

# Nestlé Waters USA reduced equipment unplanned downtime by 50% using EIT™

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David Sommer, Nestlé Waters Greenwood Plant Manager, has a sound knowledge and expertise in the Water bottling and Packaging industries. He has been with Nestlé Waters for more than 15 years and has held key operational positions in several Nestlé Waters bottling plants across the United States. The Greenwood, Indiana 7-year old facility has two high speed production lines running two 12-hour shifts, 5 to 7 days a week. In 2014, the plant's line #1 was designated as the best Asset Intensity<sup>1</sup> line among all Nestlé Waters lines across the United States and Canada. Greenwood line #2 achieved the 2<sup>nd</sup> position in the same category. When it comes to Asset Intensity, the Nestlé Waters Greenwood plant is obviously one of a kind! The backbone behind their success is the Nestlé Continuous Excellence (NCE) strategy, which is applied in all Nestlé and Nestlé Waters plants worldwide as well as DMAIC<sup>1</sup> and an effective Operations Master Plan (OMP) which is closely followed up by the plant on a daily basis.

One of the key contributor's and supporting tool to NCE and OMP is Gebo's [EIT™](#) (Efficiency Improvement Tool) automated data acquisition system. EIT™ is installed on more than 110 Nestlé Waters' lines worldwide, 87 of which are in North America. Among them, is the Greenwood facility where EIT™ is used daily, even on an hourly basis. EIT™ is now considered as Nestlé Waters' global line supervision system. It provides both line improvement and in-depth analysis of downtimes for NCE and related improvement initiatives.

## Operational Supporting Tool

In 2014, one of the plant's targets was to increase the *Asset Intensity* KPI at the line level. In order to reach that target, Nestlé Waters' team used EIT™ to get a clear and quick understanding of what were the main issues on their lines. Among the system features, two screens are particularly helpful to users in order to discover the line bottleneck and the efficiency loss sources: the **Line Audit** and the **Line Status View** screens.

With the **EIT™ Line Status View screen**, that permanently displays the machine status and the line flow, it is easy to see the impact of a machine stoppage over the whole line and detect what is your bottleneck. "*On one line, we discovered that the Labeler was our bottleneck whereas on the other line, it was rather the Orientor*", says Sommer. David's team analysis would usually starts with the EIT Line Status View screen which displays equipment status over time but most importantly, the line flow and what are the machine stops' impacts on the line. The screen also indicated when a machine was running under nominal speed, which was the case for the Labeler. The Line Status View gives you numerous hints so you can ask specific questions to your operators.

To complete the investigation, several EIT™ screens were used, such as the Machine Summary, V-Graph... It showed that the Labeler was definitely running below nominal speed. Visualizing the line flow in real-time or on an historical basis is quite powerful. "*When your production data*

*are supported with visual tools (EIT™ Line Status View), it becomes easy to convince people that running below the nominal speed is not necessarily good and that it could have a major impact on the line performance. Using EIT™ helps us to improve operators' awareness", says Sommer.*

*"[...] One of the great things about EIT™ is that you can drill down data as much as you want. The system records all machine stops, even the tiny ones. No matter if the stoppage is only one second, EIT™ gets it. Without this tool, we would not get all that valuable information. Maybe those tiny stops do not impact your line but they sure take your operators' time. On a production line, the less your operators touch machines, the better it is. At the safety level, it reduces their risk of injury. On an operational level, they lose less time and become more efficient. At the end, it is not only good for the line's output but also for the operators' moral!"*

Considering that frequent stops can increase machine wear and tear, it is always a good strategy to try reducing these stops to the minimum.

Applying the DMAIC methodology and using data provided by EIT™ for all five steps of this methodology, David's team started to track the Orientor downtime at the Shift level. During the Daily Operations Review (DOR) meetings, EIT™ data would be used to target what the team should focus on. Based on what has been recorded by the system, EIT users would know exactly how long, how many times and why the Orientor stopped in a given period of time. They could get the machine downtime reasons and/or operators' comments on those stops. They could then analyze them, set priorities and validate if taken actions were beneficial or not. By closely monitoring events and tracking results, David's team's efforts paid off. In 2014, Nestlé Waters Greenwood plant was able to reduce the Orientor unplanned downtime by 50%, which had a positive impact on the line output.

In 2014, David's team was able to reach line efficiencies ranging from low 90%'s for both lines. The Greenwood facility has been able to consistently **increase their line performance year over year.**

### **Maintenance Supporting Tool**

The Greenwood plant also uses EIT™ to drive their maintenance planning. Through the PS (Planned Stoppages) weekly meetings, they optimize the lines planned stoppages. As mentioned by David, *"EIT™ data feeds useful information. Long stops, recurrent stops and specific stops can lead to major stops so we closely monitor all events happening on the line through EIT™ data."* During the PS weekly meetings, several EIT™ screens, such as the Event Logger, Machine Summary, Pareto Charts, etc. are used to report machines major issues and recurrent stops and to do data trending.

Data acquisition being done at the PLC level, it is reliable information. Automated data acquisition systems (DAS) are limited to what is available at the PLC level. However, it is possible to enhance the level of details of a DAS by periodically involving operators and request them to comment further specific stops (ex: Stop push button). With EIT™, even though data are

automatically recorded, it is possible to manually enter comments. You can get as many details as you want to.

## **Result-driven**

In 2015, the Nestlé Waters Greenwood factory Operations Master Plan focus is rather at the machine level. It is based on three major points: Culture (training, safety, communications and changes), Waste (identify micro level waste) and Asset Intensity (reduce minor and major stops). EIT™ will play a major role in supporting the plant personal for the Asset Intensity topic. Reducing machine minor and major stops is one of the key 2015 target. *“We are now looking at a fraction of the time (i.e. downtime). We could not reach that goal without EIT™”,* says David.

If authorized by Corporate, by using the standard EIT™ functions, users can remotely connect to other plants and lines and compare equipment or line performance. Such action could be driven by a positive competitiveness initiative to simply benchmark one line/plant performance against another or for checking how issues were resolved elsewhere.

Over the years, Gebo EIT™ system has proven to be a beneficial and very useful tool for Nestlé Waters.

Always a step ahead, in 2015, Gebo will release **EIT™ Version 6** which is expected to be extremely user-friendly with a new module: **EIT AQ-Clock** focusing on available accumulation. The benefit of this module will be to inform operators on how much time they have before restarting their machines so as to not negatively impact the running of the line.

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<sup>1</sup> *Asset Intensity; KPI used at Nestlé Waters, which includes all time on the line, except idle time.*

<sup>2</sup> *DMAIC stands for Define, Measure, Analyze, Improve and Control. It is an incremental process improvement using the Six Sigma methodology.*