

MT. MCKAY WASTEWOOD LANDFILL CLOSURE

Bowater Inc.

Thunder Bay, Ontario



Project Description

In 1998 and 1999, KGS Group developed a closure design for a woodwaste landfill situated in a variable hydrogeologic setting in Thunder Bay, Ontario. The closure required control of leachate migrating into shallow and deep aquifer systems. Landfill leachate had been detected off-site in groundwater both in the unconfined aquifer near surface silty sand aquifer and in the deeper confined bedrock aquifer. The closure design objectives included control against future off-site migration of leachate and remediation of past impacts. A 3-dimensional groundwater flow model was applied as a practical design tool to optimize the closure design for a landfill located within multi-layered hydrogeologic flow regimes. The main components of the project consisted of site preparation, surface drainage improvements, landfill regrading, clay and topsoil supply, forcemain installation, civil, mechanical and electrical works, a highway culvert crossing, river crossing by directional drilling, bedrock well installation, and revegetation of the site. KGS Group led the project through a cooperative design and review process involving multiple stakeholders including the client, a first nation community and technical, legal and regulatory representatives. Construction costs for the landfill closure were approximately \$5.0 million.

KGS Group provides ongoing monitoring services to Bowater and an annual post closure compliance report to the Ministry of the Environment.