



OCWA helps with rehabilitation efforts at Kam Kotia Wastewater Treatment Plant

The challenge

The Kam Kotia Mine site was originally opened in the 1940's as a copper mine. During its time in operation, approximately 6 million tonnes of unmanaged acid-generating tailings covered more than 500 hectares of the site. As part of a rehabilitation plan to restore the site and surrounding area, the Kam Kotia Wastewater Treatment Plant (KKWTP) was constructed by the Ministry of Northern Development, Mines and Forestry. The treatment plant operates under two Certificates of Approval: one for the Industrial Sewage Works and one for air, which is required for the lime silo.

Making it happen

OCWA staff operates all aspects of the treatment process of the facility and also monitors the tailings impoundment areas for overflows. OCWA collects samples from these and an extensive system of groundwater wells. A comprehensive sampling program of local waterways is also undertaken to help MNDMF determine the effects of the runoff and treatment process.

The process:

- ◆ Runoff from the tailings areas collected and treated in four-step lime softening/saturation process using lime polymer to separate the metals and CO₂ gas for pH correction.
- ◆ Raw water pH starts below 3 and raised to 10.5 using lime to drop out metals - corrected to 7.5 using CO₂ gas before discharged back to environment.
- ◆ Heavy metals collected and separated in final clarifier and sludge pumped to separate containment area.

HIGHLIGHTS

CLIENT:

Ministry of Northern Development and Mines

AREA SERVICED:

Kam Kotia River and lake area, approximately 25 km north of Timmins, ON

WATER USE CHARACTERISTICS:

FACILITIES:

Kam Kotia Wastewater Treatment Plant

NOMINAL DESIGN CAPACITY:

1,500 (m³/day)

TOTAL ANNUAL FLOW:

422,609 (m³/year)

AVERAGE DAILY FLOW:

1,761 (m³/day)

MAXIMUM DAY FLOW:

2,109 (m³/day)



Where we are today...

In 2013, OCWA was chosen to add a CO₂ effluent treatment system for the Kam Kotia Wastewater Treatment Plant. The addition of the CO₂ plant was required due to an amended Certificate of Approval for the KKWTP which required the effluent from the plant to maintain a pH level between 6.5 and 8.5; CO₂ is used to control the pH levels.

The CO₂ plant build consisted of:

- ◆ CO₂ dissolution Tank; Pumping Reservoir (c/w 2 submersible pumps); pH control skid; Pump control panel; associated pH meters, sensors and alarms; piping and electrical work; hook up of CO₂ supply tank to current treatment system; integration of CO₂ system into current WTP SCADA system.
- ◆ OCWA also provided start-up assistance and as-built drawings for the CO₂ system and supplies the bulk CO₂.

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