

Ian Holyoake – submitter
Late submission to s42A Strikethrough

TSS deposition into water from stormwater infrastructure.
Gross Pollutant Traps

16 April 2025 amended 30 April 2025

Late Submission as granted by panel on 1 April 2025

The panel specifically allowed me to provide commentary on the Whangamata stormwater once a trial GPT had been opened. This took place on 8 April 2025. I thank the panel for this leniency.

The significance of this late submission has only recently been understood – amended on 30 April 2025.

Background:

Each Territorial Authority manages (often a number of) stormwater discharge certificates granted by WRC within RMA called Comprehensive Stormwater Discharge Consents (CSDC).

Extracts from TCDC 2018-2020 CSDC Annual Report to WRC under all of the CSDC:

Thames-Coromandel District Council holds eight Comprehensive Stormwater Discharge Consents:

- *Thames Urban Area (Consent 122521)*
- *Pauanui Urban Area (Consent 105661)*
- *Coromandel Urban Area (Consent 105663)*
- *Tairua Urban Area (Consent 105664)*
- *Whitianga Urban Area (Consent 105665)*
- *Onemana Urban Area (Consent 105666)*
- *Whangamata Urban Area (Consent 105667)*
- *Thames Coast Urban Area (Consent 105668)*

Condition 6 of each individual consent requires an Annual Report for the year ending 30th June by 30th September each year. The 2018-2019 Annual Report was not submitted and, as agreed with Waikato Regional Council, is included in this report which also includes the 2019-2020 Annual Report.

Page 5 of the Annual Report includes these statements in relation to Whangamata Urban Catchment Area (Consent 105667):

2019-2020

Major Works

- *Williamson Park Stormwater Improvements – Installation of 1050 mm diameter culverts to increase the capacity and efficiency of the existing pipe network. This network discharges into the Williamson Park pond which is a treatment device.*

Proposed Infrastructure Works

- Port Road Stormwater Improvements – Replacement of the existing pipes and the installation of a stormwater treatment device to collect gross pollutants down to 5 mm.

Page 6 Monitoring:

c) Monitoring Summary

The current stormwater monitoring programme prepared by KTB Planning has identified 15 sites across the Peninsula to form the stormwater monitoring programme. Thirteen of the sites have been selected to ensure monitoring is focussed on high risk catchments and / or catchments that contain high risk activities. The other two sites have been selected at or near discharges from medium to low density residential areas to use as control sites.

The framework developed for the stormwater monitoring programme is based on carrying out the following assessments of the receiving environment at stormwater outlets:

- Visual inspection
- Sediment quality
- Ecosystem health.

The framework requires the visual inspection to be carried out during January and May every year, with the sediment quality and ecosystem health assessment scheduled four-yearly (beginning in 2014) during January / February.

The following is a summary of the latest assessments.

i. Visual Monitoring Results

2018-2019

No visual inspection was carried out in 2019.

2019-2020

Site 13, Lindsey Road, Whangamata: ponding downstream of outfall due to buildup of material in channel noted during February inspection. Channel cleared by time of June inspection, but ponding remained.

Page 7 Sediment Sampling Results:

ii. Sediment Sampling Results

The four-yearly sediment sampling was carried out during February 2018. Samples were collected by Veolia staff and sent to R J Hill Laboratories Limited, Hamilton for analysis.

Analysis of the 2018 results suggests little change from the 2014 results.

Hydrocarbon results are only marginally changed in all sites with none of the sites exceeding the ISQG-High value for hydrocarbons.....

In terms of the metal analysis, significant changes are evident in Whangamata where sites previously recorded with values above ISQG-Low have returned results below the threshold. This is particularly the case for site 12, Aicken Road, Whangamata where values for recoverable lead and zinc are now below the ISQG-Low value, whereas in 2014 they were above.

Recent TCDC stormwater works for this discussion document:

TCDC decided in 2023 to install two GPT SW360 Cascade Separators under what has been described as a stormwater treatment train. The treatment train is limited to road run-off. Houses are not connected to pipes. This is what I understand to be the treatment train:

- a) Swales in road reserves capture sand run off and vegetation – significant road side reserves are elevated so runoff and driveway runoff is discharged to roads

- b) Gutters (curb and channel) along roads capture and Marshall sand, vegetation and litter. Opus 2005 states these should be regularly swept especially in areas of sand blow up – this has never been done.
- c) Catchpits at between 1.8 and 2.0m depth connected to pipes and soakage devices to capture solids and litter to prevent entry to pipes – Opus 2005 requires these to be regularly maintained and KTB Planning 2013 state contracts are in place for regular yearly cleaning – not done. Records show cleaning is only done if RFS are received. There are no filter bags in catchpits.
- d) Two GPT SW360 Cascade Separator installed on 2 pipes within the Williamson Park. It is noted the SW360 literature states multiple entry pipes work but two were installed – first clean after an approximate September 2024 commissioning date. The GPT have not had a full year of service. NEW
- e) Williamson detention basin – approximately 0.17 Hectares. The purpose is claimed to be a final settling area for TSS but its more basic purpose would be to manage stormwater pipe discharge when King tide level is above the weir discharge pipe.
- f) Outlet pipe through weir to discharge into the Ocean. Basin level has been constructed below outlet level. Rain events below about 10mm seem to be absorbed along swales and pipes and don't get to the detention basin. Rain events greater than this discharge into the basin and self-drain into the water table only when the water table is below the basin level. In winter of 2023 water table rose to soffit level or 1m above outlet discharge through the weir. We are yet to see what infiltration occurs and erosion to the beach occurs.

Debate whether GPT would provide any benefit to treatment train:

To date TCDC has not provided¹ any supporting evidence within its CSDC that supports the need for GPT within the Whangamata CSDC 105667.

It is clear to me as stakeholder TCDC is not correctly operating the CSDC. This affects the Coastal Plan because the CSDC is the management requirement within the RMA for Coastal Discharge.

TCDC set up a working group comprising 3 stakeholders, a councillor and community board member, a contractor, consultants (Metis and HAL) and staff. I am one of the stakeholders. I asked for water quality tests before the decision but was denied on the basis the testing would be a waste of money. The TSS debate for Williamson stormwater treatment train was mute because the road has no commercial residue that could equate to metals contamination. The only solids are sands normally greater than 63um so do not contain matter causing fine sands, clay or mud contaminants.

TCDC installed a pair of GPT despite the manufacturer specifications and detail drawings showing GPT SW360 Cascade Separators can operate with multiple pipe supply. WRC did respond stating the GPT would not provide benefit to the system.

¹ Provided: meaning is under LGOIMA or voluntarily provided any evaluation report identifying why GPT are a requirement within the treatment train for Whangamata based water run off capture.

Results of clean:

Veolia are yet to provide a report. This may not be received before deliberations are complete, so I have taken the liberty to provide this report.

The right of the 2 SW360 Cascade Separators was opened and had 130mm depth of sediment. This pipe has the least catchment area of the 2 GPT. The quantity of captured sediment would equate to around 40L.

I extracted 400grms from the GPT base and used a portion for standard separation by adding water and allowing gravity to separate by density:

88% by volume is sand.

12% by volume is organic material.

Some odd vegetation (leaves) was evident.

No clays or mud was evident.

Earlier before opening TCDC had completed water testing which came out acceptable water quality condition.

Summary of results: Sand and organic material are not pollutants. The GPT do not provide any benefit to the treatment train.

**Examination of 'treatment train'**

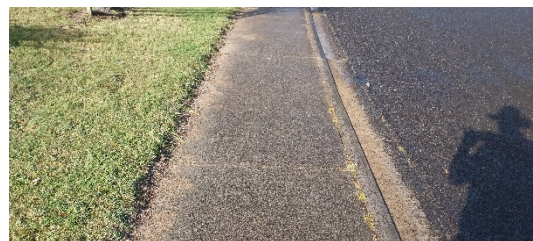
While it is accepted the GPT has captured some sand and organic matter its relevance within the stormwater treatment train in respect to adverse deposition on the environment must be debated.

TCDC claim they have discussed the GPT with WRC and are in early work with the National body to require treatment trains on all stormwater outlets throughout New Zealand to have similar GPT if any changes are required to any existing or new stormwater outlet.

Whangamata alone has 32 discharge locations to water ways, harbours and the Ocean.

It is therefore important that factual evidence supports any benefit to the environment balanced with costs and whether other mechanisms could also achieve reductions of adverse effects.

1. The Whangamata GPT tests are biased and unreliable because:
 - a. The upstream catchpits had not been cleaned. On 8 April 2025 as part of our investigation we checked 6 of the immediate catchpits and found the 4 on Ocean Road to hold deposition material up to the outlet into the pipe system. 2 further up were about 2/3 full. NIWA state that catchpits must never reach 1/3 full otherwise the velocity of water will re-suspend sand and organics and enter pipes. Full catchpits mean TSS would not be captured and would enter the pipe network and enter the GPT. On this basis we cannot determine what percentage of sediment entering the GPT was being captured. It is our contention that if the catchpits were clean TSS would not enter pipes and the purpose of the GPT be questioned.
 - b. The road gutters have never been swept. They contained volumes of sand, organics and stones as depicted. Rain water suspends these and drop into catchpits that were full so would enter pipes and get washed into the GPT. Before commissioning of the GPT gutters could have been swept and cleaned. If swept and removed this material could not enter the pipe network.
 - c. Footpaths had sand bleed from grassed areas. Upstream roading from the GPT has footpaths with sand bleed that blows into the gutters and then gets washed into the catchpits that are full.



The results of trapped sediment extracted from the GPT are predictable because TCDC has failed to follow consultants advice to perform maintenance, industry requirements to keep stormwater infrastructure in functioning form so they perform to specifications and as a consequence cannot justify GPT are providing any benefit to the environment that would not have occurred had the existing infrastructure been maintained.

2. The Whangamata GPT sediment captured is not a pollutant so not required. Sand is the basic material Whangamata is built on. The fact some sand becomes airborne in high wind, bleeds from the ground and drops off vehicles onto roads is not of itself harmful to the environment whatever way it makes its way back to waterways or the Ocean.
3. The Whangamata GPT capital cost cannot be justified. TCDC publicly announced it was spending \$800,000 on improvements to Williamson Park stormwater systems. There were 3 projects. Weir pipe, reshaping the basin and the GPT. TCDC claim less than 10% of the money was for the GPT. I have been in contracting for over 50 years and do not accept this figure. Net installation costs of just GPT are very different to whole of project costs, allocations of design fees, management, ancillary land shaping etc. No s32 RMA was done prior to the project so no justification can be claimed by TCDC.
4. The Whangamata GPT ongoing maintenance cost cannot be justified, even if council did begin maintenance. Maintenance requires a team effort including a crane to lift the lids, suction pumping equipment and disposal site. TCDC has not provided the cost benefit to prefer GPT over catchpit cleaning and road sweeping.
5. The Whangamata GPT trial should NOT be rolled out to every outfall. During discussions about the need for a GPT I asked on behalf of the WRSAG (Whangamata Ratepayers Stormwater Action Group) and stakeholder representative that water testing should be done first to establish the benefit of a GPT in reduction of adverse impact on the environment. TCDC dismissed this as a wasted cost. I sought the GPT be delayed until council had justification. The project proceeded without a s32.
6. The Whangamata stormwater project has much greater needs than spending money on GPT. For instance, TSS depositions have been forming in Moanu Anu Anu since the bridges and Marina were built caused principally through erosions from changes in land use like Forestry and farming. According to one researcher depositions have displaced some 2.4M cubic meters of flood water storage in King tides when the Wentworth floods. No-one is likely to articulate the adverse effect of this until we get the big storm. The depositions are so high our stormwater outfalls now need man-made channels to keep them maintained. This deposition has elevated ground water levels and result in higher water levels, inundation and surface flooding to low lying properties. The deposition rate far exceeds extracting 20L of harmless unpolluted sand out of a GPT.

What must happen:

Deposition – Stormwater discharges

Stormwater infrastructure must be developed properly and adequately maintained taking into account the nature of the likely deposition, the severity of deposition and best way to reduce or mitigate any adverse effect the deposition may cause to the environment.

This will involve prior testing, comparisons to acceptable practices and monitoring to determine performance improvement.

Formal s32 RMA evaluations and consultation is paramount. The current process we are experiencing in Whangamata has been done without transparency or any explanation what environmental adverse effect is being advanced. The importance to WRC for detailed evaluations is these are likely to be in the form of written consultant reports so can be used later to support decisions as testing and history develops. No sensible future decisions can be made without logic and proven performance.

Where this fits into the current Coastal Management Plan is all managed² stormwater runoff eventually finds its way to water ways so any pollutant, if harmful to the environment of performance of stormwater infrastructure eg blockages, must be managed to avoid an adverse effect. BUT this does not mean at any cost. RMA does not require the 'absolute removal at any cost'.

It is on this basis depositions originating from Rural erosion that is normally the origin of fine sand, clays and mud must be managed. That includes extraction if in excess of suspension capacity. What is happening is Rural erosion is overloading our Rivers natural ability to keep fine sand, clays and mud in suspension until it reaches our Oceans beyond our beaches and river deltas. Any changes in water velocity become settling areas that then become clogged and alter the natural ecosystems. This effects all life forms in the water systems. As these clog the adverse effect magnifies.

Money is better spent on Urban discharge dealing with harmful, toxic pollutants and excess depositions. Miney must be spent on managing and controlling Rural sediment. This discussion must now be had.

End: Ian Holyoake

² By managed it is meant within the 10%AEP pipe capacity requirement BUT not the channelled managed 2%AEP overland flow requirement or the 1%AEP now being highlighted in Natural Hazards.