

## **Development of an Alternative PAG Management Strategy at a Coal Mine in British Columbia, Canada.**

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Mining has to the potential to expose waste materials containing sulfide minerals, that in their natural state, are benign. When exposed to atmospheric oxygen, these minerals oxidize and produce acidity. If the mine wastes do not contain sufficient neutralization potential to offset acid production, acid rock drainage (ARD) will occur. As the pH of the drainage is depressed, oxidation rates increase, and the solubility of several mineral phases concurrently increases, leading to drainage quality characterized by elevated element and ion concentrations.

Once initiated, acid rock drainage is difficult to reverse. Robust geochemical characterization studies are therefore required at the inception of new mining projects to inform mine waste management to minimize ARD.

Geochemical characterization of the Tenas Coal Project, located in the town of Telkwa, British Columbia, Canada indicates that ARD management will be required. To mitigate ARD, Allegiance Coal Limited proposes to excavate external pits in advance of mining so that potentially acid generating rock can be submerged, precluding oxidation of sulfide minerals. This paper presents a practical case study of the use of a geochemical characterization study as a direct input to the mine design at the planning stage of the project.