



ENGEO Limited
124 Montreal Street, Sydenham
Christchurch, 8023

Project Number 31246.000.001

Preliminary Site Investigation:

Pegasus West Development Project
8 Mapleham Drive, Pegasus, Christchurch

Submitted to:
Wolfbrook Property Group Limited
10 Show Place
Addington
Christchurch

Executive Summary

Site Address	8 Mapleham Drive, Pegasus, Christchurch – Pegasus West Development Project	
Legal Description	• Lot 221 DP 400595 • Lot 213 DP 403716 • Lot 701 DP 403716 • Lot 2, 4 DP 407339 • Lot 206 DP 412982 • Lot 205 DP 552775 • Lot 211, 701 DP 437099	• Lot 210 DP 453895 • Lot 208, DP 417391 • Lot 1 DP 595055 • Lot 2 DP 595055 • Lot 3 DP 595055 • Lot 4 DP 595055
Site Investigation Area	Approximately 77 ha	
Current Land Use	Vacant – Previously Recreation (Golf Course)	
Proposed Land Use	Mixed Use Development (Residential, Commercial & Recreational)	
Applicable HAIL activity as defined by the NESCS (Soil)	A1 - Agrichemical preparation, storage and use (Facility Maintenance Compound) A6 - Fertiliser storage (Facility Maintenance Compound) A8 – Sheep Dip / Spray Race (Southern Stock Management Area) A10 - Pesticide storage and use (Most of Site) A17 - Fuel / chemical storage (Facility Maintenance Compound) F4 – Workshops (Facility Maintenance Compound) I - Application of fertiliser (Most of Site)	
Conclusions and Recommendations	Potential contaminant source–pathway–receptor linkages may be present. Depending on the final development layout, these could pose risks to human health and the environment that require management. The potential contaminants of concern are commonly managed or remediated using established methods. Further investigation should be undertaken at the substantive application stage in accordance with the NESCS to assess contaminants of concern, inform any remedial or soil management requirements, identify soil disposal obligations, undertake further delineation where required, and confirm additional reporting requirements associated with future development of the site. This would be in the form of Detailed Site Investigation (DSI).	

ENGEO Document Control:

Report Title	Preliminary Site Investigation – 8 Mapleham Drive, Pegasus			
Project No.	31246.000.001	Doc ID	04	
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SQEP Certifying Statement

I certify that the site has been assessed in accordance with current New Zealand Regulations and guidance documents and that this report has been prepared in general accordance with the Ministry for the Environment's Contaminated Land Management Guidelines No. 1: Reporting on Contaminated Sites in New Zealand, 2021.

I am considered by ENGEO Limited to be a suitably qualified and experienced practitioner (SQEP) able to certify reports pursuant to the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011, based on the company's definition of a SQEP as given below.



Jamie Rhodes,

27 July 2026

ENGEO Limited requires that a SQEP has the following Qualifications / Experience:

- *Tertiary science or engineering qualification relevant to environmental assessment.*
- *A minimum of ten years of relevant experience.*
- *Registration with a professional body that assess and certifies environmental professionals in the competency criteria of training, experience, professional conduct, and ethical behaviour.*

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1 Introduction

ENGEO Ltd was engaged to undertake a Preliminary Site Investigation (PSI) for the former Pegasus Golf Course located at 8 Mapleham Drive, Pegasus, Christchurch (herein referred to as ‘the site’; Figure 1, Appendix 1).

This report has been prepared to support a referral application made under s13 of the Fast-track Approvals Act 2024 by Wolfbrook Developments (Pegasus) Limited. It provides a preliminary, high-level assessment of the proposed development's contamination considerations to assist the Minister in determining whether the project should be referred to an expert panel. The report identifies the key matters likely to require further assessment at the substantive application stage and confirms that feasible solutions are available to address those matters. It is not intended to provide a full technical assessment, detailed design, or consent-level analysis, and will be supplemented by more comprehensive investigations and reporting should the project be referred for substantive consideration.

This assessment has been prepared by a suitably qualified and experienced practitioner in accordance with the requirements of the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011; (the ‘NESCS’).

This investigation was undertaken in general accordance with the Ministry for the Environment (MfE) Contaminated Land Management Guidelines (CLMG) No. 1: Reporting on Contaminated Sites in New Zealand (MfE, 2021a) and CLMG No 5: Site Investigation and Analysis of Soils (MfE, 2021b). The investigation was supervised, and the report reviewed and approved by a suitably qualified and experienced contaminated land practitioner in accordance with national environmental regulations for soil contamination.

2 Project Overview

The project is a master-planned residential development with a neighbourhood scale commercial / community node and associated infrastructure, provided as a contiguous extension to the Pegasus, Ravenswood and Woodend urban area.

The project will include the following:

1. Staged subdivision and development to enable up to 1,000 residential allotments/dwellings across a range of residential densities and to cater for a range of typologies.
2. Development of a commercial / community node that enables provision of day-to-day needs such as retail, service, healthcare, education, recreation and / or related activities for the community, with specific uses determined through community and market needs.
3. Associated three waters infrastructure; including an integrated stormwater management system and open space network featuring neighbourhood parks and green links.
4. Minor alterations to Pegasus Boulevard to provide for the access requirements of the development including intersection improvements and a new road access.
5. Associated earthworks, servicing, landscaping and related works to be implemented in stages.
6. Areas of land set aside to recognise and provide for cultural and archaeological values including retention of archaeological site M35/440 (pā site) which is registered as a wāhi tapu on the New Zealand Heritage List/ Rāragi Kōrero.

3 Scope of works

The scope of works conducted is listed below:

- Review historical aerial imagery, council property files, and previous investigation reports to identify whether activities from the Hazardous Activities and Industries List (HAIL; MfE, 2011b) have occurred on-site.
- Site walkover to assess for evidence of potential HAIL land uses, or other evidence of contaminants.
- Develop a Preliminary Conceptual Site Model (PCSM) which identifies potential source–pathway–receptor linkages.
- Assess the need for management, mitigation, or further investigation to support the proposed development and inform the FTAA assessment process.

4 Site Information

A summary of site information is summarised in Table 1. Site setting details are provided in Table 2.

Table 1: Site Information

Item	Description
Site Address	8 Mapleham Drive, Pegasus, Christchurch
Legal Description	Lot 221 DP 400595 Lot 213 DP 403716 Lot 701 DP 403716 Lot 2, 4 DP 407339 Lot 206 DP 412982 Lot 211, 701 DP 437099 Lot 205 DP 552775 Lot 210 DP 453895 Lot 208, DP 417391 Lot 1 DP 595055 Lot 2 DP 595055 Lot 3 DP 595055 Lot 4 DP 595055
Current Land Use	Vacant – Previously Recreational (Golf Course)
Proposed Land Use	Mixed Use Development (Residential, Commercial & Recreational)
Site Area	77.5 ha

Territorial Authority	Waimakariri District Council (WDC)
Regional Authority	Environment Canterbury (ECan)
Zoning	Operative Waimakariri District Plan • Northern Portion – Mapleham Rural 4b • Southern Portion – Rural Pegasus Partially Operative Waimakariri District Plan • Specific Purpose (Pegasus Resort) Zone.

Site setting details are provided in Table 2.

Table 2: Site Setting

Item	Description
Topography	The landform is characterised by gentle, rolling contours formed by fairways, greens, and landscaped features, with gradual changes in elevation rather than steep or abrupt slopes.
Local Setting	The site is situated on the east coast of the Canterbury Plains. The area is generally low-lying undulating pastoral land with areas of wetlands and beach dunes.
Nearest Surface Water	There are multiple surface water bodies throughout the site including artificial ponds and waterways. The artificial ponds appear generally interconnected and feed into several surrounding wetlands and waterways of the neighbouring subdivision. The waterways of the Taranaki and Waihora Streams also run through or nearby the site and also drain into surrounding wetlands.
Geology (GNS)	The site has been regionally mapped by GNS to be underlain by modern Holocene river floodplain or low-level degradation terrace comprising of un-weathered, variably sorted gravels, sands, silt, and clay.
Hydrogeology	The site is situated over the coastal confined gravel aquifer system. Groundwater fluctuates over the wider site at depths typically between 2.5 m and 4.5 m below ground level (bgl) and is anticipated to flow in an easterly direction.
Groundwater Abstractions	There are three active groundwater abstraction bores located on the site: • M35/7680: Pegasus Town Ltd (Irrigation) – Located 80 m west of the facility management compound. This is presumed to be used for topping lake levels up and irrigation. • M35/11591: Pegasus Town Ltd (Irrigation) – Located 60 m northwest of the facility management compound. This is presumed to be used for topping lake levels up and irrigation. • M35/0553: Musson – Located halfway between the close of Te Haunui Lane and Pegasus Boulevard. This is listed as domestic supply but may not be present/active.

5 Site History

Information on past and present land use at the site and surrounding area was obtained from a range of sources. The sources and relevant findings are summarised below.

5.1 Historical Aerial Photographs

Aerial photographs dating from 1940 to 2026 have been reviewed (refer to Appendix 2). The aerial photographs were sourced from Canterbury Maps. Relevant visible features on the site and surrounding area are summarised in Table 3 below.

Table 3: Historical Aerial Photographs

Date	Description
1940-1944	The site forms part of a broader rural landscape characterised by agricultural and pastoral land uses, comprising large open paddocks and scattered rural residential dwellings associated with the site, outside of the site boundary. There appears to be one area used for stock management containing several buildings and stock pens (potential sheep dip) within the property boundary to the south. The surrounding land is predominantly used for livestock grazing, with no evidence of cropping activities identified. Some stock management areas are noted in close vicinity to several dwellings. Topography across the site is generally flat to gently undulating. Several surface water drains / flow paths traverse and border the site, conveying runoff towards a larger wetland area located to the east.
1960-1964	Several paddocks now appear to be used for cropping. The aforementioned stock management and potential sheep dip area has been extended. No other major changes noted to the site or surrounding area.
1965-1969	Partial image of west of site. No major changes noted to the site or surrounding area.
1970-1974	There are some minor development and earthworks occurring on neighbouring residential properties. The site does not appear to have had any major changes, however, the stock management and sheep dip area no longer appear to be used or maintained with most of the site still agricultural pastoral land.
1975-1979	No major changes noted to the site or surrounding area.
1980-1984	No major changes noted to the site or surrounding area.
1985-1989	No major changes noted to the site or surrounding area.
1990-1994	No major changes noted to the site, except for notable vegetation growth in particular within the wetland and surface water flow path areas. Parts of the wetland area neighbouring the site to the east appears to be planted for forestry purposes.
1995-1999	No major changes noted to the site or surrounding area.
2000-2004	No major changes to the site. A pond has been formed near one of the dwellings outside of the site boundary along with some minor soil disturbance.
2004-2010	No major changes noted to the site or surrounding area.
2010-2014	The site has been redeveloped into a golf course. The course includes artificial ponds and drainage channels, tee boxes, fairways and putting greens. A club house building, tennis courts, and facilities maintenance area are also noted. The aforementioned dwellings previously associated with the site have been retained in separate land parcels except for the southern stock management area. Multiple smaller residential lots and roadways have been developed surrounding the course itself. The forestry area to the east of the site has also been subdivided for higher density residential land use and also incorporates artificial lakes and water ways, while some wetland areas have been kept.

Date	Description
2015-2019	No major changes to the site use. Further residential construction has occurred in the neighbouring subdivision area to the east, and a separate subdivision appears to be under construction to the west of the site.
2026	No major changes noted to the site or surrounding area.

5.2 Environment Canterbury Listed Land Use Register

ECan maintains a Listed Land Use Register (LLUR) of past and current land uses within the Canterbury Region. The LLUR lists properties on which potentially hazardous activities have been undertaken. The potentially hazardous activities are defined on the MfE HAIL List, (Ministry for the Environment, 2011). Copies of the LLUR statements are attached in Appendix 3.

5.2.1 Investigation Site (8 Mapleham Drive)

The ECan LLUR property statements for the investigation area were reviewed and the following activities were recorded (Table 4). It is noted that some properties within the investigation area do not have any HAIL activities noted and therefore are not listed below.

Table 4: LLUR Summary for HAIL Activities

Development Area	LLUR Site Number	Site Name	Period From - To	HAIL Activity(s)	LLUR Category
Pegasus Golf Course	169855	Lot 204 DP 478302, Pegasus	Unknown to Present	A10 - Persistent pesticide bulk storage or use including sports turfs, market gardens, orchards, glass houses or spray sheds	Not Investigated
	169857	Lot 204 DP 478302, Pegasus			
	169859	Lot 4 DP 407339, Pegasus			
	169861	Pegasus Golf Club			
	169861	Lot 4 DP 400595, Pegasus			
	169865	Lot 210 DP 453895, Pegasus			
	169867	Lot 211 DP 437099, Pegasus			

All records were created as part of the Waimakariri District Council 2016 HAIL identification project. This project lists the above areas as “Areas defined from Unknown to Present aerial photographs. A10 - Horticultural activities, a poultry farm or sports turf were noted in aerial photographs reviewed”.

5.2.2 Neighbouring Sites

The ECan LLUR property statement for relevant neighbouring properties was reviewed and the following activities were recorded (Table 5).

Table 5: LLUR Summary for HAIL Activities on Neighbouring Sites

Site Address	LLUR Site Number	Site Name	Period From - To	HAIL Activity(s)	LLUR Category
67 Mapleham Drive	169903	Lot 1 DP 388447, Pegasus	Unknown to Present	A8 - Livestock dip or spray race operations;	Not Investigated
	332047	Demolished dwelling	Unknown to Present	I - Any other land; A17 - Storage tanks or drums for fuel, chemicals or liquid waste;	Yet to be reviewed
	332049	67 Mapleham Drive, Pegasus	Unknown to Present	A17 - Storage tanks or drums for fuel, chemicals or liquid waste; G5 - Waste disposal to land;	Not Investigated

5.3 Existing Environmental Reports

Based on review of the LLUR and received information there are no noted previous investigations undertaken across the site.

5.4 Property File Review

The property file held by WDC Council was requested on the 19 June 2026. No information had been received at the time of issuing this report. As such, no property file information held by WDC has been included in this assessment.

6 Current Site Conditions

A site walkover was completed on 23 June 2026. Observations of conditions present at the site are summarised in Table 6. Photographs taken during the site visit are included in Appendix 4.

Table 6: Current Site Conditions

Site Conditions	Comments
Overview	The site is an 18-hole golf course comprising largely of open greens and fairways, tee boxes as well as a club house and maintenance compound. It has accessways, a tennis court and landscaping areas with undulating landforms for stormwater management, wetlands and ponds.
Surrounding Land Use	Surrounding land use of the golf course is predominantly residential development associated with the Pegasus Township to the east. Residential properties also border the fairways throughout the golf course. There are rural agricultural and pastoral properties to the north and south along with commercial developments to the west associated with the Ravenswood development.
Site Building(s)	A large single story club house is present on the corner of Mapleham Drive and Pegasus Boulevard. It is of modern construction utilising iron roofing and wooden cladding. A light-weight maintenance / facility management shed is also present within a compound near the centre of the site, south of the property at 67 Mapleham Drive. It comprises of a storage warehouse for mowers and other machinery which also likely includes a mechanical maintenance area. Surrounding the shed is a concrete block materials storage bunker, storage shipping containers including a agrichemical HSNO storage shed.
Potential Sources of Contamination	Based on the information available the likely potential sources of contamination are: • Agri-chemical preparation, storing and washing • Fertiliser Storage / Application / Use • Sheep dip / Spray Race • Pesticide Application / Storage / Use • Workshops / Maintenance Areas • Fuel Storage
Potential for On- or Off-Site Migration of Contaminants	The site comprises of a number of interconnected artificial ponds and waterways, with no obvious off site flow paths. Although limited, these are likely interconnected to groundwater to some degree and therefore soluble contaminants could migrate off-site. Surface water from the properties west of site appears to be diverted around the site, via drains and streams on the property at 67 Mapleham Drive, discharging towards the land east of the site. No other contaminant migration pathways (either on or off site) have been identified.

7 Potential HAIL Activities

Based on the information obtained during this PSI, six HAIL activities (Cat. A.1, A.6, A.8, A.10, A.17, F.4, and I) are considered more likely than not relevant to the site. The HAIL category and potential contaminants of concern are summarised in Table 7 below. All identified areas are shown on Figure 2 and Figure 3 (Appendix 5).

Table 7: Summary of Potential HAIL Categories On-Site

Activity	HAIL Category	Description	Contaminants of Concern
Agrichemicals including commercial premises used by spray contractors for filling, storing or washing out tanks for agrichemical application	A1	Storage of various agrichemicals including filling and washing down of equipment	- Heavy Metals - Organochlorine Pesticides (OCP) - Organophosphorus and Organonitrogen pesticides (ONOPs)
Fertiliser manufacture or bulk storage	A6	Bulk storage of fertiliser within open concrete bunkers within the facilities maintenance compounds	Heavy Metals
Sheep Dip / Spray Race	A8	Use of chemicals in sheep dips or spray race operations in the southern area	- Heavy Metals - Organochlorine Pesticides (OCP)
Persistent pesticide bulk storage or use including sports turfs, market gardens, orchards, glass houses or spray sheds	A10	Use of pesticides for maintenance of golf course greens and fairways as well as possible historical cropping	- Heavy Metals - Organochlorine Pesticides (OCP) - Organophosphorus and Organonitrogen pesticides (ONOPs)
Storage tanks or drums for fuel, chemicals or liquid waste	A17	Storage of fuels within the facilities maintenance compounds	Hydrocarbons
Motor Vehicle Workshop	F4	Maintenance workshop within the facilities management compound	- Heavy Metals - Hydrocarbon
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	I	Application and use of fertiliser in large quantities	Heavy Metals

8 Preliminary Conceptual Site Model

A conceptual site model consists of four primary components. For a contaminant to present a risk to human health or an environmental receptor, all four components are required to be present and connected. The four components of a conceptual site model are:

- Source of contamination.
- Pathway(s) in which contamination could potentially mobilise along (e.g., vapour or groundwater migration).
- Sensitive receptor(s) which may be exposed to contaminants.
- An exposure route, where the sensitive receptor and contaminants come into contact (e.g., ingestion, inhalation, dermal contact).

The potential source, pathway, receptor linkages at this subject site are provided in Table 8. All identified areas are shown on Figures 2 and Figure 3 (Appendix 5).

Table 8: Preliminary Conceptual Site Model

Potential Sources	Contaminants of Concern	Possible Extent	Exposure Route and Pathways	Receptors	Acceptable Risk?
Agrichemical preparation, storage, use and washdown	Heavy Metals, OCP & ONOP	Immediate area of storage and washdown area	Dermal contact with impacted soil, and incidental ingestion or consumption of produce during long-term use of the site.	Future site users	Unknown Future development plans are not finalised. Intrusive investigation required to assess potential risk
			Dermal contact with impacted soil, and incidental ingestion during earthworks.	Future subsurface maintenance workers and redevelopment workers	Likely Contaminants unlikely to be present in soils at concentrations that would exceed Tier 1 screening criteria for a commercial/industrial (unpaved) land use, considered to be protective of this receptor.
			Groundwater migration.	Surrounding environment and surface waters.	Unknown Intrusive investigation required to assess potential risk of soluble contaminants impacting groundwater.

Potential Sources	Contaminants of Concern	Possible Extent	Exposure Route and Pathways	Receptors	Acceptable Risk?
Bulk storage of fertiliser	Heavy Metals	Beneath and within immediate vicinity of storage bunker	Dermal contact with impacted soil, and incidental ingestion or consumption of produce during long-term use of the site.	Future site users	Unknown Future development plans are not finalised. Intrusive investigation required to assess potential risk
			Dermal contact with impacted soil, and incidental ingestion during earthworks.	Future subsurface maintenance workers and redevelopment workers	Likely Contaminants unlikely to be present in soils at concentrations that would exceed Tier 1 screening criteria for a commercial/industrial (unpaved) land use, considered to be protective of this receptor.
			Groundwater migration.	Surrounding environment and surface waters.	Unknown Intrusive investigation required to assess potential risk of soluble contaminants impacting groundwater.

Potential Sources	Contaminants of Concern	Possible Extent	Exposure Route and Pathways	Receptors	Acceptable Risk?
Sheep Dip / Spray Race Operations	Heavy Metals & OCP	In immediate area of the southern historical stock management area	Dermal contact with impacted soil, and incidental ingestion or consumption of produce during long-term use of the site.	Future site users	Unknown Future development plans are not finalised. Intrusive investigation required to assess potential risk
			Dermal contact with impacted soil, and incidental ingestion during earthworks.	Future subsurface maintenance workers and redevelopment workers	Unknown Future development plans are not finalised. Intrusive investigation required to assess potential risk
			Groundwater migration.	Surrounding environment and surface waters.	Unknown Intrusive investigation required to assess potential risk of soluble contaminants impacting groundwater.

Potential Sources	Contaminants of Concern	Possible Extent	Exposure Route and Pathways	Receptors	Acceptable Risk?
Pesticide storage and use	Heavy Metals, OCP & ONOP	Across most of site in particular across tee blocks, greens and fairways	Dermal contact with impacted soil, and incidental ingestion or consumption of produce during long-term use of the site.	Future site users	Unknown Future development plans are not finalised. Intrusive investigation required to assess potential risk
			Dermal contact with impacted soil, and incidental ingestion during earthworks.	Future subsurface maintenance workers and redevelopment workers	Likely Contaminants unlikely to be present in soils at concentrations that would exceed Tier 1 screening criteria for a commercial/industrial (unpaved) land use, considered to be protective of this receptor.
			Groundwater migration.	Surrounding environment and surface waters.	Unknown Intrusive investigation required to assess potential risk of soluble contaminants impacting groundwater.

Potential Sources	Contaminants of Concern	Possible Extent	Exposure Route and Pathways	Receptors	Acceptable Risk?
Fuel / Chemical storage	Hydrocarbons	Within the immediate area of the fuel storage area	Dermal contact with impacted soil, and incidental ingestion or consumption of produce during long-term use of the site. Inhalation of volatile organic compounds during site use	Future site users	Likely No significant evidence of staining or odours near surface. Future development plans are not finalised. Intrusive investigation may be required to assess potential risk.
			Dermal contact with impacted soil, and incidental ingestion during earthworks. Inhalation of volatile organic compounds during earthworks.	Future subsurface maintenance workers and redevelopment workers	Likely No significant evidence of staining or odours near surface. Future development plans are not finalised. Intrusive investigation may be required to assess potential risk.
			Groundwater migration.	Surrounding environment and surface waters.	Likely No significant evidence of staining or odours near surface.

Potential Sources	Contaminants of Concern	Possible Extent	Exposure Route and Pathways	Receptors	Acceptable Risk?
Workshop / Maintenance shed	Heavy Metals & Hydrocarbons	Facilities maintenance compound	Dermal contact with impacted soil, and incidental ingestion or consumption of produce during long-term use of the site. Inhalation of volatile organic compounds during earthworks.	Future site users	Likely No significant evidence of staining or odours near surface. Future development plans are not finalised. Intrusive investigation may be required to assess potential risk.
			Dermal contact with impacted soil, and incidental ingestion during earthworks. Inhalation of volatile organic compounds during earthworks.	Future subsurface maintenance workers and redevelopment workers	Likely Contaminants unlikely to be present in soils at concentrations that would exceed Tier 1 screening criteria for a commercial/industrial (unpaved) land use, considered to be protective of this receptor.
			Groundwater migration.	Surrounding environment and surface waters.	Likely No significant evidence of staining or odours near surface.

Potential Sources	Contaminants of Concern	Possible Extent	Exposure Route and Pathways	Receptors	Acceptable Risk?
Fertiliser Use	Heavy Metals	Across most of site in particular across tee blocks, greens and fairways	Dermal contact with impacted soil, and incidental ingestion or consumption of produce during long-term use of the site.	Future site users	Unknown Future development plans are not finalised. Intrusive investigation required to assess potential risk
			Dermal contact with impacted soil, and incidental ingestion during earthworks.	Future subsurface maintenance workers and redevelopment workers	Likely Contaminants unlikely to be present in soils at concentrations that would exceed Tier 1 screening criteria for a commercial/industrial (unpaved) land use, considered to be protective of this receptor.
			Groundwater migration.	Surrounding environment and surface waters.	Unknown Intrusive investigation required to assess potential risk of soluble contaminants impacting groundwater.

9 Potential Mitigation Measures

The investigation identified several HAIL activities are relevant to the piece of land. Further investigation is recommended to determine whether these have resulted in contaminants which require mitigation or remediation.

It is anticipated that impacts (if present) are more likely than not associated with shallow soils.

Depending on the investigation results and development plans, suitable mitigation measures may include the following.

- Reducing exposure to impacted soils through design.
- On-site reuse of impacted soils in areas with lower exposure scenarios (i.e, reuse in commercial, or infrastructure related areas).
- Capping and Encapsulation (placing impacted soils at depth and covering these with clean soil or impermeable surfaces).
- Targeted Excavation and Disposal of material which is unable to be retained on-site.

The above mitigation approaches are common practice in development projects. Specific strategies can be developed as part of the substantive application process and documented in a Site Management Plan (SMP) or Remedial Action Plan (RAP) as necessary.

10 Conclusions

ENGEO Ltd was requested to undertake a PSI for the former Pegasus Golf Course located at 8 Mapleham Drive, Pegasus, Christchurch.

The objective of the investigation was to inform an application for referral to use the Fast-track Approvals Act 2024 (FTAA). It includes a desktop review of available environmental information and a site walkover by a suitably qualified and experienced practitioner.

The site has previously had agricultural, and pastoral uses up until approximately 2010 at which time the site was redeveloped for use as a golf course. A number of potential soil contaminating activities (mostly associated with recent site use) have been identified. These included the following HAIL activities:

- A1 (Agrichemical preparation, storage and use);
- A6 (fertiliser storage);
- A8 (sheep dip / spray race);
- A10 (pesticide storage and use);
- A17 (fuel / chemical storage);
- F4 (workshops); and
- I (application of fertiliser).

Based on the findings of this PSI, there are potential contaminant source–pathway–receptor linkages associated with the identified HAIL activities.

Further investigations should be completed when designing the development, in accordance with the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (NESCSCS). These investigations should include assessment of potential contaminants of concern as identified in this PSI.

The potential contaminants of concern are commonly managed or remediated using readily available and accepted methods. Further investigations should include recommendations for remedial actions required, soil management and disposal requirements, further delineation sampling where necessary, and additional reporting obligations associated with future development of the site.

11 Limitations

- i. We have prepared this report in accordance with the brief as provided. This report has been prepared for the use of our client, Wolfbrook Property Group Limited, their professional advisers, the Minister for Infrastructure and other invited commenters / participants that are involved in the consideration of a referral application under the Fast-track Approvals Act 2024, and the relevant Local Authorities in relation to the specified project brief described in this report. No liability is accepted for the use of any part of the report for any other purpose or by any other person or entity.
- ii. The recommendations in this report are based on the ground conditions indicated from published sources, site assessments and subsurface investigations described in this report based on accepted normal methods of site investigations. Only a limited amount of information has been collected at this stage to meet the specific financial and technical requirements of the client's brief and this report does not purport to completely describe all the site characteristics and properties. The nature and continuity of the ground between test locations has been inferred using experience and judgement and it should be appreciated that actual conditions could vary from the assumed model.
- iii. Subsurface conditions relevant to construction works should be assessed by contractors who can make their own interpretation of the factual data provided. They should perform any additional tests as necessary for their own purposes.
- iv. This Limitation should be read in conjunction with the Engineering NZ / ACENZ Standard Terms of Engagement.
- v. This report is not to be reproduced either wholly or in part without our prior written permission.

We trust that this information meets your current requirements.

Report prepared by



Andrew Baxter, CEnvP, MEIANZ

Senior Environmental Scientist

Report reviewed by



Jamie Rhodes, CEnvP (SC)

Principal Environmental Engineer

12 References

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MfE, 2021b. Ministry for the Environment. (2021). Contaminated Land Management Guidelines No. 5: Site Investigation and Analysis of Soils.

NEPM, 2013. Australian National Environmental Protection Council. (2013). National Environmental Protection (Assessment of Site Contamination) Measure 1999, Schedule B(1): Guideline on the Investigation Levels for Soil and Groundwater.

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

Appendix 1: Site Plan



Legend

□ Site Boundary

0 100 m 200 m
© Nearmap

ENGEO

Produced by **Datanest.earth**

Title:
Site Plan

Client:
Woolfbrook Property Group
Limited

Size: A4

Project:
pegasus
Date:
22-06-2026
Proj No:
pegasus

Drawn: AB
Checked: JR

Appendix No.:
1
Version: Final

Appendix 2: Historical Aerial Imagery





























Appendix 3: LLUR



Customer Services
P. 03 353 9007 or 0800 324 636

PO Box 345
Christchurch 8140

P. 03 365 3828
F. 03 365 3194
E. ecinfo@ecan.govt.nz

www.ecan.govt.nz

Dear Sir/Madam

Thank you for submitting your property enquiry from our Listed Land Use Register (LLUR). The LLUR holds information about sites that have been used or are currently used for activities which have the potential to cause contamination.

The LLUR statement shows the land parcel(s) you enquired about and provides information regarding any potential LLUR sites within a specified radius.

Please note that if a property is not currently registered on the LLUR, it does not mean that an activity with the potential to cause contamination has never occurred, or is not currently occurring there. The LLUR database is not complete, and new sites are regularly being added as we receive information and conduct our own investigations into current and historic land uses.

The LLUR only contains information held by Environment Canterbury in relation to contaminated or potentially contaminated land; additional relevant information may be held in other files (for example consent and enforcement files).

Please contact Environment Canterbury if you wish to discuss the contents of this property statement.

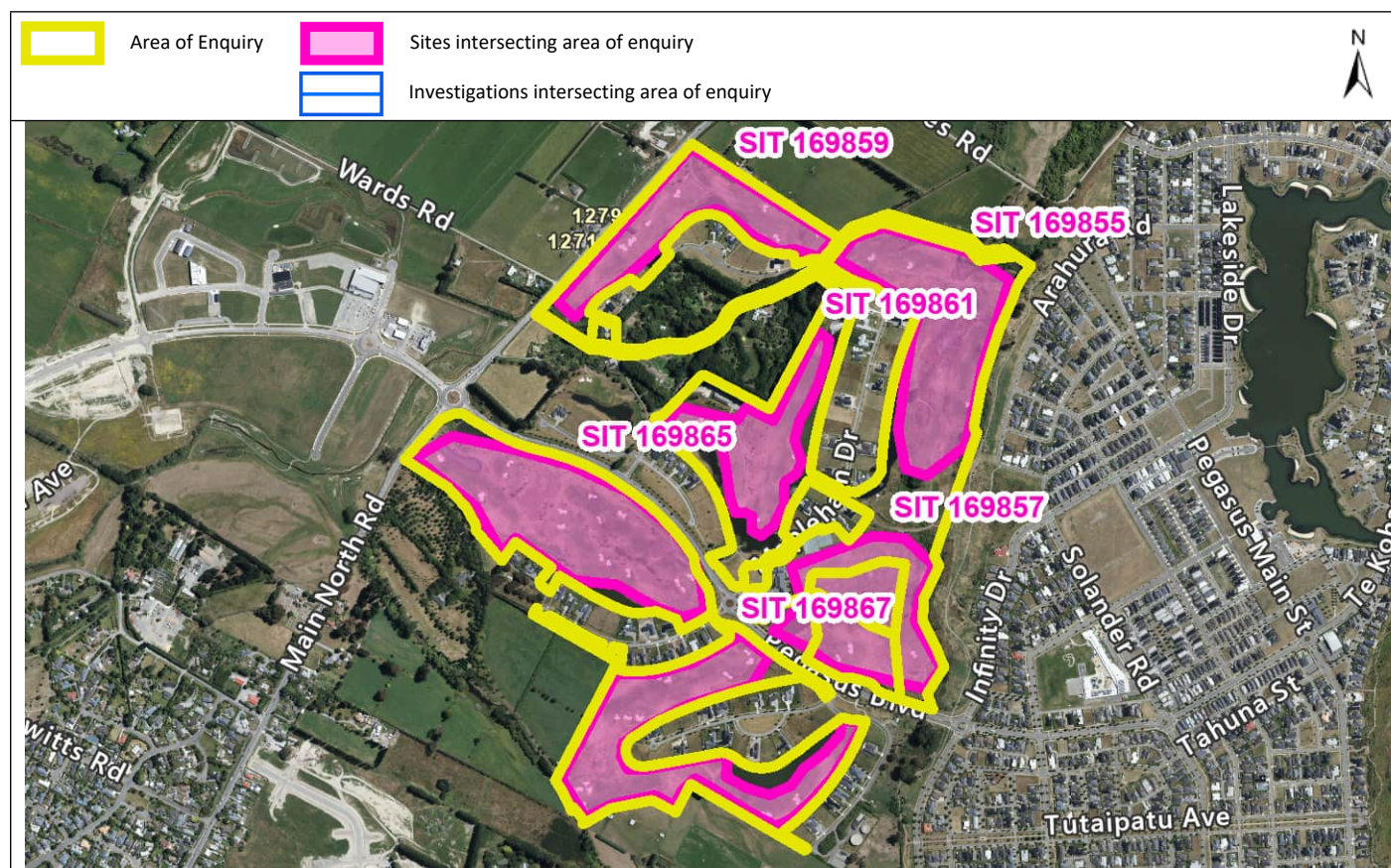
Yours sincerely

Contaminated Sites Team

Property Statement from the Listed Land Use Register

Visit ecan.govt.nz/HAIL for more information or
contact Customer Services at ecan.govt.nz/contact/ and quote ENQ457068

Date generated: 28 April 2026
Land parcels: Lot 205 DP 552775
Lot 4 DP 407339
Lot 210 DP 453895
Drain Reserve Red Map 58
Lot 4 DP 595055
Lot 1 DP 595055
Lot 211 DP 437099



The information presented in this map is specific to the property you have selected. Information on nearby properties may not be shown on this map, even if the property is visible.

Sites at a glance

 Sites within enquiry area

Site number	Name	Location	HAIL activity(s)	Category
169855	Lot 204 DP 478302, Pegasus	Lot 204 DP 478302, Pegasus	A10 - Persistent pesticide bulk storage or use;	Not Investigated
169857	Lot 204 DP 478302, Pegasus	Lot 204 DP 478302, Pegasus	A10 - Persistent pesticide bulk storage or use;	Not Investigated
169859	Lot 4 DP 407339, Pegasus	Lot 4 DP 407339, Pegasus	A10 - Persistent pesticide bulk storage or use;	Not Investigated
169861	Pegasus Golf Club	Lot 205 DP 478302, Pegasus	A10 - Persistent pesticide bulk storage or use;	Not Investigated
169865	Lot 210 DP 453895, Pegasus	Lot 210 DP 453895,	A10 - Persistent	Not Investigated

		Pegasus	pesticide bulk storage or use;	
169867	Lot 211 DP 437099, Pegasus	Lot 211 DP 437099, Pegasus	A10 - Persistent pesticide bulk storage or use;	Not Investigated

More detail about the sites

Site 169855: Lot 204 DP 478302, Pegasus (Intersects enquiry area.)

Category: Not Investigated
Definition: Verified HAIL has not been investigated.

Location: Lot 204 DP 478302, Pegasus
Legal description(s): Drain Reserve Red Map 58, Lot 204 DP 478302

HAIL activity(s):	Period from	Period to	HAIL activity
	Unknown	Present	Persistent pesticide bulk storage or use including sports turfs, market gardens, orchards, glass houses or spray sheds

Notes:

14 Dec 2016 This record was created as part of the Waimakariri District Council 2016 HAIL identification project.
7 Jul 2017 Area defined from Unknown to Present aerial photographs. A10 - Horticultural activities, a poultry farm or sports turf were noted in aerial photographs reviewed.



Investigations:

There are no investigations associated with this site.

Site 169857: Lot 204 DP 478302, Pegasus (Intersects enquiry area.)

Category: Not Investigated
Definition: Verified HAIL has not been investigated.

Location: Lot 204 DP 478302, Pegasus
Legal description(s): Lot 204 DP 478302

HAIL activity(s):	Period from	Period to	HAIL activity
	Unknown	Present	Persistent pesticide bulk storage or use including sports turfs, market gardens, orchards, glass houses or spray sheds

Notes:

14 Dec 2016 This record was created as part of the Waimakariri District Council 2016 HAIL identification project.
7 Jul 2017 Area defined from Unknown to Present aerial photographs. A10 - Horticultural activities, a poultry farm or sports turf were noted in aerial photographs reviewed.



Investigations:

There are no investigations associated with this site.

Site 169859: Lot 4 DP 407339, Pegasus (Intersects enquiry area.)

Category: Not Investigated
Definition: Verified HAIL has not been investigated.

Location: Lot 4 DP 407339, Pegasus
Legal description(s): Lot 4 DP 407339

HAIL activity(s):

Period from	Period to	HAIL activity
Unknown	Present	Persistent pesticide bulk storage or use including sports turfs, market gardens, orchards, glass houses or spray sheds

Notes:

14 Dec 2016

This record was created as part of the Waimakariri District Council 2016 HAIL identification project.

7 Jul 2017

Area defined from Unknown to Present aerial photographs. A10 - Horticultural activities, a poultry farm or sports turf were noted in aerial photographs reviewed.



Investigations:

There are no investigations associated with this site.

Site 169861: Pegasus Golf Club (Intersects enquiry area.)

Category: Not Investigated

Definition: Verified HAIL has not been investigated.

Location: Lot 205 DP 478302, Pegasus

Legal description(s): Lot 205 DP 478302

HAIL activity(s):

Period from	Period to	HAIL activity
Unknown	Present	Persistent pesticide bulk storage or use including sports turfs, market gardens, orchards, glass houses or spray sheds

Notes:

14 Dec 2016

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7 Jul 2017

Area defined from Unknown to Present aerial photographs. A10 - Horticultural activities, a poultry farm or sports turf were noted in aerial photographs reviewed.



Investigations:

There are no investigations associated with this site.

Site 169865: Lot 210 DP 453895, Pegasus (Intersects enquiry area.)

Category: Not Investigated

Definition: Verified HAIL has not been investigated.

Location: Lot 210 DP 453895, Pegasus

Legal description(s): Lot 2001 DP 394635, Lot 210 DP 453895

HAIL activity(s):

Period from	Period to	HAIL activity
Unknown	Present	Persistent pesticide bulk storage or use including sports turfs, market gardens, orchards, glass houses or spray sheds

Notes:

14 Dec 2016

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7 Jul 2017

Area defined from Unknown to Present aerial photographs. A10 - Horticultural activities, a poultry farm or sports turf were noted in aerial photographs reviewed.



Investigations:

There are no investigations associated with this site.

Site 169867: Lot 211 DP 437099, Pegasus (Intersects enquiry area.)

Category: Not Investigated

Definition: Verified HAIL has not been investigated.

Location: Lot 211 DP 437099, Pegasus

Legal description(s): Lot 211 DP 437099

HAIL activity(s):

Period from	Period to	HAIL activity
Unknown	Present	Persistent pesticide bulk storage or use including sports turfs, market gardens, orchards, glass houses or spray sheds

Notes:**14 Dec 2016**

This record was created as part of the Waimakariri District Council 2016 HAIL identification project.

7 Jul 2017

Area defined from Unknown to Present aerial photographs. A10 - Horticultural activities, a poultry farm or sports turf were noted in aerial photographs reviewed.

**Investigations:**

There are no investigations associated with this site.

Disclaimer

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Listed Land Use Register

What you need to know

What is the Listed Land Use Register (LLUR)?

The LLUR is a database that Environment Canterbury uses to manage information about land that is, or has been, associated with the use, storage or disposal of hazardous substances.

Why do we need the LLUR?

Some activities and industries are hazardous and can potentially contaminate land or water. We need the LLUR to help us manage information about land which could pose a risk to your health and the environment because of its current or former land use.

Section 30 of the Resource Management Act (RMA, 1991) requires Environment Canterbury to investigate, identify and monitor contaminated land. To do this we follow national guidelines and use the LLUR to help us manage the information.

The information we collect also helps your local district or city council to fulfil its functions under the RMA. One of these is implementing the National Environmental Standard (NES) for Assessing and Managing Contaminants in Soil, which came into effect on 1 January 2012.

For information on the NES, contact your city or district council.

How does Environment Canterbury identify sites to be included on the LLUR?

We identify sites to be included on the LLUR based on a list of land uses produced by the Ministry for the Environment (MfE). This is called the Hazardous Activities and Industries List (HAIL)¹. The HAIL has 53 different activities, and includes land uses such as fuel storage sites, orchards, timber treatment yards, landfills, sheep dips and any other activities where hazardous substances could cause land and water contamination.

We have two main ways of identifying HAIL sites:

- We are actively identifying sites in each district using historic records and aerial photographs. This project started in 2008 and is ongoing.
- We also receive information from other sources, such as environmental site investigation reports submitted to us as a requirement of the Regional Plan, and in resource consent applications.

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Where we have identified a HAIL land use, we review all the available information, which may include investigation reports if we have them. We then assign the site a category on the LLUR. The category is intended to best describe what we know about the land use and potential contamination at the site and is signed off by a senior staff member.

Please refer to the Site Categories and Definitions factsheet for further information.

What does Environment Canterbury do with the information on the LLUR?

The LLUR is available online at www.llur.ecan.govt.nz. We mainly receive enquiries from potential property buyers and environmental consultants or engineers working on sites. An inquirer would typically receive a summary of any information we hold, including the category assigned to the site and a list of any investigation reports.

We may also use the information to prioritise sites for further investigation, remediation and management, to aid with planning, and to help assess resource consent applications. These are some of our other responsibilities under the RMA.

If you are conducting an environmental investigation or removing an underground storage tank at your property, you will need to comply with the rules in the Regional Plan and send us a copy of the report. This means we can keep our records accurate and up-to-date, and we can assign your property an appropriate category on the LLUR. To find out more, visit www.ecan.govt.nz/HAIL.



My land is on the LLUR – what should I do now?

IMPORTANT! Just because your property has a land use that is deemed hazardous or is on the LLUR, it doesn't necessarily mean it's contaminated. The only way to know if land is contaminated is by carrying out a detailed site investigation, which involves collecting and testing soil samples.

You do not need to do anything if your land is on the LLUR and you have no plans to alter it in any way. It is important that you let a tenant or buyer know your land is on the Listed Land Use Register if you intend to rent or sell your property. If you are not sure what you need to tell the other party, you should seek legal advice.

You may choose to have your property further investigated for your own peace of mind, or because you want to do one of the activities covered by the National Environmental Standard for Assessing and Managing Contaminants in Soil. Your district or city council will provide further information.

If you wish to engage a suitably qualified experienced practitioner to undertake a detailed site investigation, there are criteria for choosing a practitioner on www.ecan.govt.nz/HAIL.



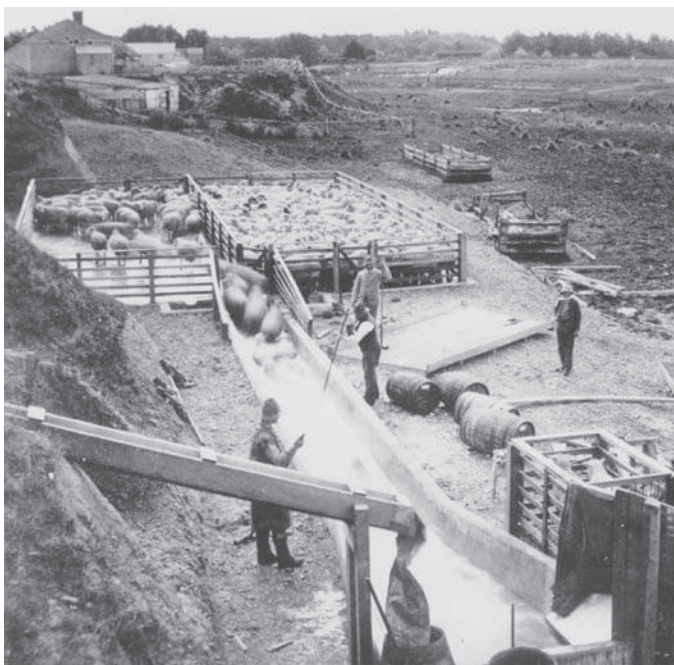
I think my site category is incorrect – how can I change it?

If you have an environmental investigation undertaken at your site, you must send us the report and we will review the LLUR category based on the information you provide. Similarly, if you have information that clearly shows your site has not been associated with HAIL activities (eg. a preliminary site investigation), or if other HAIL activities have occurred which we have not listed, we need to know about it so that our records are accurate.

If we have incorrectly identified that a HAIL activity has occurred at a site, it will be not be removed from the LLUR but categorised as Verified Non-HAIL. This helps us to ensure that the same site is not re-identified in the future.

IMPORTANT!

The LLUR is an online database which we are continually updating. A property may not currently be registered on the LLUR, but this does not necessarily mean that it hasn't had a HAIL use in the past.



Sheep dipping (ABOVE) and gas works (TOP) are among the former land uses that have been identified as potentially hazardous. (Photo above by Wheeler & Son in 1987, courtesy of Canterbury Museum.)

Contact us

Property owners have the right to look at all the information Environment Canterbury holds about their properties.

It is free to check the information on the LLUR, online at www.llur.ecan.govt.nz.

If you don't have access to the internet, you can enquire about a specific site by phoning us on (03) 353 9007 or toll free on 0800 EC INFO (32 4636) during business hours.

Contact Environment Canterbury:

Email: ecinfo@ecan.govt.nz

Phone:

Calling from Christchurch: (03) 353 9007

Calling from any other area: 0800 EC INFO (32 4636)



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Promoting quality of life through
balanced resource management.

www.ecan.govt.nz

E13/101

Listed Land Use Register

Site categories and definitions

When Environment Canterbury identifies a Hazardous Activities and Industries List (HAIL) land use, we review the available information and assign the site a category on the Listed Land Use Register. The category is intended to best describe what we know about the land use.

If a site is categorised as **Unverified** it means it has been reported or identified as one that appears on the HAIL, but the land use has not been confirmed with the property owner.

If the land use has been confirmed but analytical information from the collection of samples is not available, and the presence or absence of contamination has therefore not been determined, the site is registered as:

Not investigated:

- A site whose past or present use has been reported and verified as one that appears on the HAIL.
- The site has not been investigated, which might typically include sampling and analysis of site soil, water and/or ambient air, and assessment of the associated analytical data.
- There is insufficient information to characterise any risks to human health or the environment from those activities undertaken on the site. Contamination may have occurred, but should not be assumed to have occurred.

If analytical information from the collection of samples is available, the site can be registered in one of six ways:

At or below background concentrations:

The site has been investigated or remediated. The investigation or post remediation validation results confirm there are no hazardous substances above local background concentrations other than those that occur naturally in the area. The investigation or validation sampling has been sufficiently detailed to characterise the site.

Below guideline values for:

The site has been investigated. Results show that there are hazardous substances present at the site but indicate that any adverse effects or risks to people and/or the environment are considered to be so low as to be acceptable. The site may have been remediated to reduce contamination to this level, and samples taken after remediation confirm this.

Managed for:

The site has been investigated. Results show that there are hazardous substances present at the site in concentrations that have the potential to cause adverse effects or risks to people and/or the environment. However, those risks are considered managed because:

- the nature of the use of the site prevents human and/or ecological exposure to the risks; and/or
- the land has been altered in some way and/or restrictions have been placed on the way it is used which prevent human and/or ecological exposure to the risks.

Partially investigated:

The site has been partially investigated. Results:

- demonstrate there are hazardous substances present at the site; however, there is insufficient information to quantify any adverse effects or risks to people or the environment; or
- do not adequately verify the presence or absence of contamination associated with all HAIL activities that are and/or have been undertaken on the site.

Significant adverse environmental effects:

The site has been investigated. Results show that sediment, groundwater or surface water contains hazardous substances that:

- have significant adverse effects on the environment; or
- are reasonably likely to have significant adverse effects on the environment.

Contaminated:

The site has been investigated. Results show that the land has a hazardous substance in or on it that:

- has significant adverse effects on human health and/or the environment; and/or
- is reasonably likely to have significant adverse effects on human health and/or the environment.

If a site has been included incorrectly on the Listed Land Use Register as having a HAIL, it will not be removed but will be registered as:

Verified non-HAIL:

Information shows that this site has never been associated with any of the specific activities or industries on the HAIL.

Please contact Environment Canterbury for further information:

(03) 353 9007 or toll free
on 0800 EC INFO (32 4636)
email ecinfo@ecan.govt.nz



Customer Services
P. 03 353 9007 or 0800 324 636

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Christchurch 8140

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Dear Sir/Madam

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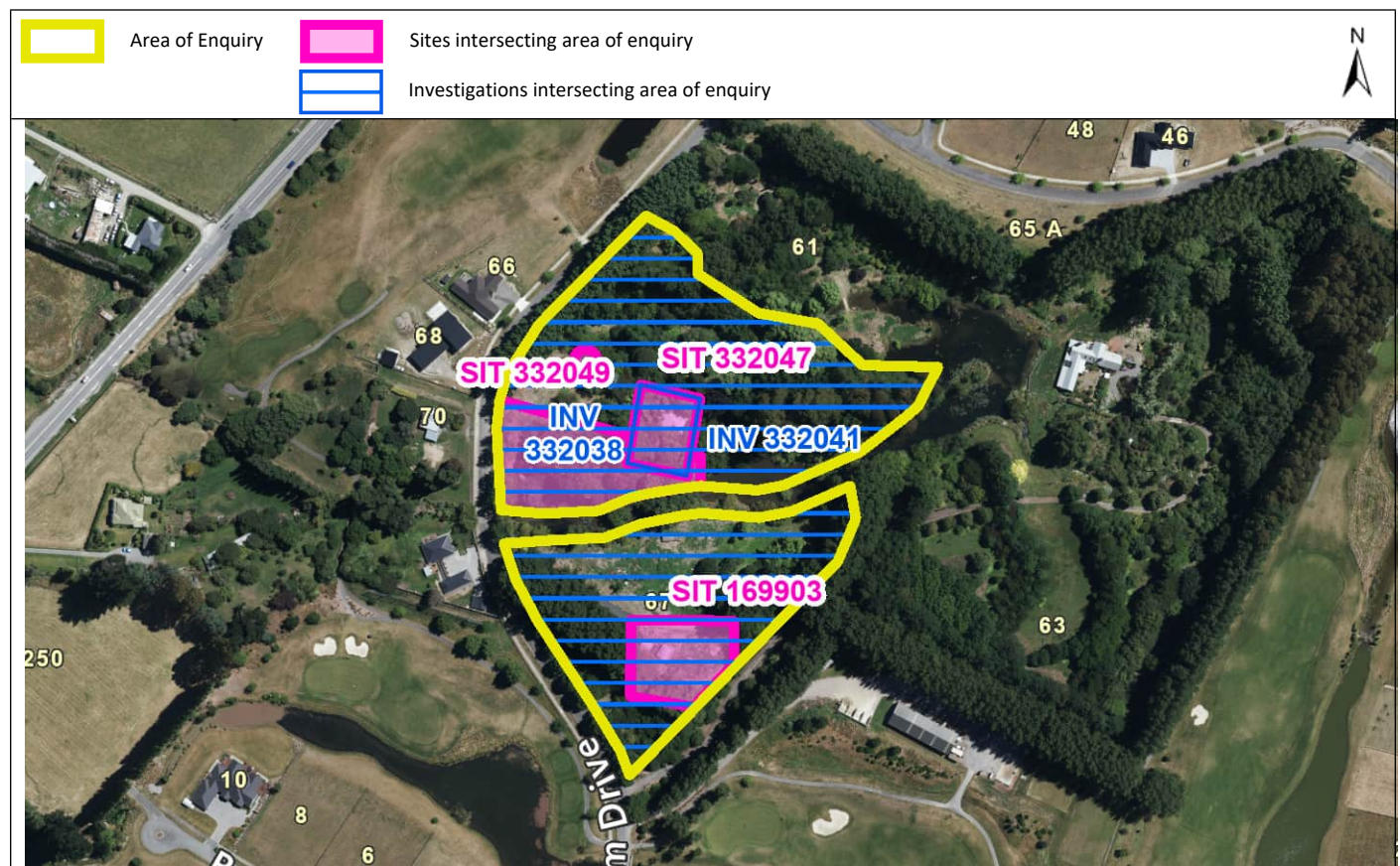
Yours sincerely

Contaminated Sites Team

Property Statement from the Listed Land Use Register

Visit ecan.govt.nz/HAIL for more information or
contact Customer Services at ecan.govt.nz/contact/ and quote ENQ463879

Date generated: 18 June 2026
Land parcels: Lot 2 DP 388447
Lot 1 DP 388447



The information presented in this map is specific to the property you have selected. Information on nearby properties may not be shown on this map, even if the property is visible.

Sites at a glance

 Sites within enquiry area

Site number	Name	Location	HAIL activity(s)	Category
169903	Lot 1 DP 388447, Pegasus	Lot 1 DP 388447, Pegasus	A8 - Livestock dip or spray race operations;	Not Investigated
332047	Demolished dwelling	67 Mapleham Drive, Pegasus	I - Any other land; A17 - Storage tanks or drums for fuel, chemicals or liquid waste;	Yet to be reviewed
332049	67 Mapleham Drive, Pegasus	67 Mapleham Drive, Pegasus	A17 - Storage tanks or drums for fuel, chemicals or liquid waste; G5 - Waste disposal to land;	Not Investigated

More detail about the sites

Site 169903: Lot 1 DP 388447, Pegasus (Intersects enquiry area.)

Category: Not Investigated
Definition: Verified HAIL has not been investigated.

Location: Lot 1 DP 388447, Pegasus
Legal description(s): Lot 1 DP 388447

HAIL activity(s):	Period from	Period to	HAIL activity
	1973	1984	Livestock dip or spray race operations

Notes:

14 Dec 2016 This record was created as part of the Waimakariri District Council 2016 HAIL identification project.

7 Jul 2017 Area defined from 1973 to 1984 aerial photographs. A8 - Livestock dip or spray race operations was noted in aerial photographs reviewed.

**Investigations:**

INV 332038 **Soil Contamination Risk Preliminary Site Investigation Report 67 Mapleham Drive, Pegasus**
Momentum Environmental Limited - Preliminary Site Investigation
5 Aug 2022

Summary of investigation(s):

Environment Canterbury has received a Preliminary Site Investigation report that includes all or part of the property you have selected.

A Preliminary Site Investigation seeks to identify potential sources of contamination resulting from current and historical land uses.

The preliminary site investigation may not have found any potential sources of contamination on the property you have enquired about. Where potential sources of contamination have been identified, a site identification number (e.g. SIT 1234) and land uses from the Hazardous Activities and Industries List (HAIL) will be shown on your statement.

This investigation has not been summarised.

Site 332047: Demolished dwelling (Intersects enquiry area.)

Category: Yet to be reviewed
Definition: Investigation reports have been received for this site, but we have not yet reviewed them.

Location: 67 Mapleham Drive, Pegasus
Legal description(s): Lot 2 DP 388447

HAIL activity(s):	Period from	Period to	HAIL activity
	Unknown	Present	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
	Unknown	Present	Storage tanks or drums for fuel, chemicals or liquid waste

Notes:**Investigations:**

INV 332041 **Detailed Site Investigation - 67 Mapleham Drive, Pegasus**
Pattle Delamore Partners Ltd - Detailed Site Investigation
22 Aug 2022

Summary of investigation(s):

Environment Canterbury has received a Detailed Site Investigation report that includes all or part of the property you have selected.

A DSI seeks to identify the type, extent and level of contamination (if any) in an area. Soil, soil-gas or water samples will have been collected and analysed.

This investigation has not been summarised.

Site 332049: 67 Mapleham Drive, Pegasus (Intersects enquiry area.)

Category: Not Investigated

Definition: Verified HAIL has not been investigated.

Location: 67 Mapleham Drive, Pegasus

Legal description(s): Lot 2 DP 388447

HAIL activity(s):

Period from	Period to	HAIL activity
Unknown	Present	Storage tanks or drums for fuel, chemicals or liquid waste
Unknown	Present	Waste disposal to land (excluding where biosolids have been used as soil conditioners)

Notes:



Investigations:

There are no investigations associated with this site.

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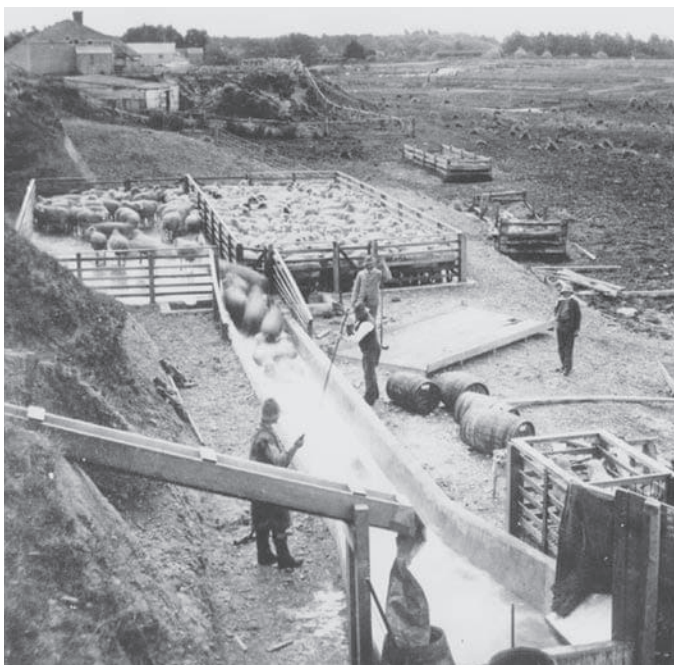
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Sheep dipping (ABOVE) and gas works (TOP) are among the former land uses that have been identified as potentially hazardous. (Photo above by Wheeler & Son in 1987, courtesy of Canterbury Museum.)

Contact us

Property owners have the right to look at all the information Environment Canterbury holds about their properties.

It is free to check the information on the LLUR, online at www.llur.ecan.govt.nz.

If you don't have access to the internet, you can enquire about a specific site by phoning us on (03) 353 9007 or toll free on 0800 EC INFO (32 4636) during business hours.

Contact Environment Canterbury:

Email: ecinfo@ecan.govt.nz

Phone:

Calling from Christchurch: (03) 353 9007

Calling from any other area: 0800 EC INFO (32 4636)

Listed Land Use Register

Site categories and definitions

When Environment Canterbury identifies a Hazardous Activities and Industries List (HAIL) land use, we review the available information and assign the site a category on the Listed Land Use Register. The category is intended to best describe what we know about the land use.

If a site is categorised as **Unverified** it means it has been reported or identified as one that appears on the HAIL, but the land use has not been confirmed with the property owner.

If the land use has been confirmed but analytical information from the collection of samples is not available, and the presence or absence of contamination has therefore not been determined, the site is registered as:

Not investigated:

- A site whose past or present use has been reported and verified as one that appears on the HAIL.
- The site has not been investigated, which might typically include sampling and analysis of site soil, water and/or ambient air, and assessment of the associated analytical data.
- There is insufficient information to characterise any risks to human health or the environment from those activities undertaken on the site. Contamination may have occurred, but should not be assumed to have occurred.

If analytical information from the collection of samples is available, the site can be registered in one of six ways:

At or below background concentrations:

The site has been investigated or remediated. The investigation or post remediation validation results confirm there are no hazardous substances above local background concentrations other than those that occur naturally in the area. The investigation or validation sampling has been sufficiently detailed to characterise the site.

Below guideline values for:

The site has been investigated. Results show that there are hazardous substances present at the site but indicate that any adverse effects or risks to people and/or the environment are considered to be so low as to be acceptable. The site may have been remediated to reduce contamination to this level, and samples taken after remediation confirm this.

Managed for:

The site has been investigated. Results show that there are hazardous substances present at the site in concentrations that have the potential to cause adverse effects or risks to people and/or the environment. However, those risks are considered managed because:

- the nature of the use of the site prevents human and/or ecological exposure to the risks; and/or
- the land has been altered in some way and/or restrictions have been placed on the way it is used which prevent human and/or ecological exposure to the risks.

Partially investigated:

The site has been partially investigated. Results:

- demonstrate there are hazardous substances present at the site; however, there is insufficient information to quantify any adverse effects or risks to people or the environment; or
- do not adequately verify the presence or absence of contamination associated with all HAIL activities that are and/or have been undertaken on the site.

Significant adverse environmental effects:

The site has been investigated. Results show that sediment, groundwater or surface water contains hazardous substances that:

- have significant adverse effects on the environment; or
- are reasonably likely to have significant adverse effects on the environment.

Contaminated:

The site has been investigated. Results show that the land has a hazardous substance in or on it that:

- has significant adverse effects on human health and/or the environment; and/or
- is reasonably likely to have significant adverse effects on human health and/or the environment.

If a site has been included incorrectly on the Listed Land Use Register as having a HAIL, it will not be removed but will be registered as:

Verified non-HAIL:

Information shows that this site has never been associated with any of the specific activities or industries on the HAIL.

Please contact Environment Canterbury for further information:

(03) 353 9007 or toll free
on 0800 EC INFO (32 4636)
email ecinfo@ecan.govt.nz



Appendix 4: Site Photos



Photo 1: Looking across the green of hole 17 showing general golf course layout



Photo 2: Looking up hole 15 showing existing waterways and surrounding residential properties



Photo 3: Showing existing wetland areas present around the site



Photo 4: Showing washdown area and fuel storage in foreground and drainage



Photo 5: Concrete block storage bunkers possibly used for fertiliser



Photo 6: Facility Management Compound and HSNO shed



Date taken	June 2026	Client	Wolfbrook Property Group Ltd		
Taken by	AB	Project	8 Mapleham Drive, Pegasus		
Approved by	JR	Description	Site Photographs		
Photo No.	1 to 6	ENGEO Ref.	31246	Appendix Ref.	4



Photo 7: Agrichemical Storage in compound



Photo 8: Existing well bore in facility maintenance compound



Photo 9: Showing the shed in the southern stock management area near the historical sheep dip



Photo 10: Looking across the historical sheep dip / spray race area



Photo 11: Showing various waterways and lakes

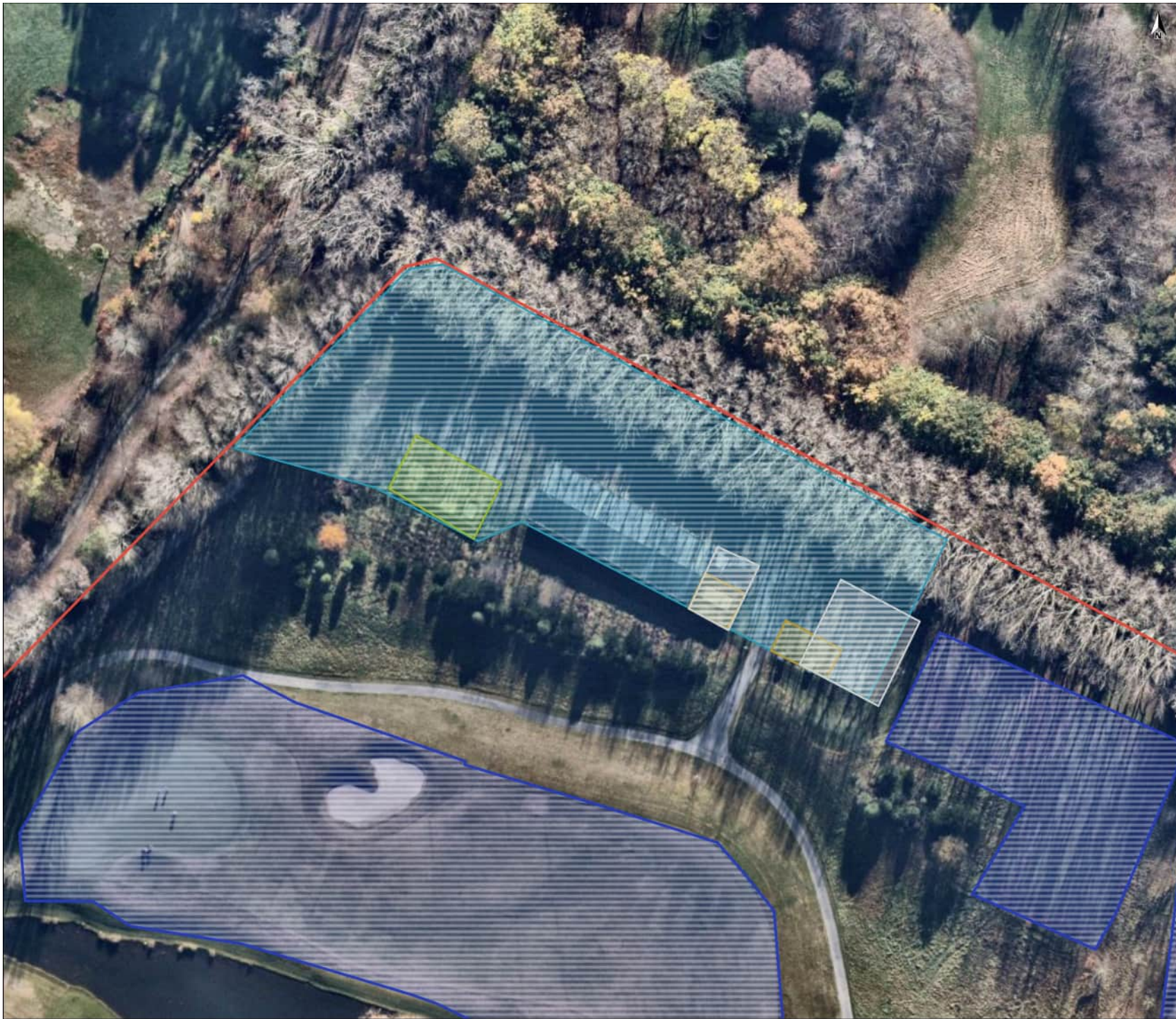


Photo 12: Showing Taranaki Stream which runs through the site



Date taken	June 2026	Client	Wolfbrook Property Group Ltd		
Taken by	AB	Project	8 Mapleham Drive, Pegasus		
Approved by	JR	Description	Site Photographs		
Photo No.	7 to 12	ENGEO Ref.	31246	Appendix Ref.	4

Appendix 5: Figures 2 and 3



- Legend**
- HAIL A1 - Agrichemicals
 - HAIL A10 & I - Pesticide and fertiliser use
 - HAIL A1 - Agrichemicals
 - HAIL A6 - Fertiliser Storage
 - HAIL A17 - Storage of fuels / chemicals
 - HAIL A17 - Storage of fuels / chemicals
 - HAIL F4 - Workshop / Maintenance Compound
 - Site Boundary

0 10 m 20 m
Nearmap

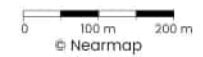
ENGEO

Produced by **Datanest.earth**

Title: HAIL Activities Plan		
Client: Woolfbrook Property Group Limited		Size: A4
Project: pegasus	Drawn: AB	Figure No.: 2
Date: 22-06-2026	Checked: JR	
Proj No: pegasus	Scale: 1:1000	Version: Final



- Legend**
-  HAIL A8 - Sheep Dip
 -  HAIL A1 - Agrichemicals
 -  HAIL A10 & I - Pesticide and fertiliser use
 -  HAIL A1 - Agrichemicals
 -  HAIL A6 - Fertiliser Storage
 -  HAIL A17 - Storage of fuels / chemicals
 -  HAIL A17 - Storage of fuels / chemicals
 -  HAIL F4 - Workshop / Maintenance Compound



ENGEO

Produced by **Datanest.earth**

Title: HAIL Activities Plan		
Client: Woolfbrook Property Group Limited		Size: A4
Project: pegasus	Drawn: AB	Figure No.: 3
Date: 22-06-2026	Checked: JR	
Proj No: pegasus	Scale: 1:10000	Version: Final