

Oklahoma Mesonet / ARS

Quality Assurance Report

October 2020

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- Mesonet technicians completed scheduled rotations of 11 batteries (BVAS/BATV), 7 barometers (PRES), 4 rain gauges (RAIN/TIP2), 12 relative humidity sensors (RELH/TSLO), 9 pyranometers (SRAD), 8 PRT thermometers (TAIR/TA9M), 8 wind sentries (WS2M), 4 wind monitor nose cones (WSPD), and 6 current excitation modules
- A power problem at the Kenton (KENT) site resulted in missed observations. This was resolved on 15-October.
- An issue with the aspirator fan at our Idabel (IDAB) site resulted in a high 1.5-meter air temperature bias. This issue was resolved on 15-October.

Mesonet QA Report for Standard Variables

Variable	Status	Site	Ticket	Remarks
TAIR	Current	MANG	43424	1.5-meter air temperature reports over 3 degrees warmer than expected during sunny conditions. Check aspirated enclosure for damage.
RELH				
WSPD				
WDIR				
PRES				
SRAD	Resolved	MARE	43234	Suspect dirty solar radiation sensor. Reports values much lower than neighboring sites. Dirty

				sensor was cleaned. Values report as expected.
RAIN	Current	FORA	43288	Primary gauge drip tests lower than desired. Please replace gauge.
	Current	FORA	43285	Secondary gauge drip tests lower than desired. Please replace gauge.
	Current	BIXB	43409	Secondary gauge drip tests lower than desired. Please replace gauge.
TA9M				
WS2M	Resolved	BOIS	43150	2-meter wind speed often has a 2-3 m/s low bias compared to 10-meter wind and neighbors. Sensor replaced.
	Resolved	TALA	43307	2-meter wind reports lower than expected at all times of day. Sensor replaced.
TB10				
TS05				
TS10	Resolved	OILT	43002	Continuity soil temperature at 10cm under sod suddenly reports values greater than 100C. Lightning in vicinity at time of problem. Sensor replaced.
TS25				
TS60				
TR05				
TRB10	Resolved	MEDI	43316	Heater only heats 1 to 1.5 degrees per cycle, resulting in erratic soil moisture data. Sensor

				replaced.
	Resolved	OILT	43010	Standard soil temperature at 10cm under bare soil reporting -7999. Lightning in the vicinity of site when problem arose. Sensor replaced.
TRS10	Resolved	OILT	43008	Standard soil temperature at 10cm under sod reporting -7999. Lightning in the vicinity of site when problem arose. Sensor replaced.
	Current	ACME	43311	Both soil temperature and soil moisture reporting -7999 or otherwise errant, erratic values.
	Current	EUFA	43278	Sensor returns erratic, noisy moisture values. Soil temperature fine. Suspect failing heater. Replace.
	Current	TAHL	43377	Soil moisture values very erratic. Starting temperature reasonable, final temperature changing more rapidly than expected. Soil temperature fine.
TR25	Resolved	YUKO	42304	Sensor no longer heating, resulting in errant soil moisture values. Soil temperature is fine. Sensor replaced.
	Current	CHEY	43384	Soil moisture values errantly spike downward during high humidity. Soil temp fine. Original sensor. Please replace.
TR60	Resolved	HINT	43381	Soil moisture values errantly spike downward during high humidity and rain. Soil temperature unaffected. Sensor replaced.
	Resolved	MIAM	43044	60cm soil moisture starting temperature reports around 500 C. Final temperature is -7999. Sensor replaced.
	Resolved	OILT	43004	Soil temperature at 60cm reporting -7999. Lightning in the vicinity of site when problem arose. Sensor Replaced.
	Current	EVAX	43257	Both soil temperature and soil moisture frequently report -7999. Please replace sensor.

	Current	NEWK	42247	60-cm sensor doesn't heat as expected, resulting in bad soil moisture data. Soil temperature is fine.

ARS QA Report for Standard Variables

Variable	Status	Site	Ticket	Remarks
RAIN				
VW05	Resolved	A250	43281	Sensor returns errant or otherwise noisy values. Replace sensor. Sensor replaced.
VW25				
VW45				
V05T				
V25T				
V45T				

FCARS QA Report for Standard Variables

Variable	Status	Site	Ticket	Remarks
RAIN				
VW05	Current	F114	43191	5-cm soil sensor frequently reports bad values. Please replace sensor.
VW25	Current	F105	43275	25 cm sensor continues to report lower voltage readings than expected, especially for 1st voltage. Please replace sensor.
VW45				
V05T				
V25T				
V45T				

'Current' tickets are the unresolved tickets as of the last day of the month OR those tickets added based on the Monthly QA analysis.

'Resolved' tickets are the sensor problems that were fixed during the entire month.

Variable	Description
TAIR	Air temperature at 1.5 meters
RELH	Relative humidity at 1.5 meters
WDIR	Wind direction at 10 meters
WSPD	Wind speed at 10 meters
PRES	Air pressure
SRAD	Incident solar radiation
RAIN	Rainfall
TA9M	Air temperature at 9 meters
WS2M	Wind speed at 2 meters
TB10	Soil temperature at 10 cm under bare soil
TS05	Soil temperature at 5 cm under native sod
TS10	Soil temperature at 10 cm under native sod
TS25	Soil temperature at 25 cm under native sod
TS60	Soil temperature at 60 cm under native sod
TR05	Soil moisture: Calibrated DeltaT at 5 cm under native sod
TRB10	Soil moisture: Calibrated DeltaT at 10 cm under bare soil
TRS10	Soil moisture: Calibrated DeltaT at 10 cm under native sod
TR25	Soil moisture: Calibrated DeltaT at 25 cm under native sod
TR60	Soil moisture: Calibrated DeltaT at 60 cm under native sod
VW05	Soil moisture: Volumetric water content at 5 cm under native sod
VW25	Soil moisture: Volumetric water content at 25 cm under native sod
VW45	Soil moisture: Volumetric water content at 45 cm under native sod
V05T	Soil temperature at 5 cm under native sod
V25T	Soil temperature at 25 cm under native sod
V45T	Soil temperature at 45 cm under native sod