

Insert: World Watch STD Paper: Moran, Reichelt-Brushett, & Young

Because detailed chemical data for metals tailings disposed at sea are generally not made public by industry, we can only make educated guesses on the concentrations and tonnages. As reported in our paper, officials of the Batu Hijau Mine refused to make public such data, hence we have estimated quantities dumped using the reported tailings disposal rates from Batu Hijau and the basic concentration data for similar tailings from the Grasberg Mine in Indonesia (see assumptions below).

More than 50 million tons of tailings per year, which is equivalent to the contents of more than **128.5 million barrels per year**, are discharged into the ocean from the Batu Hijau Mine. Over the proposed *25-year life*, this one mine will dump **more than one billion tons of tailings contaminants**.

From another perspective: in the roughly 15 minutes it would take to read our World Watch article, this mine will dump approximately 1460 tons of contaminated mine wastes containing 123 tons of powdered metals directly into the Indian Ocean off the coastline of Sumbawa, Indonesia. Does this not constitute massive ocean dumping of toxics by any reasonable standard?

This is from one mine, but several additional operating mines employ submarine tailings disposal (STD), and international corporations are pushing for many more. If such volumes were considered “industrial wastes”, such dumping would theoretically be forbidden by the International Law of the Sea. As mine wastes, however, they are presently ignored by such international regulation.

Marine Tailings Disposal—Representative Volumes.

Constituent	Tailings Solids Analysis mg/kg (dry)	Metals Dumped Per Day (kg/day)	Metals Dumped Per Year (kg/year)
Al	28,900	3,641,400	1,329,111,000
As	49	6174	2,253,510
Cd	0.33	41.6	15,176
Cu	6,600	831,600	303,534,000
Fe	56,600	7,131,600	2,603,034,000
Pb	30	3780	1,379,700
Mn	1,400	176,400	64,386,000
Hg	0.01	1.26	459.9
Se	3	378	137,970
Zn	200	25,200	9,198,000
pH (slurry)	11.13 (units)		
Total Suspended Solids (slurry)	558,584 (mg/L)		

Assumptions:

- 1) 140,000 tpd tailings disposed, as at Batu Hijau, Indonesia.
- 2) Tailings concentrations from Grasberg (2000) data [IIED, 2002].