

SEDIMENT MANAGEMENT HANDBOOK

A GUIDE TO TURBID WATER
SOLUTIONS' PRODUCTS AND
SERVICES FOR TREATMENT
OF CONSTRUCTION SITE
STORMWATER

- GET TO KNOW HIGH EFFICIENCY
SEDIMENT (HES) BASINS
- SET YOUR SEDIMENT CONTROL TO
AUTO-PILOT
- TURBID WATER SOLUTIONS –
HASSLE-FREE



A close-up photograph of water splashing and creating bubbles, set against a blue background. The water is clear and bright, with many small bubbles rising from the splash.

turbid water solutions

Noun

**(of a liquid) transforming cloudy,
opaque or muddy into clean and clear**

CONTACT DETAILS

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TURBID WATER SOLUTIONS

“Sediment is a major issue affecting water quality and the health of our waterways, wetlands and bays.”

Graeme “Butch” Uechritz
(BApp. Sc (EnvMgt & Mar Biol))



Turbid Water Solutions (Turbid) was formed in 2012 to assist civil contractors deal with stormwater on their construction sites. We have seen first-hand the challenges and frustrations felt by contractors having to deal with stormwater to keep their sites operational and to satisfy environmental criteria.

We saw an opportunity to develop a new suite of solutions that make dealing with stormwater simple and efficient and allow contractors to keep the focus on completing their projects without delay and encumbrance.

Turbid is leading the industry with the highest quality treatment products and automated dosing systems to treat dirty stormwater. Our solutions and support services provide the construction and mining industries with an economical stormwater treatment system that removes the ‘hassle’ whilst protecting our waters from sediment overloading.

Turbid can design, build and operate (or any combination of) various sediment control solutions that take into account:

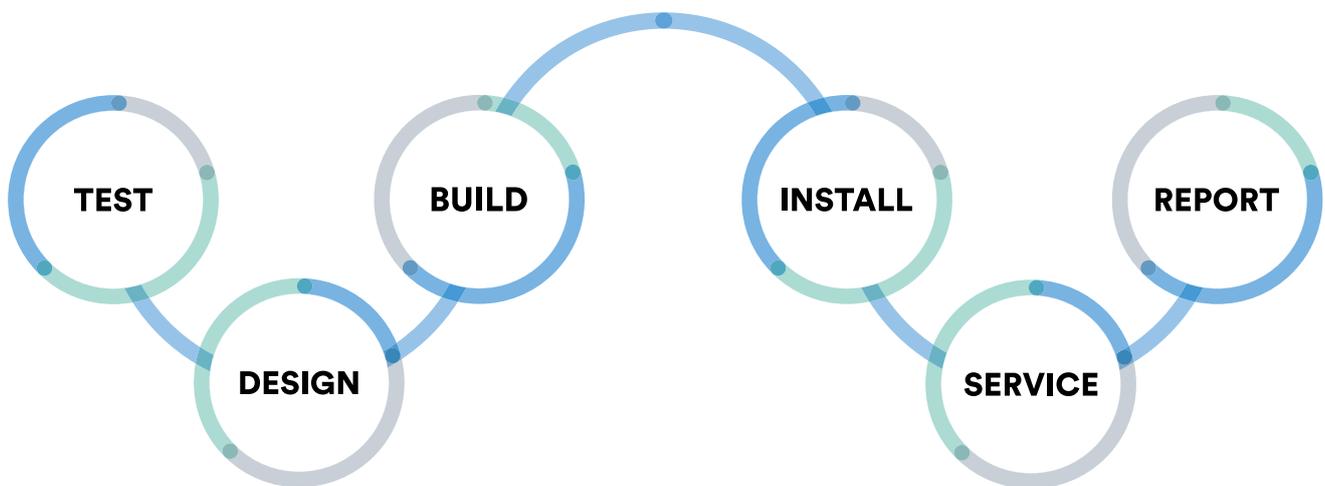
- variability in rainfall and the use of stored water as a resource,
- site specific constraints,
- site specific assets, and
- operational ability to achieve water quality targets.

In conjunction with developer and contractor needs, the most effective solution is designed prior to any groundworks occurring. Any temporary designs need to incorporate the final stormwater management strategy for the site to ensure a seamless transition between the construction and operational phases of the development.



TURBID STORMWATER PROCESS

TURBID HAS CREATED THE TURBID STORMWATER PROCESS WHICH EXPLAINS THE COMPLETE TREATMENT SOLUTION.



TEST

Testing soil and water ensures efficiency in design and treatment of the stormwater from a particular site.

DESIGN

Using the soil and water test, a specific treatment system design will be created for your site ensuring the most efficient & practical design is implemented.

BUILD

Build independently or assist a third-party contractor to ensure the highest quality product is delivered.

INSTALL

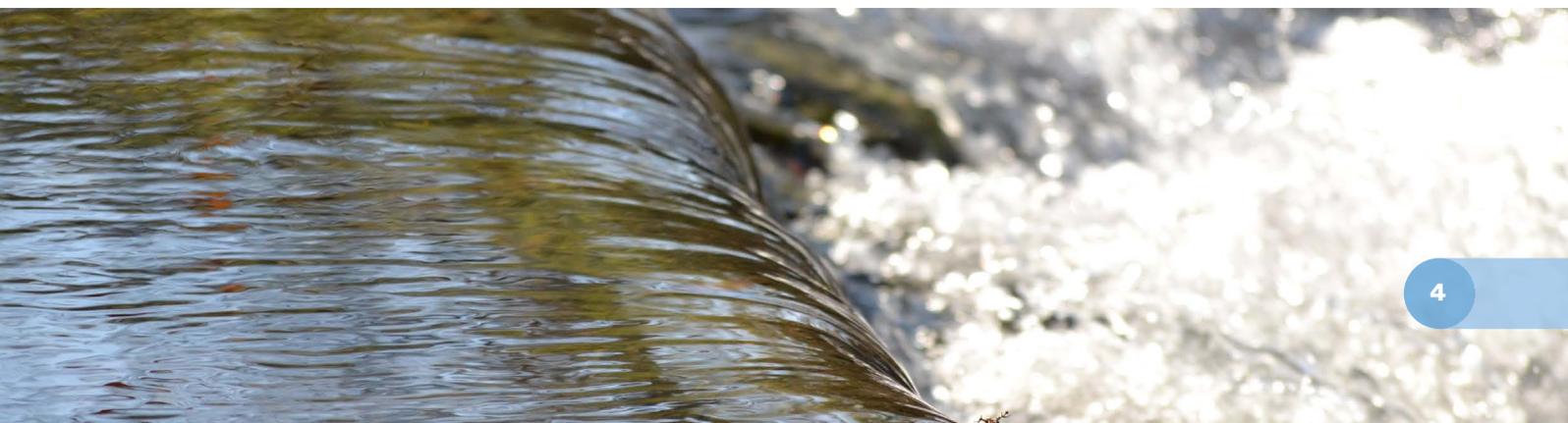
Trained personnel will install your treatment solution equipment ready for operation

SERVICE

Ensures the system is operationally sound and product levels are adequate until the next visitation.

REPORT

Monitoring can be implemented to ensure the system is achieving goals and the data collected is logged.



GET TO KNOW HIGH EFFICIENCY SEDIMENT BASINS

Turbid are leading the industry with the use of HES basins. These types of basins can:

- Significantly reduce the footprint (up to one fifth) of sediment controls for both temporary and longer termed construction activities.
- Improve environmental performance.
- Significantly reduce the frequency of turbid discharges off-site resulting in less complaints and less risk of enforcement from regulators.
- Provides a source of construction water.
- Reduce manual handling requirements resulting in lower costs for flocculation of basins and improved WH&S.
- When considered early as part of an integrated stormwater management approach it can minimise land take for permanent stormwater controls.
- Manage construction phase sediment loading risks to WSUD assets, thereby allowing WSUD assets to be constructed earlier, potentially saving time and money for developers.



Permanent HES basin (Landfill Site)



Temporary HES basin (Highway Construction)

SET YOUR SEDIMENT CONTROL TO AUTO-PILOT

Turbid's Stormwater Process means you can set your on-site sediment control to auto-pilot.

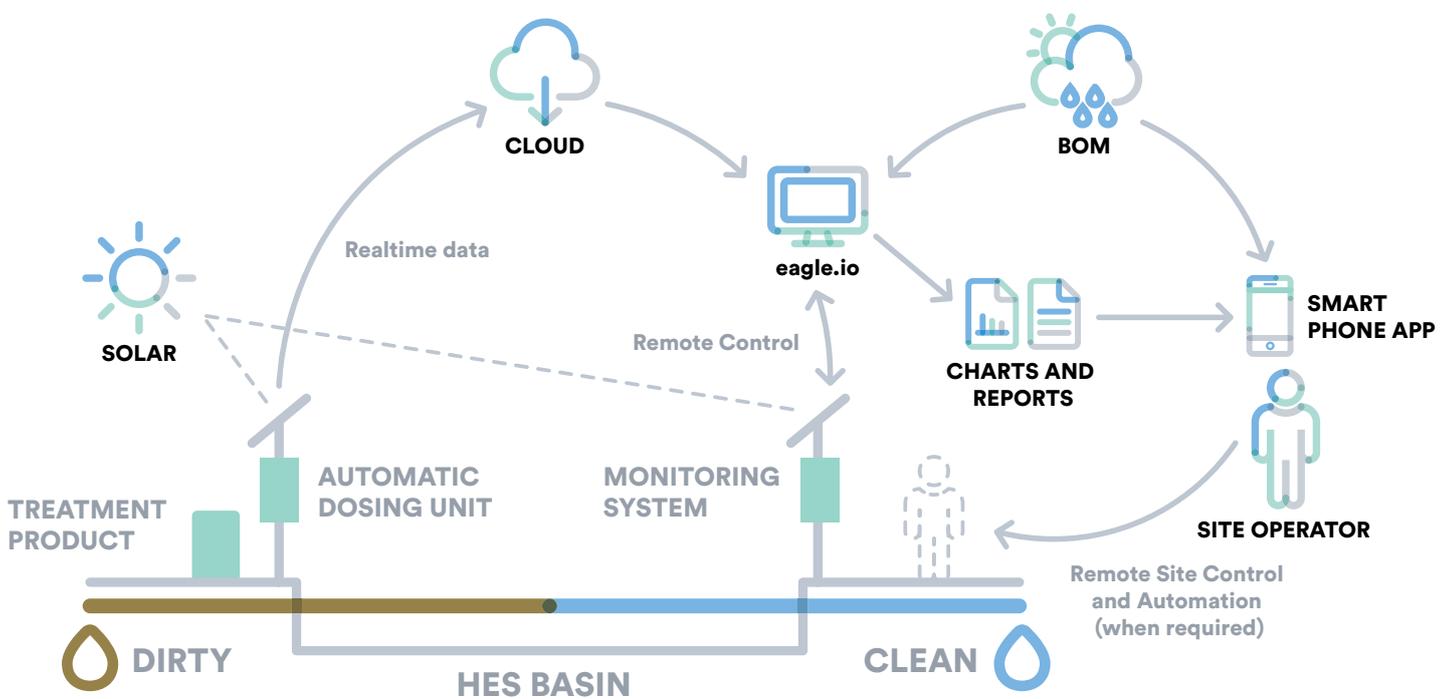
THE OLD WAY OF DOING THINGS

- Hand mixing coagulant
- Applying to basin
- Mixing
- Manual monitoring
- Risk of non-compliance at every stage

THE NEW WAY

- 24/7 auto dosing
- 24/7 pH and turbidity monitoring
- Real-time data collection & operator alerts
- Access sampling results remotely
- Remote site control & automation

Turbid® Water Solutions provide the complete Stormwater solutions with innovative designs, treatment and monitoring processes to ensure only clean water is leaving your site without hassle or restraints to your operations.



COMPLETE SEDIMENT CONTROL SOLUTIONS

TURBID WATER SOLUTIONS – HASSLE FREE SYSTEMS

AUTOMATIC DOSING UNITS

Turbid's range of automatic dosing systems provide fully automated accurate dosing of chemicals to treat water on site. Unlike manual methods, which require staff on site on holidays, weekends and potentially during rainfall events, Turbid's systems work when you don't want to.

ifod™ (intelligent flocculating operational device)

Turbid's range of ifods™ provide accurate dosing of highly effective products to treat water on construction sites. The ifod™ is a "box on post" design for light weight transportability and minimal storage and can be easily fixed to substrate and attached to an external chemical storage tank. It is ideal for sites without easy access to power as the ifod™ is equipped with a low voltage, solar charged battery for operation. It is also relocatable, so can be transferred to a different section of a site as required. The system has been designed to operate most effectively with our environmentally sensitive water treatment products.

The ifod™ will be installed and calibrated to your site by qualified personnel, eliminating the risk of overdosing your basin by site staff. In conjunction with effective treatment products and an HES basin, the ifod™ range offers a completely automated stormwater treatment system for your construction site either temporarily or for the longer term.

ifod-RAIN

The ifod-RAIN enables accurate dosing of treatment products during rainfall events. Dosing during rainfall ensures effective mixing avoiding the difficulty of treating a large full basin after rain. This ifod™ is based on an internal chipset interpreting rainfall from a tipping bucket rain gauge to monitor rainfall in real time and triggering dosing from a low voltage metering pump based on pre-set customised rules.

ifod-FLOW

The ifod-FLOW provides accurate dosing of treatment products utilising flow metres inside or above pipes, open drains or weirs. It will measure water flow, either generated from rain events or pumping on site, and accurately dose via a low voltage metering pump according to the run off volume entering the basin. This ifod™ can also be connected to water quality sensors for monitoring and control purposes and linked to our cloud based data platform for complete interoperability with our other systems.

ifod™ (intelligent flocculating operational device)



ifod-PUMP

The ifod-PUMP is a timer based dosing system that is ideal for dewatering on site. This ifod™ relies on a set flow rate flowing from either a pumpset or fixed flow pipework, for example into a sediment basin for treatment. It can be set up to be triggered either manually via a switch or automatically via sensors and uses a low voltage metering pump to accurately dose according to the set flow rate.

FLOC BOX

Turbid's Floc Box is a low cost, award-winning coagulant dispensing unit for treating sediment laden water on a construction site. Weighing in at just 45kg prior to the addition of coagulant, Turbid's Floc Box is easy to position and move around your site as and when required. The Floc Box uses rainfall captured on a catchment tray located on the top of the unit to control the displacement of a treatment product from the unit into the runoff stream entering the HES basin.

The simplicity of the Floc Box is its greatest feature requiring minimal human operation and involving no electronic or mechanical moving parts. With the catchment tray and header tank sitting below 1.2m high, maintenance, routine checks and alterations become the simplest of tasks.



Above: Calibrating the ifod™

Below: The Floc Box on-site



TREATMENT PRODUCTS

Turbid can provide a full suite of treatment products that can be used to remove sediment, metals, nutrients and pesticides from the water on site, prior to any discharges occurring. Our two key products include:

TURBICLEAR™

Turbiclear is a high quality, environmentally friendly, rapid acting coagulant for application to HES basins. Some key advantages are:

- Two to three times more effective than other coagulant agents. Lower dosing required.
- Easy to apply liquid – no dust like gypsum.
- Can be automatically dosed using the Turbid ifod™ and Floc Box, reducing the risk of overdosing.
- Excellent treated water clarity.

TURBIFLOC™

Turbifloc is a high quality, environmentally friendly, rapid acting flocculant for application to HES basins and other water treatment systems. Some key advantages are:

- Biodegradable – natural bio-polymer technology (Chitosan based).
- Easy to apply liquid.
- Forms large stable particles able to handle higher velocity environments.
- Can be automatically dosed with Turbid systems.

WATER QUALITY MONITORING + SAFETY CUT-OFF SYSTEM

For high risk sites or sites upstream of highly sensitive receiving environments, Turbid can install and maintain water quality monitoring systems for your construction activities. This provides real time readings, alerts and notifications remotely accessible at any time.

iqad™ (intelligent quality assurance device)

The iqad™ is a safety cut-off and monitoring system which utilises an internal microprocessor and logger to measure water quality parameters such as pH,

turbidity, electrical conductivity and dissolved oxygen. The iqad™ is a “box on post” design for light weight transportability and minimal storage and can be easily fixed to substrate. It is ideal for sites without easy access to power as the iqad™ is equipped with a low voltage solar charged battery for operation. It is also relocatable, so can be transferred to a different section of a site as required.

The iqad™ attaches to the discharge point of the basin and allows for the recording of the basin's discharges when occurring. The iqad™ can also control a power actuated butterfly valve installed on the discharge pipe to stop any water discharging that is not within parameters set in the site's license conditions. All information can be logged or exported from the controllers via telemetry to our cloud based data platform.

Below: The iqad™ on-site



CLOUD BASED DATA PLATFORM AND ANALYTICS

eagle.io

Turbid uses eagle.io's revolutionary cloud based data management, visualisation and remote-control platform. This forms an integral and enabling component of the monitoring stage of the Turbid stormwater solution.

eagle.io technology allows for a reliable, user friendly data and control platform to interrogate and manage turbid systems, which can save a lot of time and expense when treating water on site.

Turbid won the international Ovum on the Radar award in 2014 for Cloud and Infrastructure Transformation for use of eagle.io type technology in its stormwater treatment systems.



Above: Safety cut-off system

Below: Monitoring the HES basin

