

# **Dominion and Valley Road Apartments, Mt Eden**

# Interim Site Management Plan (Ground Contamination)

PRECINCT PROPERTIES LTD

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Interim Site Management Plan (Ground Contamination) Dominion and Valley Road Apartments, Mt Eden



#### **Dominion and Valley Road Apartments, Mt Eden**

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#### 1. Introduction

Williamson Water & Land Advisory (WWLA) has prepared this Interim Site Management Plan (SMP) to assist Precinct Properties Ltd with their proposed apartment development at 198-202 and 214-222 Dominion Road and 113-117 Valley Road, Mt Eden, Auckland (the site, see Figure 1).

This SMP should be read in conjunction the preliminary<sup>1</sup> and detailed<sup>2</sup> site investigation reports (PSI/DSI) prepared for the site, and WWLA assessment<sup>3</sup> of the PSI and DSI.

This version of the SMP supports the resource consent and is interim because detailed site investigations have not been completed across the full site extent. This SMP will be updated once investigations have been completed (following demolition).



Figure 1. Site location with individual lots comprising the site outlined in red. (Aerial image and information source: Land Information New Zealand).

 <sup>&</sup>lt;sup>1</sup> T+T, May 2016. Preliminary Site Investigation, Valley Road Apartments, Mt Eden. Prepared for Panuku Development Auckland.
 <sup>2</sup> T+T, April 2017. Detailed Site Investigation, Valley Road Apartments, Mt Eden. Prepared for Panuku Development Auckland.
 <sup>3</sup> WWLA, 31 July 2024. Dominion Road and Valley Road Apartments, Mt Eden – Ground Contamination Assessment. Prepared for Precinct Properties Ltd.



# 1.1 Background

Precinct Properties Ltd propose to construct three five-storey apartment buildings over the site, featuring a single-level interconnected basement. Construction will require excavations between 0.5 m and 4 m below current ground level, and all existing non-engineered fill will be removed from the site.

### 1.2 Site identification

The site covers several commercial properties located at the corner of Dominion and Valley Roads as shown in **Figure 1** above. Site identification details as recorded on Auckland Council Geomaps are presented in **Table 1**.

#### Table 1. Site identification

Address	Legal description	Area (m²)
198-202 Dominion Road, Mount Eden, Auckland 1024	Lot 1 DP 51797, Pt Lot 4 DP 182, Pt Lot 5 DP 182	1,376
214-222 Dominion Road, Mount Eden, Auckland 1024	Lot 2 DP 54203, Pt Lot 1 DP 31896, Pt Lot 3 ALLOT 8 SEC 10 Suburbs AUCKLAND	2,284
115-117 Valley Road, Mount Eden, Auckland 1024	Pt Lot 3 DP 1, Pt Lot 3 DP 1, Pt Lot 3 DP 1	950
113 Valley Road, Mount Eden, Auckland 1024	Lot 1 DP 54203	642
	Combined site area (approx.)	5,252

## 1.3 Objectives and scope of this SMP

The objectives of this SMP are to:

- Provide procedures to guide contractors in materials management, reuse, containment, disposal, health and safety and response to unexpected contamination encounters.
- Outline the additional soil testing and reporting required following building demolition.
- Fulfil expected contaminated land conditions of the (discretionary) resource consent.

A summary of the key components of the various sections of this SMP are provided below:

Sections 1 and 2	Identification of the land covered by this SMP and supporting evidence used to inform the requirements of this SMP. The relevant development information and conclusions from the contamination investigations of the site are summarised in these sections.
Section 3	Provides the scope of post-demolition investigation requirements to address areas not yet investigated including those presently covered by buildings.
Section 4	Contamination-specific requirements for the contractor establishing the site and procedures to ensure contaminated fill and soils are handled, contained or disposed of appropriately and discharges are mitigated during development earthworks, and procedures for undertaking expected remediation.
Section 5	General earthworks controls for bulk earthworks outside or subsequent to any contaminated areas requiring remedial action.
Section 6	The contamination-specific health and safety requirements for soil disturbing activities.
Section 7	Monitoring requirements for the Contractor and suitably qualified and experienced environmental (contaminated land) practitioner (SQEP) during soil disturbance (remedial works and bulk earthworks).
Section 8	Contingency measures provided in the event that unexpected ground conditions are encountered, discharges occur and/or complaints are received during site works.
Section 9	Lists the information the contractor is required to provide at the end of the project to be included in a validation report and sets out the closure reporting obligations and method post clearance works.
Appendix A	A Contractor Checklist is provided to assist Contractors with compliance with this document.



# 1.4 Legislative requirements

This SMP has been prepared in support of application for resource consent for subdivision and earthworks; the contaminated land component as a Discretionary Activity.

WWLA has prepared this SMP in accordance with requirements of the NESCS, NZAG<sup>4</sup>, and MfE CLMG No.1<sup> $\circ$ </sup> and 5<sup> $\circ$ </sup>.

The persons preparing and certifying this SMP are suitably qualified and experienced environmental practitioners (SQEPs) as defined in the NESCS Users' Guide (2012). Information demonstrating the experience of our SQEPs involved in preparation of this report and future investigation of the site are available on request.

### 1.5 Plan management and control

Contaminated land-related responsibilities during development of the site, including management, distribution and implementation of this plan are as set out in **Table 2**.

Table 2: Roles and responsibilities under this plan
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Organisation	Role and responsibilities
Landowner:	Role:
[Precinct Properties Ltd]	PCBU as defined in the Health and Safety at Work Act 2015 (Health and Safety Regulation).
Lead Contractor:	Responsible for:
[TBC]	Distribution of this plan to sub-contractors and ensuring they understand their obligations under the
	plan.
	Compliance with resource consent conditions.
	Implementation of this plan.
Contractor's Site Manager:	Responsible for:
[TBC]	<ul> <li>Liaising with the SQEP to ensure appropriate inspections are undertaken at the key times (refer Sections 3, 4 and 6 and Contractor Checklist, Appendix A);</li> </ul>
	Monitoring compliance with consent conditions.
	Ensuring disposal of surplus materials is to an appropriate location.
	Monitoring earthworks controls.
Site Health and Safety	Responsible for:
Officer:	• Ensuring adequacy of health and safety provisions during unexpected contamination encounters.
[TBC]	
Subcontractors	Responsible for adhering to procedures and requirements of this plan.
SQEP:	Responsible for:
[WWLA]	Post-demolition contamination testing of soils.
	Revision of this SMP as applicable based on additional investigations and unexpected contamination
	encounters.
	Advice during the works.
	Soil and water monitoring (if required).
	Validation reporting.
Auckland Council	Responsible for monitoring compliance with resource consent conditions.
Worksafe NZ	Responsible for overseeing compliance with the Health and Safety Regulations.

<sup>&</sup>lt;sup>4</sup> BRANZ, 2017. New Zealand Guidelines for Assessing and Managing Asbestos in Soil.

<sup>&</sup>lt;sup>5</sup> Ministry for the Environment, 2021. Contaminated Land Management Guideline No. 1 – Reporting on Contaminated Sites in New Zealand (updated 2021).

<sup>&</sup>lt;sup>6</sup> MfE, 2021. Contaminated Land Management Guideline No. 5 – Site Investigation and Analysis of Soils.



# 1.6 SMP Users' Guide

This SMP has been prepared to support resource consent for the development works, thus demonstrating to Council how contaminated soils will be managed. However, the ultimate objective of this report is to support contractors undertaking development earthworks. Of key importance is the function of this SMP in directing contractors in materials management, remedial actions, health and safety, general earthworks requirements, response to unexpected contaminated materials and monitoring and documenting their works.

This SMP is intended as a flexible document with the full range of procedures to account for unexpected contamination that may be present given the significant building coverage, and to avoid delays if this report required updating. However, this does not preclude this document from being revised should contamination be identified that is outside the scope of the procedures in this report.

Appendix A contains a Checklist template for easy reference by contractor(s).

Throughout this report, times when the SQEP is required to be consulted are highlighted for easy reference.



# 2. Site Conditions and Management

This section sets out the site's setting and provides an overview of the history, potential for contamination, reported contaminant concentrations, and thus the basis for the procedures in this SMP.

### 2.1 Environmental setting and history

The history and environmental setting is based on information in the PSI/DSI.

#### Table 3. Environmental setting

Surrounding land uses	The nature of surrounding land uses affects both how the site might be impacted by activities in its surrounds (e.g. be contaminated by adjacent land uses), and how contaminants present at the site (if any) might impact on surrounding land uses. Surrounding to the north, west and south is all commercial, typically retail and restaurants. Residential dwellings are located east of 113 Valley Road and to the northeast on Carrick Place.
Topography and drainage	The topography of the site influences where contaminants can migrate to (if present). Surface water features are potential receiving environments should contaminants be present on a site. The overall site topography is flat with localised moderately sloping ground in the northwestern and northeastern corners of the site. The existing ground surface levels vary between about RL 56 m and RL 51.3 m. Auckland Council Geomaps indicates that surface water drains from the northeast to the northwest across the site via an overland flow path. There are no surface water features on or adjacent to the site.
Geology	The geology is considered in the context of contaminant transport. For example, more porous soils can enable contaminants to move more quickly and potentially further than clay-rich soils that retain or prevent penetration of contaminants. Published geological maps and historical investigations <sup>7</sup> indicate the site is located on variable depths of fill (up to 2 m thick) over rubbly basalt, with solid basalt rock is encountered between 0.15 m and 5.2 m below ground level.
Hydrogeology	Hydrogeological conditions affect the potential risk of contaminants entering and being transported in groundwater. Groundwater is expected to follow topography and flow southwest. Groundwater is expected to be >20 m below ground level based on the previous geotechnical investigation <sup>7</sup> .
Sensitive receptors	Sensitive environmental receptors could include aquatic or terrestrial ecosystems. This is not an ecological assessment but is instead an initial review of the surrounding environment to assess where contaminants (if present) on the site could migrate to and the potential effects. There are no sensitive environmental receptors on or adjacent to the site.
	Sensitive human receptors could, for example, be children at a school or kindergarten on or adjacent to a site. Less sensitive receptors would be workers on industrial land (either on or adjacent to the site). This receptor interpretation informs the CSM and also future guideline value selection for evaluation of soil data. Future occupants of the site could be considered sensitive receptors since this could include families with children.

## 2.2 HAIL activities and reported contaminant concentrations

Several HAIL Activities were identified during the PSI including F4 (motor vehicle workshop), A13 (under- and aboveground fuel storage tanks (UST/AST)), E1 (degraded asbestos products) and I (accidental release of contaminants relating to filling).

Soil testing has only been completed on 214-222 Dominion Road, and the remainder of the site has not been investigated. Our review of the contamination investigations to date indicates that fill containing demolition waste, anticipated to be across much of the site to varying depths, is likely to contain contaminants above

<sup>&</sup>lt;sup>7</sup> T+T, June 2017. Geotechnical Investigation Report, 198-222 Dominion Road and 113-117 Valley Road, Mt Eden. Prepared for Panuku Development Auckland.



background levels, and heavy metal concentrations in the fill may present a risk to human health and/or the environment. Testing shows that levels of asbestos in fill are not a human health risk but this needs to be confirmed for the entire site. Further (post-demolition) investigation requirements are detailed in **Section 3**.



Figure 2. HAIL activity areas (based on information in the PSI and WWLA contamination review letter).

### 2.3 Development works requirements

At the time of preparing this SMP details of the methodology for future development works are not known, but is expected to follow the general process below:

- 1. Demolition of buildings, structures, and hardstand areas;
- 2. Undertake additional soil sampling as per **Section 3** where it is required to complete the assessment of ground conditions.
- 3. Removal and offsite disposal of all geotechnically unsuitable soil and fill. Any areas requiring remediation via offsite disposal would be completed first.
- 4. Bulk earthworks and ground engineering.
- 5. Building construction.
- 6. Paving and landscaping works; landscaping is expected to be at podium level (i.e. not in existing ground) given the basement extent.



Soil disturbance will occur during Phases 1 to 4. Management of contaminants in soil and any unexpected contamination will be required during this period.

#### 2.4 Contaminant management strategies

The rationale for soil management procedures in this SMP are based on the type of contaminants present, their distribution and are to mitigate effects on workers, neighbouring property occupants and the environment during soil disturbance utilising industry best practice methods. It also considers contaminants that may be present in areas of the site that have not been investigated due to the coverage by existing buildings.

The management strategy is as follows:

- Ensure asbestos demolition is completed appropriately. Asbestos demolition controls for the buildings will likely be as Class B works, however controls for soils (if needed) are expected to be under a lower level of control such as asbestos-related works (refer **Table 7**, **Section 4.3**). The level of control will be determined following further contamination testing.
- Complete post-demolition soil sampling (refer Section 3) to address outstanding HAIL activity concerns and confirm any areas requiring remedial works (if necessary) and confirm the SMP procedures are appropriate. If any amendments to the procedures in this document are required, a revised SMP will be provided to Auckland Council by the SQEP.
- 3. Manage contamination (exceeding NESCS commercial criteria) under contamination-specific controls so that these can be removed prior to bulk earthworks commencing. Management may include:
  - Retaining the soil onsite where it does not pose a risk, i.e. is contained beneath the building, paving or other features that prevent mechanisms for its mobilisation and thus ability to affect human or environmental receptors.
  - Removal and disposal to an appropriately licensed offsite disposal facility. *This is expected to be the most likely option chosen given the extent of the proposed basement structure*.
  - Onsite treatment or mechanisms for reducing contaminants such as vertical mixing/blending or stabilisation (addition of lime to raise the soil pH and thus reduce the leachability of metal and some other contaminants) may be possible for metal contaminants.
- 4. Standard earthworks controls and procedures during bulk earthworks, with focus on appropriate disposal of surplus soil, minimising generation of potentially contaminated sediment-laden stormwater and prompt response and management of unexpected contamination.
- 5. Regular communication between Precinct Property Ltd's project manager, the constructor's site manager and the SQEP to ensure that contaminated soil is appropriately managed without delay to the programme.
- 6. Site closure reporting to satisfy Council requirements on completion of earthworks.



# 3. **Post-Demolition Investigations**

Further (post-demolition) investigation is required within current building footprint and across paved open areas of 198-202 Dominion Road and 113-117 Valley Road, to better understand soil conditions and assess any potential impacts from prior land uses including the presence of possible underground (fuel) storage tanks (UST).

# 3.1 Investigation positions

The outstanding investigation areas, sampling and testing plan is shown in **Figure 3** below and described in **Table 4**.

#### Table 4. Post-demolition investigation plan.

Soil in building footprints and across the open areas of 198- 202 Dominion Road and 113-117 Valley Road	<ul> <li>Upon completion of demolition of building slabs, the SQEP shall inspect the ground surface for presence of deleterious materials (e.g. ACM) and other indicators of contamination.</li> <li>Collection of soil samples throughout the depth of fill or the maximum depth of excavation on a grid basis.</li> <li>Laboratory analysis by an IANZ accredited laboratory for metals and/or PAH and/or asbestos, with additional contaminant testing determined by the SQEP based on observations of the material.</li> </ul>
UST locations (if any encountered)	<ul> <li>Inspection of ground surface below the concrete pad upon removal of the tank. Surface expressions of tank locations may not be obvious.</li> <li>SQEP-supervised excavation and removal of UST(s) if present (refer Section 3.2, Table 3(5)).</li> <li>Sampling, analysis and reporting of UST decommissioning and removal, in accordance with CLMG1.</li> </ul>

# 3.2 Sampling methodology

Soil sampling shall be undertaken by a SQEP in accordance with CLMG5 as follows:

- Soil samples will be collected via trowel for surficial samples, and from test pits (machine-excavated or handdug) or hand-augered boreholes at the locations as depths as per **Section 3.1** above.
- Materials encountered will be logged in general accordance with the NZ Geotechnical Society "Guidelines for the classification and field description of soils and rocks for engineering purposes".
  - Wearing nitrile gloves, the SQEP shall collect soil samples directly from the excavator bucket, trowel or hand auger and place into laboratory-supplied glass jars to avoid cross contamination between sample positions (asbestos samples shall be collected in 500 mL plastic bags).
- Equipment (trowel, hand auger) shall be decontaminated between sample locations using Decon-90 (a phosphate-free detergent) and freshwater rinses, and nitrile gloves should be changed between samples.
- Courier samples chilled, under chain of custody documentation, the same day they are collected. Samples to be submitted to an IANZ accredited laboratory for testing.

## 3.3 Reporting

The findings of the additional investigations shall be *reported by the SQEP in an addendum DSI* along with a revision of this SMP, if necessary and an updated contractor Checklist. The Checklist will clearly set out what aspects of remediation (if any) is required and shall reference the relevant procedures in **Sections 4 – 9**.

Council shall be provided with the addendum DSI and updated SMP and Checklist. Any amendments (new procedures added) to this SMP would need to be approved by Auckland Council prior to remediation commencing.





Figure 3: Post-demolition sampling plan (Aerial image source: LINZ).



# 4. Remediation Procedures

Remediation is defined as actions to reduce, contain or remove areas where soil exceeding the NESCS soil contaminant standards for commercial use. Where environmental criteria are exceeded, the action of development of the land will increase impermeable surfaces and thus prevent mobilisation of contaminants.

These procedures only apply if remediation is deemed necessary upon review of post-demolition investigation data collected as per procedures in Section 3.1.

### 4.1 Remediation objectives and rationale

The objective of the remediation is to make the site suitable for residents of the proposed apartment complex. This will be in a high-density residential situation with no opportunity for residents to interact with in situ soils or undertake gardening. For these reasons the NESCS commercial/industrial land use criteria are applicable to the site.

The rationale for the procedures in Section 4.2 and controls in Section 4.3 is to:

- 1. Protect workers during soil disturbance.
- 2. Prevent effects on neighbouring residents/site users.
- 3. Remediate any soils exceeding commercial land use, or more sensitive if the development plans change.
- 4. Protect the environment and down gradient receptors during earthworks and post the site's development.

The procedures in this plan are provided to achieve the above.

### 4.2 Remediation methods

This SMP is intended to provide flexibility regarding remedial actions and can be upgraded to a remediation action plan (RAP) if the additional investigations to be undertaken indicates specific remediation is required. The procedures in **Table 5** shall be followed should remediation be necessary.

The contractor checklist sets out the key actions for the Contractor (**Appendix A**), to be populated once the findings of additional investigations are known.

1. Site esta	ablishment	• Appropriate site fencing and hazard boards set up. Site access to prevent anyone not directly involved in removal works from entering the site.
		<ul> <li>Fencing shall consider dust mitigation cloth/polythene, i.e. controls shall be left in place as for the building demolition.</li> </ul>
		<ul> <li>Induction for all site workers on the requirements of this plan. The SQEP shall go over the Checklist with the site manager. Further inductions (such as for visitors) may be by the site manager or nominated health and safety officer.</li> </ul>
		• A disposal permit shall be obtained from an appropriate offsite disposal site (if materials require disposal) prior to works commencing.
		• Establish PPE equipment stores and decontamination/ changing facilities (refer <b>Section 6</b> for PPE requirements).
		• Establish controls; dust suppression, erosion and sediment controls as per Section 4.3.
2. Con	ntaminated	Works shall not occur in windy conditions, particularly if asbestos removal is required.
soil	excavation	Soil shall be removed by excavator and placed directly onto trucks (hot loaded) where possible.
and	removal	• Stockpiling may be possible depending on contaminant types as per item 3 in Table 8 (Section 5)
		All excavation, loading of trucks and stockpiling must occur within the area where asbestos (if applicable)     and erosion and sediment controls are in place

#### Table 5: Remediation procedures



	• Tracking documentation shall be in place and load summaries provided to the SQEP on completion.
3. Asbestos in soils remediation	<ul> <li>The SQEP shall be notified prior to asbestos demolition of buildings occurring. The SQEP shall review the contractor's asbestos removal control plan (ARCP) and discuss the timing of building and soils removal. A Worksafe NZ licensed asbestos removalist must undertake asbestos removal from buildings.</li> <li>The SQEP shall define the level of asbestos control required for soils as per Table 7. Disturbance of asbestos contaminated soils are classified in the NZAG on the basis of the concentration of asbestos fines, asbestos fibres, and/or ACM fragments present in soil.</li> <li>Controls must be put in place and access to the works area minimised to only those contractors and workers undertaking the works.</li> <li>Controls relevant to the work class must be established and maintained as per Table 7 and trucking/ handling procedures as in 2 above adhered to.</li> <li>Validation shall be by the SQEP following removal of soils and in accordance with Section 9.</li> <li>Controls shall remain in place until all validation results are received. The threshold for all site uses is 0.001% w/w. Additional scrapes and re-validation sampling may be necessary or alternatively encapsulation may be considered (refer 4 below).</li> <li>The SQEP shall include the asbestos clearance results, including any air monitoring results and site inspection records, in the validation report outlined in Section 9.</li> </ul>
4. Onsite containment of contaminated materials	Retention of some or all contaminated materials may be appropriate, providing the materials are contained such that contact by site users and surface and groundwater is prevented. <i>Given the extent and depth of the proposed basement structure containment is not expected to be chosen as a remedial option but methods are included here for completeness in the event it is appropriate. Containment may include: <ul> <li>In situ encapsulation: Provided geotechnical/engineering considerations do not require removal of fill/opsoil, contaminated materials may remain in place below an impermeable surface or structure (i.e. – building, paving). A minimum of 0.3 m of certified cleanfill/hardfill shall be placed between contaminated materials and the final structure, with a layer of geotextile and visual marker layer (orange plastic mesh or similar) separating clean and contaminated materials.</li> <li><i>Below ground burial on another portion of the site</i>: Contaminated materials may be excavated and moved to another portion of the site (except for those containing free phase hydrocarbons), where geotechnical concerns do not preclude presence of non-engineered fill. Where materials are encapsulated they must, as above, be placed no shallower than 0.3 m BGL and covered with geotextile and visual marker layer (orange plastic mesh or similar), prior to overfilling with clean hardfill or soil. They shall not be placed within 0.5 – 1.0 m (depending on soil conditions) of the water table.</li> </ul> Above ground encapsulation within landscaping feature(s): Contaminated materials may be encapsulated above ground within landscaping feature(s): Contaminated shall be covered with geotextile and visual marker layer, prior to covering with a minimum of 0.3 m of certified cleanfill/soil. Where contaminated materials are encapsulated in situ further approval from Council is unlikely, however where materials are to be removed and placed elsewhere on the site a remediation plan would need to be provided to Council for review and app</i>
	In situ encapsulation schematic.



		Ground level
		0.3 m 1/ Certilied cleanini
		Geotextile cloth
		Clean soil
		Contaminated Solivin
		Below ground burial schematic.
		0.3 m
		Visual marker
		Contaminated soil/fill
		Ground level
		0.3 m
		Above ground encapsulation schematic.
5	LIST removal	The site history review suggests that more than one LIST has been present on the site in the past. There is no
J.	oor removal	evidence to indicate whether or not former USTs have been removed thus this procedure is provided in
		the event they are encountered.
		USTs shall be removed according to the following procedure:
		1. Cordon off the area as per item 1 above.
		2. Monitoring shall be by the SQEP as per <b>Section 7</b> .
		3. Any remaining concrete and surface coverings removed and surface excavated to the top of the tank.
		4. Tank inspected to see if any fuel or contaminated water remains. If so, tank should be pumped out to
		liquid waste before works continue.
		5. Using a narrow excavator bucket, remove soils around the sides of the tank to the tank base.
		6. Remove the tank and disposal offsite to a licensed waste facility. Tracking documents need to be retained
		for validation reporting.
		7. Excavate contaminated soils around the tank under the guidance of the SQEP.
		8. On completion of tank and soil removal, the SQEP shall carry out validation testing to enable disposal of
		remaining materials if the tank is within the excavation depth. If it extends below the excavation depth then
		validation to confirm remaining ground conditions will be required. Testing shall be for metals, TPH and
		BIEX with results required to meet AUP discharge criteria and NESCS for commercial use (including consideration of exposure scenarios for indoor air inhalation). The tank excavation shall remain open and
		fenced off until satisfactory results are received. Further validation testing and further removal if required.
		9. Backfill of the excavation with cleanfill or hardfill or if within the basement excavation then no backfilling
		would be necessary.
6.	Health and	Refer Section 6.
	safety	
7.	Vehicle	For machinery (e.g., excavator) that is used where separate phase hydrocarbons are present, decontamination
	decontamination	shall comprise washing prior to leaving the site. Washing shall be undertaken within the area of erosion and
		sediment controls with water treated and discharged to trade waste or a licensed facility via sucker truck.
		Successful decontamination of all machinery/equipment used for soil disturbance of material shall be confirmed
		by visual assessment undertaken by the SQEP prior to the machinery/ equipment leaving site.

Note: Soil stabilisation is another remedial method; lime is added to soil to raise the pH and thus reduce the leachability of metal and some other contaminants. Stabilisation may be difficult in an urban area given the issues around control of dust during addition of lime and would only be suitable if stabilisation occurred in situ or within a covered area. The use or applicability of this method could be assessed following receipt of the additional data should the earthworks plan and contaminant levels suggest this could be a viable method.

### 4.3 Remediation controls

Aside from asbestos, controls for soil disturbance must follow standard practices set out in Auckland Council Guideline Document 2016/005 – *Erosion and Sediment Control Guide for Land Disturbing Activities in the* 



# Auckland Region<sup>®</sup> (the GD05) with additional measures as outlined in **Table 6**. Asbestos control requirements are discussed in **Table 7**.

Table 6: Remediat	ion controls
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-		
1.	Management of erosion and sediment controls	<ul> <li>Erosion and sediment controls installed in accordance with the GD05.</li> <li>Any operating stormwater drains onsite shall be blocked to avoid the discharge of water that has come into contact with contaminated soil.</li> <li>Soil disturbance work in heavy rain shall be avoided.</li> <li>Surface water shall be diverted around stockpiles.</li> <li>Erosion and sediment controls shall be checked regularly and made sure that are in good working condition.</li> <li>Erosion and sediment control measures shall remain in place until surface reinstatement is established.</li> </ul>
2.	Asbestos controls (for soil)	The purpose of asbestos controls is to prevent fibres becoming airborne and potentially being inhaled by site workers, and in the future by subdivision users. Asbestos-specific control requirements for the fibre concentration groupings are set out in NZAG are in <b>Table 7</b> . Dust controls (as below) could be enhanced through use of polymer sprays prior to excavation to bind fibres if the concentrations are high.
3.	Dust controls	<ul> <li>Dust control measures shall be in accordance with the <i>Good Practice Guide for Assessing and Managing Dust</i> (Ministry for the Environment, 2016). There shall be a particular focus on dust mitigation to reduce the potential for site workers to inhale contaminated dust.</li> <li>A water truck shall be available on all days when rain is not forecast and shall provide frequent spraying of water to ensure the working surfaces remain damp.</li> <li>Use of tarps/ covers on all trucks to prevent dust generation during transport of soil to landfill.</li> <li>Use of a water truck or portable water sprays in trafficked areas to dampen dust.</li> <li>Dust cannons may also be useful in targeted areas, i.e. associated with asbestos removal.</li> <li>Monitoring shall be by the contactor, <i>overseen by the SQEP</i>, as per Section 7.</li> </ul>
4.	Stockpiling procedures	<ul> <li>Stockpiling of contaminated material shall be avoided wherever possible and all soils containing free phase hydrocarbons shall be immediately placed on trucks for disposal. The following procedures shall be applied during temporary stockpiling:</li> <li>Where possible stockpiles shall be placed within excavations to avoid the potential for rainfall induced runoff.</li> <li>For stockpiles formed on ground surface, the following controls shall be in place: <ul> <li>Stockpiles shall be placed within a designated area as defined on the ESCP.</li> <li>Bunding shall be present to control runoff of surface water falling on them.</li> <li>Covers shall be placed over the stockpile to prevent rainfall runoff and dust if stockpiles are maintained longer than one working day.</li> </ul> </li> </ul>
5.	Offsite Disposal	Offsite disposal of contaminated materials will require pre-approval from appropriately licenced fill site operator(s). The nearest licenced landfill is Redvale (operated by Waste Management, with Hampton Downs managed by Envirowaste in north Waikato also an option); the managed fill site at Ridge Road, Bombay, may accept these materials also, at a considerably lower cost (contingent on the results of post-demolition investigations).

<sup>&</sup>lt;sup>8</sup> Leersnyder, H., Bunting, K., Parsonson, M., and Stewart, C. (2018). Erosion and sediment control guide for land disturbing activities in the Auckland region. Auckland Council Guideline Document GD2016/005. Incorporating amendment 1. Prepared by Beca Ltd and SouthernSkies Environmental for Auckland Council.



6.	Water management	Surface water that intercepts contaminated soil may entrain contaminated sediment or become contaminated itself.			
		<ul> <li>Water (ground and surface) collecting in excavations may typically be managed via soakage if of a short duration. Water that cannot be managed by soakage will require testing and treatment prior to discharge to stormwater. <i>The SQEP shall be contacted if water requires discharge or disposal offsite</i>. A typical treatment method includes collection (in a series of tanks), settlement and flocculant addition to enhance settlement if required (see below).</li> <li>Water for disposal to stormwater must meet the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (https://www.waterguidity.com/ou/par.guidelines/</li></ul>			
		<u>quality-toxicants/search</u> ) for the 80% protection threshold for freshwater species, with the exception of benzene where the 95% protection level shall apply, and be free from petroleum hydrocarbon sheen and separate phase bydrocarbons. Monitoring is required as per <b>Section 7</b> .			
		<ul> <li>separate phase hydrocarbons. Monitoring is required as per Section 7.</li> <li>Water not meeting stormwater quality would require disposal to trade waste via a temporary permit. Water treatment will again be necessary prior to discharge, with a system such as in the schematic below likely to</li> </ul>			
		<ul><li>be suitable.</li><li>Alternatively, a licenced liquid waste contractor can be engaged to remove water from the site for disposal (but this is expected to be an expensive option).</li></ul>			
		Flocculant addition Flocculant addition and pH dosing (as (as required) required)			
		Collected site water			
		3 2 1			
		30,000 L plastic water tank 30,000 L plastic water tank 30,000 L plastic water tank Drain for use in event of sediment removal			
		Schematic: Suggested water treatment is required prior to discharge to stormwater or tradewaste.			
7.	SPH management	The key issues during the disturbance or removal of soils containing free phase or separate phase hydrocarbons are:			
		1. Development of hazardous atmospheres, particularly within excavations and voids.			
		2. Odour generation.			
		3. Soil handling, transport and disposal management.			
8.	Odorous materials	Implemented it odorous soils are encountered (considered unlikely):  Monitor weather conditions including wind direction and wind speed on-site			
	procedure	<ul> <li>Minimise works in strong winds as they will enhance odour transport to neighbouring sites.</li> </ul>			
		• Undertake major excavation works during early mornings and late evening periods when the wind speed is			
		expected to be lower.  Minimise the generation of odour and vanour by maintaining minimal open areas. This will include			
		reducing the volume of material being excavated during wind conditions that have a greater potential for			
		odour effects (e.g. specific wind directions, low wind speeds, early morning during warming conditions).			
		Application of dust/vapour/odour suppression measures such as:			
		<ul> <li>Use of deodorisers delivered via demisting sprays around the excavation plant if water sprays are</li> </ul>			
		insufficient. Air Repair FS Gold odour suppressants (or equivalent) will be used conservatively assuming a dosing rate of 100:1.			
		Monitoring of odour/vapour according to Section 7.			
		• If an odour is detected at the site boundary, the contingency measures in <b>Section 8</b> shall be implemented.			



Works category	Definition	Worksafe notification required?	Licensed removalist required?	Supervision level	Air monitoring required?	PPE required	Key controls
Unlicensed Works	For soils with ≤0.001% w/w AF/FA <sup>9</sup> and/or ≤0.01% w/w bonded ACM	No	No	SQEP	No	No asbestos specific PPE is required.	Standard earthworks controls as per Section 4.
Asbestos- Related Works	For soils with >0.001% w/w AF/FA and/or 0.01% w/w bonded ACM	No	No	SQEP	No	No asbestos specific PPE is required but a P2 respirator is recommended.	Standard earthworks controls with additional vigilance regarding dust emissions.
Class B Works	For soils with >0.01% w/w AF/FA and/or 1% w/w bonded ACM	Yes	Yes	SQEP meeting competency under Regulation 41(3) Asbestos Regulations	Recommended	Half face P3 mask and disposable overalls and boot covers. Decontamination tent needed.	Dust mitigation including application of polymers/ surfactants to soil prior to excavation.
Class A Works	For soils with >1% w/w AF/FA (friable)	Yes	Yes	SQEP meeting competency under Regulation 41(3) Asbestos Regulations	Yes	Full face P3 mask and disposable overalls and boot covers. Decontamination tent needed	Dust mitigation including application of polymers/ surfactants to soil prior to excavation

#### Table 7: Summary of asbestos works categorisation and controls required

<sup>&</sup>lt;sup>9</sup> AF/FA refers to the combined concentration of asbestos fines (AF) and fibrous asbestos (FA).



# 5. Bulk Earthworks Soil Management

Following remediation (if any) standard controls are applicable as per Table 8. These procedures will also apply to soil disturbance/earthworks where low levels of contaminants may exist (those below human health evaluation criteria, but including those above the AUP discharge criteria, if any). Bulk earthworks may commence after the completion of remedial actions (if required) described in Section 4.

The procedures in this section are standard earthworks practices with the exception of disposal requirements.

1.	Pre-works requirements	• Advise the SQEP of the work programme. The SQEP may need to assist with disposal permitting and must respond to unexpected contamination should it be encountered (Section 8).
		Arrange disposal permits for soil to be taken offsite (see item 3 below).
		Ensure erosion and sediment controls are in place as per the approved ESCP and as per GD05.
2.	General materials handling, excavation and transportation procedures	<ul> <li>The following shall be adhered to during excavation and offsite transportation of excavated of soils:</li> <li>Project-relevant earthworks controls shall be in place during excavation.</li> <li>Trucks transporting surplus soil offsite shall be loaded within the site where runoff and possible spills during loading shall be controlled and contained.</li> <li>The Contractor shall ensure that any soil exceeding background levels, or any unexpected contaminated soil, is disposed to managed or fill and is transported in covered trucks and accompanied by tracking documentation.</li> <li>Materials defined as suitable for cleanfill should be targeted where possible for offsite disposal as opposed to those that exceed background, to ensure cost efficiencies.</li> <li>Trucks shall have their wheels maintained clean of debris and there shall be no tracking of material onto roads or footpaths.</li> <li>All disposal dockets shall be retained, with <i>weighbridge summaries provided to the SQEP</i> for closure reporting as per Section 9.</li> </ul>
3.	Soil disposal and reuse	<ul> <li>Upon completion of any remedial works (if required, refer Section 4) and as verified by a SQEP, soils can potentially be reused onsite. The suitability for reuse is dependent on the findings of the post-demolition soil testing and geotechnical properties.</li> <li>Soils requiring offsite disposal to be treated as follows:</li> <li>Fill requires disposal to licensed landfill unless soil testing data shows managed fill is acceptable.</li> <li>Odorous hydrocarbon impacted soils (if any) will require licensed landfill disposal.</li> <li>Natural in situ subsoils are expected to be accepted by a cleanfill, confirmed by post-demolition soil testing.</li> <li>Soil data within the addendum DSI can be provided to fill site operator(s) to confirm acceptance.</li> </ul>
4.	Imported materials procedure	<ul> <li>Any material imported to the site shall originate from:</li> <li>A site which has been determined by a SQEP to have had no known history of potentially contaminating activities, as detailed on the HAIL.</li> <li>A site which has been adequately investigated by a SQEP, in accordance with CLMG5, and material that meets the 'Cleanfill material' definition as described by the Ministry for the Environment in their "Guide to the Management of Cleanfills (2002)". This process shall include: <ul> <li>Sampling at a rate of 1 sample for every 500 m<sup>3</sup>.</li> <li>Testing for metals and PAH, depending on the land use at the material's source, testing for OCPs and asbestos content may also be required.</li> <li>It is preferable that the fill is tested at its source prior to its use at the site. However, if not, then the Contractor shall stockpile the fill on site until test results are available.</li> </ul> </li> <li>Hardfill imported for backfill, if sourced directly from a quarry or supplier, does not require testing.</li> <li><i>Contact the SQEP</i> should there be any uncertainty about the certification of imported materials.</li> <li>A weighbridge or load count summary of imported materials shall be provided to the <i>SQEP on completion of works</i>.</li> </ul>

#### Table 8: Soil disturbance controls and procedures

# Interim Site Management Plan (Ground Contamination) Dominion and Valley Road Apartments, Mt Eden



5.	Management of erosion and sediment controls	<ul> <li>Erosion and sediment controls installed as per the ESCP and shall be managed as follows:</li> <li>Any additional controls shall be in accordance with GD05.</li> <li>Any operating stormwater drains onsite shall be covered by filter cloth to avoid the discharge of water that has come into contact with soil.</li> <li>Vehicles shall be inspected prior to leaving the works area and wheels brushed/cleaned as required to avoid the potential for sediment to leave the site on vehicle tyres and enter the existing stormwater system.</li> <li>Soil disturbance work in heavy rain shall be avoided.</li> <li>The site shall be kept clean of debris and stockpiles unless necessary.</li> <li>Erosion and sediment controls shall be checked regularly and made sure that are in good working condition. To ensure good practice: <ul> <li>The entry/exit point shall be reapplied with aggregate, or in the case of a pavement entrance, cleaned if excessive sediment build-up occurs.</li> <li>Erosion and sediment control measures shall be upgraded/ modified where necessary.</li> <li>Sediment fences will be replaced if the fabric is ripped or otherwise damaged. They shall be retrenched if needed.</li> </ul> </li> <li>Weather conditions along with the performance of the erosion and sediment control measures shall be monitored.</li> </ul>
6.	Dust controls	Dust generation shall be prevented at all times, via regular wetting of excavated areas, stockpiles, and haul roads as per MfE's <i>Good Practice Guide for Assessing and Managing Dust</i> .
7.	Stockpiling procedures	Standard procedures shall apply for stockpiling unless contamination is present, in which case the stockpiling procedures and controls described in item 4 in <b>Table 4 (Section 4.3)</b> shall be implemented. As a minimum, stockpiles shall be placed within a designated area defined on the ESCP.
8.	Water management	Refer item 6 in Table 6 (Section 4.3)



# 6. Health and Safety

### 6.1 Overview

Health and safety management for the works is informed by:

- The site <u>Hazard Register</u>. Available in the site office and attached to the daily contractor and visitor sign-in book.
- <u>Contractor works-specific SSSPs</u>. These documents are produced by the contractor, including any Safe Works Method Statements (SWMS) specific to their activities.
- The <u>Contamination-specific requirements</u> (detailed below). These will be updated upon discovery of further (unexpected) contamination if necessary.

### 6.2 Contamination-specific requirements

If contaminants are confirmed to be present at concentrations posing a potential risk to human health via postdemolition investigations (refer **Section 3**), the following specific measures will be required for disturbance, handling, transport and placement of soils/fill therefrom, and what protocols need to be in place for the balance of works (i.e. – outside the contaminated area areas).

Asbestos-related health and safety	The PPE requirements during disturbance of asbestos in soil are dependent on the level of contamination identified during post-demolition sampling. The PPE requirements are described in <b>Table 7</b> (Section 4.3)
General	Outside of any asbestos impacted areas contamination-specific protocols are not necessary, however, it is considered good practice to adhere to the following general principles when disturbing soil that contains elevated levels of contaminants:
	• Avoiding direct dermal contact with contaminated soil. If soil is to be handled then disposable gloves shall be worn.
	• Observing good hygiene practices such as separating works areas from break areas and ensuring all workers shall wash their hands and faces before eating, drinking, or smoking.
	• Report any dust discharges to the site manager and ensure they are addressed via dampening immediately.
	• Use of sprinklers/water trucks to prevent generation of dust and measures to prevent other soil discharges as outlined in <b>Table 8</b> are maintained.
Working with materials containing hydrocarbon	Workers may be exposed to vapours that can commonly bring on headaches and nausea. The following should be followed when remediating hydrocarbon-impacted soils:
odours	• Workers shall be aware of the potential risks and be confident to cease works as soon as there is any sign of a headache or nausea.
	<ul> <li>No worker shall enter an excavation that is impacted by hydrocarbons without the appropriate confined-spaces training and procedures. These will be advised separately on a case-by-case basis.</li> </ul>
	Half-face respirators with organic cartridges shall be provided if required.
	• Excavations shall be kept open and able to naturally vent periodically when being worked. Forced ventilation could be considered for strongly odorous materials or where triggers in <b>Table 10</b> (Section 8.2) are exceeded.
Personal decontamination (for workers involved in remediation)	All personnel involved in ground disturbance activities associated where contamination exceeds the human health and environmental protection levels must remove PPE and decontaminated before leaving the site. Decontamination facilities shall comprise, as a minimum:
	Facilities for storing and changing PPE.
	Boot wash facilities.
	A hand and face wash facility.

Table 9. Contaminated materials health and safety requirements



Bins for disposal of contaminated gloves and other consumables.
• All personnel need to complete the personal decontamination procedures whenever they stop work, i.e. for meal breaks, toilet breaks etc. Decontamination shall be undertaken immediately in the event of any body parts coming in direct contact with any soil and/or groundwater.
Personnel decontamination shall comprise:
Rinsing and/or scrubbing of boots, gloves and other PPE to remove dirt and dust residues.
• Removal of all PPE with disposable items such as gloves and dust mask (if worn) placed in a plastic bag or drum for waste collection.
Thorough washing of hands and face with soap and water.
All waste materials shall be considered as contaminated and disposed appropriately.

## 6.3 Induction and general behaviour

All contractors and visitors to the site shall be inducted as per item 1 in **Table 5** (**Section 4.2**). Workers shall be appropriately trained and qualified in their area of work and be provided training by the SQEP at the pre-works induction, and by the site manager for new subcontractors, on identifying and responding to unexpected ground contamination (**Section 8**).

The following general safety procedures shall be followed by construction staff and visitors:

- Any incidents shall be reported to the HSO;
- Site workers shall avoid unnecessary contact with unexpected contamination and shall generally avoid handling known or suspected contaminated soil or water;
- No person to enter and work on the site alone; and

Workers to be provided with appropriate training on hazards and reporting on any issues or discomfort experienced.



# 7. Monitoring

Monitoring is required during any remediation of contaminants that exceed the human health and environmental protection levels. The monitoring obligations are set out below. The actions for the contractor in Section 7.1 apply to all works where soil disturbance occurs, i.e. general/bulk earthworks.

### 7.1 Contractor obligations and documentation

The Contractor is responsible for implementation of the monitoring programme and maintaining records to confirm monitoring was carried out. We recommend this is via a daily log form.

The Contractor shall ensure that during the works:

- No discharges from any activity on site shall give rise to visible emissions, other than water vapour, to an extent which is noxious, dangerous, offensive or objectionable.
- Beyond the boundary of the site, there shall be no hazardous air pollutant, caused by discharges from the site that causes, or is likely to cause, adverse effects on human health, environment or property.

There is no discharge of contaminants to the stormwater system *unless testing by the SQEP* confirms this is appropriate. Once contaminated materials are removed this is expected to be approved.

### 7.2 SQEP obligations

The <u>SQEP shall visit the site on a regular basis</u> to confirm the procedures in the SMP are being following and to respond to issues of unexpected contamination. The SQEP shall maintain site visit records of each visit for including in the site validation report (SVR) outlined in **Section 9**.

The SQEP may also assist in monitoring for asbestos, both if requested by the contractor and as spot-checks.

#### Table 9. SQEP obligations.

Asbestos air monitoring	Air monitoring during disturbance and excavation/removal of asbestos-contaminated fill/soils is not expected to be necessary, as similar works (on comparable sites) are generally within the "asbestos-related-works" as per NZAG. This is because the potential for fibres to exceed the trace level of 0.01 fibres/ml is very low and based on the current data below the level that would trigger requirement for air monitoring based on NZAG (i.e. >0.01 % w/w in soil).
	However, if unexpected further asbestos contamination is identified or further soil testing undertaken identifies higher concentrations than detected to date or if dust management issues arise air monitoring shall be <i>undertaken by the SQEP</i> or a party independent to the contactor as follows:
	• A minimum of three monitors, one upwind and 2 downwind of the works area shall be in put around the working area.
	Monitors shall be set for a minimum of four hours during soil disturbance.
	• Cassettes shall be analysed for asbestos fibre content at an IANZ accredited laboratory, the same day they were collected.
	If the trace level (0.1 fibres/ml) is exceeded in the air monitors then works shall cease and dust suppression measures increased, as advised by the SQEP and licensed asbestos removal contractor.
Odour monitoring	If UST removal is required and hydrocarbon odours (as per the definition in <b>Table 10</b> ) are noted during removal, the SQEP shall:
	Record the level of gases present using:
	- A photoionisation detector (PID <sup>10</sup> - fitted with a 10.6 eV lamp and calibrated against an isobutylene standard) shall be used to monitor ambient air in the work area for total volatile ionisable vapours

<sup>10</sup> It should be noted that PIDs are not contaminant specific and will therefore detect all ionisable compounds that are present in the air space of the work area. This may result in false exceedances of the action level as a result of detection of compounds which are present at higher, although



to provide real-time screening and alarming for the potential cumulative mixture of volatile contaminants.
<ul> <li>Explosive gases (carbon dioxide, carbon monoxide and oxygen) shall be undertaken at above ground levels during hours of operation using a multi-meter.</li> </ul>
• Contingency measures in Section 8 shall be implemented if exceedances occur.

#### Table 10: Odour intensity evaluation descriptions

Very strong	Offensive odour that is unable to be tolerated. May cause headaches. Strong Clearly recognised type of odour and may be uncomfortable
Moderate	The type of odour is easily recognised but not uncomfortable
Slight	May be difficult to identify the type of odour
Very slight	The type of odour not able to be discerned nor is the source
Not detected	No measurable odour

#### Table 11: Air monitoring trigger values

Vapour	Action level	Measure with
Explosive gases	10 % LEL <sup>2</sup>	Multi-gas meter
	0 % LEL for hot works/ mechanical activities (piling, excavation) $^3$	
CO2	0.5 % <sup>2</sup>	Multi-gas meter
02	>19.5 % <sup>2</sup>	Multi-gas meter
H2S	10 ppm <sup>2</sup>	Multi-gas meter
VOCs	5 ppm <sup>4</sup>	PID

Notes:

- 1 AS/NZS 60079.10.:2009 Part 10.1: Classification of areas Explosive gas atmospheres.
- 2. Worksafe Exposure Standard TWA.
- 3. Any hot works at or below ground level shall only be carried out when no combustible gases are detected. As defined by WorkSafe New Zealand, hot works includes welding, thermal or oxygen cutting, heating, including fire-producing or spark-producing operations that may increase the risk of fire or explosion.
- 4. Only a limited number of compounds have New Zealand Workplace Exposure Standards (WES) lower than 5 ppm and it is unlikely that these compounds will be present in sufficient quantities to exceed their individual WES. 5 ppm has therefore been adopted as a practical screening level to avoid false positives associated with weather effects and instrument drift.

still safe concentrations, or the detection of compounds introduced by other activities which are being undertaken within or adjacent to the work area (for example vehicle exhaust emissions, use of glues, solvents, or paints etc.). In these instances NIOSH certified detector tubes, such as Gastec or Draeger colour diffusion tubes (passive and/or active), may be used to monitor exposures to specific contaminants.

Interim Site Management Plan (Ground Contamination) Dominion and Valley Road Apartments, Mt Eden



# 8. Contingency Measures

### 8.1 Contingency triggers and responsibilities

Unexpected contamination, complaints or an uncontrolled discharges will trigger implementation of contingency measures. Key identifiers for unexpected contamination that will trigger these measures include:

- Asbestos fibres and/or building products.
- Odours such as hydrocarbons or solvents.
- Discoloured soil such as black, blue or green staining, or any staining that appears out of the ordinary.
- Underground structures such as fuel tanks (USTs are already suspected).

Mitigation measures must be applied in accordance with the hierarchy of control described in the Health and Safety at Work (General Risk and Workplace Management) Regulation 2016: **Eliminate, Isolate, Minimise**.

Responsibility for identifying and enacting contingency measures lies with the Contractor. The contractor shall apply the notification process outlined below.

- The SQEP shall be notified immediately in the event that any unexpected contamination or contingency measures are required to be implemented.
- Auckland Council shall be notified in writing within 24 hours of contingency measures being implemented.
- Worksafe NZ may also need to be notified, depending on the nature of contamination or possible exposure by workers.



#### 8.2 Emergency response

Should an incident occur on site which may result in any unauthorised discharges (water, soil, hydrocarbons etc.), the Contractor's site supervisor will take control of the situation and coordinate the efforts of all on site to minimise the impact. The SQEP shall be notified and inspect the discharges and advise on mitigation.

In the unlikely event that sustained and uncontrollable discharges (exceeding the specified action levels) occur from the site, emergency response and evacuation procedures, including provisions for notifying and managing neighbouring site users, shall be implemented.

The emergency response and evacuation procedures shall be specified in the project-specific health and safety plan.



## 8.3 Complaints procedure

The contact details for occupants of the neighbouring sites shall be established by the Contractor prior to commencement of the works. These parties shall be advised of the 24-hour emergency contact number for the project and the associated complaints procedure at this time.

In regard to the general public, signage advising the 24-hour emergency contact number for the project must be posted around the fenced site frontages.

A written record of all complaints received shall be maintained. The Contractor's site supervisor shall initiate an investigation as soon as practicable on receipt of a complaint, but as a minimum shall notify Auckland Council within 24 hours of the complaint being received, including providing details of any corrective actions taken.

Appropriate feedback will be provided to the complainant, such as the response made and any corrective actions taken, in response to the complaint.

### 8.4 Unexpected contamination

In the event of unexpected (visual and olfactory indicators) contamination the Contractor shall follow the notification process in **Section 8.1**, and the workflow in **Table 12** shall be implemented by the Contractor.

The SQEP shall inspect to ensure the controls in place remain appropriate to the type and level of contamination encountered. All site staff involved in earthworks shall be inducted prior to works commencing as to the protocols for reporting on and managing unexpected contamination.

STOP WORK (in the immediate area)	<ol> <li>Remove all unnecessary site staff from the immediate area (5 x 5 m) of the unexpected contamination.</li> </ol>
ISOLATE	2. Install temporary fencing, taping or cones to identify the area.
NOTIFY	<ol> <li>Advise the Site Manager.</li> <li>Liaise with the SQEP.</li> <li>Update the site hazard board to warn workers and visitors.</li> </ol>
REVIEW CONTROLS	<ol> <li>The SQEP shall review controls with the Site Manager.</li> <li>The Contractor shall implement additions controls if required.</li> </ol>
ASBESTOS	<ul> <li>If ACM is observed in soil:</li> <li>P2 dust masks (minimum) shall be provided to all workers required to enter the isolated area.</li> <li>The <i>level of control shall be reviewed by the SQEP</i>. This shall include inspection and review of the works.</li> <li>Additional testing may be required and this shall be <i>undertaken by the SQEP</i> in accordance with the NZAG.</li> <li>If the above assessment indicates that it is possible that asbestos in soil will be encountered at concentrations exceeding the relevant standards, an Asbestos Removal Control Plan shall be prepared to support removal of the materials in accordance with asbestos control requirements in Section 4. A Licensed Asbestos Removal Supervisor must be engaged if works are classified as Class A or B.</li> </ul>

#### Table 12: Unexpected contamination work flow

Likely identifiers of soil contamination include but are not limited to the following images described below.

If unexpected contamination is encountered, works controls should be reviewed and amended appropriately to the type of contamination present (refer above). The SQEP shall advise on any additional mitigation required.





# 8.5 Odour discharges

The following hierarchy of actions is proposed in the event that odour discharges occur from the works:

- 1. Consider increased wetting of the exposed materials by use of water carts or hosing etc.
- 2. Minimise the open areas of excavations as much as practicable, including whenever possible covering or temporarily backfilling excavations when not excavating.
- 3. Automated suppression systems may need to be implemented.
- 4. The use of automated suppression systems such as rotary atomisers or spray line systems with suitable odour suppressants.

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The SQEP shall be consulted to assist with defining appropriate control measures.

#### 8.6 Water discharges

Water discharge will generally be managed via soakage; if soakage is not sufficient, and the quality of water being discharged from the site cannot meet the standards required for discharge to stormwater the following shall be employed:

- 1. Improving effluent quality through additional treatment (refer item 6 in Table 6 (Section 4.3).
- 2. Collection (for example by tanker trucks) for off-site disposal to an appropriately licensed facility.

The SQEP shall be consulted to assist with defining appropriate control measures if the standards required for discharge to stormwater cannot be met.



# 9. Closure Reporting

Validation is the process of confirming the objectives of any remedial actions have been achieved, confirming resulting ground conditions have met the remedial target, where applicable and confirming the procedures in this SMP were followed including remediation (if required).

# 9.1 Validation programme

All validation (visual and sampling) shall be undertaken by the SQEP. Validation sampling is only required for those areas requiring remedial works (to be determined upon post-demolition investigations) where visual validation is not possible.

Inspections	The SQEP shall observe all remedial works and make regular inspection during general bulk earthworks to confirm that works are being carried out as per this plan.
Asbestos validation	On completion of asbestos in soils removal and <i>if directed by the SQEP</i> , validation samples shall be collected at 5 m intervals throughout the disturbed area with samples tested for semi-quantitative analysis of asbestos at an IANZ accredited laboratory.
Other contaminants validation sampling	<ul> <li>Generally:</li> <li>Soil sampling of the remediated soil surface shall be undertaken by the SQEP on no larger than a 10 x 10 m grid spacing.</li> <li>Laboratory analysis must show that the soils remaining onsite meet commercial land use criteria for contaminants of concern.</li> <li>If the target is not met, a further 100 mm site scrape and visual inspection shall be carried out in the exceeding area before re-validation sampling occurs.</li> <li>Laboratory testing for target contaminants at an IANZ accredited laboratory.</li> </ul>
USTs	Where USTs are removed sampling shall be from the pit walls and floor and at 5 m intervals along any fuel lines. All validation samples shall be tested for total petroleum hydrocarbons and monoaromatics (benzene, toluene, ethylbenzene and xylene).

## 9.2 Site validation report

Upon completion of the clearance works a Site Validation Report (SVR) shall be prepared confirming the works were undertaken according to the final SMP, unexpected contamination encounters (if any) and any remedial measures implemented. Preparation of the SVR will also be required to be in accordance with the conditions of the consent. The SVR will document the final contaminant status of the site, and suitability (from a contamination standpoint) of the site for ongoing residential occupation.

The following information is required from the Contractor for inclusion in the SVR, including:

- As-built drawings and other information any on-site encapsulation of contaminated soils.
- Copies of weigh bridge summaries for the disposal destination of any surplus soil or water generated during the redevelopment works.
- Documentation confirming the source, where necessary testing data, and weighbridge summaries or load counts from the source of certified imported clean materials.
- Air monitoring records.
- Records of visits by Council representatives.
- Details of any complaints and actions in response to these.
- Details of any health and safety incident related to the contamination and how they were resolved.
- Details of unexpected encounters/events and the action taken.
- Any contingency actions implemented.



The Contractor shall *provide the required information to the SQEP* within one month of completion of groundworks.

The SVR(s) shall be submitted to ADC and shall be prepared to generally comply with the MfE Contaminated Land Management Guideline No. 1.

### 9.3 Long-term monitoring plan

Long term monitoring is not expected to be required given the geological conditions and the extent and depth of the basement. If any on-site encapsulation of contaminated soils is undertaken, the SQEP shall prepare a LTMP in accordance with MfE Contaminated Land Management Guideline No. 1.

The LTMP shall include as a minimum:

- A summary of the contaminated soil remaining on the site, including the soil validation results in the context of effects on residents, and location of contaminated soil on the site.
- An asbestos management plan for asbestos remaining on site (if required) prepared in accordance with the Health and Safety at Work (Asbestos) Regulations (2016) if asbestos remains on the site.
- As built details of encapsulation measures placed where contaminated soils remain (only where those exceed the NESCS soil contaminant standard for commercial/ industrial land use).
- Appropriate management measures for the site cover, and for future ground disturbing work.
- Ongoing monitoring requirements (if any).

The LTMP shall be prepared within 3 months of ground works completion.



# Appendix A. Contractor checklist





# Site Management Plan (Ground Contamination) – Contractor Checklist

# Site ID: 198-202, 214-222 Dominion Road and 113-117 Valley Road, Mt Eden Rev 1, 31 July 2024

#### Overview

Precinct Properties Ltd propose to construct three five-storey apartment buildings over the site, featuring a single-level interconnected basement.

The enabling and development works are expected to follow the general process below:

- 1. Demolition of buildings, structures, and hardstand areas;
- 2. Undertake additional soil sampling as per SMP **Section 3** where it is required to complete the assessment of ground conditions.
- 3. Removal and offsite disposal of all geotechnically unsuitable soil and fill. Any areas requiring remediation via offsite disposal would be completed first.
- 4. Bulk earthworks and ground engineering.
- 5. Building construction.
- 6. Paving and landscaping works.

This checklist provides a summary of the procedures detailed in the WWLA Site Management Plan (SMP) for the development, which outlines required post-demolition investigations, and the key materials management, reuse, health and safety and response to unexpected contamination encounters.

The contractor is responsible for following the requirements of the SMP alongside use of this Checklist, and reporting on compliance to the SQEP.

Where input is required by a SQEP, it is highlighted below and in the SMP.

Procedures understood by Contractor's Site Manager:	Date:

Induction given by SQEP		Date:
Task	Description	Check

Site Establishment	• Establish earthworks controls in accordance with Auckland Council Guideline Document 2016/005 – Erosion and Sediment Control Guide for Land Disturbing Activities in the Auckland Region.	
	<ul> <li>Inform the SQEP of works commencement date and arrange contractor induction for this SMP.</li> </ul>	
	• The contractors site manager shall induct new workers/subcontractors to requirements of this plan as works progress.	
	• Arrange disposal permits for offsite disposal of surplus soil/fill (excepting those areas requiring further investigation).	
Asbestos Management, Demolition	<ul> <li>Obtain an asbestos survey of the buildings and carry out demolition in accordance with the Asbestos Regulations. Demolition of asbestos containing structures must be by a Licensed Asbestos Removalist, certified by Worksafe NZ.</li> <li>Asbestos clearance (for buildings) shall be obtained prior to bulk demolition.</li> </ul>	
	<ul> <li>SQEP (i.e. WWLA) shall be notified post removal of the buildings to inspect the soil and conduct sampling as per Section 3 of the SMP.</li> <li>Soils asbestos clearance, separate from the building-related clearance, shall be provided by the SQEP prior to bulk earthworks commencement.</li> </ul>	
Post- demolition investigations	SQEP (i.e. WWLA) shall investigate building footprints as per Section 3 of the SMP. An addendum DSI shall be provided to Auckland Council upon completion of post-demolition investigations, along with an updated SMP and or remediation action plan (RAP) if required.	





Figure A1: Post-demolition investigation plan to be implemented by the SQEP.

Hold Point – Advice to be provided by the SQEP following the additional investigations.

#### Remediation (if required), refer SMP Section 4

Task	Description	Check
Remediation requirements	The following sections shall be updated upon completion of post-demolition investigations, following consultation with civil and geotechnical team(s).	
	<ul> <li>UST removal:</li> <li>If USTs are confirmed during/after demolition, the SQEP shall direct removal of tank(s) and remediation of contaminated soils</li> <li>Refer to Table 5 (Section 4.2) of the SMP for removal procedures; UST location(s) shall be fenced off/isolated until the SQEP confirms remediation achieved.</li> </ul>	
	<ul> <li>Onsite encapsulation of contaminated materials (<i>unlikely to occur</i>):</li> <li>Identified area(s) for onsite encapsulation shall be prepared as per Table 5 (Section 4.2) prior to excavation of contaminated soils.</li> <li>Transport, placement and capping of contaminated materials shall be overseen by the SQEP, as-built information shall be provided to the SQEP upon completion.</li> </ul>	
	<ul> <li>Offsite disposal of contaminated soils: The SQEP shall advise following the post-demolition investigations, but disposal is expected to be:</li> <li>Hydrocarbon and/or asbestos impacted soils to licensed landfill.</li> </ul>	



Hea will b	managed fill (able to accept low levels of contaminants). <b>Ith and safety during remediation:</b> Remediation specific health and safety requirements be confirmed upon completion of post-demolition investigations (refer <b>Section 6</b> SMP).	
will b	be confirmed upon completion of post-demolition investigations (refer Section 6 SMP).	
Hold Point – Confirma apply (this may be do	ation to be provided by the SQEP confirming validation is complete and general proced ne in stages to faciliate commencement of general earthworks in other parts of the site	ures ).
General Earthworks, r	refer SMP Section 5	
Task De	escription	Check
General •	Maintain standard earthworks controls (as per GD05).	
Requirements	Dust management shall be in accordance with the <i>Good Practice Guide for Assessing</i> and <i>Managing Dust</i> , Ministry for the Environment (2016).	
Of	ffsite soil disposal is expected as follows (pending fill site approval):	
•	Fill requires disposal to licensed landfill unless soil testing data shows managed fill is acceptable.	
•	Odorous hydrocarbon impacted soils (if any) will require licensed landfill disposal.	
•	Natural in situ subsoils are expected to be accepted by a cleanfill, confirmed by post- demolition soil testing.	
A	weighbridge or load count summary of imported materials shall be provided to the SQEP of completion of works.	
Im	ported materials procedure:	
•	Any material imported to the site shall originate from a proven uncontaminated site (refer <b>Table 8</b> (Section 5) of the SMP) or direct from quarry.	
•	Certification documentation shall be provided to the SQEP prior to placement of any imported fill.	
•	A weighbridge or load count summary of imported materials shall be provided to the SQEP on completion of works.	
Health and Th	ne PPE requirements during disturbance of asbestos in soil are dependent on the level of	
de	escribed in <b>Table 7</b> (Section 4.3) of the SMP.	
•	All workers to adhere to personal hygiene principles, avoiding direct contact with contaminated fill/soil at all times	
Unexpected Lia Contamination mi	aise with the SQEP should any unexpected contamination be identified and implement itigation measures advised by the SQEP. Typical unexpected materials are shown in the	
Response im	hages below and can include; odorous materials (i.e., hydrocarbons, solvent odour),	
dis	scoloured soll (green, black), bulk asbestos or putrescible or demolition materials.	
Co	unexpected contamination is encountered the following steps must be taken by the ontractor:	
•	Cease works in the immediate vicinity of the suspected contamination and tape off.	
•	Notify the project manager (client representative) and the SQEP.	
•	Implement any contaminated land-related health and safety procedures and PPE if deemed pecessary by the SOEP	
•	Update the Hazard Board to direct site workers should continued exclusion of the area	
	be required.	
•	Implement and maintain any additional controls required by the SQEP to manage contamination.	
•	Notify Auckland Council via the SQEP within 24 hours of implementing any contamination mitigation measures	
•	If additional asbestos is identified subsequent to the demolition and clearance, requirements of the Health and Safety at Work (Asbestos) Regulations 2016 must be adhered to. The SQEP shall provide direction and if required, a Licensed Asbestos Removal Supervisor shall be engaged	





Fill	materials.

Fill materials.

Task	Description	Check
Post Works: (provide to SQEP)	Clearance certificates for asbestos removal from the buildings.	
	As-built drawings and other information any on-site encapsulation of contaminated soils	
	<ul> <li>Copies of weigh bridge summaries for the disposal destination of any surplus soil or water.</li> </ul>	
	• Documentation confirming the source and weighbridge summaries/load counts of certified imported clean materials.	



Task	Description	Check
	Air monitoring records.	
	Records of visits by Council representatives, including details of any complaints and actions in response to these	
	Details of any health and safety incident related to the contamination and how they were resolved	
	Details of unexpected encounters/events and the action taken	
	Any contingency actions implemented	
	The SQEP shall produce a site validation report (SVR). The SVR shall be prepared in accordance with Ministry for the Environment Contaminated Land Management Guideline No. 1 – Reporting on Contaminated Sites in New Zealand (updated 2021).	