



December 2015

## REPORT ON

# Landfill Land Use Potential Report Winnipeg, Manitoba

**Submitted to:**  
City of Winnipeg  
1120 Waverley Street  
Winnipeg, MB  
R3T 0P4

REPORT



**Report Number: 1522283/4000**

**Distribution:**

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### 1.0 INTRODUCTION

Golder Associates Ltd. (Golder Associates) was retained by the City of Winnipeg (City), to provide professional consulting services relating to the City's Water and Waste Department closed landfills, as outlined under RFP No. 1199-2014. The study being completed, known as the Landfill Disposition Study, includes 33 landfill sites generally located within the City of Winnipeg, Manitoba (see Figure 1) and will be completed in a phased approach, consisting of the completion of a series of reports considering each site, including:

- Phase 1 – Landfill Status Report;
- Phase 2 – Landfill Environmental Risk Report;
- Phase 3 – Landfill Rehabilitation and Cost Estimate Report;
- Phase 4 – Landfill Land Use Potential Report; and,
- Phase 5 – Legal Risk and Responsibility Report.

The 33 landfills were operated from as early as 1875 to as late as 1998. Investigations undertaken by others in the area of the landfills have identified waste, and in some cases soil, groundwater, surface water, and landfill gas impacts, potentially associated with waste materials.

The potential impact that can occur from waste sites is influenced by factors such as the type and age of material deposited, depth of waste, cover material, and the local geology, hydrogeology and surface water bodies. As a result, investigations of areas where waste is known to have been deposited must assess and/or consider these factors in order to determine the potential for impact. Older waste fill areas containing little putrescible material and pre-dating use of industrial organics may be relatively innocuous, whereas those containing large amounts of organic material or liquid waste can continue to generate landfill gas or seepage even when a significant amount of time (like twenty-five years) has passed since closure of these sites.

This report fulfils Phase 4, the Landfill Land Use Potential Report. The Landfill Land Use Potential Report integrates information regarding current and planned land use, zoning, and potential for development and timing of development with the current understanding of the environmental effects associated with each site and control zone. With this information, areas of restricted development around each site are proposed.

The Landfill Land Use Potential Report is organized into the following sections:

- Methodology – outlines the steps utilized to complete this phase of the landfill disposition study;
- Current Development Environment – Outlines the development setting in the City near the closed landfills;
- Development Restrictions – summarizes current development restrictions within the City and provides the developable area for each site; and,
- Closing – provides concluding statements for the Landfill Land Use Potential Report.



### 2.0 METHODOLOGY

Information regarding planning in and around the closed landfill sites was obtained through interviews with a senior planner in the Urban Planning Division of the Planning Property & Development Department on November 17, 2015 and with a senior project management coordinator and landscape architects in the Urban Design Division of the Planning Property & Development Department on November 24, 2015. In addition, the following documents were reviewed: zoning by-law, OurWinnipeg and Complete Communities.

The planning information was then considered with the known facts about the closed landfills and the predicted environmental risks for those landfills. The previous reports prepared as part of the Landfill Disposition Study were used as sources of information. The figures provided in Phase 1, Landfill Status Report (Golder, 2015a) provide zoning on and around sites as well as properties on and around the landfills that are owned by the City. The figures provided in Phase 2, Landfill Environmental Risk Report (Golder, 2015b) depict the interpreted extent of potential landfill gas impact and groundwater impact.

Based on the information provided, restrictions and recommendations for land use around the closed landfills have been made.



### 3.0 CURRENT DEVELOPMENT ENVIRONMENT

This section discusses the development environment in the City. The things that have impacts on development are current land uses, zoning, and the Complete Communities Direction Strategy By-law (Winnipeg, 2011) which provides guidance on how the City will accommodate growth and change over the next 25 years. Specific issues and proposals for some sites are also discussed.

#### 3.1 Current Land Uses

Each of the closed landfills primary use is waste management. There are various secondary uses of the closed landfills. The majority of the sites either have no use (vacant) or informal recreational uses. Approximately one quarter of the closed landfills have sports fields, while a handful have industrial uses, commercial uses, playground structures and parking lots. There is one school within a landfill footprint and two sites have residential homes constructed within a landfill footprint. Since many of the landfills create hills in a flat landscape, some closed landfill sites are used as informal tobogganing hills in the winter.

#### 3.2 Zoning

It is noted that the closed landfill sites have a variety of zonings as follows (some have multiple zoning):

- Parks and Recreation – 11 sites;
- Manufacturing – 11 sites;
- Residential – 4 sites;
- Agricultural – 6 sites;
- Commercial – 1 site; and,
- Riverbank Sector – 1 site.

It is noted that the actual use of a site does not necessarily align with the zoning, although the usages are all allowed. For example, Site 15 Saskatchewan Avenue Dump Site has a Manufacturing – Heavy zoning yet it is a park, including walking trails, tobogganing and a lookout point. There is a sign at the entrance indicating the area is “Westview Park”. From discussions it is understood that if the zoning at a particular closed landfill does not specifically reflect the land use, that it is not critical. City staff indicated that if the land is being used appropriately then there will be no push or directive to correct the zoning. Zoning is often changed as a result of development in the area.

#### 3.3 Complete Communities

The Complete Communities (Winnipeg, 2011) report provides a guide to land use and development in the City. The report was reviewed to determine the relationship between the areas defined in the report and the closed landfills.

##### 3.3.1 Urban Structure

The Complete Communities Direction Strategy By-law (*Complete Communities*) describes a framework for the city’s physical growth and development by articulating an urban structure comprising of various land designations. *Complete Communities* describes Transformative Areas as *specific areas within the city that*



provide the best opportunity to accommodate significant growth and change. These areas include Downtown, Mixed Use Centres, Major Redevelopment Sites and New Communities. Of the closed landfills in the City only five are in areas designated as New Community and one is located in the Downtown designation. None of the closed landfills fall within the Major Redevelopment Sites listed in *Complete Communities*.

*Complete Communities* notes Areas of Stability include Mature Communities and Recent Communities. The majority of closed landfill sites fall within the Recent Communities areas and five are located in Mature Communities areas.

### 3.3.2 Precincts

There are 18 precincts in the City (A through R). Prior to development in any of the precincts a Local Area Plan is required. The following Precincts contain closed landfills:

- Precinct G – Site 11 McPhillips Street Landfill Site;
- Precinct I – Site 6 Redonda Landfill Site;
- Precinct N – Site 21 Charleston Street (Community Row);
- Precinct O – Site 22 Charleswood Road (South) Landfill Site; and,
- Precinct P – Site 20 Charleswood Road Landfill Site.

While Site 21 Charleston Street (Community Row) and Site 22 Charleswood Road (South) Landfill Site are within precincts, it is understood that development in those two areas is unlikely to occur in the short or medium term planning horizon. It was noted that there is active interest from developers to develop land in Precinct G.

### 3.3.3 Local Area Plans

Local Area Plans have been created within some of the precincts noted above. These development plans are typically developer led and undergo a Technical Advisory Committee review. A Technical Advisory Committee can be comprised of City staff from different branches/departments that may hold an interest in assessing the proposed plan, but may also include stakeholders such as Manitoba Hydro, school boards or the Province of Manitoba. The following plan areas contain closed landfills:

- Wilkes South Secondary Plan (Secondary Plan By-law) – Site 20 Charleswood Road Landfill Site, Site 21 Charleston Street (Community Row) and Site 22 Charleswood Road (South) Landfill Site;
- Precinct I Secondary Plan – Transcona North – Site 6 Redonda Landfill Site;
- Waverley West West Secondary Plan – Site 24 Cadboro Road (West) Landfill Site;
- Airport Vicinity Protection Plan – Site 15 Saskatchewan Avenue Dump Site, Site 16 Barry Avenue Dump Site, Site 17 Harcourt Street Landfill Site, and Site 28 Brooklands Landfill Site. Note that the Airport Vicinity Protection Plan is a Secondary Plan and does not direct proposed land uses; rather it places height and construction restrictions on buildings in existing land uses;
- Airport Area West Secondary Plan – Site 18 Summit Road Landfill Site is adjacent to the Airport Area West Secondary Plan; and,
- Transcona Yards Industrial – Site 29 CNR-Dugald Road Landfill Site.



Some Local Area Plans, such as the one for Transcona Yards Industrial, do not fall within a precinct. Site 18 Summit Road Landfill Site is within the Planning Area of the draft version of the Airport Area West Industrial

### 3.3.4 Parks, Places and Open Spaces

Areas for parks, places and open spaces are provided in Complete Communities (Winnipeg, 2011). The following landfills fall within a major park, place or open space:

- Site 36 Kilcona Park Landfill Site;
- Site 19 Shaftesbury Boulevard Dump Site; and,
- Site 32 Lot 61, St. Mary's Road Dump Site.

There exists a Kilcona Strategic Plan for long-term development of the park at Site 36 Kilcona Park Landfill Site. The park at Site 32 Lot 61, St. Mary's Road Dump Site is informal and there has been some interest in creating more of a park setting.

It should be noted that the parks, places and open spaces provided in *Complete Communities* are larger in size and do not include the smaller sports fields and informal recreational spaces situated at many of the closed landfill sites.

## 3.4 Site Specific Issues and Proposals

Based on interviews with City staff issues or proposals were discussed about some specific closed landfills. These items are discussed below.

### 3.4.1 Site 4 St. Boniface Landfill Site 2

There has been interest shown in the purchase of portions of this closed landfill. Due diligence work has occurred to look at potential for development work on these lands. The Water and Waste Department has denied requests for development due to concerns with landfill gas and previous experience with settlement.

The area west of Lagimodiere near St. Boniface Landfill Site 2 is called Mission Industrial Area. Due to an explosion incident (not related to the landfill), the Standing Policy Committee on Property and Development in November 2012 requested that the Public Service research and analyze planning approaches for mitigating conflicts between residential and heavy industrial uses to promote safe and orderly development. The resulting report, sent to Standing Policy Committee on Property and Development on October 8, 2013, recommended that the development of a Plan for the Mission Industrial Area be initiated. Development of this plan is currently on the list of Local Area Plan Initiatives for 2015-2016.

### 3.4.2 Site 6 Redonda Landfill Site

A playground was recently installed on the landfill and the construction of an outdoor classroom is being planned.





### 3.4.3 Site 7 Kimberly Landfill Site

The flat areas of the site are used for sports fields. Due to settlement of waste, filling of the sports fields is regularly required. There are plans for redeveloping the soccer fields and fixing the baseball diamond. There is discussion of installing an irrigation system 12 to 15 inches below ground surface.

Two waste mounds exist at the site and these areas are used for tobogganing in the winter. There are concerns about waste rising out of ground creating a hazard (especially for tobogganing).

### 3.4.4 Site 9 Bonner Avenue Landfill Site

A splash pad was recently constructed in the control zone of the landfill. The utilities associated with the splash pad were re-routed to avoid the landfill footprint.

### 3.4.5 Site 12 Margaret Park Landfill Site

A ball diamond was installed at this site for the Pan-Am Games. Due to settlement of the waste, this high-end baseball diamond required repairs not long after construction.

### 3.4.6 Site 13 Leila Avenue Landfill Site

An indoor soccer complex is currently being constructed within the control zone of this site. Due to the presence of the landfill the complex was shifted 1 metre to avoid the buried waste.

### 3.4.7 Site 14 Leila Avenue (West) Landfill Site

The City previously cleaned up illegal dumping that was occurring at the site. Some of the remaining construction waste left from developers of the residential area next to the landfill was placed into a small hill and covered with soil to create a recreational feature for the site at the request of the residents.

### 3.4.8 Site 18 Summit Road Landfill Site

For development plans near this site, the City provided the consultants with background information about the landfill and policies upfront to help the developer understand the restrictions instead of learning about possible restrictions further along the development process.

Optimist Park to the south of the landfill is expanding the baseball field 10 to 15 metres to the north. Some piezometers in place to monitor groundwater levels and quality related to the landfill will fall within the expanded baseball field and will be made into flushmounts to accommodate the move. It is noted that consideration should be given to how the location of the flushmounts will interact with activities on the baseball field and it may be necessary to relocate some piezometers if they pose a potential hazard to users.

### 3.4.9 Site 19 Shaftesbury Boulevard Dump Site

There is evidence that the site was recommended to be “surplus for development” at some point; however, it is very unlikely to be developed in the future due to its inclusion as part of the Assiniboine Forest.



## 4.0 DEVELOPMENT RESTRICTIONS

### 4.1 Present Restrictions

Since the 1980s, control zones around the closed landfill footprints have been implemented by the City. The control zones range from 0 metres to 90 metres from the landfill footprint. If development is considered on a closed landfill or within the control zone, it is intended that “The Guidance Document for the Construction and Protection of Buildings and Services on and Adjacent to Landfills” (City of Winnipeg, 2015) be followed. The Guidance Document outlines the precautions recommended for building construction and monitoring related to methane gas. It is recommended that the Nairn and Elmwood Avenue Landfill Sites in particular have an environmental assessment prior to development. The Guidance Document is not a by-law. The City is considering developing secondary plan by-laws to regulate land uses around each of the closed landfills. Once adopted, development on and around the landfill would be required to conform with policies and/or criteria contained in these secondary plan by-laws.

### 4.2 Proposed Restrictions

Areas of restricted development have been proposed for each site and are presented on Figures 2 through 33. The restricted areas are the greater of the interpreted extent of potential groundwater impacts or the interpreted extent of potential landfill gas impacts, whichever is greater. The areas of potential groundwater impact and potential landfill gas migration were defined in Phase 2, Landfill Environmental Risk Report (Golder, 2015b). It should be noted that the areas of potential groundwater impact and potential landfill gas migration were defined via a desktop study and investigative work was not conducted by Golder.

Figures 2 through 33 also show the City’s control zone. In some cases the control zone is greater than the proposed restricted areas of development such as for Site 4 St. Boniface Landfill Site 2 and Site 6 Redonda Landfill Site and in some cases the control zone is less than the proposed restricted areas of development such as for Site 1 Beliveau Road Dump Site, Site 3 St. Boniface Landfill Site 1 and Site 9 Bonner Avenue Landfill. It is considered that the proposed restricted areas of development could be reduced with the implementation of proposed investigation and monitoring outlined in Phase 3, Landfill Rehabilitation and Cost Estimate Report (Golder, 2015c). If the results of the proposed monitoring programs provide evidence that the groundwater has not been impacted at a specific location or that landfill gas is not being generated or is not migrating beyond a certain distance then the areas of potential impact and therefore the area of proposed restricted development can be reduced. In the future the control designation could be lifted for some sites allowing for unrestricted development around a landfill or there is also the possibility that future development is not recommended at all. Further investigation and monitoring is required.

Based on review of current control zones identified in the “The Guidance Document for the Construction and Protection of Buildings and Services on and Adjacent to Landfills” (City of Winnipeg, 2015), the proposed restricted areas of development provided in the Phase 2, Landfill Environmental Risk Report (Golder, 2015b) and the status of the landfill environment provided in Phase 1, Landfill Status Report (Golder, 2015a), there is a higher potential of reducing the control zone around the waste footprint of the following closed landfills:

- Site 2 St. Boniface Dump Site;
- Site 4 St. Boniface Landfill Site 2;



- Site 6 Redonda Landfill Site\*;
- Site 7 Kimberly Landfill Site;
- Site 11 McPhillips Street Landfill Site;
- Site 12 Margaret Park Landfill Site;
- Site 14 Leila Avenue (West) Landfill Site\*;
- Site 16 Barry Avenue Dump Site;
- Site 19 Shaftesbury Boulevard Dump Site;
- Site 22 Charleswood Road (South) Landfill Site;
- Site 24 Cadboro Road (West) Landfill Site;
- Site 33 Riel Dump Site\*;
- Site 35 River Road Dump Site; and,
- Site 36 Kilcona Park Landfill Site\*.

Based on review of current control zones identified in the “The Guidance Document for the Construction and Protection of Buildings and Services on and Adjacent to Landfills” (City of Winnipeg, 2015), the proposed restricted areas of development provided in the Phase 2, Landfill Environmental Risk Report (Golder, 2015b) and the status of the landfill environment provided in Phase 1, Landfill Status Report (Golder, 2015a), there is a higher potential of increasing the control zone around the waste footprint of the following closed landfills:

- Site 1 Beliveau Road Dump Site;
- Site 3 St. Boniface Landfill Site 1;
- Site 9 Bonner Avenue Landfill Site;
- Site 13 Leila Avenue Landfill Site;
- Site 20 Charleswood Road Landfill Site;
- Site 28 Brooklands Landfill Site; and,
- Site 32 Lot 61, St. Mary’s Road Dump Site.

A change in the control zone at the closed landfills may require Provincial approval and/or notification as discussed in the following paragraph.





### 5.0 LIMITATIONS

This report was prepared for the exclusive use of the City of Winnipeg. The report, which specifically includes all tables, figures and attachments, is based on information provided by the City and is based solely on historical information and data obtained by Golder Associates during site visits. The City provided available electronic information for each site. Hard copies of additional historical documents for all of the landfill sites are stored at the City offices. Due to the quantity of these files, the review of these documents was out of the scope of this project, although they have been referenced on a limited basis. It has been assumed that the City has provided the relevant information required to complete this report. Reporting of results from the historical information provided does not allow for evaluation of the adequacy of the work completed.

The information provided by the City has not been verified by any physical or intrusive methods other than visual inspection conducted during a visit of the sites. Consequently actual geographic limits of the footprint may extend beyond the boundaries shown on figures and the base of the waste may be different than what is reported.

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 Associates 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 Associates should be requested to re-evaluate the conclusions of this report, and to provide amendments as required.



### 6.0 CLOSURE

The closed landfill sites have a variety of current uses, from informal recreational areas to commercial uses to a school (in one case). The City has taken measures of creating control zones that range from 0 metres to 90 metres around each of the landfills. Based on the understanding of current potential impacts to the groundwater or from landfill gas migration, areas of restricted development for each site have been proposed. With further investigation work and monitoring, evidence may be obtained which would either allow for the reduction of or require an increase in the areas of restricted development and thus the control zones. However, development on and near the closed landfills may have more restrictions based on requirements of the Contaminated Sites Remediation Act and the Waste Disposal Grounds Regulation (Regulation 150/91).

If you have any further questions regarding this report, please contact the undersigned.

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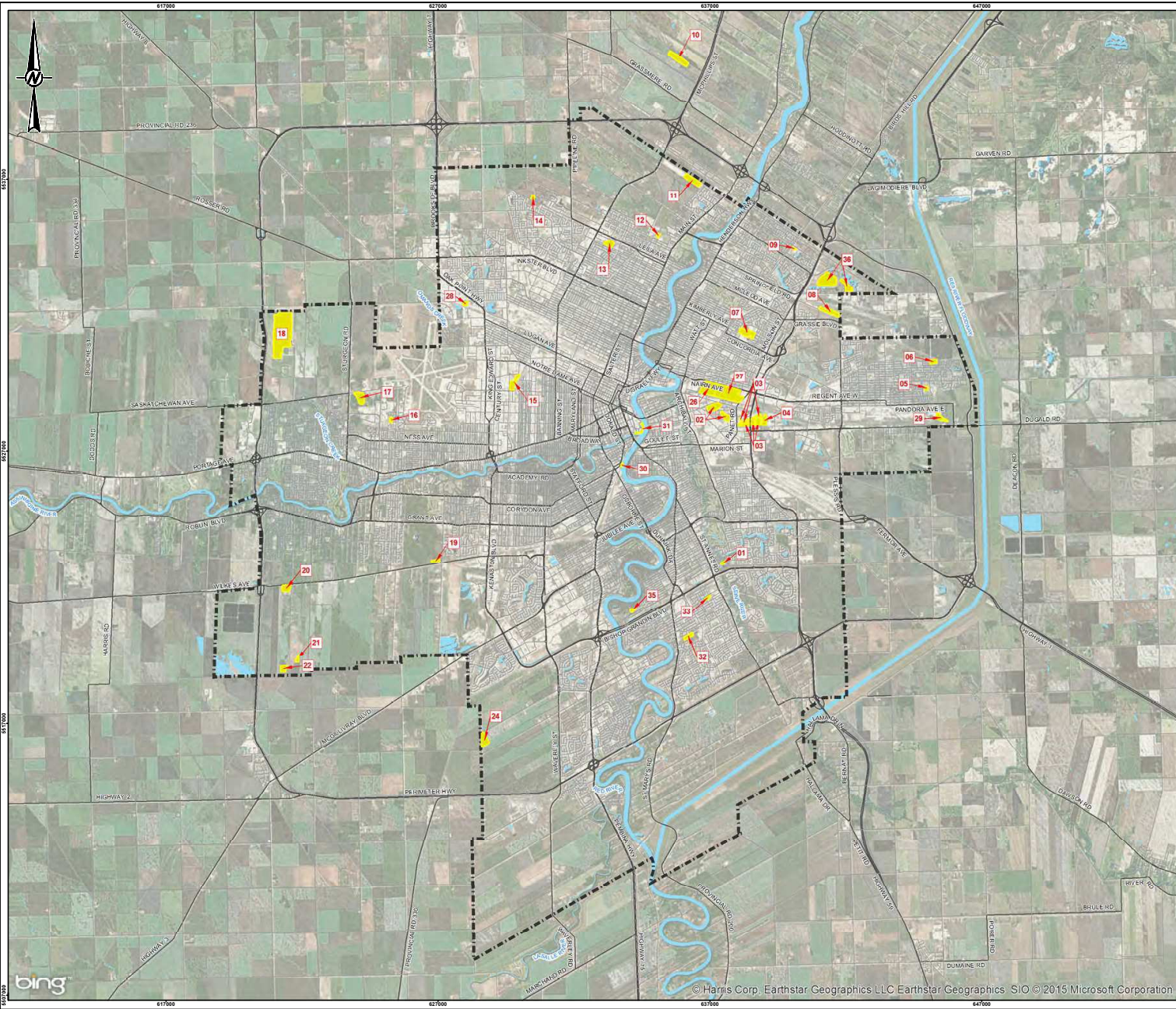
### 7.0 REFERENCES

- City of Winnipeg (Winnipeg), 2015. *Guidance Document for the Construction and Protection of Buildings and Services on and Adjacent to Landfills, Draft*. Prepared by COMCOR Environmental Limited.
- City of Winnipeg (Winnipeg), 2011. *Complete Communities Direction Strategy (Secondary Plan By-law 68-2010)*.
- Golder Associates Ltd. (Golder), 2015a. *Landfill Status Report for Closed Landfills, Winnipeg, Manitoba*. Prepared for the City of Winnipeg.
- Golder Associates Ltd. (Golder), 2015b. *Landfill Environmental Risk Report for Closed Landfills, Winnipeg, Manitoba*. Prepared for the City of Winnipeg.
- Golder Associates Ltd. (Golder), 2015c. *Landfill Rehabilitation and Cost Estimate Report for Closed Landfills, Winnipeg, Manitoba*. Prepared for the City of Winnipeg.
- Golder Associates Ltd. (Golder), 2015d. *Legal Risk and Responsibility Report for Closed Landfills, Winnipeg, Manitoba*. Prepared for the City of Winnipeg.



# FIGURES





**LEGEND**

- MAJOR ROADWAY
- LOCAL ROADWAY
- WATERBODY
- CITY OF WINNIPEG CITY LIMIT
- LOCATION OF LANDFILL AND DUMP

- SITE 01: BELIVEAU ROAD DUMP SITE
- SITE 02: ST. BONIFACE DUMP SITE
- SITE 03: ST. BONIFACE LANDFILL SITE 1
- SITE 04: ST. BONIFACE LANDFILL SITE 2
- SITE 05: REDONDA DUMP SITE
- SITE 06: REDONDA LANDFILL SITE
- SITE 07: KIMBERLY LANDFILL SITE
- SITE 08: CORDITE LANDFILL SITE
- SITE 09: BONNER AVENUE LANDFILL SITE
- SITE 10: MCPHILLIPS STREET DUMP SITE (ASH DUMP)
- SITE 11: MCPHILLIPS STREET LANDFILL SITE
- SITE 12: MARGARET PARK LANDFILL SITE
- SITE 13: LELA AVENUE LANDFILL SITE
- SITE 14: LELA AVENUE (WEST) LANDFILL SITE
- SITE 15: SASKATCHEWAN AVENUE DUMP SITE
- SITE 16: BARRY AVENUE DUMP SITE
- SITE 17: HARCOURT STREET LANDFILL SITE
- SITE 18: SUMMIT ROAD LANDFILL SITE
- SITE 19: SHATESBURY BOULEVARD DUMP SITE
- SITE 20: CHARLESWOOD ROAD LANDFILL SITE
- SITE 21: CHARLTON STREET (COMMUNITY ROW)
- SITE 22: CHARLESWOOD ROAD (SOUTH) LANDFILL SITE
- SITE 24: CADDORO ROAD (WEST) LANDFILL SITE
- SITE 26: ELMWOOD LANDFILL SITE
- SITE 27: NARN AVENUE LANDFILL SITE
- SITE 28: BROOKLANDS LANDFILL SITE
- SITE 29: CNR - DUGALD ROAD LANDFILL SITE
- SITE 30: CORYDON-OSBORNE DUMP SITE
- SITE 31: RED ASSINIBOINE RIVER JUNCTION DUMP SITE
- SITE 32: LOT 61, ST. MARY'S ROAD DUMP SITE
- SITE 33: RIEL DUMP SITE
- SITE 35: RIVER ROAD DUMP SITE
- SITE 36: KILCONA PARK LANDFILL SITE



**NOTE(S)**  
 1. THIS FIGURE IS TO BE READ IN CONJUNCTION WITH THE ACCOMPANYING GOLDR ASSOCIATES LTD. REPORT NO. 1522283/4000.

- REFERENCE(S)**
- 1. BASE DATA PROVIDED BY CITY OF WINNIPEG.
  - 2. BING IMAGERY SUPPLIED BY ESRI AND MICROSOFT © 2010 MICROSOFT CORPORATION AND ITS DATA SUPPLIERS.
  - 3. PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83  
 COORDINATE SYSTEM: UTM ZONE 14 VERTICAL DATUM: CGVD28

CLIENT  
**CITY OF WINNIPEG**

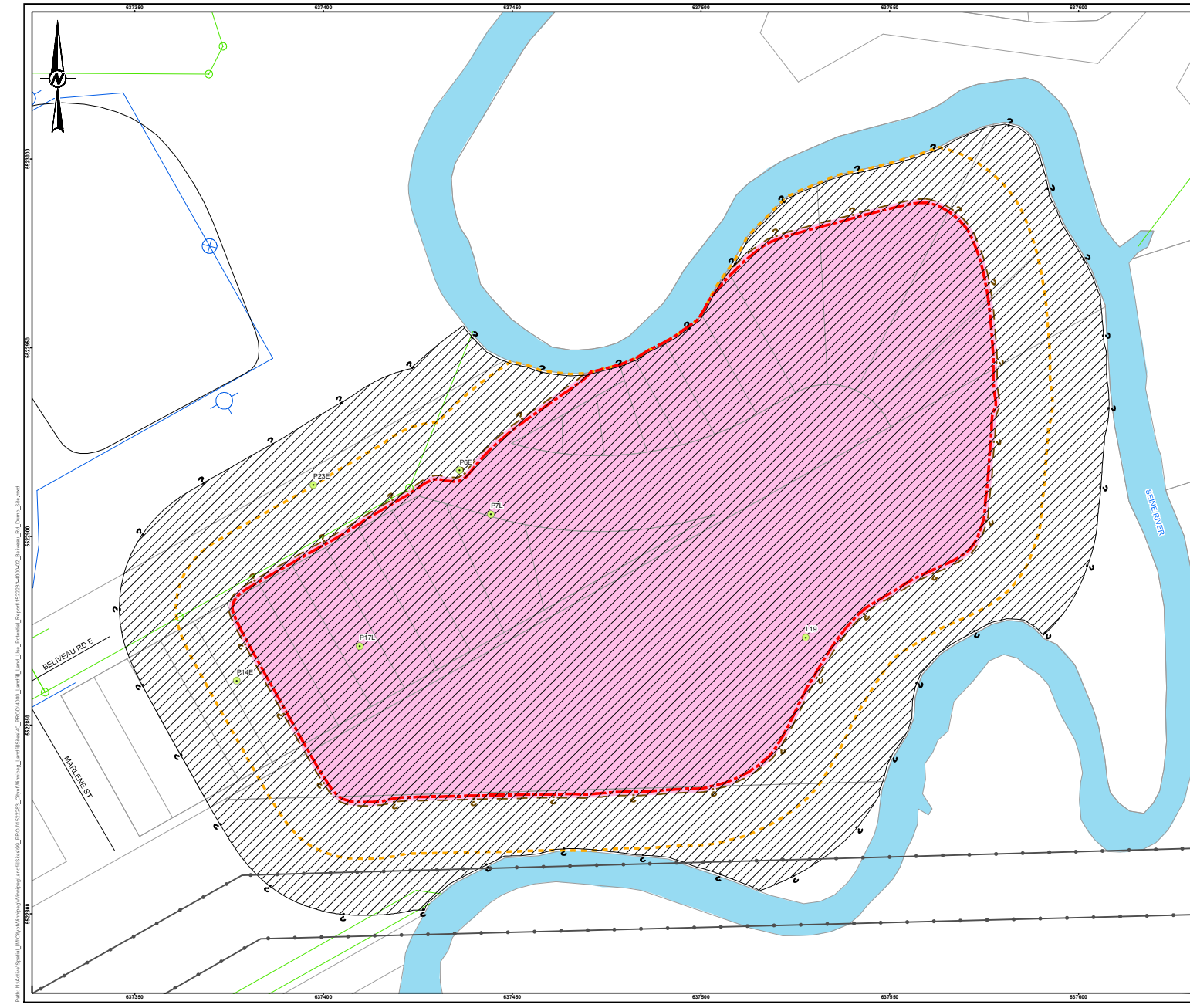
PROJECT  
**WINNIPEG LANDFILL LAND USE POTENTIAL REPORT  
 WINNIPEG, MANITOBA**

TITLE  
**LOCATIONS OF CLOSED LANDFILL SITES**

CONSULTANT	YYYY-MM-DD	2015-12-01
	DESIGNED	---
	PREPARED	BR
	REVIEWED	MKF
	APPROVED	PLE

PROJECT NO. 1522283 PHASE 4000 REV. 0 FIGURE 1

Zoom: If this measurement does not match what is shown, the sheet size has been modified from



**LEGEND**

- LANDFILL FOOTPRINT
- CONTROL ZONE AREA
- INTERPRETED EXTENT OF POTENTIAL LANDFILL GAS IMPACTS
- INTERPRETED EXTENT OF POTENTIAL GROUNDWATER IMPACTS
- GAS MONITORING PROBE
- PROPERTY PARCEL
- RIVER
- ROAD
- UTILITIES
  - SANITARY SEWER
  - WATER MAIN
  - POWER TRANSMISSION LINE (OVERHEAD)

**KEY MAP**

Content may not reflect National Geographic's current map policy.  
Sources: National Geographic, Esri.

Scale: 1:1,000 METRES

**NOTE(S)**

- THE AREA OF RESTRICTED DEVELOPMENT IS INTERPRETED EXTENT OF POTENTIAL LANDFILL GAS IMPACTS OR THE INTERPRETED EXTENT OF POTENTIAL GROUNDWATER IMPACTS, WHICHEVER IS GREATER.
- THIS FIGURE IS TO BE READ IN CONJUNCTION WITH THE ACCOMPANYING GOLDER ASSOCIATES LTD. REPORT NO. 1522283/4000.

**REFERENCE(S)**

- BASE DATA PROVIDED BY CITY OF WINNIPEG.
- PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83  
COORDINATE SYSTEM: UTM ZONE 14 VERTICAL DATUM: CGVD28

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**CLIENT**  
CITY OF WINNIPEG

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**PROJECT**  
WINNIPEG LANDFILL LAND USE POTENTIAL REPORT  
**SITE 1: BELIVEAU ROAD DUMP SITE, WINNIPEG, MANITOBA**

**TITLE**  
**AREA OF RESTRICTED DEVELOPMENT**

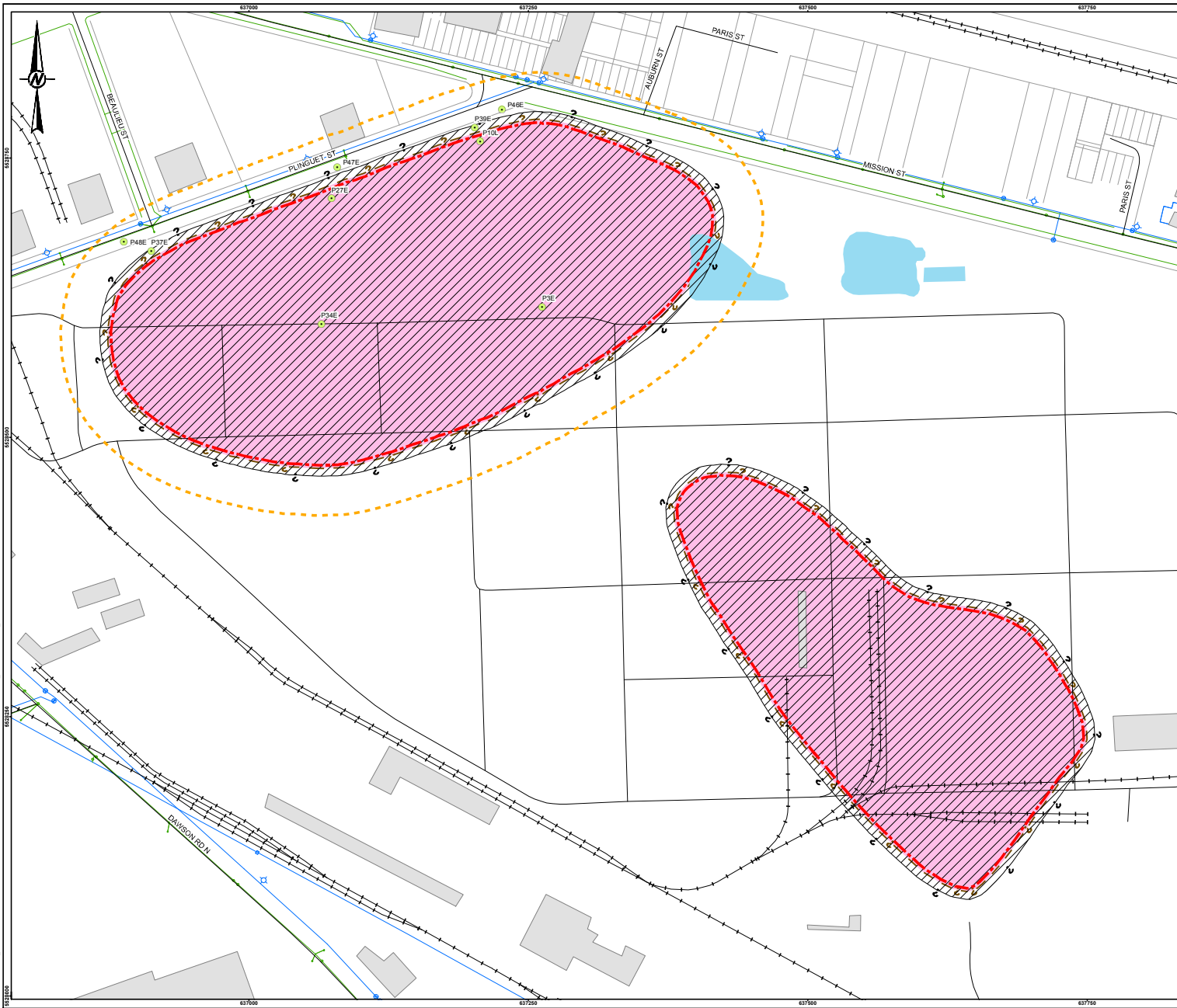
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CONSULTANT	YYYY-MM-DD	2015-12-01
	DESIGNED	---
	PREPARED	BR
	REVIEWED	MKF
	APPROVED	PLE

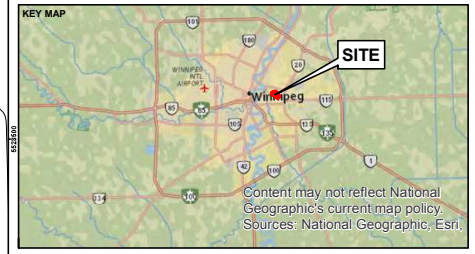
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PROJECT NO.	PHASE	REV.	FIGURE
1522283	4000	0	2

Scale: G:\Projects\1522283\1522283\_01\Drawings\Site\DWG\_SiteAreaRestrictedDevelopment.dwg, Project: 1522283, Drawing: SiteAreaRestrictedDevelopment.dwg, Date: 2015-11-18 10:11:00 AM, User: PLE



- LEGEND**
- GAS MONITORING PROBE
  - LANDFILL FOOTPRINT
  - CONTROL ZONE AREA
  - INTERPRETED EXTENT OF POTENTIAL GROUNDWATER IMPACTS
  - INTERPRETED EXTENT OF POTENTIAL LANDFILL GAS IMPACTS
  - PROPERTY PARCEL
  - ROAD
  - RAILWAY
  - UTILITIES
  - SANITARY SEWER
  - WATER MAIN
  - WATERBODY
  - BUILDING FOOTPRINT



**NOTE(S)**

1. THE AREA OF RESTRICTED DEVELOPMENT IS INTERPRETED EXTENT OF POTENTIAL LANDFILL GAS IMPACTS OR THE INTERPRETED EXTENT OF POTENTIAL GROUNDWATER IMPACTS, WHICHEVER IS GREATER.
2. THIS FIGURE IS TO BE READ IN CONJUNCTION WITH THE ACCOMPANYING GOLDER ASSOCIATES LTD. REPORT NO. 1522283/4000.

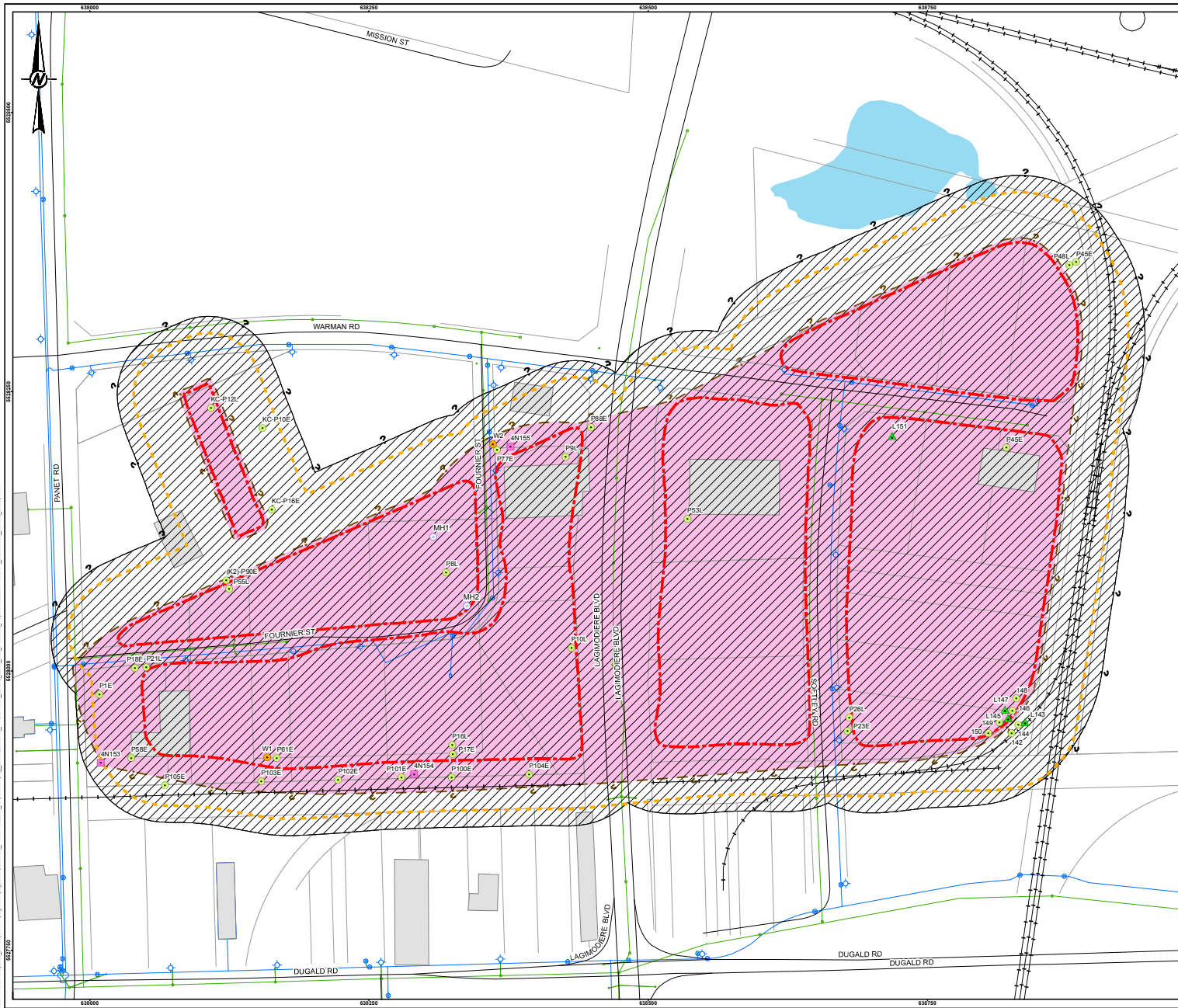
**REFERENCE(S)**

1. BASEDATA PROVIDED BY CITY OF WINNIPEG.
2. PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83  
COORDINATE SYSTEM: UTM ZONE 14 VERTICAL DATUM: CGVD28

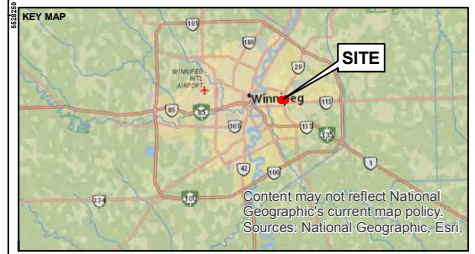
<b>CLIENT</b>			
CITY OF WINNIPEG			
<b>PROJECT</b>			
WINNIPEG LANDFILL LAND USE POTENTIAL REPORT			
SITE 2: ST. BONIFACE DUMP SITE, WINNIPEG, MANITOBA			
<b>TITLE</b>			
<b>AREA OF RESTRICTED DEVELOPMENT</b>			
<b>CONSULTANT</b>			
		YYYY-MM-DD	2015-12-01
		DESIGNED	---
		PREPARED	BR
		REVIEWED	MKF
		APPROVED	PLE
PROJECT NO.	PHASE	REV.	FIGURE
1522283	4000	0	<b>3</b>

C:\Users\james\OneDrive\Desktop\1522283\1522283\_01\Winipeg\1522283\_01\_01\Winipeg\_Landfill\_Land\_Use\_Potential\_Report\_1522283\_01\_01\Winipeg\_Landfill\_Land\_Use\_Potential\_Report\_1522283\_01\_01\_01.dwg

Note: IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SHALL BE RE-DESIGNED FROM



- LEGEND**
- LANDFILL FOOTPRINT
  - CONTROL ZONE AREA
  - INTERPRETED EXTENT OF POTENTIAL LANDFILL GAS IMPACTS
  - INTERPRETED EXTENT OF POTENTIAL GROUNDWATER IMPACTS
  - GAS MONITORING PROBE
  - GROUNDWATER WELL
  - LEACHATE MANHOLE
  - LEACHATE PROBE
  - PIEZOMETER
  - PROPERTY PARCEL
  - ROAD
  - RAILWAY
  - WATERBODY
  - BUILDING FOOTPRINT
  - UTILITY
  - SANITARY SEWER
  - WATER MAIN



**NOTE(S)**

1. THE AREA OF RESTRICTED DEVELOPMENT IS INTERPRETED EXTENT OF POTENTIAL LANDFILL GAS IMPACTS OR THE INTERPRETED EXTENT OF POTENTIAL GROUNDWATER IMPACTS, WHICHEVER IS GREATER.
2. THIS FIGURE IS TO BE READ IN CONJUNCTION WITH THE ACCOMPANYING GOLDER ASSOCIATES LTD. REPORT NO. 1522283/4000.

**REFERENCE(S)**

1. BASE DATA PROVIDED BY CITY OF WINNIPEG.
2. PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83  
COORDINATE SYSTEM: UTM ZONE 14 VERTICAL DATUM: CGVD28

CLIENT  
CITY OF WINNIPEG

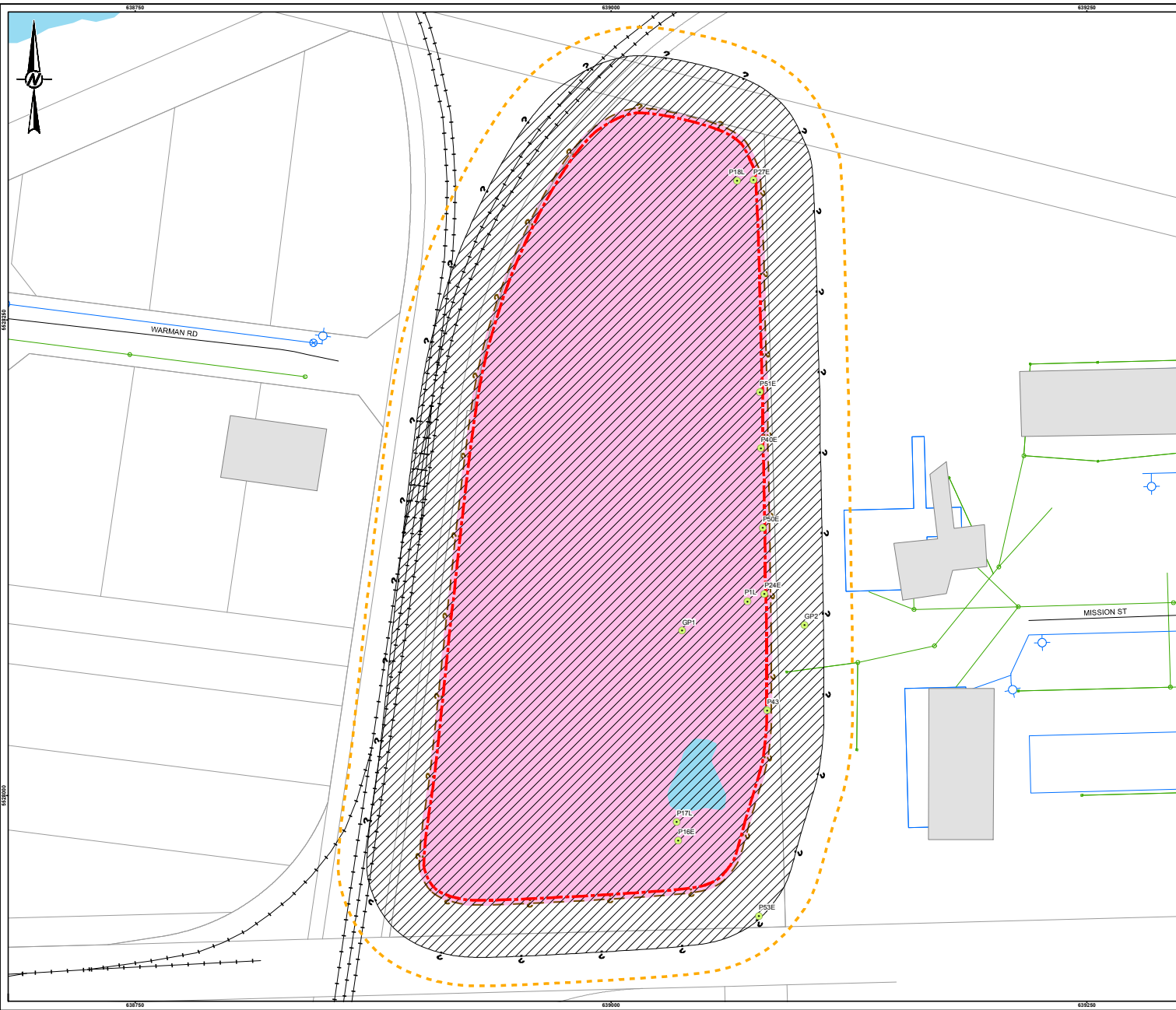
PROJECT  
**WINNIPEG LANDFILL LAND USE POTENTIAL REPORT**  
**SITE 3: ST. BONIFACE LANDFILL SITE 1, WINNIPEG, MANITOBA**

TITLE  
**AREA OF RESTRICTED DEVELOPMENT**

CONSULTANT	YYYY-MM-DD	2015-12-01
	DESIGNED	---
	PREPARED	BR
	REVIEWED	MKF
	APPROVED	PLE
PROJECT NO. 1522283	PHASE 4000	REV. 0
		FIGURE <b>4</b>

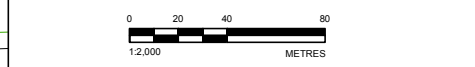
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 Plot Date: 2015-12-01 10:00:00 AM  
 Plot Scale: 1:3400  
 Plot Size: 11.00 x 17.00  
 Plot Orientation: Landscape  
 Plot Color: Black  
 Plot Lineweight: 0.50  
 Plot Linetype: Solid  
 Plot Font: Arial, 10.00  
 Plot Title: 1522283\_04\_SitePlan.dwg  
 Plot User: jgibson  
 Plot Printer: HP DesignJet T1100

Note: If this measurement does not match what is shown, the sheet size has been modified.



**LEGEND**

- GAS MONITORING PROBE
- LANDFILL FOOTPRINT
- CONTROL ZONE AREA
- INTERPRETED EXTENT OF POTENTIAL GROUNDWATER IMPACTS
- INTERPRETED EXTENT OF POTENTIAL LANDFILL GAS IMPACTS
- PROPERTY PARCEL
- ROAD
- RAILWAY
- UTILITY**
- SANITARY SEWER
- WATER MAIN
- WATERBODY
- BUILDING FOOTPRINT



**NOTE(S)**

1. THE AREA OF RESTRICTED DEVELOPMENT IS INTERPRETED EXTENT OF POTENTIAL LANDFILL GAS IMPACTS OR THE INTERPRETED EXTENT OF POTENTIAL GROUNDWATER IMPACTS, WHICHEVER IS GREATER.
2. THIS FIGURE IS TO BE READ IN CONJUNCTION WITH THE ACCOMPANYING GOLDER ASSOCIATES LTD. REPORT NO. 1522283/4000.

**REFERENCE(S)**

1. BASEDATA PROVIDED BY CITY OF WINNIPEG.
2. PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83  
COORDINATE SYSTEM: UTM ZONE 14 VERTICAL DATUM: CGVD28

CLIENT  
CITY OF WINNIPEG

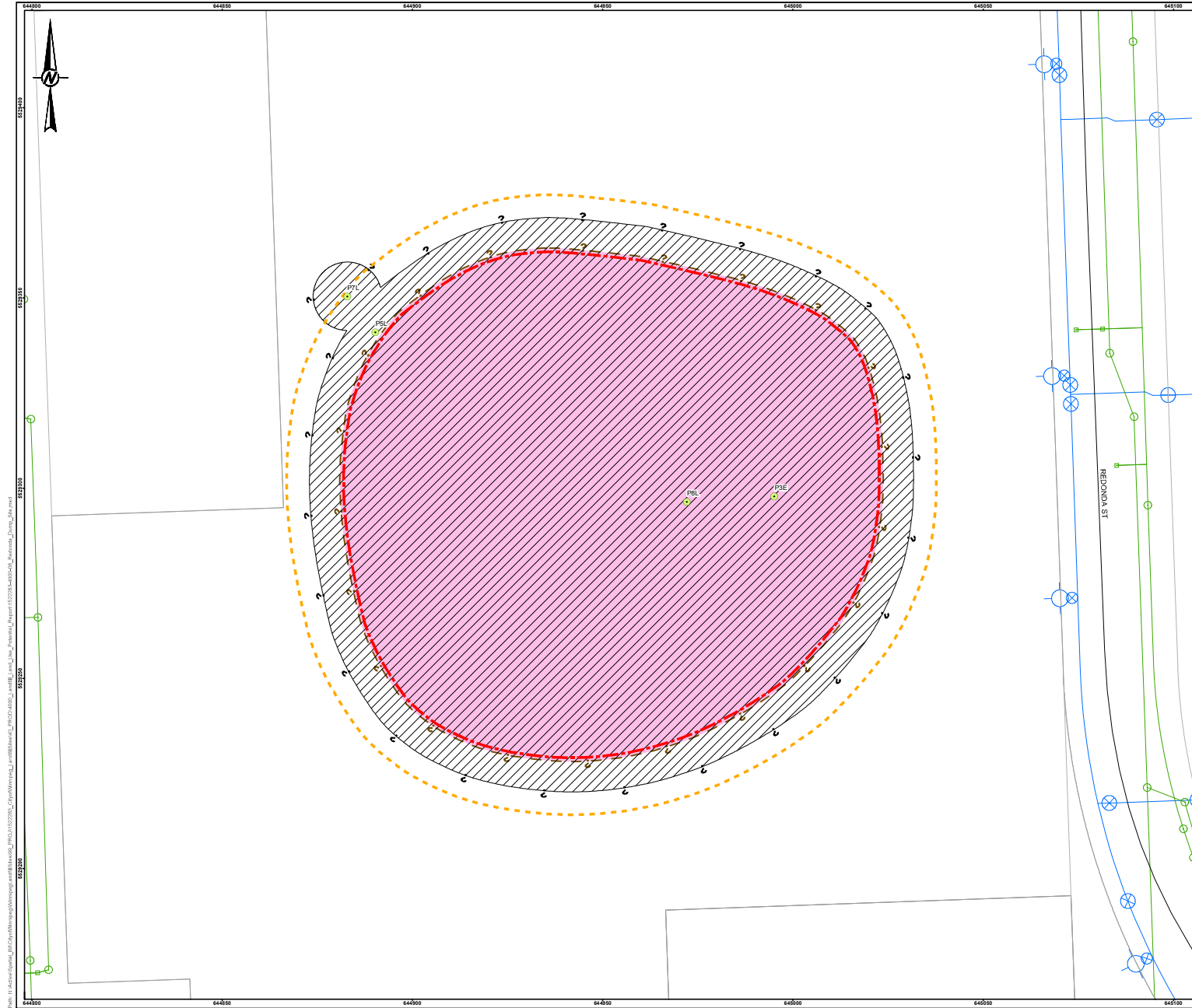
PROJECT  
**WINNIPEG LANDFILL LAND USE POTENTIAL REPORT**  
**SITE 4: ST. BONIFACE LANDFILL SITE 2, WINNIPEG, MANITOBA**  
TITLE  
**AREA OF RESTRICTED DEVELOPMENT**

CONSULTANT	YYYY-MM-DD	2015-09-30
	DESIGNED	---
	PREPARED	BR
	REVIEWED	MKF
	APPROVED	PLE

PROJECT NO.	PHASE	REV.	FIGURE
1522283	4000	0	<b>5</b>

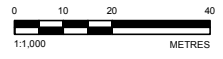
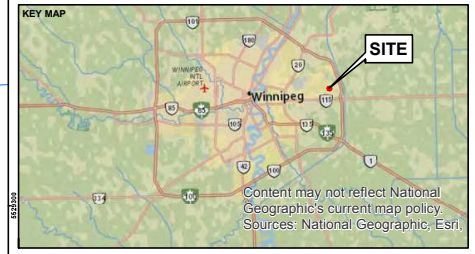
File: D:\Development\Projects\WinnipegLandfill\GIS\Map\_Series\Area\_of\_Restricted\_Development\Area\_of\_Restricted\_Development\_Map\_Series.aprx

Note: If this measurement does not match what is shown, the sheet size has been modified from 24mm x 36mm.



**LEGEND**

- LANDFILL FOOTPRINT
- CONTROL ZONE AREA
- INTERPRETED EXTENT OF POTENTIAL LANDFILL GAS IMPACTS
- INTERPRETED EXTENT OF POTENTIAL GROUNDWATER IMPACTS
- GAS MONITORING PROBE
- PROPERTY PARCEL
- ROAD
- UTILITY**
- SANITARY SEWER
- WATER MAIN



**NOTE(S)**

1. THE AREA OF RESTRICTED DEVELOPMENT IS INTERPRETED EXTENT OF POTENTIAL LANDFILL GAS IMPACTS OR THE INTERPRETED EXTENT OF POTENTIAL GROUNDWATER IMPACTS, WHICHEVER IS GREATER.
2. THIS FIGURE IS TO BE READ IN CONJUNCTION WITH THE ACCOMPANYING GOLDBER ASSOCIATES LTD. REPORT NO. 1522283/4000.

**REFERENCE(S)**

1. BASEDATA PROVIDED BY CITY OF WINNIPEG.
2. PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83  
COORDINATE SYSTEM: UTM ZONE 14 VERTICAL DATUM: CGVD28

CLIENT  
**CITY OF WINNIPEG**

PROJECT  
**WINNIPEG LANDFILL LAND USE POTENTIAL REPORT  
SITE 5: REDONDA DUMP SITE, WINNIPEG, MANITOBA**

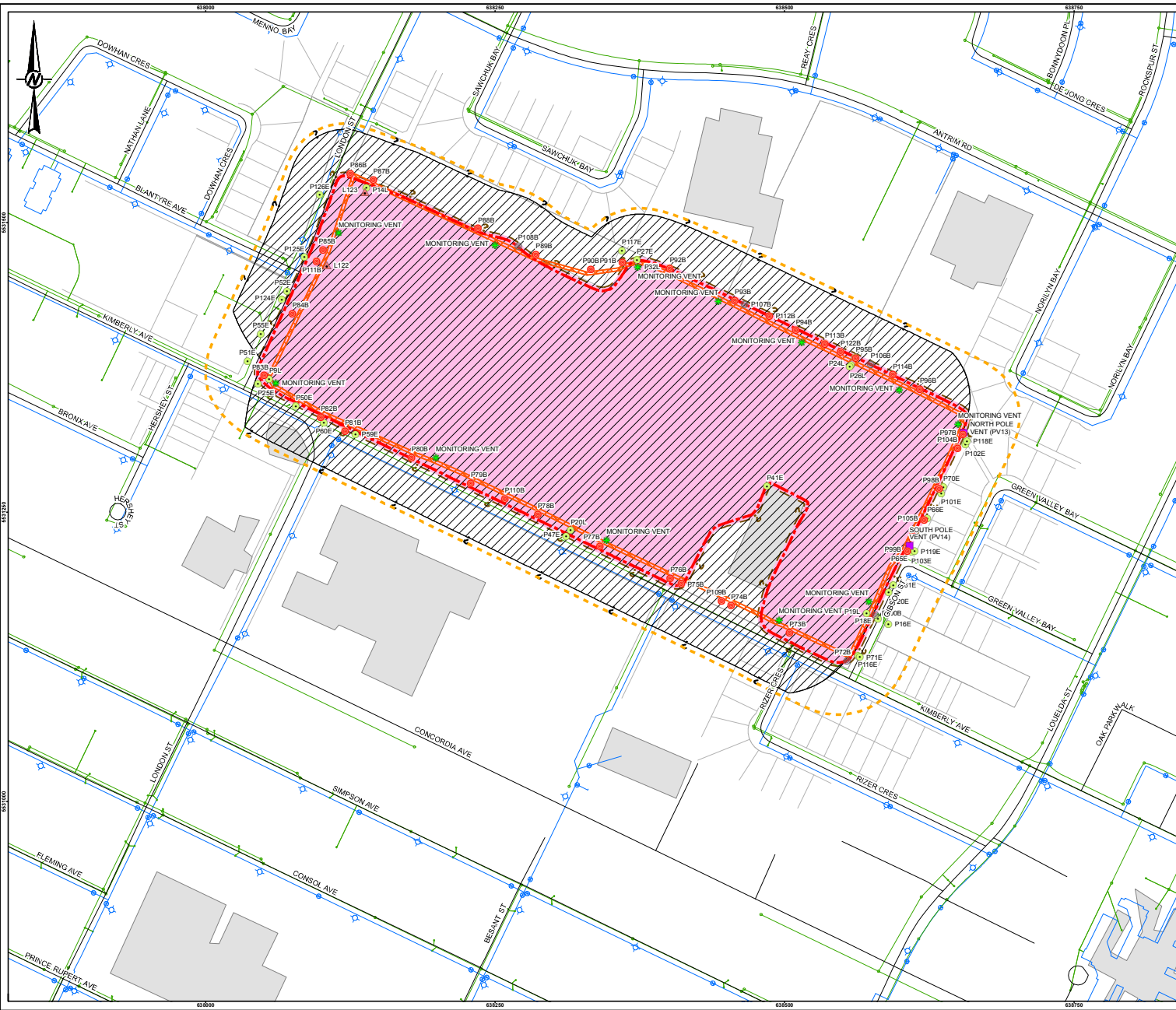
TITLE  
**AREA OF RESTRICTED DEVELOPMENT**

CONSULTANT	YYYY-MM-DD	2015-12-01
	DESIGNED	---
	PREPARED	BR
	REVIEWED	MKF
	APPROVED	PLE
PROJECT NO. 1522283	PHASE 4000	REV. 0
		FIGURE <b>6</b>

C:\Users\jgould\OneDrive\Documents\1522283\1522283\_04\Drawings\1522283\_04\_Site\1522283\_04\_Site\_01.dwg - 1522283\_04\_Site\_01.dwg

Zoom: If this measurement does not match what is shown, the sheet size has been modified from 11x17 inches to 11x8.5 inches.





- LEGEND**
- GAS BARRIER MONITORING VENT
  - GAS BARRIER PROBE
  - DESTROYED PROBE
  - POLE VENT
  - ▲ LEACHATE PROBE
  - GAS MONITORING PROBE
  - ▨ GAS BARRIER
  - ▨ LANDFILL FOOTPRINT
  - ▨ CONTROL ZONE AREA
  - ▨ INTERPRETED EXTENT OF POTENTIAL LANDFILL GAS IMPACTS
  - ▨ INTERPRETED EXTENT OF POTENTIAL GROUNDWATER IMPACTS
  - ▭ BUILDING FOOTPRINT
  - ▭ PROPERTY PARCEL
  - ROAD
  - UTILITY
  - SANITARY SEWER
  - WATER MAIN



**NOTE(S)**

1. THE AREA OF RESTRICTED DEVELOPMENT IS INTERPRETED EXTENT OF POTENTIAL LANDFILL GAS IMPACTS OR THE INTERPRETED EXTENT OF POTENTIAL GROUNDWATER IMPACTS, WHICHEVER IS GREATER.
2. THIS FIGURE IS TO BE READ IN CONJUNCTION WITH THE ACCOMPANYING GOLDBER ASSOCIATES LTD. REPORT NO. 1522283/4000.

**REFERENCE(S)**

1. BASEDATA PROVIDED BY CITY OF WINNIPEG.
2. PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83 COORDINATE SYSTEM: UTM ZONE 14 VERTICAL DATUM: CGVD28

CLIENT  
CITY OF WINNIPEG

PROJECT  
WINNIPEG LANDFILL LAND USE POTENTIAL REPORT  
SITE 7: KIMBERLY LANDFILL, WINNIPEG, MANITOBA  
TITLE  
**AREA OF RESTRICTED DEVELOPMENT**

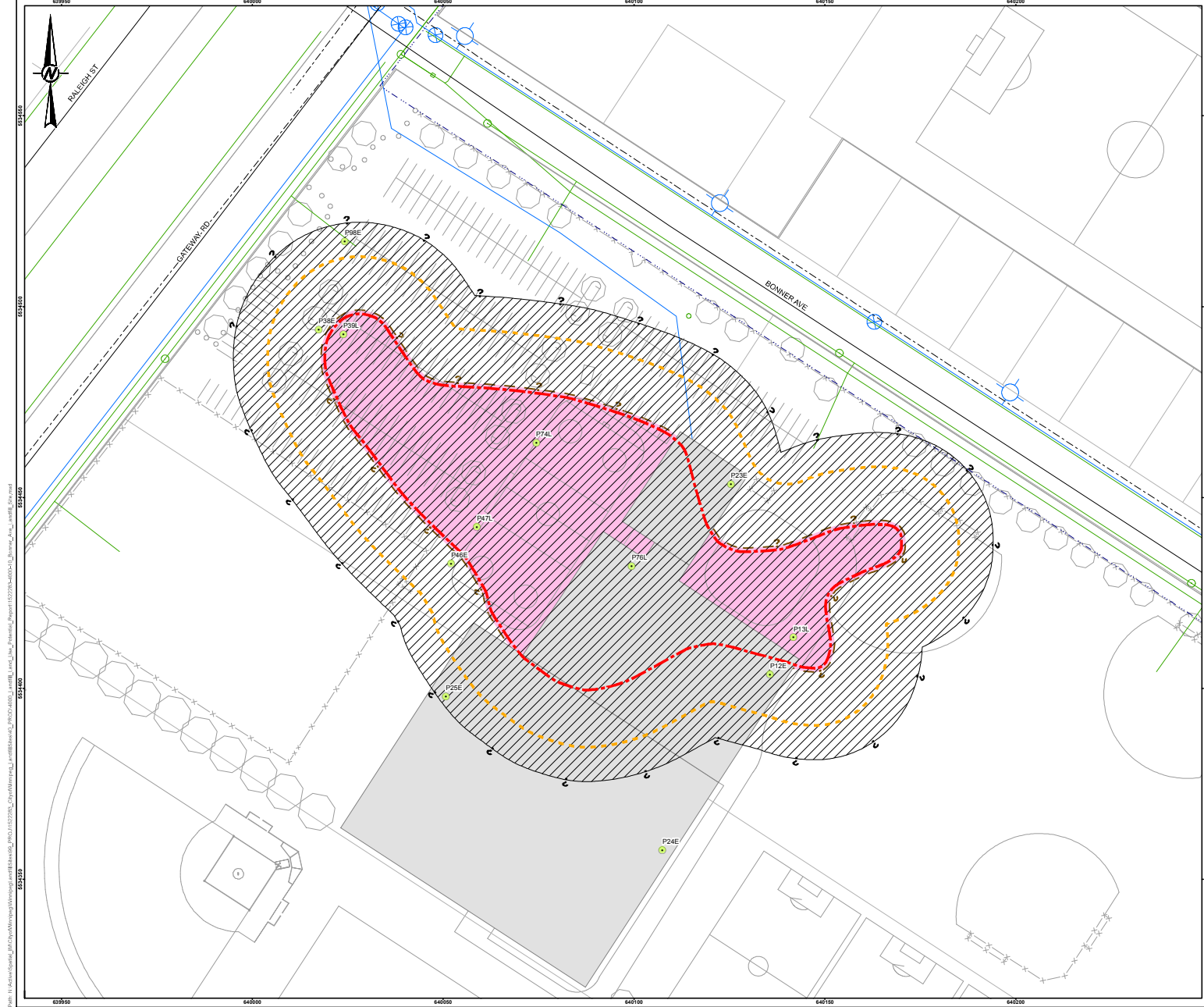
CONSULTANT	YYYY-MM-DD	2015-12-01
	DESIGNED	---
	PREPARED	BR
	REVIEWED	MKF
	APPROVED	PLE
PROJECT NO. 1522283	PHASE 4000	REV. 0
		FIGURE <b>8</b>

C:\Users\jld\Documents\Projects\1522283\1522283\_02\GIS\Map\_Series\Area\_of\_Restricted\_Development\Area\_of\_Restricted\_Development\_Series\_1.aprx

Note: If this measurement does not match what is shown, the sheet size has been modified from...







**LEGEND**

- LANDFILL FOOTPRINT
- CONTROL ZONE AREA
- INTERPRETED EXTENT OF POTENTIAL LANDFILL GAS IMPACTS
- INTERPRETED EXTENT OF POTENTIAL GROUNDWATER IMPACTS
- GAS MONITORING PROBE
- PROPERTY PARCEL
- BUILDING FOOTPRINT
- ROAD
- UTILITY
  - SANITARY SEWER
  - WATER MAIN
  - MTS CABLE
  - GAS LINE



**NOTE(S)**

- THE AREA OF RESTRICTED DEVELOPMENT IS INTERPRETED EXTENT OF POTENTIAL LANDFILL GAS IMPACTS OR THE INTERPRETED EXTENT OF POTENTIAL GROUNDWATER IMPACTS, WHICHEVER IS GREATER.
- THIS FIGURE IS TO BE READ IN CONJUNCTION WITH THE ACCOMPANYING GOLDER ASSOCIATES LTD. REPORT NO. 152283/4000.

**REFERENCE(S)**

- BASEDATA PROVIDED BY CITY OF WINNIPEG.
- PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83  
COORDINATE SYSTEM: UTM ZONE 14 VERTICAL DATUM: CGVD28

CLIENT  
**CITY OF WINNIPEG**

---

PROJECT  
**WINNIPEG LANDFILL LAND USE POTENTIAL REPORT  
SITE 9: BONNER AVENUE LANDFILL, WINNIPEG, MANITOBA**

TITLE  
**AREA OF RESTRICTED DEVELOPMENT**

---

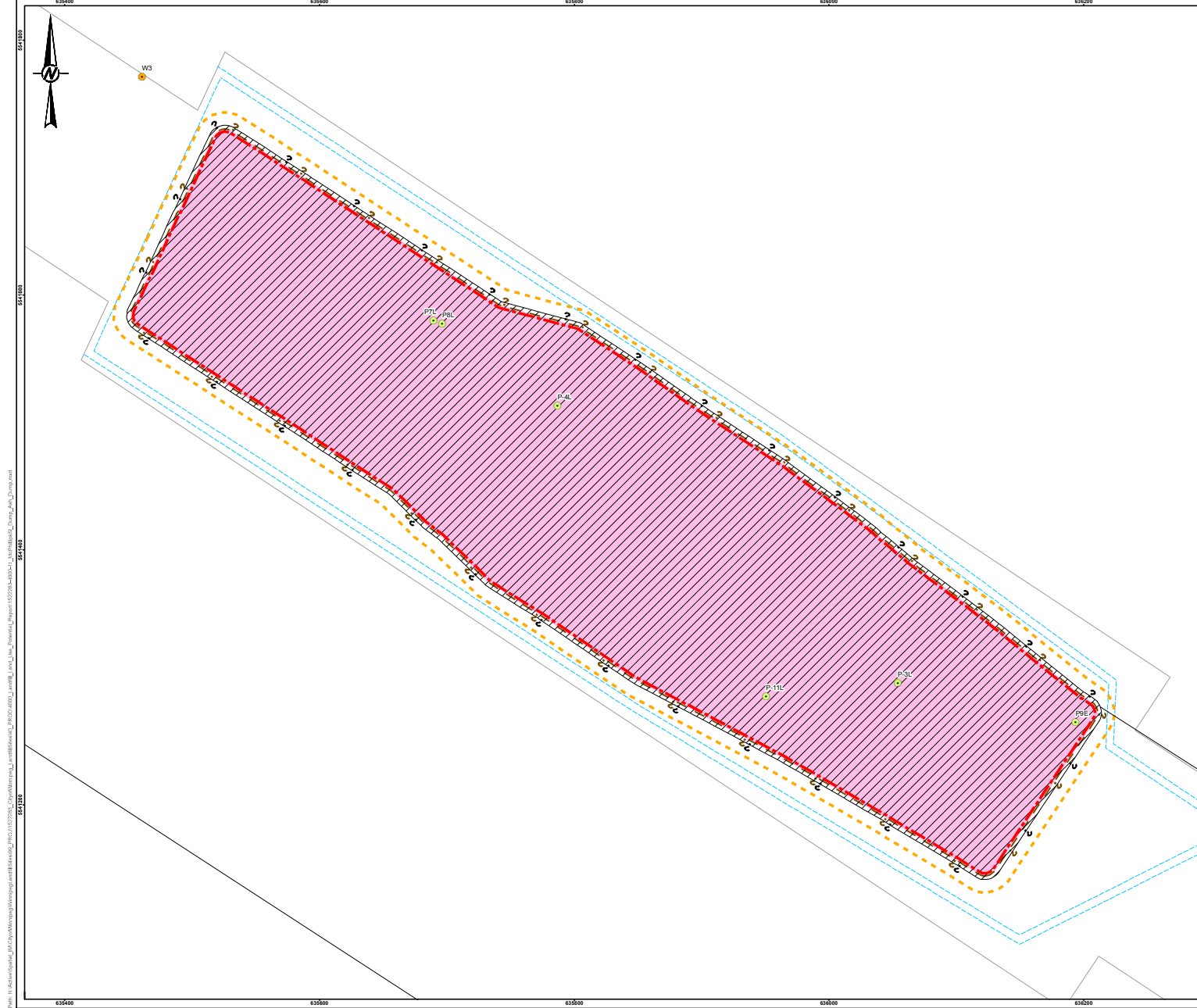
CONSULTANT	DATE	REVISION	DESCRIPTION
	YYYY-MM-DD	2015-12-01	DESIGNED
		---	PREPARED
		BR	REVIEWED
		MKF	APPROVED
		PLE	

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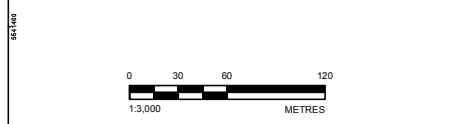
PROJECT NO.	PHASE	REV.	FIGURE
1522283	4000	0	<b>10</b>

C:\Users\maddalena\Desktop\Projects\Winnipeg Landfill\1522283-4000\Drawings\1522283-4000-10-Area of Restricted Development.dwg  
 Plot Date: 2015-12-01 10:00:00 AM  
 User: maddalena

Scale: 1:1,000  
 Note: IF THIS INSTRUMENT DOES NOT MATCH WITH THE DRAWING, THE SHEET SHALL BE RE-PRODUCED FROM THE ORIGINAL DRAWING.



- LEGEND**
- LANDFILL FOOTPRINT
  - CONTROL ZONE AREA
  - INTERPRETED EXTENT OF POTENTIAL LANDFILL GAS IMPACTS
  - INTERPRETED EXTENT OF POTENTIAL GROUNDWATER IMPACTS
  - GROUNDWATER WELL
  - GAS MONITORING PROBE
  - ROAD
  - DITCH
  - PROPERTY PARCEL



**NOTE(S)**

1. THE AREA OF RESTRICTED DEVELOPMENT IS INTERPRETED EXTENT OF POTENTIAL LANDFILL GAS IMPACTS OR THE INTERPRETED EXTENT OF POTENTIAL GROUNDWATER IMPACTS, WHICHEVER IS GREATER.
2. THIS FIGURE IS TO BE READ IN CONJUNCTION WITH THE ACCOMPANYING GOLDER ASSOCIATES LTD. REPORT NO. 1522283/4000.

**REFERENCE(S)**

1. BASEDATA PROVIDED BY CITY OF WINNIPEG.
2. PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83  
COORDINATE SYSTEM: UTM ZONE 14 VERTICAL DATUM: CGVD28

CLIENT  
**CITY OF WINNIPEG**

PROJECT  
**WINNIPEG LANDFILL LAND USE POTENTIAL REPORT  
SITE 10: MCPHILLIPS STREET DUMP (ASH DUMP), WINNIPEG,  
MANITOBA**

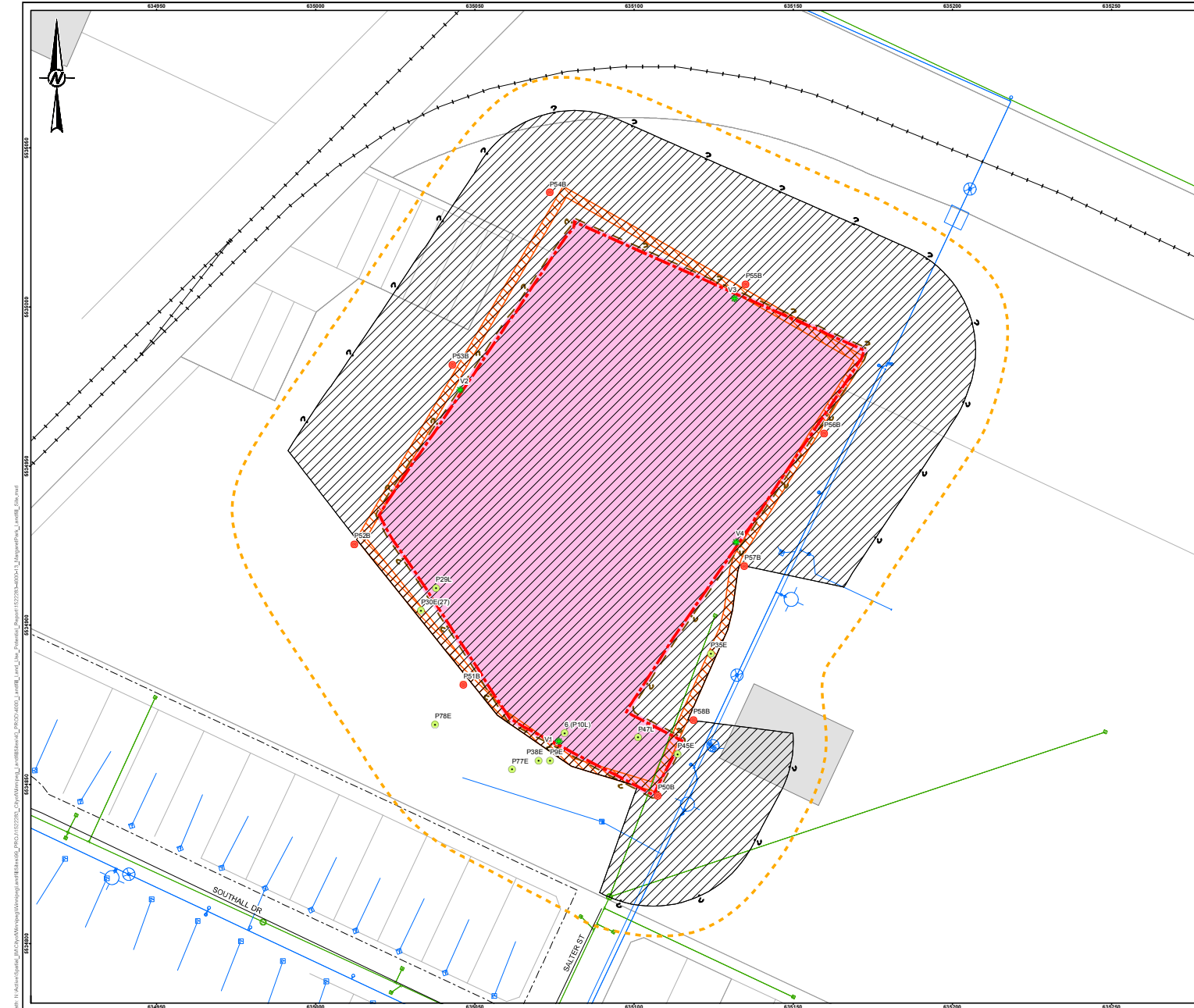
TITLE  
**AREA OF RESTRICTED DEVELOPMENT**

CONSULTANT	YYYY-MM-DD	2015-12-01
	DESIGNED	---
	PREPARED	BR
	REVIEWED	MKF
	APPROVED	PLE
PROJECT NO. 1522283	PHASE 4000	REV. 0
		FIGURE <b>11</b>

File: D:\Development\Projects\Winnipeg\Winnipeg Landfill Land Use Potential Report\1522283\1522283\_10\_Area of Restricted Development.mxd  
 Date: 2015-12-01 10:00:00 AM  
 User: Golder Associates Ltd.

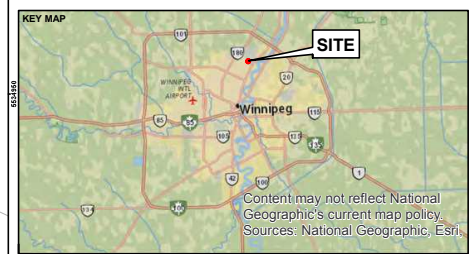
Note: If this measurement does not match what is shown, the sheet size has been modified from 11.





**LEGEND**

- GAS MONITORING PROBE
- GAS BARRIER PROBE
- GAS BARRIER MONITORING VENT
- LANDFILL FOOTPRINT
- CONTROL ZONE AREA
- LANDFILL GAS BARRIER
- INTERPRETED EXTENT OF POTENTIAL LANDFILL GAS IMPACTS
- INTERPRETED EXTENT OF POTENTIAL GROUNDWATER IMPACTS
- ROAD
- RAILWAY
- PROPERTY PARCEL
- BUILDING FOOTPRINT
- UTILITY**
- GAS LINE
- SANITARY SEWER
- WATER MAIN



**NOTE(S)**

1. THE AREA OF RESTRICTED DEVELOPMENT IS INTERPRETED EXTENT OF POTENTIAL LANDFILL GAS IMPACTS OR THE INTERPRETED EXTENT OF POTENTIAL GROUNDWATER IMPACTS, WHICHEVER IS GREATER.
2. THIS FIGURE IS TO BE READ IN CONJUNCTION WITH THE ACCOMPANYING GOLDBER ASSOCIATES LTD. REPORT NO. 1522283/4000.

**REFERENCE(S)**

1. BASEDATA PROVIDED BY CITY OF WINNIPEG.
2. PROJECTION: TRANSVERSE MERCATOR. DATUM: NAD 83

COORDINATE SYSTEM: UTM ZONE 14 VERTICAL DATUM: CGVD28

**CLIENT**  
CITY OF WINNIPEG

---

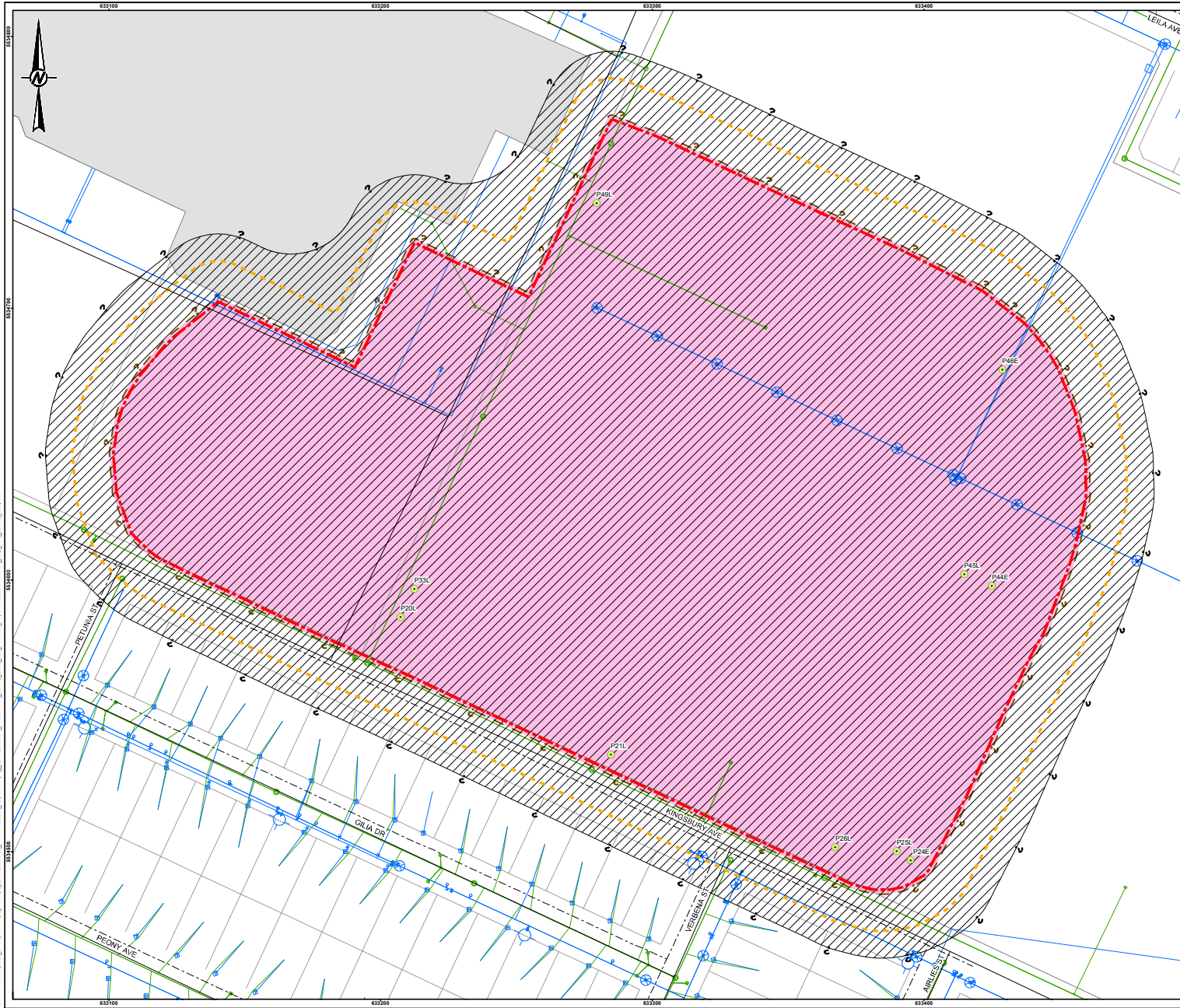
**PROJECT**  
WINNIPEG LANDFILL LAND USE POTENTIAL REPORT  
SITE 12: MARGARET PARK LANDFILL SITE, WINNIPEG, MANITOBA

**TITLE**  
**AREA OF RESTRICTED DEVELOPMENT**

CONSULTANT	YYYY-MM-DD	2015-12-01
	DESIGNED	---
	PREPARED	BR
	REVIEWED	MKF
	APPROVED	PLE
PROJECT NO. 1522283	PHASE 4000	REV. 0
		FIGURE <b>13</b>

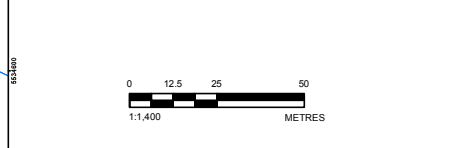
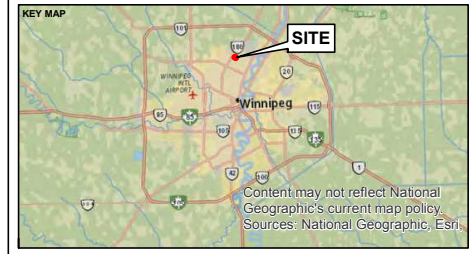
File: D:\Asphalt\MapDocs\WinPeg\MapDocs\WinPeg\1522283\1522283\_0110\1522283\_0110\_Area of Restricted Development.mxd  
 Project: 1522283 - WinPeg Landfill Land Use Potential Report  
 Date: 15/12/2015 10:07:00 AM  
 User: p...@...

Note: If this measurement does not match what is shown, the sheet has been modified from the original drawing.



**LEGEND**

- LANDFILL FOOTPRINT
- CONTROL ZONE AREA
- INTERPRETED EXTENT OF POTENTIAL LANDFILL GAS IMPACTS
- INTERPRETED EXTENT OF POTENTIAL GROUNDWATER IMPACTS
- GAS MONITORING PROBE
- ROAD
- BUILDING FOOTPRINT
- PROPERTY PARCEL
- UTILITY
- GAS LINE
- CABLE LINE
- SANITARY SEWER
- WATER MAIN



**NOTE(S)**

1. THE AREA OF RESTRICTED DEVELOPMENT IS INTERPRETED EXTENT OF POTENTIAL LANDFILL GAS IMPACTS OR THE INTERPRETED EXTENT OF POTENTIAL GROUNDWATER IMPACTS, WHICHEVER IS GREATER.
2. THIS FIGURE IS TO BE READ IN CONJUNCTION WITH THE ACCOMPANYING GOLDER ASSOCIATES LTD. REPORT NO. 1522283/4000.

**REFERENCE(S)**

1. BASE DATA PROVIDED BY CITY OF WINNIPEG.
2. PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83  
COORDINATE SYSTEM: UTM ZONE 14 VERTICAL DATUM: CGVD28

CLIENT  
**CITY OF WINNIPEG**

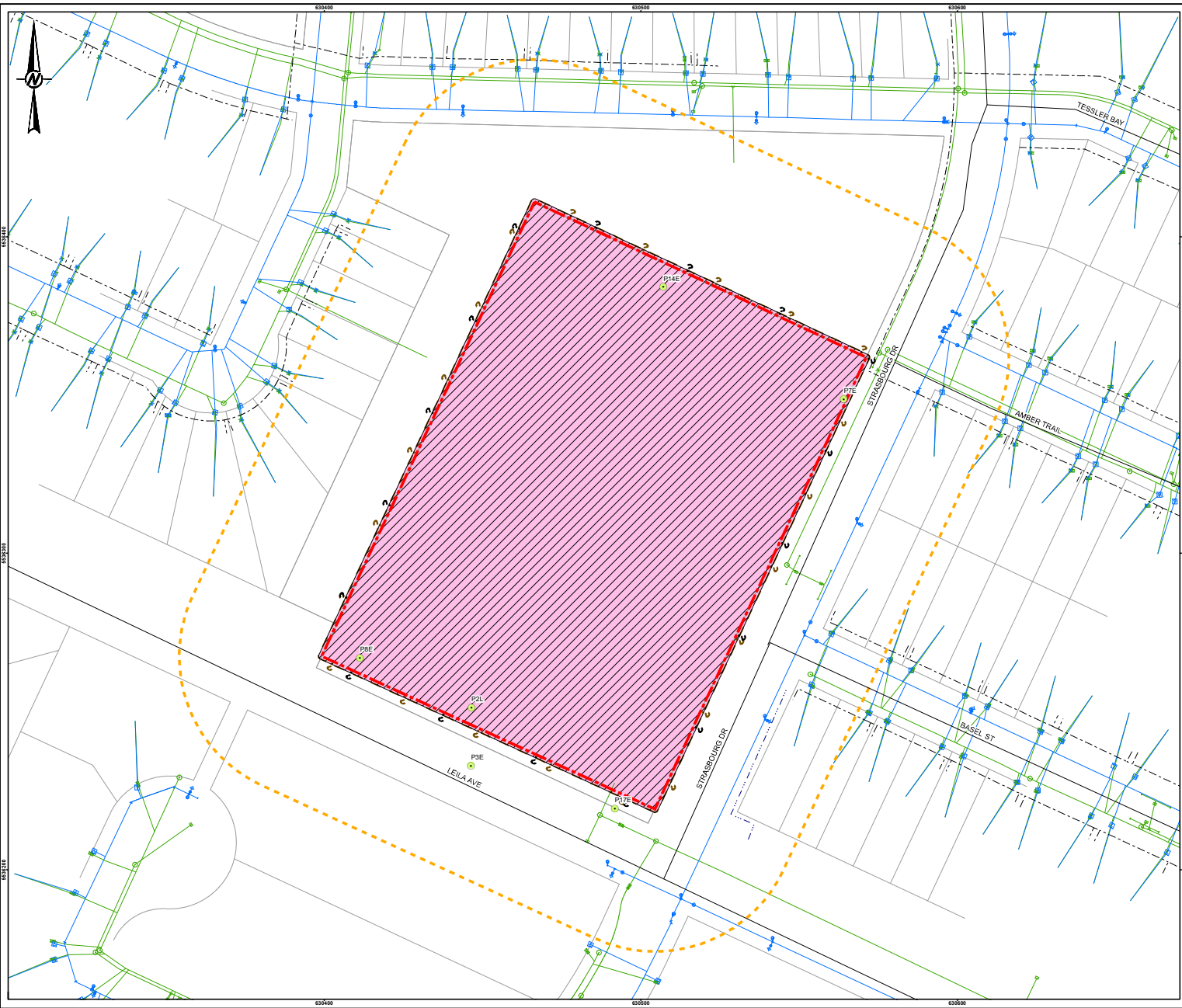
PROJECT  
**WINNIPEG LANDFILL LAND USE POTENTIAL REPORT  
SITE 13: LEILA AVENUE LANDFILL SITE, WINNIPEG, MANITOBA**

TITLE  
**AREA OF RESTRICTED DEVELOPMENT**

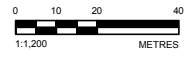
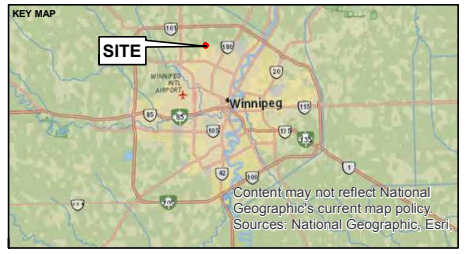
CONSULTANT	YYYY-MM-DD	2015-12-01
	DESIGNED	---
	PREPARED	BR
	REVIEWED	MKF
	APPROVED	PLE
PROJECT NO. 1522283	PHASE 4000	REV. 0
		FIGURE <b>14</b>

File: G:\Development\Projects\1522283\1522283\_01\Drawings\1522283\_01\_13\_Area of Restricted Development.dwg  
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 User: plevins  
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 Plot User: plevins  
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 Plot Description: 1522283\_01\_13\_Area of Restricted Development.dwg  
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 Plot Color: Black  
 Plot Line Weight: 0.50  
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 Plot Name: 1522283\_01\_13\_Area of Restricted Development.dwg

If this measurement does not match what is shown, the sheet size has been modified from



- LEGEND**
- LANDFILL FOOTPRINT
  - CONTROL ZONE AREA
  - INTERPRETED EXTENT OF POTENTIAL LANDFILL GAS IMPACTS
  - INTERPRETED EXTENT OF POTENTIAL GROUNDWATER IMPACTS
  - GAS MONITORING PROBE
  - ROAD
  - PROPERTY PARCEL
  - UTILITY
  - GAS LINE
  - MTS CABLE
  - SANITARY SEWER
  - WATER MAIN



**NOTE(S)**

1. THE AREA OF RESTRICTED DEVELOPMENT IS INTERPRETED EXTENT OF POTENTIAL LANDFILL GAS IMPACTS OR THE INTERPRETED EXTENT OF POTENTIAL GROUNDWATER IMPACTS, WHICHEVER IS GREATER.
2. THIS FIGURE IS TO BE READ IN CONJUNCTION WITH THE ACCOMPANYING GOLDER ASSOCIATES LTD. REPORT NO. 1522283/4000.

**REFERENCE(S)**

1. BASEDATA PROVIDED BY CITY OF WINNIPEG.
2. PROJECTION: TRANSVERSE MERCATOR; DATUM: NAD 83; COORDINATE SYSTEM: UTM ZONE 14 VERTICAL DATUM: CGVD28

CLIENT  
CITY OF WINNIPEG

PROJECT  
WINNIPEG LANDFILL LAND USE POTENTIAL REPORT  
SITE 14: LEILA AVENUE (WEST) LANDFILL SITE, WINNIPEG, MANITOBA

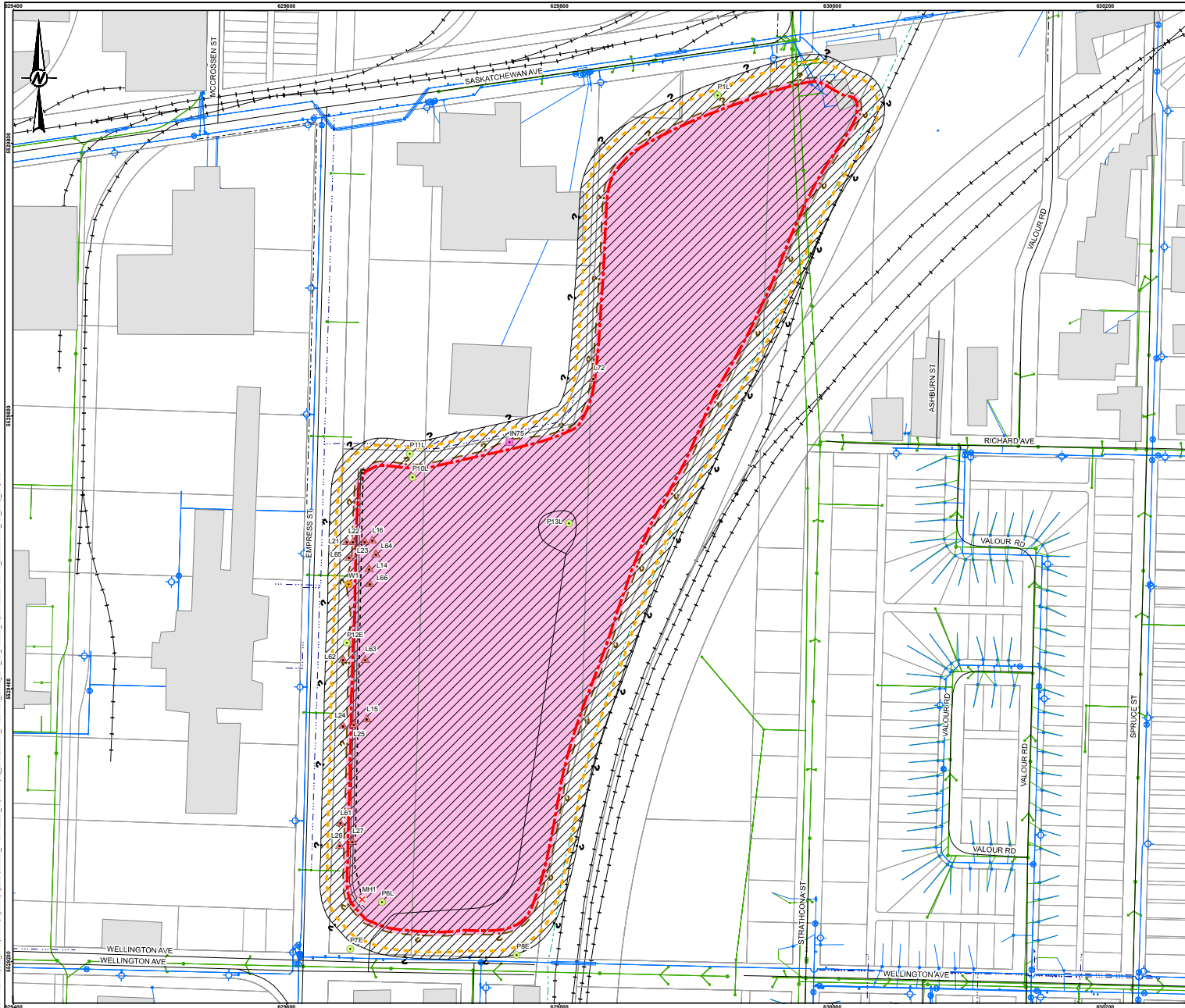
**TITLE**  
**AREA OF RESTRICTED DEVELOPMENT**

CONSULTANT	YYYY-MM-DD	2015-12-01
	DESIGNED	---
	PREPARED	BR
	REVIEWED	MKF
	APPROVED	PLE

PROJECT NO.	PHASE	REV.	FIGURE
1522283	4000	0	<b>15</b>

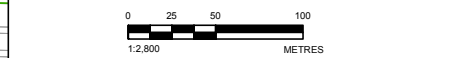
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IF THIS DIMENSION DOES NOT MATCH WITH THE DRAWING, THE SHEET SHALL BE REVISIONED FROM THE DRAWING.



**LEGEND**

- ✗ LEACHATE SUMP
- ◻ PIEZOMETER
- ▲ LEACHATE PROBE
- GROUNDWATER WELLS
- GAS MONITORING PROBE
- ▭ LANDFILL FOOTPRINT
- ▨ CONTROL ZONE AREA
- ▨ INTERPRETED EXTENT OF POTENTIAL LANDFILL GAS IMPACTS
- ▨ INTERPRETED EXTENT OF POTENTIAL GROUNDWATER IMPACTS
- ▭ BUILDING FOOTPRINT
- ▭ PROPERTY PARCEL
- ROAD
- RAILWAY
- CUT OFF WALL
- UTILITY
- FIBRE OPTIC CABLE AND CONDUIT
- GAS LINE
- MTS CABLE
- SANITARY SEWER
- WATER MAIN



**NOTE(S)**

1. THE AREA OF RESTRICTED DEVELOPMENT IS INTERPRETED EXTENT OF POTENTIAL LANDFILL GAS IMPACTS OR THE INTERPRETED EXTENT OF POTENTIAL GROUNDWATER IMPACTS, WHICHEVER IS GREATER.
2. THIS FIGURE IS TO BE READ IN CONJUNCTION WITH THE ACCOMPANYING GOLDBER ASSOCIATES LTD. REPORT NO. 1522283/4000.

**REFERENCE(S)**

1. BASEDATA PROVIDED BY CITY OF WINNIPEG.
2. PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83 COORDINATE SYSTEM: UTM ZONE 14 VERTICAL DATUM: CGVD28

**CLIENT**  
CITY OF WINNIPEG

**PROJECT**  
WINNIPEG LANDFILL LAND USE POTENTIAL REPORT  
SITE 15: SASKATCHEWAN AVENUE DUMP SITE, WINNIPEG, MANITOBA

**TITLE**  
**AREA OF RESTRICTED DEVELOPMENT**

CONSULTANT	YYYY-MM-DD	2015-12-01
	DESIGNED	---
	PREPARED	BR
	REVIEWED	MKF
	APPROVED	PLE
PROJECT NO. 1522283	PHASE 4000	REV. 0
		FIGURE <b>16</b>

C:\Users\jgold\OneDrive\Documents\Projects\1522283\1522283\_01\Drawings\1522283\_01\1522283\_01\_16.dwg (1522283\_01\_16.dwg) - 1522283\_01\_16.dwg - 1522283\_01\_16.dwg - 1522283\_01\_16.dwg

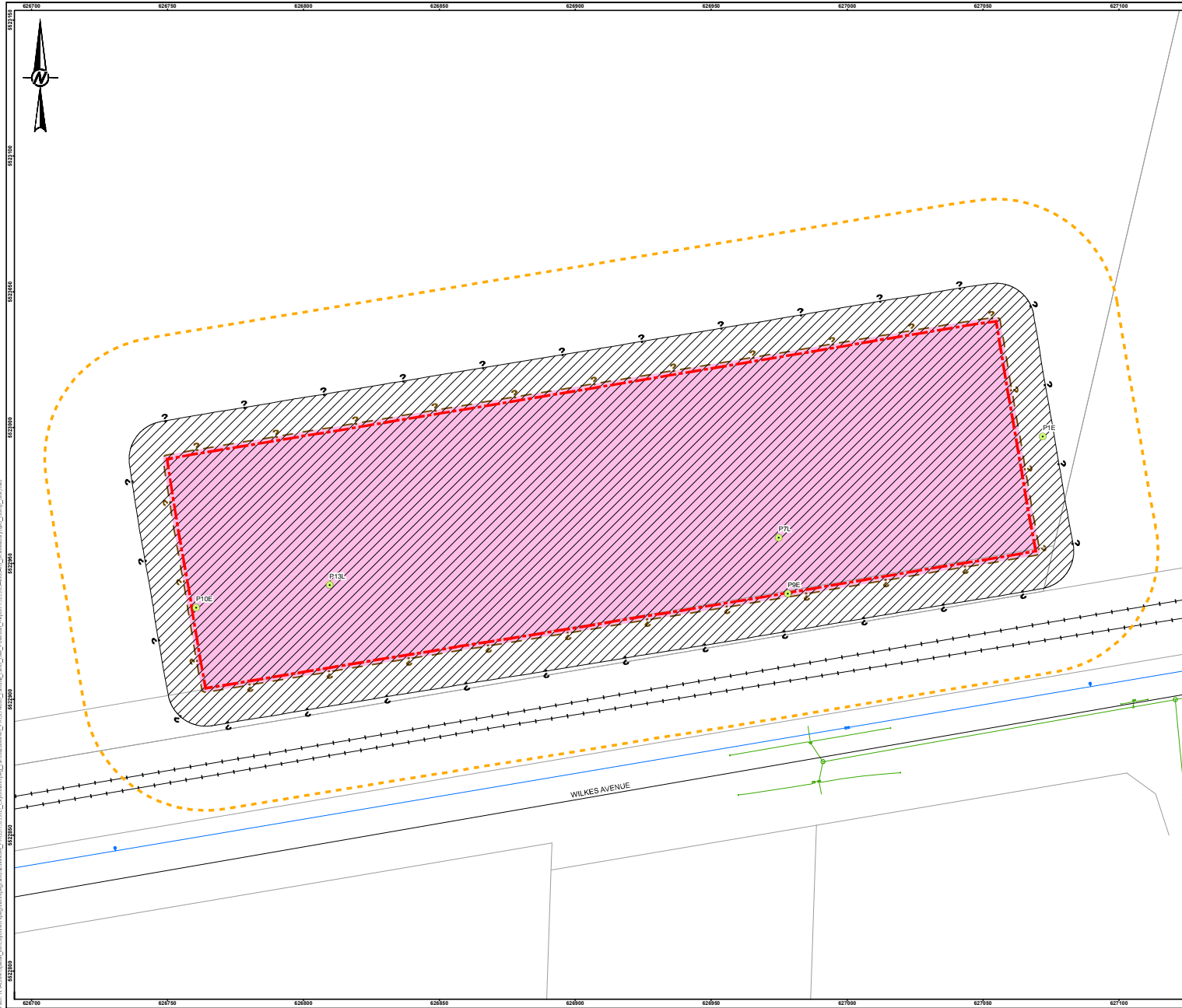
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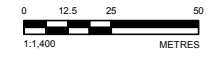
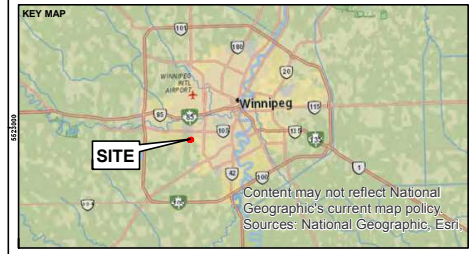








- LEGEND**
- ▭ LANDFILL FOOTPRINT
  - - - CONTROL ZONE AREA
  - ? INTERPRETED EXTENT OF POTENTIAL LANDFILL GAS IMPACTS
  - ? INTERPRETED EXTENT OF POTENTIAL GROUNDWATER IMPACTS
  - GAS MONITORING PROBE
  - ROAD
  - RAILWAY
  - PROPERTY PARCEL
  - UTILITY
  - SANITARY SEWER
  - WATER MAIN



**NOTE(S)**

1. THE AREA OF RESTRICTED DEVELOPMENT IS INTERPRETED EXTENT OF POTENTIAL LANDFILL GAS IMPACTS OR THE INTERPRETED EXTENT OF POTENTIAL GROUNDWATER IMPACTS, WHICHEVER IS GREATER.
2. THIS FIGURE IS TO BE READ IN CONJUNCTION WITH THE ACCOMPANYING GOLDBER ASSOCIATES LTD. REPORT NO. 1522283/4000.

**REFERENCE(S)**

1. BASE DATA PROVIDED BY CITY OF WINNIPEG.
2. PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83  
COORDINATE SYSTEM: UTM ZONE 14 VERTICAL DATUM: CGVD28

CLIENT  
CITY OF WINNIPEG

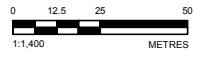
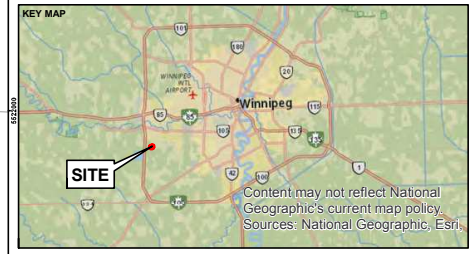
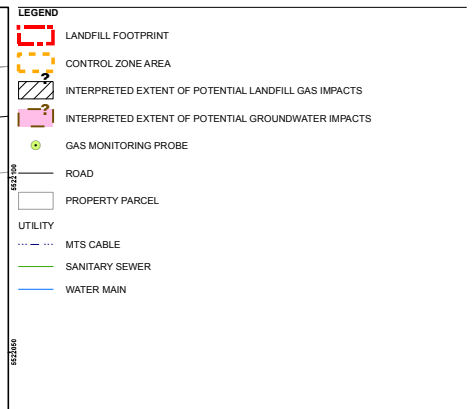
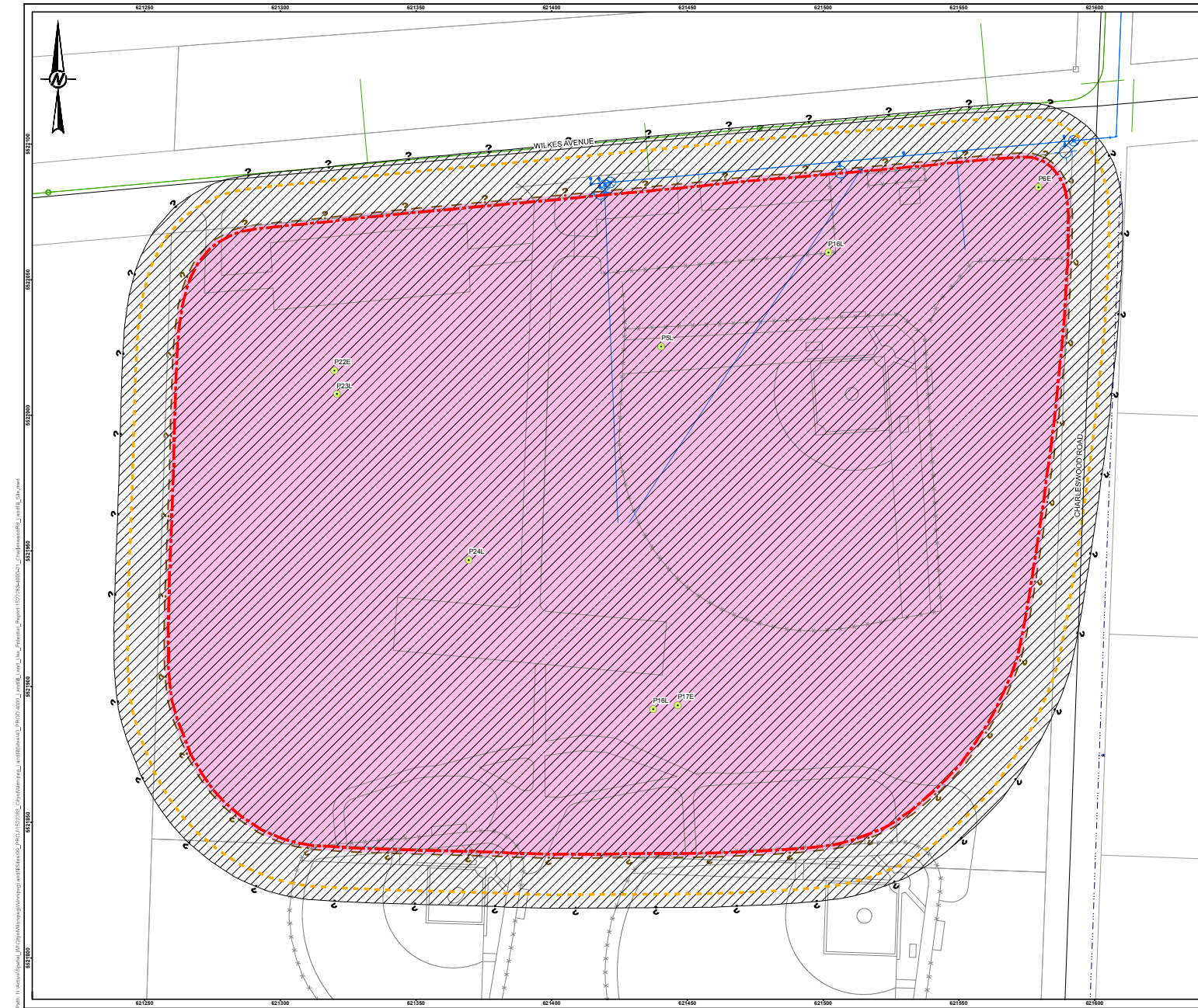
PROJECT  
**WINNIPEG LANDFILL LAND USE POTENTIAL REPORT**  
**SITE 19: SHAFTESBURY BOULEVARD DUMP SITE, WINNIPEG, MANITOBA**

TITLE  
**AREA OF RESTRICTED DEVELOPMENT**

CONSULTANT	YYYY-MM-DD	2015-12-02
	DESIGNED	---
	PREPARED	BR
	REVIEWED	MKF
	APPROVED	PLE
PROJECT NO. 1522283	PHASE 4000	REV. 0
		FIGURE <b>20</b>

File: H:\Workspaces\City of Winnipeg\GIS\Projects\GIS\2015\1522283\_01\_01\Area\_of\_Restricted\_Development\1522283\_Area\_of\_Restricted\_Development.mxd  
 Date: 2015-12-02 10:00:00 AM  
 User: jple

If this measurement does not match what is shown on the sheet, this sheet has been modified from the original.



**NOTE(S)**  
 1. THE AREA OF RESTRICTED DEVELOPMENT IS INTERPRETED EXTENT OF POTENTIAL LANDFILL GAS IMPACTS OR THE INTERPRETED EXTENT OF POTENTIAL GROUNDWATER IMPACTS, WHICHEVER IS GREATER.  
 2. THIS FIGURE IS TO BE READ IN CONJUNCTION WITH THE ACCOMPANYING GOLDER ASSOCIATES LTD. REPORT NO. 1522283/4000.

**REFERENCE(S)**  
 1. BASE DATA PROVIDED BY CITY OF WINNIPEG.  
 2. PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83  
 COORDINATE SYSTEM: UTM ZONE 14 VERTICAL DATUM: CGVD28

CLIENT  
 CITY OF WINNIPEG

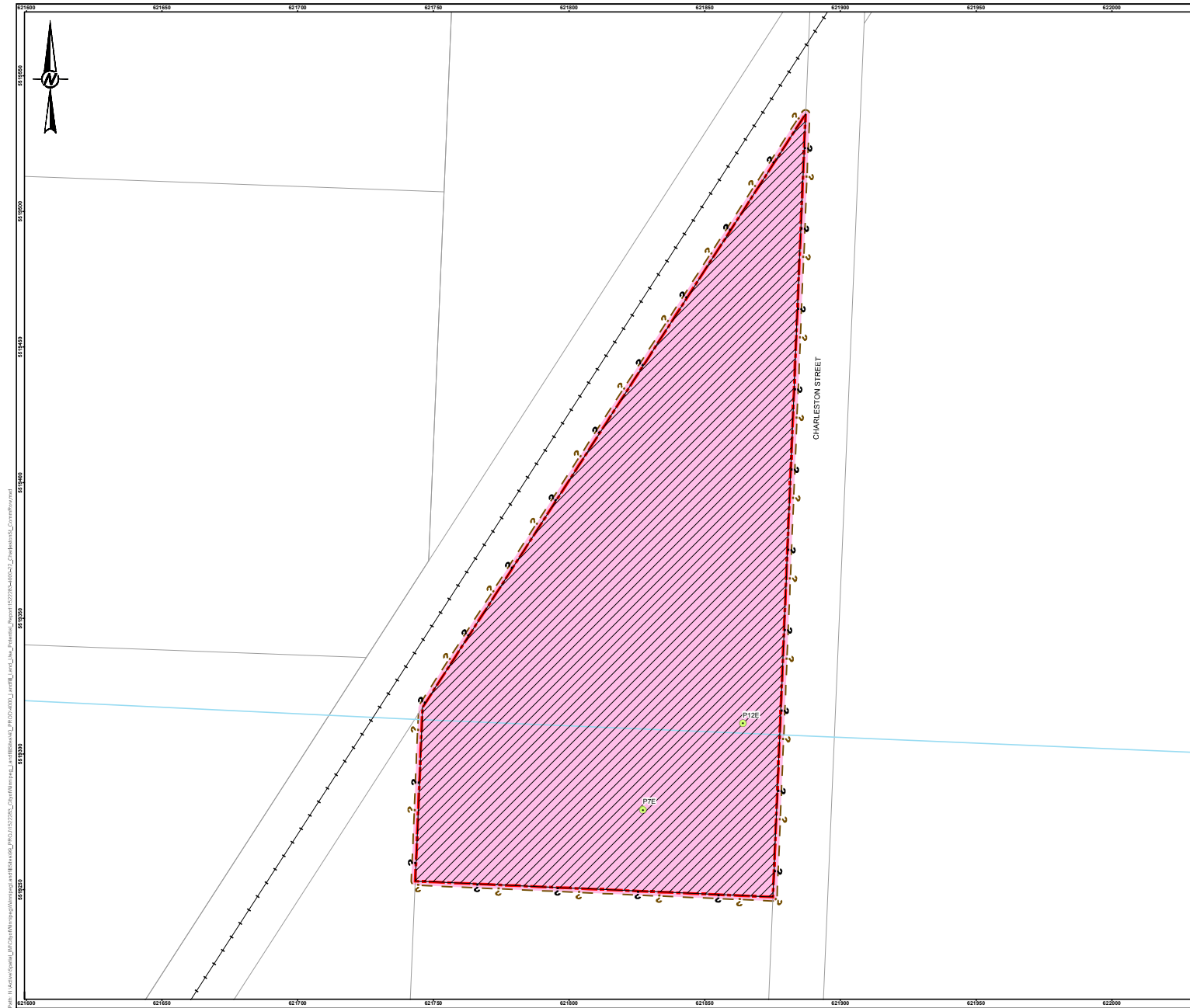
PROJECT  
 WINNIPEG LANDFILL LAND USE POTENTIAL REPORT  
 SITE 20: CHARLESWOOD ROAD LANDFILL SITE, WINNIPEG, MANITOBA

TITLE  
**AREA OF RESTRICTED DEVELOPMENT**

CONSULTANT	YYYY-MM-DD	2015-12-02
	DESIGNED	---
	PREPARED	BR
	REVIEWED	MKF
	APPROVED	PLE
PROJECT NO. 1522283	PHASE 4000	REV. 0

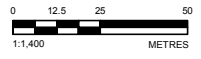
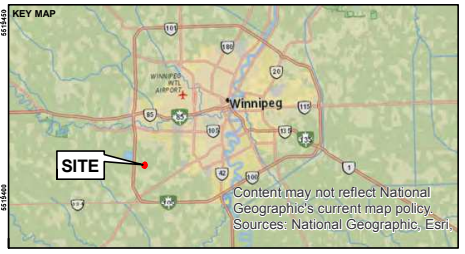
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If this measurement does not match what is shown, the sheet size was modified from the original.



**LEGEND**

	LANDFILL FOOTPRINT
	INTERPRETED EXTENT OF POTENTIAL LANDFILL GAS IMPACTS
	INTERPRETED EXTENT OF POTENTIAL GROUNDWATER IMPACTS
	GAS MONITORING PROBE
	DITCH
	RAILWAY
	PROPERTY PARCEL



**NOTE(S)**

1. THE AREA OF RESTRICTED DEVELOPMENT IS INTERPRETED EXTENT OF POTENTIAL LANDFILL GAS IMPACTS OR THE INTERPRETED EXTENT OF POTENTIAL GROUNDWATER IMPACTS, WHICHEVER IS GREATER.
2. THIS FIGURE IS TO BE READ IN CONJUNCTION WITH THE ACCOMPANYING GOLDLER ASSOCIATES LTD. REPORT NO. 1522283/4000.

**REFERENCE(S)**

1. BASEDATA PROVIDED BY CITY OF WINNIPEG.
2. PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83  
COORDINATE SYSTEM: UTM ZONE 14 VERTICAL DATUM: CGVD28

CLIENT  
CITY OF WINNIPEG

PROJECT  
**WINNIPEG LANDFILL LAND USE POTENTIAL REPORT  
SITE 21: CHARLESTON STREET (COMMUNITY ROW), WINNIPEG,  
MANITOBA**

TITLE  
**AREA OF RESTRICTED DEVELOPMENT**

CONSULTANT	YYYY-MM-DD	2015-12-02
	DESIGNED	---
	PREPARED	BR
	REVIEWED	MKF
	APPROVED	PLE
PROJECT NO. 1522283	PHASE 4000	REV. 0
		FIGURE <b>22</b>

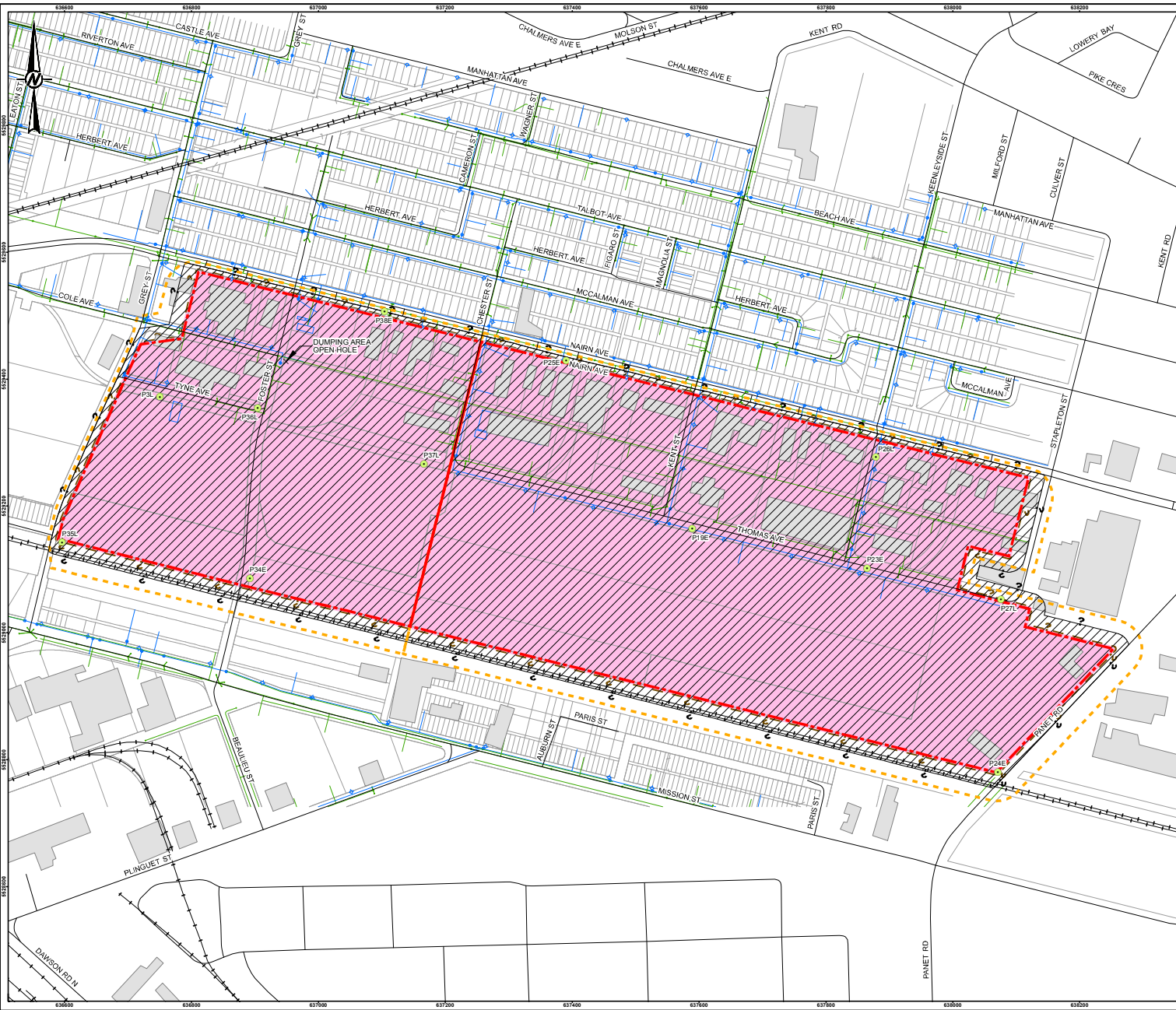
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 Plot Date: 2015-12-02 10:00:00 AM  
 Plot User: jkelly

If this measurement does not match what is shown, the sheet size has been modified from









- LEGEND**
- LANDFILL FOOTPRINT
  - CONTROL ZONE AREA
  - INTERPRETED EXTENT OF POTENTIAL LANDFILL GAS IMPACTS
  - INTERPRETED EXTENT OF POTENTIAL GROUNDWATER IMPACTS
  - GAS MONITORING PROBE
  - ROAD
  - BUILDING FOOTPRINT
  - PROPERTY PARCEL
  - SANITARY SEWER
  - WATER MAIN



**NOTE(S)**

1. THE AREA OF RESTRICTED DEVELOPMENT IS INTERPRETED EXTENT OF POTENTIAL LANDFILL GAS IMPACTS OR THE INTERPRETED EXTENT OF POTENTIAL GROUNDWATER IMPACTS, WHICHEVER IS GREATER.
2. THIS FIGURE IS TO BE READ IN CONJUNCTION WITH THE ACCOMPANYING GOLDER ASSOCIATES LTD. REPORT NO. 1522283/4000.

**REFERENCE(S)**

1. BASE DATA PROVIDED BY CITY OF WINNIPEG.
2. PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83  
COORDINATE SYSTEM: UTM ZONE 14 VERTICAL DATUM: CGVD28

**CLIENT**  
CITY OF WINNIPEG

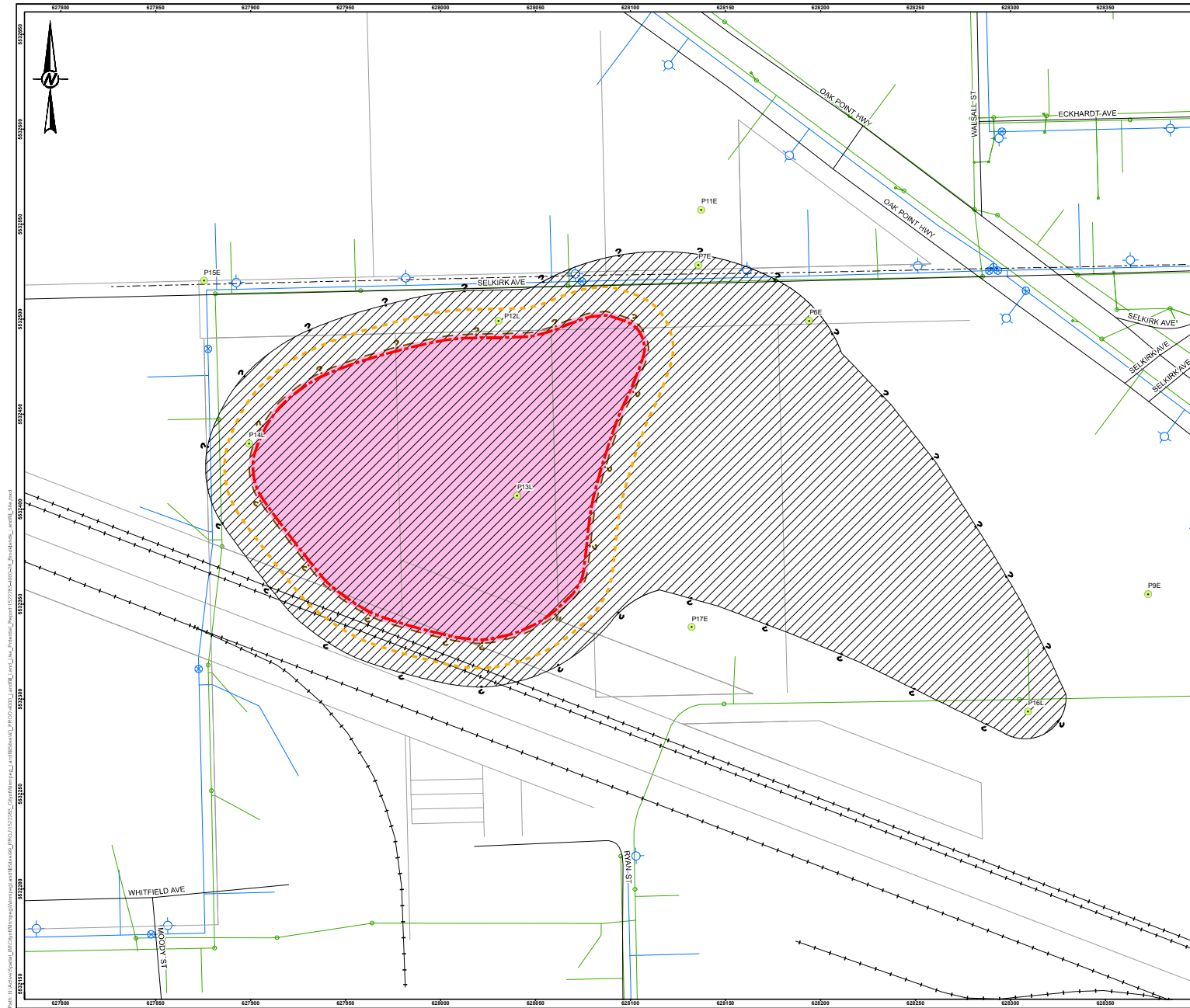
**PROJECT**  
WINNIPEG LANDFILL LAND USE POTENTIAL REPORT  
SITE 26 AND 27: ELMWOOD AND NAIRN AVENUE LANDFILL  
SITES, WINNIPEG, MANITOBA

**TITLE**  
**AREA OF RESTRICTED DEVELOPMENT**

CONSULTANT		YYYY-MM-DD	2015-12-02
		DESIGNED	---
		PREPARED	BR
		REVIEWED	MKF
		APPROVED	PLE
PROJECT NO.	PHASE	REV.	FIGURE
1522283	4000	0	<b>25</b>

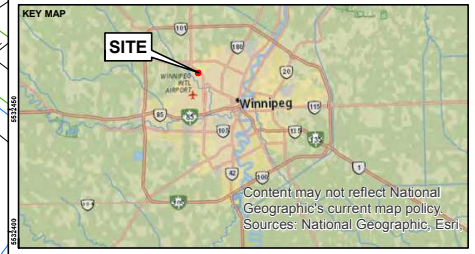
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 Plot Title: None  
 Plot Subtitle: None  
 Plot Author: jgibson  
 Plot Project: 1522283\_4000  
 Plot Description: Area of Restricted Development  
 Plot Date: 2015-12-02 10:53:00 AM  
 Plot User: jgibson

Note: If this measurement does not match what is shown, the sheet size has been modified from 11.00 x 17.00 to 11.00 x 17.00.



**LEGEND**

- LANDFILL FOOTPRINT
- CONTROL ZONE AREA
- INTERPRETED EXTENT OF POTENTIAL LANDFILL GAS IMPACTS
- INTERPRETED EXTENT OF POTENTIAL GROUNDWATER IMPACTS
- GAS MONITORING PROBE
- RAILWAY
- PROPERTY PARCEL
- UTILITY**
- GAS LINE
- SANITARY SEWER
- WATER MAIN



**NOTE(S)**

1. THE AREA OF RESTRICTED DEVELOPMENT IS INTERPRETED EXTENT OF POTENTIAL LANDFILL GAS IMPACTS OR THE INTERPRETED EXTENT OF POTENTIAL GROUNDWATER IMPACTS, WHICHEVER IS GREATER.
2. THIS FIGURE IS TO BE READ IN CONJUNCTION WITH THE ACCOMPANYING GOLDBER ASSOCIATES LTD. REPORT NO. 1522283/4000.

**REFERENCE(S)**

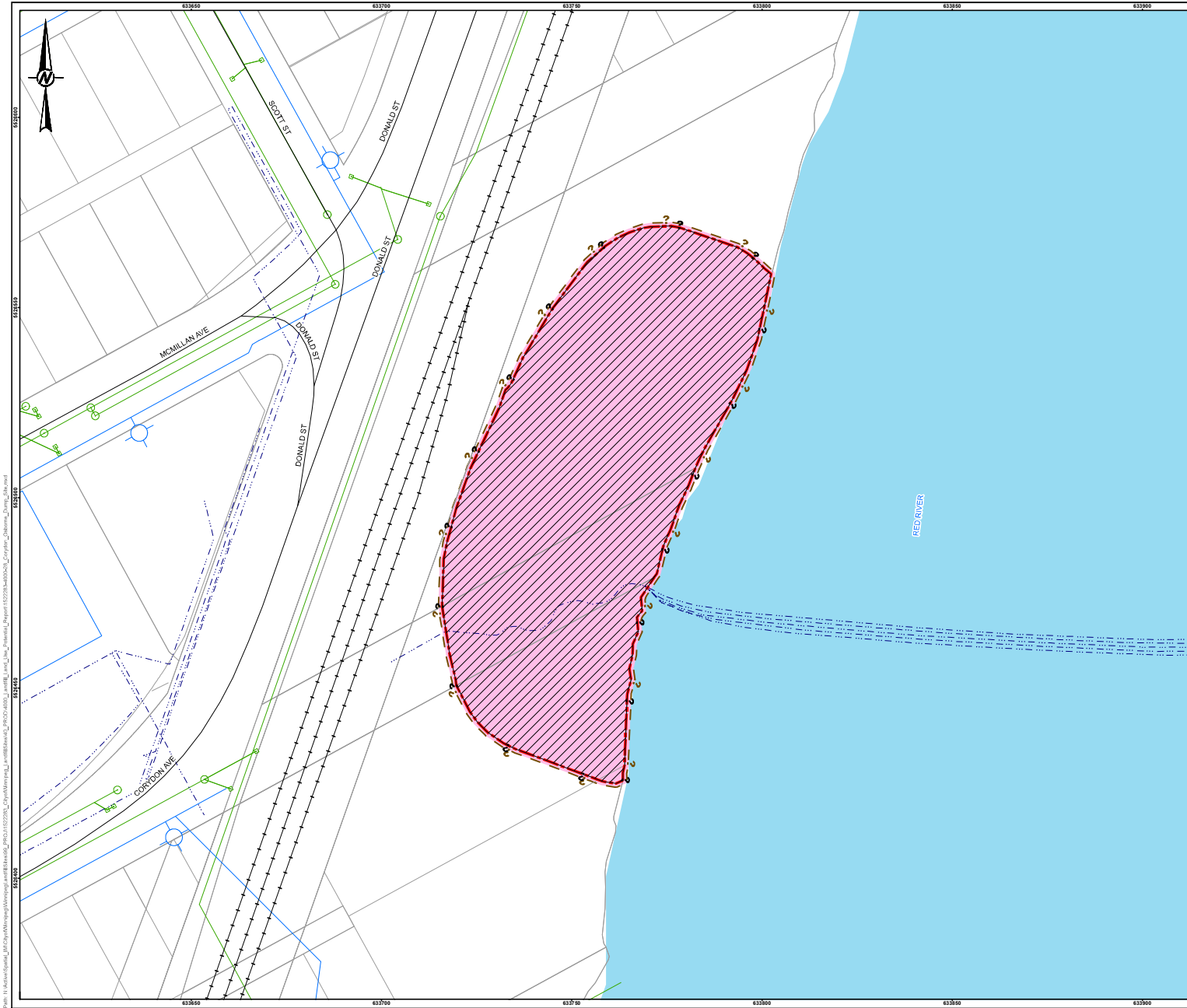
1. BASE DATA PROVIDED BY CITY OF WINNIPEG.
2. PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83 COORDINATE SYSTEM: UTM ZONE 14 VERTICAL DATUM: CGVD28

<b>CLIENT</b>			
CITY OF WINNIPEG			
<b>PROJECT</b>			
WINNIPEG LANDFILL LAND USE POTENTIAL REPORT			
SITE 28: BROOKLANDS LANDFILL SITE, WINNIPEG, MANITOBA			
<b>TITLE</b>			
AREA OF RESTRICTED DEVELOPMENT			
<b>CONSULTANT</b>			
	YYYY-MM-DD	2015-12-02	
	DESIGNED	---	
	PREPARED	BR	
	REVIEWED	MKF	
	APPROVED	PLE	
PROJECT NO.	PHASE	REV.	FIGURE
1522283	4000	0	26

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2015-12-02 10:00 AM. If this measurement does not match what is shown, the sheet size has been modified from





**LEGEND**

- LANDFILL FOOTPRINT
- INTERPRETED EXTENT OF POTENTIAL LANDFILL GAS IMPACTS
- INTERPRETED EXTENT OF POTENTIAL GROUNDWATER IMPACTS
- RAILWAY
- ROAD
- WATERBODY
- PROPERTY PARCEL
- UTILITY**
- SANITARY SEWER
- WATER MAIN
- MTS CABLE



**NOTE(S)**

1. THE AREA OF RESTRICTED DEVELOPMENT IS INTERPRETED EXTENT OF POTENTIAL LANDFILL GAS IMPACTS OR THE INTERPRETED EXTENT OF POTENTIAL GROUNDWATER IMPACTS, WHICHEVER IS GREATER.
2. THIS FIGURE IS TO BE READ IN CONJUNCTION WITH THE ACCOMPANYING GOLDBER ASSOCIATES LTD. REPORT NO. 1522283/4000.

**REFERENCE(S)**

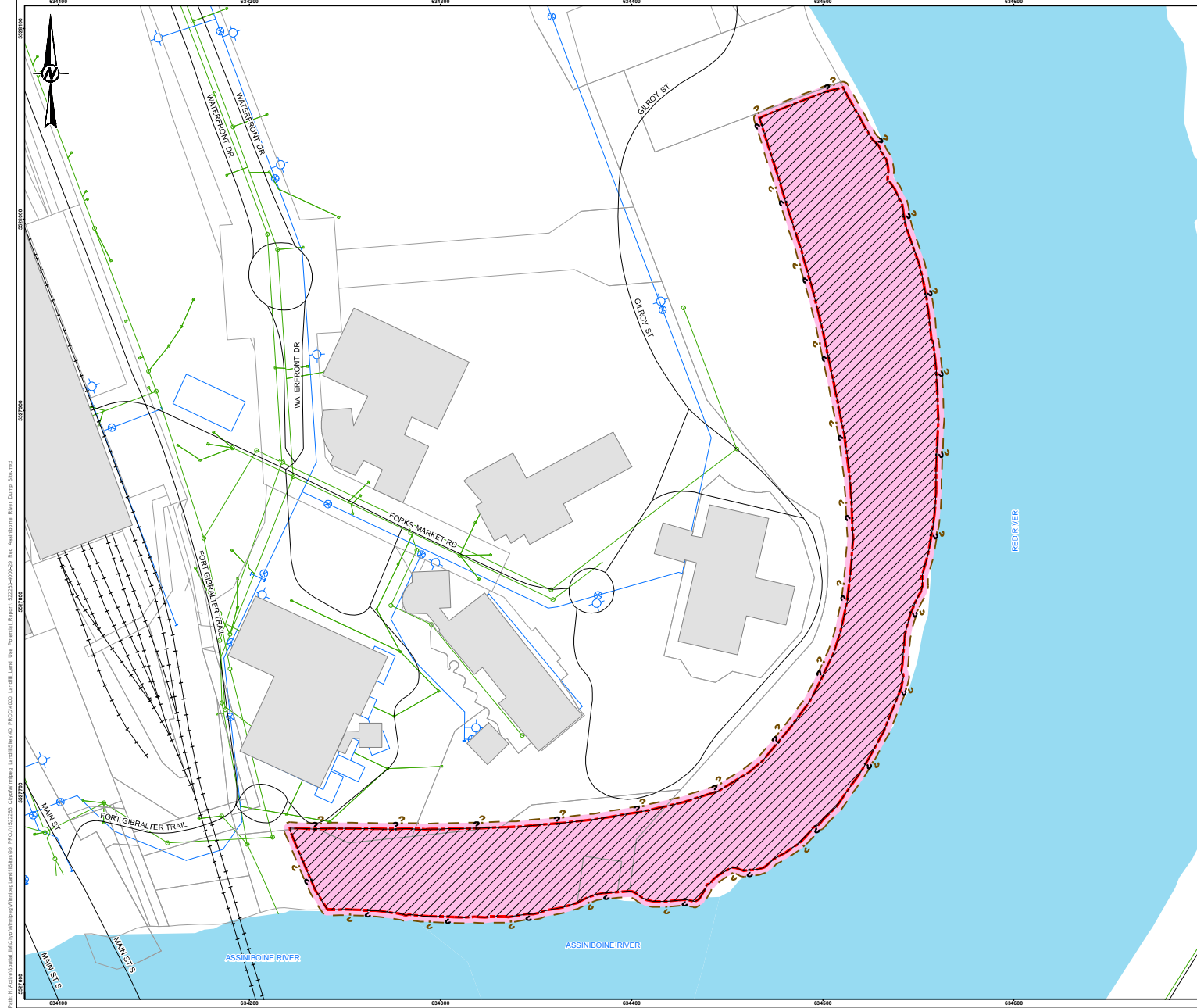
1. BASE DATA PROVIDED BY CITY OF WINNIPEG.
2. PROJECTION: TRANSVERSE MERCATOR; DATUM: NAD 83; COORDINATE SYSTEM: UTM ZONE 14; VERTICAL DATUM: CGVD28

CLIENT  
CITY OF WINNIPEG

PROJECT  
WINNIPEG LANDFILL LAND USE POTENTIAL REPORT  
SITE 30: CORYDON-OSBORNE DUMP SITE, WINNIPEG, MANITOBA

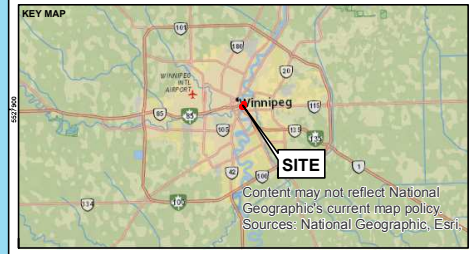
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**AREA OF RESTRICTED DEVELOPMENT**

CONSULTANT	YYYY-MM-DD	2015-12-02	
	DESIGNED	---	
	PREPARED	BR	
	REVIEWED	MKF	
	APPROVED	PLE	
PROJECT NO.	PHASE	REV.	FIGURE
1522283	4000	0	<b>28</b>



**LEGEND**

- LANDFILL FOOTPRINT
- INTERPRETED EXTENT OF POTENTIAL LANDFILL GAS IMPACTS
- INTERPRETED EXTENT OF POTENTIAL GROUNDWATER IMPACTS
- ROAD
- RAILWAY
- BUILDING FOOTPRINT
- WATERBODY
- PROPERTY PARCEL
- UTILITY**
- SANITARY SEWER
- WATER MAIN



**NOTE(S)**

1. THE AREA OF RESTRICTED DEVELOPMENT IS INTERPRETED EXTENT OF POTENTIAL LANDFILL GAS IMPACTS OR THE INTERPRETED EXTENT OF POTENTIAL GROUNDWATER IMPACTS, WHICHEVER IS GREATER.
2. THIS FIGURE IS TO BE READ IN CONJUNCTION WITH THE ACCOMPANYING GOLDLER ASSOCIATES LTD. REPORT NO. 1522283/4000.

**REFERENCE(S)**

1. BASEDATA PROVIDED BY CITY OF WINNIPEG.
2. PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83  
COORDINATE SYSTEM: UTM ZONE 14 VERTICAL DATUM: CGVD28

**CLIENT**  
CITY OF WINNIPEG

---

**PROJECT**  
WINNIPEG LANDFILL LAND USE POTENTIAL REPORT  
SITE 31: RED-ASSINIBOINE RIVER JUNCTION DUMP SITE, WINNIPEG,  
MANITOBA

**TITLE**  
**AREA OF RESTRICTED DEVELOPMENT**

---

<b>CONSULTANT</b>	YYYY-MM-DD	2015-12-02
	DESIGNED	---
	PREPARED	BR
	REVIEWED	MKF
	APPROVED	PLE

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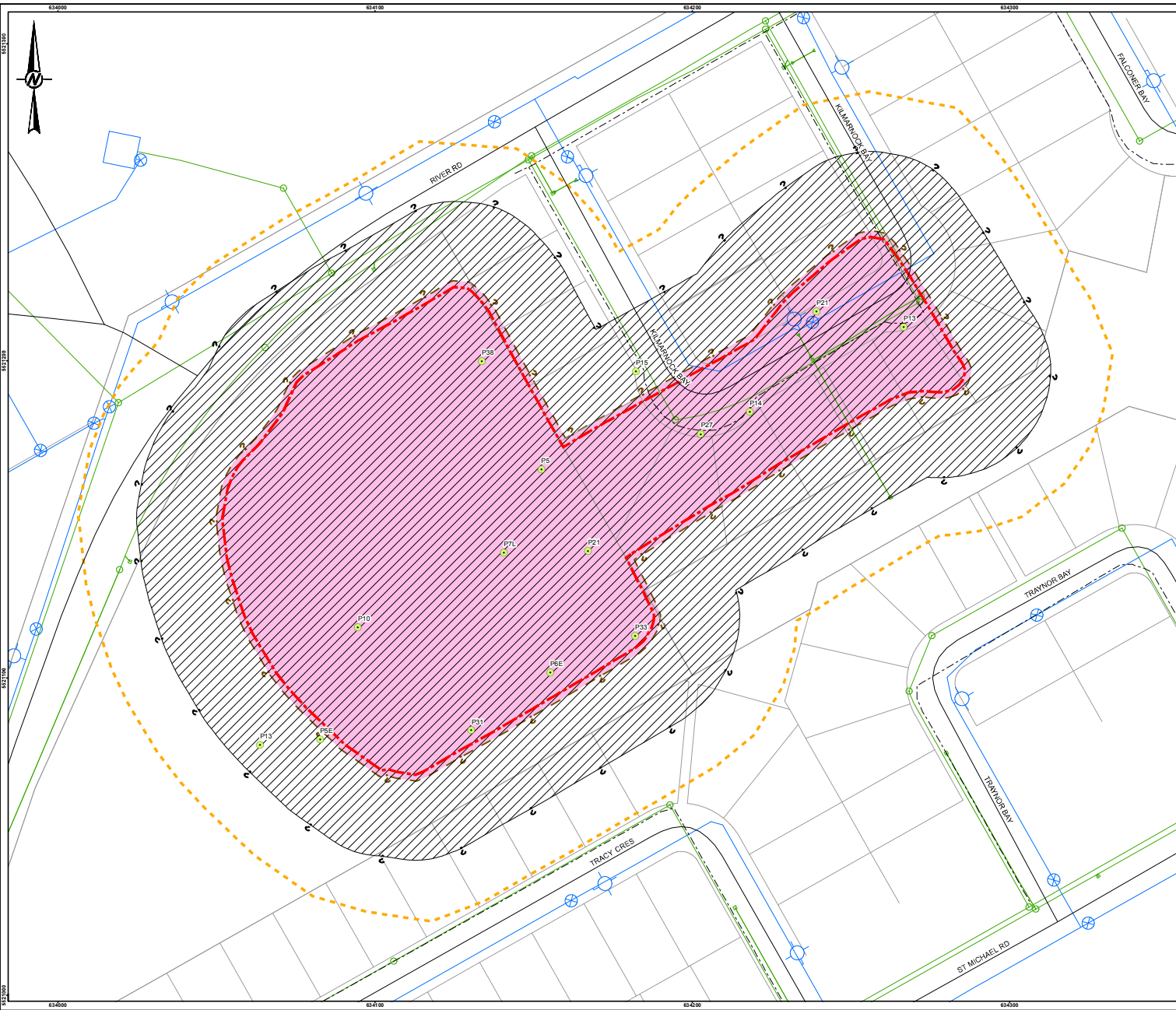
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 User: jgibson  
 Plot: 1522283\_4000\_02.dwg  
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 Plot Size: 29.7cm x 42.0cm  
 Plot Orientation: Portrait  
 Plot Title: AREA OF RESTRICTED DEVELOPMENT  
 Plot Subtitle: SITE 31: RED-ASSINIBOINE RIVER JUNCTION DUMP SITE, WINNIPEG, MANITOBA  
 Plot Author: jgibson  
 Plot Project: 1522283  
 Plot Phase: 4000  
 Plot Rev: 0  
 Plot Figure: 29

IF THIS REQUIREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM 29.7cm x 42.0cm TO 29.7cm x 42.0cm.

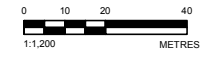
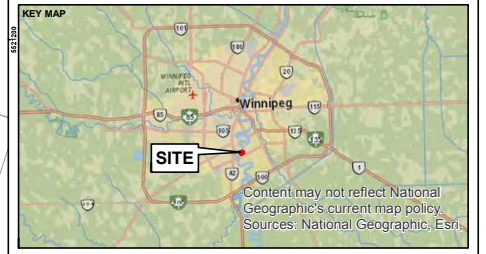






**LEGEND**

- LANDFILL FOOTPRINT
- CONTROL ZONE AREA
- INTERPRETED EXTENT OF POTENTIAL LANDFILL GAS IMPACTS
- INTERPRETED EXTENT OF POTENTIAL GROUNDWATER IMPACTS
- GAS MONITORING PROBE
- ROAD
- PROPERTY PARCEL
- UTILITY
- GAS LINE
- SANITARY SEWER
- WATER MAIN



**NOTE(S)**

1. THE AREA OF RESTRICTED DEVELOPMENT IS INTERPRETED EXTENT OF POTENTIAL LANDFILL GAS IMPACTS OR THE INTERPRETED EXTENT OF POTENTIAL GROUNDWATER IMPACTS, WHICHEVER IS GREATER.
2. THIS FIGURE IS TO BE READ IN CONJUNCTION WITH THE ACCOMPANYING GOLDER ASSOCIATES LTD. REPORT NO. 1522283/4000.

**REFERENCE(S)**

1. BASEDATA PROVIDED BY CITY OF WINNIPEG.
2. PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83  
 COORDINATE SYSTEM: UTM ZONE 14 VERTICAL DATUM: CGVD28

**CLIENT**  
 CITY OF WINNIPEG

**PROJECT**  
 WINNIPEG LANDFILL LAND USE POTENTIAL REPORT  
 SITE 35: RIVER ROAD DUMP SITE, WINNIPEG, MANITOBA

**TITLE**  
 AREA OF RESTRICTED DEVELOPMENT

<b>CONSULTANT</b>		YYYY-MM-DD	2015-12-02
		DESIGNED	---
		PREPARED	BR
		REVIEWED	MKF
		APPROVED	PLE
<b>PROJECT NO.</b>	<b>PHASE</b>	<b>REV.</b>	<b>FIGURE</b>
1522283	4000	0	32

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 Plot Subject: WINNIPEG LANDFILL LAND USE POTENTIAL REPORT  
 Plot Location: SITE 35: RIVER ROAD DUMP SITE, WINNIPEG, MANITOBA  
 Plot Path: \\s:\admin\shared\City of Winnipeg\Development\2015\12\02\Site 35 - River Road Dump Site - Area of Restricted Development - Final.dwg  
 Plot Sheet: 32 of 32

If this measurement does not match what is shown, the sheet size was modified from





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Europe	+ 44 1628 851851
North America	+ 1 800 275 3281
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