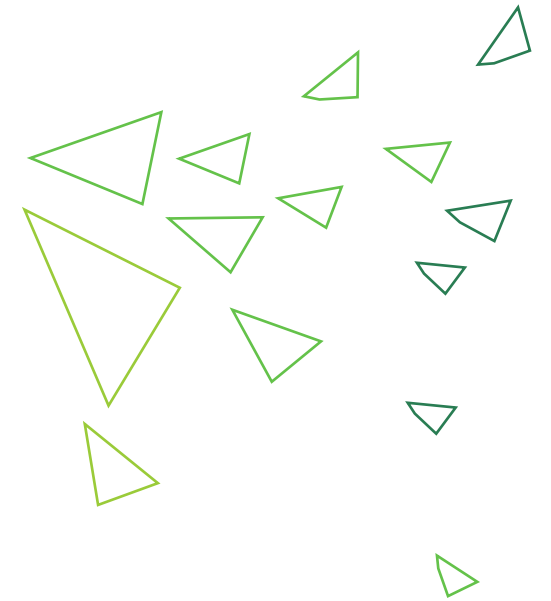




FIRE ASSAY WASTE

Lead contaminated Cupels, Slags and Crucibles
- Creating a stewardship program for a niche waste



About Us

Westref Enviro is the result of the Australian company WESTREFs vision to improve resource management within the fire assay industry.

Our approach is replicable across a vast range of industries!

Taking ownership of the fire assay byproducts



Lead pollution around the world

One out of every three children is estimated to have levels of lead in their blood that require immediate action to prevent long-lasting damage

- UNICEF 2020

Fire Assay Waste

All waste is lead contaminated

To varying degrees, all waste generated by the fire assay process will contain lead contamination – Not suitable for landfill

Reduce not an option

Lead is the key to the process – up to 400 grams of lead contaminated materials is generated per sample.

Not a prioritized waste stream

Low overall volume, the low value of lead and limited enforcement of environmental regulation has meant **low interest** from traditional waste management companies to develop more sustainable or circular options

The Problem



Lack of transparency

Waste producers do not get enough information about what happens after collection



Low volumes

Relatively low localized waste volumes prevent economies of scale and leaves little incentive to innovate



No accountability

A long value chain with little transparency means operators are not held to account for the outcome



Unreliable

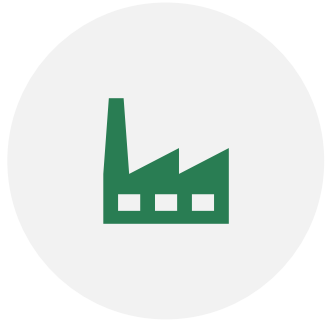
Temporary low-cost options have been sporadically available, increasing insecurity and leading to material being stockpiled



Global problem

Fire Assay waste is generated on all continents

The Solution



Industry initiative

Finding new and innovative solutions by leveraging our combined volumes



Global partnerships

Taking advantage of our global network to identify the world beating alternatives



Transparent and measurable

We believe information and technology will deliver true value to both the industry and our communities



One process, three waste streams

Different challenges and opportunities

Cupels

main issue: Reliable recovery

- 25% of total weight
- 30-40% lead by weight



Slag

main issue: Safe handling

- 37.5% of total weight
- More than 1% lead by weight



Crucibles

main issue: Certification for WDM

- 37.5% of total weight
- Less than 1% lead by weight



The benefits of a product stewardship program

The path to circularity will provide short term savings and long-term gains

SHORT TERM

- Simplify the waste handling processes for all consumers of fire assay flux
- Leverage the combined volumes to provide a more sustainable and comprehensive solution
- Fully auditable outcomes - financial and environmental

MEDIUM TERM

- Use aggregated volume to establish technology partnerships on a global level
- Drive research and innovation towards a full resource recovery solution



Product Stewardship -
All stages of product life management, from
development through the end of the product life cycle

Program Model

Westref Enviro achieves success through collaboration



Educate

Educate all stakeholders to increase industry knowledge around the by products



Aggregate

Accumulating larger volumes will allow us to invest in research and technology



Innovate

Industry knowledge makes us qualified to take on the waste challenge

Short term - Our immediate results



1.1 mt

Of metals diverted from landfill per waste shipment



5%


Shipment **weight reduction**


and


Reduced transport by volume and distance leading to a significant **reduction of the carbon footprint**

Contact us
Let's achieve together



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