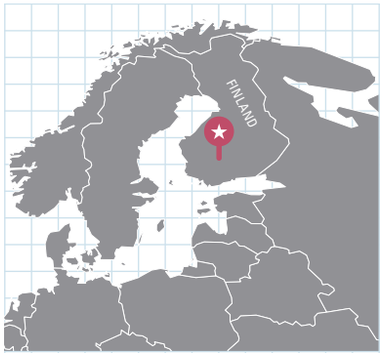
Pyhäsalmi



Location	Finland
Ownership	100%
Type of mine	underground
Primary metal	copper
Secondary metal	zinc
End product	copper and zinc concentrate
Expected mine life	2018
Average reserve	copper – 1.1% zinc – 2.2%
Infrastructure	close to roads and rail connection at property
Employees	219
Contractors	45

Business structure
Pyhäsalmi Mine Oy is a wholly owned subsidiary of Inmet Mining incorporated under the laws of Finland. Its main asset is the Pyhäsalmi copper and zinc mine.

Pyhäsalmi's mining concession consists of two leases:

- a mining lease of 59.2 hectares, covering all the surface expression of the ore body and the mine itself
- an auxiliary lease of 352.4 hectares, covering all other areas used for mining purposes.

Pyhäsalmi holds both mining concession leases and holds over 3,000 hectares of other exploration claims throughout Finland.

About the property
The Pyhäsalmi mine is in central Finland, four kilometres southeast of the town of Pyhäjärvi, on Lake Pyhäjärvi:

- it is within a two-hour drive from the cities of Oulu, Jyväskylä and Kuopio and their airports
- a rail spur joins the mine to the national network
- the rail spur also joins the mine to the port of Kokkola, 170 kilometres to the west on the Gulf of Bothnia.

Physical characteristics of the deposit
The Pyhäsalmi deposit is a copper-zinc volcanogenic massive sulphide deposit of Proterozoic age:

- the mineralization is hosted by altered felsic and mafic volcanic rocks
- the enveloping alteration zone is at least four kilometres long and one kilometre at its widest point. Alteration of the felsic volcanic rocks includes sericite and cordierite dominated mineralogies. Cordierite, anthophyllite and garnet dominate in the altered mafic volcanic rocks
- the metamorphic grade is upper amphibolite facies.

Geology
The upper part of the Pyhäsalmi deposit was mined between 1962 and 2001 and is now depleted.

Deep drilling in 1996 by Outokumpu Oyj (the previous owner) led to the discovery of an extension to the deposit below the +1050 metre level.

The newer deep deposit is located between the +1050 metre level (from surface) and the +1416 metre level:

- maximum dimensions are 420 metres long and 200 metres wide
- the inner part of the lens consists of massive pyrite with low copper and zinc values. This core is surrounded by massive chalcopyrite-pyrite and the outer rim consists of massive sphalerite-pyrite
- the main sulphide minerals are:
  - pyrite (65 percent)
  - chalcopyrite (three percent)
  - sphalerite (four percent)
  - pyrrhotite (three percent)

The ore is very coarse grained.

Environmental
The Pyhäsalmi site consists of mine infrastructure, processing facilities, administrative offices and warehouses, yards, concentrate storage facilities, an abandoned open pit, quarry and tailings storage facilities. Pyhäsalmi received its environmental permit in the fourth quarter of 2007. This permit reflects the European Union Integrated Pollution Prevention and Control environmental regulatory framework that has been incorporated into Finnish environmental legislation.

We discharge treated process water into Lake Pyhäjärvi. Industrial discharges from Pyhäsalmi and other private and municipal entities into the lake have locally led to development of pockets of elevated dissolved solids. Pyhäsalmi, as part of its Environmental Permit and in conjunction with other entities, has developed a conceptual plan to address these conditions should they be exacerbated.

When the mine is closed, the main activity will be rehabilitating the surface area. This includes covering and re-vegetating the tailings impoundments. The need for long-term water treatment will be evaluated once the mine is decommissioned. A closure cost estimate of $33 million was developed internally during the purchase of the mine by Inmet in 2001 and is the basis for our corporate accrual. The plan and cost estimate will be updated in 2009. Financial assurance of €1.2 million is currently held by the North Ostrobothnia Regional Environment Center, one of 13 regional environmental aministration units of the Government of Finland.

Mining method
Pyhäsalmi uses non-entry, bulk open-stope mining methods in a primary-secondary sequence. On average, stope size varies from 50,000 tonnes for narrow primary stopes to 200,000 tonnes for wider secondary stopes.

PRODUCTION

		2009 objective	2008 results	2008 target	2007 results	Change (target to 2008)	Change (2007 to 2008)
Tonnes of ore milled (thousands)		1,370	1,406	1,370	1,377	+3%	+2%
Tonnes of ore milled per day		3,750	3,850	3,750	3,770	+3%	+2%
Grades (percent)	copper	1.0	1.0	1.0	1.0	–	–
	zinc	1.9	2.2	2.5	3.1	-12%	-29%
	sulphur	42	42	41	40	+2%	+5%
Mill recoveries (percent)	copper	94	95	94	96	+1%	-1%
	zinc	87	91	90	92	+1%	-1%
Metal production (tonnes)	copper	13,000	13,300	13,000	13,600	+2%	-2%
	zinc	22,600	27,800	30,900	38,900	-10%	-29%
	pyrite	510,000	565,000	505,000	485,800	+12%	+16%
Cost per tonne of ore milled (C $)		$41	$42	$36	$36	+17%	+17%

Continues to improve efficiencies by increasing mine and mill production

Pyhäsalmi had record throughput in 2008, processing more than 1.4 million tonnes of ore through the mill. The mill had a record 96 percent availability.

Copper production in 2008 was slightly higher than plan.

Zinc production was lower than we planned and lower than 2007 because changes in stope sequencing resulted in lower grades.

Pyrite production increased to 565,000 tonnes to take advantage of high demand.

We purchased a rock bolter, cable bolter and a production front-end loader in 2008. The rock bolter and cable bolter are critical to safe efficient support installation, since ground support requirements have increased with the increased ore body extraction.

We replaced the corroded copper rougher and scavenger cells with new units. The zinc cells will be replaced in the near future.

Outlook for 2009

Pyhäsalmi expects to mine 1.4 million tonnes of 1 percent copper and 1.9 percent zinc in 2009, and produce 13,000 tonnes of copper and 22,600 tonnes of zinc. We expect zinc grades will be lower than in recent years because mining stopes will be further from the zinc-rich ore body contact. We have reduced stope sizes to an average of 63,000 tonnes to improve stope stability and add flexibility to the mine plan. Sixty-five percent of the stope tonnes will come from secondary stopes in 2009.

Pyrite sales are beneficial to the financial performance of Pyhäsalmi and we will continue our efforts to enter long-term markets in Europe and Asia. We made important gains in the Chinese market in 2008.

Waste pass stability was a concern in 2008, as the present system created occasional blockages in the raise. In 2009, we will review various options for developing a waste pass from the surface in an area of reduced ground stress and better rock quality. This should improve the integrity of the waste pass and reduce groundwater infiltration.

PLANNING FOR THE FUTURE

We expect zinc grades to increase to approximately 2.5 percent in 2010 and 2011, once we have finished with the low-grade zinc production.

In anticipation of more challenging ground conditions as the mine matures, Pyhäsalmi has developed a sophisticated management system for ground control that includes seismic sensors throughout the mine, and modelling programs to analyze data.

Pyhäsalmi also continues to use automation effectively. Production drills can now be operated remotely, removing the operator from the danger posed by automated loading equipment in the vicinity. There will continue to be a requirement for greater ground support as extraction of the ore body progresses. Acquiring a rock bolter with screen handling capability and a cable bolter will speed up the installation of this support to keep up with the expected needs. We also reduced stope heights to lower the risk of stope caving, oversized boulders, and to lower the height of backfill exposures.

We expect to spend $1.6 million on exploration at Pyhäsalmi in 2009, focusing on drilling out from the existing development and drilling and evaluating its current exploration claims. We also expect to spend another $1.2 million on greenfield exploration in Finland.