

2016 SWANA CONFERENCE

Thorhild Landfill Development Waste Management of Canada Corporation

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Introduction

Thorhild Landfill Project

- Site location and development overview
- County partnerships
- Siting process (drilling)
- Zoning and Development permit process
- AEP Approval process
- Recommendations

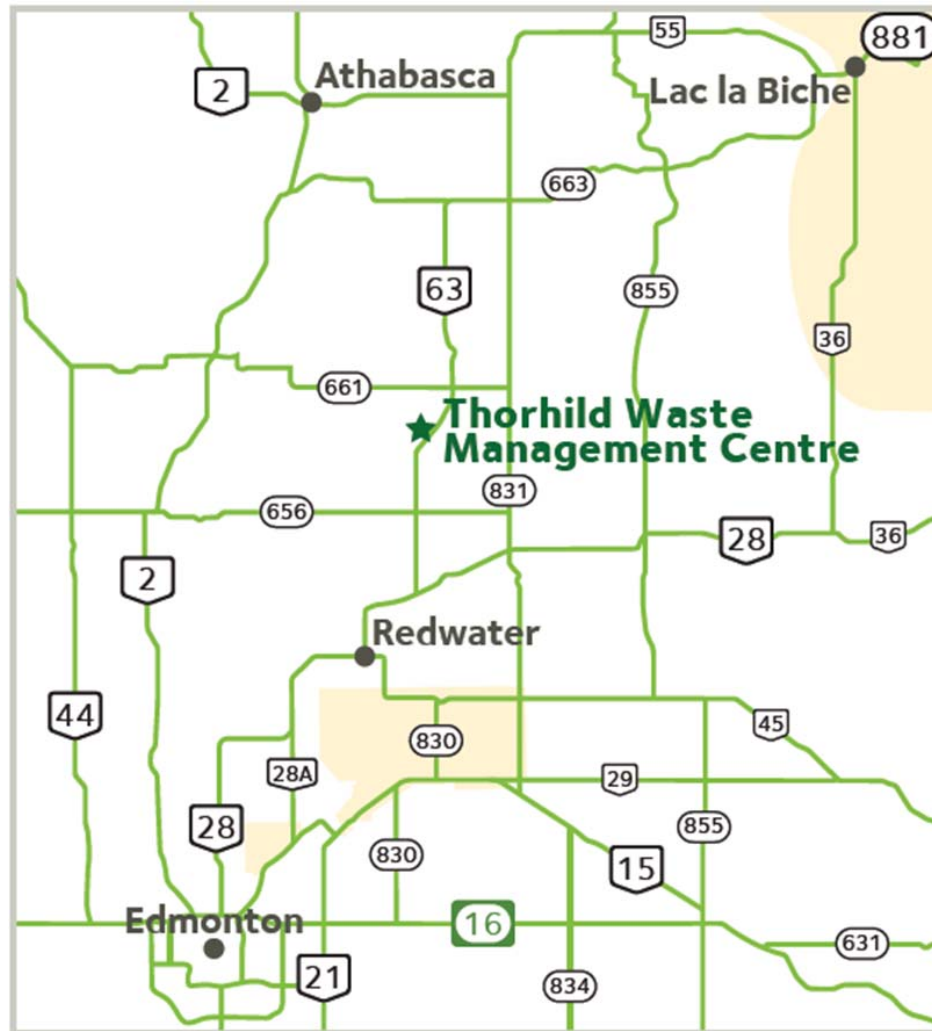
Quick Facts

Thorhild Landfill Project

- Class II Non-Hazardous Landfill
- Centrally located in Alberta 90 kms north of Edmonton
- Alberta's Industrial Heartland is nearby - within a 45 minute drive
- Total land: 454 hectares (1121 acres)
- Total permitted footprint: 85 hectares (210 acres)
- Permitted estimated site life - approx. 70 years
- Landfill: estimated capacity 23 million m³
- Cell 1A: 5.5 hectares (13.6 acres)

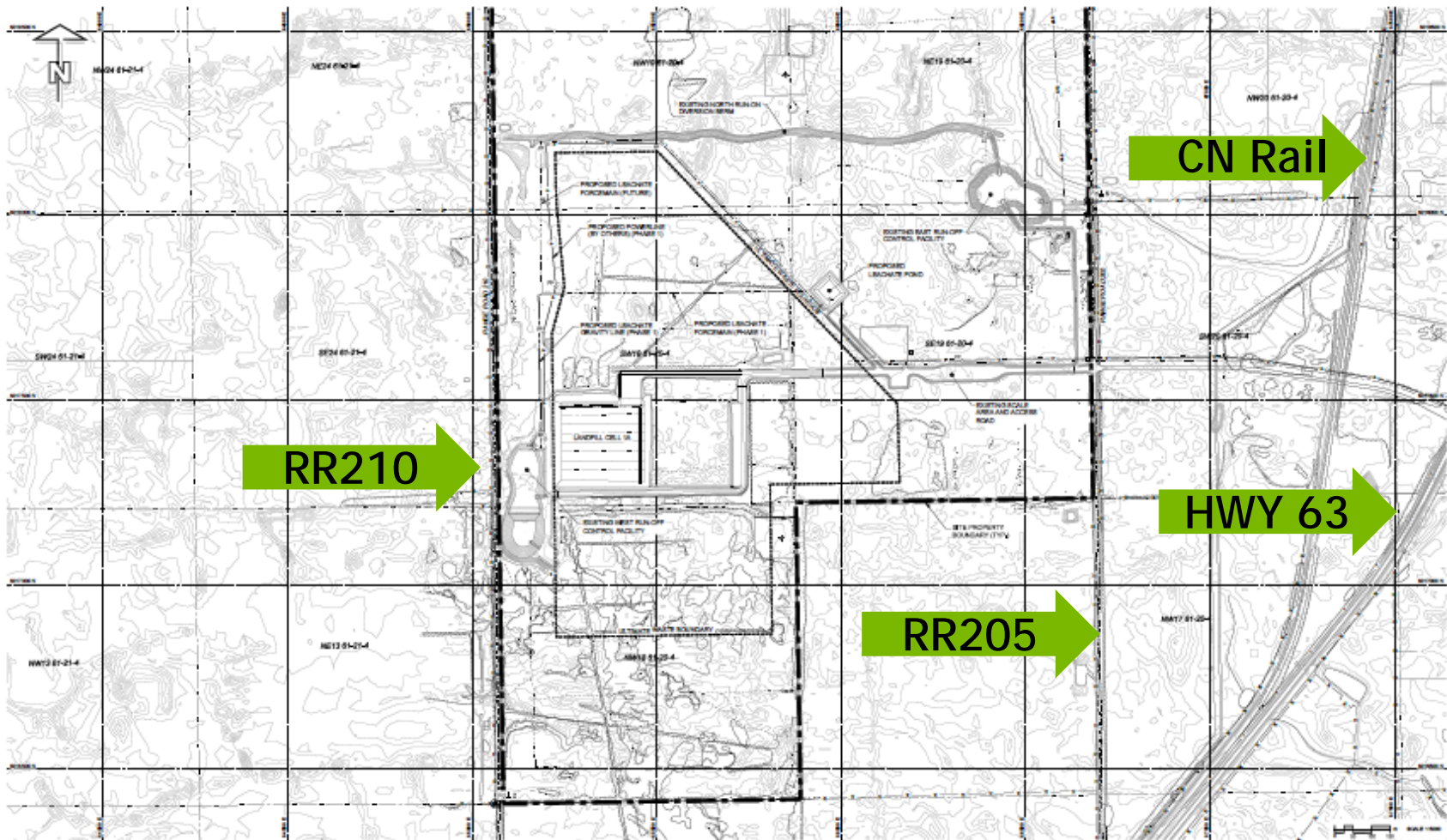
Location

Thorhild Landfill Project



Site Overview

Thorhild Landfill Project



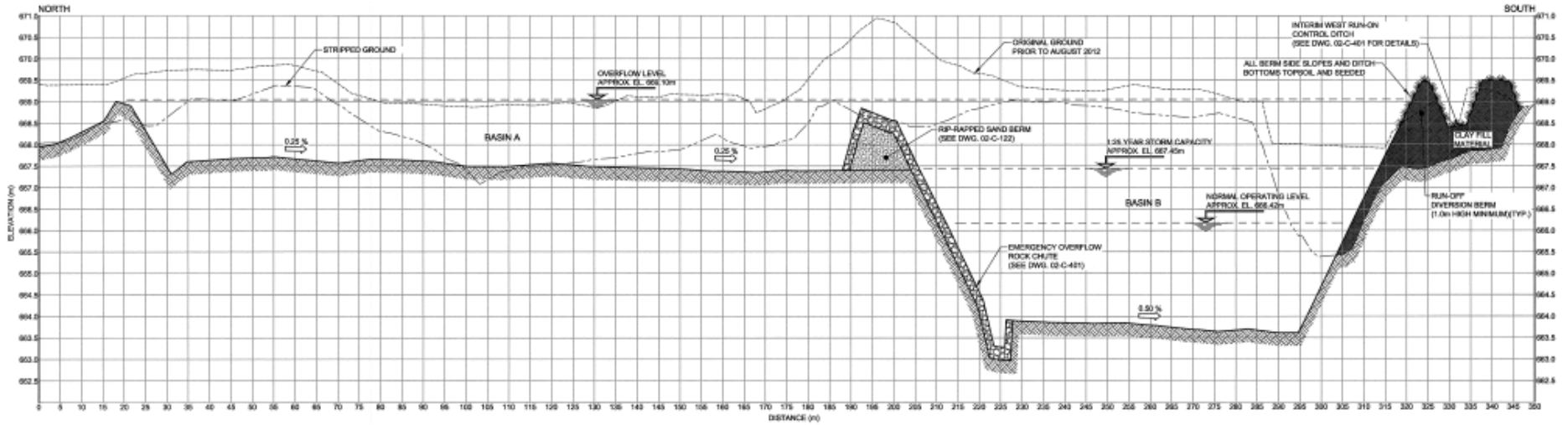
Site Overview

Thorhild Landfill Project



Southwest Storm Water Pond

Thorhild Landfill Project



Southwest Storm Water Pond

Thorhild Landfill Project



East Pond - Firewater Pumping System

Thorhild Landfill Project



Wetlands Compensation Program

Thorhild Landfill Project



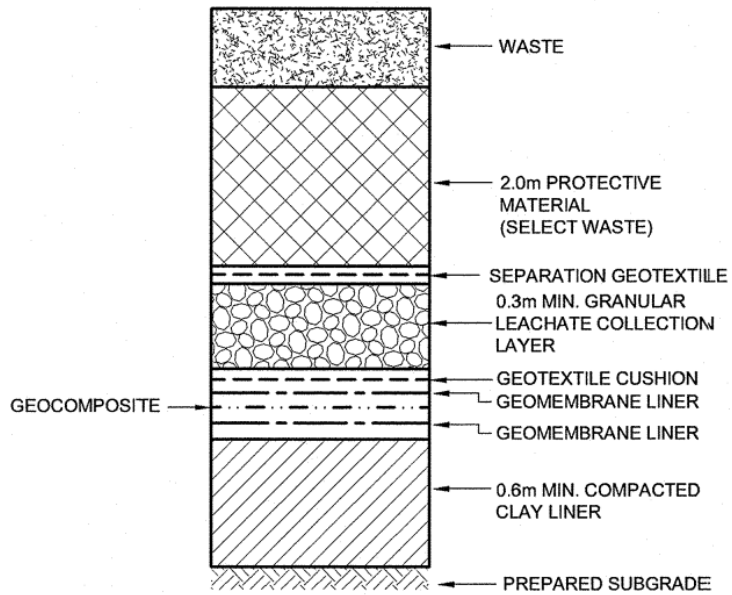
The First Cell

Thorhild Landfill Project

- 5.5 ha cell construction
- 325,000 m³ soil excavation
- 700,000 m³ built waste capacity
- Operational fall 2014 (first waste acceptance fall 2015)
- Next phase of cell construction planned 2017

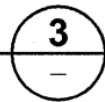
Landfill Design - Cell 1 Composite Liner System

Thorhild Landfill Project



DETAIL

SCALE: NTS
TYPICAL BASE



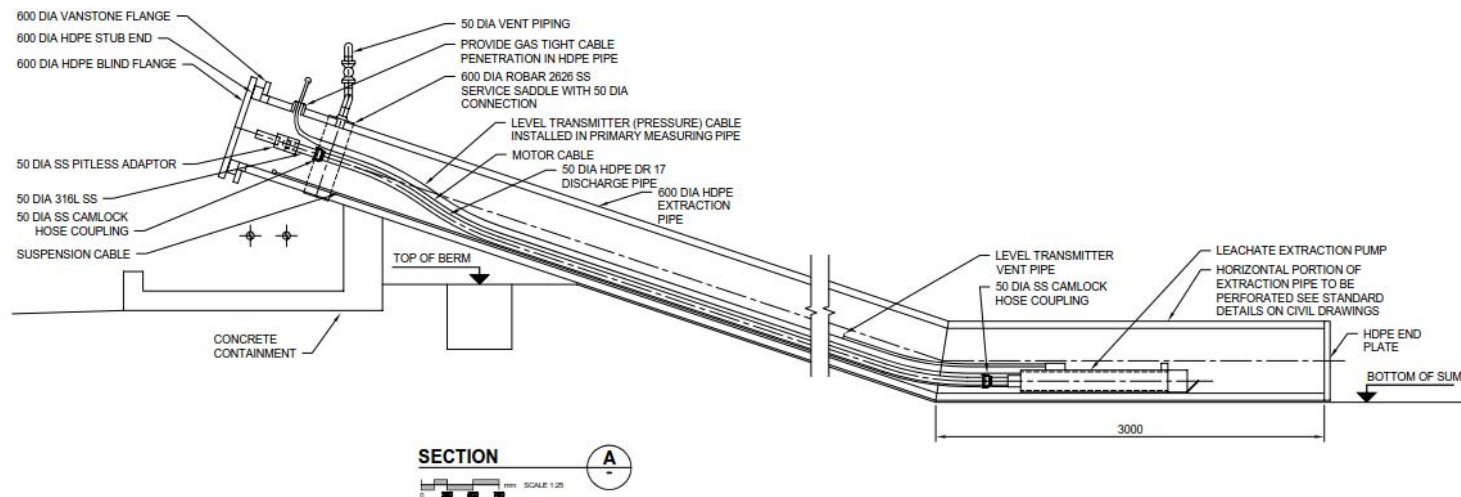
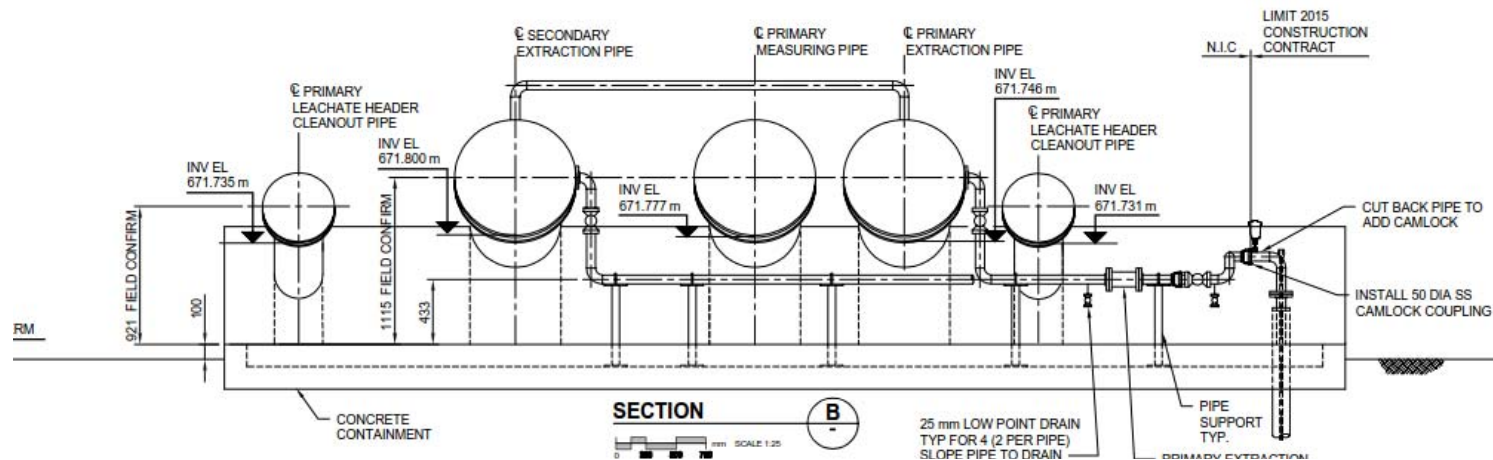
First Load of Waste

Thorhild Landfill Project



Cell 1 - Leachate Withdrawal System

Thorhild Landfill Project



Leachate Risers

Thorhild Landfill Project



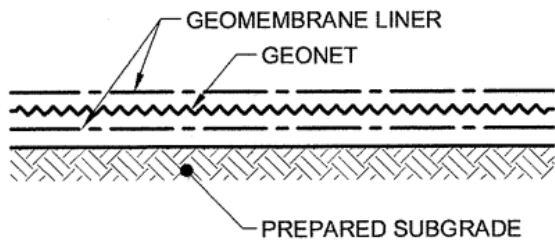
Leachate Risers

Thorhild Landfill Project



Leachate Pond and Riser Pipes

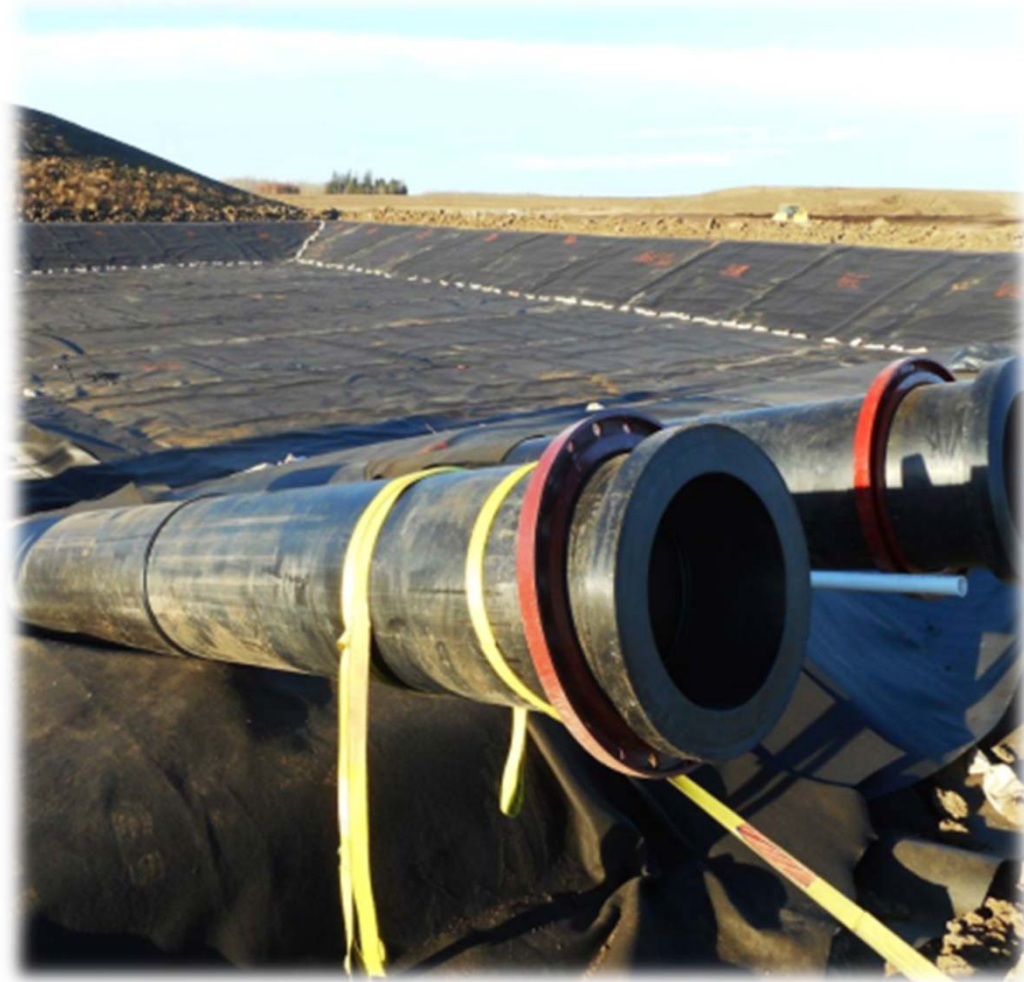
Thorhild Landfill Project



TYPICAL POND BASE LINER

SCALE: NTS

APPLICABLE TO LEACHATE POND ONLY



Scales, Scalehouse & Office

Thorhild Landfill Project



Maintenance Shop

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Entrance and game fence

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Tipper

Thorhild Landfill Project



Quality Assurance Plan

Thorhild Landfill Project

- Salvaging of topsoil and subsoil
- Compacted clay liner installation
- Geomembrane liner installation
- Geotextile, pipe, drainage rock installation
- Leachate conveyance and pond installation
- General construction practices
- As-built reporting
- Weekly construction meetings open to County and agencies

Community Relations

Thorhild Landfill Project

- Hosting agreement prior to landfill siting in 2006
- Public relations (website, newsletters, open houses)
- Property Value Protection and Impact Benefits program
- Donations to local charities/organizations (WM has invested over \$400,000 in the community)
- Annual royalty fee
- Preference to local labour and suppliers
- Concerned Citizens of Thorhild County Society - landfill opponents

Community Engagement

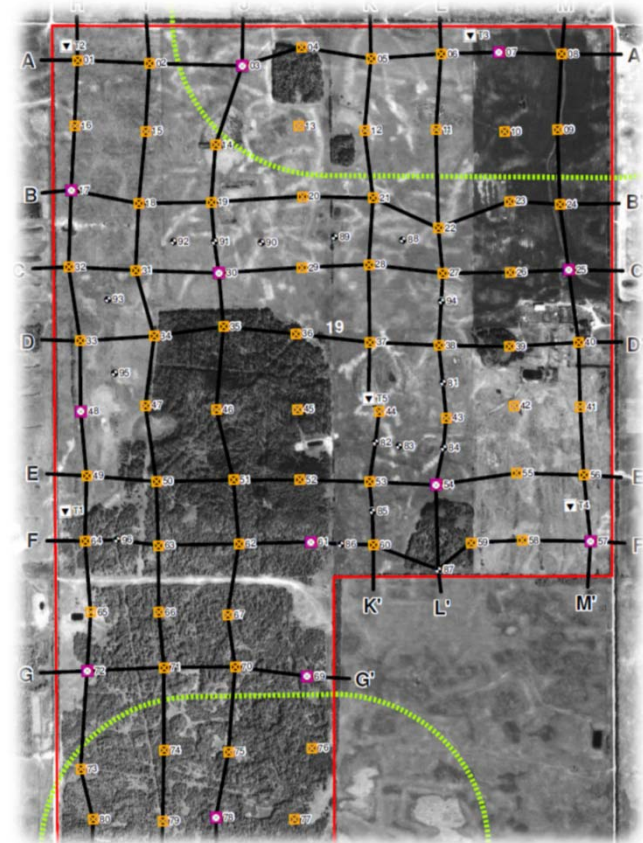
Thorhild Landfill Project

- Community Advisory Committee
 - Advises regarding operations and community engagement
 - Meeting since January 2011
 - Members volunteer their time
 - Members must be county residents
 - Members bring varied perspectives which enriches discussion
- Quarterly community meetings & tours
- Open & transparent dialog

Landfill Siting – Drilling Program

Thorhild Landfill Project

- Hydrogeological Assessment report
- Drilling program conducted in 2006 over five quarter sections meeting the 200 m spacing requirement in the Standard for Landfills in Alberta.
- Over 100 boreholes completed with over 90 wells completed as monitoring wells
- Monitoring of adjacent landowners with 2.4 km water wells and dug-outs completed in 2007 and 2009 as part of baseline program



Landfill Siting – Baseline Program

Thorhild Landfill Project

- Additional studies include:
- Landfill Disclosure plan - as required by Landfill Standards
- Noise Impact Assessment - assess baseline noise monitoring and noise modelling for proposed landfill to assess impact to surrounding residents
- Wildlife - assess baseline habitat, bird and mammal species. Changes to habitat from proposed landfill design and operations. Species at Risk and nuisance wildlife assessment
- Vegetation and wetlands - assess baseline soil (soil types/classification) and vegetation (invasive species, rare plants, existing vegetation)
- Paleontological and Historical Resources assessments
- Road access - conceptual access options and impact on local residents
- Preliminary Closure - conceptual landfill phasing to a design top of waste and associated sight lines from adjacent residents and transportation corridors
- Landfill gas generation assessment

Permit and Approval Process Timeline

Thorhild Landfill Project

- 2006: Project announced
- 2008: First rezoning application
- 2009: Second rezoning application
- 2010: Public hearings and rezoning granted
- 2011: municipal development permit granted and construction begins (road access)
- 2010: EPEA and Water Act approval application submission
- 2011: EPEA and Water Act approvals issued
- 2012/3: Mediation and Environmental Appeal Board hearings
- 2013: Ministerial Order issued
- 2015: Final Operating Approval received

Landfill Siting Process Recommendations

Thorhild Landfill Project

- Council (watch for election cycle, favorable/non-favorable - can be an election issue)
- Lead time (plan for 10 years or more if controversial)
- Land purchase (buffer zone within owned property)
- Staffing for consultants, proponent, regulatory agencies- (staff turn-over so systems needed to track developments and support new staff)
- Public relations (initiated early in siting process to minimize public dis-information and to provide politicians an overview of solid waste management and the siting/approval process)
- Budget (public consultation, consultants, legal, etc.)

Questions?

