OLD LANDFILL MANAGEMENT STRATEGY
PHASE 1 – IDENTIFICATION OF SITES
CITY OF OTTAWA, ONTARIO

DECEMBER 2003, FINALIZED OCTOBER 2004

REF. NO. 021-2785

Ottawa

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REPORT ON

OLD LANDFILL MANAGEMENT STRATEGY
PHASE 1
IDENTIFICATION OF SITES
CITY OF OTTAWA, ONTARIO

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EXECUTIVE SUMMARY

The following Executive Summary highlights key points from the report only; for complete information and findings, as well as the limitations provided in Section 7.0, it is necessary for the reader to examine the complete report.

This study was completed for the City of Ottawa to identify old landfill sites for potential environmental considerations within the boundary of the amalgamated City of Ottawa. The study represents Phase 1 of the Old Landfill Site Management Strategy implemented by the City of Ottawa, which is a proactive initiative to protect public health and the environment, to assess and minimize possible liability of the municipality and individuals, and to provide information to the various stakeholders associated with the old landfill sites. The City's primary initiative with respect to this study is to protect public health.

For purposes of this study, old landfill sites are defined as those sites in the City of Ottawa previously owned or operated by a municipality or currently owned by the City of Ottawa.

The main objectives of this study were to identify all old closed landfill sites (refer to above definition) and their locations within the City and to develop a database of old landfill sites and link it to a geographical information system (GIS). Other related objectives were to collect relevant information for the sites with respect to potential public health and environmental factors to guide future phases of the program, to provide a gap analysis of critical information required for evaluating compliance to applicable environmental criteria, and to establish a procedure to incorporate new sites in the database.

Reference sources were used to identify the old landfill sites and to obtain information about them. These sources included existing waste and land use databases, engineering reports, governmental and municipal reports, municipal files, historical reviews, air photos, documented meetings with Rural Groups in the east and the west rural areas of the City, interviews with local residents, Ministry of the Environment files, interview with the Ministry of Natural Resources and a meeting and review of files/reports from the City's Water Environment Protection Program group. Additional information on the physical characteristics of a particular site was obtained from available maps, targeted site visits and/or available air photos. In total, 82 old landfill sites were identified in the City of Ottawa fitting the definition of old landfills outlined above.

Research to identify the 82 old landfill sites which are included under the definition of this study, also identified 41 old landfill sites that were privately owned and operated and where there is no record of municipal involvement. This list has been provided to the City under separate cover for consideration in future updates to the City's Historic Land Use Inventory.

EXECUTIVE SUMMARY – continued

Key parameters were developed based on sources, pathways and receptors applicable to the context of an old landfill. Information about the sites according to these five key parameters could be used to provide a preliminary assessment of potential issues of concern related to public health and the environment.

These key parameters are:

1) subsurface conditions
2) distance to buildings/private water supply
3) age of site
4) size of site, and
5) distance to surface water

The purpose of the key parameters for the sites is to assist the City of Ottawa in determining where its resources need to be directed for future phases of the program. However, the description of the sites as per the five key parameters cannot alone indicate the actual potential issue of environmental concern associated to each site. Only a thorough investigation of the sites which would include subsurface investigation and testing of soil and water quality could allow for determining such issues.

Of the 82 old landfill sites some details are as follows:

- Forty-two sites are currently partially or wholly owned by the City.
- Seventeen of the old landfills are located within the boundary of parks or publicly accessible recreation areas that are owned by the City. Fourteen of these sites are over 50 years old and hence have low landfill gas generation potential.
- Forty-seven of the 82 old landfill sites are over 50 years old.
- Twenty-three of the old landfills are known to have been or currently are under investigation or undergoing remediation by the City of Ottawa, by a party other than the City of Ottawa or by both (excluding methane potential evaluation work completed for the City by Garner Lee in 1980, 1982, 1984 and 1988, where most sites in the urban area where assessed in terms of their landfill gas generation potential).
- Six of the old landfill sites may have partly or fully been removed.

EXECUTIVE SUMMARY – continued

- Extensive investigation and/or remediation has occurred at eight of the sites for reasons other than the old landfill, however such investigations provide valuable information with respect to the site (e.g., the Lees Avenue / old Armoury site [Ur-28] was remediated to address coal tar contamination).

The level of knowledge about each old landfill site ranges considerably as indicated earlier. For example only methane data may be available for a given site whereas at another site all environmental media that could be affected by a landfill would have been evaluated. In the absence of field investigations, available reference material would not provide sufficient data to permit a risk ranking of landfill sites for further investigation. Given the wide range of level of information between sites, the next step to this study was to identify information requirements and data gaps that would need to be filled in order to develop a sound understanding of the issues in terms of potential health and environmental effects.

In order to determine where information was required, specific data gap parameters were identified. The gap parameters consisted of the following descriptors:

- Is the waste area defined?
- Has groundwater sampling been conducted?
- Has surface water sampling been conducted?
- Has gas/methane identification work been done at or surrounding the site? and
- Is the waste covered?

As identified in the City of Ottawa's Old Landfill Management Strategy, Phase 2 will include field investigations to define the degree of potential public health and environmental impacts. The data gap information identified in the Phase 1 study will allow for scoping of the Phase 2 investigation.

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1.0 INTRODUCTION

This study was completed for the City of Ottawa and consists of the identification of old landfill sites within the City of Ottawa property boundary. The study represents Phase 1 of the Old Landfill Site Management Strategy implemented by the City of Ottawa. This report outlines the methodology, database and Geographical Information System (GIS) structure used to identify and maintain information on old landfill sites and for the identification of key parameters and data gaps at each site.

1.1 Background and Objectives

The Old Landfill Site Management Strategy is a proactive initiative being undertaken by the City of Ottawa to protect public health and the environment, to assess and minimize possible liability of the municipality and individuals, and to provide information to the various stakeholders associated with the old landfill sites. The City of Ottawa's primary initiative with respect to this study is to protect public health.

At commencement of the study, the City of Ottawa estimated that there could be about 100 to 110 old landfills within the amalgamated City of Ottawa boundaries based on the information available at that time. These old landfills included sites that were active for periods of time within the past 100 years or so, the operation of which has been replaced with the disposal sites that now serve the City's waste disposal needs. The sites are located in both rural and urban areas, some remote from development and some immediately adjacent to or underneath existing development or proposed re-development. The areas of filled wastes (old landfill sites) are found on properties which are owned either by the City of Ottawa, by a private individual or business, by an institution or other level of government, or else extend over several properties owned by a combination of these entities. In this document, as it pertains to old landfills, the words "former" and "old" are used interchangeably.

For purposes of this study, old landfills are defined as those sites in the City of Ottawa previously owned or operated by a former municipality or currently owned by the City of Ottawa. The objectives of Phase 1 of the Old Landfill Management Strategy were to:

- Identify all the old closed landfill sites, available associated information and their locations within the City of Ottawa;

- Develop a database of information on each of the old landfill sites and link it to a GIS-based mapping system;

- Collect relevant information for the sites with respect to potential public health and environmental factors, and potential exposure to receptors (humans, animals, fish, the environment, etc.) such that the City of Ottawa can determine where its resources and attention need to be directed;

- Provide a gap analysis of critical information required for the next phases of the project and related to potential effects on human health; and

- Allow for a process to incorporate "new" old landfill sites into the evaluation after the study is complete.

1.2 Structure of the Report

Section 2.0 of this report contains information on the methodology used for identifying old landfill sites and for gathering data relevant to them as a standardized database. Section 3.0 constitutes a regulatory review of the existing guidelines and regulations applicable in the Province of Ontario and relevant to the assessment and management of closed waste disposal sites. The structure of the database and definition of the fields identified for each site, as well as the format of the GIS developed as part of the scope of the Phase 1 Report are described in Section 4.0. Section 5.0 of this report provides the major results obtained from the data gathering exercise on the nature, location, key parameters, data gaps and status of existing remediation or monitoring for the old landfill sites identified within the boundaries of the amalgamated City of Ottawa. As well, recommendations are provided in Section 5.0 on the suggested maintenance and updating procedure for the database of old landfill sites that should be used when new landfill sites are identified (if applicable) or as operational sites cease to receive wastes and become closed. Finally, in Section 6.0, conclusions are drawn and guidance is provided for subsequent Phase 2 Assessment of the old landfill sites.

2.0 METHODOLOGY

2.1 Scope

Within the Terms of Reference for this project, old landfill sites to be included in the study were defined as those sites located in the City of Ottawa previously owned or operated by a municipality or currently owned by the City of Ottawa. Sites located on private property that received domestic waste, but that were not operated by or where there is no knowledge of operation by the City of Ottawa or former amalgamated municipality, as documented by available written or verbal reference, were not considered in this review. This study only looked at non-operating landfill sites and therefore the City's existing operating landfill sites were also excluded.

The following subsections 2.2 to 2.5 describe, for each old landfill site, the methodology used for gathering data, the procedure for defining the category of owner, the assessment of key parameters relevant to the protection of public health and to safeguard the natural environment, and the identification of data gap criteria required for the evaluation of compliance to applicable environmental criteria as established by regulatory bodies in the Province of Ontario.

2.2 Information Gathering

The information gathering methodology for this project is similar to a Phase I Environmental Site Assessment (ESA) with the exception that Phase I ESA's are typically completed as per Canadian Standards Association (CSA) Standard Z768-01. The standard sets a mandatory list of records to be reviewed and a requirement for a site visit. The requirements outlined in the standard were not applied to all sites in the current investigation and hence the investigation should not be called or considered a Phase I ESA.

The objective of this data gathering exercise was to complete detailed data sheets in a standardized format for each old landfill site, the grouped datasheets thereby constituting a database of all the old landfill sites in the City of Ottawa. It is understood that the purpose of this database of old landfill sites is to be used as a management and planning tool. The structure of the database and the definition of the fields included in the datasheets for each of the site are described in Section 4.1 of this report.

The primary reference sources that were consulted to identify old landfill sites located within the amalgamated City of Ottawa boundaries were: 1) the *Waste Disposal Site Inventory* (MOE, 1991); 2) the *Anderson's Waste Disposal Sites* (Ontario) database (EcoLog Eris, 2001) in conjunction with the *Historical Dump Sites* aerial photo catalogue (City of Ottawa internal report, 2001); and, 3) the *Historical Land Use Inventory (HLUI) for the Region of Ottawa-Carleton* database (Duke Engineering and Services, 2000). These sources of information were reviewed

and the records cross-referenced. Several references were found to be duplicates and associated with a single site. Upon subsequent verification, a certain amount of erroneous or inaccurate data with respect to the location or even the existence of sites was identified in these records, especially for the rural area, where information on old landfill sites is not as readily available. The work on previously identified disposal sites by Gartner Lee Ltd. (1980, 1982, 1984, and 1988) was reviewed and also used as a starting point to document most old landfill sites located in the urban area.

The following list includes some of the additional sources of information that were used to supplement, and where applicable rectify, the initial findings from the documents discussed above:

- Engineering reports available through the City of Ottawa or from the Golder library, including Phase II Environmental Site Assessments which contain subsurface investigation information;

- Governmental and municipal reports, including the *City Council Reports* (City of Ottawa, 1942 to 1953), the *State of the Environment Report* (Ottawa-Carleton Health Department, 1991) and the *Jock River Watershed – Closed Landfill Site Review* (Ontario Ministry of the Environment, 2001), which were available through the City of Ottawa;

- Municipal files, available through the City of Ottawa;

- Historical reviews, including the *Historical Investigation of Remnant Wastes – Vanier Site* (Heritage Research Associates, 1991) which was utilized for documenting sites located in the Vanier area;

- Historical aerial photographs obtained at the National Air Photo Library in Ottawa, which were utilized mostly for sites located in the rural area for identifying the location and approximate size of the site and estimating the active time period;

- Meetings with Rural Groups in the east and the west rural areas of the City, including site visits at most rural sites. Municipal staff who had been involved in landfill site operations and closure procedures since the 1970's were in certain cases available for interview;

- Interviews with local residents or personnel associated with the operation of the old landfill sites, identified through the help of municipal staff or Golder's local experience. The interviews supplemented existing information and/or provided new information on a small number of sites;

- Ministry of the Environment records from the Ottawa office for selected sites, which included landfill site Certificates of Approval and inspection reports from the Ministry's environmental officers;

- An interview with the Ministry of Natural Resources of Ontario regarding selected sites; and,

- A meeting with and review of files/reports from the City of Ottawa Water Environment Protection Program.

In addition, information on the physical characteristics of the site, including the geological setting, the topography, surface water drainage and physical setting was gathered using topographic and geological maps as described in Section 4.1, and through site visits and/or interpretation of recent aerial photographs. Site ownership information was obtained using the *Historical Dump Sites* aerial photo catalogue (City of Ottawa internal report, 2001) and through records supplied by the City of Ottawa Real Property Asset Management Branch. Property identification numbers (PINs) were supplied by the Surveys and Mapping Division of the City of Ottawa. Information on zoning in the general area of the sites was supplied by the City of Ottawa Planning and Growth Management Department.

The Phase 1 study and report prepared by Golder are based on an adequate amount of information to correctly identify and provide a preliminary characterization of the old landfill sites. These various sources of information that were available provided sufficient data, and the information could often be validated through various sources, such that a list of old landfill sites fitting the definition provided above could be established with a satisfactory degree of confidence.

Upon completion of the database, a verification and quality assurance/quality control (QA/QC) procedure was implemented to measure the completeness and reliability of the data. All data were entered in the database by a qualified member of Golder's professional staff. The QA/QC consisted of carefully proof reading all data. As an additional level of quality control, slightly over 10% of the sites were selected and the datasheets were thoroughly verified by a member of the Golder's professional team who had no previous knowledge of the site.

2.3 Grouping of Sites by Category of Owner

A certain portion of the old landfill sites identified as part of the Phase 1 Study were found to be located on properties owned by the City of Ottawa, while certain other old landfill sites were identified as being located, entirely or in part, on properties owned by other parties, such as private individuals or companies, institutions (school, church, hospital, etc.) or another level of government. For the remaining portion of old landfill sites, the area of filled wastes was found to extend over several properties owned by the City of Ottawa and by one or several of the other categories of owners identified above. The old landfill sites were grouped into three categories:

1) City-owned sites;
2) Sites jointly owned by the City and others; and,
3) Non-City owned sites.

Also, within the three categories of sites, types of owners other than the City were grouped under two sub-groups: private owners (individual or companies), and institutions/other level of governments (i.e., school, hospital, federal government, National Capital Commission, etc.).

2.4 Identification of Key Parameters

Specific information was collected about key parameters for the sites to allow for a general indication of physical settings and to provide a quick overview of each site. The key parameters were developed to provide relevant information with respect to potential public health and environmental factors, and potential exposure to receptors (humans, animals, fish, the environment, etc.) such that the City of Ottawa could thereafter determine where its resources and attention need to be directed. This approach is consistent with the primary objective of the Old Landfill Management Strategy, being the protection of public health and the environment.

Five key parameters were developed with an emphasis on public health. These five key parameters are:

1) subsurface conditions
2) distance to buildings/private water supply
3) age of site
4) size of site, and
5) distance to surface water.

2.4.1 Definition of Contaminants, Pathways and Receptors in the Context of Old Landfill Sites

In the context of risk assessment and of management of potential impacts to human health and to the environment associated with an old landfill site, there are three essential elements to consider. These three elements and their definitions are as follows:

Contaminant: a substance in soil, sediment, groundwater, surface water, air, or another environmental medium that is present at a concentration above criteria and/or causes concern related to human health, water resources or the wider environment. Examples of contaminants in the context of an old landfill are: dissolved substances in groundwater, compounds of concern for human health found in the soil, methane gas produced by the decomposition of organic waste, etc.

Pathway: the means or route by which a receptor is exposed to a contaminant. Relevant to old landfill sites, potential pathways could consist of consumption of water from a private water well tapping into an impacted aquifer, ingestion or dermal contact with impacted soil, inhalation of contaminants that volatilize from soil or groundwater to indoor air, migration of potentially explosive landfill gases to basement of houses, surface run-off of landfill leachate or of leachate-impacted surface water to neighbouring water bodies, etc;

Receptor: someone or something which could be exposed to the contaminant, including humans, water resources, surface water courses or the wider environment. Examples of potential receptors include surrounding residents and private well users, users of recreational areas developed over an old landfill site, ecosystems of surface water bodies located in the neighbourhood of an old landfill site, etc.

The following diagram provides a definition of "risk" as the interaction between contaminant(s), pathway(s) and receptor(s):

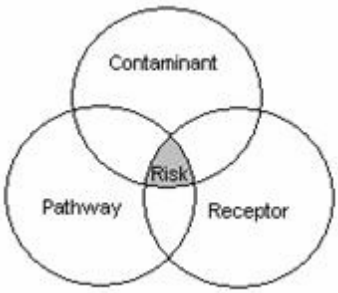

Figure 1 (included at the end of the report) illustrates the relationships between potential sources of contaminants, pathways and receptors in the context of an old landfill. Potential sources, pathways and receptors are illustrated as red, green and orange arrows, respectively.

Five key parameters have been developed to assess these potential contaminants, pathways and receptors with the objective of evaluating the potential issues associated with an old landfill site with respect to public health and the environment. The following subsections 2.4.2 to 2.4.6 provide more details on the nature and relevance of each of the key parameters developed for this study.

2.4.2 Subsurface Conditions

This first key parameter relates to the transmissivity of the soils at and surrounding the landfill site with respect to possible movement of landfill leachate and/or gas. For this study, information was obtained from actual intrusive field investigations (where available), noted site characteristics during a site visit and/or information from several 1:50,000 scale geology maps (Geological Survey of Canada, 2001-digital map and Geological Survey of Canada, 1982). Subsurface conditions were determined to be falling under one of the three following categories, enumerated in an increasing order of transmissivity of the subsurface material (or potential ease of movement for contaminants):

- Clay or clay and silt
- Till, silt or organic soils
- Granular soils or bedrock < 2 m below ground surface within 100 m of the site as shown on a 1:50,000 scale map or based on field information

2.4.3 Distance to Closest Building/Private Water Supply

The distance to closest building or private water well relates to potential impacts on potable water supply or risks of gas migration to the basement of residential dwellings or other buildings. For urban sites, where water is supplied municipally, the movement of landfill gas and associated explosion hazards are more likely to be of relevance. For rural sites, where potable water is obtained from private wells and where development is generally sparser, potential impacts on groundwater quality and private wells are more likely to be the issue of concern. This issue related to groundwater impacts is associated with the potential migration of a plume of dissolved contaminant in the subsurface downgradient from an old landfill site.

For determining this key parameter, the distance from the landfill to the closest residential dwelling with a basement was compared to 10 times the thickness of the filled wastes below ground surface, but above the groundwater table (i.e., in the unsaturated or vadose zone) for urban sites where there is municipal potable water supply. This approach is based on the criteria developed by MOE on the migration of methane gas as associated with landfill gas in the Methane Guideline, November 1987. For sites in rural setting where a building was found in close proximity to an old landfill site, the distance to closest building was also compared to 10 times the thickness of filled wastes.

The second component of this key parameter applies to potential groundwater contamination or migration of landfill volatiles (not including landfill gas) for rural settings where potable water supply is obtained with private wells. The distance from the old landfill site to the closest residential building with a basement or private well was determined. In many instances the distance to wells was unknown, since an exhaustive survey of all existing private wells was

beyond the scope of this study. For cases where the location of private wells could not be determined, it was assumed that wells would be close to the house or building and hence the distance to the house or building was used instead. The direction of groundwater flow was not considered in the assessment of the distance to basements or rural wells since it was not known for all sites. In order to provide a conservative and consistent evaluation of all sites, basements and rural wells in all directions from a given site were considered.

2.4.4 Age of Site

This third key parameter was selected on the basis that older landfill sites are likely to be of lesser concern with respect to human health and the environment. In particular, a distinction can be established between sites that are older than 25 years in comparison to sites that have been more recently closed to receipt of wastes. In this respect, MOE Guideline D-4 and the EPA states that: "no use shall be made of land which has been used for the disposal of waste within a 25 year period from the year such land ceased to be used unless the approval of the Minister for the proposed use has been given".

Another time limit of relevance is the year 1945 which delimits the start of post-war industrialization and approximate end of incineration of waste in the City of Ottawa (as suggested by references to incineration in historical City Council reports). As a general rule, it can be considered that pre-1945 landfill sites are generally more benign than post-1945 landfill sites for the following reasons:

- Chlorinated solvents and complex hydrocarbons were typically not developed at that time to the degree they were post-1945;
- Incinerated waste typically has weaker leachate strengths than non-incinerated waste;
- Due to the longer exposure to the weather (precipitation) contaminants have washed away from these older sites resulting in weaker leachate strengths remaining, if any; and,
- Organic matter found in waste which could generate landfill gas has likely already broken down to a degree resulting in lower methane gas potential.

2.4.5 Size of Site

The fourth key parameter of importance is the size of the landfill site. As a general rule, smaller sites could be interpreted to pose a risk of lesser environmental concerns as opposed to larger ones. The size of old landfill sites was established based on the observed surface expression of filled waste as documented in reports, from a field visit or as observed on air photos. Sites that could not be identified on historical air photos and for which an exact footprint could not be defined were assumed to be smaller than 1 hectare. It is noted that the area of filled wastes was used to characterize the sites, as opposed to the volume of wastes, because more uncertainty and variability is associated with records/observations of the thickness of waste than the surface expression of the area of waste.

2.4.6 Distance to Surface Water

The last key parameter that was developed for the assessment of old landfill sites was the distance to the closest water body. The distance from a permanent stream or creek was determined from a 1:50,000 scale natural topographic map (Energy, Mines and Resources Canada). The water bodies considered included streams, ditches and wetlands (swamps, marshes) indicated. Unconnected ponded water and man-made ponds (i.e., flooded quarries) were not considered as permanent surface water bodies. Generally speaking, the closer a water body is found from an old landfill site, the more important the chances are that there may be impacts associated with surface runoff and/or seepage of leachate or leachate-impacted groundwater or surface water to the water body, along with the associated impacts to the natural aquatic environment.

2.5 Identification of Data Gaps

The next aspect of data gathering and compilation that was conducted as part of this study relates to the identification of data gap criteria required for the evaluation of compliance to applicable environmental criteria in the Province of Ontario. Information with respect to risk assessment, existing guidelines and regulations were used to develop easily applied, albeit relevant data gap parameters. The data gap identification highlights information that would be required to allow for an evaluation of compliance to today's environmental criteria. The selection of data gap parameters takes into consideration the limited amount of information available at some of the old landfill sites that were investigated. The data gap parameters developed for this study are as follows:

1. Is the waste area defined?
2. Has groundwater sampling been conducted?
3. Has surface water sampling been conducted?
4. Has gas/methane identification work been done at or surrounding the site? and,
5. Is the waste covered?

A response to each of the data gap parameters for each site was tabulated and included the following possible responses: yes, no, unknown or not applicable. Some assumption were required to complete the data gap assessment, as described later in Section 5.3 of this report.

The identification of data gaps is useful to assist in determining what type of follow-up site investigation work should be considered in the next phase of the Old Landfill Management Strategy.

3.0 REGULATORY REVIEW

There are several municipal and provincial landfill legislative and regulatory requirements specific to old landfill sites. This part of the report is intended to provide a high-level summary of some requirements but is not intended to be a thorough investigation of all such requirements or to replace the need to obtain legal advice in relation to individual sites.

The City of Ottawa Official Plan, as adopted by City Council pursuant to By-law No. 2003-203 dated May 14, 2003 contains the following policy applicable to Former Landfill Sites:

Section 4.8.5 Former Landfill Sites

"Human health and safety may be affected within the area of influence of a former landfill site. The most significant contaminant discharges and visual problems occur normally within 500 metres of the perimeter of the fill area. The actual area of influence will vary for every former site.

The City has commissioned a study to identify former landfill sites in the City of Ottawa. Upon completion of the study, former landfill sites identified will be designated on Schedule K by amendment to this Plan.

Policies

1. *No land use may take place within 30 metres of the perimeter of a former landfill site.*
2. *The City will require land-use proposals including official plan amendment and subdivision and condominium applications within 500 metres of a former landfill site, to be supported by a study to evaluate the presence and impact of any adverse effects or risks to human health and safety and that necessary remedial measures are undertaken when development proposals are within this distance.*
3. *The study will provide an assessment of:*
    a. *Landfill gas in Public Service Areas;*
    b. *An assessment of the groundwater quality and an assessment of landfill gas outside of Public Service Areas where groundwater is the source of drinking water.*
4. *Where previous studies have determined the influence area of the site to be less than 500 metres, the study area can be reduced to coincide with the actual influence area."*

The Policy applies to all former landfill sites. Policy 1 of section 4.8.5 is likely to be amended by City staff in the fall of 2004, through a staff-initiated administrative amendment, as follows:

1. Where technical controls for leachate, or leachate and gas are required surrounding a former fill area, no land use may take place within 30 metres of the perimeter of the former landfill site. This distance may be reduced to 20 metres in cases where only gas controls are necessary.

This amendment will allow for a Provincial Ministry of the Environment policy to be directly incorporated within the City's Official Plan.

In addition, Section 4.8.4 of the Official Plan deals with Contaminated Sites which are defined as:

"sites where the environmental condition of the property and the quality of the soil or groundwater, particularly on former industrial and waste-disposal sites, may have the potential for adverse effects to human health or the natural environment."

Collectively, the policies contained in the Official Plan set out the requirements for land-use proposals within 500 metres of a former landfill site. Specified applications for land-use proposals are required to be supported by studies which evaluate the potential for adverse effects to human health or the natural environment, and possible remedial measures necessary due to the proximity to, or contamination arising from the former landfill site.

At the time of writing of this report, the City of Ottawa Official Plan was being appealed to the Ontario Municipal Board.

The Ontario Ministry of Environment has two guidelines pertaining to development and hazards associated with closed landfill sites and dumps. The first guideline titled *Land Use on or Near Landfills and Dumps*, Guideline D-4, April 1994 contains legislative authority under Part V, Sections 27 and 46 of the *Environmental Protection Act*; Sections 2(a) (b) (c) (f) (g) (h), 17(9), 22(3), 41(4) and 51(3) of *Ontario Regulation 347*; Section 50(3) of the *Condominium Act*; and Section 5(3) of the *Environmental Assessment Act*. This guideline is intended for direction around active and closed waste disposal sites. It indicates that factors to be considered when land use is proposed on or near a non-operating site should include: ground and surface water contamination by leachate, surface runoff, ground settlement, visual impact, soil contamination and hazardous waste, and landfill-generated gases. Specific requirements within the guideline relevant to old landfill sites include:

- Where technical controls for leachate, or leachate and gas are required surrounding a fill area, no land use may take place within 30 metres of its perimeter. This distance may be reduced to 20 metres in cases where only gas controls are necessary;

- The Ministry considers the most significant contaminant discharges and visual problems to be normally within 500 metres of the perimeter of the fill area. Accordingly, the Ministry recommends this distance be used as a study area for land use proposals; and,

- No use shall be made of land or land covered by water which has been used for the disposal of waste within a period of twenty-five years from the year in which such land ceased to be so used unless the approval of the Minister for the proposed use has been given.

The second guideline pertinent to old waste disposal sites is titled *Guideline for Assessing Methane Hazards from Landfill Sites*, Procedure D-4-1, November 1987. This guideline and an associated appendix outline the explosive nature of methane gas which can be generated from landfills and provide a rule of thumb outlining a possible distance of methane migration from a site. It states that methane migration may extend for a horizontal distance equal to 10 times the vertical depth of landfill between the ground surface and the water table.

In addition, there are other federal and provincial acts, regulations and guidelines, which although not solely intended for landfills are applicable to the old waste disposal sites being evaluated. For example, the *Policies, Guidelines, Provincial Water Quality Objectives*, Ontario Ministry of Environment, July 1994 (Reprint 1999) contains evaluation criteria for various parameters in surface water. Discharges to surface water are also regulated by the Department of Fisheries and Oceans and Environment Canada specifically by means of the *Fisheries Act*. It is the discharge of a deleterious substance (i.e., leachate) into the natural environment and the potential for adverse impact on fish and fish habitant which is covered in the *Fisheries Act*.

Groundwater issues are considered in the Ontario Ministry of the Environment Guideline *Resolution of Groundwater Interference Problems*, Guideline B-9, April 1994. Specifically, the groundwater cannot be deteriorated resulting from the release of contaminants such that where applicable, the *Ontario Drinking Water Quality Standards*, 2003 are exceeded.

4.0 DATABASE AND GIS

4.1 Old Landfill Sites Information Database

Available information that was collected for each old landfill site was compiled in a Microsoft ACCESS database. The database consists of a single master table. The contents of the database were based on the relevance of data for establishing a gap analysis and for information on the sites with respect to the key parameters developed in Section 2.4. The information that was considered for these analyses was:

- accurate location of the site;
- footprint area and waste thickness;
- historical operational features (including active time period, operator, type of disposed wastes, area served);
- current ownership of the site;
- parameters of concern (methane or others);
- potential receptors (humans, animals, fish, the environment, etc.);
- geological, hydrogeological and surface drainage setting; and,
- references from previous reports and reviews (to be used where further investigation is warranted).

The following table presents a short description of each field included in the database.

Field	Description
Site ID #	Unique site identification number assigned to each landfill site. The first two letters of the identification number refer to the former township and municipality structure (Cu = Cumberland, Gl = Gloucester, Go = Goulbourn, Ka = Kanata, Np = Nepean, Os = Osgoode, Ri = Rideau, Ur = Urban, Wc = West Carleton). The numbering for sites in the urban area follows the order established in the Gartner Lee Ltd. reports (1980, 1984, 1988) and Intera Technologies report (1988).
AND Record #	Identification number from Anderson's Waste Disposal Sites (Ontario) database, property of Environmental Risk Information Services Ltd. (EcoLog ERIS). This identification system is the reference source for the City of Ottawa *Historical Dump Sites* air photo catalogue.

Field	Description
MOE Site #	Identification number from Ontario Ministry of the Environment Waste Disposal Site Inventory (WDSI), June 1991. Sites that were active after 1971, from which time a Certificate of Approval for the operation of a waste disposal site was required, are usually identified through the Certificate number. Sites that were closed prior to 1971 are identified with an identification number starting with the letter "x". In the latter case it is indicated in the WDSI report that "older, closed, uncertified sites are not accompanied by the same level of information regarding such things as waste type and physical settings". The accuracy of information (e.g., location, closure date) included in the WDSI for older sites is therefore sometimes questionable, but was utilized unless some other source of information was available.
Category of Owner	One of the three categories of owner identified for this study, i.e., 1) City-owned, 2) jointly owned by City and other party, and 3) non-City owned. Owners other than City include private owners (individual or business), institutions (school, church, hospital, etc.), and other levels of government.
HLUI Activity ID#	Unique code for the activity related to waste disposal from HLUI for the Region of Ottawa-Carleton. Sites that were not identified in the HLUI were assigned a new code (GAL xx) (Golder Associates Ltd.)
Other References	Other sources of information including consultant reports, government reports and verbal reference (township staff or local residents). An abbreviated reference to documents is included. For the complete reference, consult the Bibliography in Appendix A.
Site Name	Common designation of the landfill site – usually refers to a geographical location such as street name or township name and concession number.

Field	Description
Landfill Monitoring / Remediation	Information pertaining to any monitoring and/or remediation activities that have occurred on the site specifically related to the old landfill (with the exception of the preliminary methane evaluation work conducted by Gartner Lee Ltd. for the City of Ottawa in the 1980s at several urban sites), recommendations of any studies and information on who the study was completed for. Some sites are located in areas with contaminate issues unrelated to the old landfill. Information on any other studies completed regarding the site, but not specifically about the old landfill is provided in the "Other Information" field.
Site Location	Description of the general location of the site. Includes street name, and for rural sites, former township name, concession and lot numbers.
Easting/Northing (UTM NAD 27)	Universal Transverse Mercator (UTM) coordinates, 1927 North American Datum. Usually, the approximate centre point of the site is indicated.
Ward #	Ward number corresponding to the current ward structure for the City of Ottawa.
Size of Site	Surface area of the waste in hectares based on aerial photo review, site visit or referenced from previous report. When the available sources of information provided conflicting results, the source is specified in brackets.
Waste Thickness	Maximum thickness of the filled material based on site visit estimate or referenced from report. When intrusive investigation work has been carried out on site, the variability of the thickness is indicated.
Active Time Period	Period of time when the site was actively used for waste disposal. For many sites only the closure date is available.
Current Ownership	Legal owner of the land parcel(s) in which the filled area is included. For sites with private individual owners no names have been provided.

Field	Description
PIN(s)	Property identification numbers (PIN) of the land parcel(s) in which the filled area are included. Properties containing sites with undefined footprints contain a special note indicating the PIN(s) provided are for the property as a whole and not the footprint of the old landfill. The landfill footprint used to determine which PIN(s) make up the footprint may contain PIN(s) that are actually located adjacent to the landfill footprint due to mapping constraints.
Area Served	Communities or industries that made use of the landfill site.
Type of Disposed Material	Type of waste material disposed on site. For post-1971 sites that have Certificates of Approval from the Ministry of the Environment, the proportion of domestic/commercial/industrial waste is often specified. Other sources of information of the type of disposed material include borehole/auger holes and/or observations during site visits.
Nearby Industries	Industrial sites, either current or historical, located in the immediate vicinity of the site. Industries were identified where there is potential for effect on subsurface conditions at the site, or where the wastes produced by the industry were possibly disposed on site. For sites located in the urban area most references are derived from *Mapping and Assessment of Former Industrial Sites – City of Ottawa*, Intera Technologies, 1988. For rural sites information from the Historical Land Use Inventory, topographic maps and/or site visits are included.
Operator	City, township, village or other organization that conducted garbage collection, filling, covering and/or attendance of the landfill site while in operation. Sites that were introduced in the City of Ottawa Council Minutes are assumed to have been operated by the City of Ottawa. For sites located in the rural area, the operator of the site was in most cases identified through interviews with municipal staff.
Parameters of Concern	Where analytical results are available this field includes chemical compounds or other parameters analyzed on site that pose a potential exposure to receptors. Background information on analytical results is also included.
Concentrations	Where analytical results are available, monitored concentrations of parameters of concern with applicable criteria are included.

Field	Description
Magnitude	When the information is available, extent (aerial and depth) of contaminated soil, surface water and/or groundwater is provided.
Methane (Landfill Gas)	Potential for the production of methane. Where direct measurements of methane gas were carried out the results are included. Where the waste was placed above ground surface, or where the type of waste is not associated with the production of landfill gas (e.g., burnt wastes, ashes), methane production is not usually considered a cause for concern.
Ecological Receptors	Potential receptors including either natural receptors or humans.
Distance to Nearest Human Receptor	Distance from the edge of the filled area to the nearest private residence or land use area where there is potential for human contact (e.g., parkland).
Adjacent Land Use and Zoning	Land use on site and in the immediate vicinity of the site. The zoning information was obtained through the City of Ottawa Development Services Department, however the accuracy of the information is limited to the general area of the site.
Adjacent Landowners	Where the owners of adjacent properties have been identified the information is included. The general nature of ownership in the area (private residences, businesses, parks, industries) is also specified. Civic addresses of adjoining properties are included where applicable.
Site Access	Accessibility of the site to the public (private versus public property). Sites that are fenced are noted.
Water Supply	Water supply in the general area of the site: municipal supply or private individual wells.
Depth to Bedrock	Depth (in metres) to reach bedrock in the general area of the site. Outcrops within 100 metres of the site are noted. Unless intrusive investigations have been carried out on site the depth to bedrock was evaluated from Geological Survey of Canada *Drift Thickness Trend, Ottawa-Hull* map (scale 1:50,00) or Geological Survey of Canada digital map, 2001. The type of bedrock is also indicated (source: Geological Survey of Canada digital map, 2001).

Field	Description
Depth to Groundwater	Depth to the water table based on information from subsurface investigation reports. The information referenced from reports is in certain cases specified to be an estimated value and should then be considered as an approximation only.
Distance to Surface Water	Distance from the edge of the filled area to the closest surface water body. Streams, ditches and wetlands (swamps, marshes) indicated on 1:50,000 topographic maps were considered as surface water bodies, whereas unconnected ponded water and man-made ponds (e.g., flooded quarries) were not.
Topography	General topography on site observed through site visits or with topographic maps.
Soil Cover Thickness	Thickness of clean fill covering wastes where subsurface data is available. Fill area is assumed to be covered based on some current land uses (e.g., parkland).
Type of Overburden	Surficial geology in the general area of the site. Unless this information is available through intrusive investigations carried out on site, the type of overburden was determined with the Geological Survey of Canada digital map (2001) or the Geological Survey of Canada *Map 1506A, Surficial Geology, Ottawa*.
Direction of Groundwater Flow	Direction of groundwater flow in the general area of the site. A direction determined through water level measurements in observation wells is most accurate. It should be noted that the direction of groundwater flow can vary depending on the season, the climate, the presence of buried service lines, or water users in the area (e.g., private and communal wells). Where measurements are not available, the direction of groundwater flow was inferred based on the closest major rivers and water bodies, the topography of the ground surface or the bedrock surface.
Physical Setting	Current land use, development on site and/or type and degree of vegetative cover.
Other Information	Other pertinent information.

The data sheet for each site is available in electronic format (Acrobat Adobe or pdf format), and a hard copy is also included in Appendix B. The City of Ottawa has been provided with original Access ™ database.

4.2 Geographical Information System

Former landfill sites were mapped using the Geographical Information System ArcView (ArcGIS™ Version 9). The data entered in ArcView can be easily imported in AMP, the GIS system currently used by the City of Ottawa. The system of co-ordinates that was used (MTM 9 NAD 83) is compatible so that landfill site footprints will superimpose appropriately on other layers included in the City of Ottawa's GIS. It was decided to present the information graphically as a separate layer from the main HLUI. More details regarding the recommended updates to the HLUI are included in Section 5.5 and Appendix C.

An approximate footprint area could be determined for most former landfill sites identified during this study. The approximate outline of the footprint area for each site is presented in Figure 2, with a close-up view for urban sites in Figure 3. The category of owner for each old landfill site was identified through colour-coding, with footprints for City-owned sites, for sites owned jointly by City and other(s) and for non-City sites traced in magenta, green and purple, respectively. The footprint area element consists of a polygon shape in ArcView. The fields included in the attribute table and associated with each footprint element are described in the following table.

Fields	Description
Featured ID	Identification number assigned automatically by ArcView to each element for mapping purposes (from 0 to 82).
SHAPE	Shape type in ArcGIS format. Each footprint is represented as a polygon.
SITE_ID	Identification number corresponding to "Site ID #" field in ACCESS database.
NAME	Common designation of the landfill site corresponding to "Site Name" field in ACCESS database.

Fields	Description
LEV_CERT	Level of certainty associated with the area identified as the footprint. The following three levels of certainty are presented in decreasing order of reliability: *Referenced*: Identified by means of a reference showing the footprint of the site. *Site visit / Air photos*: Identified by means of site visit and/or air photo interpretation. *Verbal confirm. / Historical notice*: Identified by means of word of mouth, historical documentation supporting the landfill existence and/or known waste identified in a borehole.
ACTVY_ID	Unique code for the activity from HLUI for the Region of Ottawa-Carleton. Sites that were not specifically identified in the HLUI were assigned a new code (GAL xx).

For 78 of the 82 landfill sites, it was possible to locate the footprint area with some degree of certainty. However, for four (4) landfill sites (i.e., Site ID numbers Cu-14, Cu-19, Ur-19 and Ur-54), a footprint could not be established based on the sources of information available. Also, for fourteen (14) sites, the footprint area was associated with a lesser degree of certainty, or more specifically the footprint areas could only be identified through a verbal confirmation or a historical reference. The properties onto which the former landfill site is judged to extend were then identified for these eighteen (18) sites (i.e., fourteen plus four) where the sources of information available were not sufficient to adequately locate the footprint area. These property elements are shown as shaded light orange areas on Figure 2, with a close-up view for sites located in the urban area on Figure 3. To distinguish these sites, the Identification Number was traced in bold italic font.

The property element consists of a polygon shape in ArcView. The fields included in the attribute table and associated with each property element are described in the following table.

Field	Description
Featured ID	Identification number assigned automatically by ArcView to each element for mapping purposes (from 0 to 839).
SHAPE	Shape type in ArcGIS format. Each property is represented as a polygon.
SITE_ID	Identification number corresponding to "Site ID #" field in ACCESS database.

Field	Description
PIN	Property identification number (unique 9-digit identifier assigned to each property within the amalgamated City of Ottawa).
INCL_HLUI	This attribute indicates whether the property was identified in the HLUI and associated with the operation of a former landfill site. The attribute "Y" designates a property already identified in the HLUI, whereas the attribute "N" designates a property that was newly identified as the location of a former landfill site.
ACTVY_ID	Unique code for the activity from HLUI for the Region of Ottawa-Carleton. Sites that were not specifically identified in the HLUI were assigned a new code (GAL xx).

The property identification numbers for properties that were newly identified as the location of a former landfill site (i.e., not in the existing HLUI database) were provided by the City of Ottawa. Although the PINs were provided they were not geographically referenced such that Golder could include information in this ArcView field with respect to the new sites. It is recommended that the City of Ottawa complete this field for the applicable sites.

5.0 RESULTS

5.1 Preamble

In total 82 sites were identified as old landfills in the City of Ottawa previously owned or operated by a municipality or currently owned by the City of Ottawa. Of these, nine are located in the former Municipality of West Carleton, two in the former Municipality of Rideau, one in the former Municipality of Osgoode, two in the former City of Nepean, one in the former City of Kanata, four in the former Municipality of Goulbourn, four in the former Municipality of Gloucester, eight in the former Municipality of Cumberland and 51 within the urban boundary of the former City of Ottawa. Figures 2 and 3 show the approximate location of each site and Table 1a, 1b and 1 c provide a legend of full site names, category of owner and corresponding ward number for City-owned sites (Table 1a), jointly owned sites by City and other[s] (Table 1b), and non-City sites (Table 1c). The data collected on each site is provided on data sheets in Appendix B. An electronic copy of the data in Adobe Acrobat (pdf) format is also provided in this Appendix and a bibliography of references is included in Appendix A.

Research to identify the 82 old landfill sites which are included under the definition of this study, also identified 41 old landfill sites that were privately owned and operated and where there is no record of municipal involvement. This list has been provided to the City under separate cover for consideration in future updates to the City's Historic Land Use Inventory.

5.2 Key Parameters

Five key parameters were developed to characterize the old landfill sites in the perspective of protection of human health and safeguard of the natural environment. These five parameters and the underlying risk assessment principles are discussed in Section 2.4. The five key parameters are:

1) subsurface conditions
2) distance to buildings/private water supply
3) age of site
4) size of site, and
5) distance to surface water.

The results of the assessment for the five key parameters for each of the 82 sites evaluated are provided in Tables 2a, 2b and 2c for City-owned sites, sites owned jointly by City and other(s), and for non-City sites, respectively. Also included in Tables 2a, 2b and 2c for each site are the corresponding ward number, the category of owner and the corresponding HLUI Activity ID # for cross-referencing with the existing HLUI database.

With respect to the third key parameter, distance to closest building or private water supply, the information was reported in Tables 2a to 2c distinctly for sites located in a rural setting (where potable water is supplied through private wells) and for sites located in a urban setting (characterized by denser development and municipally supplied water). As discussed in Subsection 2.4.3, for the first category of sites, potential concerns are more likely to be related to impacts on aquifer used for potable water, whereas for the second category of sites, there is greater likelihood that impacts may be related to the emission of methane gas resulting from the decomposition of putrescible waste. For sites located in urban setting, or for sites located in rural setting where buildings are located in close proximity of the area of filled wastes, the distance to the closest building with a basement was compared to 10 times the thickness of wastes filled within the unsaturated zone. The purpose of this information is to provide an indicator parameter, where houses located further away than the "critical" distance are likely not subject to potential impacts related to the migration of methane gas. Sites located closer than this limit may not represent an actual exposure because the age of the site may have resulted in the major portion of the decomposition of wastes having already occurred, or the nature of the wastes may not be prone to the emission of landfill gases.

The purposes of the identification of key parameters for the sites is for a general indication of physical settings such that the City of Ottawa can thereafter determine where its resources and attention need to be directed for future phases of the Old Landfill Management Strategy. These parameters by no means indicate the actual potential issues related to each site. The actual issues can only be identified with a satisfactory degree of certainty following a thorough investigation of each site.

5.3 Data Gap Identification

The results of the data gap identification are provided in Tables 3a, 3b and 3c, for City-owned sites, sites owned jointly by City and other(s), and for non-City sites, respectively. The purpose for conducting the data gap identification exercise was to provide guidance on the type of investigations required for determining the compliance of sites to applicable environmental criteria for future phases of the Old Landfill Management Strategy. A response (yes, no, unknown or not applicable) was provided for each of the following questions:

1. Is the waste area defined?
2. Has groundwater sampling been conducted?
3. Has surface water sampling been conducted?
4. Has gas/methane identification work been done at or surrounding the site? and,
5. Is the waste covered?

Within these Tables 3a to 3c, the parameter relating to the definition of the fill area (first data gap parameter) is accompanied by a note on how the waste footprint has been defined. This

parameter specifically includes: 1) by means of a referenced document showing a footprint; 2) by means of a site visit and/or air photos or, 3) by means of word of mouth, historical documentation supporting the existence of a landfill and/or known waste identified in a borehole. The accuracy of the waste site definition is variable, with the three methods enumerated above in a decreasing order of level of confidence on the method used for defining the waste area.

Next, with respect to gap parameter related to the cover on waste (fifth gap parameter), since not all sites were visited, assumptions based on the land use were sometimes required as to whether or not the waste area had been covered. For example, it has been assumed that old landfill sites now developed as parks within the former urban boundaries of the City of Ottawa have been covered; as these sites are regularly used by the public, a cover would be required to provide a barrier between the source (waste) and a potential receptor (human). As a component of the waste cover gap identification, the quality of the waste cover also requires assessment in areas where public health could be adversely affected. For this gap parameter, information was also provided as to whether any surficial soil sampling had been conducted at a site (parks or others) to evaluate issues of concern related to dermal contact or ingestion of potentially impacted soil.

In addition to the above-mentioned data gaps, one further gap that could be considered in the rural areas is "does the old landfill location fall within a well head protection area". The Ministry of the Environment commissioned the study of well head protection areas throughout the province in December 2001. These studies have been completed for the City of Ottawa. Only one old landfill (Site ID Number Go-2) was identified by these studies within a wellhead protection area for the Kings Park municipal communal system in Richmond, Ontario. However, the landfill is some 4 km away from the communal wells. No adverse effects are noted by this old landfill on the water quality. A wellhead monitoring program is being developed, at the time of this writing, to address the need for groundwater quality surveillance.

5.4 Investigation Status of Sites

It is noteworthy that separate and distinct from the data gap investigations, site investigations have been undertaken or are currently undergoing at several sites identified as part of this study. Excluding the methane potential evaluation work completed for the City of Ottawa by Gartner Lee Ltd. in 1980, 1982, 1984 and 1988, investigation or remediation of sites took place or is taking place in relation to the old landfill site at twelve sites for the City of Ottawa, at eight sites for a party other than the City of Ottawa (i.e., National Capital Commission, federal government, private owner, etc.), and at three sites both for the City of Ottawa and for another party. Eight sites have previously been investigated for reasons other than the old landfill site, e.g., to address petroleum hydrocarbon or coal tar contamination; or to evaluate geotechnical considerations prior to redevelopment). Not all investigations by other parties were available for review at the time of this study. In addition, the available documentation suggests that the filled wastes may have been removed/excavated at five old landfill sites (one of which was reportedly investigated for the City

of Ottawa and for another party), although this was not confirmed through subsurface investigations as part of the present study.

5.5 HLUI Update

The HLUI is a useful management and planning tool used by the City of Ottawa which houses information about historical land uses within the City of Ottawa. The HLUI database contains information on old landfills operated or owned by the City of Ottawa as well as those landfills which fall outside the definition of this study. It is Golder's understanding that the nature of the HLUI is such that it will be updated once this report is approved by City Council. For this reason, it was determined that the best method to relay information graphically for this project was to create a separate layer from the main HLUI. The old landfill site inventory is intended to be dynamic (see Section 5.6).

The existing HLUI could however be modified to reflect inaccuracies in old landfill site locations as identified through the present study. Errors or discrepancies in the HLUI identified during this study are summarized in Appendix C. They include:

- Old landfill sites identified during the present study and not included in the HLUI;
- Old landfill sites with duplicate HLUI entries;
- Old landfill sites identified in the HLUI which, based on this research work, do not exist; and
- Old landfill sites identified in the HLUI but indicated in an incorrect or inaccurate location.

5.6 Maintenance of Database

There is the potential that with time additional sites may be identified as old landfill sites. It would be appropriate that such sites be included in the database. Examples of future additions may include sites operated or owned by the City of Ottawa and currently in operation that gradually become closed down. In order to preserve the consistency of the database, information on the main characteristics of the site from all documents, references and resources available should be gathered using the method described in Section 4.1. The characterization of the sites with respect to the five key parameters developed as part of this study could be carried out using the method proposed in Subsections 2.4.2 to 2.4.6. A data gap identification could be performed for the future additions using the parameters described in Section 2.5.

It is suggested that the existing data sheets for sites identified during this study not be updated, should further investigation occur. The database is a tool to be used primarily as a Phase I Environmental Site Assessment type document. Future phases of the Old Landfill Management

Strategy would allow better definition of the subsurface conditions and potential issues associates with the old landfill sites, when and where deemed appropriate.

5.7 Results of the Verification and Qualification Procedure

As described earlier in the report, a procedure of verification and qualification of the data sheets was implemented in addition to a QA/QC consisting of carefully proofreading and reviewing all data. Slightly over 10% of the data sheets were verified by a qualified member of Golder's professional staff not previously involved in the data gathering procedure. Amongst other things, distances to receptors were re-measured, information on the geological setting was verified, and references included in the data sheets were cross-referenced to the general bibliography. Only minor inconsistencies were identified and subsequently rectified, with no major trends of errors which could have a potential effect on the gap analysis or the characterization of key parameters for the sites. All data sheets were proof-read for clarity and consistency. The position and size of all footprints included in the GIS were verified to confirm correct location of former landfill sites.

6.0 CONCLUSIONS AND RECOMMENDATIONS

The following summarizes the major findings and conclusions reached from this report on Phase 1 of Old Landfill Management Strategy – Identification of Sites. Recommendations are also provided for future phases of the program.

Eighty-two sites were identified fitting the description of the old landfill sites as defined by the City of Ottawa. Of these, 51 are located within the former City of Ottawa, with the remaining 31 sites located in the former municipalities of West Carleton (9), Goulbourn (4), Rideau (2), Osgoode (1), Kanata (1), Nepean (2), Gloucester (4) and Cumberland (8). The majority of sites (78) had previously been identified within the HLUI. Forty-seven of the sites were found to be greater than 50 years old. These older landfills are less likely to produce landfill gas because organics in the waste have already broken down or possibly were reduced prior to disposal via incineration. Seventeen City owned old landfill sites were found to be currently developed as parks or publicly accessible recreational areas.

The sites were grouped in three categories of ownership: 23 sites were found to be owned in their entirety by the City of Ottawa, 19 were owned jointly by the City of Ottawa and another party, and 40 sites were non-City owned sites (owned by a private individual, business, institution or other level of government).

The five key parameters developed to characterize sites in the context of the protection of human health and the safeguard of the environment provided a brief overview of the sites. The key parameters were: age and size of the landfill, the distance to human receptor (building or private well) and to a body of surface water, and subsurface conditions which dictate the potential migration of contaminants.

The data gap analysis carried out for each of the sites revealed that assessment of further information was required to develop a sound understanding of the issues required to assess the sites in terms of potential health and environmental effects. Data gaps were related to the following parameters: definition of the waste area, characterization of groundwater and surface water quality, assessment of landfill gas generation, and characterization of the landfill cover.

As identified in the City of Ottawa's Old Landfill Management Strategy, Phase 2 will include field investigations to define the degree of potential public health and environmental impacts. The data gap information identified in the Phase 1 study will allow for scoping of these Phase 2 investigations.

7.0 LIMITATIONS

This report was prepared for the exclusive use of the City of Ottawa. The report, which specifically includes all tables, figures and attachments, is based on information collected by Golder and is based solely on historical information and data obtained by Golder and others (see Appendix B "Data Sheets" and Appendix A "Bibliography" for list of contacts and documentation). The reporting of results from the historical information does not allow for evaluation of the adequacy of the work completed.

For purposes of this study, old landfills sites are defined as those sites in the City of Ottawa previously owned or operated by a municipality or currently owned by the City of Ottawa. The study was not to include operating landfill sites. Sources of information on the location of potential sites for this study have been provided. It is possible there may be more properties with the potential to be considered old landfills under the above-noted definition.

Although comprehensive in nature, the data contained in the database should not be used in lieu of a more complete Phase I Environmental Site Assessment where such an assessment is required.

The methods for determining footprints of the old landfills have been noted. These sources have not been verified by any physical or intrusive methods other than visual inspection conducted during a visit of the sites, and consequently actual geographic limits of the footprint may extend beyond the boundaries which have been mapped.

Contaminants in the environment are considered mobile and hence properties adjacent to old landfills in the database may also have potential to be contaminated now or in the future. These areas have not been included in the database but should be considered when using the database in the screening of applications or inquiries regarding these adjacent properties.

Landfill sites contain waste from known and unknown sources; it was beyond the scope of this study to identify and classify the waste a landfill may contain. An inherent potential for exposure to contaminants, and possible physical hazards, remains with any site used for waste disposal. The potential for exposure to the environment can be better understood and, if required, reduced further through supplemental investigation and assessment. Such investigation was not part of this study.

The services performed, as described in this report, were conducted in a manner consistent with that level of care and skill normally exercised by other members of the engineering and science professions currently practising under similar conditions, subject to the time limits and financial and physical constraints applicable to the services.

Any use which a third party makes of this report, or any reliance on, or decisions to be made based on it, are the responsibilities of such third parties. Golder accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

The findings and conclusions of this report are valid only as of the date of this report. If new information is discovered in future work, including excavations, borings, or other studies, Golder should be requested to re-evaluate the conclusions of this report, and to provide amendments as required.

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Table 1a
LEGEND OF SITE IDENTIFICATION NUMBERS:
City-Owned Sites

No.	Site ID #	Site Name	Category of Owner	Ward #
1	Cu-4	un-named Waste Disposal Site - Sand Rd.	City of Ottawa	19
2	Cu-13	Petrie Island Dump	City of Ottawa	1
3	Gl-2	Albion & Rideau Disposal Site	City of Ottawa	10
4	Gl-5	Gloucester STP Dump	City of Ottawa	11
5	Go-2	Richmond Dump	City of Ottawa	6
6	Go-6	Stittsville Dump (more recent) - 10th Line Dump	City of Ottawa	6
7	Ka-1	March Landfill	City of Ottawa	4
8	Np-4	Nepean Landfill	City of Ottawa	3
9	Ri-1	North Gower Township Dump	City of Ottawa	21
10	Ri-2	Marlborough Dump	City of Ottawa	21
11	Ur-3	McBride and Raven (Woodward Dump)	City of Ottawa	16
12	Ur-4	LaRose & Larkin (Raven Road)	City of Ottawa	16
13	Ur-5	Bayview & Slidell - Bayview Road Works Yard	City of Ottawa	15
14	Ur-20	Brown's Inlet Park	City of Ottawa	17
15	Ur-22	Central Park	City of Ottawa	17
16	Ur-23	New Edinburgh Park, Keefer St. to Dufferin St.	City of Ottawa	13
17	Ur-27	Lansdowne Park	City of Ottawa	17
18	Ur-30	Porter Island	City of Ottawa	12
19	Ur-34	Bordeleau Park	City of Ottawa	12
20	Ur-35	Windsor Ave.	City of Ottawa	17
21	Wc-1	Torbolton Con 5 Dump	City of Ottawa	5
22	Wc-3	Fitzroy Con 6 Dump (Galetta Landfill Site)	City of Ottawa	5
23	Wc-7	John Shaw Rd. Dump	City of Ottawa	5

Table 1b
LEGEND OF SITE IDENTIFICATION NUMBERS:
Sites Jointly Owned by City and Others

No.	Site ID #	Site Name	Category of Owner	Ward #
City and Government/Institutional				
1	Ur-38	Laroche Park	City and Institutional	15
2	Ur-51	St. Patrick Bridge	City and Government	12 & 13
3	Ur-54	Brule Property Dump	City and Government	17
City and Private				
4	Cu-6	Cumberland Cons 6-7 Dump	City and Private	19
5	Cu-14	un-named Waste Disposal Site - Devine Rd.	City and Private	19
6	Cu-22	un-named Waste Disposal Site - St. Joseph Blvd.	City and Private	1
7	Go-5	Stapledon Dump	City and Private	6
8	Os-1	Osgoode Con 2 Dump	City and Private	20
9	Ur-1	Pinecrest & Dumaurier	City and Private	7
10	Ur-8	Brewer Park (north)	City and Private	17
11	Ur-17	Chamberlain Ave. (Bank and Highway 17)	City and possibly Private	17
12	Ur-28	Lees Ave. (old Armoury)	City and Private	17
13	Ur-33	Warrington Drive - Wendover Ave. to Billings Bridge	City and possibly Private	17
14	Ur-43	East side of Merivale Road north of Baseline Road	City and Private	16
15	Wc-8	Loggers Way Dump	City and Private	5
16	Wc-10	Carp Plaza	Private and possibly City	5
City, Government/Institutional and Private				
17	Ur-32	Brewer Park (south) and Carleton University	City, Institutional and Private	17
18	Ur-42	Young and Fairmont	City, Government and Private	15
19	Ur-53	White Father's Property	Private and possibly Institutional and City	12

Table 1c
LEGEND OF SITE IDENTIFICATION NUMBERS:
Non-City Owned Sites

No.	Site ID #	Site Name	Category of Owner	Ward #
Government/Institutional				
1	Gl-1	Gloucester Landfill	Government	10
2	Gl-4	Ridge Road Landfill	Government	10
3	Np-3	Bruce Pit	Government	9
4	Ur-2	Parkway & Richmond (McGee Farm)	Government *	7
5	Ur-6	Nepean Bay	Government	14
6	Ur-7	Carleton University	Institutional	17
7	Ur-10	Riverside Drive	Government	17 & 18
8	Ur-13	Riverside Drive and Queensway	Government	17
9	Ur-15	Billings Street at Riverside (Rideau River Park)	Institutional	18
10	Ur-21	Commissioner Park	Government	17
11	Ur-24	New Edinburgh Park, Union St. to Queen Victoria St.	Government	13
12	Ur-25	Kingsview Park	Government	12
13	Ur-26	near Supreme Court building	Government	14
14	Ur-29	Maple Island	Government	13
15	Ur-37	King Edward and York St.	Government	12
16	Ur-39	Southwest corner of Sussex and John Streets	Government	13
17	Ur-40	Between Henderson and King Edward Streets, south of	Institutional	12
18	Wc-5	Fairgrounds Dump	Institutional	5
Private				
19	Cu-5	Cumberland Con 6 Dump	Private	19
20	Cu-9	Sarsfield Rd Dump	Private	19
21	Cu-15	un-named waste disposal site - Dunning Rd.	Private	19
22	Go-4	Stittsville Dump (old)	Private	6
23	Ur-9	Bank and Kilborn	Private	18
24	Ur-11	Riverside Drive (Nunt Farm)	Private	17
25	Ur-14	Montreal Road (Notre-Dame Cemetery)	Private	12 & 13
26	Ur-16	Hare Avenue	Private	7
27	Ur-19	Mc Rae Ave.	Private	15
28	Ur-31	Sherwood Drive, Carling to Irving	Private	15
29	Ur-41	Bayswater and Wellington	Private	15
30	Ur-46	Beechwood Ave.	Private	12
31	Ur-47	Rideau View Estate	Private	12
32	Ur-48	St. Charles St.	Private	12
33	Ur-49	Dominion Bridge Co. Property	Private	12
34	Ur-52	Lenore Place and Coupal Street	Private	12
35	Wc-2	Woodlawn Dump or Torbolton Con 2 Dump	Private	5
36	Wc-4	Carp Rd near Craig Side Rd Dump	Private	5
37	Wc-6	Holland Hill Rd Dump	Private	5
Government/Institutional and Private				
38	Ur-12	Algonquin College Rideau Campus (Lees Avenue)	Institutional and Private	17
39	Ur-36	North of Lees Ave., Lot 6, Con D	Private and Government	17
40	Ur-50	Ivy Street Dump and Marier Ave. Dump	Private and possibly Institutional	12

Note: * Landfill footprint possibly extends on City property

Table 2a
Assessment of Key Parameters:
City-Owned Sites

No.	Site ID #	Site Name	Ward #	Category of Owner	HLUI Activity ID #	Subsurface Conditions	Distance to Closest Building / Private Water Supply * (R = rural setting; U = urban setting)	Age of Site	Size of Site	Distance to Surface Water
1	Cu-4	un-named Waste Disposal Site - Sand Rd.	19	City of Ottawa	6455	granular soil	R: building 250 m from site	completed early 1980's	< 1 ha	1 km to creek, 350 m to marsh
2	Cu-13	Petrie Island Dump	1	City of Ottawa	6470	granular soil	R: assumed no basement or well in buildings on island	completed mid 70's	site about 7 ha	adjacent to river
3	Gl-2	Albion & Rideau Disposal Site	10	City of Ottawa	GAL 11	granular soil	R: building 120 m from site	closed in 2002	4 ha	over 1 km to swamp
4	Gl-5	Gloucester STP Dump	11	City of Ottawa	6096	clay	U: buildings on site (<10x Depth LF)	closed in 1980's	2.6 ha	200 m to river
5	Go-2	Richmond Dump	6	City of Ottawa	6287	organic deposits	R: building within 160 m of site	closed 1975	1.5 ha	900 m to drain
6	Go-6	Stittsville Dump (more recent) - 10th Line Dump	6	City of Ottawa	6077	bedrock at surface	R: 500 m to well, other building closer to site not regularly used	closed 1982	7 to 8 ha	400 m to swamp
7	Ka-1	March Landfill	4	City of Ottawa	6079	bedrock at surface near site	R: buildings within 300 m of site	closed 1973	1.7 ha	adjacent to drain
8	Np-4	Nepean Landfill	3	City of Ottawa	6018	granular soil	R: site buildings adjacent to site (<10x Depth LF)	closed in 1980	19 ha	over 500 m to agricultural drain
9	Ri-1	North Gower Township Dump	21	City of Ottawa	5914	granular soil	R: building 150 m from site	closed 1972 or 1977	assumed possibly more than 1 ha but less than 5 ha	270 m to marsh
10	Ri-2	Marlborough Dump	21	City of Ottawa	6067	bedrock at surface	R: building 400 m from site	closed mid 1980's	1.5 ha	400 m to creek
11	Ur-3	McBride and Raven (Woodward Dump)	16	City of Ottawa	6102	till	U: building adjacent to site (<10x Depth LF)	closed 1953	4ha	2.2 km to river
12	Ur-4	LaRose & Larkin (Raven Road)	16	City of Ottawa	7068	granular soil over till	U: buildings on site (<10x Depth LF)	active 1947	1.2 ha	2.3 km to river
13	Ur-5	Bayview & Slidell - Bayview Road Works Yard	15	City of Ottawa	6105	bedrock within 1 m of ground surface	U: buildings on site (<10x Depth LF)	closed 1946	7 ha	adjacent to river
14	Ur-20	Brown's Inlet Park	17	City of Ottawa	6129	organic soil	U: buildings within 15 m of site (<10x Depth LF)	pre 1924	0.7 ha	adjacent to inlet to canal
15	Ur-22	Central Park	17	City of Ottawa	6190	silt and clay	U: buildings within 10 m of site (<10x Depth LF)	pre 1925	2.5 ha	adjacent to creek
16	Ur-23	New Edinburgh Park, Keefer St. to Dufferin St.	13	City of Ottawa	6191	clay and silt	U: buildings within 20 m of site (<10x Depth LF)	1928 to 1938 or pre 1925	1.5 ha	adjacent to river
17	Ur-27	Lansdowne Park	17	City of Ottawa	6198	sandy silt, sand, cobbles	U: buildings 90 m from site (>10x Depth LF)	assumed pre 1945	1.2 ha	50 m to canal
18	Ur-30	Porter Island	12	City of Ottawa	6203	till	U: building on site (<10x Depth LF)	before 1928	3 ha	island in river
19	Ur-34	Bordeleau Park	12	City of Ottawa	6243	granular soil	U: buildings within 20 m of site (<10x Depth LF)	completed after 1945	0.3 ha	less than 30 m to river
20	Ur-35	Windsor Ave.	17	City of Ottawa	6245	clay and silt	U: buildings adjacent to site (<10x Depth LF)	active around 1928	< 0.5 ha	50 m to river
21	Wc-1	Torbolton Con 5 Dump	5	City of Ottawa	5946	granular soil	R: building 350 m from site	officially closed 1991	2.5 ha	650 m to creek, 250 m to marsh
22	Wc-3	Fitzroy Con 6 Dump (Galetta Landfill Site)	5	City of Ottawa	6029	bedrock at surface	R: building 380 m from site	officially closed 1991	0.9 ha	550 m to river, 100 m to marsh
23	Wc-7	John Shaw Rd. Dump	5	City of Ottawa	City of Ottawa	bedrock within 2 m of surface, bedrock outcrops near the site but 150 m away	R: building 120 m from site	closed late 1950's	0.5 ha	over 1 km to river

Note: * For sites in urban setting, or for sites in rural setting where buildings are on or immediately adjacent to the old landfill site, the distance to the closest building was compared to 10 times the thickness of filled wastes below ground surface in the unsaturated zone.

Table 2b
Assessment of Key Parameters:
Sites Jointly Owned by City and Others

No.	Site ID #	Site Name	Ward #	Category of Owner	HLUI Activity ID #	Subsurface Conditions	Distance to Closest Building / Private Water Supply * (R = rural setting; U = urban setting)	Age of Site	Size of Site	Distance to Surface Water
1	Cu-6	Cumberland Cons 6-7 Dump	19	City and Private	5776	bedrock at surface	R: building over 800 m from site	complete 1969	0.8 ha	200 m to brook, 200 m to marsh
2	Cu-14	un-named Waste Disposal Site - Devine Rd.	19	City and Private	6466	granular soil	R: waste thickness under ground surface unknown and building within 200 m of site	pre 1970	assumed <1ha	100 m to 200 m to creek
3	Cu-22	un-named Waste Disposal Site - St. Joseph Blvd.	1	City and Private	6469	bedrock near surface at site	U: buildings within 50 m of site (presumed <10x Depth LF)	pre 1970	assumed < 1 ha	over 1 km to river
4	Go-5	Stapledon Dump	6	City and Private	6285	organic deposits	R: building more than 300 m from site	closed in early 1970's	0.4 ha	450 m to river, 310 m to wetland
5	Os-1	Osgoode Con 2 Dump	20	City and Private	5863	granular soil	R: building at least 400 m from site	closed 1987	6.4 ha	50 m to ditch with no outlet, 900 m to drain
6	Ur-1	Pinecrest & Dumaurier	7	City and Private	6098	granular soil	U: building on site (<10x Depth LF)	closed 1957	4 ha	400 m to creek
7	Ur-8	Brewer Park (north)	17	City and Private	6110	till	U: buildings on site (<10x Depth LF)	around 1933	3 ha	400 m to river or canal
8	Ur-17	Chamberlain Ave. (Bank and Highway 17)	17	City and possibly Private	6127	till	U: buildings on site (<10x Depth LF)	1920 to 1940	0.2 ha	750 m to canal
9	Ur-28	Lees Ave. (old Armoury)	17	City and Private	6200	mixture of silt, till and organic deposits	U: buildings on site (<10x Depth LF)	closed in the mid to late 1930's	4.5 ha	adjacent to river
10	Ur-32	Brewer Park (south) and Carleton University	17	City, Institutional and Private	6240	organic deposits	U: buildings on site (<10x Depth LF)	pre 1928	8 ha	adjacent to river
11	Ur-33	Warrington Drive - Wendover Ave. to Billings Bridge	17	City and possibly Private	6241	clay and silt	U: buildings on site (<10x Depth LF)	before 1928	0.5 ha	adjacent to river
12	Ur-38	Laroche Park	15	City and Institutional	6122	bedrock at or near surface	U: buildings on site (<10x Depth LF)	1928 to 1932	0.6 ha	350 m to river
13	Ur-42	Young and Fairmont	15	Private, City and Government	7074	bedrock at surface at and near site	U: buildings on site (<10x Depth LF)	1928 to 1932	0.4 ha	over 1 km to lake and river
14	Ur-43	East side of Merivale Road north of Baseline Road	16	City and Private	7076	bedrock at surface at and near site	U: building 50 m from site (presumed >10x Depth LF)	1951-1972	0.3 ha	over 2 km to any surface water
15	Ur-51	St. Patrick Bridge	12 & 13	City and Government	GAL 3	clay and silt	U: buildings 30 m from site (presumed <10x Depth LF)	closed 1932	< 1 ha	adjacent to river
16	Ur-53	White Father's Property	12	Private and possibly Institutional and City	GAL 1	till	U: buildings on site (<10x Depth LF)	closed 1949	12 ha	800 m to river
17	Ur-54	Brule Property Dump	17	City and Government	6480	clay and silt	U: buildings 50 m from site (presumed <10x Depth LF)	likely closed more than 25 years ago	possibly 3 ha	adjacent to creek
18	Wc-8	Loggers Way Dump	5	City and Private	6505	bedrock at surface	R: building 110 m from site	completed in the late 1960's	0.1 to 0.45 ha	800 m to river
19	Wc-10	Carp Plaza	5	Private and possibly City	GAL 10	granular soil surrounding the site	R: buildings immediately adjacent to the site (<10x Depth LF)	assumed before the 1940's	assumed < 1 ha	less than 25 m to river

Note: * For sites in urban setting, or for sites in rural setting where buildings are on or immediately adjacent to the old landfill site, the distance to the closest building was compared to 10 times the thickness of filled wastes below ground surface in the unsaturated zone.

Table 2c
Assessment of Key Parameters:
Non-City Owned Sites

No.	Site ID #	Site Name	Ward #	Category of Owner	HLUI Activity ID #	Subsurface Conditions	Distance to Closest Building / Private Water Supply * (R = rural setting; U = urban setting)	Age of Site	Size of Site	Distance to Surface Water
1	Cu-5	Cumberland Con 6 Dump	19	Private	6295	mixture of organic soil, granular deposit and till	R: building within 100 m of site	possibly not completed until 1992	assumed < 1 ha	800 m to nearest creek, 400 m to marsh
2	Cu-9	Sarsfield Rd Dump	19	Private	6462	granular soil	R: building 200 m from site	complete 1972	1.2 ha	300 m to creek
3	Cu-15	un-named waste disposal site - Dunning Rd.	19	Private	6459	granular soil	R: building within 50 m of site (<10x Depth LF)	completed late 70's to early 80's	0.3 ha	over 400 m to agricultural drain, 350 m to marsh
4	Gl-1	Gloucester Landfill	10	Government	6087	granular soil	U: building within 200 m of site (<10x Depth LF)	chemical dump closed in 1980	6.2 ha (6 + 0.2)	1.4 km to drain
5	Gl-4	Ridge Road Landfill	10	Government	6101	granular soil surrounding the site	R: no buildings or wells nearby	closed 1977	44 ha	less than 200 m to creek
6	Go-4	Stittsville Dump (old)	6	Private	6284	granular soil with bedrock at surface near the site	R: building within 90 m of site (>10x Depth LF)	closed 1962	2 ha	50 m to drainage ditches
7	Np-3	Bruce Pit	9	Government	6282	organic soil	U: building 500 m from site (>10x Depth LF)	waste from 1960's	0.6 ha	150 m to pond
8	Ur-2	Parkway & Richmond (McGee Farm)	7	Government**	6099	till	U: building within 40 m to 60 m of site (<10x Depth LF)	closed 1959	3.5 ha	50 m to channel
9	Ur-6	Nepean Bay	14	Government	6108	till	U: building 160 m from site (>10x Depth LF)	closed 1964	7.5 ha	adjacent to river
10	Ur-7	Carleton University	17	Institutional	6109	organic soil	U: building within 20 m of site (<10x Depth LF)	completed between mid 40's and 50's	7 ha	400 m or 350 m to river or canal
11	Ur-9	Bank and Kilborn	18	Private	6111	clay and silt	U: buildings on site (<10x Depth LF)	active in 1947	0.2 ha	500 m to river
12	Ur-10	Riverside Drive	17 & 18	Government	6112	bedrock at surface	U: building on extension of property (<10x Depth LF)	closed 1963	100 ha	adjacent to river
13	Ur-11	Riverside Drive (Nunt Farm)	17	Private	GAL 5	clay	U: buildings on site (<10x Depth LF)	active late 1950's	6 ha	500 m to river
14	Ur-12	Algonquin College Rideau Campus (Lees Avenue)	17	Institutional and Private	6115	granular soil	U: building on site (<10x Depth LF)	closed 1947	6 ha	adjacent to river
15	Ur-13	Riverside Drive and Queensway	17	Government	6117	silt	U: building over 200 m from site (>10x Depth LF)	closed 1967	1.5 ha	30 m to river
16	Ur-14	Montreal Road (Notre-Dame Cemetery)	12 & 13	Private	6118	granular soil	U: buildings on site (<10x Depth LF)	1953	11 ha	adjacent to pond
17	Ur-15	Billings Street at Riverside (Rideau River Park)	18	Institutional	6125	granular soil	U: buildings within 30 m of site (<10x Depth LF)	active between 1945 and 1950	0.2 ha	250 m to river
18	Ur-16	Hare Avenue	7	Private	7069	bedrock at or near surface in area	U: buildings on site (<10x Depth LF)	active between 1945 and 1950	0.4 ha	1.5 km to river
19	Ur-19	Mc Rae Ave.	15	Private	GAL 4	till	U: buildings 100 m from site (<10x Depth LF)	pre 1940	assumed < 1 ha	1 km to river
20	Ur-21	Commissioner Park	17	Government	6130	bedrock less than 2 m below ground surface	U: building 40 m from site (<10x Depth LF)	pre 1924	4 ha	adjacent to lake
21	Ur-24	New Edinburgh Park, Union St. to Queen Victoria St.	13	Government	6192	clay and silt	U: buildings within 20 m of site (<10x Depth LF)	assumed pre 1945	1.5 ha	adjacent to river

Notes: * For sites in urban setting, or for sites in rural setting where buildings are on or immediately adjacent to the old landfill site, the distance to the closest building was compared to 10 times the thickness of filled wastes below ground surface in the unsaturated zone.
** Landfill footprint possibly extends on City property

Table 2c (continued)

No.	Site ID #	Site Name	Ward #	Category of Owner	HLUI Activity ID #	Subsurface Conditions	Distance to Closest Building / Private Water Supply * (R = rural setting; U = urban setting)	Age of Site	Size of Site	Distance to Surface Water
22	Ur-25	Kingsview Park	12	Government	6131	clay and silt	U: buildings 30 m from site (<10x Depth LF)	most evidence supports pre 1945	3 ha	adjacent to river
23	Ur-26	near Supreme Court building	14	Government	6193	bedrock near surface	U: buildings within 60 m of site (<10x Depth LF)	garbage fill pre 1945	up to 1.5 ha	adjacent to river
24	Ur-29	Maple Island	13	Government	6202	granular soil	U: island is parkland with no development (>10x Depth LF)	before 1928	1.1 ha	adjacent to river
25	Ur-31	Sherwood Drive, Carling to Irving	15	Private	6238	granular soil	U: buildings on site (<10x Depth LF)	operated between 1924 and 1928	3.5 ha	500 m to lake
26	Ur-36	North of Lees Ave., Lot 6, Con D	17	Private and Government	7070	clay and silt	U: buildings on site (<10x Depth LF)	active around 1928	5.8 ha	100 m to canal
27	Ur-37	King Edward and York St.	12	Government	7071	clay and silt	U: building on site (<10x Depth LF)	operated before 1925	0.4 ha	over 750 m to canal or river
28	Ur-39	Southwest corner of Sussex and John Streets	13	Government	7072	bedrock at surface near the site	U: buildings within 25 m of site (<10x Depth LF)	probably early 1900's	0.5 ha	30 m to river
29	Ur-40	Between Henderson and King Edward Streets, south of Templeton St.	12	Institutional	7073	clay and silt	U: buildings 20 m from site (<10x Depth LF)	prior to 1928	0.8 ha	200 m to river
30	Ur-41	Bayswater and Wellington	15	Private	7075	bedrock at surface	U: buildings 40 m from site (>10x Depth LF)	assumed prior to 1928	0.3 ha	over 500 m to river
31	Ur-46	Beechwood Ave.	12	Private	GAL 2	till	U: buildings on site (<10x Depth LF)	1910's to 1920's	possibly more than 5 ha	150 m to river
32	Ur-47	Rideau View Estate	12	Private	GAL 12	till	U: buildings on site (<10x Depth LF)	closed 1933	possibly 3 ha	110 m to river
33	Ur-48	St. Charles St.	12	Private	GAL 13	till	U: buildings on site (<10x Depth LF)	closed 1930	0.5 ha	300 m to river
34	Ur-49	Dominion Bridge Co. Property	12	Private	GAL 14	till	U: buildings 20 m from site (<10x Depth LF)	complete in 1945	3.2 ha	300 m to river
35	Ur-50	Ivy Street Dump and Marier Ave. Dump	12	Private and possibly Institutional	GAL 15	till	U: buildings on site (<10x Depth LF)	complete in 1949	11 ha	500 m to river
36	Ur-52	Lenore Place and Coupal Street	12	Private	6305	clay and silt	U: buildings on site (<10x Depth LF)	operated before 1932	2 ha	150 m to river
37	Wc-2	Woodlawn Dump or Torbolton Con 2 Dump	5	Private	6064	granular soil	R: well 90 m from site (>10x Depth LF)	closed 1971	0.9 ha	425 m to creek
38	Wc-4	Carp Rd near Craig Side Rd Dump	5	Private	GAL 7	granular soil	R: building within 35 m of site (presumed >10x Depth LF)	closed early 1960's	0.2 to 0.3 ha	450 m to river
39	Wc-5	Fairgrounds Dump	5	Institutional	GAL 9	granular soil	R: building 150 m from site	active early 1940's	assumed < 1 ha	420 m to river
40	Wc-6	Holland Hill Rd Dump	5	Private	GAL 8	bedrock outcrops at and near site	R: building within 65 m of site (presumed >10x Depth LF)	active early 1940's	< 0.1 ha	750 m to river, 500 m to marsh

Note: * For sites in urban setting, or for sites in rural setting where buildings are on or immediately adjacent to the old landfill site, the distance to the closest building was compared to 10 times the thickness of filled wastes below ground surface in the unsaturated zone.

Table 3a
Data Gap Identification:
City-Owned Sites

No.	Site ID #	Site Name	Ward #	HLUI Activity ID #	Is the Waste Area Defined? [1]	Has Groundwater Sampling Been Conducted?	Has Surface Water Sampling Been Completed? [2]	Has Gas/Methane Identification Work Been Done at or Surrounding the Site? [3]	Is the Waste Covered?
1	Cu-4	un-named Waste Disposal Site - Sand Rd.	19	6455	Yes (2)	No	Not applicable	Not applicable	No
2	Cu-13	Petrie Island Dump	1	6470	Yes (1)	No	No	Not applicable	No
3	Gl-2	Albion & Rideau Disposal Site	10	GAL 11	Yes (1)	Yes	Not applicable	No	No [4]
4	Gl-5	Gloucester STP Dump	11	6096	Yes (3)	No	No	No	Yes
5	Go-2	Richmond Dump	6	6287	Yes (2)	No	Not applicable	Not applicable	No
6	Go-6	Stittsville Dump (more recent) - 10th Line Dump	6	6077	Yes (2)	No	Not applicable	Not applicable	Mostly (waste still visible in a few areas)
7	Ka-1	March Landfill	4	6079	Yes (1)	Yes	Yes	Yes	Yes
8	Np-4	Nepean Landfill	3	6018	Yes (1)	Yes	Yes	Yes	Yes
9	Ri-1	North Gower Township Dump	21	5914	Yes (2)	No	Not applicable	No	Only partially
10	Ri-2	Marlborough Dump	21	6067	Yes (2)	No	Not applicable	Not applicable	Mostly (waste still visible in a few areas)
11	Ur-3	McBride and Raven (Woodward Dump)	16	6102	Yes (1)	No	No	Yes	Yes
12	Ur-4	LaRose & Larkin (Raven Road)	16	7068	Yes (1)	No	No	Yes	Yes
13	Ur-5	Bayview & Slidell - Bayview Road Works Yard	15	6105	Yes (1)	Yes	No	Yes	Yes
14	Ur-20	Brown's Inlet Park	17	6129	Yes (1)	No	No	No	Yes
15	Ur-22	Central Park	17	6190	Yes (1)	No	No	Yes	Yes
16	Ur-23	New Edinburgh Park, Keefer St. to Dufferin St.	13	6191	Yes (1)	No	No	Yes	Yes
17	Ur-27	Lansdowne Park	17	6198	Yes (1)	Yes	No	No	Yes [4]
18	Ur-30	Porter Island	12	6203	Yes (1)	Yes	No	Yes	Yes
19	Ur-34	Bordeleau Park	12	6243	Yes (1)	No	No	Yes	Yes
20	Ur-35	Windsor Ave.	17	6245	Yes (1)	No	No	Yes	Yes
21	Wc-1	Torbolton Con 5 Dump	5	5946	Yes (2)	No	No	Not applicable	Yes
22	Wc-3	Fitzroy Con 6 Dump (Galetta Landfill Site)	5	6029	Yes (2)	No	No	Not applicable	Yes
23	Wc-7	John Shaw Rd. Dump	5	GAL 6	Yes (2)	No	Not applicable	Not applicable	No

Notes: 1 The nature of waste area definition has been provided (i.e., 1 identified by means of a reference showing the footprint of the site, 2 identified by means of site visit and/or air photos or 3 identified by means of word of mouth, documentation supporting the landfill existence and/or known waste identified in a borehole)

2 Surface water sampling is not applicable when a permanent surface water body is more than 250 m from a defined site or footprint

3 Gas/methane identification work is not applicable when the site contains no waste underground or the water table in the area is close to ground surface. This assumption is not valid for future development directly on site.

4 Available documentation suggests that significant surficial sampling was conducted at the site.

Table 3b
Data Gap Identification:
Sites Jointly Owned by City and Others

No.	Site ID #	Site Name	Ward #	HLUI Activity ID #	Is the Waste Area Defined? [1]	Has Groundwater Sampling Been Conducted?	Has Surface Water Sampling Been Completed? [2]	Has Gas/Methane Identification Work Been Done at or Surrounding the Site? [3]	Is the Waste Covered?
1	Cu-6	Cumberland Cons 6-7 Dump	19	5776	Yes (2)	No	No	No	No
2	Cu-14	un-named Waste Disposal Site - Devine Rd.	19	6466	No	No	No	No	Unknown
3	Cu-22	un-named Waste Disposal Site - St. Joseph Blvd.	1	6469	No	No	Not applicable	No	Unknown (exact footprint no identified)
4	Go-5	Stapledon Dump	6	6285	Yes (2)	No	Not applicable	Not applicable	Partly
5	Os-1	Osgoode Con 2 Dump	20	5863	Yes (1)	Yes	Yes	Not applicable	Mostly (waste still visible in a few areas)
6	Ur-1	Pinecrest & Dumaurier	7	6098	Yes (1)	Yes	No	Yes	Yes
7	Ur-8	Brewer Park (north)	17	6110	Yes (1)	No	Not applicable	Yes	Yes
8	Ur-17	Chamberlain Ave. (Bank and Highway 17)	17	6127	Yes (1)	No	Not applicable	Yes	Yes
9	Ur-28	Lees Ave. (old Armoury)	17	6200	Yes (1)	Possibly (but not available for review in this investigation - source NCC)	Possibly (but not available for review in this investigation - source NCC)	Yes	Yes
10	Ur-32	Brewer Park (south) and Carleton University	17	6240	Yes (1)	Yes	No	Yes	Yes
11	Ur-33	Warrington Drive - Wendover Ave. to Billings Bridge	17	6241	Yes (1)	No	No	Yes	Yes
12	Ur-38	Laroche Park	15	6122	Yes (1)	Yes (but not available for review in this investigation - source NCC)	Not applicable	Yes	Yes [4]
13	Ur-42	Young and Fairmont	15	7074	Yes (1)	No	Not applicable	Yes	Yes
14	Ur-43	East side of Merivale Road north of Baseline Road	16	7076	Yes (1)	Yes	Not applicable	No	Yes (waste was reportedly removed) [4]
15	Ur-51	St. Patrick Bridge	12 & 13	GAL 3	Yes (3)	No	No	No	Yes
16	Ur-53	White Father's Property	12	GAL 1	Yes (3)	No	Not applicable	No	Yes
17	Ur-54	Brule Property Dump	17	6480	No	No	No	No	Yes
18	Wc-8	Loggers Way Dump	5	6505	Yes (2)	No	Not applicable	Not applicable	Mostly (waste still visible in a few areas)
19	Wc-10	Carp Plaza	5	GAL 10	Yes (3)	No	No	No	Yes

Notes: 1 The nature of waste area definition has been provided (i.e., 1 identified by means of a reference showing the footprint of the site, 2 identified by means of site visit and/or air photos or 3 identified by means of word of mouth, documentation supporting the landfill existence and/or known waste identified in a borehole)
2 Surface water sampling is not applicable when a permanent surface water body is more than 250 m from a defined site or footprint
3 Gas/methane identification work is not applicable when the site contains no waste underground or the water table in the area is close to ground surface. This assumption is not valid for future development directly on site.
4 Available documentation suggests that significant surficial sampling was conducted at the site.

Table 3c
Data Gap Identification:
Non-City Owned Sites

No.	Site ID #	Site Name	Ward #	HLUI Activity ID #	Is the Waste Area Defined? [1]	Has Groundwater Sampling Been Conducted?	Has Surface Water Sampling Been Completed? [2]	Has Gas/Methane Identification Work Been Done at or Surrounding the Site? [3]	Is the Waste Covered?
1	Cu-5	Cumberland Con 6 Dump	19	6295	Yes (3)	No	Not applicable	No	Unknown
2	Cu-9	Sarsfield Rd Dump	19	6462	Yes (2)	No	No	No	Unknown
3	Cu-15	un-named waste disposal site - Dunning Rd.	19	6459	Yes (3)	No	Not applicable	No	Unknown
4	Gl-1	Gloucester Landfill	10	6087	Yes (1)	Yes	Not applicable	Unknown	Yes
5	Gl-4	Ridge Road Landfill	10	6101	Yes (1)	Yes	Yes	Yes	Yes [4]
6	Go-4	Stittsville Dump (old)	6	6284	Yes (2)	Yes (monitoring wells installed on property - no results available)	Yes (off-site by MOE)	No	Mostly (waste still visible in a few areas)
7	Np-3	Bruce Pit	9	6282	Yes (1)	Yes	Yes	Yes	Yes
8	Ur-2	Parkway & Richmond (McGee Farm)	7	6099	Yes (1)	Yes	Yes (but not available for review in this investigation - source NCC)	Yes	Yes
9	Ur-6	Nepean Bay	14	6108	Yes (1)	Yes	No	Yes	Yes [4]
10	Ur-7	Carleton University	17	6109	Yes (1)	No	Not applicable	Yes	Yes
11	Ur-9	Bank and Kilborn	18	6111	Yes (1)	No	Not applicable	Yes	Yes
12	Ur-10	Riverside Drive	17 & 18	6112	Yes (1)	Yes (but not available for review in this investigation - source NCC)	Yes	Yes	Yes
13	Ur-11	Riverside Drive (Nunt Farm)	17	GAL 5	Yes (1)	No	Not applicable	Yes	Yes
14	Ur-12	Algonquin College Rideau Campus (Lees Avenue)	17	6115	Yes (1)	Yes	No	Yes	Yes
15	Ur-13	Riverside Drive and Queensway	17	6117	Yes (1)	Yes (but not available for review in this investigation - source NCC)	Possibly (but not available for review in this investigation - souce NCC)	Possibly (but not available for review in this investigation - souce NCC)	Yes
16	Ur-14	Montreal Road (Notre-Dame Cemetery)	12 & 13	6118	Yes (1)	No	No	Yes	Yes
17	Ur-15	Billings Street at Riverside (Rideau River Park)	18	6125	Yes (1)	No	No	Yes	Yes
18	Ur-16	Hare Avenue	7	7069	Yes (1)	No	Not applicable	No	Yes
19	Ur-19	Mc Rae Ave.	15	GAL 4	No	No	Not applicable	No	Yes
20	Ur-21	Commissioner Park	17	6130	Yes (1)	No	No	Yes	Yes
21	Ur-24	New Edinburgh Park, Union St. to Queen Victoria St.	13	6192	Yes (1)	No	No	Yes	Yes

Notes: 1 The nature of waste area definition has been provided (i.e., 1 identified by means of a reference showing the footprint of the site, 2 identified by means of site visit and/or air photos or 3 identified by means of word of mouth, documentation supporting the landfill existence and/or known waste identified in a borehole)
2 Surface water sampling is not applicable when a permanent surface water body is more than 250 m from a defined site or footprint
3 Gas/methane identification work is not applicable when the site contains no waste underground or the water table in the area is close to ground surface. This assumption is not valid for future development directly on site.
4 Available documentation suggests that significant surficial sampling was conducted at the site.

Table 3c (continued)

No.	Site ID #	Site Name	Ward #	HLUI Activity ID #	Is the Waste Area Defined? [1]	Has Groundwater Sampling Been Conducted?	Has Surface Water Sampling Been Completed? [2]	Has Gas/Methane Identification Work Been Done at or Surrounding the Site? [3]	Is the Waste Covered? [4]
22	Ur-25	Kingsview Park	12	6131	Yes (1)	Possibly (but not available for review in this investigation - source NCC)	Possibly (but not available for review in this investigation - source NCC)	Yes	Yes
23	Ur-26	near Supreme Court building	14	6193	Yes (1)	No	No	No	Yes
24	Ur-29	Maple Island	13	6202	Yes (1)	No	No	Yes	Yes
25	Ur-31	Sherwood Drive, Carling to Irving	15	6238	Yes (1)	Yes	Not applicable	Yes	Yes
26	Ur-36	North of Lees Ave., Lot 6, Con D	17	7070	Yes (1)	Yes (but not available for review in this investigation - source NCC)	Possibly (but not available for review in this investigation - souce NCC)	Yes	Yes
27	Ur-37	King Edward and York St.	12	7071	Yes (1)	Yes (but not available for review in this investigation - source GLL)	Not applicable	No	Yes
28	Ur-39	Southwest corner of Sussex and John Streets	13	7072	Yes (1)	No	No	No	Yes
29	Ur-40	Between Henderson and King Edward Streets, south of Templeton St.	12	7073	Yes (1)	No	No	No	Yes
30	Ur-41	Bayswater and Wellington	15	7075	Yes (1)	No	Not applicable	Yes	Yes
31	Ur-46	Beechwood Ave.	12	GAL 2	Yes (3)	No	No	No	Yes
32	Ur-47	Rideau View Estate	12	GAL 12	Yes (3)	No	No	No	Yes
33	Ur-48	St. Charles St.	12	GAL 13	Yes (3)	No	Not applicable	No	Yes
34	Ur-49	Dominion Bridge Co. Property	12	GAL 14	Yes (3)	Yes	Not applicable	No	Yes [4]
35	Ur-50	Ivy Street Dump and Marier Ave. Dump	12	GAL 15	Yes (3)	No	Not applicable	No	Yes
36	Ur-52	Lenore Place and Coupal Street	12	6305	Yes (3)	No	No	No	Yes
37	Wc-2	Woodlawn Dump or Torbolton Con 2 Dump	5	6064	Yes (2)	Yes	Not applicable	No	Yes
38	Wc-4	Carp Rd near Craig Side Rd Dump	5	GAL 7	Yes (2)	No	Not applicable	Not applicable	No
39	Wc-5	Fairgrounds Dump	5	GAL 9	Yes (3)	No	Not applicable	No	Yes
40	Wc-6	Holland Hill Rd Dump	5	GAL 8	Yes (3)	No	Not applicable	Not applicable	Unknown

Notes: 1 The nature of waste area definition has been provided (i.e., 1 identified by means of a reference showing the footprint of the site, 2 identified by means of site visit and/or air photos or 3 identified by means of word of mouth, documentation supporting the landfill existence and/or known waste identified in a borehole)

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4 Available documentation suggests that significant surficial sampling was conducted at the site.

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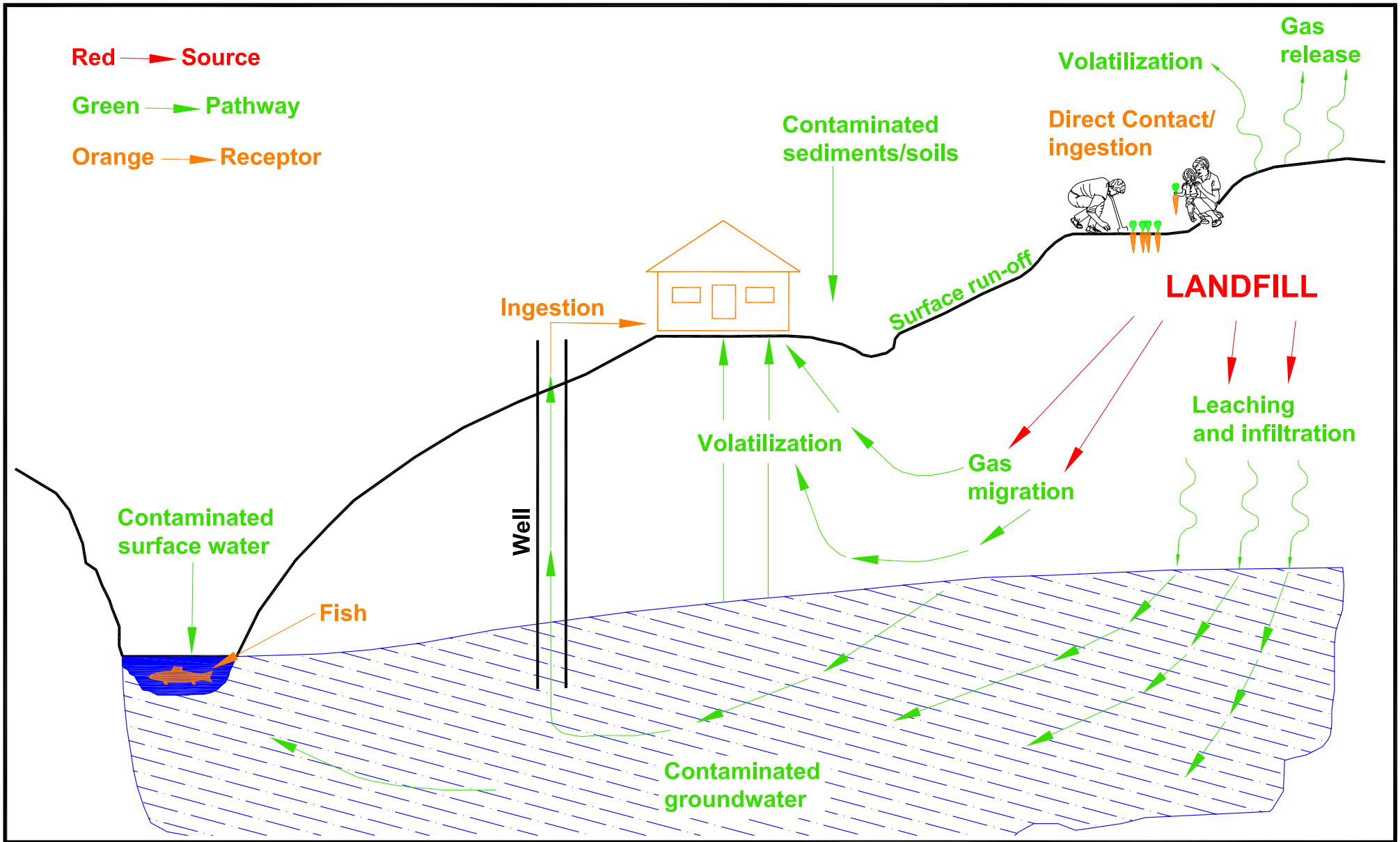


FIGURE 1

DESIGN		REV. 0	SCALE N.T.S.
CADD	P.J.M.	JULY 2004	
CHECK	M.G.	JULY 2004	
REVIEW	B.J.V.	JULY 2004	

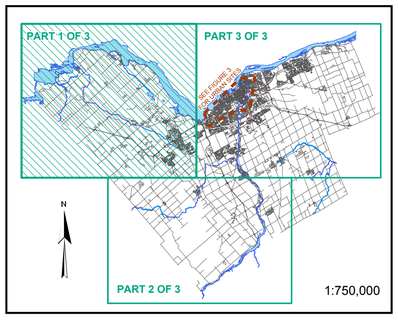
PROJECT No. 0212785-6050
FILE No. 0212785-6050-01

TITLE

Sources, Pathways and Receptors

Golder Associates
Ottawa, Ontario

Wc-1
Wc-2
Wc-3
Wc-4
Wc-5
Wc-6
Wc-7
Wc-8
Wc-10
Ka-1
Go-4
Go-6
SEE FIGURE 3 FOR URBAN SITES



LEGEND

- Roadway
- Transitway
- Waste Site Footprint and Identification No. - City-Owned Site
- Waste Site Footprint and Identification No. - Jointly-Owned Site (City and Other)
- Waste Site Footprint and Identification No. - Non-City Owned Site
- Properties associated with sites whose location was determined with lesser degree of certainty (i.e., verbal confirmation or historical reference)
- Water Body

NOTE

The sites whose Identification Number is italicized in bold are those for which the footprint / location was determined with a lesser degree of certainty (i.e., through verbal confirmation or historical reference).

REFERENCE

Datum: NAD 83 Projection: MTM Zone 09

0 10 20 Kilometres

1:150,000

N

PROJECT
Old Landfill Management Strategy
Phase 1 Identification of Sites

TITLE
Rural Waste Site Footprints and/or Associated Properties

Golder Associates Ottawa, Ontario

PROJECT No. 021-2785.6050			SCALE AS SHOWN	REV. 0
DESIGN				
GIS	MRL	22 Oct 2004		
CHECK	MG	22 Oct 2004		
REVIEW	BJV	22 Oct 2004		

FIGURE 2
PART 1 of 3

N:\Active\2700\021-2785 City of Ottawa LF Mgt Ottawa\Phase 6050\Arc\ViewMap Documents\Fig_02.mxd

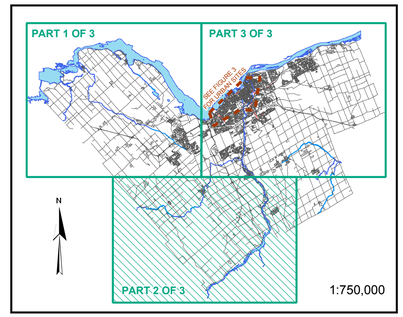
Go-2

Go-5

Os-1

Ri-1

Ri-2



LEGEND

- Roadway
- Transitway
- Waste Site Footprint and Identification No. - City-Owned Site
- Waste Site Footprint and Identification No. - Jointly-Owned Site (City and Other)
- Waste Site Footprint and Identification No. - Non-City Owned Site
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REFERENCE

Datum: NAD 83 Projection: MTM Zone 09

0 10 20 Kilometres

1:150,000

N

PROJECT
Old Landfill Management Strategy
Phase 1 Identification of Sites

TITLE
Rural Waste Site Footprints and/or Associated Properties

Golder Associates Ottawa, Ontario

PROJECT No. 021-2785.6050			SCALE AS SHOWN	REV. 0
DESIGN				
GIS	MRL	22 Oct 2004		
CHECK	MG	22 Oct 2004		
REVIEW	BJV	22 Oct 2004		

FIGURE 2
PART 2 of 3

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Cu-13

Cu-22

Gl-5

Cu-9

Cu-6

SEE FIGURE 3 FOR URBAN SITES

Gl-4

Cu-5

Cu-14

Cu-15

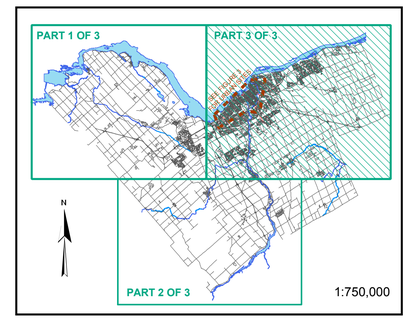
Cu-4

Np-3

Gl-1

Gl-2

Np-4



LEGEND

- Roadway
- Transitway
- Waste Site Footprint and Identification No. - City-Owned Site
- Waste Site Footprint and Identification No. - Jointly-Owned Site (City and Other)
- Waste Site Footprint and Identification No. - Non-City Owned Site
- Properties associated with sites whose location was determined with lesser degree of certainty (i.e., verbal confirmation or historical reference)
- Water Body

NOTE

The sites whose Identification Number is italicized in bold are those for which the footprint / location was determined with a lesser degree of certainty (i.e., through verbal confirmation or historical reference).

REFERENCE

Datum: NAD 83 Projection: MTM Zone 09

0 10 20 Kilometres

1:160,000

N

PROJECT
Old Landfill Management Strategy
Phase 1 Identification of Sites

TITLE
Rural Waste Site Footprints and/or Associated Properties

Golder Associates Ottawa, Ontario

PROJECT No. 021-2785.6050		SCALE AS SHOWN	REV. 0
DESIGN			
GIS	MRL	22 Oct 2004	
CHECK	MG	22 Oct 2004	
REVIEW	BJV	22 Oct 2004	

FIGURE 2
PART 3 of 3

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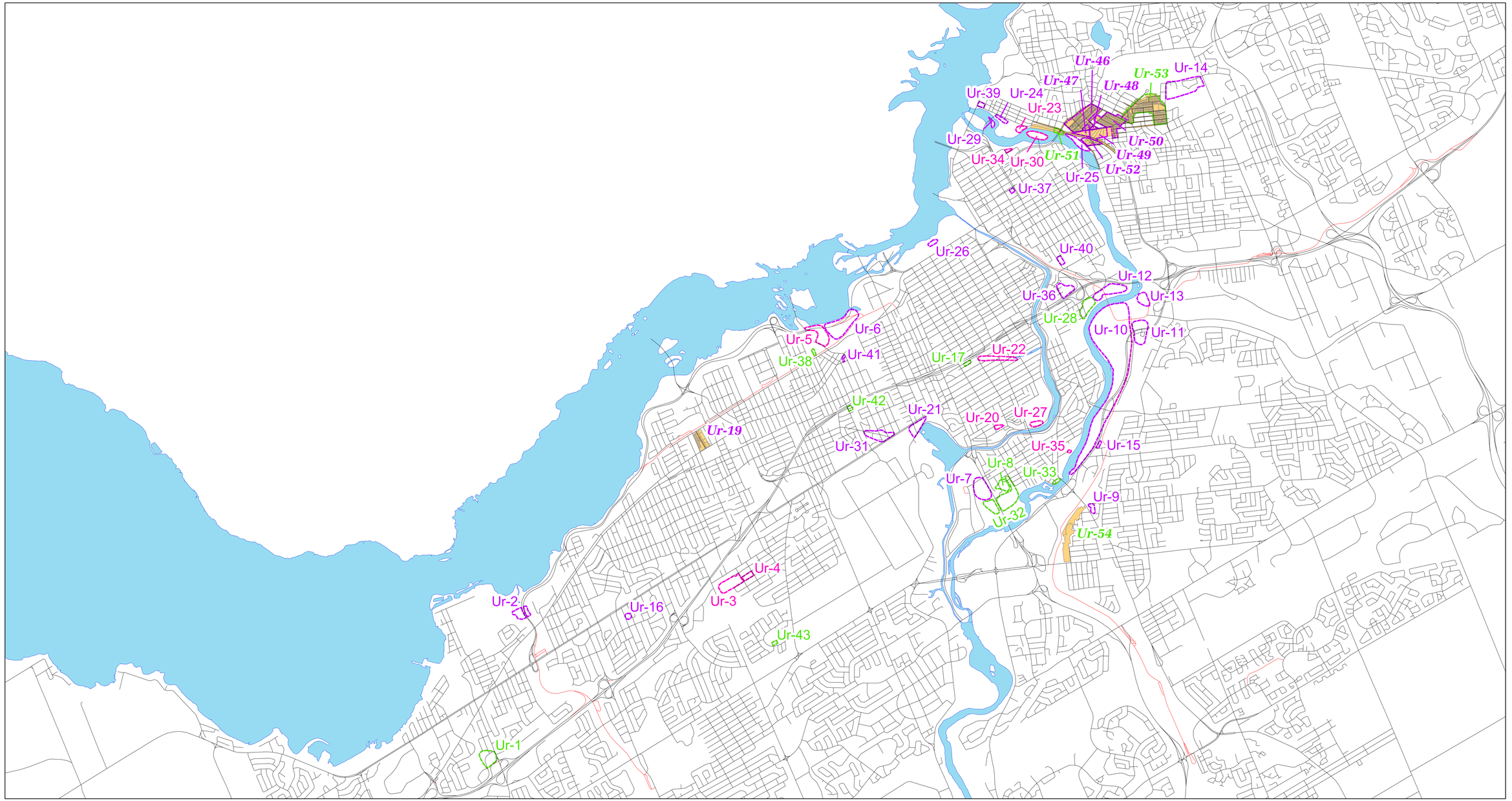

LEGEND

- Waste Site Footprint and Identification No. - City-Owned Site
- Waste Site Footprint and Identification No. - Jointly-Owned Site (City and Other)
- Waste Site Footprint and Identification No. - Non-City Owned Site
- Properties associated with sites whose location was determined with lesser degree of certainty (i.e., verbal confirmation or historical reference)
- Water Body
- Roadway
- Transitway

NOTE

The sites whose Identification Number is italicized in bold are those for which the footprint / location was determined with a lesser degree of certainty (i.e., through verbal confirmation or historical reference).

REFERENCE

Datum: NAD 83 Projection: MTM Zone 09

0 0.5 1 Kilometres

1:60,000

N

PROJECT: Old Landfill Management Strategy
Phase 1 Identification of Sites

TITLE: **Urban Waste Site Footprints and/or Associated Properties**

Golder Associates, Ottawa, Ontario

PROJECT No. 021-2785.6050			SCALE AS SHOWN	REV. 0
DESIGN				
GIS	MRL	28 Jul. 2004		FIGURE 3
CHECK	MG	28 Jul. 2004		
REVIEW	BJV	28 Jul. 2004		

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APPENDIX A

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Surface Water Quality Branch, Regional Municipality of Ottawa-Carleton, Rideau River Watershed, Technical Report 1992, August 1993

Transportation Department, Regional Municipality of Ottawa-Carleton, Rideau River Park Study (Riverside Drive / Industrial Avenue Area Concept Study), prepared for the Co-ordinator of the Transportation Committee, Regional Municipality of Ottawa-Carleton, April 1991, Report no. T65-8-12-2 (includes "Design Brief – Rideau River "Park and Snow Disposal Facility", "Impact of Snow Disposal Site Restrictions and Closures on the Cost of the Transportation Component of Snow Disposal Operations", and "Report on the Experimental Results of Snow Melting Slab Operations"; all three reports are from J.L. Richards Associates Ltd.

Trow Consulting Engineers Ltd., CCEA Phase I/II Environmental Site Assessment, Albion at Rideau Road, Ottawa, prepared for Central Canada Exhibition Association, September 2002, report no. MC15477D

von Baeyer, Edwinna, Chronology of Vegetative Change Along the Ottawa River Escarpment from the Head of the Rideau Canal to the National Archives/national Library Area 1800-1999, prepared for Public Works and Government Services Canada, January 2000

Water Technology International Corporation, Subsurface Pump and Treat Monitoring Program, Gloucester Landfill Site, Fall 1996, prepared for Transport Canada/ Public Works & Government Services Canada, May 1997

2. FOLDERS (SOURCE: CITY OF OTTAWA)

File 14-01-0004 Vol 1 from Trail Road Waste Facility, includes information on March Landfill and Regional Municipality of Ottawa-Carleton Solid Waste Management Planning June 2000.

File 14-01-0004 Vol 2 from Trail Road Waste Facility, includes information on Nepean Lot 31 Concession 3

File 14-01-0004 from Trail Road Waste Facility, Gloucester Site (Vol 4) – includes information on 10th Line Dump, Hawthorne Dump and Gloucester Dump.

File 14-01-0004-H from Trail Road Waste Facility, Burndt Site Cumberland (Vol 6) – includes two sites in Cumberland, Berndt Dump and Lot 19 Con. 4 Dump.

File 14-2001-0004 Vol 7 from Trail Road Waste Facility, includes information on Gloucester Landfill.

File 14-01-0004 Vol 8 from Trail Road Waste Facility, includes information on Nepean Landfill, Trail Road Waste Facility and Frazer Duntil Quarry Site.

File 14-01-0004 Vol 10 from Trail Road Waste Facility, includes information on Carp Landfill, Almonte Landfill, Hunneault Landfill, Springhill Landfill, Central Park Dump, ROPEC Former Dump, Community Services and Operations Committee Report 6 with Methane Gas Control Program, Pinecrest/Dumaurier Dump, Riverside Drive Landfill, Summary of Regional Municipality of Ottawa-Carleton Approved Waste Disposal Sites, Cumberland Lot 21 or 22 Con 6, Oxford Mills and Burritts Rapids, Bearbrook and Nepean Lot 10, Con 4.

File 14-2001-0004 from Trail Road Waste Facility, includes information on Ridge Road Landfill and Nepean Landfill.

File 14-2001-0004 from Trail Road Waste Facility, includes information on Gloucester Sand and Gravel Site.

File 14-92-0014 from Trail Road Waste Facility, includes information on Nepean and Trail Landfills.

File 14-2001-0004 from Trail Road Waste Facility, includes information on Almonte Landfill Closure.

Bayswater/Somerset / Closed Landfill Site

(Dumaurier Landfill) Sewers – Pumping Station – Dumaurier Methane Gas, file no. SW 97-0020

Galetta Landfill – Environmental Services, General Waste Management, file no. E0102-7

Hare Ave. / Closed Landfill Site

Laidlaw Landfill (formerly Rumps) – Environmental Services, General Waste Management, file no. E0102-9

Lees Ave. / Closed Landfill Site

Pinecrest/Dumaurier / Closed Landfill Site

Riverside Drive / Closed Landfill Site

Sherwood Drive / Closed Landfill Site

St-Laurent (Notre-Dame Property) / Closed Landfill Site

Torbolton Landfill - Environmental Services, General Waste Management, file no. E0102-6

Torbolton Landfill Attendant, file no. WD-11B

(Township of West Carleton) Landfill Sites – Garbage Contracts, file no. R-125

3. MEMORANDA, LETTERS, FAXES AND E-MAILS

AMEC Earth & Environmental Limited, Interim Report, Summer (July/August) 2002 Quarterly TCE Plume Monitoring Program, Former Township of March Closed Landfill, Kanata, Ontario, sent to Gordon MacNair, Manager, Appraisal, Strategic Projects & Environmental Remediation, September 2002, File no. TZ97464.7 (from Golder library)

Golder Associates Ltd., Discussion of Site Management and Closure Strategy, Osgoode Landfill Site, Geographic Township of Osgoode, Ontario, sent to Nancy Hay, Property Officer, Corporate Services, Real Property Asset Management, June 14, 2001, File no. 001-2709/7000

Horton, Nancy, OLMS, Health and Long-Term Care Branch information on North Gower Township Dump, sent to Trish Edmond, March 11, 2003

Ottawa (City of), Notice of Information, sent to homeowners/residents in the Vanier area on July 24, 2002, to notify risks from exposure to soil contaminants

Region Municipality of Ottawa Carleton Inter-Departmental Correspondence, February 12, 1976

Scott, Ron, Landfill Sites, Landfill sites in the former Goulbourn, sent to Keith Watson, November 29, 2001

Watson, Keith, Old, Meeting with Brian Carry and Nancy Hay at West Carleton Access Centre – Information on Torbolton, Galetta, Hydro One Site, Loggers Way and Torbolton Ridge Road landfill sites, sent to file, February 2002

Watson, Keith, West, Information from Brian Carry regarding a landfill site on the extension of John Shaw Road (right side) at Galetta Side Road, sent to file, March 2002

Watson, Keith, Ridge Road Landfill – C of A – A460703, two Certificates of Approval for Waste Disposal, sent to Golder Associates, August 12, 2002.

4. MAPS

Energy, Mines and Resources Canada, National Topographic System Maps, 31B/13 Merrickville, 31F/8 Arnprior, 31G/3 Winchester, 31G/4 Kemptville, 31G/5 Ottawa, 31G/6 Russell, 31G/11 Thurso, Scale 1:25,000 and 1:50,000

Geological Survey of Canada, Figure 4: Drift Thickness Trend, Ottawa-Hull, Ontario and Québec, to accompany Paper 77-11 by J.R. Bélanger and J.E. Harrison, Scale 1:50,000, 1979

Geological Survey of Canada, Map 1506A, Surficial Geology, Ottawa, Ontario-Québec, Scale 1:50,000, 1982

Geological Survey of Canada, Urban Geology of the National Capital Area, based on work by J.R. Bélanger, Open File D3256, 2001 (digital maps include Bedrock Geology, Surficial Geology and Drift Thickness)

APPENDIX B

DATA SHEETS

DATA SHEETS

Glossary of Abbreviations Used in Datasheets:

ADAMAS	ADAMAS Environmental Inc.
Approx.	Approximately
AMEC	AMEC Earth and Environmental Limited
AND	Anderson's Waste Disposal Sites (Ontario) database
Aqua Terre	Aqua Terre Solutions Inc.
BGL	Below ground level
BGS	Below ground surface
BTEX	Benzene, Toluene, Ethylbenzene and Xylenes
c/o	Care of
Con	Concession
CPR	Canadian Pacific Railway
CRA	Conestoga-Rovers and Associates
DCE	Dichloroethylene
Dillon	Dillon Consulting Ltd.
E	East
EMS	Environmental Management Solutions Inc.
ft	Feet
GAL	Golder Associates Limited
GLL	Gartner Lee Limited
GW	Groundwater
ha	Hectare
HLUI	Historical Land Use Inventory
Intera	Intera Technologies Ltd.
JWEL	Jacques Whitford Environmental Limited
kg	Kilogram
km	Kilometre
LEL	Lower explosive limit (lowest concentration at which a combustible vapour mixed with air will produce an explosion if ignited)
LPH	Light petroleum hydrocarbon
mg/L	Milligram per litre
m	Metre
MGM	McRostie Genest Middlemiss and Associates Ltd.

MOE	Ministry of the Environment
MTO	Ministry of Transportation Ontario
N	North
NCC	National Capital Commission
PAH	Polynuclear aromatic hydrocarbons
Paterson	John D. Paterson and Associates Ltd.
Phase I ESA	Phase I Environmental Site Assessment
PIN	Property Identification Number
RMOC	Regional Municipality of Ottawa- Carleton
S	South
TCE	Trichloroethylene
Twp.	Township
ug/L	Microgram per litre
UTM (NAD 27)	Universal Transverse Mercator coordinates, 1927 North American Datum
VC	Vinyl chloride
VOC	Volatile organic compound
W	West
WESA	Water and Earth Sciences Associates Ltd.
% v/v	Percentage per volume

Site ID # Cu-04	**AND Record #** -	**MOE Site #** -	**Category of Owner** City		**HLUI Activity ID #** 6455
Other References	personal communication with Cumberland rural roads group				
Site Name	un-named Waste Disposal Site - Sand Rd.				
Landfill Monitoring/ Remediation	none				
Site Location	located in lot 23, concessions 8 and 9. (waste placed on both sides of Sand Rd.)				
Easting (UTM NAD 27)	469400 (based on site visit)		**Northing (UTM NAD 27)**	5022400 (based on site visit)	
Ward #	19				
Size of Site	site on W side of road approximately 30 m in diameter (i.e., much less than 1 ha in area) and site on E side of road approximately 15 m in diameter (i.e., much less than 1 ha in area)				
Waste Thickness	site on W side of road approximately 1 m deep and has some obvious mounds which may even be 2 m deep; site on E side of road is expected to be less than 1 m deep				
Active Time Period	operated in late 1970's and early 1980's				
Current Ownership	City of Ottawa				
PIN (s)	145580152, 145530019, 145530035, 145580151				

Area Served	surrounding residents, possibly Vars
Type of Waste	area to the W of the road contained garbage, road cut material and tree stumps while smaller area to the E of the road contained stumps, cement and road cut material
Nearby Industries	none based on available information
Operator	former Township of Cumberland
Parameters of Concern	no known monitoring
Concentrations	no known monitoring
Magnitude	no known monitoring
Methane (landfill gas)	no measurement available
Ecological Receptors	Cumberland Forest plants and wildlife
Distance to Nearest Human Receptor	approximately 400 m to nearest dwelling from W side of the road and possibly only 250 m to nearest dwelling from E side of the road
Adjacent Land Use and Zoning	rural residential and forest in all directions; the zoning is CON (Conservation) in the general area of the site
Adjacent Land Owners	adjacent landowners are rural residents; 5370 and 5390 Sand Rd and railway to the N - railway to the E - un-opened road allowance to the W
Site Access	public land which is accessible
Water Supply	private wells
Depth to Bedrock	5 to 15 m to interbedded shale, siltstone and limestone
Depth to Groundwater	unknown
Distance to Surface Water	there are some low swampy lands behind the E side of the road about 350 m away and the closest water course is a tributary to Shaws Creek located over 1 km away
Topography	the general area is flat with a very slight decrease in elevation to the S; the site is flat with a bit of hummocky land, some of which is associated with the dumps and some is not
Soil Cover Thickness	unknown - most waste is covered but a small amount to the W is not
Type of Overburden	granular soil - deltaic and estuarian deposits
Direction of Groundwater Flow	assumed to be N towards the Ottawa River
Physical Setting	site is overgrown with small trees which appear to be healthy; the smaller trees allow a distinction between the surrounding forest and the areas used for filling
Other Information	This site was only identified via the existing HLUI and the reference within this database was Cumberland Township employee. Further information was obtained from current roads group Cumberland. The site on the W side of the road is set back approximately 50 m from the road and there are two berms along the entrance to deter people from continuing to use the site. The site on the E side of the road is set back approximately 20 m from the road and there is one berm along the entrance to deter people from continuing to use the site. Sites can be found by driving approximately 600 m in a southerly direction along Sand Road from the railway tracks.

Site ID # Cu-05	**AND Record #** 147	**MOE Site #** x 9017	**Category of Owner** Private	**HLUI Activity ID #** 6295
Other References	Ottawa-Carleton Health Department, 1991 (site 31); File 14-2001-0004 Vol 10; personal communication with Rejean Diotte, rural roads group			

Site Name	Cumberland Con 6 Dump
Landfill Monitoring/ Remediation	none
Site Location	near 2157 Forced Road, Vars, former Township of Cumberland, Con 6 Lot 22
Easting (UTM NAD 27)	472500 (based on site visit with Road group - Rejean Diotte) 472000 (MOE 1991 Waste Disposal Site Inventory) **Northing (UTM NAD 27)** 5024100
Ward #	19
Size of Site	expected to be less than 1 ha based on limited air photo evidence; size of property is approximately 60 ha
Waste Thickness	unknown
Active Time Period	pre 1970, complete in 1976. Road group indicates finished before 1992
Current Ownership	private individual
PIN (s)	145540008

Area Served	unknown
Type of Waste	road group indicates only fill from road cut disposed here however City file says that illegal waste disposal was noted in June 15, 1976.
Nearby Industries	none based on available information
Operator	Township staff
Parameters of Concern	no known monitoring
Concentrations	no known monitoring
Magnitude	no known monitoring
Methane (landfill gas)	no measurement available
Ecological Receptors	crops grown on and around site
Distance to Nearest Human Receptor	approximately 100 to 200 m
Adjacent Land Use and Zoning	agricultural land visible to the N, S, E and W; The zoning is AGR (Agricultural) in the general area of the site.
Adjacent Land Owners	adjacent landowners are farmers and rural residents; Forced Rd to the E - 2099 Forced Rd and 5409 Rockdale Rd to the S - 5381 Rockdale Rd and Rockdale Rd to the W - 8380 Russell Rd to the N
Site Access	private property
Water Supply	private wells
Depth to Bedrock	3 to 5 m to interbedded shale, siltstone and limestone bedrock
Depth to Groundwater	unknown
Distance to Surface Water	approximately 800 m W to Shaws Creek and 400 m W to marsh
Topography	gently rolling area
Soil Cover Thickness	unknown
Type of Overburden	organic soil - deltaic and estuarian deposits and/or till: hummocky to rolling with local relief 5 to 25 m
Direction of Groundwater Flow	assumed to be N towards the Ottawa river
Physical Setting	surrounded by farmland and forested areas
Other Information	No site visit conducted because it is private property. Site was viewed via Forced Road and area where waste was placed is located by hay bales in low lying area near the buildings. An approximate footprint has been provided assuming an area equivalent to 1 ha to show the general area of the fill.

Site ID # Cu-06	**AND Record #** 148	**MOE Site #** a 461602	**Category of Owner** City and Private	**HLUI Activity ID #** 5776
Other References	Ottawa-Carleton Health Department, 1991 (site no. 36)			

Site Name	Cumberland Cons 6-7 Dump
Landfill Monitoring/ Remediation	none
Site Location	near Regional Rd 28 - end of road allowance, Navan, former Township of Cumberland, Cons 6-7 Lot 9
Easting (UTM NAD 27)	468940 **Northing (UTM NAD 27)** 5031300
Ward #	19
Size of Site	100 m diameter; approximately 0.8 ha; site crosses multiple property boundaries
Waste Thickness	thickness unknown; end dumped along Cumberland Road allowance but fell mostly to the W with some also to the E outside the road allowance
Active Time Period	active in 1960's, complete in 1969
Current Ownership	Lafarge Canada Inc., City of Ottawa right of way, Canada Cement Lafarge
PIN (s)	145420022, 145420138, 145420007

Area Served	unknown
Type of Waste	appears to be municipal waste including appliances based on site visit
Nearby Industries	aggregate extraction operations and cement manufacturing
Operator	unknown
Parameters of Concern	no known monitoring
Concentrations	no known monitoring
Magnitude	no known monitoring
Methane (landfill gas)	no measurement available
Ecological Receptors	forest flora and wildlife in immediate area; agricultural land in the distant N and S
Distance to Nearest Human Receptor	a building which looks like a storage building located 100 m from the site, nearest residence is 850 m from the site, nearest workplace is 700 m from the site.
Adjacent Land Use and Zoning	land use to the E appears to be industrial commercial cement manufacturing, agricultural to the S and forested to the N and W; The zoning is partially AGR (Agricultural) and MX (Mineral Extraction) in the general area of the site.
Adjacent Land Owners	adjacent landowners include mineral extraction, cellular tower and farmers; properties to the E, W and N are owned by Lafarge - to the S 3355 Rockdale Rd and 1764 Colonial Rd - to the E and N 3365 Rockdale Rd
Site Access	the neighbouring properties and even the road allowance are fenced; site is at least partially on private property
Water Supply	private wells
Depth to Bedrock	limestone, nodular in part, with interbeds of calcarenite and shale bedrock located 0 to 15 m below ground surface. During site visit bedrock was visible at surface.
Depth to Groundwater	unknown
Distance to Surface Water	200 m N to a tributary of Bear Brook and 200 m to marsh
Topography	site located in an area high. Driving to the site uphill along Rockdale until a plateau is reach. Actually area where waste was dumped is a steep ridge or ledge.
Soil Cover Thickness	an attempt appears to have been made to cover the waste, however since cover was also dumped over the edge of the ridge it is generally ineffective and waste is uncovered in many areas
Type of Overburden	bedrock at surface; marine deposits, clay and silt, organic deposits, beach formations where soil is present
Direction of Groundwater Flow	expected to be N toward the Ottawa River
Physical Setting	new growth trees and weeds located along fenced road allowance. Vegetation does not appear to be stressed.
Other Information	No information about this site was obtained from the rural roads group therefore it would be expected that this site would have been operational before 1970.

Site ID # Cu-09	**AND Record #** -	**MOE Site #** a 461602 [MOE Records]	**Category of Owner** Private		**HLUI Activity ID #** 6462
Other References	personal communication with former Twp. Cumberland rural roads group; MOE Ottawa Office file on CofA a 461602; personal communication with Rejean Diotte, rural roads group				

Site Name	Sarsfield Rd Dump		
Landfill Monitoring/ Remediation	none		
Site Location	Near St. Hugues Cemetery 3295 Sarsfield Rd, Sarsfield, former Township of Cumberland, Con 3 Lot 9		
Easting (UTM NAD 27)	473000 (based on rural roads group and MOE file)	**Northing (UTM NAD 27)**	5033000 (based on rural roads group and MOE file)
Ward #	19		
Size of Site	dump approximately 1.1 ha; size of site approximately 12 ha		
Waste Thickness	based on site visit waste expected to be approximately 7 m deep		
Active Time Period	was used in the late 1960's and closed in 1972		
Current Ownership	private individual		
PIN (s)	145410037, 145410031, 145410325		

Area Served	Town of Sarsfield
Type of Waste	in site application indicated 80 % domestic and 20 % commercial at a rate of 1 ton/day
Nearby Industries	none based on available information
Operator	Fernand Leduc and former Township of Cumberland at the end of operation
Parameters of Concern	no known monitoring
Concentrations	no known monitoring
Magnitude	no known monitoring
Methane (landfill gas)	no measurement available
Ecological Receptors	Becketts Creek
Distance to Nearest Human Receptor	nearest dwelling approximately 200 m away
Adjacent Land Use and Zoning	rural residential and farmland to the N, S and W and farmland and undeveloped to the E; The zoning is AGR (Agricultural) in the general area of the site.
Adjacent Land Owners	adjacent landowners include a cemetery, farmers and rural residents; 3295 Sarsfield Rd to the S - 3245, 3235, 3225 Sarsfield Rd and Sarsfield Rd to the W - 3191 Sarsfield Rd to the N
Site Access	private property; farm field is fenced
Water Supply	private wells
Depth to Bedrock	limestone bedrock, nodular in part with interbeds of calcarenite and shale located at a depth of 15 to 25 m
Depth to Groundwater	approximately 20 m [MOE file - application for disposal site]
Distance to Surface Water	approximately 300 m to Becketts Creek. Pond immediately behind dump on the property.
Topography	site is located on the edge of a hill which drops approximately 10 m to flat farm fields
Soil Cover Thickness	approximately 0.6 m of fill
Type of Overburden	marine deposits, clay and silt; also potentially glaciofluvial deposits
Direction of Groundwater Flow	expected to be N towards Becketts Creek and the Ottawa River
Physical Setting	fields around site are cultivated. In area of waste placement the site appears to be vegetated with long grass/weeds and some new trees to the northern end of the former dump.
Other Information	Private property therefore extensive site visit not conducted. Site was a gravel pit. The dump was operated using an area fill/open dump method. Evidence of burning was encountered on at least one site visit conducted by the MOE. The Township of Cumberland took over the site in January 1972 and closed the site in August.

Site ID # Cu-13	**AND Record #** -	**MOE Site #** -	**Category of Owner** City		**HLUI Activity ID #** 6470
Other References	Website: Friends of the Petrie Island - http://www.fallingbrook.com/petrieisland/index.html; Daniel Brunton Consulting Services, Excerpts of report, Date Unknown; Paterson & Associates Limited, June 2002; Paterson & Associates Limited, July 2002				

Site Name	Petrie Island Dump		
Landfill Monitoring/ Remediation	Phase I and II Environmental Site Assessment Investigation conducted to assess development of Petrie Island for the Beach House Project for the City of Ottawa. Three boreholes and five test pits were put into or through the waste that is present. One groundwater and one soil sample (from below the waste) were submitted for analytical testing. Report recommended delineation of the landfill and alternate water supplies for the proposed beach house until such time as the Island is serviced via the municipal supply.		
Site Location	Former Township of Cumberland, north of Trim Road		
Easting (UTM NAD 27)	461800 (based on site visit)	**Northing (UTM NAD 27)**	5038700 (based on site visit)
Ward #	1		
Size of Site	waste footprint approximately 300 x 300 m (9 ha)		
Waste Thickness	expected to be at least 2 to 3 m thick based on intrusive investigations		
Active Time Period	1950 - mid 1970		
Current Ownership	City of Ottawa		
PIN (s)	145380083		

Area Served	unknown
Type of Waste	appeared to be domestic waste based on site visit
Nearby Industries	sand and gravel pit
Operator	unknown
Parameters of Concern	chlorobenzene, p-dichlorobenzene, arsenic, copper, lead, zinc were found in water collected from a test pit located within the waste; soil quality analysis conducted beneath the waste however no specific parameters of concern identified in the soil
Concentrations	chlorobenzene, p-dichlorobenzene, arsenic, copper, lead, zinc exceeded MOE Table A Residential/Parkland water criteria
Magnitude	the extent of groundwater and soil impact is unknown.
Methane (landfill gas)	no measurement available
Ecological Receptors	wetland, Ottawa River
Distance to Nearest Human Receptor	area used for hiking and nature exploration; buildings are located within 250 m of the site on the island; the nearest permanent dwelling is over 2 km away
Adjacent Land Use and Zoning	adjacent land is used as a pit and for hiking/boating/recreational activities; The zoning is COM (Conservation) in the general area of the site.
Adjacent Land Owners	Ottawa River to the N, E and W. Sand and gravel operation located on the E side of Island. Some commercial buildings on the way to the Island and undeveloped to the S.
Site Access	not fenced
Water Supply	boundary of municipal water supply located around Trim Road; full service to the Island is expected in the future but not for at least two years [Paterson, July 2002]
Depth to Bedrock	15 to 25 m to dolostone bedrock
Depth to Groundwater	at surface within area of waste footprint [Paterson, July 2002]
Distance to Surface Water	immediately adjacent
Topography	the island is relatively flat however the area where waste was disposed may have been low lying/swampy and is currently hummocky
Soil Cover Thickness	waste was reportedly covered by the pit owner; boreholes and test pits found 10 to 20 cm of cover [Paterson, June and July 2002]; during site visit some waste had no cover
Type of Overburden	alluvial deposits - silty sand, silt, sand and clay
Direction of Groundwater Flow	likely E along the Ottawa River
Physical Setting	area is vegetated with mature trees, grasses and ferns
Other Information	Provincially significant wetland; ANSI. Unique landforms and diverse vegetation. Mature tree growth somewhat distressed due to lack of substance for roots to hang on to, i.e., root system located within the waste. Waste partially covered and tires, glass, metal, plastic, concrete, washing machine/hot water tanks all evident.

Site ID # Cu-14	**AND Record #** -	**MOE Site #** -	**Category of Owner** City and Private		**HLUI Activity ID #** 6466
Other References	none other than HLUI records				
Site Name	un-named Waste Disposal Site - Devine Rd.				
Landfill Monitoring/ Remediation	none				
Site Location	located on east half of Lot 26, Concession 1, south side. (just past the end of Devine Rd.)				
Easting (UTM NAD 27)	479600 (based on location indicated in HLUI)		**Northing (UTM NAD 27)**	5024600 (based on location indicated in HLUI)	
Ward #	19				
Size of Site	based on lack of information site size expected to be less than 1 ha				
Waste Thickness	unknown				
Active Time Period	pre 1970				
Current Ownership	City of Ottawa road allowance (no waste identified during site visit - bridge across Creek is out), 4070 Devine Rd owned by private individual and property to the E of it owned by the City of Ottawa				
PIN (s)	145550143, 145550144 (no waste footprint defined for this site, PINs represent properties within which the waste is expected to exist)				

Area Served	unknown
Type of Waste	unknown
Nearby Industries	none based on available information
Operator	unknown
Parameters of Concern	no known monitoring
Concentrations	no known monitoring
Magnitude	no known monitoring
Methane (landfill gas)	no measurement available
Ecological Receptors	none
Distance to Nearest Human Receptor	approximately 200 m to nearest dwelling
Adjacent Land Use and Zoning	rural residential to the E and forest to the N, S and W; the zoning is GR (General Rural) in the general area of the site
Adjacent Land Owners	adjacent landowners are rural residents; - 4008 and 4000 Devine Rd to the W - 4051 Devine Rd to the N - Township of Clarence to the E
Site Access	un-opened road allowance and mostly private property on either side
Water Supply	private wells
Depth to Bedrock	25 to 50 m to interbedded shale, siltstone and limestone
Depth to Groundwater	unknown
Distance to Surface Water	approximately 100 to 200 m to the South Indian Creek to the E
Topography	somewhat rolling in accordance with rivers and creeks in the area
Soil Cover Thickness	unknown
Type of Overburden	granular soil - erosional terraces; granular soil - deltaic and estuarian deposits
Direction of Groundwater Flow	assumed to be E towards the South Indian Creek and South Nation River
Physical Setting	heavily forested and somewhat rolling topography
Other Information	This site was only identified via the existing HLUI and the reference within this database was Cumberland Township employee. Upon contact, no one within Cumberland former staff can recall any further information about the site. No information about this site was obtained from the rural roads group therefore it would be expected that this site would have been operational before 1970. A review of air photos during this time shows an anomaly located just E of the South Indian Creek, what would be S of Devine Rd in 1945. A bridge no longer exists to access this point. It was not possible to visit this site due to nearby residents allowing their dogs off leash in the area. It is recommended prior to any further site visits that the property owners in the area be notified.

Site ID # Cu-15	**AND Record #** -	**MOE Site #** -	**Category of Owner** Private		**HLUI Activity ID #** 6459
Other References	personal communication with Rejean Diotte, rural roads group				
Site Name	un-named Waste Disposal Site - Dunning Rd.				
Landfill Monitoring/ Remediation	none				
Site Location	near Con V/VI Rd and Regional Rd 26, behind 5536 Dunning Rd, Vars, former Township of Cumberland, Con 5 Lot 23				
Easting (UTM NAD 27)	474500 (based on rural roads group)		**Northing (UTM NAD 27)**	5024100 (based on rural roads group)	
Ward #	19				
Size of Site	expected 0.3 ha				
Waste Thickness	4.5 to 6 m deep				
Active Time Period	waste went to this location in the 1970's and was completed in the early 1980's or late 1970's				
Current Ownership	private individual				
PIN (s)	145540223				

Area Served	unknown
Type of Waste	mostly road debris, not significant household waste
Nearby Industries	none based on available information
Operator	Township of Cumberland
Parameters of Concern	no known monitoring
Concentrations	no known monitoring
Magnitude	no known monitoring
Methane (landfill gas)	no measurement available
Ecological Receptors	crops and animals on neighbouring properties
Distance to Nearest Human Receptor	dwelling within 50 m of site
Adjacent Land Use and Zoning	agricultural, treed and rural residential to the S, E and W; The zoning is partially MX (Mineral Extraction) and GR (General Rural) in the general area of the site.
Adjacent Land Owners	rural property owners and farmers; 5504 and 5514 Dunning Rd to the N - 5536 Dunning Rd to the W - 5618 Dunning Rd to the S - Dunning Rd and 5541 Dunning Rd to the E
Site Access	private property
Water Supply	private wells
Depth to Bedrock	2 to 10 m to reach interbedded shale, siltstone and limestone bedrock
Depth to Groundwater	unknown
Distance to Surface Water	approximately 400 m to agricultural drain which ultimately reaches the Bear Brook and 350 m S to marsh
Topography	site located at high in generally rolling topography
Soil Cover Thickness	2 to 5 m [Rural Roads Group]
Type of Overburden	glaciofluvial deposits - gravel and sand
Direction of Groundwater Flow	assumed to be S towards the Castor River
Physical Setting	agricultural fields and trees make up the surrounding area.
Other Information	Private property therefore site visit not conducted. The coordinates and house number provided to identify this site were obtained from the rural roads group. In their recollection this location does not contain significant household waste and was mostly road debris. Based on air photos it would appear that 5396 Dunning Rd. may also be a possible location for landfill activity as soil removal and filling has definitely occurred on this property. 5396 Dunning Rd is private property.

Site ID # Cu-22	**AND Record #** -	**MOE Site #** -	**Category of Owner** City and Private		**HLUI Activity ID #** 6469
Other References	none other than HLUI records				
Site Name	un-named Waste Disposal Site - St. Joseph Blvd.				
Landfill Monitoring/ Remediation	none				
Site Location	located near Brisebois Ravine along the North Service Rd.; just east of ramp along Tenth Line Rd, Cumberland				
Easting (UTM NAD 27)	462100 (based on location indicated in HLUI)		**Northing (UTM NAD 27)**	5036800 (based on location indicated in HLUI)	
Ward #	1				
Size of Site	no visual evidence of site based on aerial photographs; a small amount of waste observed during site visit - possibly on City of Ottawa property - chain link fence falling apart on sites located at and east of the second City of Ottawa property; the waste observed was less than 1 ha (site was snow covered at the time of the site visit)				
Waste Thickness	unknown				
Active Time Period	pre 1970				
Current Ownership	multiple owners: 3449 St. Joseph 853839 Ontario Inc., 3393 St. Joseph private individual, 3397 St. Joseph City of Ottawa, 3403 St. Joseph 154775 Canada Inc., 3413 St. Joseph City of Ottawa				
PIN (s)	145080032, 145080033, 145080034, 145080035, 145080204 (no waste footprint defined for this site, PINs represent properties within which the waste is expected to exist)				

Area Served	unknown
Type of Waste	unknown - waste observed was barrels, concrete, automobile parts
Nearby Industries	none based on available information
Operator	unknown
Parameters of Concern	no known monitoring
Concentrations	no known monitoring
Magnitude	no known monitoring
Methane (landfill gas)	no measurement available
Ecological Receptors	historically a creek running on or through site drains to the Ottawa River
Distance to Nearest Human Receptor	house located at 3393 St. Joseph and business located at 3403 St. Joseph
Adjacent Land Use and Zoning	highway ramp and trailer park to the E - residential, highway ramp and police station to the W - highway and residential to the N and residential to the S; the zoning is Transportation Corridor (not zoned) in the general area of the site
Adjacent Land Owners	adjacent landowners are commercial property owners, roadways and home owners
Site Access	various portions of properties have been fenced historically, however the fencing is damaged
Water Supply	municipally supplied water
Depth to Bedrock	15 to 25 m to interbedded silty dolostone, crystalline limestone, oolitic limestone, shale and quartz sandstone - exposed bedrock ridge on S side of St. Joseph Blvd
Depth to Groundwater	unknown
Distance to Surface Water	approximately 1 km to the Ottawa River to the N
Topography	the subject property slopes down towards the N
Soil Cover Thickness	unknown
Type of Overburden	thin layer of overburden with bedrock near surface at site; clay and silt - erosional terraces
Direction of Groundwater Flow	assumed to be N towards the Ottawa River
Physical Setting	the land slopes down toward the N and fill is evident in numerous places. Sparse trees are present and a ditch running in an E-W direction possibly bounds the properties
Other Information	This site is partially private property and partially City of Ottawa property. This site was only identified via the existing HLUI and the reference within this database was Cumberland Township employee. Upon contact, no one within Cumberland former staff can recall any further information about the site. No information about this site was obtained from the rural roads group therefore it would be expected that this site would have been operational before 1970. A review of air photos during this time does not identify any activity on the property suggesting waste placement. The fencing that was present along several of the western properties in the area of the supposed site do not seem to fully correspond with property boundaries. A no dumping sign along with a small amount of waste was found at either 3413 or 3449 St. Joseph Blvd. The site was partially snow covered during the time of the site visit.

Site ID # GI-01	**AND Record #** 043 (045)	**MOE Site #** a 460701	**Category of Owner** Government		**HLUI Activity ID #** 6087
Other References	Ottawa-Carleton Health Department, 1991; File 14-2001-0004 Vol 7; Water Technology International Corporation, 1997; MacLaren Engineers - Lavalin in association with WESA, 1989; National Hydrology Research Institute, 1985; AMEC 2002 Gas Utilization Feasibility Study - research; Confidential GAL report				

Site Name	Gloucester Landfill		
Landfill Monitoring/ Remediation	Transport Canada has been operating groundwater pumping, treatment and re-injection systems since 1992, located about 600 to 800 m S of Leitrim Rd in the vicinity of the CPR. Monitoring of the effectiveness and performance of the groundwater treatment system is on-going, as is on-going monitoring and investigation of groundwater quality beyond the zone of capture of the collection well systems. It is reported that the collection and treatment systems will have to operate for many tens of years into the future to meet the site-specific remediation objectives.		
Site Location	near Leitrim Rd, Former City of Gloucester Con 3 pt of Lots 16 and 17		
Easting (UTM NAD 27)	450325 (based on various reports and air photos) 450190 (MOE 1991 Waste Disposal Site Inventory)	**Northing (UTM NAD 27)**	5017385 (based on various reports and air photos) 5017700 (MOE 1991 Waste Disposal Site Inventory)
Ward #	10		
Size of Site	6 ha of domestic waste and 0.15 ha of chemical dump; property expected to be more than 250 ha		
Waste Thickness	3 m thick [AMEC]		
Active Time Period	between 1957 - 1973 for domestic waste and between 1969 and 1980 for chemical dump		
Current Ownership	Transport Canada		
PIN (s)	043280003		

Area Served	former Township of Gloucester
Type of Waste	Domestic 65%, commercial 15% and other 10% [AMEC]
Nearby Industries	sand and gravel extraction operations
Operator	Township of Gloucester and various federal government departments
Parameters of Concern	historically in the domestic plume parameters of concern include dichloroethane, trichloroethane, chloroform, chlorobenzene, benzene and toluene. In hazardous/chemical plume parameters of concern include dichloromethane, chloroform, dichloroethane, trichloroethane, 1-4 dioxane and toluene. More recently the parameter of concern has been trichloroethylene.
Concentrations	all parameters noted above were found in the ppb quantities
Magnitude	domestic plume following the unconfined aquifer in an E and NE direction towards Quinn Road. The hazardous/chemical plume is located in the confined aquifer moving E and SE towards Delzotto Road.
Methane (landfill gas)	no measurement available
Ecological Receptors	no major ecological receptors in the area other than humans which are discussed below
Distance to Nearest Human Receptor	homes within 200 m of site however water supply wells have been replaced with municipal service
Adjacent Land Use and Zoning	rural residential and light industrial commercial to the E, golf course to the N, undeveloped and farmland to the W and S; The zoning is partially Hma-Industrial Airport (Holding) and OS-Open Space in the general area of the site.
Adjacent Land Owners	adjacent landowners include farmers, rural residences, light industrial commercial businesses and the Ottawa Airport; railway and numerous properties off of Del Zotto, Quinn and Leitrim Rds. to the E - Leitrim Rd., golf course and the Ottawa airport to the N - gravel road to the W - gravel road and railway with aggregate extraction operations further to the S
Site Access	chemical dump area fenced in 1973; entire property is fenced
Water Supply	municipally supplied water
Depth to Bedrock	20 to 30 m to limestone bedrock
Depth to Groundwater	not provided in references reviewed, however shallow aquifer presumed to be between ground surface and 5 m below ground surface
Distance to Surface Water	Rideau River 4.5 km away; swamp located 1.5 km to the E and 1.4 km E to a drain which ultimately leads to the Castor River
Topography	located on gently sloping terrain the eastern flank of a ridge trending NW-SE of sand and gravel
Soil Cover Thickness	not provided in references reviewed
Type of Overburden	approximately 5 m of fine to medium sand, <0.5 m silt and clay bands, 12 m of fine to coarse sand with some gravel, 1 to 10 m silty sand and sand with some clay and/or sand and gravel and cobbles, followed by limestone bedrock
Direction of Groundwater Flow	in unconfined aquifer E/NE; in confined aquifer E/SE
Physical Setting	unknown - site visit not conducted and no information provided in references reviewed
Other Information	Rat invasions as result of closure of Pine Rd Dump on July 31 (Ottawa Citizen Oct 10, 1973). Disposal of hazardous material consisted of generally incineration within trenches followed by backfilling.

Site ID # GI-02	**AND Record #** -	**MOE Site #** -	**Category of Owner** City	**HLUI Activity ID #** GAL 11
Other References	Trow Phase I/II, September 2002; JWEL Monitoring, September 2002			

Site Name	Albion & Rideau Disposal Site
Landfill Monitoring/ Remediation	Phase I and II Environmental Site Assessment Investigation prepared for Central Canadian Exhibition Association to assess development of the subject property. Over 50 testpits were constructed in a grid pattern over the area identified as containing the waste. Five boreholes and six overburden monitoring wells were installed to permit the collection of groundwater samples and the determination of groundwater flow direction. Twenty-five soil samples, six groundwater samples and two surface water samples were submitted for laboratory analyses. The laboratory analyses included heavy metals, petroleum hydrocarbons, PAHs and VOCs however not all samples were evaluated for all parameters mentioned. The report recommended that soils exceeding the MOE criteria be removed if desired, waste at surface be removed and disposed of at a licensed landfill and the buried waste issue be discussed with the City of Ottawa and the MOE. A monitoring well and residential well water quality program was conducted by JWEL for the City of Ottawa. JWEL drilled three monitoring well pairs each comprised of one deep groundwater monitoring well and one shallow groundwater monitoring well. Based on the analytical results of the single groundwater monitoring event conducted in the vicinity of the City of Ottawa property at the NW corner of the intersection of Rideau Rd and Albion Rd, a number of exceedances of the MOE criteria used were identified. JWEL recommended that water be collected from three residences along Rideau Rd based on elevated tetrachloroethylene concentrations measured. Further, should future development of the site require drinking water, the on-site groundwater may require treatment prior to use. On-going monitoring as recommended by JWEL is occurring and discussions have taken place with the MOE regarding waste buried on-site.
Site Location	NW corner of Rideau and Albion Roads, Lot 25 Concession 3, former City of Gloucester
Easting (UTM NAD 27)	452500 **Northing (UTM NAD 27)** 5014900
Ward #	10
Size of Site	size of property is approximately 24 ha and the size of the waste disposal area is approximately 4 ha
Waste Thickness	1 to 2.5 m thick
Active Time Period	1970's to summer of 2002
Current Ownership	City of Ottawa
PIN (s)	043280159

Area Served	unknown
Type of Waste	materials picked up by road crews including tires, concrete, asphalt, appliances, propane cylinders, wood and oil; some appliances dumped on site by local residents
Nearby Industries	asphalt plant, pit operations
Operator	former City of Gloucester
Parameters of Concern	TPH and BTEX in the soil; tetrachloroethylene in the deep monitoring wells however JWEL has concluded that the source does not appear to be the waste disposal site - chloride, copper and lead also present in the deep aquifer; TPH, sodium, chloride and zinc are present in the shallow aquifer above the Table A MOE water quality criteria
Concentrations	0.03 to 0.005 mg/L of tetrachloroethylene in the deep aquifer
Magnitude	the monitoring and analysis completed has not been sufficient enough to delineate any groundwater plumes or extent of surface water impacts
Methane (landfill gas)	no measurement available
Ecological Receptors	no major ecological receptors in the area; forest located W of the site
Distance to Nearest Human Receptor	nearest dwelling approximately 120 m to the S
Adjacent Land Use and Zoning	agricultural land to the N and E, rural residential to the S, Oblates forested land to the W and further W a railway; The zoning is Me-Mineral Extraction in the general area of the site.
Adjacent Land Owners	adjacent landowners include Albion Rd to the E; Rideau Rd and 2392 and 2406 Rideau Rd; Oblates land to the W and agricultural to the N
Site Access	site is fenced along Rideau Road which is the only vehicular access to the site
Water Supply	private wells, although the area is to be serviced with water in the near future
Depth to Bedrock	dolostone bedrock found at 1.8 to more than 4.5 m
Depth to Groundwater	approximately 0.5 to 1.8 m below ground surface based on intrusive investigations
Distance to Surface Water	pond located on property however it does not drain anywhere, nearest swamp over 1 km away based on 1:50,000 map; on-site a swampy area exists in the SW corner, this swamp appears to drain S under the road
Topography	topographic relief varies from 109 m in the W to 112 m in the E
Soil Cover Thickness	waste uncovered
Type of Overburden	sand and silty sand native overburden
Direction of Groundwater Flow	in the bedrock the direction of groundwater flow is indicated to be to the E [JWEL] the wells used to infer groundwater flow direction in the bedrock are not all sealed at the same depth and hence this interpretation is questionable; in the overburden the direction of groundwater flow is to the S [Trow]
Physical Setting	small pond in centre of site, little vegetation in centre and east due to previous excavation, lack of topsoil, wooded area borders dumping site to the west
Other Information	site was previously used for sand extraction; site currently under investigation for use as the new Central Canadian Exhibition grounds

Site ID # GI-04	**AND Record #** 124 (125)	**MOE Site #** a 460703	**Category of Owner** Government	**HLUI Activity ID #** 6101
Other References	AMEC Earth & Environmental Ltd., March 2002; AMEC Earth & Environmental Ltd., excerpts 2002; Paterson, John D., & Associates Ltd., 1975; Ottawa-Carleton Health Department, 1991 (site no. 24); RMOC Inter-Departmental Correspondence, Feb. 12, 1976; Dillon, 1984 (site D-125)			

Site Name	Ridge Road Landfill
Landfill Monitoring/ Remediation	The City and the NCC has co-operatively undertaken a number of groundwater and surface water monitoring events. The most recent report, fall 2002 monitoring event, included a monitoring well condition survey, methane gas monitoring, leachate and groundwater monitoring and sampling, surface water sampling, surficial soil sampling in the adjacent agricultural fields, surface seep inspection and laboratory analyses. AMEC recommends that a regular semi-annual monitoring and sampling program be implemented to create a database to determine long-term trends and seasonal variation in the groundwater and surface water quality at the landfill [AMEC, 2003]. Based on the results of the preliminary and secondary screening process, Ridge Road Landfill was identified as the most promising candidate site in Ottawa for landfill gas utilization [AMEC, excerpts 2002]. Air infiltration through the clay cover at the Ridge Road Landfill contributed to high oxygen levels observed during extraction tests [AMEC, excerpts 2002]
Site Location	in line of Walkley Rd and Baseline Rd (Regional Rd 43); former City of Gloucester Con 3 Lots 19-20
Easting (UTM NAD 27)	454375 **Northing (UTM NAD 27)** 5027980
Ward #	10
Size of Site	landfill is 44 ha in size and the property is expected to be in excess of 150 ha
Waste Thickness	0.7 to 15 m thick
Active Time Period	1964 to 1977; closed July 12, 1977
Current Ownership	NCC
PIN (s)	043510100, 043510019, 043510017

Area Served	City of Ottawa
Type of Waste	42% residential, 33% commercial, 9% construction and demolition, 9% trade waste, 5% street sweepings, 3% industrial - letters from various federal departments indicate that pesticides, paint and "chemicals" were also disposed
Nearby Industries	none based on available information
Operator	City of Ottawa
Parameters of Concern	site leachate indicators are alkalinity, ammonia, boron, chloride, sodium, conductivity, iron, hardness, sulphate and TDS
Concentrations	leachate indicator parameters exceed ODWO/S in groundwater, AMEC concludes that exceedances of PWQO in surface water are not related to the landfill
Magnitude	surface water peak concentrations of 1.46 mg/L for boron, 0.04 mg/L of copper, 3.84 mg/L of unionized ammonia and 702 mg/L of chloride have been recorded.
Methane (landfill gas)	concentrations as high as 80% (v/v) however no vegetation stress, odours or presence of buildings on site [AMEC, 2003]; methane levels varied from 5.9 to 86.5 % v/v [AMEC, excerpts 2002]
Ecological Receptors	Borthwick Creek to the S and Black Creek to the N
Distance to Nearest Human Receptor	site used as parkland with extensive trails over the historic landfill; dwellings over 800 m away
Adjacent Land Use and Zoning	forest and Highway 417 to the W, farmland to the N, forest and vacant land to the E and S; The zoning is Os-Open Space in the general area of the site.
Adjacent Land Owners	adjacent landowners include primarily farmers to the N and S - forest and Highway 417 to the W - forest to the E
Site Access	publicly accessible site; waste footprint has walking trails over it
Water Supply	private wells; municipally supplied water west of Highway 417
Depth to Bedrock	anticipated 30 to 55 m (Carlsbad Shale bedrock)
Depth to Groundwater	2-3 m below ground surface outside landfill footprint
Distance to Surface Water	approximately 200 m to Black Creek and 450 m to Borthwick Creek
Topography	ridges in the east-west direction; mer bleue conservation area
Soil Cover Thickness	as a minimum the cover appears to be 0.1 m of topsoil followed by 0.75 m of what is most often described as silty clay [AMEC]
Type of Overburden	0 to 5 m of sand followed by 25 to up to 50 m of clay followed by an unidentified thickness of glacial till and finally Carlsbad shale
Direction of Groundwater Flow	to the north and south
Physical Setting	grassed landfill cover with trails/pathways across it, mature trees surrounding perimeter of site
Other Information	Some sand removed from ridge prior to construction of landfill. Construction waste found outside the south east landfill footprint boundary. Seasonal leachate seeps currently observed (2001).

Site ID # GI-05	**AND Record #** 131	**MOE Site #** a 460704	**Category of Owner** City		**HLUI Activity ID #** 6096
Other References	Interview with ROPEC staff, July 17, 2002; RMOC Inter-Departmental Correspondence, Feb. 12, 1976 (site 11); Ottawa-Carleton Health Department, 1991 (site no. 20); File 14-2001-0004 Vol 10				

Site Name	Gloucester STP Dump		
Landfill Monitoring/ Remediation	none		
Site Location	within ROPEC property boundary; northern property boundary near clarifiers; Former City of Gloucester Con 1 Lots 13-15		
Easting (UTM NAD 27)	454100	**Northing (UTM NAD 27)**	5034600 (based on site visit) 5034000 (MOE 1991 Waste Disposal Site Inventory)
Ward #	11		
Size of Site	three areas - north, east and under building to the south of northern clarifiers (all combined at most 2.6 ha based on site visit)		
Waste Thickness	expected to be approximately 2 m thick		
Active Time Period	from 1964 to the late 1970's early 1980's		
Current Ownership	City of Ottawa		
PIN (s)	043910899		

Area Served	plant only
Type of Waste	grit screenings and site generated municipal solid waste; a couple cubic yards per day
Nearby Industries	none based on available information
Operator	ROPEC/City of Ottawa
Parameters of Concern	no known monitoring
Concentrations	no known monitoring
Magnitude	no known monitoring
Methane (landfill gas)	no measurement available
Ecological Receptors	the Ottawa River and Green's Creek
Distance to Nearest Human Receptor	nearest dwelling approximately 350 m away
Adjacent Land Use and Zoning	residential to the W, commercial/industrial park to the S, conservation area and farm fields to the E, Ottawa River to the N; The zoning is Os-Open Space in the general area of the site.
Adjacent Land Owners	adjacent landowners include residents and tenants within commercial/industrial park to the S - the Rockcliffe Parkway and Ottawa River to the N - Shefford Rd and subdivision to the W - Green's Creek park followed by Rockcliffe Parkway and farm fields to the E
Site Access	fenced with an attendant at the gate
Water Supply	municipally supplied water
Depth to Bedrock	25 to 50 m to reach dolostone bedrock
Depth to Groundwater	18.3
Distance to Surface Water	approximately 200 m to the Ottawa River and 700 m to Green's Creek
Topography	relatively flat with man made features such as berms
Soil Cover Thickness	1 to 1.5 m of soil cover was placed on the waste after disposal; if waste is still present there appears to be a more significant cover as visual berms have been built on two of the three locations
Type of Overburden	clay - erosional terraces
Direction of Groundwater Flow	N towards the Ottawa River
Physical Setting	generally landscaped and built up berms on site
Other Information	Waste placed in trenches 6 ft wide, 6 ft deep and 100 ft long. In area to the east and north of northern clarifiers typically 5 trenches. Waste under building believed to be removed. Waste to the north and east may have also been removed. Final elevation at completion of waste fill were at grade but currently above grade due to construction of berms. Unknown if waste had to be or was removed to create storm water pond at northeast corner of property. The eastern area waste placement may have involved filling in a surface drainage ditch. File indicates waste tested and deemed appropriate for disposal at Trail Landfill July 19, 1989; Methane monitoring pipes and observations wells were supposed to be installed but no information that this work was ever completed; Deposited under Certificate a 460704 dated June 1, 1985 which was revoked by letter April 21, 1988.

Site ID # Go-02	**AND Record #** 015 (014)	**MOE Site #** x 9006	**Category of Owner** City		**HLUI Activity ID #** 6287
Other References	Jock River Watershed Study, 2001 (site no. 6); Ottawa-Carleton Health Department, 1991 (site no. 14); Fax from Ron Scott of Goulbourn Township, Nov. 29/01 (site #3); Goulbourn Township staff, personal communication with various local residents				

Site Name	Richmond Dump		
Landfill Monitoring/ Remediation	none		
Site Location	former Twp. Goulbourn Con 4 Lot 18, north of Franktown Rd., approx. 1.5 km west of Joy's Rd.		
Easting (UTM NAD 27)	431275	**Northing (UTM NAD 27)**	5002475
Ward #	6		
Size of Site	area approx. 1.5 ha		
Waste Thickness	appears to be less than 1 metre; possibly more where pits were dug in native soil prior to filling		
Active Time Period	closed 1973; site operated since before 1959 [based on aerial photograph]		
Current Ownership	City of Ottawa		
PIN (s)	044390111, 044390090		

Area Served	Municipality of Richmond
Type of Waste	domestic wastes; concrete, paint and oil cans, metal, glass, plastic, tires, a few cars, washing machines and page wire fence observed on site
Nearby Industries	none based on available information
Operator	Township of Goulbourn
Parameters of Concern	no known monitoring
Concentrations	no known monitoring
Magnitude	no known monitoring
Methane (landfill gas)	no measurement available; low risk potential expected since wastes were not buried
Ecological Receptors	wildlife
Distance to Nearest Human Receptor	closest house is approx. 160 m to the south
Adjacent Land Use and Zoning	forested land surrounding site and residential immediately north; some residential (rural) and agricultural in surroundings; the zoning is RU (rural) or W (wetland) in the general area of the site
Adjacent Land Owners	private owners; 2 residential houses (6800 and 6814 Franktown Rd.) are located south of former waste disposal site
Site Access	site is not fenced and wastes remains uncovered in several areas; filled area is not easily visible from Franktown Rd.
Water Supply	private wells
Depth to Bedrock	3 to 5 m to reach a bedrock of quartz sandstone or interbedded shale, siltstone and limestone
Depth to Groundwater	unknown
Distance to Surface Water	Hog's Drain 900 m west
Topography	relatively flat with a gentle slope towards the southeast
Soil Cover Thickness	unknown; wastes remain uncovered in certain areas
Type of Overburden	organic deposits on the western half of site and reworked marine sediments on the eastern half of site
Direction of Groundwater Flow	assumed southeast towards the Jock River
Physical Setting	area is overgrown with trees, bush and grass and is not easily found from the road side
Other Information	none

Site ID # Go-04	**AND Record #** 029 (033)	**MOE Site #** x 9004	**Category of Owner** Private	**HLUI Activity ID #** 6284
Other References	Jock River Watershed Study, 2001 (site no. 4); Ottawa-Carleton Health Department, 1991 (site no. 12); Fax from Ron Scott of Goulbourn Township, Nov. 29/01 (site #2); property owner and other local residents; Marla Williams (MOE Environmental Officer); personal communication with Goulbourn Township staff			

Site Name	Stittsville Dump (old)
Landfill Monitoring/ Remediation	Drainage ditches were recently dug for Land Ark Homes by Thomas Cavanaugh Construction (as per property owner) to evacuate surface water. As a result, MOE investigation was carried out in May 2001 to assess potential effects on offsite water quality. Samples taken in a ditch located along the eastern boundary of the property, east of the filled area, in May and October 2001 and in May 2002. None of the 63 analyses performed showed significant difference in water quality between upstream and downstream surface water samples, with the exception of Co and Cl (see Concentrations). Biannual surface water sampling is ongoing. Four monitoring wells have also been installed on site by Land Ark Homes along the west boundary of the landfill footprint, and are presumably monitored by Land Ark Homes or their consultant. Monitoring results were requested from Land Ark Homes but were not provided.
Site Location	former Twp. Goulbourn Con 10 Lot 18; on north side of Fernbank Rd., approx. 1.6 km west of Black's Side Rd.
Easting (UTM NAD 27)	425925 **Northing (UTM NAD 27)** 5008675
Ward #	6
Size of Site	area approx. 2.0 ha
Waste Thickness	likely less than 2 metres due to presence of bedrock close to ground surface
Active Time Period	closed 1962
Current Ownership	private individual
PIN (s)	044460618

Area Served	Village of Stittsville
Type of Waste	domestic wastes
Nearby Industries	none based on available information
Operator	Township of Goulbourn
Parameters of Concern	63 compounds and parameters sampled bi-annually in surface runoff water [MOE]; analytical results exist for groundwater but not available for review
Concentrations	cobalt in downstream surface water was 0.975 ug/L, slightly above Provincial Water Quality Objective of 0.6 ug/L and chloride concentration increased slightly from 2.8 mg/L upstream to 15.6 mg/L downstream (May 8, 2002 sampling) [MOE]; analytical results exist for groundwater but were not available for review
Magnitude	unknown
Methane (landfill gas)	no measurement available; not expected to be a concern given age of site
Ecological Receptors	agricultural lands
Distance to Nearest Human Receptor	closest house located 90 m to the southwest
Adjacent Land Use and Zoning	residential (rural) and agricultural lands; the zoning is RU (rural) in the general area of the site
Adjacent Land Owners	private owners at 6897 and 6909 Fernbank Rd to the southwest, at 6878 Fernbank Rd. to the south and 6951 Fernbank Rd. to the east
Site Access	site is not fenced, but located on private property and wastes have mostly covered and are not visible at ground surface
Water Supply	private wells
Depth to Bedrock	0 to 2 m to reach a bedrock of interbedded silty dolostone, limestone, shale and calcareous sandstone
Depth to Groundwater	unknown
Distance to Surface Water	drainage ditches flowing southeast located less than 50 metres away from filled area
Topography	relatively flat with a gentle slope towards the southeast
Soil Cover Thickness	wastes appear to be covered by an unknown thickness of fill
Type of Overburden	granular soil - beach formations with bedrock outcrops to the west of site and organic deposits to the east of site
Direction of Groundwater Flow	assumed southeast towards the Jock River
Physical Setting	area is covered with short grass, but filled area extends into the brush and trees near the east boundary
Other Information	none

Site ID # Go-05	**AND Record #** 031	**MOE Site #** x 9005 [MOE 1991 Waste	**Category of Owner** City and Private	**HLUI Activity ID #** 6285
Other References	Jock River Watershed Study, 2001 (site no. 5); Ottawa-Carleton Health Department, 1991 (site no. 13); Fax from Ron Scott of Goulbourn Township, Nov. 29/01 (site #4); personal communication with Goulbourn Township staff			

Site Name	Stapledon Dump		
Landfill Monitoring/ Remediation	none		
Site Location	former Twp. Goulbourn Con 3 Lot 16 (possibly partly on Lot 15); along extension of Jock Trail, approx. 900 m from the intersection of Jock Trail and Green's Rd., just north of the road allowance		
Easting (UTM NAD 27)	431100	**Northing (UTM NAD 27)**	5000250
Ward #	6		
Size of Site	area approx. 0.4 ha		
Waste Thickness	probably not more than 1 m		
Active Time Period	closed 1971 [1991 Waste Disposal Site Inventory]; closed Oct. 1970 [MOE Records]		
Current Ownership	private individual (property on Lot 15), City of Ottawa (road allowance and property on Lot 16)		
PIN (s)	039330503, 039330450, 039330429		

Area Served	Township of Goulbourn
Type of Waste	domestic wastes
Nearby Industries	none based on available information
Operator	Township of Goulbourn
Parameters of Concern	no known monitoring
Concentrations	no known monitoring
Magnitude	no known monitoring
Methane (landfill gas)	no measurement available; low risk potential since wastes do not appear to have been buried
Ecological Receptors	wildlife
Distance to Nearest Human Receptor	closest house is approx. 360 m to the southwest
Adjacent Land Use and Zoning	forested, undeveloped lands surround the site; the zoning is RU (rural) in the general area of the site
Adjacent Land Owners	unknown
Site Access	site is not fenced off and wastes are not covered
Water Supply	private wells
Depth to Bedrock	2 to 3 m to reach a bedrock of quartz sandstone, shaly limestone and shale and possibly limestone and dolostone
Depth to Groundwater	unknown
Distance to Surface Water	wetland approx. 310 m to the northeast; Jock River is located 450 m to the southeast
Topography	relatively flat with a gentle slope towards the southeast
Soil Cover Thickness	wastes are not covered
Type of Overburden	organic deposits
Direction of Groundwater Flow	assumed southeast towards the Jock River
Physical Setting	area is overgrown with relatively dense trees and bush
Other Information	none

Site ID # Go-06	**AND Record #** 032 (038)	**MOE Site #** a 460803	**Category of Owner** City	**HLUI Activity ID #** 6077
Other References	Jock River Watershed Study, 2001 (site no. 3); Ottawa-Carleton Health Department, 1991, (site no. 11); Fax from Ron Scott of Goulbourn Township, Nov. 29/01 (site #1); personal communication with Goulbourn Township staff and local resident			

Site Name	Stittsville Dump (more recent) - 10th Line Dump
Landfill Monitoring/ Remediation	none
Site Location	former Twp. Goulbourn Con 10 Lot 16; end of access road between lots 15 and 16, on north side of Fernbank Rd., approx. 2.1 km east of Jinkinson Rd.
Easting (UTM NAD 27)	424550 **Northing (UTM NAD 27)** 5008150
Ward #	6
Size of Site	approx. 7 ha [site visit and aerial photo interpretation]; area to be filled 8.0 ha [MOE Records]; total area of property 20.25 ha [MOE Records]
Waste Thickness	up to about 3 m
Active Time Period	Sept. 1962- May 1982 [MOE Records]; sign at entrance indicates dump closed May 31, 1982
Current Ownership	City of Ottawa
PIN (s)	044460610, 044460611

Area Served	Township of Goulbourn; Village of Stittsville
Type of Waste	60% domestic; 20% commercial; 20% other [MOE Records]; concrete fragments, metals, cars, tire, broken glass observed on site
Nearby Industries	none based on available information
Operator	Township of Goulbourn
Parameters of Concern	no known monitoring
Concentrations	no known monitoring
Magnitude	no known monitoring
Methane (landfill gas)	no measurement available; methane not expected to be an issue since wastes were not buried below ground surface
Ecological Receptors	wildlife
Distance to Nearest Human Receptor	closest edifice (presumably utility building for shooting range) is located approx. 250 m to the southeast; closest private well located 500 m to the south
Adjacent Land Use and Zoning	Stittsville shooting ranges located west of site, forested undeveloped areas and swamps on all other sides; the zoning is OS1 (open space) or RU (rural) in the general area of the site
Adjacent Land Owners	7101 Fernbank Rd. east of site and 7165 Fernbank Rd. west of side
Site Access	filled area is located at the end of access road, approx. 450 m away from Fernbank Rd.; area is not fenced, but cannot be accessed with a vehicle; wastes are mostly covered
Water Supply	private wells
Depth to Bedrock	bedrock consisting of interbedded silty dolostone, limestone, shale and calcareous sandstone outcrops at site
Depth to Groundwater	unknown
Distance to Surface Water	wetlands located 400 m southeast of site; drainage ditch located approx. 900 m southeast of site; unconnected swampy areas located 100 m northeast of site
Topography	rolling to generally flat, with a gentle slope towards the southeast
Soil Cover Thickness	wastes were covered with a thin soil cover originating from the immediate vicinity of filled area
Type of Overburden	thin topsoil cover over Ordovician bedrock
Direction of Groundwater Flow	assumed southeast towards the Jock River
Physical Setting	wastes were spread out or piled as mounds 2-3 m above ground level; wastes were not buried given close proximity of bedrock surface; filled area is currently covered by a mixture tall grass, bush and a few trees
Other Information	Sign indicating that site was reforested in 1985 by Boy Scouts of Canada. - Many reports in City files of poor operation of dump: lack of cover material available from site, and poor drainage with water near ground surface.

Site ID #	Ka-01	**AND Record #**	049 (050 & 48)	**MOE Site #**	x 9010 and a 460301 [MOE 1991 Waste Disposal	**Category of Owner**	City	**HLUI Activity ID #**	6079

Other References Ottawa-Carleton Health Department, 1991 (site no. 6); AMEC, January 2001a; AMEC, January 2001b; AMEC letter, September 2002; personal communication with City of Ottawa staff

Site Name	March Landfill
Landfill Monitoring/ Remediation	Groundwater and surface water monitoring activities are on-going at the site by the City of Ottawa. The City indicates a potassium permanganate pilot project will be implemented in the spring of 2003 which targets the destruction of TCE and its related break-down products. If successful, a full-scale remediation project will proceed in mid-summer and should be completed in the summer of 2004. The City is undertaking a Risk Assessment to 1) characterize the potential risk to the existing residences downgradient of the landfill resulting from the presence of TCE, and its related degradation products in groundwater; and 2) define an appropriate buffer zone between the landfill and any future development to ensure the health of future residents are protected.
Site Location	near the end of Klondike Rd on the S side, approximately 250 m west of the intersection of Klondike Rd and Second Line Rd., former Township of March Con 2 Lots 10 and 11
Easting (UTM NAD 27)	425500 **Northing (UTM NAD 27)** 5021450
Ward #	4
Size of Site	landfill is 140 by 120 metres; the property is approximately 78.8 ha
Waste Thickness	based on AMEC boreholes waste thickness ranged from 1.5 to 2.3 m
Active Time Period	1960 to closed in 1973 and covered in 1974
Current Ownership	City of Ottawa
PIN (s)	045230027, 045230020, 045230022

Area Served	Former Township of March
Type of Waste	domestic, commercial, agricultural, industrial and other
Nearby Industries	none based on available information
Operator	Township of March
Parameters of Concern	TCE and its related breakdown products
Concentrations	TCE concentrations as high as 14,300 ug/L beneath the waste and up to 126 ug/L near downgradient property boundary
Magnitude	plume extends in a northeasterly direction and is estimated to have migrated 1.5 km and be 350 m wide in the bedrock.
Methane (landfill gas)	methane detected in winter in excess of LEL however potential for migration off-site low. New buildings in vicinity of landfill not recommended.
Ecological Receptors	Shirley's Bay
Distance to Nearest Human Receptor	nearest dwelling approximately 300 m away
Adjacent Land Use and Zoning	residential to the N and E, currently open green space to the S and W; The zoning is MR(R)-Marginal Resource in the general area of the site.
Adjacent Land Owners	subdivision development and rural farming; new subdivision to the N and E covering many properties; NE corner includes 1314 and 1320 Klondike Rd - NW corner includes 936 March Rd - S is treed and swampy to railway
Site Access	site is fenced, however in disrepair
Water Supply	Groundwater well users are located approximately 650 m from the site. Although houses are located closer than this, it is understood they do not use well water as a source of drinking water. Municipally supplied water to the new subdivision.
Depth to Bedrock	approximately 8 metres on site, bedrock is at surface in surrounding area.
Depth to Groundwater	less than 4 metres
Distance to Surface Water	immediately adjacent to water on the east, south and west sides; these areas drain to creeks which ultimately drain to Shirley's Bay
Topography	gently to moderately undulating with an overall relief of approximately 10 m.
Soil Cover Thickness	based on AMEC boreholes the soil cover consisted of silty sand and ranged from 0.6 to 0.9 m in thickness
Type of Overburden	sand or sand silt fill 0.5 to 1.2 m thick, followed by 1 to 2 m of waste, followed by clay, ending with sandstone bedrock.
Direction of Groundwater Flow	north and northeast
Physical Setting	site lies within a wetland which drains to Shirley's Bay. Numerous bedrock outcrops and mature trees surround the site.
Other Information	Burning has occurred at the site. No evidence of leachate seeps.

Site ID # Np-03	**AND Record #** 017 (013)	**MOE Site #** x 9002	**Category of Owner** Government	**HLUI Activity ID #** 6282
Other References	Ottawa-Carleton Health Department, 1991 (site no. 9); Confidential GAL report; Dillon Report 1984 (site No. D-121); File 14-01-0004 Vol 2, File 14-2001-0004 Vol 10			

Site Name	Bruce Pit		
Landfill Monitoring/ Remediation	Groundwater and surface water quality was being monitored at the site for MTO. In 2001 annual monitoring report it was recommended that monitoring be discontinued [GAL]. The discontinuance of monitoring was approved by the MOE.		
Site Location	Bruce Pit parking area, former City of Nepean Con 3 Lot 33		
Easting (UTM NAD 27)	437100 (based on actual site reports)	**Northing (UTM NAD 27)**	5019325 (based on actual site reports)
Ward #	9		
Size of Site	0.6 ha in current location; was 5 ha in former location prior to move - see "Other Information"		
Waste Thickness	waste is approximately 5 m thick at its deep point		
Active Time Period	approximately 1950 to 1965 (moved in 1991)		
Current Ownership	NCC		
PIN (s)	046420563		

Area Served	Former Township of Nepean
Type of Waste	domestic waste
Nearby Industries	none based on available information
Operator	Former Township of Nepean
Parameters of Concern	nitrate, chloride, iron, manganese, nitrite, phenols, sulphate
Concentrations	Nitrate has historically been the key indicator and peaked in 1999 immediately adjacent to the moved landfill with a concentration of approximately 7 mg/L.
Magnitude	peak of nitrate was 7 mg/L
Methane (landfill gas)	methane was monitored in the early 1990's however it was discontinued under approval of the MOE
Ecological Receptors	animals (dogs) and people using the site as a recreational space, east pond
Distance to Nearest Human Receptor	People use the site for recreational activities. Houses and a high school within approximately 0.5 km.
Adjacent Land Use and Zoning	Highway to the W with high school across the highway, farmland to the S, residential to the E, NCC wood lot to the N followed by residential; The zoning is GR (Greenbelt Rural) in the general area of the site.
Adjacent Land Owners	adjacent landowners include mostly home owners
Site Access	unrestricted however covered by clay soil cover and gravel parking lot
Water Supply	municipally supplied water
Depth to Bedrock	approximately 25 to 30m
Depth to Groundwater	5 to 6 m below ground surface
Distance to Surface Water	150m to east pond
Topography	Originally an irregular surface and slightly mounded above surrounding lands; after moving now a parking lot - therefore waste area is flat. Steep slope to the north into the east pond.
Soil Cover Thickness	proposed 0.45 m of granular material followed by 1 m of clay
Type of Overburden	up to 22m of surficial sand and possibly up to 6m of glacial till, followed by dolomite bedrock
Direction of Groundwater Flow	north (towards east pond)
Physical Setting	grasses and mature tree, many walking trails
Other Information	Waste was moved to engineered repository a couple hundred metres to the SE of the original location in 1991 under CofA a461313 and approximately 30,000 cubic m was moved. Original location was Driscoll Pit approximately 10 m deep and 100 by 100 m in area. Burning may have been historically conducted.

Site ID # Np-04	**AND Record #** -	**MOE Site #** a 461301	**Category of Owner** City	**HLUI Activity ID #** 6018
Other References	Dillon 2002; GAL. 2003			

Site Name	Nepean Landfill
Landfill Monitoring/ Remediation	Groundwater, surface water and landfill gas monitoring activities are on-going at the site by the City of Ottawa. A groundwater collector south of the Nepean Landfill is currently in final design stage to collect leachate-impacted groundwater in the shallow aquifer south of the site. The collected leachate-impacted groundwater will be mixed with Trail Waste Facility Leachate and transported to ROPEC for treatment via a pipeline.
Site Location	4420 Trail Rd., south east corner of Moodie Dr. and Trail Rd., Concession 4, part of Lot 9, former City of Nepean
Easting (UTM NAD 27)	439015 **Northing (UTM NAD 27)** 5008450
Ward #	3
Size of Site	approximately 19 ha
Waste Thickness	waste at least 15 m thick based on borehole advanced by GLL [GAL 2003]
Active Time Period	early 1960's to 1980 (final cover in 1993)
Current Ownership	City of Ottawa
PIN (s)	045920005

Area Served	Former Region of Ottawa-Carleton
Type of Waste	domestic waste
Nearby Industries	aggregate extraction operations
Operator	Former Region of Ottawa-Carleton, prior to that the former Nepean Township
Parameters of Concern	alkalinity, boron, bromide, chloride, conductivity, hardness, ammonia, TKN and iron are key parameters in the groundwater; boron and total phosphorus are key parameters in the surface water
Concentrations	beneath the landfill concentrations in groundwater have been as high as approximately 500 mg/L for chloride at monitor M88-1 in the shallow aquifer; in the southwest pond concentrations have been as high as approximately 0.6 mg/L for boron and 2 mg/L for total phosphorus in the surface water
Magnitude	groundwater plume in the deep aquifer extends N past Trail Rd and as far as Cambrian Rd; groundwater plume in the shallow aquifer extends S onto the neighbouring aggregate extraction property
Methane (landfill gas)	active landfill gas collection system incorporated in cover; landfill gas monitored annual in perimeter wells and on landfill - worst case of perimeter well measurement 60 ppm
Ecological Receptors	animals and woodlot to the N on Trail Waste Disposal Facility property near Cambrian Rd.
Distance to Nearest Human Receptor	Nearest house 1.3 km away; Barrhaven 2 km N; Twin Elm 2 km W; nearest groundwater well located adjacent to the site.
Adjacent Land Use and Zoning	Aggregate extraction to the S, SE and SW, Trail Waste Disposal Facility to the N and NE, Moodie Dr., aggregate extraction and scrap wood burning to the W; The zoning is MX (Mineral Extraction) in the general area of the site.
Adjacent Land Owners	adjacent landowners include Burnside Sand and Gravel Ltd. to the S/SE, Trail Waste Disposal Facility to the N/NE, Moodie Dr and Cohen and Cohen to the W and Goldie Mohr Ltd. to the SW
Site Access	restricted and partially, if not fully, fenced
Water Supply	private wells
Depth to Bedrock	approximately 25 to 30 m to dolostone of the Oxford formation
Depth to Groundwater	typically near surface to 2 m below surface in the shallow aquifer; in the deep aquifer groundwater beneath the Nepean Landfill is at elevation 95 to 96 m
Distance to Surface Water	approximately 250 m to ponds W of Moodie Dr., 500 m to agricultural drain W of Moodie Dr., 250 m to ponds S of Nepean Landfill; extensive aggregate extraction operations in the area are constantly changing surface water surrounding the site, based on a 1:50,000 scale map the closest surface water which actually drains away from the site is the agricultural drain located W of the Nepean Landfill
Topography	The site is located on a northwest-sourtheast trending ridge feature that rises above surrounding clay plains. The ridge rises about 30 m above the surrounding clay plains.
Soil Cover Thickness	covered in 1993 incorporating an engineered geomembrane hydraulic barrier cap and active landfill gas collection system
Type of Overburden	in simple terms the site is underlain by a shallow aquifer (comprising of fine to medium sand), a clay aquitard (comprising of marine silt and clay) a deep aquifer (comprising of sand and gravel) and the bedrock aquifer (comprising of dolostone bedrock)
Direction of Groundwater Flow	in the shallow aquifer beneath the Nepean Landfill flow is in a southerly direction; in the deep aquifer groundwater flow is towards the north, northwest and west beneath the Nepean Landfill
Physical Setting	the site has been grassed
Other Information	Within the HLUI the Activity ID # includes the Trail Waste Disposal Facility too. The site has been studied in detail and continues to be monitored. A remedial work plan is being implemented.

Site ID # Os-01	**AND Record #** 075 (084, 085 & 087)	**MOE Site #** a 461401	**Category of Owner** City and Private		**HLUI Activity ID #** 5863
Other References	RMOC Inter-Departmental Correspondence, Feb. 12, 1976 (site 8); Ottawa-Carleton Health Department, 1991 (site no. 19); GAL, May 2001; GAL, June 2001; GAL, September 2001; File 14-2001-0004 Vol 10, AMEC, excerpt 2002				

Site Name	Osgoode Con 2 Dump		
Landfill Monitoring/ Remediation	A groundwater, surface water and private well monitoring program has been ongoing since approximately 1992 and is a component of the City's Site Closure and Management Plan for this landfill. In addition some land requirements and contaminant attenuation zone designations have been recommended by GAL (September 2001).		
Site Location	on NE side of road, former Township of Osgoode Con 2 part of Lots 26 and 27		
Easting (UTM NAD 27)	454025	**Northing (UTM NAD 27)**	5000400
Ward #	20		
Size of Site	approximately 4.6 ha based on delineation (AMEC indicates 0.42 ha, Health Rpt indicates 6.25 ha and RMOC memo says 5 ha)		
Waste Thickness	indicated to be at least 4.3 m thick		
Active Time Period	1932 (but more actively began in 1964) - 1987		
Current Ownership	City of Ottawa and private individual		
PIN (s)	043060086, 043060044, 043060078, 043060041, 043060033, 043060036		

Area Served	Township of Osgoode
Type of Waste	95% domestic, 5% other waste
Nearby Industries	none based on available information
Operator	assumed to have been operated by the Township of Osgoode
Parameters of Concern	Typical leachate indicator parameters at the site include alkalinity, boron, calcium, chloride, hardness, iron, magnesium, manganese, sodium, strontium, TDS, COD, DOC, potassium and TKN. The parameter of concern in private wells near the landfill is nitrate although the source of the nitrate has not been confirmed but is not the landfill site.
Concentrations	Concentrations of nitrate in the private wells has peaked at 14.4 mg/L, while the leachate indicator parameter of chloride has been seen as high as 94 mg/L in one of the private wells. The peak concentration of chloride observed near the landfill was approximately 139 mg/L.
Magnitude	The leachate-impacted groundwater plume is inferred to extend some 500 to 600 m beyond the present west property boundary of the landfill site. Surface water quality suggest that the shallow water along the length of the elongated ditch to the west of the site is impacted by leachate from the site but the landfill appears to be having a minor impact on the ditch in terms of compliance with the PWQO. Surface water at an intake to the tile drain and water discharging from the tile drain into the municipal ditch is also considered to be impacted by leachate.
Methane (landfill gas)	no monitoring conducted; based on site geology and hydrogeology monitoring has been considered unnecessary
Ecological Receptors	animal farms located adjacent to the site.
Distance to Nearest Human Receptor	approximately 500 m to nearest house, however approximately 800 m to nearest house in the direction of groundwater flow
Adjacent Land Use and Zoning	properties to the W, N and E are treed and the E is also used for agricultural purposes. The Township road is located to the S; The zoning is RU (Rural) in the general area of the site (zoning difficult to determine from zoning maps).
Adjacent Land Owners	adjacent landowners include historic sand/gravel pits to the S as well as another waste disposal area not operated by the City, farmers to the E and rural residents and wooded areas to the W and N
Site Access	site is not fenced in
Water Supply	private wells (some dug and some drilled)
Depth to Bedrock	dolostone bedrock found at 8.5 to 23.2 m
Depth to Groundwater	groundwater anywhere from 0.5 to 4.5 m below ground surface depending on the location of the monitoring well
Distance to Surface Water	Elongated ditch located adjacent to the site does not drain away from site as surface water based on 1:50,000 scale map. It is known that elongated ditch drains to tile collector and subsequently reaches ditch along the road. The nearest surface water body on a 1:50,000 scale map is a drain 900 m away.
Topography	property to the W is flat and a slight decrease in elevation is apparent to the N behind the dump
Soil Cover Thickness	unknown thickness of cover although most waste at the site is covered; small amounts of waste can be found at the surface
Type of Overburden	overburden encountered includes topsoil, peat, silty sand, sand, silty clay, sandy silt, sandy silt and clayey silt and glacial till. Generally, the sequence can be summarized as an upper granular layer consisting of fine to coarse sand and a lower granular layer consisting of interbedded layers of silty sand, sandy silt, clayey silt, silt and glacial till and separated by a silty clay stratum which is not continuous throughout the site.
Direction of Groundwater Flow	in the upper granular layer the groundwater flow direction is typically toward the SW/W
Physical Setting	mature and re-vegetated wood lot to the N and E. Farmland/grazing land to the W-SW.
Other Information	Topographic map indicates site is a former gravel pit. Some burning may have historically occurred. Site across the road and S of the dump was also a former gravel pit and waste was also placed in this location although information indicates it was not placed their by the municipality.

Site ID # Ri-01	**AND Record #** 067 (077)	**MOE Site #** a 461202, x 1044 [MOE Records]	**Category of Owner** City	**HLUI Activity ID #** 5914	
Other References	Ottawa-Carleton Health Department, 1991 (site no. 17); personal communication with Rideau Township staff, local resident and former District Road Supervisor; Horton, 2002; AMEC, excerpts 2002				

Site Name	North Gower Township Dump
Landfill Monitoring/ Remediation	Health and Long Term Care Branch of the City indicate that years ago they were involved when part of the dump was moved. No health hazards were identified at the time of their investigation.
Site Location	former Twp. North Gower Con 2 Lot 31; end of Garlock St. off 3rd Line S, on south (east) side of road allowance
Easting (UTM NAD 27)	449000 **Northing (UTM NAD 27)** 4995800
Ward #	21
Size of Site	approx. between 0.8 and 1.1 ha [site visit and aerial photo interpretation]; 0.45 ha [sketch by surveyor, MOE records, 1987]; 2.4 ha [AMEC, excerpts 2002]; 2 acres = 0.8 ha [Twp staff]
Waste Thickness	unknown, but likely less than 1 metre
Active Time Period	closed July 15, 1972 [MOE records]; closed 1977 [Twp. staff]
Current Ownership	City of Ottawa (1962 Garlock Rd.)
PIN (s)	039160020, 039160018, 039160016, 039160053

Area Served	Township of North Gower
Type of Waste	60% domestic, 40% commercial [AMEC, excerpts 2002; MOE records]
Nearby Industries	none based on available information
Operator	Township of North Gower; open dump (no pickup or dump attendant)
Parameters of Concern	no known monitoring
Concentrations	no known monitoring
Magnitude	no known monitoring
Methane (landfill gas)	no measurement available
Ecological Receptors	wetland located northeast of site
Distance to Nearest Human Receptor	private well 150 m to the NW (new house at 1959 Garlock Rd)
Adjacent Land Use and Zoning	undeveloped (bush or swamps) to the north, east and west; residential (rural) to the west and southwest; the zoning is A (agricultural) in the general area of the site
Adjacent Land Owners	private owner of property at 7153 Third Line Rd. S, south of site; private owner of property at 7123 Third Line Rd. S
Site Access	area is not fenced
Water Supply	private wells
Depth to Bedrock	5 to 25 m to the dolostone bedrock
Depth to Groundwater	unknown; high water table [MOE inspection]
Distance to Surface Water	swampy area located immediately east of site; wetland approx. 270 m east; Rideau River 1.5 km east; site is subject to seasonal flooding [MOE inspection]
Topography	flat
Soil Cover Thickness	wastes remain uncovered in areas ; 0.60 m compacted fill [C of A]
Type of Overburden	till: hummocky to rolling with local relief 5 to 25m, reworked glaciofluvial sand and/or organic deposits.
Direction of Groundwater Flow	assumed to be east towards the Rideau River
Physical Setting	partially re-vegetated with grass, shrub and some mature trees; waste partially covered but still visible at several locations
Other Information	HLUI Activity ID # 6094 and # 6409 corresponding to this site but shown in incorrect location. - AND-067 and AND-077 correspond to same site (one record for MOE) but Township staff know of only one site in the area - Photos of dead animals at dump site, cows visible; burning also evident in photo [MOE record] - Both a former contractor and a former District Road Supervisor, who were both residents since the late 1950's, confirmed that there was no waste disposal site at the location indicated by HLUI Activity ID 6409.

Site ID # Ri-02	**AND Record #** 102 (103)	**MOE Site #** a 461201	**Category of Owner** City		**HLUI Activity ID #** 6067
Other References	Sauriol, 1993; Ottawa-Carleton Health Department, 1991 (site no. 18); personal communication with Rideau Township staff				

Site Name	Marlborough Dump
Landfill Monitoring/ Remediation	none
Site Location	former Twp. Marlborough Con 3 Lot 11; adjacent to Gallagher Rd on west side
Easting (UTM NAD 27)	439830 **Northing (UTM NAD 27)** 4989500
Ward #	21
Size of Site	filled area approx. 1.5 ha [site visit and air photo interpretation]; whole property 5.14 ha [State of the Environment]; footprint of 0.8 ha [Sauriol];
Waste Thickness	4 to 5 m
Active Time Period	1964 - mid 1980's [State of the Environment]; closed 1986 [Twp. staff]
Current Ownership	City of Ottawa
PIN (s)	039260077, 039250124, 039250123

Area Served	Marlborough and North Gower Twps.
Type of Waste	90% domestic, 5% commercial, 5% other
Nearby Industries	none based on available information
Operator	Township of Rideau; open dump (no pickup or dump attendant)
Parameters of Concern	no known monitoring
Concentrations	no known monitoring
Magnitude	no known monitoring
Methane (landfill gas)	no measurement available; not likely to be a concern since wastes are located mostly above ground surface due to proximity of B/R ; no septic odour detected in 1993 [Sauriol]
Ecological Receptors	wildlife
Distance to Nearest Human Receptor	private house 400 m to the southwest
Adjacent Land Use and Zoning	undeveloped (bush and pasture) all around; the zoning is MD (disposal industrial) in the general area of the site.
Adjacent Land Owners	RBJ Development to the north (3 properties were up for development back in 1933) and private owner to the southwest; owners of property at 7165 Gallagher Rd. south of site and undeveloped land east of the site
Site Access	area is fenced
Water Supply	private wells
Depth to Bedrock	dolostone bedrock near ground surface (B/R outcrops at site)
Depth to Groundwater	unknown; water ponding observed on site: perched water table near ground surface [Sauriol]
Distance to Surface Water	wetland 450 m E
Topography	slight slope to the east in the vicinity of the site
Soil Cover Thickness	wastes mostly covered but still visible in some areas
Type of Overburden	limited topsoil in some areas of site
Direction of Groundwater Flow	assumed southeast towards the Rideau River
Physical Setting	site is mostly re-vegetated with tall grass and tress; garbage is piled in a 4-5 m tall mound; earth fill was brought in from outside to cover wastes [Glen Hayes, City]
Other Information	Illegal dumping noted on municipal property along Gallagher Rd in 1993 [Sauriol]

Site ID # Ur-01	**AND Record #** 026	**MOE Site #** x 1006	**Category of Owner** City and Private		**HLUI Activity ID #** 6098
Other References	Gartner Lee, 1980 (Site #1); Gartner Lee, 1982 (Site #1); Intera, 1988 (Lf #1); City of Ottawa Operations Branch, 1980 (Site 1); Pinecrest Dumaurier folder; Sewers Pumping Station Dumaurier Methane Gas folder; City of Ottawa Council Report, Nov. 16th, 1953, item 45 ; CRA, 2003				

Site Name	Pinecrest & Dumaurier		
Landfill Monitoring/ Remediation	Eleven gas probes were installed by GLL for the City of Ottawa in 1981. [GLL, 1982] - Detailed pumping test was undertaken in June 1985 to test feasibility of gas venting system [City of Ottawa memo, June 3, 1986] - Landfill gas control system was installed by GLL (maintained by Dillon) along Dumaurier Ave. and Watson St. and included 18 extraction wells; it has been operating on site since April 1989 and is ongoing. [City records] - The City has recently considered shutting down the methane collection system based on nil methane concentration readings. CRA recommended to confirm the good working condition of the methane probes, to collect two additional rounds of measurements and to inspect the condition of the cover. If results show that methane emission is sufficiently low, it will be recommended to decommission the system. [CRA, 2003] - Analytical results from soil samples collected on Dumaurier Plaza property (not reviewed) were all below applicable criteria. [City records]		
Site Location	bounded by Pinecrest Rd., Dumaurier Ave., Hwy 417 interchange, and line north of Sr. Remi Church and through 1000 and 999 Watson Rd. and 2793 Dumaurier Ave., Nepean Con 2 Lot 20		
Easting (UTM NAD 27)	437950 (as plotted by Gartner Lee, 1980); 437860 (MOE 1991 Waste Disposal Site Inventory)	**Northing (UTM NAD 27)**	5022050 (as plotted by Gartner Lee, 1980); 5021950 (MOE 1991 Waste Disposal Site Inventory)
Ward #	7		
Size of Site	area approx. 4 ha		
Waste Thickness	estimated depth of refuse 3 - 5 m, locally at the southern end, the fill is at least 6 m, but thins towards the north end [GLL, 1982]; a small concentration of domestic garbage extending to bedrock surface [NCC fax dated Oct. 1, 2002]		
Active Time Period	Nov. 1953 - May 1957		
Current Ownership	City of Ottawa (Dumaurier Ave. Park), St. Remi Church (2821 Dumaurier Ave.), private individuals at 999, 1000, 1004 Watson St. and 2793, 2799, 2807 Dumaurier Ave., NE section of Dumaurier Plaza property (2829 Dumaurier Ave.)		
PIN (s)	039440235, 039440234, 039440158, 039440159, 039440133, 039440157, 039440160, 039440236, 039440131, 039440132, 039440666, 039440238, 039440613, 039440615, 039440624, 039440826, 039440827, 039570532		

Area Served	City of Ottawa
Type of Waste	mostly domestic waste; some commercial and industrial waste
Nearby Industries	none based on available information
Operator	City of Ottawa
Parameters of Concern	analytical results exist but not available for review
Concentrations	analytical results exist but not available for review; also see "Landfill Monitoring/Remediation"
Magnitude	analytical results exist but not available for review
Methane (landfill gas)	combustible gases > 5% LEL detected in observation wells in 1980 and 1981 surveys; no methane detected inside houses and surrounding buildings in 1982; methane in excess of 5% v/v detected in underground service outlets in 1980; monthly gas monitoring since 1982 show conc. Up to 75 % v/v. combustible gas. Also see "Landfill Monitoring/Remediation".
Ecological Receptors	human contact possible given recreational use of site, although wastes are reportedly overlain by sufficient soil cover
Distance to Nearest Human Receptor	private houses built directly on site
Adjacent Land Use and Zoning	institutional NW of site, residential N and NE of site, commercial SW of site and industrial E of the site; the zoning is partially IP3 F(1.0) H(13.8) (business park industrial) and L4 (major leisure area) in the general area of the site.
Adjacent Land Owners	private home owners north and east of site, gas station east of site, school northwest of site, shopping mall (Dumaurier Plaza) west of site, Ontario government - Ministry of Transportation (Hwy 417 interchange) south of site
Site Access	approx. 2/3 of the site located on municipal property used by the public; remainder located on private property
Water Supply	municipally supplied water
Depth to Bedrock	bedrock encountered between 3.8 and 4.6 m along Dumaurier Avenue, probably deepens to the south. [GLL, 1982] - Bedrock expected to be interbedded quartz sandstone, shaly limestone, and shale; locally conglomerate at base; interbeds of calcarenite and silty dolostone in upper part.
Depth to Groundwater	4.3 m and 5.5 m in the deepest sands to an average range of 1.6 m to 2.9 m for most of the site [GLL, 1982]
Distance to Surface Water	Ottawa River 1.3 km NW; creek 400 m S
Topography	sloping southeast
Soil Cover Thickness	0.6 to 1.4 m of sandy fill covers refuse [GLL, 1982] - NCC fax dated October 1, 2002 indicates a small concentration of domestic garbage found at less than 1 m below surface.
Type of Overburden	silty and sandy fills to the east, south and west; fine to medium sands to the north over 5.0 m deep; underlying most of the site is a sequence of organic material generally woody in composition [GLL, 1982]
Direction of Groundwater Flow	southeast [GLL, 1982]
Physical Setting	Dumaurier Ave. Park includes 2 ball diamonds and small parking lot; residential area includes grassed areas; church and shopping mall properties mostly with paving
Other Information	none

Site ID # Ur-02	**AND Record #** 037	**MOE Site #** x 1007	**Category of Owner** Government	**HLUI Activity ID #** 6099
Other References	Gartner Lee, 1980 (Site #2); Intera, 1988 (Lf #2); City of Ottawa Operations Branch, 1980 (Site 2); Dillon, 1984 (Site No. D-119); GAL, report no. 941-2021-2; personal communication with former City of Ottawa staff			

Site Name	Parkway & Richmond (McGee Farm)
Landfill Monitoring/ Remediation	Investigation conducted by GAL in 1994 for J.L. Richards/City of Ottawa for the design of the Britannia storm sewer, outlet and sedimentation sites included monitoring of combustible gas levels, groundwater and soil analysis in the western portion of the filled area. This investigation was not aimed at evaluating the impacts of the old landfill, but some wastes were encountered in several boreholes/augerholes [GLL, 1994] - Construction debris and soil which may have included some of the filled waste were removed down to the rock surface at location of future sedimentation pond northwest of the site (currently kidney-shaped clearing surrounded by wooded area) [former City of Ottawa staff] - Monitoring of surface water at Mud Lake (?) was discontinued in 1997. [NCC fax dated October 1, 2002]
Site Location	lands located on both sides of Parkway, north of Richmond Rd., bounded by the private properties on the west side of McEwen Ave., the abandoned railroad, the private properties along Lincoln Heights and Byron Linear Park, Nepean Con 1 Lot 23
Easting (UTM NAD 27)	438410 **Northing (UTM NAD 27)** 5024260
Ward #	7
Size of Site	area approx. 3.5 ha
Waste Thickness	estimated depth of fill 1.5 - 3.0 m [GLL, 1980]; waste fill layer encountered in boreholes and augerholes in the western portion of site ranges from 0.6 to 1.9 m in thickness [GAL, 1994]
Active Time Period	April 1957 - Jan. 1959
Current Ownership	NCC (Britannia Park; filled area possibly extends on City of Ottawa property (285 Lincoln Heights Rd.)
PIN (s)	042820464, 042820785

Area Served	City of Ottawa
Type of Waste	domestic and some industrial waste, construction material [GLL, 1980] - waste fill encountered in boreholes included plastic, metal, wire, glass, bricks, crockery, wood, rubber, concrete and some organic material [GAL, 1994]
Nearby Industries	none based on available information
Operator	City of Ottawa
Parameters of Concern	soil and groundwater samples collected in the western portion of the site met the applicable criteria, with the exception of sodium and chloride, which were detected at concentrations above the non-potable groundwater criteria [GLL, 1994]
Concentrations	sodium concentrations: 8 to 23 mg/L (criteria 8 mg/L), chloride concentrations: 13 to 444 mg/L (criteria 12 mg/L) [GLL, 1994]
Magnitude	samples collected in the western portion of the site [GLL, 1994]
Methane (landfill gas)	10% v/v combustible measured in hand auger hole (location not specified) [GLL, 1980]; up to 100% LEL combustible gas measured in auger holes located in the western portion of the site [GAL, 1994]
Ecological Receptors	Ottawa River ecosystem; vegetal kills observed in 1980 on west side of site [GLL, 1980]
Distance to Nearest Human Receptor	nearest houses are less than 40 west of presumed filled area, although west limit of fill is uncertain; based on subsurface investigation, distance to nearest house is at most 60 m [GAL, 1994]
Adjacent Land Use and Zoning	parkland within the Ottawa Parkway, residential and commercial (Lincoln Heights); the zoning is partially ES (environmentally sensitive area), EW[693]-h (waterway corridor) and L3[693]-h (community leisure) in the general area of the site.
Adjacent Land Owners	houses on McEwen St. and on Lincoln Heights Rd.
Site Access	site is located on public land
Water Supply	municipally supplied water
Depth to Bedrock	between 6 and 9 m approximately to bedrock assumed to be interbedded quartz sandstone, shaly limestone, and shale; locally conglomerate at base; interbeds of calcarenite and silty dolostone in upper part; waste fill encountered in boreholes is directly overlying sandstone bedrock in the western portion of the site [GAL, 1994]
Depth to Groundwater	water table encountered between 2.1 and 2.9 below ground level in western portion of site [GAL, Aug. 29, 1994]
Distance to Surface Water	channel draining into Ottawa River located approx. 50 m north of site
Topography	sloping north towards the Ottawa River
Soil Cover Thickness	assumed to be covered based on land use and methods of filling used by the City of Ottawa for that time period; waste fill layer overlain by soil cover 0.6 to 1.5 m thick in the western portion of the site [GAL, 1994]
Type of Overburden	glacial till
Direction of Groundwater Flow	assumed to be north towards the Ottawa River
Physical Setting	parkland on either sides of the Ottawa Parkway; mostly grass with some trees on site
Other Information	Ottawa River Parkway was constructed through the site in 1966. The width of the road was excavated and back-filled with sand. The excavated garbage was reburied in roadway fill closer to the Ottawa River. [Dillon, 1994]

Site ID # Ur-03	**AND Record #** 044	**MOE Site #** x 1008	**Category of Owner** City		**HLUI Activity ID #** 6102
Other References	Gartner Lee, 1980 (Site #3); Gartner Lee, 1982 (Site #3); Intera, 1988 (Lf #3); City of Ottawa Operations Branch, 1980 (Site 3)				

Site Name	McBride and Raven (Woodward Dump)		
Landfill Monitoring/ Remediation	none		
Site Location	Carlington Park; bounded by Woodward Ave., McBride St., Raven Ave. and property line with former rock quarry		
Easting (UTM NAD 27)	441720 (as plotted by Gartner Lee, 1980); 441630 (MOE 1991 Waste Disposal Site Inventory)	**Northing (UTM NAD 27)**	5024700 (as plotted by Gartner Lee, 1980); 5024680 (MOE 1991 Waste Disposal Site Inventory)
Ward #	16		
Size of Site	area approx. 4 ha		
Waste Thickness	estimated depth of fill 1.5 - 2.4 m [GLL, 1980]		
Active Time Period	Dec. 1950 - Nov. 1953 (aerial pictures show fill material as early as 1945)		
Current Ownership	City of Ottawa (Carlington Park)		
PIN (s)	039980172, 039980169, 039980162, 039980176, 039980099, 039980173, 039980101, 039980177, 039980171		

Area Served	City of Ottawa
Type of Waste	mainly domestic with some industrial waste
Nearby Industries	Alexander Metal Products Ltd., 1965-today, 1550 Laperrière Ave.; Atomic Energy of Canada, 1950s-1965, 1529 Laperrière Ave. [Intera #17]
Operator	City of Ottawa
Parameters of Concern	no known monitoring
Concentrations	no known monitoring
Magnitude	no known monitoring
Methane (landfill gas)	up to 7.5% v/v methane [GLL, 1980]; no methane detected inside buildings or underground services [GLL, 1982]
Ecological Receptors	human contact possible given recreational use of site, although wastes are likely covered
Distance to Nearest Human Receptor	private properties on Laperrière Ave., McBride St. and Raven Ave. adjacent or across the street from site
Adjacent Land Use and Zoning	industrial north and west of site, recreational (parkland) south and NE of site and residential east of site; the zoning is IP F(1.0) H11 (business park industrial) in the general area of the site
Adjacent Land Owners	houses on Woodward Ave., McBride St. and Raven Ave.; industrial properties on Laperrière Ave.
Site Access	site located on municipal property used by the public
Water Supply	municipally supplied water
Depth to Bedrock	from 4.4 to more than 5 m [GLL, 1982] to interbedded silty dolostone, crystalline limestone, politic limestone, shale and calcareous quartz sandstone
Depth to Groundwater	2 to 4 m BGL [GLL, 1982]
Distance to Surface Water	Ottawa River 2.2 km NW; Rideau River 3.3 km E
Topography	site is located at the toe of a topographic high on southern boundary
Soil Cover Thickness	assumed to be covered based on land use, however thickness of cover unknown
Type of Overburden	silty and sandy glacial till with occasional thin veneer of fine sand overlying the till [GLL, 1982]
Direction of Groundwater Flow	north, based on water level measurements [GLL, 1982]
Physical Setting	Carlington Park includes ball diamonds; only vegetation in area is somewhat mature and maintained
Other Information	none

Site ID # Ur-04	**AND Record #** 046	**MOE Site #** x 1009	**Category of Owner** City		**HLUI Activity ID #** 7068
Other References	Gartner Lee, 1980 (Site #4); Intera, 1988 (Lf #4); City of Ottawa Operations Branch, 1980 (Site 4)				

Site Name	LaRose & Larkin (Raven Road)		
Landfill Monitoring/ Remediation	none		
Site Location	Carlington Park (swimming pool and change room), between McBride, Larose, Larkin and Raven; Nepean Con 3		
Easting (UTM NAD 27)	441970 (as plotted by Gartner Lee, 1980); 441840 (MOE 1991 Waste Disposal Site Inventory)	**Northing (UTM NAD 27)**	5024830 (as plotted by Gartner Lee, 1980); 5024825 (MOE 1991 Waste Disposal Site Inventory)
Ward #	16		
Size of Site	area approx. 1.2 ha		
Waste Thickness	estimated depth of fill 1.5 m [GLL, 1980]		
Active Time Period	1947		
Current Ownership	City of Ottawa (Carlington Park)		
PIN (s)	040000121, 040000213, 040000211, 040000206, 040000203		

Area Served	unknown; presumably City of Ottawa
Type of Waste	mainly domestic waste with possible light industrial waste intermixed
Nearby Industries	Alexander Metal Products Ltd., 1965-today, 1550 Laperrière Ave.; Atomic Energy of Canada, 1950s-1965, 1529 Laperrière Ave. [Intera #17]
Operator	City of Ottawa
Parameters of Concern	no known monitoring
Concentrations	no known monitoring
Magnitude	no known monitoring
Methane (landfill gas)	combustible gas detected at 1% v/v [GLL, 1980]
Ecological Receptors	humans living or working around the site
Distance to Nearest Human Receptor	closest houses on Larose Ave., Larkin St. and Raven Ave. are less than 20 m away from site boundaries
Adjacent Land Use and Zoning	recreational (park) west and residential in all other directions; the zoning is L1[581] (major open space) in the general area of the site.
Adjacent Land Owners	houses on Larose Ave., Larkin St. and Raven Ave.
Site Access	owned by City with public access; not fenced
Water Supply	municipally supplied water
Depth to Bedrock	approx. 3 m to interbedded silty dolostone, crystalline limestone, oolitic limestone, shale and calcareous quartz sandstone bedrock
Depth to Groundwater	probably near base of garbage [GLL, 1980]
Distance to Surface Water	Ottawa River 2.3 km NW; Rideau River 3.0 km E
Topography	site is located at the toe of a topographic high controlled by bedrock on southern boundary
Soil Cover Thickness	assumed to be covered based on land use, however thickness of cover unknown
Type of Overburden	probably sands underlain by sandy glacial till [GLL, 1980]
Direction of Groundwater Flow	assumed to be N towards the Ottawa River
Physical Setting	parkland including swimming pool and change house; vegetation in area is somewhat mature and maintained
Other Information	Duplicate HLUI Activity ID # 6103 corresponding to this site.

Site ID #	Ur-05	**AND Record #**	079 (072, 071)	**MOE Site #**	x 1010 and x 1020 (the name and date of closure of Inventory seem to indicate that these two entries correspond to the same site, despite the fact that the UTM co-ordinates [northing] are approx. 400 m apart)	**Category of Owner**	City	**HLUI Activity ID #**	6105
Other References	Gartner Lee, 1980 (Site #5); Gartner Lee, 1982 (Site #5); Intera, 1988 (Lf #5); City of Ottawa Operations Branch, 1980 (Site 5); ADAMAS, 1994; AMEC, Jan. 2002, April 2002 (Parcel C); City of Ottawa Memo #PE-1880-2-3, dated Feb. 3, 1986, from Duncan Burry, Waste Management Co-ordinator, included in Pinecrest Dumaurier folder								

Site Name	Bayview & Slidell - Bayview Road Works Yard		
Landfill Monitoring/ Remediation	NCC fax dated October 1, 2002 indicates that quarterly methane monitoring was conducted in 1999 and domestic and industrial solid waste was found 1 to 3 m below the surface. - Monitoring program designed by AMEC for the dissolved phase petroleum hydrocarbon and VOC contaminant plume was expanded in 2003 to include a more comprehensive landfill leachate monitoring component. [City Records]		
Site Location	between Bayview Rd., C.P. Railroad, Ottawa River Parkway and a line running approx. through the middle of the Bayview snow dump		
Easting (UTM NAD 27)	443250 (as plotted by Gartner Lee, 1980); 442880 (MOE 1991 Waste Disposal Site Inventory)	**Northing (UTM NAD 27)**	5028500 (as plotted by Gartner Lee, 1980); 5028840 (MOE 1991 Waste Disposal Site Inventory)
Ward #	15		
Size of Site	area approx. 7 ha		
Waste Thickness	from 0.1 m along the northwest portion of site to 7.6 m at the northeast corner [ADAMAS, 1994; AMEC, April 2002]; waste was found 1 to 3 m below the surface [NCC fax dated October 1, 2002]		
Active Time Period	1933-1946		
Current Ownership	City of Ottawa		
PIN (s)	040970038, 040970070, 040970069, 040970119, 040970130, 040970065, 040970041, 040970039, 040970037, 040970117		

Area Served	presumably City of Ottawa
Type of Waste	presumably domestic wastes based on historical City records; domestic and industrial solid waste encountered below ground level [NCC fax dated Oct. 1, 2002]
Nearby Industries	CP Railway Roadhouse (railway workshops and roundhouses), around 1922, NE corner of Bayview and O'Mera Ave. [Intera #62], Modern Containers Ltd. (Primary Metal Industry), 1940s, 20 Bayview Rd. [Intera #63]
Operator	City of Ottawa
Parameters of Concern	sodium, chloride, ammonia, boron, iron, phosphorous, potassium, sulphate in groundwater; heavy metals (barium, beryllium, cadmium, copper, lead, nickel, molybdenum, zinc) and PAHs (benzo(a)pyrene and dibenzo(a,h)anthracene) in soil and groundwater [AMEC, April 2002]
Concentrations	in excess of applicable remediation criteria [AMEC, April 2002]
Magnitude	heavy metal soil contamination found from 0.45 m to 5.91 BGL and impacts include the majority of the fill material which has been placed on site; volume of heavy-metal impacted soil evaluated at 260,000 cubic metres; PAH impacts occur sporadically [AMEC, 2002]
Methane (landfill gas)	35 % v/v gas concentration [GAL, 1980]; up to 75% v/v methane on Dec. 3, 1981 [GLL, 1982]; detailed pumping test undertaken in June 1985 and Jan. 1986 to test feasibility of gas venting system [City of Ottawa memo, June 3, 1986]; up to 53.2 % v/v methane measured in December 2001 [AMEC, April 2002]
Ecological Receptors	ecosystem of Nepean Bay/Ottawa River; human contact possible given that municipal facilities are located within filled area
Distance to Nearest Human Receptor	City of Ottawa works buildings and Spay/Neuter Clinic are located within old landfill area
Adjacent Land Use and Zoning	commercial on west side, open green space on the east side, recreational (Tom Brown Arena) on south side; historical landfill Ur-6 (Nepean Bay) is located immediately east of site; the zoning is ES (environmentally sensitive area) and EW[693]-h (waterway corridor) in the general area of the site.
Adjacent Land Owners	City of Ottawa (municipal facilities) and owners of commercial buildings on south side of Bayview Rd. west; City of Ottawa south (Tom Brown Arena); NCC east
Site Access	site is located on municipal property (presumably with restricted access)
Water Supply	municipally supplied water
Depth to Bedrock	between 1 and 6 m approximately to limestone bedrock (depth to bedrock increases from west to east) [AMEC, April 2002]
Depth to Groundwater	water table lies within the limestone bedrock in the western portion of site and within the fill/waste deposits in the eastern portion of site [AMEC, April 2002]
Distance to Surface Water	site is adjacent to Ottawa River
Topography	relatively flat
Soil Cover Thickness	sand and graver fill cover of varying thickness either as the primary surfacing material or as the subbase beneath asphalted areas; thickness ranges from approx. 0.1 m to several metres [AMEC, April 2002]
Type of Overburden	clayey sand with gravel, possibly a basal till, overlies the bedrock [AMEC, April 2002]
Direction of Groundwater Flow	generally north with an eastern component in the eastern portion of the site [AMEC, April 2002]
Physical Setting	several municipal buildings and Bayview Snow Dump (at former location of maintenance garage) located on site; asphalt and concrete paving cover on most of the site
Other Information	Duplicate HLUI Activity ID # 6121 corresponding to this site. - Petroleum hydrocarbon and VOC groundwater plumes originating from source other then old landfill are currently being monitored and mitigated through pump-and-treat systems [AMEC, Jan. & April 2002]

Site ID # Ur-06	**AND Record #** 080	**MOE Site #** x 1011	**Category of Owner** Government	**HLUI Activity ID #** 6108
Other References	Gartner Lee, 1980 (Site #6); Intera, 1988 (Lf #6); City of Ottawa Operations Branch, 1980 (Site 6); Dillon, 1984 (Site No. D-123); AMEC, April 2002 (Parcel E); AMEC, excerpts 2002			

Site Name	Nepean Bay
Landfill Monitoring/ Remediation	Extensive groundwater and soil monitoring program conducted by AMEC (report dated April 2002) for the City of Ottawa at the site and at other sites to the west; further monitoring was recommended. - NCC fax dated October 1, 2002 indicates a preliminary remediation feasibility study was conducted in 1994, domestic and industrial solid waste was found 1 to 4 m below the surface and some heavy metals, chlorides and petroleum hydrocarbons that reach significant concentrations upon spring thaw. No NCC files were reviewed as part of this investigation.
Site Location	open green space between Ottawa Parkway (N), CP railway (W), Scott St. (S) and LeBreton Flats Aqueducts (E)
Easting (UTM NAD 27)	443540 **Northing (UTM NAD 27)** 5028720
Ward #	14
Size of Site	area approx. 7.5 ha
Waste Thickness	from approx. 3 to 12 m [AMEC, 2002]
Active Time Period	March 1963 - Feb. 1964
Current Ownership	NCC
PIN (s)	040970100, 040970062, 040970059, 040970046, 040970101

Area Served	City of Ottawa
Type of Waste	domestic and industrial solid waste [NCC fax, Oct. 1, 2002]; concrete, glass, paper, wood, ashes, cinders, asphalt, plastic, rubber, metal and brick observed in fill [AMEC, April 2002]
Nearby Industries	Canadian Pacific Railway Yards, West of Broad St. to Ottawa River [Intera #75]
Operator	City of Ottawa
Parameters of Concern	heavy metals (barium, beryllium, cadmium, copper, lead, nickel, molybdenum, zinc) in soil; PAHs (benzo(a)pyrene and dibenzo(a,h)anthracene) in soil and groundwater; Trace levels of DCE, VC detected in limited number of sampling locations. [AMEC, April 2002]
Concentrations	in excess of applicable remediation criteria [AMEC, April 2002]
Magnitude	heavy metals not found near surface; volume of heavy-metal impacted soil evaluated at 312,000 m3; PAH impacts occur sporadically [AMEC, April 2002]
Methane (landfill gas)	up to 81.2 % methane v/v in December 2001 [AMEC, April 2002]; methane levels varied from 0 to 88.7% v/v in October 2002 [AMEC, excerpts 2002]; site studied in landfill gas utilization feasibility study but did not make it to extraction test screening level. Low levels of gas generation rates combined with a cover permeable to the atmosphere does not lend this site to gas collection [AMEC, excerpts 2002]
Ecological Receptors	ecosystem of Nepean Bay/Ottawa River
Distance to Nearest Human Receptor	closest existing houses are approx. 160 m south of site; site is immediately adjacent to LeBreton Flats where there is proposed residential development
Adjacent Land Use and Zoning	commercial and institutional (municipal facilities) on west side and currently undeveloped in all other directions; historical landfill Ur-5 (Bayview and Slidell) is located immediately west of site; the zoning is LI (major open space) and EW Sch.225 (waterway corridor) in the general area of the site
Adjacent Land Owners	City of Ottawa
Site Access	vacant land not used for recreational purposes; site is not fenced but access to the site is limited due to its location
Water Supply	municipally supplied water
Depth to Bedrock	between approx. 6 m at periphery to over 16 m in mid-west section [AMEC, 2002] to interbedded bioclastic limestone, crystalline limestone and shale
Depth to Groundwater	within the fill deposits, from 13.77m BGL on north side to 9.31 m BGL on southeast side and 4.55 m BGL on southwest side [AMEC, Dec. 3, 2001]
Distance to Surface Water	site is adjacent to Ottawa River on south side and to LeBreton Flats Aqueducts on east side
Topography	steeply sloping on the south and west sides to moderately inclined across the central, northern and eastern portions of the site [AMEC, April 2002]
Soil Cover Thickness	considerable earth fill placed over the waste for the construction of the Ottawa Parkway [GLL, 1980]; cover thickness varies from approx. 0.05 m (topsoil only) to several metres (topsoil underlain by sand or clay fill) [AMEC, April 2002]
Type of Overburden	topsoil, fill and native clay and/or till overlying limestone bedrock; estimated K = 4.2E-6 cm/s [AMEC, April 2002]
Direction of Groundwater Flow	radially south (towards Ottawa River), west and north [AMEC, April 2002]
Physical Setting	open green space with grass cover and tree plantings
Other Information	During site operation, a dyke was built across the bay and wastes filled in behind. [Dillon, 1984]

Site ID # Ur-07	**AND Record #** 057	**MOE Site #** x 1012	**Category of Owner** Institutional	**HLUI Activity ID #** 6109
Other References	Gartner Lee, 1980 (Site #7); Intera, 1988 (Lf #7); City of Ottawa Operations Branch, 1980 (Site 7)			

Site Name	Carleton University
Landfill Monitoring/ Remediation	none
Site Location	playing fields in Carleton University Campus, at Bronson Ave. and University Drive (main access road to campus from Bronson Ave.); approx. 400m NW of Rideau River
Easting (UTM NAD 27)	445550 **Northing (UTM NAD 27)** 5026150
Ward #	17
Size of Site	area approx. 7 ha
Waste Thickness	estimated depth of fill 3.0 - 4.6 m [GLL, 1980]
Active Time Period	early 1930's to mid 1950's; City records indicate that waste disposal was terminated in 1946
Current Ownership	Carleton University
PIN (s)	040870068, 041450202

Area Served	unknown; assumed to be City of Ottawa
Type of Waste	mainly domestic waste
Nearby Industries	none based on information reviewed
Operator	City of Ottawa
Parameters of Concern	no known monitoring
Concentrations	no known monitoring
Magnitude	no known monitoring
Methane (landfill gas)	no gas detected in Physical Recreation Center during 1980 monitoring survey
Ecological Receptors	Rideau River ecosystem; human contact possible, although wastes are likely covered
Distance to Nearest Human Receptor	Physical Recreation Center is located less than 20 m away from site southern boundary
Adjacent Land Use and Zoning	institutional (Carleton University); playing fields, parking lots, gymnasium; the zoning is partially I2A F (1.5) (major institutional) and EW[693]-h (waterway corridor) in the general area of the site.
Adjacent Land Owners	bounded by water to the N, S and W and residential area to the E
Site Access	accessible to the public
Water Supply	municipally supplied water
Depth to Bedrock	between 6 and 9 m approximately to reach bedrock of shale with laminations of calcareous siltstone
Depth to Groundwater	probably near base of garbage [GLL, 1982]
Distance to Surface Water	Rideau River 400 m SE; Rideau Canal 300 m SW; Dows Lake 400 m NW
Topography	flat
Soil Cover Thickness	unknown but wastes are assumed to be covered based on current land use
Type of Overburden	organic soils (original lands were part of a swamp extending south of Dows Lake)
Direction of Groundwater Flow	assumed SE towards the Rideau River
Physical Setting	area contains tennis courts, soccer fields, paved parking lot and open space with grass, mature trees
Other Information	Based on current access to the site, the waste has been covered so that it is not visible.

Site ID # Ur-08	**AND Record #** 063	**MOE Site #** x 1013	**Category of Owner** City and Private	**HLUI Activity ID #** 6110
Other References	Gartner Lee, 1980 (Site #8); Intera, 1988 (Lf #8); City of Ottawa Operations Branch, 1980 (Site 8)			

Site Name	Brewer Park (north)
Landfill Monitoring/ Remediation	none
Site Location	north portion of Brewer Park, between Seneca St., Glen Ave., Sloan Ave. and extension of Cameron Ave.
Easting (UTM NAD 27)	445875 **Northing (UTM NAD 27)** 5026230
Ward #	17
Size of Site	area approx. 3 ha
Waste Thickness	unknown
Active Time Period	around 1933
Current Ownership	City of Ottawa and some private individuals on Grove Ave. and Glen Ave.
PIN (s)	041450062, 041450079, 041450080, 041450081, 041450063, 041450386, 041450304, 041450384, 041450385

Area Served	unknown; presumably City of Ottawa
Type of Waste	domestic and light industrial
Nearby Industries	none based on information reviewed
Operator	City of Ottawa
Parameters of Concern	no known monitoring
Concentrations	no known monitoring
Magnitude	no known monitoring
Methane (landfill gas)	0.5% v/v gas intersected in one location [GLL, 1980]
Ecological Receptors	potential human contact given recreational use of part of site and given that residences are built on site, although wastes are likely covered
Distance to Nearest Human Receptor	residences are built on site
Adjacent Land Use and Zoning	city park and residential area; former waste disposal site Ur-32 is located immediately south and east of site; the zoning is L1C[628] (major open space) in the general area of the site.
Adjacent Land Owners	private houses on Glen Ave., Grove Ave., Seneca St. and Sloan Ave.
Site Access	site is partly on public property (Brewer Park) and partly on private property
Water Supply	municipally supplied water
Depth to Bedrock	approx. 9 m to reach interbedded bioclastic limestone, crystalline limestone and shale
Depth to Groundwater	unknown
Distance to Surface Water	Rideau River 400 m SE; Rideau Canal (Dows Lake) 400 m NW
Topography	the general area is flat
Soil Cover Thickness	assumed to be covered based on land use, however thickness of cover unknown
Type of Overburden	till: plain local relief <5m and clay and silt - erosional terraces
Direction of Groundwater Flow	assumed S towards the Rideau River
Physical Setting	NE portion of site is maintained on an individual property owner bases but generally grass, gardens and trees; park area includes an arena and a playing field with grass cover
Other Information	none

Site ID # Ur-09	**AND Record #** 066	**MOE Site #** x 1014	**Category of Owner** Private	**HLUI Activity ID #** 6111

Other References	Gartner Lee, 1980 (Site #9); Intera, 1988 (Lf #9); City of Ottawa Operations Branch, 1980 (Site 9); City of Gloucester File - Box 73 File 6-14
Site Name	Bank and Kilborn
Landfill Monitoring/ Remediation	none
Site Location	between Bank St., Kilborn Pl., Kilborn Ave. and Rooney's Lane
Easting (UTM NAD 27)	447325 **Northing (UTM NAD 27)** 5025840
Ward #	18
Size of Site	area approx. 0.2 ha
Waste Thickness	estimated depth of fill 0.6 - 1.5 m [GLL, 1980]
Active Time Period	May 1947 - Oct. 1947
Current Ownership	private individuals of townhouses at 1240 Kilborn Pl. and private individual at 1379 Bank St.
PIN (s)	041930330, 041930331, 041930242, 041930249, 041930243, 041930333, 041930334, 041930335, 041930336, 041930337, 041930329, 041930347, 041930332, 041930339, 041930342, 041930343, 041930344, 041930180, 041930346, 041930348, 041930350, 041930351, 041930352, 041930353, 041930354, 041930355, 041930179, 041930338, 041930345

Area Served	presumably City of Ottawa; Township of Gloucester used site [Gloucester file]
Type of Waste	probably domestic wastes; garbage, refuse and other waste [Gloucester file]
Nearby Industries	none based on available information
Operator	City of Ottawa
Parameters of Concern	no known monitoring
Concentrations	no known monitoring
Magnitude	no known monitoring
Methane (landfill gas)	0.5% v/v combustible gas detected [GLL, 1980]
Ecological Receptors	human contact possible given that residences are built on site
Distance to Nearest Human Receptor	private houses are constructed within old landfill area; site is adjacent to church on north side and former school building which now houses several businesses on east side
Adjacent Land Use and Zoning	residential, commercial and institutional (church); the zoning is R6B[588] (high rise residential) in the general area of the site.
Adjacent Land Owners	church (1245 Kilborn Pl.), businesses (1244 Kilborn Pl.) and private houses on Rooney's Lane
Site Access	site is located on private property
Water Supply	municipally supplied water
Depth to Bedrock	between 3 and 6 m approximately to shale with laminations of siltstone
Depth to Groundwater	probably 1.5 m to 3.0 m BGL [GLL, 1980]
Distance to Surface Water	Rideau River 500 m NW
Topography	sloping northwest; wastes were deposited in depression within the clay plain
Soil Cover Thickness	assumed to be covered based on land use, however thickness of cover unknown
Type of Overburden	marine clay plain (clay silt to silty clay) above the valley wall of Mill Creek [GLL, 1980]
Direction of Groundwater Flow	assumed to be NW towards the Rideau River
Physical Setting	site is developed with several townhouse complexes; area mostly paved
Other Information	Creek to be piped prior to garbage fill. [Gloucester file]

Site ID # Ur-10	**AND Record #** 096	**MOE Site #** x 1015	**Category of Owner** Government	**HLUI Activity ID #** 6112

Other References	Gartner Lee, 1980 (Site #10); Gartner Lee, 1982 (Site #10); Intera, 1988 (Lf #10); City of Ottawa Operations Branch, 1980 (Site 10); Riverside Dr. folder; GAL, reports no. 801-2223, 841-2417, 841-2417-1, 841-2417-2, 841-2417-3, 871-2642 and other confidential reports; Johnson Sustronk Weinstein and Associates, 1983; Paterson, 2001; Richards, J.L., 1990; Ottawa Transportation Department, 1991; Dillon Report 1984 (site D-124) ; City of Gloucester File, Box 73 - File 6-12; AMEC, excerpts 2002; State of the River Report, 2001; River Input Monitoring Program, 2000; 1998 Baseline Programme, 1999; Data from City Surface Water Group 1992 to present; Surface Water Quality Branch, 1993
Site Name	Riverside Drive
Landfill Monitoring/ Remediation	NCC fax dated October 1, 2002 indicates that a Phase II-ESA was completed in 1998, domestic and industrial solid waste was found 1 to 3 m below the surface and that waste/snow leachate and associated methane are of an environmental concern. No NCC reports were reviewed as part of this investigation. Surface water has and continues to be monitored in the Rideau River by the City. Surface water immediately adjacent to the historic waste disposal site was monitored by the City in 1992 and 1993. At that time elevated concentrations of some parameters in the surface water were possibly attributed to the historic landfill. [Surface Water Quality Branch, 1993] One purpose of the City monitoring of the Rideau River is to monitor the water quality and its variability based on location. With the exception of 1992 and 1993 results provided by the City Surface Water Group, no other landfill related data was made available and is not believed to exist within the City files. Site studied in landfill gas utilization feasibility study but did not make it to extraction test screening level. Low levels of gas generation rates combined with a cover which is permeable to atmosphere does not lend this site to gas collection. [AMEC, excerpts 2002]
Site Location	Rideau River Park, between Riverside Drive and Rideau River; extends from Billings Bridge south to river bank, 300 m N of Hurdman Station on Transitway north; also, isolated pockets of fill which may contain fill: empty field south of Neil Way and the playing field south of Lycee Claudel [GLL, 1982]
Easting (UTM NAD 27)	447850 **Northing (UTM NAD 27)** 5028350
Ward #	17 & 18
Size of Site	area approx. 100 ha
Waste Thickness	estimated depth of fill 0.9 m at southern end, 2.4 - 3.7 m in the middle section and 1.5 m to 3.0 m at northern end (not verified in the field) [GLL, 1980]; field data from AMEC in the northern end indicates at least 4 m and up to 12 m of waste fill encountered
Active Time Period	June 1948 - March 1963 (earthwork for the George McIlraith Bridge were ongoing in the mid 1960's)
Current Ownership	NCC
PIN (s)	042020254, 042020243, 042020241, 042030710, 042020245, 042030707, 042030708, 042020248, 042030709, 042020242, 042020244, 042030711, 042020253, 042030712, 041290442, 041290441, 042030632, 042020247, 042020249, 042020250, 042020251, 042020252, 042020246

Area Served	City of Ottawa and Township of Gloucester
Type of Waste	mostly domestic wastes with some light industrial and possibly some liquid wastes
Nearby Industries	National Petroleum Ltd. (bulk storage of oil and gas), around 1956, old Russell Rd near Rideau River [Intera #9]; Currie Products Ltd. (Refined Petroleum and Coal Products), 1930s-1966, 170 Lees Ave. [Intera #12]; Royal Canadian Engineers Workshops and Laboratories (Leach pits at rear of property near Rideau River), 31 Brunswick Ave. [Intera #13]; Ottawa Gas Co. (Refined Petroleum and Coal Products), 1915-1960s, 175 Lees Ave. [Intera #14]
Operator	City of Ottawa
Parameters of Concern	analytical results exist pertaining to a Phase II ESA but not available for review; Historical (1992 & 1993) data pertaining to surface water monitoring available but parameters measured pertain more to general surface water quality than leachate indicators. Trends establishing definite leachate impact on surface water not evident.
Concentrations	analytical results exist pertaining to a Phase II - ESA but not available for review; Historical (1992 & 1993) data pertaining to surface water monitoring available but parameters measured pertain more to general surface water quality than leachate indicators. Trends establishing definite leachate impact on surface water not evident.
Magnitude	analytical results exist pertaining to a Phase II - ESA but not available for review; unknown if results contain information on magnitude
Methane (landfill gas)	33% v/v combustible gas measured in 1980 survey [GLL, 1980]; trace gas locally detected in the soils on east side of Riverside Dr.; monitoring between 1982 and 1985 along south west part of site between Neil Way and Billings Ave indicate no detectable methane; potential methane at Lycee Claudel school - 1 monitoring event confirms presence of methane; other observations during drilling on site in 1987 and 1988 reports up to 100 % LEL; methane levels in October 2002 varied from 22 to 53% v/v [AMEC, excerpts 2002]
Ecological Receptors	Rideau River ecosystem, human contact possible given use of site, although wastes are reportedly overlain by sufficient soil cover
Distance to Nearest Human Receptor	some areas used as parkland; nearest residential buildings on east side of Riverside Drive are less than 100 m away from site
Adjacent Land Use and Zoning	Residential and institutional (Riverside Hospital; Lycée Claudel); The zoning is partially EW (waterway corridor), EW[693]-h (waterway corridor) and L2B[757] (leisure linkage) in the general area of the site.
Adjacent Land Owners	private owners of residential buildings on east side of Riverside Dr.; Riverside Hospital and Lycée Claudel
Site Access	area not fenced and open for public access
Water Supply	municipally supplied water
Depth to Bedrock	approximately between 6 and 15 m (depth generally increasing towards the river) to reach a bedrock of shale
Depth to Groundwater	probably in lower portion of refuse; groundwater table slopes towards the river
Distance to Surface Water	old landfill is adjacent to Rideau River
Topography	generally open and flat with topographic variation due to construction activities, i.e., Transitway
Soil Cover Thickness	1 to 3 m of cover present over waste in past investigations
Type of Overburden	alluvium consisting of a mixture of sand, silt and clay with organic; floodplain bank which borders the filled area consists of silts and clays of marine origin
Direction of Groundwater Flow	west towards Rideau River
Physical Setting	grassed with mature, somewhat maintained vegetation; no buildings on site
Other Information	Waste has been moved within the confines of the site to construct a park and Transitway. Northern part of the site was used by the City of Ottawa as a snow dump. Decay of the garbage fill appears to be variable and possibly dependent on the groundwater level (GLL, 1980). Past use of the site as a snow dump contributes to high chloride concentrations sometimes monitored in groundwater during geotechnical investigations. City of Gloucester file indicates waste was placed at this location at the request of the Federal District Commission (now NCC). This site is also referenced as HLUI Activity ID # 6113 in the original HLUI database. Both numbers accurately reflect parts of the site.

Site ID # Ur-11	**AND Record #** 100	**MOE Site #** x 1016	**Category of Owner** Private	**HLUI Activity ID #** GAL 5
Other References	Gartner Lee, 1980 (Site #11); Intera, 1988 (Lf #11); City of Ottawa Operations Branch, 1980 (Site 11)			

Site Name	Riverside Drive (Nunts Farm)
Landfill Monitoring/ Remediation	none
Site Location	lands on both sides of Riverside Dr. southwest of intersection with Industrial Ave., between Riverside Dr. (local road aligned north-south) and C.P. railway
Easting (UTM NAD 27)	448175 **Northing (UTM NAD 27)** 5028500
Ward #	17
Size of Site	area approx. 6 ha
Waste Thickness	estimated depth of fill 2.4 - 3.7 m [GLL, 1980]
Active Time Period	City records indicate 1954 to 1957; aerial photos show filling operation between 1955 and 1960
Current Ownership	high-rise buildings at 1480, 1500, 1510 and 1541 Riverside Dr.; private individual owners of several townhouse complexes on San Remo and Corsica (private roads)
PIN (s)	042020203, 042020204, 042020196, 042020197, 042020198, 042020199, 042020200, 155330000, 042020205, 042020226, 042020211, 042020202, 042020206, 042020207, 042020208, 042020209, 042020210, 042020201, 042020220, 042020216, 042020215, 042020190, 042020221, 042020195, 042020222, 042020223, 042020228, 042020217, 042020230, 042020219, 042020218, 042020214, 042020213, 042020212, 042020225, 042020227, 042020229, 042020224, 042020169, 042020157, 042020158, 042020159, 042020161, 042020162, 042020163, 042020164, 042020165, 042020166, 042020167, 042020142, 042030706, 042020160, 042020170, 042020171, 042020172, 042020173, 042020174, 042020175, 042020194, 042020176, 042020192, 042020177, 042020168, 042020183, 042020193, 042020191, 042020189, 042020188, 042020187, 042020186, 042020185, 042020184, 042020141, 042020182, 042020181, 042020180, 042020139, 153500000, 154330000, 042020179, 042020140, 042020178

Area Served	presumably City of Ottawa
Type of Waste	mostly domestic wastes possibly with some light industrial and some liquid wastes
Nearby Industries	none based on available information
Operator	City of Ottawa
Parameters of Concern	no known monitoring
Concentrations	no known monitoring
Magnitude	no known monitoring
Methane (landfill gas)	10% to 14% v/v combustible gas detected at two locations [GLL, 1980]
Ecological Receptors	human contact possible given that residences are located on site
Distance to Nearest Human Receptor	residential buildings are located on site
Adjacent Land Use and Zoning	residential and recreational (parkland); the zoning is R6B F(1.5) (high rise residential) in the general area of the site.
Adjacent Land Owners	high-rise building (Riverwood Apartments - 1551 Riverside Dr.) and parking garage south of site; Dale Park east of site; vacant land west and northeast of site
Site Access	site is located on private property
Water Supply	municipally supplied water
Depth to Bedrock	approx. between 3 and 6 m to interbedded shale, calcareous siltstone and bioclastic limestone
Depth to Groundwater	probably near base of garbage [GLL, 1980]
Distance to Surface Water	Rideau River 500 m NW
Topography	mostly flat, with a slight slope to the west
Soil Cover Thickness	assumed to be covered based on land use, however thickness of cover unknown
Type of Overburden	clayey silt soils of marine origin [GLL, 1980]
Direction of Groundwater Flow	assumed to be NW towards the Rideau River
Physical Setting	site is developed with townhouse complexes, high-rise apartment buildings; some grass and tree cover, although area is mostly paved over
Other Information	none

Site ID # Ur-12	**AND Record #** 101	**MOE Site #** x 1017	**Category of Owner** Institutional and Private	**HLUI Activity ID #** 6115
Other References	Gartner Lee, 1980 (Site #12); Intera, 1988 (Lf #12); City of Ottawa Operations Branch, 1980 (Site 12); Confidential GAL report; Lees Ave. folder			

Site Name	Algonquin College Rideau Campus (Lees Avenue)
Landfill Monitoring/ Remediation	Evaluation of the property conducted by GAL for private client including borehole and testpit advancement, collection of soil and groundwater samples and chemical analyses of selected samples. Assessment primarily completed to evaluate potential development of site and not to delineate extent of landfill or its impacts. Factual, non confidential information has been provided in this datasheet.
Site Location	north (west) bank of Rideau River, bounded by Lees Ave., property line between 170 and 180 Lees Ave. and Hwy 417
Easting (UTM NAD 27)	447700 **Northing (UTM NAD 27)** 5029080
Ward #	17
Size of Site	area approx. 6 ha
Waste Thickness	estimated depth of fill 3.1 - 4.6 m [GLL, 1980]
Active Time Period	evaluated 1933-1947 from aerial photographs
Current Ownership	Algonquin College and high-rise apartment buildings (180 and 190 Lees Ave.)
PIN (s)	042040227, 0152920000, 042070401, 042030732, 042030631, 042030629, 042030731

Area Served	City of Ottawa
Type of Waste	incinerator ash (Lees Incinerator) and other burnt waste [GLL, 1980]
Nearby Industries	Currie Products Ltd. (Refined Petroleum and Coal Products), 1930s-1966, 170 Lees Ave. [Intera #12]; Ottawa Gas Co. (Refined Petroleum and Coal Products), 1915-1960s, 175 Lees Ave. [Intera #14]
Operator	City of Ottawa
Parameters of Concern	analytical results exist but confidential
Concentrations	analytical results exist but confidential
Magnitude	landfill related impacts not delineated
Methane (landfill gas)	none detected in 1980 monitoring survey; GLL (1980) recommends gas monitoring, especially if there is new development on or adjacent to site; no methane was detected during survey of the Algonquin College buildings conducted by the City of Ottawa in October 1980
Ecological Receptors	Rideau River ecosystem; human contact possible given use of site, but wastes are overlain by thin soil cover
Distance to Nearest Human Receptor	Algonquin College facilities and two high-rise buildings are located within old landfill area
Adjacent Land Use and Zoning	Institutional and residential; The zoning is I2A (major institutional) in the general area of the site.
Adjacent Land Owners	vacant site (old Armoury) west of site belongs to RMOC and is former waste disposal site Ur-28; privately-owned high-rise towers on Lees Ave. on north side of site
Site Access	site is located on public grounds (Algonquin College)
Water Supply	municipally supplied water
Depth to Bedrock	shale bedrock encountered 10 to 12 m below ground surface [GAL, confidential]
Depth to Groundwater	3 to 8.5 m below ground surface measured during various investigations [GAL, confidential]
Distance to Surface Water	old landfill is adjacent to Rideau River
Topography	Relatively flat with slight decreasing slope across the parking area of the College property followed by steep bank down to River.
Soil Cover Thickness	approx. 0.15 m of soil fill cover over cinder and ash fill [GAL, 2000]
Type of Overburden	narrow floodplain alluvial sediments (sand, silt and clay mixtures) over marine clayey silt sediments; boreholes drilled on Algonquin College property encountered ash and cinder fill layer underlain by sandy silts, silty sands, silt, clayey silt and alluvium followed by glacial till [GAL, confidential]
Direction of Groundwater Flow	groundwater divide located on property: groundwater flows south in southern half of the property and north in northern half of the property [GAL, confidential]
Physical Setting	site is currently developed with Algonquin College facilities, including buildings and parking lot (no longer in use at the time of review) on the east side and with high-rise apartment buildings on the east side; both landscaped areas and asphalt pavement cover found on site
Other Information	Historically the surrounding area including part of the site has been contaminated by coal tar products. Pockets or remnants of these coal tar wastes may remain on parts of the area occupied by this former landfill.

Site ID # Ur-13	**AND Record #** 105	**MOE Site #** x 1018	**Category of Owner** Government	**HLUI Activity ID #** 6117
Other References	Gartner Lee, 1980 (Site #13); Intera, 1988 (Lf #13); City of Ottawa Operations Branch, 1980 (Site 13)			

Site Name	Riverside Drive and Queensway
Landfill Monitoring/ Remediation	NCC fax dated October 1, 2002 indicates the removal of LPH from groundwater in 1999, a Phase II-ESA was completed in 1998 and domestic and industrial solid waste was found 1 to 1.5 m below the surface. No NCC reports were reviewed as part of this investigation.
Site Location	within Rideau River Park, between Hurdman bridge and Transitway
Easting (UTM NAD 27)	448300 **Northing (UTM NAD 27)** 5029050
Ward #	17
Size of Site	area approx. 1.5 ha
Waste Thickness	estimated depth of fill 1.5 - 2.1 m [GLL, 1980]
Active Time Period	1964-1967
Current Ownership	NCC
PIN (s)	042030245, 042030633

Area Served	presumably City of Ottawa
Type of Waste	mixture of earth fill and garbage
Nearby Industries	National Petroleum Ltd. (bulk storage of oil and gas), around 1956, old Russell Rd near Rideau River [Intera #9]
Operator	City of Ottawa
Parameters of Concern	analytical results exist but not available for review
Concentrations	analytical results exist but not available for review
Magnitude	analytical results exist but not available for review
Methane (landfill gas)	not monitored by Gartner Lee
Ecological Receptors	Rideau River ecosystem; human contact possible given that site is used for recreational purposes, although wastes are likely covered
Distance to Nearest Human Receptor	approx. 200 m to nearest building (Canada Post main office)
Adjacent Land Use and Zoning	parkland; the zoning is EW[694]-h (waterway corridor) in the general area of the site.
Adjacent Land Owners	RMOC and Ontario government - Ministry of Transportation (Hwy 417 access ramps)
Site Access	area is not fenced and is used by the public for recreational purposes (parkland)
Water Supply	municipally supplied water
Depth to Bedrock	approx. between 6 and 9 m to interbedded shale, calcareous siltstone and bioclastic limestone
Depth to Groundwater	unknown
Distance to Surface Water	Rideau River 30 m NW
Topography	mostly flat
Soil Cover Thickness	assumed to be covered based on land use, however thickness of cover unknown
Type of Overburden	fine-grained alluvial soil [GLL, 1982]
Direction of Groundwater Flow	assumed to be NW towards the Rideau River
Physical Setting	parkland with grass and tree cover and some bicycle paths; no buildings on site
Other Information	none

Site ID # Ur-14	**AND Record #** 126	**MOE Site #** x 1019	**Category of Owner** Private	**HLUI Activity ID #** 6118
Other References	Gartner Lee, 1980 (Site #14); Intera, 1988 (Lf #14); City of Ottawa Operations Branch, 1980 (Site 14); Confidential GAL report; Saint-Laurent (Notre-Dame property) folder (including McRostie Genest Middlemiss July 21, 1985 report and June 4, 1986 letter report)			

Site Name	Montreal Road (Notre-Dame Cemetery)
Landfill Monitoring/ Remediation	McRostie, Genest, Middlemiss conducted a survey in 1986 for Mastercraft Development Corp. Ltd., where the methane levels were monitored in eight monitoring wells installed near the northern edge of the site ; no methane was detected [MGM letter report, June 1986, included in Notre-Dame folder] - GAL conducted a study for a developer in 1987, where the adequacy of existing gas wells was examined and methane levels were monitored; it was concluded that the wells would effectively collect any gas produced by the fill soils, but no explosive gas was detected in any of the wells [GAL]
Site Location	site is bounded by St. Laurent Blvd., Marier Ave., Dunbarton Crt. and extension of Lavergne St., approximately; site includes northern section of Notre-Dame cemetery and part of residential development located immediately south of Beechwood Cemetery
Easting (UTM NAD 27)	448940 **Northing (UTM NAD 27)** 5032290
Ward #	12 & 13
Size of Site	total area approx. 11 ha; filling of domestic wastes may have occurred only in certain sectors within that area [MGM, 1985]
Waste Thickness	estimated depth of fill below 1.5 m [GLL, 1980]; fill layer varies 1 to 4 m in thickness [GAL]; maximum thickness of garbage fill encountered in test pits is 4 m [MGM, 1985]
Active Time Period	1952-1953
Current Ownership	private individual owners of town house development on Dunbarton Crt; private individuals of single family houses on Ida Rocheleau Pl. and Pauline Charron Pl.; high-rise building at 500 St-Laurent Blvd; gas station (460 St-Laurent Blvd.); north section of Note-Dame Cemetery
PIN (s)	042300468, 042300459, 042300460, 042300461, 042300462, 042300463, 042300466, 042300465, 042300458, 042300467, 042300445, 042300464, 042300469, 042300416, 042300427, 042300426, 042300425, 042300424, 042300423, 042300422, 042300421, 042300420, 042300419, 042300447, 042300417, 042300430, 042300415, 042300414, 042300413, 042300412, 042300411, 042300410, 042300409, 042300408, 042300532, 042300470, 042300418, 042300440, 042300456, 042300455, 042300454, 042300453, 042300452, 042300451, 042300449, 042300446, 042300444, 042300443, 042300428, 042300441, 042300429, 042300439, 042300438, 042300438, 042300436, 042300435, 042300434, 042300433, 042300432, 042300431, 042300457, 042300442, 042300518, 042300530, 042300526, 042300525, 042300524, 042300523, 042300522, 042300521, 042300528, 042300519, 042300529, 042300517, 042300516, 042300515, 042300514, 042300513, 042300512, 042300511, 042300520, 042300537, 042300555, 042300545, 042300544, 042300543, 042300542, 042300541, 042300540, 042300527, 042300538, 042300508, 042300536, 042300535, 042300534, 042300533, 042300448, 042300531, 042300407, 042300539, 042300479, 042300488, 042300487, 042300486, 042300485, 042300484, 042300483, 042300482, 042300510, 042300480, 042300491, 042300478, 042300477, 042300476, 042300475, 042300474, 042300473, 042300472, 042300481, 042300499, 042300471, 042300507, 042300506, 042300505, 042300504, 042300503, 042300502, 042300489, 042300500, 042300490, 042300498, 042300497, 042300496, 042300495, 042300494, 042300493, 042300492, 042300509, 042300501, 042300355, 042300364, 042300241, 042300242, 042300273, 042300274, 042300291, 042300351, 042300352, 042300232, 042300354, 042300138, 042300356, 042300357, 042300358, 042300359, 042300360, 042300361, 042300362, 042300363, 042300353, 042300128, 042300406, 042300450, 042300119, 042300120, 042300121, 042300122, 042300123, 042300124, 042300240, 042300126, 042300129, 042300130, 042300131, 042300132, 042300133, 042300134, 042300135, 042300136, 042300137, 042300125, 042300397, 042300386, 042300387, 042300388, 042300389, 042300390, 042300391, 042300392, 042300393, 042300385, 042300385, 042300396, 042300405, 042300398, 042300399, 042300400, 042300401, 042300402, 042300403, 042300127, 042300404, 042300394, 042300368, 042300384, 042300367, 042300369, 042300370, 042300371, 042300372, 042300373, 042300365, 042300374, 042300382, 042300375, 042300376, 042300377, 042300378, 042300379, 042300380, 042300381, 042300383, 042300366

Area Served	presumably City of Ottawa and/or Town of Eastview
Type of Waste	mainly domestic waste and possibly some light industrial waste [GLL, 1980]; ashes, pieces of brick, concrete, asphalt and rug, glass, metal, tin cans, plastic encountered in boreholes [GAL]
Nearby Industries	none based on available information
Operator	City of Ottawa
Parameters of Concern	no known monitoring
Concentrations	no known monitoring
Magnitude	no known monitoring
Methane (landfill gas)	10% v/v combustible gas measured in the bottom of a grave excavation within filled area [GLL, 1980]; no combustible gas in any of the seven wells monitored monthly from January to May 1986 [MGM, 1986]; no combustible gas detected in any of seven wells monitored in January 1987 [GAL]; also see "Landfill Monitoring/Remediation"
Ecological Receptors	human contact possible given that residential buildings are located within filled area
Distance to Nearest Human Receptor	residential buildings are located within former waste disposal site
Adjacent Land Use and Zoning	cemetery on north and south sides; residential on east and west sides; the zoning is partially R3A [190] (townhouse zone), L3G (community leisure) and PU (public use) in the general area of the site.
Adjacent Land Owners	church (444 St-Laurent Blvd.) is located immediately northeast of old landfill site; houses on Granville St. border the site on the west side; high-rise buildings on St-Laurent Blvd. are located across the street east from the site
Site Access	site is located on private property (residential sector) and also on cemetery grounds accessible to the public
Water Supply	municipally supplied water
Depth to Bedrock	between 2 to 7 m [GAL] to reach a bedrock of interbedded calcarenite and crystalline limestone, with depth of sediments increasing to the north-east
Depth to Groundwater	probably at depth within the sands, except perhaps for a local surficial perched condition [GLL, 1980]; water seepage observed at approx. 3 m below ground surface or deeper [MGM, 1985]
Distance to Surface Water	small pond connected to drainage ditch located on the northern edge of the site
Topography	slight slope towards the southeast
Soil Cover Thickness	assumed to be covered based on land use, however thickness of cover unknown; ash-containing fill encountered at surface in test pits [MGM, 1985]
Type of Overburden	marine sands; sandy till and silty sand with some gravel and boulders encountered below fill material in test pits [MGM, 1985]
Direction of Groundwater Flow	assumed north towards the Ottawa River
Physical Setting	site is developed with residential buildings including some trees in the northern section; cemetery grounds with grass cover and some trees in the southern section
Other Information	Direct evidence of garbage fill was found in only 2 out of 11 test pits dug in northern half of the site, which suggests that only some of the material filled on site included domestic wastes [MGM, 1985]

Site ID # Ur-15	**AND Record #** 078 (074, 097)	**MOE Site #** x 1095	**Category of Owner** Institutional		**HLUI Activity ID #** 6125
Other References	Gartner Lee, 1980 (Site #15); Intera, 1988 (Lf #15)				
Site Name	Billings Street at Riverside (Rideau River Park)				
Landfill Monitoring/ Remediation	none				
Site Location	on south extremity of Riverside Hospital property, extends east of Riverside Drive from Billings Ave. to about 150 m west				
Easting (UTM NAD 27)	447475 (as plotted by Gartner Lee, 1980); 447550 (MOE 1991 Waste Disposal Site Inventory)		**Northing (UTM NAD 27)**	5026750 (as plotted by Gartner Lee, 1980); 5026650 (MOE 1991 Waste Disposal Site Inventory)	
Ward #	18				
Size of Site	area estimated less than 0.2 ha				
Waste Thickness	unknown				
Active Time Period	sometime between 1945 and 1950				
Current Ownership	Riverside Hospital				
PIN (s)	042010164, 042010145				

Area Served	presumably City of Ottawa
Type of Waste	unknown
Nearby Industries	none based on available information
Operator	City of Ottawa
Parameters of Concern	no known monitoring
Concentrations	no known monitoring
Magnitude	no known monitoring
Methane (landfill gas)	trace methane detected on site during 1980 survey [GLL, 1980]
Ecological Receptors	human contact possible, although area is not intended for recreational use and wastes are likely covered
Distance to Nearest Human Receptor	nearest houses located south of Billings Ave. are less than 30 m away from site
Adjacent Land Use and Zoning	hospital parking lot on north side and residential on south side; the zoning is I2[235] F(1.0) (major institutional) in the general area of the site.
Adjacent Land Owners	NCC park on west side; hospital (parking lot) on north side; residential houses at 66 and 70 Billings Ave. and 1982 Leslie Ave. on south side
Site Access	although the site is property of Riverside Hospital, it is not fenced and is accessible to the public
Water Supply	municipally supplied water
Depth to Bedrock	between 6 and 9 m approx. to reach shale with laminations of calcareous siltstone
Depth to Groundwater	unknown
Distance to Surface Water	Rideau River 250 m W
Topography	terrain sloping west
Soil Cover Thickness	assumed to be covered based on land use, however thickness of cover unknown
Type of Overburden	local sand deposit within marine clay plain
Direction of Groundwater Flow	assumed to be W towards the Rideau River
Physical Setting	green space with grass cover and some trees and bush; no building on site
Other Information	none

Site ID # Ur-16	**AND Record #** -	**MOE Site #** -	**Category of Owner** Private		**HLUI Activity ID #** 7069
Other References	Gartner Lee, 1980 (Site #16); Intera, 1988 (Lf #16); Hare Ave. folder				

Site Name	Hare Avenue
Landfill Monitoring/ Remediation	none
Site Location	between Kingsmere Ave. and Hare Ave., aligned with Rozel Cres. (between Carling Ave. and Lenester Ave.)
Easting (UTM NAD 27)	440145 **Northing (UTM NAD 27)** 5024275
Ward #	7
Size of Site	approx. 0.4 ha
Waste Thickness	unknown
Active Time Period	probably between 1945 and 1950
Current Ownership	private houses at 844, 848, 854, 854, 862 Hare Ave., 835, 841, 843, 845 Kingsmere Ave.
PIN (s)	039830023, 039830024, 039830025, 039830027, 039830010, 039830006, 039830005, 039830009, 039830008, 039830007, 039830029, 039830062, 039830063, 039830026, 039830028

Area Served	presumably City of Ottawa
Type of Waste	domestic waste
Nearby Industries	none based on available information
Operator	City of Ottawa
Parameters of Concern	no known monitoring
Concentrations	no known monitoring
Magnitude	no known monitoring
Methane (landfill gas)	no measurement available; not expected to be an issue given size of site and fine textured-nature of surrounding soils
Ecological Receptors	human contact possible given close proximity of residential houses
Distance to Nearest Human Receptor	residential houses are built within old landfill area
Adjacent Land Use and Zoning	residential and park; the zoning is R1G (detached house) in the general area of the site.
Adjacent Land Owners	private houses on Kingsmere Ave. and Hare Ave.
Site Access	former waste disposal site is presumably located on private property
Water Supply	municipally supplied water
Depth to Bedrock	approximately between 3 and 6 m to interbedded silty dolostone, crystalline limestone, oolitic limestone, shale and calcareous quartz sandstone
Depth to Groundwater	unknown
Distance to Surface Water	Ottawa River 1.5 km N
Topography	slight slope towards the northwest
Soil Cover Thickness	assumed to be covered based on land use, however thickness of cover unknown
Type of Overburden	till: plain with local relief and bedrock at surface in the area
Direction of Groundwater Flow	assumed northwest towards the Ottawa River
Physical Setting	developed with residential houses and partial tree cover
Other Information	Air photo from 1946 does not show any indication of earthwork activity at location proposed by GLL. However, some land disturbance is visible close by, on the west side of present location of Kingsmere Ave. Air photo from 1952 shows land disturbance at present location of Glabar Park (encircled by Rozel Cr.).

Site ID # Ur-17	**AND Record #** 081	**MOE Site #** x 1097	**Category of Owner** City and possibly Private	**HLUI Activity ID #** 6127
Other References	Gartner Lee, 1980 (Site #17); Intera, 1988 (Lf #17)			

Site Name	Chamberlain Ave. (Bank and Highway 17)		
Landfill Monitoring/ Remediation	none		
Site Location	part of the lands located between Chamberlain Ave., Glendale Ave. and Percy St.		
Easting (UTM NAD 27)	445410	**Northing (UTM NAD 27)**	5028060
Ward #	17		
Size of Site	less than 0.2 ha		
Waste Thickness	unknown		
Active Time Period	probably between 1920 and 1940, but could not be confirmed due to lack of aerial photos from that time period [GLL, 1980]		
Current Ownership	City of Ottawa (parking lot for Chamberlain Park) and possibly 4 private houses (35, 37, 39 & 41 Glendale Ave.)		
PIN (s)	041220534, 041340008, 041340090, 041340011, 041340007, 041340009, 041340010, 041340012, 041340006		

Area Served	presumably City of Ottawa
Type of Waste	rubble type waste and possibly earth fill
Nearby Industries	City Asphalt Plant (refined petroleum and coal products), 1920s-1950s, NW junction of Chamberlain Ave. and Lyon St. [Intera #28]; Imperial Oil C. Ltd (bulk storage of oil and gas), around 1922, SW corner of Catherine and Percy Sts. [Intera #41]
Operator	City of Ottawa
Parameters of Concern	no known monitoring
Concentrations	no known monitoring
Magnitude	no known monitoring
Methane (landfill gas)	none detected [GLL, 1980]; unlikely given age of site and type of wastes
Ecological Receptors	human contact possible given that residences are possibly built on site (not confirmed)
Distance to Nearest Human Receptor	private houses on Glendale Ave. are possibly built within filled area
Adjacent Land Use and Zoning	residential and parkland; the zoning is L3A (community leisure) in the general area of the site.
Adjacent Land Owners	private houses across the street on south and west sides on Glendale Ave., Chamberlain park east of site
Site Access	site is on located on public property (parking lot)
Water Supply	municipally supplied water
Depth to Bedrock	less than 3 m to interbedded bioclastic limestone, crystalline limestone and shale
Depth to Groundwater	unknown
Distance to Surface Water	small canal joined to Rideau Canal 750 m E; Ottawa River 2.0 km NW
Topography	slight slope north locally
Soil Cover Thickness	area is currently paved
Type of Overburden	till
Direction of Groundwater Flow	assumed to be N towards the Ottawa River
Physical Setting	site is located on paved parking lot, adjacent to Chamberlain Park
Other Information	No aerial photographs of the active period are available for visual identification of site.

Site ID # Ur-19	**AND Record #** -	**MOE Site #** -	**Category of Owner** Private		**HLUI Activity ID #** GAL 4
Other References	Gartner Lee, 1980 (Site #19 - not located on site plan); Intera, 1988 (Lf #19 - not located on site plan)				

Site Name	McRae Ave.
Landfill Monitoring/ Remediation	none
Site Location	on McRae Ave. between Scott and Richmond Rd
Easting (UTM NAD 27)	approx. 441300 **Northing (UTM NAD 27)** approx. 5026920
Ward #	15
Size of Site	unknown since no footprint identified
Waste Thickness	unknown
Active Time Period	before 1940
Current Ownership	private owners of some industrial and commercial properties alongside McRae Ave.
PIN (s)	040210001, 040210002, 040210003, 040210004, 040210005, 040210006, 040210007, 040210008, 040210009, 040210010, 040210011, 040210012, 040210013, 040210014, 040210015, 040210016, 040210017, 040210020, 040210021, 040210022, 040210023, 040210024, 040210025, 040210026, 040210028, 040210029, 040210030, 040210031, 040210032, 040210033, 040210244 (no waste footprint defined for this site, PINs represent properties within which the waste is expected to exist)

Area Served	presumably City of Ottawa
Type of Waste	domestic wastes
Nearby Industries	Crain Printers (printing, publishing and allied industry), 1940s-recent years, 190 Richmond Rd. [Intera #19]
Operator	City of Ottawa
Parameters of Concern	no known monitoring
Concentrations	no known monitoring
Magnitude	no known monitoring
Methane (landfill gas)	no measurement available; not expected given age of site
Ecological Receptors	none identified given land use in general area of site
Distance to Nearest Human Receptor	could not be determined since the exact location of former waste disposal site was not identified
Adjacent Land Use and Zoning	industrial, commercial and residential; the zoning is partially CG[639] (general commercial), L2B[313] (leisure linkage), IS F(1.0) and IS[631] (small scale industrial), CN[640] and CN[498] (neighbourhood linear commercial) and R4C (multiple unit) in the general area of the site.
Adjacent Land Owners	assumed to be private owners of industrial and commercial properties in the vicinity of McRae Ave.
Site Access	old waste disposal site is presumably located on private property
Water Supply	municipally supplied water
Depth to Bedrock	approximately between 3 and 6 m to interbedded dolostone, crystalline limestone, oolitic limestone, shale and calcareous quartz sandstone
Depth to Groundwater	unknown
Distance to Surface Water	Ottawa River 1.0 km NW
Topography	slight slope towards the northwest
Soil Cover Thickness	assumed to be covered based on land use, however thickness of cover unknown
Type of Overburden	till: plain with local relief
Direction of Groundwater Flow	assumed northwest towards the Ottawa River
Physical Setting	properties along McRae Ave. are developed with most of the surface covered with pavement
Other Information	Identification of site based on interviews with city personnel conducted by Gartner Lee Ltd. in 1980; location could not be confirmed due to lack of aerial photographs for the site active time period.

Site ID # Ur-20	**AND Record #** 069	**MOE Site #** x 1100	**Category of Owner** City	**HLUI Activity ID #** 6129
Other References	Gartner Lee, 1984 (Site #20); Intera, 1988 (Lf #20)			

Site Name	Brown's Inlet Park
Landfill Monitoring/ Remediation	none
Site Location	Brown's Inlet Park; bounded by Craig St, property line south of Broadway Ave. and Brown's Inlet (pond)
Easting (UTM NAD 27)	445950 **Northing (UTM NAD 27)** 5027040
Ward #	17
Size of Site	area approx. 0.7 ha
Waste Thickness	unknown
Active Time Period	before 1924 (earliest aerial photographs available show no landfilling activity)
Current Ownership	City of Ottawa (Brown's Inlet Park)
PIN (s)	041410327, 041410326, 041410321, 041410320, 041410319, 041410318, 041410317, 041410330, 041410322, 041410323, 041410325, 041410009, 041410329, 041410316, 041410324

Area Served	presumably City of Ottawa
Type of Waste	unknown
Nearby Industries	none based on information reviewed
Operator	City of Ottawa
Parameters of Concern	no known monitoring
Concentrations	no known monitoring
Magnitude	no known monitoring
Methane (landfill gas)	no methane detected during 1984 monitoring survey
Ecological Receptors	Rideau Canal ecosystem; humans using the area for recreational purposes, but wastes are likely covered
Distance to Nearest Human Receptor	nearest houses on Broadway Ave. are less than 15 m away from site
Adjacent Land Use and Zoning	residential and parkland; the zoning is EW (waterway corridor) in the general area of the site.
Adjacent Land Owners	private houses north of Broadway Ave., west of Craig St. and north of Brown's inlet
Site Access	human contact possible given recreational use of site
Water Supply	municipally supplied water
Depth to Bedrock	5 to 10 m to interbedded bioclastic limestone, crystalline limestone and shale
Depth to Groundwater	unknown
Distance to Surface Water	Brown's inlet is adjacent to site; Rideau Canal 200 m SE
Topography	park is generally flat and houses surround the inlet are on higher ground
Soil Cover Thickness	assumed to be covered based on land use, however thickness of cover unknown
Type of Overburden	native organic soils
Direction of Groundwater Flow	possibly N towards the Ottawa River, S towards the Rideau River and Canal or E towards Dow's Lake
Physical Setting	area contains a maintained open space with grass and mature trees
Other Information	Based on the name of the site in City Records, "Capital Park, Craig St.", it is possible that this site is actually located between Ella St., Craig St. and Newton St., approx. 120 m northwest of location assumed by GLL. This 0.4-ha site is currently designated as Capital Park. This earlier assumption is further supported by the fact that no refuse was intersected by GLL in 1984 probe holes.

Site ID # Ur-21	**AND Record #** 064	**MOE Site #** x 1101	**Category of Owner** Government	**HLUI Activity ID #** 6130
Other References	Gartner Lee, 1984 (Site #21); Intera, 1988 (Lf #21); Dillon, 1984 (Site No. D-126)			

Site Name	Commissioner Park
Landfill Monitoring/ Remediation	none
Site Location	north of Dow's Lake, between Carling Ave and Prince of Wales Dr - Queen Elizabeth Drwy, on both sides of Preston St.
Easting (UTM NAD 27)	444580 **Northing (UTM NAD 27)** 5027030
Ward #	17
Size of Site	area approx. 4.0 ha
Waste Thickness	unknown
Active Time Period	before 1924 (earliest aerial photographs available show no landfilling activity)
Current Ownership	NCC (Commissioner Park)
PIN (s)	041030216, 041030219, 041030220, 041040242, 041030222, 040880002, 040870080

Area Served	presumably City of Ottawa
Type of Waste	unknown; cinder, charcoal, metal, glass and brick fragments observed in the earth fills
Nearby Industries	Campbell Steel and Iron Works Ltd. (Fabricated Metal Products Industries), 1930-1990's (now parking lot), 855 Carling Ave. [Intera #21]
Operator	City of Ottawa
Parameters of Concern	no known monitoring
Concentrations	no known monitoring
Magnitude	no known monitoring
Methane (landfill gas)	no gas detected in 1984 survey by GLL
Ecological Receptors	Dow's Lake ecosystem; human contact possible given current use of site, however waste fill is reportedly overlain by sufficient soil cover
Distance to Nearest Human Receptor	closest residential buildings across from Carling Ave. are 40 m away from site
Adjacent Land Use and Zoning	recreational (park and lake) and commercial; the zoning is EW[356]-h and EW[393]-h (waterway corridor) in the general area of the site.
Adjacent Land Owners	private owners of houses and businesses on north side of Carling Ave. and on east side of Dow's Lake Rd.
Site Access	parkland accessible to the public
Water Supply	municipally supplied water
Depth to Bedrock	0 to 3 m to interbedded bioclastic limestone, crystalline limestone and shale bedrock
Depth to Groundwater	unknown
Distance to Surface Water	site is adjacent to Dow's Lake
Topography	relatively flat
Soil Cover Thickness	soil cover of 0.2 to 1.0 m thick overlying cinder and ash fill
Type of Overburden	till
Direction of Groundwater Flow	possibly south towards Dow's Lake or north towards the Ottawa River
Physical Setting	parkland with mature trees, gardens and grass areas, paved parking lot on western portion of site
Other Information	No stratum of refuse but rather earth fill intermixed with cinders, charcoal, metal, glass and brick fragments encountered in 1984 probe holes north of Dow's Lake (now Commissioner Park). - NCC fax dated October 1, 2002 indicates that domestic waste and building materials are not suspected at this site, it is believed to contain only earth fill. No NCC reports were reviewed as part of this investigation.

Site ID # Ur-22	**AND Record #** 082	**MOE Site #** x 1102	**Category of Owner** City	**HLUI Activity ID #** 6190
Other References	Gartner Lee, 1984 (Site #22); Intera, 1988 (Lf #22); Dillon, 1984 (Site No. D-127)			

Site Name	Central Park
Landfill Monitoring/ Remediation	none
Site Location	Central Park, south of Hwy 417 on both sides of Bank St.; 298 Queen Elizabeth Drwy
Easting (UTM NAD 27)	445870 **Northing (UTM NAD 27)** 5028130
Ward #	17
Size of Site	area approx. 2.5 ha
Waste Thickness	unknown
Active Time Period	before 1925 (earliest aerial photograph available shows no landfilling activity)
Current Ownership	City of Ottawa
PIN (s)	041330156, 041330279, 041340101, 041340138, 041340092, 041330185, 041330184, 041330183, 041330182, 041330180, 041330179, 041330158, 041330155, 041330154, 041330137, 041330160, 041340309, 041340106, 041340102, 041340102, 041340310, 041340308, 041340307, 041340272, 041340271, 041340158, 041340139, 041340157, 041340124, 041340140, 041340141, 041340150

Area Served	presumably City of Ottawa
Type of Waste	unknown; cinder intercepted 1.0 m BGL
Nearby Industries	City Asphalt Plant (refined petroleum and coal products), 1920s-1950s, NW junction of Chamberlain Ave. and Lyon St. [Intera #28]
Operator	City of Ottawa
Parameters of Concern	no known monitoring
Concentrations	no known monitoring
Magnitude	no known monitoring
Methane (landfill gas)	no methane detected in probe holes [GLL, 1984]
Ecological Receptors	Patterson Creek and Rideau Canal ecosystem; human contact possible given current recreational use of site, however waste fill is reportedly overlain by sufficient soil cover
Distance to Nearest Human Receptor	closest private houses on north and south sides are less than 10 m away from site
Adjacent Land Use and Zoning	residential; the zoning is partially L1 (major open space) and EW (waterway corridor) in the general area of the site.
Adjacent Land Owners	several private houses on either side of site
Site Access	parkland accessible to the public
Water Supply	municipally supplied water
Depth to Bedrock	5 to 25 m to shale with laminations of calcareous siltstone on western half and interbedded bioclastic limestone, crystalline limestone and shale on the eastern half
Depth to Groundwater	0.3 to 0.6 m BGL [GLL, 1984]
Distance to Surface Water	Patterson Creek, which flows into the Rideau Canal, is adjacent to site on the east side
Topography	slight slope to the southeast; sink in the northwest corner of the site
Soil Cover Thickness	ground truth check confirmed some cinder at a depth of about 1 m below a clayey to silty earth fill [GLL, 1984]
Type of Overburden	abandoned channel confined by clay banks; clayey to silty earth fills cover refuse
Direction of Groundwater Flow	possibly N towards Ottawa River or E towards Rideau River and Canal
Physical Setting	parkland with mature trees, grass and un-vegetated (dirt covered) areas
Other Information	NCC fax dated October 1, 2002 indicates that suspect quantities of domestic waste and construction rubble were landfilled between 2 to 3 m below surface. No NCC reports were reviewed as part of this investigation.

Site ID # Ur-23	**AND Record #** 120	**MOE Site #** x 1103	**Category of Owner** City	**HLUI Activity ID #** 6191
Other References	Gartner Lee, 1984 (Site #23); Intera, 1988 (Lf #23); Dillon, 1984 (Site No. D-128)			

Site Name	New Edinburgh Park, Keefer St. to Dufferin St.		
Landfill Monitoring/ Remediation	none		
Site Location	north (east) bank of Rideau River, south of Stanley Ave., between Keefer St. and Dufferin St.		
Easting (UTM NAD 27)	446460	**Northing (UTM NAD 27)**	5031740
Ward #	13		
Size of Site	area approx. 1.5 ha		
Waste Thickness	estimated depth of fill at 2 to 3 m [GLL, 1984]		
Active Time Period	1928-1938, based on aerial photographs [GLL, 1984]; probably before 1925 [Dillon, 1984]		
Current Ownership	City of Ottawa (New Edinburgh Park); part of Stanley Ave. may be built on old landfill area		
PIN (s)	042180184, 042200175, 042180183		

Area Served	presumably City of Ottawa or Town of Eastview
Type of Waste	unknown; cinder, ash, some glass and metal encountered below approx. 0.2 m of soil cover [GLL, 1984]
Nearby Industries	none based on available information
Operator	City of Ottawa
Parameters of Concern	no known monitoring
Concentrations	no known monitoring
Magnitude	no known monitoring
Methane (landfill gas)	no methane detected in probe holes [GLL, 1984]
Ecological Receptors	Rideau River ecosystem; human contact possible given that area is used as park, but wastes are reportedly overlain by sufficient soil cover
Distance to Nearest Human Receptor	closest houses are less than 20 m away
Adjacent Land Use and Zoning	parkland and residential; the zoning is partially EW (waterway corridor) and R5C[567] H(10) in the general area of the site.
Adjacent Land Owners	private properties on south side of Stanley Ave. are adjacent to old landfill area
Site Access	area is not fenced and is used by the public for recreational purposes (parkland)
Water Supply	municipally supplied water
Depth to Bedrock	2 to 3 m to interbedded bioclastic limestone, crystalline limestone and shale
Depth to Groundwater	unknown
Distance to Surface Water	old landfill site is located immediately north of Rideau River
Topography	relatively flat
Soil Cover Thickness	soil cover approximately 0.2 m [GLL, 1984]
Type of Overburden	clay and silt - erosional terraces
Direction of Groundwater Flow	assumed to be north towards the Ottawa River
Physical Setting	fill area is presently parkland: grassed and treed area including one small single storey building and playground
Other Information	NCC fax dated October 1, 2002 indicates that domestic and industrial solid waste was found 1 to 3 m below the surface. No NCC reports were reviewed as part of this investigation.

Site ID # Ur-24	**AND Record #** 115	**MOE Site #** x 1104	**Category of Owner** Government	**HLUI Activity ID #** 6192
Other References	Gartner Lee, 1984 (Site #24); Intera, 1988 (Lf #24)			

Site Name	New Edinburgh Park, Union St. to Queen Victoria St.
Landfill Monitoring/ Remediation	none
Site Location	north (east) bank of Rideau River, south of Stanley Ave., between Union St. and Queen Victoria St.
Easting (UTM NAD 27)	446110 **Northing (UTM NAD 27)** 5031775
Ward #	13
Size of Site	area approx. 1.5 ha
Waste Thickness	estimated 1 to 1.5 m [GLL, 1984]
Active Time Period	certainly before 1945 from the City records, likely before 1928 since no mention of aerial photograph in GLL report
Current Ownership	NCC
PIN (s)	042180351, 042180204, 042180203, 042180208, 042180207, 042180205, 042180209, 042180196, 042180194, 042180206, 042180186, 042180202, 042180193, 042180185, 042180185, 042180197, 042180198, 042180199, 042180200, 042180201

Area Served	presumably City of Ottawa, possibly Town of Eastview
Type of Waste	unknown; cinder, ash and occasional glass, metal and brick fragment encountered below approx. 0.1 m of soil cover
Nearby Industries	none based on available information
Operator	City of Ottawa
Parameters of Concern	no known monitoring
Concentrations	no known monitoring
Magnitude	no known monitoring
Methane (landfill gas)	no methane detected in probe holes [GLL, 1984]
Ecological Receptors	Rideau River and Ottawa River ecosystems; human contact possible given recreational use of site, although wastes are reportedly overlain by thin soil cover
Distance to Nearest Human Receptor	nearest houses south of Stanley Ave. are less than 20 m away from site
Adjacent Land Use and Zoning	parkland and residential; the zoning is partially EW (waterway corridor) and R5C[567] H(10) in the general area of the site.
Adjacent Land Owners	private properties on south side of Stanley Ave.
Site Access	area is not fenced and is used by the public for recreational purposes (parkland)
Water Supply	municipally supplied water
Depth to Bedrock	2 to 3 m to interbedded bioclastic limestone, crystalline limestone and shale
Depth to Groundwater	unknown
Distance to Surface Water	site is located on north bank of Rideau River, 500 m upstream from the junction with the Ottawa River
Topography	generally flat, and more steeply sloping near the Rideau River
Soil Cover Thickness	assumed to be covered based on land use, however thickness of cover unknown
Type of Overburden	clay and silt - erosional terraces
Direction of Groundwater Flow	assumed N towards the Ottawa River
Physical Setting	parkland with grass cover and some trees; includes bicycle trails
Other Information	NCC fax dated October 1, 2002 indicates that a Phase I-ESA has been completed for this site and domestic and industrial solid waste was found 1 to 1.5 m below the surface. The Phase I-ESA was not reviewed as part of this investigation.

Site ID # Ur-25	**AND Record #** 121	**MOE Site #** x 1105	**Category of Owner** Government	**HLUI Activity ID #** 6131
Other References	Gartner Lee, 1984 (Site #25); Intera, 1988 (Lf #25); Heritage Research Ass., 1991 (Dump Perimeter # 3 and # 1); Dames & More, 1991; Dillon, 1984 (Site No. D-128)			

Site Name	Kingsview Park
Landfill Monitoring/ Remediation	NCC fax dated October 1, 2002 indicates that monitoring and a risk assessment have been completed for this site. No NCC reports were reviewed as part of this investigation.
Site Location	north (east) bank of Rideau River, bounded north by Vanier Pkwy and northeast by North River Rd.
Easting (UTM NAD 27)	447270 **Northing (UTM NAD 27)** 5031450
Ward #	12
Size of Site	area approx. 3.0 ha
Waste Thickness	estimated depth of fill at 1 to 3 m [GLL, 1984]
Active Time Period	before 1928 (earliest aerial photograph available shows no landfilling activity) [GLL, 1984]; 1930-1945 or later [Heritage]; probably before 1925 [Dillon, 1984]
Current Ownership	NCC
PIN (s)	042360402, 042360326, 042360323

Area Served	unknown
Type of Waste	probably material excavated from sewer trenches in Sandy Hill and also possibly trade refuse given subsequent use of property as parkland [Heritage]; cinder, ash, some fragments of brick, metal, glass and porcelain encountered in probe holes and exposed along the river bank [GLL, 1984]
Nearby Industries	Dominion Bridge Company Ltd. operated a steel fabrication plant with an adjoining storage yard from 1912 to 1968 on parts of the lands bounded by Landry St., Vanier Pkwy and Baribeau St.
Operator	City of Ottawa
Parameters of Concern	analytical results exist but not available for review
Concentrations	analytical results exist but not available for review
Magnitude	analytical results exist but not available for review
Methane (landfill gas)	no methane detected in probe holes during GLL survey conducted in 1984
Ecological Receptors	Rideau River ecosystem; possible human contact given that area is used as park, although wastes are likely covered
Distance to Nearest Human Receptor	closest residences are approximately 30 metres northeast of site
Adjacent Land Use and Zoning	residential; the zoning is PU (public utility) in the general area of the site.
Adjacent Land Owners	private properties on northeast side of North River Rd. Ave. are across the street from old landfill area
Site Access	site is located on public grounds and is not fenced
Water Supply	municipally supplied water
Depth to Bedrock	5 to 10 m to bedrock of shale with laminations of calcareous siltstone
Depth to Groundwater	unknown
Distance to Surface Water	old landfill site is located immediately adjacent to Rideau River on the north (east) bank
Topography	generally flat with a gentle slope towards the Rideau River
Soil Cover Thickness	assumed to be covered based on land use, however thickness of cover unknown
Type of Overburden	clay and silt - erosional terraces; silt and silty clay [Dames and Moore, 1991]
Direction of Groundwater Flow	assumed to be north towards the Ottawa River
Physical Setting	area is used as parkland with grass cover and some trees
Other Information	Purpose of filling operations is the control of Rideau River flooding [Heritage]. Filling is reported to have taken place between former John St. (now Coupal St.) and Rideau River probably between 1912-1914; the fill is thought to have been limited to only ashes given the Town of Eastview regulations at the time [Heritage]

Site ID # Ur-26	**AND Record #** 098	**MOE Site #** x 1106	**Category of Owner** Government	**HLUI Activity ID #** 6193
Other References	Gartner Lee, 1984 (Site #26); Intera, 1988 (Lf #26); Dillon, 1984 (Site No. W-130); Confidential GAL report; von Baeyer E., 2000			

Site Name	near Supreme Court building
Landfill Monitoring/ Remediation	none
Site Location	lower parking lot for the Parliament Hill building (including upper and lower slope), south bank of Ottawa River, at end of Bank St.
Easting (UTM NAD 27)	444850 **Northing (UTM NAD 27)** 5029940
Ward #	14
Size of Site	area of parking lot approx. 0.7 ha [GLL, 1984]; area of slope and parking lot approximately 1.5 ha based on known areas where waste fill has been encountered in boreholes [GAL, 2000]
Waste Thickness	fill in the valley is anywhere from 1 to 20 m thick, however amount of waste within the fill is variable
Active Time Period	around 1922, earth filling occurred around 1944 [GLL, 1984]; garbage filling late 1920's to early 1930's from aerial photos, rock fill from Place de Ville construction in the 1960's [Dillon, 1984]
Current Ownership	Federal Government
PIN (s)	042800030

Area Served	City of Ottawa
Type of Waste	presumably domestic garbage & refuse and rubble [Dillon, 1984]; amount of garbage & refuse within the fill is sometimes small [GAL, 2000]
Nearby Industries	British American Bank Note Co. (Printing, Publishing and Allied Industry), 1865-1885, 241 Wellington St. [Intera #132]
Operator	City of Ottawa
Parameters of Concern	no known monitoring
Concentrations	no known monitoring
Magnitude	no known monitoring
Methane (landfill gas)	not verified by Gartner Lee due to paved area
Ecological Receptors	Ottawa River ecosystem; Ottawa River in back of Parliament buildings is identified as sturgeon spawning area [Dillon, 1984]
Distance to Nearest Human Receptor	building adjoining Supreme Court building is 60 m south from site
Adjacent Land Use and Zoning	governmental; the zoning is CP (parliamentary precinct) in the general area of the site.
Adjacent Land Owners	federal government buildings
Site Access	site is restricted to allowed users of the parking lot
Water Supply	municipally supplied water
Depth to Bedrock	limestone of the Ottawa formation; bedrock outcrops along the west part of the Upper Slope while lying at considerable depth along other parts of the slope [GAL, 2000]
Depth to Groundwater	numerous piezometers in the overburden of the slope were dry on three monitoring occasions in 2000 [GAL, 2000]
Distance to Surface Water	site is immediately adjacent to Ottawa River; level of parking lot estimated 5-6 m above River level [Dillon, Feb. 1984]
Topography	the parking lot is located on a terrace within the valley which is bounded to the north by a relatively short slope down to the promenade along the shore of the Ottawa River; the parking lot is bounded to the south by an approximately 20 m high slope up to additional parking behind the Confederation building; the slopes of the Parliament Hill and Supreme Court promontories bound the site to the east and west. The fill slopes are quite steep, approaching 1 horizontal to 1 vertical.
Soil Cover Thickness	no particular cover however when waste material present, generally in some to trace amounts
Type of Overburden	random fill materials including waste overlying bedrock at variable depth; fill material at the site generally consists of silty sand and sandy silt with variable amounts of cobbles, gravel, clay, concrete, brick, mortar, glass, metal, cinders, ashes, shale fragments, rubber, and wood; boulders were also encountered [GAL, 2000]
Direction of Groundwater Flow	direction of groundwater flow, if present, would be N towards the Ottawa River
Physical Setting	asphalt paved parking lot at base of slopes to the N, E and W; treed areas above and below the slopes consist of non-native invasive species; re-vegetation studies are on-going to modify the species on the slopes to assist in slope stability
Other Information	The lower parking lot lies within the former Bank Street valley which was filled in the early 1900's. The footprint shown on the accompanying map was provided by Intera, however based on site investigation by GAL it would appear that waste fill material is not only beneath the parking area but also on the slope above and below the parking area.

Site ID # Ur-27	**AND Record #** 076	**MOE Site #** x 1107	**Category of Owner** City	**HLUI Activity ID #** 6198
Other References	Gartner Lee, 1984 (Site #27 - located on site map but no site description); Intera, 1988 (Lf #27); Paterson, January 1999			

Site Name	Lansdowne Park
Landfill Monitoring/ Remediation	Environmental Site Characterization Study conducted by Paterson to delineate the extent of impacted soil and groundwater, and the volume of waste debris and garbage, as well as to investigate the extent of hydrocarbon impacted soil associated with another issue at the site. A previous Phase II ESA conducted by Paterson at the site was not available for review. During the characterization study 20 boreholes were drilled and 3 monitoring wells installed by Paterson. Approximately 9,000 cubic metres of impacted soil exceeding MOE guidelines associated with the landfill and 1,000 cubic metres of waste associated with the landfill was expected to be present in the area delineated [Paterson, 1999]
Site Location	Lansdowne Park (driveway and exhibition grounds), near intersection of Bank St. and Queen Elizabeth Drwy
Easting (UTM NAD 27)	446560 **Northing (UTM NAD 27)** 5027140
Ward #	17
Size of Site	1.2 ha [GLL, 1980]; 0.7 ha [Paterson, 1999]
Waste Thickness	2 to 3 m [Paterson, 1999]
Active Time Period	certainly before 1945 based on City records
Current Ownership	City of Ottawa (Lansdowne Park)
PIN (s)	041310036, 041390248

Area Served	presumably City of Ottawa
Type of Waste	cinders, ashes, metal, wood, glass [Paterson, 1999]
Nearby Industries	none based on available information
Operator	City of Ottawa
Parameters of Concern	conductivity, arsenic, boron, lead and zinc in the soil; manganese and sodium in the groundwater (only metals and VOCs analyzed in the groundwater) [Paterson, 1999]
Concentrations	soil parameters noted above found exceeding MOE Table B criteria; groundwater parameters noted to exceed the 1994 MOE Ontario Drinking Water Objectives [Paterson, 1999]
Magnitude	area of soil impact partially delineated as asphalt parking area east of Aberdeen Pavilion, possibly extending towards the Pavilion and also on to NCC parkland
Methane (landfill gas)	no measurement available
Ecological Receptors	ecosystem of Rideau Canal
Distance to Nearest Human Receptor	nearest houses on Queen Elizabeth Pl. are located some 90 m west from the site
Adjacent Land Use and Zoning	recreational (park and arena) and residential the zoning is L4[549] F(1.5) (major leisure area) in the general area of the site.
Adjacent Land Owners	NCC (Queen Elizabeth Pkwy and shore of Rideau Canal) south and residential houses on Wilton Cr. and Queen Elizabeth Pl. west of site
Site Access	site is intended for public use, but the Lansdowne Park property is fenced
Water Supply	municipally supplied water
Depth to Bedrock	5 to 10 m to shale with laminations of calcareous siltstone
Depth to Groundwater	3 to 5 m below grade [Paterson, 1999]
Distance to Surface Water	site is less than 50 m north of Rideau Canal
Topography	flat to slight slope to the SE
Soil Cover Thickness	at least 1.5 m of fill (silt, sand and gravel) and sometimes grey crushed stone and asphalt [Paterson, 1999]
Type of Overburden	sand, silty sand and sandy silt beneath waste fill [Paterson, 1999]
Direction of Groundwater Flow	possibly S towards the Rideau River and Canal or E towards Dow's Lake based on topography; groundwater flow to the E based on groundwater surface elevation [Paterson, 1999]
Physical Setting	filled area includes the area east of the Aberdeen Pavilion and surrounding paved grounds
Other Information	none

Site ID # Ur-28	**AND Record #** 099 (093)	**MOE Site #** x 1108	**Category of Owner** City and Private	**HLUI Activity ID #** 6200	
Other References	Gartner Lee, 1984 (Site #28); Intera, 1988 (Lf #28); Dillon, 1984 (Site No. D-119); Lees Ave folder; Aqua Terre Solutions Inc. (Jan. 1997 and Feb. 1997)				

Site Name	Lees Ave. (old Armoury)
Landfill Monitoring/ Remediation	coal tar contaminated soil (which may have included garbage and/or ash fill) was removed from the eastern portion of site, although the remedial activities were not related to the old landfill [Aqua Terre, Jan. 1997 and Feb. 1997] - Gas and groundwater monitoring programs conducted by Aqua Terre for the City of Ottawa in Springhurst Park (now discontinued) and at 168 Lees Ave./sewer right-of-way (still maintained but aimed at characterization of coal tar impact). Methane vents installed at both sites [City records] - NCC Phase II-Site characterization Study completed in 1994 but not reviewed as part of this investigation.
Site Location	north (west) bank of Rideau River, bounded by Lees Ave. north, Chestnut Ave. west and property line between 170 and 180 Lees Ave. east; garbage filled area is located in southwest corner of site with only ash fill in remainder of site [Aqua Terre, Feb. 1997]
Easting (UTM NAD 27)	447280 **Northing (UTM NAD 27)** 5028900
Ward #	17
Size of Site	area approx. 4.5 ha
Waste Thickness	estimated depth of fill 1 to 2 m [GLL, 1984]; approximately2-3 m of ash fill underlain by up to 3 m of garbage fill [Aqua Terre, Feb. 1997]
Active Time Period	around 1928-1938 [GLL, 1984] - NCC indicates in Oct. 1, 2002 fax the site was active between 1906 and 1930
Current Ownership	City of Ottawa (vacant land at 160 Lees Ave., sewer right-of-way, Rideau River Trail and Springhurst Park), and private owners (high-rise building at 170 Lees Ave., all or part of housing at 35, 39, 43, 47, 51, 55, 59 and 63 Chestnut St.)
PIN (s)	042030147, 042030148, 042030152, 042030151, 042030150, 042030150, 042030149, 042030704, 042030153, 042030154, 042030628, 042030627, 042030626, 042030240, 042030240, 042030161, 042030169, 042030160, 042030158, 042030157, 042030156, 042030155, 042030231, 042030144, 042030143, 042030142, 042030217, 042030170, 042030145, 042030230, 042030221

Area Served	City of Ottawa and Ottawa Gas plant [Dillon, 1984]
Type of Waste	municipal fill and cinders from the Ottawa gas plant [Dillon, 1984]; cinder and ash with some brick, glass and metal fragments encountered in probe holes [GLL, 1984]
Nearby Industries	Currie Products Ltd. (Refined Petroleum and Coal Products), 1930s-1966, 170 Lees Ave. [Intera #12]; Royal Canadian Engineers Workshops and Laboratories (Leach pits at rear of property near Rideau River), 31 Brunswick Ave. [Intera #13]
Operator	City of Ottawa
Parameters of Concern	analytical results exist but not available for review
Concentrations	analytical results exist but not available for review
Magnitude	analytical results exist but not available for review
Methane (landfill gas)	no gas detected in probe holes [GLL, 1984]; also see "Landfill Monitoring/Remediation"
Ecological Receptors	Ottawa River ecosystem; human contact possible given that houses are built within filled area
Distance to Nearest Human Receptor	private houses on east side of Chestnut Rd. and high-rise building at 170 Lees Ave. are built within old landfill area
Adjacent Land Use and Zoning	residential on east and west sides and undeveloped north; the zoning is R5A H(10.7) (low rise apartment) in the general area of the site.
Adjacent Land Owners	private houses on west side of Chestnut St., high rise buildings at 169 and 180 Lees Ave.; former waste disposal site Ur-12 is located immediately east of the site
Site Access	part of site is located on public property (Rideau River Trail and Springhurst Park)
Water Supply	municipally supplied water
Depth to Bedrock	approx. 10 m [Dillon, 1984] to interbedded shale, calcareous siltstone and bioclastic limestone
Depth to Groundwater	probably at or below original ground level [GLL, 1984]; approx. 1.5 m [Dillon, 1984]; groundwater table located in fractured clay underlying the fill material [Aqua Terre, Feb. 1997]
Distance to Surface Water	old landfill is adjacent to Rideau River; poor drainage on site [Dillon, 1984]
Topography	flat, sunken below Lees Ave. [Dillon, 1984]
Soil Cover Thickness	0.1 to 0.2 shallow soil cover [GLL, 1984]; soil cover 0.6 to 0.9 m [Dillon, 1984]; 0 to 0.6 m of soil cover consisting of topsoil or fill comprised of reworked clay [Aqua Terre, Jan. and Feb. 1997]; Aqua Terre (Feb. 1997) recommended the capping of the site with 50 mm of top soil and seeding with grass, but it is not known whether this was completed
Type of Overburden	deposits of silty sand, glacial till and recent sediments (silty sand, organic material) [Dillon, 1984]; silty clay underlie the garbage fill [Aqua Terre, Feb. 1997]
Direction of Groundwater Flow	groundwater flow direction varies: to the east over the sewer right-of-way [Aqua Terre, Jan. 1997] and radially inwards at property located at 160 Lees Ave. [Aqua Terre, Feb. 1997]
Physical Setting	property is partly developed with high-rise buildings (east) and housing (west), and partly open space, children's play area and playfields (center); partial tree cover and grass; old armoury property shows distinct settlement relative to Lees Ave. [Dillon, 1984]
Other Information	several monitoring and excavation programs primarily aimed at defining coal tar contaminated area/removing coal tar contaminated soils were conducted by Intera, WESA, EMS, Aqua Terre, Raven Beck and ADAMAS at 168 and 170 Lees Ave.; these studies included analysis of PAHs, VOCs, BTEX and metal compounds but were not available for review - MOE designates site as St-Paul University but site is in fact located northeast of St-Paul property

Site ID # Ur-29	**AND Record #** 114	**MOE Site #** x 1109	**Category of Owner** Government	**HLUI Activity ID #** 6202
Other References	Gartner Lee, 1984 (Site #29); Intera, 1988 (Lf #29)			

Site Name	Maple Island		
Landfill Monitoring/ Remediation	none		
Site Location	Maple Island, in Rideau River, approx. 400 m upstream from the Ottawa River		
Easting (UTM NAD 27)	445875	**Northing (UTM NAD 27)**	5031810
Ward #	13		
Size of Site	area approx.1.1 ha		
Waste Thickness	estimated depth of fill 1 to 2 m [GLL, 1984]		
Active Time Period	before 1928 (earliest aerial photograph available show no landfilling activity)		
Current Ownership	NCC		
PIN (s)	042180188, 042180181, 042180187		

Area Served	presumably City of Ottawa
Type of Waste	unknown; cinder and ash encountered in probe holes
Nearby Industries	none based on available information
Operator	City of Ottawa
Parameters of Concern	no known monitoring
Concentrations	no known monitoring
Magnitude	no known monitoring
Methane (landfill gas)	no gas encountered in probe holes [GLL, 1984]
Ecological Receptors	Rideau River ecosystem; human contact possible given recreational use of site, although wastes are reportedly covered
Distance to Nearest Human Receptor	island is parkland with no development
Adjacent Land Use and Zoning	the zoning is EW (waterway corridor) in the general area of the site.
Adjacent Land Owners	none
Site Access	area is not fenced and is used by the public for recreational purposes (parkland)
Water Supply	municipally supplied water
Depth to Bedrock	2 to 3 m to reach the interbedded bioclastic limestone, crystalline limestone and shale
Depth to Groundwater	unknown
Distance to Surface Water	island within Rideau River
Topography	relatively flat, and more steeply sloping near the Rideau River
Soil Cover Thickness	up to 1 m of soil [GLL, 1984]
Type of Overburden	silty sand, silt, sand and clay - erosional terraces
Direction of Groundwater Flow	assumed radially outwards
Physical Setting	parkland with grass cover and some trees
Other Information	NCC fax dated October 1, 2002 indicates that domestic and industrial solid waste was found 1 to 2 m below the surface and low soil permeability reduces mobility of leachate but may result in methane accumulation. No NCC reports were reviewed as part of this investigation.

Site ID # Ur-30	**AND Record #** 116	**MOE Site #** x 1110	**Category of Owner** City	**HLUI Activity ID #** 6203
Other References	Gartner Lee, 1984 (Site #30); Intera, 1988 (Lf #30); Dillon, 1984 (Site No. D-128); J.D. Paterson, 1999			

Site Name	Porter Island
Landfill Monitoring/ Remediation	A soil and groundwater sampling survey was conducted by Paterson for the Region of Ottawa-Carleton c/o J.L. Richards & Associates Ltd.. Several boreholes were drilled and monitoring wells installed and waste was encountered throughout the site.
Site Location	Porter Island, in Rideau River, approx. 1 km upstream from the Ottawa River
Easting (UTM NAD 27)	446620 **Northing (UTM NAD 27)** 5031560
Ward #	12
Size of Site	area approx. 3.0 ha
Waste Thickness	between 1.35 and 3.95 m [Paterson, 1999]
Active Time Period	between 1909 and 1912 [Paterson, 1999]; before 1928 (earliest aerial photograph available show no landfilling activity) [GLL, 1984]; probably before 1925 [Dillon, 1984]
Current Ownership	City of Ottawa (Island Lodge Long Term Care Centre)
PIN (s)	042180178

Area Served	City of Ottawa
Type of Waste	solid municipal wastes and possibly cinders from Parliament Hill heating plant [J. D. Paterson, 1999]; garbage fill consists of a mixture of cinders, ash, wood, leather, glass, metal, brick, ceramics and bones [J. D. Paterson, 1999]; ash and cinder with metal, glass and brick encountered under 0.5 to 1.0 m of soil cover [GLL, 1984];
Nearby Industries	none based on available information
Operator	City of Ottawa
Parameters of Concern	lead in soil and free cyanide in groundwater [Paterson, 1999]
Concentrations	lead : 0.44 to 4.33 mg/L (criteria 0.05 mg/L); free cyanide: 0.16 ppm (criteria 0.052 ppm) [Paterson, 1999]
Magnitude	appears to be throughout garbage fill area [Paterson, 1999]
Methane (landfill gas)	low organic vapour readings not considered to be indicative of significant methane concentrations [Paterson, 1999]
Ecological Receptors	Rideau River ecosystem; human contact possible given current use of site, however waste fill is reportedly overlain with sufficient soil cover
Distance to Nearest Human Receptor	Island Lodge Long Term Care Centre is located within old landfill area
Adjacent Land Use and Zoning	the zoning is EW[572] H(30) (waterway corridor) in the general area of the site.
Adjacent Land Owners	none
Site Access	site located on private property
Water Supply	municipally supplied water
Depth to Bedrock	2.4 m to 4.1 m [Paterson] to interbedded bioclastic limestone, crystalline limestone and shale
Depth to Groundwater	groundwater intercepted at 4.1 m below ground level eastern edge of site [Paterson, Sept. 26, 1999]
Distance to Surface Water	island within Rideau River
Topography	local topographic high near the middle of the island with more pronounced slope on the western portion of the island
Soil Cover Thickness	topsoil sometimes underlain by silty sand fill range in thickness from 0.15 to 0.85 m over garbage fill [Paterson, 1999]
Type of Overburden	erosional terraces; garbage fill underlain by silty sand glacial till and silty clay [Paterson, 1999]
Direction of Groundwater Flow	assumed radially outwards
Physical Setting	Porter Island houses Island Lodge Long Term Care Centre; includes two multi-storey structures, paved areas, grassed areas and mature trees
Other Information	none

Site ID # Ur-31	**AND Record #** 058 (060)	**MOE Site #** x 1111	**Category of Owner** Private	**HLUI Activity ID #** 6238
Other References	Gartner Lee, 1984 (Site #31); Gartner Lee, 1988 (Site #31); Intera, 1988 (Lf #31); Sherwood Drive folder; Confidential GAL reports			

Site Name	Sherwood Drive, Carling to Irving
Landfill Monitoring/ Remediation	none
Site Location	on both sides of Sherwood Dr., between Irving Pl. and Carling Ave.
Easting (UTM NAD 27)	444020 **Northing (UTM NAD 27)** 5026890
Ward #	15
Size of Site	area approx. 3.5 ha
Waste Thickness	depth of fill 0.4 to 4 m (based on a compilation of all records reviewed)
Active Time Period	around 1924-1928
Current Ownership	private owners: commercial building at 933 Carling Ave., 350 Loretta Ave., all or part of housing (or commercial buildings?) at 111, 112, 116, 120, 121, 124,125, 130, 131, 139, 141, 142, 143, 145, 146, 150, 156, 162 Sherwood Dr., 233 Irving Pl., 12, 13, 15, 16, 19, 20, 23 Larwood Ave., 292, 293, 295, 300, 318 Bayswater Ave., 306, 310, 335 Breezhill Ave., 1 Summershade, 899, 903, 911Carling Ave.
PIN (s)	041010050, 041010061, 041010060, 041010059, 041010057, 041010056, 041010055, 041010054, 041010053, 041010034, 041010062, 041010051, 041010051, 041010049, 041010048, 041010035, 041020202, 041010040, 041010041, 041010033, 041010042, 041010043, 041010052, 041020208, 041020167, 041020166, 041020201, 041020203, 041020204, 041020205, 041020159, 041020207, 041020103, 041020209, 041020213, 041020218, 041020222, 041020222, 041020238, 041020239, 041010039, 041020206, 041010106, 041010078, 041010079, 041010080, 041010101, 041010102, 041010103, 041020164, 041010105, 041010063, 153820000, 041010107, 041010111, 041010112, 041010117, 041010118, 041020101, 041020102, 041010104

Area Served	presumably City of Ottawa
Type of Waste	cinder-ash type refuse including trace glass, brick, wood, and metal fragments (based on evidence in boreholes)
Nearby Industries	Campbell Steel and Iron Works Ltd. (fabricated metal products), 1930s-present, 855 Carling Ave. [Intera #21]; F.W. Argue Fuel Oil Depot (bulk storage of oil and gas in underground storage tanks), SW corner Railway St. and Hickory [Intera #22]; Hutchings & Patrick Ltd. (printing and publishing), 1930s-present, 100 Champagne Ave. [Intera #24]
Operator	City of Ottawa
Parameters of Concern	groundwater has been monitored from a construction (i.e., concrete compatibility) perspective but not necessarily because a dump was present (GAL 1985); no other known monitoring
Concentrations	no landfill-related known monitoring
Magnitude	no landfill-related known monitoring
Methane (landfill gas)	trace methane (0.5% v/v) measured in probe holes in early 1984; no gas detected in 2 boreholes in Dec. 1984 (cf. GLL letter report dated Jan. 22, 1985)
Ecological Receptors	Experimental Farm and Dow's Lake
Distance to Nearest Human Receptor	several houses are built within old landfill area
Adjacent Land Use and Zoning	residential; the zoning is partially R5A U(70) (low rise apartment) and R1J (detached house) in the general area of the site.
Adjacent Land Owners	houses on north side of Sherwood Dr. and on west side of Irving Pl.
Site Access	private property; in general many sites/areas are not fenced
Water Supply	municipally supplied water
Depth to Bedrock	various reports indicate bedrock is between 5 to 7 m below ground surface; bedrock assumed to be interbedded calcarenite and limestone
Depth to Groundwater	groundwater elevation is variable and based on the reports reviewed ranged from 1.7 to 7 m below ground surface; in some instances the groundwater table was within the cinder and ash fill at the site
Distance to Surface Water	Dow's Lake 500 m east
Topography	some areas are flat however an increase in elevation is evident heading E along Carling Ave. towards Dow's Lake
Soil Cover Thickness	assumed to be covered based on land use, however thickness of cover unknown; based on GAL reports sometimes no cover is present and sometimes 0.2 to 1.2 m of cover is present
Type of Overburden	earth & garbage fill followed sometimes by peat and marl after which sand, gravel and/or glacial till is present; surficial geology maps indicate till is prevalent in the area
Direction of Groundwater Flow	possibly E towards Dow's Lake or possibly N towards the Ottawa River
Physical Setting	the area is developed with residential houses and generally well vegetated with young to mature tree growth
Other Information	This site is considered to correspond to the same location as Site #18 in 1980 GLL report.

Site ID # Ur-32	**AND Record #** 059	**MOE Site #** x 1112	**Category of Owner** City, Institutional and Private	**HLUI Activity ID #** 6240	
Other References	Gartner Lee, 1984 (Site #32); Intera, 1988 (Lf #32); GAL, 1996				

Site Name	Brewer Park (south) and Carleton University
Landfill Monitoring/ Remediation	Investigation for development of property at 145 Grove Ave. conducted by GAL. Three boreholes were drilled and monitoring wells were installed in two of the boreholes. Four soil samples and two groundwater samples were collected and submitted for analysis of leachate indicator parameters. GAL recommended stratified restoration of a lead issue in the soil and either characterization and removal or site specific soil remediation criteria for boron in the soil.
Site Location	south portion of Brewer Park, between Bronson Ave., extension of Cameron Ave., Seneca St. and pond of water, with narrow edge along Seneca St. extending past Grove Ave. and playing field on Carleton University campus across Bronson Ave.
Easting (UTM NAD 27)	445860 **Northing (UTM NAD 27)** 5026000
Ward #	17
Size of Site	area approx. 8 ha
Waste Thickness	estimated depth of fill 1 to 2 m [GLL, 1984]; approximately 1.5 to 2.0 m [GAL, 1996]
Active Time Period	before 1928
Current Ownership	Carleton University, City of Ottawa (Brewer Park) and private owners (all or part of housing at 133, 145 Grove Ave. and 82 Seneca St.)
PIN (s)	040870068, 041450077, 041450202, 041450383, 040870069, 041440359, 041450082, 041450303, 041450076, 041450075, 041450074, 041450073, 041450068, 041450067, 041450066, 041440469, 041450083

Area Served	unknown; assumed City of Ottawa
Type of Waste	excavation for underground service intersected cinder and ash refuse; sand and silt with wood, glass, rubber, brick/mortar, cinders, ash [GAL, 1996]
Nearby Industries	none based on information reviewed
Operator	City of Ottawa
Parameters of Concern	in soil lead and boron present, no parameters of concern identified in the groundwater [GAL, 1996]
Concentrations	lead and boron exceedances in soil above MOE Table B criteria
Magnitude	unknown
Methane (landfill gas)	no methane detected in probe holes; from 125 ppm up to 100 % LEL in monitoring wells [GAL, 1996] (the methane gas attributed to decomposition of the organic soils underlying the site)
Ecological Receptors	Rideau River ecosystem and human contact
Distance to Nearest Human Receptor	2 to 3 private houses on Grove Ave. and Seneca St. are built within old landfill area; Carleton University buildings are located west of site
Adjacent Land Use and Zoning	residential, institutional (Carleton University) and recreational (Brewer Park); former waste disposal sites Ur-7 and Ur-8 are located immediately north of site; the zoning is partially I2A F(1.5) (major institutional) and L1C[621] (major open space) in the general area of the site.
Adjacent Land Owners	Carleton University (west) and houses on east side of Seneca St. (east); former waste disposal sites Ur-7 and Ur-8 are located immediately northwest and north of site
Site Access	accessible to public
Water Supply	municipally supplied water
Depth to Bedrock	approximately 5 to 10 m to reach shale with laminations of calcareous siltstone bedrock.
Depth to Groundwater	approximately 2 to 2.5 m below ground surface [GAL, 1996]
Distance to Surface Water	old landfill area is adjacent to Rideau River
Topography	general area is flat
Soil Cover Thickness	approximately 5 to 10 m; 0.7 to 1.5 m in area investigated by GAL
Type of Overburden	beneath the fill a thick peat deposit which is in turn underlain by successive deposits of firm clayey silt, sand and gravel and glacial till to bedrock [GAL, 1996]
Direction of Groundwater Flow	S towards the Rideau River
Physical Setting	area is a maintained open space with grass, mature trees and some buildings; parts of the site are used as recreational areas with playing fileds (baseball)
Other Information	based on current access to the site, waste has been covered so it is not visible.

Site ID # Ur-33	**AND Record #** 065	**MOE Site #** x 1113	**Category of Owner** City and possibly Private	**HLUI Activity ID #** 6241
Other References	Gartner Lee, 1984 (Site #33); Intera, 1988 (Lf #33)			

Site Name	Warrington Drive - Wendover Ave. to Billings Bridge
Landfill Monitoring/ Remediation	none
Site Location	edge of land approx. 50 m wide extending on north (west) bank of Rideau River between extension of Wendover Ave. and Billings Bridge (Bank Ave.); south section of Linda Thom Park
Easting (UTM NAD 27)	446750 **Northing (UTM NAD 27)** 5026200
Ward #	17
Size of Site	area approx. 0.5 ha
Waste Thickness	unknown
Active Time Period	before 1928 (earliest aerial photograph available show no landfilling activity)
Current Ownership	City of Ottawa (Linda Thom Park) and possibly private houses at 1 Warrington Dr., and at 47 & 50 Harvard Ave.
PIN (s)	041450162, 041290492, 041450216, 041450215, 041450121, 041450157, 041450152, 041450151, 041450118, 041450122, 041450117, 041450158, 041450247, 041450120

Area Served	presumably City of Ottawa
Type of Waste	unknown; occasional cinder encountered in probe holes
Nearby Industries	none based on available information
Operator	City of Ottawa
Parameters of Concern	no known monitoring
Concentrations	no known monitoring
Magnitude	no known monitoring
Methane (landfill gas)	no gas detected in probe holes [GLL, 1984]
Ecological Receptors	Rideau River ecosystem; human contact possible given that residences are perhaps built on filled area
Distance to Nearest Human Receptor	some houses are possibly built on site
Adjacent Land Use and Zoning	residential; the zoning is R2F (semi-detached) in the general area of the site.
Adjacent Land Owners	houses on Warrington Dr. and Harvard Ave. and building at 1312 Bank St.
Site Access	area is not fenced and is used by the public for recreational purposes (parkland)
Water Supply	municipally supplied water
Depth to Bedrock	5 to 10 m to possibly shale, siltstone or limestone
Depth to Groundwater	unknown
Distance to Surface Water	site is immediately adjacent to Rideau River
Topography	sloping southeast towards the Rideau River
Soil Cover Thickness	assumed to be covered based on land use, however thickness of cover unknown
Type of Overburden	clay and silt - erosional terraces
Direction of Groundwater Flow	assumed to be SE towards the Rideau River
Physical Setting	parkland with tree cover and including some paved trails
Other Information	Large segment of old landfill area has been removed in 1933, possibly by the action of flooding; it is possible that the eroded section may have been the area of refuse, though some refuse may still exist near the bridge. [GLL, 1984]

Site ID # Ur-34	**AND Record #** 111	**MOE Site #** x 1114	**Category of Owner** City	**HLUI Activity ID #** 6243
Other References	Gartner Lee, 1984 (Site #34); Intera, 1988 (Lf #34)			

Site Name	Bordeleau Park		
Landfill Monitoring/ Remediation	none		
Site Location	Bordeleau Park, south (west) bank of Rideau River, north of junction of Bruyere St. with Rose St.		
Easting (UTM NAD 27)	446150 (as plotted by Gartner Lee, 1984); 445950 (MOE 1991 Waste Disposal Site Inventory)	**Northing (UTM NAD 27)**	5031350
Ward #	12		
Size of Site	area approx. 0.3 ha		
Waste Thickness	estimated depth of fill 0.5 to 1 m [GLL, 1984]		
Active Time Period	from before 1928 (probably refuse) to after 1945		
Current Ownership	City of Ottawa (Bordeleau Park)		
PIN (s)	042180166, 042180170, 042180124, 042180115		

Area Served	presumably City of Ottawa
Type of Waste	unknown; cinder and ash with some charcoal encountered in probe holes under up to 0.7 m of soil cover [GLL, 1984]
Nearby Industries	St. Andrew St. Tannery - James McCullough (Leather and Allied Products Industries), 1875-1895, north side of Bruyere St. east of Rose St. [Intera #163]
Operator	City of Ottawa
Parameters of Concern	no known monitoring
Concentrations	no known monitoring
Magnitude	no known monitoring
Methane (landfill gas)	no gas encountered in the fill area [GLL, 1984]
Ecological Receptors	Rideau River ecosystem; human contact possible given current use of site as parkland, although wastes are reportedly covered
Distance to Nearest Human Receptor	the area is presently parkland with no development; closest private houses on west side of Rose St. and south side of Bruyere St. are located less than 20 m from site
Adjacent Land Use and Zoning	residential; the zoning is CG[543] F(2.5) (general commercial) in the general area of the site.
Adjacent Land Owners	private houses on Rose St. and Bruyere St.
Site Access	area is not fenced and is used by the public for recreational purposes (parkland)
Water Supply	municipally supplied water
Depth to Bedrock	3 to 5 m to interbedded bioclastic limestone, crystalline limestone and shale
Depth to Groundwater	unknown
Distance to Surface Water	site is located less than 30 m from the Rideau River
Topography	sloping north
Soil Cover Thickness	up to 0.7 m [GLL, 1984]
Type of Overburden	silty sand, silt, sand and clay - erosional terraces
Direction of Groundwater Flow	assumed to be N towards the Rideau River and the Ottawa River
Physical Setting	parkland with grass cover and some trees; includes a bicycle trail
Other Information	none

Site ID # Ur-35	**AND Record #** 073	**MOE Site #** x 1115	**Category of Owner** City	**HLUI Activity ID #** 6245
Other References	Gartner Lee, 1984 (Site #35); Intera, 1988 (Lf #35)			

Site Name	Windsor Ave.		
Landfill Monitoring/ Remediation	none		
Site Location	parking lot for Windsor Park, at the end of Windsor Ave.		
Easting (UTM NAD 27)	446980	**Northing (UTM NAD 27)**	5026650
Ward #	17		
Size of Site	area less than 0.5 ha		
Waste Thickness	depth of fill estimated at 1 to 2 m [GLL, 1988]		
Active Time Period	around 1928		
Current Ownership	City of Ottawa (Windsor Park)		
PIN (s)	041290426		

Area Served	presumably City of Ottawa
Type of Waste	not specified; cinder and ash with some glass, metal and brick fragments encountered in probe holes [GLL, 1984]
Nearby Industries	none based on available information
Operator	City of Ottawa
Parameters of Concern	no known monitoring
Concentrations	no known monitoring
Magnitude	no known monitoring
Methane (landfill gas)	no gas detected in refuse in 1984 survey [GLL, 1984]
Ecological Receptors	none
Distance to Nearest Human Receptor	private properties on Windsor Ave. are built just beside the old landfill area
Adjacent Land Use and Zoning	parkland on east side; residential on west side; the zoning is R5B (low rise apartment) in the general area of the site.
Adjacent Land Owners	1 and 4 Windsor Ave.
Site Access	accessible to public
Water Supply	municipally supplied water
Depth to Bedrock	5 to 10 m to shale with laminations of calcareous siltstone
Depth to Groundwater	unknown
Distance to Surface Water	Rideau River 40 m SE
Topography	sloping east towards the Rideau River
Soil Cover Thickness	assumed to be covered based on land use, however thickness of cover unknown
Type of Overburden	clay and silt - erosional terraces
Direction of Groundwater Flow	assumed to be SE towards the Rideau River
Physical Setting	site is currently used as a paved parking lot for Windsor Park; filled area possibly extends on adjacent lands which are grassed areas with tree cover
Other Information	none

Site ID # Ur-36	**AND Record #** -	**MOE Site #** -	**Category of Owner** Private and Government	**HLUI Activity ID #** 7070	
Other References	Gartner Lee, 1988 (Site #36); Intera, 1988 (Lf #36)				
Site Name	North of Lees Ave., Lot 6, Con D				
Landfill Monitoring/ Remediation	none				
Site Location	between Concord St, Hwy 417 and ramp from Nicolas St. onto Hwy 417W				
Easting (UTM NAD 27)	447050		**Northing (UTM NAD 27)** 5029200		
Ward #	17				
Size of Site	approx. 5.8 ha				
Waste Thickness	unknown				
Active Time Period	around 1928				
Current Ownership	private owner(s) of townhouse complexes located southeast of junction of Concord St. and Greenfield Ave., and Ontario government (Ministry of Transportation) for the undeveloped land alongside Queensway interchange access ramps				
PIN (s)	042040079, 042040075, 042040076, 042040078, 042040080, 042040077, 042040074, 042040073, 042040070, 042040062, 042040063, 042040064, 042040065, 042040066, 042040059, 042040061, 042040081, 0152960000, 152780000, 152460000, 152300000, 042040060, 042040067, 042040069, 042040068, 042040086, 042040058, 042040049, 042040051, 042040052, 042040053, 042040054, 042040055, 042040056, 042040057, 042040232				

Area Served	presumably City of Ottawa
Type of Waste	unknown; well-mixed coal fragments, brick and glass with some cinders in a silty sand matrix encountered in GLL boreholes; brick fragments, wood, metal, concrete slabs, cinders, pieces of tin clay and sands encountered of Edward J. Cuhaci Ass. boreholes (as reported by GLL)
Nearby Industries	Canadian National Railways Roundhouse (railway workshops and roundhouses), 1930s-1960s, east end of Montcalm St. near Hwy 417 - Nicolas ramp [Intera #15]; Grand Trunk Rwy. Workshops and Roundhouses (railway workshops and roundhouses), 1911-mid-1920s, east end of Montcalm St. near Hwy 417 - Nicolas ramp [Intera #16]
Operator	City of Ottawa
Parameters of Concern	see "Other Information"
Concentrations	unknown
Magnitude	unknown
Methane (landfill gas)	none detected during GLL survey conducted in 1988; not expected given inert nature of filled material
Ecological Receptors	none identified
Distance to Nearest Human Receptor	private houses located within old landfill area
Adjacent Land Use and Zoning	residential on west side; undeveloped (highway structures) on east side; the zoning is partially R5D (low rise apartment), R4A H(13.8) U(98) (multiple unit) and UR (urban reserve) in the general area of the site.
Adjacent Land Owners	private houses on west side of Concord Ave.
Site Access	filled area is located partly on private property (eastern half) and partly on public property (western half); residential is encircled with sound barrier on its eastern limit
Water Supply	municipally supplied water
Depth to Bedrock	10 to 25 m to interbedded shale, siltstone and limestone
Depth to Groundwater	unknown
Distance to Surface Water	Rideau Canal 100 m NW; Rideau River 400 m SE
Topography	terrain locally slopes to the southwest
Soil Cover Thickness	sandy silt textured fills (unknown thickness) placed over the waste filled area during construction of the Queensway interchange
Type of Overburden	clay and silt - erosional terraces
Direction of Groundwater Flow	assumed to be west towards the Rideau Canal
Physical Setting	western portion of old landfill site (residential area) has sparse tree cover; eastern portion of old landfill site (edge of highway interchange) is vacant grassed area
Other Information	NCC fax Oct. 1, 2002 indicates material consists of rubble from Queensway construction, however PAH and heavy metal contamination is an issue. No NCC reports were reviewed as part of this investigation

Site ID # Ur-37	**AND Record #** -	**MOE Site #** -	**Category of Owner** Government		**HLUI Activity ID #** 7071
Other References	Gartner Lee, 1988 (Site #37); Intera, 1988 (Lf #37)				

Site Name	King Edward and York St.		
Landfill Monitoring/ Remediation	none		
Site Location	southwest corner of King Edward and York St.		
Easting (UTM NAD 27)	446200	**Northing (UTM NAD 27)**	5030700
Ward #	12		
Size of Site	approx. 0.4 ha		
Waste Thickness	unknown		
Active Time Period	early 1900's or before		
Current Ownership	Environment Canada		
PIN (s)	042140151, 042140140, 042130207		

Area Served	presumably City of Ottawa
Type of Waste	unknown
Nearby Industries	Bytown Gasworks (Refined Petroleum and Coal Industry), 1845-1915, corner of King and York Sts. [Intera #140]
Operator	City of Ottawa
Parameters of Concern	see "Other Information"
Concentrations	unknown
Magnitude	unknown
Methane (landfill gas)	no methane monitoring performed during GLL investigation; not expected to be a concern given age of site
Ecological Receptors	human contact possible although unlikely in grassed area located in front of Environment Canada building
Distance to Nearest Human Receptor	institutional building is located on filled area; houses/businesses are located across the street north of York St., less than 40 m from filled area
Adjacent Land Use and Zoning	commercial and residential; the zoning is R7B[717] F(5.0) Sch.206 (residential/service commercial) in the general area of the site.
Adjacent Land Owners	several private owners of houses/businesses across the street north of York St./ parking lot east of King Edward
Site Access	area is not fenced
Water Supply	municipally supplied water
Depth to Bedrock	5 to 10 m to interbedded bioclastic limestone, crystalline limestone and shale
Depth to Groundwater	unknown
Distance to Surface Water	Rideau Canal 800 m S; Rideau River 750 m N
Topography	general area is flat with a slight slope towards the southwest
Soil Cover Thickness	wastes are likely covered by unknown thickness of fill
Type of Overburden	clay and silt - erosional terraces
Direction of Groundwater Flow	expected to be west towards the Ottawa River or southwest towards the Rideau Canal
Physical Setting	area is developed with a institutional building with grassed area in front of the building
Other Information	Site was investigated by Environment Canada in the late 1980's for coal tar contamination. Soils report possibly available through Environment Canada. [GLL, 1988] No reports prepared for Environment Canada were reviewed as part of this investigation.

Site ID # Ur-38	**AND Record #** 068	**MOE Site #** x 1021	**Category of Owner** City and Institutional	**HLUI Activity ID #** 6122	
Other References	Gartner Lee, 1988 (Site #38); Intera, 1988 (Lf #38); AMEC, April 2002 (Parcel A)				

Site Name	Laroche Park
Landfill Monitoring/ Remediation	NCC fax dated October 1, 2002 indicates that a Phase I and II-ESA and Audit was completed in 1996. Preliminary remediation feasibility study was completed in 1994 and there is no significant contamination of water/soil except for isolated sampling points. No NCC reports were reviewed as part of this investigation. - Although significant monitoring has been conducted at old landfill sites to the east (Ur-05 and Ur-06) as part of work carried out by AMEC (April 2002) no intrusive investigation was completed at Parcel A (Laroche Park)
Site Location	east of Stonehurst Ave: southeast portion of Laroche Park and east portion of Russian Orthodox Church property
Easting (UTM NAD 27)	443050 **Northing (UTM NAD 27)** 5028230
Ward #	15
Size of Site	area approx. 0.6 ha
Waste Thickness	unknown
Active Time Period	1928-1932
Current Ownership	City of Ottawa (Laroche Park) and Russian Orthodox Church
PIN (s)	040960210, 040960211, 040960212, 040960213, 040960216

Area Served	presumably City of Ottawa
Type of Waste	unknown; cinder, ash, glass, cobbles in a silty sand textured soil encountered in probe holes
Nearby Industries	Modern Containers Ltd. (Primary Metals Industry), 1940s, 20 Bayview Rd. [Intera #63]
Operator	presumably City of Ottawa
Parameters of Concern	see "Landfill Monitoring/Remediation"
Concentrations	analytical results exist but not available for review
Magnitude	analytical results exist but not available for review
Methane (landfill gas)	none detected during GLL survey conducted in 1988
Ecological Receptors	since area is used as a park, human contact is possible
Distance to Nearest Human Receptor	church and senior citizen residence are located on old landfill area
Adjacent Land Use and Zoning	commercial on east side; residential on south and west sides; open green space on north side; the zoning is partially L3 (community leisure) and R5A[600] H(10.7) (low rise apartment) in the general area of the site.
Adjacent Land Owners	private home owners west of Stonehurst Ave. and industries east of site
Site Access	area is fenced but currently accessible to the public
Water Supply	municipally supplied water
Depth to Bedrock	interbedded calcarenite, bioclastic limestone, crystalline limestone and shale bedrock expected at or near surface
Depth to Groundwater	unknown
Distance to Surface Water	Ottawa River 350 m NNW
Topography	generally flat
Soil Cover Thickness	wastes are assumed to be covered based on land use, however thickness of cover unknown
Type of Overburden	limited topsoil over near surface bedrock
Direction of Groundwater Flow	assumed to be N towards the Ottawa River
Physical Setting	Laroche Park is currently used as a playing field
Other Information	Several large sewage lagoons observed on 1928 aerial photographs. Earth and construction rubble used to fill lagoons and shallow low-lying areas between 1928 and 1932. [GLL, 1988]

Site ID # Ur-39	**AND Record #** -	**MOE Site #** -	**Category of Owner** Government		**HLUI Activity ID #** 7072
Other References	Gartner Lee, 1988 (Site #39); Intera, 1988 (Lf #39)				

Site Name	Southwest corner of Sussex and John Streets		
Landfill Monitoring/ Remediation	none		
Site Location	park located between Sussex Dr., John St., Thomas St. and Stanley Ave.		
Easting (UTM NAD 27)	445750	**Northing (UTM NAD 27)**	5032050
Ward #	13		
Size of Site	approx. 0.5 ha		
Waste Thickness	unknown		
Active Time Period	probably early 1900's		
Current Ownership	NCC (parkland)		
PIN (s)	042190160, 042190001, 042190002, 042190003, 042190150, 042180371, 042190152, 042220258		

Area Served	possibly City of Ottawa or community now located at former City of Vanier
Type of Waste	domestic and industrial solid waste [NCC fax, dated Oct. 1, 2002]
Nearby Industries	New Edinburgh Mills (Primary Textile Industry), 1855-1875, west side of Sussex, between Green Island and John St. [Intera #160]
Operator	City of Ottawa
Parameters of Concern	no known monitoring
Concentrations	no known monitoring
Magnitude	no known monitoring
Methane (landfill gas)	no measurement available; unlikely given age of site
Ecological Receptors	Rideau River ecosystem
Distance to Nearest Human Receptor	3 houses on east side of Thomas St. are across the road from old landfill area, approx. 25 m from old landfill site
Adjacent Land Use and Zoning	parkland on west and north sides; residential on east side; the zoning is partially EW[574] (waterway corridor) and CG[543] F(1.0) H(10) (general commercial) in the general area of the site.
Adjacent Land Owners	private houses: 11 and 15 Thomas St., 38 Stanley Ave.; parkland: 47 and 50 Sussex Dr.
Site Access	area is not fenced and is used by the public for recreational purposes (parkland)
Water Supply	municipally supplied water
Depth to Bedrock	2 to 3 m to interbedded bioclastic limestone, crystalline limestone and shale
Depth to Groundwater	unknown
Distance to Surface Water	Rideau River 30 m S
Topography	area is generally flat
Soil Cover Thickness	wastes covered by 1 to 2 m of soil cover [NCC fax, dated Oct. 1, 2002]
Type of Overburden	till: plain with local relief; bedrock at surface near the site
Direction of Groundwater Flow	assumed to be southwest towards the Rideau River
Physical Setting	grassed parkland with sparse tree cover
Other Information	NCC fax dated October 1, 2002 indicates that domestic and industrial solid waste was found 1 to 2 m below the surface. No NCC reports were reviewed as part of this investigation.

Site ID # Ur-40	**AND Record #** -	**MOE Site #** -	**Category of Owner** Institutional		**HLUI Activity ID #** 7073
Other References	Gartner Lee, 1988 (Site #40); Intera, 1988 (Lf #40)				

Site Name	Between Henderson and King Edward Streets, south of Templeton St.		
Landfill Monitoring/ Remediation	none		
Site Location	University of Ottawa sports complex, located between King Edward Ave., Mann Ave., Templeton St. and extension of Henderson Ave., west side of University arena		
Easting (UTM NAD 27)	446950	**Northing (UTM NAD 27)**	5029600
Ward #	12		
Size of Site	approx. 0.8 ha		
Waste Thickness	unknown		
Active Time Period	unknown, but likely prior to 1928		
Current Ownership	University of Ottawa		
PIN (s)	042050248, 042050241, 042050247, 042050229		

Area Served	presumably City of Ottawa
Type of Waste	unknown; building rubble, concrete slabs, bricks, pieces of coal and some cinder encountered in probe holes
Nearby Industries	Ottawa and New York Railway Workshops (railway workshops and roundhouses), 1920s, west side King Edward, between Templeton and Gladstone [Intera #140]
Operator	City of Ottawa
Parameters of Concern	no known monitoring
Concentrations	no known monitoring
Magnitude	no known monitoring
Methane (landfill gas)	no measurement available; unlikely given age of site
Ecological Receptors	none identified
Distance to Nearest Human Receptor	closest building (University pavilion) is located approximately 20 metres west of the site
Adjacent Land Use and Zoning	residential on southeast side, and institutional all else where; the zoning is R5C[89] H(13.8) (low rise apartment) in the general area of the site.
Adjacent Land Owners	private house at 56 Templeton St.
Site Access	institutional area accessible to public
Water Supply	municipally supplied water
Depth to Bedrock	10 to 15 m to interbedded shale, siltstone and limestone
Depth to Groundwater	unknown
Distance to Surface Water	Rideau Canal 200 m SW
Topography	general area has a slight slope southeast towards the Rideau River
Soil Cover Thickness	assumed to be covered based on land use, however thickness of cover unknown
Type of Overburden	clay and silt - erosional terraces
Direction of Groundwater Flow	assumed east towards the Rideau River
Physical Setting	site is developed with institutional building (sports complex)
Other Information	It is possible that most wastes were excavated during recent construction of University of Ottawa sports complex.

Site ID # Ur-41	**AND Record #** -	**MOE Site #** -	**Category of Owner** Private		**HLUI Activity ID #** 7075
Other References	Gartner Lee, 1988 (Site #41); Intera, 1988 (Lf #41); Bayswater/Somerset / Closed Landfill Site folder				

Site Name	Bayswater and Wellington
Landfill Monitoring/ Remediation	none
Site Location	between Wellington St., Bayswater Ave., Somerset St. and Spadina Ave.
Easting (UTM NAD 27)	443500 **Northing (UTM NAD 27)** 5028150
Ward #	15
Size of Site	approx. 0.3 ha
Waste Thickness	approx. 1 m [GLL, 1988]
Active Time Period	unknown, but likely prior to 1928
Current Ownership	businesses/industries located at 1079, 1085, 1089 Somerset St., 1 Spadina Ave, 10 Bayswater Ave. and 930 Wellington St. (Car Country Canada Ltd.)
PIN (s)	040980030, 040980029, 040980028, 040980027, 040980026, 040980023, 040980021, 040980006, 040980002, 040980024

Area Served	presumably City of Ottawa
Type of Waste	unknown; glass, crushed stone, brick fragments and other construction rubble encountered in probe holes
Nearby Industries	Canadian Oil Co. Ltd. (bulk storage of oil and gas), 1920s-1930s, east side of Breezhill, north of Somerset [Intera #62]; CP Railway Roadhouse (railway workshops and roundhouses), 1920s-1950s, NE corner of Bayview and O'Mera Ave. [Intera #62]; CPR Roundhouse - early (railway roundhouse), 1890s-1920s, north of Wellington at Breezhill Ave. N [Intera #76]
Operator	City of Ottawa
Parameters of Concern	no known monitoring
Concentrations	no known monitoring
Magnitude	no known monitoring
Methane (landfill gas)	no methane detected during GLL survey conducted in 1988
Ecological Receptors	none expected since most of the area is paved and no water body located close-by
Distance to Nearest Human Receptor	town house complex (?) located across Bayswater Ave. east of old landfill site; closest houses are approx. 40 m away from the site
Adjacent Land Use and Zoning	residential on east side, commercial all elsewhere; the zoning is partially L2[317] (leisure linkage) and R5A[160] H(24) (low rise apartment) in the general area of the site.
Adjacent Land Owners	24 Spadina Ave. and 1073 Somerset St. on southeast side, 2 Spadina Ave. on southwest side, properties northwest of Wellington St. and south of Somerset St.
Site Access	old landfill site mostly located on private property
Water Supply	municipally supplied water
Depth to Bedrock	bedrock at surface
Depth to Groundwater	water table encountered 1.2 m below ground level during GLL survey conducted in 1988
Distance to Surface Water	Ottawa River 550 m NNW
Topography	general area has a slight slope to the north and northeast
Soil Cover Thickness	wastes covered in one area by a thin cover (0.05m) of asphalt and crushed stone fill
Type of Overburden	generally bedrock is at the surface
Direction of Groundwater Flow	assumed north towards the Ottawa River
Physical Setting	area is developed with commercial buildings and is paved on most of its surface
Other Information	none

Site ID # Ur-42	**AND Record #** -	**MOE Site #** -	**Category of Owner** City, Government and Private	**HLUI Activity ID #** 7074	
Other References	Gartner Lee, 1988 (Site #42); Intera, 1988 (Lf #42)				

Site Name	Young and Fairmont		
Landfill Monitoring/ Remediation	none		
Site Location	between Hwy 417, Fairmount Ave., Kinnear St. and wooded area extending north of Fairmount Park		
Easting (UTM NAD 27)	443600	**Northing (UTM NAD 27)**	5027375
Ward #	15		
Size of Site	approx. 0.4 ha		
Waste Thickness	unknown		
Active Time Period	around 1928 to 1932		
Current Ownership	Ministry of Transportation (undeveloped land south of Hwy 417), City of Ottawa (road allowance at Young St.), private houses at 235 and 237 Fairmount Ave. and 170, 172 and 174 Young St.		
PIN (s)	041000203, 041000201, 041000200, 041000020, 041000009, 041000007, 041000003, 041000002, 041000001, 041000008		

Area Served	presumably City of Ottawa
Type of Waste	unknown
Nearby Industries	none based on available information
Operator	City of Ottawa
Parameters of Concern	no known monitoring
Concentrations	no known monitoring
Magnitude	no known monitoring
Methane (landfill gas)	no methane detected during GLL survey conducted in 1988
Ecological Receptors	human contact possible given that private houses are built within old landfill area
Distance to Nearest Human Receptor	private houses are built within old landfill area
Adjacent Land Use and Zoning	residential; the zoning is R2F (semi-detached house) in the general area of the site.
Adjacent Land Owners	9, 11 and 15 Kinnear St., 241 Fairmount Ave. are immediately south of old landfill area; vacant land at 155 Young St. is immediately northeast of old landfill area; houses west of Fairmount Ave. and east of Fairmount Park
Site Access	old landfill site is located on private property
Water Supply	municipally supplied water
Depth to Bedrock	interbedded calcarenite and crystalline limestone bedrock (possibly to the east with interbedded bioclastic limestone, crystalline limestone and shale bedrock) outcrops nearby site
Depth to Groundwater	water table encountered 1.2 m below ground level during GLL survey conducted in 1988
Distance to Surface Water	Dow's Lake 1.1 km SE; Ottawa River 1.4 km NW
Topography	site is located between two localized topographic highs located to the east and west; ground slopes north locally
Soil Cover Thickness	waste fill covered with silty sand textured soils probably originating from Queensway construction work
Type of Overburden	bedrock outcrops on or near site
Direction of Groundwater Flow	possibly north towards the Ottawa River given local topography
Physical Setting	site is developed with private residences with partial tree cover
Other Information	none

Site ID # Ur-43	**AND Record #** -	**MOE Site #** -	**Category of Owner** City and Private	**HLUI Activity ID #** 7076
Other References	Intera, 1988, pp. 101 and 105 (Lf #43); personal communication with Agriculture Canada staff (citing McLarentech Inc., Waste Site Characterization - Phase I, December 1987, and Phase Ib, June 1988, which was not reviewed as part of this study); J.D. Paterson, 1994; J.D. Paterson, 1998			

Site Name	East side of Merivale Road north of Baseline Road
Landfill Monitoring/ Remediation	MacLarentech Inc. conducted a Phase I ESA and soil and leachate monitoring (report not available for review but summarized by Agriculture Canada staff). They stated that decontamination of the site was not required based on applicable criteria and leachate toxicity data if the land use remained unchanged. Wherever unrestricted access to the site by the public was anticipated, it was recommended that a cover of at least 0.5 m of clean fill be added for protection from general debris and from chronic exposure to compounds found to be marginally in excess of applicable criteria. - J.D. Paterson conducted an environmental site characterization report for Cumming Cockburn Ltd. in 1994 which included an historical review, excavation of exploratory test pits (41) and trenches (4), electromagnetic and magnetometric surveys and soil and groundwater monitoring (11 soil samples / 3 GW samples submitted). It was recommended to excavate and dispose of contaminated soils and to treat impacted groundwater. [Paterson, 1994] Impacted soil and waste material covering an area of approx. 90 m by 50 m was excavated under the supervision of Paterson for Ashcroft Homes in 1998. Excavated material was screened to separate debris from the soil and stockpiled separately; material that tested above the applicable criteria and large debris were hauled off site to Trail Road Landfill (total approx 4,500 cubic metres) while the native material that tested under the remediation criteria remained on site. Report states that the site has been fully remediated to meet MOE guideline for residential use. [Paterson, 1998]
Site Location	part of municipal park (200 Central Park Rd.) and vacant land (110 Central Park Rd.) located within area bounded by Central Pak Dr., west of Merivale Rd. and north of Baseline Rd.
Easting (UTM NAD 27)	442200 **Northing (UTM NAD 27)** 5023950
Ward #	16
Size of Site	approx. 0.35 ha; wastes and soil impacted to above MOE criteria was reportedly completely removed from site in 1998 [Paterson, 1998]
Waste Thickness	up to 1 m, based on subsurface investigation by McLarenth Inc.
Active Time Period	from 1951-1959, and from 1959-1972 [Agriculture Canada]
Current Ownership	City of Ottawa (parkland at 200 Central Park Dr.) and Ashcroft Developments Inc. (110 Central Park Dr.)
PIN (s)	039980678, 039980667, 039980666

Area Served	wastes produced by Agriculture Canada (Experimental Farm)
Type of Waste	first period: tree stumps, construction rubble, rubber tires (reportedly incinerated using dynamite as igniters); later period: various laboratory wastes from Agriculture Canada (also reportedly incinerated whenever possible) [Agriculture Canada]; metal, wood, concrete pieces intermixed with sand and gravel with occasional thin layers of cinders and ashes encountered in test pits [Paterson, 1994]
Nearby Industries	none based on available information
Operator	Agriculture Canada - Experimental Farm
Parameters of Concern	potentially several chemical compounds included in pesticides [based on McLarenth report]; lead in soil, copper in groundwater [Paterson, 1994]; heavy metals including arsenic, lead, copper and zinc in soil [Paterson, 1998]
Concentrations	lead in soil = 500 ppm (criteria 375 ppm), copper in GW = 0.01 mg/L (PWQO 0.005 mg/L) [Paterson, 1994]; concentrations in soil were found to be above the provincial soil remediation criteria [Paterson, 1998]; copper in groundwater = 0.01 mg/L at two locations (criteria 0.005 mg/L) (0.023 mg/L ?) [Paterson, 1994]
Magnitude	multiple sampling areas throughout the site [Paterson, 1994 and 1998]
Methane (landfill gas)	no measurement available; not expected given nature of wastes, and also since wastes were reportedly burnt
Ecological Receptors	human contact possible given the use of site as parkland
Distance to Nearest Human Receptor	closest residences on south side of Central Park Dr., south of the site, are located approx. 50 m away; during the site visit, it appeared that foundations were dug at the property at 110 Central Park Dr.: further development on this property could increase potential exposure levels to human receptors if waste has not all been removed
Adjacent Land Use and Zoning	residential to the north and south, recreational east, vacant land (probably to be developed with residential building) west; the zoning is partially L1[692] (major open space) and R5A[160] H(24) (low rise apartment) in the general area of the site.
Adjacent Land Owners	private owners of homes located south of Central Park Dr.
Site Access	located on municipal property (playgrounds) and private property (residential); not fenced
Water Supply	municipally supplied water
Depth to Bedrock	0 to 3 m to interbedded calcarenite and crystalline limestone; 0 to 2.9 m to bedrock [Paterson, 1994]
Depth to Groundwater	groundwater infiltration at 1 m BGL [Paterson, May 11/94]; groundwater not encountered in test pits [Paterson, 1998]
Distance to Surface Water	Rideau River 2.5 km ESE; Ottawa River 3.3 km NW
Topography	area is generally flat
Soil Cover Thickness	approx. 0.3 m to 0.4 m of heterogeneous fill (assumed clean) before waste was excavated [Agriculture Canada]
Type of Overburden	till: plain with local relief; bedrock outcrops at or near site; sandy silt to silty clay overlying bedrock [Paterson, 1998]
Direction of Groundwater Flow	assumed to be southeast towards the Rideau River based on bedrock surface elevation; groundwater flow in the upper bedrock zone flows towards the east [Paterson, 1994]
Physical Setting	site is currently used as park, playground and tennis court, immediately east; high-rise residential building was being built in 2002 in the west section of the site
Other Information	Site is not considered to pose an environmental threat or impact by Environment Canada [Intera, 1988, p. 105]

Site ID # Ur-46	**AND Record #** -	**MOE Site #** -	**Category of Owner** Private	**HLUI Activity ID #** GAL 2
Other References	Heritage Research Ass., 1991 (Dumps # 1 and # 2); Dames & More, 1991			

Site Name	Beechwood Ave.
Landfill Monitoring/ Remediation	none
Site Location	location is not defined precisely; two or three blocks bounding Beechwood Ave. southeast, between Charlevoix St. and Marier Ave. (Area 1 in Heritage report) and about 1.2 ha of the lands bounded by Charlevoix St., Barrette St., St. Charles St. and Alice St. (Area 2 in Heritage report)
Easting (UTM NAD 27)	approx. 447300 **Northing (UTM NAD 27)** approx. 5031800
Ward #	12
Size of Site	total area possibly containing wastes is approx. 13 ha, but actual filled area is likely much smaller
Waste Thickness	unknown
Active Time Period	possibly 1906-1912 (Area 1) and 1912-1922 (Area 2)
Current Ownership	multiple private owners
PIN (s)	042350496, 042250225, 042350511, 042350510, 042350509, 042350508, 042350507, 042350506, 042350505, 042350504, 042350503, 042350489, 042350501, 042350499, 042350497, 042350495, 042350490, 042350498, 042350491, 042210321, 042350492, 042350493, 042350494, 042350500, 042350502, 042350241, 042350532, 042350533, 042350247, 042350246, 042350245, 042350244, 042250147, 042350242, 042350529, 042350240, 042350239, 042350238, 042350237, 042350411, 042350235, 042350233, 042350243, 042350522, 042350484, 042350513, 042350514, 042350515, 042350516, 042350517, 042350518, 042350531, 042350521, 042350530, 042350523, 042350524, 042350524, 042350526, 042350527, 042350528, 042350512, 042350520, 042350440, 042350456, 042350455, 042350454, 042350453, 042350452, 042350451, 042350450, 042350449, 042350448, 042350447, 042350446, 042350445, 042350444, 042350486, 042350434, 042350412, 042350413, 042350414, 042350423, 042350424, 042350442, 042350427, 042350441, 042350435, 042350436, 042350437, 042350438, 042350439, 042350459, 042350425, 042350481, 042350457, 042350476, 042350477, 042350478, 042350479, 042350474, 042350480, 042350473, 042350482, 042350483, 042350234, 042350485, 042350232, 042350487, 042350322, 042350466, 042350488, 042350460, 042350461, 042350462, 042350463, 042350475, 042350465, 042350458, 042350467, 042350468, 042350469, 042350470, 042350471, 042350472, 042350464, 042350173, 042350183, 042350236, 042350536, 042350231, 042350166, 042350167, 042350168, 042350169, 042350170, 042350170, 042350546, 042350172, 042350548, 042350174, 042350175, 042350176, 042350177, 042350178, 042350179, 042350180, 042350181, 042350182, 042350171, 042350560, 042350571, 042350570, 042350569, 042350568, 042350567, 042350566, 042350565, 042350564, 042350563, 042350545, 042350561, 042350535, 042350559, 042350558, 042350557, 042350556, 042350554, 042350553, 042350551, 042350550, 042350549, 042350562, 042350216, 042350204, 042350205, 042350206, 042350207, 042350208, 042350209, 042350210, 042350211, 042350212, 042350213, 042350203, 042350184, 042350215, 042350218, 042350219, 042350220, 042350221, 042350222, 042350223, 042350224, 042350225, 042350226, 042350228, 042350214, 042350190, 042350199, 042350198, 042350185, 042350196, 042350194, 042350193, 042350200, 042350191, 042350197, 042350189, 042350188, 042350187, 042350186, 042350202, 042350217, 042350192, 042350201, 042350195 (associated with the waste footprint) - 042350443, 042350539, 042350544, 042350547, 042350555 (associated with other properties around the waste footprint)

Area Served	City of Ottawa and former Town of Eastview
Type of Waste	ashes (Area 1); garbage, ashes and other refuse (Area 2)
Nearby Industries	Dominion Bridge Company Ltd. operated a steel fabrication plant with an adjoining storage yard from 1912 to 1968 on parts of the lands bounded by Landry St., Vanier Pkwy and Baribeau St.; McKay Smelters operated between 1924-1959 on property located west of intersection of Landry St. and Charlevoix St.; various oil and metal related industries operated at 108 Laval St. from 1947 to 1973
Operator	dump area managed and maintained by contractor to City of Ottawa (Ottawa City Cartage Co.) [Heritage Research Ass., 1991]
Parameters of Concern	no known monitoring
Concentrations	no known monitoring
Magnitude	no known monitoring
Methane (landfill gas)	no measurement available; not expected to be a concern given age of site
Ecological Receptors	Rideau River ecosystem; human contact possible given that private residences are built within former waste disposal site
Distance to Nearest Human Receptor	numerous residential and commercial buildings are located within former waste disposal site
Adjacent Land Use and Zoning	commercial and residential; multiple zones in the general area of the site
Adjacent Land Owners	multiple private owners
Site Access	located on private property
Water Supply	municipally supplied water
Depth to Bedrock	approx. 3 m to reach a bedrock of shale with laminations of calcareous siltstone
Depth to Groundwater	unknown
Distance to Surface Water	Rideau River 150 m SW
Topography	slight slope to the southwest
Soil Cover Thickness	assumed to be covered based on land use, however thickness of cover unknown
Type of Overburden	till plain with local relief
Direction of Groundwater Flow	assumed to be southwest towards the Rideau River
Physical Setting	area is entirely developed with a few commercial buildings along Beechwood Ave. and residential dwellings elsewhere
Other Information	Two former waste disposal sites identified in Heritage Research Ass. report were combined and are presented as one site since they are reported to cover some common area, to have been operated in similar time period and to contain similar type of waste material. - Notice of information sent by the City of Ottawa on July 24, 2002 to residents/homeowners living on portion of this site to ensure that they were made aware of the risks of exposure to soil contaminants.

Site ID # Ur-47	**AND Record #** -	**MOE Site #** -	**Category of Owner** Private	**HLUI Activity ID #** GAL 12
Other References	Heritage Research Ass., 1991 (Dump # 3); Dames & More, 1991			

Site Name	Rideau View Estate
Landfill Monitoring/ Remediation	none
Site Location	location is not defined precisely; possibly lands located between Landry St. and Vanier Pkwy to where Alice St. intersects Landry Ave., and parts of lands located between Genest St., St. Charles St. and Alice St.
Easting (UTM NAD 27)	approx. 447300 **Northing (UTM NAD 27)** approx. 5031600
Ward #	12
Size of Site	total area possibly containing wastes is approx. 3 ha, but actual filled area likely much smaller
Waste Thickness	unknown
Active Time Period	possibly 1912-1933
Current Ownership	multiple private owners
PIN (s)	042350416, 042350433, 042360206, 042350432, 042350431, 042350430, 042350429, 042350443, 042350428, 154980000, 042350415, 042350420, 042350555, 042350422, 042350421, 154560000, 042350426, 042350417, 042350419, 042350418

Area Served	City of Ottawa and former Town of Eastview
Type of Waste	mostly garbage, ashes and refuse; possible industrial wastes in the period 1927-1933
Nearby Industries	Dominion Bridge Company Ltd. operated a steel fabrication plant with an adjoining storage yard from 1912 to 1968 on parts of the lands bounded by Landry St., Vanier Pkwy and Baribeau St.
Operator	City of Ottawa [Heritage Research Ass., 1991]
Parameters of Concern	no known monitoring; heavy metals and petroleum contamination was detected in soil samples from Dominion Bridge Co. property, located immediately east of site [Dames & Moore, 1991]
Concentrations	no known monitoring
Magnitude	no known monitoring
Methane (landfill gas)	no measurement available; not expected to be a concern given age of site
Ecological Receptors	Rideau River ecosystem; human contact possible given that private residences are built within former waste disposal site
Distance to Nearest Human Receptor	high-rise building (40 Landry St.) and numerous residential buildings are located within former waste disposal site
Adjacent Land Use and Zoning	residential to the north, parkland to the south; vacant land to the east; multiple zones in the general area of the site
Adjacent Land Owners	multiple private owners to the north and east; NCC to the south
Site Access	located on private property
Water Supply	municipally supplied water
Depth to Bedrock	approx. 12 to 15 m (thickness of overburden increases towards the Rideau River) to reach a bedrock of shale with laminations of calcareous siltstone
Depth to Groundwater	unknown
Distance to Surface Water	Rideau River 110 m SW
Topography	slight slope to the southwest
Soil Cover Thickness	assumed to be covered based on land use, however thickness of cover unknown
Type of Overburden	till plain with local relief
Direction of Groundwater Flow	assumed to be southwest towards the Rideau River
Physical Setting	north portion of site is developed with residential buildings, southwest portion, with high-rise apartment building, and southeast portion is vacant land
Other Information	HLUI Activity ID # 6309 corresponding to this site and other sites in the same area. - Other report pertaining to this site was not available during review: "Raven Beck, 1992, Review of Historical Land Use in the Landry St./Baribeau St. Area City of Vanier, prepared for the MOE, REF 91-023". - Notice of information sent by the City of Ottawa on July 24, 2002 to residents/homeowners living on portion of this site to ensure that they were made aware of the risks of exposure to soil contaminants.

Site ID # Ur-48	**AND Record #** -	**MOE Site #** -	**Category of Owner** Private	**HLUI Activity ID #** GAL 13
Other References	Heritage Research Ass., 1991 (Dump # 4); Dames & More, 1991			

Site Name	St. Charles St.
Landfill Monitoring/ Remediation	It is possible that most wastes located on the site were removed during the excavation of the foundations for the construction of apartment buildings that took place prior to 1952.
Site Location	location is not defined precisely; probable area bounded by St. Charles St., Alice St. and Landry St.
Easting (UTM NAD 27)	approx. 447500 **Northing (UTM NAD 27)** approx. 5031660
Ward #	12
Size of Site	approx. 0.5 ha
Waste Thickness	unknown
Active Time Period	possibly 1921-1930
Current Ownership	private owner(s) of two apartment buildings at 100 Alice St. and of apartment building at 76 St. Charles St.
PIN (s)	042350409, 042350543, 042350410

Area Served	site received mainly wastes produced by Dominion Bridge Co.
Type of Waste	trade wastes produced by Dominion Bridge Co.: ashes, smelting wastes (including lead and molding sands, arsenic, antimony, lead, cadmium, cyanides and cyanide impurities and molding sands) and fabricated metal products wastes (cleaning solutions containing cyanides and heavy metals, possible chromium and cyanide, nickel, zinc, copper and cadmium); possibly wastes imported from Ottawa industries [Heritage Research Ass., 1991]
Nearby Industries	Dominion Bridge Company Ltd. operated a steel fabrication plant with an adjoining storage yard from 1912 to 1968 on parts of the lands bounded by Landry St., Vanier Pkwy and Baribeau St.
Operator	City of Ottawa [Heritage Research Ass., 1991]
Parameters of Concern	no known monitoring; heavy metals and petroleum contamination was detected in soil samples from Dominion Bridge Co. property, located immediately south of site [Dames & Moore, 1991]
Concentrations	no known monitoring
Magnitude	no known monitoring
Methane (landfill gas)	no measurement available; not expected to be a concern given age of site and type of wastes
Ecological Receptors	Rideau River ecosystem
Distance to Nearest Human Receptor	apartment buildings are built within former waste disposal site
Adjacent Land Use and Zoning	residential to the north, vacant land to the south; multiple zones in the general area of the site
Adjacent Land Owners	multiple private owners
Site Access	located on private property
Water Supply	municipally supplied water
Depth to Bedrock	approx. 6 to 11 m to reach a bedrock of shale with laminations of calcareous siltstone (thickness of overburden increases towards the Rideau River)
Depth to Groundwater	unknown
Distance to Surface Water	Rideau River 300 m SW
Topography	slight slope to the southwest
Soil Cover Thickness	assumed to be covered based on land use, however thickness of cover unknown
Type of Overburden	till plain with local relief
Direction of Groundwater Flow	assumed to be southwest towards the Rideau River
Physical Setting	site is developed with apartment buildings; about two-thirds of property is paved and remaining area grassed
Other Information	HLUI Activity ID # 6309 corresponding to this site and other sites in the same area. - Possible alternate location for this site is Block 1335 identified on 1948 Fire Insurance Plan, located between St. Ambroise St., Landry St., St. Charles St. and Alice St. - Other report pertaining to this site was not available during review: "Raven Beck, 1992, Review of Historical Land Use in the Landry St./Baribeau St. Area City of Vanier, prepared for the MOE, REF 91-023".

Site ID # Ur-49	**AND Record #** -	**MOE Site #** -	**Category of Owner** Private	**HLUI Activity ID #** GAL 14
Other References	Dames & More, 1991; Heritage Research Ass., 1991 (Dump # 5)			

Site Name	Dominion Bridge Co. Property
Landfill Monitoring/ Remediation	Dames and Moore conducted a soil and groundwater sampling program for the owner (Truscan Properties Ltd.) in 1991. They recommended that a Remedial Action plan be developed for the site.
Site Location	vacant lands located between Landry St. and Vanier Pkwy, bounded west where Alice St. intersects Landry St. and east where St. Ambroise intersects Landry St.
Easting (UTM NAD 27)	approx. 447600 **Northing (UTM NAD 27)** approx. 5031600
Ward #	12
Size of Site	approx. 3.5 ha
Waste Thickness	waste fill encountered in test pits and boreholes by Dames & Moore ranged from 0.3 m to 2.4 m thickness, with an average thickness of approx. 1.1 m
Active Time Period	possibly 1930-1945
Current Ownership	Truscan Properties Limited
PIN (s)	042360320, 042360319, 042360373, 042360371, 042360372, 042360205, 042360204, 042360203, 042360202, 042360200, 042360308, 042360201 (associated with the waste footprint) - 042350552 (associated with other properties around the waste footprint)

Area Served	site received mainly wastes produced by Dominion Bridge Co., and possibly other trade refuse from Eastview industries
Type of Waste	trade wastes produced by Dominion Bridge Co.: ashes, smelting wastes (including lead and molding sands, arsenic, antimony, lead, cadmium, cyanides and cyanide impurities and molding sands) and fabricated metal products wastes (cleaning solutions containing cyanides and heavy metals, possible chromium and cyanide, nickel, zinc, copper and cadmium); possibly wastes imported from Ottawa industries [Heritage Research Ass., 1991]; fill containing ash, glass, brick fragments, metal, pipes and porcelain was encountered in boreholes and test pits by Dames & Moore in 1991
Nearby Industries	Dominion Bridge Company Ltd. operated a steel fabrication plant with an adjoining storage yard from 1912 to 1968 on site
Operator	City of Ottawa, through a contract with former site owner, Dominion Bridge Co. [Heritage Research Ass., 1991]
Parameters of Concern	metals (arsenic, cadmium, cooper, lead, mercury, molybdenum and zinc) and oil and grease
Concentrations	in excess of provincial soil quality criteria
Magnitude	multiple sampling areas throughout the site
Methane (landfill gas)	no measurement available; not expected to be a concern given age of site and type of wastes
Ecological Receptors	Rideau River ecosystem
Distance to Nearest Human Receptor	closest residential dwellings are located approximately 15 to 20 metres from property boundaries
Adjacent Land Use and Zoning	residential to the north, west and south, recreational (Vanier Tennis Chalet) to the east; multiple zones in the general area of the site
Adjacent Land Owners	multiple private owners to the north, west and south; City of Ottawa to the east
Site Access	located on private property and fenced
Water Supply	municipally supplied water
Depth to Bedrock	2.3 to 6 metres to reach a bedrock of shale in the west portion of the site, and 1.3 to 3 metres to reach a bedrock of weathered slate in the east portion of the site [Dames & Moore, 1991]
Depth to Groundwater	unknown
Distance to Surface Water	Rideau River 300 m SW
Topography	generally flat
Soil Cover Thickness	from 0 to 1.2 m of clean fill cover wastes in boreholes drilled by Dames & Moore in 1991
Type of Overburden	heterogeneous mixture of clay to boulders to generally sandy till materials [Dames & Moore, 1991]
Direction of Groundwater Flow	assumed to be southwest towards the Rideau River
Physical Setting	site is currently grassed undeveloped area
Other Information	HLUI Activity ID # 6309 corresponding to this site and other sites in the same area. - Unauthorized disposal of construction debris (bulldozed by City of Vanier in 1987) and snow disposal (by RMOC, late 1970's to mid 1980's) occurred on site. - Other report pertaining to this site was not available during review: "Raven Beck, 1992, Review of Historical Land Use in the Landry St./Baribeau St. Area City of Vanier, prepared for the MOE, REF 91-023"

Site ID # Ur-50	**AND Record #** -	**MOE Site #** -	**Category of Owner** Private and possibly Institutional	**HLUI Activity ID #** GAL 15	
Other References	Heritage Research Ass., 1991 (Dumps # 6 and # 7); Dames & More, 1991				

Site Name	Ivy Street Dump and Marier Ave. Dump
Landfill Monitoring/ Remediation	none
Site Location	location is not defined precisely; probable area is described as following: lands between St. Ambroise St., Alice St., Marier Ave. and Landry St. (becoming Shakespeare St.), lands in the vicinity of Baribeau St., part of the lands located between Alice St. and Genest St. close to Dagmar Ave., and lands in the vicinity of the junction of Marier Ave. with Des Peres Blancs Ave.
Easting (UTM NAD 27)	approx. 447675 **Northing (UTM NAD 27)** approx. 5031675
Ward #	12
Size of Site	total area possibly containing wastes is approx. 11 ha, but actual filled area is likely much smaller
Waste Thickness	unknown; area is expected to be shallower than earlier dumps in the area [Heritage Research Ass., 1991]]
Active Time Period	possibly 1932-1949
Current Ownership	mostly private owners of residential buildings; site possibly includes parts of school properties: Trillium Elementary School (135 Alice St.), Le Transit Public School (140 Genest St.), former Baribeau School (200 Baribeau St.)
PIN (s)	042350552, 042350544, 042350542, 042350541, 042350539, 042360380, 042350358, 042360302, 042360303, 042350547, 042350255, 042340007, 042350277, 042350276, 042350275, 042350274, 042350273, 042350272, 042350271, 042350279, 042350256, 042350280, 042350254, 042350253, 042340038, 042340037, 042340012, 042340011, 042340010, 042340009, 042350301, 042350270, 042350290, 042350300, 042350299, 042350298, 042350297, 042350296, 042350295, 042350294, 042350293, 042350278, 042350291, 042330339, 042350289, 042350288, 042350287, 042350286, 042350285, 042350391, 042350283, 042350360, 042350281, 042350292, 042330011, 042340008, 042330030, 042330029, 042330028, 042330027, 042330026, 042330025, 042330024, 042330032, 042330012, 042330033, 042330010, 042330009, 042330008, 042330007, 042330006, 042330005, 042330004, 042330003, 042330002, 042330013, 042330195, 042330338, 042330215, 042330214, 042330213, 042330203, 042330202, 042330200, 042330199, 042330031, 042330196, 042350284, 042330082, 042330081, 042330080, 042330079, 042330038, 042330037, 042330036, 042330035, 042330034, 042330198, 042350354, 042350366, 042350365, 042350364, 042350363, 042350362, 042350282, 042330001, 042350302, 042350357, 042350344, 042350355, 042350369, 042350353, 042350352, 042350351, 042350350, 042350349, 042350348, 042350347, 042350346, 042350345, 042350356, 042350379, 042350390, 042350389, 042350388, 042350387, 042350386, 042350385, 042350384, 042350383, 042350382, 042350367, 042350380, 042350368, 042350378, 042350377, 042350376, 042350375, 042350374, 042350373, 042350372, 042350371, 042350370, 042350359, 042350381, 042350361, 042350324, 042350323, 042350320, 042350318, 042350317, 042350316, 042350315, 042350314, 042350313, 042350325, 042350343, 042350321, 042350304, 042350305, 042350306, 042350307, 042350308, 042350309, 042350310, 042350311, 042350312, 042350303, 042350330, 042350339, 042350337, 042350336, 042350335, 042350340, 042350334, 042350319, 042350341, 042350326, 042350338, 042350331, 042350333, 042350329, 042350328, 042350342, 042350327, 042350332 (associated with the waste footprint) - 042340013, 042340014, 042340015, 042340016, 042340017, 042340018, 042340019, 042340020, 042340021, 042340022, 042340154, 042340157 (associated with other properties around the waste footprint)

Area Served	City of Ottawa and Town of Eastview
Type of Waste	garbage, ashes and refuse; some industrial wastes may have been filled in area located in the vicinity of Marier Ave. and Des Peres Blancs Ave. in the period following 1945
Nearby Industries	Dominion Bridge Company Ltd. operated a steel fabrication plant with an adjoining storage yard from 1912 to 1968 on parts of the lands bounded by Landry St., Vanier Pkwy and Baribeau St.; various metal related industries operated at 114 Marier from 1952 to 1990
Operator	City of Ottawa operating under umbrella provided by County of Carleton, except for site located in the vicinity of Marier Ave. and Des Peres Blancs, where site was operated by Town of Eastview [Heritage Research Ass., 1991]
Parameters of Concern	no known monitoring
Concentrations	no known monitoring
Magnitude	no known monitoring
Methane (landfill gas)	no measurement available
Ecological Receptors	human contact possible given that private residences are built within former waste disposal site
Distance to Nearest Human Receptor	numerous residential buildings are built within former waste disposal site
Adjacent Land Use and Zoning	residential and institutional (schools); multiple zones in the general area of the site
Adjacent Land Owners	multiple private owners
Site Access	located on private property
Water Supply	municipally supplied water
Depth to Bedrock	approx. 3 to 6 m to reach a bedrock of shale with laminations of calcareous siltstone
Depth to Groundwater	unknown
Distance to Surface Water	Rideau River approx. 500 m SW
Topography	slight slope to the south in the general area of the site
Soil Cover Thickness	assumed to be covered based on land use, however thickness of cover unknown
Type of Overburden	till plain with local relief
Direction of Groundwater Flow	assumed to be southwest towards the Rideau River
Physical Setting	site is entirely developed as a residential neighbourhood
Other Information	HLUI Activity ID # 6309 corresponding to this site and other sites in the same area. - Two former waste disposal sites identified in Heritage Research Ass. report were combined and are presented as one site since they are reported to cover some common area, to have been operated in similar time period and to contain similar type of waste material. - Other report pertaining to this site was not available during review: "Raven Beck, 1992, Review of Historical Land Use in the Landry St./Baribeau St. Area City of Vanier, prepared for the MOE, REF 91-023" - Notice of information sent by the City of Ottawa on July 24, 2002 to residents/homeowners living on portion of this site to ensure that they were made aware of the risks of exposure to soil contaminants.

Site ID # Ur-51	**AND Record #** -	**MOE Site #** -	**Category of Owner** City and Government	**HLUI Activity ID #** GAL 3	
Other References	Heritage Research Ass., 1991 (Dump Perimeter -2); Dames & More, 1991				

Site Name	St. Patrick Bridge
Landfill Monitoring/ Remediation	none
Site Location	location is not certain; most likely between Vanier Pkwy and the Rideau River close to St. Patrick Bridge
Easting (UTM NAD 27)	approx. 446950 **Northing (UTM NAD 27)** approx. 5031600
Ward #	12 & 13
Size of Site	total area possibly containing wastes is approx. 1 ha, but actual filled area could be smaller
Waste Thickness	unknown
Active Time Period	possibly 1918-1932
Current Ownership	NCC and City of Ottawa (201 Stanley Ave. and 307 Crichton St.)
PIN (s)	042180327, 042180330, 042180331, 042360377, 042180332, 042180333, 042180350 (associated with the waste footprint) - 042360326 (associated with other properties around the waste footprint)

Area Served	probably City of Ottawa and possibly CPR
Type of Waste	possibly ashes from municipal wastes or ashes from industrial wastes
Nearby Industries	Dominion Bridge Company Ltd. operated a steel fabrication plant with an adjoining storage yard from 1912 to 1968 on parts of the lands bounded by Landry St., Vanier Pkwy and Baribeau St.
Operator	City of Ottawa operating under umbrella of County roads commission [Heritage Research Ass., 1991]
Parameters of Concern	no known monitoring
Concentrations	no known monitoring
Magnitude	no known monitoring
Methane (landfill gas)	no measurement available; unlikely given age of site and type of wastes
Ecological Receptors	Rideau River ecosystem; possible human contact given that area is used as park
Distance to Nearest Human Receptor	approximately 30 metres to closest residential buildings to the north
Adjacent Land Use and Zoning	residential and commercial; multiple zones in the general area of the site
Adjacent Land Owners	multiple private owners
Site Access	site is located on public grounds and is not fenced
Water Supply	municipally supplied water
Depth to Bedrock	approx. 3 to 9 m to reach a bedrock of shale with laminations of calcareous siltstone (thickness of overburden generally increases to the southeast)
Depth to Groundwater	unknown
Distance to Surface Water	site is located immediately adjacent to Rideau River on the north (east) bank
Topography	generally flat with a gentle slope towards the Rideau River
Soil Cover Thickness	assumed to be covered based on land use, however thickness of cover unknown
Type of Overburden	erosional terraces; silt and silty clay [Dames and Moore, 1991]
Direction of Groundwater Flow	assumed to be south towards the Rideau River
Physical Setting	area is used as parkland with grass cover and some trees
Other Information	none

Site ID # Ur-52	**AND Record #** -	**MOE Site #** -	**Category of Owner** Private		**HLUI Activity ID #** 6305
Other References	Heritage Research Ass., 1991 (Dump Perimeter -4); Dames & More, 1991				

Site Name	Lenore Place and Coupal Street
Landfill Monitoring/ Remediation	none
Site Location	location is not certain; probable area located between Vanier Pkwy, North River Rd. and Coupal St.
Easting (UTM NAD 27)	approx. 447525 **Northing (UTM NAD 27)** approx. 5031450
Ward #	12
Size of Site	approx. 2 ha
Waste Thickness	unknown
Active Time Period	before 1932
Current Ownership	multiple private owners
PIN (s)	042360232, 042360323, 042360326, 042360374, 042360402, 042360231, 042360211, 042360401, 042360221, 042360210, 042360212, 042360214, 042360215, 042360216, 042360217, 042360218, 042360213, 042360220, 042360230, 042360222, 042360223, 042360224, 042360225, 042360226, 042360227, 042360228, 042360229, 042360219

Area Served	City of Ottawa
Type of Waste	probably municipal refuse and ashes
Nearby Industries	Dominion Bridge Company Ltd. operated a steel fabrication plant with an adjoining storage yard from 1912 to 1968 on parts of the lands bounded by Landry St., Vanier Pkwy and Baribeau St.
Operator	City of Ottawa [Heritage Research Ass., 1991]
Parameters of Concern	no known monitoring; heavy metals and petroleum contamination was detected in soil samples from Dominion Bridge Co. property, located immediately north of site [Dames & Moore, 1991]
Concentrations	no known monitoring
Magnitude	no known monitoring
Methane (landfill gas)	no measurement available; unlikely given age of site
Ecological Receptors	Rideau River ecosystem; human contact possible given that private residences are located on site
Distance to Nearest Human Receptor	several residential buildings are located within former waste disposal site
Adjacent Land Use and Zoning	residential to the east, south and west, vacant land to the north; multiple zones in the general area of the site
Adjacent Land Owners	multiple private owners
Site Access	site located on private property
Water Supply	municipally supplied water
Depth to Bedrock	approx. 15 to 18 m to reach a bedrock of shale with laminations of calcareous siltstone
Depth to Groundwater	unknown
Distance to Surface Water	Rideau River approx. 150 m SW
Topography	area is generally flat
Soil Cover Thickness	assumed to be covered based on land use, however thickness of cover unknown
Type of Overburden	erosional terraces; silt and silty clay [Dames and Moore, 1991]
Direction of Groundwater Flow	assumed to be southwest towards the Rideau River
Physical Setting	area developed with private houses
Other Information	Notice of information sent by the City of Ottawa on July 24, 2002 to residents/homeowners living on portion of this site to ensure that they were made aware of the risks of exposure to soil contaminants.

Site ID # Ur-53	**AND Record #** -	**MOE Site #** -	**Category of Owner**	Private and possibly Institutional and City	**HLUI Activity ID #** GAL 1

Other References	Heritage Research Ass., 1991 (Dump Perimeter -5); Dames & More, 1991; GAL, reports no. 951-2080 & 921-2076
Site Name	White Father's Property
Landfill Monitoring/ Remediation	A geotechnical investigation was conducted in 1995 by GAL for the RMOC/Homes for the Ages (c/o J.L. Richards and Associates Ltd.) in the north most section of the site where methane gas monitoring was carried out in boreholes at several locations. Methane venting in the vicinity of buildings was recommended [GAL, 1995]
Site Location	location is not certain; possible area includes parts of lands located between Lavergne St. and St. Denis St., parts of lands located to the southeast of Des Peres Blancs Ave., and lands located between Lavergne St., Granville St., Montfort St. and Ste. Anne St.
Easting (UTM NAD 27)	approx. 448500 **Northing (UTM NAD 27)** approx. 5031950
Ward #	12
Size of Site	total area possibly containing wastes is approx. 12 ha, but actual filled area likely much smaller
Waste Thickness	waste intercepted in the north portion of the site range from 0.7 to 4.6 m in thickness [GAL, 1995]
Active Time Period	possibly 1943-1949
Current Ownership	mostly private owners of residential and commercial buildings; site also possibly includes parts of school property (Cadieux Elementary School, 345 St. Denis St.), and municipal park (Nault Park)
PIN (s)	042310011, 042310215, 042310226, 042310225, 042310224, 042310223, 042310222, 042310221, 042310220, 042310219, 042310218, 042310205, 042310216, 042310229, 042310214, 042310213, 042310212, 042310211, 042310210, 042310209, 042310208, 042310207, 042320214, 042310217, 042310264, 042310097, 042320212, 042320211, 042320210, 042320209, 042320208, 042320207, 042320206, 042320205, 042310227, 042310267, 042310228, 042310263, 042310262, 042310261, 042310260, 042310259, 042310258, 042310257, 042310254, 042310253, 042320203, 042310107, 042310118, 042310117, 042310116, 042310009, 042310114, 042300047, 042310112, 042310111, 042310110, 042310206, 042310108, 042310138, 042310106, 042310105, 042310104, 042310103, 042310102, 042310101, 042310100, 042310099, 042310098, 042310109, 042310168, 042310203, 042310202, 042310201, 042310200, 042310175, 042310174, 042310173, 042310172, 042310171, 042310119, 042310169, 042310120, 042310167, 042310166, 042310165, 042310164, 042310163, 042310162, 042310161, 042310140, 042310139, 042320215, 042310170, 042340136, 042340151, 042340150, 042340149, 042340144, 042340143, 042340142, 042340141, 042340140, 042340139, 042340062, 042340137, 042340155, 042340135, 042340134, 042340133, 042340132, 042340131, 042340130, 042340129, 042340116, 042320213, 042340138, 042340189, 042340202, 042340201, 042340200, 042340198, 042340196, 042340195, 042340194, 042340193, 042340192, 042340153, 042340190, 042340154, 042340188, 042340187, 042340186, 042340161, 042340160, 042340159, 042340158, 042340157, 042340156, 042340061, 042340191, 042320225, 042320236, 042320235, 042320234, 042320233, 042320232, 042320231, 042320230, 042320229, 042320228, 042340063, 042320226, 042320271, 042320224, 042320223, 042320222, 042320221, 042320220, 042320219, 042320218, 042320217, 042320216, 042320227, 042340022, 042340033, 042340032, 042340031, 042340030, 042340029, 042340028, 042340027, 042340026, 042340025, 042320237, 042340023, 042320264, 042340021, 042340020, 042340019, 042340018, 042340017, 042340016, 042340015, 042340014, 042340013, 042310113, 042340024, 042310002, 042310015, 042310014, 042310013, 042310012, 042310010, 042310008, 042310007, 042310006, 042310005, 042300280, 042310003, 042310018, 042310001, 042300298, 042300297, 042300296, 042300293, 042300290, 042300289, 042300288, 042310040, 042310004, 042310028, 042310039, 042310038, 042310037, 042310036, 042310035, 042310034, 042310033, 042310032, 042310031, 042310016, 042310029, 042310017, 042310027, 042310026, 042310025, 042310096, 042310023, 042310115, 042310021, 042310020, 042310019, 042300260, 042310030, 042300057, 042300068, 042300067, 042300066, 042300065, 042300064, 042300063, 042300062, 042300061, 042300060, 042300287, 042300058, 042300071, 042300056, 042300055, 042300054, 042300053, 042300052, 042300051, 042300050, 042300049, 042300048, 042300059, 042300081, 042300259, 042300258, 042300257, 042300256, 042300250, 042300090, 042300089, 042300088, 042300084, 042300069, 042300082, 042300070, 042300080, 042300079, 042300078, 042300077, 042300076, 042300075, 042300074, 042300073, 042300072, 042310024, 042300083, 042310069, 042310077, 042310076, 042310075, 042310074, 042310073, 042310072, 042310062, 042310070, 042310080, 042310022, 042310067, 042310041, 042310065, 042310064, 042310063, 042310071, 042310087, 042310095, 042310094, 042310093, 042310092, 042310091, 042310090, 042310078, 042310088, 042310079, 042310086, 042310085, 042310084, 042310083, 042310082, 042310081, 042310066, 042310089, 042310050, 042310060, 042310059, 042310058, 042310056, 042310068, 042310054, 042310053, 042310061, 042310051, 042310057, 042310049, 042310048, 042310047, 042310046, 042310045, 042310044, 042310043, 042310042, 042310052, 042310055

Area Served	City of Ottawa
Type of Waste	garbage, refuse and ashes; ashes, cinders, wood, metal, glass, brick, mortar, concrete, wire, pipe, rubber, plastic, fuses, spark plugs, rags and rubble intercepted in boreholes drilled in the northern portion of the site [GAL, 1995]; pieces of wood and glass mixed with silty sand fill intercepted along Boudreau St. and pieces of glass, wire and wood mixed with sand and gravel fill intercepted along St. Denis St. between Bradley Ave. and Granville St. [GAL, 1992]
Nearby Industries	none based on available information
Operator	City of Ottawa [Heritage Research Ass., 1991]
Parameters of Concern	no known monitoring
Concentrations	no known monitoring
Magnitude	no known monitoring
Methane (landfill gas)	combustible gas concentration in boreholes located in the northern portion of site ranged from 0% to in excess of 100% LEL [GAL, 1995]; also see "Landfill Monitoring/Remediation"
Ecological Receptors	human contact possible given that private residences are located on site
Distance to Nearest Human Receptor	several residential buildings are located within former waste disposal site
Adjacent Land Use and Zoning	mostly residential, with some commercial and institutional (schools) ; multiple zones in the general area of the site
Adjacent Land Owners	multiple private owners
Site Access	site located for the most part on private property; some area possibly located on public land (Nault Park)
Water Supply	municipally supplied water
Depth to Bedrock	approx. 2 to 3 m to reach a bedrock of shale with laminations of calcareous siltstone
Depth to Groundwater	from 3.3 to 5.2 m BGL in north central portion of site [GAL, June 28, 1995]
Distance to Surface Water	Rideau River approx. 800 m SW
Topography	flat to rolling topography
Soil Cover Thickness	topsoil sometimes underlain by sand fill range from 0.24 to 1.5 m in thickness
Type of Overburden	till plain with local relief
Direction of Groundwater Flow	possibly southwest towards the Rideau River
Physical Setting	area is entirely developed with residential dwellings and a few commercial buildings, with the exception of Nault Park
Other Information	none

Site ID # Ur-54	**AND Record #** -	**MOE Site #** -	**Category of Owner** City and Government	**HLUI Activity ID #** 6480
Other References	Township of Gloucester-File #6-13 Subject: Health-Dump on Brule Property-Box 73			

Site Name	Brûlé Property Dump
Landfill Monitoring/ Remediation	none
Site Location	part of Lot 5 division between Lots 19 and 20, bounded on the W by CNR, E by Gloria Ave (Baylie Ave)
Easting (UTM NAD 27)	approx. 447000 **Northing (UTM NAD 27)** approx. 5025700
Ward #	17
Size of Site	the property sold for waste disposal was 2.8 ha in size
Waste Thickness	unknown
Active Time Period	unknown; agreement for sale of property took place in 1947
Current Ownership	999 Heron Rd owned by the City of Ottawa and 959 Heron Rd owned by Public Works Canada
PIN (s)	041460025, 041460030 (no waste footprint defined for this site, PINs represent properties within which the waste is expected to exist)

Area Served	City of Gloucester and neighbouring City of Ottawa properties
Type of Waste	garbage, ashes, refuse and other waste
Nearby Industries	none based on available information
Operator	unknown
Parameters of Concern	no known monitoring
Concentrations	no known monitoring
Magnitude	no known monitoring
Methane (landfill gas)	no measurement available
Ecological Receptors	parkland animals and vegetation, nearby human receptors using area as leisure space
Distance to Nearest Human Receptor	residential buildings located approximately 50 m from property boundary of site purchased for waste disposal
Adjacent Land Use and Zoning	mostly residential, with some commercial and institutional nearby ; the property is zone L1 (Major Open Space) and ES (Environmentally Sensitive) in the general area of the site
Adjacent Land Owners	multiple residential property owners, roadway and taxation data centre; park (including pool and outdoor rink) and residential to the S - residential to the E - railway, Data Centre Rd and Data Centre to the W - commercial and RA Centre to the N
Site Access	site is located on publicly accessible land
Water Supply	municipally supplied water
Depth to Bedrock	15 to 50 m to interbedded shale, siltstone and limestone to the N and interbedded bioclastic limestone, crystalline limestone and shale to the S
Depth to Groundwater	unknown
Distance to Surface Water	Rideau River approx. 700 m NW; Sawmill Creek runs through the property and drains to the Rideau River
Topography	site contains a valley running between it containing Sawmill Creek
Soil Cover Thickness	assumed to be covered based on land use, however thickness of cover unknown
Type of Overburden	clay and silt - erosional terraces
Direction of Groundwater Flow	probably N to NW towards the Rideau River
Physical Setting	area is developed with generally well maintained, mature vegetation
Other Information	A promise was made that the City would properly maintain drainage of Sawmill Creek which crosses the property. Actual evidence that filling of the property occurred is not available in literature or air photos. Evidence is only that significant plans were made to use this property for waste disposal.

Site ID # Wc-01	**AND Record #** 132	**MOE Site #** a 460804 [MOE 1991	**Category of Owner** City	**HLUI Activity ID #** 5946
Other References	Torbolton Landfill folder; LF Sites Garbage Contracts folder; Ottawa-Carleton Health Department, 1991 (site no. 1) Inventory]; a 461501 [MOE Records]			

Site Name	Torbolton Con 5 Dump
Landfill Monitoring/ Remediation	none
Site Location	former Twp. Torbolton Con 5 Lot 6; north side of Vances Side Rd., approx. 450 west of junction with Greenland Rd.
Easting (UTM NAD 27)	419460 **Northing (UTM NAD 27)** 5034150
Ward #	5
Size of Site	total property 8.3 ha; filled area approximately 2.5 ha
Waste Thickness	approx. 2 to 3 metres
Active Time Period	16-ha land bought by Twp. in 1964; half of it sold in 1967; first MOE inspection of LF site 1972 (operations begin between 1967 and 1972); landfilling operations stopped in Dec. 31, 1986; capped in 1990; officially closed 1991
Current Ownership	City of Ottawa
PIN (s)	045660174

Area Served	communities within former Township of Torbolton
Type of Waste	60% domestic; 20% commercial; 20% others
Nearby Industries	none based on available information
Operator	Township of West Carleton
Parameters of Concern	no known monitoring
Concentrations	no known monitoring
Magnitude	no known monitoring
Methane (landfill gas)	no measurement available; low risk potential since wastes were not buried below ground level
Ecological Receptors	wildlife
Distance to Nearest Human Receptor	closest house is 350 metres to the northeast
Adjacent Land Use and Zoning	forested undeveloped land immediately northeast, followed by agricultural and residential (rural); quarries or undeveloped lands to the southeast; the zoning is RU (rural) in the general area of the site.
Adjacent Land Owners	private owners of house at 617 Vances Side Rd. and 3381 Greenland Rd. to the east; private owner of narrow piece of land (right-of-way) immediately west followed by 743104 Ontario Inc. (Latimer Excavating); undeveloped land to the north: 3419 Greenland Rd.; Torbolton Pit (Spratt) to the south
Site Access	site is fenced and wastes mostly covered
Water Supply	private wells
Depth to Bedrock	2 to 3 m to the interbedded quartz sandstone, shaly limestone and shale with interbeds of calcarenite and silty dolostone in upper part bedrock.
Depth to Groundwater	unknown
Distance to Surface Water	wetland 250 m to the northwest; Constance Creek 600 metres to the southwest
Topography	mostly flat with a slight slope to the southwest
Soil Cover Thickness	garbage covered with 0.60 metre of clay [C of A]
Type of Overburden	stratified medium-grained sand with some silt
Direction of Groundwater Flow	locally, assumed radial flow towards the perimeter of waste mound; regional flow probably southwest towards Constance Creek; MOE inspector suggests GW flow towards northwest
Physical Setting	wastes have been piled as mound with surrounding lands below grade of garbage; tall grass cover on site
Other Information	Illegal burning and poor covering of garbage remains a problem from 1972 to 1980, such that operation is no better than that of an open dump [Torbolton folder] - Piles of asphalt/crushed culvert/branches and stumps near the entrance of site. - Due to configuration of waste mounds; leachate quickly permeates through underlying sands, which likely prevents most surface runoff.

Site ID #	Wc-02	**AND Record #**	145 (141, 140)	**MOE Site #**	a 461006, x 9023 [MOE 1991 Waste Disposal Site	**Category of Owner** Private	**HLUI Activity ID #** 6064
Other References	State of the Environment, 1991 (site no. 3); personal communication with local contractor involved in site closing procedure Records]						

Site Name	Woodlawn Dump or Torbolton Con 2 Dump
Landfill Monitoring/ Remediation	Drinking water from neighbouring private wells (drilled in bedrock) have been sampled by MOE (Brian Dickman) 2 to 3 times, with last samples taken in 2000; no levels detected above provincial drinking water standards [personal communication, local resident]
Site Location	former Twp. Torbolton Con 2 lot 12, adjacent to Torbolton Ridge Rd on northeast side; southwest section of property at 3972 Torbolton Ridge Road
Easting (UTM NAD 27)	412925 **Northing (UTM NAD 27)** 5033575
Ward #	5
Size of Site	area approx. 0.9 ha
Waste Thickness	2.5 m below ground level [MOE records]
Active Time Period	dump site officially closed Oct. 22, 1971 [MOE records]; site active for approx. 20 years [local contractor]
Current Ownership	private individual (3972 Torbolton Ridge Rd.)
PIN (s)	045680111, 045680056, 045680119

Area Served	communities within Torbolton Township
Type of Waste	domestic wastes
Nearby Industries	gravel pits east of site
Operator	Township of Torbolton
Parameters of Concern	no parameters of concern identified based on testing of neighbouring private wells by MOE [personal communication]; also see "Landfill Monitoring/Remediation"
Concentrations	analytical results exist but not available for review
Magnitude	analytical results exist but not available for review
Methane (landfill gas)	no measurement available; possible concern, given close proximity of residential houses
Ecological Receptors	human contact possible given proximity to residential houses
Distance to Nearest Human Receptor	closest house 90 metres to the northeast
Adjacent Land Use and Zoning	residential (rural) and agricultural lands; the zoning is partially RU (rural), RU-30 (rural) and HL-1 (hazard lands) in the general area of the site.
Adjacent Land Owners	private owners of properties at 3972 Torbolton Ridge Rd. to the northeast, 3987 Torbolton Ridge Rd. to the southwest, 4007 Torbolton Ridge Rd. to the west, 4008 Torbolton Ridge Rd. to the north
Site Access	area not fenced - garbage was covered and is currently not visible at surface
Water Supply	private wells (closest well approx. 90 metres northeast)
Depth to Bedrock	25 to 50 m to interbedded quartz sandstone, shaly limestone and shale; interbeds of calcarenite and silty dolostone in upper part based on mapping. Bedrock outcrops 400 metres southwest of site based on site visit.
Depth to Groundwater	2.7 metres below ground surface - measured November 1970 [MOE records]
Distance to Surface Water	drainage ditch 425 metres to the north
Topography	mostly flat; slight slope to the north
Soil Cover Thickness	garbage covered with unknown thickness of earth fill during closure procedures
Type of Overburden	stratified sand with some silt (old location of quarry)
Direction of Groundwater Flow	likely to the northeast, based on slope of bedrock surface and presence of fault northeast of site
Physical Setting	old dump site currently covered with tall grass; ponded water accumulates in the spring time immediately north of site
Other Information	Duplicate HLUI Activity ID # 6095 corresponding to this site but location incorrect. - Drinking water from neighbouring private wells (drilled in bedrock) have been sampled by MOE (Brian Dickman) 2 to 3 times, with last samples taken in 2000; no levels detected above provincial drinking water standards.

Site ID # Wc-03	**AND Record #** 151	**MOE Site #** a 461005	**Category of Owner** City	**HLUI Activity ID #** 6029
Other References	Galetta Landfill folder; Torbolton Landfill folder, LF Sites Garbage Contracts folder; Ottawa-Carleton Health Department, 1991 (site no. 2); personal communication with Brian Carry, West District Supervisor; AMEC, excerpts 2002			

Site Name	Fitzroy Con 6 Dump (Galetta Landfill Site)
Landfill Monitoring/ Remediation	none
Site Location	former Twp. Fitzroy Con 6 Lot 21, north of Galetta Side Rd, approx. 500 m west of Loggers Way
Easting (UTM NAD 27)	402375 **Northing (UTM NAD 27)** 5031320
Ward #	5
Size of Site	filled area approx.0.9 ha
Waste Thickness	approx. 7.5 metres
Active Time Period	MOE inspection reported in 1976 (operations commence before 1976); landfilling operations stopped in Dec. 31, 1986; capped in 1990; officially closed in 1991
Current Ownership	City of Ottawa
PIN (s)	045590222, 045590223

Area Served	communities within former township of Fitzroy
Type of Waste	80% domestic, 10% commercial, 10% other [AMEC, excerpts 2002]; 90% domestic, 10% bush/wood [MOE records]; possibly wastes from lead mine closed after 1945 [Brian Carry]
Nearby Industries	none based on available information
Operator	Township of West Carleton
Parameters of Concern	no known monitoring
Concentrations	no known monitoring
Magnitude	no known monitoring
Methane (landfill gas)	no measurement available; low risk potential since wastes were not buried below ground level
Ecological Receptors	wetlands in the surroundings of site
Distance to Nearest Human Receptor	closest house 380 metres to the southwest
Adjacent Land Use and Zoning	tree nursery to the south (4789 Loggers Way); undeveloped forested land/swamps to the north, east and west; the zoning is RU (rural) in the general area of the site.
Adjacent Land Owners	private owner at 4789 Loggers Way to the south; Tumbling Waters Ltd. to the north [City of Ottawa Air "Historical Dump Sites" internal document]
Site Access	site fenced and garbage mostly covered, with a few exceptions near periphery
Water Supply	private wells
Depth to Bedrock	igneous and metamorphic rock outcrops visible in the immediate vicinity of site
Depth to Groundwater	probably near the base of wastes, since water ponding at ground surface around the waste mound
Distance to Surface Water	wetland 100 m to the north; Mississippi River 550 metres to the southeast
Topography	garbage mound approximately 7.5 metres above-grade surrounded by relatively flat lands
Soil Cover Thickness	garbage covered with 0.60 metre of clay [C of A]
Type of Overburden	thin soil cover over Pre-Cambrian bedrock
Direction of Groundwater Flow	locally radial flow towards the perimeter of waste mound; regional flow likely southwest towards Mississippi River; possibly northwest towards Ottawa River
Physical Setting	wastes have been piled as mound with surrounding lands below grade of garbage; a few white pines (planted by Boy Scout Club) and mostly grass covers site
Other Information	Leachate production observed in recent years: abnormal colour and odour in ponded water immediately adjacent to site [Brian Carry] but no obvious staining observed during the site visit. Clay cover seems to have somewhat limited leachate production.

Site ID # Wc-04	**AND Record #** -	**MOE Site #** -	**Category of Owner** Private		**HLUI Activity ID #** GAL 7
Other References	Ottawa-Carleton Health Department, 1991 (site no. 4); personal communication with local residents				

Site Name	Carp Rd. near Craig Side Rd. Dump
Landfill Monitoring/ Remediation	none
Site Location	former Twp. Huntley Con 3 Lot 21, back of the house located at 4101Carp Rd., on south side of road; wastes were dumped over the edge of the hill (not buried)
Easting (UTM NAD 27)	417200 **Northing (UTM NAD 27)** 5022850
Ward #	5
Size of Site	from 0.2 ha to possibly 0.3 ha
Waste Thickness	probably less than 1 m
Active Time Period	operated from before 1955; closed early 1960s [local residents]; operations did not commence before 1952 (no access road on aerial photo)
Current Ownership	private individual
PIN (s)	045460173, 045460174

Area Served	Village of Carp
Type of Waste	domestic wastes [local residents]; mostly metal scraps observed during site visit
Nearby Industries	none based on available information
Operator	Township of Huntley
Parameters of Concern	no known monitoring
Concentrations	no known monitoring
Magnitude	no known monitoring
Methane (landfill gas)	no measurement available; low risk potential since wastes were not buried below ground level
Ecological Receptors	human contact possible given close proximity of residential house
Distance to Nearest Human Receptor	house (with probable private well) located 35 m uphill and probably upstream from site
Adjacent Land Use and Zoning	residential (rural) immediately north; forested with some houses further north; agricultural fields with some houses east, south and west; the zoning is RU (rural) in the general area of the site.
Adjacent Land Owners	4116 and 4088 Carp Rd on north side; 4091 Carp Rd on south and east sides; 4115 Carp Rd on west side (all properties include main building -house and surrounding fields)
Site Access	area is not fenced and wastes do not appear to have been covered
Water Supply	private wells
Depth to Bedrock	2 to 10 m to igneous and metamorphic bedrock
Depth to Groundwater	unknown
Distance to Surface Water	Carp River is 450 metres south (surface runoff expected to be south towards river due to topography)
Topography	ground surface sloping down south
Soil Cover Thickness	wastes did not appear to be covered
Type of Overburden	reworked glaciofluvial sand and possibly marine deposits, clay and silt
Direction of Groundwater Flow	probably to the southwest
Physical Setting	wastes are located on abrupt edge behind house where terrain is partially re-vegetated (trees, grass and shrub); possible waste dumping on east of property (old car sticking out) but terrain is currently covered with clean sand fill
Other Information	Local knowledge of garbage dumping over the edge of the hill behind Saddler Carruthers farm [local residents].

Site ID # Wc-05	**AND Record #** -	**MOE Site #** -	**Category of Owner** Institutional		**HLUI Activity ID #** GAL 9
Other References	personal communication with Brian Carry, West District supervisor				

Site Name	Fairgrounds Dump
Landfill Monitoring/ Remediation	none
Site Location	former Twp. Huntley, Con 2 , Lot 18; "Fair Ground" on Carp Agricultural Society property (3790 Carp Rd); garbage was dumped in former ravine, which was 8-9 m deep [Brian Carry]
Easting (UTM NAD 27)	418690 **Northing (UTM NAD 27)** 5021880
Ward #	5
Size of Site	unknown; probably of limited dimensions
Waste Thickness	likely less than 1 m
Active Time Period	not known precisely; likely prior to 1940's; certainly before 1946 [aerial photo]
Current Ownership	Carp Agricultural Society
PIN (s)	045330248, 045330825, 045330928

Area Served	Village of Carp
Type of Waste	domestic wastes
Nearby Industries	none based on available information
Operator	Township of Huntley (no formal operation of dump)
Parameters of Concern	no known monitoring
Concentrations	no known monitoring
Magnitude	no known monitoring
Methane (landfill gas)	no measurement available; not likely to be a concern given age of site
Ecological Receptors	none identified
Distance to Nearest Human Receptor	private houses 150 metres to the southeast
Adjacent Land Use and Zoning	institutional (Carp Agricultural Society) in the immediate vicinity; residential (rural), institutional (church) and agricultural land in the surroundings; the zoning is R5-1 (h) (residential) in the general area of the site.
Adjacent Land Owners	St. James church and cemetery grounds (3774 Carp Rd) to the east and southeast; Huntley Curling Club (3806 Carp Rd) to the northeast
Site Access	area not fenced, but wastes were buried under several metres of clean fill
Water Supply	communal well used for purposes of water on-site; to the E may be on private wells
Depth to Bedrock	15 to 50 m to igneous and metamorphic bedrock or interbedded bioclastic limestone, crystalline limestone and shale
Depth to Groundwater	unknown
Distance to Surface Water	Carp River 420 metres to the south
Topography	flat terrain in the immediate vicinity (originally ravine)
Soil Cover Thickness	ravine was in filled and wastes covered with 8 to 9 metres of clean fill [Brian Carry]
Type of Overburden	reworked glaciofluvial sand and possibly marine deposits, clay and silt
Direction of Groundwater Flow	probably to the south towards Carp River
Physical Setting	grounds are currently well leveled and covered with gravel/sand fill
Other Information	A drain was installed in original location of ravine/stream in 1997 or 1998 [Brian Carry].

Site ID # Wc-06	**AND Record #** -	**MOE Site #** -	**Category of Owner** Private		**HLUI Activity ID #** GAL 8
Other References	personal communication with local resident				

Site Name	Holland Hill Rd. Dump
Landfill Monitoring/ Remediation	none
Site Location	former Twp. Huntley, Con 2 , Lot 20; wooded land behind house and garage at 136 Holland Hill Rd.
Easting (UTM NAD 27)	417900 **Northing (UTM NAD 27)** 5022810
Ward #	5
Size of Site	less than 0.1 ha
Waste Thickness	unknown
Active Time Period	early 1940s (no later than 1944) to late 1940s [local resident]
Current Ownership	private owner individual
PIN (s)	045330226, 045330227, 045330225

Area Served	village of Carp
Type of Waste	domestic wastes
Nearby Industries	none based on available information
Operator	Township of Huntley
Parameters of Concern	no known monitoring
Concentrations	no known monitoring
Magnitude	no known monitoring
Methane (landfill gas)	no measurement available; low risk potential since wastes were not buried below ground level due to proximity of bedrock
Ecological Receptors	wildlife
Distance to Nearest Human Receptor	house is located 65 metres to the southwest (private well observed at the back of property)
Adjacent Land Use and Zoning	residential (rural) to the north, west and south; wooded undeveloped land to the east; the zoning is RU (rural) in the general area of the site.
Adjacent Land Owners	private houses: 251 Holland Hill Rd to the north; 3996 Carp Rd to the southeast; undeveloped land: 4034 Carp Rd to the west
Site Access	area is not fenced but located on private property
Water Supply	private wells
Depth to Bedrock	igneous and metamorphic bedrock outcrops observed at and near site
Depth to Groundwater	unknown
Distance to Surface Water	Carp River 750 m to the southwest
Topography	significant slope to the southwest
Soil Cover Thickness	unknown
Type of Overburden	thin organic soil cover over bedrock
Direction of Groundwater Flow	probably to the southwest
Physical Setting	site is densely vegetated
Other Information	Due to dense vegetative cover, it was not possible to thoroughly inspect site; no wastes were observed during site visit with the exception of metal drums and car parts which appeared to have been stored on site relatively recently .

Site ID #	Wc-07	**AND Record #** -	**MOE Site #** -	**Category of Owner** City	**HLUI Activity ID #** GAL 6
Other References	Brian Carry, West District Supervisor; personal communication with local resident				

Site Name	John Shaw Rd. Dump
Landfill Monitoring/ Remediation	none
Site Location	former Twp. Fitzroy, road allowance between Con 7 and 8 , Lot 21; extension of John Shaw Rd on east side of road, approx. 150 m north of Galetta Side Rd.
Easting (UTM NAD 27)	403725 **Northing (UTM NAD 27)** 5032625
Ward #	5
Size of Site	area approx. 0.5 ha
Waste Thickness	1 to 2 m above ground surface
Active Time Period	closed late 1950's; site was closed when Galetta Landfill Site (Fitzroy Con 6 Dump) started operations [local resident]
Current Ownership	City of Ottawa (road allowance)
PIN (s)	045590869, 045590870, 045590839

Area Served	Fitzroy, Kinburn and Galetta
Type of Waste	domestic wastes; car frames, wire, glass bottles, batteries observed on site
Nearby Industries	none based on available information
Operator	Township of Fitzroy
Parameters of Concern	no known monitoring
Concentrations	no known monitoring
Magnitude	no known monitoring
Methane (landfill gas)	no measurement available; low risk potential since wastes were not buried below ground level
Ecological Receptors	agricultural lands
Distance to Nearest Human Receptor	closest house is 120 metres to the southwest
Adjacent Land Use and Zoning	undeveloped forested land to the northwest; agricultural land and residential (rural) in all other directions; the zoning is RU (rural) in the general area of the site.
Adjacent Land Owners	2793 Galetta Side Rd to the east; 2875 Galetta Side Rd. to the southeast
Site Access	site is not fenced but is located 150 m away from main road; wastes have not been covered
Water Supply	private wells
Depth to Bedrock	igneous or metamorphic bedrock 2 to 3 m below or at surface
Depth to Groundwater	unknown
Distance to Surface Water	Mississippi River Snye 1.0 km northwest
Topography	relatively flat, with a gentle slope north
Soil Cover Thickness	wastes are not covered
Type of Overburden	glacial till; bedrock outcrops 150 metres to the north
Direction of Groundwater Flow	expected to be north based on topography and location of Mississippi River Snye
Physical Setting	wastes have been piled as mound with surrounding lands below grade of garbage; site is currently partially covered with small trees and shrub
Other Information	none

Site ID # Wc-08	**AND Record #** -	**MOE Site #** -	**Category of Owner** City and Private	**HLUI Activity ID #** 6505
Other References	RMOC, 2000; Brian Carry, West District Supervisor; personal communication with local resident			

Site Name	Loggers Way Dump		
Landfill Monitoring/ Remediation	none		
Site Location	former Twp. Fitzroy, road allowance between Con 6 and 7, Lot 14; site is located east of Loggers Way approx. 400 m north of junction with Yucks Lane; site extends to telephone line (east boundary) at the back of the property; a small wedge of land part of 4028 Logger's Way is presumably included within the fill area		
Easting (UTM NAD 27)	405550	**Northing (UTM NAD 27)**	5028400
Ward #	5		
Size of Site	area estimated between 0.1 ha and 0.45 ha		
Waste Thickness	evaluated at 1 to 2 metres at most		
Active Time Period	1950s to late 1960s (closed before 1968) [local resident]; site was closed when Galetta Landfill Site began operations [Brian Carry]		
Current Ownership	City of Ottawa (road allowance) and private owner of 4028 Logger's Way		
PIN (s)	045540178, 045550048		

Area Served	Village of Kinburn
Type of Waste	domestic wastes; old tires and tin cans were observed near the edge of the dump
Nearby Industries	Kingdon Mine, located near Galetta, was operated since 1931; operations included mining for zinc, lead and other metals; since the mine has closed, rock tailing have been used as aggregate material in the local area which has resulted lead contamination [RMOC, 2000]
Operator	Fitzroy Township
Parameters of Concern	no known monitoring
Concentrations	no known monitoring
Magnitude	no known monitoring
Methane (landfill gas)	no measurement available; low risk potential since wastes were filled above original ground level
Ecological Receptors	wildlife
Distance to Nearest Human Receptor	closest house 110 metres south
Adjacent Land Use and Zoning	residential (rural) and agricultural land to the west; undeveloped forested land to the east (up for residential development in the near future?); the zoning is RCL-1 (country lot residential) in the general area of the site.
Adjacent Land Owners	private owners of 4028 and 4093 Loggers Way to the south; 112 and 110 Thymes Dr. to the east and northeast; 328 Yucks Lane to the west
Site Access	site is not fenced, but wastes are mostly covered, except in the periphery (eastern and northern limits of site)
Water Supply	private wells
Depth to Bedrock	igneous or metamorphic bedrock near surface; outcrops visible at and near site
Depth to Groundwater	unknown
Distance to Surface Water	Carp River 800 metres to the east
Topography	gentle slope towards the road (to the southeast)
Soil Cover Thickness	wastes covered with soil cover from road construction when site was closed but thickness unknown; some waste still visible at the back of property
Type of Overburden	thin soil cover over bedrock
Direction of Groundwater Flow	assumed to be east due to location of Carp River
Physical Setting	site currently covered with tall grass
Other Information	none

Site ID # Wc-10	**AND Record #** -	**MOE Site #** -	**Category of Owner** Private and possibly City	**HLUI Activity ID #** GAL 10	
Other References	personal communication with local resident				
Site Name	Carp Plaza				
Landfill Monitoring/ Remediation	none				
Site Location	former Twp. Huntley, Con 2 , Lot 18; reportedly behind current plaza building (461 Donald B Munro Dr.); garbage was dumped in former ravine				
Easting (UTM NAD 27)	418675		**Northing (UTM NAD 27)** 5021500		
Ward #	5				
Size of Site	unknown; probably of limited dimensions				
Waste Thickness	likely less than 1 m				
Active Time Period	not known precisely; likely prior to 1940's				
Current Ownership	Carp Plaza Ltd. (461 Donald B. Munro Dr.) and possibly City of Ottawa (Ambulance Post Carp and Fire Station 64 - Carp: 475 Donald B. Munro Dr.)				
PIN (s)	045430132, 045430198, 045430136, 045430135, 045430134				

Area Served	Village of Carp
Type of Waste	domestic wastes
Nearby Industries	none based on available information
Operator	Township of Huntley (no formal operation of site)
Parameters of Concern	no known monitoring
Concentrations	no known monitoring
Magnitude	no known monitoring
Methane (landfill gas)	no measurement available
Ecological Receptors	Carp River ecosystem
Distance to Nearest Human Receptor	The Carp plaza is located immediately north of reported location of site
Adjacent Land Use and Zoning	commercial to the north; rail way immediately south; the zoning is C1 (commercial) in the general area of the site.
Adjacent Land Owners	McNeely's Outdoor Power Equipment (469 Donald B. Munro Dr.) to the northwest; Carp Ambulance and Fire Station (475 Donald B. Munro Dr.) to the southwest; closed commercial building (449 Donald B. Munro Dr.) to the east
Site Access	area not fenced, but no visible sign of wastes at surface (likely mostly covered)
Water Supply	communal well
Depth to Bedrock	25 to 50 m to interbedded bioclastic limestone, crystalline limestone and shale
Depth to Groundwater	unknown
Distance to Surface Water	Carp River approximately 25 metres south of reported old dump site location
Topography	old river bed; ground surface slopes to the south in the surrounding area
Soil Cover Thickness	25 to 50 m
Type of Overburden	clay and silt with gravel and sand immediately west and north of site
Direction of Groundwater Flow	likely south towards Carp River
Physical Setting	site is approx. located in the back yard of Carp Plaza; partial bush cover on site
Other Information	none

APPENDIX C

HLUI UPDATE

HLUI UPDATE

1. OLD LANDFILL SITES IDENTIFIED DURING THIS STUDY BUT NOT INCLUDED IN THE HLUI:

	Site ID #	Site Name	Activity ID #
1	Wc-4	Carp Rd. near Craig Side Rd. Dump	GAL 7
2	Wc-5	Fairgrounds Dump	GAL 9
3	Wc-7	John Shaw Rd. Dump	GAL 6
4	Wc-10	Carp Plaza	GAL 10

2. OLD LANDFILL SITES IDENTIFIED DURING THIS STUDY THAT WERE INCLUDED IN THE HLUI AS INDUSTRIAL SITES OR OTHER, BUT THAT WERE NOT PROPERLY DESCRIBED IN THE HLUI AS LANDFILLS

	Site ID #	Site Name	Activity ID #
1	Gl-2	Albion & Rideau Disposal Site	GAL 11
2	Ur-11	Riverside Drive (Nunt Farm)	GAL 5
3	Ur-19	McRae Ave.	GAL 4
4	Ur-46	Beechwood Ave.	GAL 2
5	Ur-47	Rideau View Estate	GAL 12
6	Ur-48	St. Charles St.	GAL 13
7	Ur-49	Dominion Bridge Co. Property	GAL 14
8	Ur-50	Ivy St. Dump and Marier St. Dump	GAL 15
9	Ur-51	St. Patrick Bridge	GAL 3
10	Ur-53	White Father's Property	GAL 1
11	Wc-6	Holland Hill Rd. Dump	GAL 8

3. OLD LANDFILL SITES WITH SEVERAL ASSIGNED ACTIVITY ID #'s (based on "Activity_Name" and "Activity_Reference" fields in HLUI):

	Site ID #	Site Name	Activity ID #
1	Ri-1	North Gower Township Dump	5914, 6094, 6409
2	Ur-4	LaRose & Larkin (Raven Road)	6103, 7068
3	Ur-5	Bayview & Slidell - Bayview Road Works Yard	6105, 6121
4	Ur-10	Riverside Drive	6112, 6113
5	Wc-2	Woodlawn Dump or Torbolton Con 2 Dump	6064, 6095

4. OLD LANDFILL SITES IDENTIFIED IN THE HLUI WHICH BASED ON THIS RESEARCH DO NOT EXIST:

	Activity ID #	Location	Basis for Exclusion
1	6468	area of former Twp. Goulbourn	there is another site in Cumberland with the same HLUI Activity ID which represents the correct location
2	6943	corner of Rideau Rd. and Albion Rd., Twp. of Gloucester, Con 3, Lot 26	no mention in referenced file of the existence of a dump other than a request from the MOE of an inventory of dump sites. A recently identified waste site (Gl-02) is located across the street from this location

5. OLD LANDFILL SITES IDENTIFIED IN THE HLUI BUT INDICATED IN INCORRECT LOCATION*:

	Site ID #	Site Name	Activity ID #	Correction Required
1	Cu-4	Sand Rd.	6455	should also include part of Con 9
2	Cu-6	Cumberland Cons 6-7 Dump	5776	should also include property to the west of road allowance
3	Cu-13	Petrie Island Dump	6470	should also include property to the east of location indicated
4	Cu-15	Dunning Rd.	6459	should be located on property at 5536 Dunning Rd.
5	Gl-5	Gloucester STP Dump	6096	should be located at the same location as Activity ID 5373, north of location indicated
6	Go-5	Stapledon Dump	6285	should also extend at property northeast of road allowance
7	Np-3	Bruce Pit	6282	should be located off of Cedarview Road
8	Ur-54	Brule Property Dump	6480	should be located closer to Brule Rd.
9	Wc-2	Woodlawn Dump or Torbolton Con 2 Dump	6064	should be located in southwest corner of property at 3972 Torbolton Ridge Rd.
10	Wc-8	Loggers Way Dump	6505	should be located on part of road allowance between Cons 6 and 7 Lot 14, former Twp. Torbolton

* It should be noted that minor inconsistencies in properties identified in the HLUI and actual waste footprints were identified for several urban sites but are not included in this table as it would be impractical to establish a list of that length. Instead only major and/or rural errors have been presented here.