Deutsch Domestic Water Company, Inc

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March 15, 2022

Ben Wade
Water Supply Planning
Colorado Water Conservation Board
1313 Sherman Street, Room 718
Denver, Colorado 80203

Re: Water Efficiency Grant – POGGI PDAA 2022-2322

Sub: **75% Progress Report**

Ben,

DDWC has completed Tasks 5 & 6 of the Drought Management Plan and hereby submits the 75% Progress Report indicating the "essential" elements that have been completed:

Task 5 –Drought Stages, Trigger Points, and Response Targets

5.1 Water Stage, Trigger Points, and Response Targets

5.1.1 DDWC's Worksheet F is shown below. It outlines the proposed drought stages, corresponding trigger points, and response targets.

Drought Stages, Trigger Points, and Response Targets				
Stage	**Drought Category**	**Drought Trigger Point(s)**	**Response Targets (Water Savings)**	**Summary of Key Response Actions**
None	-	USDM, SPI, EDDI rating.		
Advisory	D0	USDM, SPI, EDDI rating.	0 gpcd	Focus on public awareness.
Watch	D1	USDM, SPI, EDDI rating.	5 gpcd	Focus on voluntary responses.
Warning	D2	USDM, SPI, EDDI rating.	10 gpcd	Focus on planning and preparation.
Extreme	D3	USDM, SPI, EDDI rating.	15 gpcd	Focus on initial, mandatory responses.
Exceptional	D4	USDM, SPI, EDDI rating.	20 gpcd	Focus on supplemental, mandatory responses.

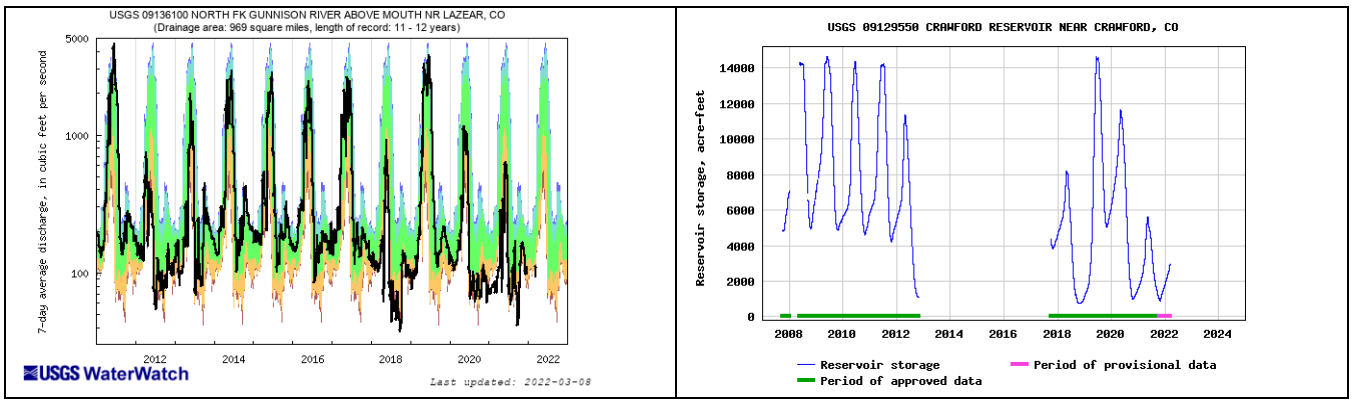
5.1.2 DDWC would also like to explain how each drought stage corresponds to the drought severity and the amount of water that needs to be saved, as follows:

DDWC is approved to service up to 150 homes, with a calculated 65.3 ac-ft/yr normal supply. Drought years 2018 and 2021 approximated about 45.0 ac-ft/yr available, necessitating a 20.3 ac-ft (31.1%) reduction. Estimates from drought years 2018 and 2021, found differences of about 13.6 and 15.4 GPCD from historic maximum demand. Drought severity during those years were mostly D3, but peaked in D4 a portion of the time. Consequently, DDWC's water savings goal will step up 5 GPCD per stage up to 20 GPCD at D4.

5.2 Drought Declaration and Predictability

5.2.1 DDWC would like to discuss the nature of the weather in western Colorado and challenges for detecting drought conditions early, as follows:

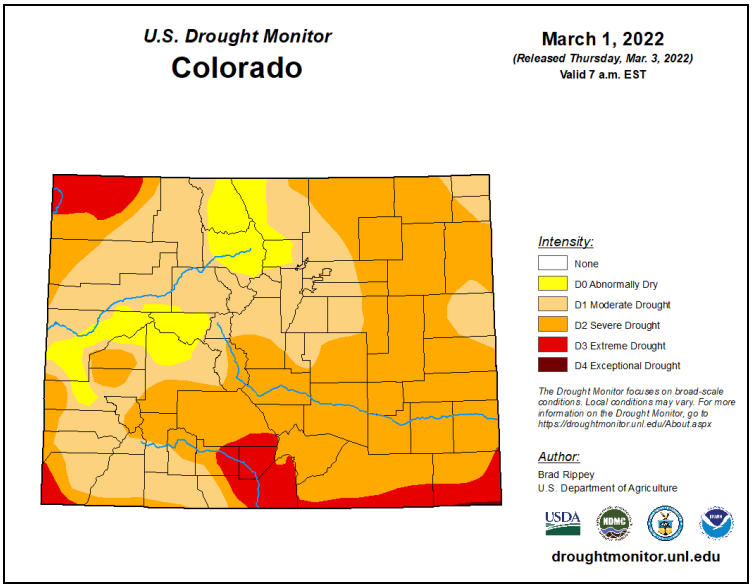
DDWC's water is from a groundwater source. However, it has historically demonstrated some responsiveness to precipitation and evapotranspiration patterns. Changes at the collection point seem to lag behind Smith Fork flows by about thirty days. Its flows can be correlated with surface streamflow trends with this is mind. The closest surface water stations are USGS station #09129550 at the Crawford Reservoir two miles away and USGS station #09136100 on the North Fork of Gunnison River about fifteen miles away. Historic data from both are illustrated below. Reductions during drought years 2012, 2018, and 2021 are easily identifiable.



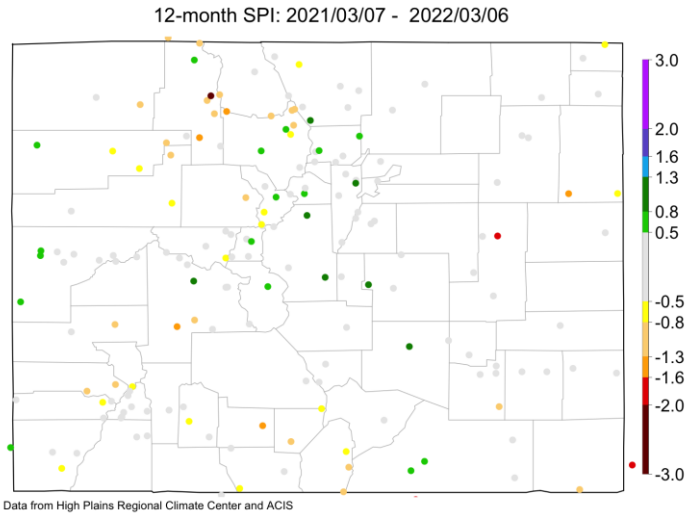
The nearest USGS groundwater monitoring stations are around the Gunnison River in Delta, and didn't demonstrate a notable correlation. DDWC may eventually install its own monitoring well in the Smith Fork seep.

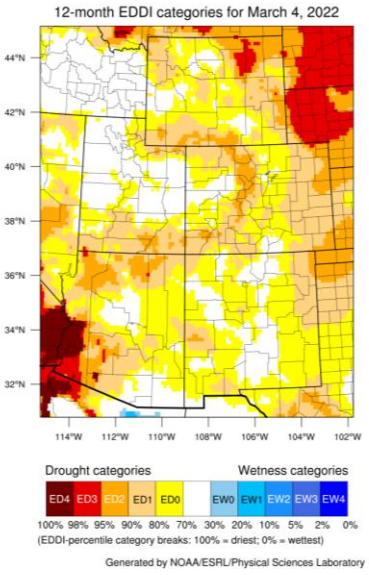
5.2.2 DDWC has developed a final list of drought indicators and how they reflect current water supply conditions, as follows:

The USDM's published drought map will be DDWC's primary drought indicator for current conditions.



DDWC will also check current SPI and EDDI indices. Presently, there is an estimated thirty-day delay between changes in the Smith Fork tributary to flow changes in DDWC's spring. These may help predict drought persistence for the coming month. The indices' twelve-month time spans will be used.





5.2.3 DDWC has selected the proposed drought triggers for the following reasons:

DDWC is very small company, and may not benefit from an overly complex process. The proposed trigger system is based directly on published drought conditions and forecasts in the Gunnison Basin. It does have a long-term plan for system improvements to flow monitoring and data tracking. Once installed, these may provide more precise correlation between flow observations and drought conditions.

5.2.4 DDWC would like to discuss how drought indicators, triggers and other pertinent data are incorporated into the decision-making process, as follows:

The USDM's published conditions will be the primary trigger source. Other indices will also be monitored to help forecast drought persistence and changes. DDWC reserves the right to modify its drought response tier based on the other information if deemed necessary.

5.2.5 DDWC has provided a summary of how the drought indicators should be monitored, as follows:

The USDM, SPI, and EDDI drought indices will be used to set DDWC's drought condition stages at least monthly. Emphasis will be placed on those that demonstrate the most correlation with supply impacts if there are circumstances where sources disagree.

Task 6 – Staged Drought Response Program

6.1 Monitoring Drought Stages

6.1.1 DDWC has attached Worksheets outlining our proposed supply and demand-side response measures.

6.1.2 DDWC has attached Worksheets with summary table of the drought response measures including drought stages, trigger points, and response targets.

6.1.3 DDWC has setup a website and is in the process of developing the staged public drought campaign along with the drought stages.

6.1.4 DDWC has setup a website and is in the process of developing a staged drought program with input from stakeholders and the Drought Management.

- The Plan is progressing as originally estimated.

75% Progress Report

This Progress Report indicates the "essential" elements for Tasks 5 & 6 that have been completed, such as:

- Presentation of the drought stages and corresponding trigger points and response targets.
- Created list of selected drought indicators and description of how these indicators are reflective of conditions.
- Provided discussion of how the drought indicators, triggers, and other data are incorporated into the decision-making process of declaring a drought.
- Provided summary of how drought indicators will be monitored.
- Provided supply and demand-side response measures by drought stage.
- Provided summary that highlights stages, trigger points, response targets, and measures.
- Completed elements under Task 1 through 4 outlined in the 50% Progress Report.
- Also conducted Drought Planning Committee Meeting #2 and have attached the meeting agenda and supporting documentation.
- The Plan is progressing as originally estimated.

Please let me know if you have questions and/or would like more information.

Thanks,

Austin R Hobbs
President
(907) 232-4409