WILLIAMSON
WATER & LAND ADVISORY

61 Hampton Downs Road

Preliminary and Detailed Site Investigation (Ground Contamination)

NATIONAL GREEN STEEL

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26 February 2025

61 Hampton Downs Road

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1	29 January 2025	Preliminary and Detailed Site Investigation (Ground Contamination)	Raffe Mahon	Lauren Windross	Wendi Williamson
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1	29 January 2025	Shearer Consulting and National Green Steel	To support consent
2	26 February 2025	Shearer Consulting and National Green Steel	Minor updates to reflect site plan

Report Summary

Williamson Water & Land Advisory (WWLA) has prepared this Preliminary and Detailed Site Investigation (PSI/ DSI) to assist Shearer Consulting and their client, National Green Steel, in decision making and resource consent applications for a proposed steel recycling facility in Hampton Downs, to be progressed as part of the Fast Track consent process. The objective of the scope of work is to provide concise and clear ground contamination documentation. A full site history and site walkover inspection was undertaken, as well as targeted sampling for initial stages and representative sampling to inform master planning. Key conclusions are:

History and potential for contamination [Section 3]	***An evaluation of past activities against the Ministry for the Environment's Hazardous Activities and Industries List (HAIL; those with potential to cause ground contamination) was undertaken to inform the resource consent planning assessment and proposed earthworks. Potential HAIL activities were identified.*** The historical review found that the site was primarily used as pastoral farmland with localised haymaking. Several sheds were constructed in the eastern section of the site between the 1940s to 1980s and a sealed access road was added between 1997 and 2007. The following HAIL activities were identified as having potential to occur: • Livestock and spray operations (HAIL Activity A8) • Storage of agrichemicals (HAIL Activity A1) • Usage of lead-based and asbestos-containing material (ACM) in the construction of the buildings (HAIL Activities I and E1) Soil testing was required to confirm if contaminants associated with these activities is present and if so whether they are at levels that pose a human health or the environment.
Soil characterisation [Section 4]	***Soil sampling was undertaken to assess potential for contaminants in topsoil around farm buildings. Heavy metals (7), organochlorine pesticides (OCPs), and asbestos were identified as possible contaminants and tested for.*** • No pesticides were detected in any of the samples tested and metals typically associated with pesticide use are only present in localised areas, constituting no human health risk. • Asbestos fibres were identified in topsoil around the margins of the wool shed and present a potential risk to human health.
Conceptual site model (CSM) [Section 4]	***The CSM identifies a risk to human health in the area around the wool shed, where asbestos fibres are present in the topsoil.*** • Asbestos management is required for excavation in soil material present around the margins of the wool shed. • The impacted soil will either necessitate capping or appropriate removal and disposal. It is recommended this occur regardless of earthworks plans for the affected area.
Consenting considerations [Section 5.1]	***Specific considerations were made for controls and matters of discretion outlined in the NESCS and contaminated-land rules of the Waikato Regional Plan (WRP) as part of the Fast Track consent process.*** • Under traditional consenting frameworks, soil disturbance in the asbestos-affected area would be a Restricted Discretionary Activity under the NESCS. The remainder of the site would not be subject to the NESCS. • No contamination-related consents are required under the WRP as no environmental contaminants need remediation. • It is expected that the fast track process will take into consideration the above traditional consenting implications.
Earthworks controls [Section 5.3]	***Standard earthworks controls and procedures are applicable to most of the site, except for the area of asbestos contamination.*** • Asbestos removal/ disturbance in soils must comply with requirements of the New Zealand Guidelines for Assessing and Managing Asbestos in Soils (NZAG) which, based on the asbestos levels present, will require "Asbestos Related Works" controls. A SQEP must provide clearance following either encapsulation or removal. • A Site Management Plan (SMP) is provided in **Appendix B** setting out contaminant (asbestos) management measures during the works, including disposal requirements, health and safety and monitoring action.

Contents

Appendices

1. Introduction

Williamson Water & Land Advisory (WWLA) has prepared this Preliminary and Detailed Site Investigation (PSI/ DSI) for ground contamination to support Shearer Consulting and their client, National Green Steel, in decision making and resource consent applications for a proposed steel recycling facility in Hampton Downs. The site location is shown in **Figure 1.**

Figure 1. Site boundary (source: LINZ 2023-2024).

1.1 Background

National Green Steel propose to develop a steel recycling facility on the site at 61 Hampton Downs Road. Development plans detail a large raised platform covering majority of the site with several industrial buildings, material storage areas, truck/ car parking, a wastewater treatment system and storage ponds. While earthworks plans are not yet confirmed, bulk earthworks up to approximately 1 million m^3 are expected (refer **Appendix A** for indicative site plans). We understand that the necessary consent application is proposed to be progressed as part of the Fast Track Legislation.

The site is currently farmland and is located between the Hampton Downs Motor Sport Park, EnviroNZ's Hampton Landfill and Spring Hill Corrections Centre. This investigation has been undertaken to determine if potentially contaminating activities (HAIL activities[1]) have occurred on the site. If HAIL activities are occurring, or

[1] MfE's Hazardous Activities and Industries List (HAIL)

have occurred, on the site Fast Track consent process will need to address the requirements of the NESCS[2] and contaminated-land rules of the Waikato Regional Plan.

1.2 Objectives and scope of this report

This PSI/ DSI has been undertaken to identify the potential for ground contamination within the site. The scope of the report included:

1. Review of historic aerial photographs and Waikato District Council (WDC) property files to establish the history of the site.
2. Review of data from Waikato Regional Council's HAIL register.
3. Site walkover inspection by a suitably qualified environmental practitioner (SQEP) i.e. contaminated land specialist.
4. Assessment of the potential for contamination, based on historical land use and evaluation of that against the HAIL.
5. Collection of soil samples for testing for key contaminants in potential HAIL areas and evaluation of the data against human health and environmental criteria.
6. Evaluation of likely contamination-related consenting requirements and earthworks/construction implications for the development.

1.3 Legislative requirements

WWLA has undertaken the investigations 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), (CLMG1);
- MfE's Contaminated Land Management Guidelines No. 5: Site Investigation and Analysis of Soils (Revised 2021), (CLMG5);
- 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[2] Users' Guide[3]. CVs confirming the SQEP status of our contaminated land specialists are available on request.

[2] Resource Management (National Environmental Standards for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011.
[3] Ministry for the Environment, April 2012. Users' guide: National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health.

2. Site Description

2.1 Site identification

The site is located at 61 Hampton Downs Road, Hampton Downs, and is as described in **Table 1** below.

Table 1. Site identification

Address	Legal description	Title	Area (m^2)
61 Hampton Downs Road, Hampton Downs, 3782	Part Lot 1 DPS 45893 Part Lot 1 DPS 43275 Lot 1 DP 310030 Lot 3 DP 310030 Lot 4 DP 310030 Lot 5 DP 310030	SA40B/472 473369 39529 39531 39532 39533	528,705

2.2 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). These variables set the scene and inform the conceptual site model (CSM; **Section 5**) if it is established that activities with potential to cause ground contamination to have occurred.

Table 2. Environmental setting

Topography and drainage	*The topographical nature of the site impacts where contaminants might migrate to if present. Surface water features are potential receiving environments should contaminants be present on a site.* The site is dominated by a broad central gully, with topography steepening to a low ridge line (approximately 40 m RL) in the southeast and east. The Waipapa Stream is located along the western boundary of the site. Stormwater from the site discharges directly to the Waipapa Stream via overland flow and constructed drainage ditches. The Waipapa Stream, which is highly modified, largely now being a drainage channel, ultimately discharges to the Waikato River some 3.5 km to the north of the site.
Surrounding land use	The site is located in a mixed-use area. Farmland borders majority of the site, but a motorsport park is located immediately to the north (beyond Hampton Downs Road), a prison some 500 m to the south, a regional landfill to the west (some 1300 m) and State Highway 1 to the east (some 400 m) of the site.
Geology	*Geological conditions are considered in the context of describing the CSM (**Section 5**) should a potential for contamination be identified by this desk study. For example, more porous soils can enable contaminants (if present) to move more quickly and potentially further than clay-rich soils that retain/ bind or prevent penetration of contaminants.* The published geology[4] (see **Figure 2**) reveals that the site is underlain by clastic sedimentary rocks, stratigraphically belonging to the Tauranga Group and the Amokura Formation. These sedimentary rocks include deposits of sand, sandstone, siltstone, mudstone, peats and grits. Bore logs from NZGD[5] and Wells NZ[6] confirm the published geology, with nearby boreholes encountering clays, sands, silts, siltstones and peats.
Hydrogeology	*Hydrogeological conditions affect the potential for contaminants (if present) to enter and be transported in groundwater*.

[4] Sourced from GNS Science QMap 2014 Webmap, https://data.gns.cri.nz/geology/
[5] Sourced from NZGD Webmap. https://www.nzgd.org.nz/arcgismapviewer/mapviewer.aspx
[6] Sourced from Wells NZ Webmap https://wellsnz.teurukahika.nz/wells/map

	Bore logs from NZGD indicate that groundwater was encountered in nearby boreholes between approximately 1 and 3 m below ground level (bgl). Groundwater is expected to be at shallow depth (near surface) in lower parts of the site, however it is likely to be deeper beneath the higher parts 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 affect.* There may be sensitive aquatic and terrestrial ecosystems associated with the Waipapa Stream.
	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 people receptor interpretation informs the CSM and also future guideline value selection for evaluation of soil data. The surrounding land comprises principally farmland and commercial operations. Worker at and users of these facilities are not considered to be sensitive with respect to the site. While residents of surrounding farms would typically be considered to be sensitive receptors they are located at significant distance (>200 m) in this instance and are therefore unlikely to be impacted by contamination derived from the site (if any).

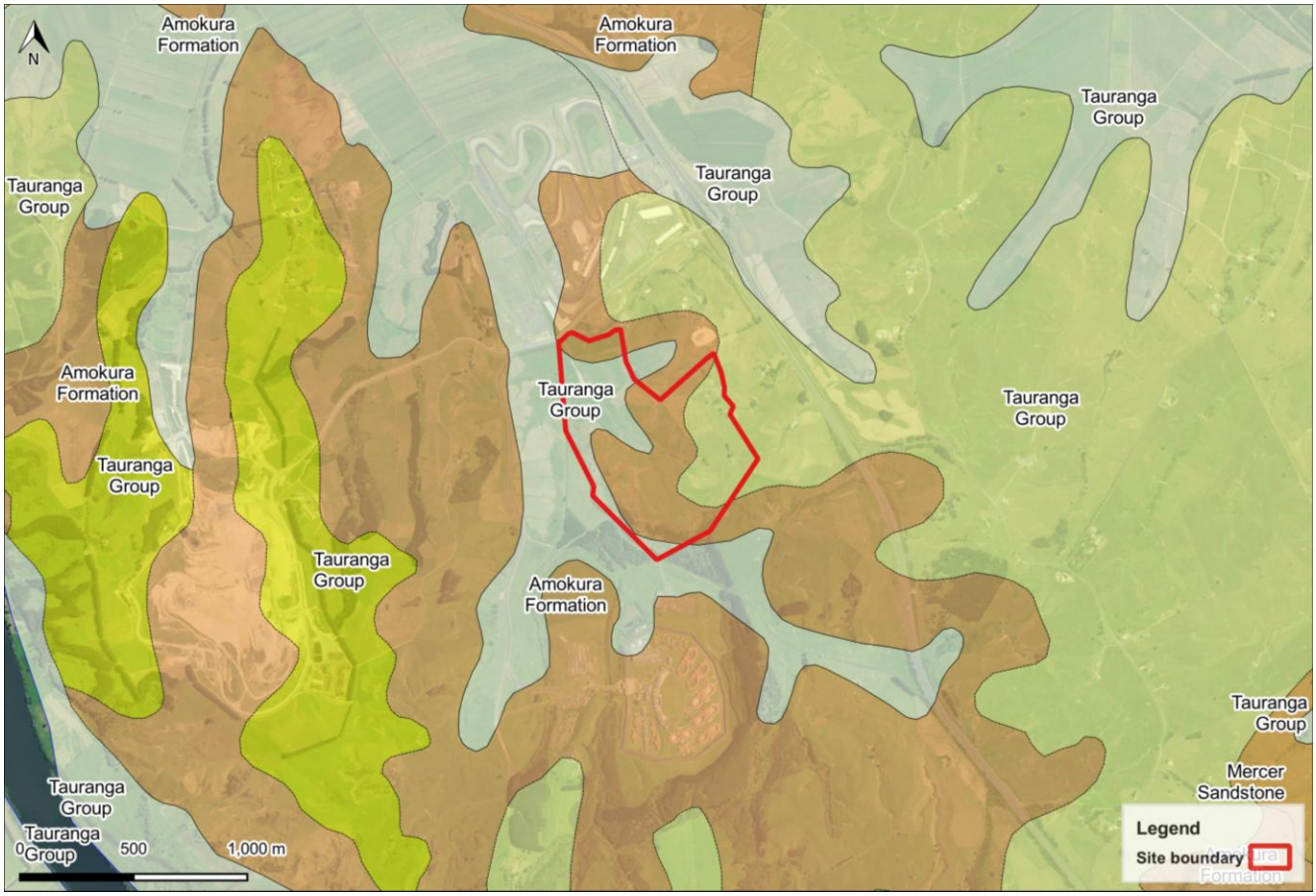


Figure 2. Published geology (Source: GNS Science QMAP 2014)

3. HAIL Assessment

This section provides a review of historical land uses to determine whether activities listed on MfE's HAIL are occurring, or have occurred, on the site. The findings of the HAIL review inform the requirement and scope for soil sampling (**Section 4**). The HAIL assessment also informs the consenting status under the NESCS.

3.1 Site layout

The site was visited by an SQEP from WWLA on 12 November 2024. The site features are described below and are shown in **Photographs 1 – 10** and **Figure 3**.

- The site is accessed from Harness Road, off Hampton Downs Road. Harness Road borders the northern boundary of the site and the Waipapa Stream borders the western boundary of the site.
- The site is predominantly used for cattle grazing and is fenced with typical post and wire fencing.
- A cluster of farm buildings is located on the eastern boundary of the site, accessed by a sealed access road from Harness Road.
- There are three (3) farm buildings/sheds, being a wool shed (**Photograph 1**), an implement shed (**Photograph 2**) and a cattle shed (**Photograph 3**).
  - The cattle shed is constructed of timber posts and framing, the structure is open with one corrugated iron wall on the western side and a corrugated iron roof. It includes a cattle holding / weighing station and associated race. A fridge and empty agriproduct containers (of small volume) were also present.
  - The wool shed is raised on timber foundations, constructed of timber and plywood with a corrugated (possibly super-six, an asbestos containing material or ACM) roof, and timber joinery. The front room of the woolshed has weatherboard cladding and a corrugated iron roof. A variety of small farm equipment, IBCs (empty or unlabelled), blue drums (Donaghys Uddercontrol), furniture and other householditems were present inside the woolshed (**Photograph 4**).
  - The implement shed has a concrete slab floor and is constructed of timber and corrugated iron. The implement shed contained agriproduct containers on shelves, tools, farm equipment, a motorbike and cattle feed bags (**Photograph 5**). A gravel pad with a trailer, water tanks and a gravel stockpile is located beside the implement shed to the west (**Photograph 6**).
  - A fenced stockyard with a loading ramp is located between the cattle shed and wool shed (**Photograph 7**). There is one small concrete slab area in the stockyard and one next to the cattle shed. The remainder of the ground in this area is grass or bare earth.
- Various farm equipment and machinery including tractors, trucks, trailers, sprayers, water tanks, sheet metal, timber, sprayers and pipes are stored around the wool shed, implement shed and in front of the cattle yard (**Photographs 8, 9**). Former fence posts (removed from the ground/ recycled) are stacked in stillages and stored south of the cattle yard next to a water tank.
- A farm race runs south from the three (3) sheds and follows the shape of the boundary around to the west, finishing in the centre of the site. Another farm race runs southwards from the northwestern corner of the site.
- A large wet/ boggy area is in the centre of the site (**Photograph 10**).
- An oval shaped track/bund is located in the northwest corner of the site, a stockpile of clay is located on the northeastern edge of this oval (**Photograph 11**).
- Several drainage ditches are present on the northern half of the site (**Photograph 12**).

Photograph 1: Wool shed, located on the eastern boundary of the site.

Photograph 2: Implement shed, located on the eastern boundary of the site.

Photograph 3: Cattle shed, located on the eastern boundary of the site.

Photograph 4: Interior of the wool shed.

Photograph 5: Interior of the implement shed.

Photograph 6: Gravel pad with trailer, tanks and stockpile adjacent (west) the implement shed.

Photograph 7: Cattle yards with loading ramp on eastern boundary of the site. Implement shed (left) and wool shed (right) visible behind cattle yards.

Photograph 8: Various farm machinery and equipment stored adjacent (north) the woodshed.

Photograph 9: Various farm machinery and equipment stored behind (north) the implement shed.

Photograph 10: View of the boggy area in the centre of the site, facing east.

Photograph 11: View of the oval shape track/bund in northwest corner of the site. Clay stockpile visible on eastern edge of oval.

Photograph 12: View over the fields in the northern half of the site, facing north. Drainage ditches are visible between paddocks.

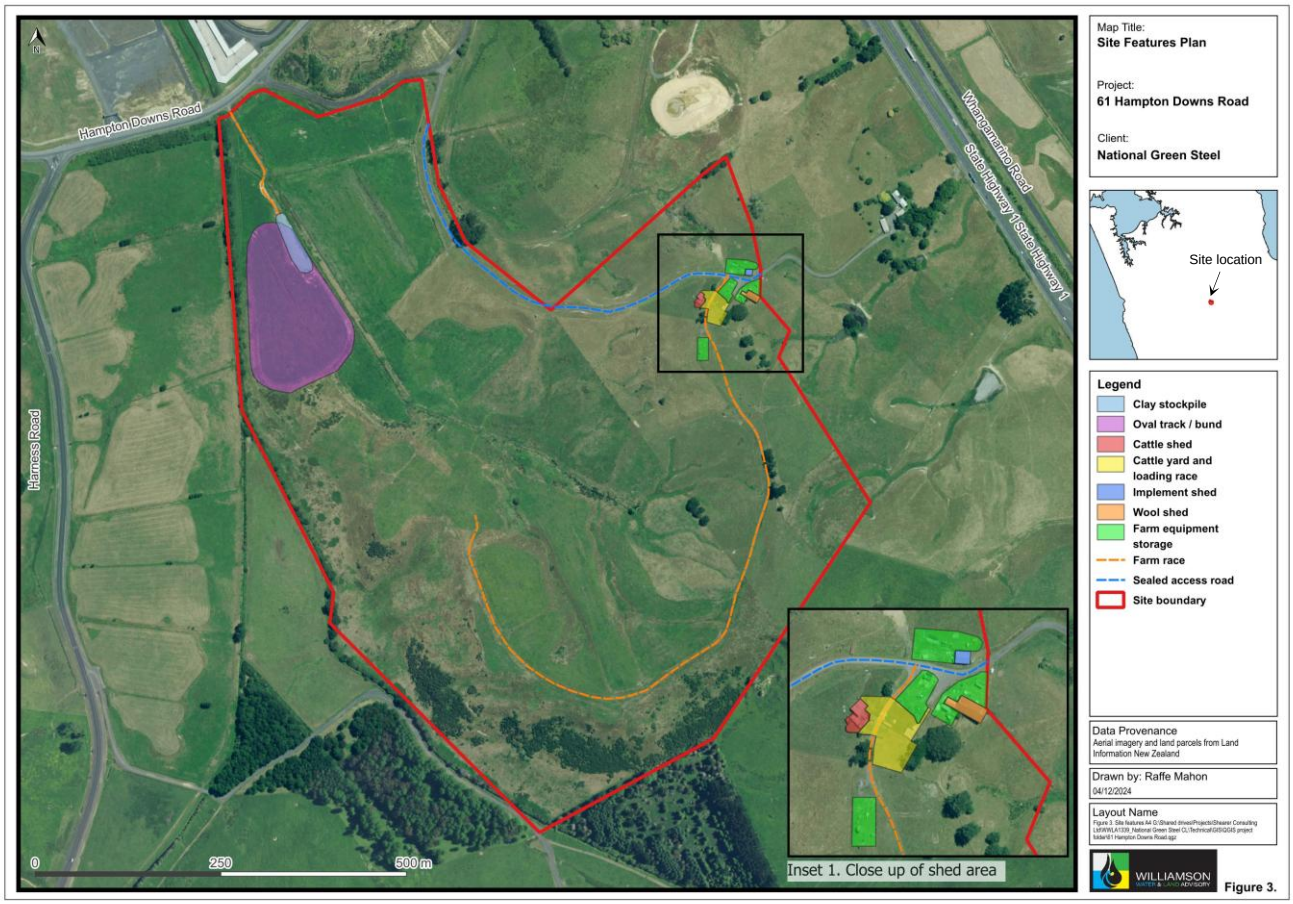


Figure 3. Site features (image source: LINZ 2023-2024)

3.2 Site history

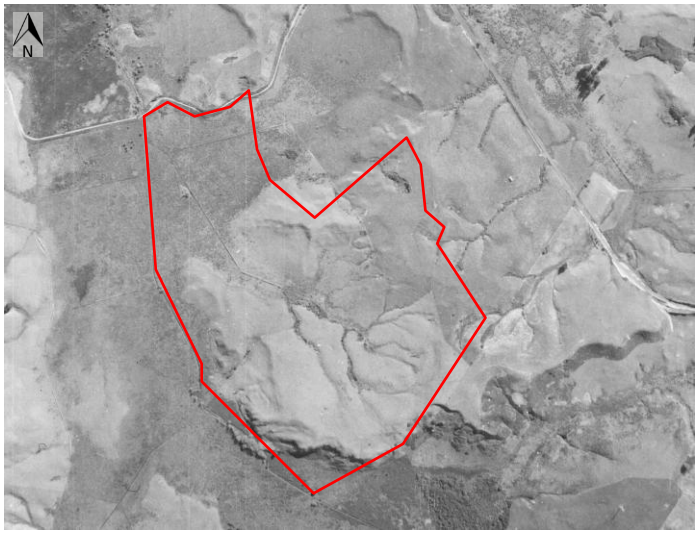
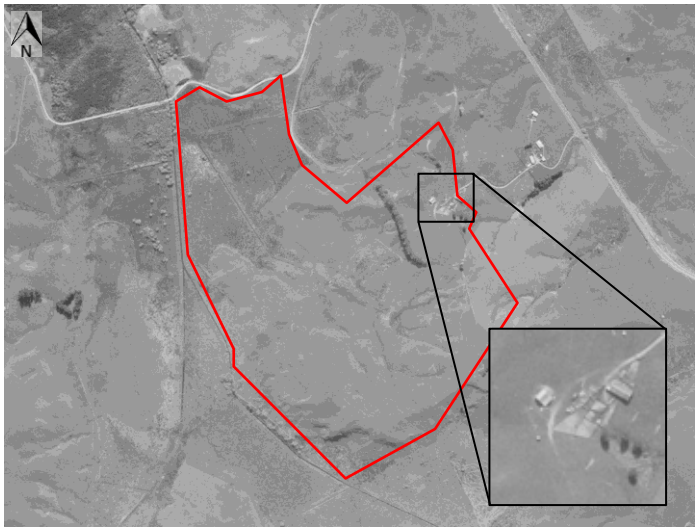
The site history was determined by review of publicly available aerial imagery (Retrolens, Google Earth) and the Waikato District Council property file.

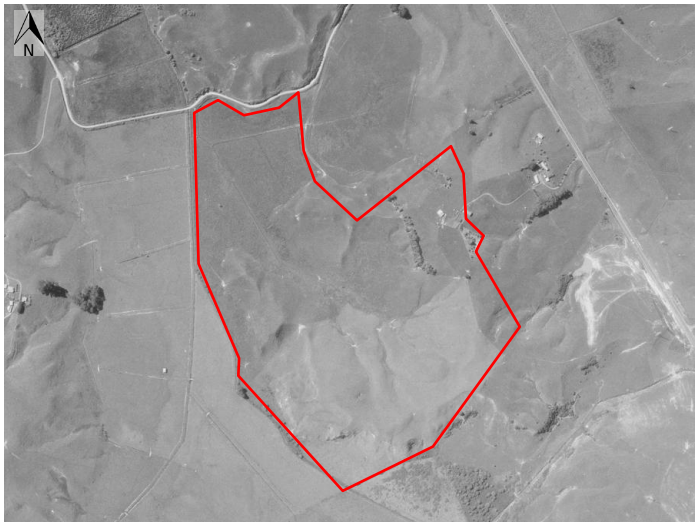
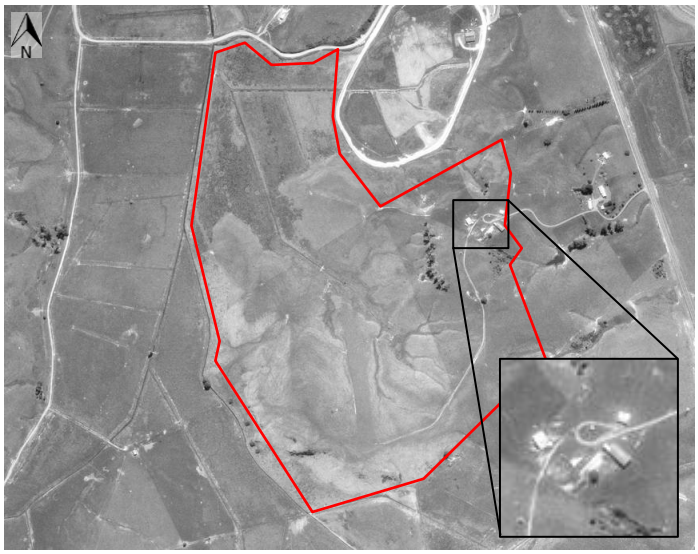
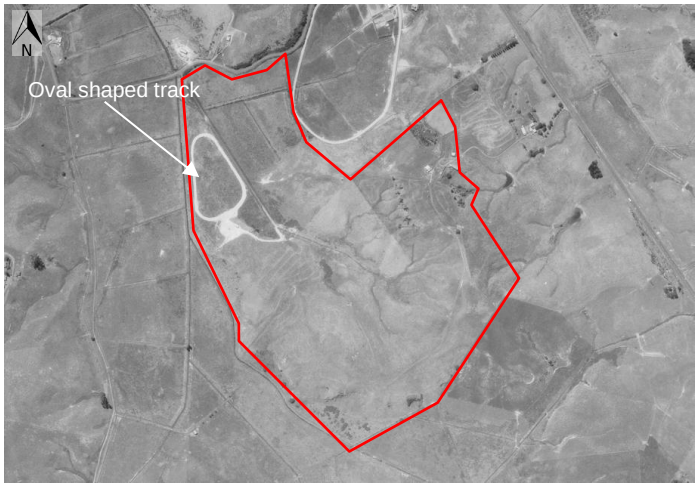
In summary our review found the site has been used as pastoral farmland since 1942. Several sheds were constructed on the site between 1942 and 1986. A sealed access road was added to the site between 1997 and 2007.

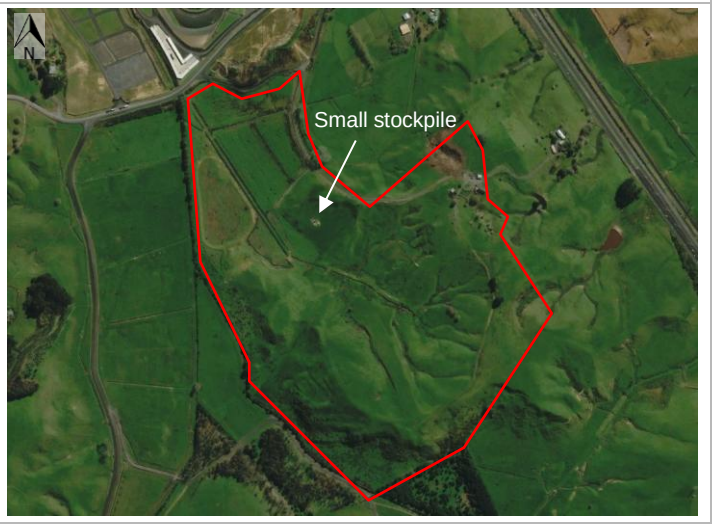
3.2.1 Aerial photographs

Historical aerial imagery reviewed is summarised in **Table 3** (overpage).

Table 3. Historical aerial photograph review

Photograph date (source)	Activities	Aerial image (site in red outline)
1942 Retrolens (SN192.285.38)	The site is in a rural area and is likely used for pastoral purposes, there are no structures on the site. There is little vegetation on the site other than pasture/ grass. Several small gullies and drainage ditches can be seen throughout the site. Surrounding land is also under pastoral use with only sporadic structures present. Hampton Downs Road is formed to the North of the site and State Highway One is formed to the East.	
1963 Retrolens (SN1397.3256.23)	Between 1942 and 1963, two (2) structures were added on the eastern boundary of the site (see inset), with a fenced area between and a driveway leading to the road to the east. A row of trees is present in the eastern section of the site near the structures. The site appears to still be used for pastoral purposes. An oval shaped track has been formed adjacent to the northeastern boundary of the site (outside of the site). The surrounding land remains relatively unchanged, however four (4) structures have been added to the adjacent paddock east of the site, where there was one in 1942.	

Photograph date (source)	Activities	Aerial image (site in red outline)
1977 Retrolens (SN5164.I.3)	The site and surrounds remain largely unchanged.	
1986 Retrolens (SN8614.C.4)	A third structure and livestock yards/ races has been added where the two previous structures sit on the eastern boundary of the site (see inset). The site still appears to be used for pastoral activities. A farm access road has been added in the southeastern section of the site. The oval shaped track adjacent northeast to the site has been formed further and a structure has been added inside this area, a structure has also been added to land north of the site. Other than this, surrounding land remains relatively unchanged.	
1991 Retrolens (SN9124.B.3)	An oval shaped track has been formed in a paddock in the northwest of the site, an access track has also been added, leading from the road at the northern boundary to the centre of the site. Further structures have been added on land north of the site, otherwise surrounding land remains largely unchanged.	

Photograph date (source)	Activities	Aerial image (site in red outline)
1997 Retrolens (SN.9615.A.9)	The site remains largely unchanged. Several new structures have been added to the land north of the site, otherwise surrounding land remains relatively unchanged.	
2007 Google Earth	An access road, possibly gravelled or sealed, has been added to the site, leading from the road on the northern boundary to the three structures on the eastern boundary. Paddocks in the northern portion of the site appear to be overgrown otherwise the site still appears to be used for pastoral activities. Construction has begun on the motorsport park to the north of the site and the roading network surrounding the site has been developed further.	
2020 Google Earth	A small stockpile appears to have been added to a paddock in the northern section of the site between 2017 and 2020. The northern paddocks appear to be being grazed again. Other than this, the site remains largely unchanged. The motorsport park to the north has been constructed, otherwise the surrounding land remains unchanged.	

Photograph date (source)	Activities	Aerial image (site in red outline)
2023 Google Earth	The small stockpile visible in the 2020 imagery has been removed. Otherwise, there are no notable changes to the site or surrounding land.	

3.2.2 Property file

The Waikato District Council property file was obtained in November 2024. The following key information related to ground contamination and historical use of the site has been identified.

Table 4. Summary of key information related to ground contamination and historical use of the site

1958	Application for building permit to erect an implement shed was submitted. The application detailed the shed construction as steel reinforced concrete piles, concrete block walls and a barn style roof, likely timber framing and corrugated iron. Given the date, use of asbestos containing materials (ACM) is possible.
1962	An application for building permit to erect a dwelling was submitted, although this may have been for the lot to the east of the site (not in the site). No construction details are noted. Drainage plans, dated July 1962, show a septic tank. The dwelling was subsequently altered in 1967.
1963	Application for two building permits to erect a hay barn and a storeroom. The application details the hay barn to have 800 square feet floor area and the storeroom to have 214 square feet floor area, both with no plumbing or drainage. Building products are not specified.
1984	Building permit granted to erect a skyline garage. The permit details the garage to be concrete foundations, single story with a floor area of 64.8 square meters, and classified as a domestic garage with no plumbing or drainage.
1985	Building permit granted to erect an implement shed. The permit details the shed construction as concrete foundations, tanalised poles and timber framing with corrugated iron walls and roof.

3.2.3 Waikato Regional Council HAIL Register

The Waikato Regional Council HAIL Register was searched for any publicly available HAIL records held for the site. The following information was obtained:

A potential sheep dip is identified, located in between two of the structures on the eastern boundary of the site. This is classified as an “Unverified HAIL under HAIL Activity A8: Livestock dip of spray race operations.

3.3 Potential for contamination

The potential for ground contamination has been informed by the site history review and WRC HAIL register search. Potentially contaminating (HAIL) activities identified by this review are described in **Table 5.**

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 5. Potential for contamination.

Land use	Potential contaminants	Possible extent of contamination	HAIL Assessment
Farm sheds Hail Activity E1: Buildings containing asbestos products known to be in a deteriorated condition HAIL Activity I: Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	Asbestos and lead	Potential ACM cladding was identified on the woolshed, and since structures were built in the late 1950s and early 1960s, it is also possible that they were constructed using lead-based paints. General wear-and-tear, as well as maintenance activities such as water blasting/ cleaning, can result in degradation of the structures and contamination of surface soils in the immediate vicinity of them. If ACM and/or lead-based paints were used, localised contamination, typically confined to surface soils, would be expected around the structures.	HAIL Activity E1 and Activity I potentially apply, testing is required to confirm.
Potential livestock dip HAIL Activity A8: Livestock dip or spray race operations	Metals, organochlorine pesticides (OCP)	The site has been used for pastoral purposes. WRC has interpreted that historic structures may have included a livestock dip or spray race operation. However, only standard stock yards were observed during our site walkover and buildings were not constructed on the site until the late 1950s (at earliest). As dipping operations using OCPs principally occurred in the period from the 1940s to 1960s it is unlikely that this activity occurred at the site. However, as livestock spraying activities cannot be excluded a precautionary approach has been adopted in this instance.	HAIL Activity A8 applies to the site.
Storage and use of agrichemicals Hail Activity A1: Agrichemicals	Metals, OCP's	Storage of agrichemicals occurred inside the farm sheds, although only in quantities expected of typical farm operations. There are also sprayers present; areas where sprayers have been filled may have higher concentrations of contaminants. Although no bulk storage or dedicated filling areas were observed during the site walkover a precautionary approach has been adopted in this instance.	HAIL Activity A1 applies
Placement of fill HAIL Activity I: as above	Metals, polycyclic aromatic hydrocarbons (PAH)	Fill may have been placed on site during early development. However, it is likely to have been site won and therefore would be unlikely to have introduced contaminants to site. On this basis, placement of fill is not considered a HAIL Activity.	HAIL Activity I does not apply

4. Soil Characterisation

Soil sampling was undertaken on 12 November 2024 by a SQEP from WWLA. The following provides the rationale, method and results of soil sampling and testing.

4.1 Sampling and analysis rationale

The site history review indicates that activities with the potential to cause ground contamination may have occurred on the site. As shown on **Figure 3**, and described in **Section 3.3**, these activities occurred in and around the farm buildings. On this basis sample locations were targeted to investigate potential contamination sources around the farm buildings. The sampling rationale is set out in **Table 6** and sampling locations are shown on **Figure 4**.

Table 6. Sampling and testing plan and rationale

Potential contaminant	Potential contaminant source	Sampling and testing rationale	Sample locations
Asbestos	Use of ACM in construction of the woolshed.	Sampling of topsoil around building / shed footprints to determine if asbestos is present.	S1, S2, S3
Metals	Storage and use of agrichemicals in sheds and yards. Use of lead-based paints.	Sampling of surface and subsurface soils around buildings / sheds and throughout yards to determine if metals (7) and OCPs are present. Composite sampling techniques were used, with four (4) subsamples per composite.	HA1-HA5

4.2 Sampling methodology

Soil sampling was undertaken by a SQEP from WWLA and collected via hand auger and trowel. Soil sampling was undertaken in accordance with CLMG5as follows:

- Collection of samples using freshly gloved hands via the hand auger or trowel with samples placed directly into laboratory supplied containers.
- Decontaminating sampling equipment using phosphate free detergent and fresh-water rinses between sample positions.
- Delivery of samples chilled, under chain of custody documentation.
- All samples were sent to an IANZ accredited laboratory for testing.

The data quality objectives (DQOs) for this investigation were to collect and analyse soil samples with sufficient accuracy and precision to provide evaluation against relevant human health and environmental acceptance criteria.

Figure 4 . Sampling locations (image source: LINZ 2023-2024)

4.3 Field observations

Our observations of materials encountered during sampling include the following:

- Topsoil was generally present to 0.1-0.2 m bgl and comprised of light greyish brown to dark brown silt with minor clay. Topsoil was soft and dry across all sample locations except HA1 which had gravels / rocks and HA5 which was moist. Topsoil could not be penetrated at HA1 due to the presence of gravels and high level of compaction.
- Natural soils comprising clayey silt, orangey brown with minor dark brown to black inclusions, was encountered beneath the topsoil. The clayey silt was dry to moist and ranged from soft to firm across sample locations.

There were no visual or olfactory indicators of contamination in any of the sampling locations, which reached a maximum depth of 0.5 m bgl.

4.4 Soil evaluation criteria

The analytical data was compared against the criteria set out in **Table 7.**

Table 7. Soil evaluation criteria.

Protection of Human Health	• NESCS contaminant standards for commercial/industrial land use to assess potential effects on construction workers during earthworks and future site workers. • Where NESCS standards were not provided, guidance obtained from the following documents were used, as per MfE's "Contaminated Land Management Guideline No. 2, Hierarchy and Application in New Zealand of Environmental Guideline Values (Revised 2011)": - [Australian] National Environment Protection (Assessment of Site Contamination) Measure 1999, updated 2013 for Commercial/industrial use. (NEPM). - For asbestos: BRANZ, 2017. New Zealand Guidelines for Assessing and Managing Asbestos in Soil. The "all users" criteria selected to assess both effects on construction workers and future site users.
Discharges to the Environment	• Landcare Research Manaaki Whenua, 2019. Updated Development of Soil Guideline Values for the Protection of Ecological Receptors (Eco-SGVs): Technical document. Standards derived using EC30 and Waikato Regional Council background values. Typical soils, aged contaminants.
Soil Disposal	• Waikato Regional Council: Natural background concentrations in the Waikato region, accessed 19 November 2024: https://www.waikatoregion.govt.nz/services/waste-hazardous-substances-and-contaminated-sites/contaminated-sites/natural-background-concentrations/. • Background values are also used as a basis for acceptance of soil to cleanfill sites.

4.5 Results and discussion

The laboratory testing results are discussed in **Table 8** and presented in **Table 9**. Sample locations are shown previously in **Figure 4**. Full laboratory transcripts are attached in **Appendix A**.

Surficial soil samples around farm buildings contain metals above background concentrations, but no OCPs were detected. There were no exceedances of NESCS or Eco-SGV criteria for metals or OCPs. Asbestos was detected in samples around the wool shed.

Table 8. Evaluation of laboratory testing results.

Results summary	Soil testing results show the following: • No OCPs were detected in any of the samples tested. • Arsenic, cadmium, lead, and zinc levels exceed published background concentrations in the areas where farm equipment is stored, the cattle yard and cattle shed (samples HA2, HA4 and HA5). However, there are no exceedances of NESCS criteria for commercial/ industrial use or Eco-SGV criteria for environmental protection. • Asbestos is present in samples S1-S3, located around the margins of the wool shed. In S1 and S3, concentrations exceed applicable human health criteria, but as described in the preceding sections this contamination is expected to be localised around this building.
Discussion	The usage of the land for pastoral purposes such as livestock dips and spray race operations as well as the storage of agrichemicals in the farm sheds have not resulted in contamination of shallow soils with OCPs or the accumulation of metals at levels that constitute a risk to human health or the environment. In contrast, the use of ACM in the construction of the wool shed has resulted in contamination of shallow materials, posing a potential risk to human health that will require remediation and/or management. Even if earthworks are not proposed in this area, remediation of localised soils is recommended to remove potential risks to future site workers.

Table 9. Soil Laboratory Testing Results61 Hampton Downs Road, Hampton Downs

Sample information	**Sample Location**	**NESCS Commercial/ Industrial/ Outdoor worker [1]**	**WRC Background Concentration [2]**	**Eco-SGV [3]**	**HA1**	**HA2**	**HA3**	**HA4**	**HA5**	**S1**	**S2**	**S3**
	Depth (m bgl)				0.0-0.01	0.0-0.01	0.0-0.01	0.0-0.01	0.0-0.01	0.0-0.0	0.0-0.0	0.0-0.0
	Date				12/11/2024	12/11/2024	12/11/2024	12/11/2024	12/11/2024	12/11/2024	12/11/2024	12/11/2024
	Material type				Topsoil	Topsoil	Topsoil	Topsoil	Topsoil	Topsoil	Topsoil	Topsoil
	Lab number				3714641	3714641	3714641	3714641	3714641	Q-01183	Q-01183	Q-01183
Asbestos	**ACM (bonded) % w/w [6]**	0.05	-	-	-	-	-	-	-	0.15	ND	1.52
	AF+FA* %w/w [6]	0.001	-	-	-	-	-	-	-	<0.001	<0.001	0.483
Metals	**Arsenic**	70	6.8	150.8	6	7	5	12	21	-	-	-
	Cadmium	1,300	0.22	40.22	0.13	0.56	< 0.10	0.13	0.23	-	-	-
	Chromium	6,300	30	672	28	10	8	11	13	-	-	-
	Copper	>10,000	25	625	34	13	7	11	21	-	-	-
	Lead	3,300	20	3069	13.4	78	15.7	21	51	-	-	-
	Nickel	6,000 [4]	7.6	-	51	3	< 2	2	4	-	-	-
	Zinc	400,000 [4]	53	516	77	410	25	35	161	-	-	-
OCP	**Total DDT**	1,000	-	21	-	-	< 0.07	< 0.07	< 0.07	-	-	-
	Dieldrin (or Σ aldrin+dieldrin)	160	-	-	-	-	< 0.012	< 0.012	< 0.012	-	-	-
	Other OCPs and ONOPs	-	-	-	-	-	<LR	<LR	<LR	-	-	-

Notes:

All values are presented in mg/kg except where noted (asbestos).

* FA = fibrous asbestos, AF = asbestos fines.

ND denotes no asbestos detected.

<LR indicates concentration below the laboratory limit of reporting.

Grey values are below expected background values, black values exceed background, bold values exceed Eco SGVs 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. Waikato regional council, Natural background concentrations in the Waikato region, accessed 19 November 2024: https://www.waikatoregion.govt.nz/services/waste-hazardous-substances-and-contaminated-sites/contaminated-sites/natural-background-concentrations/
3. Landcare Research Manaaki Whenua , 2019. Updated Development of Soil Guideline Values for the Protection of Ecological Receptors (Eco-SGVs): Technical document. Added concentration limits using EC30 and site predicted background used. Typical soils, aged contaminants.
4. National Environment Protection Council [Australia] - National Environment Protection Measure (Assessment of Site Contamination). Health Investigation Levels - Commercial/industrial land use (HIL D)
6. BRANZ, 2017. New Zealand Guidelines for Assessing and Managing Asbestos in Soil.

5. 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 purpose of the CSM is to set out risks to people and the environment (if any) associated with a proposed activity (short or long term) on the land.

Soil sampling shows that metals are present above background levels in the tested surficial soils around farm buildings but do not exceed NESCS or Eco-SVG criteria. However, asbestos is present around the woolshed at concentrations the present a potential risk to health risk, we recommend this risk is mitigated.

The CSM for the proposed redevelopment is presented in **Table 10**. Colour coding in the table is used to indicate the:

- Complete pathways indicate where there is a risk to human health or the environment.
- Partially Complete pathways i.e. those where there may be a risk to people and/or the environment if appropriate procedures or controls are not in place; and
- Incomplete exposure pathways where there is no risk to human or environmental receptors.

In summary, the CSM shows a risk to people during earthworks around the wool shed.

Table 10. CSM for 61 Hampton Downs Road, Hampton Downs.

Source	Receptor	Exposure pathway	Risk assessment
Surficial soil containing metals above background	Construction workers during redevelopment (soil disturbance).	Inhalation, ingestion or skin contact.	**No risk posed** Soil testing shows contaminants are not at concentrations that present an unacceptable risk to people or the environment.
	Future site workers.		
	Ecological receptors at the nearest surface water bodies.	Dust, sediment and surface water runoff to surface water bodies.	
	Ecological receptors at an offsite soil disposal site.		**Requires management** If disturbed, soil surplus to site needs will require disposal at a site consented to take the low levels of contamination present. The soil can be reused onsite if appropriate controls are implemented to mitigate dust and sediment discharges.
Surficial soil containing asbestos around wool shed	Construction workers during redevelopment (soil disturbance).	Inhalation	**Potential health risk** Mitigation measures are required to address the current and future risk presented by asbestos in soil around the margins of the wool shed. The impacted soil could either be removed for disposal to landfill or appropriately encapsulated (either hard cover or 200 mm of soft cover), Asbestos management procedures are provided in the Site Management Plan (SMP) (**Appendix B**).
	Site workers at any receiving site for topsoil containing asbestos.		
	Future site workers.		**Risk expected to be mitigated** If remediated there will be no risk to future site workers. If the soils are encapsulated ongoing monitoring will be required to ensure that the cover remains intact.

6. Development Implications

6.1 HAIL Re-Evaluation

Soil sampling has not identified the presence of OCPs around the farm buildings, where livestock or spray race operations are most likely to have been undertaken. On this basis we interpret that HAIL activities A1 and A8 are NOT more likely than not to have occurred at the site and the area around the farm buildings is NOT considered to constitute a HAIL area (or piece of land) under the NESCS. However, HAIL activity E1 was confirmed for the area surrounding the wool shed.

6.2 Consenting

The expected contaminated-land related consenting requirements are summarised below and discussed in detail in the following sections**.**

Table 11. Consent summary

Regulatory Framework	Rule	Consent required (Y/N and type)
NESCS	Rule 8(1) Removing or replacing fuel storage system	No – not applicable
	Rule 8(2) Soil sampling	No – not applicable
	Rule 10 Disturbing soil	No – Permitted Activity (for asbestos remediation / mitigation)
	Rule 8(4) Subdivision and land use change	No – Permitted Activity (if asbestos contamination is remediated / mitigated prior)
WRP	Rule 5.3.4.6	No – effects are appropriately addressed by the NESCS and Asbestos Regulations.

6.2.1 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 activities on land (soil disturbance, bulk soil sampling, subdivision, and land use change) where a HAIL activity has occurred. Our assessment against the NESCS shows:

- The NESCS applies to the site because HAIL activities have occurred on the site (HAIL activity E1 surrounding the wool shed).
- Earthworks or soil disturbance across the wider site is not captured by the NESCS as areas beyond the immediate surrounds of the wool shed are not considered to be HAIL areas (or piece of land) under the NESCS.
- Earthworks or soil disturbance in the immediate surrounds of the wool shed will trigger the NESCS. As the permitted activity threshold is very low, the volumes removed from site in any remediation would likely exceed the Permitted Activity thresholds (refer to **Table 12**).
- As asbestos is present at concentrations that present a risk under both the current and future land uses the proposal triggers the “changing use” provisions set out under Part 4 of Regulation 8 of the NESCS. This is because changing use is defined under the NESCS as any changing land to a use that is reasonably likely to harm human health. However, if the asbestos risk around the wool shed is mitigated as a permitted activity, prior to the use of the site being changed, Part 4 of Regulation 8 will not be triggered.

As site wide earthworks are proposed, the wool shed, farm sheds and livestock yards will be demolished and asbestos contaminated soil around the wool shed will be remediated as part of enabling works. Consent will therefore be required on a Restricted Discretionary basis under Regulation 10 of the NESCS for soil disturbance around the wool shed/ yards.

A Site Management Plan (SMP) for managing contaminants in soil is provided in **Appendix B** to aid in compliance with the permitted activity provisions. It is expected that the SMP will also be suitable for supporting an application for consent under the NESCS if this is required.

Table 12. Permitted activity provisions for soil disturbance under the NESCS Regulation 8(3).

Rule 8(3)	Permitted activity requirement	Evaluation
(a)	Implementation of controls to minimise exposure of humans to mobilised contaminants.	Can be met (as per SMP).
(b)	The soil must be reinstated to an erosion free state within one month of completing the land disturbance	Expected to be met.
(c)	The volume of the disturbance of the piece of land must be no more than 25 m^3 per 500 m^2. *[The HAIL area (piece of land) for the site is the area of the wool shed, giving an area of approximately 300 m^2. Therefore, the permitted activity volume for disturbance is 15 m^3].*	Expected to be met. Less than 15 m^3 of earthworks are expected to be required to remediate or mitigate the asbestos risk associated with the woolshed.
(d)	Soil must not be taken away unless it is for laboratory testing or, for all other purposes combined, a maximum of 5 m^3 per 500 m^2 of soil may be taken away per year. [*The site-specific permitted activity volume for soil removal is 3 m^3 per year. As a year is not defined in the NESCS, works on successive days can be considered as being undertaken over two consecutive years, i.e. 6 m^3 total*].	May not be met. It is expected that the permitted activity provision for soil disturbance will be exceeded given that soils excavated from the remediation will likely be removed from site.
(e)	Soil taken away must be disposed of at an appropriately licensed facility.	Can be met (as per SMP).
(f)	The duration of land disturbance must be no longer than two months.	Can be met.
(g)	The integrity of a structure designed to contain contaminated soil or other contaminated materials must not be compromised (not applicable to this site).	Not applicable.

6.2.2 Waikato Regional Plan

The Waikato Regional Plan (WRP) regulates the disturbance of soils impacted by HAIL activities (from Rule 5.3.4.6), but only if remediation is being undertaken. Remediation in the context of the WRP is only deemed to be necessary if soil testing finds that contaminant levels exceed applicable criteria. As noted in **Section 6.2.1**, remediation or mitigation of the asbestos risk associated with the woolshed will occur as part of enabling works prior to wider site earthworks. This work is required to be undertaken in accordance with the requirements of both the NESCS and Asbestos Regulations. As obtaining further consent under the WRP adds no value in terms of mitigating potential effects of these works we consider that consent for remediation should not be required under the WRP in this instance.

We also note that the WRP is principally concerned with mitigating effects on the environment, while the District Plan (in this case implemented by way of the NESCS) is more aligned with mitigating effects on health, so the NESCS and Asbestos Regulations provide more appropriate consenting / approval mechanisms in this instance.

6.3 Earthworks implications

Earthworks implications are set out below.

Table 13. Earthworks implications

Demolition and SQEP inspection	***An asbestos survey for demolition is recommended and should be undertaken by a Licensed Asbestos Assessor prior to demolition in accordance with the Health and Safety at Work (Asbestos) Regulation 2016.*** • Clearance certificates will be issued once any identified ACM has been removed on the buildings and should be provided to the SQEP prior to soil remediation taking place.	
Asbestos impacted topsoil disturbance requirements	***Topsoil containing asbestos fibres is present along the margins of the wool shed. It is expected that localised remediation will be carried out via either encapsulation or removal from site.*** • Disturbance of soils for either option must comply with NZAG, which based on the asbestos levels present will require "Class B Works" controls (refer SMP attached in **Appendix B** and key controls set out in **Table 14**). This will require involvement of a licensed asbestos removalist, keeping soil damp during works, asbestos-related PPE for site workers and validation of the removal area by a SQEP on completion. • The remediation area should extend to 2 m away from the wool shed, and to a depth of 100 mm. If validation sampling returns elevated levels of asbestos, further remediation may be required. • The two remediation options are set out below: - Encapsulation would involve leaving contamination in place and capping with geotextile and either concrete/ hard stand or 200 mm of clean soil. The area would need to be marked on a plan and long-term monitoring and management may be required. - Removal of soil is the second option and would involve excavation of topsoil to 100 mm below current ground level, loading into trucks and disposing offsite to a facility licensed to accept asbestos. This would be followed by validation sampling to confirm contamination has been removed.	
Earthworks controls	***Once the asbestos risk associated with the woolshed is mitigated, standard earthworks practices will apply for the remaining site works. Standard earthworks practices include:*** • Controls as set out in Waikato Regional Council's *Guidelines for Soil Disturbing Activities* will be applicable for the works, with particular focus on ensuring that there are no discharges of topsoil or runoff to the stormwater network or surrounding sites. • Dust must be managed in accordance with the Ministry for the *Environment Good Practice Guide for Assessing and Managing Dust*.	
Health and safety	• Provisions for workers to adhere to good hygiene practices should be available, such as washing hands before eating and drinking, and brushing down boots before entering vehicles. • Asbestos related PPE and worker health and safety requirements is outlined in the SMP (**Appendix B**).	
Soil reuse	***Aside from topsoil containing asbestos, soils may be reused on site without restriction***. • If topsoil containing asbestos is to be left onsite it must be encapsulated by a hard cap (concrete or asphalt) or a soft cap (e.g. clean soil, 200 mm). • Remaining soils can be reused on site if geotechnically suitable.	
Surplus soil disposal	For disposal offsite:	
	• ***Topsoil containing asbestos*****:** Soil will require disposal to a managed fill able to take asbestos (i.e. Envirofill South or Ridge Road Quarries). Approximately 30 m^3 of soil can be expected from the initial remediation.	Managed fill licensed to accept asbestos
	• ***Topsoil around remaining farm buildings:*** Containing low levels of metal contamination.	Managed fill
	• ***All other topsoil and natural subsoils***: Surplus soils are suitable for disposal to cleanfill as they have not been subject to any HAIL activities.	Cleanfill

Post-works reporting	A site validation report (SVR) will be a condition of consent for a restricted discretionary activity under the NESCS. The SVR will be produced on completion of the earthworks by a SQEP (i.e. WWLA). Evidence of the post demolition asbestos inspection by the SQEP and collation of disposal dockets confirming appropriate soil disposal will be included along with any additional data provided as part of the soil clearance process.

Table 14. Asbestos works categorisation and controls required (as per BRANZ Guidelines).

Scenario	Unlicensed Asbestos Work (to be in place during all soil removal)	Asbestos-Related Works	Class B Works (where topsoil contains asbestos)	Class A Works
Asbestos concentrations	≤0.001% w/w AF+FA or ≤0.01% w/w ACM	>0.001% w/w AF+FA or >0.01 % w/w ACM	>0.01% w/w AF+FA or >1% ACM	>1% w/w AF+FA
Additional notification requirements	No additional documentation or notification required.	No additional documentation or notification required.	Asbestos removal control plan (ACRP) and WorkSafe notification for asbestos removal.	Asbestos removal control plan (ACRP) and WorkSafe notification for asbestos removal.
Oversight	*SQEP*.	*SQEP*.	Licensed removalist and *SQEP*.	Licensed removalist and SQEP.
Personal protective equipment	No asbestos-specific PPE as concentrations are unlikely to exceed trace levels in air.	Disposable coveralls rated type 5, category 3, nitrile gloves, steel toe capped gumboots or safety footwear with disposable overshoes.	Disposable coveralls rated type 5, category 3, nitrile gloves, steel toe capped gumboots or safety footwear with disposable overshoes.	Disposable coveralls rated type 5, category 3, nitrile gloves, steel toe capped gumboots or safety footwear with disposable overshoes.
Respiratory protective equipment	No asbestos-specific requirements.	Disposable P2 dust mask.	Half-face P3 respirator with particulate filter.	Full-face P3 respirator with particulate filter.
Dust/asbestos fibre suppression	Water spray via localised points.	Water spray via localised points.	As per ARCP prepared by licenced removalist.	As per ARCP prepared by licenced removalist.
Air monitoring	Air monitoring not required.	Air monitoring not required.	Air monitoring not required but recommended where sensitive receptors are nearby.	Air monitoring required.
Cleaning facilities	Foot wash and used PPE collection area.	Dedicated cleaning area and foot wash	Dedicated cleaning area and foot wash.	Dedicated wet cleaning area or trailer. Consider powered and plumbed unit.
Vehicle (truck) protection	Truck lining/soil wrapping not required. All trucks should be covered.	Truck lining/soil wrapping depends on the receiving landfill. All trucks should be covered.	200 µm heavy-gauge polythene wrapped soil/lined trays and truck covered.	200 µm heavy-gauge polythene wrapped soil/lined trays and truck covered.
	Standard air conditioning.	Standard air conditioning.	Filter system fitted for all occupied vehicles where friable ACM on site (lagging, insulation, etc).	Filter system fitted for all occupied vehicles filter replaced or clean down with HEPA vacuum cleaner post work.
Vehicle washing Facilities	*Visual assessment by a competent person/ SQEP*	*Visual assessment by a competent person/ SQEP*	Visual assessment plus swab (if friable) by an independent assessor, competent person, or	Visual assessment plus swab and air sampling inside the cab by an

Scenario	Unlicensed Asbestos Work (to be in place during all soil removal)	Asbestos-Related Works	Class B Works (where topsoil contains asbestos)	Class A Works
	following brush and or wash down.	following brush and or wash down.	SQEP following brush and or wash down.	independent assessor or competent person.

7. Conclusions

This report has been prepared to comply with requirements of a preliminary site investigation (PSI) and detailed site investigation (DSI) and has been undertaken to assist National Green Steel in decision making and resource consent applications for a proposed steel recycling facility in Hampton Downs, to be progressed as part of the Fast Track consent process.

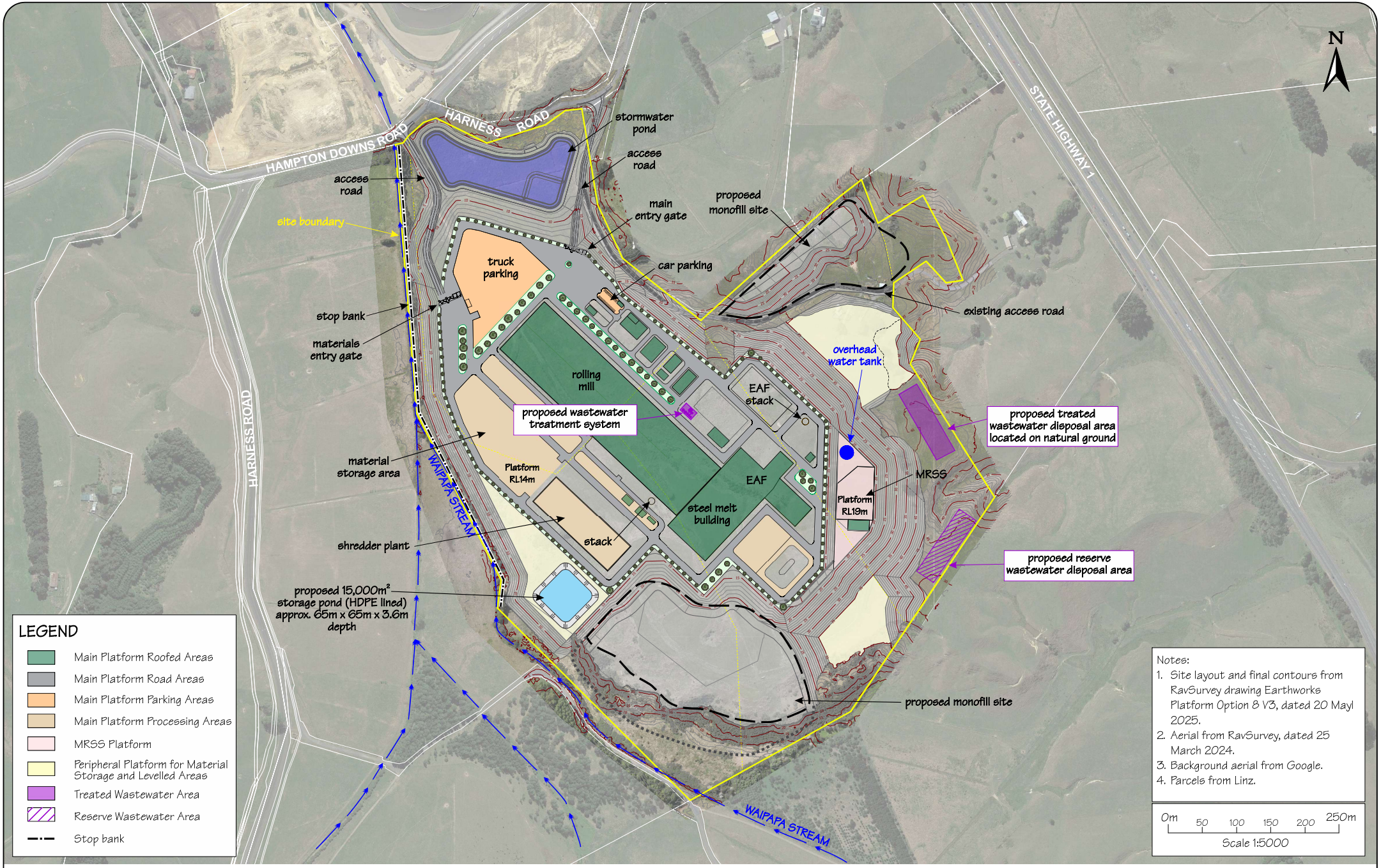
The key findings of this investigation are:

- The site was primarily used as pastoral farmland with localised haymaking. Several sheds were constructed in the eastern section of the site between the 1940s to 1980s, while a sealed access road was added from 1997 – 2007, connecting the structures to the road at the northern boundary of the site.
- The HAIL assessment determined the likely potential for soil contamination due to livestock and spray operations as well as the storage of agrichemicals. Furthermore, given the age of the structures, the potential for usage of ACM as building material was identified.
- Soil sampling detected asbestos fibres in the topsoil around the margins of the wool shed, which pose a risk to human health, confirming that HAIL Activity E1 has occurred in that area.
- Specific considerations were made for controls and matters of discretion set out in the NESCS and contaminated-land rules of the WRP within the scope of the Fast Track consent process.
  - Any soil disturbance around the wool shed would likely exceed Permitted Activity thresholds under the NESCS, meaning consent as a restricted discretionary activity would be required.
  - The NESCS does not apply to earthworks outside the area of the woolshed as no HAIL Activities have occurred elsewhere on the site.
  - No contamination-related consents are required under the WRP.
- Elevated asbestos in soils around the farm buildings will be remediated as part of enabling works prior to wider site earthworks and to prevent risks to current and future site workers. Asbestos removal or encapsulation in the affected area must comply with NZAG, which based on the asbestos levels present will require “Class B Works” controls. Once topsoil containing asbestos has been removed or encapsulated, asbestos-related controls can be removed for the remainder of the works and these can proceed under standard earthworks controls.

Appendix A. Supporting Information

A.1 Proposed site plan

A.2 Laboratory Data



FOR INFORMATION

Note: All drawings are to be approved (initialled) before final issue.

EARTHTECH

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61 HAMPTON DOWNS ROAD

National Green Steel Limited

Site Plan

REV	DATE	AMENDMENT/ISSUE	DRAWN BY	CHECKED	TRACED BY	APPROVED BY
A	05-12-24	DRAFT FOR DISCUSSION	L.S	A.N	S.SW	
B	18-02-25	UPDATE PLATFORMS AND CONTOURS	L.S	A.N	S.SW	
C	16-04-25	UPDATE STORMWATER POND	L.S	A.N	S.SW	
D	20-05-25	UPDATE WASTEWATER AREA	L.S	A.N	S.SW	

DRAWING NO.: FIG. PD3

REF: 4392

SCALE: 1:5000

CRS: Mt Eden 2000

DATUM: AVD46

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Certificate of Analysis

Client:	Williamson Water & Land Advisory Limited	**Lab No:**	3714641 SPv1
Contact:	Becki Williamson	**Date Received:**	13-Nov-2024
	C/- Williamson Water & Land Advisory Limited	**Date Reported:**	18-Nov-2024
	PO Box 314	**Quote No:**	94634
	Kumeu 0841	**Order No:**	WWLA 1339
		Client Reference:	WWLA 1339
		Submitted By:	Becki Williamson

Sample Type: Soil

Sample Name:		Composite of HA1A 0-0.1M, HA1B 0-0.1M, HA1C 0-0.1M & HA1D 0-0.1M	Composite of HA2A 0-0.1M, HA2B 0-0.1M, HA2C 0-0.1M & HA2D 0-0.1M	Composite of HA3A 0-0.1M, HA3B 0-0.1M, HA3C 0-0.1M & HA3D 0-0.1M	Composite of HA4A 0-0.1M, HA4B 0-0.1M, HA4C 0-0.1M & HA4D 0-0.1M	Composite of HA5A 0-0.1M, HA5B 0-0.1M, HA5C 0-0.1M & HA5D 0-0.1M
Lab Number:		3714641.30	3714641.31	3714641.32	3714641.33	3714641.34
Individual Tests						
Dry Matter	g/100g as rcvd	-	-	84	83	89
Heavy Metals, Screen Level						
Total Recoverable Arsenic	mg/kg dry wt	6	7	5	12	21
Total Recoverable Cadmium	mg/kg dry wt	0.13	0.56	< 0.10	0.13	0.23
Total Recoverable Chromium	mg/kg dry wt	28	10	8	11	13
Total Recoverable Copper	mg/kg dry wt	34	13	7	11	21
Total Recoverable Lead	mg/kg dry wt	13.4	78	15.7	21	51
Total Recoverable Nickel	mg/kg dry wt	51	3	< 2	2	4
Total Recoverable Zinc	mg/kg dry wt	77	410	25	35	161
Organochlorine Pesticides Screening in Soil						
Aldrin	mg/kg dry wt	-	-	< 0.012	< 0.012	< 0.012
alpha-BHC	mg/kg dry wt	-	-	< 0.012	< 0.012	< 0.012
beta-BHC	mg/kg dry wt	-	-	< 0.012	< 0.012	< 0.012
delta-BHC	mg/kg dry wt	-	-	< 0.012	< 0.012	< 0.012
gamma-BHC (Lindane)	mg/kg dry wt	-	-	< 0.012	< 0.012	< 0.012
cis-Chlordane	mg/kg dry wt	-	-	< 0.012	< 0.012	< 0.012
trans-Chlordane	mg/kg dry wt	-	-	< 0.012	< 0.012	< 0.012
2,4'-DDD	mg/kg dry wt	-	-	< 0.012	< 0.012	< 0.012
4,4'-DDD	mg/kg dry wt	-	-	< 0.012	< 0.012	< 0.012
2,4'-DDE	mg/kg dry wt	-	-	< 0.012	< 0.012	< 0.012
4,4'-DDE	mg/kg dry wt	-	-	< 0.012	< 0.012	< 0.012
2,4'-DDT	mg/kg dry wt	-	-	< 0.012	< 0.012	< 0.012
4,4'-DDT	mg/kg dry wt	-	-	< 0.012	< 0.012	< 0.012
Total DDT Isomers	mg/kg dry wt	-	-	< 0.07	< 0.07	< 0.07
Dieldrin	mg/kg dry wt	-	-	< 0.012	< 0.012	< 0.012
Endosulfan I	mg/kg dry wt	-	-	< 0.012	< 0.012	< 0.012
Endosulfan II	mg/kg dry wt	-	-	< 0.012	< 0.012	< 0.012
Endosulfan sulphate	mg/kg dry wt	-	-	< 0.012	< 0.012	< 0.012
Endrin	mg/kg dry wt	-	-	< 0.012	< 0.012	< 0.012
Endrin aldehyde	mg/kg dry wt	-	-	< 0.012	< 0.012	< 0.012
Endrin ketone	mg/kg dry wt	-	-	< 0.012	< 0.012	< 0.012
Heptachlor	mg/kg dry wt	-	-	< 0.012	< 0.012	< 0.012
Heptachlor epoxide	mg/kg dry wt	-	-	< 0.012	< 0.012	< 0.012
Hexachlorobenzene	mg/kg dry wt	-	-	< 0.012	< 0.012	< 0.012
Methoxychlor	mg/kg dry wt	-	-	< 0.012	< 0.012	< 0.012

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 Labs, 28 Duke Street, Frankton, Hamilton 3204.

Sample Type: Soil

Test	Method Description	Default Detection Limit	Sample No
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	30-34
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	32-34
Dry Matter	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	32-34
Composite Environmental Solid Samples*	Individual sample fractions mixed together to form a composite fraction.	-	1-5, 7-10, 12-15, 17-20, 22-24

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

Testing was completed between 13-Nov-2024 and 18-Nov-2024. 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.

Ara Heron BSc (Tech)
Client Services Manager - Environmental

Certificate of Analysis

Client Williamson Water and Land Advisory
Client Contact Wendi Williamson
Phone Number +64 21 65 4422
Email wendi.williamson@wwla.kiwi
Address 10/1 Putaki Drive, Kumeu, Auckland

All tests reported herein have been performed in accordance with the laboratory's scope of accreditation

IANZ# 1308

Certificate ID	Q-01183	Date Sampled[2]	12/11/2024
Samples Taken By[2]	Becki	Date Sample(s) Received	14/11/2024
Project Reference[2]	WWLA1339	Date Sample(s) Analysed & Issued	14/11/2024
Site Address[2]	WWLA1339		
Location Sample Analysed	Eurofins | Focus Unit C1, 4 Pacific Rise Mount Wellington Auckland 1060		

Lab ID	Sample ID[2]	Sample Details[2]	Sample type	Sample size(g)[2]	Fibres Identified
1	S1	0.0m	Soil	151.2	**CHR**, ORF
2	S2	0.0m	Soil	150.8	**CHR**, ORF
3	S3	0.0m	Soil	115.7	**CHR**, ORF

Opinions and interpretations expressed herein are outside the scope of Eurofins | Focus IANZ accreditation

Analytical Notes	-

Fibre Identification Key:

*	See Analytical Notes	**ORF**	Organic Fibre
CHR	Chrysotile (White Asbestos)	**SMF**	Synthetic Mineral Fibre
AMO	Amosite (Brown / Grey Asbestos)	**NFD**	No Fibres Detected
CRO	Crocidolite – (Blue Asbestos)	**NAD**	No Asbestos Detected
UMF	Unknown Mineral Fibre		

Sample Size Guide:

Sufficient	Sample weight >1 g
Limited	Sample weight between 0.5 g -1 g
Insufficient	Sample weight <0.5 g; small size could misrepresent what is in sampled material. Suggest the client obtain a larger sample.

Analysis Methods:

1. Samples submitted have been analysed to determine the presence of asbestos using stereo microscopy followed by polarised light microscopy (PLM) and dispersion staining (DS) techniques as documented in AS 4964–2004 for Qualitative Identification of Asbestos in Bulk Samples.
2. Eurofins | Focus did not carry out any sampling, and the data presented are based on the samples submitted. Data supplied by the client is indicated with superscript [2] and may impact the results.
3. This certificate should be read in its entirety and shall not be reproduced except in full without written approval of the laboratory.

Methodology

Asbestos Fibre Identification	Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples by polarised light microscopy (PLM) and dispersion staining (DS) techniques. NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.
Unknown Mineral Fibres	Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity. NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS 4964 – 2004 requires that these are reported as UMF unless confirmed by an independent technique.
Subsampling Soil Samples	The whole sample submitted is first dried and then passed through a 10 mm sieve followed by a 2 mm sieve. All fibrous matter greater than 10 mm greater than 2 mm and the material passing through the 2 mm sieve are retained and analysed for the presence of asbestos. If the sub 2 mm fraction is greater than approximately 30 g to 60g, then a subsampling routine based on ISO 3082:2009(E) is employed. NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be subsampled for trace analysis in accordance with AS 4964 - 2004.
Bonded asbestos containing material (ACM)	The material is first examined, and any fibres are isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly combined. The resultant material is then further examined in accordance with AS 4964 - 2004. NOTE: Even after disintegration, it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.
Limit of Reporting	The performance limitation of the AS 4964 - 2004 method for non-homogeneous samples is 0.1 g/kg (equivalent to 0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis, this is considered at the nominal reporting limit of 0.01% (w/w). The *National Environment Protection (Assessment of Site Contamination) Measure 1999* (NEPM) screening level of 0.001% (w/w) is intended as an on-site determination, not a laboratory Limit of Reporting (LOR), per se. Examination of a large sample size (e.g., 500 mL) may improve the likelihood of detecting asbestos, particularly Asbestos Fines (AF), to aid assessment against the NEPM criteria.

Sample History

Where samples are submitted/analysed over several days, the last extraction date is reported. If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time. Client samples are disposed of 3 months after analysis.

Description	Testing Site	Extracted	Holding Time
AS4964-2004	Auckland	14/11/2024	Indefinite

Eurofins Environment Testing NZ LTD (Trading as Eurofins | Focus)
Unit C1, 4 Pacific Rise Mount Wellington, Auckland 1060
New Zealand
Telephone: +64 9 525 0568

Comments

Asbestos Counter/Identifier:

Colin Wang Senior Analyst-Asbestos

Colin Wang

Senior Analyst-Asbestos (Key Technical Personnel)

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

Measurement uncertainty of test data is available on request or please click here.

Appendix B. Site Management Plan

Certificate of Analysis

Client Williamson Water and Land Advisory
Client Contact Wendi Williamson
Phone Number +64 21 65 4422
Email wendi.williamson@wwla.kiwi
Address 10/1 Putaki Drive, Kumeu, Auckland

IANZ# 1308

Certificate ID	Q-01231	Date Sampled[2]	-
Samples Taken By[2]	Lauren Windross	Date Sample(s) Received	06/12/2024
Project Reference[2]	WWLA1339	Date Sample(s) Analysed & Issued	06/12/2024
Site Address[2]	WWLA1339		
Location Sample Analysed	Eurofins | Focus Unit C1, 4 Pacific Rise Mount Wellington Auckland 1060		

Qualitative Analysis of Asbestos

Lab ID	Sample ID[2]	Sample Details[2]	Sample type	Sample size (g)[2]	Fibres Identified
1	S1	0.0m	Soils	667	**CHR, ORF**
2	S2	0.0m	Soils	558	**CHR, ORF**
3	S3	0.0m	Soils	563	**CHR, ORF**

Opinions and interpretations expressed herein are outside the scope of Eurofins | Focus IANZ accreditation

Analytical Notes	-

Fibre Identification Key:

*	See Analytical Notes	**ORF**	Organic Fibre
CHR	Chrysotile (White Asbestos)	**SMF**	Synthetic Mineral Fibre
AMO	Amosite (Brown / Grey Asbestos)	**NFD**	No Fibres Detected
CRO	Crocidolite – (Blue Asbestos)	**NAD**	No Asbestos Detected
UMF	Unknown Mineral Fibre		

Scope of Accreditation:

1. The analytical comments marked (*) stated in the semi-quantitative analysis and the calculations in the semi-quantitative analysis of asbestos in soil are beyond Eurofins | Focus scope of accreditation.
2. Eurofins | Focus did not carry out any sampling, and the data presented are based on the samples submitted. Data supplied by the client is indicated with superscript [2] and may impact the results.
3. This certificate should be read in its entirety and shall not be reproduced except in full, without written approval of the laboratory.

*Semi Quantitative Analysis of Soil

*Semi Quantitative Analysis of Asbestos in Soil

Date sample(s) received: 06/12/2024
Date sample(s) analysed: 6/12/2024

Lab ID	Sample ID	As received weight (g)	Dry weight (g)	Moisture (%)	Fraction size (mm)	Dry fraction weight (g)	Asbestos product weight (g)	Asbestos product type	Percentage of asbestos in product [a]	Total mass of Asbestos in sample [b]	Bonded Asbestos containing material in sample (% w/w) [c]	Asbestos as FA (% w/w) [d]	Asbestos as AF (% w/w) [e]	Total Fibrous Asbestos + Asbestos Fines (Friable) (% w/w) [f]
1	S1	667.4	462.7	30.6	(>10mm) Fraction	125.4	4.5293	CMP	15	0.0042	0.15	<0.001	<0.001	<0.001
					(10-2mm) Fraction	188.2	0.0040	FFF	100					
					(<2mm) Fraction	149.1	0.0002	FFF	100					
2	S2	557.5	399.7	28.2	(>10mm) Fraction	84.4	-	NAD	-	0.0036	-	<0.001	<0.001	<0.001
					(10-2mm) Fraction	170.2	0.0025	FFF	100					
					(<2mm) Fraction	145.1	0.0011	FFF	100					
3	S3	563.4	360.4	36.0	(>10mm) Fraction	95.5	36.4664	CMP	15	7.2104	1.52	<0.001	0.483	0.483
					(10-2mm) Fraction	141.0	11.0964	CMP	15					
					(<2mm) Fraction	123.9	0.0760	FFF	100					

Analysis Method:

Samples submitted have been analysed to determine the mass fraction of asbestos in soil using low powered stereo microscopy followed by polarised light microscopy (PLM) including dispersion staining techniques as documented in (AS 4964-2004), Method for the qualitative identification of asbestos in bulk samples, BRANZ, New Zealand Guidelines for Assessing and Managing Asbestos in Soils:2017.

Product Identification Key:

BTP	Bituminous Product	LSE	Loose Fill Insulation
CMP	Cement Product	NAD	No Asbestos Detected
COM	Composite	PPR	Paper Product
FFF	Free Fibres	RPL	Reinforced Plastics
FIB	Fibre Board	TXC	Textured Coating
GCP	Gaskets (compressed)	VNP	Vinyl Products
GRW	Gaskets (rope/woven)	VPP	Vinyl with paper backing
INB	Insulating Board	WVP	Woven Product

Interpretation of Key:

[a] Percentage of Asbestos in product is adopted from HSG 264 - 2012, Asbestos the survey guide, Appendix 2, ACMS in buildings and categorized in our internal Technical Procedure (NPM-TP02) for Qualitative and Semi-Quantitative analysis of asbestos in soil. A dash (-) denotes that there was no asbestos found in that fraction.

[b] Total Mass of Asbestos is the sum mass of asbestos-by-asbestos type in product type([a]) plus the mass of free fibre asbestos. A dash (-) denotes that there was no total mass of asbestos calculated asbestos found in that fraction.

[c] Bonded Asbestos Containing Material in the greater than 10mm fraction as percentage of the total sample (% w/w). A dash (-) denotes that there was no bonded asbestos containing materials found in that fraction.

[d] Asbestos as Fibrous Asbestos (FA) in greater than 10mm fraction as percentage of total sample (% w/w).

[e] Asbestos as Asbestos Fines (AF) in less than 10mm fraction as a percentage of total sample (% w/w).

[f] Total Friable Asbestos combining Fibrous Asbestos and Asbestos Fines as the percentage weight for weight of the total sample (% w/w).

Sample History

Where samples are submitted/analysed over several days, the last extraction date is reported. If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time. Hold soil samples willonly be stored for one month from date of receipt.

Description	Testing Site	Extracted	Holding Time
AS4964-2004 and in-house Method NPM -TP02	Auckland	06/12/2024	Indefinite

Comments

Asbestos Counter/Identifier:

Elsie Xu	Analyst-Asbestos
Emily Wang	Analyst-Asbestos

Emily Wang

Senior Analyst-Asbestos (Key Technical Personnel)

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

Measurement uncertainty of test data is available on request or please click here.

Appendix B. Site Management Plan

WILLIAMSON
WATER & LAND ADVISORY

Unit 10 | 1 Putaki Drive | Kumeu
Auckland | New Zealand
T +64 21 613 408
E environment@wwla.kiwi
W www.wwla.kiwi

Site Management Plan (Ground Contamination)

Site ID:	61 Hampton Downs Road	Rev 1, 29 January 2025

Overview:

National Green Steel propose to develop a steel recycling facility on the site at 61 Hampton Downs Road, which is currently used as farmland.

Williamson Water & Land Advisory (WWLA) has prepared a detailed site investigation (PSI/DSI)[1] for the site which identified topsoil containing asbestos fibres around the margins of the wool shed, which present a risk to human health (refer **Figure 1**). Furthermore, metals (arsenic, lead, and zinc) have been detected in topsoils within the vicinity of the storage sheds that exceed published background values but do not pose a risk to human health or the environment.

This Site Management Plan (SMP) has been prepared to provide procedures to guide contractors in asbestos-in-soils management, removal or encapsulation, health and safety and response to unexpected contamination encounters.

The contractor is responsible for following the requirements of this SMP and reporting on compliance to the SQEP. Where input is required by a SQEP (i.e. WWLA, details in letterhead), it is *highlighted* below.

Figure 1. Location of HAIL activities (refer WWLA PSI/ DSI).

[1] WWLA, 29 January 2025. 61 Hampton Downs Road – Preliminary and Detailed Site Investigation (Ground Contamination). Prepared for National Green Steel, Ref. WWLA1339, Rev 1.

Procedures understood by the Contractor: ………………………..………..……..……...	Date: ……………………………
Induction given by SQEP: ……………………………………...……………………...……	Date: ……………………………

Task	Description	Check
1. Site Establishment	• Establish earthworks controls according to Auckland Council's Guideline Document 2016/005, "*Erosion and Sediment Control Guide for Land Disturbing Activities in the Auckland Region* (GD05)".	☐
	• *Inform the SQEP* of works commencement date and arrange an induction for this SMP (to sign off above).	☐
	• Induct new workers/ subcontractors to requirements of this plan as works progress; the site manager may do this.	☐
	• Establish health and safety facilities during asbestos in fill removal. Otherwise, no other health and safety requirements are necessary other than providing change/ hand wash and boot wash facilities.	☐
	• Arrange disposal permits for soils proposed to be disposed offsite, i.e. the removal of fill during the basement excavation. The *SQEP can assist* if required.	☐
2. Demolition	• 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. • Further sampling may be required beneath the footprint of the wool shed if ACM fragments are observed during demolition and subsequent excavation. A surface scrape (50-100 mm deep) of the building footprint may be required, with subsequent validation testing. • *SQEP (i.e. WWLA) shall be notified post removal of the buildings, and paved areas to inspect the soil and advise whether any further soil removal needs to occur*.	☐
3. Asbestos in topsoil removal or encapsulation around wool shed	**The following controls (Class B Works, refer Table 1 Attached) <u>apply to the area of asbestos impacted topsoil shown in Figure 1</u>** until the impacted material has been removed or encapsulated (we recommend this work is undertaken first to reduce the level of control for the balance of the site): • PPE shall comprise a minimum of: - Wearing of Tyvek suits; and - Wearing of P2 dust masks. • Earthworks controls in **Section 4** are applicable, however: - Stockpiles should be avoided. - Trucks are required to be wrapped and covered during transport. • Weighbridge dockets retained and *provided to the SQEP* to confirm appropriate disposal. • *The SQEP (i.e. WWLA) shall be notified post remediation* to inspect and provide clearance for removal of "Asbestos Related Works" controls.	☐
	Encapsulation: • If encapsulation is chosen, the area shown on **Figure 1**, extending 2 m out from the wool shed, shall be covered with either hard stand (concrete/ gravel/ asphalt) or 200 mm of clean soil. Geotextile marker should be placed between the contaminated soil and the cap, pegged down on the edges and at overlaps. Warning tape is also recommended to be placed over the geotextile. • The encapsulated area shall be GPS-located and marked on a plan. A long-term monitoring and management plan shall include this location and the procedures for ongoing inspections to ensure cap integrity is maintained.	☐
	Removal: • If removal is preferred, the area shown on **Figure 1**, extending 2 m out from the wool shed, shall be excavated to a depth of 100 mm below the current surface. Excavated soil shall be placed into trucks for offsite disposal to a facility licensed to take the contamination present.	☐

Task	Description	Check
	• *Validation sampling shall be undertaken by the SQEP* following removal of topsoil with testing for asbestos. Further removal or encapsulation will be required if results above 0.001% w/w asbestos in soil are returned.	
4. General Earthworks Requirements	• Standard earthworks controls and procedures are applicable to all non-asbestos affected areas and will also apply to the asbestos-affected area around the wool shed once the localised area of asbestos impacted topsoil is removed.	☐
	• Other than as described in **Section 3** above no worker health and safety requirements in respect of contaminated land are required. However, it is good practice to ensure hands are washed before eating/ smoking and boots are brushed down before entering vehicles.	☐
	• Maintain earthworks controls during all soil disturbance in accordance with GD05. Report any dust discharges to the site manager and ensure they are addressed via dampening immediately. • Dust management shall be as per the MfE *Good Practice Guide for Assessing and Managing Dust*.	☒
	• Surface water shall be retained onsite and allowed to soak to ground. Water shall not be disposed to the public stormwater network without prior treatment. The *SQEP shall be notified* if water disposal is required, and testing must be undertaken to ensure water is suitable for discharge. If water cannot be successfully treated to meet stormwater quality, trade waste consent from Watercare may be required, or water tankered offsite.	☐
	• Ensure any imported materials are clean. These must be *verified by the SQEP* as being either quarry sourced or cleanfill as defined in by the Waikato Regional Plan (WRP).	☐
	• Action mitigation for any new hazards identified during the course of the works.	☐
5. Soil disposal	Topsoil containing asbestos and/ or metals around wool shed (refer **Figure 1**)	Managed fill or landfill (licensed to accept asbestos)
	Topsoil around remaining farm buildings	Managed fill
	All other topsoil and natural subsoils, if testing confirms their suitability.	Cleanfill
6. Unexpected contamination response	• *Liaise with the SQEP* should any unexpected contamination be identified and implement mitigation measures advised by the SQEP. Typical unexpected materials can include: - odorous materials (i.e., hydrocarbons, solvent odour); - discoloured soil (green, black); - bulk asbestos; or - putrescible or demolition materials.	☐
	If unexpected contamination is encountered the following steps must be taken by the Contractor: 1. Cease works in the immediate vicinity of the suspected contamination and tape or cone off. 2. *Notify the project manager (client representative) and the SQEP*. 3. Implement any contaminated land-related health and safety procedures and PPE if deemed *necessary by the SQEP*. 4. Update the Hazard Board to direct site workers should continued exclusion of the area be required. 5. Implement and maintain any additional controls required by the SQEP to manage contamination. 6. If additional controls outside the scope of this SMP are required, *the SQEP shall* provide the remedial plan to Council. If additional asbestos is identified subsequent to the demolition and clearance, requirements of the Health and Safety at Work (Asbestos) Regulations must be adhered to. The *SQEP shall provide direction* and if required, a Licensed Asbestos Removal Supervisor shall be engaged.	

Task	Description	Check
7. Contamination indicator examples	 **Odours/sheen such as hydrocarbons or solvents.**	
	 **Asbestos fibres and/or building products.**	
	 **Discoloured soil such as black, blue or green staining, or any staining that appears out of the ordinary.**	
	 **Underground structures such as fuel tanks/drums, or other buried waste.**	
	 **Fill materials.**	
	 **Fill materials.**	
8. Post Works (*provide to SQEP*)	• Weighbridge summaries (or estimated loads for facilities without weighbridges) of all soil, fill and concrete materials disposed from site.	☐
	• Details of any health and safety or environmental incidents during the works.	☐
	• Details of any unexpected discoveries and associated mitigation measures implemented during the works.	☐
	• Clearance certificates for asbestos removal from the buildings.	☐
9. Reporting	*The SQEP* shall prepare a site validation report (SVR) commensurate with CLMG1[2] within one months of earthworks completion, detailing the results of site inspections, the post-works information provided by contractor(s) (above), and compliance with SMP. The SVR is expected to be a condition of the resource consent.	☐

Attachments:

Asbestos controls under NZAG

Laboratory data for disposal permitting

[2] Ministry for the Environment, Contaminated land Management Guideline No. 1 – Reporting on Contaminated Sites in New Zealand.

Asbestos works categorisation and controls required (as per BRANZ Guidelines).

Scenario	Unlicensed Asbestos Work (to be in place during all soil removal)	Asbestos-Related Works	Class B Works (where topsoil contains asbestos)	Class A Works
Asbestos concentrations	≤0.001% w/w AF+FA or ≤0.01% w/w ACM	>0.001% w/w AF+FA or >0.01 % w/w ACM	>0.01% w/w AF+FA or >1% ACM	>1% w/w AF+FA
Additional notification requirements	No additional documentation or notification required.	No additional documentation or notification required.	Asbestos removal control plan (ACRP) and WorkSafe notification for asbestos removal.	Asbestos removal control plan (ACRP) and WorkSafe notification for asbestos removal.
Oversight	*SQEP*.	*SQEP*.	Licensed removalist and *SQEP*.	Licensed removalist and SQEP.
Personal protective equipment	No asbestos-specific PPE as concentrations are unlikely to exceed trace levels in air.	Disposable coveralls rated type 5, category 3, nitrile gloves, steel toe capped gumboots or safety footwear with disposable overshoes.	Disposable coveralls rated type 5, category 3, nitrile gloves, steel toe capped gumboots or safety footwear with disposable overshoes.	Disposable coveralls rated type 5, category 3, nitrile gloves, steel toe capped gumboots or safety footwear with disposable overshoes.
Respiratory protective equipment	No asbestos-specific requirements.	Disposable P2 dust mask.	Half-face P3 respirator with particulate filter.	Full-face P3 respirator with particulate filter.
Dust/asbestos fibre suppression	Water spray via localised points.	Water spray via localised points.	As per ARCP prepared by licenced removalist.	As per ARCP prepared by licenced removalist.
Air monitoring	Air monitoring not required.	Air monitoring not required.	Air monitoring not required but recommended where sensitive receptors are nearby.	Air monitoring required.
Cleaning facilities	Foot wash and used PPE collection area.	Dedicated cleaning area and foot wash	Dedicated cleaning area and foot wash.	Dedicated wet cleaning area or trailer. Consider powered and plumbed unit.
Vehicle (truck) protection	Truck lining/soil wrapping not required. All trucks should be covered.	Truck lining/soil wrapping depends on the receiving landfill. All trucks should be covered.	200 µm heavy-gauge polythene wrapped soil/lined trays and truck covered.	200 µm heavy-gauge polythene wrapped soil/lined trays and truck covered.
	Standard air conditioning.	Standard air conditioning.	Filter system fitted for all occupied vehicles where friable ACM on site (lagging, insulation, etc).	Filter system fitted for all occupied vehicles filter replaced or clean down with HEPA vacuum cleaner post work.
Vehicle washing Facilities	*Visual assessment by a competent person/ SQEP* following brush and or wash down.	*Visual assessment by a competent person/ SQEP* following brush and or wash down.	Visual assessment plus swab (if friable) by an independent assessor, competent person, or SQEP following brush and or wash down.	Visual assessment plus swab and air sampling inside the cab by an independent assessor or competent person.

WWLA

Table 1. Soil data summary (refer sample locations in Figure 1).

Sample information	Sample Location	NESCS Commercial/ Industrial/ Outdoor worker [1]	WRC Background Concentration [2]	Eco-SGV [3]	HA1	HA2	HA3	HA4	HA5	S1	S2	S3
	Depth (m bgl)				0.0-0.01	0.0-0.01	0.0-0.01	0.0-0.01	0.0-0.01	0.0-0.0	0.0-0.0	0.0-0.0
	Date				12/11/2024	12/11/2024	12/11/2024	12/11/2024	12/11/2024	12/11/2024	12/11/2024	12/11/2024
	Material type				Topsoil	Topsoil	Topsoil	Topsoil	Topsoil	Topsoil	Topsoil	Topsoil
	Lab number				3714641	3714641	3714641	3714641	3714641	Q-01183	Q-01183	Q-01183
Asbestos	ACM (bonded) % w/w [6]	0.05	-	-	-	-	-	-	-	0.15	ND	1.52
	AF+FA* %w/w [6]	0.001	-	-	-	-	-	-	-	<0.001	<0.001	0.483
Metals	Arsenic	70	6.8	150.8	6	7	5	12	21	-	-	-
	Cadmium	1,300	0.22	40.22	0.13	0.56	< 0.10	0.13	0.23	-	-	-
	Chromium	6,300	30	672	28	10	8	11	13	-	-	-
	Copper	>10,000	25	625	34	13	7	11	21	-	-	-
	Lead	3,300	20	3069	13.4	78	15.7	21	51	-	-	-
	Nickel	6,000 [4]	7.6	-	51	3	< 2	2	4	-	-	-
	Zinc	400,000 [4]	53	516	77	410	25	35	161	-	-	-
OCP	Total DDT	1,000	-	21	-	-	< 0.07	< 0.07	< 0.07	-	-	-
	Dieldrin (or Σ aldrin+dieldrin)	160	-	-	-	-	< 0.012	< 0.012	< 0.012	-	-	-
	Other OCPs and ONOPs	-	-	-	-	-	<LR	<LR	<LR	-	-	-

Notes:

All values are presented in mg/kg except where noted (asbestos).

* FA = fibrous asbestos, AF = asbestos fines.

ND denotes no asbestos detected.

<LR indicates concentration below the laboratory limit of reporting.

Grey values are below expected background values, black values exceed background, bold values exceed Eco SGVs 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. Waikato regional council, Natural background concentrations in the Waikato region, accessed 19 November 2024: https://www.waikatoregion.govt.nz/services/waste-hazardous-substances-and-contaminated-sites/contaminated-sites/natural-background-concentrations/
3. Landcare Research Manaaki Whenua , 2019. Updated Development of Soil Guideline Values for the Protection of Ecological Receptors (Eco-SGVs): Technical document. Added concentration limits using EC30 and site predicted background used. Typical soils, aged contaminants.
4. National Environment Protection Council [Australia] - National Environment Protection Measure (Assessment of Site Contamination). Health Investigation Levels - Commercial/industrial land use (HIL D)
6. BRANZ, 2017. New Zealand Guidelines for Assessing and Managing Asbestos in Soil.