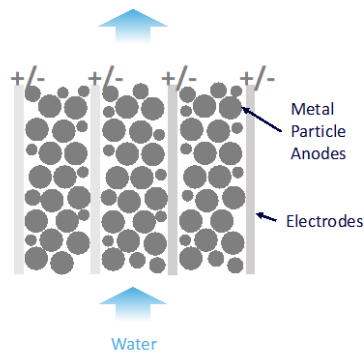


## Amprey™

### An Environmental and Economical Solution for Removing any Dissolved Metal, Sulphate and Nitrate from Mine Water

waterStrider's Amprey™ is the Swiss Army knife of mine water treatment. Amprey forms hydroxides and sulphides, and causes reduction, co-precipitation, and coagulation of contaminants in order to neutralize acidic pH and remove dissolved metals and other constituents from mine water.

**Removing Contaminants of Concern (CoCs)** Depending on the mine's CoCs, Amprey's anode pellets are particles of steel, magnesium, or aluminum. Electrical power dissolves Amprey's metal pellet anodes to provide treatment. Pellets are dissolved until they become so tiny that they wash out of the cell. Periodically, dissolved metal anode pellets are replaced with new pellets, which can be automated. Electrons use Amprey's metal pellet anodes as steppingstones with only modest electrical requirements. Electrical power to Amprey can also be automated using a pH or a redox controller.



#### What Amprey does

- Raises pH
- Creates reducing conditions:
- Reduces Sulphate → Sulphide
- Reduces Nitrate → Ammonia
- Co-precipitates, coagulates

#### How Amprey works

Amprey cell:

- Consumable metal anode particles fill spaces between titanium rod electrodes
- Water flows up through Amprey to flush solids and gases from cell with treated water discharge

Electric power:

- Electric current flows between electrodes and anode particles, accelerating the rate that metal anode particles are dissolved to provide contaminant removal
- Splits water to form hydroxide (OH<sup>-</sup>), hydrogen gas, oxygen gas
- Dissolved anode metal scavenges oxygen from mine water, causing reducing conditions

#### Why Amprey is Useful

Amprey is a simple, compact, and practical up flow electrochemical cell that functions irrespective of the conductivity of mine water. Amprey removal of dissolved metals cannot make contaminants go away, but does result in the next best thing: a small quantity of solid cake is produced that is easy-to-dewater and non-leachable (TCLP). Unlike lime or biological mine water treatment processes that stop working as temperatures approach freezing, Amprey operates at any temperature and at any scale.

#### For more information, please contact:

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