

Private Plan Change Request – Hughes Developments Limited
Appendix C – Preliminary and Detailed Site Investigations



Preliminary Environmental Site Investigation

163 Halkett Road

West Melton

Canterbury

Submitted to:

Hughes Development Limited

Canterbury

ENGEO Limited

124 Montreal Street, Sydenham, Christchurch 8023

PO Box 373, Christchurch 8140, New Zealand

Tel +64 3 328 9012 Fax +64 3 328 9013

www.engeo.co.nz

30.06.2017

14088.000.000_01



Contents

1	Introduction.....	3
1.1	Objectives of the Assessment.....	3
1.2	Approach	3
1.2.1	Review of Site Information	3
1.2.2	Site Inspection.....	3
2	Site Description	4
3	Site History	5
3.1	Interview with Site Occupants	5
3.2	SDC Property File Review	5
3.3	Listed Land Use Register	6
3.4	Historical Aerial Photograph Review.....	6
4	Current Site Conditions	6
5	Potential HAIL Activities	7
6	Conceptual Site Model	8
7	Conclusions and Recommendations	8
8	References	9
9	Limitations	10

Tables

Table 1:	Site Information
Table 2:	Site Setting
Table 3:	Property File Review
Table 4:	Aerial Photographs
Table 5:	Current Site Conditions
Table 6:	Potential Contamination at the Site
Table 7:	Conceptual Site Model

Figures

Figure 1:	Site Location Plan
-----------	--------------------

Appendices (at the rear of this report)

Appendix 1:	Listed Land Use Register
Appendix 2:	Site Photographs

ENGEO Document Control:

Report Title	Preliminary Environmental Site Investigation - 163 Halkett Road, West Melton			
Project No.	14088.000.000	Doc ID	01	
Client	Hughes Development Limited	Client Contact	Kelvin	
Distribution (PDF)	Hughes Development Limited			
Date	Revision Details/Status	WP	Author	Reviewer
30/06/17	Final	JB	HA/NF	DR

1 Introduction

ENEGO Ltd was requested by Hughes Development Limited to undertake a Preliminary Environmental Site Investigation (PSI) of the property (herein referred to as ‘the site’) at 163 Halkett Road in West Melton, Canterbury. The purpose of this investigation was to assess the property’s suitability for consent for a change of land use and subdivision consent under the Resource Management (*National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health*) Regulations 2011 (NES) to satisfy the requirements of Selwyn District Council (SDC). The site currently has an agricultural land use and it is proposed to be redevelopment for residential land use.

Figure 1 indicates the location of the property. This PSI was undertaken in general accordance with the Ministry for the Environment (MfE) 2001, *Guidelines for Reporting on Contaminated Sites*.

1.1 Objectives of the Assessment

The objective of this PSI was to evaluate and identify conditions indicative of releases and threatened releases of hazardous substances on, at, in or to the subject property and report on the potential risk posed to future site users.

1.2 Approach

To satisfy the objectives, ENGEO sought to gather information regarding the following:

- Current and past property uses and occupancies;
- Current and past uses of hazardous substance;
- Waste management and disposal activities that could have caused a release or threatened release of hazardous substances;
- Current and past corrective actions and response activities to address past and on-going releases of hazardous substances at the subject property; and
- Properties adjoining or located near the subject property that have environmental conditions that could have resulted in conditions indicative of releases or threatened releases of hazardous substances to the subject property.

1.2.1 Review of Site Information

During this assessment, a number of sources of information were contacted for information relating to the site regarding its past and present uses. This included contacting Canterbury Regional Council (CRC) to determine if there were any records on the Listed Land Use Register (LLUR) and reviewing records held by Selwyn District Council (SDC) including the property file and dangerous goods file (if available). A review of a number of historical and current aerial photographs was also undertaken using images from Canterbury Maps and Google Earth.

1.2.2 Site Inspection

A site walkover was undertaken on 28 June 2017 by Jenna Lohmann of ENGEO. Objective evidence was collected through discussions with the current site owner.

2 Site Description

Site information is summarised in Table 1.

Table 1: Site Information

Item	Description
Location	163 Halkett Road, West Melton, Canterbury
Legal Description	Lot 1 DP 34902
Property Owner	Heather Ringland
Current Land Use	Agricultural
Proposed Land Use	Residential subdivision
Site Area	8.3170 ha
Building Construction	Two farm sheds and one storage shed: timber frame with metal cladding and roofing
Territorial Authority	Selwyn District Council

The site setting is summarised in Table 2.

Table 2: Site Setting

Item	Description
Topography	Generally flat with gentle swales.
Local Setting	Land to the west of the site is residential with land to the north, east and south is predominantly agricultural with some associated residential land use.
Nearest Surface Water & Use	An un-named water race is present approximately 15 m to the south of the site.
Geology	Late quaternary dunes, sand in mobile and fixed dunes of the coast and river.
Hydrogeology	The site is overlying an unconfined / semiconfined gravel aquifer, with groundwater depth estimated to be between 70 and 65 m bgl and estimated to be flowing in an easterly direction.
Groundwater Abstractions	There is one groundwater abstraction located on the site: M35/1013: A & J Dunn; domestic and stockwater supply. There are eight active groundwater abstractions within 250 m of the site: M35/7353: P & J Lenton; irrigation supply.

Item	Description
	M35/9443: P & J Rowlands; domestic and stockwater supply. M35/5159: J Grant; irrigation, domestic and stockwater supply. M35/10751: Selwyn District Council; public water supply. M35/18776: R & L Smith; domestic and stockwater supply. M35/10753: Apex Industries; domestic supply. BX23/0505: J & K Brosnahan; domestic and stockwater supply.
Discharge Consents	There are no discharge consents located on the site. There are two active discharge consents located within 250 m of the site: CRC172915: Fergusson & Wang; discharge contaminants, being treated domestic sewage effluent, to land. CRC061616: Fenton; discharge domestic sewage tank effluent to ground.

3 Site History

A number of sources were used to investigate the past uses of the site. The findings of these information searches have been summarised in this section.

3.1 Interview with Site Occupants

During the site walkover on 28 June 2017, the site owner, Heather Ringland, was interviewed by Jenna Lohmann of ENGEO. Heather indicated that she has owned the site since 1972 and has used it solely to raise and train horses. No dwelling has been present on the site, and no structures have been demolished, while she has owned the property. Additionally, no other agricultural activities have taken place on the site. Ms. Ringland indicated that the only known area of buried materials is a pit of buried shingles and boards near the power pole, east of the southernmost farm shed.

3.2 SDC Property File Review

The property file for the site held by Selwyn District Council was reviewed on 28 June 2017 as part of the PSI. The following documents were provided for review.

Table 3: Property File Review

Document	Date	Description
Building Consent Application #21510	29/1/1977	Application with the Selwyn District Council for a new hay shed.
Building Consent Application #33207	13/11/1986	Application with the Paparua County Council for a new hay shed.

3.3 Listed Land Use Register

Potentially hazardous activities are defined on the Hazardous Activities and Industries List (HAIL). Canterbury Regional Council (CRC) maintains a Listed Land Use Register (LLUR) of past and current land uses within the Canterbury region which have potentially had an activity included on the HAIL undertaken on them. The listing of the property on the LLUR triggers the requirement for a contaminated land assessment prior to development.

The CRC LLUR property statement was requested by ENGEO on 23 June 2017 for the site and is presented in Appendix 1, no areas of concern were identified on the CRC LLUR for the site.

3.4 Historical Aerial Photograph Review

Aerial photographs dating from 1940 to 2016 have been reviewed on Canterbury Maps. The relevant visible features are summarised in Table 4.

Table 4: Aerial Photographs

Date	Description
1941	The site is being used for agricultural grazing purposes with the site appearing to be split into three fields. No buildings are present on the site. The surrounding area is agricultural with farm buildings located to the southeast of the site.
1960-1964	The site remains the same. The surrounding area remains predominantly agricultural with a trotting track now present to the west of the site.
1975-1979, 1980-1984, 1985-1989	The site remains the same, with some small buildings present in the centre of the site. It is presumed their use is for agricultural purposes. The surrounding area remains the same with a trotting track present to the east of the site as well as the west.
1994	The site remains the same with an additional building present along the eastern boundary of the site. It is unclear as to what the building is used for. The surrounding area remains the same.
2004	The site remains the same. There appears to be some disposal to land/storage or materials present in the centre of the site. There are also a number of cars located on the property in the same area. The surrounding area remains the same.
2016	The site remains the same as the previous photo with material still present in the centre of the site. Piles of timber also appear to be present. Land to the west of the site has been developed for residential purposes with the remaining surrounding area the same.

4 Current Site Conditions

A site walkover investigation was undertaken on 28 June 2017 by Jenna Lohmann of ENGEO. The information gathered is summarised in Table 5. Photographs taken during the site investigation are included in Appendix 2.

Table 5: Current Site Conditions

Site Condition	Comments
Visible signs of contamination	Four small burn pits with materials consisting of green waste, cans, building materials, and household items were observed in the vicinity of the farm sheds.
Surface water appearance	No surface water was present.
Local sensitive environments	None identified.
Visible signs of plant stress	Aside from the burn pits, no plant stress was apparent.
Potential for on or off site migration of contaminants	None identified.
Additional observations (if any)	A fuse board that may contain asbestos was identified in the southernmost farm shed. Although materials in the materials storage shed were covered, there may be impacts to the underlying soil as the shed was built straight onto earthen ground. There is a water race to south of West Coast Road.

5 Potential HAIL Activities

Activities included on the HAIL trigger the requirement for a contaminated land investigation prior to development. While no activities have been identified on the LLUR for the site, the following observations noted during the site walkover have been included:

- G5: Waste disposal to land

Further information regarding the areas of potential concern have been summarised in Table 6.

Table 6: Potential Contamination at the Site

Potential source of contamination	Contaminants of concern	Possible extent of contamination	HAIL activity as defined by the NES (soil)
Burn off Areas	Heavy metals PAH's	Eastern paddock and south-western paddock only	G5: Waste disposal to land

6 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 the contaminants; and
- An exposure route, where the sensitive receptor and contaminants come into contact (e.g. ingestion, inhalation, dermal contact).

The potential source, pathway, receptor, exposure linkages at this subject site are provided in Table 7.

Table 7: Conceptual Site Model

Potential Sources	Contaminants of Concern	Exposure Route and Pathways	Receptors	Acceptable risk?
Burn pits	Heavy metals PAH's	Dermal contact with impacted soil, incidental ingestion and inhalation of dust during earthworks	On-site redevelopment workers. Future subsurface maintenance workers.	Unknown, further investigation or removal of site soils required.
		Dermal contact with impacted soil, incidental ingestion and inhalation of wind-blown dust.	Future residential land users.	Unknown, further investigation or removal of site soils required.

7 Conclusions and Recommendations

ENGEO Ltd was requested by Hughes Developments Limited to undertake an environmental assessment of an 8.3 ha site, situated at 163 Halkett Road, West Melton, for a change of land use (agricultural to residential), subdivision and soil disturbance consent. Information was gathered and reviewed regarding the current and past uses of the site that could have resulted in releases or potential releases of hazardous substances to the subject property.

The review of information identified that the site has been used for agricultural grazing since before 1940. No evidence of wider land use before this date was available.

The review of property files at the Selwyn District Council indicated that the farm buildings were constructed in 1977 and 1986. The Health and Safety at Work (Asbestos) Regulations 2016, states if a building is constructed or installed prior to 2000 requires demolition or refurbishment, a full asbestos survey must be undertaken by a competent person. ENGEO recommends that asbestos surveys are completed prior to the demolition of any buildings present on site if no previous information related to a building survey is present.

No activities were identified on the Canterbury Regional Council's Listed Land Use Register (CRC LLUR). The property file for the site was viewed at Selwyn District Council, and contained no information related to potential hazardous substances having occurred at the site.

During the site walkover, four small burn pits located in the middle of the property were noted. It is considered that the burn pits would be listed on the HAIL for G5: Waste disposal to land.

Based on the information gathered, we consider that there is a potential that soils in four localised areas may have been impacted by the past and current uses of the site. There is a potential risk to human health at the site to future redevelopment works or site users from these sources.

As the redevelopment of the site involves a change of land use, subdivision and soil disturbance, it is possible that soils being disturbed have been impacted by the identified potential sources of contamination. The burn pits observed during the site walkover and the impacted soil should be removed and properly disposed of prior to site redevelopment. The removal of these areas would be considered a permitted activity under Regulation 8(3) of the Resource Management (National Environmental Standard for Assess and Managing Contaminants in Soils to Protect Human Health) Regulation 2011 due to the small volume to be removed. However a site management plan would be required detailing controls to be put in place to protect the site workers and surrounding during the works. It is likely that soil validation samples in the burn pit areas would also be required.

It is considered that the remainder of the site is highly unlikely to have been impacted by its past uses and therefore the change of land use and sub-division should be considered a permitted activity under Regulation 8(4) of the Resource Management (National Environmental Standard for Assess and Managing Contaminants in Soils to Protect Human Health) Regulation 2011.

8 References

Forsyth, P.J.; Barrell, D.J.A; Jongens, R. 2008: Sheet 16 - Geology of the Christchurch Area 1:250,000. Institute of Geological and Nuclear Sciences, Lower Hutt.

Ministry of Business, Innovation, and Employment. 2016: Health and Safety at Work (Asbestos) Regulations 2016.

MfE Oct 2011: Ministry for the Environment Hazardous Activities and Industries List.

MfE 2012: Users' guide: National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health.

9 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, Hughes Development Limited, their professional advisers and the relevant Territorial 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 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 IPENZ/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. Please do not hesitate to contact the undersigned on (03) 328 9012 if you require any further information.

Report prepared by



Hazel Atkins

Senior Engineering/Environmental Geologist

Report reviewed by



Dave Robotham, CEnvP CL Specialist

Principal Environmental Consultant

FIGURES



Date	June 2017	Client	Hughes Developments Limited		
Drawn by	NF	Project	163 Halkett Road, West Melton		
Approved by	DR	Description	Site Plan		
Scale	NTS	Figure Number	1	Project Number	14088.000.000

APPENDIX 1:
Listed Land Use Register

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 in regards to our Listed Land Use Register (LLUR) which holds information about sites that have been used, or are currently used for activities which have the potential to have caused contamination.

The LLUR statement provided indicates the location of the land parcel(s) you enquired about and provides information regarding any LLUR sites within a radius specified in the statement of this land.

Please note that if a property is not currently entered 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 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; other information relevant to potential contamination may be held in other files (for example consent and enforcement files).

If your enquiry relates to a farm property, please note that many current and past activities undertaken on farms may not be listed on the LLUR. Activities such as the storage, formulation and disposal of pesticides, offal pits, foot rot troughs, animal dips and underground or above ground fuel tanks have the potential to cause contamination.

Please contact and Environment Canterbury Contaminated Sites Officer if you wish to discuss the contents of the LLUR statement, or if you require additional information. For any other information regarding this land please contact Environment Canterbury Customer Services.

Yours sincerely

Contaminated Sites Team

Property Statement from the Listed Land Use Register

Visit www.ecan.govt.nz/HAIL for more information about land uses.



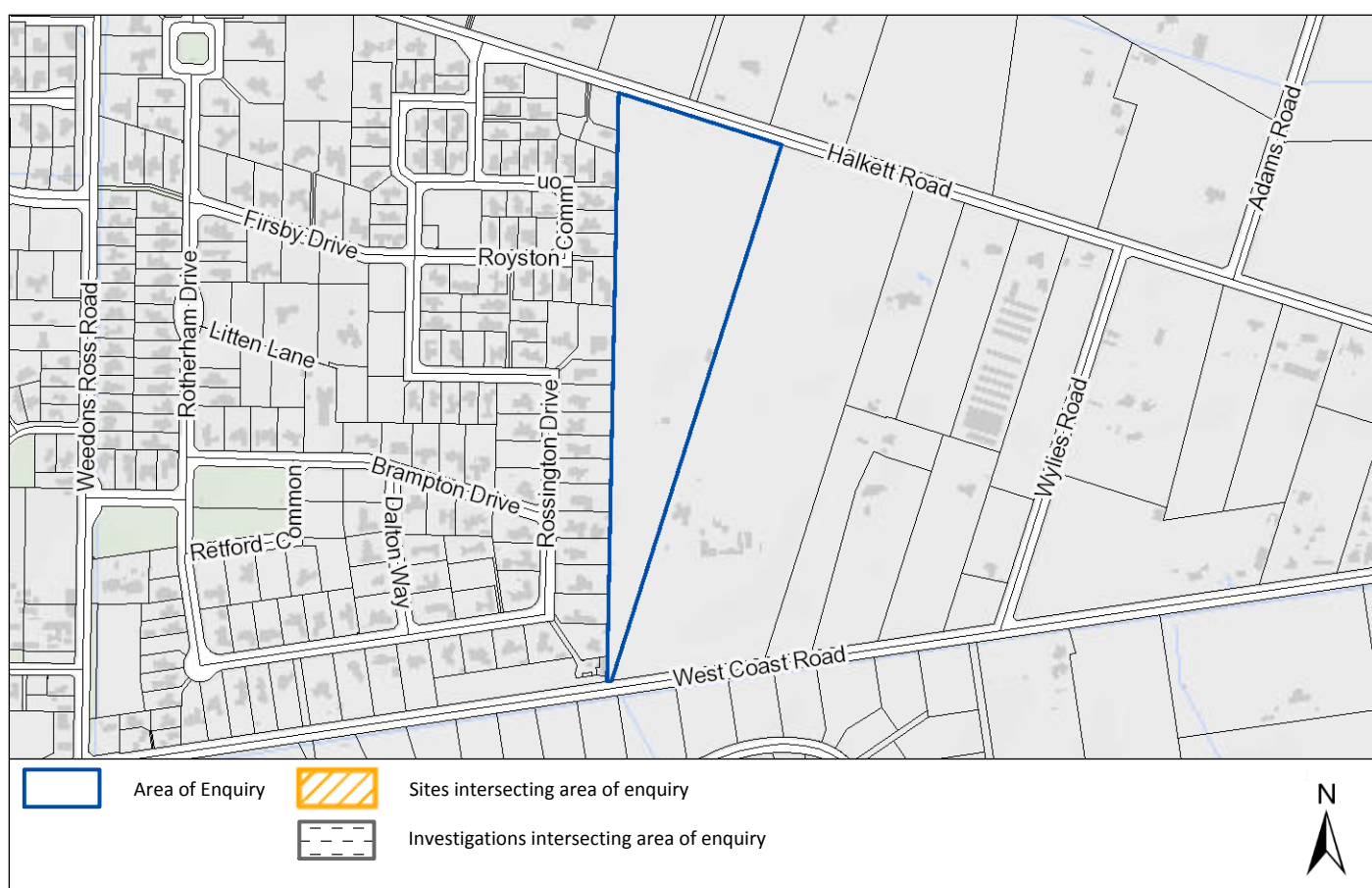
Customer Services
P. 03 353 9007 or 0800 324 636

PO Box 345
Christchurch 8140

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

www.ecan.govt.nz

Date:	23 June 2017	
Land Parcels:	Lot 1 DP 34902	Valuation No(s): 2354113100



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.

Summary of sites:

There are no sites associated with the area of enquiry.

Information held about the sites on the Listed Land Use Register

There are no sites associated with the area of enquiry.

Information held about other investigations on the Listed Land Use Register

For further information from Environment Canterbury, contact Customer Services and refer to enquiry number ENQ168019.

Disclaimer: *The enclosed information is derived from Environment Canterbury's Listed Land Use Register and is made available to you under the Local Government Official Information and Meetings Act 1987 and Environment Canterbury's Contaminated Land Information Management Strategy (ECan 2009).*

The information contained in this report reflects the current records held by Environment Canterbury regarding the activities undertaken on the site, its possible contamination and based on that information, the categorisation of the site. Environment Canterbury has not verified the accuracy or completeness of this information. It is released only as a copy of Environment Canterbury's records and is not intended to provide a full, complete or totally accurate assessment of the site. It is provided on the basis that Environment Canterbury makes no warranty or representation regarding the reliability, accuracy or completeness of the information provided or the level of contamination (if any) at the relevant site or that the site is suitable or otherwise for any particular purpose. Environment Canterbury accepts no responsibility for any loss, cost, damage or expense any person may incur as a result of the use, reference to or reliance on the information contained in this report.

Any person receiving and using this information is bound by the provisions of the Privacy Act 1993.

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.

¹ The Hazardous Activities and Industries List (HAIL) can be downloaded from MfE's website www.mfe.govt.nz, keyword search HAIL

How does Environment Canterbury classify sites on the LLUR?

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.



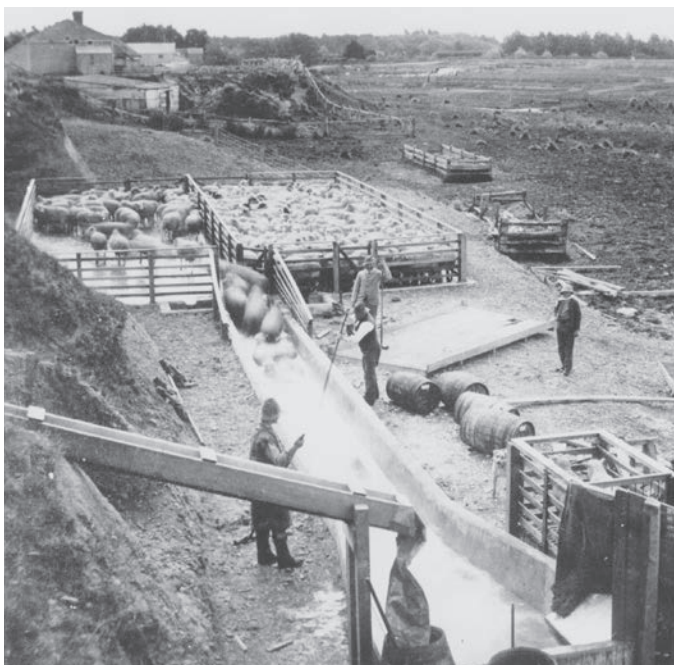
I think my site category is incorrect – how can I change it?

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)



Everything is connected

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

APPENDIX 2:
Site Photographs



Photo 1: Looking north across southern paddock



Photo 2: Looking south across southern paddock



Photo 3: Looking south across western site boundary



Photo 4: Looking south along eastern site boundary



Photo 5: Looking towards north east site corner



Photo 6: Looking west across central portion of site



Date taken	June 2017	Client	Hughes Developments Limited		
Taken by	JL	Project	163 Halkett Road, West Melton		
Approved by	DR	Description	Site Photographs		
Photo No.	1 to 6	ENGEO Ref.	14088.000.000	Appendix	2



Photo 7: Burn Pit in northern paddock



Photo 8: Burn pit next to trotting track



Photo 9: Household rubbish, burn pit, and materials storage shed



Photo 10: Materials storage shed



Photo 11: Northernmost farm shed



Photo 12: Southernmost farm shed



Date taken	June 2017	Client	Hughes Development Limited		
Taken by	JL	Project	163 Halkett Road		
Approved by	DR	Description	Site Photographs		
Photo No.	7 to 12	ENGEO Ref.	14088.000.000	Appendix	2