

Are you getting your money's worth?

The impact of short fuel deliveries



Accurately measuring a fuel delivery, comparing it to the Bill of Lading (“BOL”) and identifying the exact reason(s) for differing amounts

Author’s note: The fuel retailer concerned has authorized Dover Fueling Solutions to publish this White Paper report. The identity and the location of the Fuel Suppliers/Common Carriers and drivers will not be used in this study.

In the summer of 2017, a large grocery market chain and fuel retailer successfully used the ClearView™ solution, powered by Dover Fueling Solutions, to provide indisputable evidence to receive more than a **\$500,000 refund** from one of their fuel suppliers, due to short deliveries.

Negative media coverage surrounding a delivery driver inadvertently dropping gasoline in a diesel tank (“cross-drop”), prompted the retailer to adopt a relatively new inventory management concept: continuous fuel monitoring - a real-time solution with the potential to minimize any future problems caused by the late or misidentification of issues.

The ClearView solution was the retailer’s fuel management provider of choice. In addition to being able to closely monitor potential cross-drops, the ClearView solution, which performs virtually in real-time, can determine the accuracy of the delivery volume when compared with the BOL. The resulting information is subsequently reported to the home office via a real-time cloud-based platform, which can also provide the user with detailed drilled-down reports.

Once the retailer had rolled out the ClearView solution to all of their 204 fueling locations, it became possible to take a holistic view of each site’s deliveries, inventory, sales and operations.

The ClearView solution enables customers to:

- Monitor fuel deliveries with an accuracy of 1/1000th of an inch
- Compare the actual temperature compensated delivery volume to the BOL
- Quickly determine other losses due to leaks and meter drift
- Ascertain which dispensers are inoperative and for how long
- Find fuel that has been delivered to an unintended location despite there being no delivery documentation to reference
- Determine flow rates and create better efficiencies for replacing filters
- Report and archive Automatic Tank Gauge (“ATG”) Alerts/Alarms and pass/fail reports as per state regulator specifications

The problem

To this day, many operators have their ATG’s programmed to use only four ‘known’ points of inches = gallons, and even these four ‘known’ points depend on tank charts which themselves are not precise. This leads to an inaccurate record of fuel volume, since the distance between the points is crudely interpolated.

Accurately measuring the delivered volume in a typical 20-minute fuel delivery is further compounded when sales are taking place during the delivery. In this retailer’s case, sales rates can reach up to 1,000 gallons per hour. This type of environment generates complete reliance on the accuracy of the BOL, as the ATG can only acknowledge that a delivery has occurred and can’t measure the precise volume delivered into the tank.

A conventional ATG or inventory control system may report a variance, however, this information is unreliable if the technology and/or process has a wide margin of error.

Before the introduction of a monitoring service such as the ClearView solution, it was extremely difficult to reconcile a fuel delivery to within single digit accuracy, and a lack of awareness of the existence of delivery problems meant there was little motivation to seek a solution.

In fact, many retailers tolerate a delivery variance of greater than 100 gallons because the investigation is cost prohibitive when compared to the cost of the product lost. Furthermore, the crude data available from even high-end ATG systems cannot account for all of the variables, leaving the retailer with a claim they cannot prove. As fuel prices increase however, the motivation to investigate continues to rise. Additionally, it is a common mistake for retailers to associate missing fuel with an apparent loss caused by temperature variances, but without knowing the temperature of the product at the terminal at the time of delivery, and in the tank over time, this can only be speculation. Alternatively, a loss variance on delivery may be incorrectly attributed to evaporation due to the lack of any other plausible explanation.



The solution

The ClearView solution leverages existing on-site technology common to the petroleum industry, such as ATG, point-of-sale ("POS") units and pump controllers, to perform statistical calculations using a series of complex proprietary algorithms and software architecture to analyze the site data. By using both net and gross gallons, the ClearView solution typically reconciles fuel deliveries to an accuracy of less than ten gallons.

The ClearView solution is able to calculate its own tank chart, using existing tank probes to determine fuel volume, normally measured to within a thousandth of an inch, and in-tank temperature, using the ATG for nothing more than a conduit for the collection of data.

The original motivation for the retailer to purchase the ClearView solution was to be able to quickly identify instances of cross-drop. What they had not considered was the extra value that could be gained from implementing the new process of capturing the gross and net gallons from the BOL.

Using the gross and net gallon figures, the ClearView solution was able to determine the probable cause of loss, including actual expansion and contraction due to temperature variance. Furthermore, it could accurately determine the amount of fuel dropped with each delivery, even if, during the delivery, all dispensers on site were pumping at maximum capacity, or if there were multiple deliveries occurring in a single day.

Not only did the ClearView solution deliver these added benefits, but it also had an impact on the retailer's accounting process, since they could now accurately determine the volume of fuel delivered against the amount stated on the invoice and easily identify any discrepancies.

The ClearView solution can calculate the exact fuel loss on delivered loads due to temperature fluctuation, eliminating the need for guesswork. It can also determine the probability of fuel lost to evaporation by accounting for the remainder of the missing fuel and providing evidence to substantiate the results.

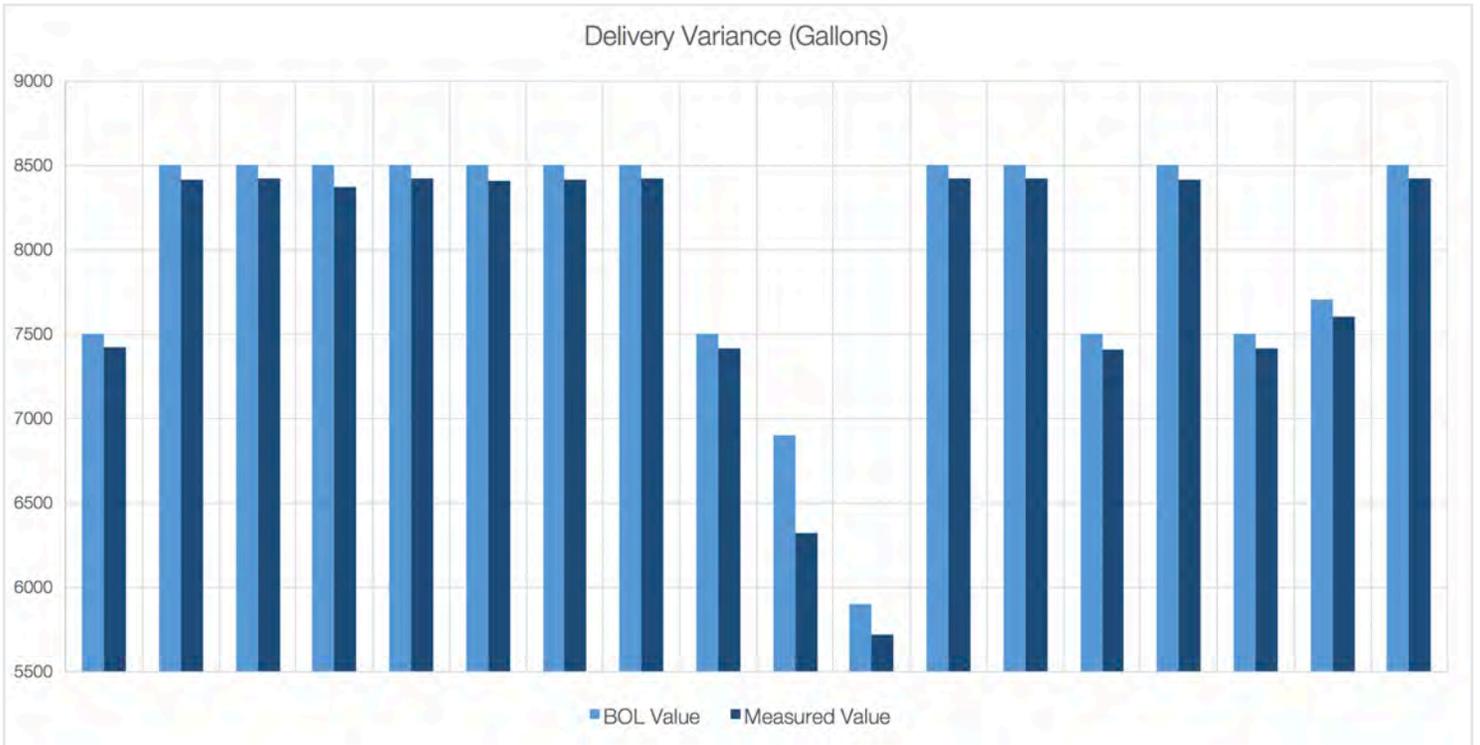


Figure 1

Graph showing the retailer's actual fuel volume discrepancies between the measured value, as per the ClearView solution, and the amount stated on the BOL. Across these eighteen deliveries during a single month, the retailer experienced a notable loss of profit due to delivery shortages.

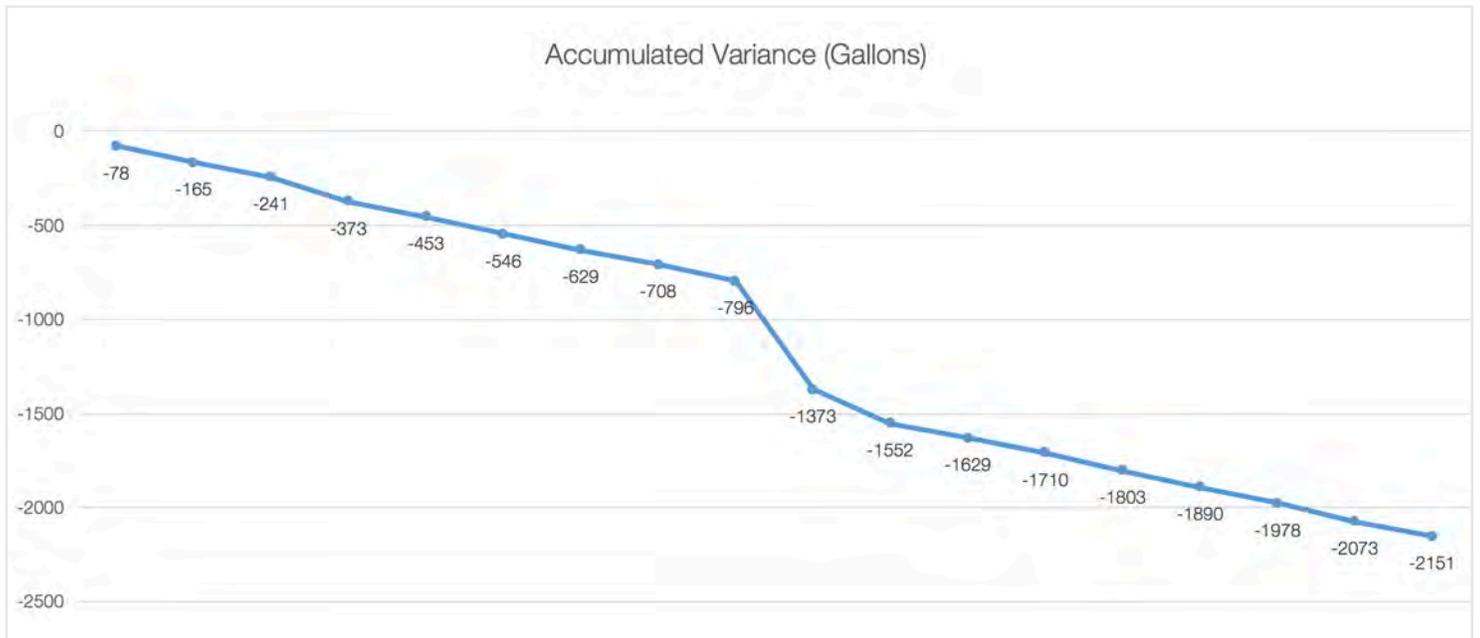


Figure 2

Graph showing the accumulated variance across the retailer's eighteen deliveries, which totalled 2,151 gallons.

Confidence builders

During the retailer's first few months of using the ClearView solution, the data uncovered several "confidence builders" which helped to prove the value of the service to the retailer.

Unexpected fuel deliveries

The ClearView solution was able to quickly identify instances of undocumented loads showing up at unexpected locations, such as split loads and cross-drops etc.

Delivery and terminal discrepancies

Using the new inventory control process, the ClearView solution quickly discovered a series of delivery and terminal discrepancies, whereby fuel shortages across the network were consistently noticed when the delivery was supplied by a common terminal.

Note: It is common for the transport driver to carry the blame for instances of missing fuel. The ClearView solution delivery trend analysis is able to differentiate between driver mistakes and terminal error.

Conclusion

In the past, it was unheard of for a vendor, such as a fuel supplier, to provide refunds in such large numbers. With enough credible evidence, however it is now possible and appropriate for a retailer to receive reimbursement for overpayment on short deliveries. Even if fuel retailers have invested in the most accurate gauge and POS systems on the market, they can still expect to receive considerable cashback with the additional accuracy provided by the ClearView solution.

This retailer now uses the ClearView solution to automatically reconcile every load they purchase from their suppliers. The solution is part of an on going accounting process for validating the amount of fuel delivered compared to that invoiced.

There are many different causes of fuel loss, some of which can have a significant impact on the profitability of the retailers. These losses can be minimized by tighter controls, such as stricter tolerance thresholds when analysing meter error, the monitoring of tanker driver behavior during delivery, or simply by adopting a service such as the ClearView solution to manage fuel more accurately.

For more information on the ClearView solution, call us at +1 972 497 9002

