



Project No. S9534-05-04
August 11, 2020

Jason Smith
A. Teichert & Son, Inc.
Aggregate Resource Development
3500 American River Drive
Sacramento, California 95864-5805

Subject: TECHNICAL MEMORANDUM – DEWATERING
SHIFLER MINING AND RECLAMATION PROJECT
YOLO COUNTY, CALIFORNIA

References:

1. *Technical Memorandum – Groundwater Conditions in the Vicinity of Planned Wet Pit Mining Operations, Shifler Property, Woodland*, prepared by Luhdorff & Scalmanini Consulting Engineers, December 9, 2019.
2. *Slope Stability Evaluation – Teichert Shifler Mining and Reclamation Project, Yolo County, California*, prepared by Geocon Consultants, Inc. (Project No. S9534-05-04), May 25, 2016.
3. *Technical Memorandum – Local Geology, Shifler Mining and Reclamation Project, Yolo County, California*, prepared by Geocon Consultants, Inc. (Project No. S9534-05-04), November 27, 2019.
4. *Technical Memorandum – Shifler Off-Channel Mining and Reclamation Application, Cache Creek Channel Stability Analysis*, prepared by Cunningham Engineering, December 23, 2019.

Mr. Smith:

As requested, we have prepared this Technical Memorandum (TM) to address questions raised by Raney Planning & Management during the preparation of the project Environmental Impact Report (EIR). The questions and our responses are presented hereinafter.

Question #1. *My question is that dewatering is proposed as a part of the Shifler application and I want to confirm that Geocon knew and assumed this in their analysis.*

Geocon Response: We understand that Teichert plans to pump water from the wet mine pits for use in aggregate processing. Under this scenario, water would be pumped from the pit, used for processing and then discharged back into the pit. In the December 2019 *Technical Memorandum* by Luhdorff & Scalmanini (Ref 1), two scenarios were analyzed assuming that 10% of the water is lost during this process. The worst case scenario (Scenario 2A) results in the water level in the wet pit being lowered by 23 feet. In our 2016 *Slope Stability Evaluation* (Ref. 2), as a conservative measure for the mining condition, we assumed no ponded water against the mining slope which effectively models a fully-dewatered condition. In limit-equilibrium slope stability analysis, ponded water against a slope tends to increase global slope stability due to the buttressing effect of the mass of water against the slope. Therefore, our previous analyses is still considered conservative with respect to the worst case scenario (Scenario 2A) where the water level in the wet pit is lowered by 23 feet. No reanalysis of slope stability is required.

Question #2: *The [Geocon] report prepared for the project included a section on pit capture wherein the potential for lateral migration of Cache Creek was determined not to pose a risk to the mining pit. The question has subsequently been raised whether this conclusion also applies to the lateral migration of Cache Creek affecting Moore Canal following realignment of the canal. Based on the evidence provided in Section 6.6, Pit Capture, of the Soil Stability Evaluation, we believe that the historic channel migration patterns that form the basis of the conclusions regarding pit capture would also apply to the potential for Cache Creek to laterally migrate and effect Moore Canal (which would generally be located in between the mining pit and Cache Creek).*

We would like to have Geocon also confirm whether the foregoing conclusion is supported by the information presented within their report.

Geocon Response: We confirm the conclusion is supported by the information in our 2016 report (Ref 2) and is also further supported by a 2019 Technical Memoranda by Geocon (Ref. 3) and Cunningham Engineering (Ref. 4).

CLOSURE

Our professional services are provided in general accordance with generally accepted geotechnical and geological principles and practices used in the site area at this time. No warranty is provided, express or implied. Please contact us if you have any questions regarding this TM.

Respectfully Submitted,

GEOCON CONSULTANTS, INC.



Jeremy J. Zorne, PE, GE
Senior Engineer

