Contaminant Generating Activities at US Magnesium

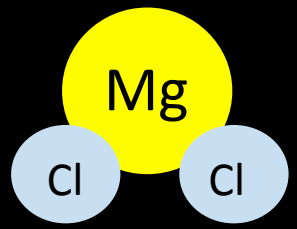
Documents used:

- US Magnesium Superfund Site-- Community Involvement Plan
- US Magnesium Region 8_US EPA
- US Magnesium, Community Advisory Group Informational Presentation, June 19, 2014

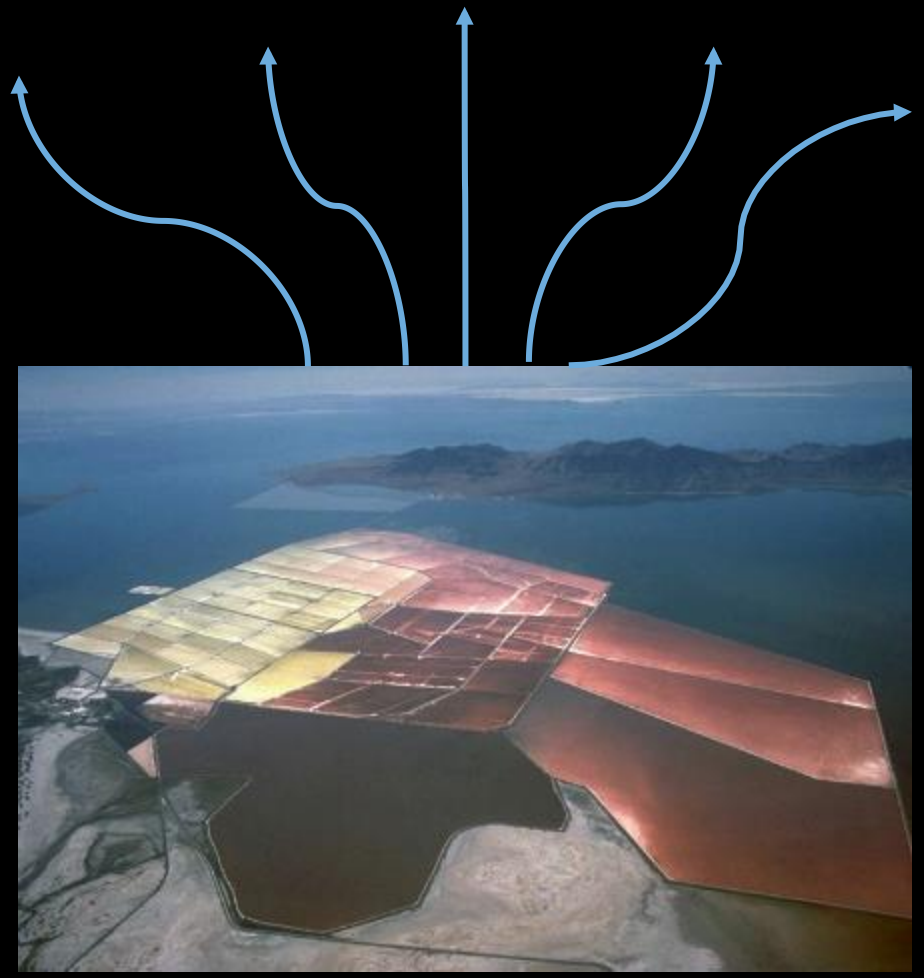
Phase 1A Attachment 10B Site Photographs

Uses of Magnesium (Mg)

Aluminum Alloy



Salt from the GSL transported in canals



Salt water (brine) is concentrated in evaporation ponds

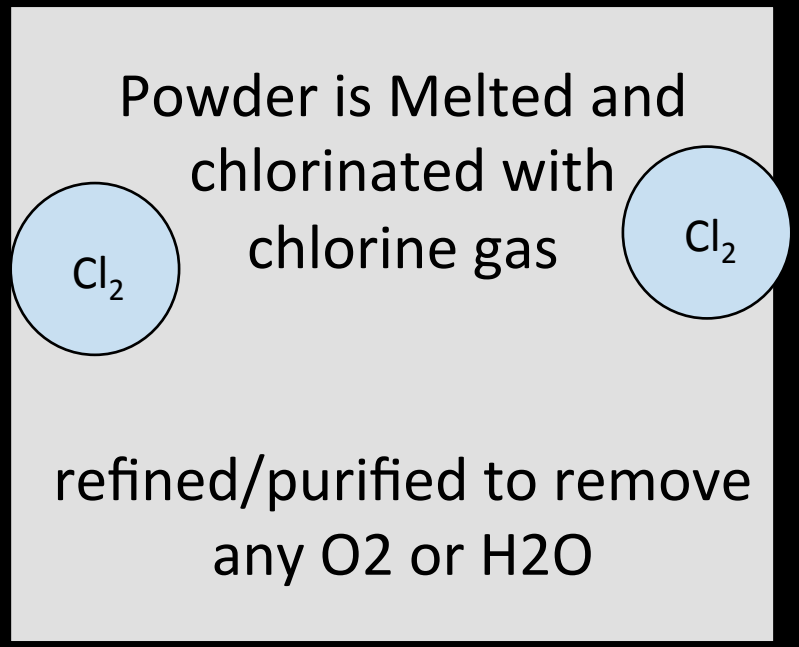
Once at the right concentration, brine is pumped into an underground tank and stored

Remove Sulfate:
$MgSO_4 + CaCl_2 \rightarrow CaSO_4(s) + MgCl_2$

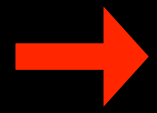
Brine is spray dried resulting in anhydrous magnesium chloride

Dry powder is stored

Melt Reactor

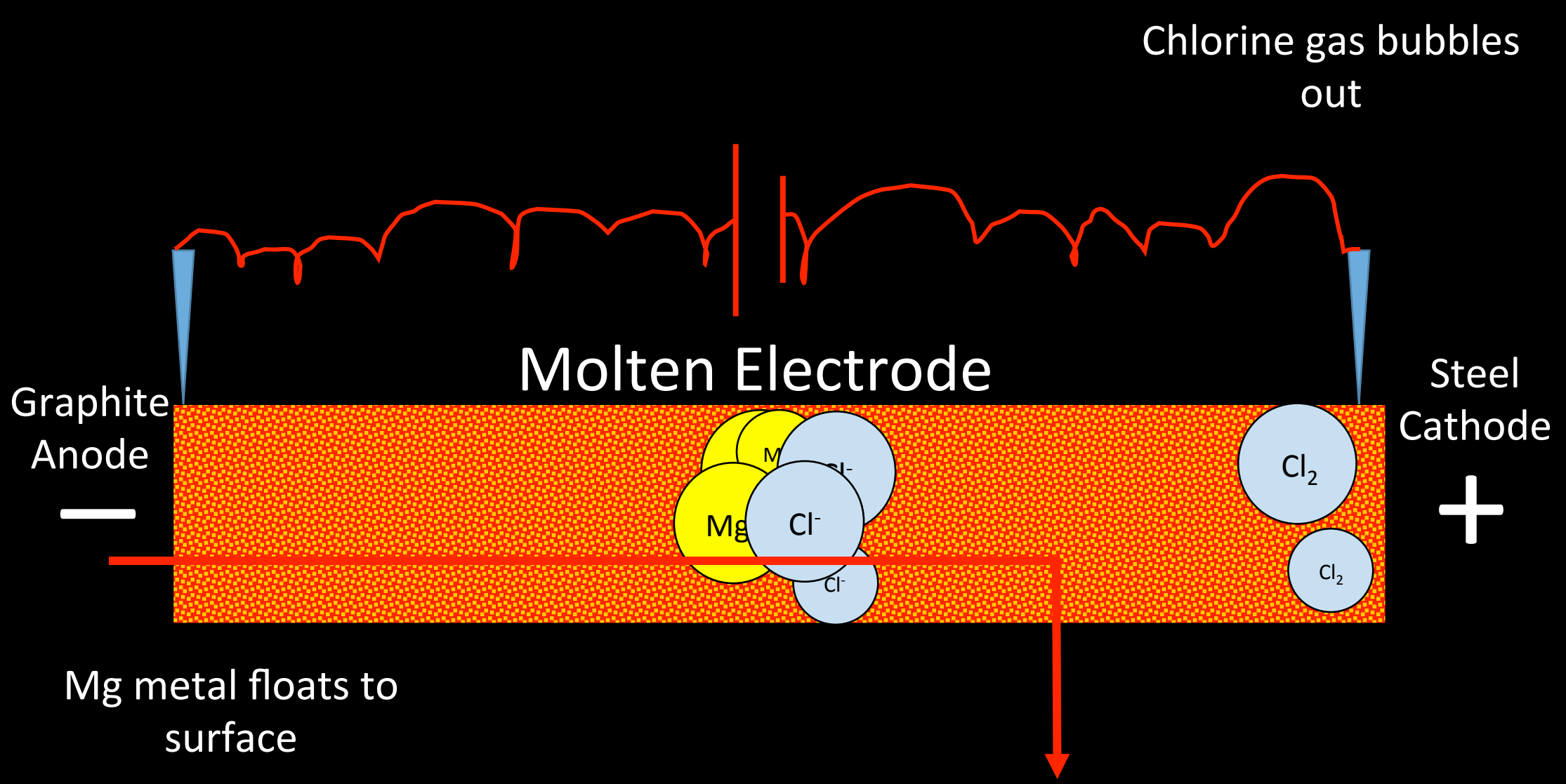


Uncontrolled releases of chlorinated hydrocarbons (VOCs)

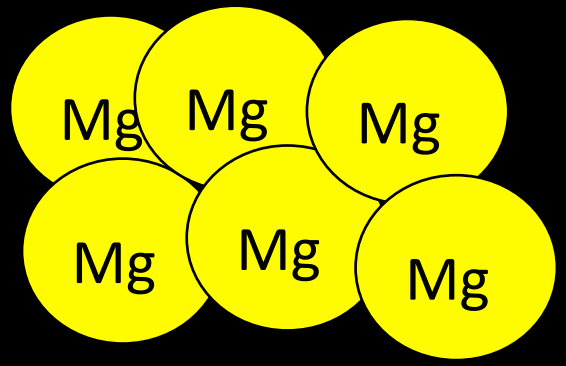


Electrolysis

Molten Salt = 94% MgCl



Degradation of graphite in anode provides the carbon for HCBs
-Generation of contaminated dust



- Molten magnesium is removed via vacuum suction twice a day into a mobile pressure vessel
- Magnesium is casted, cools and hardens
- Low density and high strength