

Title:  **Goal: Recycle of Beneficial Use of All Waste Streams!**

Full Scale Implementation    OR     Pilot Scale/Study

## **1. Description of the project: What is the issue and how did you fix it?**

Our goal is to find recycling or beneficial use options for every waste stream. Just within the realm of solid waste, our current successes include used sand, melting slag, steel drums, cardboard drums, pallets & scrap wood, used oil, used antifreeze, used electronics, sand system baghouse dust, quench pit scale, office paper & cardboard, arc furnace electrodes, scrap metals, machine shop chips, landscape debris, pattern shop wood scraps & chips, etc.

Additional Comments We reuse waste products from other industries. Scrap steel is our primary raw material. We also use rice hulls, chopped aluminum wire, mill scale, titanium shavings, granulated carbon. Our favorite melting stock is alloy steel castings, worn out and returned from our customers. We even make wear parts for the recycling industry; scrap shredders, asphalt & concrete crushers.

## **2. Environmental Benefits: Conservation of raw materials or energy, reduction or elimination of emissions, wastes, toxics, water discharges, etc.**

The obvious environmental benefits start with conservation of raw materials; providing substitutes for virgin materials and products. Also avoiding the energy consumption and pollution effects of mining and processing and transporting raw materials. Not so obvious is conservation of precious landfill space by diverting as much as possible from landfill disposal. "Repurposing" is a favorite term for finding alternative uses for discarded items and materials.

## **3. Other Benefits: Productivity, health and safety, employee morale, etc.**

Hopefully our employees are inspired by our diverse efforts at recycling and waste management, so they go home and practice what they can personally. We have a rewards program to incentivize employees to submit leads for construction sites that can use our spend sand for fill.

#### **4. Cost Savings: Capital cost, operating cost, ROI or other pertinent cost information.**

Considering the diversity in the scope of our efforts, described above, it is nigh onto impossible to quantify the costs and ROI for the scope of these efforts. the ROI comes about from reduced costs of disposal.

#### **5. Applicability to other foundries and additional Comments**

Any foundry could benefit from using at least some of the above ideas. Very few will have the broad scope of operations that Columbia Steel does. As for limitations, use your imagination! I demonstrated that you could make kitty litter from baghouse dust. I also found that landfills could use our baghouse dust to solidify liquid wastes before burying them in the landfill. Companies making asphalt seal coat for parking lots and driveways can use our baghouse dust as the mineral filler in their recipe. Quench pit scale is being used for ballast weight. Wood chips for livestock bedding. Look outside of the foundry industry.

#### **6. Applicable Environmental Categories and Foundry Processes. Select all that apply.**

##### **Environmental Categories**

- Carbon (GHG) Emissions Measurement and Reduction
- Air Quality       Water Use and Discharge       Waste Management
- Beneficial Use       Stormwater       Material and Resource Conservation
- Community Engagement

##### **Foundry Process(es) Impacted**

- Melt       Pour       Mold       Core       sand system/reclaim
- Shakeout       Heat Treat       Quench       Finishing       Shipping
- Maintenance       Pattern Shop       Casting Design
- Management Systems and Metrics
- Other, explain:

#### **7. Add photos to enhance your application, if applicable.**

# Green Foundry Project

2205-04



# Green Foundry Project

2205-04

