

Start with the operating problem

Use this worksheet with operations, maintenance and your water-treatment supplier. Choose one point where a trustworthy residual reading changes a decision.

Mill / process area / owner / date

What is the team trying to improve?

☐ Fewer manual cleanings ☐ Better treatment visibility ☐ Fewer suspect alarms
☐ More valid data ☐ Less sample-line upkeep ☐ Other: _____

What you observe	What to check before changing dose
Low residual after a treatment event	Confirm the active species, mixing and elapsed time. Compare a reference result with the online reading. Review demand and the sampling path.
Reading shifts after sensor cleaning	Log before/after readings and reference results. Inspect deposits and service history; a shift alone does not identify the cause.
Erratic or missing signal	Inspect power, communications, air, submergence and sample delivery. Record operating changes at the same time.
Slime or deposits despite a residual	Keep microbiological tests, deposit inspections and the treatment supplier's checks. Residual is not a biofilm measurement.

State the decision in one sentence

If the verified reading is _____, the operator will _____.

Keep current dosing safeguards and mill procedures during evaluation. No dose, alarm threshold or financial saving is prescribed by this kit.

Choose the point and the chemistry

A useful trial starts with a representative stream, safe access and a confirmed measurement species. Do not assume one sensor fits every mill water.

Candidate point: ☐ Incoming treated water ☐ Clarified-water outlet
☐ Utility storage ☐ Cooling circuit ☐ White water / reuse (separate review)

Exact location / distance from dosing / mixing / expected sample delay

Record before selection	Site information
Active oxidant and chemical blend	Species: _____ Product / SDS: _____
Residual and reference method	Normal: _____ Upset: _____ Units: _____ Method: _____
Operating envelope	pH: _____ Temperature: _____ Pressure: _____ Conductivity: _____ Include units and upset conditions.
Matrix and interference review	Fiber / solids: _____ Color / deposits: _____ Other oxidants, reducing agents and additives: _____
Installation and controls	☐ In-pipe ☐ Immersion ☐ Side stream Isolation / access: _____ Signal / controller: _____

Fit review: what Halogen may contribute

Mechanical self-cleaning addresses sensing surfaces. Reagent-free, membrane-free measurement can reduce consumable tasks. Compatible direct mounting may reduce sample-line upkeep and transport delay. Confirm the model, materials and limits for the actual point.

Review before proceeding: bulk fibers, heavy solids, high-consistency stock, bleach liquor, aggressive cleaning, bromine, chlorine dioxide, blended or non-oxidizing biocides. Self-cleaning does not establish compatibility or prevent every blockage.

Chemistry / materials review completed by and unresolved questions

Define a pilot you can evaluate

Agree on duration, reference method and acceptance criteria before installation. Include dosing cycles, furnish or grade changes, and shutdown/restart conditions relevant to this point.

Pilot dates / baseline period / operating conditions to include

Measure	Acceptance target agreed by the mill
Reference agreement	Method / species: _____ Allowed difference: _____ Units: _____ Check frequency: _____ Reviewer: _____
Usable data	Valid-data hours / scheduled monitoring hours: _____ % minimum Define invalid or stale data and service exclusions: _____
Response and delivery	Maximum useful delay: _____ How to verify: _____ Include sensor response, sample transport and data-system delay.
Service burden	Cleaning: _____ min/week Interventions: _____ per period Consumables / reference checks: _____
Alarm handling	Owner: _____ Confirmation test: _____ Response: _____ Loss-of-signal and suspect-reading procedure: _____

Paired-reading and intervention log

Time / event	Online / units	Reference / units	Action / minutes
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Keep the trial in monitoring mode until the measurement and complete control strategy are validated. Retain microbiological and process-quality checks; chlorine residual alone does not demonstrate biological control.

Make the go / no-go decision

Compare equivalent duties and operating periods. Separate measured service costs from unproven chemical or production savings.

Annualized service comparison	Current	Pilot estimate
Labor hours x loaded hourly rate	_____	_____
Consumables + verification materials	_____	_____
Sample water + disposal, where applicable	_____	_____
Total recurring cost (same basis)	_____	_____

Calculations: Annual labor = observed hours / observed operating days x expected annual operating days x hourly rate. Annual net benefit = current recurring cost minus proposed recurring cost. Simple payback = installed cost / positive annual net benefit. If benefit is zero or negative, there is no positive simple payback on this basis.

Include installation, controller, integration and training in installed cost. Do not extrapolate an unrepresentative short trial; show assumptions and uncertainty. Count chemical, downtime or quality benefits only when separately demonstrated.

Decision and next step

☐ Proceed ☐ Extend trial ☐ Change location / configuration ☐ Not suitable

Reason / unresolved risks / approver / date

Bring to Halogen: point sketch, treatment chemistry and SDS, normal/upset ranges, solids and deposits, paired results, service log, required signal and acceptance criteria.

Request a mill-water application review

[Open the monitoring-kit page and contact Halogen](#)

Phone: (775) 347-0780

References and scope

Buckman: [Microbiological Control](#) - mill treatment and monitoring context.

Solenis: [Microbiological Control Agents](#) - deposits and diverse biocide chemistries.

Halogen: [SensiCLEN](#) - sensing-surface cleaning; verify model-specific documentation.

Supplier background is not evidence of Halogen performance in your mill. This planning aid does not establish process suitability, safety or regulatory compliance.