

Oklahoma Mesonet / ARS

Quality Assurance Report

November 2025

Prepared by Ethan Becker, Cindy Luttrell, and Mandy Voth

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Contact: gamgr@mesonet.org

This month, Mesonet technicians completed scheduled rotations of 14 batteries, 1 barometer (PRES), 4 rain gauges (RAIN/TIP2), 7 relative humidity sensors (RELH/TSLO), 4 pyranometers (SRAD), 3 PRT thermometers (TAIR/TA9M), 6 wind monitor nose cones (WSPD), 1 wind direction sensor (WDIR), 1 CDM, and 1 current excitation module.

An insect nest at the Perkins station resulted in flagged air temperature measurements due to poor ventilation over the PRT thermometer at 1.5m. This fan has been replaced.

Rodent damage at Ketchum Ranch resulted in missing 9m air temperature, solar radiation, and 5 cm soil moisture data. The bad data are flagged as bad, and the affected instruments have been replaced.

At the Talala station, cattle damage resulted in chewed cabling affecting 9m air temperature and data from the volumetric water sensors. The affected data are flagged. The technician fixed most of the damage and will return to the site to complete remaining repairs.

Mesonet QA Report for Standard Variables

Variable	Status	Site	Ticket	Remarks
TAIR	Resolved	CHIC	54529	1.5m air temperature reports much lower than expected (-200C). Please rewire both sensor and CDM end unless other problem found. Rewired.
RELH				
WSPD	Resolved	SKIA	54503	10m wind speed reported zero for extended period. WSPD now reports values intermittently, but is usually less than expected. Problem resolved on its own.

WDIR				
PRES				
SRAD				
RAIN	Resolved	COOK	54481	Primary gauge measures rainfall slower than expected, then continues to tip after precip ends. Suspect clogged. Clog cleaned.
	Resolved	TAHL	54480	Primary gauge stopped recording tips mid-event. Completely missed rainfall during subsequent event. Secondary gauge is fine. Replaced.
	Resolved	WIST	54483	Primary gauge recently misses start of rain event, then catches up and records near expected amount compared to secondary gauge. Clog cleaned.
TA9M	Resolved	TALA	54622	9m air temperature sometimes slightly lower or otherwise much lower than expected. Problem begins during overnight periods then slowly returns to normal during the day. Please rewire sensor unless other problem found. Cable replaced.
WS2M				
TB10				
TS05				
TS10				
TS25				

TS60				
TR05				
TRB10				
TRS10				
TR25	Resolved	PUTN	54531	25cm under sod legacy 229 sensor suddenly began recording higher diurnal variation after VWC install. Suspect depth problem or damage to sensor. Replaced.
TR60	Resolved	SKIA	54427	60cm under sod legacy 229 soil moisture is more noisy than allowed. Please replace sensor. Replaced.

ARS QA Report for Standard Variables

Variable	Status	Site	Ticket	Remarks
RAIN	Resolved	A148	54638	Rain gauge report precip slower than expected, then missed event on 11 24. Suspect gauge clogged. Clog cleaned.
	Resolved	A253	54636	Rain gauge records precip much slower than expected. Suspect gauge clogged. Clog cleaned.
VW05	Current	A256	54419	5cm under sod soil temperature has 2C low bias. No spare hydraprobos at this time, so date fix by is extended.
VW25	Current	A132	53082	Reports near 0 for voltages 1-3, resulting in errant soil moisture data. No spare hydraprobos at this time, so date fix by is extended.

	Current	A146	54625	25cm hydroprobe reports 0 VWC during conditions when higher soil moisture content is expected. Soil temperature is reasonable. No spare hydraprobes at this time, so date fix by is extended.
	Current	A234	53981	Reports near 0 for voltages 1-3, resulting in errant soil moisture data. No spare hydraprobes at this time, so date fix by is extended.
VW45				
V05T				
V25T				
V45T				

FCARS QA Report for Standard Variables

Variable	Status	Site	Ticket	Remarks
RAIN				
VW05	Current	F105	54259	5cm hydroprobe reports errant soil temperatures between 12-50C. Soil moisture data frequently errant. No spare hydraprobes at this time, so date fix by is extended.
	Current	F215	53078	All reported voltages are frequently missing. When the sensor does report reasonable values, they tend to be highly variable, leading to erratic soil temperature and moisture data.
VW25	Current	F101	54213	25cm sensor reports missing for all voltages. Disconnecting well sensor and power cycling logger did not resolve problem. 5cm hydroprobe was temporarily wired in as 25 cm and measured normally. No spare hydraprobes at this time, so date fix by is extended.

	Current	F103	52831	Volumetric water is much lower than expected and noisy. Soil temperature fine. Problem traces to period of heavy rainfall. No spare hydraprobes at this time, so date fix by is extended.
	Current	F110	53996	25cm Hydraprobe 1st voltage reports unreasonable values. Program download did not fix problem. No spare hydraprobes at this time, so date fix by is extended.
	Current	F112	53080	25cm sensor sometimes reports much lower voltages than expected.
VW45	Current	F104	54524	45cm Hydraprobe soil moisture data much noisier than expected. No spare hydraprobes at this time, so date fix by is extended. Soil temperature is fine.
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