

Oklahoma Mesonet / ARS Quality Assurance Report

October 2019

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- Mesonet technicians completed scheduled rotations of 2 batteries, 5 aspirator fans, 4 rain gauges (RAIN/TIP2), 5 relative humidity sensors (RELH/TSLO), 4 pyranometers (SRAD), 2 PRT thermometers (TAIR/TA9M), 3 wind sentries (WS2M), and 3 current excitation modules.
- A lightning strike at the Westville site (WEST) resulted in data loss. Affected equipment replaced.

Mesonet QA Report for Standard Variables

Variable	Status	Site	Ticket	Remarks
TAIR				
RELH				
WSPD				
WDIR				
PRES				
SRAD				
RAIN	Resolved	ADAX	40456	Confirm serial number of rain gauge cover and base. Resolved.
	Resolved	SEMI	40492	Primary gauge sometimes fails to record tips. Please replace rain gauge cable. Gauge replaced.
	Resolved	SEMI	40497	Please replace TIP2 rain gauge cable. Resolved.
	Resolved	ARD2	40411	Secondary gauge sometimes records less rain than expected. If no clog found, check cables/connections for damage. Cleaned corrosion.
	Current	RING	40453	Confirm serial number for cover and base of rain gauge.
	Current	WEST	40600	Primary rain gauge sometimes reports significantly more than TIP2. Suspect cover problem.

	Current	MINC	40571	TIP2 records rainfall slower than expected or misses rain altogether. Suspect clogged gauge.
	Current	OKEM	40475	TIP2 fails to record rainfall.
TA9M	Current	BUTL	40615	TA9M reports errant values.
WS2M	Current	WEST	40605	WS2M sometimes reports values lower than expected for a few observations.
TB10	Current	LAHO	40180	10cm bare soil temperature reports errant values.
	Current	SLAP	39314	10cm bare sensor reports errant values.
TS05	Current	GOOD	39317	5cm sod sensor reports values much lower than expected for starting, final, and average soil temperature.
TS10	Current	MADI	40566	10-cm under sod temperature reports errant values.
	Current	PERK	40177	10cm sod temperature reports errant values.
TS25	Resolved	DURA	40266	25cm soil temperature and moisture report errant values. Replaced.
TS60				
TR05	Resolved	ADAX	40312	5cm soil moisture very slow to moisten after extended periods of dryness. Replaced.
	Resolved	ADAX	40464	5cm sod sensor suddenly reports much larger diurnal variation than expected. Soil moisture data show errantly dry values. Suspect sensor exposed to air. Reburied.
	Current	OKCE	40541	5 cm sod sensor not heating.
TRB10	Resolved	NEWP	40270	10cm bare soil moisture stopped heating. Replaced.
	Resolved	WEST	40533	10cm bare soil temperature reports errant values. Replaced.
	Current	BUFF	40594	10cm bare soil moisture final temperature is errantly high.
	Current	HINT	40589	10cm bare soil moisture final temperature is a errant and noisy.
TRS10	Resolved	CLAY	39311	Sensor not heating. Replaced.

	Current	ERIC	40498	10-cm sod sensor often doesn't heat properly.
	Current	PAUL	40585	10cm sod final temperature lower than expected.
TR25	Resolved	PUTN	40309	Small errant spikes in 25cm soil moisture during precip or dew. Replaced.
	Resolved	SALL	40137	25-cm sensor reports errant values. Replaced.
	Current	HINT	40591	25cm soil moisture final temperature sometimes higher than expected for several obs during rain or periods of high humidity.
TR60	Resolved	ANT2	40200	Sensor not heating. Replaced.
	Current	BUFF	40327	60 cm starting and final temperatures oscillate between 10-50 deg C throughout the day. Soil moisture final temperature is always less than starting temperature. Please check sensor wiring.
	Current	FTCB	40205	Sensor not heating.
	Current	OKCE	40206	Sensor reports errant values.
	Current	PAUL	40582	60cm soil moisture often doesn't heat properly.

ARS QA Report for Standard Variables

Variable	Status	Site	Ticket	Remarks
RAIN				
VW05	Current	A148	40576	5cm soil sensor reports values near zero for voltages 1-3. Rewire sensor to see if problem resolves.
	Current	A154	40357	5cm soil sensor reports values near zero for voltages 1-3. Rewire sensor to see if problem resolves.
VW25	Current	A124	40361	25cm soil sensor reports values near zero for voltages 1-3. Rewire sensor to see if problem resolves.
	Current	A133	40363	25cm soil sensor reports erratic values for voltages 1-3. Rewire sensor to see if problem resolves.
VW45	Current	A262	40279	Errantly low 45cm soil moisture. Voltages 1-3 report values near zero. Soil temperature voltage is fine. Rewire sensor to see if problem resolves.

V05T	
V25T	
V45T	

FCARS QA Report for Standard Variables

Variable	Status	Site	Ticket	Remarks
RAIN				
VW05	Current	F113	40353	5cm soil sensor reports values near zero for voltages 1-3. Rewire sensor to see if problem resolves.
VW25	Resolved	F106	40274	25cm soil sensor reports values near zero for all voltages. Completely unwire rewire sensor to see if it resolves problem. Replaced due to electrical short within sensor.
	Current	F105	40282	25cm soil moisture is errantly high. Voltages 1-3 are in reasonable range, but have small fluctuations in values that result in data spikes. Rewire sensor to see if problem resolves.
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