

NELSON

RESOURCE RECOVERY

Recover your wasted value.

Core Waste Streams Recovery Solutions

- SAGD Drill Cuttings
- Oil Recovery
- Millscale
- Fly ash
- Tire Pyrolysis
- Carbon Sludge & Catalysts
- Lime Sludge
- Centrifuge Cake
- Railway Ties

Nelson Environmental Remediation

Recovery solutions from SAGD drill cuttings to mill scale.

A practical route from difficult residuals to cleaner sites, reusable materials, and a stronger project record.

Traditional waste management can move liability from one location to another. Nelson designs mobile thermal programs around the material itself: separate the contaminant, destroy or recover it, and preserve the useful fraction wherever the chemistry and project criteria allow.

01

ISOLATE

Characterize the feed, contaminant, moisture, and recovery target.

02

TREAT

Select direct fire, indirect thermal, or pyrolysis around the material.

03

RECOVER

Return treated solids or captured products to the most useful approved outlet.

WHAT THE PROJECT GAINS

Permanent treatment

Reduce the contaminant burden rather than transferring it.

Recovered value

Capture usable oil, ferrous solids, or other approved outputs.

Lower logistics exposure

Bring treatment to the material and reduce avoidable hauling.

Stronger ESG evidence

Document diversion, recovered outputs, avoided transport, and material returned to use.

nelsonremediation.com | info@nerglobal.com | 1.888.960.8221

Nelson turns waste stream problems into permanent strategies.

A wide range of powerful mobile configurations gives you new solutions for old problem.

SAGD drill cuttings

Separate heavy hydrocarbons at the lease or disposal site to reduce long-term residual liability.

Recoverable oils

Separate usable hydrocarbons from sludges, liquid mixtures, and complex industrial matrices.

Mill scale

Recover oil and preserve iron-rich solids for approved return to industrial use.

Fly ash

Process and condition complex ash streams for approved downstream reuse.

End-of-life tires

Use oxygen-free pyrolysis to separate oil, carbon-rich solids, steel, and process gas.

Carbon sludge + catalysts

Concentrate valuable constituents and reduce the volume requiring final management.

Lime sludge

Separate oil, water, and mineral solids through a feed-specific thermal treatment train.

Centrifuge cake

Condition and process dense continuous industrial feeds through a sized mobile system.

Railway ties

Thermally release impregnants and manage recovered carbon and process gas through engineered controls.

Treatment brought to the source.

Four mobile systems sized for industrial remediation in remote, access-restricted, and operating sites.

SYSTEM	CLASS	NOMINAL	PRIMARY / OXIDIZER	TYPICAL RECOVERY USE
RS-945	Large-scale continuous	50 to 70 t/hr	To 650 C / 1,100 C	Pipeline-scale and multi-year campaigns
RS-45	High-volume mobile	35 to 50 t/hr	To 650 C / 1,100 C	Mixed hydrocarbon and PCB inventories
RS-40	Mid-range mobile	30 to 45 t/hr	To 650 C / 1,100 C	Industrial residuals and mid-size campaigns
RS-20	Compact / remote	15 to 25 t/hr	To 650 C / 1,100 C	Access-restricted and remote sites

Mobile by design

Modular treatment trains move to the material, reducing avoidable hauling and keeping project control at the source.

Engineered to the site

Feed preparation, residence time, temperature, air controls, and production targets are configured around the actual remediation envelope.

Built for hard conditions

The fleet is designed for remote access, active industrial settings, and field operation across severe seasonal conditions.

Specifications are nominal design values for planning. Project envelopes are confirmed through testing, engineering, and permitting.



80,000 tonnes remediated. Mill scale and oil recovered.

Indirect Thermal Desorption recovered 3.8 million litres of oil and returned every tonne of iron-bearing material to steel production.

80,000
tonnes processed

3,828,163 L
oil recovered

<0.1%
residual oil

100%
ferrous material returned

THE CHALLENGE

Oil-impacted mill scale at an operating Quebec steel facility contained approximately 10 to 20 percent oil and a similar level of moisture. The objective was to recover value from the oil and iron-bearing material rather than send the feed to disposal.

THE SOLUTION

Nelson operated an Indirect Thermal Desorption train with oil recovery. The controlled process separated recoverable oil without combusting the iron-bearing feed while work continued inside the operating steel facility.

VERIFIED OUTCOME

All ferrous material was returned to steel production. Recovered oil went to fuel recyclers. Residual oil finished below 0.1 percent against criteria of under 1 percent oil and under 5 percent water.

Up to 15 t/hr

APPROX. CAD $13 MILLION



19,223 tonnes remediated. Through spring breakup.

A historic Alberta wellsite and drilling-waste disposal area, treated on site with the RS-20 and returned to its own footprint.

19,223
tonnes treated

RS-20
mobile thermal unit

4 months
through spring breakup

Tier 2
remediation criteria

THE CHALLENGE

A remote west-central Alberta legacy wellsite required hydrocarbon-impacted material to be treated on site through difficult seasonal conditions. The program continued through spring breakup, when site access and logistics were constrained.

THE SOLUTION

Nelson deployed its compact RS-20 thermal train and afterburner. Recycled used oil was approved as process fuel, supporting continuous field operations while the contaminated material was treated to the project criteria.

VERIFIED FIELD OUTCOME

The four-month hydrocarbon remediation program treated 19,223 tonnes to Alberta Tier 2 criteria. Mobile equipment kept treatment at the source and operated through spring breakup.

Treatment at source

Remote deployment | seasonal resilience

APPROX. CAD $2.3 MILLION

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State-of-the-art tire pyrolysis.

Engineered with over 30 years of expertise in resource recovery.

End-of-life tire stockpiles carry fire load, leachate, vector, and regulatory exposure on the same footprint. Nelson's modular pyrolysis systems heat tires in an oxygen-free reactor so the rubber polymers cannot combust. The material is converted rather than buried, and the recovered fractions re-enter the supply chain.

01

PREPARE

Tires are sized and charged to the reactor ready for processing.

02

CONVERT

Indirect heating in an oxygen-free reactor cracks the polymers without combustion.

03

CONDENSE

Vapours pass a condenser train; non-condensable gas is captured for process heat.

04

RECOVER

Carbon-rich solids, oil, process gas, and steel are separated for qualification.



Condenser and vapour recovery train



Reactor vessel and feed conveyor



Recovered carbon-rich solids

Pyrolysis oil

Liquid hydrocarbon fraction for industrial fuel or upgrading routes.

Recovered carbon

Carbon-rich solid suitable for compounding markets after upgrading.

Process gas

Non-condensable gas captured and burned cleanly for process heat.

Steel

Belt and bead wire recovered and returned to steel recycling.

Tire pyrolysis is an available Nelson technology. Output quality and end markets are confirmed through characterization, testing, and downstream acceptance.

“Resource recovery is a major part of our business at Nelson. We give companies strategic and sustainable options that reduce liability, create new value, and deliver a better ESG story.”



Warren Nelson

CHIEF EXECUTIVE OFFICER

Permanent solutions. Engineered value.

For more than 30 years, Nelson has engineered and operated permanent remediation and value-added recovery programs across five continents.

Our mobile systems create a unique advantage by bringing industrial-scale treatment directly to remote, access-restricted, and active industrial sites. This reduces haulage costs and risks, and brings a managed solution right to the source.

WORLD'S LARGEST MOBILE THERMAL FLEET

Our technology is built for reliable performance in all climates, from high heat and humidity to freezing temperatures, with proven experience in the Arctic, the South Pacific, Southeast Asia, Hawaii, and all across North America.



NATO PFAS TEST BED

Nelson chosen by NATO Science and Technology Organization to test technology to solve the global challenge of forever chemicals.

NELSON

For more, visit nelsonremediation.com

Because tomorrow matters™

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Victoria, British Columbia
Saint John, New Brunswick
London, Ontario

UNITED STATES

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We respond to project inquiries within one business day.