Soil resistance data recorded using the Miller 400A versus data recorded using other resistance meters – A comparison study

A. The 4-Pin (Wenner) Method

PIN SPACING	**NILSSON 400** ANALOG METER READING	**MILLER 400A** ANALOG METER READING	**BIDDLE DET2/2** DIGITAL METER READING
20 feet	R = 2.1 Ω (8,043 Ω.cm)	R = 2.5 Ω (9,575 Ω.cm)	R = 2.45 ±0.2 Ω (9,383 Ω.cm)
10 feet	R = 7.4 Ω (14,171 Ω.cm)	R = 7.5 Ω (14,362 Ω.cm)	R = 7.7 ±0.1 Ω (14,745 Ω.cm)
5 feet	R = 18.5 Ω (17,714 Ω.cm)	R = 18.0 Ω (17,235 Ω.cm)	R = 18.8 ±0.05 Ω (18,001 Ω.cm)

Table 1: Soil resistance data (plus calculated resistivity values) measured by various resistance meters, including the Miller 400A meter. The data were recorded using the **4-pin method** under wet sandy soil conditions (data were recorded on July 23, 2008 in Sebastian, Florida). The readings from the different resistance meters were recorded within seconds of each other.

B. The Soil Box Method

NILSSON 400 ANALOG METER READING	**MILLER 400A** ANALOG METER READING	**BIDDLE DET2/2** DIGITAL METER READING
R = 5.6 kΩ (5,600 Ω.cm)	R = 5.6 kΩ (5,600 Ω.cm)	R = 5.65 kΩ (5,650 Ω.cm)

Table 2: Soil resistance data measured by various resistance meters, including the Miller 400A meter. The resistance data were measured using an **M. C. Miller soil box** and soil resistivity data are indicated based on an A/L value of 1cm for the soil box). The data were recorded at the M. C. Miller testing facility using a moist sandy soil sample (not the same soil as that involved with the 4-pin method). Resistance readings from the different resistance meters were recorded within seconds of each other.