
Visual AI for Industrial Wastewater Monitoring

How existing cameras can become visual fluid sensors without replacing validated measurement or operator judgment.

Executive summary

Industrial wastewater teams already use cameras to understand what is happening in tanks, pits, channels, DAF units, and discharge areas. ABYSS turns suitable camera footage into a visual monitoring layer for fluid movement and visible surface anomaly candidates.

What ABYSS reviews

- Foam, scum, oil-film candidates, turbidity appearance, level change, visible flow behavior, and camera health.
- Evidence frames, timestamps, and candidate categories for human review.

ABYSS is not a replacement for compliance measurement, official sampling, or final operator judgment.

Why cameras add value

Point sensors explain values

Turbidity, pH, level, flow, and other sensors are essential for numeric measurement and control. They remain the source of truth for validated values and compliance workflows.

Cameras explain scene context

Camera footage can show whether a surface is foaming, whether scum is collecting, whether a sheen-like candidate appears, or whether a flow pattern visually changed.

Visual AI narrows review burden

The practical value is not that AI makes a final decision. The value is that it can narrow which camera, timestamp, and visible condition should be reviewed, recorded, or escalated.

Start with one asset, one visible anomaly, and one operational decision.

PoC readiness checklist

Camera and footage conditions

- Can an experienced human see the target cue in the footage?
- Is the target liquid area large enough in the frame?
- Is the camera fixed enough to compare normal and abnormal scenes?
- Are glare, rain, fog, shadows, night visibility, lens dirt, and reflections manageable?
- Can short normal, abnormal, and borderline clips be reviewed after NDA when needed?

Operational conditions

- Who reviews the candidate?
- What action follows: patrol, notification, record creation, or a manual check?
- Which sensor or SCADA signals should remain the source of truth?

Reference links

Useful pages

Visual AI guide: <https://itumo.app/en/resources/visual-ai-for-wastewater-monitoring.html>

Camera AI vs sensors:

<https://itumo.app/en/resources/camera-ai-vs-water-quality-sensors.html>

Camera checklist: <https://itumo.app/en/resources/ai-camera-monitoring-checklist.html>

Industrial wastewater solution:

<https://itumo.app/en/solutions/industrial-wastewater-camera-monitoring.html>

Next step

A first application discussion can happen without footage or drawings. Clarify the target facility, visible anomaly, camera availability, and operational decision first.

<https://itumo.app/en/consultation.html>