




**COLORADO DIVISION OF RECLAMATION, MINING AND SAFETY**  
**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> Revenue Mine	<b>MINE/PROSPECTING ID#:</b> M-2012-032	<b>MINERAL:</b> Pb, Ag, Au	<b>COUNTY:</b> Ouray
<b>INSPECTION TYPE:</b> Monitoring	<b>INSPECTOR(S):</b> Wallace H. Erickson	<b>INSP. DATE:</b> March 27, 2015	<b>INSP. TIME:</b> 16:30
<b>OPERATOR:</b> Fortune Revenue Silver Mines, Inc	<b>OPERATOR REPRESENTATIVE:</b> Clint Fletcher, Dave Rigsby, Travis Fletcher, Jim Gubler	<b>TYPE OF OPERATION:</b> 112d-1 - Designated Mining Operation	
<b>REASON FOR INSPECTION:</b> High Priority Response to Complaint	<b>BOND CALCULATION TYPE:</b> Partial Bond	<b>BOND AMOUNT:</b> \$340,570.00	
<b>DATE OF COMPLAINT:</b> March 27, 2015	<b>POST INSP. CONTACTS:</b> MSHA, CDPHE	<b>JOINT INSP. AGENCY:</b> None	
<b>WEATHER:</b> Clear	<b>INSPECTOR'S SIGNATURE:</b> 	<b>SIGNATURE DATE:</b> April 8, 2015	

**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.**

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

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

**INSPECTION TOPIC:** Acid And Toxic Materials

**PROBLEM:** Improper secondary and/or emergency containment of chemicals and/or processing fluids stored and utilized within the reagent bay.

**CORRECTIVE ACTIONS:** Within 30 days of the signature date of this inspection report, due May 8, 2015, submit a written statement with photo documentation, prepared, signed and certified by a Colorado licensed professional engineer, demonstrating that the full containment capacity of the reagent bay has been restored in accordance with the designs previously approved by the Division.

**CORRECTIVE ACTION DUE DATE:** May 8, 2015

**OBSERVATIONS**

This inspection occurred in response to an anonymous complaint submitted to the Mine Safety and Health Administration (MSHA) on or about March 26, 2015. On March 27, 2015, MSHA forwarded the complaint to the Colorado Department of Public Health and Environment (CDPHE), who immediately forwarded the complaint to the Division of Reclamation, Mining and Safety (Division or DRMS). The complaint identified a potential for environmental degradation. Therefore, the Division responded immediately with an on-site inspection. The Division's inspection concentrated on the issues raised in the complaint. As reported by MSHA and CDPHE, the complainant alleges inappropriate containment of mine chemicals, inappropriate containment of mill tailings, and inappropriate discharge of untreated mine drainage to Canyon Creek. This report is accompanied by a copy of the complaint and eight photographs.

The Revenue Mine operation is referenced by involved agencies as follows:

- DRMS Permit No. M-2012-032
- CDPHE Discharge Permit No. CO-0000003
- CDPHE Storm Water Permit No. COR-040000
- MSHA Mine Identification No. 0503528
- Corps of Engineers SPK-00953

The Revenue Mine is located in an historic mining district and is surrounded by pre-law operations, which were abandoned prior to the reclamation statute. Mining activities at the Revenue Mine commenced in the late 1800's. Currently, the Revenue Mine operates under a 112d-1 type permit. The mining activity has potential to expose and/or utilize toxic or acid-forming materials and as such is subject to the most stringent environmental protection requirements authorized under Colorado statute and regulations. The operation is approved for 34.19 acres affected lands, for the extraction and processing of precious metal ore. Affected lands will be reclaimed to support a combination of rangeland and industrial/commercial post-mining land uses. The Division holds \$340,570 financial warranty.

Photo 1 provides an overview of the operation and labels various features of the affected lands. As shown in Photos 1 through 4, mine drainage is treated for sediment at the Mine Water Pond prior to discharge to Sneffels Creek. Sneffels Creek is tributary to Canyon Creek. The confluence of Sneffels Creek and Canyon Creek is approximately 1.3 miles downstream of the permit area. The Division found no evidence of discharge from the mine site directly to Canyon Creek. Discharge from the Mine Water Pond to Sneffels Creek is regulated by permit number CO-0000003, issued and enforced by CDPHE. Storm water runoff from the site is regulated by permit number COR-04000, also issued and enforced by CDPHE.



As shown in Photos 1 and 5, mill tailings were concentrated at the tailings disposal area. The operation is approved for temporary tailings storage at alternate areas during winter operations. All tailings are dewatered, by filter press, to approximately 20% moisture content within the mill facility prior to transport by truck to the disposal area. Fluids filtered from the tailings are recycled through the mill circuits with approximately 20% fresh water (mine drainage) added at the mill circuits. The majority of the mill facility is located underground. The concrete floors of the mill facility are graded to drain to various sumps located within the mill facility and thereby ensure containment and recycling of all metallurgical processing fluids. The milling operation is designed and approved as a non-discharging facility. Evidence of loss of containment of metallurgical processing fluids was not observed during the inspection.

Reagents for the mill facility are stored and utilized in the reagent bay of the mill facility. The operation is approved to store and utilize the following chemicals:

- Zinc Sulfate ( $\text{ZnSO}_4$ ), maximum of nine bags at 50 pounds each
- Copper Sulfate ( $\text{CuSO}_4$ ), maximum of nine bags at 50 pounds each
- Calcium Oxide ( $\text{CaO}$ ), maximum of 150 bags at 50 pounds each
- Potassium Amyl Xanthate (PAX), maximum of 1.5 drums at 55 gallons each
- Flottec F-120 Frother/Collector (Aero 404), maximum of 1.5 drums at 55 gallons each
- Flow Tech 534 Frother (MIBC), maximum of 1.5 drums at 55 gallons each

As shown in Photo 6, the concrete floor of the reagent bay, like the other portions of the mill facility, is graded to direct all fluids to a sump with sump-pump whereby spilt fluids may be contained and recycled back through the processing vessels. As shown in Photo 7, a concrete curb, approximately six inches high, is located in the reagent bay to ensure emergency containment in the unlikely event of simultaneous rupture of all chemical tanks. As shown in Photo 8, the concrete curb was recently damaged and temporarily replaced with an earthen berm. Although the Division found no evidence of escaped chemicals or processing fluids, no loss of containment at the reagent bay, the Division has noted a problem with the damaged portion of the concrete curb and has imposed a corrective action deadline whereby the problem must be resolved. Additional details regarding the corrective action and deadline are provided on page two of this report.

Attachment: Certificate of Service

Enclosure: 1) Report of anonymous complaint from CDPHE, case number 2015-0178,  
dated March 27, 2015

2) Eight photographs

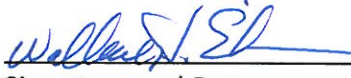
**CERTIFICATE OF SERVICE**

I, Wallace H. Erickson, hereby certify that on this 8<sup>th</sup> day of April, 2015, I placed a true and complete copy of the foregoing inspection report, generated from the March 27, 2015 inspection of the Revenue Mine, Permit No. M-2012-032, signed April 8, 2015, with enclosures, in the US Mail, first class postage affixed, and addressed to the following:

Dianna Stoopnikoff  
Fortune Revenue Silver Mines, Inc  
P.O. Box 564  
Ouray, CO 81427

And an electronic version of the same provided by email to the following:

Dianna Stoopnikoff, Fortune Revenue Silver Mines, Inc, [dstoopnikoff@fortuneminerals.com](mailto:dstoopnikoff@fortuneminerals.com)  
Clint Fletcher, Fortune Revenue Silver Mines, Inc, [clfletcher@fortuneminerals.com](mailto:clfletcher@fortuneminerals.com)  
Ann Nedrow, CDPHE, [ann.nedrow@state.co.us](mailto:ann.nedrow@state.co.us)  
Tony Waldron, DRMS Minerals Program Supervisor, [tony.waldron@state.co.us](mailto:tony.waldron@state.co.us)  
Russ Means, DRMS West Team Supervisor, [russ.means@state.co.us](mailto:russ.means@state.co.us)  
Bob Oswald, DRMS Lead Specialist on the Revenue Mine, [bob.oswald@state.co.us](mailto:bob.oswald@state.co.us)

 4/8/15  
\_\_\_\_\_  
Signature and Date



# COLORADO

## Office of Emergency Preparedness & Response

Department of Public Health & Environment

Revenue Mine

M-2012-032

Print date 3/27/2015

CASE NUMBER: 2015-0178 DATE ENTERED: 3/27/2015 TIME ENTERED: 10:22  
WHO TOOK REPORT: ANN NEDROW DATE REPORTED: 3/27/2015 TIME REPORTED: 10:05:00 AM

NRC NUMBER:

CALLER: KEN VALENTINE CONFIDENTIAL: N PHONE: 303-231-5465

ORGANIZATION: MINE SAFETY AND HEALTH ADMINISTRATION

STREET:

CITY: COUNTY:

STATE: CO ZIP CODE:

POTENTIALLY RESPONSIBLE PARTY FORTUNE REVENUE SILVER MINE

PRP CONTACT: FORTUNE MINERAL

PRP PHONE:

ADDRESS:

EMAIL:

CITY: OURAY COUNTY:

STATE: CO ZIP CODE:

EVENT DATE: 3/26/2015 EVENT TIME: 8:00:00 AM

LOCATION OURAY, SEE DIRECTIONS BELOW

MILE MARKER:

CITY: OURAY COUNTY: OURAY

STATE: CO ZIP CODE:

Latitude:

Longitude:

TYPE OF MATERIAL OTHER

MATERIAL1: MINING CHEMICALS QUANTITY1: UNIT1: QTY TO WATER1: UNIT1:

MATERIAL2: QUANTITY2: UNIT2: QTY TO WATER2: UNIT2:

MATERIAL3: QUANTITY3: UNIT3: QTY TO WATER3: UNIT3:

SOURCE: X

SOURCE TYPE SILVER MINE

CAUSE: DUMPING

CAUSE INFORMATION: Caller to the Mine Safety and Health Administration hotline reported the following. At the Fortune Revenue Silver Mine near Ouray, chemicals from the mine are not being filtered. High pH tailings are located all over the mine surface. When the tests for the pH are done, a neutralizer is applied to the sample so that it will test closer to the pH of 8 that is required. Water going down the pissditch, which should have been filtered is not filtered. It is very high in chemicals, very turbid, and this water is discharged via the sump pump to Canyon Creek. Where curbs should be installed, there are only dirt berms. The non-solid part of the draining material goes right through the dirt berm, and washes it out. Chemicals are not being stored properly. The reagent room has no curb as it is supposed to. This has been ongoing for

RECEIVED  
MAR 27 2015  
Durango Field Office  
Division of Reclamation,  
Mining and Safety

approx. 1 year. Caller kept putting off calling because they might clean things up. It is very important to protect the confidentiality of the caller. On the Internet I found these directions to the mine. From Ouray, go south on US 550, go west to Camp Bird Rd, take slight right onto CO Rd 26. Continue onto Forest Rd 853, 1B Yankee Boy Basin. Arrive.

MEDIUM IMPACTED: WATER AND LAND

☐ Fixed Facility☒ Land☐ Air☐ Groundwater☐ Surface Water

Waterway Impacted:

CANYON CREEK --&gt; UNCOMPAHGRE RIVER

NUMBER OF DEATHS:

NUMBER OF INJURIES:

EVACUATION:

NUMBER EVACUATED:

ACTION TAKEN:

CDPHE NOTIFIED: DRMS: TONY WALDRON, T KALDENBACH, RUSS MEANS; WQCD: M THIEBAUD, D KURZ, R CRIBBS, H DRISSEL, C KEEVER; HMWMD: R BEIERLE, J HENDERSON, E SMITH, J O'ROURKE, S NEWTON, K STEWART, D FOSTER; CPW: MINDI MAY, D KRIEGER, J ALVES, E GARDUNIO, R DELPICCOLO

COMMENTS: Ouray County EH: Elisabeth Lawaczek, Jim Austin

RESPONDERS:

RESPONDER COMMENTS:

ADDITIONAL COMMENTS:



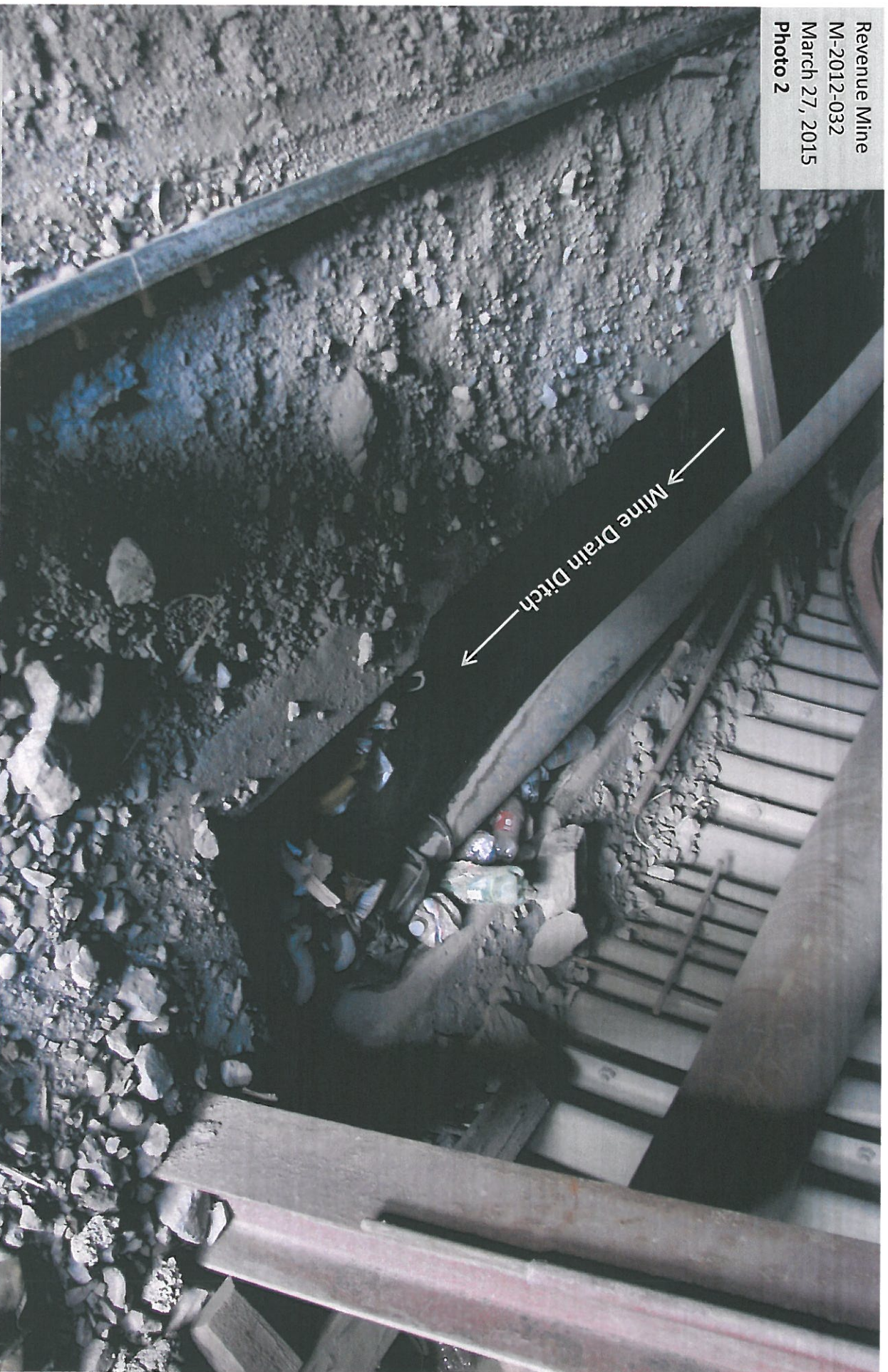
Revenue Mine  
M-2012-032  
October 3, 2014  
Photo 1



View east, taken from a jeep trail nearby Governor Basin, showing the configuration of the Revenue Mine as of the date of the photograph, October 3, 2014.



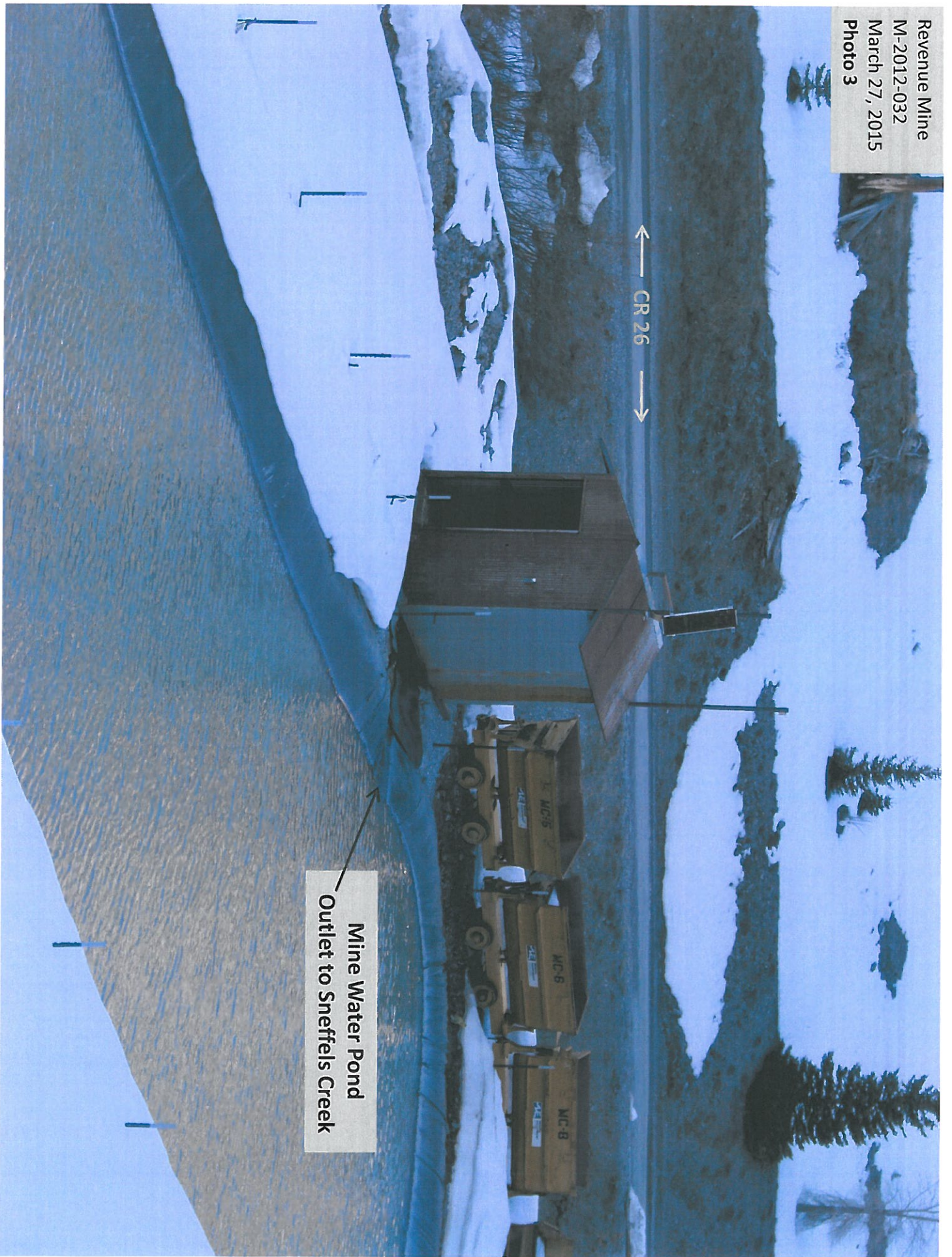
Revenue Mine  
M-2012-032  
March 27, 2015  
Photo 2



View inside the mine portal, showing termination of the mine drain ditch (piss ditch). At this point the ditch flow is routed into a pipeline which ultimately outlets to the mine water pond. As shown in this photo, trash is screened from the ditch flow prior to entering the pipeline. Mine drainage is treated for sediment at the mine water pond prior to discharge to Sneffels Creek, in accordance with the CDPHE discharge permit (CO-0000003).



Revenue Mine  
M-2012-032  
March 27, 2015  
Photo 3



← CR 26 →

Mine Water Pond  
Outlet to Sneffels Creek





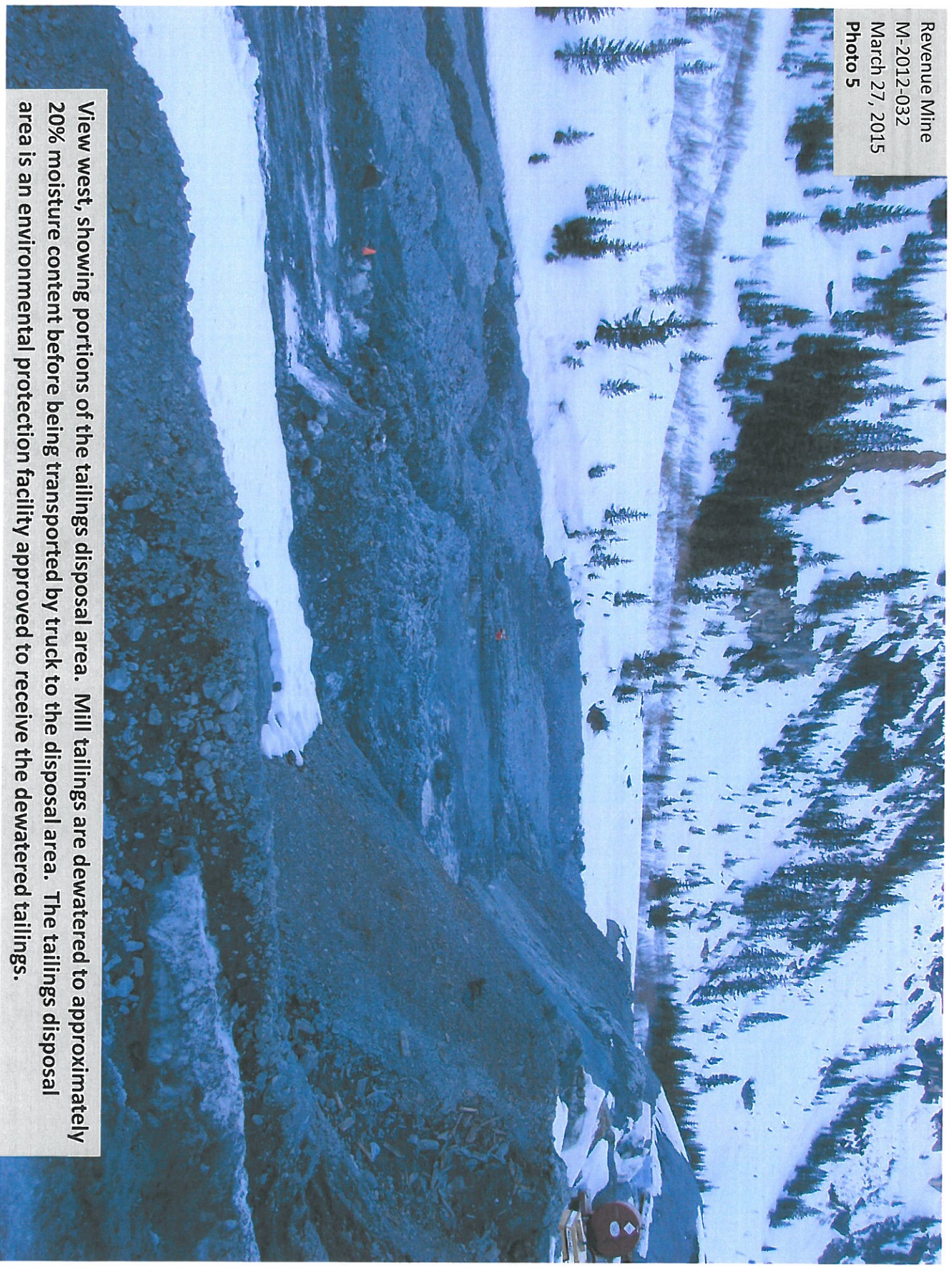
Mine Water Pond  
Outlet to Sneffels Creek

Sneffels Creek



Revenue Mine  
M-2012-032  
March 27, 2015  
Photo 5

View west, showing portions of the tailings disposal area. Mill tailings are dewatered to approximately 20% moisture content before being transported by truck to the disposal area. The tailings disposal area is an environmental protection facility approved to receive the dewatered tailings.

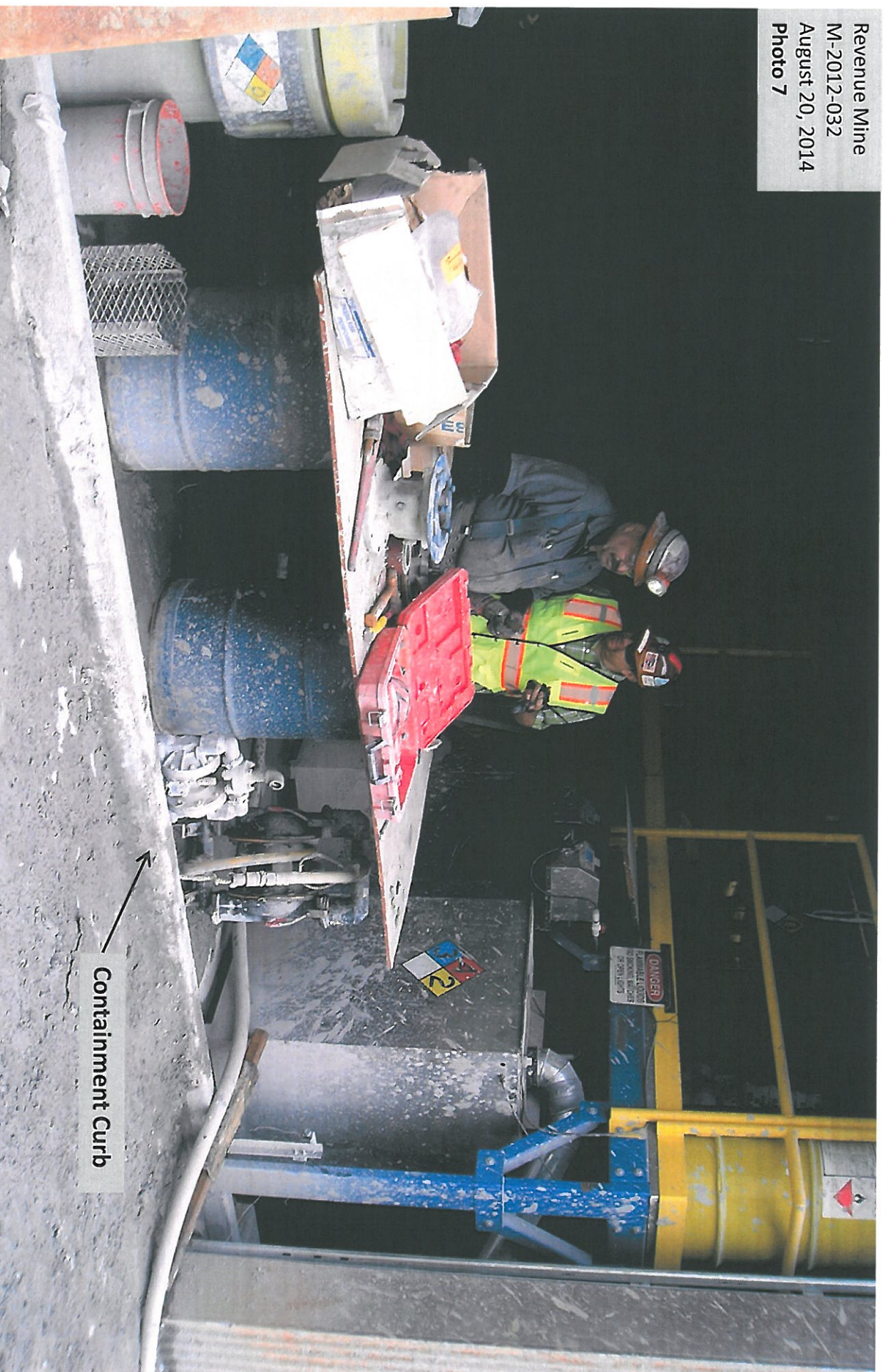






The concrete floor of the reagent bay drains to the sump, shown in this photo. A sump pump recycles fluids from the sump to the processing vessels. The mill facility and its associated reagent bay are non-discharging facilities with primary and secondary containment designed into the facility to ensure containment of all metallurgical processing fluids and/or designated chemicals. Evidence of loss of containment was not observed.





Containment Curb

Photo taken August 20, 2014, showing the entrance to the reagent bay of the mill building. As shown in this photo, the containment curb for the reagent bay was intact as of the date of this photo. The concrete curb ensures emergency containment for the reagent bay in the unlikely event all fluid vessels rupture simultaneously and temporarily overwhelm the sump and sump-pump system of the reagent bay.



Revenue Mine  
M-2012-032  
March 27, 2015  
**Photo 8**

Photo taken inside the reagent bay, showing a temporary earthen berm where the concrete curb was previously located (see Photo 7). According to the Operator, the curb was damaged February 2015, when struck by a fork lift. The concrete rubble was removed and replaced by a temporary earthen berm. Designs for an expanded containment system for the reagent bay is currently being reviewed by the Division through Technical Revision No. 5 (TR-05).



Evidence of loss of containment of metallurgical processing fluids and/or designated chemicals was not observed. However, the concrete curb was part of the redundant containment system for the reagent bay. The Division has noted a problem for the missing curb and has imposed a corrective action deadline whereby the issue must be resolved. Additional details of the corrective action and its associated deadline are provided in the text portion of this inspection report.