Process Control & Monitoring

Your Digital Hub for Operational Excellence

Where advanced technology meets human expertise

PC&M®

U.S. Water

The U.S. Water Process Control & Monitoring (PC&M®) system redefines operational excellence by seamlessly integrating advanced technology with unparalleled human expertise.

Included as a fundamental component of our O&M services, PC&M serves as a digital hub, revolutionizing the way treatment plants are operated and monitored. With a focus on optimizing operations and reducing costs, PC&M was designed by treatment plant operators to offer a comprehensive suite of robust user-friendly features that are tailored to individual plant specifics and customer needs.

Today's treatment plants are bustling with activity, making a digital hub essential. From chemical deliveries and compliance testing to treatment monitoring, maintenance, and plant surveillance, the U.S. Water PC&M system keeps you informed about site operations across your entire portfolio.

Features of PC&M

U.S. Water's web-based PC&M system provides easy access to operational data with a user-friendly interface that optimizes plant operations and enhances efficiency at treatment sites through several key features:

24/7 AVAILABILITY
With around the clock access and daily emails that deliver customizable critical monitoring reports, you'll stay informed of treatment performance in the office and on the go.

ALERT NOTIFICATIONS
Receive text alerts when parameters exceed preset tolerances leading to informed decision-making and swift corrective action.

BROAD PORTFOLIO PICTURE
Enterprise reporting consolidates and aggregates data from all of your plants giving you a broad view of operations across your entire plant portfolio.

KNOWLEDGE SHARING
Better than easily misplaced emails, plant specific discussion forums streamline communication and promote knowledge sharing among teams with threads that are organized and stored for posterity with other site information.

PERFORMANCE TRACKING
Gain operational insights through actionable key performance indicators, historical trends, and ad hoc charting. Quickly assess facility health with visual cues that compare current values to preset acceptable ranges.

INSTANT ACCESS
Every team member can easily retrieve essential plant files, including O&M eManuals, safety documentation, and standard operating procedures from a centralized document repository.

From customizable tools for tailored site management to continuous technical support and operational status through text alerts and email reports, PC&M optimizes processes, improves equipment reliability, maximizes cost savings, and ensures regulatory compliance. By entrusting U.S. Water with plant operations, clients have complimentary access to a digital ecosystem driven by actual intelligence, where cutting-edge technology meets human expertise to deliver unparalleled results in operational efficiency and cost-effectiveness.

SINGLE INFORMATION SOURCE
Bidirectional integration turns PC&M into a data collector and dispensary for the other tools we use. Some of these touch points include maintenance work order status, links to always current Safety Data Sheets (SDS), and equipment runtimes pushed to our CMMS for triggering preventative maintenance events.

Case Studies

WASTE INDUSTRY CLIENT

PC&M revolutionized a waste industry client's management of nine landfill leachate treatment sites. By implementing PC&M, the client gained unparalleled transparency into operational data, real-time monitoring capabilities, customizable reporting, and centralized data access. This empowered them with enterprise-wide visibility, facilitating the seamless implementation of best practices and cost-saving measures across all sites.

Remarkably, at one site, PC&M spearheaded substantial cost reductions in treatment processes, slashing costs per gallon of treated leachate by an impressive 74%.

DAIRY MANUFACTURER CLIENT

PC&M successfully resolved a dairy production facility's costly discharge surcharges, **totaling up to $900,000 annually,** attributed to elevated BOD and phosphorus levels. The root cause was attributed to the underperformance of their newly installed MBBR treatment system. PC&M identified excessive use of CIP chemicals containing quaternary ammonium (quat) compounds as the culprit, leading to biomass inhibition and detachment in the reactor. By reducing quat usage and neutralizing existing quats before introduction, optimal system performance was restored, eliminating surcharges. Additionally, PC&M's data monitoring now effectively identifies problematic chemical usage and production campaigns, facilitating timely operational adjustments.

FOOD MANUFACTURER CLIENT

PC&M was instrumental in addressing operational compliance hurdles for a food manufacturing client following the launch of their new production plant. By leveraging PC&M, the facility's management gained invaluable visibility, enabling a **smooth startup and proactive operations monitoring to prevent costly process disruptions.** PC&M's data empowered U.S. Water's technical support team to precisely guide the commissioning of anaerobic digesters, attaining an outstanding 100% operational efficiency while consistently adhering to permitted limits. The client also realized a substantial savings in hauling costs through PC&M's optimization of processes, resulting in streamlined operations and minimized waste transportation needs.

Security and Reliability

Multi-tiered, banking-level protection for your critical operational data

Every component of PC&M has been built to keep your data secure. Strong password enforcement and specialized program logic prevent unauthorized data corruption. Role-based user permissions control access to system functions.

The data center, compliant with NEBS Level 3 standards, features continuous staffing by network and security personnel, alarm and camera surveillance, mantraps, biometrics, keycard access, and multi-factor authentication for secure entrances.

PC&M has consistently received high scores from independent security assessments. Since 2010, the data center has upheld SAS 70 Type II compliance, transitioning to and maintaining the SSAE 16 SOC 1 certification. These independent audits validate the completeness and accuracy of a service organization's internal controls and operations.

Redundant hot-swappable servers ensure reliability, while nightly backups and redundant systems protect against data loss and service disruption. The physical data center is strategically located outside flood plains and seismic zones, with redundant systems for fire detection and suppression, power, networking, and cooling.

SAS 70 Type II

SSAE 16 CERTIFIED TYPE I

A- Observatory mozilla

A Qualys

Client Testimonials

U.S. Water clients have a lot of great things to say about PC&M:

"I enthusiastically recommend U.S. Water for their exceptional expertise in wastewater treatment facilities. Their PC&M system has made key metrics easily accessible and understandable, ensuring operational excellence. Their technical knowledge, resource availability, and data management systems have significantly elevated our operations."

Engineering Project Manager
Food & Beverage Industry Client

"PC&M has become an indispensable tool for managing our entire plant portfolio. It keeps us informed of daily KPIs, enables seamless communication with the U.S. Water staff, and adapts to our evolving needs. It has been a game changer and having it included for free with our O&M services makes it an even more valuable asset."

Managing Director
Semiconductor Industry Client

"PC&M offers a great service and provides us with the ability to customize and retrieve data for generating reports... We highly recommend this service."

EH&S Manager
Dairy Processing Industry Client

A Leader in Innovation

Guided by a dedicated team of technologists and advisors, PC&M is continually improved with innovative features that enhance the user experience and extend its capabilities by leveraging emerging technologies. These optional components can be implemented to maximize the capabilities at your site.

PC&M Connect!

Automatically capture plant data to feed PC&M

PC&M Connect! is a compact, custom-programmed industrial PC that seamlessly integrates into treatment plant instrumentation networks, capturing measurements from digital sensors and programmable logic controllers (PLCs). Collected and temporarily stored within its local database, PC&M Connect! frequently pushes data to a secure Amazon Web Service (AWS) cloud database, which is then pulled by PC&M to populate its application database.

PC&M Connect! operates continuously, providing data coverage even during unstaffed hours. It is designed with security and redundancy in mind, storing data locally during internet outages and forwarding it automatically once connectivity is restored. Additionally, an optional near real-time graphical web dashboard offers visualization of granular plant data without compromising sensitive network systems.

PC&M Application Programming Interface (API)

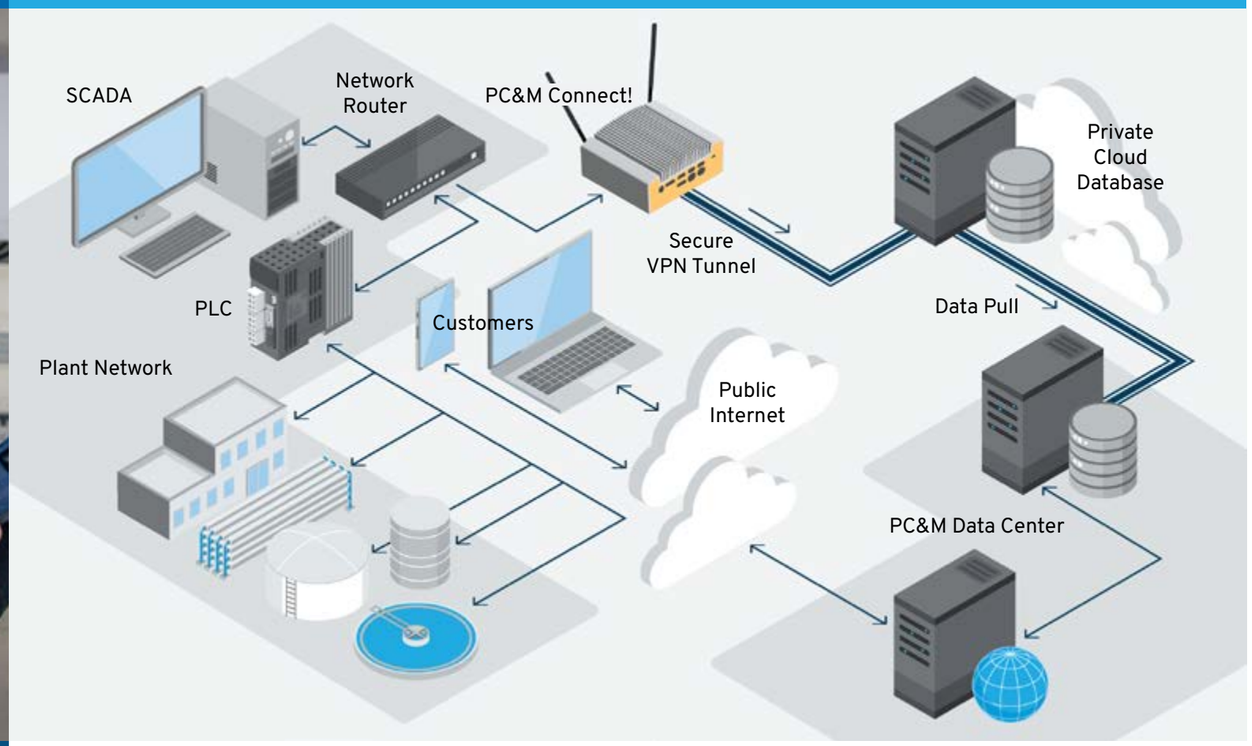
Integrate PC&M data into your business process applications and enterprise dashboards

Designed for developers by developers, the PC&M API is a standards-compliant interface accessible to virtually any Internet-enabled system or program. With secure socket layer encryption and OAuth2 authentication, it seamlessly integrates PC&M data into your internal workflows without the need for manual exports and imports.

API-accessible data provides a foundation for innovation, enabling organizations to build scalable, data-driven solutions that drive efficiency, improve decision-making, and deliver enhanced user experiences. With 24/7 data availability, the PC&M API makes it possible to:

- Automatically retrieve, organize, and surface data between internal business systems.
- Combine wastewater treatment data with production data for comprehensive manufacturing performance and cost analysis.
- Establish enterprise-wide event workflows and notifications that drive business process changes by exchanging data between various systems.
- Eliminate data silos, merge sources, and apply data mining techniques such as statistics, artificial intelligence, and deep learning to uncover new insights.

PC&M CONNECT! – HOW IT WORKS



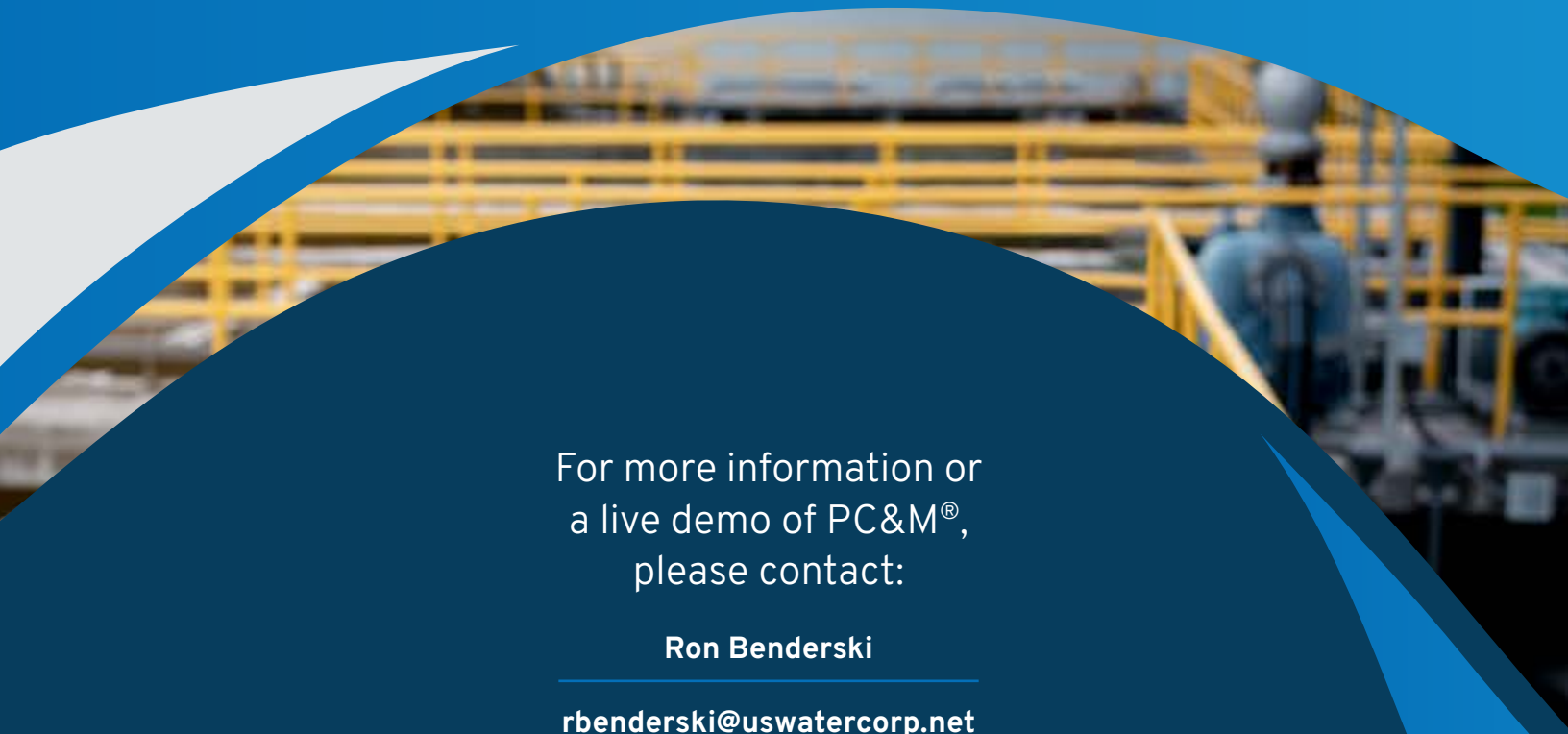
PC&M Detect!

Continuous monitoring, visual diagnostics, and historical playback within PC&M

Video technology isn't just a tool – it's a catalyst for transformation, empowering your plant to operate more securely, efficiently, and sustainably than ever before. An indispensable tool for troubleshooting, our technical team can ship self-contained, plug-and-play camera system "fly-packs" to sites experiencing sporadic treatment issues.

Bring your site into the modern age and unlock its full potential with these PC&M Detect! capabilities:

- Remotely view live video streams from multiple locations within a single, secure, easy-to-use interface without complex passwords or special software.
- Deter intruders, receive security breach alerts, and keep a watchful eye over unstaffed facilities.
- Safeguard against operational hazards and improve worker safety by visually inspecting dangerous or hard to reach areas.



For more information or a live demo of PC&M®, please contact:

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U.S. Water

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