

# Sustainability Success Story

## Finding the Solution to Mercury Pollution

### The Challenge

Mercury is a necessary part of energy efficient fluorescents and high intensity discharge (HID) lamps. Fluorescent lamps provide essentially all our lighting at Kwantlen's classrooms, halls, cafeterias, offices and washrooms. HID lamps, which include metal halide and high pressure sodium lamps are used for our gym, older shops, parking lot lights, walkways and floodlights.



Each lamp (including Compact Fluorescents) has about 5 mg. of Mercury, a potent toxin that typically ends in the landfill. Lamps broken enroute release Mercury vapour that may be even more harmful to humans and their environment (lamps also contain glass, rare earth powders, and lead).

Even though mercury in fluorescent lamps is a problem. The largest man-made source of mercury in the atmosphere is fossil fuel combustion. Electricity from fossil fuels (the main electric generation method) contributes more mercury to the environment (overall) when incandescents are used.

### Our Solution

Since 1995 Kwantlen University College has shown our commitment to good citizenship and sustainability by voluntarily paying to have our fluorescent and HID lamps disposed of by a proper recycling company (photo at left). This ensures safe handling and disposal of the material

We have approximately 45,000 lamps (of both types) on our campuses and every year send approximately 7,000 lamps for recycling. This avoids approximately 32 grams of mercury going to the landfill and/or being spilled en route. While 32 grams may not seem a large amount, this amount of the potent toxin can contaminate a 32 hectare lake. Proper management of old lamps minimizes adverse impacts in our campuses and the community.

Of the total life cycle operating costs of about \$45 for a fluorescent lamp, proper disposal is the least expensive of these costs: purchasing (\$2), installation (\$3), electricity for operating (\$40), proper disposal (less than \$1).

### Project Cost, Annual Savings and Other Benefits

<i>Costs</i>	\$5,000 (@ 7,000 lamps)
<i>Reduced Environmental Mercury</i>	32 grams of mercury not available to contaminate soil or water
<i>External Stakeholder Benefits</i>	Various health problems minimized through less environmental (mercury) pollution.
<i>Other Benefits</i>	Demonstrates Leadership, Commitment, the Sustainability Process, improved Risk Management benefits.