



# EnviroHub

Simple and stress-free solutions  
for environmental protection





EnviroHub is a control system used by the quarrying and construction industries to monitor, treat, and report on water quality onsite.

With sites now required to provide proof of safe water disposal and water quality checks routinely being carried out by the Environment Agency, a robust monitoring system such as EnviroHub plays a vital role.







## Safe Water With Service

Founded on our client's feedback, EnviroHub is dedicated to implementing sound, sensible practices for permanent and temporary water management on sites, that reduce risk and protect our client's reputation.

We understand the day-to-day realities our customers face at site level, whilst also factoring in their company corporate aims and objectives. We bring these two strands together in proven, cost effective and sustainable solutions.

Each requirement has its own unique challenges, that's why we are on your journey from initial concept through to ongoing maintenance and support.





## Challenges That EnviroHub Can Solve

- Discharge water quality monitoring
- Silt, sediment and discoloured water
- pH imbalanced water
- Hydrocarbons in water
- Dissolved heavy metals
- Automated alerts & datalogging
- Needing an innovative bespoke solution



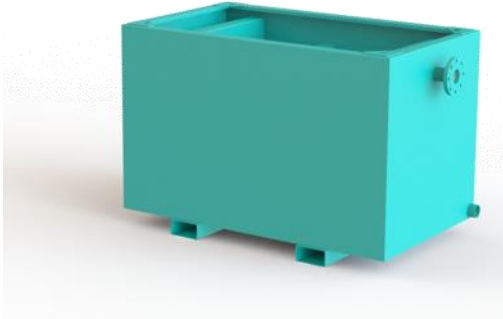


# EnviroHub Solutions

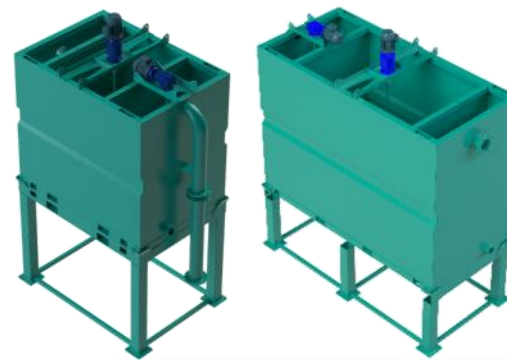
These units can be combined to create a bespoke solution to your site's water quality challenges.



Lamella Tanks



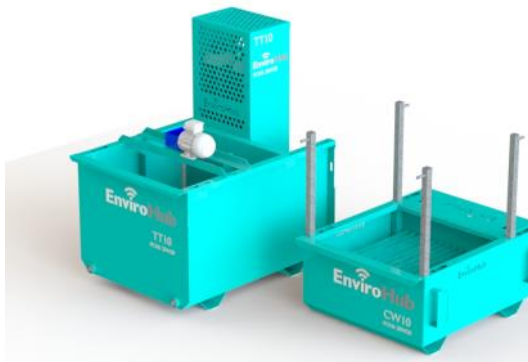
Settlement Tanks



Treatment Tanks



Correction Tank



Concrete Washout



Monitoring & Sampling



Dosing Unit



The Brain

## Applications

# Silt, Sediment and Discoloured Water

### What they are

- This is the most common form of contamination, found on many sites.
- This is when the water contains fine sand, silt and clay type particles in suspension. This type of pollution is easily visible and is very traceable.
- Heavier particles such as sand settle very quickly, these are rapidly settling solids, whereas fine clay particles are so fine they don't settle even when the water is left stagnant for long periods. They require chemicals such as coagulants and flocculants to help them 'clump' together to settle out.

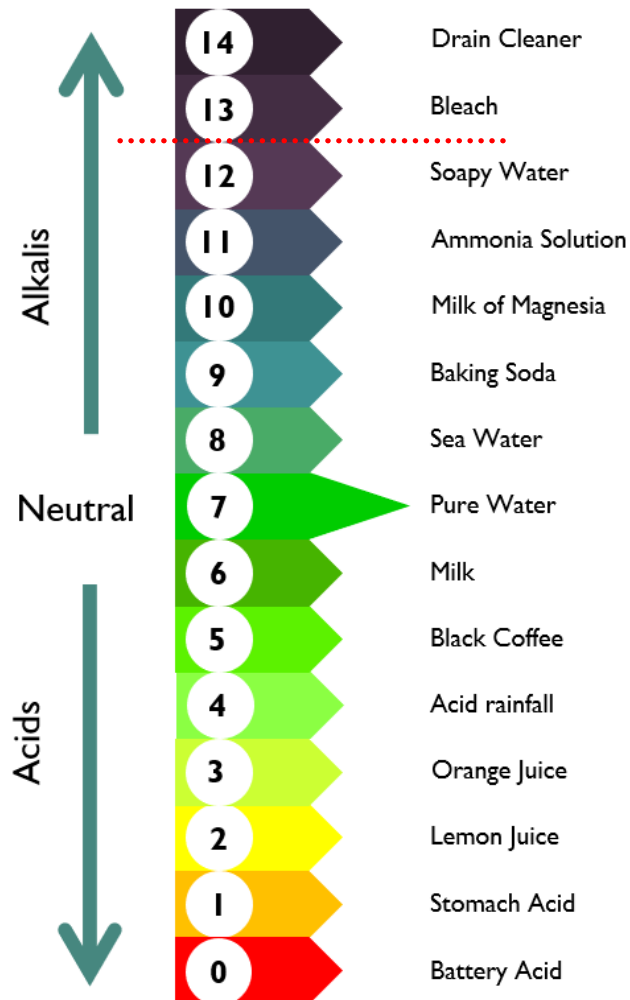
### Where it comes from

- Surface water runoff from yards or processing plant areas
- Quarry dewatering and temporary excavations
- Process water from treatment systems
- Washdown of equipment

### How you treat it

- Treating solids in water depends on the type of solids and the flow rate required (how fast you want to discharge it). For rapidly settling solids and where 'visually' clear water isn't the priority, a basic settlement tank like an ST30 or ST50 is suitable. However, if you require visually clean water, additional chemicals may be required to help achieve this.
- For larger volumes and to achieve visually clean water, the lamella clarifier tanks (e.g. HL20, HL40-R & HL50) are used in conjunction with the treatment tanks (TT50 & TT100) and dosing units (TU20).
- There are also options such as silt trap socks and water polishing medias that can be used in more tricky situations.





**Above:** red line denotes concrete water

## pH Imbalanced Waters

### What they are

- Water with a pH that is above 8 or below 6 is typically classed as not safe for discharge to surface water (rivers, streams, lakes etc.). For foul drainage below 6 or above 10 is generally not permitted.
- pH imbalanced water comes from activities where the water comes into contact with a contaminant that changes the pH. This must be corrected before it can be discharged off site.
- A pH imbalance in water is not necessarily visible; the water can look very clean, but can be a serious health risk to humans and the environment.

### Where they come from

- Concreting and washing down concreting equipment, grouting and hydrodemolition works
- Dewatering in acidic or alkaline rock works areas
- Remediation on contaminated land reclamation sites

### How you treat them

- Concrete wash down or hydrodemolition activity can use treatment tanks such as the CW10 and TT10 to treat the water. These use CO<sub>2</sub> gas or acid to correct the pH. This is an automated process.
- Large volumes of water will require larger tanks such as the TT50 or TT100 in conjunction with a TU20 or CO<sub>2</sub> gas dosing systems, depending on what pH correction is required.
- Correcting pH can be very sensitive – it is important not to overdose which would cause the pH to imbalance to opposite extremes.



## Applications

# Hydrocarbons in Water



Above: An EnviroHub Lamella Tank

## What they are

- A less common form of organic contamination, this is for example where water contains petroleum based oils or fuels.
- There are 'dense' and 'light' hydrocarbons, the dense generally settle out with other solids, whilst the light may float, so sometimes they can be skimmed off the water surface. Often further treatment is required to remove them from the water.
- Hydrocarbons are generally visible in water. Left untreated they can have very damaging effects on nature, resulting in costly clean up and compensation charges.

## Where it comes from

- Land remediation activity of old contaminated sites.
- Process plant effluent where a chemical has been used as part of the process.
- Spills and incident clean up and remediation.

## How you treat it

- The removal of hydrocarbons depends on the type, the volume in the contaminant and the volume of water in total.
- Light hydrocarbons can often be removed using a surface extraction bowl or skimmer. Likewise, dense hydrocarbons may settle out of the water and be able to be extracted as a sludge. However, frequently they can 'clump' or disperse through the water meaning they require more specialist treatment to remove them.
- Typically for simple applications the EnviroHub lamella clarifiers can remove both dense and light hydrocarbons. For more challenging applications a Dissolved Air Flootation (DAF) treatment system may be required, this essentially aerates the water and allows the fine air particles to attach to the unwanted contaminants and lift them to the surface so they can be skimmed off.



# Heavy Metals

## What they are

- A less common form of mineral contamination, for example where water contains iron, nickel, copper or lead.
- This happens when the metals are present on site and are exposed to water or extreme weathering; they leach away and end up polluting the watercourses.
- Heavy metals are generally in solid form, and as fine particles can form part of a sludge or soil. However, when they come into contact with water that has a greater extreme of pH, the metals dissolve into the water and remain in suspension.
- Metal contamination cannot always be seen. If the water is heavily agitated the metal particles sometimes oxidize, which is when discolouration is seen in the water.

## Where it comes from

- Remediation of contaminated sites or works on metal-coating plants or steelworks.
- Excavation in certain rock types for example shale or terrace gravel.
- Mining and tunnelling water extraction.

## How you treat it

- The removal of heavy metals is a staged process and depends on the type of metal that needs removal. If metal concentrations are not removed, they can be fatal to humans and wildlife.
- Treatment is typically done by adjusting the pH to the required level, using a TT50 or TT10 treatment tank, then adding chemicals to assist with the removal of the now solid particles. Once passed through a lamella clarifier to remove the solids, the water can then be finally corrected to a neutral pH so it is suitable for discharging.
- Sludge from this process is metal rich and must then be treated as contaminated. It can be further treated using a centrifuge or filter press to remove more water and make the sludge into a harder cake so it is safer to transport off site.





# Monitoring and Reporting

---

### The EnviroHub Monitoring System

- Takes readings of water quality such as pH level or levels of suspended solids in the water.
- Transmits data to a live data online portal.
- Sends text and email alerts to warn operatives of water condition, pre-empting any breach of conditions.
- Sends commands to equipment such as pumps or valves to turn off in the event of poor quality.

### Protecting Your Reputation

- Every site discharging water, whether temporarily or permanently, must meet the consent constraints as set out by the permitting authority.
- Manual monitoring is not only demanding but is also susceptible to incorrect data or data deficiency at the time of need.
- It is a legal offence to distribute poor quality water outside of the consent constraints – poor data and negligence can lead to large fines and reputation damage.





# EnviroHub Control Module & EnviroHub Online Portal



## EnviroHub Control Module

The EnviroHub Control Module is a miniaturised control panel for use with EnviroHub systems. It can be programmed for a large array of water monitoring and control purposes and is capable of returning data to central EnviroHub servers.

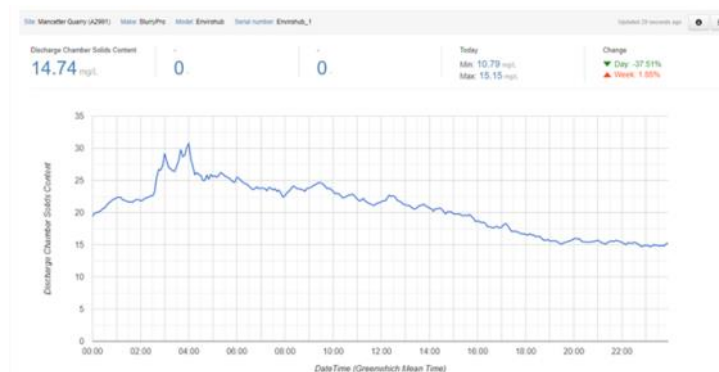
- Very compact water-proof enclosure – 230 x 190 x 80mm
- Inputs:
  - a. 2x pH probes
  - b. Turbidity probe
  - c. Flow meter
  - d. 8x multipurpose – such as float switches etc
  - e. Temperature
  - f. GPS positioning
- Outputs:
  - a. 8x multipurpose – such as valve or pump control etc
- Runs on 415, 230, 110 or 12v power supply
- The telemetry gateway that goes with this gives it a long-range capability for data transmission
- Text or email alert warnings when approaching or in breach of any parameter set

## EnviroHub Online Portal

Access your EnviroHub data from anywhere with our secure online portal.

### Levels of Management Access:

- Management level: can view all their sites on the system and a score/activity log of each site.
- Site Manager level: can view their own site, with score and activity logs. Also reports such as the PDF week view or CSV data log can be downloaded.
- View graphs, change timelines, performance score and max/min levels for each probe.
- View from anywhere at any time.
- You get real time reports, alerts and insight into what is happening without having to be there.





# Concrete Washout



### CW10

- Frame supports standard one ton builders bag
- Separates aggregate and silt from water
- Approx 300ltrs of onboard water holding capacity
- Provision for pump to remove water to TT10
- Bag supports storage on side of tank
- Fork pockets and lifting points



### TT10

- pH correction unit
- Removable agitator
- CO2 or Acid enclosure with lock
- 1m3 water holding capacity
- 110v power supply required
- Fork pockets and lifting points
- Option to have pump and hose onboard to enable reuse of water

# Lamella Tanks

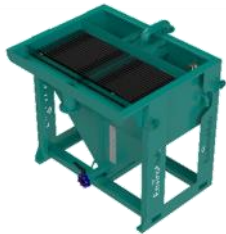


## HL10

- 10m<sup>2</sup> of effective settling area
- 10m<sup>3</sup> per hour settlement capacity
- 4" Feed and discharge pipe fittings

## Standard Features

- Manual valve on sludge remove OR can be used with peristaltic
- Includes hydrocarbon removal funnel for smaller amounts of diesel and light oils etc.
- Vision panel to see sludge level in tank
- Fork pockets and lifting points



## HL20

- 20m<sup>2</sup> of effective settling area
- 20m<sup>3</sup> per hour settlement capacity
- 6" Feed and discharge pipe fittings



## HL40-R

- 40m<sup>2</sup> of effective settling area
- 40m<sup>3</sup> per hour settlement capacity
- 6" Feed and discharge pipe fittings
- Internal sludge rake fitted for such as sand applications



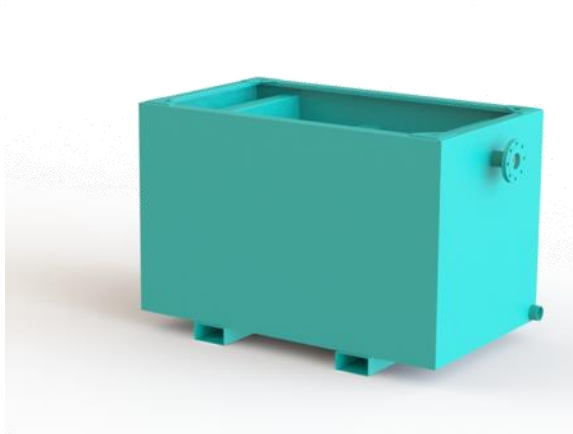
## HL50

- 50m<sup>2</sup> of effective settling area
- 50m<sup>3</sup> per hour settlement capacity
- 6" Feed and discharge pipe fittings



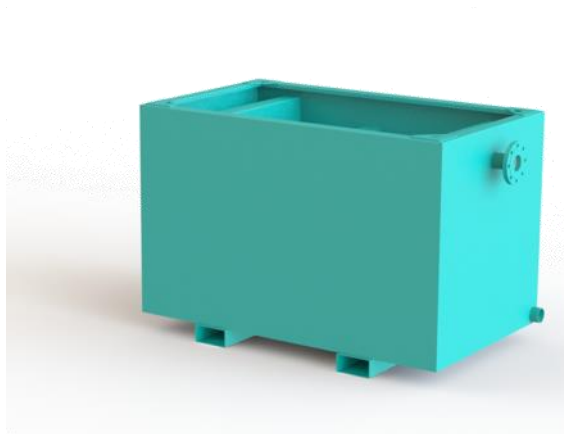
# Settlement Tanks

---



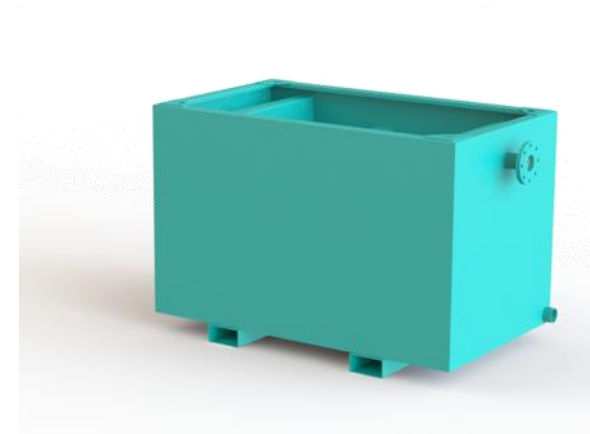
ST30

- 3.0m<sup>3</sup> Treatment capacity
- Will process circa 20m<sup>3</sup> per hour of water
- 2" Feed and discharge pipe fittings
- One central weir plate
- Fork pockets and lifting points



ST50

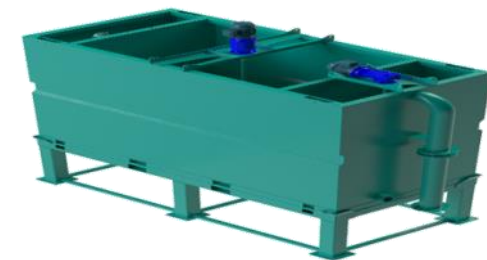
- 5.0m<sup>3</sup> Treatment capacity
- Will process circa 30m<sup>3</sup> per hour of water
- 6" Feed and discharge pipe fittings
- One central weir plate
- Fork pockets and lifting points



ST100

- 10.0m<sup>3</sup> Treatment capacity
- Will process circa 60m<sup>3</sup> per hour of water
- 6" Feed and discharge pipe fittings
- One central weir plate
- Fork pockets and lifting points

# Treatment Tanks



## TT30

- 3.0m<sup>3</sup> Treatment capacity
- Will process circa 20m<sup>3</sup> per hour of water
- 2" Feed and discharge pipe fittings

## TT50

- 5.0m<sup>3</sup> Treatment capacity
- Will process circa 30m<sup>3</sup> per hour of water
- 6" Feed and discharge pipe fittings

## TT100

- 10.0m<sup>3</sup> Treatment capacity
- Will process circa 60m<sup>3</sup> per hour of water
- 6" Feed and discharge pipe fittings

## Bigger

- 30.0m<sup>3</sup> Treatment capacity
- Will process circa 180m<sup>3</sup> per hour of water
- 8" Feed and discharge pipe fittings

## Standard Features:

- 2no removable agitator units
- One central weir plate
- Fork pockets and lifting points
- Support stand is separate item, but elevates the tank so the discharge outlet is approx. 2.5m above ground level, so it gravity feeds into a lamella tank



## Correction Tanks



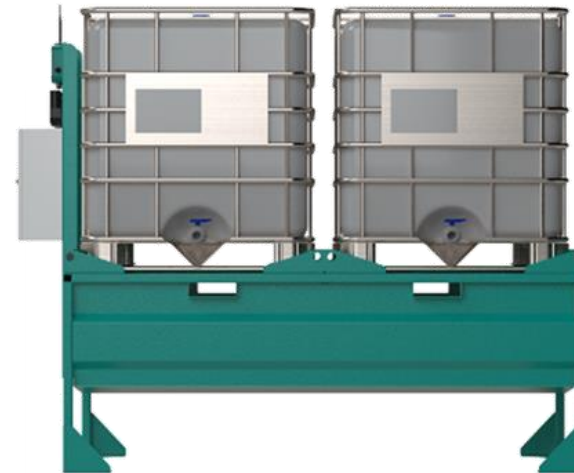
### CT10

The CT10 is designed to treat water that requires pH adjustment by various methods.

- Full monitoring of water quality
- Suitable for all wastewater applications which require pH correction
- pH neutralisation by various methods
- Easy to move around via chain lift or fork pockets
- Continuous flow operation minimal intervention required
- Reporting on water quality daily or weekly (optional)

## Dosing Units

---



TU20

- 2no IBC of reagent storage capacity
- Sufficiently bunded to prevent spillage
- Onboard enclosure for dosing pumps (peristaltic)
- On board control to ensure correct proportionate dosing
  - Automated alert when IBCs near empty
  - Fork pockets and lifting points



# Case Studies

## Case Study 1

### Application:

Lagoon maintenance

### Situation:

The client needed to empty a surface water settlement lagoon that was collecting water from highways drainage. This lagoon filters the solids and hydrocarbons prior to releasing into a nearby brook. The lagoon needed emptying to enable silt removal and repair work, which not only meant dewatering the contaminated water in the lagoon but also providing a continual by-pass for the brook inflows.

As the work commenced the water needed treatment to remove suspended solids and allow for the removal of light hydrocarbons, to ensure that there was no pollution discharged into a nearby SSSI site (Site of Specific Scientific Interest).

### Solution:

Using a series of lamella tanks with onboard oil removal syphons, all the discharge water left the site free of solids and hydrocarbons.

### Outcome:

The highly contaminated water was safely cleaned and discharged into the nearby brook well within the parameters required by the consent permit. This significantly reduced the very costly risk to the client of polluting a SSSI site.

## Case Study 2

### Application:

Process water effluent – precast plant

### Situation:

On completion of each day, the client washes off all equipment, moulds etc and hoses down the floor in preparation for the next. This water, averaging 20m<sup>3</sup> per day, because of its contact with cement-based slurry products, contains a high suspended solids content and is highly alkaline. Added to this, the large storage and curing area have a high runoff during rainfall events. This runoff ends up in the same settlement tanks.

This water is a contaminated waste product, requiring routine maintenance in the removal and disposal of silt. The 120m<sup>3</sup> settlement tank is a significant health and safety issue.

### Solution:

By installing a treatment system consisting of a treatment tank for pH reduction and water conditioning, a lamella settlement tank to remove solids and a water quality monitoring and correction tank, the water is transformed from a contaminated waste to a safe reusable asset.

This process not only enables the water to be reused in the batching process, but is also within the specification of the discharge consent for safe discharge from site.

As part of the installation of this system, the settlement tank was reduced from 120m<sup>3</sup> to 45m<sup>3</sup>, with safety measures put in place to protect personnel, and a 10,000-litre clean water tank was installed to store clean water ready for reuse.

The system is installed for total automation, using its onboard diagnostics system to report to the site operatives on water quality, consumable restocking requirements and system status troubleshooting.

### Outcome:

The client could now discharge water from site within specification, but more importantly they closed the loop, recycling water on site and hugely reducing contaminated waste disposal a) saving them a significant waste budget and b) treating waste at source to reduce the volume, contamination grade and carbon footprint of the waste.



## Compliance and Legislation

### Make Sure Your Site Complies With the Law

The best practise for quarries or construction sites is to discharge off site under the Environment Agency's 'Regulatory Position Statement' (RPS). This allows you to discharge water from your site, for a limited period of time, so long as it is mostly rain water and is of a suitably clean quality. However, if in doubt ask. Small risks have big impacts when it comes to water.

In the event that you have an excess of water and it is too contaminated to safely meet the constraints of the RPS, you should then look at the option of applying for a bespoke consent to discharge permit from either the Environment Agency or your local water authority should you be looking to discharge to foul drains.

Typically, if you need to treat the water through a process to make it suitable to discharge safely, you must have a consent permit in place.

### Plan Ahead for Peace of Mind

The number one money saver on a project is to plan ahead if you foresee water related issues. Applying for a permit can be costly and take 6 to 9 months to get approval.

There is no second plea for not knowing, negligence claims are costly both monetarily and for your company reputation. But if you are planning ahead and taking precautionary measures you have a case to mitigate that claim.

### Monitor Continuously and Keep Records

With sites now required to provide proof of safe water disposal and water quality checks routinely being carried out by the Environment Agency, a robust monitoring system such as EnviroHub plays a vital role. In addition to monitoring and reporting water quality onsite, EnviroHub can inform the site if the water is unsafe to be disposed of and can automatically intervene.





T. 01246 284 420  
E. [info@atlanticpumps.co.uk](mailto:info@atlanticpumps.co.uk)

Proving that corporate success and  
environmental protection can go  
hand in hand

EnviroHub is an Atlantic Pumps brand and is part of the Intrax Global Group. Atlantic Pumps Ltd is a Limited Company registered in England number 09400148. Registered Office: Atlantic Pumps, Unit 21 Prospect House, Colliery Close, Staveley, Derbyshire, United Kingdom, S43 3QE.