



J&T Consulting, Inc.

October 20, 2023

Ms. Hunter Ridley
Environmental Protection Specialist
State of Colorado
Division of Reclamation, Mining, and Safety

Physical Address:

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RE: Adequacy Review #1; Technical Revision (TR9); NCCI Pit #1 – File No. M-2001-107

Dear Ms. Ridley,

Northern Colorado Constructors, Inc. (NCCI) has received the Division's Adequacy Review letter dated October 16, 2023. Below are the comments and the corresponding responses that we have provided to address the comments.

1. TR9 includes submittal of an updated monitoring well map. This shows the location of seven wells, labeled MW-Z1 through MW-Z7. Three of these wells are within the NCCI Pit #1 boundary and four wells are located to the south and west of the pit. The monitoring well map previously submitted to the Division in 2011 shows ten monitoring wells at the NCCI Pit #1 site, labeled MW#1 through MW#10. Baseline water levels for the original monitoring wells MW#1 – MW#10 were established using data collected from weekly measurements beginning January 1, 2007 through December 31, 2010. This data would accurately depict water levels at the site before any dewatering activities occurred. Baseline water levels derived from this data were approved under TR5. Water level data submitted with TR9 shows water level data for MW-Z1 – MW-Z7 beginning in August 2010.

Please clarify for the Division when, why, and how MW#1 – MW#10 were destroyed and why MW-Z1 – MW-Z7 were chosen to replace water level monitoring at the site. Please provide a rationale for how the new wells provide an accurate representation of water levels at the site under dewatered and non-dewatered conditions, since baseline non-dewatered conditions were originally set with data from 2007 – 2010 and conditions at MW-Z1 – MW-Z7 began in 2010.

Response: *The monitoring wells MW#1-MW#10 were removed or taken out due to being in conflict with the excavation limits for the clay liner. Prior to removing these wells it was decided that the City of Thornton would install additional monitor wells MW-Z1-MW-Z7 and would monitor those wells. NCC also kept monitoring wells around the pit where possible until they had to remove in order to excavate to the limits of construction for the clay liner (See Appendix C of the ground water modeling report). The MW-Z1-MW-Z7 wells were placed such that the locations were outside the limits of*



excavation for the clay liner and in locations where upgradient and down gradient ground water elevations could continue be monitored for the existing condition of the mine as well as the future condition of the mine once the clay liner was completed.

2. Page 1 of the submitted hydrologic report states that as of November 2020 the south pit at the NCCI Pit #1 site has, “been dewatered by pumping for approximately the last 10 years”. To allow the Division to more precisely interpret monitoring well water level data, please provide the exact month and year that dewatering begin at the NCCI Pit #1 south pit. The site was permitted in 2001. If de-watering did not occur in this year, please explain why.

Response: The initial phase of the mining required stripping overburden and topsoil and then mining of the surface gravel commenced after the permit approval in 2001. The de-watering commenced in October 2003.

3. The baseline levels for the original monitoring wells MW#1 – MW#10 were established using data collected from weekly measurements beginning January 1, 2007 through December 31, 2010. The Division is of the understanding that this data would depict water levels at the site before any dewatering activities occurred. Baseline water levels derived from this data were approved under TR5. In order to accurately determine a change in water levels at the NCCI Pit #1 from pre-mine to post-mine conditions, the Division would need to compare current data from MW#1 - #10 to this baseline data. However, since data from these wells is not available, please clarify for the Division how potential water level impacts are being monitored at the site. Who is conducting water level monitoring? Is NCCI tracking this information in order to adhere to the trigger level stipulation approved under TR5. For reference, this stipulation reads: “NCCI will notify the Division in writing within 48 hours in the event the monthly averages of any of the monitoring wells exceeds the upper or lower levels by 24 inches for three consecutive months.”

Response: The data from monitoring wells MW#1, MW#2, MW#3, MW#4, MW#7, MW#8 were monitored starting in 2003 and should be considered the pre-mining levels as shown in Appendix C of the groundwater modeling report. The impacts have been monitored and data is provided in Appendix C of the ground water model report. The potential impacts are included in the text of the ground water model report and the impacts at the site are continuing to be monitored utilizing the groundwater level data from MW-Z1, MW-Z2, MW-Z3, MW-Z4, MW-Z5, MW-Z6, and MW-Z7. The City of Thornton has been collecting the data for the MW-Z1-MW-Z7 wells and providing to Northern Colorado Constructors. Northern Colorado Constructors has been providing this data with the annual reporting to the DRMS. Now that the clay liner is completed, dewatering has stopped, and the North Cell is being backfilled, we would suggest monitoring the MW-Z1-MW-Z7 wells on a monthly basis (as the City of Thornton is currently doing) as part of this Technical Revision No. 9.

4. Page 10 of the submitted hydrologic report states “We again used a predevelopment run with no pits present for a baseline reference case (pre-development conditions). We selected the late July 2019 water table as the baseline month for the change comparison (Figure 9) since late summer is when we expect the highest water levels west of the NCCI pits due to recharge from LDC and LBD which is also when we expect the highest drain flow. This is the baseline against which changes are evaluated in the remainder of this report.” Please clarify what conditions Figure 9 and the 2019 data used to create it

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represents. Does this figure show pre-development and pre-dewatering conditions? Post slurry wall construction conditions? De-watered conditions?

Response: Figure 9 represents the predevelopment (pre-dewatering), high (July) water table. It was used to create Figures 11 and 13.

Figure 10 then represents the high water table in July, 2019 while the NCCI pit was being dewatered. It was used to evaluate the maximum amount of drawdown that dewatering created (Figure 11).

5. The Division will continue its review with additional comments forthcoming from Patrick Lennberg. Additional comments will follow in separate adequacy letters.

Response: Acknowledged.

NCCI appreciates your consideration of this adequacy review response.

Please feel free to contact me with any questions or comments.

Sincerely,



J.C. York, P.E.
J&T Consulting, Inc.