

**18<sup>th</sup> International Conference and Exhibition on****MATERIALS SCIENCE AND ENGINEERING****May 28-30, 2018 Osaka, Japan****Mining sustainability by tailings repurposing, water treatment and slag recycling****Courtney A Young**

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**M**ontana Tech has been engaged in repurposing tailings, treating water and recycling slags for several decades in order to help sustain the mining industry. Recent efforts include treating contaminated waters including acid-rock drainage, repurposing tailings to manufacture synthetic lunar soil and make sand for concrete production and using slag to not only recycle valuable metal content as a pig iron but also to produce a secondary slag for the glass industry. These efforts are reviewed in detail but the latter is emphasized such that treating slags from different sources yields similar results. In all cases, an environmental issue is resolved but by-products are marketed to help offset remediation costs. Consequently, waste products become economic by-products allowing the mining industry to reduce its environmental footprint and improve the bottom line.

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