STATE OF COLORADO

Eschberger - DNR, Amy <amy.eschberger@state.co.us>

Permit M-1977-410 Supplementary Information for Activities

Daniel Takami <danieltakami@gmail.com> Wed, Jan 26, 2022 at 1:39 PM
To: "Eschberger - DNR, Amy" <amy.eschberger@state.co.us>, "Cunningham - DNR, Michael" <michaela.cunningham@state.co.us>, "Daniel V. Pollock" <Dpollock@nedmining.com>, Richard Mittasch <rmittasch@nedmining.com>, Sergio Rivera <sergio.rivera@novametallix.com>

Amy,

Enclosed is supplementary Information for activities related to the Winze Rehabilitation and Sublevel Sediment Sumps Development. Please feel free to reach out if you have any questions. Have a great rest of your week and an enjoyable weekend!

Respectfully,

Daniel J. Takami
President, Sustainable Metal Solutions, LLC
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M-1977-410 Signed Progress Update 1-26-21.pdf
604K

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4415 Caribou Rd,
Nederland CO, 80466

Division of Reclamation, Mining & Safety
c/o Ms. Amy Eschberger
1001 E 62nd Ave,
Room 215
Denver, CO 80216

January 26, 2022

RE: Cross Gold Mine, Permit No. M-1977-410, Supplementary Information for Activities Related to the Winze Rehabilitation and Sublevel Sediment Sumps Development.

Ms. Eschberger,

Pursuant to DRMS' site visit to the Cross and Caribou Gold Mines on January 11th, 2022, and the discussions that took place on site with you, Mr. Cunningham and Mr. Means, regarding the activities associated with Winze rehabilitation and Sublevel Sumps, GIR herewith provides additional information for the requested activities; and, hereby requests approval of the Winze activities requested by GIR under 3.1.2 and 3.1.3

The winze, an internal underground shaft, connects the main tunnel level with the lower levels. The location of the winze with respect to the mine workings is shown in figure 1. The winze consists of two adjoined openings: the manway and the skip-way. The winze is the only means available for transport of personnel, equipment, and timber to the lower levels of the mine. The sublevel sediment sumps are critical features which will allow for the increased sediment control in select areas at the lower levels (figure 2).

The activities related to the winze rehabilitation and sublevel sediment sump development in sequential order consist of:

- Improve access and egress to the work area at the winze collar.
- Repair and improve the sheave wheel and its support structure, with an increased engineered safety factor.
- Below the collar;
    - Remove and replace the rotten ground support timber,
    - Scale the shaft walls and implement new shaft supports,
    - Isolate the manway from the skip-way with lacing and install new ladders.

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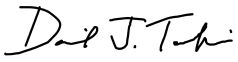
  - Rebuild the landing doors and landings within 30 feet intervals, per MSHA regulation.
- Rehabilitation, cleaning of, and optimization of the existing winze sump at the bottom of the winze for discharge controls and pump maintenance.
- Inspect and rehabilitate the existing workings for safe access and egress to facilitate implementation of adequate ground support systems and development of additional sediment control sumps, starting from level 2 and working sequentially to level 3 and 4.

As indicated previously, Winze rehabilitation is essential for safe access to the lower levels of the mine for rehabilitation and environmental management pertaining to groundwater management.

If you have any questions, feel free to reach out.

Respectfully,



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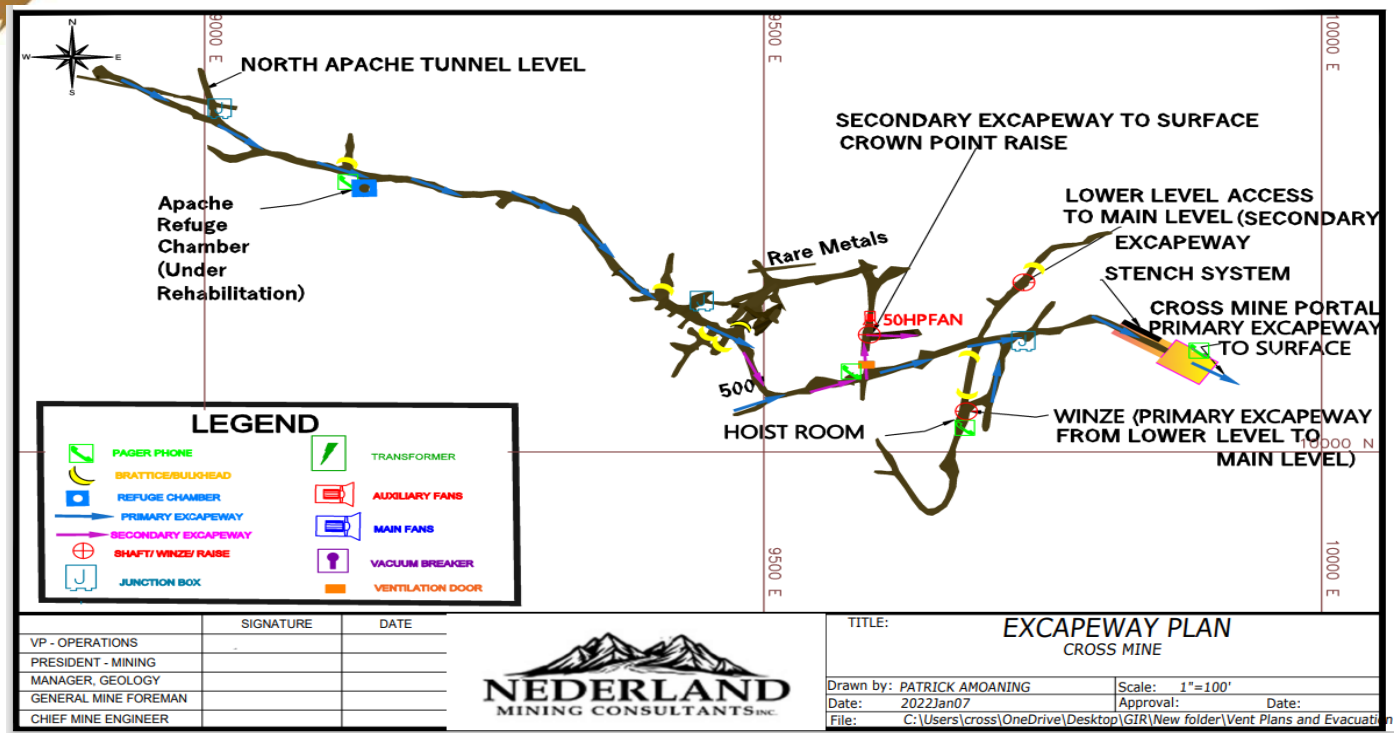

Figure 1: Cross mine escapeway plan with the location of the winze displayed.

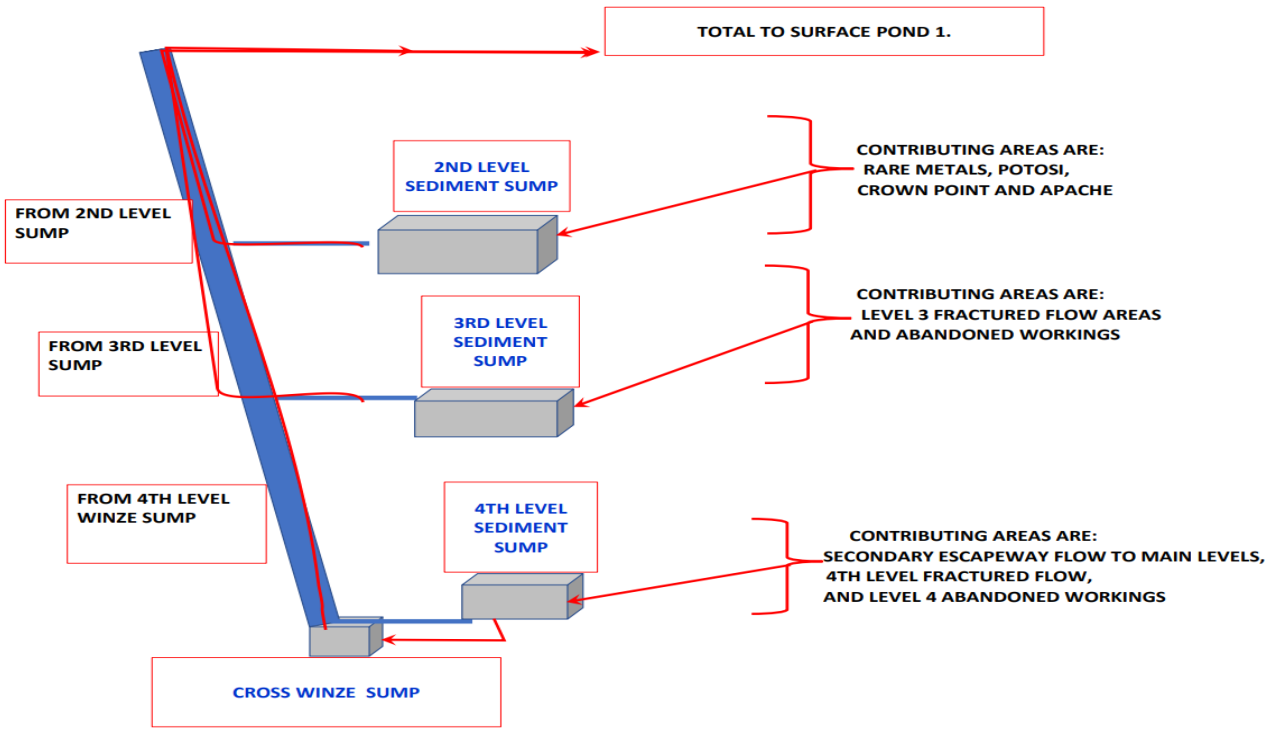

Figure 2: Schematic drawing of the proposed Cross sediment control system.

RE: Cross Gold Mine, Permit No. M-1977-410, Progress on GIR's proposed activities aimed to comply with the Cease-and-Desist order issued by the Board on December 15, 2021 and Proposed to DRMS on GIR letter dated December 21st, 2021

Priority	Location		Final Approval by DRMS	Progress (% complete)
Priority 1	Cross Mine	1.1.1. Cross Discharge lines installations. The scheduled installation of replacement water discharge lines must continue in the Cross Mine to connect underground drainage system to prevent the mine from flooding. Should flooding occur, ground water would report to the surface through the Cross Mine Adit in an uncontrolled fashion directly to the environment.	22-Dec-21	100.0%
		1.1.2. Refuge Chamber Construction. Construction of an MSHA compliant safety refuge toward the back of the Cross tunnel. This is a critical activity and essential for operations associated with water management (pumps, pipelines, utilities).	22-Dec-21	30.0%
		1.1.3. Utilities Installation for Safety and Operations. (Discharge, Compressed Air, Ventilation, Power and Water supply). Replacement of dated infrastructure (compressed air, water, and electrical lines) which must be installed such that mine dewatering pumps and ventilation systems are operational.	29-Dec-21	50.0%
		1.1.4. Auxiliary Fan installations. The ventilation system is a critical safety requirement for personnel attending and maintaining the pumping systems; these systems must be operational prior to the construction of water management sumps and for any associated activities.	29-Dec-21	95.0%
		1.1.5. Ground support installation. All areas leading to the mine pumping sites must be secured, bolted, and must comply with MSHA guidelines for safe personnel access.	29-Dec-21	100.0%
		1.1.6. Freeze Prevention Program. The groundwater conveyance systems must be insulated to prevent freezing of pipes and equipment and appurtenant facilities such that the water conveyance systems remain operational during the winter months.	22-Dec-21	70.0%
	Caribou Mine/Idaho Tunnel	1.2.1. Construction of Sediment Control Structures. Solids removal from groundwater within the mine workings prior to discharge to the sediment control ponds is critical for optimizing the performance of the settling ponds. The construction of a Cofferdam and Check dams in the Idaho tunnel is critical for water quality compliance. These activities include the extension of piping systems into the pumping areas.	22-Dec-21	70.0%
		1.2.2. "75" Sediment Control Sump Rehabilitation. Removal of sediment accumulated in the clarifying sump is a required O&M part of the system; GIR is planning to relocate the existing pump further into the sump to optimize sump storage capacity, an access walkway must be constructed to ensure the safety of maintenance personnel.	22-Dec-21	30.0%
		1.2.3. Freeze Prevention Program. The groundwater conveyance systems must be insulated to prevent freezing of pipes and equipment and appurtenant facilities such that the water conveyance systems remain operational during the winter months.	22-Dec-21	65.0%
Priority 2	Cross Mine	2.1.1. Cross Shaft and Old Access Road Surface Reclamation. Backfill, compact and recontour the terrain to reduce surface water inflow into the underground working. A detailed reclamation plan and design is currently being prepared for submittal under separate cover to DRMS	Activity not Approved by DRMS	0.0%
		2.1.2. Apache/Potosi Sump Development at 'G' Station. Construction of a water sedimentation and clarification system at a midpoint within the tunnel. Construction of underground sumps is required such that water flows are collected and controlled. The sumps would serve as sediments settling structures such that heavily sediment laden water is not delivered to the treatment plant.	22-Dec-21	30.0%
	Caribou Mine/Idaho Tunnel	2.2.1. Personnel Siding Development along Railway and Equipment Corridors. Safety step-aways from moving equipment.	22-Dec-21	60.0%
Priority 3	Cross Mine	3.1.1. Required infrastructure for safe construction and operation of water systems controls. Infrastructure construction required for control of fracture flow discharges reporting to the underground workings. The infrastructure is required to minimize suspended solids reporting to the treatment system and includes pipe installation at ground level where pre-mining construction will occur on the haulageway. This will protect the drainage ditch from collecting and discharging sediment.	Activity not Approved by DRMS	0.0%
		3.1.2. Winze Hoist and Winze Sump Rehabilitation. Essential activity required for access of lower mine levels for rehabilitation and water management.	Activity not Approved by DRMS	0.0%
		3.1.3. Sublevel Sediment Sumps Rehabilitation and Development. Rehabilitation of currently flooded workings after groundwater table drawdown and release of groundwater via the water treatment system.	Activity not Approved by DRMS	0.0%
	Caribou Mine/Idaho Tunnel	3.2.1. Sediment Control Pond Upgrades. Minor modifications to reduce the impact of freezing pipes and ice build-up.	29-Dec-21	15.0%
Site Wide		4. HYDROGEOLOGIC STUDY GIR intends to conduct a comprehensive Hydrogeologic Study of the Mining Complex. The Study is considered critical and essential for near future and long-term operations and water quantity and quality management. GIR anticipates that the Study will require access to the mining areas and activities that are not anticipated to result in high level of disturbance. GIR will provide, upon request, the Scope of Work for the Study. Approval of the Study is hereby requested.	Activity not Approved by DRMS	0.0%