

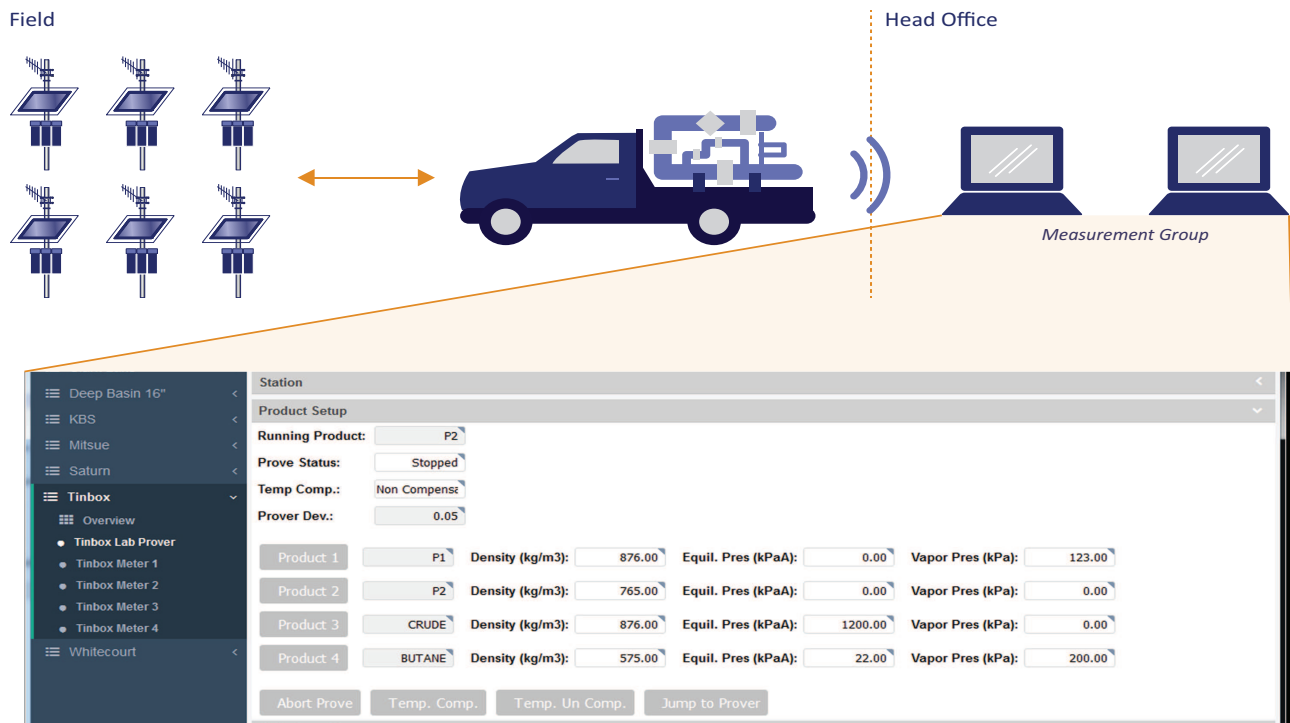
# Meter Proving

## Introduction: the issues with proving meters in the oil and gas business

Ensuring the meters in the field are accurate and true is crucial, as they determine the level of product and how much is paid in custody transfer situations. Hundreds of millions of dollars are at stake every month and yet the industry has difficulty establishing a reliable, repeatable process with consistent results. Different divisions use different processes where much of the work can be manual, and manual data can be subject to errors and difficult to audit. Meters and Electronic Flow Meters are finicky. Existing processes are costly and can be unreliable. Third parties are hired and fired. Much of the data is paper based and filed, or manually inputted into spreadsheets, that then have to be visually analyzed by an expert. The processes are inconsistent and inefficient making them costly. Audits and challenges are expensive to research in order to provide reliable conclusions.

It has become clear that these meters and flow meters require a supplementary application to help facilitate all the requirements for controlling both the actual operation of the prover (as well as the master meter system). The data generated, as well as the transfer and receiving of information, improves the overall reliability of the portable and stationary proving process.

How can I establish a consistent process that increases my level of confidence in the data and reduces the risk of an extremely costly error? How do I get that data and analyze it?



For more information please visit

[www.tinboxsoftware.com](http://www.tinboxsoftware.com)



## The Solution:

The industry has been searching for a solution. Some systems have been built to try to accomplish these goals but have fallen short. Software systems have now been developed that mandate a consistent process be used. These systems have years of skill and experience built right into them. The WellTrak™ for Proving software analyzes the data and looks for issues. The WellTrak™ for Proving solution physically hooks up to the meters and the flow meters. It goes through the process and automatically records, into an SQL database, everything that happens during the trial prove and actual prove process. The data is then available for everyone to ensure the prove occurred, happened correctly according to your standard, and is delivered to your partners or government reporting for audit and challenge purposes.

## Overview:

2 years ago, TinBox Energy Software recognized the importance of proving in measuring and reporting volumes in the industry, and that proving itself had room for improvement. An enormous amount of vital data is presented in paper form, then transposed into spreadsheets, and then a hardcopy is filed in storage. The reliance on 3rd party provers and their data management may be uncertain. There is just too much room for potentially costly errors. After several discussions with industry proving experts we developed a much-needed solution, right here in Alberta.

WellTrak™ for Proving literally takes over the process. The prover operator's interaction is with WellTrak™ for Proving which then 'talks' to the EFM, or through manual proving. Initially, ProveTrak™ kicks off the process, guiding the operator through while recording everything that happens.

Not only is WellTrak™ for Proving controlling the process but it is also doing it's own calculations from the raw data feeds; providing a side-by-side comparison for validation. There is also a 'trial prove' functionality that further ensures quality results and system stability. The system will record everything that happens in the prove process and once a prove is accepted, will 'write' the meter factor back to the device.

There is also a digital signature capability whereby witnesses can literally record their signature into the database along with the prove. Product changes are handled by the solution for different fluid viscosity for different products. The operator can control the product change through WellTrak™ for Proving, thus not having to do it through the flow computer itself.

TinBox Energy Software has built WellTrak™ for Proving specifically for Proving. We know what the overall proving process and transaction should be and how the data is to be extracted, collated, managed, calculated, checked, and verified. The foundation is solid.

There are user definable queries and alerts. WellTrak™ for Proving has the ability to extend the current proving solution by implementing automatic scheduled queries, looking for a variety of operational issues and anomalies. Once these issues are discovered, the software can be configured to alert and notify operations and management. These changes are managed using a variety of different components in the core of the product and can be added and extended to the software with no additional product development, putting the experience and skills into the system to work with you.

With WellTrak™ for Proving, the operator is talking directly to the flow meter and can literally see the runs as they are happening and manage the process appropriately and with confidence. Data management is



key. Everything is stored in our data table structure in a standard SQL database - the 'Historian'. Analytics, trending, reporting, auditing, and troubleshooting are all done with standard, pre-built tools across your entire asset base. Any data changes, bad runs, old and new meter factors, basically anything that happens, is logged as an event in our database; which also adds confidence to the process. We have put years of proving experience and knowledge into the system that is creating alerts, exception reporting, and a self checking meter factor. The software system is doing analysis and looking for issues, then notifying you on an exception basis.

Reporting is very advanced and certainly customizable. All proves, enterprise wide, can be searched, collated, and reported in a myriad of different ways. The key is looking for meters that may be trending the wrong way. It is simple enough to see if a prove has failed, but we are trending to see if a meter, a truck, or an operator have gone out of range. The meter may be out .024, but if it's out .024 every month there may be a problem. The system is analyzing the data for you.

The benefits of the proving system are significant and we have developed an ROI spreadsheet to show the monetary value of an enterprise wide consistent system that assures better data and better management of that data reducing potentially very expensive issues.



## Return on Investment

The table below shows the elements and areas for the significant return on investment. We designed these elements and numbers directly with our customers and used their numbers. It is a sample return on investment and each individual company would plug in their own areas and numbers, but you can see the potential immense value of an enterprise wide proving solution.

Return on Investment - ProveTrak Automated Proving Solution	Yearly Savings
Potential Product "Loss" due to length of time to identify, assess, and correct can exceed 6 months	\$ Unknown
Standard process for executing approve, record results into database all data available for operators and Head Office. Admin staff reduction 10 days per month	\$192,000 <b>assume \$1600 / day</b>
Save time doing proves, greater success / efficacy / efficiency = more proves per month per operator. 6 more mobile proves per month X \$2000 X 6 X 12	\$144,000
Proving issues found currently require 10 man days to find, and one day to reprove the meter - adds up to 11 days to execute re-proves	\$211,200 / problem
Challenge efficiencies / Audit efficiencies - 4 days per month	\$76,800
Send electronic reports to other Interconnects or Producers - 2 days	\$38,400
Efficiency of scheduling - 5 days per month	\$96,000
Reduced training and support requirements - 1 days per month	\$19,200
Reduced reliance and cost of 3rd parties - 6,000/month	\$72,600
Reduce time to correct, mistakes, and data storage – 1 days	\$19,200
Delay (eliminate?) cost of new proving truck \$1.5 mil 6 months 6 %	\$30,000
<b>Total Yearly Savings</b>	<b>\$898,400</b>