Building a Secure Data Foundation for Water and Wastewater Treatment

How Phaseshift delivers a unified industrial data layer for real-time process monitoring, regulatory compliance, multi-stakeholder visibility, and API-driven analytics at water and wastewater treatment facilities.

THE CHALLENGE

Water and wastewater treatment facilities generate enormous volumes of process data across SCADA systems, PLCs, local historians, and field instruments. That data is essential to plant operations, regulatory compliance, and long-term performance optimization, but it is almost always fragmented: locked inside site-level systems, siloed by vendor, or accessible only through one-off integrations that are expensive to maintain and difficult to secure.

Operators need real-time dashboards for process awareness. Engineers need historical trends for troubleshooting. Compliance teams need structured exports for regulatory reporting. And increasingly, analytics providers and internal data science teams need API-level access to drive advanced modeling. Meeting all of these needs from disconnected systems means duplicated infrastructure, inconsistent data, and growing cybersecurity exposure.

THE APPROACH

Phaseshift serves as the facility's secure data backbone. We collect process data from SCADA systems and field instruments, normalize it, and bring it into a private cloud where it can be governed and reused across multiple applications. Instead of building and maintaining separate pipelines for each dashboard, vendor, or stakeholder, Phaseshift creates one controlled data layer that serves all consumers from a single source of truth.

EDGE-TO-CLOUD INGESTION

Secure data collection from SCADA, PLCs, and field sensors to private cloud infrastructure

DATA NORMALIZATION

Standardized data governance layer across all process control and instrument data sources

HOSTED DASHBOARDS & HISTORIAN

Real-time process visibility and durable time-series retention

API & MULTI-STAKEHOLDER ACCESS

Flexible interfaces for operations, lab teams, regulators, and analytics providers

THE OUTCOMES

Process Dashboards

Real-time streaming visibility into treatment performance for operators and stakeholders

Durable Historian

Long-term time-series retention for troubleshooting and trend analysis

Compliance Pipeline

Structured downstream feed to regulatory reporting and compliance systems

API Access

Direct authenticated access for internal engineering teams and analytics models

Single Secure Path

One controlled data corridor from plant systems to private cloud

Zero Fragmentation

Eliminates point-to-point SCADA integrations and disconnected data sources

THE INTELLIGENCE LAYER

Phaseshift goes beyond passive data collection. The platform autonomously governs, correlates, and acts on industrial data, turning raw process telemetry into operational intelligence without manual intervention.

AUTONOMOUS COMPLIANCE MONITORING

Continuously evaluates effluent parameters against permit thresholds, triggering alerts and escalation workflows before violations occur

PREDICTIVE PROCESS CORRELATION

Correlates upstream process variables with downstream water quality to surface emerging issues before they reach discharge points

SELF-GOVERNING DATA PIPELINES

Automatic data quality validation, anomaly detection, and gap identification across all ingested process and instrument data

AUTONOMOUS REPORT GENERATION

Structured regulatory and operational reports assembled from governed data without manual extraction or reconciliation

THE VALUE

Phaseshift enables water and wastewater operators to treat process data as a strategic asset rather than a collection of disconnected SCADA signals. The platform delivers process visibility through live dashboards, preserves facility history through a durable historian, autonomously monitors compliance thresholds, and gives engineering teams API-level access to the full operational dataset, all from a single self-governing platform.

> ***“For water utilities managing complex treatment processes, this is the real value of a modern industrial data layer: process data that is usable, governed, and accessible across the people and systems that need it.”***

Ready to build your secure data foundation? www.phaseshiftdata.com