



COLORADO


Division of Reclamation,  
Mining and Safety

Department of Natural Resources

## MINERALS PROGRAM INSPECTION REPORT

PHONE: (303) 866-3567

The Division of Reclamation, Mining and Safety has conducted an inspection of the mining operation noted below. This report documents observations concerning compliance with the terms of the permit and applicable rules and regulations of the Mined Land Reclamation Board.

<b>MINE NAME:</b> Boettcher Limestone Quarry	<b>MINE/PROSPECTING ID#:</b> M-1977-348	<b>MINERAL:</b> Limestone (general)	<b>COUNTY:</b> Larimer
<b>INSPECTION TYPE:</b> Monitoring	<b>INSPECTOR(S):</b> Amy Eschberger, Eric Scott	<b>INSP. DATE:</b> August 16, 2017	<b>INSP. TIME:</b> 15:55
<b>OPERATOR:</b> Holcim (US) Inc.	<b>OPERATOR REPRESENTATIVE:</b> Mike Toelle	<b>TYPE OF OPERATION:</b> 112c - Construction Regular Operation	
<b>REASON FOR INSPECTION:</b> Normal I&E Program	<b>BOND CALCULATION TYPE:</b> None	<b>BOND AMOUNT:</b> \$2,518,261.30	
<b>DATE OF COMPLAINT:</b> NA	<b>POST INSP. CONTACTS:</b> None	<b>JOINT INSP. AGENCY:</b> None	
<b>WEATHER:</b> Clear	<b>INSPECTOR'S SIGNATURE:</b> 	<b>SIGNATURE DATE:</b> June 7, 2018	

**The following inspection topics were identified as having Problems or Possible Violations. OPERATORS SHOULD READ THE FOLLOWING PAGES CAREFULLY IN ORDER TO ASSURE COMPLIANCE WITH THE TERMS OF THE PERMIT AND APPLICABLE RULES AND REGULATIONS. If a Possible Violation is indicated, you will be notified under separate cover as to when the Mined Land Reclamation Board will consider possible enforcement action.**

### **INSPECTION TOPIC:** Hydrologic Balance (Ponded Water)

**PROBLEM:** The Division has no evidence that the operator has a valid well permit, substitute water supply plan, or approved water augmentation plan for the exposed groundwater at the site. This is a problem related to C.R.S. 34-32.5-116(4)(h) and Rule 3.1.6(1)(a) governing injury to existing water rights.

**CORRECTIVE ACTIONS:** The operator shall demonstrate that the operation is in compliance with the Office of the State Engineer (SEO), show evidence that the operator is taking measures to bring the site into compliance with the SEO, or backfill the pits to at least two feet above the groundwater surface by the corrective action due date.

**CORRECTIVE ACTION DUE DATE:** August 6, 2018

### **INSPECTION TOPIC:** Hydrologic Balance (Groundwater Monitoring)

**PROBLEM:** The current groundwater monitoring plan for the site does not include monitoring for the parameters of Table Value Standards established by Water Quality Control Commission's (WQCC's) Regulation No. 41 - The Basic Standards for Ground Water. This is a problem at this time pursuant to Rule 3.1.6(1)(b), which requires operators to maintain compliance with applicable federal and Colorado water quality laws and regulations, including statewide water quality standards and site-specific classifications and standards adopted by the WQCC.

**CORRECTIVE ACTIONS:** The operator shall submit a Technical Revision, with the required \$216 revision fee, to update the approved groundwater monitoring plan to include monitoring for parameters from the Table Value Standards established by WQCC's Regulation No. 41 - The Basic Standards for Ground Water, and comparing parameter values to the most restrictive Table Value Standards rather than to any calculated values that may have been approved previously.

**CORRECTIVE ACTION DUE DATE:** August 6, 2018

## **OBSERVATIONS**

This inspection of the Boettcher Limestone Quarry (Permit No. M-1977-348) was conducted by Amy Eschberger and Eric Scott of the Division of Reclamation, Mining and Safety (Division) at the request of the operator. The operator, Holcim (US) Inc. was represented by Mike Toelle during the inspection. The site is located approximately 1.5 miles north of LaPorte, Colorado in Larimer County. The site can be accessed from the south via County Road 21C.

### **Operation Summary:**

This is a 112c operation permitted for 862 acres to mine limestone from a hogback along the Front Range for use in the operator's nearby cement plant. The site was mined historically. Cement kiln dust (CKD) was generated on site during operations that occurred from the early 1900s to 2002. According to the operator, disposal of CKD in mined out portions of the quarry began in 1980. Per the Division's approval of Technical Revision No. 3 in 1999, CKD disposal was to be limited to the A2 area (see enclosed map showing approximate CKD disposal area boundary). Approximately 140,000 cubic yards of CKD was placed in the A2 disposal area between 1999 and 2002. Plant operations and mining ceased at the site in 2002. The site has been in various stages of reclamation since that time. The approved reclamation plan calls for grading disturbed land to gradients of 2H:1V or flatter, replacing up to 8 inches of topsoil, and seeding disturbed areas with a native grass seed mixture for a post-mining land use of dry rangeland. The CKD disposal area was covered with a minimum of two feet of overburden, graded for positive drainage, covered with 6-12 inches of topsoil, and seeded.

### **Reclamation Status:**

During the inspection, the Division observed that all reclamation grading has been completed at the site. The final slope configurations of the elongated strip pits appear to be stable. Additionally, reclamation vegetation is establishing well across the site, except for a portion of the east-facing slope of the southern pit where vegetation was sparse. Given the size of the permit area, some variability in vegetation density is to be expected. However, to promote long-term stability of pit slopes, the Division recommends the operator prioritize revegetation efforts in these areas, if needed. Grass establishment has been very successful throughout much of the site, especially in the northern half. The Division recommends the operator continue to monitor the growth of weeds in reclaimed areas and implement the approved weed control plan as needed, especially for any state-listed noxious weed species.

### **Hydrologic Balance (Ponded Water):**

The Division observed water ponded in three of the pits located along the western half of the permit area, and in two of the pits located along the eastern half of the permit area. According to permit documents, the three western pits observed holding water are referred to as Pond A, Pond B3, and Pond B (see enclosed map showing labeled ponds). The pit referred to in the file as Pond B2 was not holding water during the inspection. The two eastern pits observed holding water are referred to in the permit file as Pond 2 and Pond C. The Division of Water Resources (DWR) requires operators to ensure water is not retained on site for more than 72 hours, unless an augmentation plan approved by water court is obtained. An augmentation plan must also be obtained for any exposed groundwater, unless an exemption has been approved by DWR. The operator has copied the Division on several letters submitted to the DWR/Office of the State Engineer (SEO) demonstrating the operator was working to obtain compliance with their Office. However, the Division is unable to find any documentation in the permit file proving the operation ever gained compliance with the DWR/SEO for the ponded water. Pursuant to Rule 3.1.6(1)(a), the operator must maintain compliance with applicable Colorado

water laws and requirements governing injury to existing water rights. Therefore, the Division is citing a Problem in this report for the ponded water, giving the operator 60 days to demonstrate the operation is in compliance with the SEO, show evidence the operator is taking measures to bring the site into compliance with the SEO, or backfill the pits to at least two feet above the groundwater surface.

### **Hydrologic Balance (Groundwater Monitoring):**

The operation monitors groundwater at the site from seven monitoring wells, with all but one located near or downgradient of the CKD disposal area in the southern portion of the permit area. Monitoring wells MW-1, MW-2, MW-3, and MW-4 were installed in 1998 and 1999. Monitoring wells MW-5, MW-6, and MW-7 were installed in late 2012. It appears that groundwater monitoring was not conducted regularly at the site until 2010/2011, from the first four monitoring wells. The additional three monitoring wells installed in 2012 have been monitored regularly since 2013. The permit file does not include groundwater monitoring data prior to the disposal of CKD on site. After the Division's approval of Technical Revision No. 6 (TR-6) in 2014, monitoring parameters were reduced to include: Barium, Boron, Iron, Manganese, pH, Total Dissolved Solids (TDS), Alkalinity, Calcium, Chloride, Magnesium, Potassium, Sodium, and Sulfate. Approval of Technical Revision No. 7 in 2016 reduced the required monitoring (and reporting) frequency from quarterly to semi-annually. This was to allow for complete recharge between sampling events, so that true independent measurements are collected based on groundwater equilibrium conditions.

Rule 3.1.6(1)(b) requires operators to maintain compliance with applicable federal and Colorado water quality laws and regulations, including statewide water quality standards and site-specific classifications and standards adopted by the Colorado Department of Public Health and Environment (CDPHE), Water Quality Control Commission (WQCC). After recent discussions with the CDPHE, WQCC, it has come to the Division's attention that some previously approved groundwater monitoring plans require modification to comply with Rule 3.1.6(1)(b).

According to WQCC's Regulation No. 41, in areas where groundwater has not yet been classified and no site-specific standards have been adopted by the WQCC, the Interim Narrative Standard applies. Until such time as use classifications and numerical standards are adopted for groundwater on a site-specific basis throughout the state, groundwater quality shall be maintained for each parameter at whichever of the following levels is less restrictive:

- a) Existing ambient quality as of January 31, 1994; or
- b) That quality which meets the most stringent criteria set forth in Tables 1 through 4 of "The Basic Standards for Ground Water" (Table Value Standards)

If an operator wishes to propose a groundwater standard less restrictive than those contained in the Table Value Standards, it will be the operator's burden to sufficiently demonstrate to the Division that their circumstances meet at least one of the following two conditions, thereby allowing the Division to apply a less restrictive standard, and still fully implement the requirements of Regulations No. 41:

- 1) The operator is able to provide the Division with adequate documentation and data to determine, to the satisfaction of the Division, that the existing ambient groundwater quality on January 31, 1994, was above Table Value Standards; or
- 2) The operator provides the Division with data generated after January 31, 1994 which exceeds Table Value Standards, and can also demonstrate that no new or increased sources of groundwater

contamination in the area in question have been initiated since January 31, 1994, therefore, indicating that ambient conditions exceeded Table Value Standards prior to January 31, 1994.

The only other way that a permitted mine site may allowably exceed the Table Value Standards would be for the operator to obtain a site-specific exemption or variance from the WQCC through a rule-making process.

In order to ensure compliance with Rule 3.1.6(1)(b), the operator should begin monitoring for the parameters of WQCC's Table Value Standards. Additionally, when reporting these results to the Division, all parameter values should be compared to the most restrictive Table Value Standards rather than to any calculated values that may have been approved previously. The Division is citing a Problem in this report, requiring the operator to submit a Technical Revision within 60 days to revise the groundwater monitoring plan accordingly. A Technical Revision form is enclosed with this report. In the revision, the operator should include a revised groundwater monitoring plan that complies with Rule 3.1.6(1)(b), and a review of all groundwater monitoring data collected for the site, identifying any parameters that exceed Table Value Standards.

### **Records:**

The Division approved Technical Revision No. 8 (TR-8) on February 16, 2018 to allow geotechnical investigations to be conducted at the site to support the proposed realignment of Hwy 287 as part of the Glade Reservoir Project. Groundwater is not expected to be encountered in any of the planned geotechnical borings due to the relatively shallow nature of the borings and deep local drawdown within the adjacent strip pits. Although the site is reclaimed with regard to earthwork and revegetation, the remaining water quality issues may keep the site from being releasable prior to the planned construction date for the highway realignment project. However, the current reclamation plan and map for the site do not include the highway realignment project. Therefore, prior to commencing with any construction activities for this project (beyond disturbances associated with TR-8), the operator would need to submit a permit Amendment to revise the reclamation plan and reclamation plan map to incorporate the Hwy 287 realignment project.

In review of the permit record for this site, the Division found a clerical error with regard to the permitted acreage entered into the permit system, specifically, for Acreage Reduction No. 1 (AR-1), which should have left a permit area of 862 acres. It appears this acreage reduction was not properly entered into the permit system, as it still showed a permit area of 1,848 acres. To correct this clerical error, the Division issued an Administrative Revision (AD-2) on June 1, 2018 to change the permit area from 1,848 acres to 862 acres (see enclosed notification of Administrative Revision No. AD-2). This revision does not change the approved permit boundary, but corrects the permit acreage to match what was released in AR-1. Enclosed with this report are two Google Earth images of the site showing the approved permit area, along with other features discussed in the report.



### GENERAL INSPECTION TOPICS

The following list identifies the environmental and permit parameters inspected and gives a categorical evaluation of each

(AR) RECORDS----- <u>Y</u>	(FN) FINANCIAL WARRANTY----- <u>Y</u>	(RD) ROADS----- <u>Y</u>
(HB) HYDROLOGIC BALANCE----- (2) <u>PBs</u>	(BG) BACKFILL & GRADING----- <u>Y</u>	(EX) EXPLOSIVES----- <u>NA</u>
(PW) PROCESSING WASTE/TAILING---- <u>Y</u>	(SF) PROCESSING FACILITIES----- <u>NA</u>	(TS) TOPSOIL----- <u>Y</u>
(MP) GENL MINE PLAN COMPLIANCE- <u>Y</u>	(FW) FISH & WILDLIFE----- <u>N</u>	(RV) REVEGETATION---- <u>Y</u>
(SM) SIGNS AND MARKERS----- <u>Y</u>	(SP) STORM WATER MGT PLAN---- <u>Y</u>	(RS) RECL PLAN/COMP-- <u>Y</u>
(ES) OVERBURDEN/DEV. WASTE----- <u>Y</u>	(SC) EROSION/SEDIMENTATION--- <u>Y</u>	(ST) STIPULATIONS----- <u>NA</u>
(AT) ACID OR TOXIC MATERIALS----- <u>N</u>	(OD) OFF-SITE DAMAGE----- <u>Y</u>	

Y = Inspected and found in compliance / N = Not inspected / NA = Not applicable to this operation / PB = Problem cited / PV = Possible violation cited

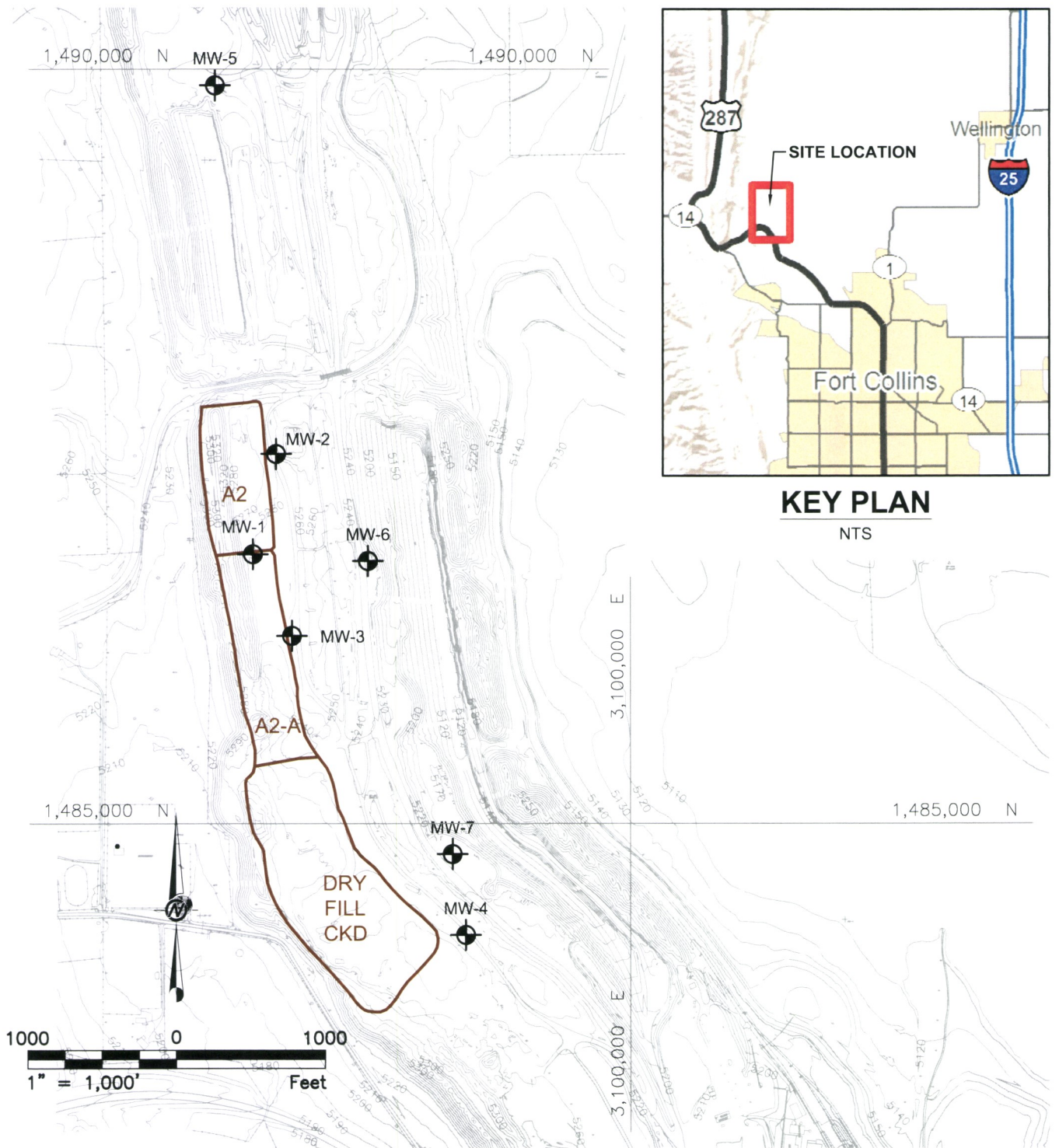
#### Inspection Contact Address

Derrick Dease  
Holcim (US) Inc.  
3500 Highway 120  
Florence, CO 81226



Enclosure(s): Map showing approximate CKD disposal area boundary, submitted with Second Semi-Annual 2017 Groundwater Sampling report, received on January 19, 2018.  
Map showing labeled ponds, titled Property, Permit, and Pre-1981 Areas over Current Aerial Imagery, submitted with letter received on February 8, 2013.  
Technical Revision form  
Notification of Administrative Revision No. AD-2, issued on June 1, 2018.  
Google Earth image showing approved permit area, CKD disposal areas, monitoring well locations, and labeled ponds.  
Google Earth image showing closer view of southern portion of site.

EC: Eric Scott, DRMS at: [eric.scott@state.co.us](mailto:eric.scott@state.co.us)  
Michael Cunningham, DRMS at: [michaela.cunningham@state.co.us](mailto:michaela.cunningham@state.co.us)  
Sara Harkins, Golder Associates, Inc. at: [sara\\_harkins@golder.com](mailto:sara_harkins@golder.com)  
Caleb Foy, DWR at: [caleb.foy@state.co.us](mailto:caleb.foy@state.co.us)  
Robert Hillegas, CDPHE, WQCD at: [robert.hillegas@state.co.us](mailto:robert.hillegas@state.co.us)

Drawing File: N:\10\103-81640\A FIGURES\10381640A010.dwg | Layout: 8.5X11 Portrait | Modified: May 15, 2013 11:06 NRSenthal | Plotted: 06/17/14 1:09pm MTMarks



## LEGEND

- MW-1  
 EXISTING MONITORING WELL
-  APPROXIMATE CKD DISPOSAL AREA BOUNDARY

## REFERENCES

1. BASEMAP PROVIDED BY; HOLCIM (US) INC.
2. COORDINATE SYSTEM: STATE PLANE COLORADO, NORTH ZONE, NAD 83, NAVD88

PROJECT  
HOLCIM (US) INC.  
BOETTCHER LIMESTONE QUARRY  
LARIMER COUNTY, COLORADO

TITLE

## LOCATION MAP



PROJECT No.	103-81640A	FILE No.	10381640A010
DESIGN	LS	03/12/13	SCALE AS SHOWN
CADD	DBS	03/12/13	REV. A
CHECK	LS	03/12/13	
REVIEW	EJP	03/12/13	

FIGURE 1

Plot Time: 06/17/14 13:09



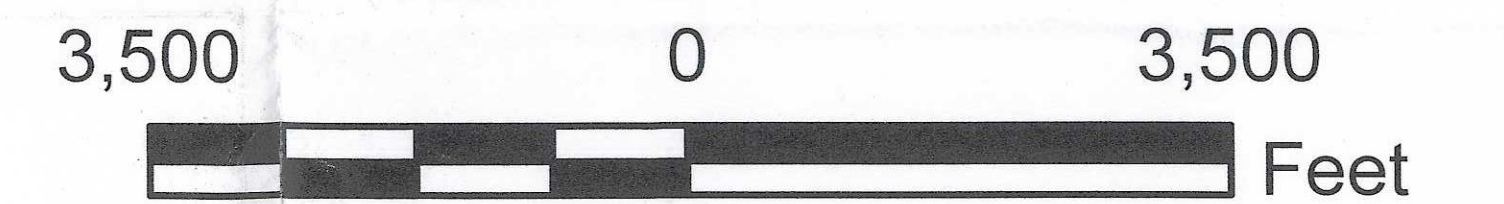


## LEGEND

- Pond Coordinates (NDR DoWR)
- Amended Permit Boundary
- Permit Boundary
- Property Boundary
- Pond
- Pre-Law Area

## REFERENCES

COORDINATE SYSTEM: NAD 1983 StatePlane Colorado North FIPS 0501 Feet NAVD 88  
Bing Maps Hybrid and Bing Maps Aerial (c) 2010 Microsoft Corporation and its data suppliers.



PROJECT HOLCIM (US) INC.  
BOETTCHER LIMESTONE QUARRY  
LARIMER COUNTY, CO

TITLE  
**PROPERTY, PERMIT, AND PRE-81 AREAS  
OVER CURRENT AERIAL IMAGERY**



FILE No. PropertyPermitsPre1981.mxd  
SCALE: AS SHOWN REV. 0

**FIGURE: 1**





## COLORADO DIVISION OF RECLAMATION, MINING AND SAFETY

1313 Sherman Street, Room 215, Denver, Colorado 80203 ph(303) 866-3567

### REQUEST FOR TECHNICAL REVISION (TR) COVER SHEET

File No.: M- \_\_\_\_\_ Site Name: \_\_\_\_\_

County \_\_\_\_\_ TR# \_\_\_\_\_ (DRMS Use only)

Permittee: \_\_\_\_\_

Operator (If Other than Permittee): \_\_\_\_\_

Permittee Representative: \_\_\_\_\_

Please provide a brief description of the proposed revision: \_\_\_\_\_

As defined by the Minerals Rules, a Technical Revision (TR) is: “a change in the permit or application which does not have more than a minor effect upon the approved or proposed Reclamation or Environmental Protection Plan.” The Division is charged with determining if the revision as submitted meets this definition. If the Division determines that the proposed revision is beyond the scope of a TR, the Division may require the submittal of a permit amendment to make the required or desired changes to the permit.

The request for a TR is not considered “filed for review” until the appropriate fee is received by the Division (as listed below by permit type). Please submit the appropriate fee with your request to expedite the review process. After the TR is submitted with the appropriate fee, the Division will determine if it is approvable within 30 days. If the Division requires additional information to approve a TR, you will be notified of specific deficiencies that will need to be addressed. If at the end of the 30 day review period there are still outstanding deficiencies, the Division must deny the TR unless the permittee requests additional time, in writing, to provide the required information.

There is no pre-defined format for the submittal of a TR; however, it is up to the permittee to provide sufficient information to the Division to approve the TR request, including updated mining and reclamation plan maps that accurately depict the changes proposed in the requested TR.

Required Fees for Technical Revision by Permit Type - Please mark the correct fee and submit it with your request for a Technical Revision.

<u>Permit Type</u>	<u>Required TR Fee</u>	<u>Submitted</u> (mark only one)
110c, 111, 112 construction materials, and 112 quarries	\$216	<input type="checkbox"/>
112 hard rock (not DMO)	\$175	<input type="checkbox"/>
110d, 112d(1, 2 or 3)	\$1006	<input type="checkbox"/>



## COLORADO

Division of Reclamation,  
Mining and Safety

Department of Natural Resources  
1313 Sherman Street, Room 215  
Denver, Colorado 80203

June 1, 2018

Mr. Derrick Dease  
Holcim (US) Inc.  
3500 Highway 120  
Florence, CO 81226

**Re: Boettcher Limestone Quarry, Permit No. M-1977-348, Notification of Administrative Revision, Revision No. AD-2**

Mr. Dease:

On June 1, 2018, the Division of Reclamation, Mining and Safety (Division) issued an Administrative Revision (Revision No. AD-2) for Permit No. M-1977-348, addressing the following:

*Revision to acreage amount as reported in Acreage Reduction No. 1 (Revision No. AR-1) approved on 11/16/2005. This revision does not change the approved permit boundary, but corrects a clerical error in the permit file. This revision corrects the permit area from 1,848 acres to 862 acres.*

The terms of Revision No. AD-2 as approved by the Division are hereby incorporated into Permit No. M-1977-348. All other conditions and requirements of Permit No. M-1977-348 remain in full force and effect.

If you have any questions, you may contact me by telephone at 303-866-3567, ext. 8129, or by email at [amy.eschberger@state.co.us](mailto:amy.eschberger@state.co.us).

Sincerely,

Amy Eschberger  
Environmental Protection Specialist





# M-1977-348 / Boettcher Limestone Quarry / Holcim (US) Inc.

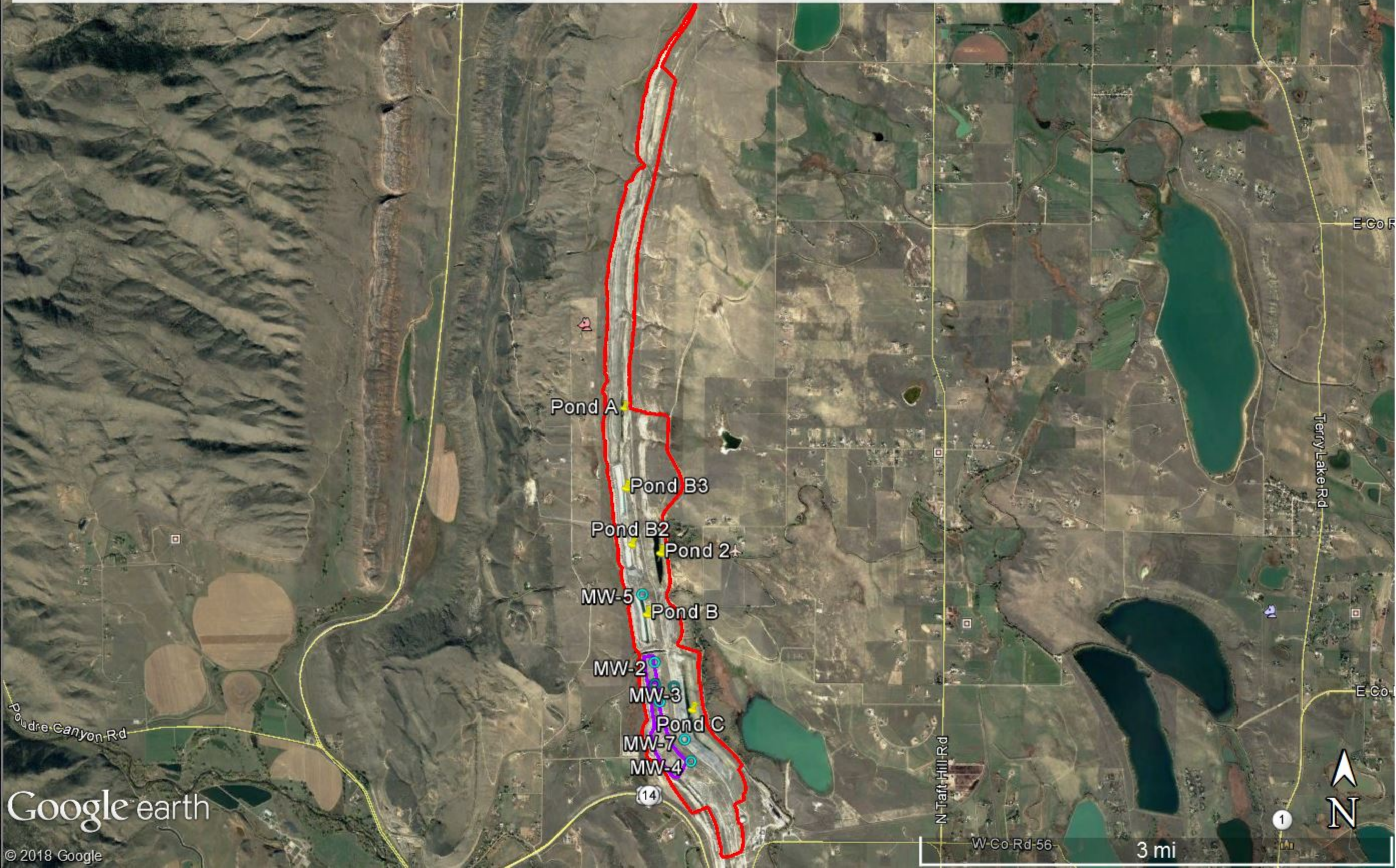
Red Outline = 862 acres = Approved Permit Area (approximated based on revised maps submitted for Revision No. AR-1)

Purple Outline = Approximate location of CKD disposal areas

Blue Circles = Approximate locations of groundwater monitoring wells MW-1 through MW-7

Yellow Thumbtacks = Labeled ponds

(Image data from 10/14/2017)





# M-1977-348 / Boettcher Limestone Quarry / Holcim (US) Inc.

Closer view of southern portion of site.

Red Outline = 862 acres = Approved Permit Area (approximated based on revised maps submitted for Revision No. AR-1)

Purple Outline = Approximate location of CKD disposal areas

Blue Circles = Approximate locations of groundwater monitoring wells MW-1 through MW-7

(Image data from 10/14/2017)

