Improve production accounting, decrease operating costs, and reduce HSE risk

Onshore Oil & Gas Produced Fluids Management
Proven automation solutions and local expertise to help you overcome your toughest challenges.
Tired of production accounting errors, high lease operating costs, and needless HSE risks?

Lost production is costly, so it’s essential to ensure accurate production accounting and control fiscal risk. At the same time, it’s challenging to maintain a safe, efficient, and profitable operation while managing produced fluids across expansive fields and hundreds of wells. Not only do you have to operate in an environmentally sound manner, you’ve got to meet daily targets and ensure measurement compliance, while reducing your operating costs.

During a four-year period, nine worker fatalities occurred while workers manually gauged or sampled production tanks.

Failure to augment operations can result in a major loss from producing assets. According to McKinsey & Company, improved operations deliver up to 30 percent more value from producing assets.

Accurate measurement and control for improved fiscal certainty

Emerson’s comprehensive, scalable produced fluids management solutions help to ensure accurate production accounting while controlling lease operating expenses. You can depend on reliable measurement to provide allocation and accounting certainty. You’ll also realize efficient vapor control and recovery, minimized emissions, and have a better handle on managing fiscal risk.

Achieve daily production targets and measurement compliance
• Minimize allocation and accounting errors
• Reduce actual and unaccounted for production losses
• Improve fiscal transfer operations efficiency and effectiveness

A North American producer reduced unaccounted for oil losses from 15% to 1% within 60 days.

Control facility and site operating costs and manage cash flow
• Effectively manage lease and production inventory
• Improve operations and maintenance effectiveness and project execution efficiency
• Achieve cost-effective monitoring, control, and automation

By improving their ability to track well allocations and commingle produced fluids, a major oil and gas company reduced its emissions by 30%.

Easily monitor and ensure HSE performance
• Improve spill avoidance and reduce emissions
• Reduce reactive operations and maintenance
• Improve safety by keeping your operators off the tanks and out of the field

Using Emerson vapor control and recovery solutions, an oil and gas operator was able to minimize emissions and recover 9,464,864 SCFD of 1,600 BTU gas for sale.

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With Emerson, you can overcome your produced fluid management challenges.

**Tank Management and Custody Transfer**
- Reduce reactive operations with accurate tank inventory levels.
- Globally manage oil and water transfer volumes with level or flow-based measurements.
- Ensure accurate tank inventory levels to the last drop.
- Reliably manage inventory allocation and logistics remotely.
- Achieve cost-effective monitoring, control, and automation.
- Effectively manage custody transfer operations.

**Level and Fiscal Measurement**
- Reduce HSE exposure from manual tank gauging.
- Confirm accurate oil and water transfer volumes with level or flow-based measurements.
- Detect and prevent oil losses to the water tank.
- Reduce emissions from manual tank gauging.

**Vapor Control**
- Control tank Blanket pressure and minimize gas consumption.
- Prevent tank damage due to over pressure or vacuum.
- Prevent flame propagation and minimize vapor leak points.
- Enhance gas leak and flame detection.

**Vapor Recovery**
- Recover higher BTU value natural gas.
- Enhance NGL recovery.
- Improve profitability with increased gas to sales.
- Lower emissions.

**Vapor Control and Recovery**
- Effective tank vapor control reduces emissions and prevents tank damage, while vapor recovery units increase gas to sales.

**Level and Fiscal Transfer Measurement**
- Reduce unaccounted for production losses.
- Transfer up.
- Reliably manage inventory allocation and logistics remotely.
- Achieve cost-effective monitoring, control, and automation.
- Effectively manage custody transfer operations.

**Gas and Leak Detection**
- Minimize emissions, preventing overfilling, and improving the safety of storage tanks are critical to your operations.

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**Tank Management and Custody Transfer**
To reduce production management uncertainty and fiscal risk, you need the right tank management software, automated custody transfer system, and remote operations controllers to enhance your operations. Learn more.

**Level and Fiscal Measurement**
Reliable level and flow measurements during transfers are critical for the fiscal integrity of your production storage operations. Learn more.

**Vapor Control and Recovery**
Effective tank vapor control reduces emissions and prevents tank damage, while vapor recovery units increase gas to sales. Learn more.

**Gas and Leak Detection**
Minimizing emissions, preventing overfilling, and improving the safety of storage tanks are critical to your operations. Learn more.
Tank Management and Custody Transfer

Well pad inventory management, allocation data, and custody transfer measurements are key to reducing production management uncertainty and fiscal risk. Tank management software, automated custody transfer systems, and remote operation controllers provide the means to automate your operations. This minimizes total unaccounted for uncertainty, while reducing operating costs. Reliable flow and level measurement enable timely pay/check haul verifications.

Services offered... 
- Global technical support during commissioning, startup, and post-startup phases
- Services designed to reduce your measurement uncertainty and ensure regulatory compliance
- Comprehensive 367: an advanced training tool
- User training
- Custom process control software programming

Reduce production management uncertainty and improve operational flexibility. Connect with an Emerson expert.

Getting accurate, timely data from your facility with improved tank management is important. Transforming that data into a strategy that gains you more operating flexibility and efficiency is even more critical. Emerson experts can help.

Services offered... 
- Global technical support during commissioning, startup, and post-startup phases
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What’s your opportunity?
- Reduce actual and unaccounted for production losses.
- Reliably manage inventory allocation and logistics remotely.
- Achieve cost-effective monitoring control and automation.
- Effectively manage custody transfer operations.

Features and Benefits:
- Open-standards interfaces provide business systems access to real-time historical and configuration data
- Integrates seamlessly with ROC800-Series and FloBoss flow computers
- Powerful reporting and trending tools
- Arm alarm and event manager, with text messaging and email support

Measure liquid hydrocarbon net volume and quality.
- Improves accuracy through more precise volume, temperature, API gravity, and BS&W measurements
- Provides automatic measurement, sampling, and oil transfer from the lease location
- SCADA-friendly logging and reporting of transfer events

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- Services designed to reduce your measurement uncertainty and ensure regulatory compliance
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Measure and control liquid or gas flow to support fiscal measurement, custody transfer, batch loading, and more.
- Distributed RTU network provides wireless capabilities for widely dispersed wells
- Intuitive SmartProcess Oil and Gas Applications suite software minimizes custom programming
- Low power consumption

OpenEnterprise™ SCADA Software

Lease Automatic Custody Transfer (LACT) Unit

Fisher™ Position Transmitters

For more information, visit EmersonProcess.com/PFMSolutions
Effective tank vapor control begins with ensuring tighter control of blanket pressures. This helps to minimize hydrocarbon loss and the potential for gas pad contamination and oxygen ingress into the tank, while also mitigating tank damage. Emergency vent/vacuum relief valves and flame arrestors prevent tank damage and fires due to abnormal situations and pressure surges. For effective recovery of higher BTU value gas vapors and NGLs, an Emerson Smart Vapor Management (SVM) system reduces lost production and provides reliable, on-demand operation with lower maintenance. The increase in recovered gas and NGLs often pays the cost of an SVM in less than one year.

For more information, visit EmersonProcess.com/PFMSolutions

What’s your opportunity?
- Control tank blanket pressure and minimize gas consumption.
- Prevent tank damage due to over-pressure or vacuum.
- Prevent flame propagation and minimize vapor leak points.
- Recover higher BTU value natural gas and NGLs for sales with cost-effective vapor recovery systems.

Minimize emissions and increase gas sales. Connect with an Emerson expert. For the most reliable vapor control and recovery, you need the most appropriate technology. Our experts can help you identify and select the best vapor control solutions for your tanks.

Related products
- Emerson Smart Vapor Management System
- Fisher Tank Blanketing and Vapor Recovery Regulators
- Fisher 119 Burner Valve, 67C Supply Regulator, and 627 Regulators
- Enardo Pressure/Smart Wireless Vacuum Relief Valve
- Enardo Gauge Hatch
- Enardo Flame Arrestor
- Enardo Emergency Pressure Vacuum Relief Vent

Maintains proper pressure set point of tank.
- Maintains both high pressure and low pressure.
- Tight shut-off design to limit emissions and entrainment.

Ensures the flow of blanketing gas and safeguards the vapor space.
- Monitor and control pressure in the vapor space to increase safety and prevent corrosion.
- Monitor high and low pressure to limit emissions and evaporation losses.

Related services
- On-site field services
- Diagnostic testing, calibration, loop checks, and valve tuning
- Recommended spares
- Technical support
- Diagnostic reports
- Tank surveys

Protects against abnormal high or low pressures.
- Resists corrosion and flow restriction for asbestos conditions.
- Tight shut-off design to limit emissions and evaporation losses.
Level and Fiscal Measurement

Reliable measurements and transfers are critical for the fiscal integrity of your operations. By applying wired or wireless level monitoring, you can gain continuous insight into tank levels, minimize high-level alarms, validate transfers and manual gauging, and detect oil/water interfaces. You can also eliminate gauging uncertainty and high fiscal risk by implementing accurate flow metering on LACT units.

What’s your opportunity?

- Reduce reactive operations and prevent well shut-ins with accurate tank inventory levels.
- Confirm accurate oil and water transfer volumes with level or flow-based measurements.
- Detect and prevent oil losses to the water tank.
- Reduce HSE exposure from manual tank gauging.

For more information, visit EmersonProcess.com/PFMSolutions

Featured level and fiscal measurement solutions

- Rosemount™ Guided Wave Radar
  - Accurate measurement of tank level and interfaces.
  - Wired or wireless measurement of tank level for accurate and reliable monitoring.
  - No recalibration and no moving parts.
  - Unaffected by changes in fluid density, conductivity, viscosity, temperature, pressure, pH, or viscosity.
  - Advanced diagnostics and Verification Reflector to assure measurement integrity.

- Rosemount Vibrating Fork Level Switch
  - Provides level monitoring, control, and overfill protection.
  - Wired or wireless high, overfill, or low-level alarms.
  - Quick response time and reliable switching with “Fast Dip” fork design.
  - Unaffected by flow disturbances.
  - No moving parts and no calibration required.

- Micro Motion™ Coriolis Meter
  - Measures oil, water, and gas production.
  - Regulatory compliant custody transfer of produced oil and gas.
  - A ccurate transfer of water disposal volumes.
  - Diagnostics to detect oil/water interfaces and wet gas.
  - In-situ meter verification.

- Daniel™ Senior Orifice Fitting
  - Proven technology for a broad range of gas and liquid flow measurements.
  - Provides custody transfer accuracy without the need for expensive flow calibration.
  - Allows plate changes under pressure for safe and easy inspection and maintenance.
  - Precisely aligned orifice plate carrier minimizes uncertainty.

- Rosemount DP Flow Solutions
  - Measures flare and recovery gas flow rates using differential pressure, static pressure, and temperature.
  - Conditioning orifice plate eliminates the need for long, straight pipe runs.
  - For 1/2-inch to 11/2-inch line sizes, eliminate error sources and simplify installation with integral orifice flowmeters.

- Micro Motion Fork Density Meter
  - Measures density of produced fluids (oil and water).
  - Detects oil/water interfaces for tank dewatering.
  - Detects oil in the produced water during offloading.
  - A ccurate measurement of density (±1 kg/m³) and concentration (±0.1%).

- Daniel Liquid Turbine Meter with Rosemount 705 Pulse Transmitter
  - Measures transfers of produced oil and water.
  - Detects oil/water interfaces for tank dewatering.
  - Detects oil in the produced water during offloading.
  - A ccurate measurement of density (±1 kg/m³) and concentration (±0.1%).
  - Durable construction.
  - Versatile mounting configuration available.

- Fisher 240 Level Sensor and DLC3010 HART® Digital Level Controller
  - Discharge-based liquid level and interface measurement.
  - Automatically compensates for density changes.
  - Automatic configuration.
  - Simple setup, calibration, and maintenance.

- Additional products
  - Daniel Ultrasonic Meter
  - Rosemount Magnetic and Ultrasonic Flowmeters
  - Fisher Back Pressure Regulator
  - Fisher Solenoid Valve Actuators.

Services offered...

- Commissioning
- Configuration, and device testing
- Uncertainty analysis and audits
- Spare parts

Reduce your fiscal risk. Connect with a measurement expert.

You need to know that you’re getting maximum accuracy and performance from your level and flow instruments. Get in touch with a local expert now.

For more information, visit EmersonProcess.com/PFMSolutions
Gas and Leak Detection

Minimizing emissions, detecting leaks, and improving the safety of storage tanks are critical to your operations. Regulations around tank emissions require control of vapors to minimize pad gas leaks. Gas detection devices ensure a quick response to upsets minimizing emissions and fines. Flame detectors provide immediate indication of the ignition of combustible gas leaks. Liquid hydrocarbon leak detection devices provide a faster response to any tank overfills. These early indicators help you to ensure HSE compliance.

What’s your opportunity?
- Detect gas leaks minimizing emissions and fines.
- Detect liquid leakage.
- Flame detection to prevent catastrophic fires.

For more information, visit EmersonProcess.com/PFMSolutions

Featured gas and leak detection solutions

- Rosemount Incus Ultrasonic Gas Leak Detector
  - Uses acoustic sensors to monitor emissions generated from high-pressure gas leaks.
  - Quad-sensing provides the widest overall range available.
  - -40°C to +70°C operational temperature range.
  - Automated electronics will test often in operation.
  - Each sensor fits into existing parts, will not age, drift, and will never need replacing under normal conditions.
- Rosemount 975 Flame Detectors
  - Detects hydrocarbon fuel and gas fires.
  - Designed to perform in the harshest environmental conditions.
  - Heated window eliminates condensation and icing.
  - High immunity to false alarms.
  - Wide area coverage range.
- Net Safety Point Gas Detectors and Sensors
  - Detects toxic and combustible gases.
  - Easily changeable sensors to increase range of gases detected.
  - Single or multi-channel controller.
  - Low power consumption ideal for remote installations.

Protect your people and assets. Connect with a local expert.
Using Emerson’s innovative technologies, solutions, and expertise— you can protect your people and the environment, while maintaining compliance.

Services offered...
- Certified training
- Accredited calibration
- Critical spares
- Tank surveys

Related products

- Rosemount 702 Wireless Discrete Transmitter
  - Connects to a wide variety of non-powered switches enabling wireless access to discrete inputs.
  - Cost-effective liquid hydrocarbon leak detection for single tanks, large tank farms, and pipelines.
  - Compatible with Pentair TraceTek sensors.
  - Supports up to 500 feet of TraceTek hydrocarbon or solvent sensor cable.

- Enardo Pressure/Smart Wireless Vacuum Relief Valve
  - Maintains proper pressure set point of tank.
  - Adaptable both high pressure and low pressure.
  - Tightly sealed design to limit emissions and evaporation losses.
  - Wireless notification of pressure and vacuum relief events.

- Rosemount 935 Open Path Combustible Gas Detector
  - Detects hydrocarbon fuel and gas leaks.
  - Designed to perform in the harshest environmental conditions.
  - Heated window eliminates condensation and icing.
  - High immunity to false alarms.
  - Wide area coverage range.

For more information, visit EmersonProcess.com/PFMSolutions
Enhance your field’s lifetime performance with expert support.

With Emerson Lifecycle Services, you’ll have the support you need for setting up and sustaining efficient and reliable onshore production, while maximizing risk to health, safety, and the environment.

With our broad network of local service centers, you’ll have quick access to experts who can help you plan, commission, and maintain an automation strategy that enhances your insight into field operations and minimizes trips to the field. You’ll be able to keep your investments performing at their best—throughout the life of your field or operation.

With locations all over the world, we’re always nearby to help you solve your problems—no matter where you are. Contact us today!

Plan & Design
• Wireless site surveys
• Design and engineering services
• Project management

Implement & Build
• SCADA systems integration
• Instrumentation startup and commissioning
• Valve startup and commissioning

Operate & Maintain
• Instrument calibration
• Uncertainty analysis and meter proving
• Valve diagnostic services

Improve & Modernize
• Optimization services
• Modernization and migration
• Local repair and refurbishments
Emerson Process Management delivers time-tested and innovative produced fluids management solutions designed to help you improve production accounting, decrease operating costs, and reduce HSE risk. Contact us now for world-class technologies, expertise, and services that can help you meet daily targets, ensure measurement compliance, and reduce operating costs. Getting started is easy. Visit EmersonProcess.com/PFMSolutions