



17 February 2021

Jason Smith  
Teichert Aggregates  
P.O. Box 15002  
Sacramento, CA 95851

**Subject:** Schwarzgruber Reclamation Plan Minor Modification  
Stability, Erosion, and Pit Capture Evaluation

Dear Jason,

The purpose of this letter is to opine on whether proposed minor modifications to the Schwarzgruber Reclamation Plan will have any increased potential of levee/bank stability, erosion, and/or pit capture. The referenced minor modifications are depicted in Cunningham Engineering Corporation's (CEC) revised Reclamation Plans dated 11 January 2021. Said modifications generally consist of the addition of riparian enhancement areas within the 700-foot setback located between the Schwarzgruber mining pit and the Cache Creek southern embankment. Creation of the additional riparian enhancement areas will include excavation within the 700-foot setback to depths on the order of 10 to 28 feet below the existing ground (Elevation 68+/- [NAVD 88]) and backfilling with soil.

To aid in evaluating the levee/bank stability CEC reviewed *Additional Geotechnical Evaluation, Schwarzgruber Mining and Reclamation Project Update*, prepared by Geocon Consultants, Inc., dated January 11, 2021, revised February 16, 2021. Geocon reviewed previous subsurface exploration information and advanced several additional borings within the 700-foot setback in December 2020. The subsurface conditions were substantially similar to those within the mining pit area for which rigorous slope stability analysis was conducted in 2011/12 in conjunction with Teichert's mining permit application. The proposed excavations within the setback area are substantially less than the analyzed pit slopes (28 vs. 75' in height) thus Geocon concludes that the modified reclamation plan slopes within the 700-foot setback have low potential for slope instability. Furthermore, since the reclamation slopes are considered stable, they conclude that the reclamation enhancement activities are not expected to "adversely affect the stability of the existing levee/bank such that the potential for pit capture increases."

None of the proposed riparian enhancements require any modifications to the existing levee/bank located between Cache Creek and the 700-foot setback. There is no intention of any creekside modifications as all riparian improvements will be on the dry side of the levee/bank. Therefore, the riparian enhancement work will not affect the potential for erosion of the levee/bank resulting from flows during a major flood event.

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Since the riparian enhancements will not adversely affect the stability of the levee/bank nor will they increase potential levee/bank erosion we conclude that they will not increase the potential for pit-capture resulting from levee/bank failure. In conclusion, it is our opinion that the riparian enhancements, as proposed within the 700-foot setback, do not increase the potential for pit-capture during major flood events.

Please contact us if you have any questions.

Sincerely,



Steve Greenfield, P.E., G.E.  
Vice President  
Cunningham Engineering Corporation



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