445692.64	1298522.62	
4444.00	28.20	175.10	4432.67	-64.05	31.44	13.46	65.94	1445679.04	1298524.09	
4474.00	31.60	178.90	4458.67	-78.97	32.20	12.97	80.89	1445664.11	1298524.84	
4505.00	35.40	181.30	4484.52	-96.08	32.15	12.98	97.95	1445647.01	1298524.80	
4534.00	39.20	180.60	4507.58	-113.64	31.86	13.18	115.46	1445629.44	1298524.51	
4565.00	43.30	179.50	4530.88	-134.08	31.85	13.43	135.86	1445609.01	1298524.50	
4596.00	47.60	179.00	4552.63	-156.16	32.15	13.92	157.91	1445586.92	1298524.79	
4626.00	51.30	178.30	4572.13	-178.95	32.69	12.46	180.68	1445564.14	1298525.33	
4655.00	54.60	179.10	4589.60	-202.08	33.21	11.59	203.81	1445541.00	1298525.85	
4684.00	57.50	180.20	4605.79	-226.14	33.35	10.48	227.82	1445516.95	1298526.00	

**Calmena Energy Services**

Company: Woolsey Operating Company, LLC  
 Well: Ricke #4-H  
 Location: Barber County, Kansas

Date: 14-Jun-2012  
 Surveys  
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Job#: 6425  
 NAD83 Ks South gr elev=1370 RKB=1392

MD (feet)	Inclination (degrees)	Azimuth (degrees)	TVD RKB (feet)	N-S (feet)	E-W (feet)	DLS (deg/100')	VS @ 176.30° Az (feet)	Grid Y	Grid X	Comments
4716.00	59.30	180.90	4622.56	-253.39	33.09	5.93	255.00	1445489.70	1298525.73	
4747.00	60.40	181.30	4638.13	-280.19	32.57	3.72	281.71	1445462.90	1298525.22	
4778.00	61.30	181.60	4653.23	-307.25	31.89	3.02	308.67	1445435.83	1298524.53	
4809.00	62.60	181.60	4667.81	-334.60	31.12	4.19	335.91	1445408.49	1298523.77	
4840.00	64.90	181.40	4681.52	-362.39	30.40	7.44	363.60	1445380.69	1298523.04	
4872.00	67.30	181.60	4694.48	-391.64	29.63	7.52	392.73	1445351.45	1298522.28	
4901.00	68.00	182.10	4705.51	-418.44	28.76	2.89	419.43	1445324.64	1298521.41	
4930.00	68.40	182.10	4716.28	-445.35	27.78	1.38	446.22	1445297.73	1298520.42	
4959.00	68.20	183.10	4727.00	-472.27	26.55	3.28	473.00	1445270.82	1298519.20	
4989.00	68.40	184.20	4738.09	-500.09	24.78	3.47	500.64	1445243.00	1298517.43	
5020.00	68.70	184.70	4749.43	-528.85	22.54	1.79	529.20	1445214.24	1298515.19	
5096.00	69.70	185.30	4776.42	-599.63	16.35	1.51	599.43	1445143.46	1298509.00	
5127.00	70.00	185.20	4787.10	-628.61	13.69	1.01	628.18	1445114.48	1298506.33	
5157.00	71.10	185.10	4797.09	-656.78	11.15	3.68	656.13	1445086.31	1298503.79	
5186.00	73.00	184.60	4806.02	-684.27	8.81	6.75	683.41	1445058.82	1298501.46	
5217.00	75.40	183.60	4814.46	-714.02	6.68	8.34	712.96	1445029.07	1298499.33	
5248.00	78.10	183.30	4821.57	-744.14	4.87	8.76	742.90	1444998.95	1298497.52	
5277.00	81.90	183.60	4826.60	-772.64	3.15	13.14	771.23	1444970.45	1298495.80	
5307.00	84.10	181.50	4830.26	-802.38	1.83	10.10	800.83	1444940.70	1298494.47	
5338.00	87.00	180.70	4832.66	-833.28	1.23	9.70	831.62	1444909.81	1298493.88	
5367.00	87.70	178.90	4834.00	-862.25	1.33	6.65	860.54	1444880.84	1298493.98	
5399.00	90.50	177.30	4834.51	-894.22	2.40	10.08	892.51	1444848.87	1298495.04	
5428.00	93.70	176.30	4833.44	-923.15	4.01	11.56	921.49	1444819.93	1298496.66	
5459.00	95.70	174.00	4830.90	-953.93	6.62	9.81	952.37	1444789.15	1298499.27	
5489.00	96.20	174.40	4827.79	-983.62	9.64	2.13	982.19	1444759.47	1298502.29	
5520.00	96.10	174.00	4824.47	-1014.28	12.75	1.32	1012.99	1444728.80	1298505.40	
5551.00	94.90	173.40	4821.50	-1044.95	16.14	4.32	1043.82	1444698.13	1298508.79	
5583.00	93.90	172.70	4819.05	-1076.62	20.00	3.81	1075.67	1444666.46	1298512.65	
5614.00	92.10	172.50	4817.42	-1107.32	23.99	5.84	1106.56	1444635.77	1298516.63	
5644.00	89.00	172.30	4817.14	-1137.05	27.95	10.35	1136.49	1444606.03	1298520.60	

**Calmena Energy Services**

Company: Woolsey Operating Company, LLC  
 Well: Ricke #4-H  
 Location: Barber County, Kansas

Date: 14-Jun-2012  
 Surveys  
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Job#: 6425  
 NAD83 Ks South gr elev=1370 RKB=1392

MD (feet)	Inclination (degrees)	Azimuth (degrees)	TVD RKB (feet)	N/-S (feet)	E/-W (feet)	DLS (deg/100')	VS @ 176.30° Az (feet)	Grid Y	Grid X	Comments
5675.00	87.70	172.20	4818.03	-1167.76	32.13	4.21	1167.40	1444575.33	1298524.78	
5705.00	88.90	172.60	4818.92	-1197.48	36.10	4.22	1197.31	1444545.61	1298528.75	
5737.00	89.80	173.10	4819.28	-1229.23	40.08	3.22	1229.25	1444513.86	1298532.73	
5768.00	90.30	173.10	4819.25	-1260.00	43.81	1.61	1260.21	1444483.08	1298536.45	
5800.00	91.50	172.90	4818.75	-1291.76	47.71	3.80	1292.15	1444451.33	1298540.35	
5829.00	91.40	172.70	4818.02	-1320.52	51.34	0.77	1321.08	1444422.56	1298543.99	
5861.00	91.70	172.50	4817.15	-1352.25	55.46	1.13	1353.01	1444390.84	1298548.11	
5892.00	91.10	171.70	4816.40	-1382.94	59.72	3.23	1383.91	1444360.15	1298552.37	
5924.00	89.10	171.10	4816.34	-1414.58	64.50	6.53	1415.79	1444328.51	1298557.15	
5954.00	89.70	171.20	4816.65	-1444.22	69.12	2.03	1445.67	1444298.87	1298561.77	
5985.00	90.30	171.30	4816.65	-1474.86	73.83	1.96	1476.55	1444268.23	1298566.48	
6017.00	90.90	171.00	4816.32	-1506.48	78.76	2.10	1508.42	1444236.61	1298571.40	
6049.00	90.50	171.10	4815.93	-1538.09	83.73	1.29	1540.28	1444205.00	1298576.38	
6080.00	89.30	172.10	4815.98	-1568.75	88.26	5.04	1571.18	1444174.34	1298580.91	
6111.00	89.20	173.30	4816.39	-1599.50	92.20	3.88	1602.11	1444143.59	1298584.85	
6142.00	90.00	173.20	4816.60	-1630.28	95.85	2.60	1633.07	1444112.81	1298588.49	
6173.00	90.60	172.90	4816.44	-1661.05	99.60	2.16	1664.02	1444082.04	1298592.24	
6206.00	89.50	172.90	4816.41	-1693.80	103.68	3.33	1696.96	1444049.29	1298596.32	
6237.00	89.30	173.20	4816.74	-1724.57	107.43	1.16	1727.91	1444018.52	1298600.07	
6269.00	89.30	173.20	4817.13	-1756.34	111.21	0.00	1759.86	1443986.75	1298603.86	
6298.00	89.60	173.10	4817.41	-1785.13	114.67	1.09	1788.81	1443957.95	1298607.32	
6329.00	89.60	173.30	4817.62	-1815.92	118.34	0.65	1819.77	1443927.17	1298610.99	
6360.00	89.70	172.90	4817.81	-1846.69	122.07	1.33	1850.72	1443896.40	1298614.72	
6389.00	89.60	172.80	4817.99	-1875.46	125.68	0.49	1879.67	1443867.62	1298618.32	
6420.00	88.80	173.00	4818.42	-1906.22	129.51	2.66	1910.61	1443836.87	1298622.16	
6452.00	88.50	172.70	4819.18	-1937.97	133.49	1.33	1942.54	1443805.12	1298626.14	
6481.00	88.20	172.10	4820.01	-1966.70	137.32	2.31	1971.46	1443776.39	1298629.97	
6511.00	87.90	173.20	4821.03	-1996.43	141.16	3.80	2001.38	1443746.65	1298633.81	
6542.00	87.90	174.70	4822.17	-2027.24	144.43	4.84	2032.33	1443715.85	1298637.07	
6573.00	88.00	174.80	4823.28	-2058.09	147.26	0.46	2063.30	1443685.00	1298639.91	

**Calmena Energy Services**

Company: Woolsey Operating Company, LLC  
 Well: Ricke #4-H  
 Location: Barber County, Kansas

Date: 14-Jun-2012  
 Surveys  
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Job#: 6425  
 NAD83 Ks South gr elev=1370 RKB=1392

MD (feet)	Inclination (degrees)	Azimuth (degrees)	TVD RKB (feet)	N/-S (feet)	E/-W (feet)	DLS (deg/100')	VS @ 176.30° Az (feet)	Grid Y	Grid X	Comments
6605.00	88.50	174.60	4824.25	-2089.94	150.21	1.68	2095.28	1443653.15	1298642.86	
6636.00	88.30	174.10	4825.12	-2120.78	153.27	1.74	2126.25	1443622.31	1298645.91	
6668.00	88.20	173.80	4826.10	-2152.58	156.64	0.99	2158.20	1443590.51	1298649.28	
6699.00	88.10	173.80	4827.10	-2183.39	159.98	0.32	2189.16	1443559.70	1298652.63	
6729.00	88.00	173.50	4828.12	-2213.18	163.30	1.05	2219.11	1443529.90	1298655.95	
6759.00	88.80	173.20	4828.96	-2242.97	166.77	2.85	2249.06	1443500.12	1298659.42	
6788.00	89.00	173.20	4829.51	-2271.76	170.20	0.69	2278.01	1443471.33	1298662.85	
6818.00	89.50	174.10	4829.91	-2301.57	173.52	3.43	2307.97	1443441.51	1298666.17	
6847.00	88.90	175.70	4830.31	-2330.45	176.10	5.89	2336.96	1443412.63	1298668.75	
6878.00	88.70	175.80	4830.96	-2361.36	178.40	0.72	2367.95	1443381.73	1298671.04	
6907.00	89.20	176.50	4831.49	-2390.29	180.34	2.97	2396.95	1443352.80	1298672.99	
6937.00	89.70	177.30	4831.78	-2420.25	181.97	3.14	2426.94	1443322.84	1298674.61	
6966.00	90.10	176.70	4831.83	-2449.21	183.48	2.49	2455.94	1443293.88	1298676.13	
6996.00	91.30	176.70	4831.46	-2479.15	185.21	4.00	2485.94	1443263.93	1298677.86	
7025.00	92.50	176.40	4830.50	-2508.09	186.95	4.27	2514.92	1443235.00	1298679.60	
7057.00	93.70	176.50	4828.77	-2539.98	188.93	3.76	2546.87	1443203.11	1298681.58	
7089.00	93.50	176.20	4826.76	-2571.85	190.97	1.13	2578.81	1443171.24	1298683.61	
7118.00	91.90	176.80	4825.40	-2600.76	192.73	5.89	2607.78	1443142.33	1298685.38	
7147.00	90.80	176.30	4824.71	-2629.70	194.48	4.17	2636.77	1443113.39	1298687.13	
7179.00	90.60	176.40	4824.32	-2661.63	196.52	0.70	2668.77	1443081.46	1298689.16	
7208.00	89.60	175.80	4824.27	-2690.56	198.49	4.02	2697.77	1443052.52	1298691.14	
7239.00	89.30	175.30	4824.57	-2721.47	200.89	1.88	2728.76	1443021.62	1298693.54	
7269.00	89.90	175.40	4824.78	-2751.37	203.33	2.03	2758.76	1442991.72	1298695.97	
7298.00	90.80	175.50	4824.60	-2780.28	205.63	3.12	2787.75	1442962.81	1298698.27	
7330.00	91.60	175.60	4823.93	-2812.17	208.11	2.52	2819.74	1442930.91	1298700.76	
7359.00	91.20	175.30	4823.22	-2841.07	210.41	1.72	2848.73	1442902.01	1298703.05	
7391.00	88.80	175.60	4823.22	-2872.97	212.95	7.56	2880.72	1442870.12	1298705.59	
7420.00	89.10	175.10	4823.75	-2901.87	215.30	2.01	2909.72	1442841.22	1298707.94	
7451.00	88.50	174.90	4824.40	-2932.75	218.00	2.04	2940.70	1442810.34	1298710.65	
7482.00	88.30	174.90	4825.27	-2963.61	220.75	0.65	2971.68	1442779.48	1298713.40	

**Calmena Energy Services**

Company: Woolsey Operating Company, LLC  
 Well: Ricke #4-H  
 Location: Barber County, Kansas

Date: 14-Jun-2012  
 Surveys  
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Job#: 6425  
 NAD83 Ks South gr elev=1370 RKB=1392

MD (feet)	Inclination (degrees)	Azimuth (degrees)	TVD RKB (feet)	N/-S (feet)	E/-W (feet)	DLS (deg/100')	VS @ 176.30° Az (feet)	Grid Y	Grid X	Comments
7513.00	90.90	175.60	4825.49	-2994.50	223.32	8.69	3002.67	1442748.59	1298715.97	
7542.00	94.20	176.40	4824.20	-3023.40	225.34	11.71	3031.64	1442719.69	1298717.99	
7571.00	94.10	176.20	4822.10	-3052.26	227.21	0.77	3060.56	1442690.83	1298719.85	
7601.00	93.40	175.90	4820.13	-3082.13	229.27	2.54	3090.50	1442660.96	1298721.92	
7630.00	93.00	176.00	4818.52	-3111.01	231.31	1.42	3119.45	1442632.08	1298723.96	
7660.00	92.00	175.70	4817.21	-3140.90	233.48	3.48	3149.42	1442602.19	1298726.13	
7691.00	90.60	176.00	4816.50	-3171.81	235.73	4.62	3180.41	1442571.28	1298728.37	
7722.00	90.30	175.80	4816.26	-3202.73	237.94	1.16	3211.41	1442540.36	1298730.59	
7752.00	90.80	175.50	4815.97	-3232.64	240.22	1.94	3241.41	1442510.45	1298732.86	
7783.00	91.40	175.50	4815.38	-3263.54	242.65	1.94	3272.40	1442479.55	1298735.30	
7814.00	90.20	175.70	4814.94	-3294.45	245.03	3.92	3303.39	1442448.64	1298737.67	
7843.00	89.10	175.30	4815.12	-3323.36	247.30	4.04	3332.39	1442419.73	1298739.95	
7875.00	89.50	175.00	4815.51	-3355.24	250.01	1.56	3364.38	1442387.85	1298742.65	
7904.00	90.70	174.80	4815.46	-3384.12	252.59	4.20	3393.37	1442358.97	1298745.23	
7935.00	90.80	175.50	4815.06	-3415.01	255.21	2.28	3424.36	1442328.08	1298747.85	
7966.00	89.00	174.90	4815.11	-3445.90	257.80	6.12	3455.35	1442297.19	1298750.45	
7997.00	87.40	175.50	4816.08	-3476.77	260.39	5.51	3486.33	1442266.31	1298753.04	
8028.00	88.00	175.00	4817.33	-3507.64	262.96	2.52	3517.30	1442235.45	1298755.60	
8060.00	89.00	174.80	4818.17	-3539.50	265.80	3.19	3549.28	1442203.58	1298758.45	
8090.00	88.30	175.10	4818.87	-3569.38	268.44	2.54	3579.26	1442173.71	1298761.09	
8121.00	88.80	175.80	4819.66	-3600.27	270.90	2.77	3610.25	1442142.82	1298763.55	
8152.00	89.30	175.60	4820.17	-3631.18	273.22	1.74	3641.24	1442111.91	1298765.87	
8183.00	90.00	175.40	4820.36	-3662.08	275.66	2.35	3672.24	1442081.00	1298768.30	
8215.00	90.30	175.10	4820.28	-3693.97	278.31	1.33	3704.23	1442049.11	1298770.95	
8244.00	90.70	174.90	4820.02	-3722.86	280.83	1.54	3733.22	1442020.23	1298773.48	
8274.00	91.20	174.60	4819.53	-3752.73	283.58	1.94	3763.21	1441990.36	1298776.23	
8303.00	91.30	175.00	4818.89	-3781.61	286.21	1.42	3792.19	1441961.48	1298778.85	
8332.00	91.90	174.60	4818.08	-3810.47	288.83	2.49	3821.17	1441932.61	1298781.48	
8380.00	91.90	174.60	4816.49	-3858.24	293.35	0.00	3869.12	1441884.85	1298785.99	Survey projected

## PACKERS PLUS - PACKER PLACEMENT

Ricke #4H					
Item	Description	Length	Landed @	Accumulated	Proposed
			Actual MD		
			8357.04		
	Guide Shoe	0.92	8356.12	0.92	
	Float Collar	1.32	8354.80	2.24	
	Pup	6.12	8348.68	8.36	
	Float Collar	1.34	8347.34	9.70	
	<b>Toe Circulating Sub</b>	<b>2.73</b>	<b>8344.61</b>	<b>12.43</b>	
	Pup	6.12	8338.49	18.55	
1	Joint 4.50" 11.60ppf L-80	45.56	8292.93	64.11	
	Pup	3.08	8289.85	67.19	
	<b>Dual Hydraulic Fracport</b>	<b>4.33</b>	<b>8285.52</b>	<b>71.52</b>	
	Pup	6.13	8279.39	77.65	
2	Joint 4.50" 11.60ppf L-80	45.55	8233.84	123.20	
3	Joint 4.50" 11.60ppf L-80	45.58	8188.26	168.78	
	Pup	3.09	8185.17	171.87	
	<b>RSIS</b>	<b>7.17</b>	<b>8178.00</b>	<b>179.04</b>	
	Pup	6.10	8171.90	185.14	
4	Joint 4.50" 11.60ppf L-80	45.54	8126.36	230.68	
	Pup	3.09	8123.27	233.77	
	<b>RSII</b>	<b>5.23</b>	<b>8118.04</b>	<b>239.00</b>	
	Pup	6.10	8111.94	245.10	
5	Joint 4.50" 11.60ppf L-80	45.57	8066.37	290.67	
6	Joint 4.50" 11.60ppf L-80	45.57	8020.80	336.24	
	<b>2.125" Fracport</b>	<b>2.65</b>	<b>8018.15</b>	<b>338.89</b>	
7	Joint 4.50" 11.60ppf L-80	45.55	7972.60	384.44	
8	Joint 4.50" 11.60ppf L-80	45.54	7927.06	429.98	
	Pup	3.09	7923.97	433.07	
	<b>RSII</b>	<b>5.22</b>	<b>7918.75</b>	<b>438.29</b>	
	Pup	6.11	7912.64	444.40	
9	Joint 4.50" 11.60ppf L-80	45.54	7867.10	489.94	
10	Joint 4.50" 11.60ppf L-80	45.50	7821.60	535.44	
	<b>2.250" Fracport</b>	<b>2.65</b>	<b>7818.95</b>	<b>538.09</b>	
11	Joint 4.50" 11.60ppf L-80	45.58	7773.37	583.67	
12	Joint 4.50" 11.60ppf L-80	45.56	7727.81	629.23	
13	Joint 4.50" 11.60ppf L-80	45.58	7682.23	674.81	
	Pup	3.09	7679.14	677.90	
	<b>RSII</b>	<b>5.24</b>	<b>7673.90</b>	<b>683.14</b>	
	Pup	5.82	7668.08	688.96	
14	Joint 4.50" 11.60ppf L-80	45.58	7622.50	734.54	
15	Joint 4.50" 11.60ppf L-80	45.56	7576.94	780.10	
	<b>2.375" Fracport</b>	<b>2.65</b>	<b>7574.29</b>	<b>782.75</b>	
16	Joint 4.50" 11.60ppf L-80	45.55	7528.74	828.30	
17	Joint 4.50" 11.60ppf L-80	45.53	7483.21	873.83	
18	Joint 4.50" 11.60ppf L-80	45.55	7437.66	919.38	
	Pup	3.08	7434.58	922.46	
	<b>RSII</b>	<b>5.23</b>	<b>7429.35</b>	<b>927.69</b>	



## PACKERS PLUS - PACKER PLACEMENT

	Pup	6.09	7423.26	933.78	
19	Joint 4.50" 11.60ppf L-80	45.52	7377.74	979.30	
20	Joint 4.50" 11.60ppf L-80	45.53	7332.21	1024.83	
✓	<b>2.50" Fracport</b>	<b>2.65</b>	<b>7329.56</b>	<b>1027.48</b>	
21	Joint 4.50" 11.60ppf L-80	45.54	7284.02	1073.02	
22	Joint 4.50" 11.60ppf L-80	45.50	7238.52	1118.52	
23	Joint 4.50" 11.60ppf L-80	45.58	7192.94	1164.10	
✓	Pup	3.08	7189.86	1167.18	
	<b>RSII</b>	<b>5.24</b>	<b>7184.62</b>	<b>1172.42</b>	
	Pup	6.08	7178.54	1178.50	
24	Joint 4.50" 11.60ppf L-80	45.57	7132.97	1224.07	
25	Joint 4.50" 11.60ppf L-80	45.53	7087.44	1269.60	
✓	<b>2.625" Fracport</b>	<b>2.65</b>	<b>7084.79</b>	<b>1272.25</b>	
26	Joint 4.50" 11.60ppf L-80	45.58	7039.21	1317.83	
27	Joint 4.50" 11.60ppf L-80	45.55	6993.66	1363.38	
28	Joint 4.50" 11.60ppf L-80	45.55	6948.11	1408.93	
✓	Pup	3.06	6945.05	1411.99	
	<b>RSII</b>	<b>5.24</b>	<b>6939.81</b>	<b>1417.23</b>	
	Pup	6.13	6933.68	1423.36	
29	Joint 4.50" 11.60ppf L-80	45.58	6888.10	1468.94	
30	Joint 4.50" 11.60ppf L-80	45.55	6842.55	1514.49	
✓	<b>2.75" Fracport</b>	<b>2.65</b>	<b>6839.90</b>	<b>1517.14</b>	
31	Joint 4.50" 11.60ppf L-80	45.58	6794.32	1562.72	
32	Joint 4.50" 11.60ppf L-80	45.58	6748.74	1608.30	
33	Joint 4.50" 11.60ppf L-80	45.53	6703.21	1653.83	
✓	Pup	3.08	6700.13	1656.91	
	<b>RSII</b>	<b>5.24</b>	<b>6694.89</b>	<b>1662.15</b>	
	Pup	6.14	6688.75	1668.29	
34	Joint 4.50" 11.60ppf L-80	45.54	6643.21	1713.83	
35	Joint 4.50" 11.60ppf L-80	45.54	6597.67	1759.37	
✓	<b>2.875" Fracport</b>	<b>2.65</b>	<b>6595.02</b>	<b>1762.02</b>	
36	Joint 4.50" 11.60ppf L-80	45.52	6549.50	1807.54	
37	Joint 4.50" 11.60ppf L-80	45.58	6503.92	1853.12	
38	Joint 4.50" 11.60ppf L-80	45.58	6458.34	1898.70	
✓	Pup	3.08	6455.26	1901.78	
	<b>RSII</b>	<b>5.23</b>	<b>6450.03</b>	<b>1907.01</b>	
	Pup	6.15	6443.88	1913.16	
39	Joint 4.50" 11.60ppf L-80	45.58	6398.30	1958.74	
40	Joint 4.50" 11.60ppf L-80	45.55	6352.75	2004.29	
✓	<b>3.00" Fracport</b>	<b>2.65</b>	<b>6350.10</b>	<b>2006.94</b>	
41	Joint 4.50" 11.60ppf L-80	45.48	6304.62	2052.42	
42	Joint 4.50" 11.60ppf L-80	45.52	6259.10	2097.94	
✓	Pup	3.08	6256.02	2101.02	
	<b>RSII</b>	<b>5.24</b>	<b>6250.78</b>	<b>2106.26</b>	
	Pup	6.11	6244.67	2112.37	
43	Joint 4.50" 11.60ppf L-80	45.53	6199.14	2157.90	
44	Joint 4.50" 11.60ppf L-80	45.52	6153.62	2203.42	
✓	<b>3.125" Fracport</b>	<b>2.65</b>	<b>6150.97</b>	<b>2206.07</b>	

## PACKERS PLUS - PACKER PLACEMENT

45	Joint 4.50" 11.60ppf L-80	45.50	6105.47	2251.57	
46	Joint 4.50" 11.60ppf L-80	45.51	6059.96	2297.08	
47	Joint 4.50" 11.60ppf L-80	45.52	6014.44	2342.60	
✓	Pup	3.09	6011.35	2345.69	
	<b>RSII</b>	<b>5.24</b>	<b>6006.11</b>	<b>2350.93</b>	
	Pup	6.13	5999.98	2357.06	
48	Joint 4.50" 11.60ppf L-80	45.52	5954.46	2402.58	
49	Joint 4.50" 11.60ppf L-80	45.54	5908.92	2448.12	
✓	<b>3.25" Fracport</b>	<b>2.65</b>	<b>5906.27</b>	<b>2450.77</b>	
50	Joint 4.50" 11.60ppf L-80	45.52	5860.75	2496.29	
51	Joint 4.50" 11.60ppf L-80	45.51	5815.24	2541.80	
52	Joint 4.50" 11.60ppf L-80	45.54	5769.70	2587.34	
✓	Pup	3.09	5766.61	2590.43	
	<b>RSII</b>	<b>5.23</b>	<b>5761.38</b>	<b>2595.66</b>	
	Pup	6.12	5755.26	2601.78	
53	Joint 4.50" 11.60ppf L-80	45.54	5709.72	2647.32	
54	Joint 4.50" 11.60ppf L-80	45.55	5664.17	2692.87	
✓	<b>3.375" Fracport</b>	<b>2.65</b>	<b>5661.52</b>	<b>2695.52</b>	
55	Joint 4.50" 11.60ppf L-80	45.54	5615.98	2741.06	
56	Joint 4.50" 11.60ppf L-80	45.50	5570.48	2786.56	
57	Joint 4.50" 11.60ppf L-80	45.53	5524.95	2832.09	
✓	Pup	3.09	5521.86	2835.18	
	<b>RSII</b>	<b>5.24</b>	<b>5516.62</b>	<b>2840.42</b>	
	Pup	6.13	5510.49	2846.55	
58	Joint 4.50" 11.60ppf L-80	45.50	5464.99	2892.05	
59	Joint 4.50" 11.60ppf L-80	45.55	5419.44	2937.60	
60	Joint 4.50" 11.60ppf L-80	45.58	5373.86	2983.18	
61	Joint 4.50" 11.60ppf L-80	45.56	5328.30	3028.74	
62	Joint 4.50" 11.60ppf L-80	45.54	5282.76	3074.28	
63	Joint 4.50" 11.60ppf L-80	45.52	5237.24	3119.80	
64	Joint 4.50" 11.60ppf L-80	45.50	5191.74	3165.30	
65	Joint 4.50" 11.60ppf L-80	45.52	5146.22	3210.82	
66	Joint 4.50" 11.60ppf L-80	45.52	5100.70	3256.34	
67	Joint 4.50" 11.60ppf L-80	45.51	5055.19	3301.85	
68	Joint 4.50" 11.60ppf L-80	45.50	5009.69	3347.35	
✓	<b>SF Hanger</b>	<b>9.91</b>	<b>4999.78</b>	<b>3357.26</b>	



**Do It Once  
Do It Right**

**Job Record V1.1.2**

Operator:	Woolsey Operating Company	Base Point:	20600 Conway
Company Rep:	Mike Tharp	Packers Plus Rep:	Gary Goodman/Tim Jones
Well Name:	Ricke 4-H	Date Started:	6/15/2012
Ticket Number:	SOU004926	Date Completed:	6/27/2012
County/State:	Barber Co, KS	Type of Job:	StackFrac HD
Field	Stranathan	Formation	Mississippi
Rig Name	Dan-D 11	Well API #	-

**DETAIL THE JOB - THIS FORM USED TO REPORT WHAT ACTUALLY TOOK PLACE - FILL OUT COMPLETELY**

General Well Information				Stages			
Well Profile	Open Hole Horizontal			Number of Stages	12		
Depth TVD	4,815	Feet		MD to Packer 1	202		
Depth MD	8,380	Feet		Packer 1 to Packer 2	194.07		
Lateral Length	3,309	Feet		Packer 2 to Packer 3	239.61		
				Packer 3 to Packer 4	239.32		
KOP	4,152	Feet		Packer 4 to Packer 5	239.49		
				Packer 5 to Packer 6	239.57		
Hole Size	6.250	Inch		Packer 6 to Packer 7	239.68		
				Packer 7 to Packer 8	239.63		
BHP	0	PSI		Packer 8 to Packer 9	194.01		
				Packer 9 to Packer 10	239.43		
BHT	106	°F		Packer 10 to Packer 11	239.5		
				Packer 11 to Packer 12	239.52		
Reamer run?	yes	Size	6				
Build Rate	9.44/100		*/100 FT				
Max Dog Leg	9		*/100 FT				
Angle of Perma Plus	4999.78' @ 61 degrees						
Planned Depth Bullet Guide	8,357	Feet					
Actual Depth Bullet Guide	8,357	Feet					
Distance Off	0	Feet					
				Average Stage Length	229		Feet

**WORK STRING INFORMATION**

Casing	Weight	Thread	ID	Capacity	Grade	Shoe	
7	23	LTC	6.366	0.039368521	J55	5071	
				0			
Drill Pipe	Weight	Thread	ID	Capacity	Grade	Length	Torque
4	14	IF	3.34	0.010836992	XH	3789.61	10K
Heavy Weight	Weight	Thread	ID	Capacity	Grade	Length	Torque
4	27.2	IF	2.3125	0.005194925	XH	1233.52	10K
Drill Collar	Weight	Thread	ID	Capacity	Grade	Length	Torque
0	0	0	0	0	0	0	0
Liner	Weight	Thread	ID	Capacity	Grade	Length	Torque
4.5	11.6	LTC	4	0.015543035	L80	3096.82	2280

**Well Data**

MD	TVD	KOP	Shoe	Lateral	Open Hole Size	Capacity
8380	4815	4152	5071	3309	6.25	0.03794686 bbl/ft

**FLUIDS**

Mud Weight	Mud Type	Fill Fluid	Fill Weight	LCM (if yes-amount- ppg)	Viscosity	
8.34	WATER BASE	FRESH WATER	8.34	8 ppg	28	
Fluid Level in Annulus Start	full	PUMP TYPE	SPM	BPS	Rig Type	Weight
Fluid Level in Annulus Change	full	DH-7000	75	0.079	Kelly	50K

**AS RUN IN HOLE WEIGHTS**

Liner	Air	Mud	Push Pipe	Air	Mud	H.W.D.P.	Air	Mud	D.P.	Air	Mud
0	0	31,339	0	0	0	0	29,271	0	0	0	46,439
Calculated Neutral Weight Including Blocks:			78K			Weight When Released From PermaPlus:			78K		
						Pipe Stretch in Inches Before Releasing:			24"		

Setting Tool Part Number	PN 108425-000001	FracPORT Part Number	PN 121332-000022
Elastomer / Metallurgy / Pinned to	HSN P110 2800psi	Elastomer / Metallurgy / Pinned to	1890psi
Packer Part Number	PN 121381-000001	Other Part Number	3.5" IF Handling Sub PPHS 012 AR
Elastomer / Metallurgy / Pinned to	HSN p-110 1944psi	Elastomer / Metallurgy / Pinned to	n/a
FTR	Yes	Problem on Job	Dropped Fracports from Rig Floor

**Notes:**



## Woolsey Operating Company, LLC

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

Measured Depth Log

Well Name: Ricke #4-H  
Location: Section - 5 - Township 35 South - Range 11 West  
License Number: 15-007-23861-01-00 Region: Barber County, KS  
Spud Date: May 17, 2012 Drilling Completed: June 14, 2012  
Surface Coordinates: 1055' FNL and 360' FWL  
Approx. SE SW NW NW  
Bottom Hole  
Coordinates:  
Ground Elevation (ft): 1375' K.B. Elevation (ft): 1392'  
Logged Interval (ft): 3400' To: 5071' Total Depth (ft): 5071'  
Formation: Kansas City -----> Mississippian  
Type of Drilling Fluid: Water/Chemical Mud  
Printed by WellSight Log Viewer from WellSight Systems 1-800-447-1534 www.WellSight.com

### OPERATOR

Company: Woolsey Operating Company, LLC  
Address: 125 N. Market, Suite 1000  
Wichita, KS 67202

### GEOLOGIST

Name: Billy G. Klaver  
Company: Woolsey Operating Co. LLC  
Address: 125 N. Market, Wichita Kansas, 67202

### COMMENTS

Surface Casing: 20" X 53#/ft conductor set at 40' with 4 yards grout.  
Ran 13 3/8" X 54.5#/ft to 270' with 240 sx.  
Ran 7" X 23#/ft to 5071' with 230 sx.


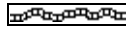
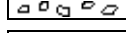
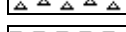
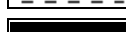








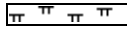







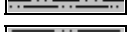

Gas Detector: Woolsey Operating Co. Gas Trailer #2  
Mud System: Mud Co. Brad Bortz, Engineer

## DSTs















































































No tests were ran.

## CREWS

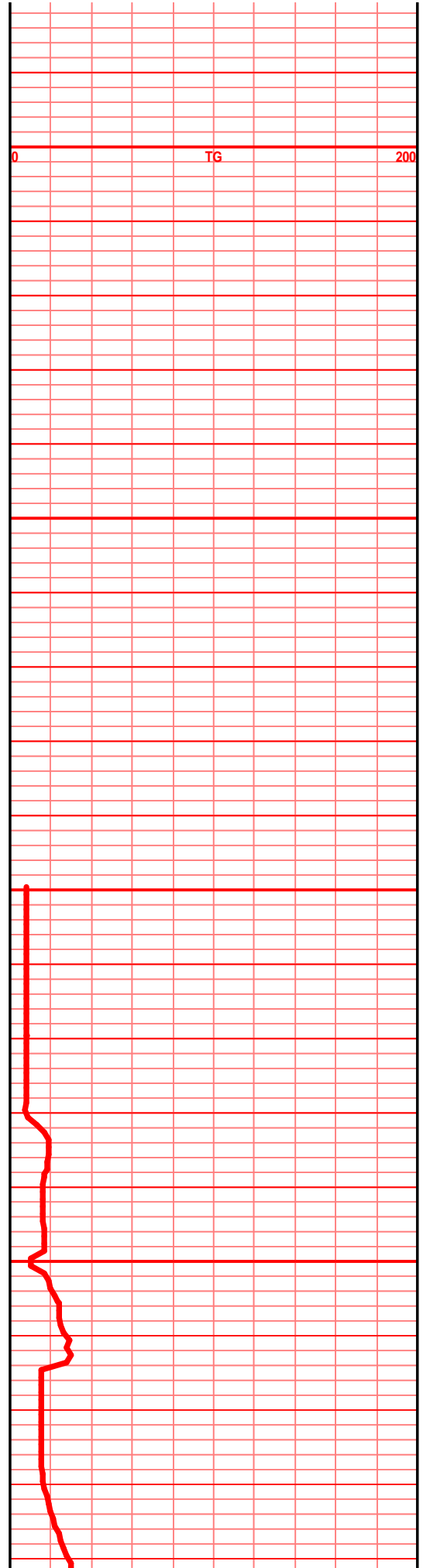
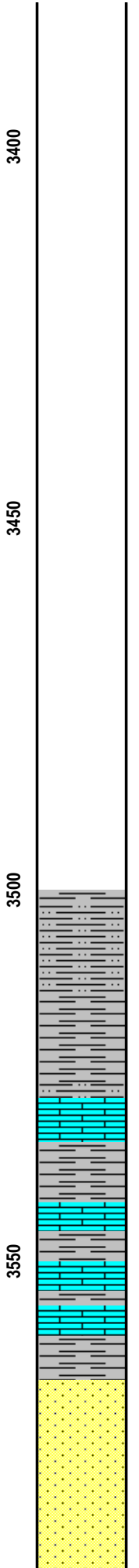
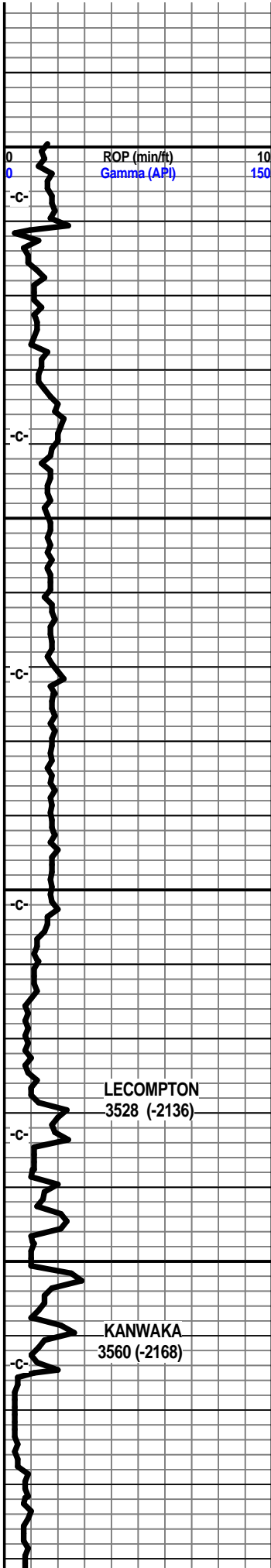
### ROCK TYPES

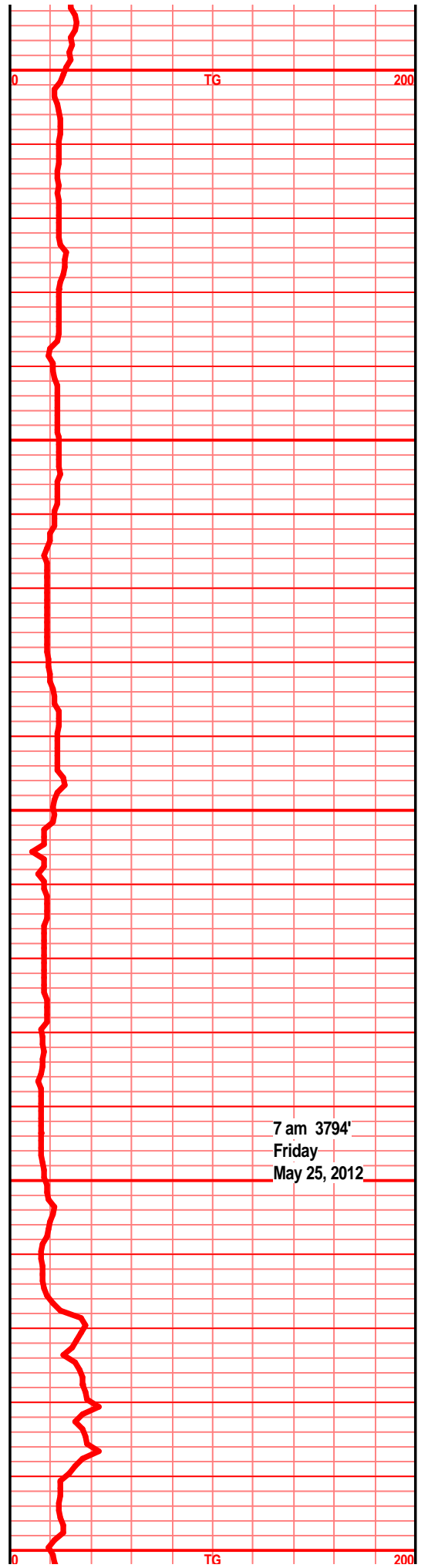
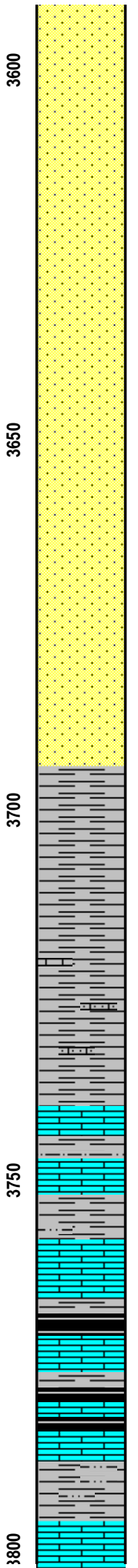
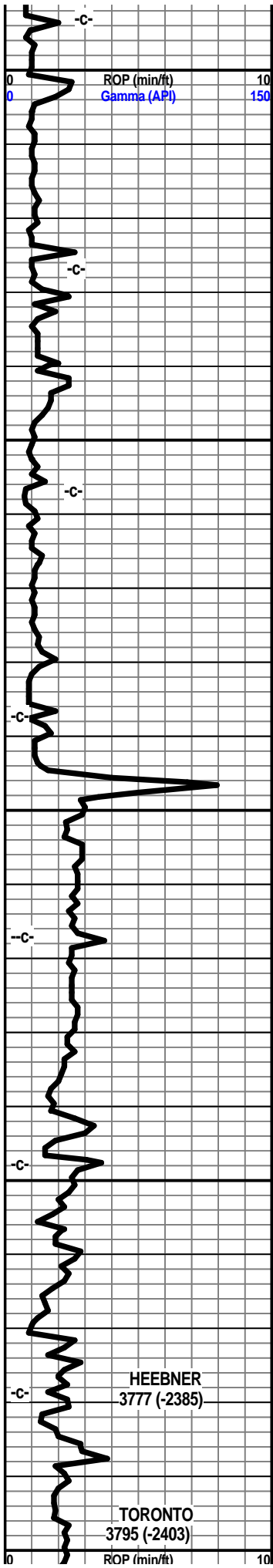
 Anhy  Bent  Brec  Cht  Clyst  Coal	 Congl  Sdy dolo  Shy dolo  Dol  Gyp  Sdy lmst	 Lmst  Mrlst  Salt  Shale  Sltst  Ss	 Black sh  Gry sh  Shale  Shysltst  Sltsh
---	--	--	---

### ACCESSORIES

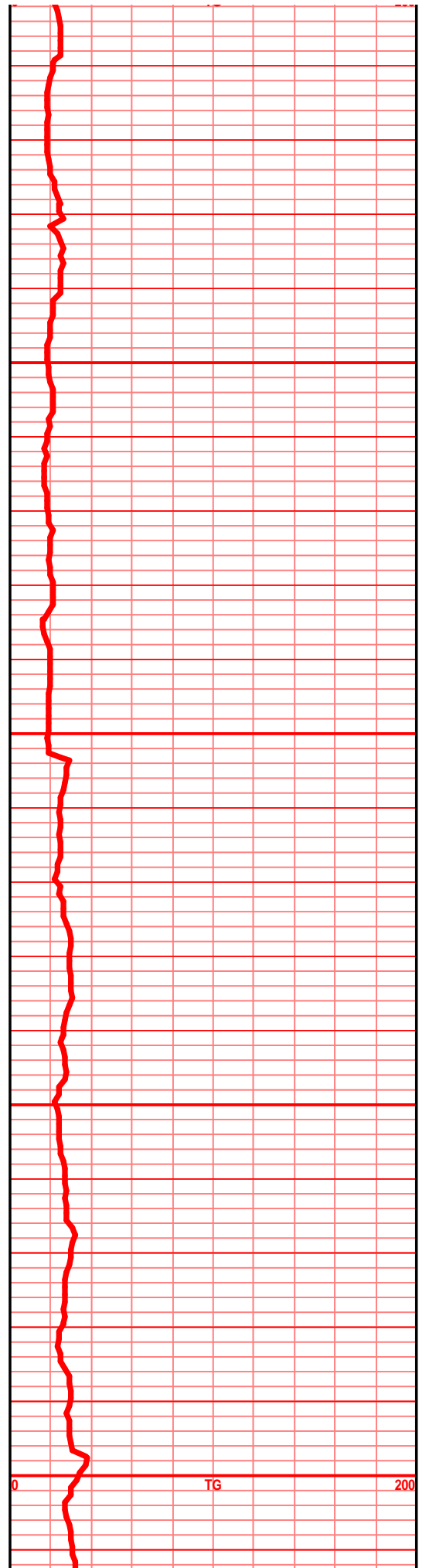
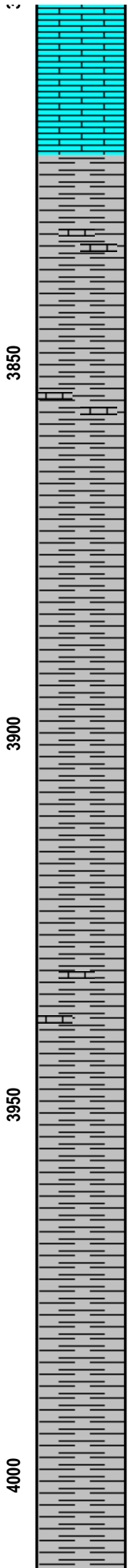
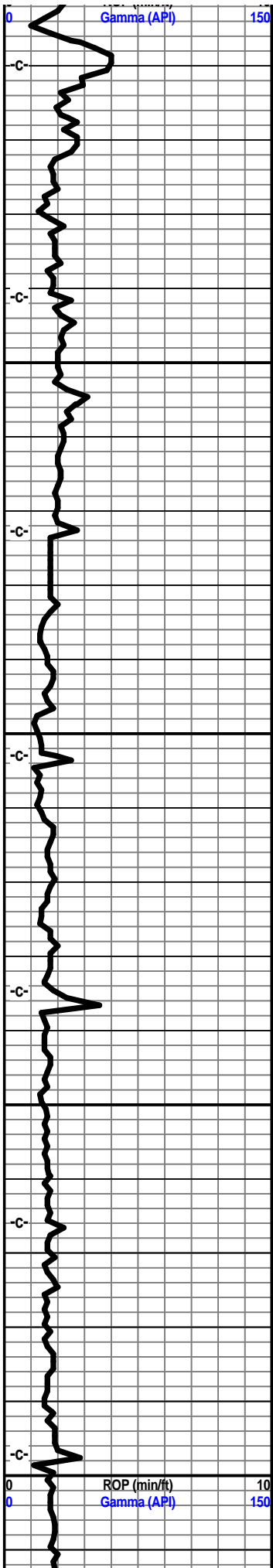
<b>MINERAL</b>  Anhy  Arg  Bent  Bit  Brecfrag  Calc  Carb  Chtdk  Chtlt  Dol  Ferrpel  Ferr  Glau  Gyp  Marl  Nodule  Phos  Pyr  Salt  Sandy  Silt	 Chlorite  Dol  Sand  Slt  <b>FOSSIL</b>  Algae  Amph  Belm  Bioclst  Brach  Bryozoa  Cephal  Coral  Crin  Echin  Fish  Foram  Fossil  Gastro  Oolite  Ostra	 Pelec  Pellet  Pisolite  Plant  Strom  Fuss  Oomoldic  <b>STRINGER</b>  Anhy  Arg  Bent  Coal  Dol  Gyp  Ls  Mrst  Sltstrg  Ssstrg  Carbsh  Clystn  Dol	 Grysh  Gryslt  Lms  Sandylms  Sh  Sltstn  <b>TEXTURE</b>  Boundst  Chalky  Cryxln  Earthy  Finexln  Grainst  Lithogr  Microxln  Mudst  Packst  Wackst
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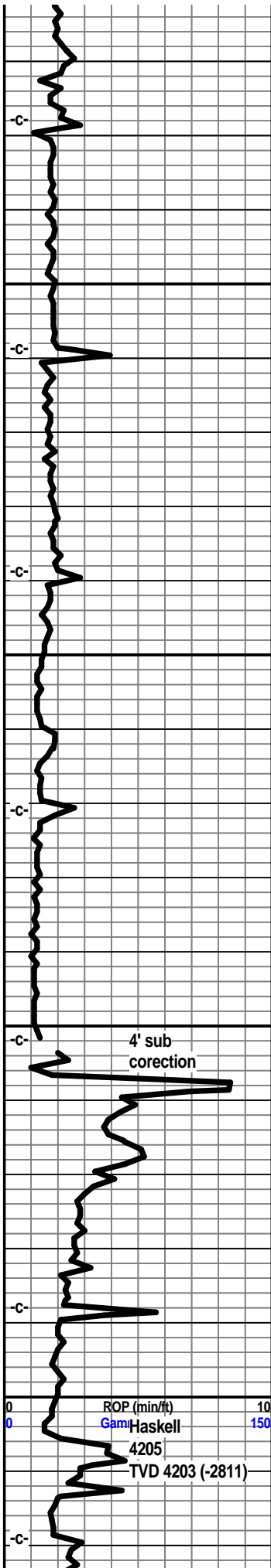








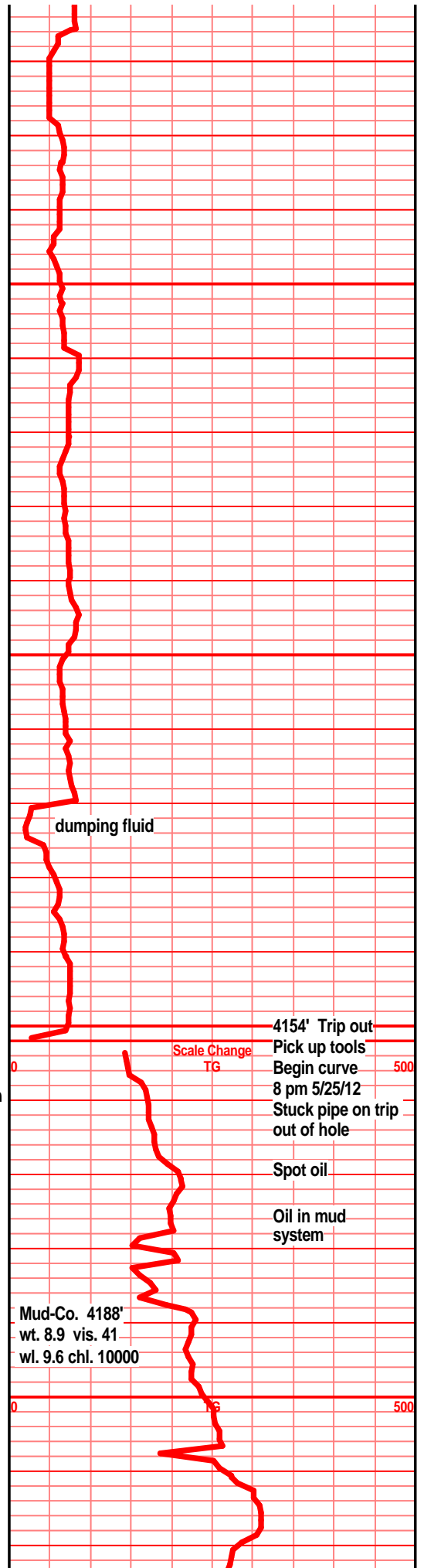


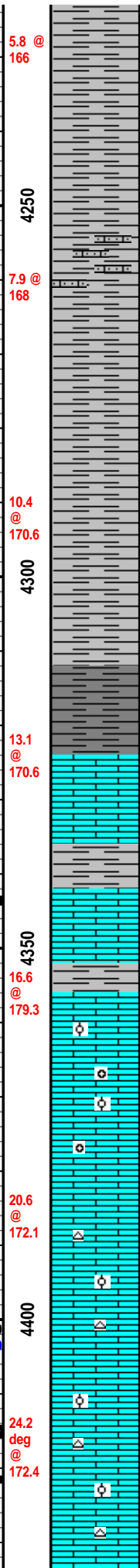
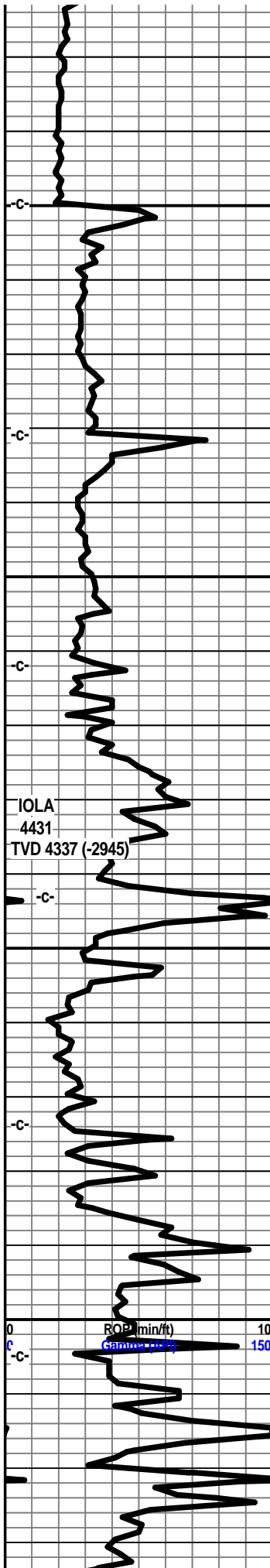


shl gry drk gry, gry drk brn, silty, soft, spls wsh drk gry

shl gry drk gry silty soft

shl drk gry, med gry silty soft, spls wsh med gry, tr gritty gran text





shll gry med drk gry silty, tr gritty soft, gran in prt.

shl gry drk gry silty soft, tr gritty

shl gry drk/med gry silty gritty, tr lst tan crm brn f vfxln blkly dns hrd calc

shl gry drk gry silty soft, tr gritty, spls wsh med gry

shl gry drk gry, silty soft, sticky, spls wsh med gry

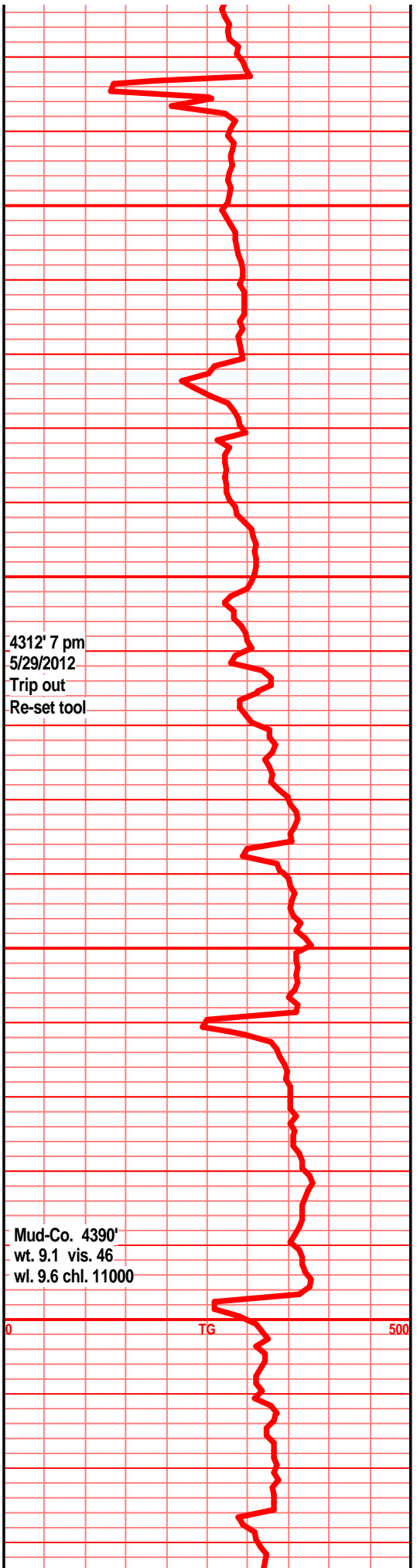
shl gry blk, blk carb in prt, blkly ang pcs, tr gas bubs, lst wht tan crm f sli med xln, sub chlky foss dns

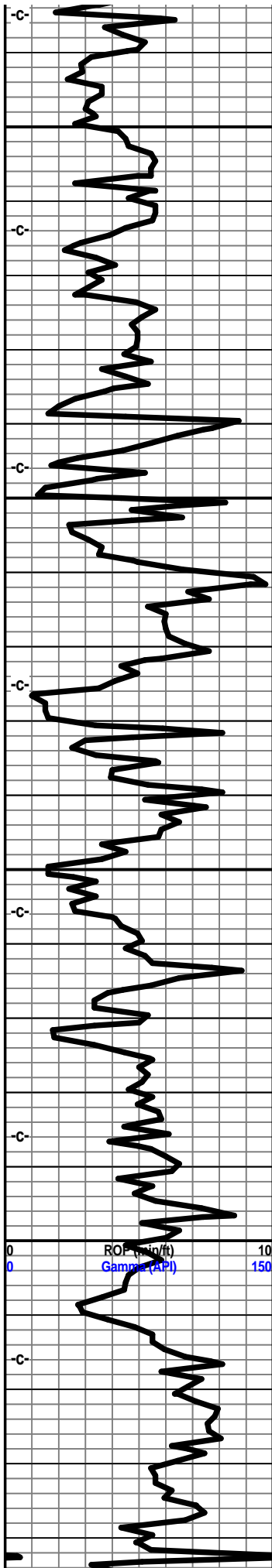
shl gry med gry calc, lst wht tan crm f sli med xln sub chlky foss frags tr foss ool, calc xln fill, soft chlky gran in prt

lst wh off wht tan, f sli med xln, sub chlky, soft chlky gran in prt, tr foss frags, tr foss ool, moldic por, calc xln fill, spls wsh off wht, chrt wht shrp opa

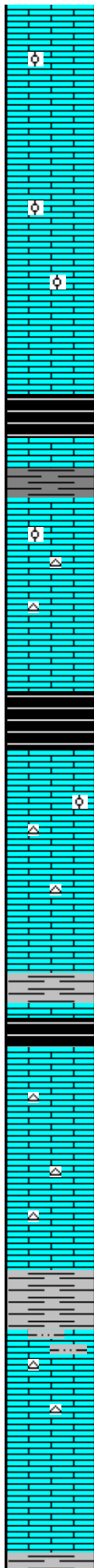
lst crm wht off wht, f sli med xln, sub chlky to chlky, foss frags, foss ool, foss mold por, tr calc xln fill, chrt wht shrp frsh opa, tr foss inclu

lst crm tl gry tan f sli med lxn gran soft, sub chlky to chlky foss frags, calc xln fill, spls wsh wht, chrt wht opa shrp frsh blkly, tr foss inclu





28.2 @ 175.1  
44.4  
31.6 @ 178.9  
4500  
35.4 @ 181.3  
4500  
39.2 @ 180.6  
4550  
43.3 @ 179.5  
4600  
47.6 @ 179.0  
4610  
51.3 @ 178.3



lst crm tan lt gry f sli med xln gran, sub chlky/chlky foss frags, foss mold por, calc xln fill, chrty, chrt wht shrp frsh foss

lst gry crm tan f xln sli med xln in prt, sub chlky to chlky, foss frags, tr foss ool, foss mold por, chrty in prt, much blk carb shl in 4500' spl

lst tan lt gry crm f vsli med xln gran flky sub chlky/chlky, foss frags, tr chrty, chrt wht off wht shrp frsh foss

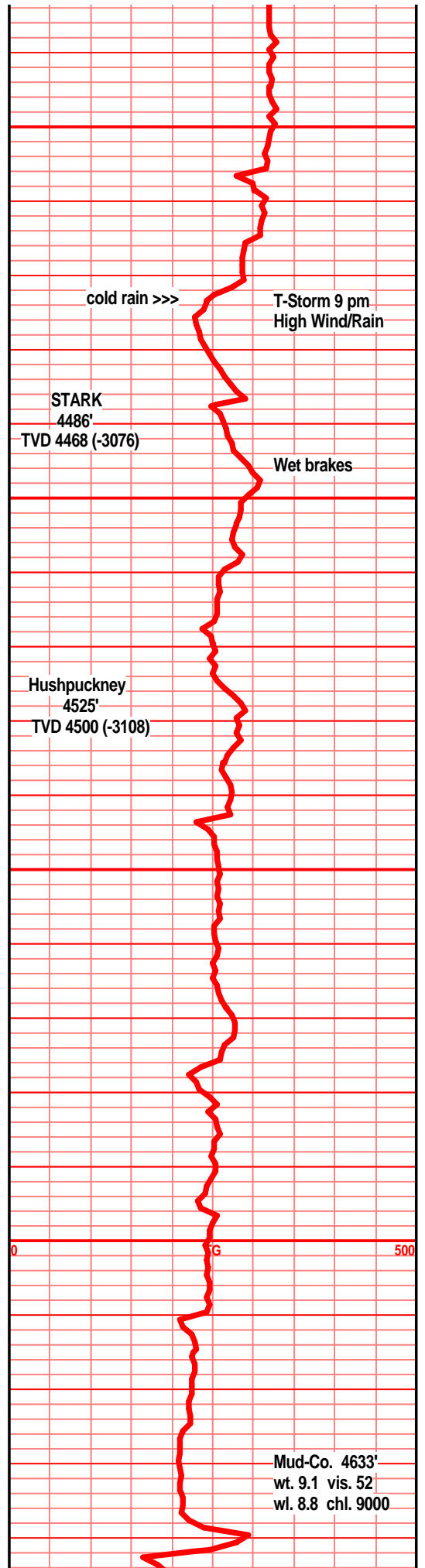
much blk carb shl, lst tan crm lt gry, f xln gran blk sub chlky foss frags, calc xln fill, tr gran, tr chrt aa

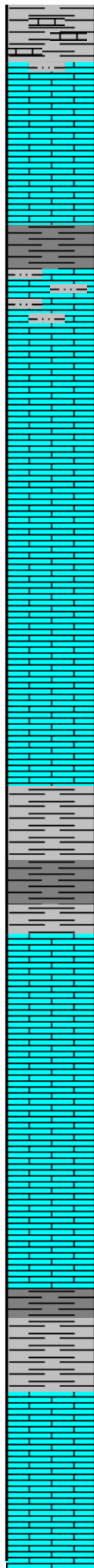
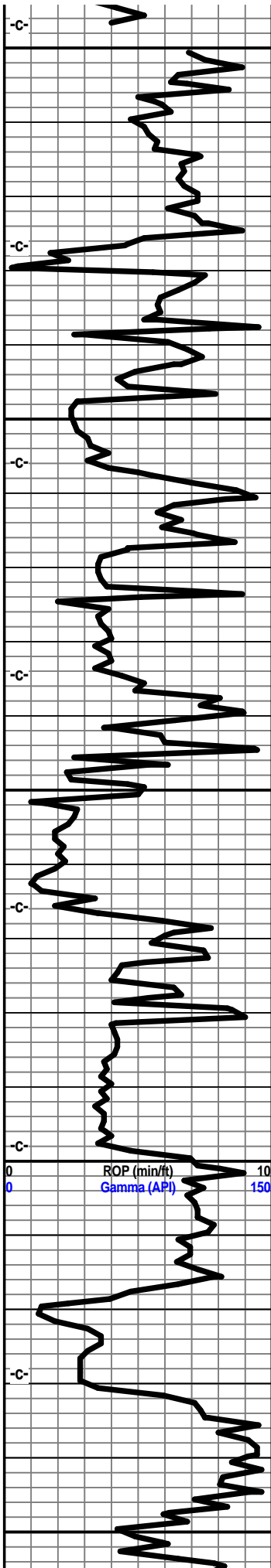
lst lt gry tan f tr sli med xln gran blk ang tr arg, tr sub chlky, foss frags gran, chrt tan off wht shrp frsh

lst lt gry gry off wht f vf xln dns blk ang sub chlky/chlky tr foss frags, calc xln fill, tr chrt off wht lt gry shrp frsh opa

shl gry, gry green brn, silty gritty, calc, lst tan gry brn f vf xln dns hrd silty gritty, chrt tan gry brn shrp frsh foss

lst gry crm tan f vf lxn dns hrd blk ang arg, foss frags, calc xln fill, tr chrt tan gry tr brn shrp frsh foss opa





shl gry green silty gritty pyritic, calc, 1st tan lt gry f vf xln, gran gritty silty, 1st tan brn vf xln dns hrd blk ang dns

shl gry green, silty gritty, 1st buff tan crm f vf xln dns bky ang hrd, sub chky

1st tan crm buff f vf xln dns blk ang hrd, tr sub chky mic foss, shl gry med gry silty gritty calc

1st crm buff tan f vf xln blk ang dns hrd, sub chky in prt, tr micro foss, chrt wht shrp frsh opa

1st crm buff tan off wht in prt, f vf xln blk ang hrd dns, tr sub chky tr micro foss, tr foss micro ool

shl gry, drk gry blk, carb in prt, 1st tan gry buff, f vf xln dns hrd blk tr sub chky, foss frags, calc xln fill, arg in prt

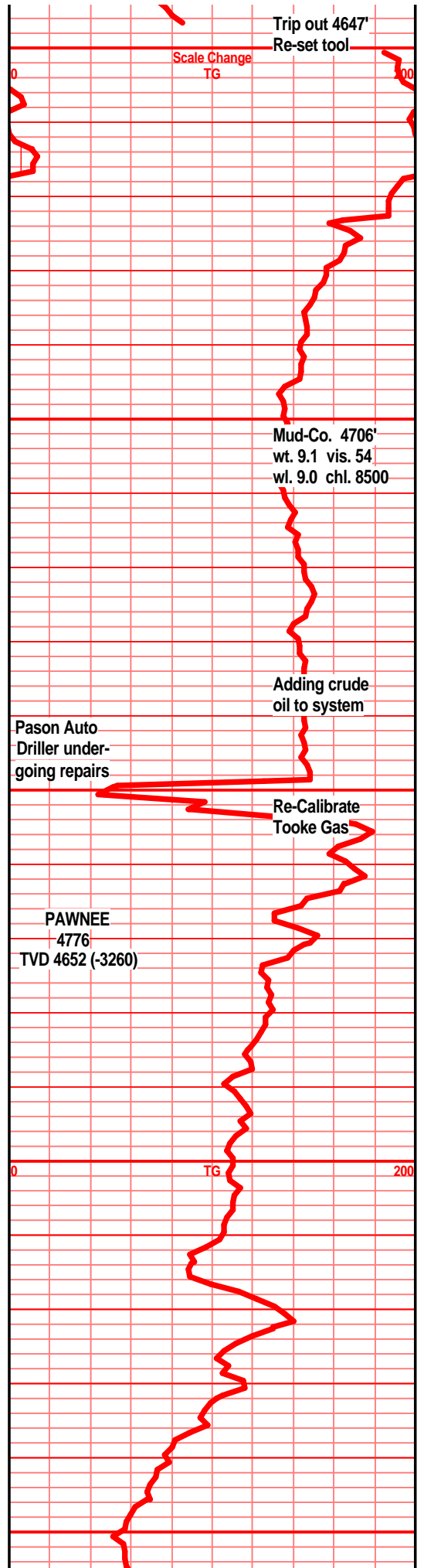
shls, gry med gry tr blk carb 1st crm lt gry tan f vf xln dns blk ang hrd, tr micro foss frags,

1st crm buff tan off wht f vf xln dns hrd blk ang, tr sub chky, micro foss, tr calc xln fill

1st crm buff tan tr lt gry/tan f vf xln gran blk dns ang hrd, tr sub chky, micro foss frags,

sh gry drk gry, tr carb text in prt, 1st crm buff tan, lt gry f vf xln dns hrd blk ang tr sub chky, micro foss, calc xln fill

1st crm tan buff tr lt gry, f vf xln dn shrd blk ang, tr sub chky, tr micro foss frags, shls, gry,



gry med gry silty gritty

shl gry med gry blk, blk carb in prt, blk ang pcs, tr gas bubs, lst tan lt gry buff f vf lxn gran arg silty gritty arg,

lst lt gry buff tan f vf lxn gran arg silty in prt, sub chlky, shls, gry med gry silty gritty pyritic, calc in most

lst dull tan lt gr vf lxn gran arg silty gritty, shl gry lt gry silty gritty,

lst crm buff tan tr lt gry f vf lxn blk ang calc, tr sub chlky soft, shls gry lt gry silty gritty calc

lst off wht gry tan f vf lxn dns hrd blk ang sub chlky tr calc fill, abun shl gry med gry silty gritty calc

shl gry med gry/green, tr yellow, maroon, blue green silty gritty

shl gry me gry green, tr yllw, maroon, silty, gritty, tr sndy in prt, gry-blk, blk splintery shls

shl gry blk, gry green, reddish, maroon, tr yellow maroon mix, silty, gritty, calc in prt, sndy gritty in prt

chrt wht off wht lt gry, tr smokey, shrp, frsh opa, semi opa, semi trans, tr trip edge text, tr frac por, blk hvy stain, tr gas bubs, sli odor, mostly frsh opa barren chrt

chrt wht off wht lt gry tr smokey, frsh shrp tr foss, opa, tr trans, tr weath trip edge, tan brn

4879' 7 am Saturday June 2, 2012

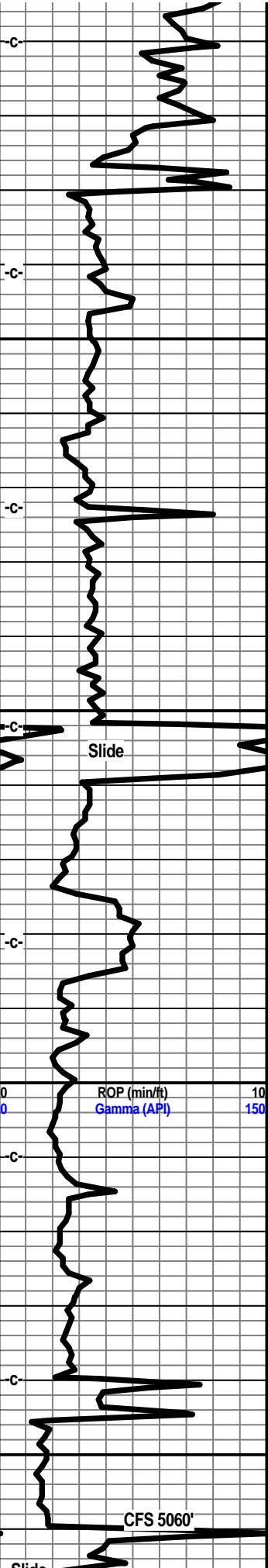
CHEROKEE GRP  
4880'  
TVD 4697 (-3305)

Mud-Co. 4923'  
wt. 9.0 vis. 59  
wl. 8.0 chl. 7,000

7 am 4952'  
Sunday June 3, 2012

Mississippi  
5045  
TVD 4758 (-3366)

CFS 5060'



67.3 @ 181.6

68.1 @ 182.1

68.4 @ 182.1

68.2 @ 183.1

68.4 @ 184.2

68.7 @ 184.7

5050

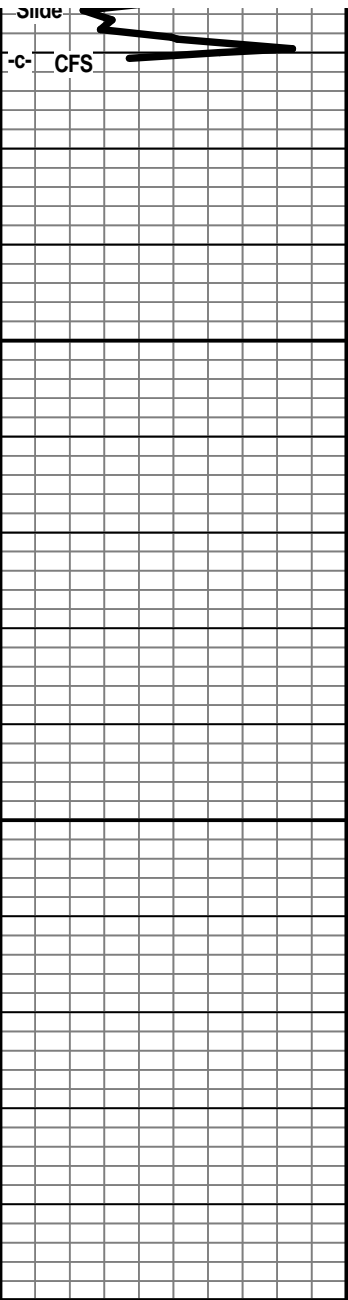
5050

ROP (min/ft)  
Gamma (API)

CFS 5060'

TG

200



00  
5150  
5100

stain, hvy blk stain, gas bubs, sli odor, dull UV,  
much shrp frsh off wht gry opag chrt

CFS 5071' MTD 5071'  
TVD 4768 (-3376)

Casing point  
6 pm Sunday  
June 3, 2012



**Woolsey Operating Company, LLC**



# **Woolsey Operating Company, LLC**

Scale 1:600 (2"=100') Metric  
Measured Depth Log

<b>Well Name:</b>	Ricke #4-H		
<b>Location:</b>	Section 5 - Township 35 South - Range 11 West		
<b>License Number:</b>	15-007-23861-01-00	<b>Region:</b>	Barber County, Kansas
<b>Spud Date:</b>	May 17, 2012	<b>Drilling Completed:</b>	June 14, 2012
<b>Surface Coordinates:</b>	1055' FNL & 360' FWL App SE SW NW NW		
<b>Bottom Hole Coordinates:</b>			
<b>Ground Elevation (m):</b>	1375'	<b>K.B. Elevation (m):</b>	1392'
<b>Logged Interval (m):</b>	4100'	<b>To: 8380' Total Depth (m):</b>	8380'
<b>Formation:</b>	Mississippian Chert		
<b>Type of Drilling Fluid:</b>	Chemical / Poly Plus (Water)		

Printed by WellSight Log Viewer from WellSight Systems 1-800-447-1534 [www.WellSight.com](http://www.WellSight.com)



### OPERATOR

Company: Woolsey Operating Company, LLC  
Address: 125 N. Market Suite 1000  
Wichita, Kansas 67202


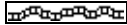


### GEOLOGIST





Name: Bill Klaver  
Company: Woolsey Operating Company, LLC  
Address: 125 N. Market Suite 1000  
Wichita, Kansas 67202





### Casing Info




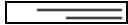
Set 20" X 53#/ft conductor pipe at 40' with 4 yards of grout.  
Ran 10 joints of 13 3/8" X 54.5#/ft set at 270' with 240 sx.  
Ran 122 joints of 7" X 23#/ft set at 5071' with 230 sx





### ROCK TYPES

 Anhy  
 Bent  
 Brec  
 Cht

 Clyst  
 Coal  
 Congl  
 Dol

 Gyp  
 Igne  
 Lmst  
 Meta

 Mrlst  
 Salt  
 Shale  
 Shcol

 Shgy  
 Sltst  
 Ss  
 Till

### ACCESSORIES

#### MINERAL

Anhy  
 Arggrn  
 Arg  
 Bent  
 Bit  
 Breclfrag  
 Calc  
 Carb  
 Chtdk  
 Chtlt  
 Dol  
 Feldspar  
 Ferrpel  
 Ferr  
 Glau

Gyp  
 Hvymin  
 Kaol  
 Marl  
 Minxl  
 Nodule  
 Phos  
 Pyr  
 Salt  
 Sandy  
 Silt  
 Sil  
 Sulphur  
 Tuff

#### FOSSIL

Algae  
 Amph  
 Belm  
 Bioclst  
 Brach  
 Bryozoa  
 Cephal  
 Coral  
 Crin  
 Echin  
 Fish  
 Foram  
 Fossil  
 Gastro  
 Oolite

Ostra  
 Pelec  
 Pellet  
 Pisolite  
 Plant  
 Strom

#### STRINGER

Anhy  
 Arg  
 Bent  
 Coal  
 Dol  
 Gyp  
 Ls  
 Mrst

Slststrg  
 Ssstrg

#### TEXTURE

Boundst  
 Chalky  
 Cryxln  
 Earthy  
 Finexln  
 Grainst  
 Lithogr  
 Microxln  
 Mudst  
 Packst  
 Wackest

### OTHER SYMBOLS

#### POROSITY

Earthy  
 Fenest  
 Fracture  
 Inter  
 Moldic  
 Organic  
 Pinpoint

Vuggy

#### SORTING

Well  
 Moderate  
 Poor

#### ROUNDING

Rounded  
 Subrnd  
 Subang  
 Angular

#### OIL SHOW

Even

Spotted  
 Ques  
 Dead

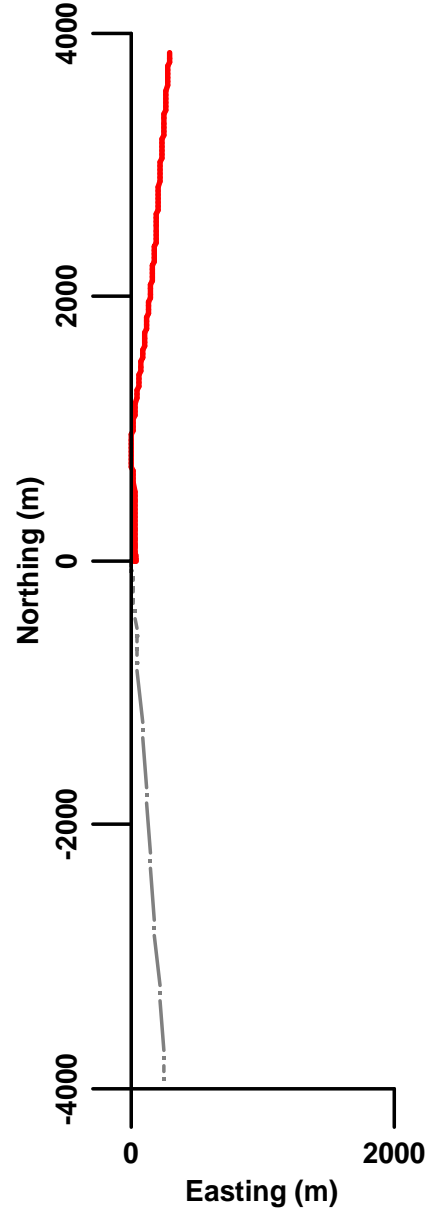
#### INTERVAL

Core  
 Dst

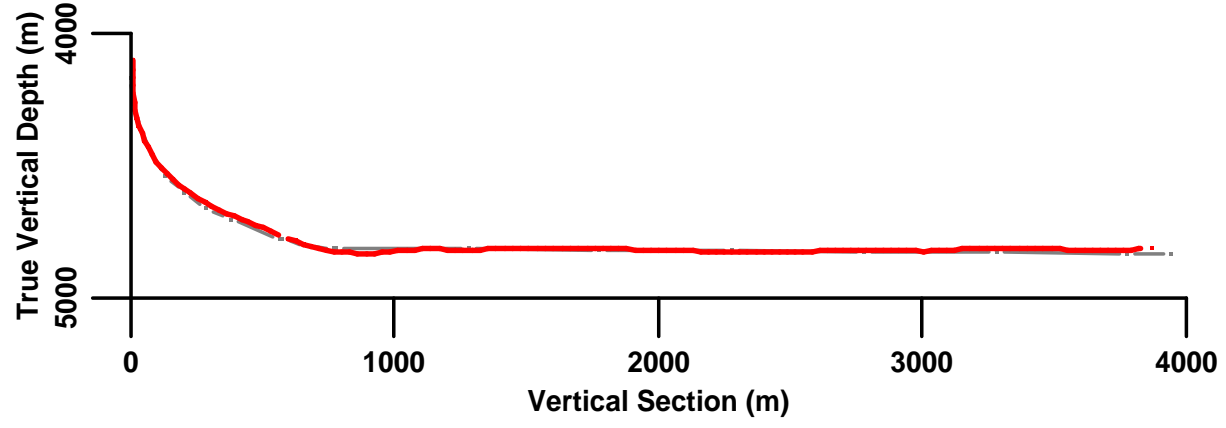
#### EVENT

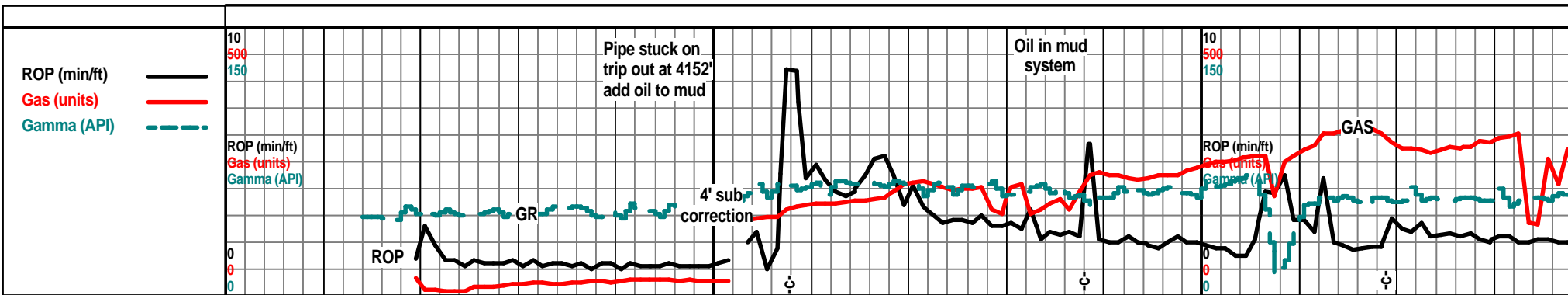
Rft  
 Sidewall

# Plan



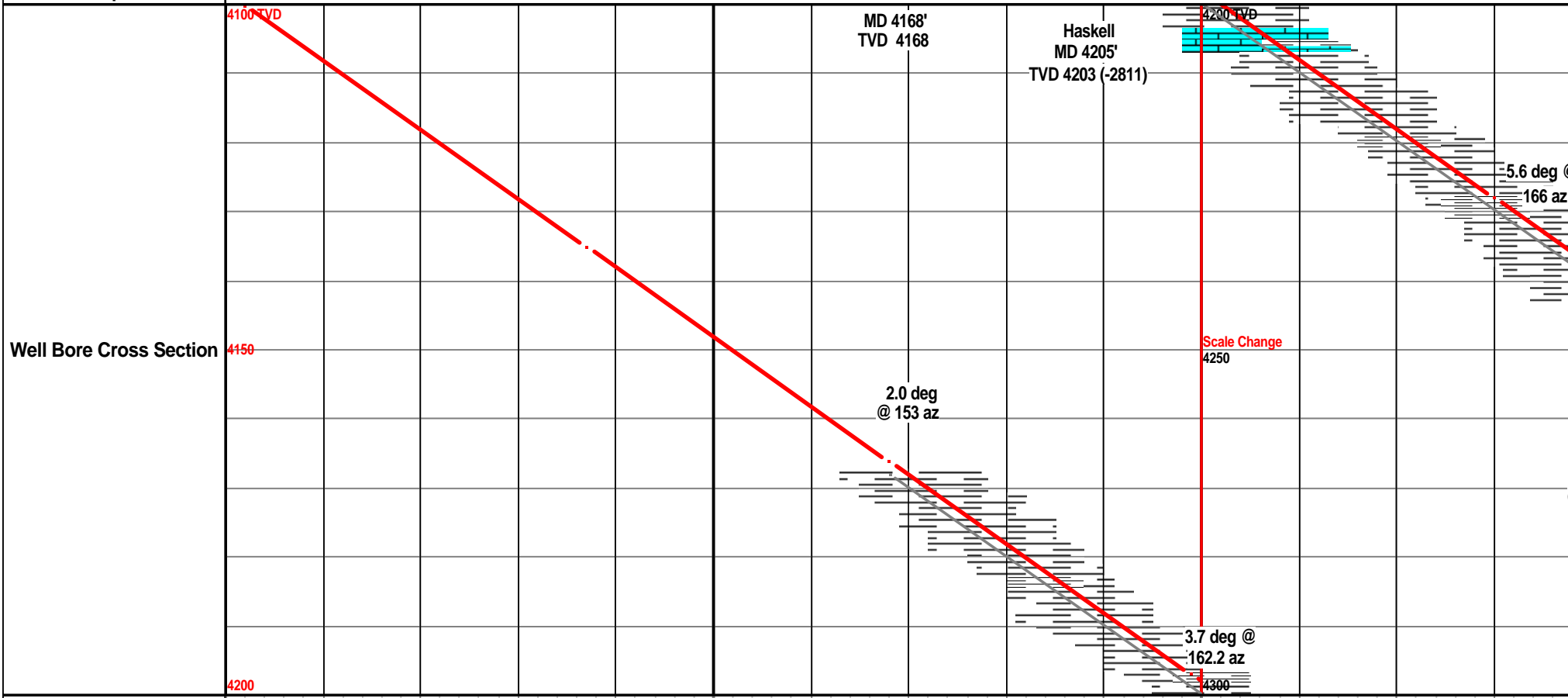
# Elevation



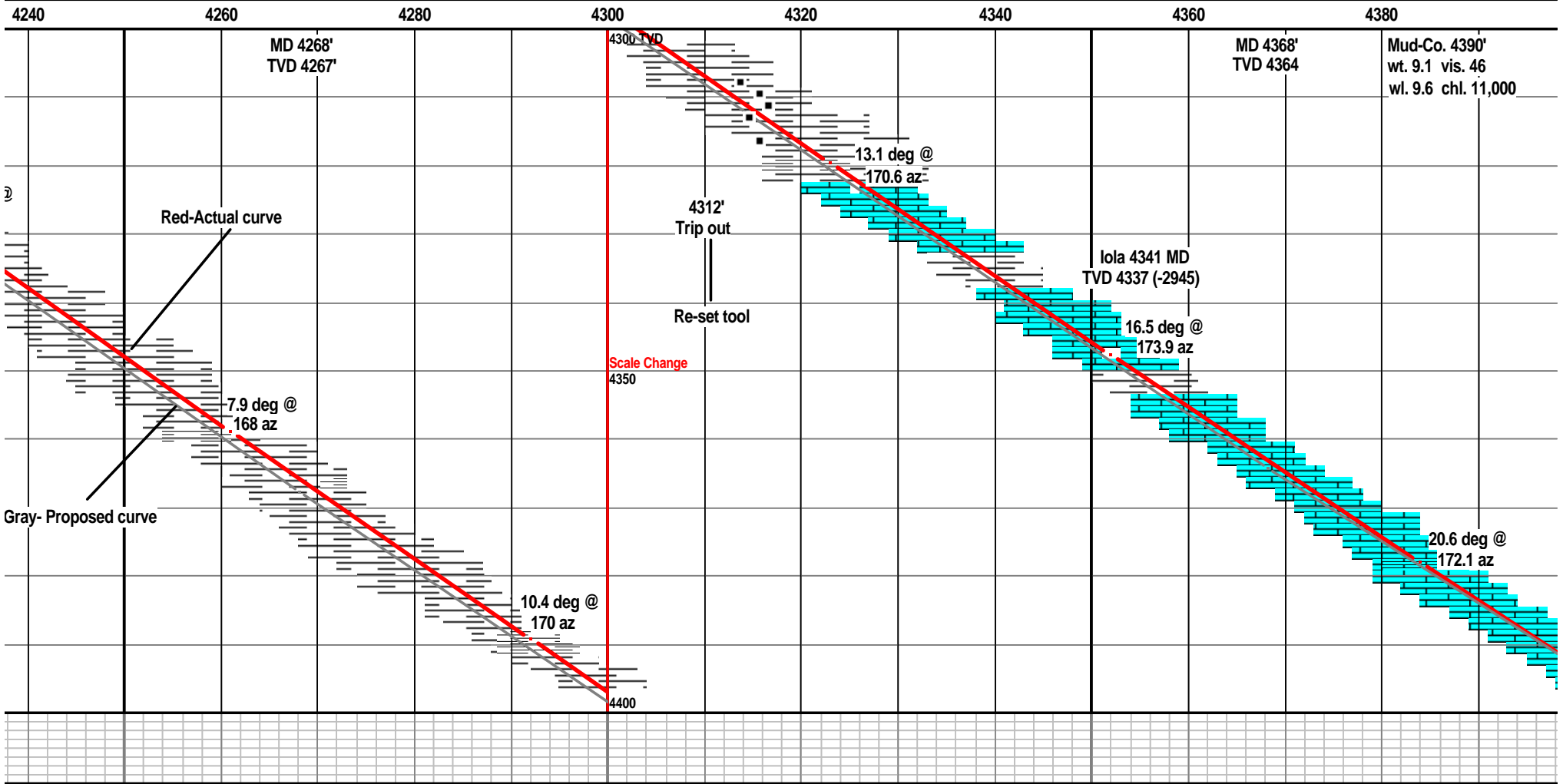
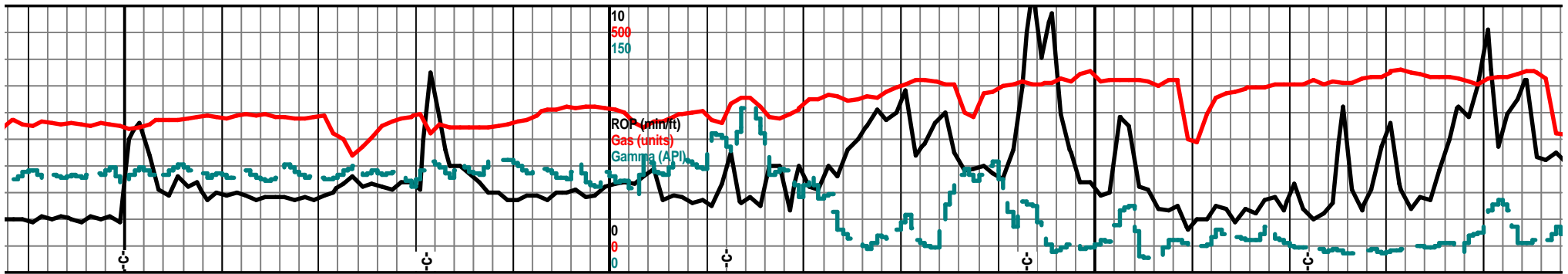


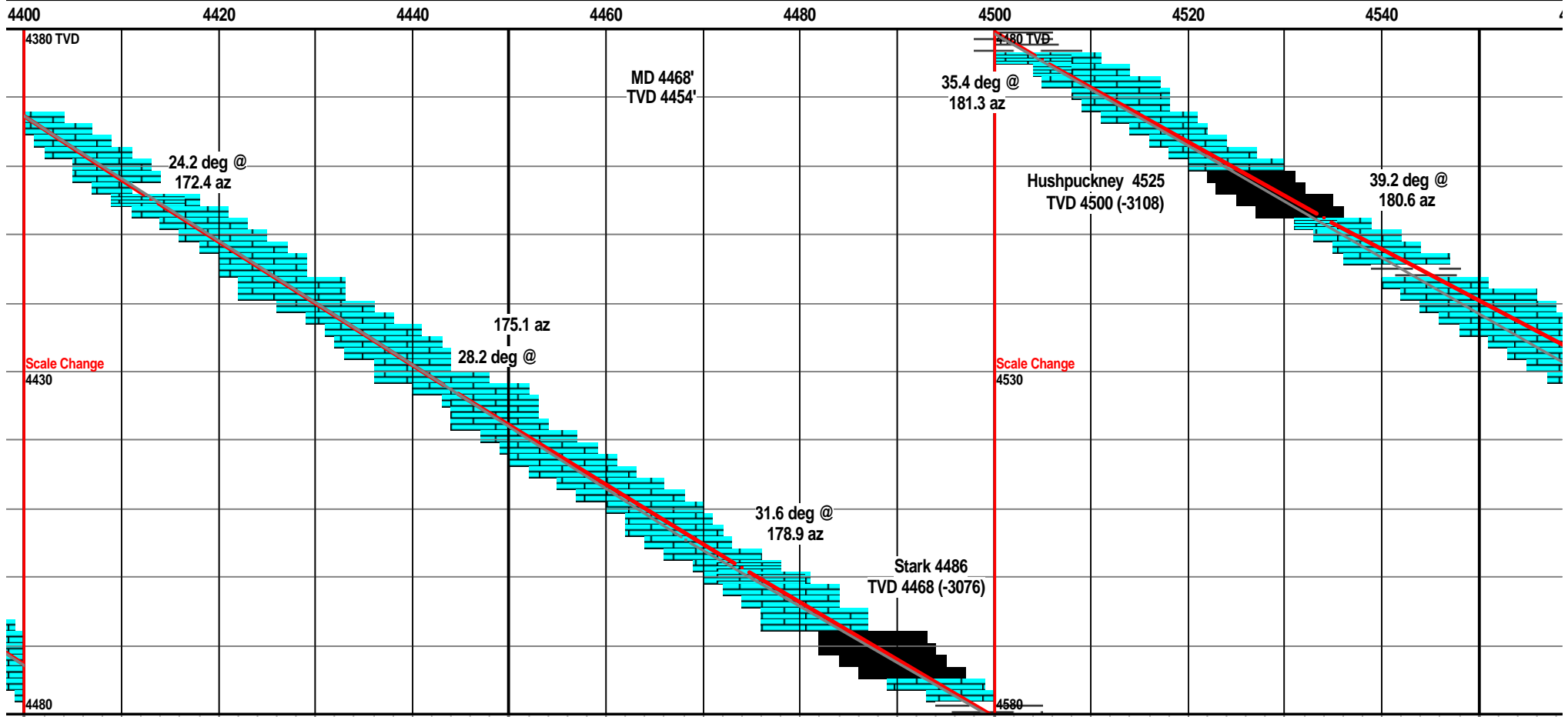
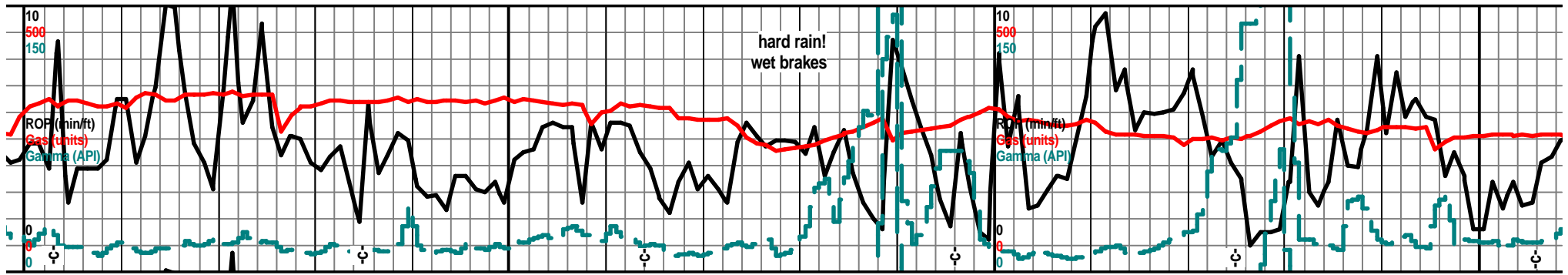
Oil Shows

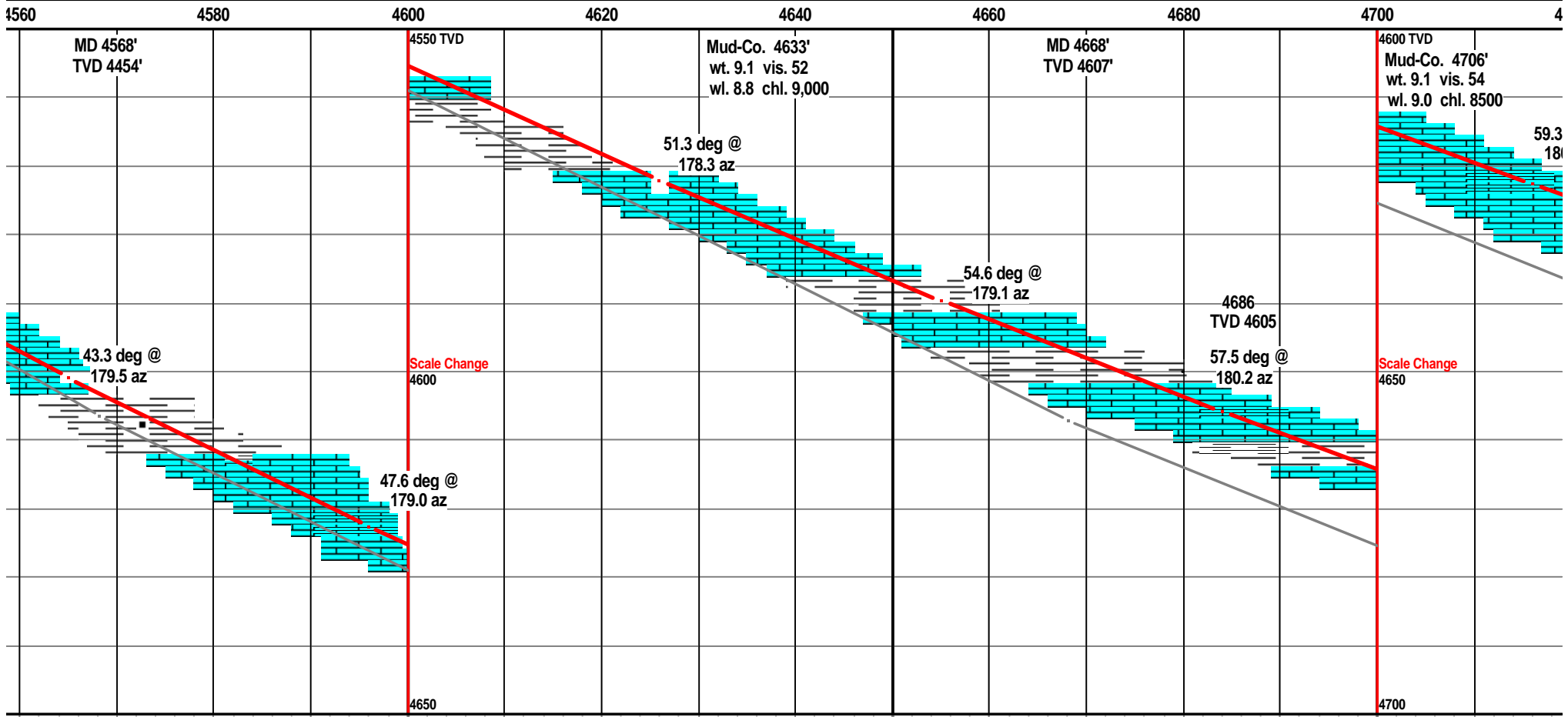
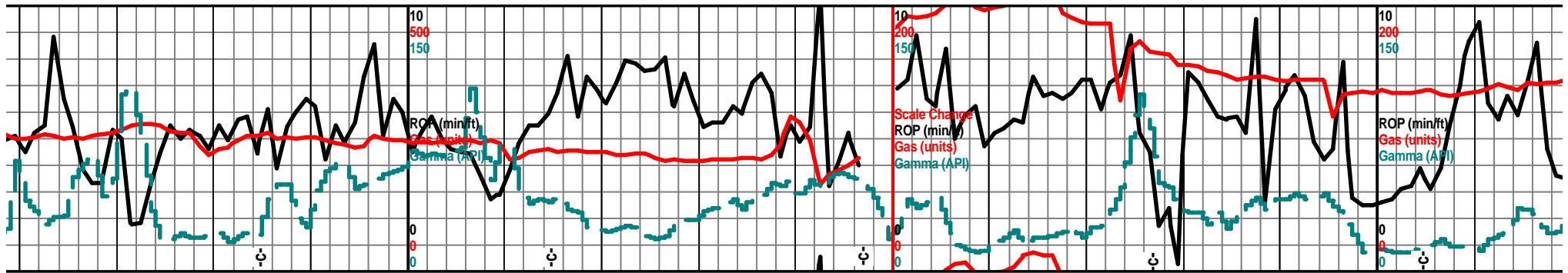
Depth 00 4120 4140 4160 4180 4200 4220



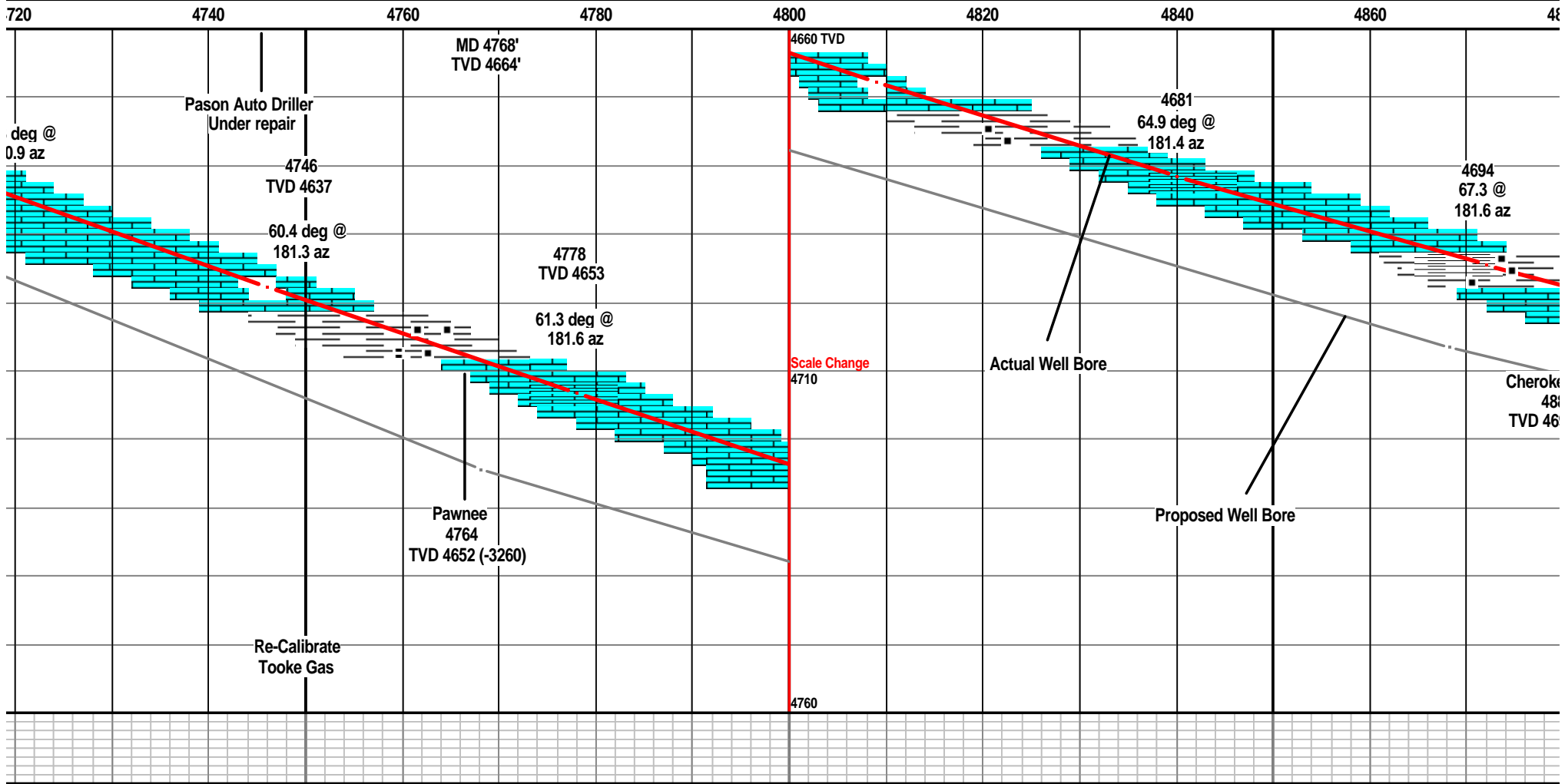
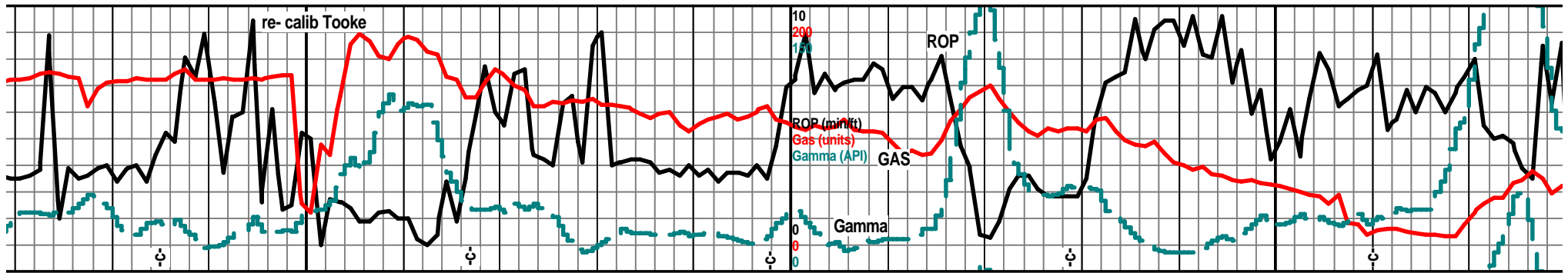
Porosity	24%
	18%
	12%
	6%
Porosity Type	

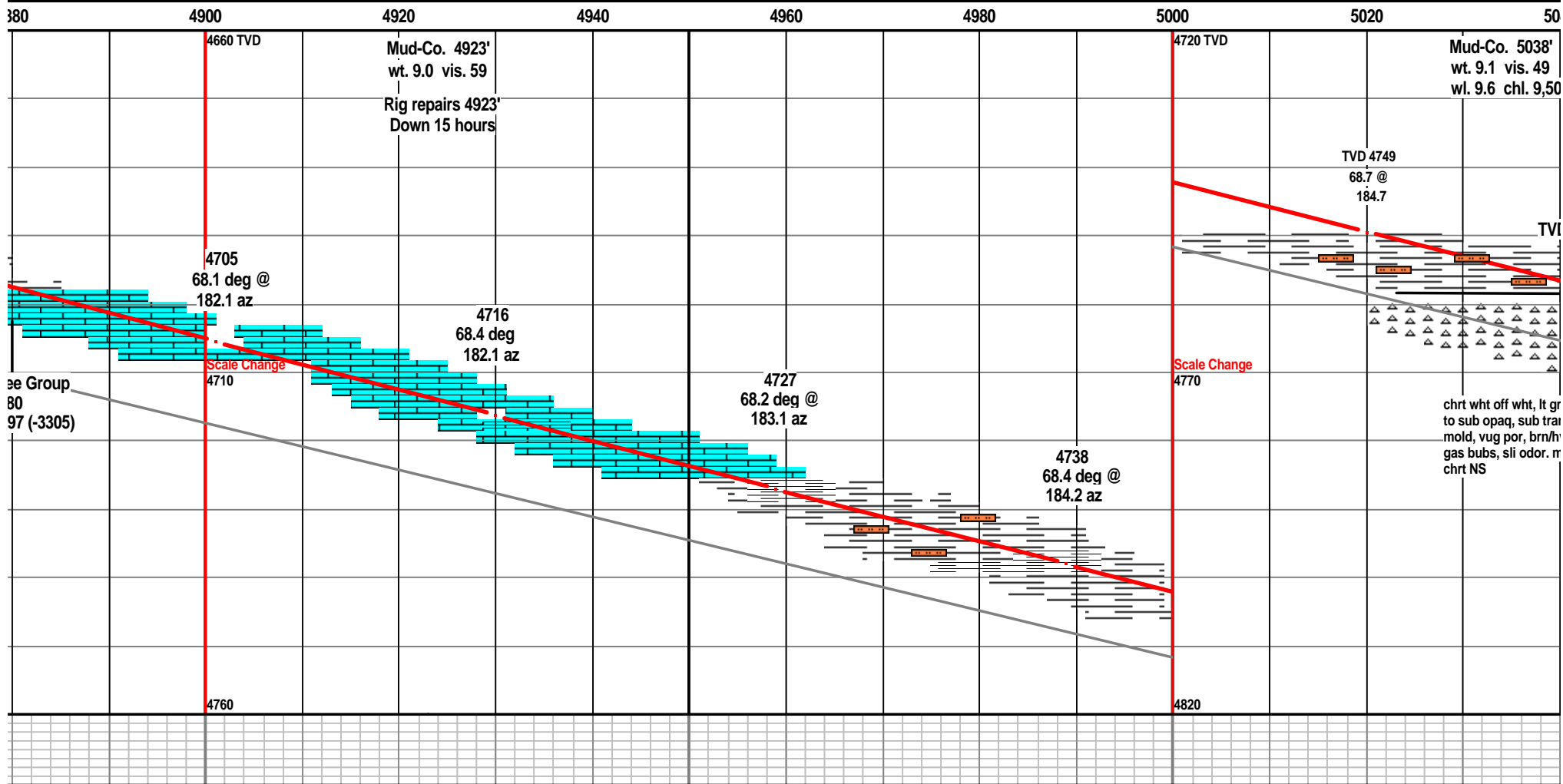
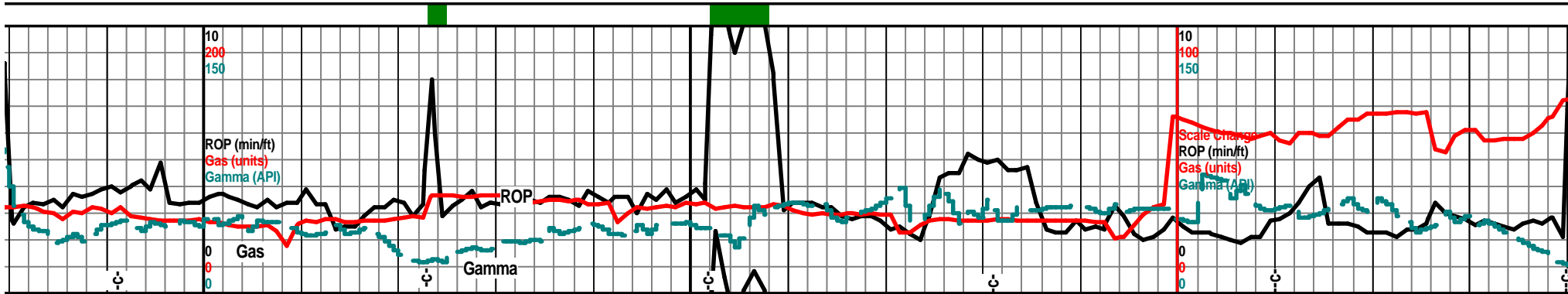


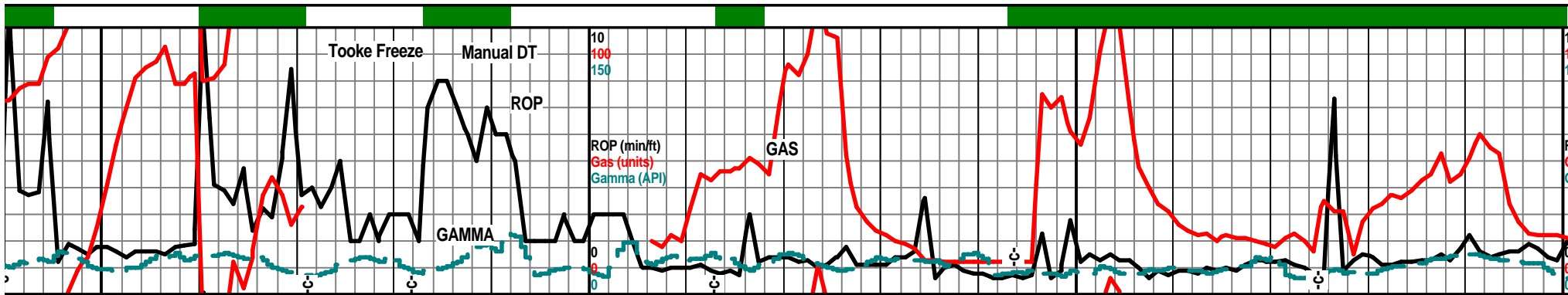




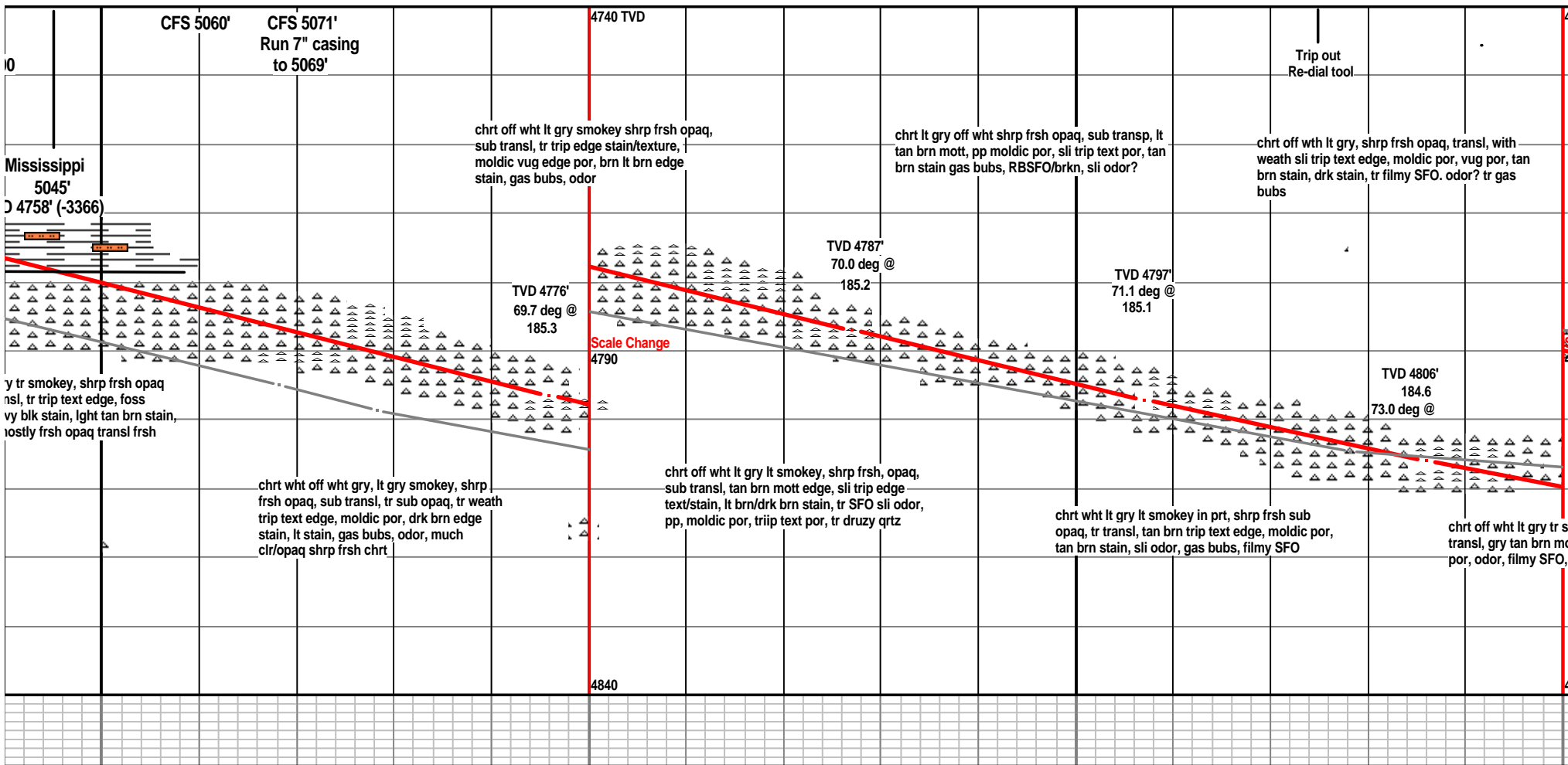


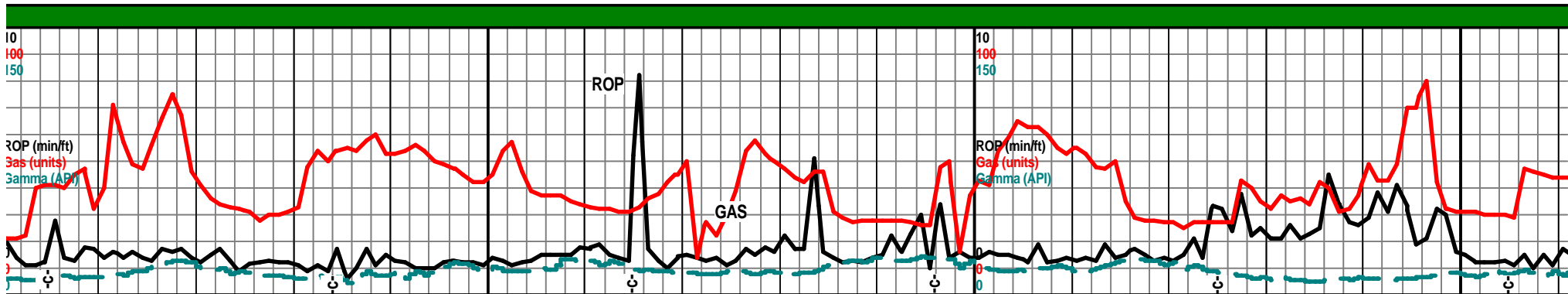






40 5060 5080 5100 5120 5140 5160 5180 5200

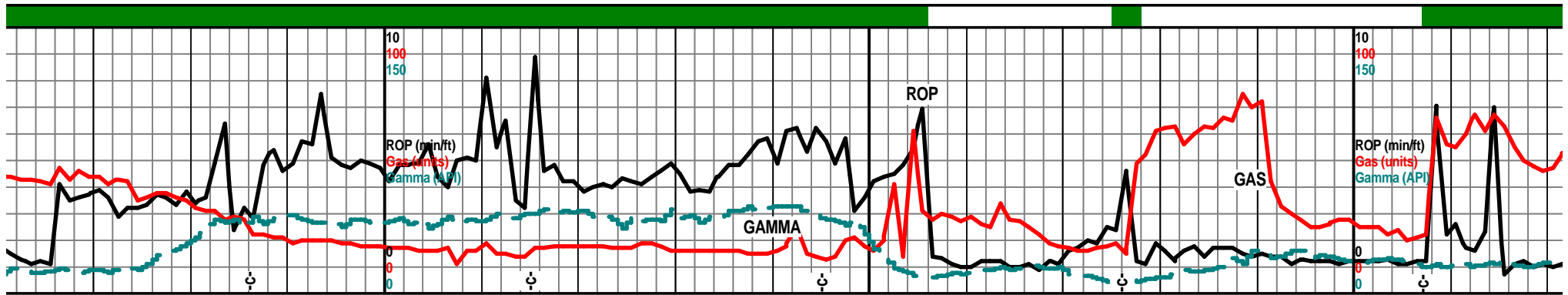




10 100 150 10 100 150

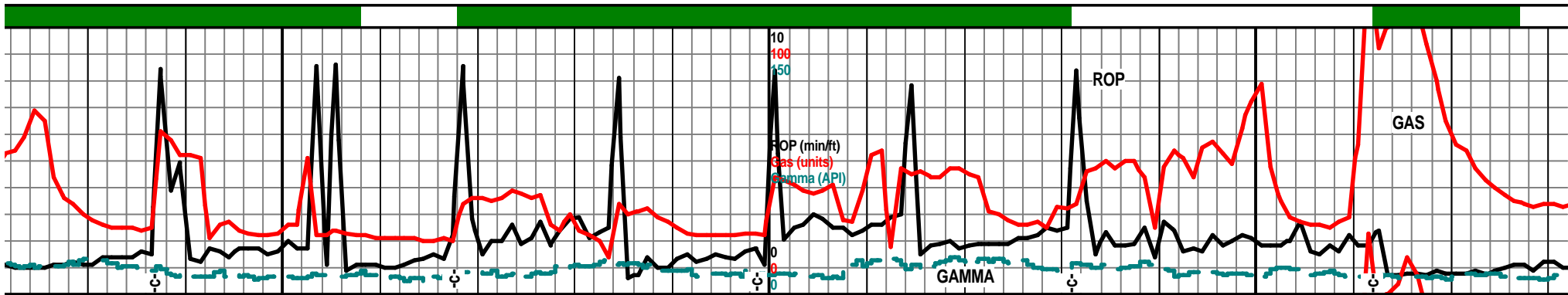
10 5220 5240 5260 5280 5300 5320 5340 536

1760 TVD	Mud Co. 5214' wt. 8.3 vis. 26 chl. 800		CFS 5265'		CFS 5296'	4760 TVD					
	chrt off wht gry tan, shrp frsh opaq sub opaq, tan brn mott, trip text, gd vug moldic por, tan brn stain, filmy SFO odor gas bubs dull UV,		chrt wht off wht lt gry shrp frsh opaq, weath trip edge, foss mold, pp/moldic por, inter gran por, sli odor, gas bubs, tan brn blk stain, filmy SFO dull UV		crt tan smokey off wht shrp frsh opaq, semi transp, w/weath trip edge. tan brn stain, dark stain, dolo/lst wht lt tan f xln gran soft chlyk glau, chrt inclu		chrt wht lt gry opaq, transl, chrt off wht lt gry shrp frsh w/weath trip text edge, pp moldic por, tan brn stain, tr gas bubs, tr dolo/lst tan off wht fn xln gran tr soft chlyk glau, stain odor?				
	TVD 4814' 75.4 deg @ 183.6		TVD 4821' 78.1 deg @ 183.3		TVD 4826' 81.9 deg @ 183.6		Actual well bore				
Scale Change						4810					
1840						TVD 4830, 84.1 deg @ 181.5					
	mokey, shrp frsh opaq sub jt, trip text edge, moldic/vug tan brn stain, gas bubs	chrt crm tan off wht lt gry shrp frsh opaq sub transl, tan brn lt tan mott, weath trip text, gd vug/pp por, moldic por, tan brn stain, gas bubs, filmy SFO odor		chrt wht off wht lt gry shrp frsh opaq, with tan brn trip weath edge, stain, tan brn stain gas bubs, lst/dolo wht off wht f xln gran chlyk chrt, off wht tan gry chrt inclu, glau, tr stain		chrt wht clr lt gry opaq, semi transl, shrp frsh blkly, with tan brn weath trip edge text, pp moldic por, brn stain ssfo, odor? lst/dolo wht lt gry f xln gran blkly sub chlyk chrt inclu w/stain, drk ssfo.					
											chrt lt gry smokey trans dolo edge, dolo wht lt tr chlyk, with weath chrt i por, dark stain gas bub:
1860						4860					



0 5380 5400 5420 5440 5460 5480 5500 5520

		4760 TVD						4760 TVD	
								7 am 5508' June 12, 2012	
	chrtly dolo, wht off wht tr lt gry, f vf xln blkly ang gran, with gry smokey chrtly inclu, weath edge chrt, pp moldic por, glau, dark brn stain, gas bubs,			dolo tan lt gry vf xln gran blkly ang dns hrd, chrt gry shrp frsh opa, chrt inclu, gry smokey shrp opa, tr tan brn weath trip edge text, lt tan brn stain,				No samples, sweeping the hole	
	Proposed well bore								
									TVD 4827 96.1 deg @ 174.0
TVD 4834' 87.7 deg @ 178.9		4810				TVD 4830' 95.7 deg @ 174.0		4810	
	TVD 4834 90.5 deg @ 177.3			TVD 4833 93.7 deg @ 176.3					
sl, opa, shrp frsh, with an f vf xln blkly ang dns tr nclu, pp moldic por, vug s, sfo, dull UV	chrtly dolo, dolo chrt, lt gry tan off wht f vflxn dns hrd blkly tr gran/chlky, glau, chrt inclu, gry smokey gry shrp frsh opa, with weath trip edge text, pp moldic por, drk stain, drk sfo, tr gas bubs, odor?			dolo tan lt gry gry f vf xln dns hrd blkly, ang, chrtly, chrt inclu, gry smokey shrp frash opa, chrt w/weath trip text por, pp moldic por, stain ssfo, sli odor dull UV				dolo tan off wht crm f vf xln gran blkly and dns tr chlky, with gry tan chrt inclu, shrp frsh with weath trip text por, pp moldic edge por, tan brn stain, filmy SFO sli odor gas bubs dull UV	chrt wht lt gry tr smoke transl, tan brn weath tri vf xln chlky gran, chrt i por, tan brn stain filmy
		4860						4860	



5540 5560 5580 5600 5620 5640 5660 5680

Mud Co. 5568'  
wt. 8.4 vis. 28  
chl. 1,000

4760 TVD

chr wht off wht lt gry, shrp frsh opa sub transl,  
weath trip edge text, tan brn stain, gas bubs, dull  
UV, sli odor, tr dolo wht off wht f vf xln dns soft  
chky with chrt inclu, tan brn trip text edge.

chr wht lt grh smokey shrp frsh transl, chr tan lt  
brn tan gry with weath trip edge text, pp moldic  
por, vug por, tan brn stain, filmy sfo, gas bubs,  
dull UV

chr lt gry, lst smokey, tan, shrp frsh opaq transp,  
with weath vug, pp, moldic por, dark stain, filmy  
sfo, floating drops, gas bubs, chr aa with weath  
tan brn trip text edges, vug, moldic por, dark  
stain, sfo, odor, dull UV

chr lt gry lt smokey shrp frsh opaq transl, with  
weath trip text edges, pp moldic por, vug por, tan  
brn stain, vssfo, floating oil drops, gas bubs, dull  
UV

24'  
g @

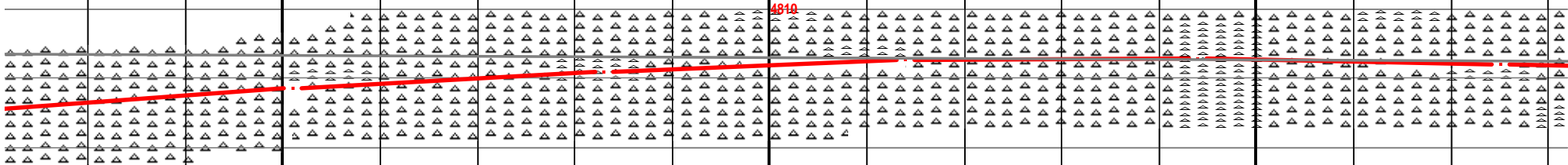
TVD 4821'  
94.9 deg @  
173.4

TVD 4819'  
93.9 @  
172.7

TVD 4817'  
92.1 deg @  
172.5

4817'  
89.0 deg @  
172.3

4818'  
87.7 deg @  
172.2



y, shrp frsh opa, sub  
p text edge, dolo tan crm  
nclu, tan brn pp moldic  
sfo, gas bubs

wht off wht lt gry, with tan brn mott trip text edge,  
pp moldic por, vug por, tan brn stain, filmy sfo,  
floating drops, gas bubs, sli odor, lots gry lt  
smokey shrp frsh opa transl chrt

chr off wht lt gry smokey, with tan brn mott trip  
text edge, pp, vug and moldic por, tan to brn  
stain, filmy sfo, sli odor, gas bub, gry smokey frsh  
opaq transl chrt

chr off wht lt gry smokey, shrp frsh opa, ang  
biky transp with weath trip text edges, dark stain,  
sli odor, filmy sfo, dull UV, gas bubs

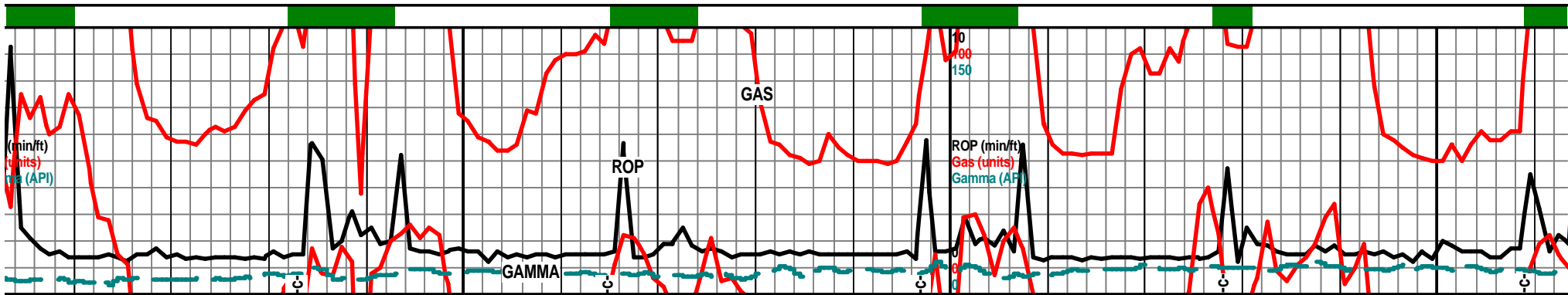
chr off wht lt gry smokey,  
opaq transp, with weath m  
moldic por, pp por, tan brn  
drops, gas bubs, dull UV

4860









6020                      6040                      6060                      6080                      6100                      6120                      6140                      6160

**TVD**                      Mud- Co. 6091'                      4760 TVD  
 wt. 8.4 vis. 29  
 wl. N/C chl. 1,200

chrt lt gry clr smokey shrp frsh with weath trip edge text, mosity gry tan brn mott, crs weath trip edge text, tan brn stain, abun gas bubs, tan brn SFO w/brkn, dull UV, fair odor

chrt lt gry off wht shrp frsh opaql transl, tr glau, chrt gry smokey with tan brn mott weath trip edge text, stain, brn stain, SFO/brkn, sli odor, gas gubs, dull UV good shows!

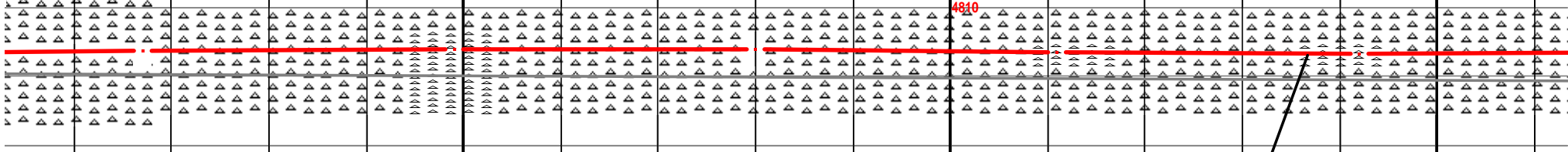
chrt off wht lt gry lt smokey, shrp frsh blkly opaql, semi transl, tr foss, chrt aa with weath trip text edge, pp vug moldic por, tan brn stain, drk stain, tr SFO/brken gas gubs sli odor

chrt tl gry off wht clr, shrp frsh opaql transl, chrt lt gry off wht with weath trip edge, tn brn stain, tan stain dull UV, pp, moldic. vug por, odor, SFO when brkn gas bubs

4816'                      4815'                      4815'                      4816'                      4816'

90.0 deg @                      90.5 deg @                      89.3 deg @                      89.2 deg @                      90.0 deg @

170.0                      171.1                      171.1                      173.3                      173.2



Actual well bore

weath trip text, gd pp stain, SFO/brkn, gas

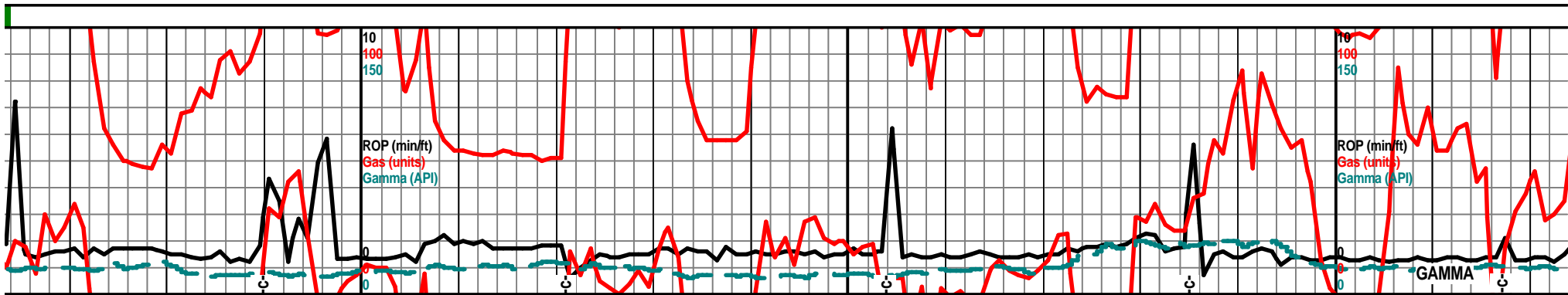
chrt off wht lt gry shrp frsh opaql, blkly ang transl, chrt tan brn mott, weath trip text, gd pp/moldic/vug por, tan brn stain, odor, gas bubs, SFO when brken, floating oil droplets sli odor

chrt off wht lt gry lt smokey, shrp frsh, opaql, semi transl, foss, chrt aa with weath trip text edges, pp moldic por, vug por, tan brn stain, drk SFO, drk stain, dull UV, sli odor, gas bubs, floating free oil

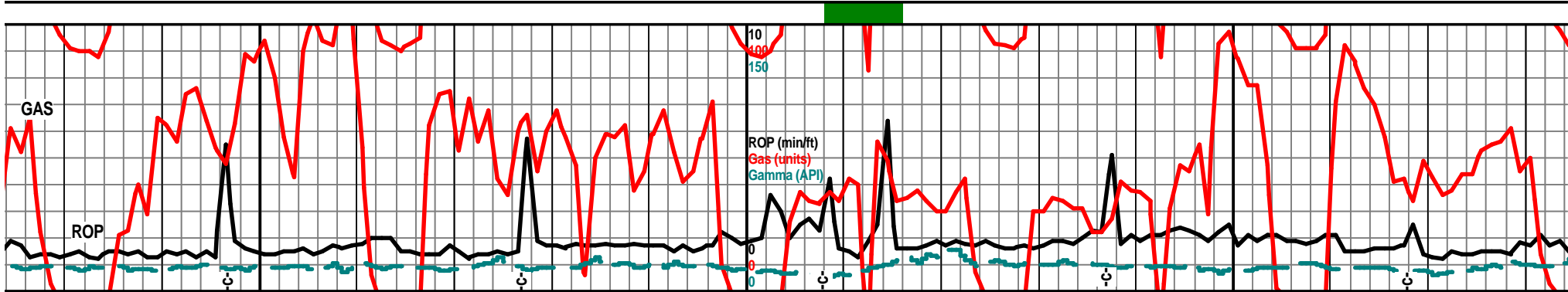
chrt off wht lt gry shrp frsh opaql transl, tr foss frags, chrt wht off wht gry smokey shrp frsh with weath trip text edges, drk tan brn stain gd vug moldic pp por, drk SFO when brkn, gas bubs, sli odor

chrt clr off wht lt gry tr lt sn semi transl, tr transp, with tan brn stain, brn sfo when UV

4860



6180	6200	6220	6240	6260	6280	6300	6320
	4760 TVD		6221' Bit Trip 6 pm Friday June 8, 2012		Mud-Co. 6280' wt. 8.4 vis. 28 chl. 1,200	4760 TVD	
chrt off wht lt gry tr lt smokey shrp frsh opa transl, transp in prt, with weath trip text edges, tan brn stain, dark SFO, gas bubs, pp vug moldic por	chrt off wht lt gry lt smokey shrp frsh opa transl, semi transp, chrt off wht gry smokey with weath trip text edges, pp moldic por, tan brn stain, odor, gas bubs, dull UV	chrt lt gry lt smokey shrp frsh opa transl, chrt lt gry tan brn mott, weath trip text pp, vug & moldic por, tan brn stain, SSFO, filmy SFO, gas bubs sii odor	chrt lt gry lt smokey shrp frsh opa transl, chrt lt gry tan brn mott, weath trip text pp, vug & moldic por, tan brn stain, SSFO, filmy SFO, gas bubs sii odor	chrt lt gry lt smokey shrp frsh opa transl, chrt lt gry tan brn mott, weath trip text pp, vug & moldic por, tan brn stain, SSFO, filmy SFO, gas bubs sii odor	chrt lt gry lt smokey shrp frsh opa transl, chrt lt gry tan brn mott, weath trip text pp, vug & moldic por, tan brn stain, SSFO, filmy SFO, gas bubs sii odor	chrt gry tan wht mott, weath trip text, pp, moldic por, vug por, tan brn tr blk stain, filmy sfo, floating droplets, gas bubs, chrt lt gry lt smokey shrp frsh blk opa transl	chrt gry tan wht mott, weath trip text, pp, moldic por, vug por, tan brn tr blk stain, filmy sfo, floating droplets, gas bubs, chrt lt gry lt smokey shrp frsh blk opa transl
4816' 90.6 deg @ 172.9	4816' 89.5 deg @ 172.9	4816' 89.3 deg @ 173.2	4816' 89.3 deg @ 173.2	4817' 89.3 deg @ 173.2	4817' 89.6 deg @ 173.1	4817' 89.6 deg @ 173.1	4817' 89.6 deg @ 173.1
nokey shrp frsh, opa weath trip text edge, brkn, tr gas bubs, dull	chrt lt gry off wht tr lt smokey, shrp frsh opa blk semi transl, sli transp, with weath trip text edge, tan brn stain, abun gas bubs, dull UV, filmy SFO, odor, gd vug pp moldic por	chrt off wht lt gry lt smokey shrp frsh opa, tansl semi transp, chrt off gry lt smokey shrp frsh with tan brn weath trip text, pp moldic vug por, tan brn stain SSFO, tr gas bubs dull UV	chrt off wht lt gry lt smokey shrp frsh opa, tansl semi transp, chrt off gry lt smokey shrp frsh with tan brn weath trip text, pp moldic vug por, tan brn stain SSFO, tr gas bubs dull UV	chrt lt gry lt smokey shrp frsh opa blk transl semi transp, chrt gry tan brn mott, weath trip text, gd vug, moldic por, pp por, tan brn stain, ssfo, gas bubs odor, dull UV	chrt lt gry lt smokey shrp frsh opa blk transl semi transp, chrt gry tan brn mott, weath trip text, gd vug, moldic por, pp por, tan brn stain, ssfo, gas bubs odor, dull UV	chrt wht lt gry lt smokey shrp transl, transp in prt, with we brn tan tr blk edge stain, vss bubs, odor	chrt wht lt gry lt smokey shrp transl, transp in prt, with we brn tan tr blk edge stain, vss bubs, odor
	4860					4860	



6340

6360

6380

6400

6420

6440

6460

6480

4760 TVD

chrt as before, bec frsher, mstly lt gry lt smokey  
frsh chrt, shrp blk, opa, semi transl, 30% with  
weath trip edge por, vug pp por, tan brn stain gas  
bubs, abun oil droplets floating dull UV

chrt lt gry smokey shrp frsh blk opa trans, with  
weath trip text edge, tan brn mott trip chrt, vug  
moldic por, pp por, tan drk tan brn stain, oil  
floaters, odor tr gas bubs.

chrt tan brn drk brn mott, weath trip text, pp,  
moldic, vug por, tan brn, tr blk stain, sfo, fair  
odor, floating SFO, dull UV, abun gas bubs, tr chrt  
lt gry smokey shrp frsh opa with weath edge aa

chrt off wht lt gry lt smokey, shrp frsh opa,  
transl, semi transp, mstly frsh, with weath trip text  
edges, moldic and vug por, tan brn stain, drk brn  
stain, dull UV, filmy SFO

4817'  
89.6 deg @  
173.3

4817'  
89.9 deg @  
172.9

4817'  
89.6 deg @  
172.8

4818'  
88.8 deg @  
173.0

4819'  
88.5 deg @  
172.7

4820'  
88.2 deg @  
172.1

4810



frsh opa, semi  
th sli trip edge text,  
fo when brkn, tr gas

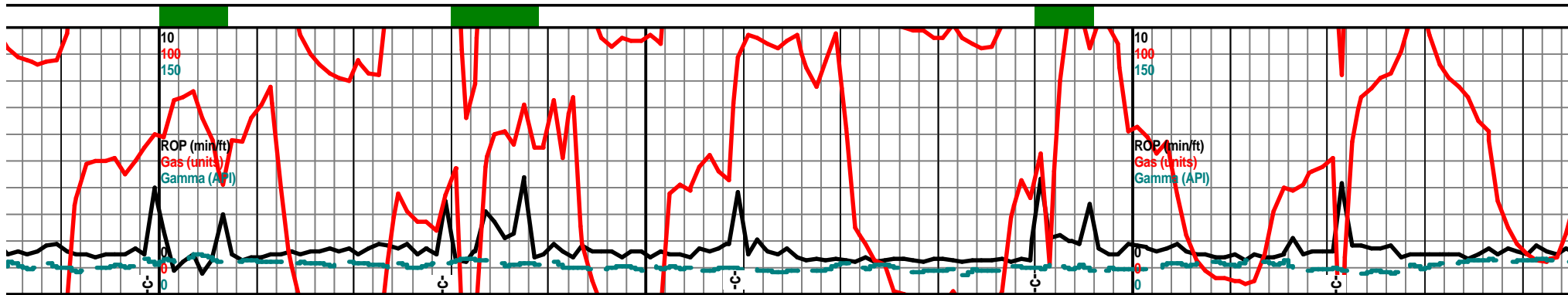
chrt lt gry lt smokey shrp frsh blk, opa transl,  
semi transp, gry tan brn mott, weath trip text/por,  
vug moldic pp por, tan brn stain odor dull UV, gas  
bubs,

chrt off wht lt gry lt smokey shrp frsh blk opa,  
transl, simi transp, with weath tan brn mott trip  
text edges, weath edges, pp moldic por, vug por  
tan brn stain, ssfo, odor gas bubs

chrt lt gry lt smokey, shrp frsh, opa, transl, semi  
transp, spl 70% chrt, chrt aa with weath trip text  
edge, pp moldic por, vug por, tan brn stain, drk  
brn stain, gas bubs, filmy sfo odor

chrt wht lt gry lt smokey sh  
semi transp, tr vit, with wea  
edge, pp, moldic, vug por, l  
gas bubs, much floating oil

4860



6500 6520 6540 6560 6580 6600 6620 6640

4760 TVD  
 down hole vibrator = fine samples  
 4760 TVD

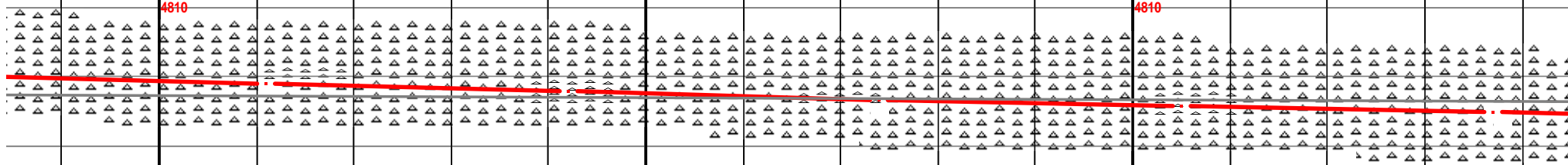
chrt off wht lt gry lt smokey gry, shrp frsh opa, trans, semi transp, with trace weath trip text edges, tan brn edge stain, vug, moldic por, oil droplets, dull UV, spls 70% frsh chrt

chrt lt gry lt smokey, shrp frsh opa blk ang, transl, semi transp, tan brn weath trip edge, tan brn stain, odor?, vug moldic por, dullUV, tr gas bubs, oil floaters

chrt lt gry smokey shrp frsh opa blk ang, opa, transl, semi transp, tan brn weath trip edge, vug moldic por tan brn stain, filmy sfo, sli odor, ssfo

chrt lt gry lt smokey shrp frsh opa blk ang, transl, semi transp, tan brn weath trip text edges, tan brn stain, tr gas bubs, oil floaters, dull UV

@ 4821' 87.9 deg @ 173.1  
 4822' 87.9 deg @ 174.7  
 4823' 88.0 deg @ 174.8  
 4824' 88.5 deg @ 174.6  
 4825' 88.3 deg @ 174.1



rp frsh opa, transl, th tan brn trip text tan brn stain, sli odor, droplets!!

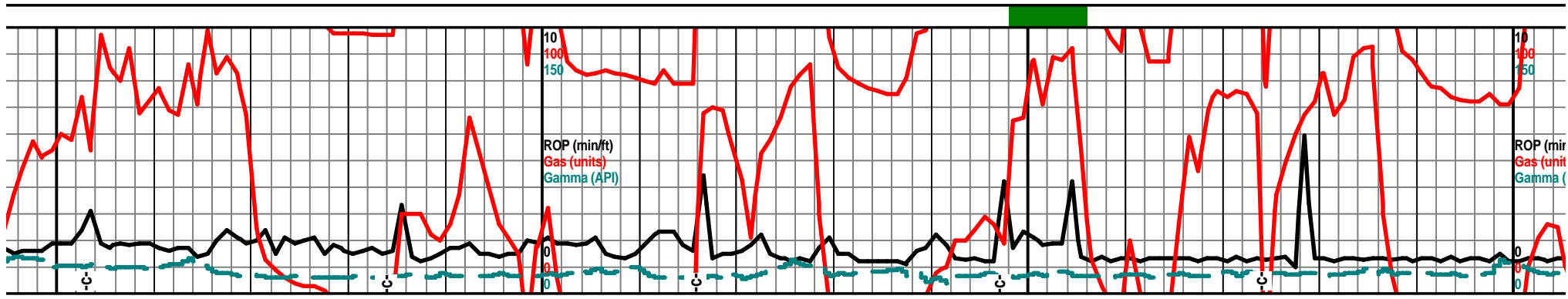
chrt lt gry smokey gry, shrp frsh opa blk transl, semi transp, with weath trip text edge, brn blk stain, pp vug and moldic por, ssfo, gas bubs, oil floaters

chrt lt gry lt smokey shrp frsh opa blk, with gran weath trip text edge, pp moldic por, pp por, tan brn stain, ssfo. gas bubs odor?,

chrt lt gry lt smokey gry shrp frsh opa blk ang, chrt aa with tan brn weath trip text edges, tan brn stain, drk stain, tr gas bubs odor? tr lst wht f xln soft chiky chrt

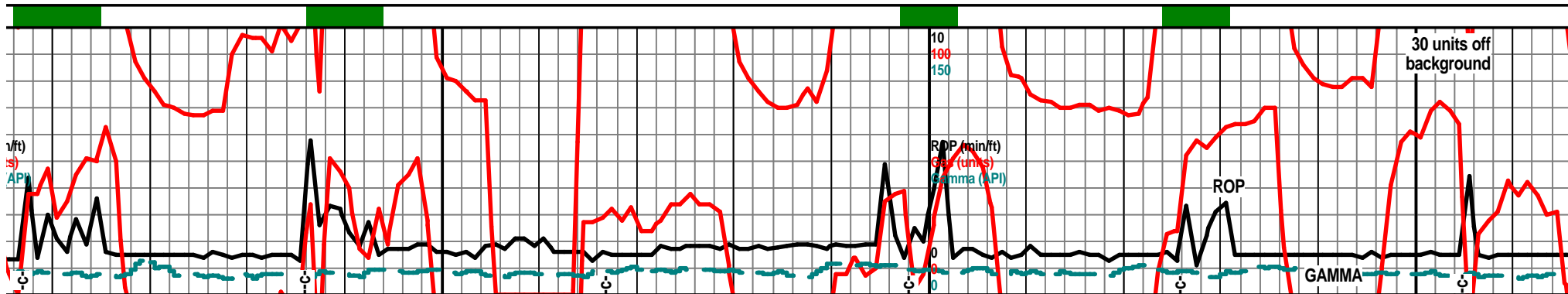
chrt lt gry lt smokey gry sh semi transp, with tan brn w tan brn stain, gas bubs, vs chrt f xln hrd blk ang

4860 4860



6660 6680 6700 6720 6740 6760 6780 6800

			4760 TVD					MD 6786' TVD 4824'	4760 TVE
									7 am 6800' Sunday June 10, 2
chrt lt gry lt smokey gry shrp frsh opa q blky ang pcs, transl, semi transp, with tan brn weath gran trip edge text, tan brn stain, vssfo, gas bubs, tr lst wht xln chrt, semi chlky		chrt lt gry, lt smokey gry shrp frsh opa q blky ang, with weath trip text edge, pp moldic por, tan brn stain, drk blk stain, oil droplets, sli odor, tr gas bubs, 60% frsh chrt		chrt lt gry lt smokey gry, shrp frsh opa q, blky ang, with weath sli trip weath edges, drk tan brn mott, pp moldic vug por, tan brn stain, dolo/lst wht vf xln chlky chrt/chrt inclu, tr glau, w/weath edge, dark stain		chrt lt gry lt smokey, shrp frsh opa q, blky ang pcs, transl, semi transp, with tan brn weath trip text edges, pp vug molic por, tan brn stain, drk stain, sli odor, gas bubs, floaters, tr lst/dolo wht off wht f xln gran soft chlky tr glau with chrt inclu			
	4826' 88.2 deg @ 173.8	4827' 88.1 deg @ 173.8	4810	4828' 88.0 deg @ 173.8	4828' 88.8 deg @ 173.2	4829' 89.0 deg @ 173.2	4810		
vrp frsh opa q, transl, weath gran edge text, sfo, dull UV, tr lst wht	chrt lt gry lt smokey gry shrp frsh opa q transl, semi transp, with weath tan brn trip text edge, vug/moldic por, pp por, tan brn stain, tr gas bubs, dull UV	chrt lt gry lt smokey tr wht, shrp frsh blky ang pc, opa q, transl semi transp, with weath tan brn trip text edge, pp moldic vug por, tan brn stain, drk sfo, tr gas, odor?		chrt lt gry frsh shrp opa q transl, semi transp, blky ang pcs with weath tan brn trip edge text, vug pp, moldic por, tan brn stain, sli odor, dull UV, oil floaters, tr lst dolo, wht off wht f xln gran chlky soft with chrt inclu tr glau		chrt lt gry lt smokey shrp frsh trancl, with incr tan brn weath stain, vug pp and moldic por, gas bubs			
			4860				4860		



6820 6840 6860 6880 6900 6920 6940 6960

Mud-Co. 6896' wt. 8.4 vis. 27 chl. 1,300 ppm 4760 TVD

chrt lt gry lt smokey, shrp frsh opa, blk ang pcs, with weath gran trip text, vug pp and moldic por, tan brn in color, tan brn stain, oil floaters, dull UV, tr gas

chrt lt gry shrp frsh opa blk ang pcs, withtan brn trip text edges, chrty dolo/lst, wht off wht f xln glau, chrty inclu with weath vug moldic por, stain drk sfo, odor

chrt lt gry shrp frsh opa with weath sli trip text edges. vug and moldic por, chrty dolo/lst wht off wht f xln gran soft chrty, weath por, pp moldic por, tan brn stain,

chrt lt gry smokey shrp frsh opa, blk ang pcs, transl, semi transp, weath tan brn trip text edge, tan brn stain, chrty dolo wht off wht f xln gran soft, with weath chrty inclu, tan brn stain gas bubs

4829' 89.5 deg @ 174.1

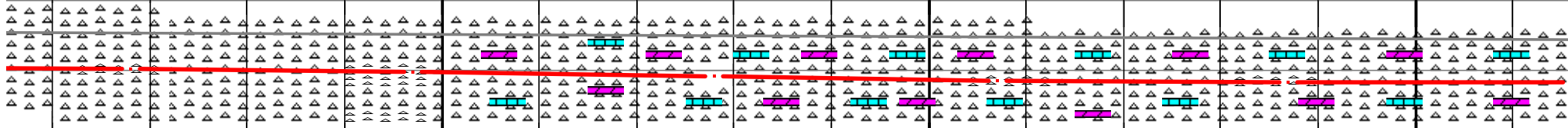
4930' 88.9 deg @ 175.7

4930' 88.7 deg @ 175.8

4810 4931' 89.2 deg @ 176.5

4831' 89.7 deg @ 177.3

48 90.1 c 176.



blkly ang opa, trip text tan brn dull UV, floaters,

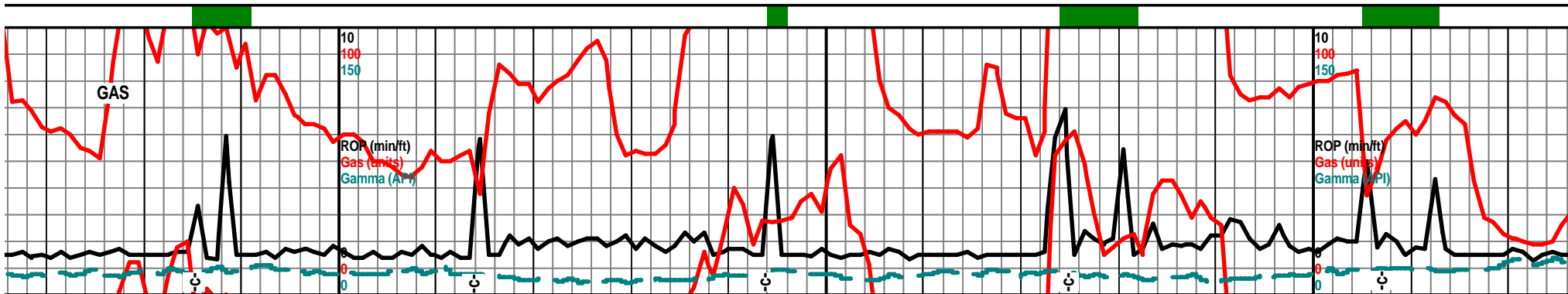
chrt lt gry lt smokey gry, shrp frsh opa blk ang pcs, with weath trip text edges, brn blk stain, sli odor, drk sfo dull UV, tr lst/dolo wht off wht f xln gran chlky chrty tr glau.

chrt off wht lt gry shrp frsh opa with weath edges, pp moldic por, tan brn stain, chrty dolo/lst wht off wht f xln gran soft chrty with tan brn stain glau gas bubs

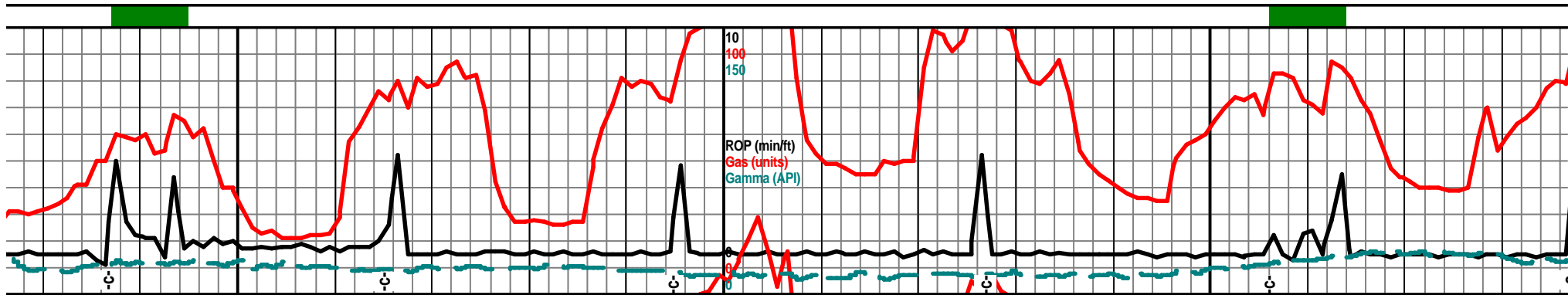
chrt lt gry lt smokey shrp frsh opa blk ang pcs, transl, semi transp. with tan brn weath trip edge text, tan brn stain, chrty dolo wht off wht lt green, f xln blkly ang gran chrty, moldic vug por, stain VSSFOS odor

chrt as before, dolo, lst/dolo, blkly gran and dns sub chlky, stain, pp moldic por, chrty, cl moldic por, tan brn stain, ocl

4860



6980	7000	7020	7040	7060	7080	7100	7120
	4760 TVD					4760 TVD	
						Bit Trip 7105' 9 pm June 10, 2012	
chrt aa in spl, dolo wht off wht lt tan f vr xln gran, tr sub chlky, pp por, tan brn stain, chrt inclu with weath chrt, pp moldic por, tan brn stain		chrt off wht lt gry lt smokey shrp frsh blkly pcs, opa, transl, semi transp. tr weath sli trip edge, tr tan brn stain, dolo/lst wht off wht f xln gran sub chlky chrt tr tan brn stain		chrt lt gry lt smokey color gry shrp frsh opa blkly ang pcs, incr weath trip text egde material, incr tan brn stain, vug moldic por, lst/dolo wht f xln soft chlky chrt, glau, tr tan brn stain		sample quality??	
	4831'	4830'	4828'	4826'	4810'	4825'	
31' leg @ 7	91.3 deg @ 176.7	92.5 deg @ 174.6	93.7 deg @ 176.5	93.5 deg @ 176.2		91.0 deg @ 176.8	
wht off wht, f vf xln glau, with tan brn hrt lt gry w/weath pp or	chrt lt gry lt smokey shrp frsh blkly pcs, with tr weath tan brn sli trip edge stain, chrt dolo wht off wht f xln gran soft chlky chrt, chrt with weath trip text, tan brn stain,	chrt lt gry lt gry/smokey shrp frsh opa, blkly ang pcs, transl, semi transp, tr weath sli trip edge stain, tan brn sfo, tr floating droplets dolo/lst wht off wht f xln gran tr chlky tr chrt glau		chrt lt gry off wht frsh shrp tr foss, blkly ang pcs, opa, transl, semi transp, with weath tan brn trip text edge pp moldic por, stain, dolo.lst wht off wht f xln gran chlky chrt, glau, chrt inclu with weath text, stain		chrt lt gry lt smokey shrpfrsh opa ang pcs, with weath trip text edge drk sfo, dull UV, sli odor, lst wht blkly ang tr chlky chrt withtan br inclu,	
	4860				4860		



7140 7160 7180 7200 7220 7240 7260 7280

MD 728  
TVD 482

chrt lt gry smmokey shrp frsh blkly ang pcs, with tan brn weath trip text edges/faces, pp moldic vug por, tan brn stain, sli odor, dull UV, oil floaters

chrt off wht lt gry lt smokey shrp frsh opa, blkly ang pcs, transl, semi transp, with weath trip text edge, pp vug mildic por, tan brn stain, tr oil floaters, sli odor?, tr dolo/1st edge tr glau

chrt lt gry lt smokey shrp frsh blkly ang pcs, with weath trip text edge/surface, tan brn stain, pp vug moldic por, dull UV, ssfo, fair odor,

chrt off wht lt gry lt smokey, shrp frsh opa, blkly ang pc, with tan brn weath trip text edges/faces, pp vug moldic por, tan brn stain, fair odor, floating droplets dull UV

4760 TVD

Actual well bore

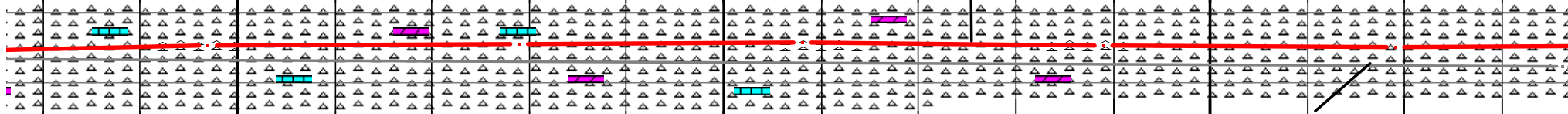
4824'  
90.8 deg @  
176.3

4824'  
90.6 deg @  
176.4

4810 4824'  
89.6 deg @  
175.8

4824'  
89.3 deg @  
175.3

4824'  
89.9 deg @  
175.4



Proposed well bore

transl hrd blkly, tan brn stain, off wht lt green n stain chrt

chrt off wht lt gry dolo in prt wht off wht f xln gran chiky soft, chrt lt grh smokey shrp frsh opa with tan brn weath trip edge text, pp moldic por, uv g por, tan brn stain

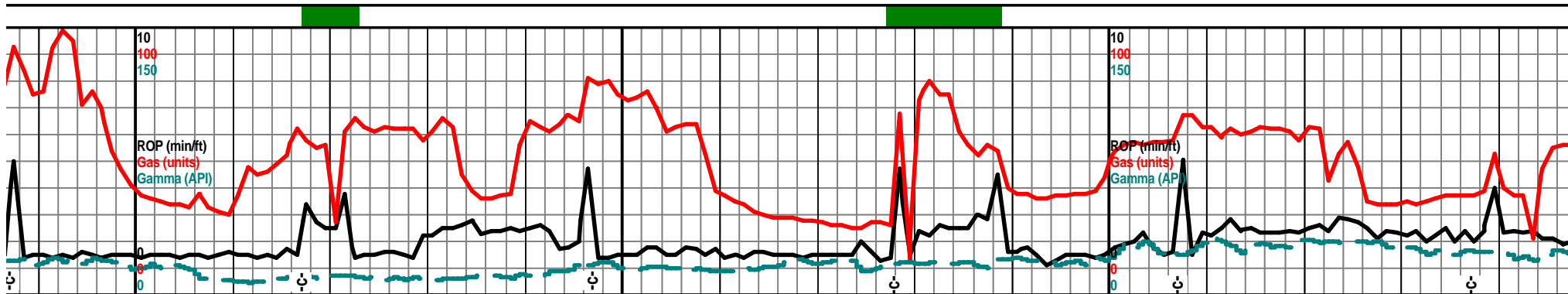
chrt off wht lt gry tr smokey, shrp frsh opa transl, semi transp with weath trip text edges/faces, tan brn stain, vug, pp, moldic por, tan brn sfo dull UV gas bubs, sli odor, oil floaters

chrt lt gry off wht lt smokey shrp frsh opa transl, semi transp, with tan brn weath trip text edge/face, tan brn stain, pp vug and moldic por, odor, gas bubs, tr 1st dolo wht off wht f xln gran chiky chrt, chrt inclu with show aa

chrt off wht lt gry, lt gry/smokey transl, semi transp, with weath trip tan brn stain, vssfo, dolo/1st wht off wht chiky glau, chrt inclu, tan brn stain

4860





7300 7320 7340 7360 7380 7400 7420 7440

6' 27'

4760 TVD

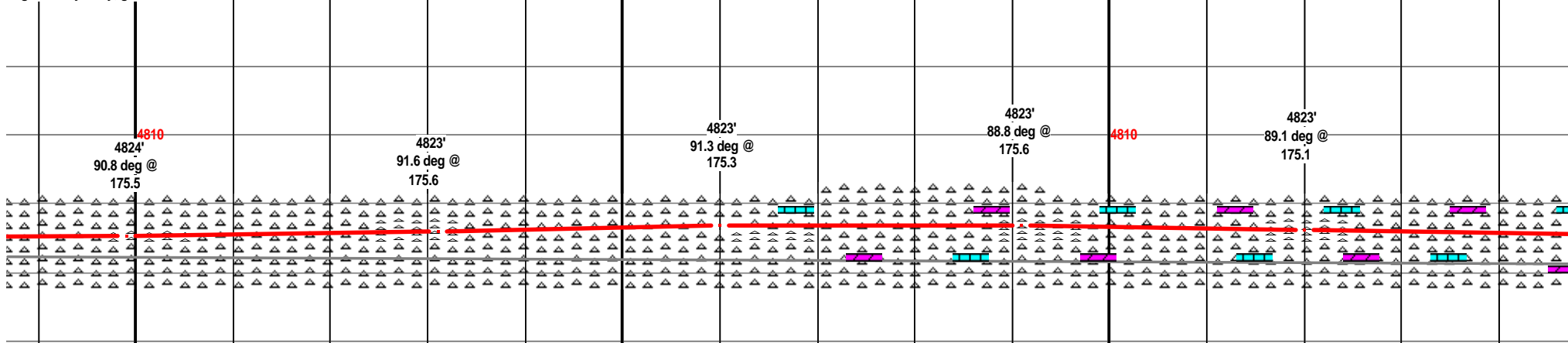
4760 TVD

chrt wht lt gry off wht lt smokey frhs shrp blk ang pcs, opa, transl, with weath tan brn trip text edge, lst/dolo wht off wht tr green tint, f vf xln gran chlyk chrt, glau

chrt as before, incr chrt off wht lt tan, blk ang pcs, less sharp, semi transp, chrt lt gry shrp frsh blk pcs, some with weath tan brn edge, tan brn stain dull UV

chrt off wht lt gry shrp frsh opa blk ang pcs, semi transp, transl, tr with weath edge stain, pp moldic por, mostly shrp frsh

dolo chrt dolo wht f vf xln blk ang dns glau, wht chrt inclu of off wht lt gry shrp blk opa tr weath trip text, tan brn stain tan brn ssfo, dull UV nodor



shrp frsh opa, rip text edges, tan wht f xln gran in sli odor.

chrt lt gry lt smokey shrp frsh blk opa pcs, transl, semi transp, tr glau, chrt lt gry shrp frsh with tr weath trip text edges/face tan brn stain

chrt lt gry off wht tr lt tan shrp frsh blk ang opa, transl, semi transp, 80% chrt aa, tr chrt with tan brn weath edge stain pp moldic por

chrt of gry/gry/smokey shrp frsh blk ang opa pcs, transl, semi transl, with tr weath trip edge, mostly frsh shrp blk

dolo wht off wht f vf xln gran blk chrt, chrt inclu, chrt lt gry shrp f semi transp, with weath trip text stain, ssfo, nodor floating oil dro

4810

4824' 90.8 deg @ 175.5

4823' 91.6 deg @ 175.6

4823' 91.3 deg @ 175.3

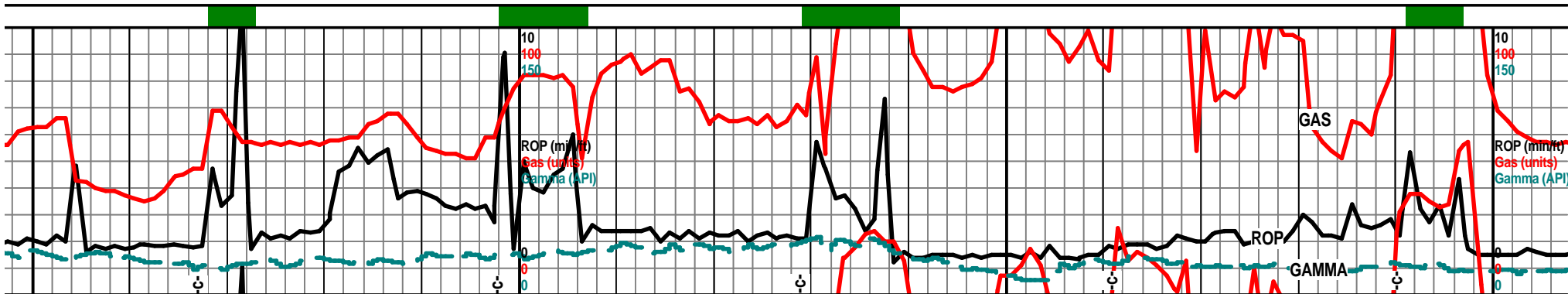
4823' 88.8 deg @ 175.6

4810

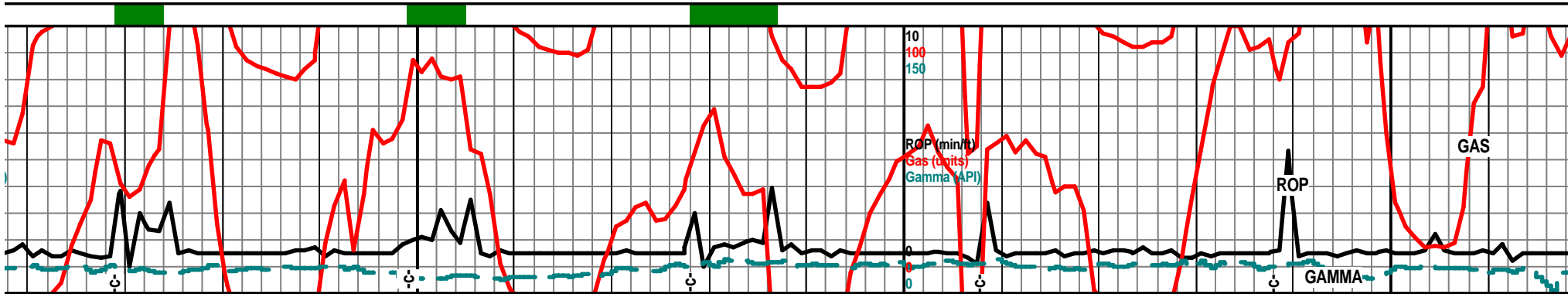
4823' 89.1 deg @ 175.1

4860

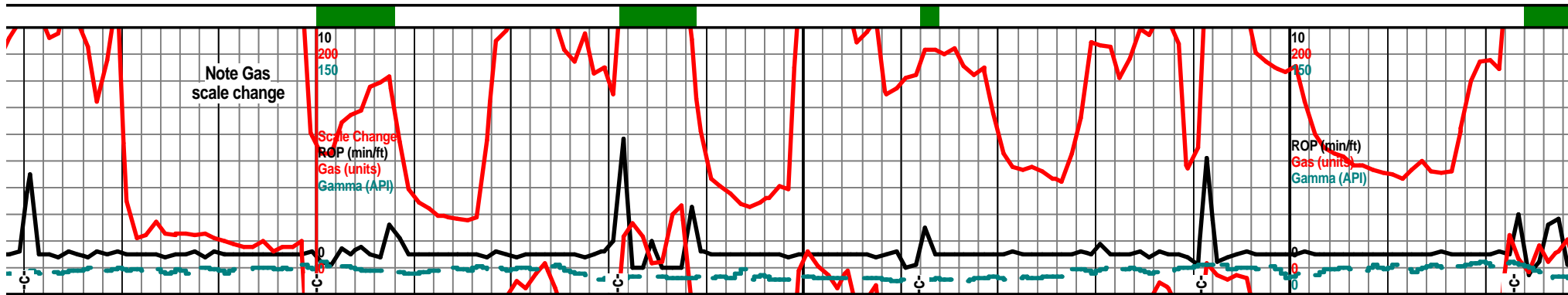
4860



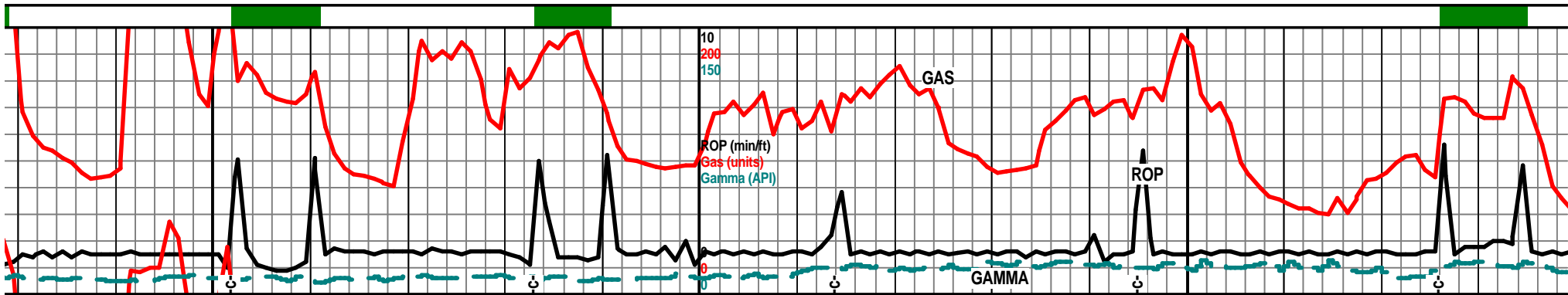
7460	7480	7500	7520	7540	7560	7580	7600
		4760 TVD	7520' 7 am Monday June 12, 2012			Mud-Co. 7585' wt. 8.4 vis. 27 chl. 900 ppm	4760 TVD
dolo chrty dolo, wht off wht lt green tint in prt, f xln blkly ang soft chlky, chrt lt gry smokey shrp frsh, weath pp vug por, tan brn stain, nodor, floating oil drops tr gas bubs, dull UV		dolo crm off wht, f v f xln gran soft chrty, chrt inclu, chrt with weath gran sli trip text, all tan brn in color, pp bug and moldic por, tan brn stain, floaters, dull UV, odor?		chrt off wht lt gry, shrp frsh opa, transl blkly ang pcs, chrt lt gry smokey shrp frsh opa with weath edge, tan brn in color, tan brn stain, vug moldic por, floating droplets, sli odor		chrt off wht lt gry, gry/smokey shrp frsh, blkly ang pcs, transl, w/trace weath edge text, pp moldic por, tan brn stain, tr gas bubs, dull UV	
4824' 88.5 deg. @ 174.9	4825' 88.3 deg @ 175.6	4810	4825' 90.9 deg @ 175.6	4824' 94.2 deg @ 176.4		4822' 94.1 deg @ 176.2	4820' 93.4 deg @ 175.9
7 dns tr glau, frsh opa, transl, edge, tan brn plets	dolo chrty dolo wht off wht tr lt green tint, glau, lt gry smokey chrt inclu, chrt lt gry smokey shrp frsh, with sli weath tan brn edges, tan brn stain, pp moldic por,		chrty dolo, off wht lt gry shrp frsh, lt smokey opa, transl, tan brn stain on weath pp moldic por, dull UV, odor?, tr floating droplets. tr dolo wht lt green tint f v f xln gran chrty chlky soft glau with chrt inclu with sho		chrt lt gry opa shrp blkly ang pcs, transl, transp in most, with weath edge, pp moldic por, tan brn stain, floaters, sli odor? dull UV tr dolo as before..		chrt lt gry shrp frsh opa, blkly ang transl, tr tan drk brn weath text moldic por, tan brn stain, floating dull UV
		4860					4860



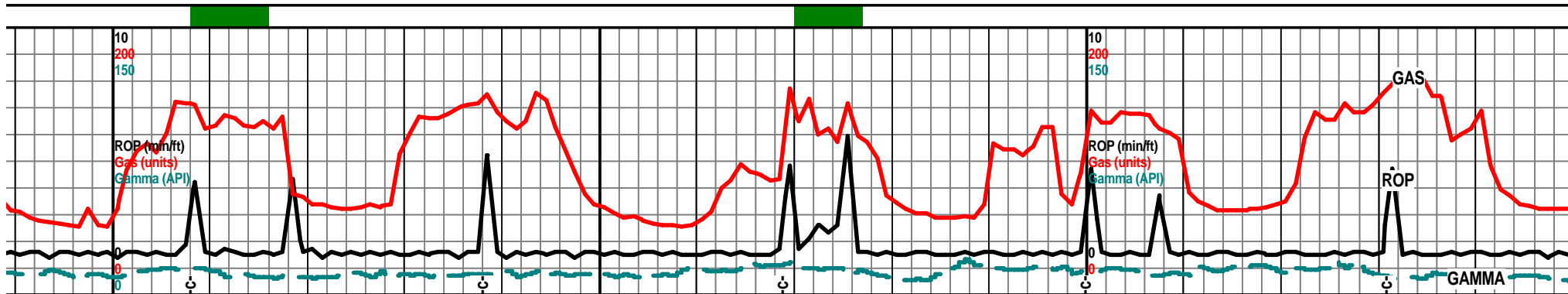
7620	7640	7660	7680	7700	7720	7740	7760	
				4760 TVD				
<p>chrt lt gry dull gry frsh opa, blk ang shards, transl, foss?, tr drk tan brn weath edges with vug/moldic por, pp por, tan brn drk brn stain, gas bubs, floating drops, sli odor dull UV, tr wht off wht dolo, f vf xln, blk soft gran chrt, chrt inclu with weath text and sho aa</p>		<p>chrt off wht lt gry lt smokey gry, shrp frsh opa blk ang shards, tr foss, with gd weath trip text edges text, tan brn stain sso gas bubs, pp, vug, moldic por, floating oil, sli odor, dull UV</p>		<p>chrt gry wht shrp frsh blk ang shards, opa, transl, transp in prt, dec show as before, much frsher, tr weath trip text edges/faces, tr tan brn stain nodor</p>		<p>chrt off wht lt gry wht gry mott, frsh shrp blk ang shards, opa trans, tr foss?, with trace weath text edges/faces, tan brn stain, floating oil droplets</p>		
4818' 93.0 deg @ 176.0		4817' 92.0 deg @ 175.7		4816' 90.6 deg @ 176.0		4816' 90.3 deg @ 175.8		
<p>g shards, edges, vug drops, sli odor,</p>	<p>chrt lt gry dull gry, clear, opa, transl, blk ang shrp shards, with weath sli trip text edge tan brn stain, vug moldic pp por, odor? floaters</p>		<p>chrt off wht lt gry lt smokey in color, shrp frsh blk ang shards, tr foss, opa transl, with gd weath trip text edges/faces, tan brn stain, drk sfo, sli odor, gas bubs, dull UV</p>		<p>chrt off wht lt gry, gry wht mott, shrp frsh blk ang opa shards, transl, tr weath trip text edges/faces, sli tan brn stain, vug, moldic por, nodor, 85% frsh chrt in spl</p>		<p>chrt off wht, lt gry, lt gry/wht mott, opa, blk ang sharp shards, tran weath edge text, tr tan brn stain, o</p>	
				4860				



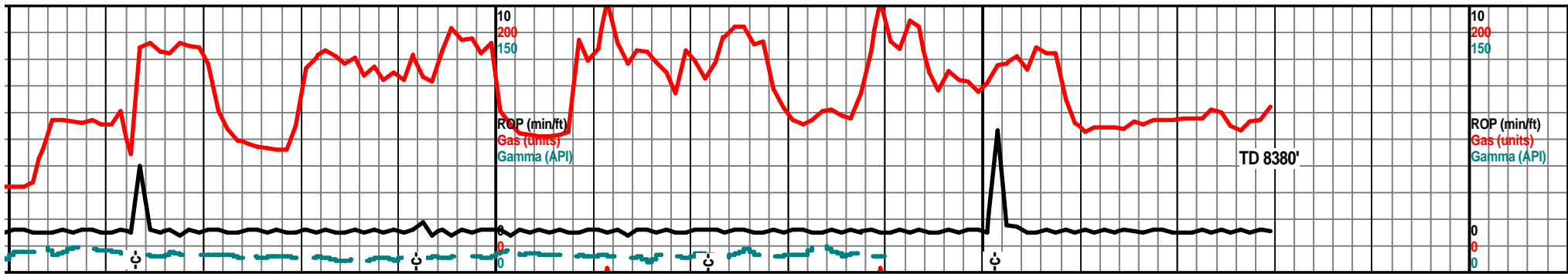
7780	7800	7820	7840	7860	7880	7900	7920
	4760 TVD					4760 TVD	
	Mud-Co. 7800' wt. 8.4 vis. 28 chl. 1,200 ppm Bit Trip 7800'						
chrt lt gry, lt gry/wht mott, shrp frsh opa, blk ang sharp shards, with trace weath text edges/face, tan brn stain color edges, oil floaters, 75% frsh chrt		chrt lt gry lt smokey, gry wht mott, shrp frsh blk ang shards, transl, with weath text edges/faces, tan brn stain, vug moldic por,		chrt lt gry lt smokey shrp frsh blk ang shards, transl, with weath text edges/face, tan brn stain, sli odor		chrt lt gry smokey shrp frsh opa trans, shrp blk, with gd weath text, trip text edge stain/faces, pp vug moldic por, tan brn stain, ssfo, gas bubs odor? dull UV	
4815' 91.4 deg @ 175.5		4814' 90.2 deg @ 175.7		4815' 89.1 deg @ 175.3		4815' 90.7 deg @ 174.8	
4810							
shrp frsh, sl, with trace il floaters		chrt off wht lt gry lt smokey shrp frsh opa shrp frsh shards, tr foss, opa transl, blk ang pcs, tr tan brn stain, pp vug moldic por		chrt wht off wht lt gry gry wht mott, shrp, frsh, transl, opa, blk ang sharp shards, tr tan brn stain along weath trip text edge/face, dull UV		chrt gry gry smokey weath gran, dark brn weath text, trip text edges/faces, tan brn stain, gas bubs, SFO, floating oil droplets, fair odor	chrt lt gry off wht/gry mott, tr blue shrp frsh opa transl, gd vis weath edges/faces, tan brn stain, pp vug, brn SFO, abun gas bubs, dull UV, fl odor
	4860					4860	



7940	7960	7980	8000	8020	8040	8060	8080
			4760 TVD				
	Increase fresh chert, less weath trip text..						
chrt lt gry off wht gry mott, tr blue gry smokey shrp frsy opaql transl, gd vis weath trip text edge/face text, tan brn stain, pp moldic/vug por, rnrn SFO, gas bubs, fair odor, dull UV		chrt as before, chrt wht shrp, cloudy weath text, blkly ang, tr gran opaql dec weath text, fresher, dec visible show		chrt wht/gry mott, lt gry wht, shrp frsh cloudy, semi transp, blkly ang pcs, with fair weath trip text edges/faces, tan brn stain, sli odor, tr lt brn SFO dull UV		chrt wht off wht, wht gry mott, frsh shrp blkly ang pcs, shrp shards, opaql transl, with tr weath trip text edges, tr tan brn stain, pp, vug, moldic por,	cl tr te
4815' 90.8 deg @ 175.5	4815' 89.0 deg @ 174.9	4816' 87.4 deg @ 175.5	4810	4817' 88.0 deg @ 175.0 az		4818' 89.0 deg @ 174.8 az	
gry smokey, trip text moldic por, loating oil, fair	chrt lt gry, gry wht mott, tr lt blue smokey gry, shrp frsh opaql with weath trip text edge face, tan brn stain, pp, vug& moldic por, tan brn SFO, gas bubs sli odor, dull UV		chrt wht off wht tr lt gry shrp frsh cloudy, chrt off wht lt gry tr smokey shrp frsh opaql transl, with gd weath trip text edge/face, tan brn stain tan brn SFO, sli odor, gas bubs,		chrt wht off wht lt gry shrp frsh blkly ang pcs, sharp shards, transl, tr weath sli trip edges, tr tan brn stain, nodor, incr frsh chrt less weath edge material		chrtly off wht wht, wht lt gry mott, s transl, sharp shards, tr weath trip tr brn stain, mostly barren frsh chrt, t
			4860				



8100	8120	8140	8160	8180	8200	8220	8240
4760 TVD					4760 TVD		
hrt wht off wht lt gry gry wht mott frsh shrp ansl, blk ang hrd pcs, shards, with tr weath trip xt edges, tan brn stain, tr gas bubs, oil floaters		chrt wht off wht lt gry/wht shrp frsh blk ang pcs, transl, semi transp, shards, tr tan brn colored semi weath trip edge, vug moldic por, tan brn stain		chrt off wht wht lt gry/wht, cloudy, opa, shrp blk shards, semi transp, mostly transl, tr weath semi trip edge text, tan brn color, tan brn stain dull UV oil floaters, incr dead black stain		chrt wht off wht lt gry wht mott, frsh shrp blk ang opa pcs, transl, semi transp, foss content? with semi weath edges, tan brn weath trip edges, tan lt brn stain, nodor, many transp oil floaters	chrt sh tex
4818' 88.3 deg @ 175.1	4819' 88.8 deg @ 175.8		4820' 89.3 deg @ 176.5 az	4820' 90.0 deg @ 175.4 az		4820' 90.3 deg @ 175.1 az	4820' 90.7 deg @ 174.9 az
4810					4810		
hrp frsh opa ext edge, tan r tan brn stain,	chrt off wht lt gry, lt gry smokey to wht cloudy, shrp frsh opa transl, sharp shards, tr tan brn color edges, weath gran trip text edge, tan brn stain, vug moldic por, oil floaters, tr gas bubs		chrt off wht wht/gry, shrp frsh opa, blk ang pcs, transl, semi transp, sharp shards, tr tan brn colored semi weath trip edge text, vug moldic por, tan brns stain, incr dead blk stain		chrt wht off wht lt gry shrp frsh opa, transl, semi transp, tr weath sli trip text edges/faces, tan brn stain, tr gas bubs, dull UV		chrt wht, off wht, wht/gry mott, shrp blk ang shards, transl, semi transp brn semi trip edge text, tan brn stain many floating transl oil droplets noc
4860					4860		



8260	8280	8300	8320	8340	8360	8380	8400
		4760 TVD					4760 TVD
chrt wht off wth lt gry shrp frsh opaq blkly ang ards, transl, semi transp, tr foss, tr weath trip t edge, tan brn stain, tr gas bubs, oil floaters		chrt wht off wth lt gry shrp frsh opaq, blkly ang pcs, sharp shards, tr weath trip text, edge/face, tan brn in color, tan brn stain, odor? gas bubs, drk dead blk stain, oil floaters		chrt wht off wth lt gry shrp frsh opaq, transl, semi tranp, blkly ang pce, with weath trip text, pp vug moldic por, tan brn stain, sli odor			
Actual well bore	4819' 91.2 deg @ 174.6 az	4818' 91.3 deg @ 175.0 az		4818' 91.1 deg @ 174.6 az		4816' 91.1 deg @ 174.6 az	4810
		Proposed well bore				Last 50' projected by Calmena	
frsh opaq sli weath tan tr gas bubs, for	chrt off wth lt gry lt gry wht mott, frsh shrp, opaq transl, semi transp, with weath edge/face, tr trip text, tan brn stain, drk stain, blk dead stain, oil floaters, oil droplets		chrt off wth wht gry mott, frsh shrp opaq, transl, semi transp, sharp shards, with weath semi trip tan brn text, tan brn stain, sli odor pp vug and moldic por		shrt lt gry off wth lt gry wht mott, sharp frsh opaq, blkly ang pcs, shards, with weath trip text edges/faces, tan brn stain, sli odor, gas bubs, dull UV, pp moldic and vug por.		
		4860					4860









