

Data Acquisition Round Table

(DART)

Overview

- Introduction and Inception Idea
- Data Acquisition Process
- DART Committees Goal
- Current Positive Outcomes

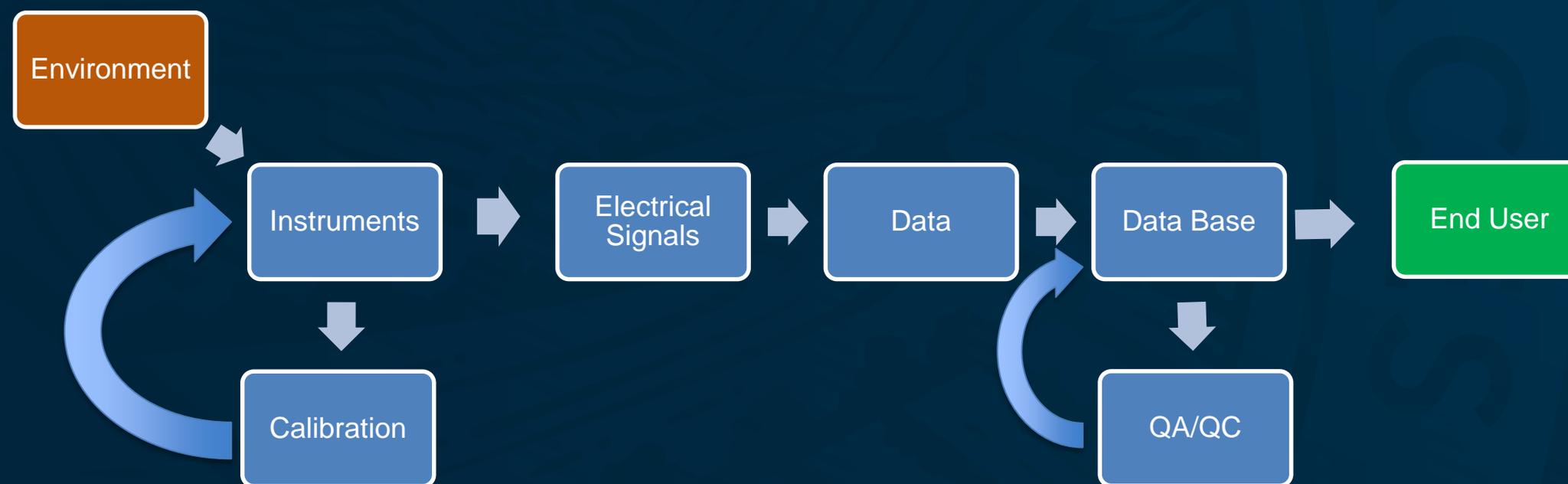
The Idea was Born



DART

Data
Acquisition
Round
Table

Data Acquisition Process



DART Vision and Purpose

- Create an open forum to discuss data acquisition experiences, knowledge and recommendations, and to build consensus around professional instrumentation and measurement standards.

DART Primary Mission (Operations)

- To provide a recommended set of standards for weather station instrumentation, including sustainable calibration and maintenance programs. These standards will ensure a quality data baseline that can be trusted by operational agencies.

DART Secondary Mission (Academic)

- To provide quality datasets and an environment for academics and researchers to test new science and instruments with the goal of improving operations.

Process Improvement and Variation Reduction

- Current Instruments: Reliability, Data Accuracy, Technology
- Future Instruments: Reliability, Research, and Testing
- Benefits: Time vs Cost vs Program Benefit
 - Retrofit all stations with new instrument?
 - Longevity of the retro-fit?
 - Is the operational outcome an advantage?
 - Is it worth all the time, effort, and Installation and sustainability costs?

Calibration

- Ensures product reliability and manufactured recommended lifecycle of product by testing and replacing instrumentation “Consumables”.
- NIST Traceable – “Metrological traceability [3] requires the establishment of an unbroken chain of calibrations to specified reference standards: Typically National or International standards, in particular realizations of the measurement units of the International System of Units (SI).”

<https://www.nist.gov/calibrations/traceability>

Data (Resolution and Types)

- Units
- What is a good resolution for Operational and Research purposes?

(How many decimals do we carry out?)

1 or 1.0 or 1.00 or 1.000000000000

Data Improvements

- Easy Solutions:
 - Instrumentation Sampling Rate (Hourly to 15min)
 - Calibrate your instruments per manufactures recommendations
 - Replace consumables per manufactures recommendations during calibration
 - Procure correct instrument for the job
(Example Wind Anemometer 25cm vs 50cm pitch)

CWD Temp Hourly



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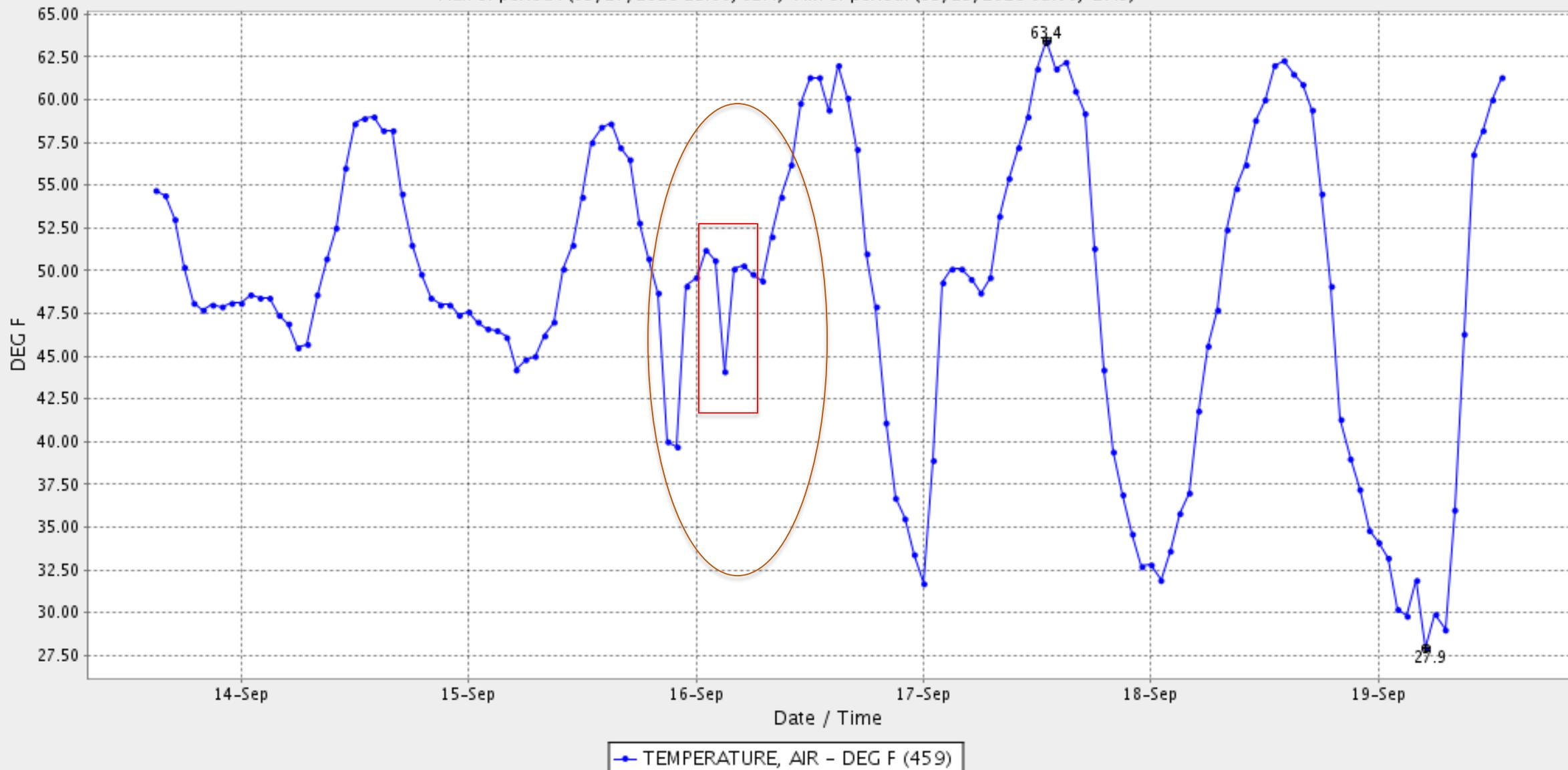
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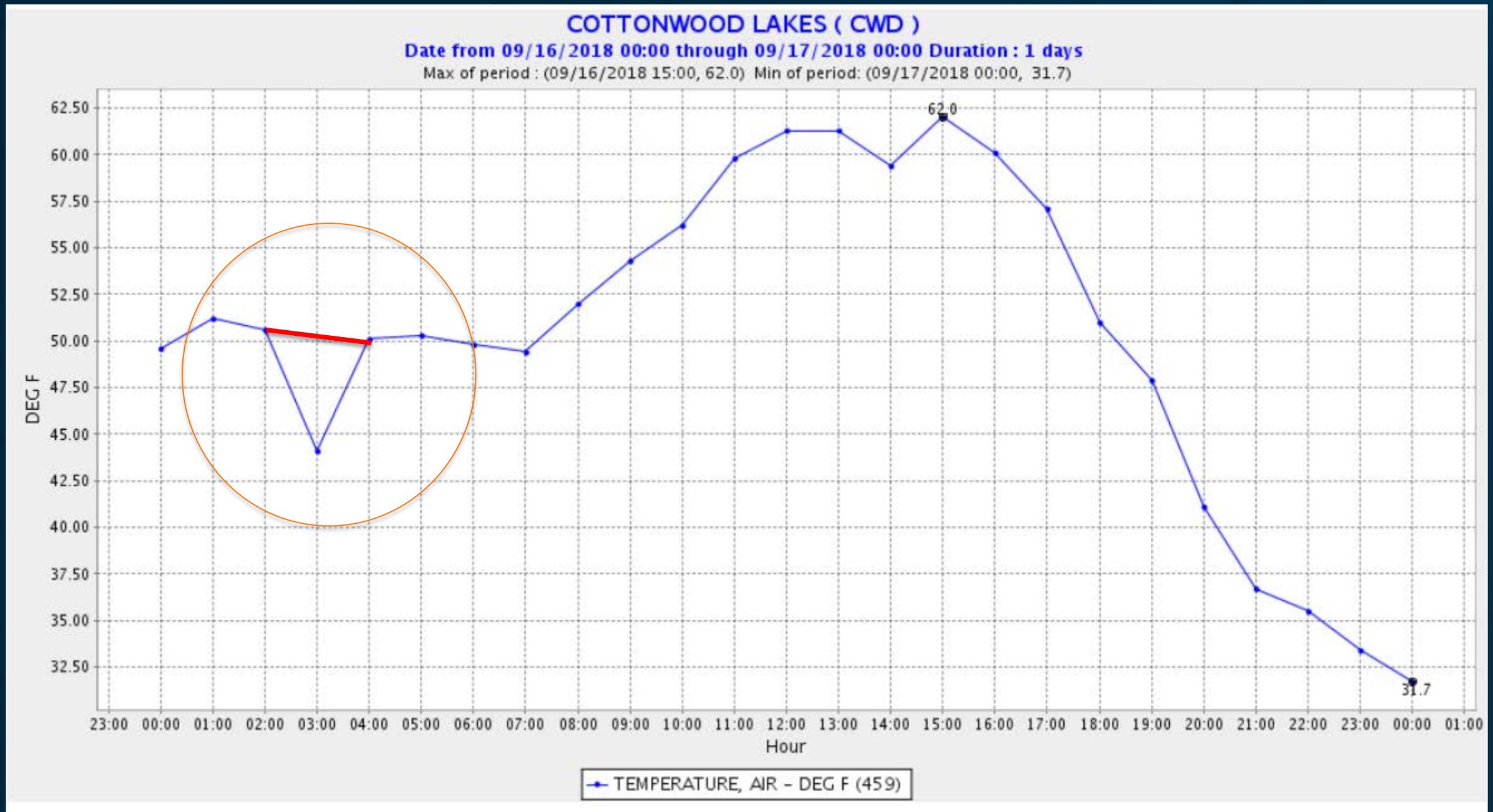
COTTONWOOD LAKES (CWD)

Date from 09/13/2018 13:32 through 09/19/2018 13:32 Duration : 6 days

Max of period : (09/17/2018 13:00, 63.4) Min of period: (09/19/2018 05:00, 27.9)



CWD Temp Hourly Continued



CWD Temp (20 min)



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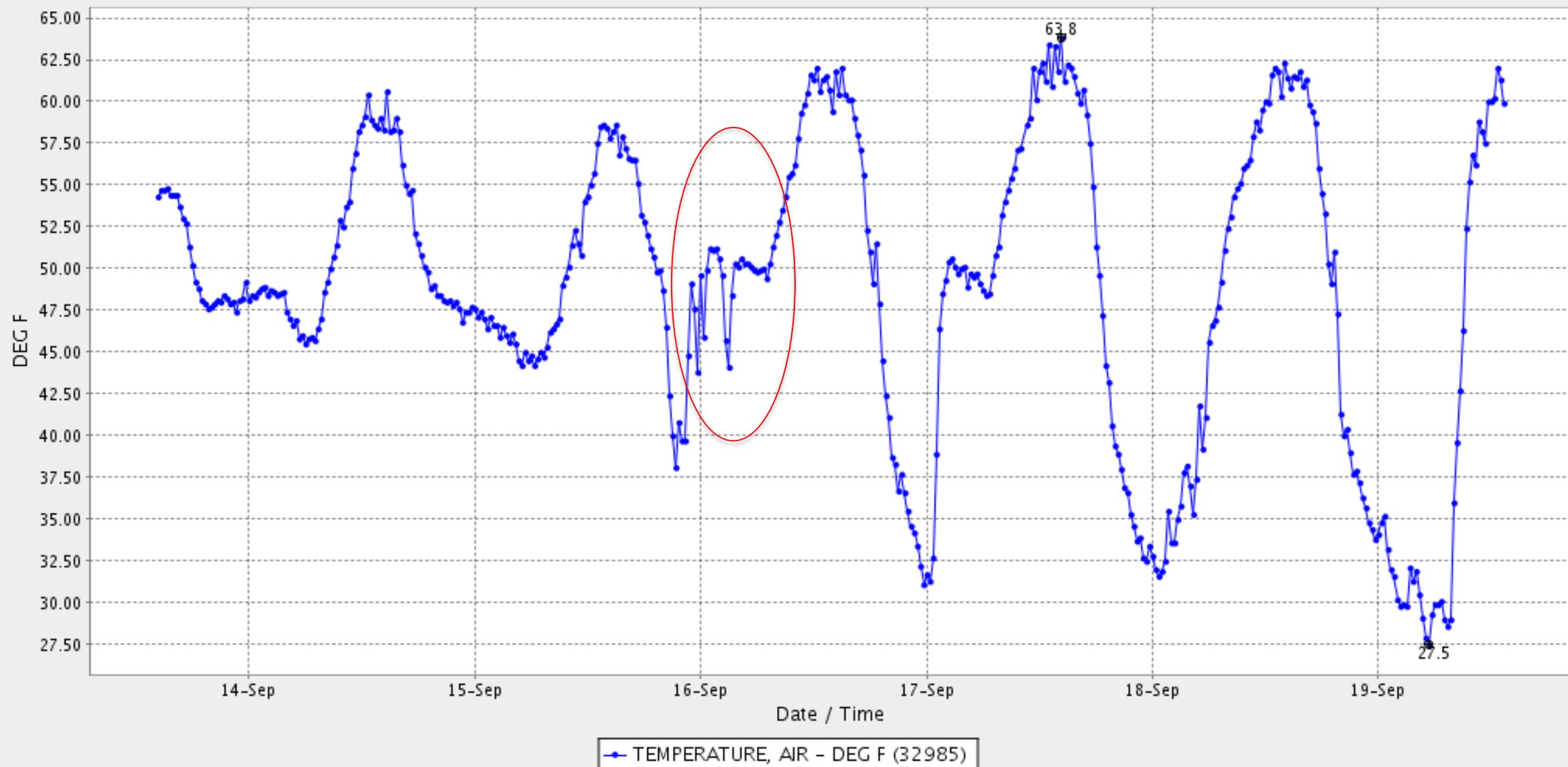
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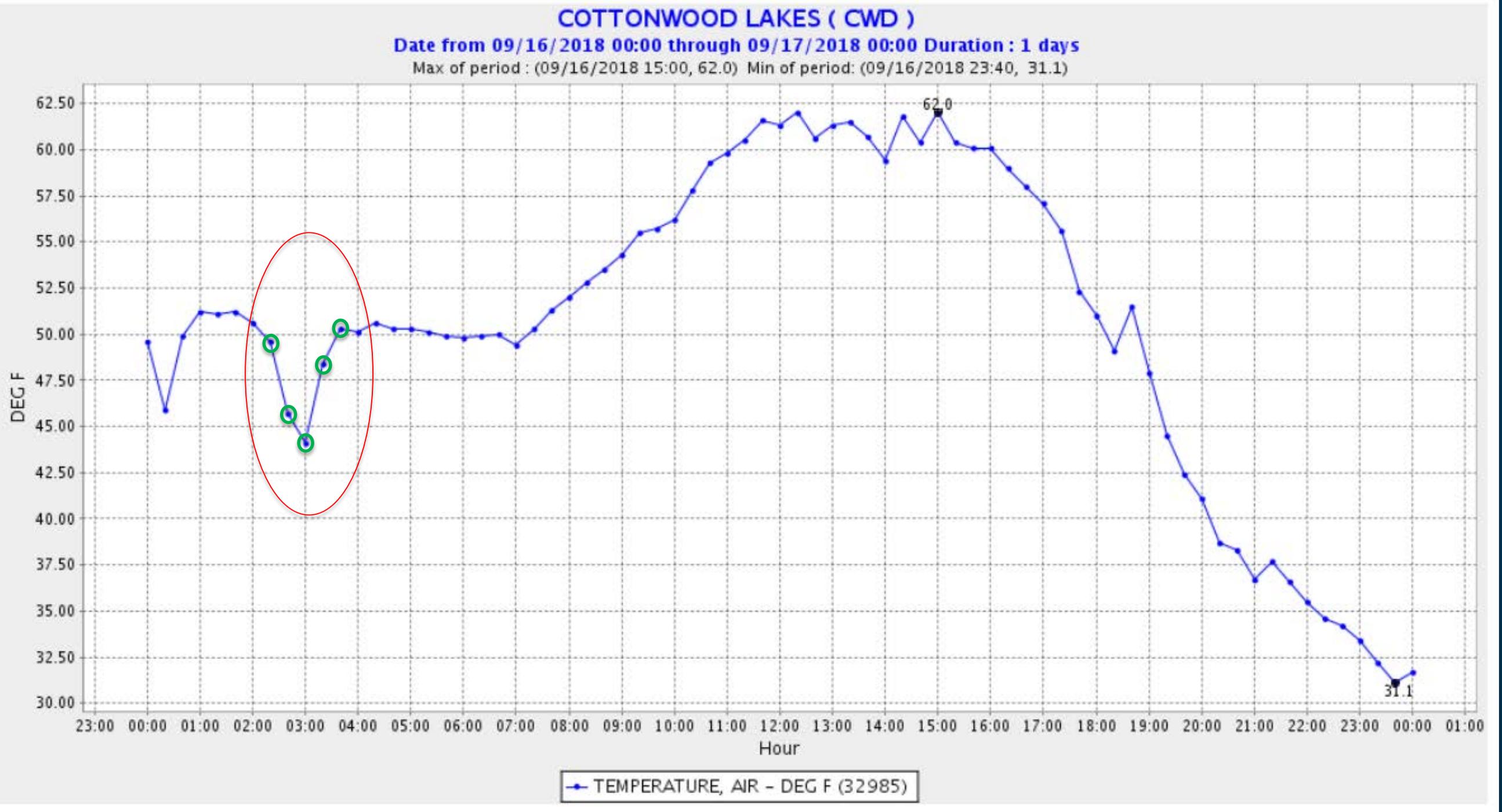
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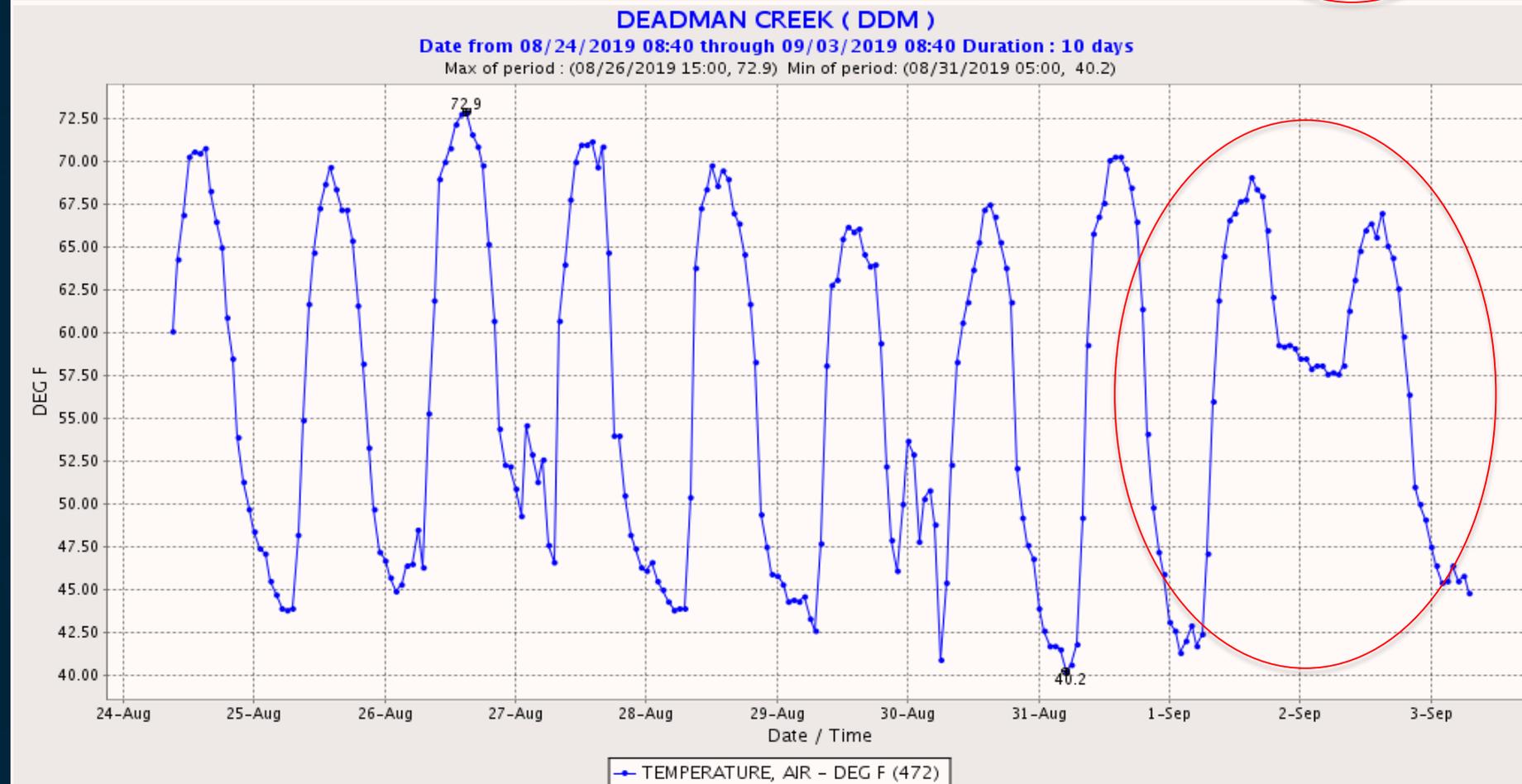
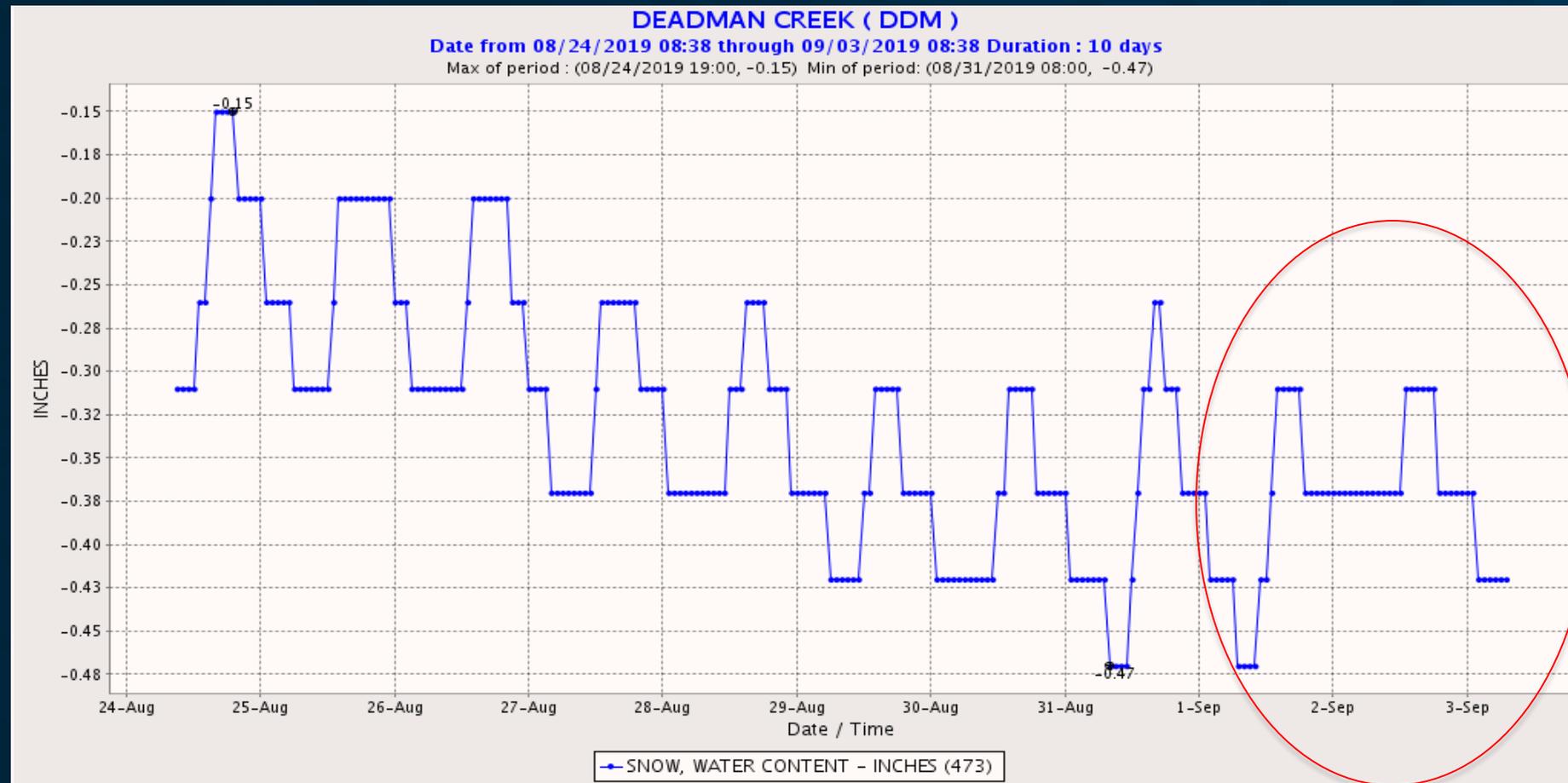
Max of period : (09/17/2018 14:20, 63.8) Min of period : (09/19/2018 05:20, 27.5)



CWD Temp (20 min) continued



Deadman SWE vs Temp



Telemetry Sites Status

Legend:

-  Station is 100% working.
-  One or more items is uncalibrated or broken or needing repair – however the primary sensors are still in tact.
-  Station failure, or primary sensor failure.

Sort

Filter

Site ID	Site Name	Status	Notes	Last Visit
ADR	AUBURN DAM RIDGE			12/16/2016
AGP	AGNEW PASS		Sam Visited: 10/2 and 10/3/2019, up and working.	07/25/2018
ALY	ALLEGHENY			11/19/2018
ANG	ANGWIN			11/09/2016
ARC	AARCATA		Temp bad	02/07/2018
ATL	ATLAS PEAK			03/19/2014
BCB	BLACKCAP BASIN		Visited 9/16-19/19: Upgraded to HyDAS standard. Wind, Solar, Albedo, Laser Snow Depth, SWE PT, Temp/RH.	09/16/2019
BCC	BLACK CREEK NR. COPPERPOLIS			06/09/2010
BCH	BEACH MEADOWS		7/18/19 - Precip Reset	07/18/2019
BDM	BALD MOUNTAIN		Precip stopped measuring correctly, late January 2019.	01/10/2018
BFL	BIG FLAT			08/10/2017
BGP	BIG PINE CREEK 3		7/17/19 - Site looks good, DCP or Batt failure, pillows intact (Needs to be upgraded)	07/17/2019
BGV	BRIDGEVILLE PRECIP			02/15/2018
BIM	BIG MEADOWS		Visited 9/04/19: Fixed and added Wind, Solar Rad and Albedo along with Laser Snow Depth, Snow Scale, Temp/RH.	09/04/2019
BLA	BLACKS MOUNTAIN			11/01/2017
BLC	BLUE CANYON			05/30/2018

Conclusion

- Lots of great opportunities to come!
- If you have any comments, suggestions or questions please contact your agencies DART representatives. If your agency is not involved and would like to become a member, please come find me or send me an email:

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