



J&T Consulting, Inc.

June 20, 2024

Holcim Group | Holcim – WCR, Inc.
ATTN: Neil Whitmer
1687 Cole Blvd., Suite 300
Golden, CO 80401

RE: Adequacy Review No. 1; Technical Revision No. 2 (TR-2) – Pit Side Slope Protection; Irwin/Thomas Mine, Permit No. M-2016-054

Mr. Whitmer,

On June 20, 2024 J&T Consulting received the Adequacy Review No. 1; Technical Revision No. 2 (TR-2) – Pit Side Slope Protection comments for the Irwin/Thomas mine from Patrick Lennberg with the Colorado Division of Reclamation, Mining and Safety. The comments were related to the pit side slope protection design that we provided to you to submit as part of your TR-2 request. Below are the comments and the corresponding responses that we have provided to address the comments.

DRMS TR-2 Comments:

1. Please provide an explanation for the source of 1,000 cfs in the Design Storm Data section. For example, is this related to potential flooding from St. Vrain Creek?

Response:

The flow rate used in the Design Storm Data section was estimated based on the Colorado Hazard Mapping Project (CHAMP) flows for the 100-year flood event (1% probability of occurrence) used in CHAMP's floodplain model for St. Vrain Creek. This flow rate was obtained from the Colorado Hazard Mapping & Risk MAP Portal from flow change locations in their model along St. Vrain Creek. Per CHAMP, the 100-year flow rate in the creek to the west of the site is 17,399 cfs.

We conservatively assumed that 50% of the 100-year flow rate entered the pit over the side of the pit adjacent to the creek, which equates to 8,700 cfs.



RE: Adequacy Review No. 1; Technical Revision No. 2 (TR-2) – Pit Side Slope Protection;
Irwin/Thomas Mine, Permit No. M-2016-054
June 20, 2024

-2-

The side of the pit adjacent to the creek is 921 feet long. The riprap slope protection length along the side of the pit is 103 feet. Therefore, the riprap slope protection will occupy 11.2% of the side of the pit receiving the flood flows.

11.2% of 8,700 cfs equates to 974 cfs. This rate was rounded up to 1,000 cfs and entered into the Design Storm Data section of the spreadsheet.

See the attached CHAMP map that shows the flows at the junction west of the site along St. Vrain Creek.

2. Please provide an explanation of the value of 100:1 for the side slopes in the chute geometry.

Response: The 100:1 side slopes were used to effectively remove the side slopes from the model, to model the flow as sheet flow down the slope of the pit.

Please contact us if you have any questions or need any additional information.

Regards,



J.C. York, P.E.
Principal/Owner
J&T Consulting, Inc.

Attachments:

1. CHAMP St. Vrain Creek Flood Flows Map



Map Floodplain Mapping

Layers | Documents | Data

☒ Project Streams

Show: Project Streams

Project Streams

☐ 10% Depth Grids

☐ NFHL Flood Hazard Zones

☐ Year 1 Surveyed Locations

☐ Year 2 Surveyed Locations

☒ UDFCD Boundary

☐ Hydrology Flow Changes

☐ Project Counties

☐ Lidar Coverage

