

TORONTO STAFF REPORT

March 11, 2003

To: Work Committee

From: Barry H. Gutteridge, Commissioner, Works and Emergency Services

Subject: Notification Process for Old Landfills Program
All Wards

Purpose:

The purpose of this report is to amend existing guidelines and procedures that address risk management associated with old municipal landfill sites in the City of Toronto.

Financial Implications and Impact Statement:

There are no financial implications from this report.

Recommendations:

It is recommended that:

- (1) the guidelines and procedures addressing risk management associated with old landfill sites in the City of Toronto be amended to become revised guidelines and procedures dated March 4, 2003 attached as Appendix A to this report; and
- (2) the appropriate City Officials be authorized and directed to take the necessary action to give effect thereto.

Background:

On June 26, 27 and 28, 2001, City Council approved Clause No. 7 of Report No. 9 of the Works and Utilities Committee, entitled "Old Landfill Programs: Harmonized Policy, Guidelines and Procedures" and Clause No, 8 of Report No. 9 of the Works and Utilities Committee, entitled "Old Landfill Program: Site Investigation and Risk Assessment". The former report outlined a harmonized policy, guidelines and procedures program to be used in addressing risk management of old municipal landfill sites in the City of Toronto. The latter report was an "In-

Camera” report giving certain authorities to staff in dealing with issues related to private property adjacent to old landfills.

Comments:

WES staff is working in consultation with the Ontario Ministry of the Environment to gather all available information on all City owned or managed old municipal landfills in the City of Toronto, to identify and prioritize those sites requiring either remedial works, or the installation of monitoring wells and landfill gas probes to determine whether remedial works are required. Methane gas is a combustible gas present in landfill gas produced from decomposing waste. Remedial works at 27 landfill sites have either been completed or are underway. The City’s consultants have recommended the installation of additional landfill gas monitoring probes on private property adjacent to seven landfill sites to determine whether there is a risk of subsurface migration of methane gas into buildings. Facilities and Real Estate staff is assisting WES staff in obtaining easement agreements for the installation and monitoring of these probes on private property, however, the easement process has turned out to be very time consuming. It is necessary to request permission from property owners to enter their premises and monitor for the presence of methane gas, as an interim measure, until such time as the easement agreements are finalized and landfill gas probes are installed.

In December 2002, staff distributed letters to 44 owner/ occupants on Avon Avenue and Cayuga Avenue, in Ward 11, adjacent to the old Porter Landfill, requesting permission to monitor the air in their homes for the presence of methane gas. The letters yielded seven enquiries. Three requested staff to monitor their buildings, the monitoring has been completed and no methane gas was detected. Two others were resolved and two expressed concerns regarding responsibilities and occupant relocation costs if methane is detected. There needs to be clarification in our policies, guidelines and procedures to address owner/occupants concerns, in the unlikely event that methane gas is detected in excess of 10 percent of the Lower Explosive Limit (LEL) detected inside a building.

Clause 7 of Report No. 9 of the Works Committee as adopted by Council on June 26, 27 and 28, 2001, provides, in paragraph 2(iii), that:

“Should landfill methane be detected at 10 percent LEL or higher in the air in a building, the building should be evacuated immediately and permission from the land owner should be sought forthwith to provide remedial works as recommended.”

In order to address public concern and give residents at these locations more comfort, we recommend the following addition to the Guideline, paragraph 2 (iii):

“If monitoring staff confirm the presence of methane at 10% LEL or higher, the building occupant will be asked to vacate the premises and the Toronto Fire Department will be alerted immediately. Staff will follow confined space entry procedures as outlined in the Occupational Health and Safety Act and Regulations for Industrial Establishments. Measures to protect occupants and workers from the effects of potentially harmful gases

inside enclosed spaces such as buildings may include externally disconnecting electrical power sources and promoting building ventilation by opening windows and doors.

If the affected building is a residence or workplace, the City will provide appropriate alternate accommodation to the residents or workers at the City's cost, without any admission of liability, until the situation has been remedied or there has been a determination that the source of the gas is not City lands. If the affected building is not a residence or workplace, i.e. a garage or storage shed, the door(s) to the building will be temporarily removed and replaced with ventilated door(s) or additional ventilation will be provided, as deemed appropriate, at the City's cost and without any admission of liability."

Through Council's adoption of the "In-Camera" report contained in Clause No. 8 of Report No. 9 of the Works Committee on June 26, 27 and 28 of 2001, staff may authorize expenditures related to landfill investigations and remediation. Should relocation of occupants and/or ventilation work be required as outlined in this report, funding is available in the Capital Works Program under Perpetual Care of Landfills and staff may authorize such expenditures. In the unlikely event that additional funding is required as a result of such expenditures, additional funding will be sought in a future report to Council.

Prior to adoption of the In-Camera report by Council, Works Committee added the following:

"Staff will advise the Ward Councillor of the results of the investigation, remedial recommendations and public issues at sites in the respective ward. Notification to the Councillor will take place well in advance of any scheduled construction activities."

It also became apparent through the notification process at the old Porter Landfill site that councillors should be notified well in advance of any contact with the owners/occupants of properties adjacent to old landfills.

To ensure Councillors are fully informed of old landfill activities in their respective wards, we recommend the following addition to the Procedures:

"(1b) Staff will provide each ward councillor with the following:
- a map listing the locations of all known former landfills in their ward;
- a description of the monitoring activities currently taking place at each site;
- notification well in advance of any contact with owners/ occupants regarding investigations scheduled to take place at any landfill site within their ward.

This report has been prepared in consultation with the Legal Division.

Conclusions:

It is highly unlikely that any explosive levels of landfill gas will be present in buildings adjacent to old landfills since the majority of them were closed 40 to 50 years ago. Nonetheless, should

such a situation arise, the guidelines should give some indication of the City's commitment to notify and assist those affected.

It is recommended the guidelines for old landfills be amended as set out in this report.

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Attachment:

Appendix A – Old Landfill Program Policy, Guidelines and Procedures

APPENDIX A

Old Landfill Program Policy, Guidelines and Procedures

Policy

The City of Toronto will investigate and resolve:

- (1) issues on the portion of old landfill sites that are on property owned by, or managed by, the City of Toronto; and
- (2) the leachate and landfill gas issues on abutting properties as related to (1) above.

Guidelines

Staff and consultants hired to assist with various activities will use the following guidelines when investigating and assessing risk at old landfills.

- (1) As general guidance, sites that were filled after 1950 and having more than 10,000 tonnes of waste will be investigated first, as these newer and larger sites have potential to produce large quantities of landfill gas and leachate;
 - (i) Buildings and other enclosures, in locations where there is a potential for migration of subsurface landfill methane gas and accumulation of this gas in an enclosed space, will generally be considered the highest priority.
 - (ii) Potential contamination of surface water courses and surface ponding areas will also be considered high priority.
 - (iii) Other risk factors that will be considered include slope stability, soil and vegetation cover, ambient air emissions and groundwater contamination.
- (2) Landfill methane gas can migrate through the subsurface soils into confined spaces. It is an explosive hazard when it reaches five percent by volume methane-in-air. This is called the lower explosive limit (LEL). When investigating the potential migration of methane gas to nearby buildings and enclosures:
 - (i) Should landfill methane be detected at 50 percent of the LEL or higher in the subsurface soil at the property line of a property containing a building, permission from the land owner should be sought forthwith to monitor the air in the building and to construct monitoring probes near the building foundations.

- (ii) Should landfill methane be detected at 20 percent LEL or higher in the subsurface soil near a building foundation, permission from the land owner should be sought forthwith to monitor the air in the building and to provide remedial works as recommended.
- (iii) Should landfill methane be detected at 10 percent LEL or higher in the air in a building, the building should be evacuated immediately and permission from the land owner should be sought forthwith to provide remedial works as recommended.

If monitoring staff confirm the presence of methane at 10 percent LEL or higher, the building occupant will be asked to vacate the premises and the Toronto Fire Department will be alerted immediately. Staff will follow confined space entry procedures as outlined in the Occupational Health and Safety Act and Regulations for Industrial Establishments. Measures to protect occupants and workers from the effects of potentially harmful gases inside enclosed spaces such as buildings may include externally disconnecting electrical power sources and promoting building ventilation by opening windows and doors.

If the affected building is a residence or workplace, the City will provide appropriate alternate accommodation to the residents or workers at the City's cost, without any admission of liability, until the situation has been remedied or there has been a determination that the source of the gas is not City lands. If the affected building is not a residence or workplace, i.e. a garage or storage shed, the door(s) to the building will be temporarily removed and replaced with ventilated door(s) or additional ventilation will be provided, as deemed appropriate, at the City's cost and without any admission of liability.

Issues of landfill gas migration and associated land use are described in the MOE's current 1994 Guideline D-4, titled "Land Use On or Near Landfills and Dumps" (formerly MOE Policy 07-07).

Procedures

Works and Emergency Services Department staff in consultation with City staff of Legal, Real Estate, and Insurance and Risk Management will implement the following procedures:

- (1) Site Identification and Data Administration (includes mapping; preliminary audit; review and commenting on associated development proposals and building permit applications) will be led by Technical Services Environment Section, in liaison with MOE.
- (1b) *Staff will provide each ward councillor with the following:*
 - a map listing the locations of all known former landfills in their ward;
 - a description of the monitoring activities currently taking place at each site;
 - notification well in advance of any contact with owners/ occupants regarding investigations scheduled to take place at any landfill site within their ward.

- (2) Non-Intrusive Investigation (includes Phase I study; non-intrusive geophysical tests) will be led by Technical Services with assistance of Solid Waste Division and geophysical consultants.
- (3) Intrusive Investigation (includes Phase II study; in-ground testing, sampling and analysis) will be led by a team of City staff from Technical Services and Solid Waste Division, with assistance from geotechnical and environmental consultants.
- (4) Risk Evaluation and Reporting (includes assessment of public, environmental and corporate risk on a site by site basis; up-dated reporting on a five-year cycle or after remedial work completed) will be provided by consultant(s) led by a team of City staff from Technical Services, Solid Waste Division, Legal Division, and Insurance and Risk Management Division.
- (5) Remedial Options and Action Plan Reporting (includes a report, on a site by site basis, of risk management options, a proposed action plan with recommendations and approximate costs; this report will go to Council to support approval of continued action and implementation of recommendations) will be led by a team of City staff as in procedure (4) above.
- (6) Engineering and Approvals (includes detailed remedial design; detailed cost estimates; scheduling; approvals from land owners and regulatory agencies) will be led by a team of City staff from Solid Waste and Technical Services, with assistance of appropriate consultants.
- (7) Construction and Zoning Control (includes award of, and project management of, construction activities; amendments to OP, secondary plans, zoning by-laws and conditions on development agreements and permit review process) will be lead by Solid Waste (for construction), with assistance of appropriate consultants, and Technical Services (for zoning control).
- (8) Long Term Monitoring and Maintenance (includes on-going site monitoring of gas and groundwater probes, surface conditions and slope stability; reports for perpetual care and site review up-dates) will be led by Solid Waste Division.