WILLIAMSON
WATER & LAND ADVISORY

50 Westney Road, Māngere

Preliminary Site Investigation (Ground Contamination)

ROTOKOHU INVESTMENTS LTD

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25 March 2025

50 Westney Road, Māngere

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Investigation Summary

Williamson Water & Land Advisory (WWLA) has prepared this preliminary site investigation (PSI) into ground contamination to support Rotokohu Investments Ltd with a Plan Change application for 50 Westney Road, Māngere. The site is currently zoned for residential use and the Plan Change proposes to seek a light industry zoning. The objective of this investigation was to determine the site's history and potential for ground contamination to inform the resource consent process and implications for earthworks and future commercial use. The key findings of this report are:

History and potential for contamination [Section 3]	**Potentially contaminating activities (those listed on the Ministry for the Environment's Hazardous Activities and Industries List, or HAIL) were not identified at the desk study phase.** • The site was a rural property primarily used for stock grazing from at least 1939 until the early 1980s. The existing SPCA animal village was constructed between 1980 and 1988. Adjacent land was also used for farming activities from at least 1939 until residential and commercial development in the late 1990s. • Asbestos/fibrolite cement board (HAIL Activity E1) was used in construction of the SPCA building in the 1980s and potentially in some of the earlier farm buildings. The majority of the ACM cement board observed on the buildings is in good condition and adjacent to these structures the ground is covered by concrete paths. On this basis, given its condition and extent of paving there is only a low potential for asbestos fibres to migrate into surrounding soils and thus HAIL Activity E1 does not apply.
Conceptual site model (CSM) [Section 4]	No HAIL activities have been identified. Provided that ACM is appropriately removed from structures identified by an asbestos demolition survey undertaken by an appropriately licensed assessor prior to demolition and any identified is removed by a suitably qualified asbestos removalist, there is likely to be minimal to no risk to human health during post-demolition earthworks and future construction/redevelopment of the site. **No other sources of contamination were identified during the site walkover and history review thus there is negligible potential for risks to occur to human health or the environment**.
Consenting implications [Section 5.1]	**The evaluation shows that no HAIL Activities have occurred on the site thus the NESCS does not apply to the proposed land use change application via the Plan Change process. Rules in Chapter E30 of the AUP are not triggered as no HAIL activities are relevant to the site.** • The National Environmental Standards for Assessing and Managing Contaminants in Soil to Protect Human Health Regulations (NESCS) do not apply because HAIL activities have not occurred on the site, therefore, no consent is required. • Similarly, rules in the Auckland Unitary Plan – Operative in Part are not triggered as no potentially contaminating activities have been identified for the site.
Earthworks implications [Section 5.2]	Standard earthworks controls are applicable for the redevelopment earthworks, but appropriate permits for disposal of surplus soil should be obtained. This may require soil sampling.

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1. Introduction

Williamson Water & Land Advisory Ltd (WWLA) has prepared this ground contamination investigation report, also referred to as a Preliminary Site Investigation (PSI) to support a Plan Change application for redevelopment of 50 Westney Road, Māngere (referred to as 'the site', described in **Table 1** with the location shown in **Figure 1**). The site is currently zoned for residential use and the Plan Change proposes to seek a light industry zoning.

Table 1. Site identification details

Address	Legal description	Title	Area (m^2)
50 Westney Road, Māngere, Auckland 2022	PT ALLOT 74 PARISH OF MANUREWA	NA570/201	40,468

Figure 1. Site location, site boundary outlined in red. (source: Google Earth Pro, 2025).

1.1 Background

Mount Hobson Group (MHG) have lodged resource consent on behalf of Rotokohu Investments. The site is currently zoned for residential use and the Plan Change proposes to seek light industry zoning.

The site has most recently been occupied by the SPCA (since the 1980s) but prior uses have been predominantly for rural residential purposes, with much of the site being in pastoral use. It is possible past and current activities on the site could potential to cause contamination, i.e. land uses included on MfE's Hazardous Activities and Industries List (HAIL). If HAIL activities have occurred on the site rules in the Resource Management National Environmental Standard for Assessing and Managing Contaminants in Soil (NESCS)

Regulation 2011 and the Auckland Unitary Plan – Operative in Part (AUP) will need to be considered in the Plan Change application.

1.2 Objective and scope of work

This investigation has been undertaken to confirm the site's history and potential for contamination to inform ground contamination-related consenting requirements and provide concise and clear documentation to support the Plan Change application. The scope of this investigation comprised:

1. Review of historic aerial photographs from public sources such as Retrolens, Auckland Council's GeoMaps and Google Earth.
2. Review of Auckland Council property file information.
3. Site walkover inspection by a Suitably Qualified and Experienced Practitioner (SQEP).
4. Assessment of resource consent requirements based on the information available and whether or not intrusive investigations, referred to as a detailed site investigation or DSI, are necessary.

1.3 Legislative requirements

WWLA has undertaken this investigation and prepared this report in general accordance with requirements of published industry best practice guidance, including:

- Ministry for the Environment (MfE) Contaminated Land Management Guideline No. 1: Reporting on Contaminated Sites in New Zealand (Revised 2021), (CLMG 1).
- New Zealand Guidelines for Assessing and Managing Asbestos in Soil (NZAG; BRANZ, November 2017).

This report has been prepared, reviewed, and certified by WWLA's SQEPs as described in the NESCS Users' Guide[1]. CVs confirming the SQEP status of our contaminated land specialists are available on request.

[1] Ministry for the Environment, April 2012. Users' guide: National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health.

2. Environmental Setting

The environmental setting is described in **Table 2**. The features of the environmental setting are considered in the context of their potential to affect the distribution, mobility and form of contaminants (if present).

Table 2: Environmental setting.

Topography and drainage	*The topographical nature of the site impacts where contaminants might migrate to if present and surface water features are potential receiving environments should contaminants be present on a site.* The site is gently undulating, apart from areas relevelled for building platforms, with a general slight decline to the southeast (approximate elevation 16 m RL in the northwest to 15 m RL), thereby directing storm water runoff in that direction[2].
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.* The surrounding area comprises residential housing to the northwest and southeast, a school on the adjacent property to the north and another school further to the north. Industrial activities occur on land to the adjacent south and to the southwest and further to the northwest. The House Park, Kirkbride Road Reserve, and Naylors Esplanade Reserve are all present within a 500 m radius.
Geology	*Geological conditions are considered in the context of describing the conceptual site model (CSM) (**Section 5**) should a potential for contamination be identified by this study. For example, more porous soils can enable contaminants to move more quickly and potentially further than clay-rich soils that retain/bind or prevent penetration of contaminants.* The published geology[3] indicates the site is underlain by pumiceous deposits of the Puketoka Formation (also referred to as the Takaanini Formation), comprising *light grey to orange-brown, pumiceous mud, sand and gravel, with black muddy peat and lignite*. The underlying geology of the site may have some volcanic influence due to the proximity of Pukaki Volcano some 650 m to the east of the site and Waitomokia Volcano further to the west, and the associated basalt, basanite lava, scoria, ash and lapilli, and lithic tuff deposits. Undifferentiated alluvium deposits (Tauranga Group) are present further to the north and comprise *mud, sand and gravel*. Published borehole logs from geotechnical investigations[4] on site for the SPCA in 1999 encountered 2 m of clay overlying silts, peat and sand layers, Kaawa Formation sand and sandstone, and pumice/shell/silts, confirming the published geology.
Hydrogeology	*Hydrogeological conditions affect the potential risk of a contaminant entering and being transported in groundwater*. Based on data from earlier geotechnical investigations on site for the SPCA in 1999[4], groundwater is expected to be encountered around 12 m bgl (below ground level (mbgl)), whereas modelling by GNS[5] predicts the groundwater table to lie between 0.5-5 m bgl beneath the site.
Surface water bodies	*Surface water features are potential receiving environments should contaminants be present on a site.* The Pukaki Creek is located approximately 240 m southeast of the site and joins the Papakura Channel and ultimately the Manukau Harbour some 6 km southeast of the site.
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 whether the receiving ecosystem could be vulnerable to contaminants*. Ecosystems associated with the Pukaki Creek, Papakura Channel and Manakau Harbour would be considered sensitive environmental receiving environment receptors.
	Sensitive human receptors could for example be children at a school or kindergarten on or adjacent to a site. Workers on industrial land (including or adjacent to a site) would be considered less sensitive. This receptor interpretation informs the CSM and the guideline value selection for evaluation of soil data.

[2] Source: Auckland Council Geomaps
[3] Kermode, L.O., 1992. Geology of the Auckland Urban Area. Scale 1:50,000. Institute of Geological and Nuclear Sciences geological map 2. 1 sheet + 63p. Institute of Geological and Nuclear Sciences Ltd., Lower Hutt, New Zealand.
[4] New Zealand Geotechnical Database, Accessed 20 February 2025: https://nzgd.org.nz/tenant/295/hierarchy/3563/level/1751/tag/165253
[5] GNS Science. (2018). National water table model [Dataset]. GNS Science. https://doi.org/10.21420/KZ52-NT28

	Residents of the surrounding properties, school children, users of the nearby parks and reserves may be considered sensitive human receptors.

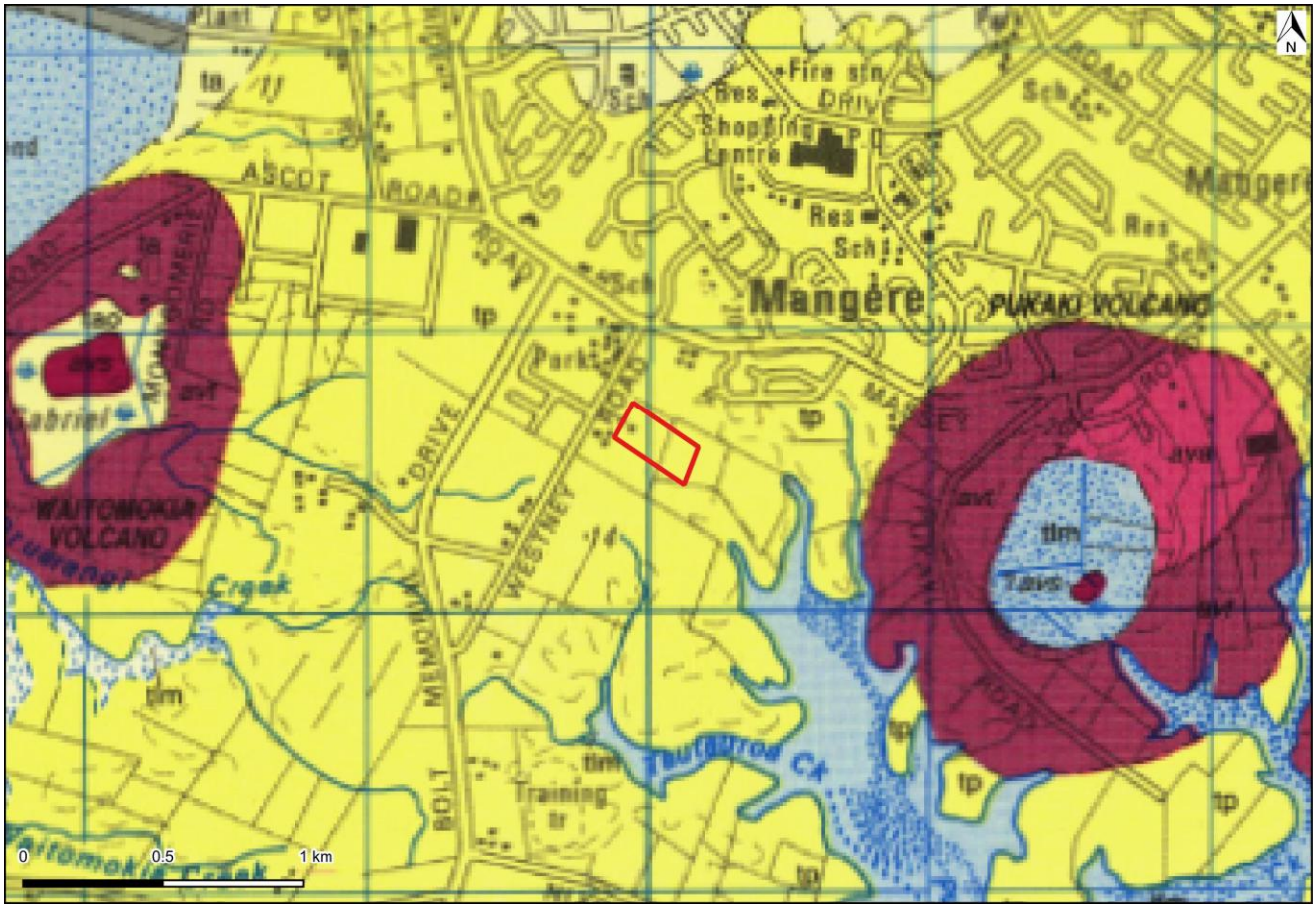


Figure 2. Published geology with site outlined in red. Puketoka Formation marked in yellow, Undifferentiated alluvium in light yellow, Tauranga Group deposits in light blue with blue spots, and Auckland Volcanic Field in red/burgundy (source: GNS Auckland Urban Area geological map 2, Kermode, L.O., 1992).

3. HAIL Assessment

This section details a HAIL Assessment, incorporating a walkover assessment to establish current site activities and a review of historical activities to determine whether any listed on MfE's HAIL have occurred on the site. The findings of the HAIL review inform the requirement and scope for detailed investigations (sampling) if required and the planning assessment.

3.1 Site walkover

The site was visited by a SQEP from WWLA on 14 March 2025. The following observations about the current use of the site were made (refer **Photographs 1-13**). The site layout and features (e.g., buildings) are shown on **Figure 3**.

The site comprises numerous buildings including admin buildings (**Photograph 1**), a barn/temporary aviary (**Photograph 2 and 3**), animal hospital, dog kennels and adoption centre (**Photograph 4**), a quarantine facility (**Photograph 5**), animal shelters and play pens, metal storage containers (**Photograph 6**), temporary Portacom-style buildings (**Photograph 7**), and yards and paddocks associated the SPCA facility in the western half of the site, with asphalt carparking areas surround the reception/admin building(s) to the west (**Photograph 8**).

The SPCA buildings are constructed from a variety of materials including:

- Concrete block and brick walls.
- Hardboard or cement board cladding and soffits (potentially asbestos-containing material/ ACM in select locations, e.g., the laundry building, where an asbestos survey has identified ACM) (**Photograph 9**).
- Corrugated metal cladding and roofing.
- Prefab concrete panels.
- Concrete and brick floors.
- Timber.
- Glass windows and ranch sliding doors with timber or metal framing.
- Archgola/pergola with metal framing (**Photograph 10**).
- Corrugated and non-corrugated clearlite roofing (**Photograph 9**).

The paddock fences and gates are constructed from timber planks and posts (**Photograph 11**).

A well-maintained garden and lawn area with large trees, observed to be used as a break/lunch area by SPCA staff, is located to the west of the car parking areas to the west, adjacent to Westney Road.

A large gravel carpark used by Tourism Holdings (northeastern quarter) and Fly Away (southeastern quarter) for campervan and airport traveller parking, respectively, is located in the eastern half of the site (**Photograph 11**).

- The campervan portion of the carpark (Tourism Holdings) is separated from the traveller parking portion (Fly Away) by a chain metal fence.
- A gravel driveway provides access from Westney Road to the campervan parking at the rear (east) of the site. The site is fenced on all sides with an approximately 1.5-2 m high metal fences in good to moderate condition.
- A clay stockpile is reportedly stockpiled on the Fly Away portion of the gravel carpark near the fence separating Fly Away and Tourism Holdings. The stockpile and carpark were not able to be viewed during the inspection thus the WWLA SQEP was unable to inspect the stockpiled material.

An unmarked locked shed constructed from corrugated metal sheets with vented metal doors is located on the (south)eastern end of the admin building, adjacent to the aviary/barn, and contains a small dangerous goods storage (flammable liquid storage cabinet), milking equipment and a pump, a number of empty fuel cans,

ladders and property maintenance equipment, road cones, Panasonic inverter, water blaster, and various other items (**Photographs 12 to 14**).

Photograph 1: View of one of the admin buildings, facing southwest.

Photograph 2: View of the barn which is currently housing bird cages (temporary aviary) and other small animals, facing south.

Photograph 3: Inside the barn/temporary aviary.

Photograph 4: Dog adoption centre with viewing pens.

Photograph 5: View of the quarantine facility, facing southeast.

Photograph 6: Storage containers are located across the site.

Photograph 7: Temporary Portacom-style buildings were observed as extensions of permanent buildings and as standalone buildings.

Photograph 8: Carparking around the admin buildings to the west.

Photograph 9: View of the laundry and ACM as identified during the asbestos survey, facing west.

Photograph 10: Archgola/pergola covering a walkway through the adoption centre.

Photograph 11: View of the paddocks and yard in the centre of the site with the Tourism Holdings campervan carpark in the background, facing southeast.

Photograph 12: View of the storage shed housing a dangerous goods cabinet, facing southwest.

Photograph 13: Dangerous goods store (flammable liquid storage cabinet), empty fuel cans, milking equipment and pump, and property maintenance equipment, among other items stored in the shed in Photograph 12.

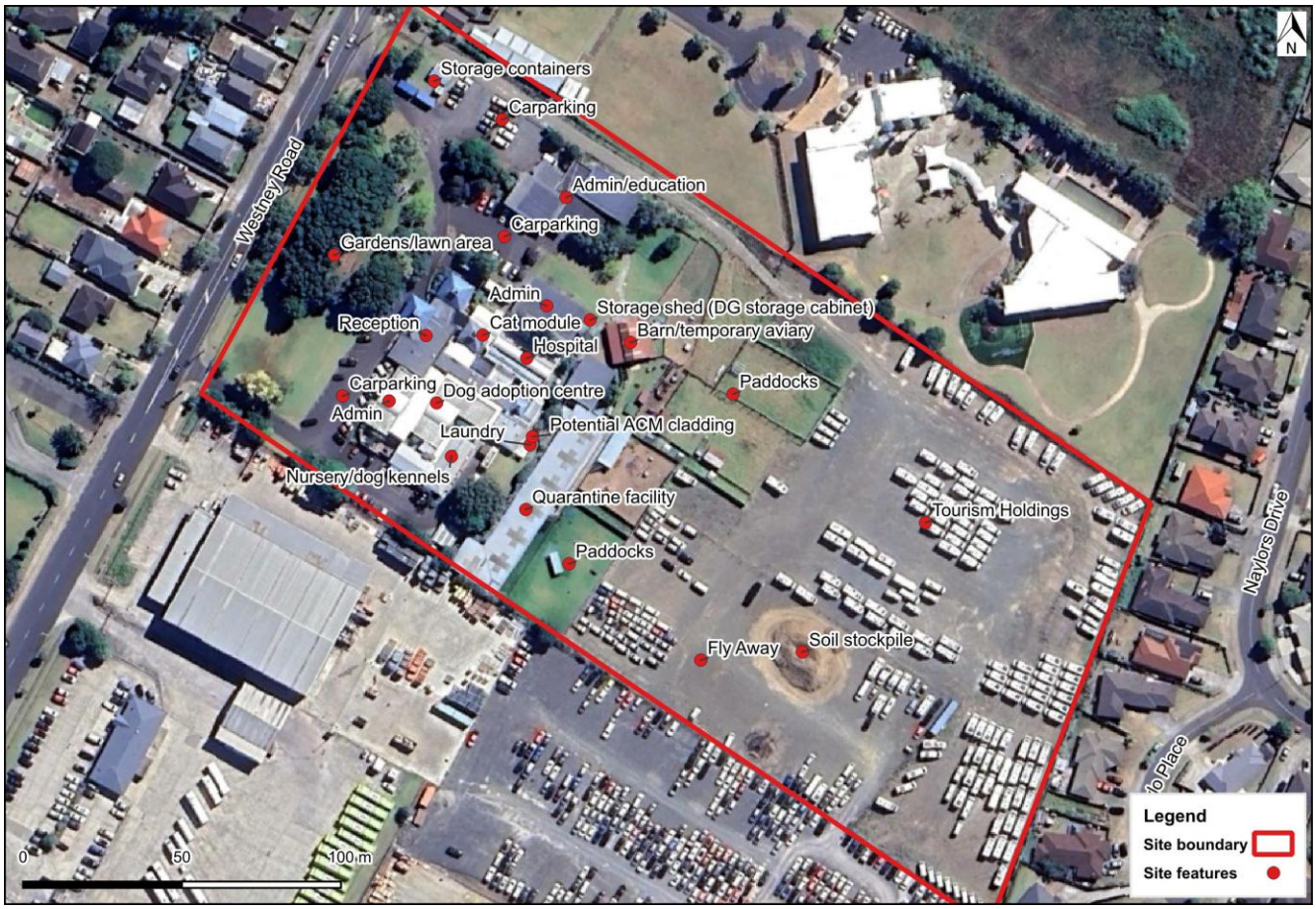


Figure 3. Site features plan (Source: Google Earth Pro, 2025).

3.2 Site history review

The review of historical information used to determine the site's history is described in the following subsections.

In summary, the site history review shows the site was farmland with a rural residential dwelling and associated structures present between 1939 (earliest image available) and 1980. The 1988 imagery shows a large complex (the SPCA animal village) under construction in the western portion of the site, with the eastern portion of the site split into six (6) paddocks with sun shelters. Between 2022 and 2023 earthworks occurred over the eastern portion of the site, with a large gravel carpark observed in the eastern portion by the 2024 aerial image. The site has remained largely the same since 2024, except for the addition of a soil stockpile in early February 2025.

3.2.1 Historical aerial imagery

Table 3. Historical aerial photograph review.

Photograph date (source)	Description	Aerial image (approximate site in red outline)
1939 – 1959 (1939: Retrolens *SN139 32/6*) (1959: Auckland Council Geomaps) *1959 image shown*	Structures occur in the northwest of the site, with the balance being used for stock grazing. The site is likely to be part of a wider farm as a farm race runs along the eastern boundary and north across the neighbouring paddock. By the 1959 aerial photograph, the structure near the western corner of the property is no longer observed. The surrounding area is predominantly used for grazing/pastoral land with some rural residential dwellings and associated farm buildings. A group of four rectangular sheds (possibly poultry sheds) occur on the eastern portion of the neighbouring property to the north, adjacent to the eastern corner of the site	
1967 – 1972 Retrolens *(*1967: *SN3015 B/15)* *(*1972: *SN3552 4605/13)* *1972 image shown*	The cluster of structures in the northwest remains although one on the boundary has been removed and the land has been reverted back to pasture. A newer possible minor dwelling is observed in the northern corner of the site. A track of some description is observed occupying much of the site. The surrounding land to the northwest of the site and further to the north/northeast has begun to undergo residential redevelopment, although rural residential properties and farmland remains to the west, south and east.	
1988 – 2006 (1988: Retrolens *SN8772 R/4*) (1996 – 2006 AC Geomaps) *2001 image shown.*	A large complex is under construction in the western portion of the site in the 1988 aerial photograph (complete by the 2006 image), and the eastern portion has been split into six (6) smaller paddocks each with an animal shelter shed. The dwellings/buildings in the northern corner of the site remain until prior to the 1996 aerial photograph when a new larger building and associate smaller buildings/sheds was observed. The adjacent school to the north of the site has been developed with multiple buildings added between 1996 and 2001.	

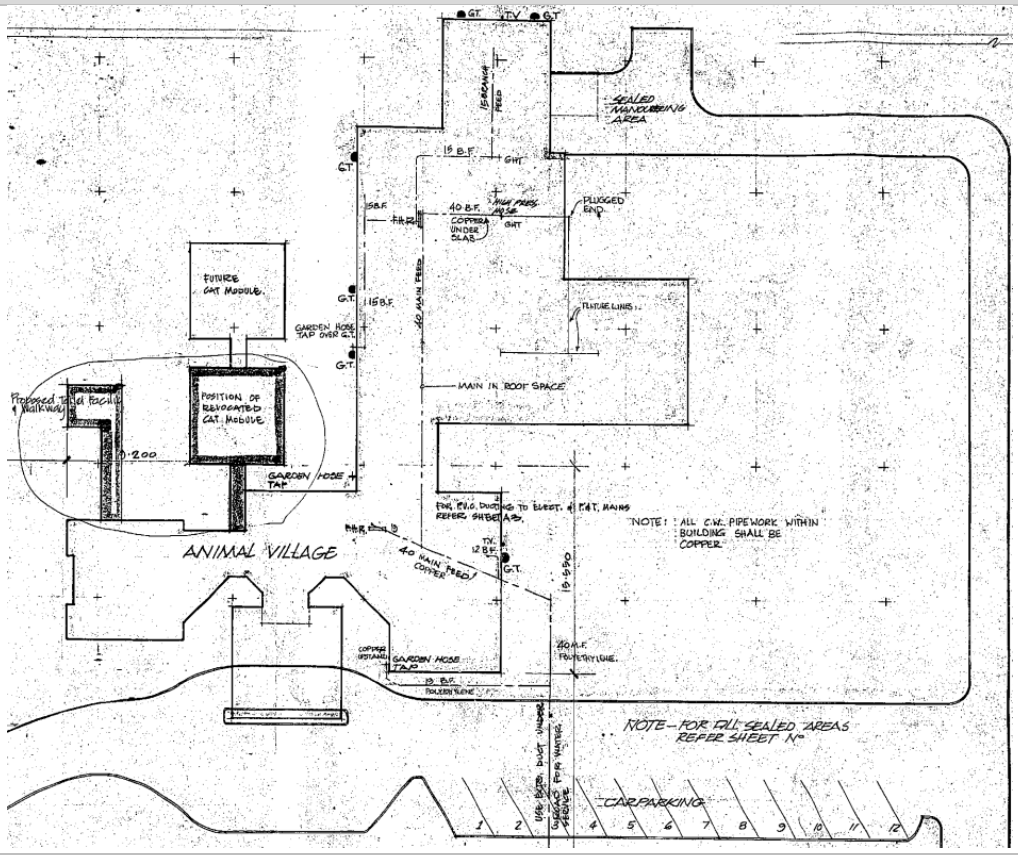
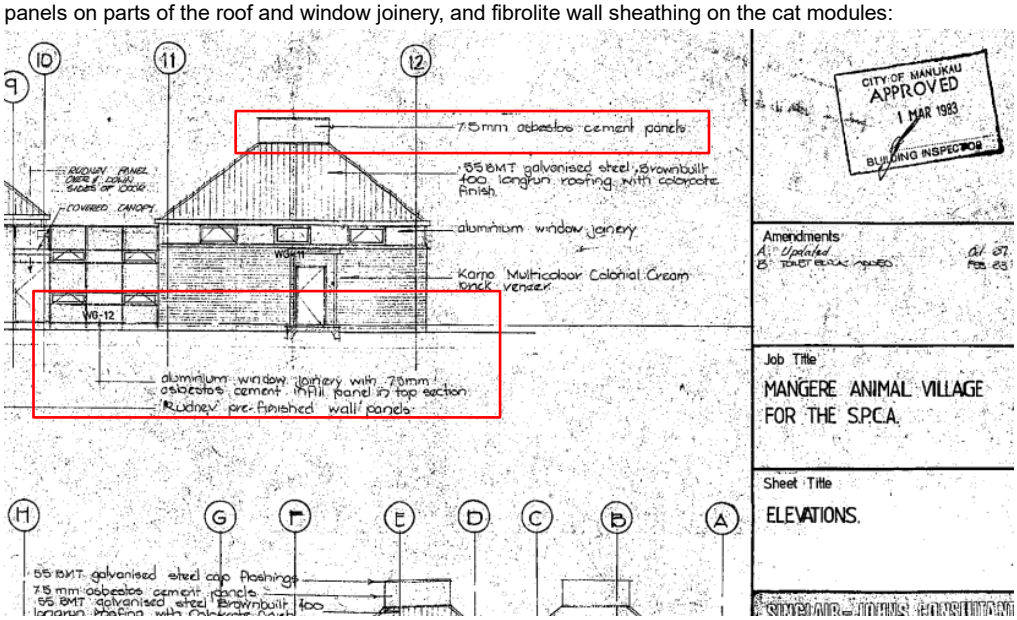
Photograph date (source)	Description	Aerial image (approximate site in red outline)
2008 – 2022 (2008-2016: AC Geomaps) (2017: LINZ) (2022: Google Earth Pro) *2017 image shown.*	Minor changes have occurred on the site since the 2006 aerial photograph, primarily additions of small sheds/buildings through the centre of the site and in the paddocks. By 2017, the two paddocks in the centre of the site had been split up into smaller paddocks and what appears to be a yard area with two shed/shelters. Evidence of ponding water/flooding is observed in the eastern corner of the site in the 2017 aerial photograph. By 2022, earthworks had commenced along the eastern half of the northern boundary and the eastern boundary. The surrounding area has undergone significant redevelopment to residential properties/subdivisions to the northwest and southeast, with commercial/industrial development to the south.	
2024 - 2025 (2024: LINZ) (2025: GEP) *2024 image shown*	By 2024, significant earthworks has occurred over the southern and eastern half of the site, including relevelling and the construction of an earthbund. By 2025 the earthbund had been levelled out, and a large gravel carpark occupies much the southern and eastern half of site. A gravel driveway/access road runs along the northern boundary, providing access from Westney Road at the northern corner of the site to the carpark. By March 2025, a soil stockpile was observed in the southern half of the large gravel carpark in the east of the site. The surrounding area remains relatively unchanged since the previous aerial photograph.	

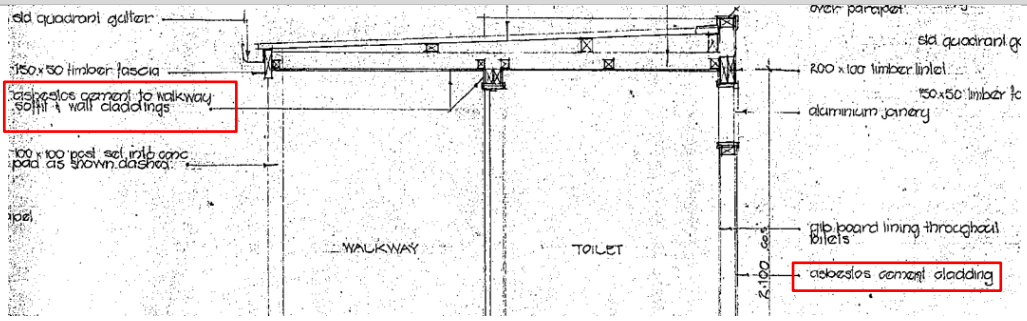
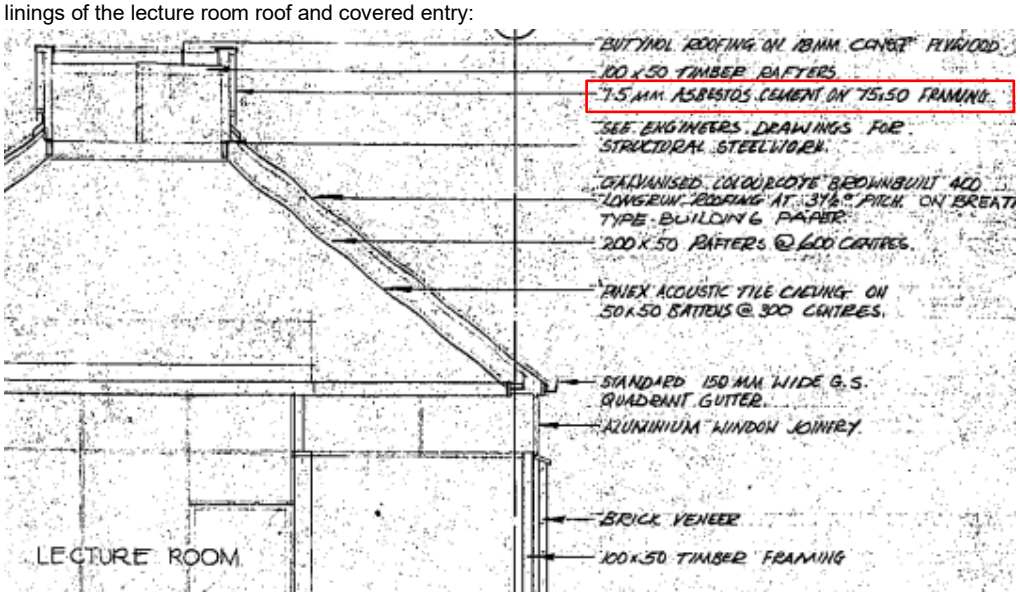
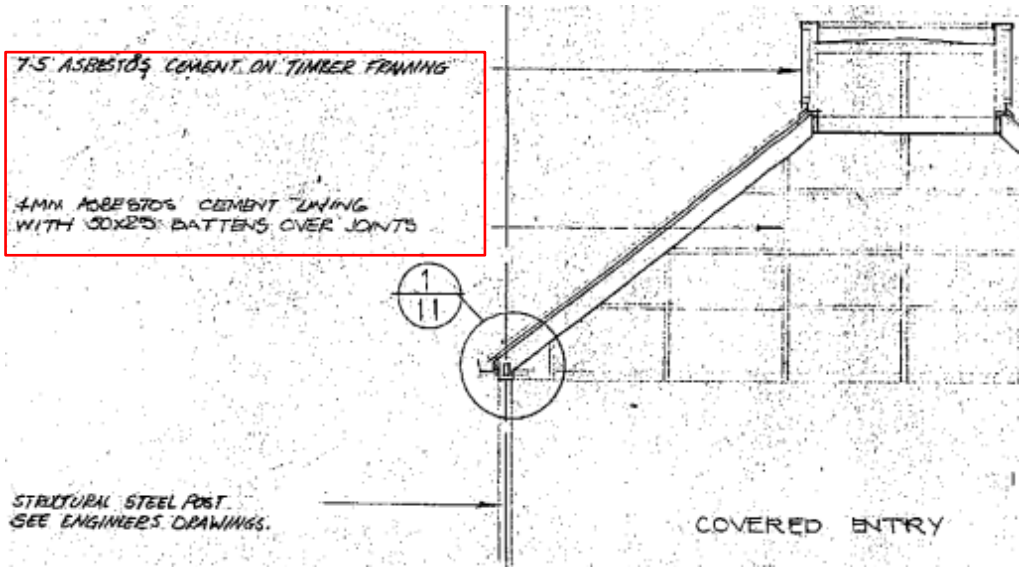
3.2.2 Auckland Council property file

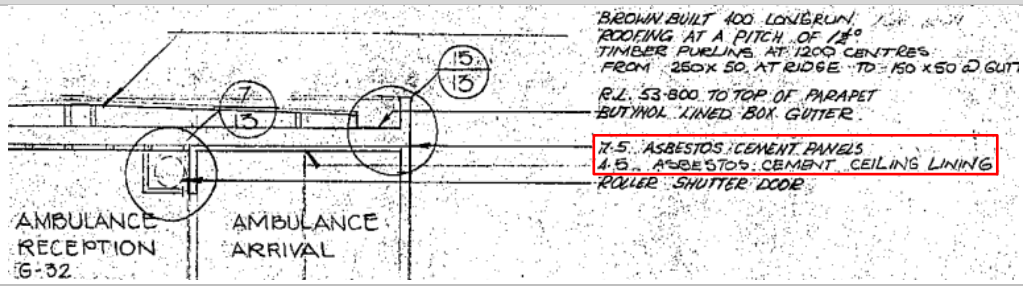
The property file for the site was provided by the MHG on 10 March 2025. The file was reviewed by a WWLA SQEP and relevant documents are summarised in **Table 4**.

Table 4: Auckland Council property file documents

Date:	Relevant Information
Microfilmed on 22 Dec 1996	Specifications for building materials including specifying the use of treater timber.
1999	Drilling logs from subsurface investigations in 1999 by Drillwell Exploration NZ Ltd for the SPCA confirm the published geology (refer **Section 2**).
1994	Approved building plan drawings specifying the use of Hardiflex panels on walls of pens, runs and kennels.
1990 onwards	Numerous building and drainage permits applied for to and approved by the Manukau City Council for additional buildings/renovations (e.g., new cattery), and new drainage systems. • Approved 1991 building plan for new cattery specifying use of Hardie sheets for exterior wall line. • 1991 building plan for the reception/office specifying use of Hardie sheets panels on exterior walls.
1983	Site and siteworks plan drawing. An approved site and siteworks plan drawing for the site specifying the use of copper pipework:

Date:	Relevant Information
	
1983	Approved elevations drawing for the Māngere Animal Village for the SPCA specifies the use of asbestos cement panels on parts of the roof and window joinery, and fibrolite wall sheathing on the cat modules: 
1983	Approved building plan drawing for new toilet facility & walkway specifying the use of asbestos cement in walkway soffits and wall claddings:

Date:	Relevant Information
	
	Approved sections A-A, B-B, C-C & D-D drawings specifying the use of asbestos cement on timber framing and linings of the lecture room roof and covered entry:   Approved sections E-E & F-F drawings specifying the use of asbestos cement panels and ceiling linings on the ambulance reception and arrival building:

Date:	Relevant Information
	
1982	Approved construction details drawings specifying the use of asbestos cement in various parts of the buildings including the kennel supervision area and the wall to food preparation area. Approved cross sections of typical animal modules drawings specifying the use of asbestos cement on battens and asbestos cement linings.
1982	Approved schedule of finishes for the interior of the SPCA buildings documents the use of asbestos cement for the walls in the ambulance reception and the ceilings in the 'animals for homes' buildings and the covered entry:

3.3 Client provided information

An asbestos survey has been undertaken but has not been provided to WWLA. Asbestos stickers are present on the identified buildings containing ACM (**Section 3.1, Photograph 9**).

Laboratory transcripts for previous soil testing by Wilkinson Civil Ltd in 2023 for the redevelopment of the eastern half of the site for carparking were provided by the Rotokohu Investments. The results are summarised in **Table 5** and the general area is shown in **Figure 4** below (sample locations not provided). Soil testing shows contaminant levels largely consistent with published background values.

Table 5. Laboratory results from soil testing by Wilkinson Civil Ltd in 2023.

Sample information	Sample Location	NESCS Commercial/ Industrial/ Outdoor worker [1]	AUP permitted activity discharge criteria [2]	Published background (non-volcanic) [3]	1	2	3	4
	Depth (m bgl)				-			
	Date				7/03/2023	7/03/2023	7/03/2023	7/03/2023
	Material type				-			
	Lab number				3193701.1	3193701.2	3193701.3	3193701.4
Metals	Arsenic	70	100	12	12	4	8	4
	Cadmium	1,300	7.5	0.65	0.11	<0.10	<0.10	0.1
	Chromium	6,300	400	55	54	39	58	43
	Copper	>10,000	325	45	18	12	20	20
	Lead	3,300	250	65	16.3	15.2	17	14.3
	Nickel	6,000 [4]	105	35	20	14	26	25
	Zinc	400,000 [4]	400	180	42	37	53	36
OCP	All OCPS (see Hill Labs transcript for specifics)	-	-	-	All OCPS were reported below laboratory detection limits			

Notes:

All values are presented in mg/kg

<LR indicates concentration below the laboratory limit of reporting.

Grey values are below expected background values, black values exceed background, bold values exceed AUP discharge criteria and blue shaded values exceed applicable human health criteria

1. MfE, 2011. Methodology for Deriving Standards for Contaminants in Soil to Protect Human Health (unless otherwise stated). Soil Contamination Standard - Commercial/industrial land use.
2. Auckland Unitary Plan permitted activity discharge criteria (Standard E30.6.1.4).
3. Auckland Regional Council, Technical Publication 153, October 2001. Background Concentrations of Inorganic Elements in Soils from the Auckland Region.
4. National Environment Protection Council [Australia] - National Environment Protection Measure (Assessment of Site Contamination). Health Investigation Levels - Commercial/industrial land use (HIL D)

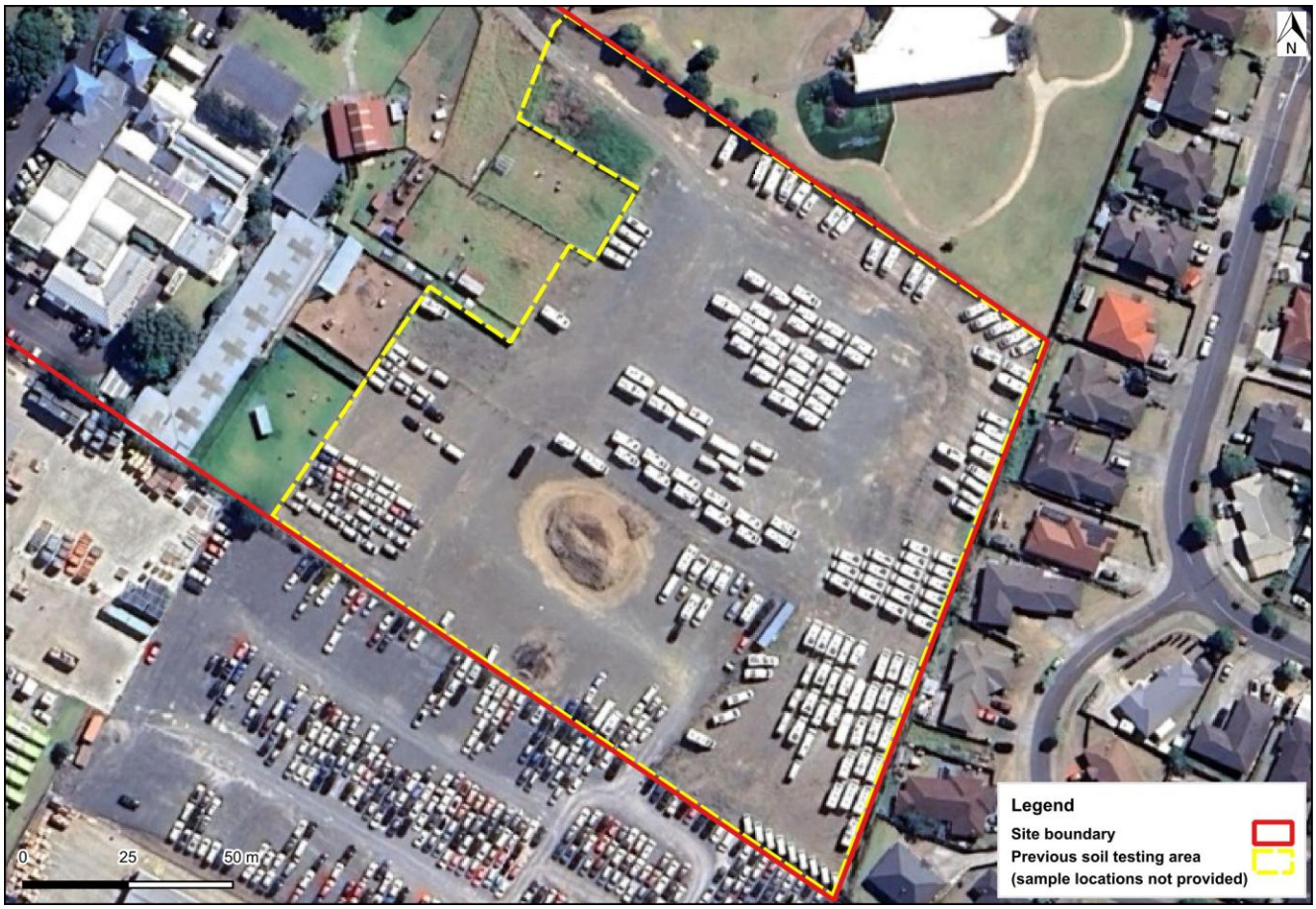


Figure 4. Investigation area of previous soil testing by Wilkinson Civil Ltd in 2023 (source: Google Earth Pro, 2025).

3.4 Potential for contamination

Potentially contaminating activities as determined by the site history review and walkover are described in **Table 6** along with an assessment of the likelihood and magnitude of any contamination resulting from the activity, and whether the activity constitutes a HAIL. The assessment has been shaded red where a HAIL is confirmed, orange where the activity may be considered a HAIL depending on the findings of soil testing and green where a HAIL activity is not considered relevant in the context of this site.

Table 6: Evaluation of potentially contaminating activities from previous and current land use.

Land use and associated HAIL activity	Potential contaminants	Possible extent of contamination	HAIL Assessment
Use of asbestos-containing materials (ACM). *Activity E1. Sites with buildings containing asbestos products known to be in a deteriorated condition.*	Asbestos	Asbestos/fibrolite cement board was used in construction of the SPCA building in the 1980s and potentially in some of the earlier farm buildings. The property files specify the use of ACM in various parts of the SPCA animal village, including the kennel supervision area, a toilet block and walkway, cat modules, 'animals for homes' buildings, covered entry, food preparation area, and ambulance reception. Release of asbestos fibres via deteriorating building materials typically impacts surficial soils. The majority of the ACM cement board observed on the buildings is in good condition and much of the potentially affected soil adjacent to these structures is covered by concrete paths. On this basis, given its condition and extent of paving there is only a low potential for asbestos fibres to migrate into	HAIL Activities E1 for asbestos **does not apply** to the site given the condition of the buildings where ACM is present.

Land use and associated HAIL activity	Potential contaminants	Possible extent of contamination	HAIL Assessment
		surrounding soils. If present, asbestos fibres will be highly localised to immediately near the buildings where any exposed soil occurs. During demolition any ACM is required to be appropriately removed by a qualified asbestos removalist and disposed of to an appropriately licenced fill site.	
Dangerous goods cabinet (flammable liquid) and storage of fuel cans. *Activity A17. Storage tanks or drums for fuel, chemicals or liquid waste.*	Wide range of chemicals (organic and inorganic)	Only small (typical domestic) quantities of hazardous substances are stored in a small cabinet onsite. No other large The storage of dangerous goods on site is kept on concrete and is more akin to domestic use, thus the risk to human health or the environmental is considered to be minimal to non-existent.	HAIL Activity A17 for dangerous good storage **does not apply** in the context of this site.

4. Preliminary Conceptual Site Model

A conceptual site model (CSM) indicates known and potential sources of contamination, routes of exposure (pathways), and the receptors that are affected by contaminants moving along those pathways. Receptors may be people or the environment. *The CSM's purpose is to set out risks to people and the environment (if any) associated with any proposed activity (short- or long-term) on the land. This CSM is considered 'preliminary' as soils sampling has not been completed, thus the identified pathways will not exist if contamination is not present.*

The potential for contamination is very low due to pavements surrounding buildings known to contain asbestos. Provided that ACM is removed appropriately during demolition by a suitably qualified asbestos removalist, there is likely to be minimal to no risk to human health during post-demolition earthworks and future construction/redevelopment of the site. No other sources of contamination were identified during the site walkover and history review thus there is negligible potential for risks to occur to human health or the environment.

Soil sampling may be required to inform soil disposal and ensure material is sent to an appropriately licensed facility.

5. Development Implications

5.1 Consenting

The resource consent assessment summary is below and discussed in detail in the following sections.

Regulatory framework	Rule	Consent required (Y/N and type)
NESCS	8(1) Removal of a fuel storage system	No – not applicable
	8(2) Soil sampling	No – not applicable
	8(3) Disturbing soils	No – not applicable
	8(4) Subdivision and land use change	No – not applicable
AUP	E30.6.1.2 Discharges of contaminants from soil disturbance activities	No – not applicable

5.1.1 NESCS

The NESCS sets out nationally consistent planning controls appropriate to district and city councils for assessing potential human health effects related to contaminants in soil. The regulations apply to specific development activities (namely soil disturbance, soil sampling, subdivision, land use change, and fuel system removal) carried out on land where an activity included on the HAIL has occurred. Land use change and soil disturbance, activities included in the NESCS, are required to facilitate development of the site.

The evaluation shows that no HAIL Activities have occurred on the site thus the NESCS does not apply to the proposed land use change application via the Plan Change process.

5.1.2 Auckland Unitary Plan - Operative in Part

The Auckland Unitary Plan (AUP), Section E30 contains rules that address discharges to the environment, both during works and in the long term. The contaminated land rules of the AUP apply to soils that exceed the permitted activity discharge criteria set out in Standard E30.6.1.4.

Rules in Chapter E30 of the AUP are not triggered as no HAIL activities are relevant to the site.

5.2 Earthworks and construction

The key requirements for earthworks management during the redevelopment are summarised in **Table 7**.

Table 7. Earthworks and implications.

Demolition	• ACM removal on the buildings must be undertaken in accordance with the Health and Safety at Work (Asbestos) Regulations 2016. • Removal of ACM must be undertaken under the oversight of a licensed asbestos removalist. • Following removal of ACM, inspection and soil testing by a SQEP is required to inform soil disposal requirements.
Earthworks controls	Standard earthworks controls are applicable: • Auckland Council's GD05 – *Erosion and Sediment Control Guide for Land Disturbing Activities in the Auckland Region* will be applicable for the works. • Dust must be managed in accordance with the Ministry for the *Environment Good Practice Guide for Assessing and Managing Dust*.
Health and safety	There are no ground contamination-related health and safety requirements applicable.
Surplus reuse and soil disposal	Soil sampling post-demolition and removal of asbestos may be required to inform soil disposal and ensure material is sent to an appropriately licensed facility.

6. Conclusions

This report has been prepared to comply with the requirement for a PSI to support resource consent for land use change and redevelopment for commercial land use at 50 Westney Road, Māngere.

Key findings of the PSI include:

- The site was a rural property primarily used for animal grazing from at least 1939 until the early 1980s. The existing SPCA animal village was constructed between 1980 and 1988. Adjacent land was also used for farming activities from at least 1939 until residential and commercial development in the late 1990s.
- No potentially contaminating (HAIL) activities have occurred on the site thus consent under contaminated land rules in the NESCS and Chapter E30 of the AUP are not triggered in respect of the Plan Change application.
- ACM has been identified on the buildings and is required to be removed in accordance with the Health and Safety at Work (Asbestos) Regulation by a suitably qualified asbestos removalist during demolition of the buildings.
- Standard earthworks controls are applicable for the redevelopment earthworks, but appropriate permits for disposal of surplus soil should be obtained. This may require soil sampling.

Appendix A. Client provided information

Hill Laboratories
TRIED, TESTED AND TRUSTED

R J Hill Laboratories Limited
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Private Bag 3205
Hamilton 3240 New Zealand

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T +64 7 858 2000
E mail@hill-labs.co.nz
W www.hill-laboratories.com

Certificate of Analysis

Client:	Wilkinson Civil Limited	**Lab No:**	3193701 SPv1
Contact:	David Wilkinson	**Date Received:**	08-Mar-2023
	C/- Wilkinson Civil Limited	**Date Reported:**	13-Mar-2023
	PO Box 74627	**Quote No:**	122768
	Greenlane	**Order No:**	101032
	Auckland 1546	**Client Reference:**	
		Submitted By:	David Wilkinson

Sample Type: Soil

		Sample Name:	1 07-Mar-2023	2 07-Mar-2023	3 07-Mar-2023	4 07-Mar-2023
		Lab Number:	3193701.1	3193701.2	3193701.3	3193701.4
Individual Tests						
Dry Matter	g/100g as rcvd		72	77	74	72
Heavy Metals, Screen Level						
Total Recoverable Arsenic	mg/kg dry wt		12	4	8	4
Total Recoverable Cadmium	mg/kg dry wt		0.11	< 0.10	< 0.10	0.10
Total Recoverable Chromium	mg/kg dry wt		54	39	58	43
Total Recoverable Copper	mg/kg dry wt		18	12	20	20
Total Recoverable Lead	mg/kg dry wt		16.3	15.2	17.0	14.3
Total Recoverable Nickel	mg/kg dry wt		20	14	26	25
Total Recoverable Zinc	mg/kg dry wt		42	37	53	36
Organochlorine Pesticides Screening in Soil						
Aldrin	mg/kg dry wt		< 0.014	< 0.013	< 0.014	< 0.014
alpha-BHC	mg/kg dry wt		< 0.014	< 0.013	< 0.014	< 0.014
beta-BHC	mg/kg dry wt		< 0.014	< 0.013	< 0.014	< 0.014
delta-BHC	mg/kg dry wt		< 0.014	< 0.013	< 0.014	< 0.014
gamma-BHC (Lindane)	mg/kg dry wt		< 0.014	< 0.013	< 0.014	< 0.014
cis-Chlordane	mg/kg dry wt		< 0.014	< 0.013	< 0.014	< 0.014
trans-Chlordane	mg/kg dry wt		< 0.014	< 0.013	< 0.014	< 0.014
2,4'-DDD	mg/kg dry wt		< 0.014	< 0.013	< 0.014	< 0.014
4,4'-DDD	mg/kg dry wt		< 0.014	< 0.013	< 0.014	< 0.014
2,4'-DDE	mg/kg dry wt		< 0.014	< 0.013	< 0.014	< 0.014
4,4'-DDE	mg/kg dry wt		< 0.014	< 0.013	< 0.014	< 0.014
2,4'-DDT	mg/kg dry wt		< 0.014	< 0.013	< 0.014	< 0.014
4,4'-DDT	mg/kg dry wt		< 0.014	< 0.013	< 0.014	< 0.014
Total DDT Isomers	mg/kg dry wt		< 0.09	< 0.08	< 0.08	< 0.09
Dieldrin	mg/kg dry wt		< 0.014	< 0.013	< 0.014	< 0.014
Endosulfan I	mg/kg dry wt		< 0.014	< 0.013	< 0.014	< 0.014
Endosulfan II	mg/kg dry wt		< 0.014	< 0.013	< 0.014	< 0.014
Endosulfan sulphate	mg/kg dry wt		< 0.014	< 0.013	< 0.014	< 0.014
Endrin	mg/kg dry wt		< 0.014	< 0.013	< 0.014	< 0.014
Endrin aldehyde	mg/kg dry wt		< 0.014	< 0.013	< 0.014	< 0.014
Endrin ketone	mg/kg dry wt		< 0.014	< 0.013	< 0.014	< 0.014
Heptachlor	mg/kg dry wt		< 0.014	< 0.013	< 0.014	< 0.014
Heptachlor epoxide	mg/kg dry wt		< 0.014	< 0.013	< 0.014	< 0.014
Hexachlorobenzene	mg/kg dry wt		< 0.014	< 0.013	< 0.014	< 0.014
Methoxychlor	mg/kg dry wt		< 0.014	< 0.013	< 0.014	< 0.014

This Laboratory is accredited by International Accreditation New Zealand (IANZ), which represents New Zealand in the International Laboratory Accreditation Cooperation (ILAC). Through the ILAC Mutual Recognition Arrangement (ILAC-MRA) this accreditation is internationally recognised.
The tests reported herein have been performed in accordance with the terms of accreditation, with the exception of tests marked * or any comments and interpretations, which are not accredited.

Sample Type: Soil					
Sample Name:		1 07-Mar-2023	2 07-Mar-2023	3 07-Mar-2023	4 07-Mar-2023
Lab Number:		3193701.1	3193701.2	3193701.3	3193701.4
Polycyclic Aromatic Hydrocarbons Screening in Soil*					
Total of Reported PAHs in Soil	mg/kg dry wt	< 0.4	< 0.4	< 0.4	< 0.4
1-Methylnaphthalene	mg/kg dry wt	< 0.014	< 0.013	< 0.014	< 0.014
2-Methylnaphthalene	mg/kg dry wt	< 0.014	< 0.013	< 0.014	< 0.014
Acenaphthylene	mg/kg dry wt	< 0.014	< 0.013	< 0.014	< 0.014
Acenaphthene	mg/kg dry wt	< 0.014	< 0.013	< 0.014	< 0.014
Anthracene	mg/kg dry wt	< 0.014	< 0.013	< 0.014	< 0.014
Benzo[a]anthracene	mg/kg dry wt	< 0.014	< 0.013	< 0.014	< 0.014
Benzo[a]pyrene (BAP)	mg/kg dry wt	< 0.014	< 0.013	< 0.014	< 0.014
Benzo[a]pyrene Potency Equivalency Factor (PEF) NES*	mg/kg dry wt	< 0.033	< 0.031	< 0.032	< 0.033
Benzo[a]pyrene Toxic Equivalence (TEF)*	mg/kg dry wt	< 0.033	< 0.031	< 0.032	< 0.033
Benzo[b]fluoranthene + Benzo[j] fluoranthene	mg/kg dry wt	< 0.014	< 0.013	< 0.014	< 0.014
Benzo[e]pyrene	mg/kg dry wt	< 0.014	< 0.013	< 0.014	< 0.014
Benzo[g,h,i]perylene	mg/kg dry wt	< 0.014	< 0.013	< 0.014	< 0.014
Benzo[k]fluoranthene	mg/kg dry wt	< 0.014	< 0.013	< 0.014	< 0.014
Chrysene	mg/kg dry wt	< 0.014	< 0.013	< 0.014	< 0.014
Dibenzo[a,h]anthracene	mg/kg dry wt	< 0.014	< 0.013	< 0.014	< 0.014
Fluoranthene	mg/kg dry wt	< 0.014	< 0.013	< 0.014	< 0.014
Fluorene	mg/kg dry wt	< 0.014	< 0.013	< 0.014	< 0.014
Indeno(1,2,3-c,d)pyrene	mg/kg dry wt	< 0.014	< 0.013	< 0.014	< 0.014
Naphthalene	mg/kg dry wt	< 0.07	< 0.07	< 0.07	< 0.07
Perylene	mg/kg dry wt	< 0.014	< 0.013	< 0.014	< 0.014
Phenanthrene	mg/kg dry wt	< 0.014	< 0.013	< 0.014	< 0.014
Pyrene	mg/kg dry wt	< 0.014	< 0.013	< 0.014	< 0.014

Summary of Methods

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively simple matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis. A detection limit range indicates the lowest and highest detection limits in the associated suite of analytes. A full listing of compounds and detection limits are available from the laboratory upon request. Unless otherwise indicated, analyses were performed at Hill Laboratories, 28 Duke Street, Frankton, Hamilton 3204.

Sample Type: Soil			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Environmental Solids Sample Drying*	Air dried at 35°C Used for sample preparation. May contain a residual moisture content of 2-5%.	-	1-4
Total of Reported PAHs in Soil	Sonication extraction, GC-MS analysis. In-house based on US EPA 8270.	0.03 mg/kg dry wt	1-4
Heavy Metals, Screen Level	Dried sample, < 2mm fraction. Nitric/Hydrochloric acid digestion US EPA 200.2. Complies with NES Regulations. ICP-MS screen level, interference removal by Kinetic Energy Discrimination if required.	0.10 - 4 mg/kg dry wt	1-4
Organochlorine Pesticides Screening in Soil	Sonication extraction, GC-ECD analysis. Tested on as received sample. In-house based on US EPA 8081.	0.010 - 0.06 mg/kg dry wt	1-4
Polycyclic Aromatic Hydrocarbons Screening in Soil*	Sonication extraction, GC-MS analysis. Tested on as received sample. In-house based on US EPA 8270.	0.010 - 0.05 mg/kg dry wt	1-4
Dry Matter (Env)	Dried at 103°C for 4-22hr (removes 3-5% more water than air dry) , gravimetry. (Free water removed before analysis, non-soil objects such as sticks, leaves, grass and stones also removed). US EPA 3550.	0.10 g/100g as rcvd	1-4
Benzo[a]pyrene Potency Equivalency Factor (PEF) NES*	BaP Potency Equivalence calculated from; Benzo(a)anthracene x 0.1 + Benzo(b)fluoranthene x 0.1 + Benzo(j)fluoranthene x 0.1 + Benzo(k)fluoranthene x 0.1 + Benzo(a)pyrene x 1.0 + Chrysene x 0.01 + Dibenzo(a,h)anthracene x 1.0 + Fluoranthene x 0.01 + Indeno(1,2,3-c,d)pyrene x 0.1. Ministry for the Environment. 2011. Methodology for Deriving Standards for Contaminants in Soil to Protect Human Health. Wellington: Ministry for the Environment.	0.024 mg/kg dry wt	1-4

Sample Type: Soil			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Benzo[a]pyrene Toxic Equivalence (TEF)*	Benzo[a]pyrene Toxic Equivalence (TEF) calculated from; Benzo[a]pyrene x 1.0 + Benzo(a)anthracene x 0.1 + Benzo(b) fluoranthene x 0.1 + Benzo(k)fluoranthene x 0.1 + Chrysene x 0.01 + Dibenzo(a,h)anthracene x 1.0 + Indeno(1,2,3-c,d)pyrene x 0.1. Guidelines for assessing and managing contaminated gasworks sites in New Zealand (GMG) (MfE, 1997).	0.024 mg/kg dry wt	1-4

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Testing was completed between 09-Mar-2023 and 13-Mar-2023. For completion dates of individual analyses please contact the laboratory.

Samples are held at the laboratory after reporting for a length of time based on the stability of the samples and analytes being tested (considering any preservation used), and the storage space available. Once the storage period is completed, the samples are discarded unless otherwise agreed with the customer. Extended storage times may incur additional charges.

This certificate of analysis must not be reproduced, except in full, without the written consent of the signatory.

Ara Heron BSc (Tech)
Client Services Manager - Environmental