



# NELSON

Environmental Group





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### DIRECT-FIRED THERMAL REMEDIATION

Direct-fired Thermal Desorption (DTD): ex-situ process for remediation of soils with organic contamination via evaporative extraction and oxidation destruction. DTD recycles high-quality soil for beneficial re-use while eliminating risks of off-site transportation, imported backfill quality and long-term landfill liability.



### INDIRECT-FIRED THERMAL REMEDIATION

Indirect-fired Thermal Desorption (ITD): ex-situ process for evaporative extraction and condensation recovery of organic compounds from waste streams. ITD is a non-destructive thermal process delivering value of product recovery from waste with high-level organic concentration such as sludge and oil-based muds.



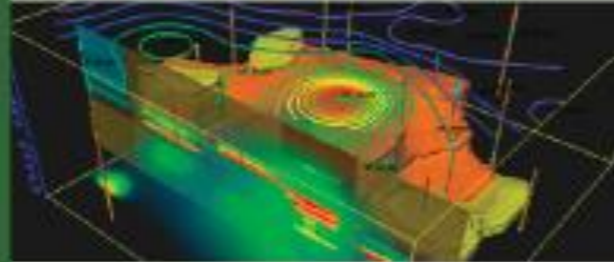
### NELSON EARTHWORKS

- General Contracting
- Excavation and Site Restoration
- Soil Treatment/Disposal
- Tank Removals
- Barrier Wall and Slurry Excavations
- Water Treatment
- Shoring
- Site Decommissioning and Demolition
- Pipeline Decommissioning and Abandonment
- Concrete Crushing and Recycling



### IN-SITU REMEDIATION

GTR is a thermal conduction heating technology that treats all organic contaminants. Generally, a treatment temperature of 100°C is achieved for VOC removal. If required, temperatures in excess of 300°C can be utilized to remediate pesticides, dioxins, furans and SVOCs. GTR can use natural gas or propane to power the thermal remediation and has been applied to depths in excess of 30 m bgs.



### SCG INDUSTRIES LTD.

Using High Resolution tools coupled with proprietary data analysis and modeling, SCG offers clearer delineation of contaminated sites. Clearer delineation allows stakeholders and consultants a better opportunity to develop effective clean-up strategies.

#### Water Remediation:

SCG has over 20 years of experience in the design and installation of remediation and water treatment systems conducting hundreds of pilot and full-scale operations for a variety of contaminants and environmental conditions.



### OSPREY SCIENTIFIC

- Environmental Assessment and Remediation Test Kits and Samplers
- Water Quality Meters, Kits and Samplers
- Waste Characterization Test Kits and Samplers
- Gas Monitors for Safety & Site Evaluation
- Consumables
- Laboratory Equipment and Supplies
- Service and Technical Support Training
- Rentals



### MALAHATNELSON

- Indigenous Joint Venture on Vancouver Island
- Service Offerings:
- Thermal Treatment of Hydrocarbon Impacted Soils
- Landfilling of Saline Impacted Soils
- Creosote and Clean Wood Disposal
- Water Treatment Services
- Soil Wash Services
- Earthworks Services



## The NELSON Environmental Remediation Ltd.

- Established in 1994
- Thermal Desorption Treatment (TDU) Cleantech Service
- TDU fleet size
- Cost effective remediation Solution
- Blanket Approval to work on AB and ON Permit
- Upcoming major projects





**DTD: Direct-Fired Thermal Desorption - Soil / Sediment  
Organic Extraction & Destruction**



**ITD: Indirect-Fired Thermal Desorption - Sludge / Oil Mud  
Organic Extraction & Recovery**





# Thermal Desorption to Treat PFAS

## Benefits of TDU (Thermal Desorption Unit) Technologies:

- 1. Effectiveness:** *Onsite Thermal Desorption effectively breaks down the complex PFAS molecules, ensuring a thorough and complete remediation.*
- 2. Rapid Treatment:** *This process significantly accelerates treatment timelines compared to traditional methods, reducing project durations and costs.*
- 3. Mobility:** *The mobile onsite aspect of TDUs allows us to target contaminated sites directly, eliminating the need for offsite soil transport/disposal and import of replacement backfill.*
- 4. Cost Effective:** *TDU application has long proven to be a cost-efficient solution delivering liability elimination.*



## Regulatory Compliance:

- 1. Meeting Standards:** *Mobile Thermal Desorption ensures compliance with stringent environmental regulations, contributing to a responsible and sustainable remediation process.*
  
- 2. Stakeholder Confidence:** *By delivering the certainty of thermal remediation, we build trust and confidence among stakeholders showcasing a commitment to environmental responsibility.*



## Future Outlook and Innovation:

- 1. Continuous Improvement:** *There are ongoing research and development initiatives to enhance TDU efficiency to address emerging environmental challenges. There have been many pilot projects carried out in US, Europe and Australia demonstrating destruction capability of TDUs. In Canada PFAS has been treated at TDU receiving sites with success.*
- 2. Collaborative Innovation:** *There is encouraged collaboration between all stakeholders to drive innovation in soil remediation technologies.*

*Onsite Thermal Desorption technology stands as a leading method to address PFAS-contaminated soils. TDU effectiveness, mobility, and environmental benefits make it a pivotal solution for the challenges we face. We at NELSON look forward to collaborating with our customers to deliver our 30+ years of expertise in TDU technology application to eliminate environmental liability under our slogan “Clean Dirt, No Doubt!”*



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