



December 7, 2021

Manitoba Conservation and Climate
Environmental Approvals Branch
1007 Century Street
Winnipeg, MB R3H 0W4

Attention: Edwin Yazon, P.Eng., Environmental Engineer

**RE: NOTICE OF ALTERATION: TIRE DERIVED AGGREGATE AS DRAINAGE MEDIUM ON
CELL 33 PLATEAU AREA FOR LEACHATE COLLECTION**

A new waste disposal cell was constructed at the Brady Road Resource Management Facility (BRRMF) this summer (Cell 33) in accordance with Environment Act License No. 3081R. The City subsequently received authorization from your office (via email on September 7, 2021) to commence use of Cell 33 for waste disposal.

This new disposal cell is adjacent to a historic waste disposal area (developed prior to issuance of EAL No. 3081R) that relies on in situ high plastic clay soils as a liner for waste containment. Further, this historic waste disposal area does not have well defined limits/boundaries adjacent to recently constructed waste disposal cells (Cell 30, 31, and 32), including Cell 33. The land between the historic and recent disposal cells is defined as a transition zone and referred to as the Plateau Area.

Similar to the historic waste disposal area, the Plateau Area relies on in situ low permeability soils for waste containment. The acceptability of this approach was initially reviewed and accepted by your office through discussions with KGS Group in April 2017 (see attached correspondence).

To facilitate leachate collection on the Plateau Area adjacent to Cells 31 and 32, the City initiated a pilot project to use tire derived aggregate (TDA) as a drainage medium. This information was communicated to your department throughout its development. The TDA pilot project was installed on the Plateau Area adjacent to Cell 31 (2017) and Cell 32 (2019), and appears to be functioning as intended.

As discussed during our MS Teams meeting today, the City submits the attached Notice of Alteration Form to document the intent to continue with this pilot project on the Plateau Area adjacent to Cell 33.

TDA is produced by shredding old passenger tires, and has been used in Manitoba as well as throughout Canada and the United States as an alternate to traditional aggregate for structural and drainage applications. Reliable Tire Recycling (RTR) produces the majority of TDA in Manitoba, and has supplied TDA for beneficial reuse at the BRRMF. *Through this pilot project we are providing an opportunity for the beneficial reuse of local waste materials!*

The development of the Cell 33 Plateau Area for waste disposal will not extend into the footprint of the synthetically (HDPE) lined area of Cell 33; the east anchor trench for the HDPE liner were serve at the west limit of Cell 33 Plateau Area development. TDA will not be applied to any HDPE lined surfaces in Cell 33. The Plateau Area development includes grading the existing ground surface to promote positive drainage into the leachate collection system in Cell 33. A separator fabric (geotextile) will be installed on the graded ground surface; the separator fabric will subsequently be covered with a 300 mm layer of TDA to facilitate drainage into Cell 33. In addition, the temporary leachate pond that occupies a portion of the Plateau Area will be decommissioned by pumping out the leachate, removing debris and the HDPE liner, and backfilling the excavation with high plastic clay.

In addition to supporting the attached Notice of Alteration Form, as per Clause 23 of Environment Act License No. 3081R, the City submits the drawing attached to the Notice of Alteration Form for the construction of Cell 33 Plateau Area.

Should you have any questions, please contact me at 204-986-2962 or by email at araichura@winnipeg.ca.

Sincerely,



Ash Raichura, P. Eng.
Project Coordinator

Attachments:

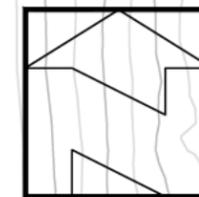
- Notice of Alteration Form
- Drawing Number 33-01
- KGS Group Meeting Minutes, dated April 17, 2017

AR/ar

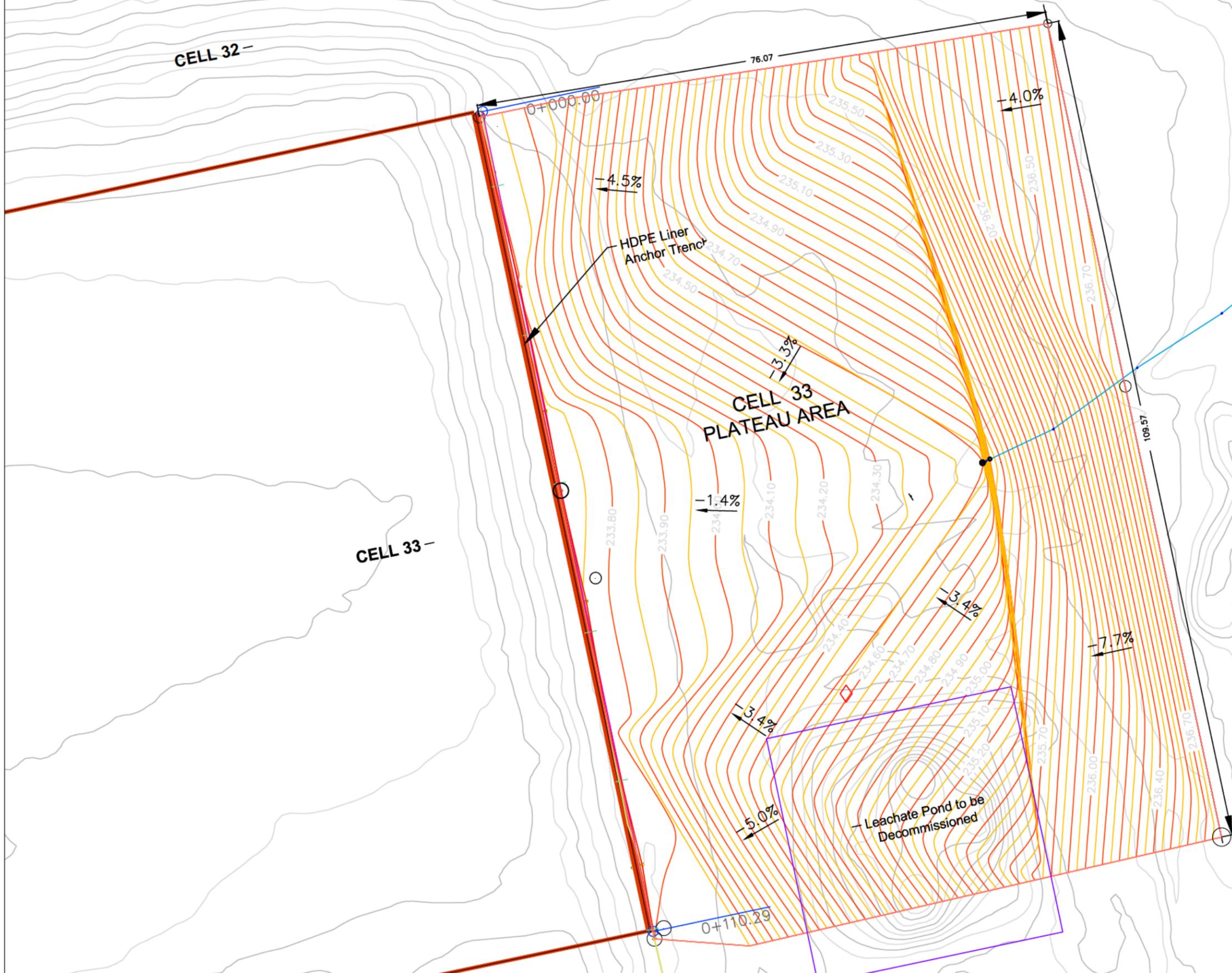
c: Nada Suresh, Manitoba Conservation and Climate (email)
Asit Dey, Manitoba Conservation and Climate (email)
Michael Gordichuk, Water and Waste Department (email)
Chris Kozak, Water and Waste Department (email)



CELL 32 PLATEAU AREA



CELL 32 -



200mm HDPE pipe LFG Header,
 for future Landfill Gas System
 Expansion

HISTORIC WASTE
 DISPOSAL AREA

CELL 33
 PLATEAU AREA

CELL 33 -

Leachate Pond to be
 Decommissioned

METRIC / MÉTRIQUE
 WHOLE NUMBERS AND
 DECIMALIZED NUMBERS INDICATE METRES /
 LES NUMÉROS ENTIER, ET DÉCIMALIÉS INDICENT LES MÈTRES
 CONTOURS FROM UAV DEM COMPLETED SEPTEMBER 27, 2021

GEODETTIC REFERENCE
 Projection: UTM Zone14N
 Units: Metres
 Datum: NAD83
 Ellipsoid: GRS80

MINUTES OF MEETING

Meeting 2017-01

FILE NUMBER
15-0107-014

PROJECT DESCRIPTION
Brady Cell 31 Design

PREPARED BY:
Tony Kuluk

DATE
April 17, 2017

MEETING DATE: Monday, April 3, 2017 – 9:30 AM

LOCATION: 865 Waverley Street

PRESENT:

<u>Name</u>	<u>Company</u>	<u>Email</u>
Cory Switzer (CS)	Province of Manitoba	Cory.Switzer@gov.mb.ca
Irv Slike (IS)	City of Winnipeg	ISlike@winnipeg.ca
Ash Raichura (AR)	City of Winnipeg	ARaichura@winnipeg.ca
Tony Kuluk (TK)	KGS Group	TKuluk@ksgroup.com
Mario Poveda (MP)	KGS Group	MPoveda@ksgroup.com

ISSUED: April 18, 2017

PURPOSE: Discuss Cell 31 design approach

DISCUSSION:

- The Brady Road Resource Management Facility (BRRMF) Cell 31 Design Approach, April 3/17 (copy attached) and pertinent 2014 and 2017 soils testing information was circulated and explained by TK.
- CS agreed that the proposed cell design approach was a reasonable course of action.

It is believed that these minutes accurately reflect the discussion held in the meeting. Please advise the undersigned if there are errors or omissions.

Prepared by:

Tony Kuluk, P. Eng.
Solid Waste Management Specialist

TK/jr
Attachments

For discussion purposes

BRADY ROAD RESOURCE MANAGEMENT FACILITY (BRRMF)

CELL 31 DESIGN APPROACH

BACKGROUND

Cell 31 is the next disposal cell to be constructed at BRRMF, and located immediately south of Cell 30, which is the cell constructed in 2014 utilizing a Geosynthetic Clay Liner (GCL) . In a meeting held on October 15, 2015 between representatives of Manitoba Conservation, City of Winnipeg, Solid Waste Services Division and KGS Group, the idea of utilizing a prairie level unlined bench at the easternmost portion of the Cell 31 footprint for waste disposal was brought forth by the City and KGS. Considering the excellent hydraulic conductivity results of the clay overburden from testing in the Cell 30 area, Manitoba Conservation deemed this approach to be reasonable.

The City has undertaken pre-excitation in the Cell 31 area to provide needed cover material as well as to save time for cell construction. During the course of examining conditions in the Cell 31 area on February 23, 2017, several leachate seeps were noted as shown on Figure 1 attached. One series of seeps are emerging from a clay plug constructed in 2015 within a former cell access road alignment. This plug was constructed to control leachate seepage and proved to be effective until recently this year. The other seepage noted appears to be emerging from the existing landfilled area to the east and primarily outside of the influence of the leachate drain (French drain) which was constructed in 2015 to divert seeps off the existing landfill along much of the existing east landfill boundary. This trench empties into an HDPE lined retention basin to the south. It is likely that since this trench did not extend sufficiently north, seepage as noted is not captured by this feature.

PROPOSED APPROACH

The City and KGS have reviewed the seepage issue relative to the timing for below ground Cell 31 construction and subsequent Cell 31 disposal operations and deems the following to be the preferred option to address this matter:

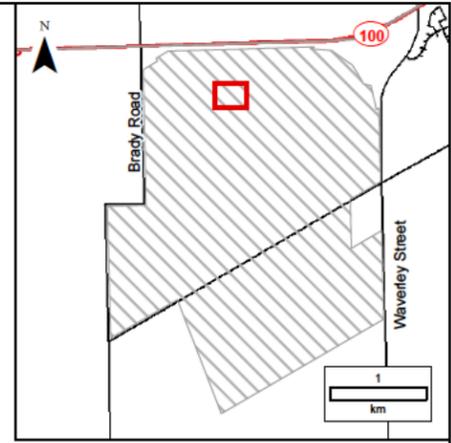
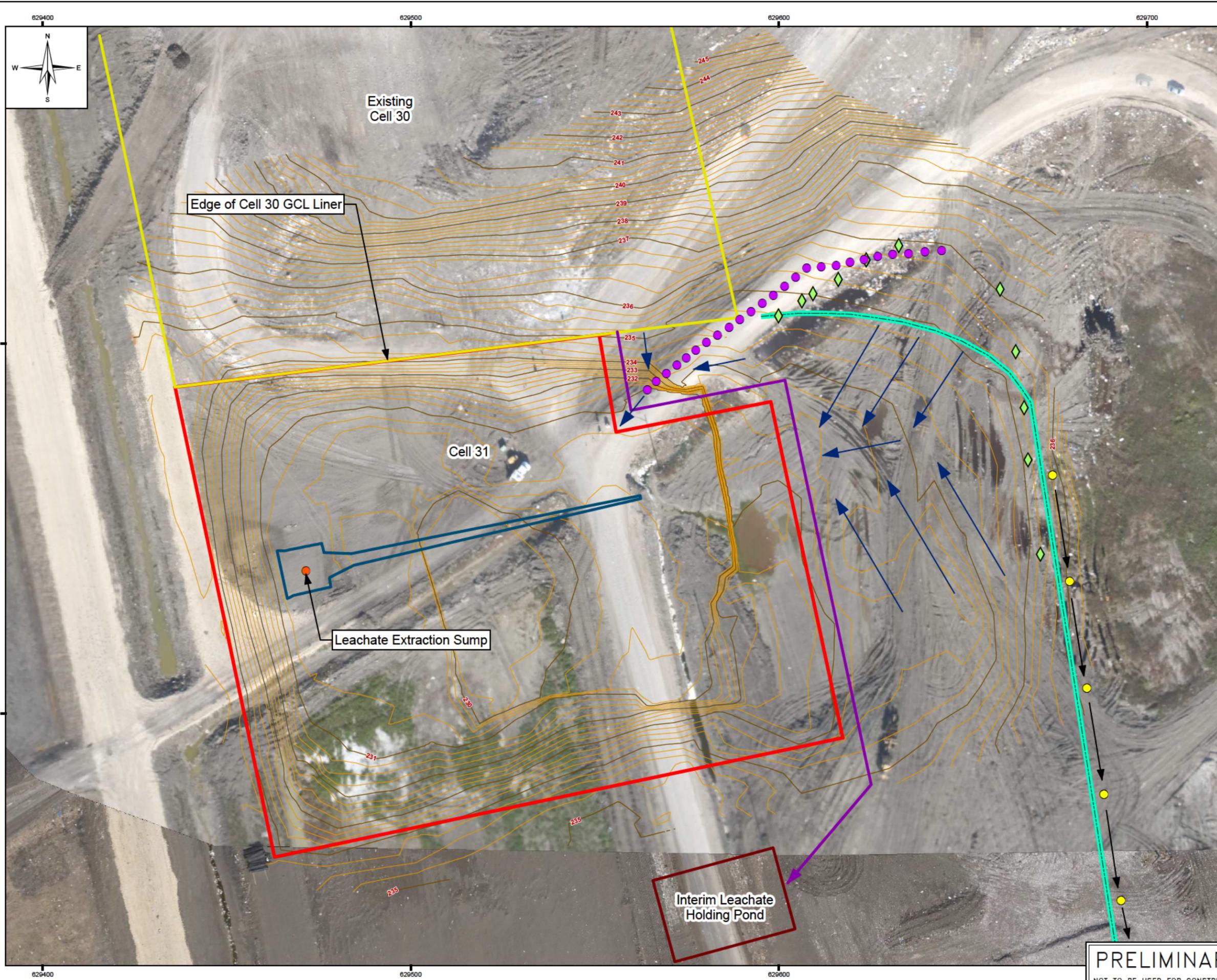
-The City will carry out work to collect and haul for treatment, the leachate from seeps peripheral to the Cell 31 excavation. Together with this, the City will control runoff peripheral to the excavation during construction of the cell liner and leachate collection system.

-The clay plug area will be left in place to minimize leachate seepage into Cell 31 during construction, therefore the cell excavation will be adjusted to avoid this feature as shown on Figure 1 attached.

-The area around the clay plug and to the east of the excavation will be graded to drain to the leachate collection system once the liner and collection components are constructed. To enhance flow over the graded area, consideration will be given to applying a base of shredded tire media.

-Constructing a liner the prairie level areas around the clay plug and east of the excavated area is not contemplated given that the existing in situ soils are expected to provide adequate containment as a soil liner, based on the hydraulic conductivity testing that was previously conducted on these soils.

April 3/17



LEGEND:

- Leachate Extraction Sump
- Clay Plug
- Leachate Drain
- ◆ Leachate Seeps
- Existing Landfill Limit
- Interim Runoff/Leachate Interception
- Cell 30 GCL Lined Area
- Cell 31 Drain Base
- Perimeter of Cell 31 Excavation Area
- Interim Leachate Holding Pond
- 1m Index Contour
- 0.25m Contour
- ➔ Grading to Drain to Cell 31

**FOR INTERNAL
USE ONLY**

NOTES:

1. Digital ortho imagery shown from ? (October 19, 2015).



SCALE: 1:1,000 METRIC 11"x17"

All units are metric and in metres unless otherwise specified.
 Transverse Mercator Projection, NAD 1983, Zone 14
 Elevations are in metres above sea level (MSL)

NO.	YY/MM/DD	DESCRIPTION	ISSUED BY	CHECK BY
X	17/03/29	ISSUED FOR INFORMATION	XXX	XXX

REVISIONS / ISSUE

KGS
GROUP
CONSULTING
ENGINEERS

**BRADY ROAD RESOURCE MANAGEMENT
FACILITY INFRASTRUCTURE & DISPOSAL
MASTER PLAN & CELL DESIGN**

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

CELL 31 AND ADJOINING AREA	MARCH 2017	FIGURE 01	REV: X
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