

# SEG 2023 Conference: Resourcing the Green Transition

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## The West Desert Zinc-Copper-Silver-Indium Deposit, Juab County, Utah, USA

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The West Desert zinc-copper-silver-indium deposit is in west-central Utah, USA, and is being developed by American West Metals Ltd. (ASX: AW1 and OTCQB: AWMLF). West Desert is a late Eocene age ferro-magnesium skarn-CRD replacement deposit, overprinted by zinc-copper-silver-indium hydrothermal mineralization and intruded by a porphyry molybdenum system at depth. Current resources are 33.7 Mt of inferred and indicated resource grading 3.83% Zn, 0.15% Cu, and 9.1 g/t Ag. The historic indium resource is being updated and stands at 869,000 kg grading 35 ppm indium. A combined open-pit and underground mine encompassing oxide and sulfide resources is being planned. West Desert is the largest viable base metal-indium deposit in North America. The Utah Geological Survey is working in conjunction with the U.S.G.S to further develop the project as a critical metal source. Gallium in the West Desert deposit is being evaluated as part of this process.

Indium at West Desert occurs in two forms: 1) a lattice substitution in sphalerite with lesser amounts in bornite and chalcopyrite and 2) the mineral roquesite ( $\text{CuInS}_2$ ), which typically occurs in chalcopyrite-bearing sphalerite as replacement along crystal dislocations (chalcopyrite disease). Historical metallurgical testing indicates that about 94% of recoverable indium reports to a zinc concentrate and about 6% of indium to a copper concentrate. Further work is being conducted with QEMSCAN, TIMA, and column leach tests to refine oxide zinc and copper recovery and the indium deportment to each product. Critical to indium evaluation are the following: 1) type of mineral deposit being explored; 2) use of proper geochemical standards and sample digestion techniques for accuracy; 3) mineralogical distribution of indium within the various sulfide ore minerals. There are six exploration projects worldwide that may contribute to the near-term (5-20 year) supply of new indium sources. West Desert is currently the leading North American project.