



PINCHIN & AFFILIATES

- A leader in engineering, environmental health and safety solutions
 - Contaminated site assessment
 - Landfill services
 - Asbestos and mould
 - Environmental approvals
- Multi-disciplinary approach by highly qualified, experienced professionals
- Established in 1981
- Over 35 offices with 750+ staff
- Christian Tenaglia - P.Eng. – NWT, NU, ON
- Paul Kehoe – former MOECC – 32 years

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PRESENTATION OUTLINE

- Regulatory Overview
- Landfill Operations and Management
- Contaminated Site Assessment Process
- Liability and Remediation
- Proactive Access and Engagement

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ACTS & REGULATIONS

- Environmental Protection Act (<https://www.ontario.ca/laws/statute/90e19>)

LANDFILLS

- Ontario Regulation 347 – General Waste Management (<https://www.ontario.ca/laws/regulation/900347>)
- Ontario Regulation 232 – Landfilling Sites (<https://www.ontario.ca/laws/regulation/980232>)
- Ontario Regulation 101/94 – Recycling and Composting of Municipal Waste (<https://www.ontario.ca/laws/regulation/940101>)

BROWNFIELDS

- Ontario Regulation 153/04 – Records of Site Condition (<https://www.ontario.ca/laws/regulation/040153>)

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Landfill Management



ENVIRONMENTAL COMPLIANCE

- What is an Environmental Compliance Approval (ECA)?
- Formerly called Certificates of Approval (CofA's)
 - "One Pagers" and why they are important
 - Terms, conditions, and schedules
 - Small Landfill <40,000 cubic meters of volume – why this is extremely important, population equivalent of 15,000

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ENVIRONMENTAL COMPLIANCE APPROVALS
How they can affect your job and the landfill's operation

- Newer Multi-Page ECAs – Comes complete with:
 - Terms and Conditions
 - Emergency Requirements
 - Signage Specifics
 - Complaint Procedures
 - Site Inspection and Record Keeping Needs
 - Employee Training Requirements
 - Site Security and Access Conditions
 - Site Design and Operations
 - Site Plan and Survey Requirements
 - Water Quality Monitoring and Annual Reporting Requirements

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ROLES AND RESPONSIBILITIES

- Municipality / Province
- Landfill Supervisors and Attendants
- Landfill Users



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KEY OPERATIONAL POINTS FOR MOST LANDFILLS

- Record Keeping
- Site Access
- Hazardous and Non-Hazardous Waste
- The Importance of Recycling
- MOECC Site Inspections
- Directing Users in the Landfill

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LANDFILL TRAINING – WHAT TO KNOW

- Your liability as a municipality





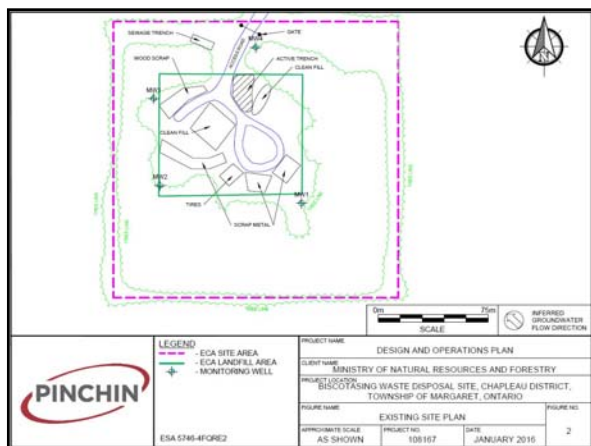

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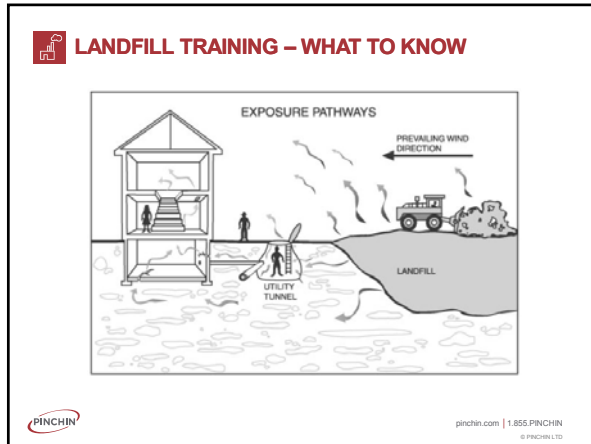
LANDFILL AWARENESS – WHAT TO KNOW

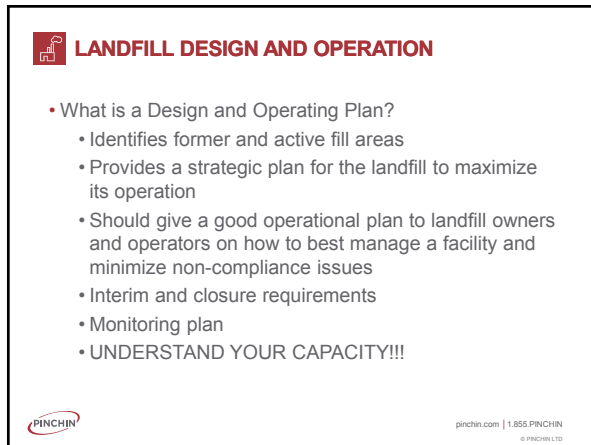
- Where are your property boundaries?
- Where are your fill areas?
- What can you accept at your landfill? This should be specified in your ECA / CofA
- Example

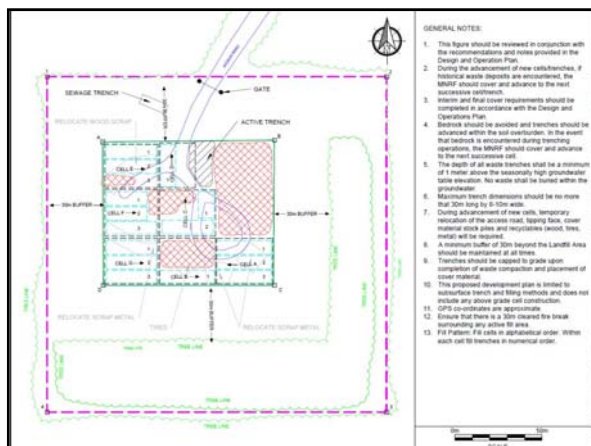
use and operation of a 2.10 hectare landfilling area within a total site area of 22.83 hectares to be used for the landfilling of the following types of waste:
solid non hazardous waste

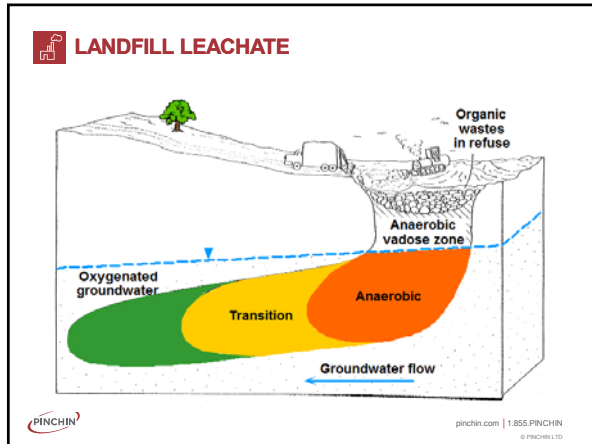
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 **ANNUAL REPORTING**


- Most ECAs require landfill owners to prepare an annual monitoring report documenting the environmental quality and site operations.
 - Groundwater and surface water data;
 - Methane monitoring;
 - Volume of waste deposited;
 - Complaints;
 - Operational issues;
 - GUIDELINE B-7 (REASONABLE USE CRITERIA - **COMPLIANCE);
 - This is a technical report and should be prepared by a MOECC registered QP
 - Etc.
- Cost Range Per Year (monitoring and reporting)
 - Small private or municipal landfill \$5,000 - \$20,000
 - Large urban or industrial landfill \$20,000 - \$100,000

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Brownfield – Contaminated Sites



 **LIABILITIES FOR BROWNFIELDS**

Contaminated sites and due diligence

- Do the due diligence and find out what historical activities have taken place
- Look beneath the surface to determine if there is an issue (the Phase I and II ESA process)
- Manage and deal with your risks/contamination (remediation and risk assessment)
- Prevent long term liabilities by being proactive
 - Landfill monitoring
 - UST to AST systems
 - Good maintenance practices and inspections (OWS, cathodic protection, water treatment plants)
 - Training staff
- Need to consider the good economic benefit for redeveloping brownfield sites

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BROWNFIELD & RSC

- Ontario Regulation 153/04 as amended by Ontario Regulation 511/09
- Came into effect July 1, 2011
- MOECC requirements for filing a Record of Site Condition
- Brownfields are abandoned or underused industrial and commercial facilities available for re-use – economic / community benefit, positive social implications



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WHAT IS A RECORD OF SITE CONDITION (RSC)?

- A legal document filed on the MOE's Environmental Site Registry by a consultant (QP) confirming a site meets applicable environmental standards
- Upon filing an RSC, the regulatory regime grants statutory immunity from most MOE orders (clean-up, etc., does not remove civil liability)
- Phase I ESA as a minimum to file an RSC (In most cases a Phase II ESA is required)

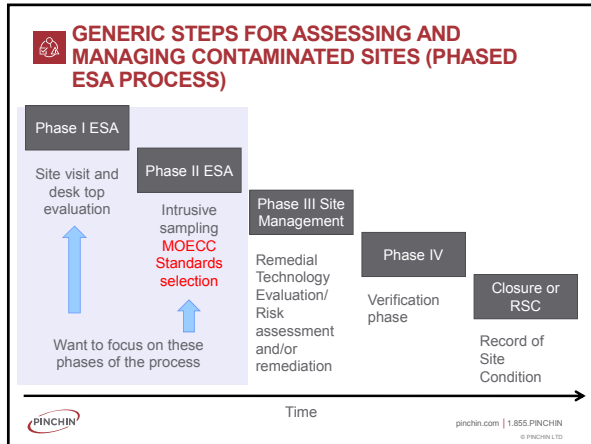
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DO I NEED AN RSC ?

- Many municipalities require RSCs prior to site plan approval or building permits (regardless of change of use or not)
- Mandatory requirement for certain land use changes (less sensitive to more sensitive use: i.e., industrial / commercial to residential, etc.)

Change in use from all or part of the following:	To any of the following (more sensitive) uses:
Industrial or Commercial or Community	Agricultural or Other Use Institutional Use Parkland Use Residential Use

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- ### PHASE I ESA PROCESS
- Follow a CSA Standard "Z768-01 Phase I Environmental Site Assessment"
 - Four principal components for completing a Phase I ESA
 1. Information and Records Review
 2. Site Inspection
 3. Interviews
 4. Evaluation of Information and Reporting
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 **EXAMPLE – AERIAL PHOTOGRAPHS – 1998, DOWNTOWN SAULT STE. MARIE**




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 **MAJOR RISK FACTORS**




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 **MAJOR RISK FACTORS**


- USTs
 - Service Stations (gasoline, diesel, waste oil, etc.)
 - Private fuel outlets (trucking firms, etc.)
 - Apartment buildings, stores, hotels (fuel oil storage)
 - Industrial solvents, oils, wastes, etc.



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PHASE II ESA PROCESS

- Follow a CSA Standard “Z769-00 Phase II Environmental Site Assessment”
- Six principal components for completing a Phase II ESA
 1. Review existing Phase I ESA or other background info
 2. Development of sampling plan
 3. Planning a site investigation
 4. Conducting a site investigation
 5. Interpretation and evaluation of the data gather during investigations
 6. Reporting

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EXAMPLE INVESTIGATION - BOREHOLE DRILLING

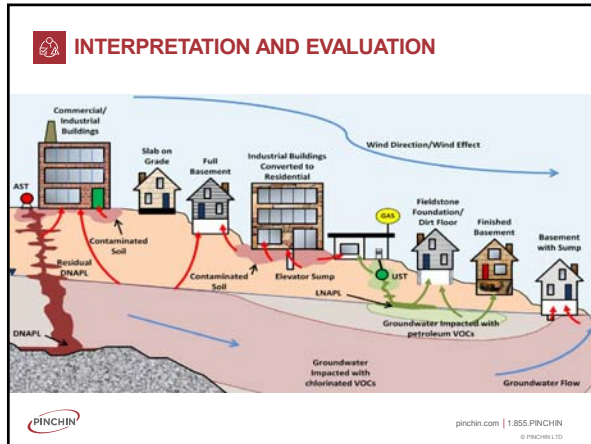


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EXAMPLE INVESTIGATION – TEST PIT EXCAVATIONS



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PLANNING A REMEDIATION

- Recommended to know extent of contamination (may require supplemental investigation to delineate)
- Retain a qualified contractor
 - Experienced in handling contaminated soil and water
 - Insurance requirements
 - MOE licensed hauler for liquid and solid waste
 - May be required to handle structural issues

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EX-SITU SOIL REMEDIATION

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RISK ASSESSMENT

Risk Assessment

- Toxicity Assessment
- Site Assessment & Conceptual Site Models
- Exposure Assessment

Risk Management

- RMM
- Financial
- Legal

Central Process: Risk Characterization

Outcomes: Risk Management Decision, Risk Communication

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MUNICIPAL LIABILITIES ON ABANDONED PROPERTIES

- Community eyesore
- Degraded property values
- Lack of tax revenue
- Building Issue
- Access by youth
- Safety and fire issue

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MUNICIPAL LIABILITIES ON ABANDONED PROPERTIES

- Property Issue
- Possible off site impacts
- Direct municipal responsibility
- Contaminated wells
- Municipal infrastructure

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**THE MUNICIPAL ACT FOR TAX SALES
GETTING ACCESS**



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**THE MUNICIPAL ACT FOR TAX SALES
GETTING ACCESS**

- **Power of entry**
- 386.1 (1) For the purpose of assisting a municipality to determine whether it is desirable to acquire land that has been offered for public sale under subsection 379 (2) but for which there is no successful purchaser, the municipality may, during the 24 months following the public sale referred to in subsection 379 (5), enter on and inspect the land. 2002, c. 17, Sched. A, s. 76 (1); 2006, c. 32, Sched. A, s. 159 (1).
- **Inspections**
- (2) In carrying out an inspection, a municipality may do anything reasonably necessary to carry out an environmental site assessment of the land, including,
 - (a) conduct surveys, examinations, investigations and tests of the land, including the excavation of test pits, and for those purposes, place equipment on the land for such period as the municipality considers necessary;
 - (b) take and remove samples or extracts;
 - (c) make inquiries of any person; and
 - (d) record or copy information by any method. 2002, c. 17, Sched. A, s. 76 (1).

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LIMITED INVESTIGATORY APPROACH

- If we already know the Site has good potential for contamination do we need to do a Phase I ESA?
- Before going ahead with the full ESA process or RSC, do a limited investigation to see if there are any major red flags before going forward
- Option for public works assistance, use of municipal backhoe/equipment to excavate test pits
- This will assist in determining next steps at a low cost



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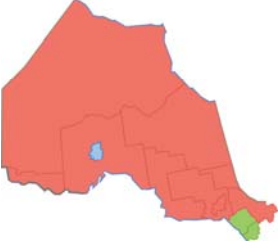
INCENTIVES

- Should Municipalities have a Brownfield Incentive Program?
 - "Municipal Financial Incentives for Brownfield Redevelopment"
- Municipal Fee Grant Program (to encourage developers)
 - Landfilling fees for contaminated soil
 - Demolition and building permits
 - NOHFC / FEDNOR – stimulate economic growth
- Commonly found in Community Improvement Plans
 - Must have to file an RSC, therefore Phase I ESA minimum
 - Usually found in concert with an area of rehabilitation (i.e., former industrial parks, waterfront, etc.)

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QUESTIONS?

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