

# Oklahoma Mesonet / ARS Quality Assurance Report December 2020

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- Mesonet technicians completed scheduled rotations of 8 batteries (BVAS/BATV), 1 barometer (PRES), 1 rain gauge (RAIN/TIP2), 3 relative humidity sensors (RELH/TSLO), 2 pyranometers (SRAD), 2 PRT thermometers (TAIR/TA9M), 9 wind directions (WDIR), 1 wind sentry (WS2M), and 3 wind monitor nose cones (WSPD).
- A problem with the Aspirator fan at our Eva site is causing 1.5m air temperature (TAIR) to report much higher than expected. TAIR currently flagged at EVAX.

## Mesonet QA Report for Standard Variables

Variable	Status	Site	Ticket	Remarks
TAIR	Resolved	MANG	43424	TAIR reports over 3 degrees warmer than TSLO during sunny conditions. Enclosure lower section damaged and fell off, likely due to ice accumulation. Aspirator fan enclosure replaced.
RELH	Current	BEAV	43471	RELH sometimes reports values >110 percent, then suddenly drops to 10 percent. Resetting sensor during issue did not resolve problem. Please replace sensor.
	Current	BEAV	43472	If HMP155 cable not replaced after wildfire, please replace sensor cabling.
WSPD				
WDIR				
PRES				

<b>SRAD</b>				
<b>RAIN</b>	<b>Resolved</b>	<b>BYAR</b>	<b>43445</b>	<b>Secondary gauge underreports tips during rain events. Replace cable on primary gauge for consistency (referring to primary gauge). Rain gauge cables replaced.</b>
	<b>Resolved</b>	<b>BYAR</b>	<b>43443</b>	<b>Secondary gauge misses or underreports tips during rain events. Please replace rain gauge cable. Rain gauge cables replaced.</b>
	<b>Resolved</b>	<b>BIXB</b>	<b>43409</b>	<b>Secondary gauge drip tested 3 tips low for two consecutive post-cleaning tests. Please replace gauge. Replaced sensor.</b>
	<b>Current</b>	<b>NEWP</b>	<b>43480</b>	<b>Please replace primary gauge cable.</b>
	<b>Current</b>	<b>NEWP</b>	<b>43479</b>	<b>Secondary gauge sometimes misses tips at start of rain events. Please replace rain gauge cable.</b>
	<b>Current</b>	<b>OKCE</b>	<b>43483</b>	<b>Primary gauge fails to record precip. Before problem began, gauge had history of very low drip tests. Please replace gauge and RG cable.</b>
	<b>Current</b>	<b>OKCE</b>	<b>43484</b>	<b>TIP2 measured 3 tips low for 2 consecutive post-cleaning drip tests. Please replace gauge and RG cable.</b>
<b>TA9M</b>	<b>Resolved</b>	<b>HECT</b>	<b>43439</b>	<b>Sensor reports errant values at or near -248C for several hours then returns to normal. Please replace sensor cable. Replaced cable.</b>
<b>WS2M</b>	<b>Current</b>	<b>HECT</b>	<b>43459</b>	<b>Mice nest found inside enclosure. Technician confirmed damage to WS2M cable. Damage patched with electrical tape. No problems found in data at this time. Replace sensor. Will increase priority if data become affected.</b>
<b>TB10</b>				
<b>TS05</b>				

<b>TS10</b>				
<b>TS25</b>				
<b>TS60</b>				
<b>TR05</b>	<b>Resolved</b>	<b>ACME</b>	<b>43449</b>	<b>Sensor reports errant spikes in values during high humidity and rain. Original Sensor. Please replace. Replaced.</b>
	<b>Resolved</b>	<b>HOLL</b>	<b>43434</b>	<b>Sensor slow to reach or doesn't reach saturation following heavy rain events. Original sensor. Please replace. Sensor replaced.</b>
<b>TRB10</b>				
<b>TRS10</b>	<b>Resolved</b>	<b>ACME</b>	<b>43311</b>	<b>Both soil temperature and soil moisture reporting -7999 or otherwise errant, erratic values. Replaced.</b>
	<b>Resolved</b>	<b>EUFA</b>	<b>43278</b>	<b>Sensor returns erratic, noisy moisture values. Soil temperature fine. Suspect failing heater. Replace. Replaced.</b>
	<b>Resolved</b>	<b>TAHL</b>	<b>43377</b>	<b>Soil moisture values very erratic. Starting temperature reasonable, final temperature changing more rapidly than expected. Soil temperature fine. Replaced. Suspect rocks may be cause of erratic readings.</b>
<b>TR25</b>				
<b>TR60</b>	<b>Resolved</b>	<b>NEWK</b>	<b>42247</b>	<b>60-cm sensor doesn't heat as expected, resulting in bad soil moisture data. Soil temperature is fine. Sensor replaced.</b>
	<b>Current</b>	<b>EVAX</b>	<b>43257</b>	<b>Both soil temperature and soil moisture frequently report -7999. Please replace sensor.</b>

### ARS QA Report for Standard Variables

Variable	Status	Site	Ticket	Remarks
RAIN				
VW05				
VW25				
VW45				
V05T				
V25T				
V45T				

### FCARS QA Report for Standard Variables

Variable	Status	Site	Ticket	Remarks
<b>RAIN</b>	<b>Current</b>	<b>F101</b>	<b>43481</b>	<b>Gauge records less rainfall than expected during both warm rain and snow melt events.</b>
<b>VW05</b>				
<b>VW25</b>				
<b>VW45</b>				
<b>V05T</b>				
<b>V25T</b>				
<b>V45T</b>				

'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.

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