# Beyond The Bin 2026

## *Emerging Issues: Solid Waste, Contamination & Debris Management*

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# Emerging Issues: Contamination & Solid Waste

- **Waste dumping** presents issues for land managers
- Generates leachate and pollution
- Causes soil and groundwater contamination

**Contamination:**

Salinity
PHC
PAH
PFAS/PFOA
Metals
Asbestos
Phthalates





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# Emerging Issues: Contamination & Solid Waste

- **Waste burning** releases contamination to the air, soil, and groundwater
- Generates pyrogenic contamination: **dioxins & furans, PAHs, phthalates**

**Other Issues:**

Risk of wild fire

Ignition may be accidental i.e., due to battery management practices

Construction materials can exacerbate the burning issue





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## Fire Impacted Structures

**History:** New information has come to light following environmental investigations stemming from the Fort McMurray wildfire, Grenfell Tower (London UK) fire, California wildfires, Lytton First Nation wildfire, and Skwlāx First Nation wildfire.

**Problem:** Structural loss of buildings due to fire and forest fire can:

1. release contamination from the building to the surrounding environment, and
2. create new contaminants in 'pyrogenic' processes which can be released to the surrounding environment.

**Where:** in the debris, ash, and in a halo around the burn site.

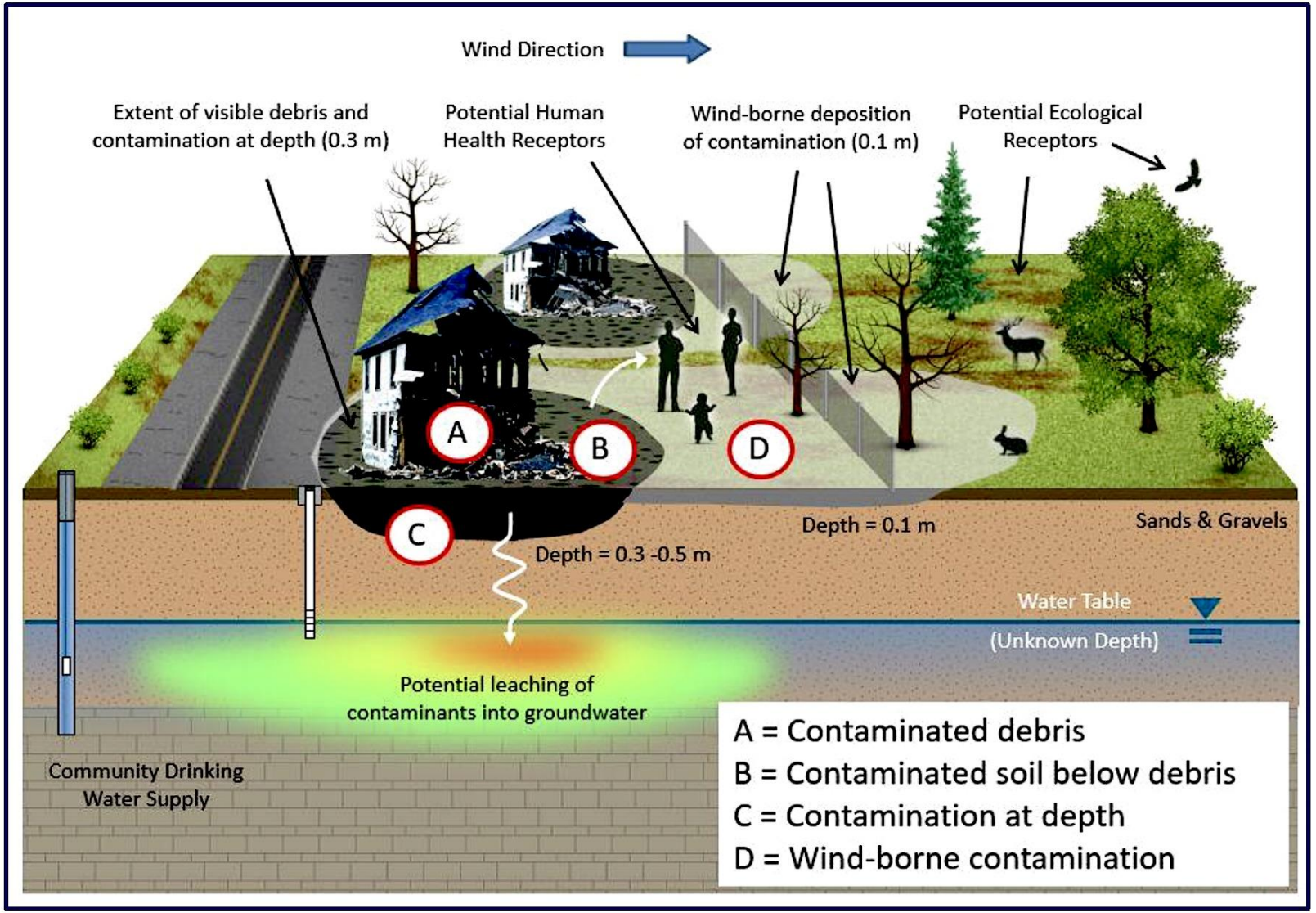


**Contaminates of concern:**

- Dioxins & furans
- Polycyclic aromatic hydrocarbons (PAH)
- BTEX F1-F4 petroleum hydrocarbons
- CCME regulated metals and leachable metals
- Volatile organic compounds (VOC)
- PFAS / PFOA
- Phthalates (plasticizers)
- Pending age of structure, asbestos and heavy metals

**Issues:** presents health and environmental problems for waste managers, public works staff, and the general public

# Emerging Issues: Contamination & Solid Waste



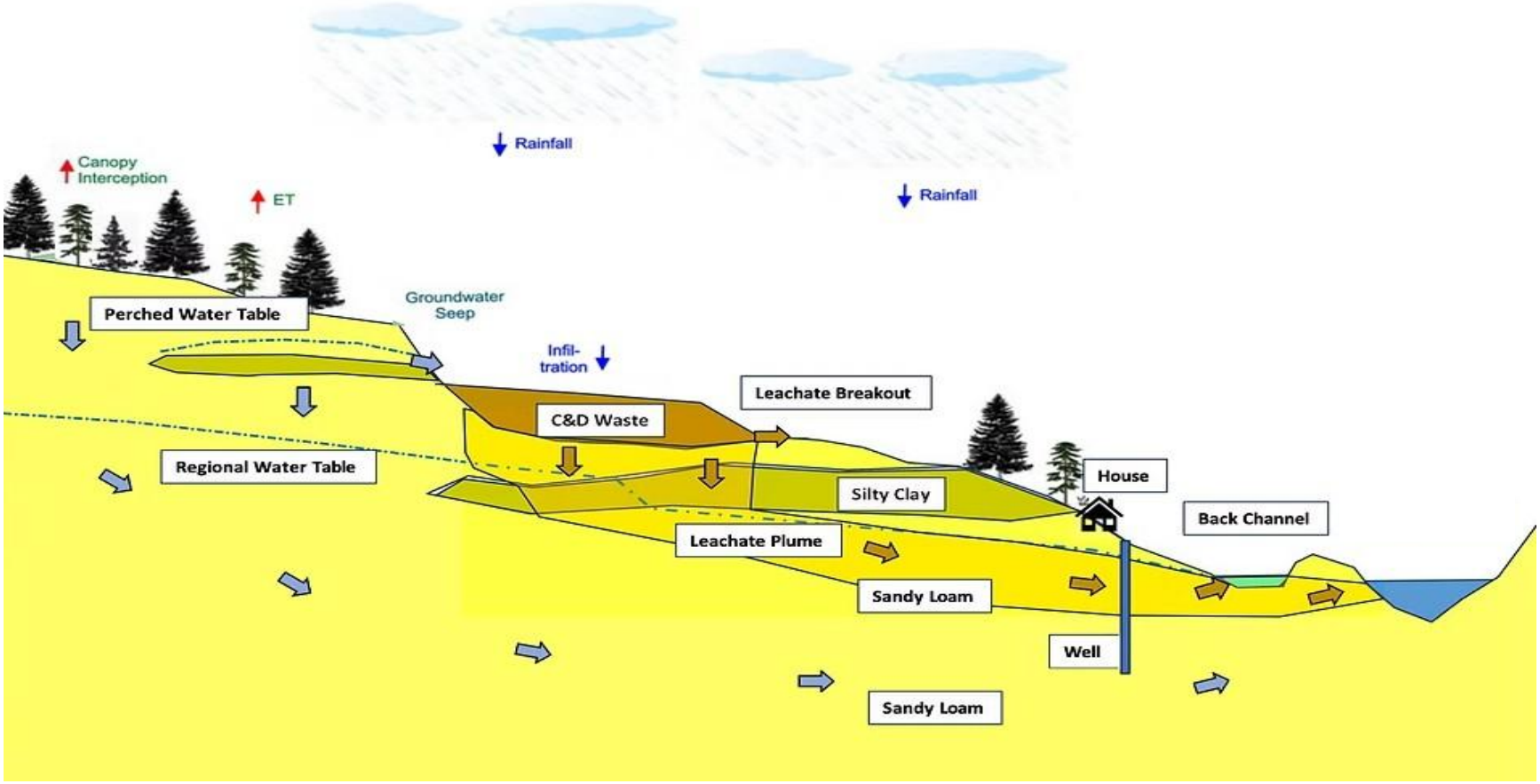
# Emerging Issues: Contamination & Solid Waste

- **Construction Waste Dumping** Construction, demolition, and renovation waste disposal is not covered by the FNSWMI.
- The presents challenges in managing / disposing of housing construction debris; sometimes, these materials are dumped on reserve.



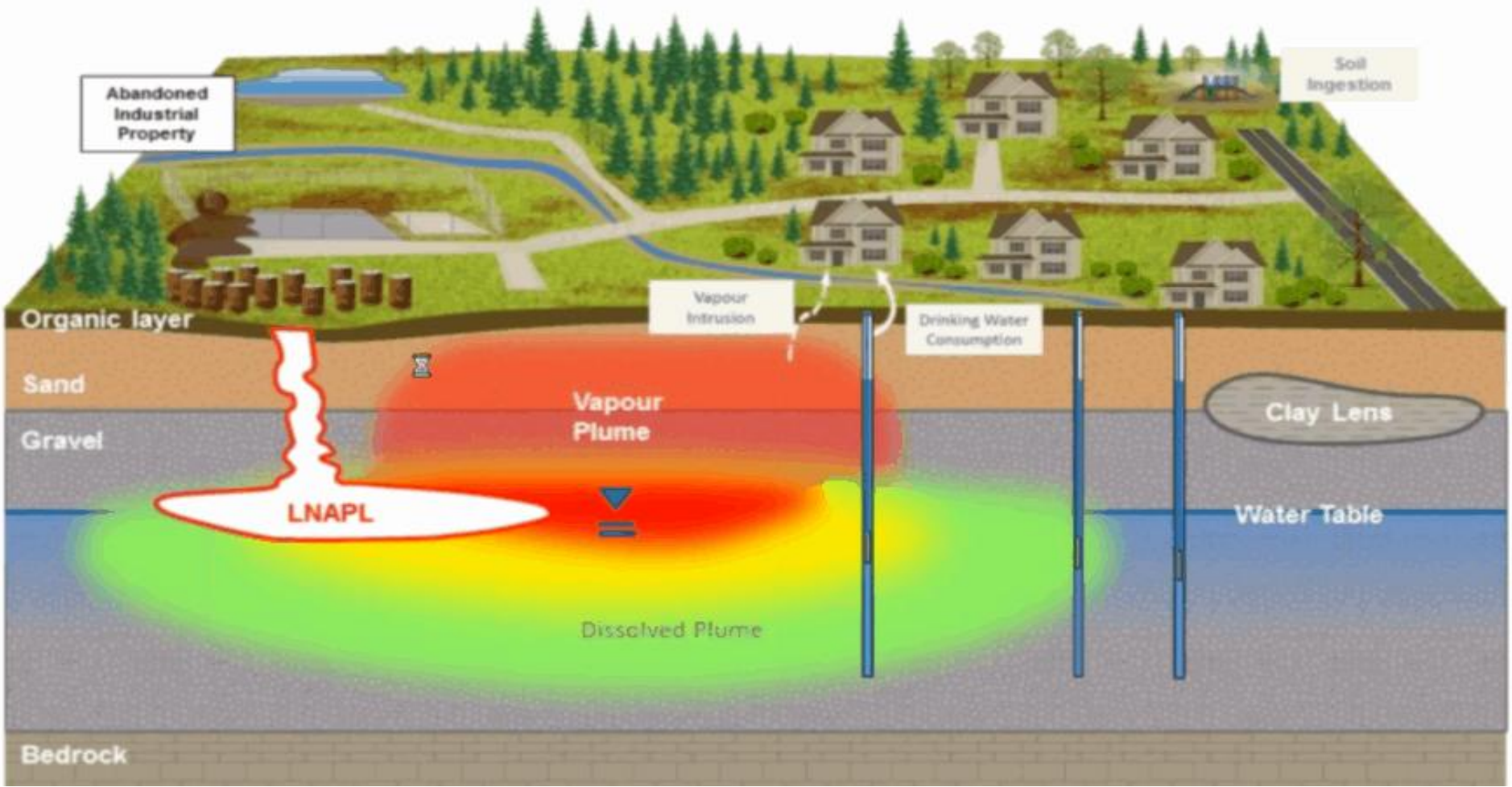
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# Emerging Issues: Contamination & Solid Waste

- **Health Concerns:** These substances:
  - Carcinogenic (cancer causing agents),
  - Agents linked to developmental delays,
  - May cause cognitive impairment,
  - May result in reproductive challenges,
  - May cause endocrine disruption, and
  - Can bioaccumulate, causing disease to organ tissues.
- **Exposure:**
  - Chronic exposure through soil contact, inhalation, and consumption of country foods grown in contaminated soil.
  - At-risk people include public works staff and residents.



# Emerging Issues: Contamination & Solid Waste

- **Solutions:**
  - waste collection and handling systems
  - waste transfer stations
  - engineered landfills with leachate collection and management systems
  - Construction, demolition, and renovation wastes are handled separately from residential wastes



# Emerging Issues: Contamination & Solid Waste

- **Solutions** several options available
  - Allocation of 2% - 5% of housing budget to public works to cover waste hauling, disposal fees, and use of community's waste transfer station, roll-off truck, bins, etc.
  - Third-party bin rental and disposal services,
  - Contractual requirements for third-party builders to haul waste debris off-reserve,
  - Housing Departments purchase haul bin(s) for long-term waste management strategy and specific use on housing construction projects,
  - Others?

# Emerging Issues: Contamination & Solid Waste



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**Recommendations** for post-fire recovery:

1. No prolonged human access to impacted sites without PPE.
2. Detailed soil testing of topsoil in the area surrounding the building halo.
3. All cleanup staff should wear N-95 respirator when disturbing ash, debris, and/or soil.

**Key take-away:**

Protect staff and residents.

Debris should be removed to an approved waste management facility.

Soil should be stripped and tested, and if necessary, removed to an approved waste management facility





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# Emerging Issues: Contamination & Solid Waste

**Recommendations** for post-fire recovery:

4. Removal of ash, building debris, and top 10 cm of soil around building – immediate hauling / disposal at Class II Landfill.
   a) If leachable compounds are present, on-site debris preparation may be necessary and may include strategies such as binding with Portland cement and application of tackifiers.
   b) If hazardous building materials (asbestos and heavy metals) are present, a separate hazardous materials management plan may be necessary.
5. Soil impacted by naturally attenuating compounds (and no other contaminants) may be stockpiled and managed on-site, away from residential areas. Longterm monitoring of these stockpiles should be completed to track contaminant attenuation.



# Emerging Issues: Contamination & Solid Waste

**Other waste management considerations: refrigerated appliances & community evacuations**

- Community evacuations and sustained power outage cause food to spoil.
- Cleaning appliances is not sufficient to eradicate harmful pathogens.
- Refrigerators and freezers containing spoiled food are considered hazardous.
  1. Seal (tape shut) refrigerators and freezers.
  2. Remove (evacuate) refrigerant from appliances and recycle.
  3. Dispose at a suitable facility.





# Integrating Environmental Best Practices into Housing Projects

- **New for Fiscal Year 2026–27**
  - ISC Alberta's Solid Waste Management team partnered with the Housing team to include environmental and waste management best practices in housing confirmation letters.

## Key Messages

- **Construction Waste**
  - Dispose of all construction waste and debris at approved off-reserve waste management or recycling facilities.
  - Plan and budget for proper handling, transportation, and disposal.
- **Funding Reminder**
  - The **First Nations Solid Waste Management Initiative (FNSWMI)** does **not** fund construction or demolition waste disposal.
- **Stressors**
  - Dumping creates risks to public health and natural ecosystems

# Integrating Environmental Best Practices into Housing Projects

- **Burned Site Development Considerations**
- Burned sites may contain contaminants from fire-damaged structures and firefighting activities.
- Consider an alternate development location where feasible.
- If construction proceeds on a burned site:
  - Remove burned materials and debris.
  - Complete appropriate soil testing prior to construction.
    - Alberta Class II Landfill disposal testing and procedures
  - Address any identified contamination risks before development.
- Supports safe housing development and protects community health.

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# Thank you.

# Discussion