



STATE OF
COLORADO

Ebert - DNR, Jared <jared.ebert@state.co.us>

Hazeltine Adequacy Review No. 1 Response

Joel Bolduc <joel.bolduc@aggregate-us.com>

Fri, Aug 10, 2018 at 3:04 PM

To: Jared Ebert <jared.ebert@state.co.us>

Cc: Scott Twombly <scott.twombly@cityofthornton.net>, Emily Hunt <Emily.Hunt@cityofthornton.net>

Hi Jared,

Attached is Aggregate Industries Response to Adequacy Review No. 1.

A hard copy of this response is being mailed today to Mr. Orr.

Thanks, Joel

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Joel F. Bolduc
Regional Land and Environment Manager
Aggregate Industries (US) Inc.
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Golden, CO 80401
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"The Way To Get Started Is To Quit Talking And Begin Doing." – Walt Disney



2018 0810 Agglnd Response to DRMS Adequacy Response No. 1.pdf
1122K

August 10, 2018

Mr. Jared Ebert
Division of Reclamation Mining and Safety
1313 Sherman Street, Room 215
Denver, CO 80203

**Re: Permit Number M-2004-031 – Hazeltine Mine
Aggregate Industries Response to TR-06 Adequacy Review No.1**

Dear Jared:

Aggregate Industries (Aggregate) submits this letter in response to the Division's July 17, 2018 TR-06 Adequacy Review Response No. 1.

Paragraph 1 – *Orr Drain design flow*: Please see the attached memo (Exhibit A) from Tetra Tech that documents the Orr Drain size is sufficient to handle Bull Seep flows.

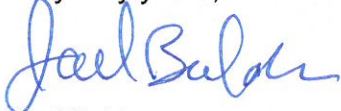
Paragraph 2 – *Legal water rights to capture flows in the pit*: Please see the attached letter (Exhibit B) from Division of Water Resources that allows water from the Bull Seep to pass through the pit given proper accounting takes place and water is not stored in the pit.

Paragraph 3 – *Possible relocation of Bull Seep turnout downstream*: AI believes the responses above address paragraphs 1 and 2 and thus a response to paragraph 3 is not necessary at this time.

Aggregate is committed the keeping the Orr Drain open continuously and pumping out the water indefinitely. Aggregate understands this is not a permanent solution. With this letter Aggregate requests a 30-day extension of the TR decision date to work with the City of Thornton to develop a permanent plan. Once the mine permit is released, handling the Orr Drain flows will become the responsibility of the City of Thornton and thus they must be involved in the permanent plan.

If you have any questions or require additional information regarding this response, please do not hesitate to call me at (719) 239-0974.

Very truly yours,



Joel Bolduc
Regional Land and Environment Manager

Mr. Jared Ebert, Division of Reclamation, Mining and Safety
August 10, 2018
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Enclosures

Exhibit A – 7/30/2018 Tetra Tech Memo

Exhibit B – 1/13/2016 DWR Letter

cc: Fred Orr



MEMO

To: Joel Bolduc (AI)
Cc: Connie Davis (AI), Justin Stoeber (Tetra Tech)
From: Jeffrey A. Butson, P.E., CFM
Date: July 30, 2018
Subject: Hazeltine Mine – Orr Drain Capacity

The purpose of this memorandum is to document the capacity of the Orr Drain turnout structure located at the Hazeltine Mine.

The Orr property is located southeast of the Hazeltine Mine. The topographic survey of the Orr property shows that the elevation is primarily at or above elevation 5040.

The Fulton Ditch Company stated that the normal turnout rate for the ditch is approximately 5 to 7 cfs.

A drain was installed to rout flows in the Bull Seep to the Hazeltine Reservoir and hence drain the inundated areas on the Orr property. Topographic survey of the constructed Orr Drain showed that the invert elevation of the drain is at approximate elevation 5036.5. The orifice diameter is 18 inches.

The capacity of the Orr Drain was evaluated using the Orifice Equation. Calculations were performed using a pipe centroid at 5037.25. An orifice coefficient of 0.6 was used for the calculations. A summary of the calculations is presented in Table 1 below.

Table 1 – Orr Drain Capacity Calculations

Water Surface Elevation	Head over Centroid (ft)	Q (cfs)
5038.0	0.75	7.4
5038.5	1.25	9.5
5039.0	1.75	11.3
5039.5	2.25	12.8
5040.0	2.75	14.1

The calculations show that the drain has sufficient capacity to convey the reported flow rates at an elevation lower than the Orr property.

P:\23514\200-23514-18001\Docs\Reports\Orr Drain Capacity\Memo Orr Drain Capacity Rev1.docx

Exhibit B



COLORADO
Division of Water Resources

1313 Sherman Street, Room 821
Denver, CO 80203

Response to Reclamation Permit Amendment Application Consideration

DATE: January 13, 2016
TO: Tyler V. O'Donnell, Environmental Protection Specialist
CC: Division 1 Office, District 2 Water Commissioner
FROM: Ioana Comaniciu, P.E.
RE: Hazeltine Mine, File No. M-2004-031
Operator: Aggregate Industries-WCR, Inc.
Contact: Connie N. Davis, (970) 396-5252
Section 9, Twp 2 South, Rng 67 West, 6th P.M., Adams County

COMMENTS: Aggregate Industries-WCR, Inc. requested an amendment (AM01) to the application for Hazeltine Mine, Permit no. M2004-031. The purpose of this amendment is to incorporate a permanent ground water mounding mitigation plan into the final reclamation of the site. A soil-bentonite slurry wall keyed into the bedrock was constructed around the perimeter of the Hazeltine Mine. The installation of the slurry wall caused ground water mounding into an adjacent property, known as Orr property. The operator is proposing to construct a permanent drain to reduce ground water levels from Orr property into the Hazeltine Mine Pit. The propose system will be a gravity system where partial flows from the Bull Seep and groundwater seepage will be diverted through the mine and from there conveyed back to Bull Seep and the South Platte River.

The final use of the Hazeltine Mine is a water storage reservoir owned and operated by the City of Thornton. According to our records a 90-day leak test for this reservoir started on December 9, 2015. This office has no objection to the amendment request, provided all inflows and outflows of the water through the reservoir from the drain system are properly accounted for. All water pumped from the drain shall not be used for any beneficial purposes and must be discharge to the stream system without consumptive use. Water shall not be impounded in the reservoir except pursuant to lawful diversions allowed by statute or decree. At all other times, all inflow of water into the reservoir from any source, including precipitation, ground water inflows and drain water shall be removed to prevent illegal storage of water. The owner or operator will need to coordinate with Brent Schantz, River Operations Coordinator, to review operations, measurement structures, and accounting.

The applicant may contact the State Engineer's Office with any questions.

