

# Troilus



The 87 open pit.

Troilus is an open pit gold mine in northwestern Quebec.

Quick facts:			
<b>Type of mine</b>	Open pit gold and copper.	<b>National employees</b>	250
<b>Ownership</b>	100%	<b>Female employees</b>	17
<b>Inmet's gross sales</b>	10%	<b>Donations to the local community</b>	C\$26,000
<b>Opened</b>	1995	<b>Contributions to the local economy<sup>1</sup></b>	C\$39,900,000
<b>Expected closure</b>	2009	<b>Methods of waste disposal</b>	Tailings disposal in an engineered impoundment. Waste rock and overburden stored in surface dumps.
<b>Land owned</b>	1,365 hectares		
<b>Land disturbed</b>	737 hectares	<b>Emergency Preparedness and Response Plan (EPRP)</b>	Yes (not consistent with MAC <sup>2</sup> guidelines).
<b>Distance from nearest town</b>	120 kilometres north of Chibougamau, Quebec, Canada. 170 kilometres northwest of Mistissini, Quebec, Canada.		
<b>Main activities in surrounding area</b>	Recreational, wilderness, fishing, subsistence hunting.	<b>Tailings management system</b>	No (in progress following MAC guidelines).
<b>Employees</b>	250	<b>Tailings Operations, Maintenance and Surveillance (OMS) manual</b>	No (in progress following MAC guidelines).
<b>Unionized employees</b>	0		

<sup>1</sup> Contributions to the local economy include the local purchase of goods and services, and total payroll (GRI Indicators EC3 and EC5).

<sup>2</sup> MAC is The Mining Association of Canada.

## Troilus

Troilus safety performance increased significantly in 2006 and they also reduced spills of petroleum and improved tailings management performance.

### Safety and health

Troilus' safety performance improved significantly in 2006. Lost time injury frequency decreased 37 percent from 2005 and disabling injury frequency decreased 4 percent. Troilus was able to achieve these results even with underground mining contractors working extensively on a ramp from the open pit for three months. Contractor safety performance was good in 2005 and remained good in 2006. Troilus was able to decrease employee lost time injury frequency by 44 percent and severity by 83 percent.



Working with environmental samples in the Troilus lab.

Increased on-site coaching by safety professionals and a re-emphasis on reporting and investigating incidents and injuries helped achieve these improved results. Troilus reported more incidents, first aid cases and other leading safety indicators in 2006 as a result of increased safety awareness. They also hired new staff in the mill who were able to provide more depth, leadership and coaching to the operation's health and safety function. Inmet's improved accident investigation form also paid dividends at Troilus by helping supervisors identify root causes.

Troilus's new risk-based safety training program, *formule de supervision*, was implemented with all supervisors. Troilus was able to put a program in place quickly by customizing a program already developed by the Quebec Mining Association. *Formule de supervision* builds on the five step program approved by the safety task force (see page 11 of our sustainability report for more information), and teaches supervisors to use risk-based thinking in their duties.

During a small rock fall in the J4 pit in November, Troilus learned that they needed to clarify the roles and responsibilities and notification protocols in their emergency preparedness and response plan. The plan has been improved to address these areas and will be tested in 2007.

### Environment

Troilus' environmental performance in 2006 was the best in their 11-year history. The total number of environmental incidents was 24, a decrease of 47 percent from 2005. Reportable environmental incidents declined to 13 from 22 in 2005, a reduction of 41 percent. Reportable incidents included five permit exceedances for total suspended solids in surface water, six spills of petroleum, one tailings spill and one spill of ethylene glycol.

Most of the reduction in total and reportable spills at Troilus is due to a dramatic reduction in the number of petroleum spills at this operation. Historically, most petroleum spills at this location have resulted from hydraulic hose breaks on heavy mining equipment. Preventative maintenance has helped reduce the frequency

### Location and characteristics



Troilus is an open pit gold and copper mine, located 175 kilometres from Chibougamau in a remote area of Northern Quebec. Workers live on-site away from their families on two different shift schedules, either four days on/three days off, or seven days on/seven days off.

Approximately 14 percent of them are Cree, although the mine works diligently to increase that number through recruiting activities in the surrounding Cree communities of the region. One family lives within one kilometre of the mine.

As an open pit mine, Troilus' footprint is considerably larger than our underground operations, and covers 737 hectares. The area around the mine is largely boreal forest wilderness that is commercially logged. Ore is milled on-site and concentrate is transported by truck to the railhead in Chibougamau. Concentrate is shipped overseas from there for smelting.



*Celebration during "Aboriginal Day" at Troilus. Teepee and plaque established by Troilus to commemorate the life and contribution of Sam Awashish. Mr. Awashish's family lives 1 kilometre from the mine.*

of these breaks, and the mine department has done an excellent job of training employees to stop their equipment if they suspect something is wrong. These measures are reducing the number of catastrophic hose failures and the number of spills that result from them.

Although we are pleased that Troilus had only one tailings spill in 2006 (three fewer than in 2005), our goal is to have no tailings spills. Troilus's operations, maintenance and surveillance manual will be finished in early 2007 and will help them achieve that goal by formalizing tailings management, maintenance and inspection procedures.

Fugitive dust continues to be a challenge at this site. To help prevent the problem, Troilus has purchased a dust chute for the ore stockpile and will finish installing it in 2007. Once it is installed, the operation will evaluate the effectiveness of the chute and whether any additional steps are necessary.

Troilus is subject to the Canadian government's *Fisheries Act* Metal Mining Effluent Regulations, and completed their first round of environmental effects monitoring fieldwork in September 2005. The data gathered has been analyzed by a third-party consultant who specializes in this work and who has concluded that there is no statistical difference in fish species or morphology between the background monitoring location and the water where Troilus discharges treated effluent – a very positive result.

As part of Inmet's corporate safety, environment and community affairs management system, Troilus underwent an environmental compliance audit in August. The audit results showed a dramatic improvement from Troilus's last audit in 2004, particularly in terms of the number of outstanding and uncorrected items. The audit identified 21 exceptions from regulatory compliance and 23 good management practice issues. Although we take all instances of regulatory non-compliance seriously, the exceptions identified in this audit were less serious than the exceptions in 2004, with one-third of this audit's exceptions relating to management of petroleum products that can be readily corrected. We're pleased with Troilus' improvements in compliance and believe they result directly from the operation's renewed focus on the details of compliance.

## Community affairs



*The Troilus fire fighting team.*

In 2006, Troilus continued to build their community affairs program through dialogue with the Cree of Mistissini. Much of the operation's contact with the Cree community is formalized through the Troilus implementation committee, made up of three representatives from Inmet, three representatives nominated by the Cree Band Council, and the Troilus Cree Coordinator. The committee met three times in 2006 and discussed employment, environmental issues and the future of Troilus.

As a demonstration of our commitment to transparency, Inmet invited the science advisor for the Cree Regional Authority, Alan Penn, to attend our environmental compliance audit of Troilus as an observer. We did this in an effort to build trust with an important local community, and to provide them with a better understanding of how we monitor and manage environmental compliance.

The authors of the case study on the Troilus impact and benefit agreement interviewed 74 individuals and six groups from the mine and the community in 2006, including: 40 former and current Cree employees, 11 current non-Cree employees, seven former and current Troilus management representatives, seven current and former representatives of the Cree Nation of Mistissini, four former and current Troilus Cree Employment Coordinators and five current and former representatives of Cree and non-Cree contractors. As part of the interview process, families particularly impacted by Troilus identified issues of concern that were beyond the scope of the case study. A special meeting was held with Troilus management so the families could voice their questions and concerns. Troilus responded to these concerns and is following up on those that could not be fully addressed at the meeting.

Troilus (cont'd)

Troilus continued its efforts to enhance a good relationship with the Cree of Mistissini in 2006.



The 87 pit at Troilus.

**2006 Objective**

**2006 Results**

**2007 Target**

- Develop and implement a formal community engagement and dialogue plan and hold at least one community meeting in Chibougamau.

✘ Troilus did not meet this objective.

- Develop and implement a formal community engagement and dialogue plan and hold at least one community meeting in Chibougamau and Mistissini.

- Return health and safety performance to its historic excellence. To achieve this objective Troilus will develop and implement a risk-based training program (*formule de supervision*) for all employees.

- ✔ Troilus met this objective.
- ✔ Lost time injury frequency for 2006 was 0.9, which is the operation's long-term average, and 53 percent below 2005 levels. Severity was 36, well below their long-term average of 100 and 81 percent below 2005 levels.
- ✔ Troilus implemented the risk-based training program, *formule de supervision*.

- Troilus will implement a Safety Card System to strengthen the risk-based training program (*formule de supervision*).

- Improve tailings management performance.

- ✔ Troilus met this objective.
- ✔ Troilus had one tailings spill in 2006, three less than in 2005. It also made substantial progress in developing its tailings operations, maintenance and surveillance manual.

- Complete full implementation of the tailings operations, maintenance and surveillance manual.