



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> Cresson Project	<b>MINE/PROSPECTING ID#:</b> M-1980-244	<b>MINERAL:</b> Gold	<b>COUNTY:</b> Teller
<b>INSPECTION TYPE:</b> Monitoring	<b>INSPECTOR(S):</b> Timothy A. Cazier	<b>INSP. DATE:</b> March 21, 2019	<b>INSP. TIME:</b> 09:50
<b>OPERATOR:</b> Cripple Creek & Victor Gold Mining Company	<b>OPERATOR REPRESENTATIVE:</b> Justin Bills & Katie Blake	<b>TYPE OF OPERATION:</b> 112d-3 - Designated Mining Operation	

<b>REASON FOR INSPECTION:</b> Normal I&E Program	<b>BOND CALCULATION TYPE:</b> None	<b>BOND AMOUNT:</b> \$208,491,188.00
<b>DATE OF COMPLAINT:</b> NA	<b>POST INSP. CONTACTS:</b> None	<b>JOINT INSP. AGENCY:</b> None
<b>WEATHER:</b> Cloudy	<b>INSPECTOR'S SIGNATURE:</b> 	<b>SIGNATURE DATE:</b> May 10, 2019

**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

**PROBLEM/POSSIBLE VIOLATION:** Problem: Water in the LDS-6 VLF 1 leak detection sump has not been removed, nor have water quality laboratory results been provided to the DRMS characterizing the water.

**CORRECTIVE ACTIONS:** Provide photographic evidence of removing all water in the LDS-6 sump and water quality laboratory test results to the DRMS.

**CORRECTIVE ACTION DUE DATE:** 6/10/19

## **OBSERVATIONS**

Tim Cazier (DRMS) conducted a regular monitoring inspection of the site on March 21, 2019. Mr. Justin Bills and Ms. Katie Blake represented CC&V during the inspection. The planned inspection agenda included the following facilities and areas:

- High Grade Mill (HGM);
- Arequa Gulch Valley Leach Facility (AGVLF, a.k.a. VLF 1), including select HVSCS and LVSCS water levels;
- Squaw Gulch Valley Leach Facility (SGVLF, a.k.a. VLF 2), including HVSCS and LVSCS water levels;
- Leak Detection Sump LDS-6 (near Phase II pumps);
- Ironclad Shops;
- Stormwater Repairs on the north side of VLF 1.

### **Site Inspection:**

Permit signs were observed at both the ADR1 and Ironclad entrance locations.

High Grade Mill: Mr. Bills and Ms. Blake accompanied the DRMS on the mill exterior walk-around inspection. The purpose was to perform a visual inspection for leaks, spills and secondary containment problems. Both the east and west sides of the mill exterior were inspected, as well as the area around the concentrate storage facility (Con Barn). No problems were observed, however some blown in snow was observed on the west side of the secondary containment for the High pH Thickener Tank (See **Photo 1**), but not significant enough to cite a problem. [The DRMS recommends keeping all secondary containment clear of snow and other debris in order to maintain the full secondary containment volume.](#) The vat leach circuit on the west side of the HGM continued to be offline (since around February 18, 2018).

CC&V personnel pointed out the silo that is to be moved as proposed in TR-114 (See **Photo 2**)

Arequa Gulch Valley Leach Facility (VLF1): The 10,300 washout area (See **Photo 3**) from the day before was observed along with active leaching areas (primarily elevation 10,200 and 10,400 - See **Photo 4**). The washout area appeared to have only a surficial impact. CC&V geotechnical personnel were evaluating potential impact to slope stability, but none were expected. No significant ponding was observed. However, due to the cold temperatures, lots of ice (most of it process solution) was observed. Discussions with CC&V personnel indicated the mine intends to better manage the frozen pipe and valve issues that has led to this situation during the 2019 – 2020 winter.

High Volume Solution Collection System (HVSCS) and Low Volume Solution Collection System (LVCSC) water levels were checked at Phase II/III and Phase IV (See **Attachment A**) and found to be at acceptable levels. It was also noted the Phase IV LVSCS log was being completed on a daily basis.

Squaw Gulch Valley Leach Facility (VLF 2): Mr. Bills and Ms. Blake accompanied the DRMS to the VLF 2. Although some frozen process solution was observed (See **Photo 5**), it was considerably less than that observed on VLF 1.

High Volume Solution Collection System (HVSCS) and Low Volume Solution Collection System (LVCSC) water levels were checked (See **Attachment A**) and found to be at acceptable levels.

Leak Detection Sump LDS-6: The February 14, 2019 inspection report noted CC&V found and sampled water in LDS-6 on November 28, 2018. Our February 2019 inspection report also noted all the water had not been removed from the sump bottom at that time. The purpose of the leak detection sumps are to determine if the

VLF liners are leaking. If water is not sampled for characterization and removed upon the initial observance, it is difficult to ascertain whether the liner is leaking. As such, LDS-6 was a priority inspection for March 2019. Although absorbent pads and a pump were positioned near LDS-6 (See **Photo 6**), water was still present in the bottom of the sump (See **Photo 7**). **The continued presence of water in LDS-6 is cited as a problem on page 1 of this report.**

**Ironclad Shops:** Mr. Bills and Ms. Blake accompanied the DRMS on the Ironclad Maintenance Shops (large truck shop to the south and the warehouse/small truck shop to the north) inspection. The perimeter of both building was walked (See **Photos 8 through 11**). No problems were observed.

**Stormwater Repairs on the north side of VLF 1:** The DRMS was accompanied by Mr. Bills and Ms. Blake to inspect the area near the northwest toe of the VLF 1 where the Division has been periodically checking an area of concern relating to stormwater control where the access road crosses the edge of liner (*UTM coordinates: Zone 13 S, 485856.96 m E, 4286300.68 m N*). CC&V indicated the mine also periodically inspects this area and conducts repairs as need to ensure runoff from the access road remains on the VLF over the liner system as runoff is considered impacted water. The recent grading repairs made to the drainage controls appeared to be adequate and functioning as intended (See **Photos 12 and 13**).

Please contact Tim Cazier (303)866-3567 ext. 8169 or email at [tim.cazier@state.co.us](mailto:tim.cazier@state.co.us) if you have any questions regarding this report.

## **PHOTOGRAPHS**



Photo 1. Blown in snow observed on west side of secondary containment of High pH Thickener Tank.



**PHOTOGRAPHS (cont.)**



Photo 2. High Grade Mill silo to be moved as proposed in TR-114.



Photo 3. VLF 1 ice (elevation 10,200) and 3/20/2019 washout (from elevation 10,300).



**PHOTOGRAPHS (cont.)**



Photo 4. VLF 1 ice (elevation 10,400,).



Photo 5. VLF 2 – relatively clear of ice on benches.



**PHOTOGRAPHS (cont.)**



Photo 6. LDS-6 sump, note pump and absorbent pad bag.



Photo 7. LDS-6 sump bottom, note reflection in standing water.



**PHOTOGRAPHS (cont.)**



Photo 8. Large truck maintenance shop (north side, looking west).



Photo 9. Large truck maintenance shop (south side, looking east).



**PHOTOGRAPHS (cont.)**



Photo 10. Small truck maintenance shop/warehouse (south side, looking east).



Photo 11. Small truck maintenance shop/warehouse (north side, looking east).



**PHOTOGRAPHS (cont.)**



Photo 12. VLF 1 stormwater system repair (looking upgradient and SW).



Photo 13. VLF 1 stormwater system repair (looking downgradient and NE).

### GENERAL INSPECTION TOPICS

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

(AR) RECORDS----- <u>N</u>	(FN) FINANCIAL WARRANTY----- <u>N</u>	(RD) ROADS----- <u>Y</u>
(HB) HYDROLOGIC BALANCE----- <u>PB</u>	(BG) BACKFILL & GRADING----- <u>Y</u>	(EX) EXPLOSIVES----- <u>Y</u>
(PW) PROCESSING WASTE/TAILING---- <u>Y</u>	(SF) PROCESSING FACILITIES----- <u>Y</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>Y</u>	(SP) STORM WATER MGT PLAN---- <u>NA</u>	(RS) RECL PLAN/COMP-- <u>Y</u>
(ES) OVERBURDEN/DEV. WASTE----- <u>N</u>	(SC) EROSION/SEDIMENTATION--- <u>N</u>	(ST) STIPULATIONS----- <u>N</u>
(AT) ACID OR TOXIC MATERIALS----- <u>Y</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

Mike Schaffner  
Cripple Creek & Victor Gold Mining Company  
P.O. Box 191  
Victor, CO 80860

Enclosure: Attachment A

EC: Michael Cunningham, DRMS  
Elliott Russell, DRMS  
Patrick Lennberg, DRMS  
Amy Eschberger, DRMS  
Justin Raglin, CC&V  
Justin Bills, CC&V  
Katie Blake, CC&V  
DRMS file



## CC&amp;V VLF Water Level Inspection Readings

## Previous Results

Date:

AREQUA VLF:

## Phase I HVSC &amp; Pond Piezometers

Note: 80% cap.  
@ 63.75 ft

Max. of Pump #299, #300, #301, #302, or #303 (Circle Pump #)

Pond Lvl / XDCR #1

System Press / XDCR #2

## Phase I Low Volume Solution Collection

Note: Req'd  
< 2 ft

Piezo #1 (HAND)

Piezo #2 (AUTO)

## Phase II &amp; III HVSC &amp; Pond Piezometer

Note: 80% @  
49.4 ft

Max. of XDCR #4, #5, or #6 (Circle XDCR #)

Piezo (Pipe)

## Phase II &amp; III Low Volume Solution Collection

Note: Req'd  
< 2 ft

Pump / XDCR #1 (AUTO)

Pump / XDCR #2 (AUTO)

## Phase IV High Volume Solution Collection

Note: 80% cap.  
@ 56.5 ft

Max. of Pump #307, #308, or #309 (Circle Pump #)

XDCR pipe (#310 Resv'd)

## Phase IV Low Volume Solution Collection

Note: Req'd  
< 24"

Pump / XDCR #1

Pump / XDCR #2

## Phase V High Volume Solution Collection

Note: 80% cap.  
@ 36.5 ft

Max. of XDCR #311, #312, #313, or #314 (Circle XDCR #)

## Phase V Low Volume Solution Collection

Note: Req'd  
< 24"

XDCR #001

XDCR #002

## External Pond Low Volume Solution Collection

Note: Req'd  
< 24"

Pump / XDCR #1-EXT (AUTO)

Pump / XDCR #2-EXT (AUTO)

## Underdrain Discharge Area

Note: 1 l/sec =  
15.85 gpm

South Underdrain (S U/D)

4" Pipe Discharge AG 01 Spring Pipe

NPDES Discharge AG 1.5 -001A

North Underdrain (N U/D)

24-inch Solid Pipe

## Arequa Gulch Monitor Well Pumpback System

Data first  
collected by  
DRMS 3/8/12

35A

63B

B63

A35

## SQUAW GULCH VLF High Vol. SC:

Note: 80% cap.  
@ 94 ft

LIT #88301 (north end)

LIT #88303

LIT #88305

LIT #88307 (south end)

Piezometer-LIT #88314

## SQUAW GULCH VLF Low Vol. SC:

Note: Req'd  
< 24"

Leachate Pump 1

Leachate Pump 2

	3/29/18	6/28/18	7/31/18	9/27/18	10/30/18	3/21/19	Notes
EPS:	TC1	AME	TC1	TC1	AME		
TIME:	12:16			10:28	11:17		
(ft)	--		--	53.5	56.2		
(ft)	--	13.1	--	52.9	11.2		
(ft)	--	12.4	--	38.3	15.1		system head
TIME:	12:22				11:14		
(ft)	--	0.63	--	--	0.66		
(ft)	--	0.79	--	--	0.79		
TIME:	12:21				11:00	10:45	
(ft)	--	16.9	--	--	34.7	44.9 #6	#5 @ 0.0?
(ft)	--	30.9	--	--	32.7	44.7	COMP FROM LOREN SAVS #5 PULL
TIME:	12:24				11:02	10:50	
(ft)	--	0.71	--	--	0.57	0.58	
(ft)	--	0.25	--	--	0.48	0.44	
TIME:	12:43	12:43		11:40	12:07	12:46	
(ft)	36.3	18.1	should be fixed < 1 wk	30.4	46.1	43.7	
(ft)	17.1	11.7	--	38.0	45.9	44.2	
TIME:	12:45			11:47	12:11	12:50	
(in)	--	7.4	--	11.2	15.2	13.3 → 12.0	
(in)	--	11.6	--	12.3	12.6	12.4	
TIME:					13:25		
(ft)	--	--	--	--	31.1		
TIME:					13:26		
(in)	--	--	--	--	13.72		
(in)	--	--	--	--	15.7		
TIME:							
(in)	--	--	--	--	--		
(in)	--	--	--	--	--		
TIME:							
(gpm)	--	--	--	--	--		
(gpm)	--	--	--	--	--		
(gpm)	--	--	--	--	--		
(gpm)	--	--	--	--	--		
(gpm)	--	--	--	--	--		
TIME:							
(in)	--	--	--	--	--		
(ft)	--	--	--	--	--		
(gpm)	--	--	--	--	--		
(gpm)	--	--	--	--	--		
TIME:	11:27	10:12		10:24	10:25		
(ft)	--	46.56	70.76	--	55.59	70.61	
(ft)	--	46.37	70.07	--	54.8	69.68	
(ft)	--	45.7	70.07	--	54.97	70.21	
(ft)	--	45.24	69.55	--	54.6	70.18	
(ft)	--	52.7	77.09	--	62.72	80.6	
TIME:	11:35	10:27		10:27	10:19		
(in)	--	9.3	pump pulled	--	6.4	6.6	
(in)	--	8.2	12.7	--	6.7	6.9	