Common Sources of Fuel Loss for Retail Operators

BY TONY CAPUTO, WARREN ROGERS

Retail fuel operators have many factors to manage on their journey to reasonable profitability. Labor, marketing, maintenance, housekeeping, foodservice, and logistics to name just a few.

When it comes to fuel inventory management, today's $5 to $6 average gasoline and diesel retails do not make matters any easier! Every gallon of fuel loss can have dramatic and negative impact on the bottom-line.

The largest potential fuel loss areas for any fuel reseller are based on how well they manage their wet-stock inventories. An average underground fuel tank may have $15,000 or more in liquid fuel at any one time and a load of fuel can be worth well over $30,000. Without good controls and measurements in place, fuel losses could grow dramatically, even without your knowledge. While it is commonly perceived that an operator may not have much control over their fuel-related "shrink" or loss, some steps can be taken to better-manage the impact. The 4 most-common factors resulting in fuel loss include:

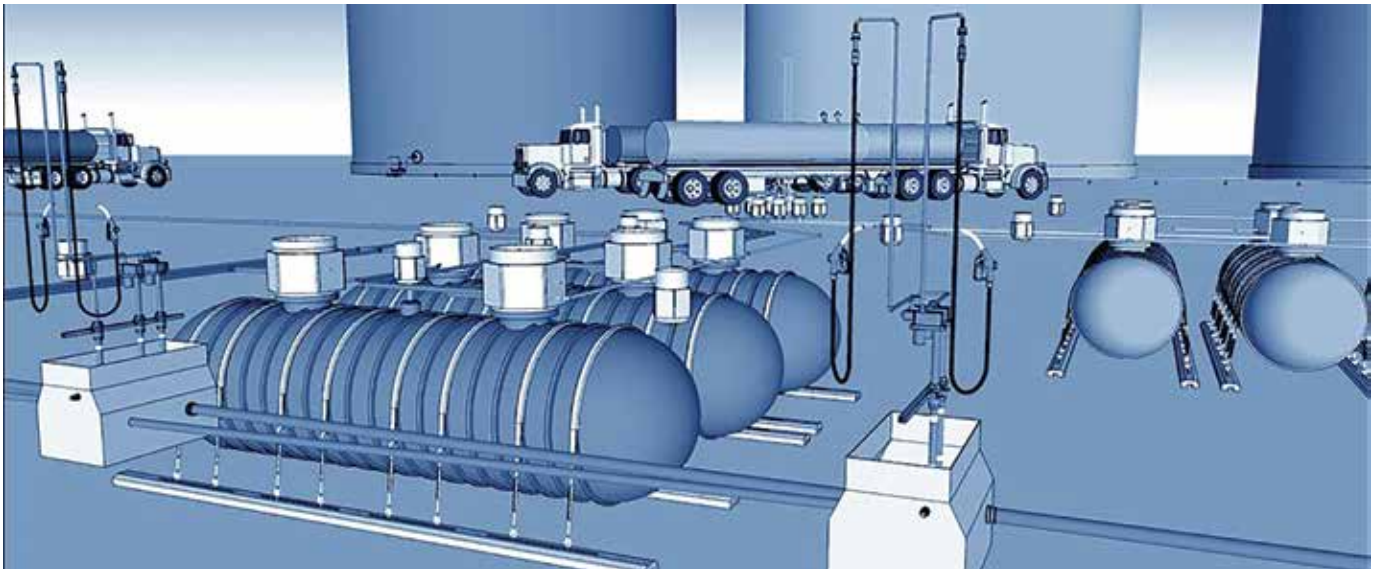
- **Delivery Shortages**
- **Fuel theft**
- **Environmental or temperature factors**
- **Meter drift**

In this article, we will briefly look at each factor and suggest ways for better management.

Delivery Shortages

Loss can be inherent in the fuel delivery process without strong oversight. If your fuel loads are unintentionally shorted by the terminal supplier or your fuel hauler, the loss can be substantial. A delivery loss due to a terminal short is often a result of terminal meter drift, or the fuel tanker not receiving the expected fuel load.

Many fuel operators depend on the store's ATG, or automatic tank gauge, to capture the delivery amount. However, depending on the brand, model, and options on the ATG, this delivery estimate may not include transactions that occurred during the 30–60-minute timeframe of the delivery drop. Also, the ATG and supplied delivery reports may not compensate for the impact of temperature difference between the fuel load and the temperature of product in the tank. When the tank product is colder than the delivered product, natural fuel loss can occur. However, fuel gain can occur when the delivered product is cooler than ground product. We will cover that in more detail later in this article. ▶



What can a fuel operator do to combat fuel delivery shortages? Here are some suggested best practices:

- Track your fuel inventory and deliveries daily.
- Use special accounting or remote monitoring software to compute daily book inventories and variances.
- Compare your fuel bills of lading (BOLs) promptly to your delivery estimates or tank readings.
- Investigate fuel variances, both large losses and gains, promptly.
- Employ ATG's or automatic tank gauges at your locations. Today's ATG's are wonderful pieces of equipment and employ great technology to help you better manage your fuel inventory and protect the environment. However, if you have older ATG's in your arsenal or a mismatch of brands and models, then remote monitoring solutions can help. These solutions can help integrate the tracking of your site equipment onto a manageable platform for more-effective controls.
- Remote monitoring software providers can help you to capture inventory levels in real-time and compute net or gross delivery amounts **as well as track dispensed transactions during the delivery**. Oftentimes, a fuel station may dispense 200 to 500 gallons or more during the fuel delivery drop. Without taking these transactions into consideration or depending solely on your ATG for basic delivery amounts, you may suffer fuel losses without your knowledge. Remote monitoring providers can also help to ensure that your tank charts and ratio blends are correct.

Fuel Theft

Today's fuel thieves are becoming craftier every day! We all have seen news stories related to stolen tankers, vehicles pulling over fill areas and siphoning fuel directly from the underground tanks or overriding the dispensers with special devices and dispenser programming to steal fuel.

There are many ways to better secure your fuel tanks and dispensers, but how do you detect when a fuel theft does occur? Here are a few ways:

- Just like with delivery tracking, closely-monitor and review your fuel inventory and deliveries daily.
- Use special accounting or remote monitoring software to compute daily book inventories and variances and react to large fluctuations or variances.
- Investigate fuel variances, both large losses and gains, promptly.
- Employ remote monitoring software services to detect and alert you when fuel losses not related to a known leak or other cause occur. While losses cannot be prevented, knowing promptly when they occur can aid in your investigative effort and thwart future losses.

Environmental/Temperature factors

As you may know, liquid fuels expand or contract depending on temperature. This impact is the hardest to control but having the right technology in place can help you to compensate and better-estimate the expected loss (or gain).

This expansion and contraction can be significant, especially during colder months or in colder climates. The ATG and supplied delivery reports may not compensate for the impact of temperature difference between the fuel load and the temperature of product in the tank. When the tank product is colder than the delivered product, natural fuel loss can occur. However, fuel gain can occur when the delivered product is cooler than ground product.

How can you address this loss?

- Today's remote monitoring solutions can track the temperature of the delivery, the tanks at the time of the delivery, and provide you with accurate net or gross delivery calculations. These delivery calculations can then be compared to the fuel bills of lading.


Deposit Photos

- When there are large variances between the fuel bills of lading and the system's calculated deliveries, then appropriate investigative action can be taken.
- A loss of 100 or 200 gallons on a fuel load can be quite costly. Average losses of .0015% for a site doing 200,000 gallons a month can equate to 3,600 gallons of loss annually! That would be over $15,000 on today's costs!

Meter Drift

Every fueling dispenser contains several fuel meters. As product flows from the storage tanks, through the dispenser, and into the customer's car, the fuel meter measures the quantity of fuel to ensure that the proper amounts of fuel are dispensed. An errant meter can give away hundreds of dollars in free product in a very short time!

Meter drift can occur when the meters experience wear and tear over time. Meter drift causes dispensers to deliver higher amounts of fuel than what is charged to the customer. This potential loss area can be periodically-addresses by having your system audited and recalibrated with trained service technicians. Often, some meters may no longer be adjustable, requiring replacement.

Advanced remote monitoring services can precisely-monitor the flow of fuel from the terminal, hauler, storage tanks, through the dispenser meters, and into the customer's car. Today's robust analytics can rule out other anomalies and indicate which fueling positions may be over-dispensing or under-dispensing to customers, recommending a meter calibration be made.

A robust meter monitoring application can eliminate the need for annual meter checks (except where required by law), allowing you to better target your repair spending. Also, with remote meter monitoring, you can move to a 365-day solution to a common and expensive issue.

In summary, a savvy fuel operator can curb their fuel losses with the right technology and tools in place. However, it does require change and the willingness to go after these costly, but controllable costs to the business! ★

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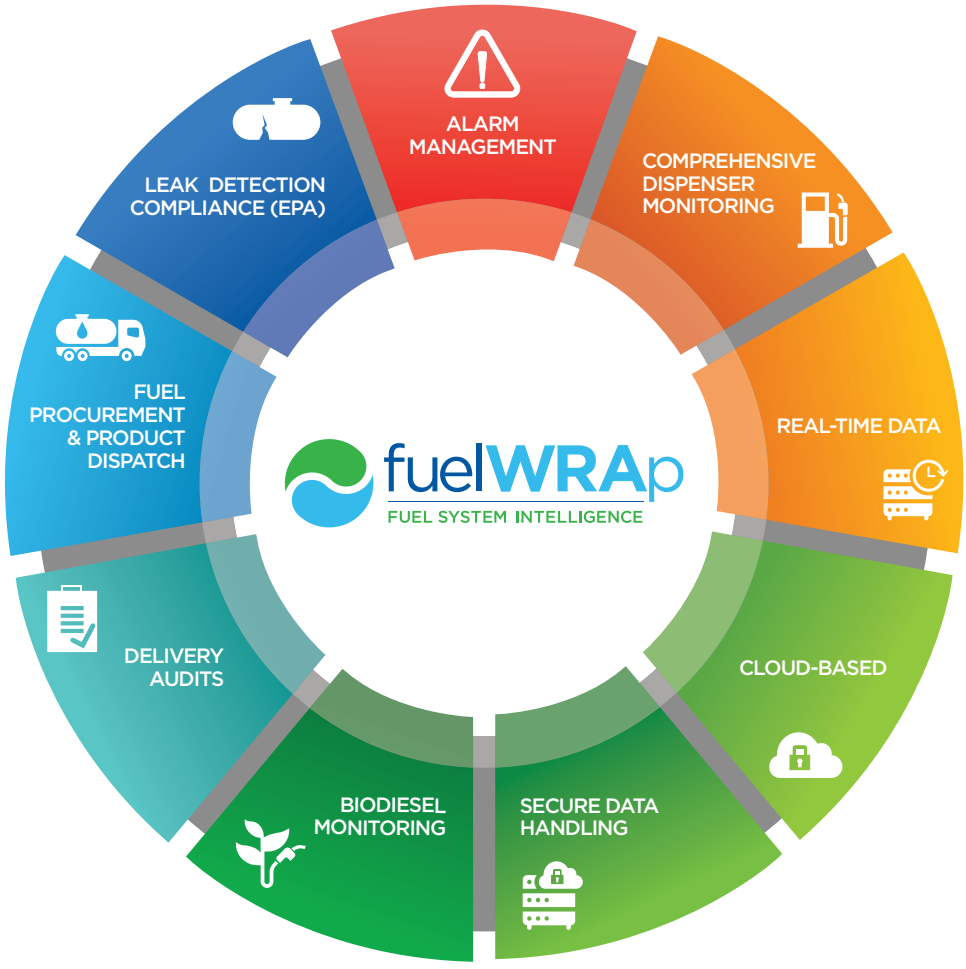

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