

Contamination Site Management Plan – Maitai River Flood Improvement Works - Queen's Gardens Pond to the Maitai River

1 Introduction

This Contamination Site Management Plan (CSMP) provides a framework for managing potential contamination encountered during soil disturbance works for the installation of a DN 1050 stormwater pipe from Queen's Gardens Pond to the Maitai River. This CSMP applies to the works occurring from Bridge Street to Ngaire Place, Nelson (See **Figure 1**).

This plan has been prepared in general accordance with the requirements for a Site Management Plan referred to in the NESCS¹, and as outlined in the Ministry for the Environment (MfE) Contaminated Land Management Guidelines.² The persons preparing and reviewing this plan are suitably qualified and experienced practitioners (SQEP), as required by the NESCS.

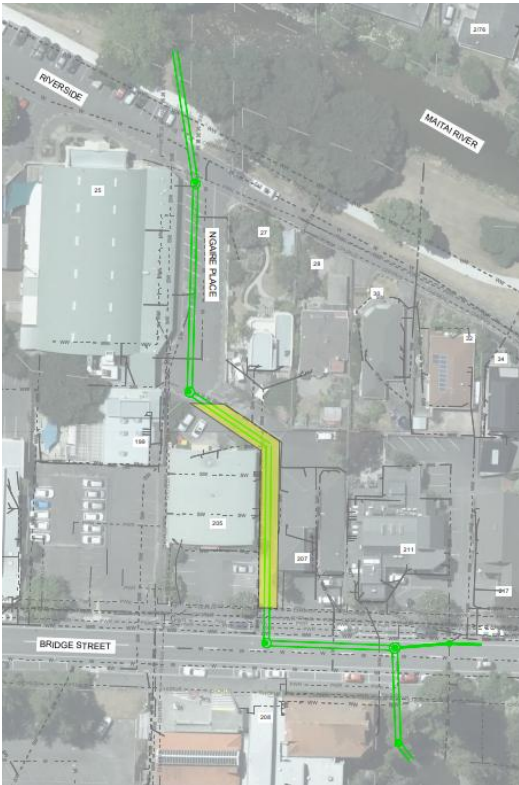


Figure 1: Proposed alignment (green outline). The area in yellow indicates the proposed easement extents through private property.

2 Proposed works

The project involves open trenching and excavation for stormwater pipe installation, crossing Bridge Street from Queen's Gardens, turning west on Bridge Street, passing north through a private driveway before following Ngaire Place northwards to the Maitai River. Works will involve:

- Excavation and trenching down to 3.5 m in depth.
- Dewatering and groundwater management.
- Soil reuse and/or disposal of excavated material.

3 Background

Two investigations have informed the contamination assessment for the Queen’s Gardens to Maitai River stormwater pipe project (See appended Figure for sampling locations):

- Envirolink Ltd (February 2025)**³: Coal tar investigation in pavement materials along Bridge Street and Ngaire Place.

- T+T Detailed Site Investigation (DSI) (July 2026)**⁴: Soil and groundwater sampling along the proposed stormwater alignment.

Results from the investigations identified:

- Coal tar was detected in Bridge Street pavement materials beneath the road seal at depths of approximately 50–320 mm, with high polyaromatic hydrocarbons (PAH) concentrations.
- Along Ngaire Place, some roading materials and fill beneath the surface seal contain elevated PAHs and heavy metals (identified to at least 1.2 m depth). These contaminants may present a risk to workers during excavation unless appropriate controls and PPE are implemented, and some materials may be unsuitable to be left exposed at the surface due to potential risk to the public.
- Fill with heavy metal concentrations above expected background levels was also identified at various locations along the alignment, typically from 50 mm – 320 mm depth.
- A former service station at 205 Bridge Street (HAIL A17) is adjacent to the proposed route (Underground storage tanks (USTs) removed in 1995). Investigations to date have not confirmed fuel-related contamination within the works area; however, workers should maintain vigilance for hydrocarbon indicators (e.g., staining, odour, sheen/free product).
- Groundwater contains elevated heavy metals, predominantly bound to suspended sediment, and concentrations may increase during dewatering. Without effective sediment removal/treatment and discharge controls, dewatering discharges could present a risk to the receiving environment (including the Maitai River).

This CSMP provides management procedures for contaminated soil disturbance and dewatering during construction works.

4 Roles and Responsibilities

The following **Table 1** outlines key personnel and their respective responsibilities in managing contamination during construction works.

Table 1

Role	Organisation	Responsibility
Client / Site Owner	Nelson City Council (NCC)	Overall responsibility for implementation of the CSMP, resource consent compliance, and coordination with regulatory authorities.
Site Controller (may be Contract Manager or Project Manager)	Appointed by NCC / Contractor	Ensures CSMP requirements are implemented, manages day-to-day site activities and contamination controls.
Health & Safety Officer (HSO)	Appointed by Contractor	Oversees compliance with the Health and Safety at Work Act 2015; ensures all personnel are inducted and aware of contamination hazards.
Contaminated Land Specialist (CLS)	SQEP (e.g., Tonkin & Taylor Ltd, CLS)	Carries out pre-works testing (if required), site inspection, provides contaminant management advice, and undertakes validation sampling.
Project Team / Subcontractors	Appointed by Contractor	Follows procedures in CSMP and H&S Plan; report any unexpected contamination to the Site Controller or CLS.

5 Health and Safety Management

The Site Controller will prepare and implement a risk assessment in compliance with the Health and Safety at Work Act (2015) and associated regulations, and other applicable legislation, codes and guidelines. A Job Safety Environmental Analysis (JSEA) should be prepared by the Contractor and will address other health and safety and PPE requirements that may be

applicable to the works. This document should also be modified and updated to address any specific health, safety or environmental issues that may arise during the works.

The Contractor’s assessment will also cover measures related to the presence of potentially contaminated material.

Additionally, the Site Controller shall ensure that all personnel complete a site induction or toolbox talk before entering the works area. Inductions must cover:

- Nature of potential contaminants (e.g., heavy metals, PAHs and coal tar).
- Correct use of personal protective equipment (PPE).
- Safe handling and hygiene practices.

Key controls include:

- Avoiding hand-to-mouth contact during soil work.
- Establishing a wash station to clean hands, boots, and equipment.
- Designating clean areas for eating, drinking, and smoking/vaping.
- Providing a first aid station on-site.

These measures align with the DSI’s findings, that while contaminant levels are below relevant human health guidelines in most locations analysed, localised exceedances of PAHs warrant contamination-related precautions.

6 Personal Protective Equipment (PPE)

As mitigation for elevated PAHs, personnel that are likely to come into contact with contaminated soil shall wear a minimum PPE (in addition to standard earthworks PPE of):

- Nitrile gloves, and full-length clothing.

Additional protection should be available if unexpected contamination is encountered, this includes disposable overalls and P2 masks.

7 Decontamination

The Site Controller must:

- Provide washdown areas for hand and boot cleaning before breaks and at shift end.
- Contain wash water on impermeable surfaces.
- Inspect equipment and vehicles for soil residue before leaving the site.
- Dispose of contaminated PPE in designated waste bins for landfill disposal.

8 Erosion, Sediment and Dust Control

To prevent run-off and minimise dust during earthworks the Contractor will:

- Establish and maintain entry/exit points to prevent tracking of material from site.
- Use silt fences, diversion drains, or bunds to contain sediment.
- Treat all nearby stormwater catchpits/kerb inlets and surface water drains as direct pathways to the Maitai River unless confirmed otherwise.
- Install and maintain inlet protection (e.g., silt sock/filter protection) on any catchpits within or immediately adjacent to the works area, to prevent sediment-laden runoff entering the stormwater system.
- Inspect inlet protection daily and after rainfall and maintain until reinstatement is complete.
- Stage soil disturbance to reduce open exposed areas.
- Apply regular water spraying if conditions become windy or significant dust is observed.
- Maintain dust control measures until surfaces are reinstated and vegetation established.

¹ Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011.

² MfE, updated 2021. *Contaminated land management guidelines No. 1: Reporting on Contaminated Sites in New Zealand*. Ministry for the Environment.

³ Envirolink Ltd, 2025. *Coal Tar Assessment – Queens Gardens (Bridge St & Ngaire Place)*. Prepared for Nelmac (on behalf of NCC) on 19 February 2025.

⁴ T+T, 2026. *Draft Maitai River Flood Improvement Works - Area 3, Portion 1 - Stormwater Pipe – Queens Garden to the Maitai River - Contaminated Land Detailed Site Investigation*. Prepared for NCC. 17 March 2026. T+T ref: 1006675.5171.

9 Dewatering management

Groundwater is expected to be encountered at depths between 2.8 and 3.4 m below ground level during excavation works.

Contamination characteristics:

- Heavy metals are predominantly present bound to suspended sediment in groundwater.
- Groundwater appeared silty with high sediment content during field investigations.
- Dissolved metals concentrations generally comply with surface water assessment criteria.

Treatment requirements:

Prior to discharge to the stormwater network or Maitai River, dewatering discharge must:

- Undergo sediment removal/treatment to reduce suspended solids and minimise potential for elevated heavy metals to reach surface waters.
- Be discharged at a controlled rate limited to less than 10% of the Maitai River flow to allow adequate dilution.
- Meet the Nelson Resource Management Plan⁵ (NRMP) water quality standards (Class A) after reasonable mixing in accordance with Appendix 28⁶ of the NRMP – see **Table 2 and Table 3 below**.

Discharge controls:

- Controlled discharge rate and method to prevent erosion or scouring.
- Treatment through sediment settling tanks or filtration systems before discharge.
- Discharge points positioned to allow adequate mixing in the Maitai River.
- Erosion and sediment controls to prevent sediment-laden water entering stormwater system or directly discharging to the Maitai River.

Monitoring and validation:

- Maintain a dewatering log that records:
 - Discharge location (stormwater network or Maitai River)
 - Treatment method in use (e.g., settling tanks/filtration)
 - Approximate discharge rate and volume
 - Observations (sediment/turbidity/sheen/odour)
 - Any maintenance actions.
- Visual monitoring:
 - Inspect discharge during start-up and at least daily thereafter for sediment content and turbidity and any sheen/odour.
 - If visible sediment or a plume is observed within the Maitai River, stop discharge and improve treatment prior to recommencing.
- Validation testing:
 - Undertake treated discharge sampling at start-up and periodically (once a week) during dewatering to confirm discharge quality remains below guideline levels after treatment and retain results on file.
- Confirm compliance against NRMP water quality standards (Class C - see **Table 2 and Table 3** below for assessment criterion) after reasonable mixing in accordance with Appendix 28.
- Compliance monitoring may be undertaken at the discharge point OR within the reasonable mixing zone downstream of the discharge which is no more than 100 m downstream plus the water depth at the discharge point

Table 2

Monitoring parameter	Unit	Class C standard / assessment criterion
Discharge rate	L/s (or m³/s)	Must be controlled to <10% of Maitai River flow*
Turbidity	NTU	≤ 3.0 NTU
Dissolved oxygen (DO)	%	Minimum over 24 hours (low flow) ≥ 90%
pH	pH units	6.5 to 8.5
Toxicants	µg/L	Water quality must meet the Class C NRMP assessment criterion for heavy metals (as outlined in Table 3 below). These parameters are based on contamination identified during the Detailed Site Investigation (DSI) and specified in AP28.6.i) ⁶ .

***Note:** Maitai River flow varies. Before dewatering discharge starts, the Site Controller must check the current Maitai River flow (Maitai at Forks – TDC River Flow datasite⁷) and set the discharge rate to <10% of the river flow at the time of discharge. Record the flow value and the discharge rate calculation in the dewatering log. Following sediment removal/treatment and discharge at <10% of river flow, discharge quality is expected to meet relevant surface water criteria after reasonable mixing.

Table 3 - NRMP Class A water quality standards– Unit: µg/L	
Heavy Metals	
Arsenic	1
Cadmium	0.06
Chromium	7.7
Copper	1
Lead	1
Nickel	8
Zinc	2.4

10 Stockpile management

If stockpiling is required on site:

- Stockpile(s) will be bunded and located in established areas where there are earthworks controls.
- Located away from watercourses, stormwater drains and steep terrain where practicable.
- All stockpiles of non-cleanfill materials will be covered overnight. The method of covering should prevent the generation of dust and the ingress of rainwater into stockpiled materials.
- During dry and windy conditions stockpiles should be dampened with water to minimise erosion and dust generation.

11 Soil reuse and disposal

On-site reuse:

- Excavated material may be re-used onsite as backfill, provided it is capped and is geotechnically suitable and does not contain refuse or asbestos.
- No reuse of contaminated soils below groundwater level (i.e., where they could become saturated). Since groundwater levels vary along the pipe alignment, reuse of contaminated soils should be limited to the backfill zone above the pipe embedment material (no lower).
- If soils are suspected to contain elevated PAHs above commercial/industrial criteria, or coal tar residues, they must be managed in accordance with this CSMP (see Section 12).

Off-site disposal:

There are different disposal options/requirements for different materials likely to be excavated:

- Surface seal** – comprises bitumen and can be disposed as cleanfill.
- Sub-base to approximately 350 mm** – assumed to contain elevated PAHs and metals – not suitable for cleanfill disposal. Will require disposal to Eves Valley landfill, unless additional testing confirms compliance with York Valley Landfill Waste Acceptance Criteria (WAC).
- Approximately 350 mm to 1,000 mm** – suitable for disposal to York Valley Landfill as contaminated material.
- Below 1000mm, suitable for disposal at York Valley Landfill.** May be suitable for cleanfill disposal subject to additional sampling and analysis.

IMPORTANT NOTE:

A suspected burn pit containing black stained soils is present within Ngaire Place. The extent of this feature has not been defined and may be intersected by the proposed trenching works. This material contains elevated PAHs and metals that would require disposal to Eves Valley Landfill, with disposal potentially requiring additional (TCLP) analysis.

- Material may be segregated and stockpiled in an offsite holding area for additional testing undertaken by the CLS to determine alternative disposal locations. The contractor shall confirm the approach for material segregation, stockpiling and testing (if required) with NCC prior to the commencement of works.

The contractor shall:

- Confirm disposal acceptance with the receiving facility before excavation.
- Minimise spillage of material outside of works area during truck loading.
- Load trucks where earthwork controls are in place so that runoff and possible spills during loading can be controlled and contained.
- Keep weighbridge dockets and disposal confirmation record.

12 Coal Tar management

Coal tar has been identified in Bridge Street pavement materials at depths between 50 and 320 mm, with high PAH concentrations (Total PAH up to 1,080 mg/kg; BaP TEF up to 162 mg/kg). All material beneath the road seal and to a depth of 350 mm is assumed to contain coal tar (in Bridge Street).

Handling requirements:

- Designated PPE for coal tar handling: nitrile gloves, P2 dust masks, safety glasses, disposable overalls.
- Dust suppression through water spraying or covering.
- Coal tar can be odorous and should therefore be removed from site or covered as soon as possible.

13 Imported material

Any material imported to site is required to meet environmental criteria for commercial/industrial land use. Material imported will comprise either:

- Granular materials sourced directly from a licensed quarry. Such material will not require testing, provided documentation confirming the source of the material is present (i.e., weighbridge dockets or invoices and a summary sheet).
- Material derived from a source, which has been verified in accordance with the methods in the NESCS, as being a piece of land that the NESCS does not apply, or
- Material sampled by a CLS at a rate of 1 sample for every 500 m³ and tested to confirm that it meets commercial/industrial criteria.

If material is to be stockpiled on-site, it must be in accordance with procedures in this CSMP.

14 Record keeping

The Site Controller will maintain records of earthworks and contamination management, including:

- Soil disposal manifests and weighbridge receipts.
- Photographs of soil excavation and loading.
- Any unexpected contamination events and subsequent actions.
- Records of inspections by the CLS or regulatory agencies.

15 Unexpected Contamination Discovery Protocols

If previously unidentified contamination is discovered during the works, or an uncontrolled discharge of potentially contaminated soil or water to the environment has been identified, the first response procedures below in **Table 4** will be followed. Indications of contamination can include the following:

- Non coal tar odours (e.g., oil/petroleum hydrocarbons, solvents, sewage).
- Discolouration of soil (e.g., black, blue, grey or green staining).
- Asbestos-containing materials (for example asbestos cement pipe, plasterboard, lagging, or cement board)
- Sheen or oily liquids in soil or on water.
- Industrial by-products / combusted materials e.g., ash or slag.
- Drums, sumps, or storage tanks.

⁵ [Resource Management Plan - Nelson City Council](#)

⁶ <https://nelson.isoplan.co.nz/operative/rules/0/81/0/0/0/144>

⁷ [Maitai at Forks | Tasman District Council](#)

Table 4 - Potential Contaminated Materials First Response Checklist

First Response Checklist	
Stop work in the location of the discovery and isolate the area by taping, coning, or fencing off.	☐
Advise the Site Controller.	☐
Update the site Hazard Board and prevent unnecessary access to the area by personnel.	☐
If unexpected ACM is observed, provide P2 dust masks to all staff entering the isolated area.	☐
If separate phase hydrocarbon (SPH) is encountered in excavations, then the area must be covered or temporarily backfilled.	☐
The Site Controller is to contact the CLS to inspect, sample and advise on specific controls.	☐
The Site Controller is to notify the Client.	☐
Contain surface water/sediment and dust as per this CSMP.	☐
The Site Controller is to contact the CLS to inspect, sample and advise on specific controls.	☐

16 Document control

Date	Version	Description	Prepared	Reviewed	Authorised
July 2026	1	CSMP	R Edwards	P Walker	O Whalley

17 Applicability

This CSMP has been prepared specifically for Nelson City Council to manage contamination during trenching and excavation work for the Maitai River Flood Improvement Works - Area 3, Portion 1 - Stormwater Pipe. It should not be used for other sites or purposes without written consent. The plan is based on site data available in the DSI (March 2026); if additional or revised information becomes available, the CSMP must be updated accordingly.

This CSMP provides information and options to manage Health & Safety and environmental protection but is not intended to relieve the controller of the place of work of either their responsibility for their workers, Contractors and the public, or their responsibility for protection of the environment. The provisions of this CSMP are mandatory for all persons (employees, Contractor and sub-Contractors) who will be involved in undertaking any of the proposed works. The CSMP has been prepared on the basis of information available at the date of preparation. The nature and continuity of subsoil away from sample locations are inferred and it must be appreciated that actual conditions could vary from the assumed model.