

COMMONWEALTH OF KENTUCKY  
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

DAVID BALLANTINE BELL	)	
	)	
COMPLAINANT	)	
	)	
V.	)	CASE NO.
	)	2012-00312
MEADE COUNTY RURAL ELECTRIC	)	
COOPERATIVE CORPORATION	)	
	)	
DEFENDANT	)	

ORDER

On April 9, 2013, Commission Staff gave notice that monitoring equipment would be placed at locations near Complainant David Ballantine Bell's ("Complainant") property. On April 23, 2013, and on June 24, 2013, recorders were installed on circuits near Complainant's property for respective one-month periods. The data collected by the recording devices is contained within Commission Staff's Investigation Report and is attached as an Appendix.

On its own motion, the Commission hereby finds as follows:

1. Complainant and Meade County Rural Electric Cooperative Corporation ("Meade RECC") should have an opportunity to submit comments on the Staff Investigative Report.
2. Complainant should inform the Commission of any alleged continued service-related deficiencies.

3. Meade RECC should install monitoring equipment at locations necessary to monitor the quality and adequacy of service rendered at Complainant's premises.

4. Complainant should maintain records detailing any and all observed service-related deficiencies.

5. An informal conference should be scheduled for the purposes of discussing the data gathered in the Staff Investigative Report as well as the current quality and adequacy of service received by Complainant.

IT IS THEREFORE ORDERED that:

1. Within 20 days of the date of this Order, Meade RECC and Complainant shall submit any comments pertaining to the Staff Investigative Report.


2. Within 20 days of the date of this Order, Complainant may provide a status report setting forth the existence of any current alleged service deficiencies.

3. Within ten days of the date of this Order, Meade RECC shall install monitoring equipment at a location suitable for monitoring the quality and adequacy of the service rendered to Complainant's premises. The monitoring equipment shall remain in place for a period of 30 days. The data collected shall be filed with the Commission within 50 days of the date of this Order.

4. Within ten days of the date of this Order, Complainant shall begin logging any service-related deficiencies, including flickers, brownouts, and blackouts. Complainant shall maintain the log for a period of 30 days and shall file a copy of the log with the Commission within 50 days of the date of this Order.

5. A telephonic conference call shall be held in this matter on Wednesday, May 14, 2014, at 1:30 p.m. Eastern Daylight Time. Commission Staff shall contact all participants to provide the details for joining the conference call.

By the Commission

ENTERED   
MAR 07 2014  
KENTUCKY PUBLIC  
SERVICE COMMISSION

ATTEST

  
\_\_\_\_\_  
Executive Director

APPENDIX

APPENDIX TO AN ORDER OF THE KENTUCKY PUBLIC SERVICE  
COMMISSION IN CASE NO. 2012-00312 DATED

**MAR 07 2014**



**Steven L. Beshear**  
Governor

**Leonard K. Peters**  
Secretary  
Energy and Environment Cabinet

Commonwealth of Kentucky  
**Public Service Commission**  
211 Sower Blvd.  
P.O. Box 815  
Frankfort, Kentucky 40602-0815  
Telephone: (502) 564-3940  
Fax: (502) 564-1582  
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**David L. Armstrong**  
Chairman

**James W. Gardner**  
Vice Chairman

**Linda Breathitt**  
Commissioner

## COMPLAINT INVESTIGATION REPORT

**Utility:** Meade County RECC

**Contact Person:** David Poe

**Address:** 1351 Hwy. 79, Brandenburg, KY

**Phone #:** 270-422-2911

**Complainant(s) Name:** Bell, Miles, and Jarboe

**Address:** Battletown, KY

**Phone #:** Unknown

**PSC Investigator:** Jeff Moore

**Field Visit Propose:** Voltage Issues

**List Person(s) Involved:** David Poe and Mike French

**List Facilities/Property Involved:** N/A

**Damage to Customers Facilities/Property:** N/A

**Additional Information Requested From Utility:**

Voltage charts from the substation and voltage data from recorders installed on complainants' circuit from the time the complaint was filed to the most recent voltage data collected.

**Complaint #:** 2012-310, 311, 312

**County:** Meade

**Email:** Unknown

**Field Visit:** Yes

**Estimated Cost:** N/A

### Discussion:

Kentucky Public Service Commission (KPSC) received calls from the complainants that they are still experiencing voltage issues. KPSC Staff decided that voltage recorders be installed on the circuit serving the complainants at various locations over the next several weeks. Meade County RECC (MCRECC) installed recorders during the same time at locations up line and down the line from KPSC recorders.

Beginning April 23, 2013 voltage recorders were installed on the circuit feeding the complainants to monitor the quality of service. The KPSC voltage charts in Attachment A are voltage recordings on various dates. Noticeable sags in the voltage are indicated on the charts during weekdays between (approximately) 7:00 AM to 5:00 PM. During the same time period on Saturdays and Sundays these voltage sags did not occur.

After the KPSC recorders had been removed a few weeks later, the complainants called the consumer inquiry branch at the Commission and stated they were still having voltage and flicker issues. At the direction of KPSC staff, recorders were installed on June 24<sup>th</sup>, 2013 at the complainant's location for approximately 30 days. MCRECC again placed recorders up and down line from KPSC recorders. The KPSC voltage data (charts) noted in Attachment B, indicates the same voltage patterns as the previous data noted in Attachment A. KPSC Meter Standards Laboratory is unable to capture and record flicker events with the equipment we currently have. Therefore, we are unable to compare flicker data provided by MCRECC.

## Findings:

- The chart listed in Attachment A, on page 6 is from KPSC's seven day voltage recorder (# 352), installed on 4/23/2013. This MCRECC customer (meter number 54619) is located at the end of the circuit (B Phase), which is past the complainants who are on the same circuit. The chart indicates voltage fluctuations recorded on the dates listed below.

Tuesday (4/23/2013), approximately between 1:00 AM – 6:00 PM

Wednesday (4/24/2013), approximately between 5:00 AM – 5:00 PM

Thursday (4/25/2013), approximately between 5:00 AM – 5:00 PM

Friday (4/26/2013), approximately between 7:00 AM – 2:00 PM

Saturday (4/27/2013), approximately at 6:00 PM

Monday (4/29/2014), approximately between 1:00 AM – 3:00 PM

- The chart listed in Attachment A, on page 7 is from KPSC's seven day voltage recorder (# 352), installed on 5/7/2013. This MCRECC customer (meter number 54619) is located at the end of the circuit (B Phase), which is past the complainants who are on the same circuit. The chart indicates voltage fluctuations recorded on the dates listed below.

Tuesday (5/7/2013), approximately between 6:00 AM – 5:00 PM

Wednesday (5/8/2013), approximately between 6:00 AM – 5:00 PM

Thursday (5/9/2013), approximately between 6:00 AM – 4:00 PM

Friday (5/10/2013), approximately between 6:00 AM – 6:00 PM

Saturday (5/11/2013), approximately between 5:30 AM – 11:00 AM

Monday (5/13/2013), approximately between 5:00 AM – 5:00 PM

- The voltage charts on pages 8 and 9 are from KPSC's SLM8 Metrosonics recorder. This recorder was installed at MCRECC's primary meter pole, located at Hilltop Quarry. The charts indicate voltage fluctuations recorded on the dates listed below.

Tuesday (4/23/2013), approximately between 1:00 PM – 7:30 PM

Wednesday (4/24/2013), approximately between 6:30 AM – 7:00 PM

Thursday (4/25/2013), approximately between 8:30 AM – 8:00 PM

Friday (4/26/2013), approximately between 8:30 AM – 5:30 PM

Monday (4/29/2013), approximately between 8:00 AM – 5:30 PM

Tuesday (4/30/2013), approximately between 8:00 AM – 8:30 PM

Wednesday (5/1/2013), approximately between 10:00 AM – 5:30 PM

Thursday (5/2/2013), approximately between 7:00 AM – 6:30 PM

Friday (5/3/2013), approximately between 8:00 AM – 8:30 PM

Monday (5/6/2013), approximately between 11:00 AM – 1:30 AM (Tuesday 5/7/2013)

Tuesday (5/7/2013), approximately between 8:20 PM – 7:30 PM

- The voltage charts on pages 10 and 11 are from KPSC's SLM8 Metrosonics recorder. This recorder was installed at MCRECC's primary meter pole, located at Hilltop Quarry. The charts indicate voltage fluctuations recorded on the dates listed below.

Wednesday (5/8/2013), approximately between 7:00 AM – 7:00 PM

Thursday (5/9/2013), approximately between 8:30 AM – 7:00 PM

Friday (5/10/2013), approximately between 9:30 AM – 9:30 PM

Monday (5/13/2013), approximately between 12:30 PM – 11:00 PM

Tuesday (5/14/2013), approximately between 2:30 PM – 7:00 PM

- The voltage charts on pages 13 and 14 are from KPSC's thirty day recorders (74A - 109 and 84A - 1274). Recorder 74A - 109 was installed at MCRECC's transformer pole serving Mr. Miles home. Recorder 84A - 1274 was installed on MCRECC's transformer pole serving Mr. Jarboe's shop. The charts indicate voltage fluctuations recorded on the dates listed below.

Recorder 74A – 109

Recorder 84A - 1274

Monday (6/24/2013)

Monday (6/24/2013)

Tuesday (6/25/2013)

Tuesday (6/25/2013)

Wednesday (6/26/2013)

Wednesday (6/26/2013)

Saturday (6/29/2013)

Saturday (6/29/2013)

Wednesday (7/10/2013)

Wednesday (7/10/2013)

Monday (7/22/2013)

Monday (7/22/2013)

Tuesday (7/23/2013)

Tuesday (7/23/2013)

#### Recommendation:

It is recommended that the team schedule a meeting with MCRECC to discuss the flicker data and gain a better understanding of how it can affect the quality of service for a customer, and if the upgrade to the circuit completed on or before December 28<sup>th</sup>, 2012 has improved the quality of service enough to meet Commission regulations.<sup>1</sup>

<sup>1</sup> 807 KAR 5:041, Section 6, Voltage and Frequency:

(1) Each utility shall adopt a standard nominal voltage or standard nominal voltages, as required by its distribution system for its entire constant-voltage service, or for each of several districts into which the systems may be divided, which standard voltages shall be stated in every schedule of rates of each utility or in its terms and conditions of service.

(2) Voltage at the customer's service entrance or connection shall be maintained as follows:

(a) For service rendered primarily for lighting purposes, variation in voltage between 5 p.m. and 11 p.m. shall not be more than five (5) percent plus or minus the nominal voltage adopted, and total variation of voltage from minimum to maximum shall not exceed six (6) percent of the nominal voltage.

(b) 1. For service rendered primarily for power purposes, voltage variation shall not at any time exceed ten (10) percent above or ten (10) percent below standard nominal voltage.

2. Where a limited amount of lighting is permitted under these contracts, the entire load shall be considered power as far as voltage variation is concerned.

(c) Where utility distribution facilities supplying customers are reasonably adequate and of sufficient capacity to carry actual loads normally imposed, the utility may require that starting and operating characteristics of equipment on customer premises shall not cause an instantaneous voltage drop of more than four (4) percent of standard voltage nor cause objectionable flicker in other customer's lights.

(d) Equipment supplying constant current circuits shall be adjusted to furnish as nearly as practicable the rated current of the circuit supplied, and in no case shall the current vary more than four (4) percent above or below the circuit rating.

(3) Each utility supplying alternating current shall adopt a standard frequency of sixty (60) hertz which shall be stated in the schedule of rates of each utility.

(4) A frequency meter monitor shall be maintained for each system frequency. Accuracy of the frequency meter shall be checked each day and frequency shall be governed within limits as set forth in this section so that the frequency meters on the system are correct once daily.

(5) The following shall not be considered a violation of this section: Voltage variations in excess of those caused by operation of power apparatus on customer premises which require large starting currents and affect only the user of such apparatus, by action of the elements and infrequent and unavoidable fluctuations of short duration due to system operation.

(6) Greater variation of voltage than specified under this section may be allowed if service is supplied directly from a transmission line, if emergency service, or if in a limited or extended area in which customers are widely scattered or business done does not justify close voltage administrative regulation. In such cases the best voltage administrative regulation shall be provided that is practicable under the circumstances.

**Investigators Comments:**

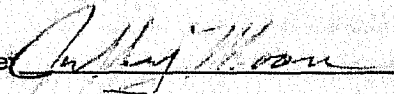
It should be noted the KPSC Meter Standards Laboratory equipment available at this time is not capable of capturing detailed voltage data like newer equipment that is available today (such as Meade County RECC voltage recorders). The current KPSC equipment can record voltage fluctuations (sags and swells) when installed, but is not able to record flicker events. The newer equipment MCRECC uses has the capability to capture and record flicker events if present on the customer's service. Therefore, engineering can only review flicker data provided by MCRECC.

**Attachments:**

- A. KPSC voltage data from 4/23/2013 to 5/7/2013
- B. KPSC voltage data from 6/24/2013 to 7/25/2013

**REPORT SUBMITTED BY:**

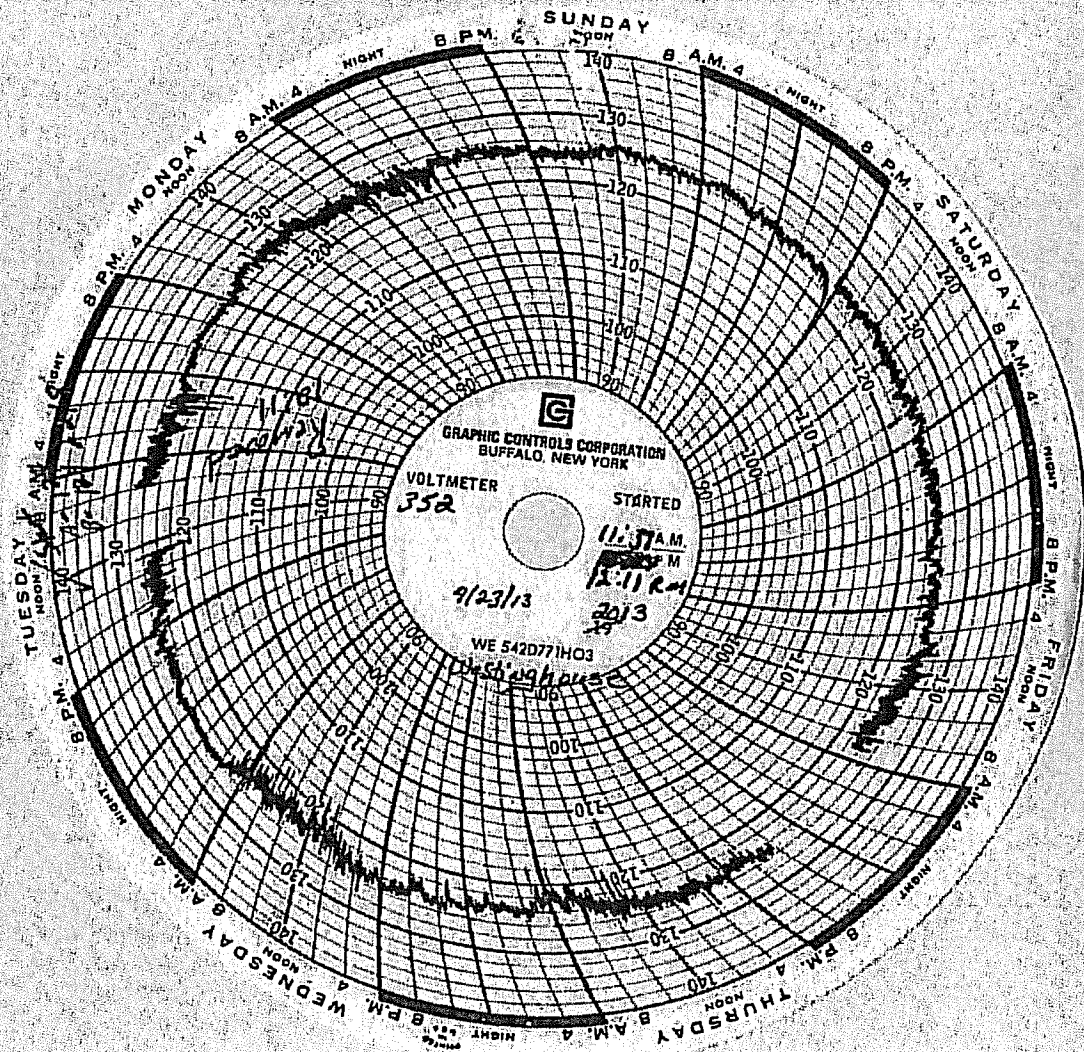
Jeffrey C. Moore  
Electric Utility Investigator  
Engineering Division  
Kentucky Public Service Commission

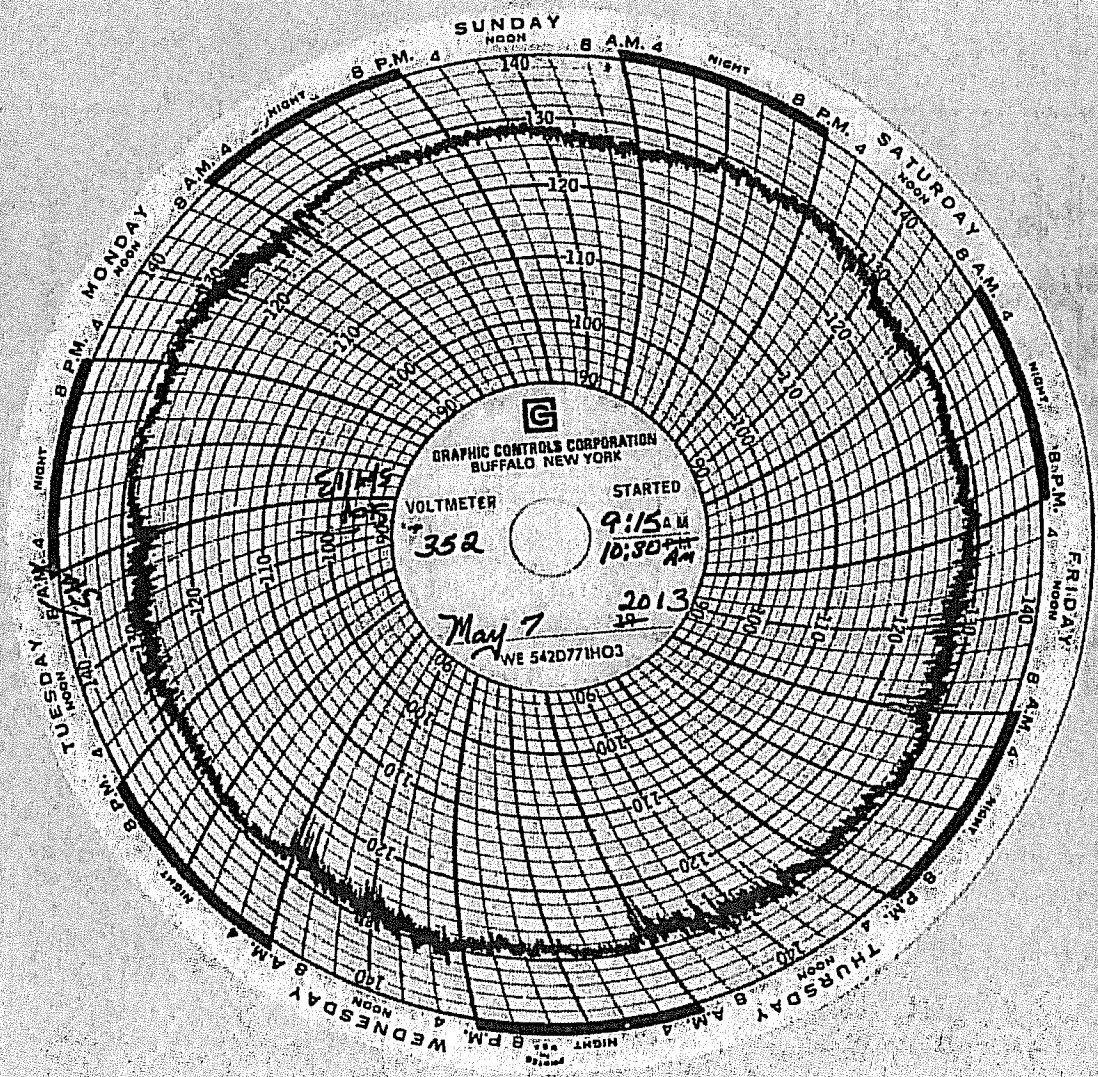
Signature: 

Date: 2/14/14

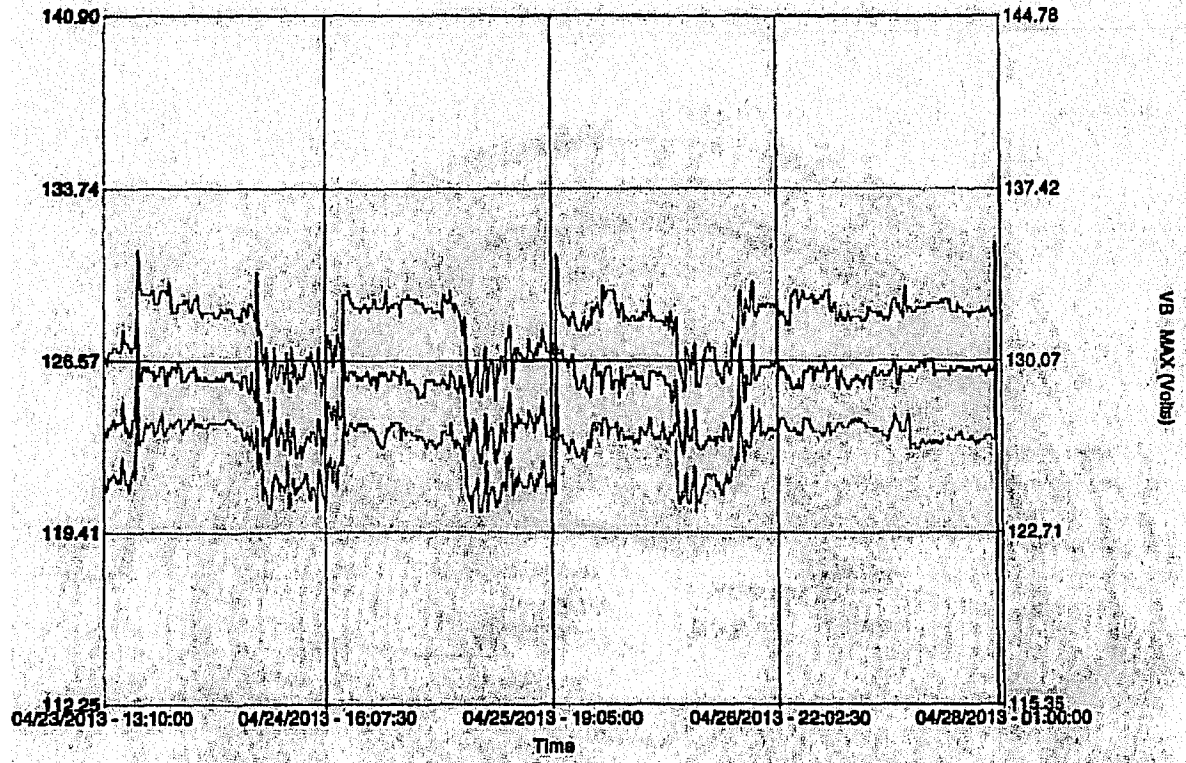


## **ATTACHMENT A**

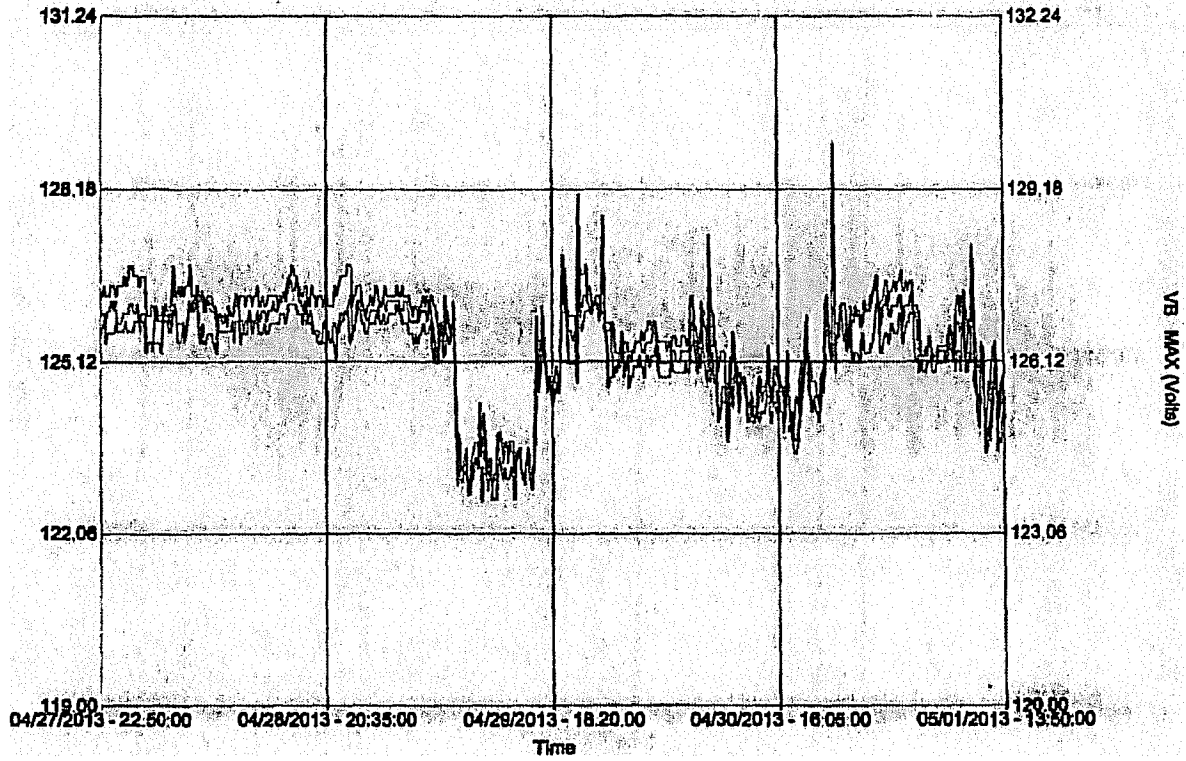




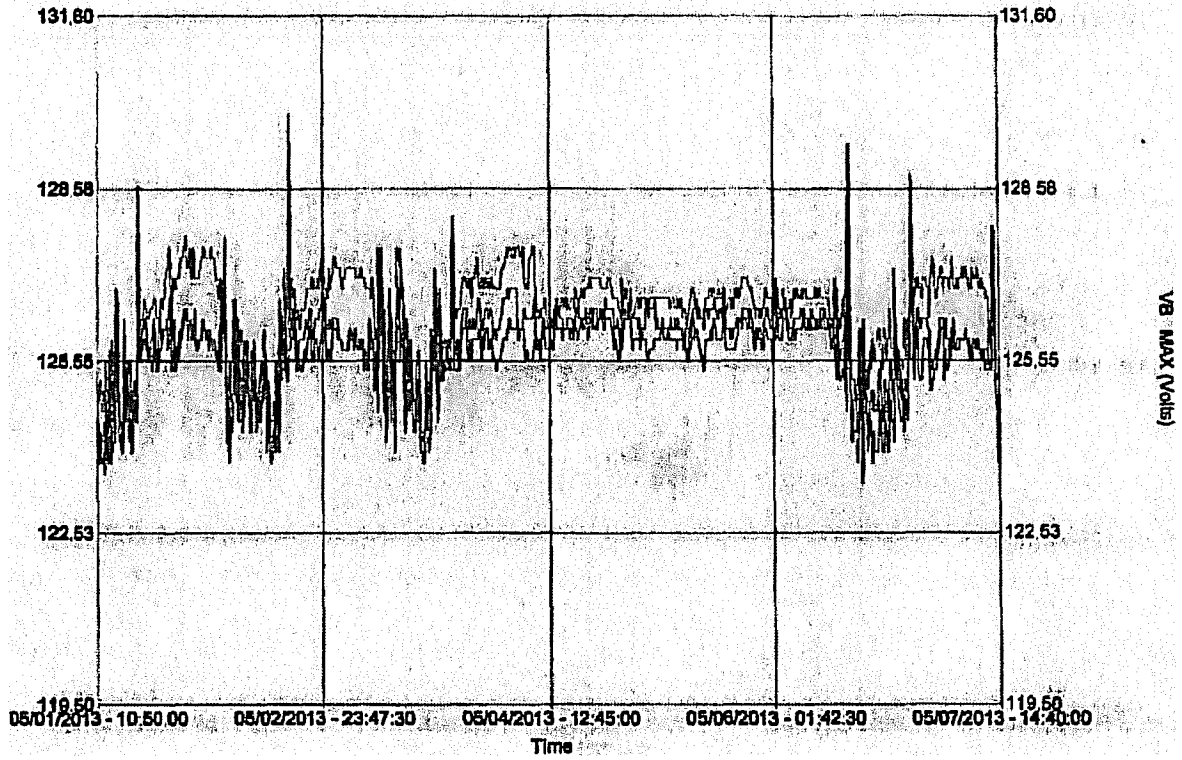
Hiltop Quarry

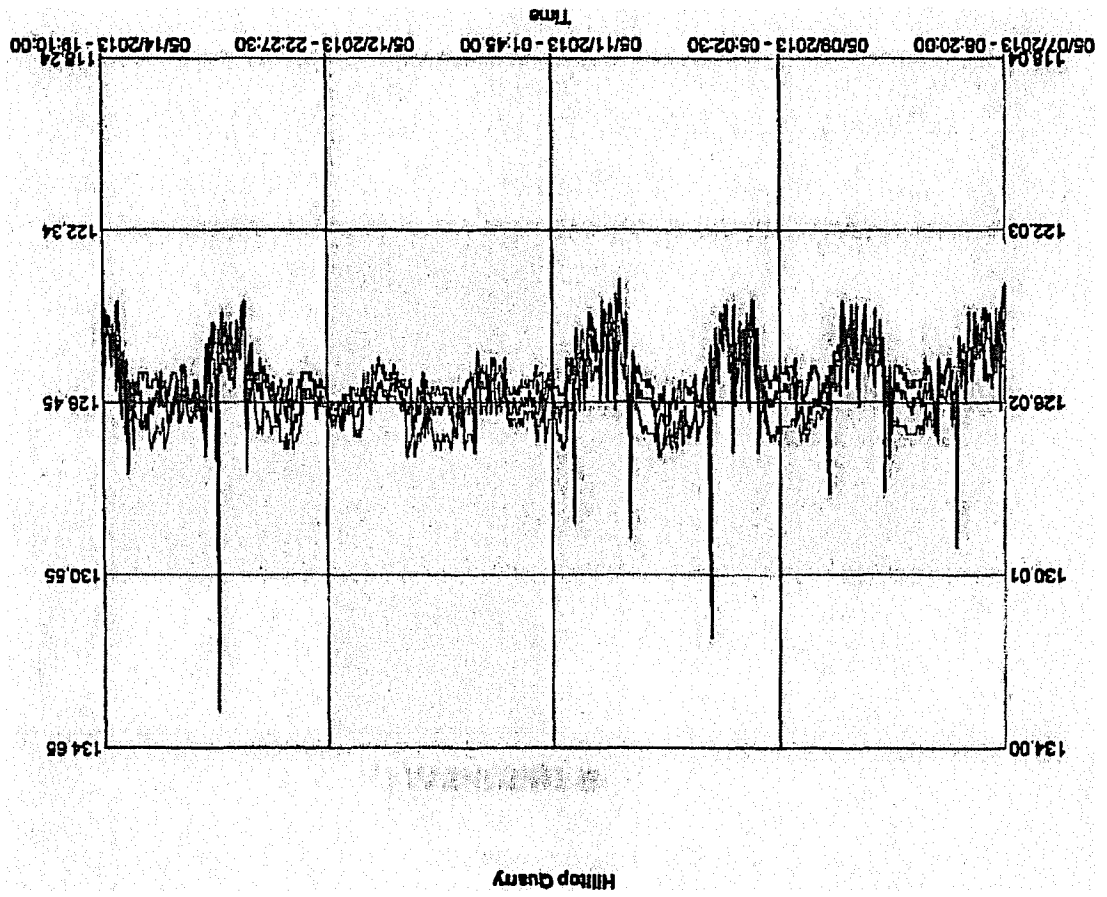


Hilltop Quarry



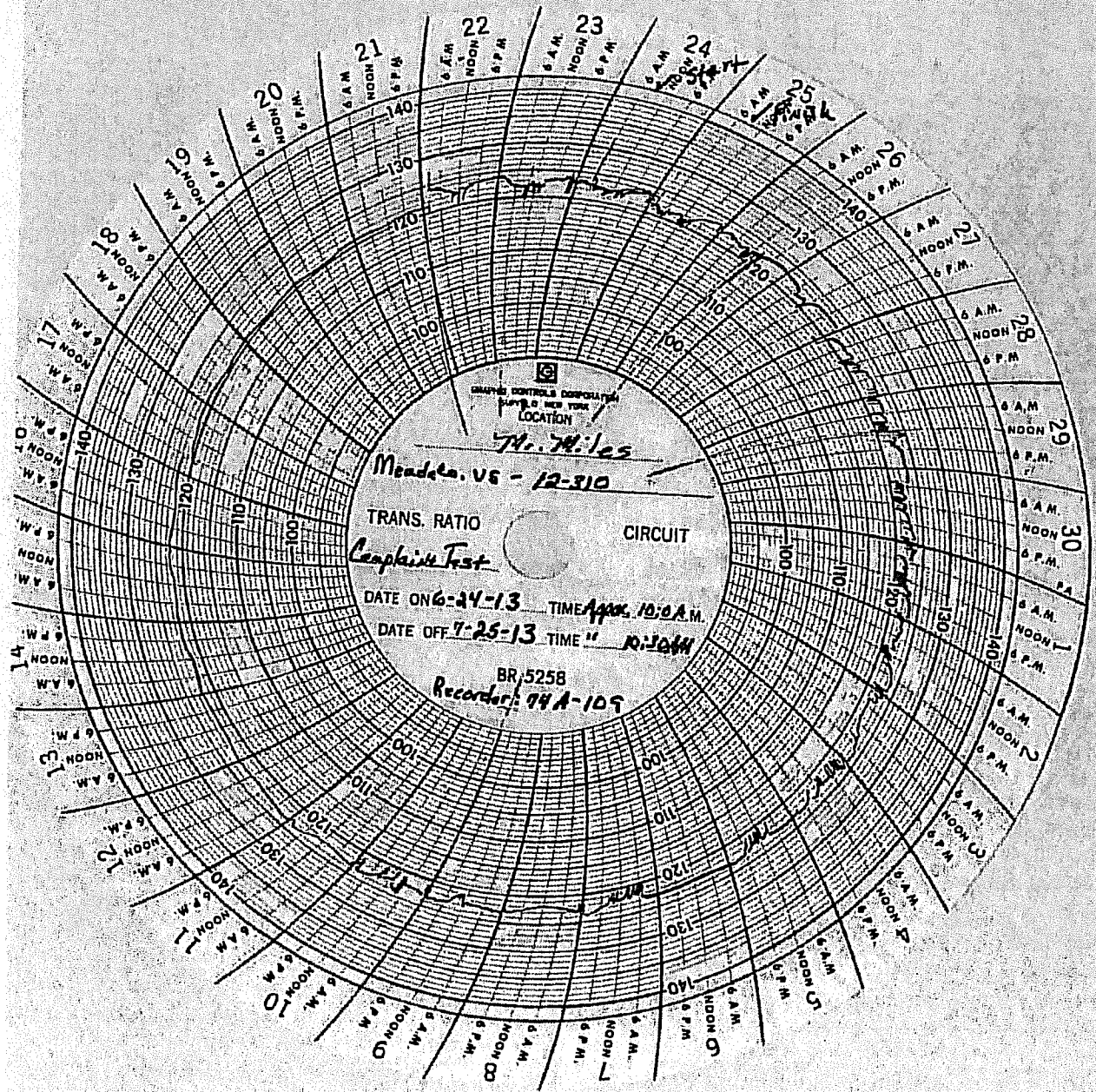
Meade Co. Hilltop Quarry





**ATTACHMENT B**





GRAPHIC CONTROLS CORPORATION  
TYPE 8.0 PER TYPE  
LOCATION

74. Miles

Mendota, Vt - 12-310

TRANS. RATIO

CIRCUIT

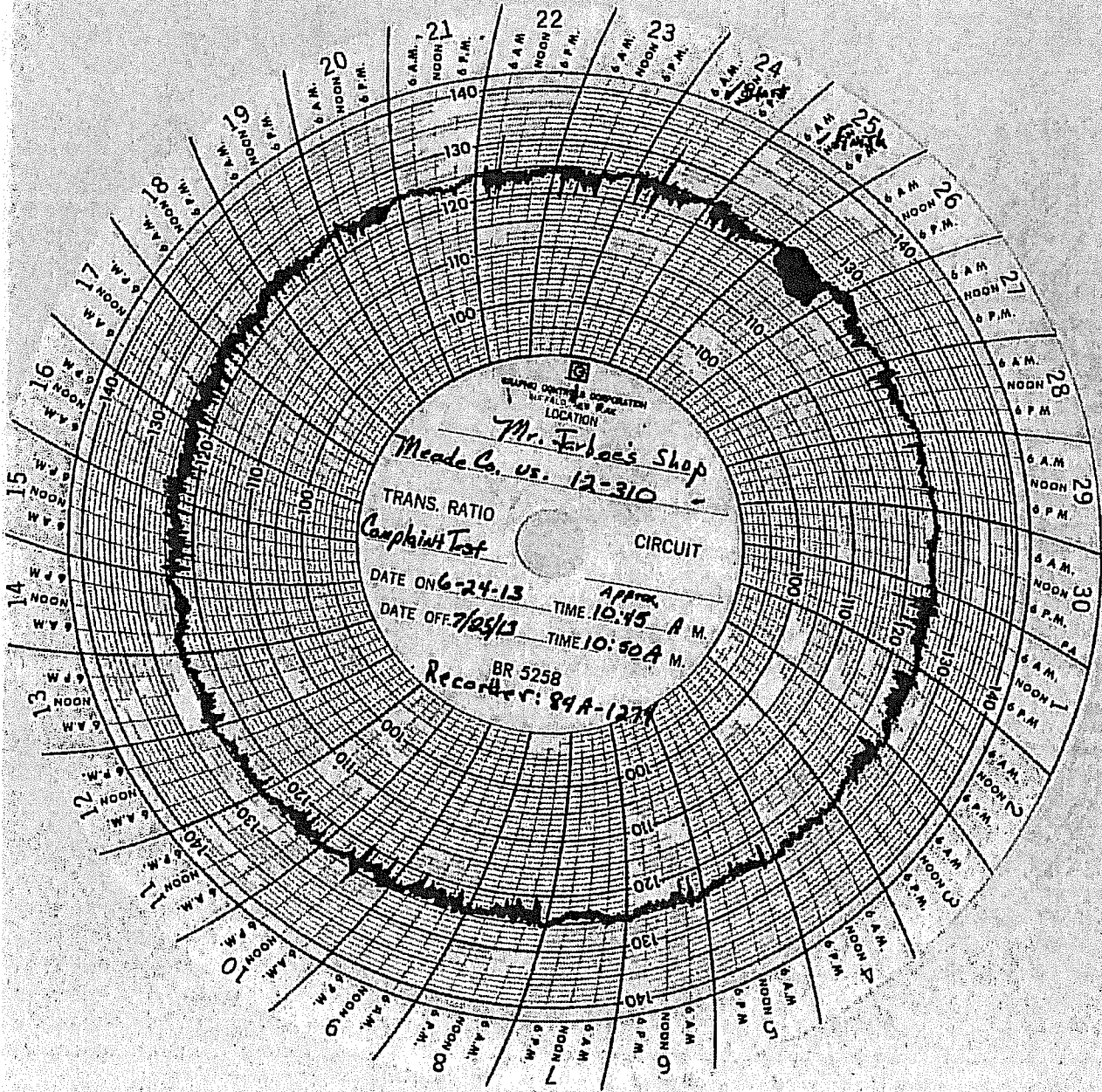
Complaint Test

DATE ON 6-24-13 TIME 10:00 A.M.

DATE OFF 7-25-13 TIME 10:30 A.M.

BR 5258

Recorder: 74A-109



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