Background information

• The Waterloo landfill opened in 1972 and is the only operating landfill in Waterloo Region.
• Our Waste Management Centre is approximately 126 hectares and includes a recycling centre, transfer station, household hazardous waste depot and a waste diversion area.
• The Waterloo landfill will reach capacity in 15 to 20 years. When full, the site will hold 15 million cubic metres of garbage.
• In 2014:
  • approximately 174,700 tonnes of garbage were landfilled;
  • residents recycled 34,000 tonnes of blue box materials; and
  • approximately 52 per cent of residential waste was diverted.

Methane gas and climate change

• Methane is one of the most powerful greenhouse gases. These gases contribute to climate change.
• Methane gas is colourless, odourless and tasteless.
• Methane has 21 times the impact of carbon dioxide. (http://www.ec.gc.ca/gdd-mw/default.asp?lang=En&n=6F92E701-1)
• Methane can be explosive in the range of 5 to 15 per cent in the atmosphere.

Did you know?

How fast garbage decomposes depends on:
• Type of waste (what’s actually in the garbage)
• Moisture level
• pH levels
• Temperature

How is landfill gas produced:

As garbage in our landfill slowly decomposes, landfill gas is generated. Landfill gas consists mostly of methane, carbon dioxide and nitrogen. Typically waste will produce landfill gas for approximately 25 years after it has been buried.

What is in landfill gas?

- Methane 55%
- Carbon Dioxide 40%
- Nitrogen 5%

Trace amounts (<.1%) of oxygen, sulphides and organics compounds are also present.
Energy from landfill gas

Landfill gas is collected using an extraction system that consists of trenches and gas wells installed within the landfill.

Underground pipes connected to the wells bring the landfill gas to the Region’s Blower Building and then to the Toromont Energy Plant.

This energy plant uses combustion engines to produce the electricity that is fed into the power supply grid. Between 4,000 and 6,000 homes in the area use the electricity produced from the landfill gas. Toromont Energy can supply up to 6,225 kilowatts of energy to the power grid.

Electricity production began in 1999.

Why do we collect landfill gas?

• To reduce odour, migration of landfill gases and greenhouse gas emissions.
• To use an energy resource productively.
• To offset energy production by other means (e.g. power plants, fossil fuel).

Did you know?

Canada is a world leader in the production and use of energy from renewable resources. Renewable energy sources currently provide about 17 per cent of Canada’s total primary energy supply.