Total Process Management from the Cloud at Roxborough Water and Sanitation District

30th July 2019

Mark Drake
VWT - Kruger
Product Manager

Barbara Biggs
Roxborough WSO
General Manager

How to Participate Today

- Audio Modes
  - Listen using Mic & Speakers
  - Or, select “Use Telephone” and dial the conference (please remember long distance phone charges apply).

Submit your questions using the Questions pane.

- A recording will be available for replay shortly after this webcast.
AQUAVISTA™
Digitalization is changing the World


Internet of Things Artificial Intelligence Collaborative Platform Robots

Digitalization is changing the Water Industry

Total spend by application

$21.3 billion (2016)

2021: $30.1 billion (CAGR of 7.2%)

- Networks $10.179 million
- Water treatment $4.973 million
- Wastewater treatment $4.331 million
- Industry processes $1.779 million

Potential savings in the region of $320 billion between 2016-2020 in capital and operational spending.

Source: GWI - Water's Digital Future
**AQUAVISTA™ -**

Digitalization is changing the water industry

**Drivers**
- Optimize Asset Performance
- Boost Predictive and Preventive Maintenance
- Improve Operation (Stability & Safety)
- Anticipate and Better Manage Environmental Crisis (Flood)
- Eliminate Non-Compliance
- Costs Savings

**Barriers**
- Culture
- Cybersecurity
- Data Confidentiality

---

**Roxborough Water and Sanitation District**

System Overview

- Located Southwest of Denver in Douglas County, CO
- 6 MGD average treatment capacity
  - 4 MGD for Roxborough
  - 2 MGD for Sterling Ranch, via Dominion Water & Sanitation District
- Opened in 2017
- First CO facility to receive credits for UV as primary disinfectant
  - DBP reduction from 80 ppb to 17 ppb
Roxborough Water and Sanitation District
System Overview

- ACTIFLO
- Filters
- UV Disinfection
- Chloramine for Distribution Residual
- Expandable by 2 MGD by adding 2 more Filters

Roxborough Water and Sanitation District
Decisions… Decisions...

- Explored Several Asset Management Systems
- GOALS
  - Better View of Compliance Parameters
  - Better View of Chemical Consumption
  - Better Tools for Performance Optimization
  - Better View of Equipment Status and Tracking/Scheduling Maintenance

The Old: Cumbersome Spreadsheet Manipulation for Managing Maintenance Tanks
Most Platforms Focus Only on One Area

Reasons for selecting AQUAVISTA
  ○ Touches on all Goals - Total System Management Tool
  ○ Consolidated Data from Multiple Plant Processes
    ■ Not Just Veolia Technologies
    ■ Data from Any Source
  ○ Access to Veolia Process Experts
Overview: 15 Seconds on IT

Physical Security
- Network infrastructure
- Hosted on a secure AWS cloud

Device / Modem / Software
- TLS Encryption

Network Security
- ISO 27001
- GDPR Privacy

Cloud Security
- Data Aggregation / Data Analysis
- User Management & Accountability
- User Access Management, Firewall, Malware & Virus Protection

Overview: Four Tiers of Service

Portal
- An Advanced Remote Monitoring and Reporting Tool

Insight
- A Data Driven Performance Optimization Tool

Plant
- An Online, Smart and Automated Optimization Tool

Assist
- Access to Veolia’s Process Experts
Overview: Tiers at Roxborough WSD

**Portal**
- An Advanced Remote Monitoring and Reporting Tool

**Insight**
- A Data Driven Performance Optimization Tool

**Plant**
- An Online, Smart and Automated Optimization Tool

**Assist**
- Access to Veolia's Process Experts

AQUAVISTA™ Portal - Main Dashboard

**Portal**
- An Advanced Remote Monitoring and Reporting Tool

**Customizable Interface**
- Acquisition, Aggregation and Cloud Storage of All Data
AQUAVISTA™ Portal - Main Dashboard

An Advanced Remote Monitoring and Reporting Tool

Portal

Manage Multiple Sites
Easy Navigation to Equipment Items

Simple PFD/PID View with Status

An Advanced Remote Monitoring and Reporting Tool

REMOTE MONITORING
Data Display

An Advanced Remote Monitoring and Reporting Tool

Remote Monitoring

Instant insights into trends (with selection of data visualization tools)
Management of multiple sites online through an interactive view with status indicators;

Data Display

An Advanced Remote Monitoring and Reporting Tool

Remote Monitoring

Instant insights into trends (with selection of data visualization tools)
Management of multiple sites online through an interactive view with status indicators;
Manual Data Upload

An Advanced Remote Monitoring and Reporting Tool

Portal

Individual Lab Data Results
or
Bulk Data Upload from .csv

Data Export

An Advanced Remote Monitoring and Reporting Tool

Portal

Easily Export in Multiple Formats

Easily export to PDF or Excel
Alarm and Alert Management

An Advanced Remote Monitoring and Reporting Tool

Portal

Full alarm management and threshold alerting in real time;
Notification of events for equipment such as service renewal, Hydrex chemicals re-ordering and other consumable replacement, etc;

Alarm and Alert Management

An Advanced Remote Monitoring and Reporting Tool

Portal

Full alarm management and threshold alerting in real time;
Notification of events for equipment such as service renewal, Hydrex chemicals re-ordering and other consumable replacement, etc;
An Advanced Remote Monitoring and Reporting Tool

**DOCUMENT MANAGEMENT**

Online access to useful links, documentation and videos, stored in one place for increased convenience.

- Archive and consult service reports, orders, contracts, warranty documents;
- Track the history of purchase orders;
- Review equipment/plant data: training materials, user guides, operation & maintenance manuals, performance documents, calibration certificates, product data sheets;
- Compliance information: health & safety sheets, regulatory specifications, etc.;

**Asset Management**

An Advanced Remote Monitoring and Reporting Tool

**MAINTENANCE MODULE**

Traffic Light Style Overview
Asset Management

An Advanced Remote Monitoring and Reporting Tool

Portal

Maintenance

Task Customization

MAINTENANCE MODULE

Task Status Features

Asset Management

An Advanced Remote Monitoring and Reporting Tool

Portal

Maintenance

MAINTENANCE MODULE

Task Customization

Asset Management

An Advanced Remote Monitoring and Reporting Tool

Portal

Maintenance

MAINTENANCE MODULE

Task Status Features

Asset Management

An Advanced Remote Monitoring and Reporting Tool

Portal

Maintenance

MAINTENANCE MODULE

Task Customization

Asset Management

An Advanced Remote Monitoring and Reporting Tool

Portal

Maintenance

MAINTENANCE MODULE

Task Status Features
Consumable Insights

An Advanced Remote Monitoring and Reporting Tool

Portal

Maintenance

MAINTENANCE MODULE

View of Consumables Performance

Customer Service Connection

An Advanced Remote Monitoring and Reporting Tool

Portal

ORDER MANAGEMENT

Place spare parts and consumables orders online, Book online visits for Veolia consultancy services, maintenance, troubleshooting, etc.
Customer Service Connection

An Advanced Remote Monitoring and Reporting Tool

Assist

- Process Expert Data Review
- Recommendations for Optimization
- Troubleshooting Assistance
- Augmented Reality
- Ease Issues Related to High Turnover of Staff

Streamlined Access to Veolia Experts
AQUAVISTA™
Smarter Water Solutions for Roxborough

Veolia’s digital tool designed & developed by Water Treatment Experts

- Full overview of your equipment from remote locations and **online access to documentation**
- **Convenience** of monitoring **anywhere, anytime, at any device** through a **secure cloud-based system and a single & intuitive portal**
- **Improved asset performance**, higher plant efficiency and stability, improved preventive and predictive maintenance, decrease downtime through **customized KPIs and Maintenance Module**
- **Lower capital and operational costs**, reduced maintenance, chemical use and energy consumption with **Kruger support through ASSIST offering**.
- **Easily upgrade to Insight or Plant** platforms to further enhance system efficiencies

Thank you!

Any questions?