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.

MINE NAME: Cresson Project	**MINE/PROSPECTING ID#:** M-1980-244	**MINERAL:** Gold	**COUNTY:** Teller
INSPECTION TYPE: Monitoring	**INSPECTOR(S):** Timothy A. Cazier	**INSP. DATE:** May 21, 2015	**INSP. TIME:** 08:10
OPERATOR: Cripple Creek & Victor Gold Mining Compar	**OPERATOR REPRESENTATIVE:** Chris Hanks	**TYPE OF OPERATION:** 112d-3 - Designated Mining Operation	

REASON FOR INSPECTION: Normal I&E Program	**BOND CALCULATION TYPE:** None	**BOND AMOUNT:** $136,475,000.00
DATE OF COMPLAINT: NA	**POST INSP. CONTACTS:** None	**JOINT INSP. AGENCY:** None
WEATHER: Cloudy	**INSPECTOR'S SIGNATURE:**	**SIGNATURE DATE:** June 23, 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.

INSPECTION TOPIC: Support Facilities On-site
PROBLEM/POSSIBLE VIOLATION: Problem: The AGVLF Phase I and Phase V PSSAs have exceeded the 100 percent storage capacity for a significant period of time.
CORRECTIVE ACTIONS: Provide a summary report to the Division within 60 days of the inspection. The report should: 1) Summarize the water balance problem, 2) Discuss critical timelines such as the 20-day filling of the Phase II PSSA, and 3) Describe the actions being and/or may be taken to remedy the AGVLF water balance problem.

CORRECTIVE ACTION DUE DATE: 7/20/15

OBSERVATIONS

The Division conducted a monitoring inspection of the site on May 21, 2015. Timm Comer, Jeff Winterton, and Chris Hanks were present for a pre-inspection meeting. Tim Cazier and Wally Erickson represented the Division. The focus of this inspection was to discuss Arequa Gulch Valley Leach Facility (AGVLF) water balance issues and ongoing construction items, observe water levels, and inspect select Environmental Protection Facilities (EPFs), specifically the Fuel Island and Lime Silo.

Pre-Inspection Meeting:
Mr. Winterton (Process Production Manager) provided an explanation for the water balance issues with respect to some pregnant solution storage areas (PSSAs) having water levels above the 80 percent operating level and/or the 100 percent storage capacity:

- In 2012 and 2013 there were buried pipe header failures involving two barren lines and one pregnant solution line that serviced the Phase IV PSSA area. These lines are now out of commission and construction of replacement lines on the surface were close to being finished, but have met with construction delays. He noted that these replacement lines are all on the surface except where they cross haul roads.
- The inability to apply barren solution to the Phase IV pad area results in a significantly reduced area available for solution application, especially considering the reduced surface area of the Phase V pad as it nears its ultimate height, resulting in a smaller surface area than at lower lifts.
- Overflow resulting from a Phase V PSSA 100% exceedance drains to the Phase I PSSA. Overflow resulting from both Phases I and IV PSSA 100% exceedances drains to the Phase II PSSA. The Phase II PSSA solution is the most downgradient of the four PSSAs and solution in this "pond" must be pumped to the External Storage Pond to avoid exceedance levels. (*Note: PSSAs are triple lined, all other portions of the VLF is double lined.*)
- The mine was focusing on keeping the Phase II PSSA well below the 80% operating level by applying solution to the Phase I and V pads.
- The AGVLF leaching circuit is a closed system and the only practical short-term method of reducing the amount solution is through evaporation.

Mr. Winterton agreed to provide a summary report (which is **cited as a potential problem** on page 1 of this report solely for tracking purposes) to the Division within 60 days of the inspection. The report should:

1. Summarize the water balance problem,
2. Discuss critical timelines such as the 20-day filling of the Phase II PSSA, and
3. Describe the actions being and/or may be taken to remedy the AGVLF water balance problem.

Messrs. Comer and Hanks provided some feedback on items the Division had regarding recent Weekly Construction Quality Assurance (CQA):

- Water pumped from the Squaw Gulch VLF low volume solution collection system is transferred directly back onto the SGVLF.
- The "containment berm" constructed in the Phase I area of the SGVLF delineates the end of the Soil Liner Fill (SLF) work, marking the boundary of subgrade acceptance.

- SLF processing in Squaw Gulch has been completed. All SLF processing is now being done at the Cameron site.

Inspection:

Mr. Hanks accompanied the Division representative on the site inspection.

Expansion: The potential future adit locations at the Chicago Tunnel and upgradient Poverty Gulch were visited. Mr. Hanks indicated samples will be collected for geochemical analyses to assess the material for the potential for acid generation.

Mine plan: Production drilling and blasting continued in the Wildhorse Extension (WHEX) pit (see **Photo 1**). A retro-reflector (see **Photo 2**) used to monitor potential AGVLF slope movement was observed near the Phase V LVCS shed.

Construction: The Division observed the nearly completed EMP 021 sediment ponds (see **Photo 3**) and SGVLF progress (see **Photo 4**).

Environmental Protection Facilities (EPFs): The Division has implemented a more structured inspection program for EPFs. The Fuel Island, Lime Silo, and External Storage Pond and were inspected during this site visit:

- The Fuel Island (Diesel and gasoline fueling station – see **Photos 5** and **6**) is located in the northern portion of the mine site, south of the WHEX pit. This is a lined facility with an oil/water separator (see **Photo 7**) and pipe bollards to prevent vehicles from accidentally colliding with the fuel tanks.
- The Lime Silo (see **Photo 8**) is located in the southern portion of the mine site near the crusher and northeast toe of the Phase IV VLF. Lime is added to the crushed ore destined for the VLF in order to help maintain a higher pH to facilitate cyanide leaching. 55-gallon drums observed in the area appeared in good condition and no leaks were observed (see **Photo 9**). Mr. Hanks pointed out the large electro-magnet (see **Photo 10**) used to remove iron and steel from the crushed ore prior to loading ore into haul trucks at the load out bin (LOB).
- The External Storage Pond (ESP) is located at the very southern tip of the site between Hwy 67 and the Arequa Gulch processing facilities: Adsorption/Desorption/Recovery (ADR) and Process Solution Enhancement System (PSES). The pipes for transferring solution to be treated and treatment tanks were observed in place (see **Photo 11**).

No issues or concerns were raised during the inspection of these facilities.

Water levels: The inspection continued as the Division visited each of the high and low solution collection system transducers and recorded water level values. The recording sheet is included as **Attachment A**, and the values are summarized below in the Transducer Readings. (*Note: both the Phase I and V PSSA ponds were observed to exceed their respective 100 percent capacities. However, the downgradient Phase II PSSA pond was observed to be approximately 10 feet below its 80 percent operating level.*)

The North and South Arequa Gulch underdrains were inspected. The South Underdrain discharge was determined to be 28.6 gpm. The North Underdrain, A35 pumpback line and B63 pumpback line were dry.

Transducer Readings:

Phase I High Volume Solution Collection (readings in ft)

Pump #299 / XDCR #xx	Pump #300 / XDCR #00	
34.5	37.9	
Pump #301 / XDCR #01	**Pump #302 / XDCR #02**	**Pump #303/XDCR #03**
51.5	58.5	**67.7**

Phase I Low Volume Solution Collection (readings in ft)

Pond Lvl / XDCR #1	System Press / XDCR #2
0.52	0.61

Phase I Pond Piezometers (readings in ft)

Piezo #1 (HAND)	Piezo #2 (AUTO)
71.9	49.6

Phase II & III High Volume Solution Collection (readings in ft)

Pump / XDCR #4	Pump / XDCR #5	Pump / XDCR #6
25.3	24.0	29.5

Phase II & III Low Volume Solution Collection (readings in ft)

Pump / XDCR #1 (AUTO)	Pump / XDCR #2 (AUTO)
0.40	0.46

Phase II & III Pond Piezometer (readings in ft)

Piezo (Pipe)
30.90

Phase IV High Volume Solution Collection (readings in ft)

Pump #4 / XDCR #307	Pump #5 / XDCR #308	Pump #6 / XDCR #309	XDCR pipe (#310 Reserved)
35.0	35.2	35.0	35.0

Phase IV Low Volume Solution Collection (readings in inches)

Pump / XDCR #1	Pump / XDCR #2
16.30	11.90

Phase V High Volume Solution Collection (readings in ft)

XDCR #311 (AUTO)	XDCR #312 (AUTO)	XDCR #313 (AUTO)	XDCR #314 (AUTO)
42.87	21.04	19.90	31.65

Phase V Low Volume Solution Collection (readings in inches)

XDCR #001	XDCR #002
13.14	14.60

External Pond Low Volume Solution Collection (readings in inches)

Pump / XDCR #1-EXT (AUTO)	Pump / XDCR #2-EXT (AUTO)
14.0	11.8

Red/Bold values exceed 80% operating level
Red/Bold/Underlined values exceed 100% capacity level

PHOTOGRAPHS

Photo 1. Side tipping loader filling blast holes with stemming material (WHEX Pit).

Photo 2. Retro-reflector used to monitor AGVLF slope movement (near Phase V LVCS shed).

PHOTOGRAPHS (cont.)

Photo 3. Nearly completed EMP 021 sediment ponds (looking NE).

Photo 4. SGVLF construction progress (looking NW).

PHOTOGRAPHS (cont.)

Photo 5. Fuel Island diesel storage tanks over liner with pipe bollards (looking SW).

Photo 6. Fuel Island gasoline storage tank over liner with pipe bollards (looking NE).

PHOTOGRAPHS (cont.)

Photo 7. Fuel Island oil/water separator over liner (looking north).

Photo 8. Lime Silo is located near the crusher and northeast toe of the Phase IV VLF (looking east).

PHOTOGRAPHS (cont.)

Photo 9. 55-gallon drums near Lime Silo appeared in good condition / no leaks were observed.

Photo 10. Large electro-magnet used to remove iron and steel from the crushed ore prior to loading the VLF.

PHOTOGRAPHS (cont.)

Photo 11. External Storage Pond treatment tanks observed in place on north side of pond.

GENERAL INSPECTION TOPICS

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

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

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

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Enclosure

CC: Wally Erickson, DRMS
Amy Eschberger, DRMS
Elliott Russell, DRMS
Chris Hanks, CC&V
DRMS file

ATTACHMENT A

Date:			11/5/14	12/10/14	1/7/15	2/24/15	3/11/15	5/21/15	Notes
Phase I High Volume Solution Collection		Units	14:12	10:54	15:19	10:59	12:12	13:23	
	Pump #299 / XDCR #xx	(ft)	37.9	36.4	34.1	42.1	36.9	34.5	
Note: 80% cap. @ 63.75 ft	Pump #300 / XDCR #00	(ft)	40.3	36.4	33.9	44.1	34.3	37.9	
	Pump #301 / XDCR #01	(ft)	29.4	22.5	39.6	24.9	23.0	51.5	
	Pump #302 / XDCR #02	(ft)	39.0	33.6	46.3	37.3	33.8	58.5	
	Pump #303 / XDCR #03	(ft)	42.6	37.0	52.8	42.0	37.8	67.7	⊗
Phase I Pond Piezometers			14:12	10:54	15:19	10:59		13:23	
80% cap. @ 63.75 ft	**Pond Lvl / XDCR #1**	(ft)	57.5	52.4	63.8	57.1	53.2	71.9	⊗
	System Press / XDCR #2	(ft)	48.3	47.3	51.9	48.2	48.8	49.6	system head
Phase I Low Volume Solution Collection			13:54	10:30	14:44	10:21	12:19	13:34	
Note: Req'd < 2 ft	Piezo #1 (HAND)	(ft)	0.55	0.53	0.39	0.55	0.57	0.52	
	Piezo #2 (AUTO)	(ft)	0.42	0.64	0.64	0.68	0.74	0.61	
Phase II & III High Volume Solution Collection			14:01	10:46	15:10	10:47	12:33	13:37	
Note: 80% cap. @ 49.4 ft	Pump / XDCR #4	(ft)	28.3	27.4	38.4	25.0	23.0	25.3	
	Pump / XDCR #5	(ft)	29.2	34.4	46.4	18.3	17.8	24.0	
	Pump / XDCR #6	(ft)	31.7	30.3	42.9	27.1	24.7	29.5	
Phase II & III Pond Piezometer				10:47	15:10	10:47		13:37	
80% @ 49.4 ft	**Piezo (Pipe)**	(ft)	31.0	33.7	46.7	31.8	31.8	30.9	OK
Phase II & III Low Volume Solution Collection			14:02	10:49	15:12	10:52	12:30	13:39	
Note: Req'd < 2 ft	Pump / XDCR #1 (AUTO)	(ft)	0.31	0.28	0.70	0.46	0.71	0.70	
	Pump / XDCR #2 (AUTO)	(ft)	0.47	0.54	0.25	0.30	0.41	0.32	
Phase IV High Volume Solution Collection			12:21	11:15	13:47	11:52	11:28	12:00	
	Pump #4 / XDCR #307	(ft)	19.7	15.1	27.1	35.7	32.9	35.0	
Note: 80% cap. @ 56.5 ft	Pump #5 / XDCR #308	(ft)	19.4	14.8	26.7	35.4	32.8	35.2	
	Pump #6 / XDCR #309	(ft)	19.3	14.9	26.7	35.3	32.5	35.0	
	XDCR pipe (#310 Reserved)	(ft)	19.3	14.8	26.7	35.3	32.5	35.0	
Phase IV Low Volume Solution Collection			12:34	11:17	13:52	11:57	11:35	12:15	
Note: Req'd < 24"	Pump / XDCR #1	(in)	16.1	15.9	16.7	18.3	17.8	16.3	
	Pump / XDCR #2	(in)	11.2	11.5	11.0	11.5	11.8	11.9	
Phase V High Volume Solution Collection			14:23	11:03	15:27	11:08	12:04	13:09	
	XDCR #311 (AUTO)	(ft)	34.39	23.28	29.46	19.20	32.74	~~31.65~~	42.87 ⊗
Note: 80% cap. @ 36.5 ft	XDCR #312 (AUTO)	(ft)	28.77	15.31	19.13	29.53	21.17	~~19.9~~	21.04
	XDCR #313 (AUTO)	(ft)	28.56	25.10	28.34	32.29	20.30	19.9	
	XDCR #314 (AUTO)	(ft)	30.61	15.80	18.96	32.28	30.90	31.65	
Phase V Low Volume Solution Collection			14:21	11:05	15:29	11:12	11:59	13:13	
Note: Req'd < 24"	XDCR #001	(in)	11.12	9.00	10.08	12.84	9.42	13.14	
	XDCR #002	(in)	14.60	12.90	16.80	16.30	15.50	14.6	
External Pond Low Volume Solution Collection			13:49	10:25	14:40	10:18	12:24	13:29	
Note: Req'd < 24"	Pump / XDCR #1-*EXT* (AUTO)	(in)	12.9	13.1	13.5	9.1	9.7	14.0	
	Pump / XDCR #2-*EXT* (AUTO)	(in)	16.9	15.6	17.1	12.2	13.4	11.8	
Underdrain Discharge Area			No Check	10:38	14:56	10:39	12:42		
	South Underdrain (S U/D)	(gpm)	N/C	20.0	14.0	8.0	15.0		← 2gs/4.28cc
Note: 1 ℓ/sec = 15.85 gpm	4" Pipe Discharge AG 01 Spring Pipe	(gpm)	N/C	N/C	Dry	Dry	Dry	DRY	
	NPDES Discharge AG 1.5 -001A	(gpm)	N/C	N/C	Dry	Dry	Dry		
	North Underdrain (N U/D)	(gpm)	N/C	N/C	Dry	Dry	Dry		
	24-inch Solid Pipe	(gpm)	N/C	N/C	Dry	Dry	Dry		
Arequa Gulch Monitor Well Pumpback System			No Check	10:35	14:52	10:32		13:46	
	35A	(in)	N/C	N/C	0.00	0.00	0.00	0.00	
Data first collected by DRMS 3/8/12	63B	(ft)	N/C	29.28	28.29	35.92	36.98	39.38	
	B63	(gpm)	N/C	N/C	0.4	0.0	0.0	0.0	
	A35	(gpm)	N/C	N/C	0.0	0.0	0.0	0.0	