

Remedial Action Plan and Contaminated Site Management Plan – Brymer Development

1.0 Introduction

1.1 Purpose of this Management Plan

This Remedial Action Plan and Contaminated Site Management Plan (RAP-CSMP) has been prepared to support the redevelopment of 81 ha of pastoral land located between Brymer Road, Rotokauri and Whatawhata Road, State Highway 23, Hamilton (the Site) for residential landuse. The Site location is presented on **Figure 1**.

At the time of preparation of this RAP-CSMP, detailed information regarding the nature, extent, depth, and sequencing of the proposed earthworks was still being developed.

A Detailed Site Investigation (DSI) was completed by SLR Consulting New Zealand Ltd (SLR) in 2025 (ref. SLR, 2025. DSI – Brymer Development) to support the substantive fast-track application process. This DSI addressed data gaps from a previous DSI assessment conducted at the Site by BTW Company (BTW) in 2021, which identified the requirement for additional soil sampling to better identify potential risks to human health and the environment. This is summarised in Section 1.2.

This RAP-CSMP provides management practices to control potential health and safety, and environmental issues related to soil disturbance and potential discovery of previously unidentified contaminated soil during the proposed works. It also serves as a management plan to give regard to the Resource Management National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health, 2011 (NESCS).

In accordance with the provisions of the Health and Safety at Work Act (HSWA, 2015), it is the responsibility of the supervisor of the place of work to communicate to their workers undertaking work on the Site the nature and extent of the contamination and associated hazards and recommended management practices. This RAP-CSMP is intended to support this process and does not relieve the supervisor of their responsibility for the health and safety of workers. This RAP-CSMP is a 'live document' and should be updated based on Site condition or development plan changes.

1.2 Site History

Historical and current land uses at the Site include pastoral farming, sheep farming, livestock grazing, and associated agricultural activities. Historical aerial imagery and records reviewed as part of the BTW DSI indicate that farm structures were present on the Site from at least the early 1940s. The Site

was reportedly used for sheep farming between the 1940s and 1980s and has subsequently been used for livestock grazing.

The BTW DSI identified three Areas of Concern (AOC/Stockyards 1 to 3) associated with historical stock handling activities and potential sheep dip operations. Soil sampling undertaken as part of the investigation identified arsenic concentrations exceeding adopted human health assessment criteria within each of the AOC/Stockyard areas and asbestos in soil adjacent to a building within AOC/Stockyard 3. The investigation concluded that additional delineation sampling was required to better define the extent of contamination within the AOC/Stockyard areas and around the existing residential dwellings.

The SLR DSI included the collection of 42 soil samples from the identified AOC/Stockyard areas and around on-site buildings to address data gaps identified by the BTW investigation. The findings were:

- Lead exceeded the NESCS Soil Contaminant Standard (SCS) for the residential 10% produce land use scenario in four surface soil samples collected adjacent to the cottage.
- Asbestos was detected above the New Zealand Guidelines for Assessing and Managing Asbestos in Soil (NZ GMAS) in one shallow soil sample collected adjacent to the cottage.
- Concentrations of one or more heavy metals (arsenic, cadmium, copper, lead, nickel and/or zinc) exceeded published background concentrations in a number of soil samples collected from AOC/Stockyards 1 to 3, although all results were below the applicable NESCS Soil Contaminant Standards (SCS) and ecological guideline values.
- Dieldrin was detected above the laboratory limit of reporting in one soil sample collected adjacent to AOC/Stockyard 2, although at a concentration below the relevant NESCS SCS.

Overall, historical investigations have identified localised areas of contamination associated with the cottage and AOC/Stockyards 1 to 3. Contaminants of potential concern include arsenic, lead, asbestos and, organochlorine pesticides. Elevated concentrations of contaminants are localised with portions of the Site meeting the definition of a "piece of land" under the NESCS. Soil at these locations requires appropriate management during earthworks and development activities.

Why this RAP-CSMP is Required

The development of this RAP-CSMP is required to manage soil with elevated concentrations around the cottage and AOC. It will establish processes for managing unexpected discovery of contamination that may be encountered during the proposed redevelopment of the Site.

Implementation of the procedures in this document will assist in providing the necessary controls to manage potential exposure of excavation workers to contaminants in soil during the works. It also sets out appropriate controls for off-site soil disposal of contaminated soils.

2.0 Accidental Discovery and Management of Unexpected Contamination

The presence of discoloured soils, staining, odours, fibrous material (such as presumed asbestos containing material), and general refuse may indicate possible contamination and immediate steps will be undertaken to address the situation as described in **Table 1**.

Table 1: Proposed contingency plan for unexpected discovery of contamination during construction

EVENT	POTENTIAL IMPACTS	CONTINGENCY PLAN
Uncovering or disturbance of unexpected contamination – as evidenced by the following: • Discoloured soils; • Staining; • Odours; • General refuse; and • Fibrous materials (asbestos).	Discharges to the environment and risks to health and safety of workers	• STOP WORK in area of discovery. Area to be cordoned off until the material has been identified and decisions made on how to progress. • Site Manager to be notified of any contaminated material identified. • Site Manager to contact a Suitably Qualified and Experienced Person (SQEP) to assess the nature of the material. • Work to re-commence only once advised by a SQEP.



3.0 Remedial Action Plan

Soil in the Remediation Area (refer to **Figure 1**) requires remediation so that concentrations of contaminants in soils remaining in-situ are highly unlikely to pose a risk to human health for the proposed development. Specifically, this is focused on the management of arsenic, lead and/or asbestos contaminated soils at and around the cottage footprint and AOC/Stockyards 1 to 3.

3.1 Remedial Process and Criteria

Based on the analytical results from both the BTW and SLR DSIs, remediation is required within the cottage footprint and AOC/Stockyards 1 to 3, where arsenic, lead and/or asbestos in surface soils have been identified at concentrations exceeding the applicable human health guidelines.

The following should be undertaken by a competent person, overseen by a SQEP:

- Appropriate Site access controls should be implemented.
- Excavate a minimum of 0.5 m beyond the building footprint within the cottage footprint, to a minimum depth of 0.25 m.
- Excavate to the nearest clean sample location within AOC/Stockyards 1 to 3, to a minimum depth of 0.25 m.
- A visual inspection should be conducted to assess for any visual or olfactory evidence of contamination.
- Validation soil samples are to be collected by a SQEP from the walls and base of the remediation areas. Repeat sampling may be required to demonstrate that remaining soils meet the remediation criteria.
- Collected soil samples are to be analysed for arsenic, lead and/or asbestos by an IANZ accredited laboratory.
- It is estimated that between 350-400 m³ of soil will require excavation and off-site disposal.

Appropriate precautions should be undertaken during soil disturbance, as provided in Sections 4 and 5.

3.2 Remedial Criteria

Remediation criteria for the Site are adopted from the NESCS Soil Contaminant Standards (SCS), adopting the Residential 10% produce land use scenario and NZ GAMAS using Residential land use scenario. Comparison with the remediation criteria will determine if the remediation has been successful.

3.3 Soil Validation

Following remediation, an SVR will be prepared in accordance with CLMG No.1 and lodged with WDC as soon as practicable after validation sampling is complete.

All reporting will follow Contaminated Land Management Guideline No. 1 (Revised 2021) and be certified by a SQEP.

4.0 Contaminated Soil Management

All soil within the Site should be handled and disposed of in accordance with this RAP-CSMP and is generally considered suitable for re-use on-Site, except for the Remediation Areas.

If soil from any of the 'Piece of Land' areas, as presented on **Figure 1**, is to be removed from the Site, this must be disposed at a suitably licensed facility, licensed to accept soils with contaminant concentrations as identified in the DSI. Sampling of surplus soils for disposal (if required) should be conducted by the SQEP and in general accordance with:

- MfE Contaminated land Management Guideline Publication No.5 Site Investigation and Analysis of Soils, 2021 (CLMG No.5), and
- WasteMinz Technical Guidelines: Characterising Surplus Soil for Disposal, 2024.

5.0 Environmental Management Procedures

Environmental management procedures are required to minimise the impacts to human health and the environment associated with the low-level soil contamination identified across the Site. In addition to the procedures to be followed in the event of unexpected discovery of contamination, the following procedures also apply to all construction works.

5.1 Earthworks

Earthworks controls will be important in minimising potential environmental impact, and will include:

- Minimising exposed surfaces to only those being works on. If an area has been excavated but is not being works on, it must be covered or stabilised to prevent stormwater run-off / sediment entering drains.
- Stockpiling of soils should be minimised. If stockpiling of soils is unavoidable, excavated soils will be temporarily stockpiled in accordance with procedures provided in Section 5.3.
- Good housekeeping of the worksite shall be maintained to avoid the spread of potentially contaminated material outside the site, including tracking and spilling on roadways.

5.2 Disposal of Excavated Material

Excavated and disturbed soils should be retained on-site wherever practicable. The DSI results indicate that soils outside of contaminated areas (as referenced in Section 3.0) are generally suitable for on-site retention from both human health and environmental perspectives. Retaining soils on-site is the preferred approach, as it represents a more sustainable practice and reduces the volume of material requiring disposal to landfill.

Where off-site disposal is required, surplus soils generated from areas outside the identified contamination zones may be suitable for disposal as Cleanfill, subject to waste classification and acceptance by the receiving facility.

Stockpiling of contaminated or potentially contaminated soil shall be avoided where possible, however if immediate disposal is not possible, the material may be stockpiled onsite in accordance with Section 5.3 of this RAP-CSMP or may be segregated and stockpiled at the disposal site pending analysis.

Suitable tracking documentation for all material taken off-site, including weighbridge tonnage, will be provided to the project manager for recording purposes and made available to Council upon request.

5.3 Stockpiling of Contaminated Soils

Stockpiled soil which is contaminated or suspected to be contaminated will be managed by the contractor as follows:

- The stockpiled material shall be placed on plastic sheeting or hardstand to prevent the potential contamination of underlying soil.
- A bund will be constructed around the stockpile to minimise stormwater run-on and run-off.
- Stockpiles will be wetted and/or kept covered with plastic sheeting or a geotextile layer when material is not being added or removed to prevent erosion and dust generation.
- Following stockpile removal, the underlying plastic will be properly disposed of at a suitably licensed facility (if stockpiled soils contain contaminants above acceptable standards). If the underlying plastic is breached, sampling and analysis or removal and appropriate disposal of underlying soil may be required.

5.4 Stormwater and Sediment Control

Erosion and sediment controls shall be put in place to ensure that the generation of potentially contaminated sediment and stormwater is minimised and managed.

Sediment controls will be undertaken in accordance with:

- The site-specific Erosion and Sediment Control Plan (ESCP).



- Industry best practice.
- Waikato regional Council (2009) Erosion and Sediment Control Guidelines for Soil Disturbing Activities (TR 2009/02).

Erosion and sediment controls will be adequate to ensure that contaminated soil does not travel off-site.

Daily inspections of erosion and sediment controls and the overall stormwater system will be conducted. Additional inspections will also be conducted following high rainfall events. If the erosion and sediment control system has been breached, the offsite sediment will be immediately cleaned and managed as potentially contaminated soil. If any areas of the site have potentially been cross-contaminated, soil testing will be undertaken to characterise the potentially impacted area.

5.5 Dust Control

Dust must be managed during the excavation works to ensure that it generally complies with the Good Practice Guide for Assessing and Managing the Environmental Effects of Dust Emissions. To control the generation of dust, the contractor will ensure that:

- A water truck and/or portable water sprays is used in trafficked areas to dampen exposed soil during dry and windy conditions. When utilising water to control dust, the contractor will ensure that:
 - The volume of water used does not exceed soil field capacity of the wetted areas causing surface run-off that could discharge in stormwater systems or other waterways.
 - The application of water does not induce soil erosion and/or soil pugging.
- Stockpiled material is covered as outlined in Section 5.3.
- Vehicle access onto the works area is limited.
- Working in windy conditions is avoided.

A dust and odour complaints log will be maintained by the site contractor. If complaints regarding dust are received, the following information will be recorded:

- Time and date of the complaint.
- Name and location of the complainant.
- Weather conditions, description of site activities, and location of site activities.
- Nature of the complaint.
- Mitigation measures undertaken and evaluation of effectiveness.

5.6 Groundwater and Dewatering

Should groundwater be encountered the construction manager will contact a SQEP to determine any further actions that may be required.

6.0 Health and Safety Measures

The health and safety procedures described in this section of the RAP-CSMP shall be implemented by the contractor, in addition to those covered by their own Health and Safety Plan (HSP) and documents.

6.1 Site Access and Signage

Fencing or other barricades will be put in place prior to the start of works to provide for site access control. Only authorised personnel may be allowed to enter the site. All persons entering the site will sign in and out, and will be briefed on the HSP. Workers are required to be briefed on the applicable requirements of this RAP-CSMP.

6.2 Identification of Hazards and Management

The following contaminated land related hazards may be encountered during the works if contaminated soil is encountered:

- Dermal skin contact with contaminated soil or groundwater.
- Inhalation of contaminated dust.
- Ingestion of contaminated soil or groundwater.

Further unspecified hazards may be identified during the course of the works. The hazards identified above will be managed through the wearing of appropriate personal protective equipment (PPE) and the procedures set out in Sections 6.3 and 6.4. The primary hazard management method is minimising exposure to contaminated soil during excavations and transportation. Maintenance of earthworks controls (Section 5.1) is a key component of contaminated soil hazard management.

6.3 Personal Protective Equipment

The current land use at the site has led to the potential contamination of shallow soils with heavy metals, TPH, and PAH at the site. The following PPE will be mandatory for all personnel involved in ground disturbance activities where the potential for direct contact (including accidental contact) with contaminated materials exists:

- Clothing that covers the body.
- Safety footwear.
- Gloves (if soil is handled).

- Dust masks (P1 dust masks, if there is a potential for the generation of contaminated dust).
- Safety glasses – to prevent airborne soil / dust entering eyes.
- Hard hat (if working around plant).
- High-vis vest.

6.4 Hazard Minimisation Procedures

The following procedures to minimise hazards related to contaminated soil will be implemented by the contractor:

- Dust controls, according to the procedures set out in Section 5.5.
- Contact with potentially contaminated material is expected to be minimal because the excavations are proposed to be undertaken using machinery. However, as a precautionary measure, any worker that is required to manually handle any soil will be required to wear disposable gloves.
- Maintaining good personnel hygiene, including:
 - No eating, drinking, smoking or vaping in the works area, whilst potentially contaminated soils are being excavated to prevent contaminated soil contacting food or being ingested directly through soiled hands;
 - Avoiding hand to mouth and hand to face contact during work with potentially contaminated soils;
 - Washing boots if contaminated soil has been contacted;
 - Disposing of gloves that have contacted contaminated material; and
 - Hands and face will be washed before eating, drinking and smoking, which is only permitted where site personnel are offsite or in designated areas.

7.0 Contacts

The main regulatory authorities to be consulted in respect of the site management controls proposed, any unexpected discoveries related to potential contamination, and emergencies are as follows:

Table 2: Contacts during construction

Organisation	Contact	Telephone
Principal Contractor	TBC	TBC
SLR Consulting New Zealand- SQEP	Lindsay Lutes	020 4000 1872



Organisation	Contact	Telephone
Waikato District Council	General Enquiries (24 hours)	0800 492 452
New Zealand Fire and Ambulance Service		111
National Poisons and Hazardous Chemicals Information Hotline		0800 764 766
WorkSafe New Zealand		0800 030 040

8.0 References

BTW Company, 2021. Detailed Investigation (DSI) at Brymer Road, Rotokauri (210406 Rev 2 – 30/07/2021).

Ministry for the Environment, 2011. National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health.

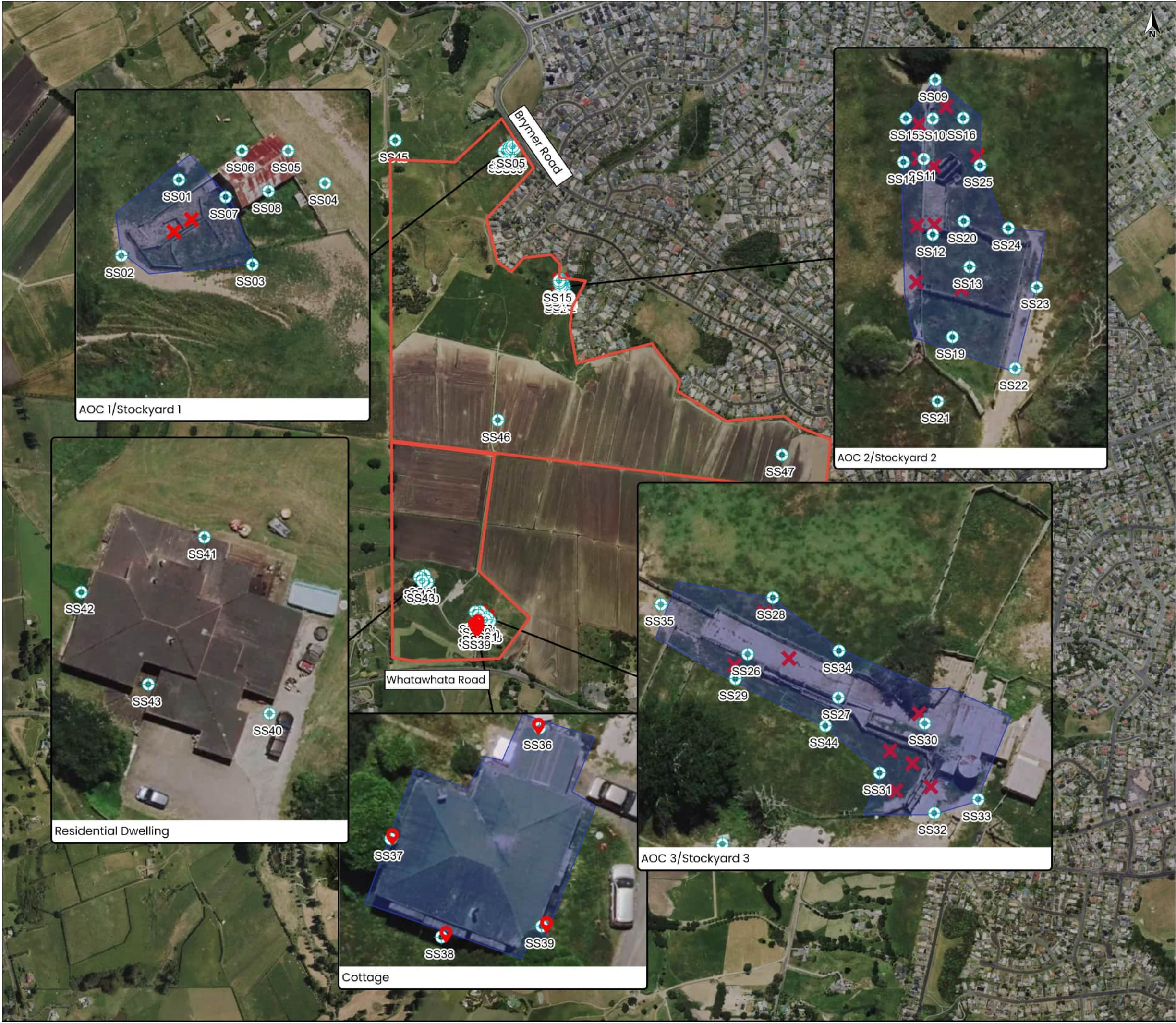
Ministry for the Environment, 2016. Good Practice Guide for Assessing and Managing the Environmental Effects of Dust Emission.

SLR Consulting New Zealand Limited. 2026. Preliminary and Detailed Site Investigation - Te Kowhai East Development (Project No. 810.032016.00001)

9.0 Closure

This report has been reviewed by Nigel Mather, a Certified Environmental Practitioner with Site Contamination specialism (CEnvP- SC), and is a SQEP in accordance with the requirements of the NESCS and Ministry for the Environment (MfE) Contaminated Land Management Guideline Publication No.1 *Reporting on Contaminated Sites in New Zealand*, 2011 (CLMG No.1).





Legend

- Site Boundary
- SLR DSI Sample Locations - Above NES
- SLR DSI Sample Locations
- BTW DSI Sample Locations - Above NES
- Remediation Area
- Location

0 100 m 200 m

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Title:
RAP-CSMP – Site Location and Remediation
Areas

Client: CMW Geosciences Size: A3

Project: Brymer Development DSI	Drawn: SH	Figure No.: 1
Date: 13-10-2025	Checked: NM	

Proj No: 810.031825.00001	Scale: 1:10500	Version: 1.0
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