Landfill Gas Remediation
Frequently Asked Questions

What are closed historical landfill sites?
There are over 160 closed historical landfills located across the City of Toronto that were closed more than 40 years ago. At present, the City of Toronto's Solid Waste Management Services Division is responsible for the post-closure maintenance of these inactive landfill sites.

What type of waste is in the closed landfill sites?
Closed landfills contain mostly municipal waste, construction waste, ash, and soil.

What is landfill gas and how does it move at closed landfill sites?
As waste breaks down inside the landfill it produces gases. Landfill gas is mostly made up of methane and carbon dioxide, with trace amounts of sulfides and non-methane organic compounds. The gas produced in the ground travels up and/or sideways through pores in the soil and is released to the air where it is diluted with fresh air. The amount of gas produced by closed landfill decreases over time.

How is landfill gas measured and monitored?
Landfill gas monitoring is accomplished using soil gas probes, which are small plastic pipes embedded in the soil. Probes are installed in the soil at various depths, usually anywhere from 5 to 20 meters deep, depending on conditions encountered. Closed landfill operations field staff use the probes to monitor below-ground soil gases using specialized instruments that connect to the probes. Probes are monitored a minimum of twelve (12) times per year (once per month). The City has been periodically monitoring probes at the closed Stan Wadlow landfill from 2005 to the present.

How can landfill gas affect health?
Methane and carbon dioxide, the two main components of landfill gas, are both colourless and odourless gases that displace oxygen in enclosed spaces. Health effects associated with both gases result from the lack of oxygen rather than toxicity of the gases, and can include reduced coordination, fatigue, and nausea. These health effects have rarely been reported from landfill sites. The other gas components are present only in trace amounts and are unlikely to be associated with adverse health effects. Active Venting Systems will collect and control landfill gas release through sheds located on the Waste Management Facility.

Are there risks from landfill gases? How are they being addressed?
The City of Toronto's Solid Waste Division monitors closed landfills. When warranted, the City implements mitigation measures such as gas venting to provide a preferential pathway for the gasses. The biggest concern associated with methane is its ability to accumulate in enclosed spaces and pose an explosion risk at certain concentrations.

How does the Active Venting System release gas?
Gas is released constantly from the surface of the closed landfill. Landfill gases can accumulate underground in the body of the waste and in soils near the waste. The Active Venting Systems will facilitate the collection and controlled release of landfill gas to prevent accumulation. Low concentrations of landfill gas will be collected through a fan and released through a pipe at the top of sheds located on the Waste Management Facility.

What approvals were obtained for this project?
The air and noise emissions anticipated from the projects went through detailed technical reviews by the Ontario Ministry of Environment and Climate Change (MOECC). The MOECC issued an approval for the projects, with conditions for the operation and maintenance of the equipment.

Will there be noise?
A small fan will run within each blower enclosure shed to collect the landfill gas and ventilate each shed.

Will there be odours from the landfill gas venting?
Odours are not expected and have not been encountered at similar sites operated by the City.

What happens to trees removed for this work?
To undertake construction and installation of the Active Venting Systems, 9 tree removals are required. The City is working with its Urban Forestry department to organize replanting and relocating established trees, to minimize impacts as much as possible.

For more information on Toronto's Solid Waste Management Services visit:
www.toronto.ca/garbage