



*Setting the Standard for Automation™*

# **BEST PRACTICES FOR ANALYTICAL SYSTEMS IN GASOLINE BLENDING OPERATIONS**

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Schneider Electric

Standards  
Certification  
Education & Training  
Publishing  
Conferences & Exhibits

# AGENDA

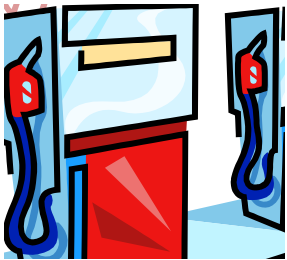


- VALUE & BUSINESS FUNDAMENTALS
- BEST PRACTICES
- KEEPING THE ANALYZERS UP TO DATE
- CONCLUSION

# Gasoline Blending Business Fundamentals



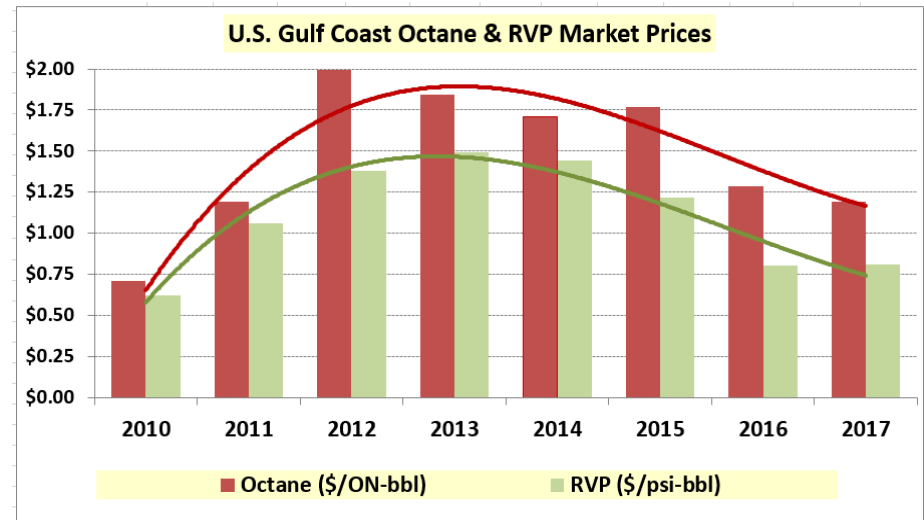
*No matter how much optimization is done throughout the refinery, it can be lost as specification give-away at the pump*



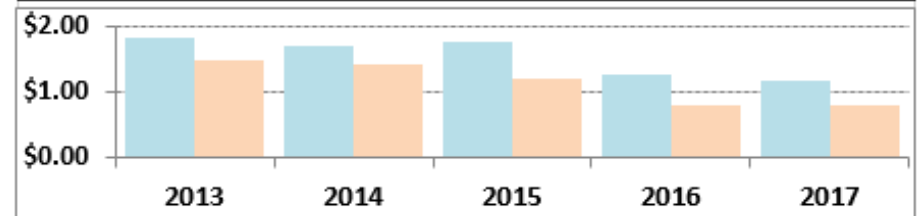
## **Good Rule of Thumb:**

1 ON-BBL is worth USD\$1

1 PSI-BBL is worth USD\$1



U.S. Gulf Coast Octane/RVP Values	Aug-2017	2017 YTD	5-yr Avg
Octane Value (\$/ON-BBL)	\$0.95	\$1.16	\$1.72
RVP Value (\$/PSI-BBL)	\$0.82	\$0.81	\$1.27

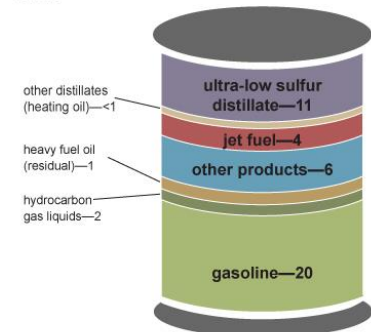


# REFINERIES ARE LEAVING BIG MONEY ON THE TABLE



***Monthly*** Savings for a typical 200,000 BPD (10m MTY) refinery from just 0.3 Octane giveaways is **\$ 1.7 Million**

Petroleum products made from a barrel of crude oil, 2016  
volumes



Note: A 42-gallon (U.S.) barrel of crude oil yields about 45 gallons of petroleum products because of refinery processing gain. The sum of the product amounts in the image may not equal 45 because of independent rounding.

Source: U.S. Energy Information Administration, *Petroleum Supply Monthly*, February 2017, preliminary data for 2016

This is just the **GIVEAWAY** from **OCTANE !\***

**\* RVP not included!**

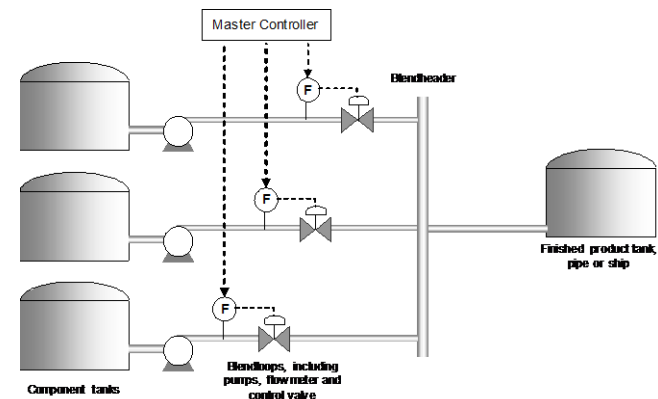


# BLENDING AUTOMATION

## “BOON” OR “BANE”

- Blending Automation and Blending Optimization is the solution.
- The operation and maintenance demands of the Blending Automation System is a challenge.
- What does it take to make analyzers work?

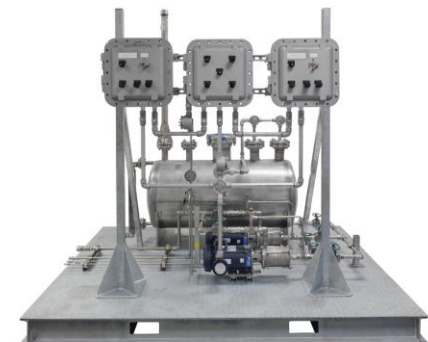
The screenshot displays the GABLER software interface, which includes a data table and a control panel. The table lists various process parameters such as Source, Component, Set, Pos, Actual, Target, Min, Max, Alarm, Loop, Pump, Setting, Flow, Volume, Cost, and Open. Below the table, there are sections for 'Blend ID', 'Blend name', 'Blend date', 'Blend time', 'Blend status', 'Blend mode', and 'Blend control'. The control panel includes buttons for 'Start', 'Stop', 'Blend', 'Analyze', 'Events', 'Optimize', 'Alarm', and 'Messages'.



# BEST PRACTICES DESIGN



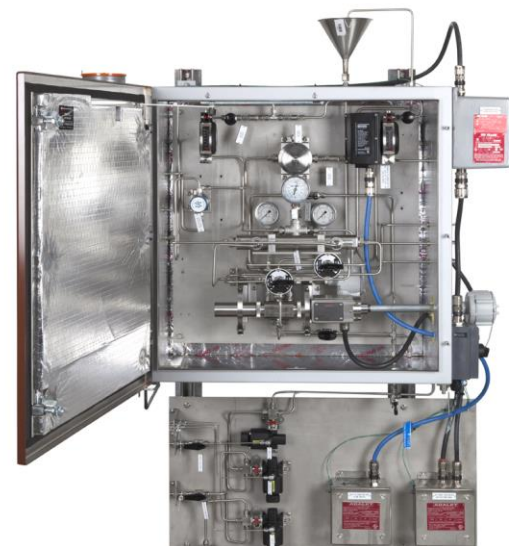
- Start with the Basics: Sample Tap, Transport & Recovery
- “Representative Sample” is a must.
- Pipe sample, not light. Use extractive probe.



# BEST PRACTICES SAMPLE CONDITIONING SYSTEMS



- Condition the Sample to suit the Analyzer
  - Filter Particulate, Control Moisture
  - Redundant Filtration
  - Caustic Diversion
- Sample Temperature Control is critical for good spectroscopy





# BEST PRACTICES RIGHT ANALYZERS

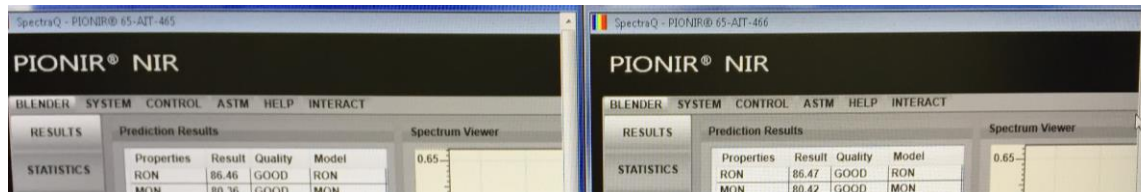
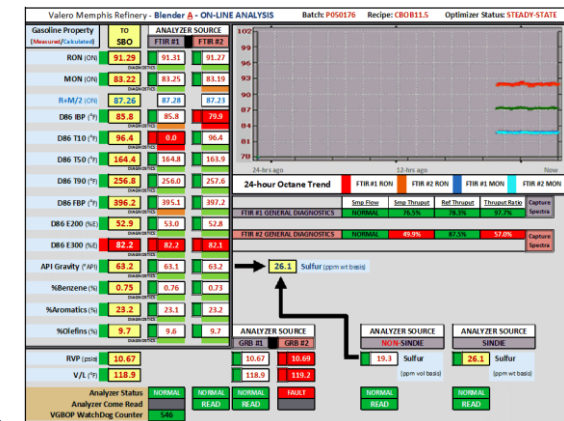


- FTIR / NIR analyzers are Fast, Reliable and Repeatable.
- Online Vapor Pressure Analyzers may be required
- Dedicated Sulfur Analyzers are must for low ppm/ppb sulfur analysis.





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# BEST PRACTICES ORGANIZATION & CULTURE



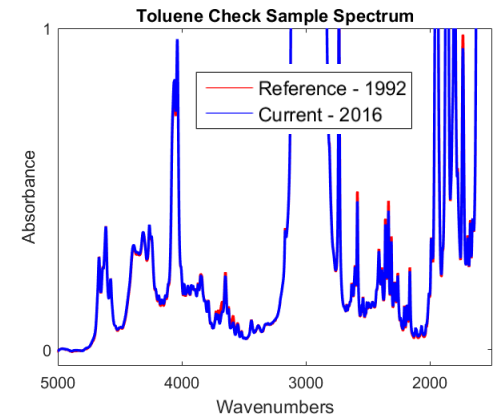
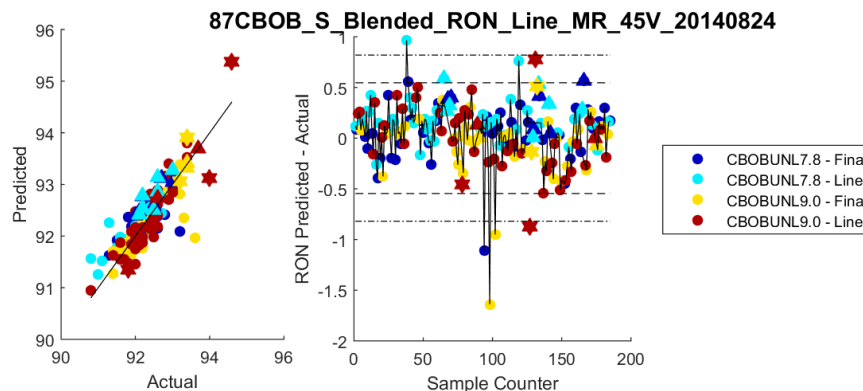
- Successful implementation of analyzers requires Team Work.
- Identify a CHAMPION.
- The Refinery Laboratory is a key member of the team.



# BEST PRACTICES

## ASTM VALIDATION – “PROVE IT WORKS”

- ASTM E1688 based performance tests to verify analyzer performance in accordance with ASTM D6122
  - Validation & Wash Sample (high purity toluene & isopropanol or methyl-cyclohexane)
  - Verify that system can match spectrum of check sample to within historically defined tolerances



# BEST PRACTICES SAMPLE SYSTEM MAINTENANCE



- Make maintenance a habit – Don't wait for it to “Break-Down”.
- Incorporate daily checks as part of analyzer technician routine.



- The POTENTIAL for saving is HUGE.
- ROI is less than 6 months for a complete redundant analyzer system.
- There are other savings than just on QUALITY GIVEAWAY.



THANK YOU!

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Robert Hegger is Vice President, Sales and Marketing of Schneider Electric, Applied Instrument Technologies.

Robert joined AIT when it was established in 1996 in Pomona, California. In 2010, he and his partner lead the management buyout of the business from United Technologies in 2010, establishing the company as a private stand-alone corporation. In 2016, he organized a sale of the business to Schneider Electric and is now integrating the analyzer business into Schneider Electric's Process Automation division.

Robert has an engineering degree from Northwestern University, Evanston IL and an MBA in Corporate Finance from DePaul University, Chicago. Robert resides in Pasadena, California.

Life Is On

