

Memorandum

To: Colorado Division of Reclamation and Mining Safety

From: Billy Ray, Site Manager, Ensero Solutions Inc
Elizabeth Busby, PE, PMP, Project Manager, Ensero Solutions Inc.
Tyler Fasenmyer, Project Engineer, Ensero Solutions Inc.

CC: Jim Harrington, Colorado Legacy Land.

Date: August 31, 2023

Re: Schwartzwald Mine (M-1977-300) – Mine Pool Elevation

On August 23-28, 2023 Ensero installed the PVC conduit down to 360 feet from the surface of the Jefferies Shaft Headframe (6,747.89 ft amsl, surveyed by Lambert Land Consulting 7/23/2020). On August 29, 2023 a water level indicator was lowered down the conduit until a tone was heard at 338 feet below the Jefferies Shaft Headframe (as measured through the PVC conduit). From historic mine workings, it is known that the Jefferies Shaft descends to the flooded mine workings at 12-degree angle from vertical (see attached schematic). Therefore, the mine pool elevation with respect to the Steve Adit (6,601.71 6,747.89 ft amsl, surveyed by Lambert Land Consulting 7/23/2020) is calculated with the following formula:

Mine Pool Elevation Calculation:

Water level reading, adjusted to vertical (feet below the Jefferies Shaft Headframe):

$$\cos(12^\circ) \times 338ft = 330.61ft$$

Water level elevation, feet above sea level:

$$6,747.89ft - 330.61ft = 6,417.28 \text{ feet above sea level}$$

Water level feet below permit level (150-feet below Steve):

$$6,601.71ft - 6,417.28ft = 184.43 \text{ feet below the Steve Adit level}$$

This water level elevation demonstrates in compliance with the site's Mine Land Reclamation Permit (Permit No. MLRP-100-1977) which requires the mine pool to remain 150-feet below the Steve Adit. Assuming refill rates (0.5-1 foot per day recharge) are consistent with previous operation years (2018-,

the mine pool currently has 34 – 72 days of storage capacity. Continued WTP Operations during the 2023 will increase this capacity.

Continued monitoring of the mine pool will be accomplished with a transducer. Ensero plans install a submersible pressure transducer (Geotech Model No. #15-11-09-PTA-200-73078, Pressure Range: 0-200 psi) through the PVC conduit at the beginning of September. A local display will be used to interface with the pressure transducer. The display (Walchem W900 series Webmaster) will be mounted at head frame and will be used by the operators to manually read the mine pool water level. The display will be powered by a local electrical source (ex: battery or generator) allowing WTP Operators to record the mine pool elevation on an as-needed basis during the remainder of the 2023 operating season. Future operations may consider the installation of a solar panel to power the Webmaster, which can be readily integrated into the existing WTP controls. The addition of a solar panel would allow for continuous, remote monitoring.

Schwartzwalder Mine (M-1977-300) – Mine Pool Elevation Schematic

