

Non-hazardous Waste - Ferrous Melting Baghouse Media

Full Scale Implementation OR Pilot Scale/Study

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

Melting furnace baghouses within steel and iron foundries that use scrap steel for feed could have heavy metals contamination in the baghouse dust and baghouse bags. If this accumulates the bags (when replaced) could possibly test as hazardous waste. This poses problems as generator status and disposal cost and considerations. This project was for complete change out of bags in a melting furnace baghouse. This could also apply to partial replacement. This is not well suited to small scale replacement. The goal is to not generate any hazardous waste. The solution was to fully clean the bags in place (pulse down) and then coat the bags with a fine grid material that would possibly impregnate the bags and adhere to the bags prior to removal. The coating material used is just a fine grind of the stabilization agent used for the bag house dust.

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

The goal was that the bags once removed would profile as a non-hazardous waste. The bags (over 700) were tested (representative sample) and TCLP results demonstrated non-hazardous waste. This supports no-hazardous waste generated and reduces disposal costs. The company has maintained for several years a Zero generation status for hazardous waste. This reduces the waste generator profile and reduces cost for disposal.

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

Productivity, health and safety, employee morale, etc. Productivity benefit - Bags can be replaced in mass without the concern for accumulation of heavy metals within the bags.

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

Capital cost, operating cost, ROI or other pertinent cost information

Tangible cost = hazardous waste disposal vs. non-hazardous waste disposal.

Intangible cost = Profile status with governmental regulators.

5. Applicability to other foundries and additional Comments

This procedure is applicable to all industries that use baghouse that might have heavy metal contamination of the bags of that baghouse. This only applies to possible heavy metal contamination. No other aspects of hazardous waste determination applied or were evaluated. This process was used on a baghouse with approximately 700 bags replaced and another baghouse with approximately 500 bags replaced. Additive addition can be scaled up or down based on bag type and cloth area.

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: