

The background of the image is a deep purple with a network of glowing, intersecting lines in shades of cyan and magenta, creating a diamond-like pattern. The lines have a soft, ethereal glow.

AVEVAWORLD

ACCELERATE INDUSTRIAL INTELLIGENCE



2026



Sustainability Impact Award Finalists: Calcamite



**YOU will select the
winner!**



Go to www.avevaworld.com

We will donate 10,000 EUR
to World Wildlife Fund Italy

And plant 2 trees
for every vote!



Calcamite

SANITATION + WASTEWATER

Building a Sustainable Water Future for Developing Nations

On-site, modular wastewater treatment plants, connected and controlled.

To enhance the lives of people and protect the natural environment where communities are remote, sewage systems are overloaded, water is scarce and skills are limited.

Sebasti Badenhorst – Calcamite COO

Wilhelm Swart – Chief Operational Technology Officer - 4Sight





About Us

Our manufacturing facility is based in Gauteng, South Africa. From here we export to the rest of Africa.

2,000+ Small-scale Wastewater
Treatment Plants Installed



2.3 million m³

Total treatment capacity
over 20 years

Modular, Scalable **Underground** WWTPs

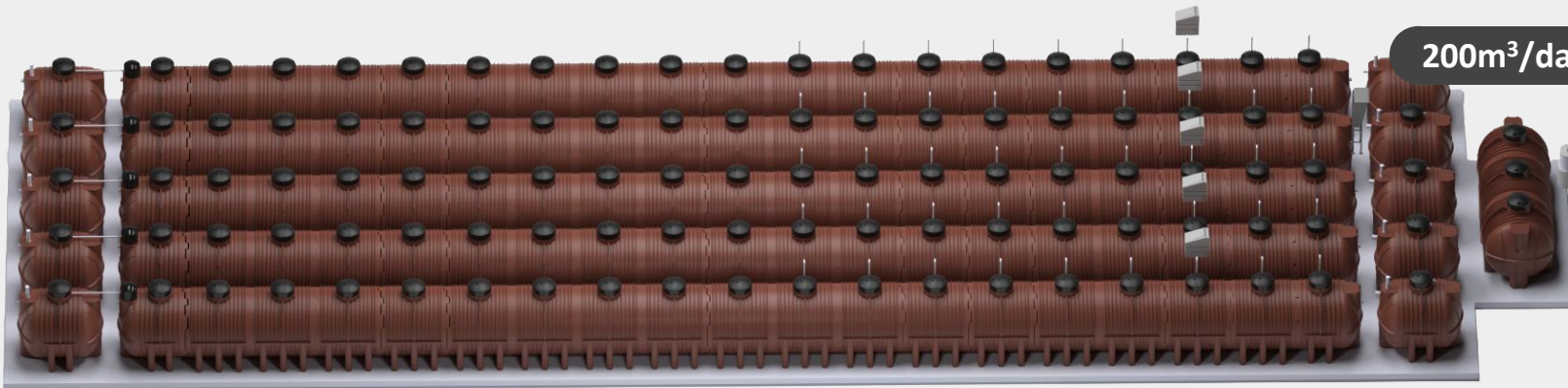
2m³/day



20m³/day



200m³/day

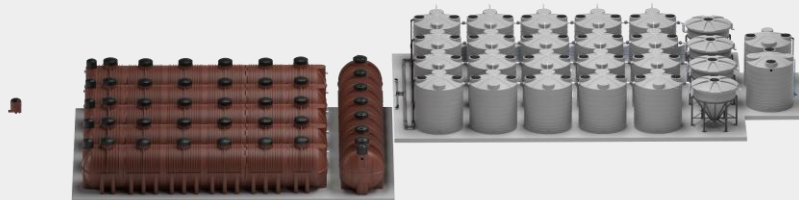


Modular, Scalable **Hybrid** WWTPs

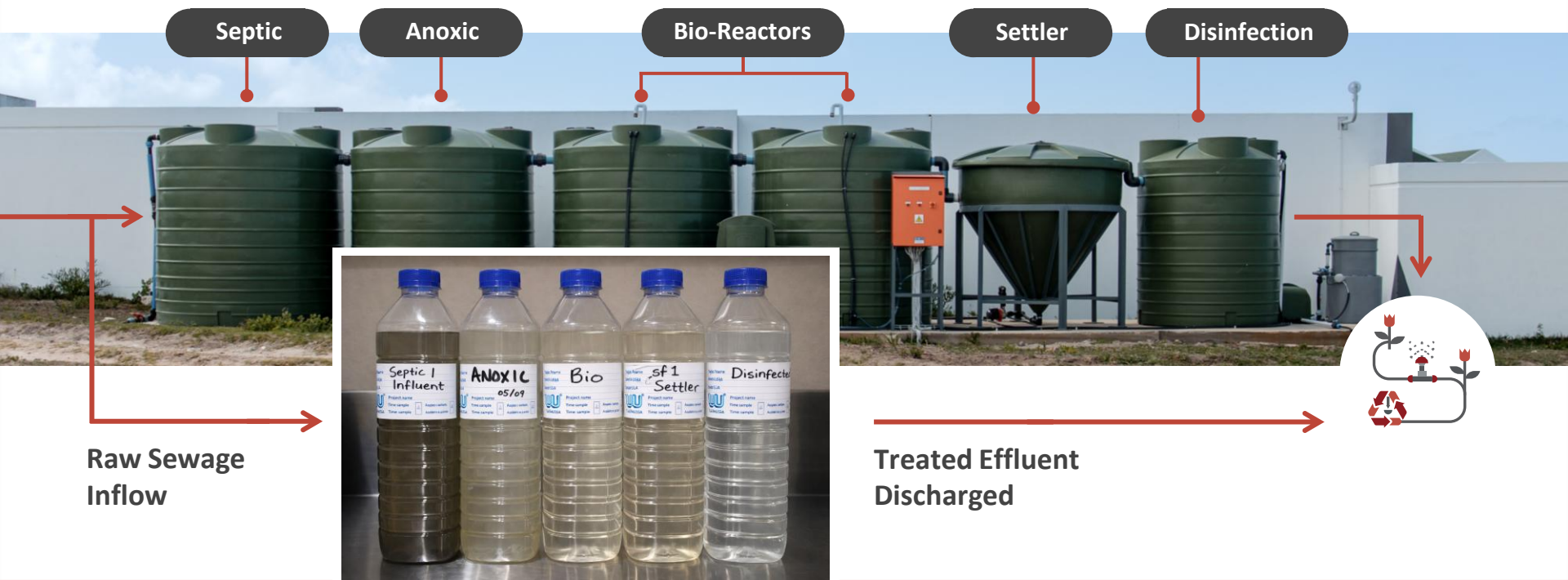
20m³/day



150m³/day



Treatment Phases Similar to Large Municipal Plants



Wastewater & Sanitation Solutions For Different Industries



**Commercial &
Light-industrial**



Mining



**Housing
Developments**



**Clinics
& Hospitals**



Shopping Centres



Game Lodges



Schools



**Individual
Households**

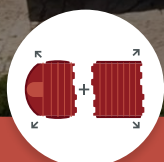
The Benefit of Decentralised Sewage Treatment

To Clients and Communities



Development Autonomy

Independent of municipal sewer constraints.



Scalability

Modular design enables phased expansion as demand grows.



Low Capital & Operating Costs

Modular, energy-efficient systems reduce costs.



Reduced Infrastructure

Localised reticulation system.



Water Security & Re-use

Enables reuse and reduces potable water demand.

The Benefit of Decentralised Sewage Treatment

To the Environment



Groundwater Recharge

Returns treated water to soil, supporting recharge & vegetation.



Lower Energy & Emissions

Treatment at source reduces transport & overall energy demand.



Nutrient Recycling

Systems manage nutrients, with reuse supporting natural fertilisation.



Reduced Pollution Risk

Decentralised treatment limits impact & reduces risk of leaks.

Water Safety and Security Remains a Challenge in Africa



Water Insecurity

Unpredictable droughts and floods lead to water shortages and damage to infrastructure.



Lack of Water and Wastewater Treatment Facilities

Pollution in rivers and groundwater, combined with inadequate treatment systems, results in unsafe water and disease outbreaks.



Overloaded Bulk Infrastructure

Aging and overburdened bulk systems cannot keep up with demand, leading to environmental and service challenges.



The Funding Gap

The funding gap is the largest constraint to infrastructure development in Africa.

The Magnitude of the Problem

R400bn

(\$23.5bn)

TOTAL
Maintenance
Backlog



The Current Annual Revenue



R21bn

(\$1.4bn) From Sewage



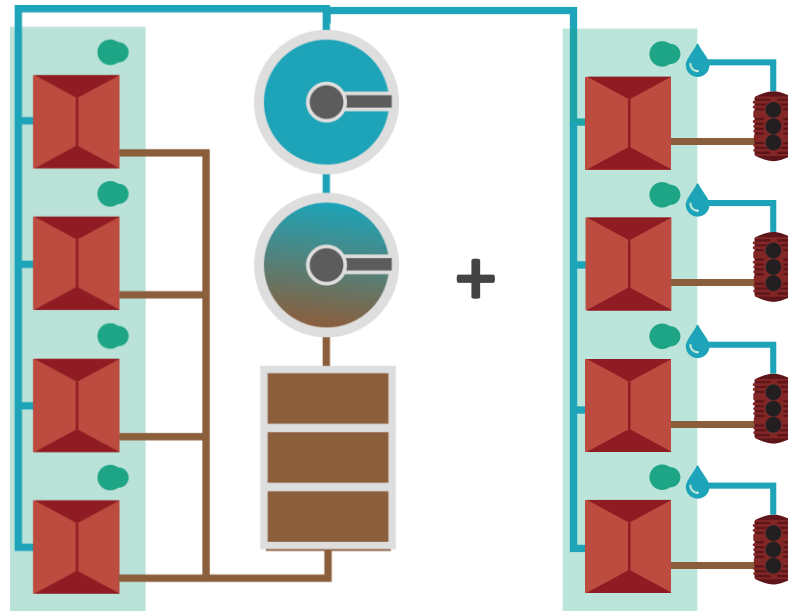
R64bn

(\$3.76bn) From Water

The Pivot

- Privately funded, decentralised plants can reduce pressure on centralised networks
- DWS supports this shift with new regulations enabling on-site sanitation

The Future of Infrastructure Development



Decentralised Infrastructure



Risks

Compliance
& Operational Hurdles

- **Maintenance Gaps:** Poor O&M remains the biggest risk
- **DWS Regulations:** Maintenance plans and records are now mandatory
- **Personnel Mandates:** Registered process controllers required for oversight
- **Penalties:** Stricter enforcement of effluent compliance



Opportunities

The Strategic Advantage
for Calcamite

- **Market Demand:** Growing regulatory pressure creates demand for compliant solutions
- **Long-term Value:** Ongoing monitoring and support services create recurring revenue
- **Calcamite Edge:** Positioned to provide cost-effective, turnkey compliance services

Business Challenge

Calcamite WWTP Performs Optimally when:

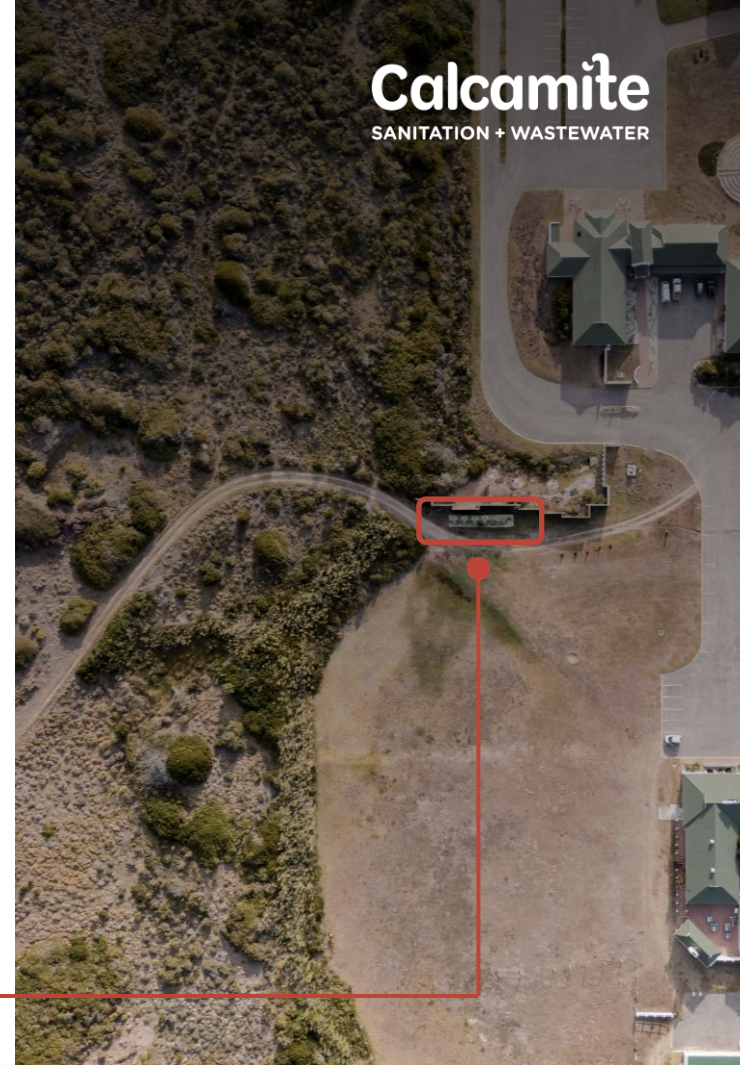
1. Operated within design capacity
2. Routine, preventative maintenance performed
3. High uptime of electrical & mechanical equipment

The Current Challenge:

1. Limited real-time visibility → reliance on on-site staff
2. Reactive maintenance after breakdowns
3. Automation historically too costly for small plants

Client's Constraints:

1. Limited funding → undersized installations
2. Shortage of specialized on-site skills
3. Remote sites increase service costs



The Pilot Project Gourikwa Nature Reserve



Gourikwa Nature Reserve

Overview

The pilot was initiated in response to client concerns around maintenance costs. To mitigate this, Calcamite covered all maintenance costs for the first year of operation.

This de-risked the project for the client while allowing Calcamite to build experience and reduce travel, with site visits limited to biannual servicing.



Location:

Buffelshoek, Gouritz. 1,380km from our factory



Plant Size:

Treats 15 m³/day

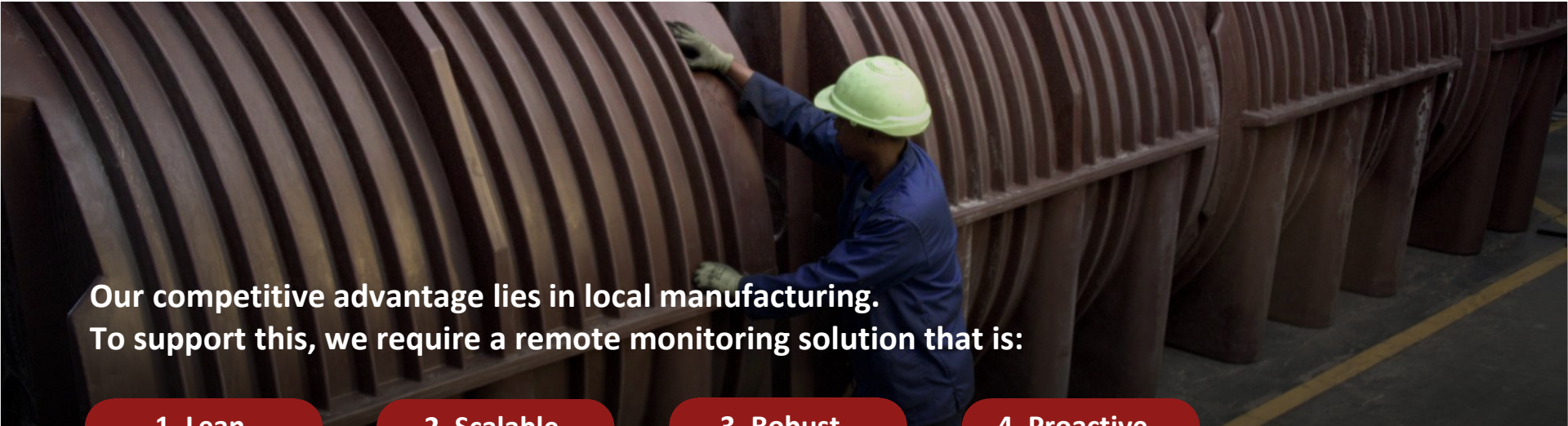


Project Completion Date:

4Sight was given 5 weeks to implement the solution



Brief to 4Sight on the Project



Our competitive advantage lies in local manufacturing.
To support this, we require a remote monitoring solution that is:

1. Lean

Efficient, cost-conscious systems

2. Scalable

Modular like our WWTP plants

3. Robust

Reliable in remote environments

4. Proactive

Fewer call-outs,
OPEX competitive with CAPEX

An Introduction to



4Sight's Clusters

4Sight is a **JSE Listed**, Multi-National, Diversified Technology Group

IT

Information Technologies

Enables Digital **AI** Transformation of ERP, accounting, HR and payroll, CRM, reporting and business process automation.



ERP



HR & Payroll



Fixed Assets



CRM



Business Intelligence & Reporting

OT

Operational Technologies

Offers essential industrial OT simulation, automation, and optimisation solutions, along with cutting-edge **AI** technologies, to support our industrial customers.



Optimisation



Automation



Simulation

BE

Business Environments

Converges IT and OT environments, using Enterprise Data for more informed decision-making.



Modern Digital Enterprise



Adoption & Change Management



Data Enablement



Cybersecurity



Intelligent Automation



Software & Application Dev

CP

Channel Partner

4Sight's 100% partner focused ecosystem, distributing and supporting **AI** solutions on behalf of international software vendors including Microsoft, Sage as well as a wide range of vertical and horizontal ISV applications.



Cloud Solution Provider



Channel Partner



Independent Software Vendor

Saving Water, Sustaining the Planet

Building a Sustainable Water Future in Remote Off-Grid Locations with State-of-the-Art Wastewater Solutions



Customer Challenges

- Lack of central wastewater facilities
- Overloaded bulk infrastructure
- Africa's two-fold water crisis
- Core problem: Monitoring remote plants
- No real-time data

1. Lean

2. Scalable

3. Robust

4. Proactive



The Solution

- Deploy Edge Hardware by Schneider Electric
- Deploy Scalable Open Cloud Platform – CONNECT
- Expert Solution & Integration by 4Sight



Customer Benefits

- Safe water reuse
- Sustainable treatment technology
- Low Capital Cost
- Low Operating Cost
- Predictive Maintenance

Enterprise Insights & Optimisation

CLOUD ACCESS

- Apps & AI Analytics
- Services
- Remote Monitoring,
- Reporting & Data Sharing

AVEVA  Microsoft

CONNECT



- AVEVA Connect
- AVEVA Insights
- AI Assistant
- AI Analytics
- Agentic AI / Copilot

Intelligent Control & Edge Processing

CONTROL SYSTEM

- Open-Software Defined Automation
- Schneider Electric
- EAE

EcoStruxure
Innovation At Every Level

MQTT



Modicon
M580d



EAE - EcoStruxure
Automation Expert

Connected Asset Foundation

FIELD INSTRUMENTATION

- Connected Products



AVEVA

DASHBOARDS



Microsoft



- Agentic **AI** / Copilot
- **AI** Analytics
- **AI** Assistant
- Power BI
- Data Reporting
- Date Monitoring
- Central Data Logging
- Data Reporting

Technical Overview

EcoStruxure
Innovation At Every Level

Gourikwa WWTP



Syferfontein WWTP



Acornhoek WWTP



- Open Software Defined Automation
- Schneider Electric EAE (EcoStruxure Automation Expert)
- Open Automation Standards
- Distributed Control Automation



- Multiple widely distributed WWTP's

AVEVA
CONNECT

Microsoft

Schneider
Electric

4Sight OT Automation
Waste Water Treatment
System architecture

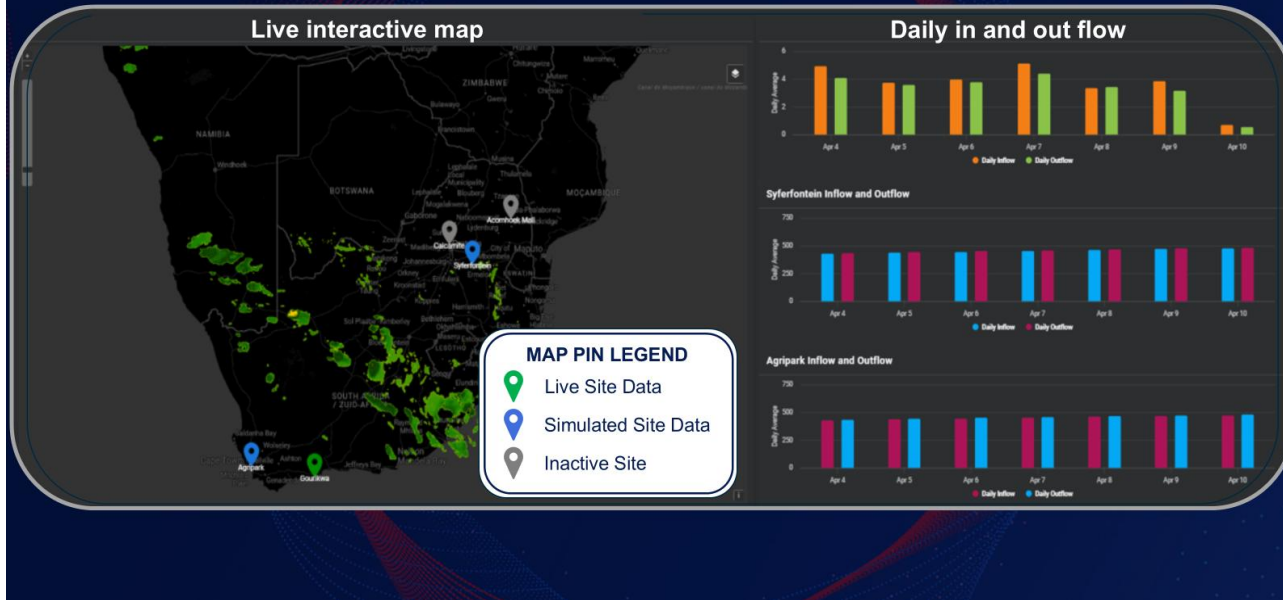
Calcamite
SANITATION + WASTEWATER

4sight | 4AI

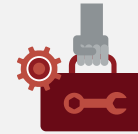
GOURIKWA
COASTAL NATURE RESERVE

Our Current Plants being Monitored

Calcamite **CONNECT** Home Page



Since the pilot plant
In Nov 2025

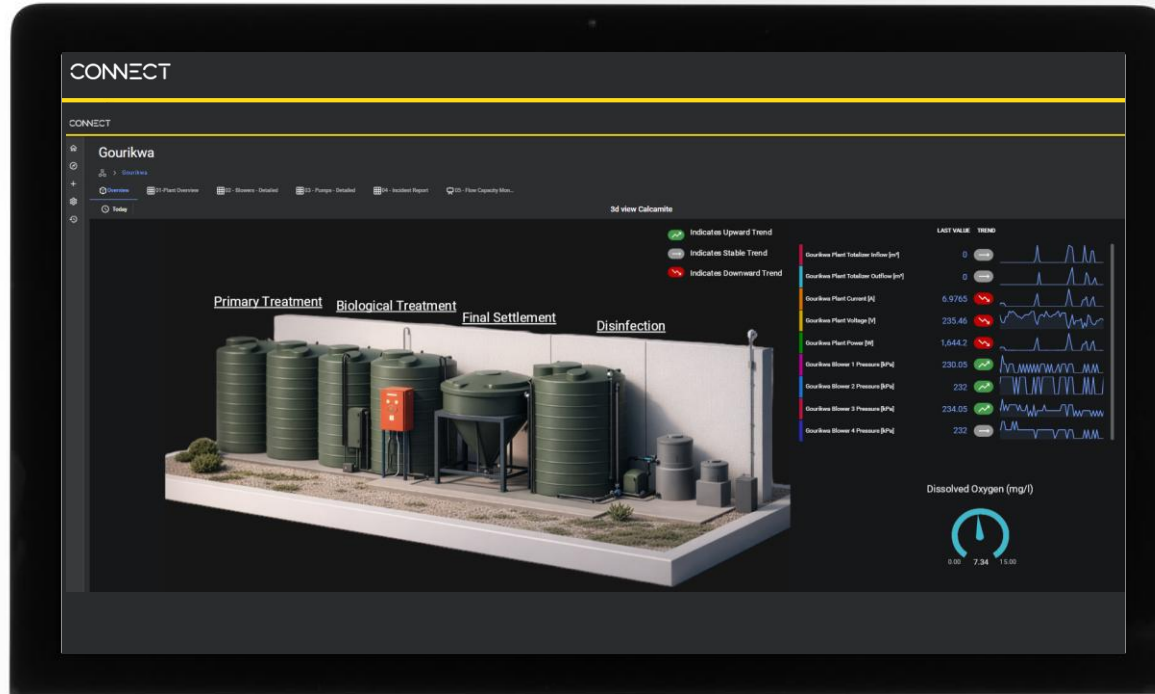


**3 more
plants**

are being implemented

Overview of Plant Configuration

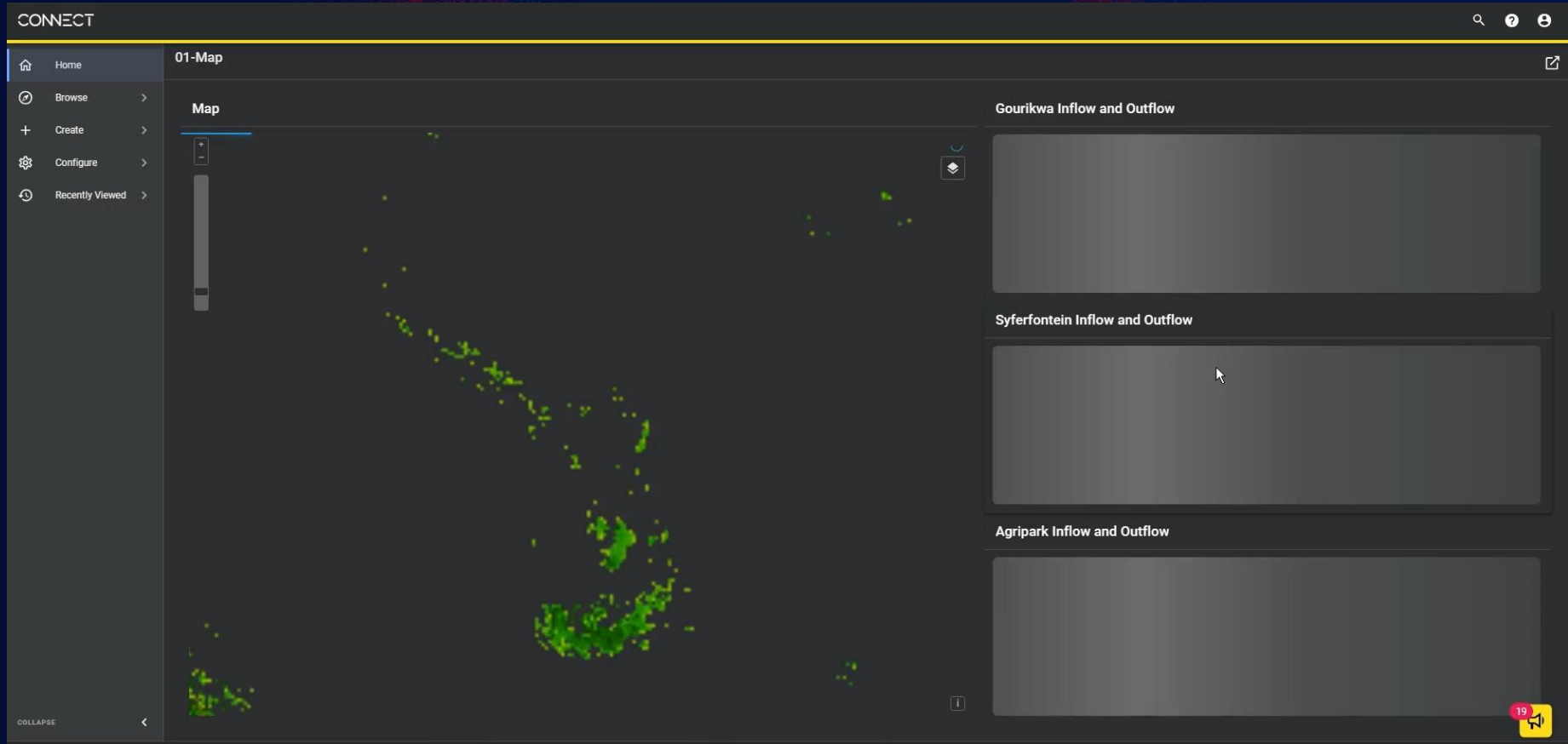
Calcamite
SANITATION + WASTEWATER



With many modular plants in operation, it is essential to have visibility of each plant's specific configuration when assessing data.

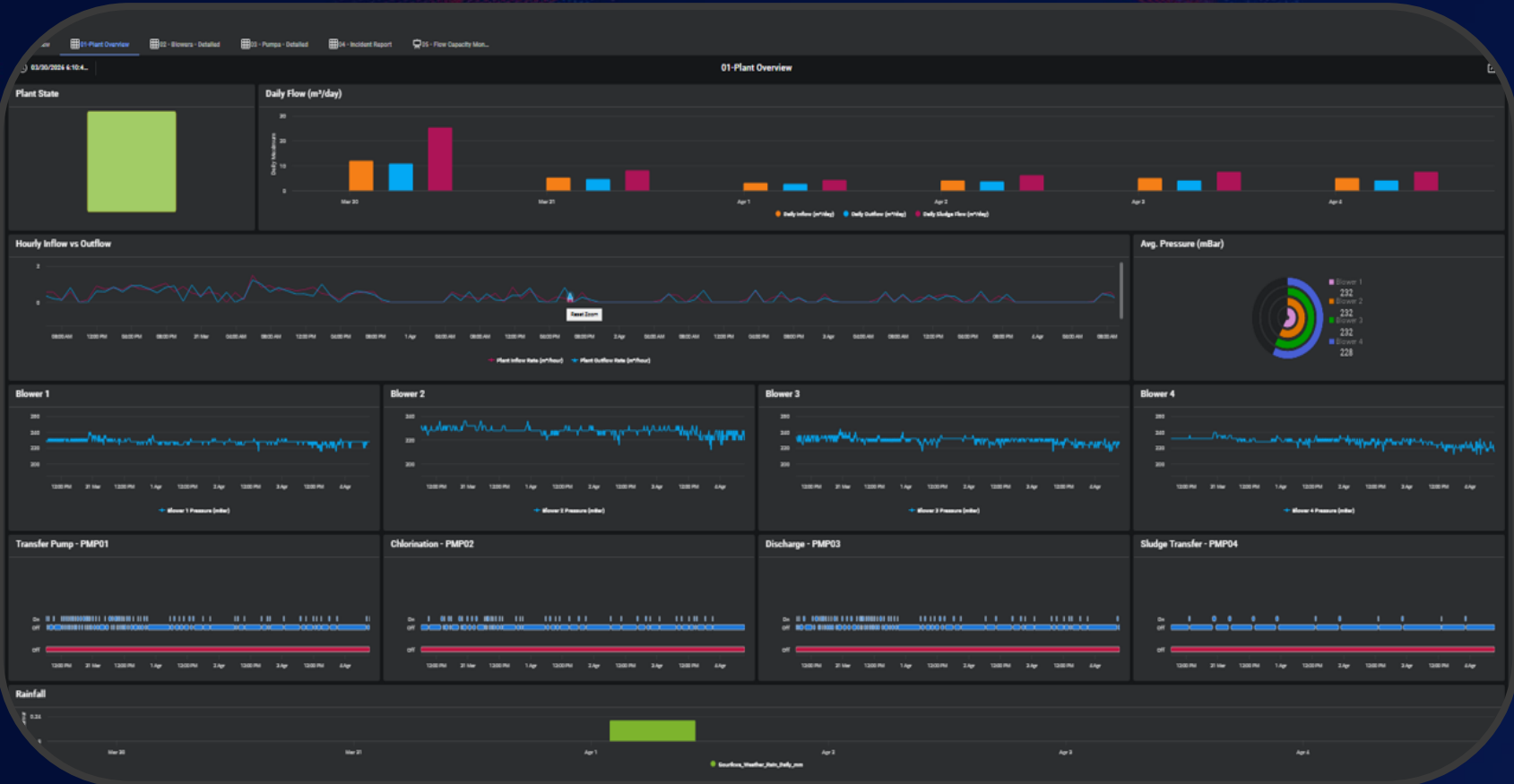


CONNECT Home Page Live with Industrial AI Assistant



(CONNECT "Multi-agent AI" used to analyse, reason, and responds over live complex data data)

CONNECT - Plant Overview Dashboard



CONNECT navigation panel

Daily flow based on virtualised sensors

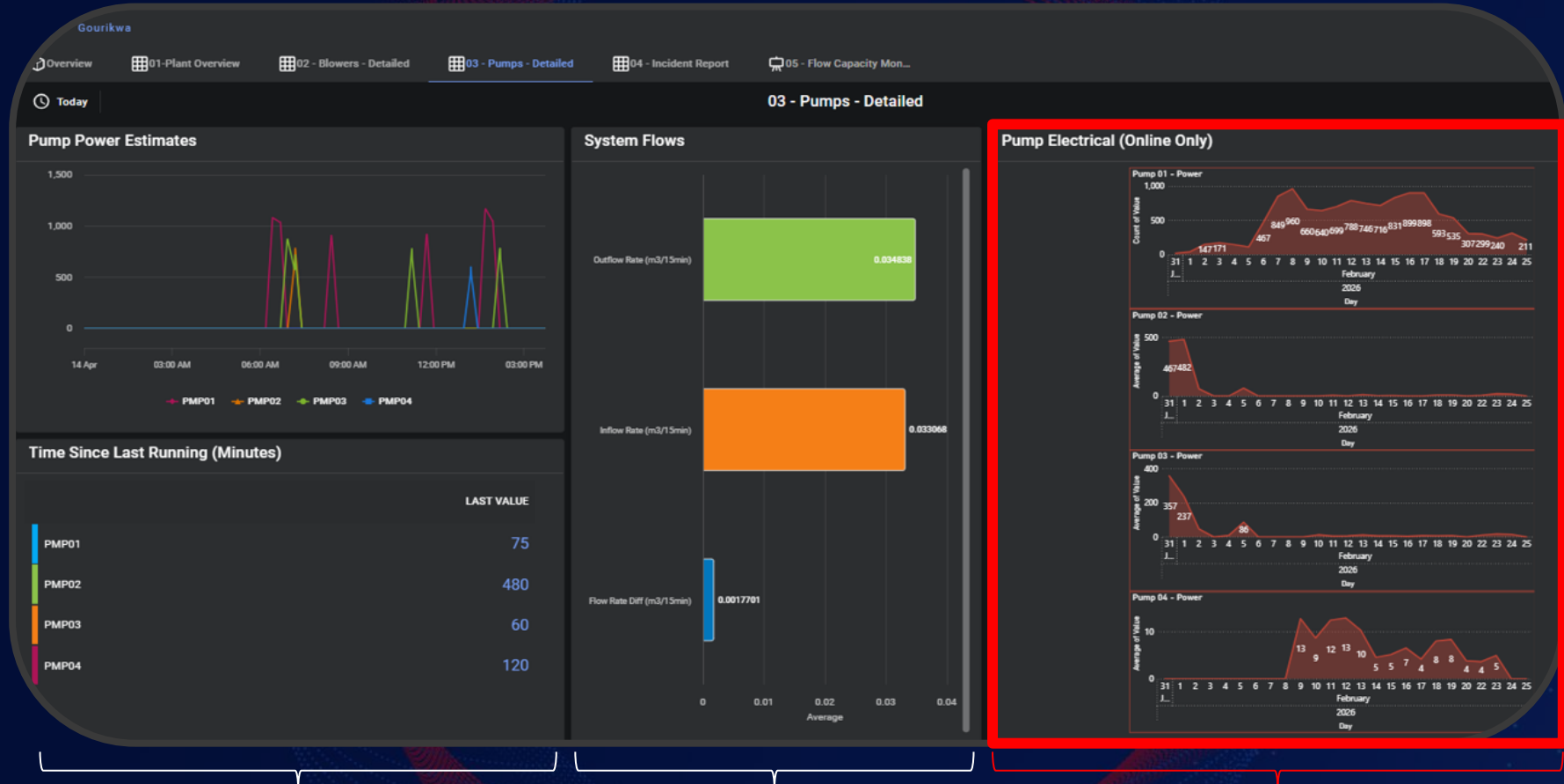
Hourly flow

Blower pressure

Pump status

Rainfall in area to explain spikes in inflow

CONNECT - Detailed Pump Dashboard



Pump power usage and runtime

Mathematically derived flowrates monitoring based on pump runtime analysis

MS **Power BI** integrated into CONNECT

Automatically AI generated Power BI Reports

- ✓ Monthly compliance
- ✓ Executive summaries
- ✓ Municipality-outputs

Calcamite

SANITATION + WASTEWATER

Operated and Owned by JICA

Water Purification Compliance

4sight

March

Gourikwa - Compliance

Dissolved Oxygen Percentage

3,20

Water Recovery Percentage

98,70

Total Monthly Rainfall [mm]

45,10

93,30

Goal: 90,00 (+3,67%)

Compliance Heatmap

Month	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
March							
9	100,00						
10	100,00	100,00	100,00	100,00	100,00	100,00	100,00
11	100,00	100,00	100,00	100,00	91,60	100,00	100,00
12	100,00	100,00	100,00	100,00	100,00	100,00	100,00
13	100,00	100,00	66,60	100,00	100,00	100,00	100,00
14		100,00	100,00				

Executive Summary (System Generated)

Choose a narrative type

Use Copilot to create a narrative with AI, or choose Custom for more control.

Read Copilot notes

Copilot

Custom

Last Refreshed: Thursday, 02 Apr 2026 - 09:50

PAGE 1 OF 3

Calcamite

SANITATION + WASTEWATER

Operated and Owned by JICA

Water Purification Compliance

4sight

2026

Rainfall, Inflow and Outflow by Year, Month and Day

Rainfall [mm]

Inflow and Outflow

Sum of Avg. DO by Year, Month and Day

Sum of Avg. DO

Blower and Pump Operations

MonthName	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
March							
9							
Blowers							
Pumps							
10							
Blowers							
Pumps							
11							
Blowers							
Pumps							
12							
Blowers							
Pumps							
13							
Blowers							
Pumps							

Last Refreshed: Thursday, 02 Apr 2026 - 09:50

PAGE 2 OF 3

Calcamite

SANITATION + WASTEWATER

Operated and Owned by JICA

Water Purification Compliance

4sight

March

Event Log

Event_ID	Type	Start Date	End Date	Category
E-102	LOW DO	2026/03/12 08:20:00	2026/03/12 10:20:00	Env. Factors
E-103	UNDER-FED	2026/03/24 05:00:00	2026/03/24 13:00:00	Supply Issues
E-104	PUMP FAIL	2026/03/24 06:40:00	2026/03/24 14:40:00	Mech Failure

Event Log Breakdown

Choose a narrative type

Use Copilot to create a narrative with AI, or choose Custom for more control.

Read Copilot notes

Copilot

Custom

1 (33.33%)

1 (33.33%)

1 (33.33%)

Type • LOW DO • PUMP FAIL • UNDER-FED

Last Refreshed: Thursday, 02 Apr 2026 - 09:50

PAGE 3 OF 3

Agentic AI Operations with Microsoft Copilot

The screenshot displays the Copilot Studio interface for configuring an agent named 'The Calcamite Copilot'. The interface includes a sidebar with navigation options like Home, Agents, Flows, and Tools. The main area is divided into sections for Details, Select your agent's model, Analytics, and Instructions. The Details section shows the agent's name and description. The Select your agent's model section is currently empty. The Analytics section provides a summary of the agent's performance over the last 7 days. The Instructions section contains a detailed prompt for the agent, which includes information about the Calcamite company, its wastewater treatment plants, and the specific tasks the agent is designed to perform, such as answering questions about sensor readings and generating reports.

Copilot Studio Environment: RAA2

The Calcamite Copilot Overview Knowledge Tools Agents Topics Activity Evaluation Analytics Channels

Details [Edit]

Name
The Calcamite Copilot

Description
None provided 13/10/24

Select your agent's model

Analytics [Open Analytics]

Check your agent's key performance info from the last 7 days.

Instructions [Edit]

You have access to the entire OT structured and unstructured dataset for Gourikwa, a site under Calcamite, a company that builds wastewater treatment plants.

When a user starts their conversation they generally look towards getting answers about the excel they provided you as a tool so start there if the context seems like it might be found in the historian excel they provided you access to. (it contains sensor readings at certain times over several days)

Your knowledge base is about how the plant is structured and connects assets to assets and operates and what limits it operates (eg 10m3/day inflow of wastewater).

Your tools are sending an email and looking up values from an excel version of the plants historian.

The user will specify how to send an email and to who, this is straight forward, look for the keyword "send an email" or similar.

When the user asks about certain values or limits or amounts or alarms, it probably means you should check your excel tool and look up the first row to see if that tag exists, then rerun the tool again with that specific column in mind against the timestamps column as well to ensure you are directly getting to the right answer.

do not tell the user how to perform excel operations, they are looking to you to grab the information from the excel.

if a user asks for an image, ensure you use matplotlib and a conversion script to get it into base64 so that it can be added as a token into an email body without the actual file. If asked for a report, make sure you compile all information from all avenues and aim to follow a typical research report

(executive summary: intro, body (variable may have different headlines, code generated images or graphs, tables, and nomenclature or bullet points as well)

Test your agent [Test]

Published 4/9/2026 [Publish] [Settings] [Test]

Test your agent

Hello, I'm The Calcamite Copilot. How can I help?

3 minutes ago

Ask a question or describe what you need

9/2000

You're testing your agent's real responses and capabilities. [Find troubleshooting help here](#). Make sure AI-generated content is accurate and appropriate before using. [See terms](#)

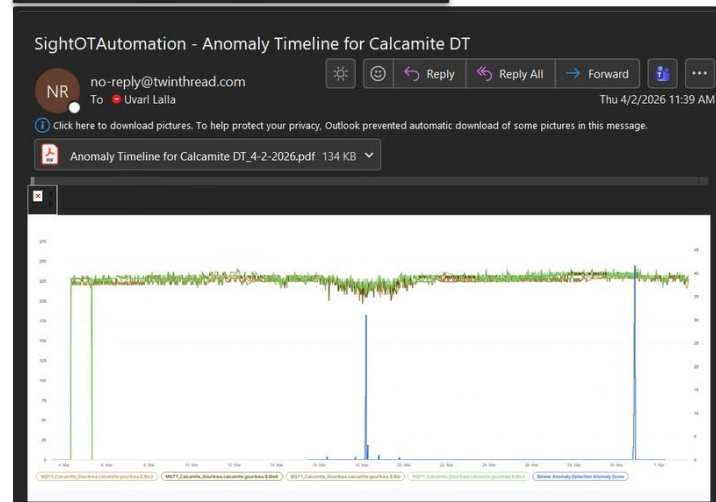
CONNECT - Advanced AI Analytics Insights

Machine learning driven
ML - Anomaly detection

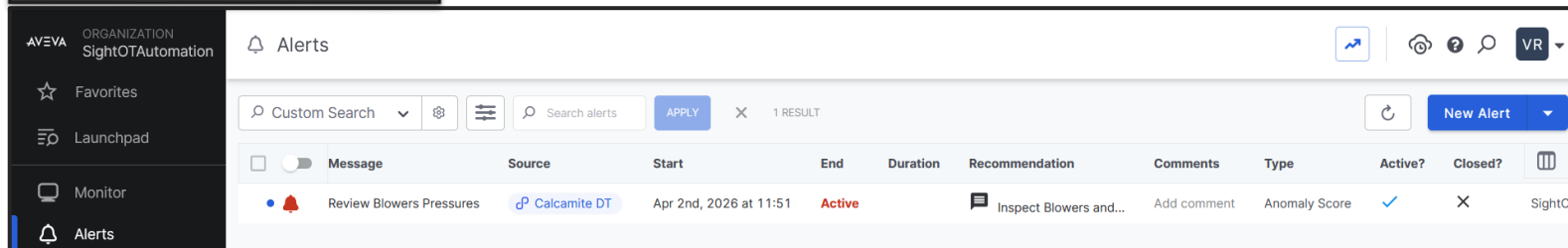
Alert monitoring



Alert notification emails



Alert case management



The Value of Remote Monitoring for Us

Business Impact

- 01 | Recurring Revenue
- 02 | Operational Assurance
- 03 | Improved Performance
- 04 | Stronger Reputation

Strategic Impact

- 01 | Regulatory Compliance
- 02 | Advanced Capability
- 03 | Data-Driven Design

Simply put it enables us to:

Expand our Offering, Enhance our Reputation
Grow our Business

Sustainability Impact

Remote monitoring and control enabled higher effluent standard of onsite treatment at lower maintenance costs.

Saved

22 656,00 km by treating the sewage on-site
27,21 tons of CO₂ & **\$20 363** in transport fees
85% on maintenance costs per month

Recovered

2 123m³ of water for local groundwater recharge
63kg of nitrogen
6,3kg of phosphates

Prevented

400m² of land loss
6 000m³ of soil pollution



The Scalability Vision

From One to Thousands

The Platform

CONNECT provides the platform to add the 2nd, 10th, and 1000th plant with ease.

CONNECT
Industrial intelligence platform



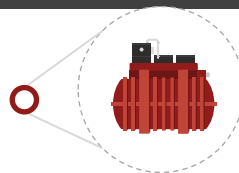
+



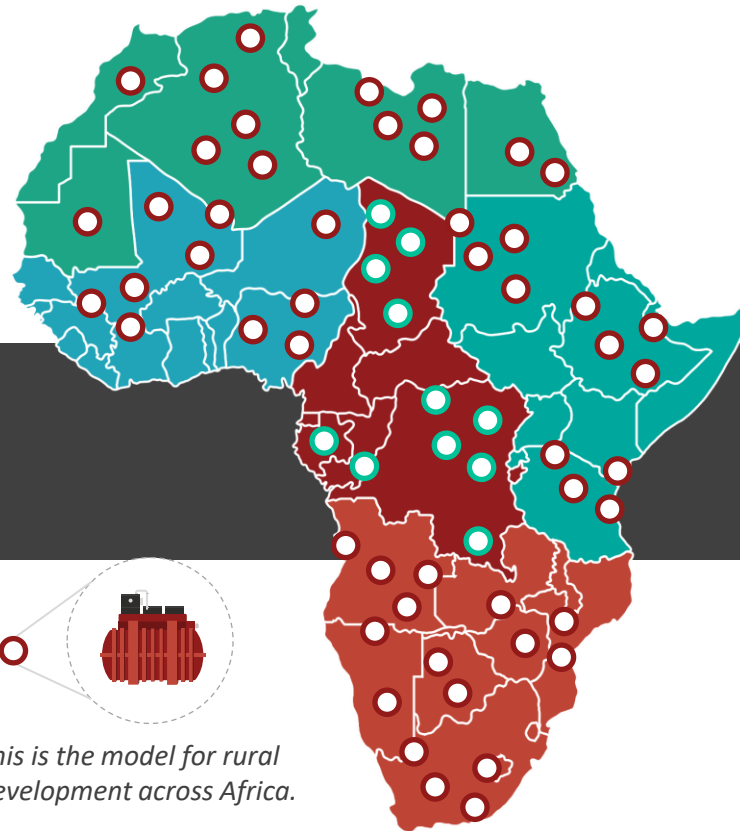
The Solution

Designed by 4Sight, is built for massive scale.

This isn't just one plant. It's a blueprint.

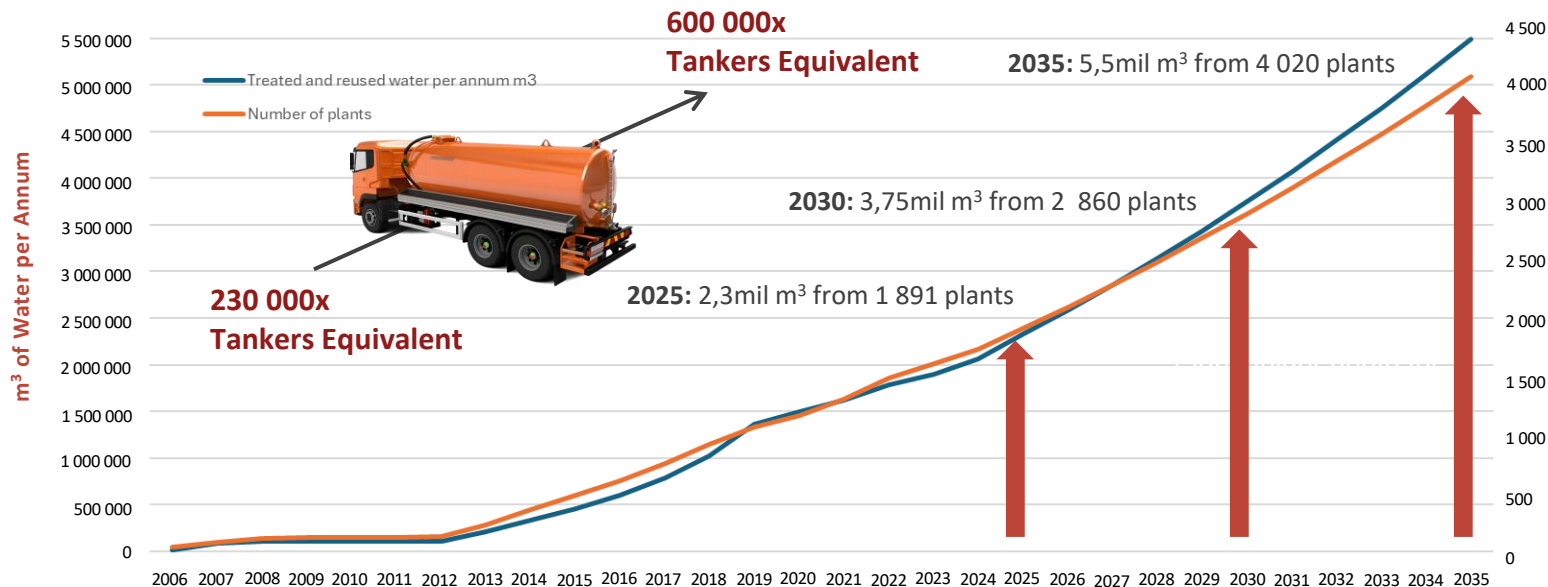


This is the model for rural development across Africa.



Calcamite Installed Treatment Capacity and Forecast

Treated and Reused Wastewater per year, m³



Moving 2.3 million m³ of water by truck =
~230,000 trips
~3.5 million litres of diesel
~ 9,380 tons CO₂

Small-scale Plants. Large-scale Intelligence. Infinite Impact.

Challenge

- Enable cost-effective remote monitoring and automation for small, modular wastewater plants
- Ensure rapid deployment
- Deliver a scalable, modular solution

Solution

- Deploy AVEVA™ Connect integrated with Schneider Electric M262 Controller and 4G/LTE VPN Router

Results

Compared to other treatment options:

- **Saved \$20 363**
- Recovered **2123m³ of water** for local groundwater recharge
- **Nutrient recovery: 63kg of nitrogen and 6,3kg of phosphates**
- **Saved 27,32 tons of CO₂**
- **Prevented land loss of 400m²; 6000m³ of soil pollution**
- **85% saving on oversight/maintenance costs at monthly frequency**

...And this is just the beginning





**YOU will select the
winner!**



Go to www.avevaworld.com

We will donate 10,000 EUR
to World Wildlife Fund Italy

And plant 2 trees
for every vote!

