



COLORADO
**Division of Reclamation,
Mining and Safety**
Department of Natural Resources
1313 Sherman Street, Room 215
Denver, CO 80203

July 19, 2021

J.C. York, P.E.
J&T Consulting, Inc.
305 Denver Avenue, Suite D
Fort Lupton, CO 80621

**Re: J-2 Contracting Co.; DPG Pit; File No. M-2019-028;
Technical Revision No. 1 (TR-01); Hydraulic Analysis Report Review Memo**

Mr. York:

The Division of Reclamation, Mining and Safety (Division/DRMS) reviewed of the content of the Delta Reservoir West Cell Preliminary and East Cell Conceptual Design report by Galloway & Company, Inc. dated April 16, 2021 for the DPG Pit, Permit No. M-2019-028. A copy of the review memo from Tim Cazier, P.E. dated July 19, 2021 is attached for review.

If you have any questions, please contact me at peter.hays@state.co.us or (303) 866-3567 Ext. 8124.

Sincerely,

Peter S. Hays
Environmental Protection Specialist

Enclosure – Review Memo

Ec: Jared Ebert; Division of Reclamation, Mining & Safety





COLORADO

Division of Reclamation,
Mining and Safety

Department of Natural Resources

Date: July 19, 2021

To: Peter Hays

From: Tim Cazier, P.E.

RE: DPG Pit, DRMS File No. M-2019-028, TR-01;
Review of April 16, 2021 Delta Reservoir West Cell Preliminary and East Cell
Conceptual Design (GAL Project No. FMF00001.25)

The Division of Reclamation, Mining and Safety (DRMS) engineering staff has reviewed the April 16, 2021 Delta Reservoir West Cell Preliminary and East Cell Conceptual Design related to Technical Revision No. 1 (TR-01). The review focused on assessing the ability proposed spillway design and armoring to protect the east and west cells from failure leading to a stream capture event.

Background: The challenge with designing protection for water storage pits is determining the peak design flows and just as importantly the timing and duration of the peak flows. This is further complicated at this site as it is near the confluence of two rivers: the South Platte River (SPR) and the Cache La Poudre River (CLPR). Previously submitted floodplain maps indicate the site is nearly all in the floodplain and that it is a combined floodplain with impact from both rivers.

1. Independent floods: It appears from the review that it was assumed both rivers are to contribute flood flows, but the CLPR peak comes sufficiently prior to the SPR flood to have both cells fill before the peak flow arrives in the SPR, thus providing some protection from inflows contributed from the lagging SPR flood. Both the CLPR and SPR watersheds are large when compared to the standard 10-square mile moving thunderstorm. It is therefore feasible that one river could flood without a significant impact from the other river. Such was the case with the 2013 floods where the CLPR was severely impacted and the SPR not nearly as much. The scenario presented demonstrates the design is expected to function well when a 100-year flood (1-percent annual chance /1-PAC) occurs simultaneously in both rivers with the expected lag in the SPR. This scenario also appears to demonstrate effectiveness should the 1-PAC occur in the CLPR, while an event in the SPR is less than or equal to the 25-year flood. It is unclear from the presented analyses how the design would perform opposite scenario. Please present an analysis where the flow in the CLPR is less than or equal to a 25-year event and the 1-PAC occurs in the SPR.

