Saving the Spirits

The Company

The Company is a producer and distributor of premium spirits, and a market leader with several of the top worldwide brands in their respective categories.

The Situation

The company had begun a company-wide waste reduction effort. Keystone was engaged to identify the sources and magnitude of liquid loss at the company's largest North American production facility, and to quantify the opportunities for improvement.

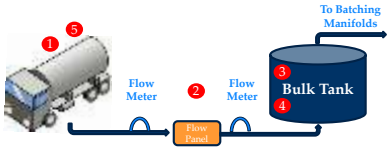
The scope of the project included the *liquid loss* in the production and bottling of spirits. In order to identify sources of liquid waste, the team had to quickly dissect the operation, which spanned a 530,000 square foot facility running 24 hours a day seven days a week.

The Approach

The effort was divided into three areas of focus:

1. Raw Material Unloading
2. Processing/Blending
3. Bottling

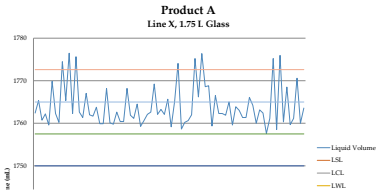
The team began the effort by observing the path of the liquids throughout the operation, identifying control (measurement) points, and developing reasonable hypotheses for where waste could occur.



Once these measurements were established, the team conducted the following activities:

- Interviewed key employees
- Observed key processes
- Analyzed Data

In total, 15 products were observed at over 50 points in the production process.



At the end of the study, the key findings included:

- Significant variance in fill-head performance was leading to overfilled bottles
- The "proof-in" process to initialize a bottling run was wasting more liquid than necessary
- Current sampling plans based on average weights did not accurately reflect fill volumes
- Inconsistent procedures and a breakdown in communication led to unnecessary confusion and mistakes in Processing/Blending
- Opportunities existed to make waste reduction a part of the overall culture by improving plant-wide metrics
- Reporting variances on receipt of material from internal vendors was causing a virtual inventory loss within the company that was a paper loss

The Results

Based on the findings during the yield study, Keystone developed specific recommendations focused on: improving the bottling sampling plan, minimizing overfilled bottles, making waste reduction a part of the culture at all levels, decreasing the likelihood of large-scale losses, and reducing the incidences of virtual loss.

Recommendation	Key Areas of Focus	Benefits (gals/yr)	Time to Implement	Ease of Implementation	Requires Capital
Improve bottling sampling plan	Determine a more effective way to correlate weight to volume given the variability in bottle weights	High	<1 Month	Moderate	Likely
	Increase the frequency		<1 Month	Easy	No
	Have "auditor" validate results of the operator		<1 Month	Easy	No
Reduce overall variability at filler heads	Understand equipment capabilities and operating parameters. Identify opportunities to improve	High	2-3 Months	Moderate	Likely
Decrease likelihood of large-scale losses	Assign batches to one person and improve shift communications	High	2-3 Months	Moderate	No
Reduce loss in pipes on batching transfers	Conduct additional proof-ins to validate opportunities	Medium	<1 Month	Easy	No
	Open pipes and valves to audit all "high loss potential" flow paths after processing and CIP		<1 Month	Easy	No
	Empower and incent crews to explore savings opportunities		<1 Month	Easy	No
	Identify tools (pigs, sight gauges, pumps, etc.) or procedural changes that can be implemented to improve fluid evacuation		2-3 Months	Moderate	Yes
Reduce liquid loss during proof-in	Understand and track variability in proof-in processes on each of the lines	Medium	2-3 Months	Moderate	No
	Develop best practice and implement across all lines		<1 Month	Easy	Minor
Reduce inconsistency in mislead reporting	Implement a standardized, mandated procedure for mis-loaders to log variances in SAP based on proof gallons	Low	<1 Month	Easy	No

Key:

High	<1 Month	Easy
Medium	2-3 Months	Moderate
Low	>3 Months	Difficult

In all, the team identified and developed recommendations focused on reducing liquid loss by 1% of total product produced each year. Additionally, the recommendations improved the company's ability to track and reduce future loss with greater urgency.

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