

Since 1987, GSI Environment is the wholly owned business unit of EnGlobe Corp. specializing in Organic Waste Management (OWM) services. These services include the provision of environmental services such as land application, composting or disposal of organic wastes as well as agricultural and horticultural product sales in Quebec and Ontario. GSI has operating locations in Ontario and Quebec and has eight composting facilities all located in Quebec. GSI manages approximately 800,000 metric tons of organic waste annually through direct land application and composting facilities.



SITE REMEDIATION FORMER MINING SITE

CLIENT

Association of the owners of the former Quebec Copper Mines (Bolton, Eastern Townships).

MANDATE

Permanent remediation of the mine tailings area. The Quebec Copper mine closed in 1957.

PROBLEMS

- 6 ha surface of mine tailings, light generator of acid mine drainage
- Near residences, water sources, and a lake
- Problems of wind and water erosion
- Excessive sedimentation in ditches and water sources
- Unable to establish a permanent vegetation cover

PROJECT SUMMARY

Phases:

- Agreement between the owners and GSI Environment
- Characterization of mining residues
- Obtaining the authorizations required by the municipality and the ministère du Développement durable, de l'Environnement et des Parcs (MDDEP)
- Neutralization of the mining residues at the surface (25 cm) by adding liming agents
- Installation of a 70 to 100 cm thick impervious membrane containing de-inking residues from paper recycling
- Addition of a 30 to 40 cm layer of soil (sand and/or silt) to cover the low permeability membrane
- Amendment of the soil layer by using compost made of bark and municipal biosolids
- Year 1: Herbaceous species seeds spread
- Year 2: Forest species planted

Duration: May 2002 to July 2005

RESULTS

- Drastic reduction of environmental problems related to erosion and acidic leachate
- Significant improvement of the site's aesthetic
- Remediation costs reduced due to use of de-inking residues and other residual matters
- Enhancement of the site's value



Aerial view before remediation



Aerial view after remediation



A layer of earth is placed over the low permeability membrane

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