

## OFFICE MEMORANDUM

TO : File

DATE: July 28, 1977

FROM : Thad Stevens *TS*

SUBJECT : STANDARD OPERATING PROCEDURES FOR MOISTURE MEASUREMENTS USING THE TROXLER SCALER-RATEMETER

SYMBOL : H8-77-533

In order to have constant valid data using the Troxler Scaler-Ratemeter (Model 2651) the following standard operating procedures should be followed by users.

### SAFETY

The Troxler Scaler-Ratemeter uses a remote probe containing a 100 mCi Am Be neutron source and sensitive detector tube.

1. Operators will wear a LASL film badge while handling or working near the probe.
2. The probe should be housed in its shield when not in use.
3. Personal proximity and contact with the probe should only occur when necessary.
4. During transportation the probe (housed in its shield) should be secured in the wooden transport container and away from personnel. Care should be taken to handle the probe carefully as the detector tube can easily be damaged by physical shock.
5. Storage should be in a place away from personnel and restricted to users. The equipment is presently being stored in the white metal cabinet at the west end of the annex building.

### INSTRUMENTATION PRELIMINARIES

1. Preferably one day prior to field use the Troxler Scaler-Ratemeter instrument, with the power switch in the OFF position, should be charged for not more than 12 hours on 110 to 120 VAC using the special black AC cord.
2. After one day of continuous "on" field usage, the instrument should be charged, as described above, for 2 to 4 hours.

### FIELD INSTRUMENTATION SET-UP

1. The Troxler Scaler-Ratemeter should be transported in a method as to minimize shock and vibration to the instrument.
2. With the POWER switch in the OFF position, the probe cable is then plugged into the instrument.
3. Then set the POWER switch to the STAND-BY position.
4. The instrument is then allowed to stabilize for a minimum of 20 minutes.
5. Next the POWER switch is moved to the ON position.



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6. Then move the VOLT-RATE switch to the VOLT position and make certain the meter shows approximately ~~1500~~ <sup>1200</sup> volts.

7. Set the following switches to the designated positions:

TEST: DOWN

TIME: ~~1 min.~~ <sup>.5 min</sup>

HIGH VOLTAGE: ~~750~~ <sup>1500</sup>

RATE x 1000 : 100 (or a position which provides a reasonable reading without "pinning" the meter needle)

VOLT-RATE: RATE

### FIELD USE

It is very important that the user take two standard counts, one before and one after, collecting moisture data. The following procedure should be followed carefully.

*CORRECT HOLE  
ADAPTER*

1. Place probe (locked in the shield) in an upright vertical position on the ~~floor~~ of the vehicle. Make certain that there are no objects (including personnel) within a 50 centimeter diameter around the probe.
2. A ~~standard count (SCB) is now taken and recorded in the data book.~~ *A 3 standard counts Three, .5 min standard counts are now taken*
3. Collect necessary moisture measurements. *3* (SCA)
4. Then before moving to a new site location, standard counts ~~after~~ (SCA) <sup>are</sup> taken and recorded in the data book.
5. The use of the new data book is self-explanatory.

With these operating procedures it is hoped that the amount of errors will be minimized, field time reduced, and add to more convenient operations.

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