

MEMORANDUM



To: Jerry Schnabel, Castle Concrete Aggregates
From: Paul Bruss, P.E.
Subject: Pueblo East Pit – Ground Water Monitoring Update
Job: 9107.07
Date: March 19, 2021

The memo presents an update on groundwater level monitoring data and recent groundwater conditions for Castle Concrete Aggregates' (Castle Aggregates) Pueblo East Pit.

Background

In 2019, Technical Revision (TR-5) of Castle Aggregates' DRMS mining permit for the Pueblo East Pit (M-1986-015) modified the frequency of data collection for its groundwater monitoring program from bi-monthly to monthly measurements. Technical Revision TR-5 requires Castle Aggregates to summarize and submit the monthly groundwater measurements to the DRMS annually before the end of November each year. The submittal is to be provided as a MS Excel spreadsheet that includes tables of the collected measurements along with hydrographs for each monitoring well. A map of the groundwater monitoring wells at the Pueblo East Pit is attached as Figure 1.

Based on correspondence with Castle Aggregates, we understand that due to a misunderstanding and personnel changes, limited monitoring data was collected in 2019 and no monitoring data was collected at the Pueblo East Pit in 2020. New groundwater monitoring data was collected on March 18, 2021 to document current groundwater conditions, as described further below.

Mining Activities in 2019 and 2020

In 2019 and 2020, site conditions and dewatering operations remained largely the same as what occurred following the first-fill of the Phase 1 pit in September 2018. No dewatering occurred at the unlined Phase 1 pit during 2019 and 2020 and the pit currently remains full of water. The lined Phase 2 pit is used for water storage and is not in connection with groundwater in the Arkansas River alluvium. At the unlined Phase 7 pit, dewatering continued during all of 2019 and most of 2020. In October 2020, pursuant to an approved SWSP and with authorization of Division 2, dewatering was shut off at the Phase 7 pit and a first-fill of the pit was completed. All depletions resulting from the first-fill of the Phase 7 pit were replaced pursuant to the approved SWSP. As a result of the now complete cessation of dewatering at the Pueblo East Pit, including both unlined Phase 1 and 7 pits, groundwater levels have since returned to a pre-mining state. This has been confirmed through the recent groundwater level measurements collected by Castle Aggregates on March 18, 2021, as shown in Figures 2, 3, and 4 attached.

An MS Excel spreadsheet of the groundwater monitoring data is also provided with this memo.

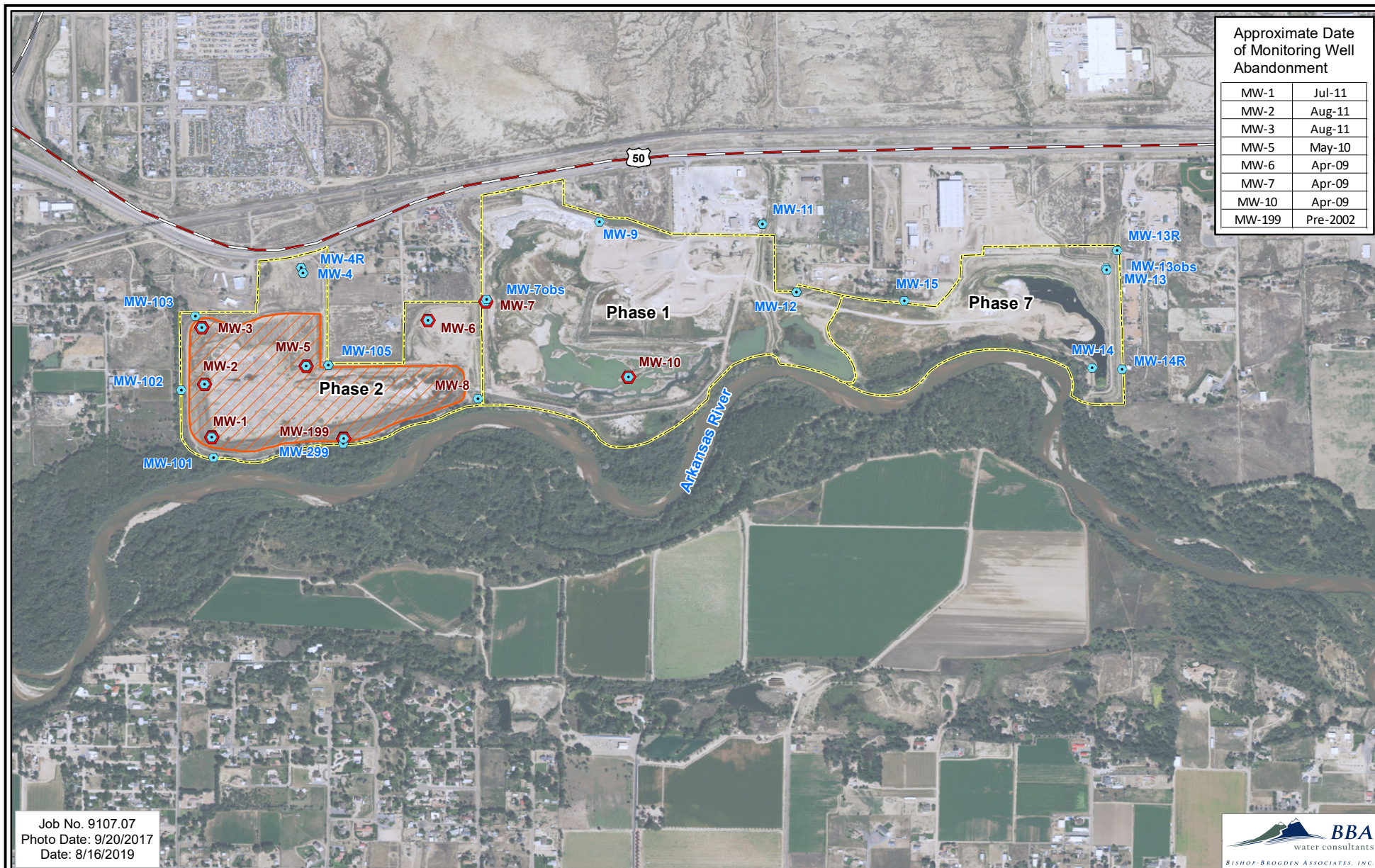


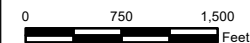
Figure 1
CCA Pueblo East Pit
Monitoring Well Locations

Legend

-  Abandoned Monitoring Wells
-  Existing Monitoring Wells
-  Mining Area (Approximate)
-  Slurry Wall - Constructed (Approximate)



1 inch = 1,500 feet



Overview Map

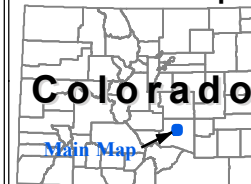
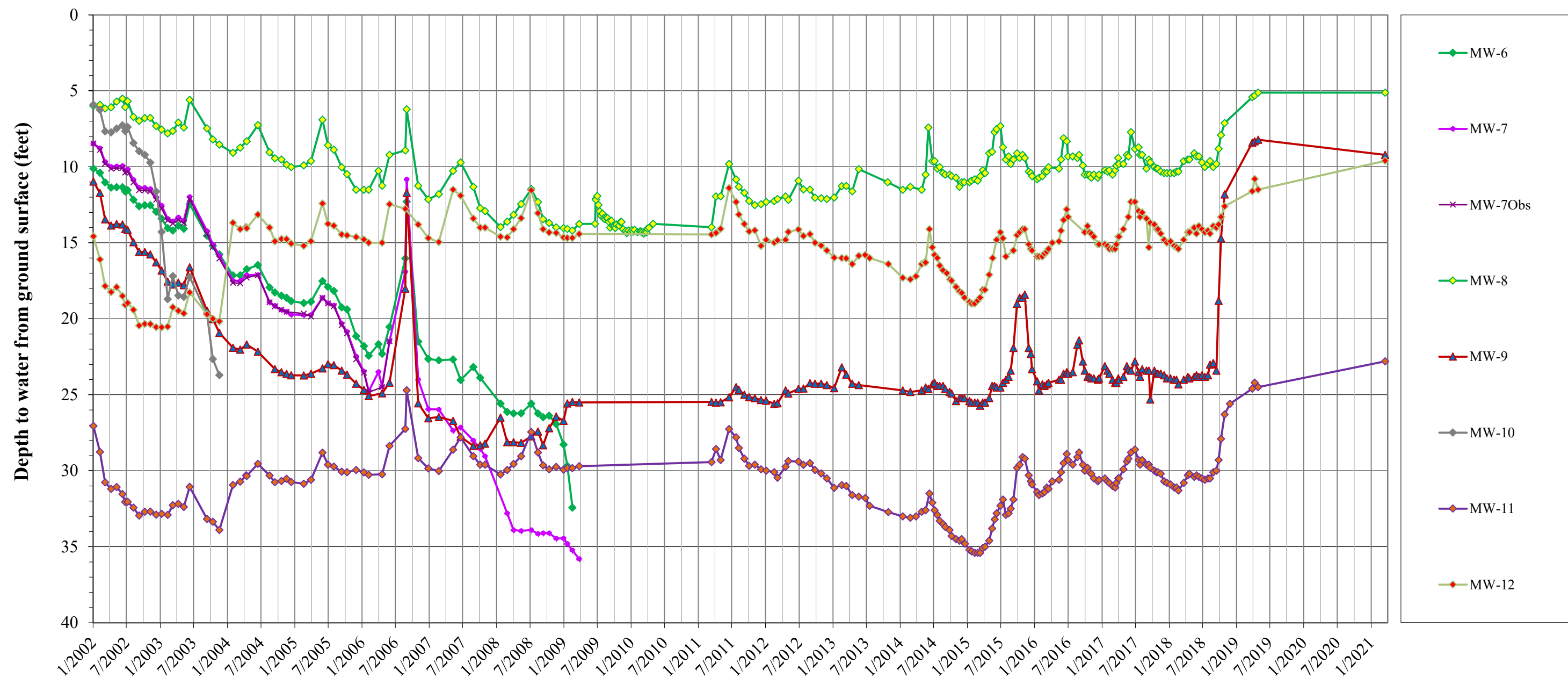
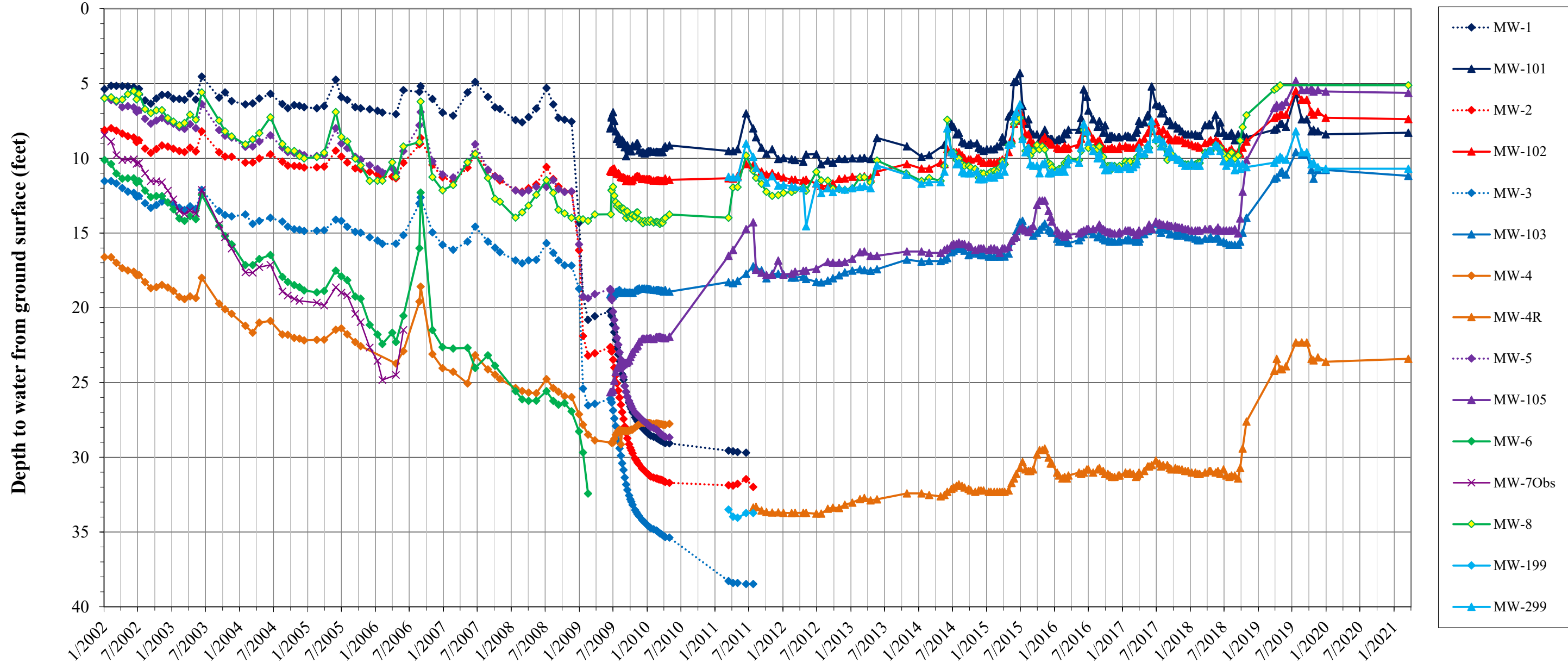


Figure 2
Castle Concrete Aggregates - Pueblo East Pit - Monitoring Wells
Depth to Ground Water
Phase 1 Area



Notes:
 -Several wells, including MW-6, 7, 7Obs and 10, have either been mined through and abandoned or are inaccessible and are no longer measured.
 -Significant decrease in depth to ground water in wells in September 2018 due to cessation of dewatering activities at the Phase 1 pit.

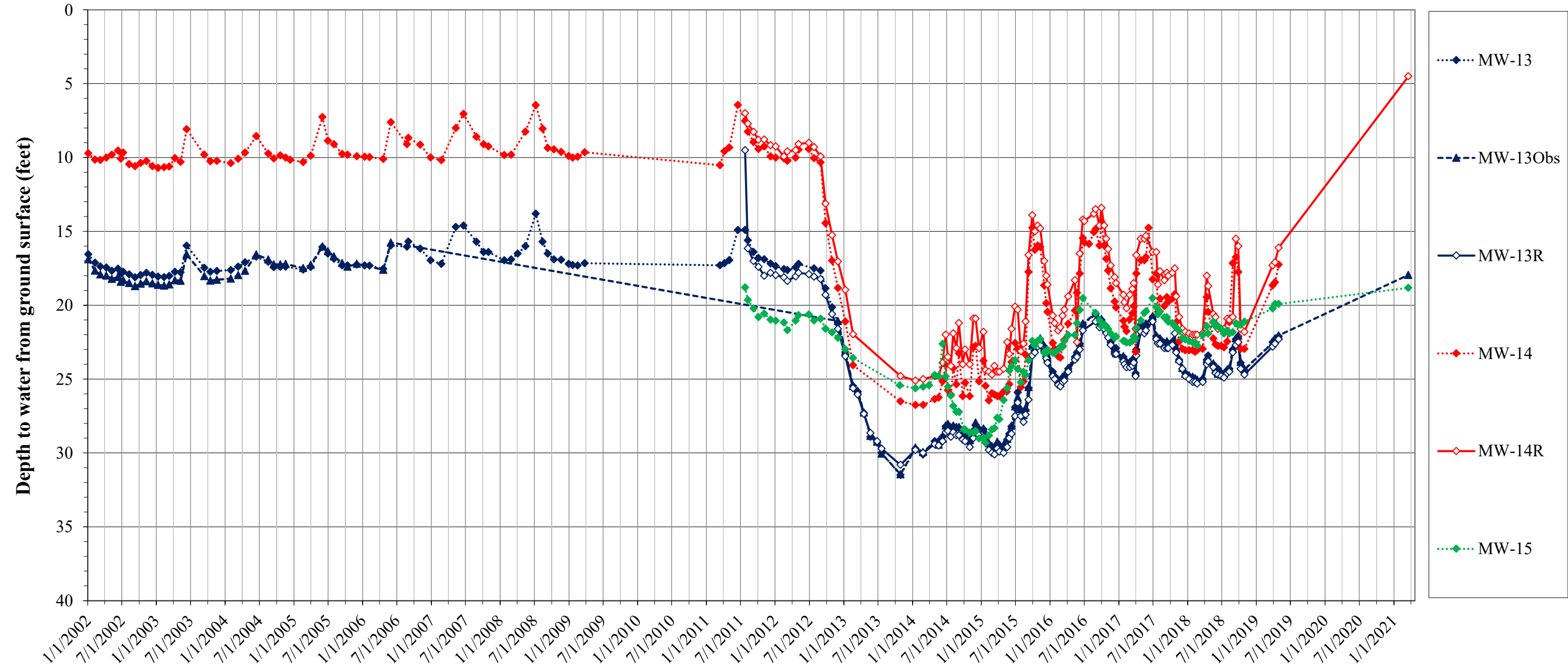
Figure 3
Castle Concrete Aggregates- Pueblo East Pit - Monitoring Wells
Depth to Ground Water
Phase 2 Area



Notes:

- Several wells, including MW-1, 199, 2, 3, 4, 5, 6, 7 and 7Obs have either been mined through and abandoned or are inaccessible and are no longer measured.
- Wells MW-1, MW-2, MW-3, MW-5, and MW-199 were located within the slurry wall, and are not representative of local ground water conditions after November 2008.
- MW-4R is located at higher elevation than MW-4, resulting in a greater depth to water than in MW-4. Offset between MW-4 data in May 2010 and MW-4R data from July 2011 to present are the result of differing ground surface elevations.
- Depth to water for MW-101,102,103 and 105 assume the same measuring height above ground surface as MW-1,2,3 and 5, respectively.
- Significant decrease in depth to ground water in certain wells in September 2018 due to cessation of dewatering activities at the Phase 1 pit.

Figure 4
Castle Concrete Aggregates- Pueblo East Pit - Monitoring Wells
Depth to Ground Water
Phase 7 Area



Notes:
 -Increase in depth to water starting in late 2012 due to beginning of dewatering operations at Phase 7.
 -Greadual decrease in depth to water from late 2015 to April 2019 present due to reduction in the footprint of the dewatered area. Significant decrease in depth to ground water as of March 2021 due to cessation of dewatering activities at Phase 7 pit in October 2020.