

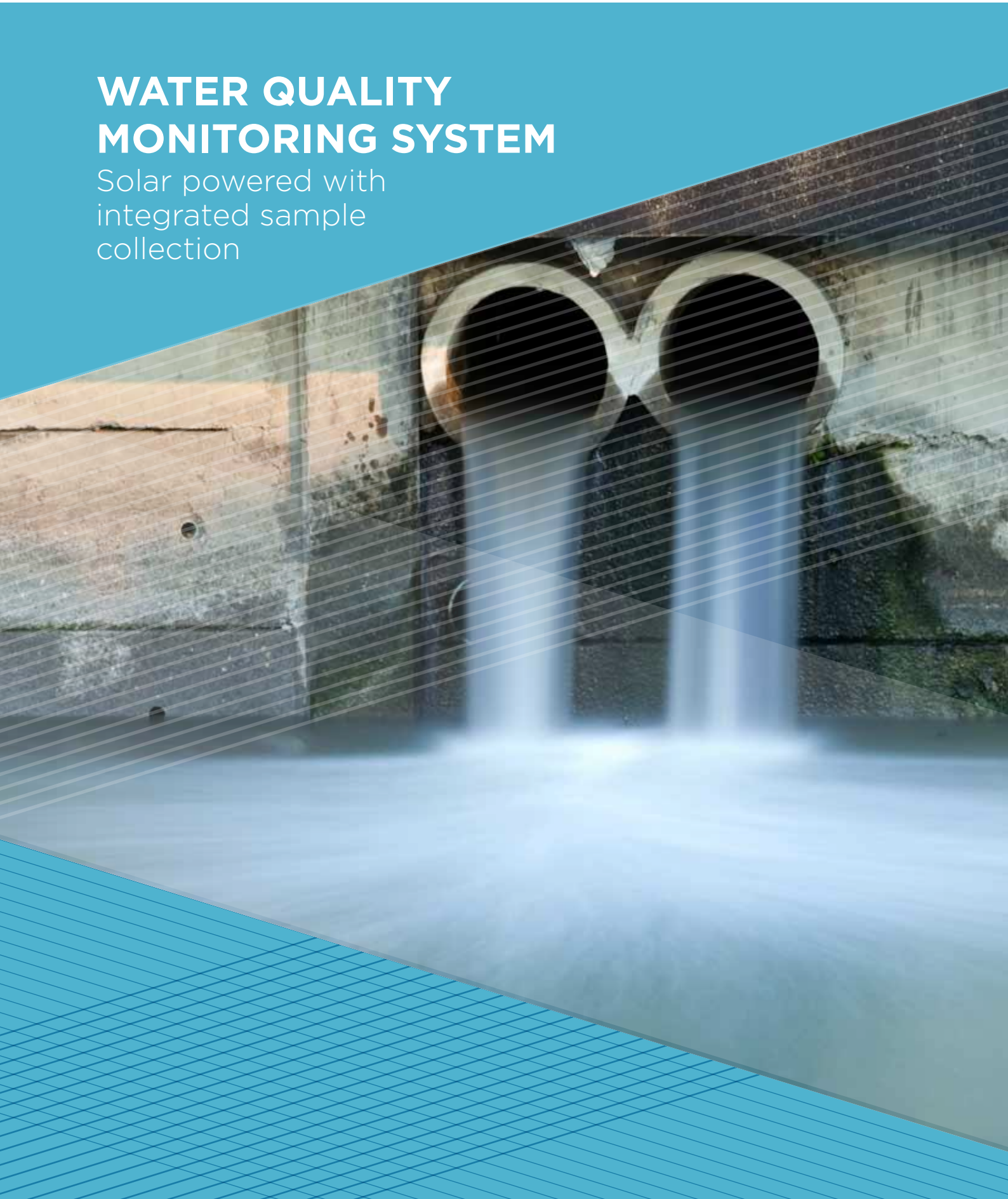


ecotech

environmental monitoring solutions

WATER QUALITY MONITORING SYSTEM

Solar powered with
integrated sample
collection



AUSTRALIA IS THE DRIEST INHABITED CONTINENT. WATER QUALITY IS EVERYONE'S CONCERN.



Australia's climate makes it vulnerable to drought and as a result, industries are becoming more concerned with not just monitoring water usage, but also the levels of pollutants that may enter waterways as a result of their processes.

One aspect of water quality management is the monitoring and sampling of stormwater runoff, which could contain a higher level of pollutants such as oils, petrochemicals, asbestos, lead, mercury, phosphates and nitrates. As a result, stormwater management plans are becoming common for construction and industrial sites. However it is a concern to any industry where there is a potential issue of runoff or discharge.

Stormwater first flush pollution occurs when the pollutants are dislodged by rainfall and enter into the creeks and river systems which then flow into lakes and oceans, potentially causing harm to people and the environment. The initial first flush can hold significantly higher levels of pollutants which can cause exceedence and transboundary pollution.

Attention needs to focus on monitoring the levels of the first flush pollutants to determine not just the levels of pollutants but also the rainfall trigger level which initiates this effect. On a rain event, a sampling station can be triggered to take samples on first flush at differing rain levels to capture the build-up of pollutants and allow mitigation and pre-empt environmental or compliance issues.

WHO NEEDS TO REGULATE?

Mine site operators must follow strict regulations when it comes to monitoring pollutants in the water. When it rains, dams can fill and the mine operators may need to discharge overflow into creeks. In order to safely do so, they need to analyse the water to ensure it is within compliance levels. Samples can be taken to ensure parameters such as nitrates, phosphates or hydrocarbons are within limits post discharge event. If in-situ sensors show acceptable ranges via the in-built web display then operators can authorise discharge with confidence.

The transportation industry e.g. airports and rail operators have stormwater management plans which are designed to prevent, eliminate and reduce the discharge of polluted stormwater. Recently, one airport in Australia installed Ecotech's water quality monitoring systems to automate the sampling and monitoring of first flush pollution.



WHAT CAN WQMS DO TO HELP SOLVE THE WATER PROBLEM?

Engineered to be nomadic, power self-sufficient, rugged, secure and with low maintenance requirement, the Ecotech Water Quality Monitoring Station (WQMS) is the ideal system to measure and sample water discharge or run-off. This system automates monitoring and collection then notifies when a sample collection is made or exceedence level measured.

HOW IT WORKS

- The rain gauge or flow/level sensor takes continuous measurements at regular intervals and reports to the station data logger,
- The system is also fully customisable to include water quality sensors as the situation may require
- Once a pre-set level has been reached, the data logger will trigger the automatic sampler to either grab one or multiple samples,
- If the sampler is refrigerated, the sampler cooling system will be activated,
- An email / SMS will be sent notifying interested parties of a sample grab event, allowing sample collection within the required time frame,
- The sample can then be collected and taken to a lab for further analysis and the system reset awaiting another trigger event.

Don't know what rainfall trigger level to set? The Ecotech WQMS solves this problem by being fully flexible by utilising multiple bottles (up to 24) set at different trigger levels to ensure all events are captured.

Each WQMS comprises of the following:

- Full system housing
- Stainless steel or hot dip galvanised instrument enclosure
- Datalogger with web accessible data presentation
- 3G/4G modem with antenna (other communication solutions available)
- Solar power kit, including panel, regulator and brackets
- Backup battery and enclosure to suit >3 days of no solar input
- Automated water sampler

Options

- Physiochemical water quality sensors. Additional sensor capacity to monitor pH, Conductivity, Dissolved Oxygen, Turbidity, Suspended Solids, Temperature and more!
- Refrigerated or non-refrigerated
- Portable water sampler with up to 24 bottles
- Tipping bucket rain gauge, flow or level sensor
- SMS or email via ERS data service

Combined with Ecotech's powerful Airodis™ data collection, validation and reporting software, the system automatically collects and displays continuous real-time data.

Features

- Solar powered. Place it anywhere!
- 3 day (standard) to 7 day (optional) battery backup
- USB memory for easy data and program transfer
- Remote communications via 3G telemetry
- Web interface
- Expandable number of sensor channels
- 1, 4, 12, 24 bottle sampling on triggering from rain / flow / water quality sensors
- 3-7 backup battery supply

WHY ECOTECH?

Ecotech is one of the world's leading manufacturers of environmental monitoring systems. What sets us apart from the crowd is that we operate the systems we build so we can truly say we understand the needs of the technicians, consultants, engineers and data operators who use our equipment on a daily basis. We have internationally recognised accreditation for quality, environmental management systems, blast monitoring and data reporting that provides peace of mind. Partnering with Ecotech for innovative environmental monitoring solutions is the right choice.



WQMS SPECIFICATIONS

DATA LOGGER

Sampling rate: 5sec to 24hr

Memory: 10,000,000 data points (128Mb)

Analogue sensor inputs: 6x two wire w/ common ref or 2x independent ref (optional 15x two wire w/ common ref)

Digital I/O: 4x (+ 1 Relay)

Counters: 4x (10Hz low speed max), 100kHz high speed max)

SDi-12 sensor inputs (optional): 10x

Modbus sensor inputs: Unlimited

Communication: Serial (RS-232, RS-485 Modbus, RS-422), Ethernet (TCP/IP, FTP, Modbus)

Command Interface: Access the ASCII command interface of the DT821 via TCP/IP

Web Server:

- Access current data and status from any web browser.
- Custom pages can be defined.
- Download data in CSV format.
- Command interface window.
- Define mimic displays.

Operating temperature range: -45...70° C

SAMPLER

Single sample volume accuracy:

- Vacuum system: < 2.5% or ±3 ml
- Peristaltic pump: ±5 % or ±5 ml

Suction height (vertical): Max. 6.5m (@ 1atm) optional: 8m

Pumping speed: >0.5 m/s at suction height <5m

Suction hose: PVC, 5m (l), 10mm (ID). Max hose length 30m

Sampling modes:

- Time-related, flow-dependent, event- related and manual sample extraction.
- Optional: flow-proportional

Interval setting: 1 min...100hr

Bottle variants: Option: 1 x 10L, 1x 25L, 2x13L, 4x5L, 16x1L, 24x1L

Operating temperature range: 0...45° C

Sample temperature range: 0...40° C

Standards: CE Sampling according to ISO 5667-2/3-10]

SYSTEM

Sensors available:

- pH, Electrical Conductivity, Dissolved Oxygen, Turbidity, Suspended Solids, Temperature, Rainfall, Flow, Level, Pressure
- Other sensors are available upon request



Solar panel capacity: 140W

Battery backup:

- 3x 105Ah gel cell batteries (standard)
- 7x 105Ah gel cell batteries (optional)

Shelter Material:

- Hot dipped galv steel
- Galv steel mesh (optional)

Instrument enclosure material: 316 Stainless Steel

Battery enclosure material: Hot dipped galv steel

Modem:

- 3G/NextG (standard)
- Radio/Satellite (optional)

Dimensions: 1.9m (l) x 1.3m (w) x 1.9m (h)

Weight: 470Kg



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