

From water data to dosing decisions.

Predictive coagulation control for
drinking water and wastewater.

Find your application.

Choose the treatment objective, then connect the measurements to the decision.

Compass

Drinking water
Turbidity control

Compass EOR

Drinking water
Enhanced organics removal

Compass CPR

Wastewater
Chemical phosphorus removal

Compass CEP

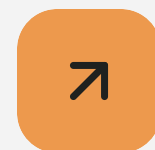
Wastewater
Chemically enhanced pre-treatment

Application summary: PMA drinking-water and wastewater overviews; supplied Compass Product Information. [1–3]

From a signal to a strategy.

The value is in the relationship between the measurements, the model and your treatment objective.

Explore the technology



01 / MEASURE

Incoming water quality

Bring together the agreed online optical, turbidity and process measurements.

02 / PREDICT

Site-specific dose model

Translate the measured characteristics into coagulant demand for the defined duty.

03 / CONTROL

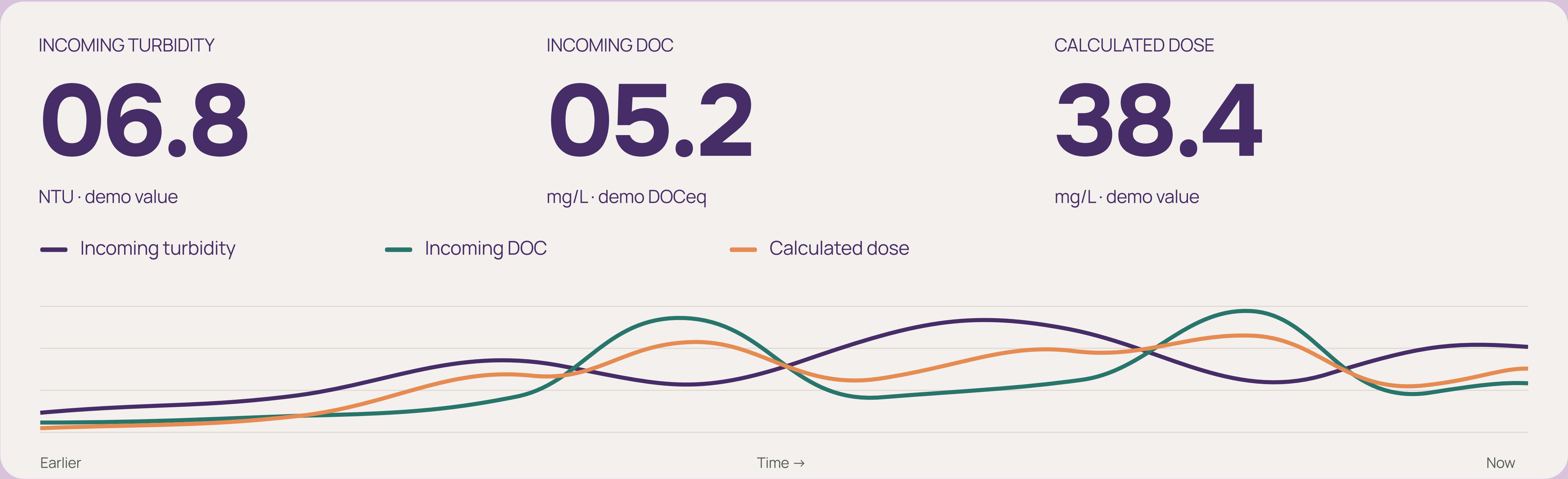
An informed dose output

Integrate the calculated dose with the agreed plant controls, limits and operating modes.

A site-specific control relationship is developed and validated with process evidence. [1-3]

See the signal. See the decision.

Read incoming turbidity and dissolved organic carbon alongside the calculated dose.



Illustrative UI only. Fictional values; trends use separate relative scales. DOC is an optical equivalent (DOCEq). Site-specific calibration and validation are required.

Two signals. One informed dose.

Clearer-looking water can still carry dissolved organics. Turbidity and DOC tell different parts of the story.

Turbidity rises

Particulate material changes the incoming-water picture. The model evaluates the resulting coagulant demand.

DOC peaks later

An organic signal can remain elevated as turbidity falls. One falling signal does not describe the whole water.

The dose responds

The site model considers the agreed inputs together, rather than assuming one signal tells the entire story.

Compass EOR adds another view: treat the water, measure the response, then trim the prediction.

Conceptual explanation, not measured event data. Optical organic equivalents require site-specific correlation. [1–3]



Drinking-water turbidity control.

Predict coagulant demand as source-water conditions change, using a model developed for the works.

MEASURED INPUTS

Incoming optical and turbidity measurements.

CONTROL PRINCIPLE

Feed-forward prediction from source-water quality.

TREATMENT OBJECTIVE

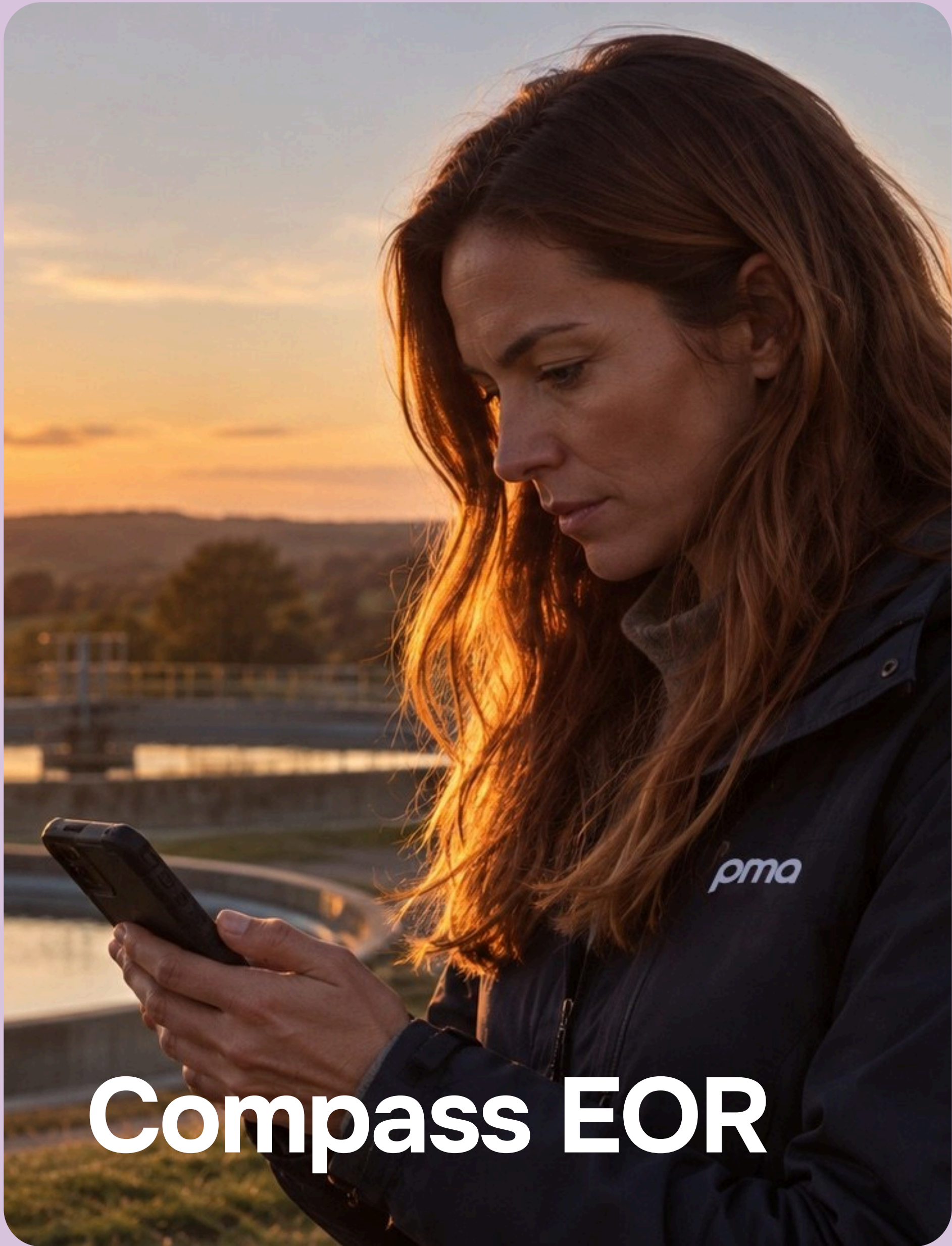
A dosing decision for the turbidity-removal duty.

CONFIGURATION

Model, outputs, limits and validation agreed for the site.

Discuss Compass





DRINKING WATER / 02



Enhanced organics removal.

Combine incoming-water prediction with treated-water feedback for the agreed organics-removal objective.

MEASURED INPUTS

Incoming measurements plus treated-water optical feedback.

CONTROL PRINCIPLE

Feed-forward dose prediction with feedback trim.

TREATMENT OBJECTIVE

Coagulable organics removal alongside turbidity needs.

CONFIGURATION

Measurement location and removal objective agreed together.

Discuss Compass EOR





WASTEWATER / 03



Chemical phosphorus removal.

Account for phosphorus-related and background coagulant demand as incoming wastewater changes.

MEASURED INPUTS

Influent spectral data and the agreed phosphorus input.

CONTROL PRINCIPLE

Phosphorus demand plus non-phosphorus demand.

TREATMENT OBJECTIVE

A dose output for the chemical phosphorus-removal duty.

CONFIGURATION

Validate any surrogate against the applicable site data.

Discuss Compass CPR



Chemically enhanced pre-treatment.

Predict influent coagulant demand ahead of primary clarification for the agreed downstream objective.

MEASURED INPUTS

Influent suspended-solids and optical organic indicators.

CONTROL PRINCIPLE

Feed-forward prediction for the pre-treatment duty.

TREATMENT OBJECTIVE

Primary-effluent quality or downstream loading.

CONFIGURATION

Review changing load, chemistry and primary treatment.

Compass CEP

Discuss Compass CEP



The objective shapes the model.

Compass

OBJECTIVE

Turbidity

Drinking water

MEASUREMENTS

Incoming optical + turbidity

Feed-forward

Compass EOR

OBJECTIVE

Organics

Drinking water

MEASUREMENTS

Incoming + treated-water
optical feedback

Prediction + trim

Compass CPR

OBJECTIVE

Phosphorus

Wastewater

MEASUREMENTS

Influent optical + agreed
phosphorus input

Feed-forward

Compass CEP

OBJECTIVE

Pre-treatment

Wastewater

MEASUREMENTS

Influent solids + optical
organic indicators

Feed-forward

Select the treatment duty before choosing sensors, I/O or controller arrangement. CPR and CEP address different wastewater objectives. [1-3]

Measurement, with context.

TriOS sensor options in the supplied
May 2025 instrumentation pack.

FEED-FORWARD REFERENCE

OPUS

UV spectral analysis · 200–360 nm
256-channel miniature spectrometer

Ethernet TCP/IP; RS-232 or RS-485
(Modbus RTU), depending on configuration.

EOR FEEDBACK REFERENCE

LISA UV

SAC254 / UVT sensing
254 nm and 530 nm LED channels

Digital Modbus RTU or an analogue
4–20 mA option, as specified.

The pack illustrates wall-mounted panels, stainless-steel flow cells and HydroWipers. Final selection, optical path, range, sample conditions and control interfaces require PMA confirmation.

Dated reference, not a universal system specification. May 2025 pack, pp. 1–3 and 5–7; embedded manufacturer sheets dated 2020/2022. Sensor interfaces are not controller I/O. [4]

A year of evidence. A clearer control decision.

A site-specific Compass model was compared with the works' existing dosing strategy during the 2011 trial.

136

ML/day

Works capacity

The scale reported for Mythe in the historical trial.

12

months

Trial period

A year of model development and comparison with site data.

£60k+

six summer months

Modelled opportunity

Predicted coagulant saving with the stated pH-control setup.

£8k

six winter months

Modelled opportunity

Average predicted coagulant saving in the historic assessment.

Financial figures are historical model predictions, not measured savings or a forecast for another site.

Source: PMA, Compass automated coagulation control at Mythe WTW. Original case study published 2017; trial began 2011. [5]

Developed around your process.

01 Define the objective

Identify the source water, treatment duty, coagulant and operating constraints.

02 Review the evidence

Bring together online trends, laboratory data, dose history and existing instruments.

03 Agree the integration

Establish signals, operating modes, dose limits, alarms and responsibilities.

04 Validate the response

Use agreed site data and acceptance criteria to review the configured system.

The model, equipment and acceptance criteria are agreed for the individual treatment works. [1–3]



Let's find your next step.

Tell us about the water, the treatment objective and the measurements available at your works.

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Visit PMA



The detail behind the story.

[1] Drinking-water application

PMA · Automatic Coagulation Control for Water Treatment

[2] Wastewater application

PMA · Advanced Coagulation Control for Phosphorus Removal

[3] Range description

Lutra · Compass Product Information · supplied public product overview

[4] Instrumentation reference

Instrumentation for Compass system · TriOS Optical Sensors · May 2025

[5] Historical case study

PMA · Automatic coagulation control at Mythe WTW

This brochure describes application and control principles. Final ranges, sensors, interfaces and installation details are confirmed for the site. Demonstration curves are fictional and independently scaled. Historic case-study results are specific to the cited installation. Scenic photographs are illustrative.