VALIS

THE IMPACT OF RELIABLE SAMPLING

How VALI-Sample benefits your bottomline

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Executive Summary

Every load you sell could be worth more than you think. Most recycled metal processors make pricing and processing decisions using incomplete, inaccurate, or outdated sampling data. The result is undervalued products, missed recovery opportunities, customer claims, and lost margin.

VALI-Sample transforms routine sampling into real-time business intelligence—helping processors recover more value, improve pricing confidence, and increase profitability.

Without VALI-Sample

- Pricing based on assumptions
- Manual spreadsheets
- Delayed decisions
- Missed recovery opportunities
- Customer disputes
- Inconsistent quality

With VALI-Sample

- Trusted sampling data
- Real-time dashboards
- Better commercial decisions
- Higher recovery
- Improved pricing confidence
- Measurable ROI

Through improving the reliability of their sampling process and acting on insights delivered by VALI-Sample, one customer achieved:

+$1M in annual revenue opportunity

ROI in less than one month

40% increase in reds content

70% more samples collected

150% increase in in spec loads

VALI-Sample delivers better data, better pricing, and better recovery. Learn more about the impact it could have on your operations below.

Disclaimer: Returns are not guaranteed, and results may vary by facility.

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The Hidden Cost of Inaccurate Sampling

Understanding the material breakdown of recycled metal loads is critical for accurate pricing, informed processing decisions, and overall profitability of metal shredding and processing facilities. Incoming and processed loads of shredded nonferrous scrap are rarely uniform and contain metals of varying value that can affect per pound pricing. For example, if a shipment has a higher concentration, even just 1 wt%, of copper or copper alloys, referred to as red metals, it can be sold at a significantly higher price per lb.

There are many factors that influence the variability of shredded and sorted material packages such as changes to the infeed of the shredder, weather, or equipment performance. Every week, processors unknowingly leave money on the table because they cannot reliably measure the value of the material they're producing, forcing them to rely on assumptions, vague estimates, or historical averages. This can lead to hundreds of thousands of dollars lost and erosion of customer relationships due to claims or millions of dollars of lost revenue annually when material is undervalued highlighting the need for a modern sampling solution.

Why Traditional Sampling Falls Short

The most common method of grading metal, and determining the ever-important red metal content, is a highly manual process with many opportunities for human error. In a typical workflow, a technician collects a 5-gallon sample, sorts the material into individual fractions, weighs each fraction, writes the weights down on pen and paper, types the data in spreadsheets often times at the end of a shift or the next day, and takes material images using a cellphone. That data then needs to be analyzed by a human to extract what is valuable and communicated out to operations and commercial teams to make informed decisions; this often occurs days or weeks after the material has been assessed.

While this approach is widely adopted due to its low cost and flexibility, it relies excessively on human intervention, and therefore introduces human error, at nearly every step of the process. Data can be entered incorrectly, photographs can be misplaced, and records may be difficult to locate or audit. Furthermore, because results are often stored across spreadsheets and emails, information can become fragmented and difficult to access with significant time required to identify valuable insights. As a result, material quality data often remains underutilized or significantly delayed before reaching key decision-makers.

A variety of alternative technologies exist that aim to support material grading. Over-belt XRF systems can deliver accurate bulk compositional data but with limited insights into performance of downstream sorting equipment and require significant capital investment. Handheld analyzers provide accurate elemental analysis but can be intractably slow when evaluating representative volumes of shredded material. The industry's primary challenge is identifying a solution that balances accuracy and cost while creating structured, actionable data to support real-time decisions.

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How VALI-Sample Transforms Sampling

VALI-Sample doesn't simply digitize sampling—it transforms sampling into a continuous decision-making tool for operations, quality control, and commercial teams.

VALI-Sample is an integrated hardware-software tool that turbocharges the sampling process by eliminating human data entry and analysis, and the overall uncertainty associated with manual sampling. Rather than having a technician manually weigh each fraction, they can instead place the material into VALI-Sample. The system automatically takes images and records the weights of the fractions and instantly displays sampling results and insights in a web-based app that can be accessed anywhere, anytime. Streamlined reporting and alerting ensures your team gets the information they need as soon as its available – no delays and no guesswork.

This system can be used to qualify both ferrous and non-ferrous metals, as well as waste streams to monitor and reduce metal loss. A representative understanding of material can be achieved with smaller, more frequent samples. One five-gallon sample taken every shift or daily can deliver high-confidence results without the high cost associated with trying to analyze an entire process run or shipment. Through regular analysis with VALI-Sample, scrap processors gain stronger, trust-worthy insights into how they should price their product or make changes that improves product quality.

	Manual Sampling	Over-Belt Analyzer	Handheld Analyzer	VALI-Sample
wt% Material Breakdown	✓	✗	✗	✓
Speed	✓	✓	✗	✓
Cost	✓	✗	✓	✓
Structured Data & Workflow	✗	✓	✗	✓
Real-time Analytics, Alerts & Trends	✗	✓	✗	✓
	Prone to **human error, missing data** & costly **decision-making delays.**	Provides online bulk chemistry, but expensive solution at upwards of **$1M+ per unit.**	Accurate piece by piece chemistry, but a **very slow process.**	Enables **fast, accurate, actionable & auditable** sampling with high ROI.

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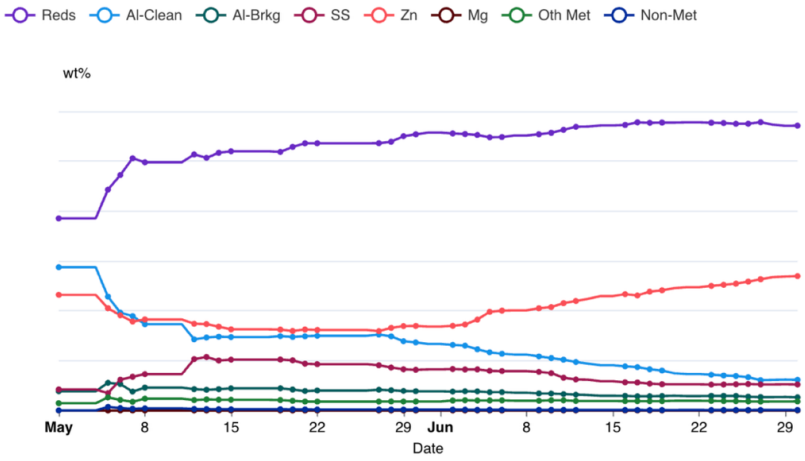
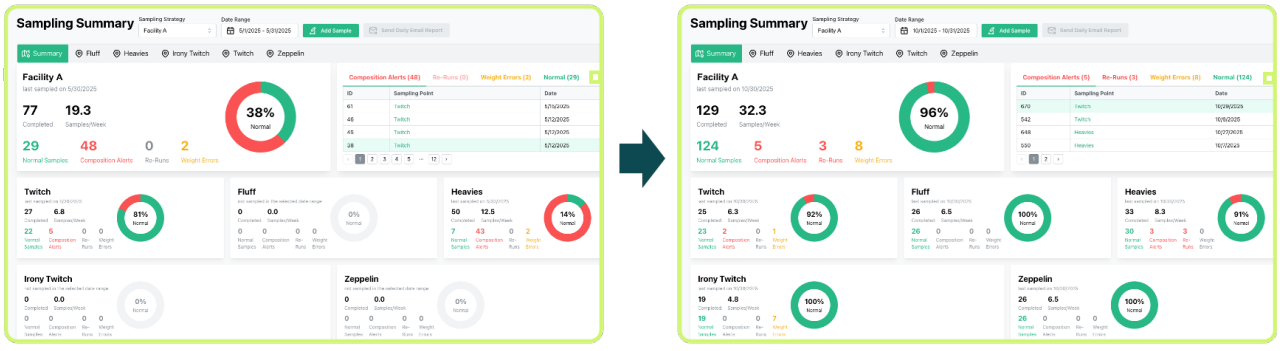
Case Study: From Routine Sampling to Seven-Figure Value

In 2025, a VALI-Sample client identified a higher than expected reds content in one of their products. Through consistent sampling and data-driven improvements to equipment settings and processing workflows, this customer was able to increase reds content by 40% and sustain those improvements in quality. With this higher purity, and the data to support it, they were able to market and sell this material at a higher price per pound. This price increase represents over $1 million in additional revenue per year for one product generated at a single facility.



Prior to using VALI-Sample this facility had a routine sampling process, but the data was not trusted by decision makers and was ultimately failing to deliver value. With the increased efficiency, visibility and reliability delivered by VALI-Sample, operations and commercial team members were empowered to take action that directly improved the bottom-line. This is demonstrated by the changes seen in the first six months of using VALI-Sample which is shown in the figure below. Given that VALI-Sample substantially decreases the amount of time it takes to conduct a sample, the facility was able to increase the number of samples taken per month by 70%. Over the course of a six-month period, this client was also able to get a far more accurate measure of quality across all their nonferrous products and make data-driven decisions that increased in-spec loads by 150%.



MONTH 1 **MONTH 6**

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Additional Sampling Services

Beyond the VALI-Sample subscription, there are two additional opportunities for scrap processors to gain a better understanding of their metal content through working with VALIS. The first involves a one-time sampling study, where clients can send a 5-gallon sample of their material to VALIS and team members conduct an in-house analysis using VALI-Sample. Clients who have used this service have been able to gain a baseline understanding of their material, including infeed, outgoing products, and waste. This service is primarily ideal for processors who do not sample and want to determine a sampling strategy that aligns with their goals.

For processors that already sample or want to on a more consistent basis, VALIS also offers a monthly sampling service, which allows clients to track trends over time on the VALI-Sample dashboard. This service requires clients to ship samples to VALIS on a weekly or monthly basis and also involves the VALIS team using VALI-Sample in-house.

Conclusion

In today's recycling industry, better data creates better margins. VALI-Sample gives processors the confidence to price more accurately, recover more valuable metals, improve operational performance, and make faster decisions based on trusted information. The question is no longer whether or not you should sample. The question is whether you're getting everything your material is worth and have the proof to back it up.