

The ESC newsletter for the civil construction industry.

Mud Matters is a free quarterly newsletter focussed on erosion and sediment control designed for the civil construction industry, sharing national updates, site-based learnings, practical tools and industry insights to help lift standards and support best practice across the sector.

Massive shout out for the feedback to date and thank you to everyone who has put time into contributing articles. If you'd like contribute, we'd love to hear from you. escnewsletternz@gmail.com



pumice sand erosion following rain event

INDUSTRY UPDATE *CCNZ Conference and ESC Practitioners Forum 2026, words by Joe Johnson*

- The civil construction and environmental sectors have enjoyed two excellent industry events over recent months, with both the Civil Contractors New Zealand (CCNZ) Conference in August and the ESC Practitioners Forum, hosted by Cirtex, in July providing valuable opportunities for learning, collaboration and professional development.
- The 2026 CCNZ Conference in Wellington featured a strong programme covering workforce development, procurement, infrastructure delivery and emerging industry challenges. A significant milestone for this year's event was the introduction of a dedicated Environmental Stream for the first time. The environmental sessions attracted strong attendance and highlighted the growing importance of environmental management within the construction sector. Particular congratulations must go to Steph Kirk and Dr Chris Wilcox, whose practical and engaging presentation on environmental management was exceptionally well received. Their session reinforced that effective environmental management is not about complicated systems or endless legislation, but about practical actions, sound processes and a commitment to continuous improvement.
- A month earlier, Cirtex's ESC Practitioners Forum brought together contractors, consultants, regulators and suppliers from across New Zealand for a day focused on erosion and sediment control. Presentations showcased major infrastructure projects, renewable energy developments, innovative monitoring technologies and lessons learned from projects of all sizes. Common themes included early contractor engagement, strong environmental leadership, effective training and embedding environmental responsibility across entire project teams. The forum reinforced that successful ESC outcomes are achieved through planning, accountability and a culture where everyone has a role to play.
- While we're on the topic of events, there is still plenty happening across the industry. The **Northland Earthworks Field Day** is fast approaching, providing another valuable opportunity for practical learning and networking, while preparations are well underway for the **IECA Australasia Conference** in Sydney. Both events promise to deliver excellent technical content and opportunities to connect with industry peers. We hope to see you there.

PROJECT FEATURE – ESC ON THE EDGE: LESSONS FROM A COASTAL LIFESTYLE DEVELOPMENT

Hopper Construction Ltd

The Project

Hobbs Bay Estate is one of the last remaining large coastal blocks of land on the Hibiscus Coast - 88 lifestyle lots perched on the cliff edge of the Hauraki Gulf, with views across to the Auckland CBD. Previously owned by the Burrell family - early settlers on the Hibiscus Coast in the late 1800s, the Burrell family wished to sell this last block to Hopper Developments in the hope they would create something special and not just a “cookie cutter” style subdivision.

The consenting process was challenging, a resource consent was issued with over 100 specific conditions. Some of which included:

- Preservation of the heritage villa - existing Burrell Family Homestead.
- Multiple archaeological sites to investigate/preserve.
- Midden relocation.
- Notable trees to work around and preserve.
- Lizard trapping and relocation.
- Working in and around Significant Ecological Areas (SEAs).
- Existing wetland preservation.
- Exotic tree removal within the esplanade reserve.

The total site footprint was approximately 13 hectares across five stages, with bulk earthworks completed over three stages.

Site Setup - What We Built

The entire site slopes toward the Coastal Marine Area, sediment retention ponds (SRPs) sat near the cliff edge, and devices discharged straight to Hobbs Bay beach below. Getting ESC right wasn't optional - it was non-negotiable.

A super silt fence ran the entire esplanade and cliff-edge boundary - mostly installed by hand given the established trees, steep gullies, and sensitive areas throughout. Two SRPs were positioned as close to the site edge as possible; one sized for 5.0ha, the other 4.5ha, both requiring on-site design adjustments working closely with our engineers and geotechnical partners.

The site operated under a tailored ESC Adaptive Management Plan covering watercourse monitoring, weather monitoring, pre and post-rainfall ESC inspections, chemical treatment protocols, and trigger event reporting. Initially we thought it would be a burden - it turned out to be one of the most valuable frameworks we had for both on-site process and staff training.



Our First Trigger Event

Our very first trigger event set the tone. Overnight of the 20/21st of May 2024, our rain gauge recorded 97.8mm over six hours with a peak intensity of 73mm/hr - exceeding the 1% AEP (1-in-100-year) design storm and more than double our forecast. The SRP held. All three decants and the primary spillway engaged as designed. The primary spillway discharged via a 400mm culvert to a stabilised rock rip-rap outlet. This 'blew out' and took with it a portion of the bank adjacent the gully. The volume and velocity from the outlet discharge was too great for the rip-rap and bank below.

Upon discovery we stopped the discharge from the SRP by raising the T-bars, performed onsite bench testing and batch doses the pond, stabilised the upper banks at the slip to prevent further erosion, manually cleared sediment from the watercourse and extended the outlet down below the bank directly into the receiving environment. This event and discharge triggered a coastal response, requiring our project ecologist to review ecological effects on the coastal environment. Results came back from this report as minor.

Long term the bank was reinstated, lined with coir matting and planted in natives. Outlet energy dissipation was redesigned in a way that we would convey water as far as possible and as close as possible to its final outlet point, minimising the overland travel. Outlet velocity became a non-negotiable pre-event check from that point forward.

We also adopted the “belts & braces” mindset throughout the project, this included plenty of drop out pits, contour drains, check dams, etc. all in an effort to slow the velocity and intensity at which site run-off would enter our devices.

PROJECT FEATURE – CONT.

The morning of 21 May 2024 also just so happened to be our fortnightly Auckland Council site inspection. It turns out it was also one of our most valuable inspections. Working through issues in real time in the field with the Council team was far more productive than emails. The pond performed, the devices worked as intended, and we were all on the same page with a remediation plan.



Damage to pond outlet and bank below SRP post storm event



What We Did Differently

Before breaking ground, we outsourced some on-site training, this was mandatory from management level to labouring. Practical, field-based education that helped instil the mindset that ESC is everybody's job.

We also conducted all water quality testing in-house, training key staff to bench test, batch dose, and adjust pH - particularly useful in areas affected by lime modification works on site.

Gavin Sims - Contracts Manager, Hopper Construction Ltd

<https://www.hopperconstruction.co.nz/>

<https://www.hobbsbayestate.co.nz/>



Key Takeaways

- Site-wide buy-in is everything. ESC fails when it's one person's job. Everyone needs to understand why it matters - including the client.
- Engage your partners early. These guys are a technical resource, not just a supplier. I was never shy about asking for help.
- Tailor your plan to the site. A generic ESCP won't cut it. Build something fit for purpose and keep it adaptable.
- Test, don't assume. Systematic pH and clarity testing before and after every event is the only way to know what's actually happening.
- Fix it now. Nothing cost us more time than having to revisit something that should have been sorted at the last inspection.

Hobbs Bay was one of the most demanding ESC environments we've worked in - 17 trigger events over 18 months, a 1-in-100-year storm on the first event, and the Hauraki Gulf directly below. The team delivered, the compliance results were consistent, and the site is something we are genuinely proud of.

About Hopper Construction

Hopper Construction Ltd is a civil construction company headquartered in Orewa, Auckland, with an active presence extending across Coromandel and Northland. Established in 1976, the company operated until 1987, resumed in 1994, and has since maintained a continuous presence in the civil contracting industry. Today we employ approximately 50 skilled professionals.

We're a proud New Zealand company spanning coastal lifestyle and greenfield developments, infrastructure projects including wastewater treatment plants and stormwater systems, and a particular specialisation in waterway canal construction. We don't carry a dedicated erosion and sediment control (ESC) team - we rely on selected, well-trained people within our own crews, backed by strong management and close engagement with specialists and suppliers. Hobbs Bay Estate is a good example of what that looks like in practice.



LESSONS LEARNT: BAY OF PLENTY 2026 PROSECUTION CASE

Shortcuts leads to Earthworks Blow Out

Those working in the earthworks industry are being reminded to follow environmental protection rules and consent conditions after a recent prosecution against a consent holder and contractor highlighted the consequences of cutting corners.

Regulatory Compliance Manager Matt Harrex is urging contractors, consent holders and developers to ensure robust erosion and sediment controls are in place on their sites. "Tighter restrictions apply during wetter months for a reason, when increased rainfall and saturated ground significantly heighten the risk of sediment runoff."

Across Aotearoa New Zealand, sediment from poorly managed earthworks continues to impact waterways and harbours. While clear rules exist to manage these risks, they are not always followed.

In a recent case in the Bay of Plenty, a contractor undertook work on a land development site for a consent holder. Consent conditions were clear and designed to manage sediment during the works. These included:

- Limiting the area of exposed earthworks
- Stabilising soils to prevent erosion
- Treating all sediment-laden stormwater before discharge
- Installing properly designed sediment retention systems.

However, these conditions were not met.

A sediment retention pond was constructed using unsuitable sandy, non-cohesive material and was significantly undersized, with the pond designed for a 2.4ha catchment but was actually receiving water from approximately 23.4ha.



Left: Compliance Officer collecting sediment-laden water samples from the failed spillway for analysis. Right: Failed spillway associated with the newly contoured site highlighting poor construction.



Remains of the poorly constructed sediment retention pond following failure.

A series of non-compliances followed, including:

- Failure to divert clean water away from the earthworks site/not installing clean water diversions
- Not adhering to approved sediment control plans
- Exceeding the area of exposed earthworks allowed by the consent
- Failure to provide an as-built or verification that the sediment retention pond had been appropriately constructed.

These are exactly the types of failures the consent conditions were intended to prevent.

The consequences were significant. Sediment-laden stormwater discharged off-site on three separate occasions, flowing through boundary breaches and onto a neighbouring property. This included a carefully established man-made wetland planted with native species such as kahikatea, rimu, tōtara and kōwhai. The wetland supported birdlife including ducks, herons and nesting shags, and functioned as a natural nutrient sink.

Judge Tepania, who oversaw the case, noted the approach of the contractor in 'hoping for good weather' indicated an awareness that the erosion and sediment controls in place were inadequate and would likely fail in adverse weather events. "Unfortunately, that is what occurred."

The consent holder was convicted, fined \$37,500, and ordered to pay \$9,600 in reparation. The contractor was also convicted, fined \$10,000, and ordered to pay \$6,400 in reparation.

This case serves as a clear reminder that failing to adhere to consent conditions and taking short cuts can lead to serious consequences.

Key reminders about getting ESC right on your sites from the council – because once sediment leaves a site, the damage is already done.

- Ensure erosion and sediment controls are correctly sized for the catchment.
- Build systems suited to site conditions.
- Comply fully with consent conditions.
- Plan for wet weather — don't rely on it holding off.

PUMICE SOILS – LESSONS LEARNT AND SOME GUIDANCE

Graeme Ridley, Ridley Dunphy Environmental Limited, Tauriko Business Estate
Stephanie Kirk, Heb Construction, Takitimu North Link

Working in the Bay of Plenty Region means you will likely encounter pumiceous soils. It's one of the most common soil types in the region and can give contractors a run for their money when building ESC measures, managing water and dust on site. Despite being one of the most common soil types, there is very little specific regional guidance when it comes to working with it.

Know your pumice

One important thing to know about pumice soils is that there is a huge amount of variability in soil types, each which come with their own unique challenges. Some examples of these are:

Taupo pumice (visible chunks of un-weathered pumice)

- Highly erodible also prone to piping erosion/embankment failures
- Managing dust can be hard work

Tauranga pumice (non-visible chunks of pumice, sandy and granular)

- Highly erodible even after small rainfall events
- Dries out fast, big dust issues when windy

Pumiceous tephras, Pohoia ashes at depth (high fines content)

- Influence of other volcanic minerals (allophane/halloysite) can make soils non-plastic, unworkable
- High fines content, difficult to treat water for clarity



Photos: Top - Example of in situ pumiceous tephras, Bottom - example of in situ Tauranga pumice sand material.

Managing Erosion in Pumice Soils

Erosion control is something talked about frequently in the ESC space. The difference when it comes to pumice is instead of typical erosion control methods, we have learnt to somewhat "accept erosion". This concept could be seen as controversial to some but it's the reality of dealing with a highly mobile and erodible soil type.

Instead of focussing all efforts on trying to stop erosion, you have to think differently by accepting it will erode (however not forgetting about erosion control completely) and putting in additional measures before your sediment controls to try and capture as much of the eroded material before it hits the devices.

The use of drop out pits, pre forebay-forebays, check dams, lining diversion drains, drop flumes, encapsulation of pumice where possible and the use of stabilisation including hydro mulch are some of the ways to help manage some of the erosion on site.

We have often found that standard erosion control measures such as cut off drains across fills, diversion bunding and check dams do not work effectively and at times can make erosion worse if implemented how they would be in similar situations with clay or ash soils. Slowing the water down before sediment control devices and encouraging as much drop out prior using additional forebays has been a method which has worked well.



Photos: examples of extensive erosion on Tauriko pumice soils, 15mm of rain, 30m slope length with less than a 3% grade.



Photos: Top and bottom left showing some hydro mulch applied to pumice surface to help reduce rainfall erosion. Top and bottom right showing pumice soils being encapsulated with topsoil or ash/clay to prevent erosion.

PUMICE SOILS – CONT.

Sediment Retention Pond Construction in Pumice Soils

Due to the granular and erosive nature of pumice soils, it is not advised to build diversion channels, sediment retention ponds or decanting earth bunds from it. Some key learnings from building SRPs in pumice soils are:

- SRPs should be clay / ash lined. This is to prevent seepage through any embankments which may lead to pond failure.
- SRPs subject to geotech certification which is linked to stability, failure and compaction during construction. These are submitted as part of the as built for the device.
- Full SRP width and dead storage height baffles are proving to be a critical factor and are installed in many of the SRPs on site –significant improvement in water quality.
- Clean out of forebays and main ponds after each rain event. There can be a lot of erosion from pumice during rain events so it's key not to leave the clean-up for another day.
- Decant blockages from pumice – continual maintenance – booms across ponds not found to be that effective.

Chemical treatment remains a key factor in ensuring good water quality outputs. New technologies such as EDD auto dosers (refer back to Mud Matters Issue 2 for more info!) have proved really helpful in managing the changing nature of pumice fines runoff.



Pre-forebay forebays prior to SRPs to help slow water down and encourage sediment drop out prior to the Sediment Retention Device.



Pond constructed in pumice soils being ash and clay lined.



Left: baffle in action inside pond during rain event showing improvement in water quality
Right: sediment deposition in an SRP post rain event.

Diverting Water in Pumice Soils

Building water diversions in pumice is a lot different to building them in clay or ash soils and requires very careful consideration. If any bunding is built from pumice, you will generally see this erode away or fail with any water running along the edges or toe of the bund.

Some guidance developed for our projects to help with water diversion construction and management on pumice soil sites is as follows:

- The diversions are all built as per the approved design as per internal design calculations.
- All DWDs need a flat channel next to the bund – 1.1m is recommended.
- In some locations we need to line DWD with geotextile in particular, immediately upstream from forebays etc it can be very beneficial to help slow erosion.
- All DWD need to be made of cohesive well compacted material – not sand or pumice – there is no compaction standard in the guidelines, but they must be track rolled.
- Low spots can cause an issue – all DWD need to be checked that there are no low points and if these exist then the bund height will need to increase – if they are going to hold water then these sections may need to have geotextile cover.
- If they get driven over, then they must be repaired daily (or as a minimum before the weekend or rain events).
- If the DWD lead to flumes (down a batter slope) then proper design of flume capacity needs to occur to prevent additional loading on a pumice bund which causes a risk of failure.
- All external critical bunds should consider having bunting installed along them to allow ease of identification and to avoid traffic movement
- For flume installation never leave them short on a batter or they will erode and if they have a long "tail" they will block. Position and length with protection at the outlet are key considerations.



Photos: showing short length which will cause erosion and long tail causing blockage

PUMICE SOILS – CONT.

Pumice and Dust

One thing that pumice will teach you is just how dusty a soil type can get. Due to the ability for pumice soils to drain fast and dry out quickly it makes dust management a real focus point when working with this material. So much so that in the Bay of Plenty, unless there is a confirmed consistent water supply available, and the ability to apply that water, to support works where pumice may be used, then the council will likely not sign off on works to begin.

One big learning from working with pumice has been that once trafficked, it becomes almost hydrophobic so water will not infiltrate through the surface and bead off. Even the best water cart out there will struggle with that.

Our general guidance for managing dust in pumice environments:

- Have a confirmed water source prior to works commencing.
- Where possible keep construction traffic to defined haul routes that water carts can routinely access.
- Keep speeds low on site.
- Only open up areas you can manage successfully with water carts (if you can't get to it with a water cart, then it should be covered or sprayed out with a polymer).
- Utilise polymers wherever possible (great for stockpiles and hard to reach areas)
- Wet your stockpiles or areas being sprayed with polymer prior to polymer application (otherwise it won't stick!).



Polymer being applied to a pumice stockpile to prevent dust and water carts using cannons in action to manage dust over big spaces.

Our Final Takeaways

Knowing what soil types your job may have and what limitations they may apply to your operation is a key part of planning for success for any job. Hopefully this article has helped raise awareness when it comes to pumiceous soils, but the same applies for any new soil type out there you may work with.

Pumice management top tips summary:

- Know your soils before you start
- Erosion control, erosion control, erosion control! (but accept it for what it is)
- Encapsulate pumice wherever possible
- Do not build bunds or SRPs out of pumice soils
- Don't open up more than you can manage
- Adapt and adjust
- Always bring council on the journey with you.

"Ask yourself what is best practice in the area you are working in – it isn't always the guidelines, they don't always have all the answers and best practice must rely heavily on site knowledge (soils, climate etc) and your own knowledge – best practice is all encompassing".

WEATHER NERD CHAT WITH CHRIS EL NINO DECLARED!

**Chris Brandolino –
Chief Scientist Earth
Sciences New Zealand**

There has been a lot of talk in the media about El Niño the last month and what this may mean for New Zealand. To look into this further, some of our Mud Matters team Hannah and Steph sat down with Chris Brandolino, Chief Scientist Weather and Seasonal Forecasting at Earth Sciences New Zealand to get his expert "weather nerd" insight into what our industry can expect for the rest of the year.

For those who aren't up to speed with ENSO, can you explain with El Niño is?

El Niño and La Niña are opposite phases of a naturally occurring global climate cycle known as the El Niño Southern Oscillation, or ENSO for short. ENSO influences rainfall, temperature, and wind patterns around the world, including New Zealand. El Niño and La Niña episodes occur on average every few years and last up to around a year or so. These are the climate influences which drive the weather outputs people see day to day. During El Niño, New Zealand tends to experience stronger or more frequent winds from the westerly quarter (or northwest to southwest) in spring and summer, which can encourage dryness in eastern and northern areas and more rain in the west. In winter, the winds tend to blow more from the southwest, causing colder temperatures across the country.

We know the average outcome of El Niño but no El Niño is "average". Every El Niño has its own personality, all covered by the same last name! Past patterns are less reliable to help predict the future due to changing climate.



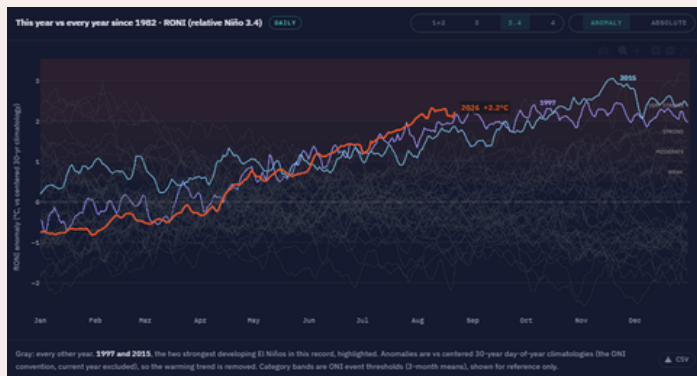
When was the last time as a country we experienced a very strong El Niño?

2015/2016 was the last time a very strong El Niño was experienced here in NZ. 1997/1998 was the second most recent one in NZ before that. Recently La Niña has been the dominant climate cycle in New Zealand the past few years.

There's been a lot of hype in the media about this El Niño with many referring to it as catastrophic or a "super El Niño", what makes this one so special?

The term super El Niño is not just a media headline, it's related to the predicted strength of the El Niño event. When we refer to strength this is linked to ocean temperature anomalies, when it reaches a certain threshold it's categorised as a level of "strength". Currently due to the temperature anomalies being 1.8 degrees higher than normal, this falls into the "strong" category and we are still in the winter period or early phases of El Niño. Extrapolating this out towards the summer period, it has the potential to become "very strong" or "super" and at a scale we have not seen.

What we are seeing at the moment is something quite unusual. The sea surface temperatures in the central and eastern pacific are unusually warm, quite unusually warm and forecast to reach a level we have not ever seen before. More likely than not that this will be the strongest El Niño we have ever seen in history.



Graph showing the sea surface temperature anomalies for each year against the "strength of El Niño". Red line is 2026, blue line is the 2015 El Niño and purple line was the 1997 El Niño.

Source: Climate Dashboard www.dashboard.theclimatebrink.com/#enso

Because Climate Change is happening, El Niño is existing in a world which is much warmer than it was 50 years ago. This can make it hard to predict what the impacts may be for us here in NZ. What we can say now is we are confident this will be near record-to-record strength. Our confidence is not so high in how this translates into on the ground impacts in NZ due to this climate change impact, particularly at longer forecast horizons, i.e. after Christmas.

What will be the noticeable changes/impacts in the North Island?

For the upper and eastern parts of the North Island we will likely see some very large periods of settled and dry weather with lower than normal rainfall. There will be a few rain events/patchy weather through spring but as we head toward summer, extended periods of dryness are on the cards. Along with the low rainfall, as we work through September and October, we are also going to start experiencing some very strong winds across the North Island.

If there is going to be an area of the North Island which escapes dryness during this period it will be the western and lower parts of the north island which may experience some rain events as we move closer to summer.

We may also experience what I like to call "spiky" temperatures where for a few days we get highly unusual warmth followed by sharp coolness due to the hot air coming over from Australia in spring.

What will be the noticeable changes/impacts in the South Island?

For those in the west and south of the South Island (even Otago and the Queenstown/Lakes District), strong winds and heavy rain will likely be problematic as we move into spring and summer. The prevailing winds with El Niño, westerly quarter, drives more frequent weather events over this part of the country.

Canterbury and Marlborough will be at risk of dryness as we move through the rest of the year with an increased risk of wildfires. We could be on the way to setting new record high temperatures in NZ in this region as well as all over the North Island this summer.

Any tips for those in the earthworks industry to get ahead of potential El Niño impacts?

Take note of how El Niño climate influences might drive weather patterns in your region. Understanding climate drivers is a key part of knowing how day to day weather may impact your sites. As we said earlier, stronger winds and dryness may lead to increased dust risk in the upper and eastern parts of both islands, whilst strong winds and rainfall may lead to risk of erosion and sediment control related incidents in the west and south of both islands, especially of the South Island, so make sure you keep checking in on the Earth Sciences New Zealand page where we give you monthly updates on the climate for the next quarter [Seasonal Climate Outlook](#) | [Earth Sciences New Zealand](#) | [NIWA](#)

OPINION PIECE: DIRTY LITTLE SECRET: WHY SMARTER SOIL REUSE IS THE NEXT BIG WIN FOR EARTHWORKS

Rod Lidgard, Certified Environmental Practitioner – Site Contamination Specialist
Pattle Delamore Partners Limited



For decades, Aotearoa has treated surplus soil as waste: dig it up, truck it away and replace it with new imported material. It feels straightforward and low risk, but may cost projects far more than it saves. WasteMINZ's Reclaiming Resources programme, strongly supported by CCNZ, is challenging that default and highlighting an opportunity hiding in plain sight: treating soil as a resource, not a waste stream.

The Scale of the Opportunity

More than 20 million tonnes of soil is estimated to be disposed of to New Zealand landfills and cleanfills each year, at a cost measured in billions of dollars to industry. Much is not hazardous and could be reused on site, transferred to another project, or treated for beneficial use. Smarter reuse can reduce truck movements, disposal costs, pressure on landfill capacity and carbon emissions, while retaining an important finite natural resource.

Challenging the "Dig and Dump" Default.

Disposal should be the last resort, not the default starting point. Regulation, consent conditions and established practice can make landfill the easiest choice, reinforcing the view that soil is a liability rather than an asset. Forward-thinking consultants and contractors ask: "What is the highest-value use for this material before we dispose of it?". This shift can reduce costs, shorten programmes and improve sustainability outcomes. Better Investigations = Better Outcomes.

Soil investigation may establish whether contamination is present and identify a consent pathway, but it rarely provides enough detail to optimise reuse or construction methods. A project-specific Remedial Action/Site Management Plan (RAP/SMP) can add real value by translating investigation findings into practical earthworks and construction decisions. A reuse-focused approach asks whether soil can be retained for beneficial use or used to reduce imported fill. The result can be lower disposal volumes, fewer truck movements, reduced fill imports and better project economics, alongside many environmental, social and cultural benefits.

Turning Reuse into Results: Practical Moves

The greatest influence comes early, before earthworks methods and disposal assumptions are locked in. Test the design intent: can levels, cut and fill, excavation footprints, foundation types, bunds or landscaping be adjusted to retain more soil?

Engage specialists early to delineate affected areas, classify materials and confirm environmental and engineering suitability for reuse. Use the RAP/SMP to define where soil can be retained, separated, treated, encapsulated, relocated or reused. Look beyond the site boundary. Connect surplus fit-for-purpose soil with projects needing material, early enough to confirm suitability, consent, timing and performance.

New Technology is Expanding the Toolbox

Excavation and disposal are no longer the only remediation model. (Is disposal to landfill even remediation?). Stabilisation, blending, screening, washing, bioremediation and new treatment reagents are creating practical alternatives that keep soil in productive use. Not every option suits every site, but growing choice and competition are making reuse a standard project consideration rather than a bespoke solution.

The Next Frontier for Earthworks

The earthworks sector thrives on practical problem-solving. Soil reuse is the next evolution of that thinking. Contractors, consultants, regulators and asset owners are increasingly recognising surplus soil as a material with economic, environmental and engineering value. The best projects ask not how quickly soil can leave, but how much value can be retained before it does.

If soil can be safely reused, why are we still paying to throw it away?



Example of soil being re-used.

INDUSTRY SPOTLIGHT – MARK CHRISTENSEN

Owner operator at Erosion and Sediment Control Services.

Mark is an erosion and sediment control (ESC) installation specialist, operating out of south Auckland. Operating since 2014 Mark has built his business from installing residential silt fences locally to working on projects throughout Auckland, Waikato and even the odd project in the South Island.

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Zac from Mud Matters caught up with Mark with a few questions.



Where did Mark from ESCS come from and how did you end up in ESC?

I started in residential earthworks and quickly saw the importance of managing sediment runoff properly. In 2014, I started installing residential silt fences due to the rise in council compliance requirements and the need for someone experienced to complete them.

What types of ESC projects have you worked on?

We've worked on subdivisions, roading projects, infrastructure upgrades, solar farms, quarries, commercial developments and large-scale earthworks. My role ranges from site assessments and ESC planning through to installation, compliance support, maintenance and training.

Can you describe a challenging site?

One of the more challenging projects involved steep terrain, highly erodible soils and multiple catchments draining through active earthworks. The key was breaking the site into manageable catchments, installing controls ahead of works, and maintaining them constantly as conditions changed.

Most common mistakes on construction sites?

The biggest mistake is installing controls too late. ESC measures work best when they're planned and installed before earthworks begin. The second biggest issue is lack of maintenance after rainfall events.

Biggest piece of advice?

Think of sediment control as a system rather than individual controls. A good silt fence won't perform if water isn't being diverted properly or if catchments are too large. Get the fundamentals right.

Favourite SRP installation and why?

The best-performing ponds are usually the simple, well-designed ones. The sites where catchments are correctly sized, inflows are managed properly and flocculation is used effectively consistently outperform more complicated setups.

Difference between BOP, Auckland and Waikato?

The biggest differences are soil types and Council expectations. Auckland's clay soils behave differently to Waikato soils, while Bay of Plenty often presents different rainfall patterns and volcanic soils. Installation methods need to be adapted to local conditions rather than applying the same solution everywhere.

How could we do things more sustainably?

Reducing waste is a major opportunity. Reusing materials where possible, improving product durability, and developing alternatives to disposable products can significantly reduce environmental impact while maintaining compliance.

Where is the most waste generated?

Silt fence fabric, geotextiles, damaged controls and temporary construction materials create a large amount of waste. Better planning, reuse programs and more durable products could reduce this substantially.

Tips for getting contractor buy-in?

Show contractors how ESC protects their project rather than viewing it as compliance. Good controls reduce delays, rework, cleanup costs and compliance issues.

If you could change anything in the ESC guidelines?

I'd like to see more focus on performance-based outcomes and encouraging innovation. New technologies and products can often achieve equal or better environmental outcomes than traditional methods, but approval pathways can be slow.

Best smoko stop and what are you ordering?

Any good rural bakery wins. A steak and cheese pie, a V and a custard slice is hard to beat after a morning installing silt fence.



REGULATORY WHIP AROUND.

What our Regional Councils have to say

Northland Regional Council

Kicking off the earthworks season with an Earthworks Feild Day - Wednesday 16th September!



Delivered in collaboration with:

Whangārei District Council • Far North District Council • Kaipara District Council • Northland Regional Council • International Erosion Control Association • Civil Contractors New Zealand

A practical, hands-on day for the earthworks industry

Join us for a free, education-focused field day designed to support contractors, consultants, and council staff working across erosion and sediment control. This event is built on an "education before enforcement" approach, helping lift capability across the region through shared learning, practical demonstrations, and real-world insights.

What to expect

- Short, practical presentations
- Live product demonstrations
- Real-world examples and lessons learned
- Opportunities to connect with councils and industry

Who should attend

- Earthworks contractors
- Site supervisors
- Environmental managers
- Engineers & consultants
- Council compliance and monitoring officers

Location: Barge Showgrounds
474 Maunu Road, Maunu, Whangārei
Date: Wednesday 16 September
Time: 9am - 3pm
Cost: FREE

Morning: Short, practical education sessions (20-30 mins each)
Lunch & networking
Afternoon: Live demonstrations and exhibitor displays
Learn the "why" in the morning.
See the "how" in the afternoon.



Scan the QR code to register your attendance or click here



Otago Regional Council

Otago Regional Council
Residential Earthworks Guide
– Second Edition Out Now!

Since launching the original guide in 2023, we have observed the guide in practice and worked closely with technical experts to refine our guidance. The updated guide incorporates a brand-new chapter dedicated to Otago's unique environment.

Otago presents a unique set of high-risk conditions where a direct application of GD05 is often insufficient to prevent environmental impacts. This region's unique soils, steep topography, and climate extremes (from drought to intense rainfall) demand a more conservative and site-specific approach. This guide offers practical guidance for developers, contractors, and consultants. It is designed to help project teams:

- Quickly identify if the site has high-risk characteristics.
- Understand why these factors are problematic.
- Implement "Otago Best Practice" measures required to achieve compliance and protect the environment.

The full Residential Earthworks in Otago document, along with forms, is available for download on the [ORC website](#) *Melanie Heather, Principal Compliance Specialist*



Environment Canterbury

I've got a few different things from across the Canterbury region this time around! Recently we've been seeing an increase in attention towards dust. With the risk of dryness across Canterbury from El Niño, it's important to make sure you're not the cause of a dust complaint by being proactive in controlling it. Dust can be generated not just from within your site but also when sediment is tracked out onto the road. Our incident response team is undertaking proactive monitoring so please check and maintain your site and site access points regularly.

Even with all the talk about dry weather I'd like to remind everyone that complacency is where mistakes happen. Even if it's been dry for a while, things can change and all it takes is one unmaintained erosion or sediment control device to fail and suddenly you're having a discharge from your site.

And last but not least, for those who are using chemical treatment on site... It pays to make sure all the relevant people know how to use it. Batch dosing doesn't mean throwing a haphazard amount of chemical into your sediment retention pond and hoping it works, you could end up throwing off the pH, aluminium, or just straight up wasting chemical if the proper methodology isn't followed.

Georgia Simmonds, Compliance Account Lead

Auckland Council

A few routine checks can help ensure chemical treatment systems continue to perform as intended:

- Recharge floc reservoirs and maintain header tanks when required. After rainfall the header will be full. Reduce the volume by half after about 3 days of no rain and reduce volume to empty after 6 days without rain
- Refer to your chemical treatment management plan (ChTMP).
- Check that the header tank low and high-flow holes are correctly installed and clear of blockages.
- Monitor water clarity and pH before and after rainfall or dewatering to confirm treatment systems are operating effectively and the ChTMP is being followed, particularly for batch dosing.
- Review and adjust chemical dose rates as site conditions change, and confirm pH remains within the required range after stabilisation.
- Update roof trays whenever catchment boundaries change to ensure runoff is dosed correctly.
- Ensure flocculation systems are installed in a suitable location and based on appropriate design calculations.

Taking a few minutes to complete these checks can improve treatment performance, reduce compliance risks, and help ensure sediment control systems continue to operate as designed.

Laura Scaife, Team Leader Environmental Monitoring Region Wide

REGULATORY WHIP AROUND CONT. What our Regional Councils have to say

Greater Wellington

As we come to the end of another winter season, I've been reflecting on what's worked well and some of the lessons we've learned during the winter works period across the Greater Wellington region.

For those unfamiliar with Greater Wellington's Winter Works process, earthworks are generally paused over winter unless a site can demonstrate that environmental risks can be effectively managed through appropriate controls, staging, and contingency planning. The process is designed to minimise sediment discharges and protect waterways during the region's wetter months.

One of the biggest successes for this year has been early engagement with contractors and project teams. The sites that started planning early and got in touch before winter generally submitted stronger applications, had more robust risk management measures in place, and moved through the approval process more smoothly. Having those conversations upfront made a real difference and I hope to see this continue.

A common challenge was applications that didn't fully consider winter-specific risks or provide updated erosion and sediment control measures to reflect the wetter conditions. In many cases, this led to requests for further information and delays while those gaps were addressed. It's a good reminder that winter planning isn't just an extension of summer earthworks and approval is not a given. It needs its own site-specific approach including appropriate staging and if you submit your application late or without the information required to assess this, then you will have to fully stabilise and close your site prior to the winter works period starting.

Another lesson was about stabilisation measures and contingency planning. Some sites were relying heavily on hydroseeding as their primary stabilisation method, despite this not being considered as fully stabilised until >80% grass strike had been achieved which as we all know is hard to achieve as the months get wetter and colder. More immediate stabilisation measures were often needed to ensure exposed areas could be protected quickly. Having a backup plan ready to go and knowing when to stop work and close-up shop proved invaluable. What has stood out for me this season is the willingness across the industry to engage, adapt, and improve. The quality of many applications and the effort being put into managing environmental risks has been encouraging to see.

As we continue to refine the Winter Works framework, we'd be really interested to hear from contractors, consultants, and project teams about their experiences this year. **What worked well? What challenges did you encounter? Are there ways the process could be improved?**

Sharing those lessons helps all of us learn from one another and ultimately achieve better environmental outcomes across the region. Any feedback please email acting CME Team Leader: Cari.Kuske@gw.govt.nz

AGONY AUNT

Got an ESC related query you'd like an opinion on? Send us your query and our committee will have a go at providing feedback.



Dear Agony Aunt, Any tips out there for how to manage getting rid of small volumes of dirty water off sites? We have small service type sites where we don't need ponds. We have had a few issues trying to get water off site without calling out a costly sucker trucks. Any tips appreciated!

There are a couple of options in this space depending on how much water is being pumped. Dewatering bags, sludge pods and a robust turkey nest set up are great for small volumes of water. If you are dealing with some larger volumes or continuous inflow of groundwater then hiring a lamella is a great option as when set up with chemical treatment these can sometimes operate 24/7.
Yours sincerely, Agony Aunt

Mud Matters is for the people, by the people. It's driven by shared learning and collaboration, and we welcome contributions from across the industry. Whether it's a success story, a challenge, or a hard-earned lesson, your experiences matter.



If you'd like to contribute or provide feedback please get in touch with the team at escnewsletternz@gmail.com. To sign up to receive future issues, scan the QR code.

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