

White Pine Copper Mine Proposals

Components	Proposal name			
	Option A	Option B	Option C	Option D
Mine information				
Location	46.76° N, 89.56° W	46.76° N, 89.56° W	46.76° N, 89.56° W	46.76° N, 89.56° W
Method	Open pit	Open pit	Underground	Underground
Estimated life span	25 years	20 years	35 years	122 years
Estimated number of new jobs	50	130	110	60
Maximum mine surface area	3 km ² (1.2 sq miles)	8 km ² (3.1 sq miles)	0.6 km ² (0.23 sq miles)	0.6 km ² (0.23 sq miles)
Maximum mine depth	0.5 km (0.3 miles)	0.8 km (0.5 miles)	1.4 km (0.9 miles)	2 km (1.2 miles)
Total amount of ore* to be mined	44.3 million mt	85 million mt	125 million mt	200 million mt
Ore* extraction rate	5,600 mt/day	65,000 mt/day	10,000 mt/day	4,500 mt/day
Mining waste				
Size of waste rock pile	1.2 km ² (0.46 sq miles)	3.1 km ² (1.2 sq miles)	1.4 km ² (0.54 sq miles)	0.17 km ² (0.07 sq miles)
Amount of AGR	86 million mt	155 million mt	94 million mt	25 million mt
Amount of non-AGR	320 million mt	544 million mt	352 million mt	95 million mt
Dust	43.7 mt/day	524 mt/day	32.5 mt/day	16.3 mt/day
Milling waste				
Estimated amount of tailings produced	48 million mt	100 million mt	160 million mt	275 million mt
Total surface area of storage ponds	Not applicable	19.3 km ² (7.5 sq miles)	25.2 km ² (9.7 sq miles)	36 km ² (13.9 sq miles)
Maximum storage pond dam height	Not applicable	23 m (75.5 feet)	18 m (59.1 feet)	28 m (91.9 feet)
Dust	29.1 mt/day	321 mt/day	78 mt/day	35.4 mt/day
Smelting waste				
Amount of slag produced	0.67 million mt	1.27 million mt	1.87 million mt	3 million mt
SO ₂ gas	1,879 mt/day	21,817 mt/day	3,356 mt/day	1,510 mt/day
Waste management plan				
Overburden	Stored in piles near pit; used to refill pit after closure	Stored in piles near pit; used to refill pit after closure	Stored in piles near pit; used to refill pit after closure	Stored in piles near pit; used to refill pit after closure
Tailings	Emptied into Lake Superior	Stored in lagoons	Stored in lagoons	Stored in lagoons
Slag	Sold for concrete production, road construction, and sandblasters	Stored in piles near pit; used to refill pit after closure	Sold for concrete production, road construction, and sandblasters	Stored in piles near pit; used to refill pit after closure
Mine water	Discharged into rivers (no treatment)	Trapped and treated; sludge buried underground	Discharged into rivers (no treatment)	Trapped and treated; sludge buried underground
Dust	None	Gravity collectors	Gravity collectors	None
SO ₂ gas	Wet scrubbers	None	Wet scrubbers	None
Expenses				
Personnel	\$56,000/job	\$54,000/job	\$59,000/job	\$62,000/job
Mining (removing ore)	\$300/mt of ore	\$350/mt of ore	\$550/mt of ore	\$625/mt of ore
Milling (separating minerals)	\$130/mt of ore	\$115/mt of ore	\$125/mt of ore	\$140/mt of ore
Refining (smelting and electrolysis)	\$1,000/mt of ore	\$1,000/mt of ore	\$1,000/mt of ore	\$1,000/mt of ore
Waste management	\$300/mt of ore	\$325/mt of ore	\$325/mt of ore	\$300/mt of ore
Mine closure	\$1 million/km ² of surface area	\$1.2 million/km ² of surface area	\$1.4 million/km underground	\$1.6 million/km underground

Note: AGR = acid-generating rock; mt = metric ton = 1,000 kg (2,205 lb); SO₂ = sulfur dioxide.

*Ore = Rock with copper in it