

Appendix 6: Preliminary Site Investigation

***Soil Contamination Risk
Stage 1 - Preliminary Site Investigation Report***

***West Coast Road,
Darfield***

December 2017



Malloch Environmental Ltd

801 East Maddisons Road, Rolleston 7614

021 132 0321

www.mallochenviro.co.nz

Asbestos Surveys • Soil Contamination Investigations • Environmental Planning

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1 Executive Summary

The subject site involves a single rural lot on West Coast Road. The site is the subject of a proposed plan change, with an outline development plan indicating a mix of residential, recreational and commercial areas. This will involve a change in use and subdivision and disturbance of soils in the future. The Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Health) Regulations 2011 (NESCS) require an assessment of the likelihood of soil contamination being present. It is noted also that Malloch Environmental Ltd is obligated to consider the requirements of Section 10 of the Health and Safety at Work (Asbestos) Regulations 2016. This report details the work undertaken to assess the risks.

The investigations undertaken have identified a risk of soil contamination associated with a former poisoned possum disposal pit, and other potential waste material disposed to a former quarry pit. Both of these areas are on the western side of the site and affect only a small portion of the overall site. These are confirmed HAIL activities and there may be a risk to human health from potentially contaminated soils.

A Remediation Action Plan for the possum pit should be developed and remediation should occur as part of the overall development of the site. It is also recommended that a Detailed Site Investigation, in terms of the Ministry for the Environment's Contaminated Land Management Guidelines, be undertaken on the area to the south where potential fill may have been placed. It is noted that neither of these risk areas would preclude the proposed plan change from occurring. Any remediation required to ensure safe future uses could be physically and economically achieved within the total development.

The rest of the subject site has been used for general pastoral or rural residential use for all its known history. This use is not considered to pose a risk to human health or the environment. No further investigation is considered to be required for the majority of the subject site.

In terms of planning status at the time of writing of this report, the NESCS does apply to the identified risk areas of the site and resource consent is required for activities listed in the NESCS.

2 Objectives of the Investigation

This report has been prepared in accordance with the Ministry for the Environment's "Contaminated Land Management Guidelines No 1: Reporting on Contaminated Sites in New Zealand". This report includes all requirements for a Stage 1 preliminary site investigation report. This is one of the methods described in Section 6(3) of the NES to establish whether the regulations apply. The objective is to determine whether there is any risk of potential contamination that would warrant further investigation.

3 Scope of Work Undertaken

The scope of the work undertaken has included:

- Review of Selwyn District Council property files
- Obtaining ECan data from the Listed Land Use Register (LLUR)
- Search of LINZ NZ orchard database
- Review of historic aerial photos
- Review of historic titles
- Preparation of report in accordance with MfE guidelines

4 Site Identification

The site is located adjacent to West Coast Road bounded on the east by Creykes Road as shown on the plan in **Figure 1** below. The site is legally described as Section 1 SO 1277 and has a total area of approximately 30.7561Ha.

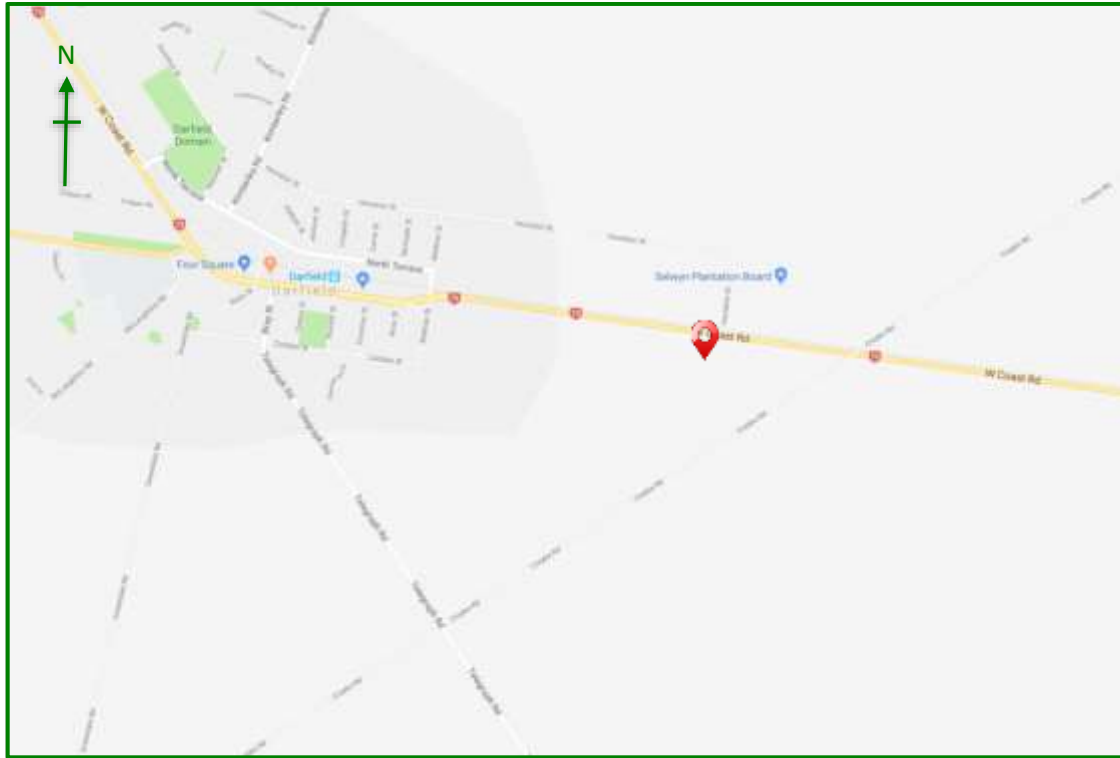


Figure 1 – Location Plan

5 Site Description and Surrounding Environment

The subject site is generally flat rural land on West Coast Road. There are no buildings or structures on the subject site. The subject site is clearly defined by existing hedges and fences. It is bounded by rural properties to the west, south and east. To the north, across West Coast Road, is a poultry farm. The centre of Darfield township lies approximately 930m to the west.

6 Geology and Hydrology

The ECan GIS describes the soils as Lismore stony silty loam. Wells in the area indicate that topsoils are underlain by layers of gravels, claybound gravels and sandy silty gravels. Soil trace elements are 'Regional, Yellow Brown Stony'.

The site lies over the unconfined/semiconfined gravel aquifer system. Ground water levels recorded on nearby bore logs are between 91.3 and 129.8m deep. The direction of ground water flow is generally in a south easterly direction.

The ECan GIS indicates that an open drain runs along the southern boundary of the subject site. Another open drain runs along the opposite side of the West Coast Road for part of the northern boundary.

7 Site History

7.1 Previous Site Ownership and Use

Historic Certificates of Title were searched and the following relevant ownership information was obtained:

Aug 1875 - Made into a Reserve for Provincial Government purposes
Jun 1994 - Selwyn Plantation Board for plantation purposes
Nov 2010 - Rupert Jack Wright and Catherine Elizabeth Wright

Copies of the Historic Titles are included in **Appendix A**.

7.2 District Authority Records

The Selwyn District Council property file was requested and was reported to be empty.

7.3 Regional Council Records

The ECan Listed Land Use Register Statement lists the subject site for 'G3 – Landfill sites'. A landfill site was noted in 1975 to 1998 aerial photographs. The site is defined as 'Verified HAIL has not been investigated'. Three nearby sites are also listed:

- 1-7 Horndon Street, Darfield for 'A17 – Storage tanks or drums for fuel, chemicals or liquid waste'. Two 2,273L tanks were installed circa 1975. One contains diesel the other petrol. The site is defined as 'Verified HAIL has not been investigated'.
- 15 Horndon Street, Darfield for 'A10 – Persistent pesticide bulk storage or use'. The site has been used as a poultry farm from around 1975 until the present day. The site is defined as 'Verified HAIL has not been investigated'.
- 354 Creyke Road, Darfield for 'A8 – Livestock dip or spray race operation'. A livestock dip or spray race was noted in aerial photographs from 1975 to the present day. The site is defined as 'Verified HAIL has not been investigated'.

An investigation on an adjacent lot to the south-west found most of that site does not contain contamination. The north-west corner of that site has been subject to migration of arsenic from a neighbouring site but this does not exceed residential soil guideline values and is distant from the current subject site.

See LLUR Statement in **Appendix C**.

Resource consent information was sourced from the GIS mapping system. There are no active resource consents on the subject site. There is an active resource consent to the north to discharge contaminants to the air from two brick firing kilns fired with either a mixture of diesel and re-refined oil or with coal. There are also multiple resource consents nearby to discharge domestic sewage tank effluent into ground and to discharge stormwater generated from roofs.

7.4 LINZ Records

The LINZ Orchard layer does not show the subject site or adjacent sites as having listed orchards.

7.5 Review of Historic Aerial Photographs

A total of eight aerial photos (see copies in **Appendix B**) have been used to assess the historic use of the site as detailed below:

- The earliest photo is from **1941** and has been sourced from ECan's GIS. There are no buildings or structures on the subject site. Most of the site is covered in small trees. In the north-west corner is a cleared area, possibly a gravel pit. The surrounding area is mainly pasture farmland. There are two dwellings adjacent to the subject site on Creykes Road. One is to the south of the subject site, the other is to the east and has associated farm buildings. Another dwelling lies to the north of the subject site across West Coast Road at the western end of the subject site. North of the subject site at its eastern end an area appears to be used for forestry.
- A photo from **1958** is sourced from ECan's GIS and shows the site is covered with trees except for a strip along the western boundary that is grassed. There is an oval depression in the north-west corner, and a nearby linear depression parallel with the western boundary, indicating gravel extraction has occurred. A dwelling has been built to the north of the subject site adjacent to the forestry area. Two long sheds have been built next to the dwelling south of the subject site along Creykes Road. In the homestead area to the east of the subject site one of the farm buildings has been removed and a new long shed added further east. Another barn or shed appears to be under construction closer to the dwelling.
- A photo from **1965** is sourced from ECan's GIS and shows no significant changes to the subject site. North of the subject site and to the east of the forestry area are a number of small structures. The barn on the farm to the east of the subject site is now complete. A line of baleage can be seen to the east of the farm buildings. A dwelling and garage have been built north-east of the farm.
- A photo from **1975**, sourced from ECan's GIS, shows the trees on the subject site have been cut. The excavated areas in the west of the site may have been filled. A dwelling has been built approximately 160m beyond the subject site to the west. North of the subject site four long sheds plus a dwelling and garage have been built for the poultry farm. Between the poultry farm and West Coast Road are sheds and stockpile areas for the brick manufacturing business. East of these the trees also appear to have been cut. On the farm to the east of the subject site there appears to be a livestock dip adjacent to the barn. One of the farm buildings has been removed.

- A photo from **1985**, sourced from ECan's GIS, is overexposed in places and detail hard to discern. A bright spot in the north-west corner of the subject site could indicate renewed extraction or filling. New trees have been planted across the rest of the site. Approximately 240m north of the subject site new buildings have been added along Horndon Road.
- A photo from **1995** is sourced from ECan's GIS and shows the extracted/filled area of the subject site is now grassed over. North of the subject site at its western end the dwelling has gone. On the poultry farm to the north the three shorter sheds have been extended. Sheds have been built within the forestry area north of the subject site. In the homestead area to the east of the subject site the barn has been extended over where the livestock dip was seen. A new shed has been built to the south of the farmhouse. South of the subject site long sheds have been removed and replaced with a larger shed.
- A photo from **2004** is sourced from ECan's GIS and shows the trees have been removed from the subject site. The subject site is now all pasture farmland. There are no significant changes to the surrounding area.
- The most recent aerial photo reviewed, dated **2012**, sourced from ECan's GIS show the subject site has been divided up into smaller fields. There are some small structures in the south-west corner, of a size that they are possibly bee hives.

7.6 Local Knowledge

The current owner, Catherine Wright, advised the following relevant information:

"Re the contaminated site - there is an old possum pit at the Darfield (west) end of the site, it can still be made out as a slight dip in the ground. It was used in the 1980's and capped with concrete. It was used by the council to dispose of poisoned (1080?) possums, I don't know quantities. The rest of the site was a forestry block so was in trees for years, harvested (approx 10-15 years ago) then put back into agricultural use and it has just been used to grow grass and lucerne ever since."

8 HAIL Uses and Possible Types of Contaminants Associated with Past Use

The Hazardous Activities and Industries List (HAIL) compiled by The Ministry for the Environment include the following categories (*in italics*) that could be associated with the historical uses of the site with a summary of the risk of these activities having been carried out on the site.

A - Chemical manufacture, application and bulk storage

10. Persistent pesticide bulk storage or use including sport turfs, market gardens, orchards, glass houses or spray sheds

The majority of the site has been used for forestry until sometime between 1995 and 2004. Since then it has been used for pastoral activities. The normal uses of fertilisers and pastoral weed controls associated with these uses are unlikely to have caused soil contamination that would pose a risk to human health. It is unlikely that persistent agrichemicals or fuels were used or stored on the site in any significant volume.

G – Cemeteries and waste recycling, treatment and disposal

3. Landfill sites

Aerial photographs have shown an area in the north-west corner of the subject site has probably been used to extract gravel and then filled. The current owner has indicated that in the 1980s this was used to dispose of poisoned possums. If the poison used was 1080 (sodium monofluoroacetate), research data indicates that degradation in the soil takes 1-4 weeks under favourable conditions. In extreme conditions of cold and drought, degradation takes several months. It is also highly water soluble so leaching out of the soil is possible, but limited at this site due to the concrete capping. There was no evidence able to found on effects or degradation time for burials of large quantities of poisoned animals. However, as the burial occurred more than 20 years ago the risk of significant concentrations of 1080 being found is likely to be low.

The other areas identified as possible gravel pits may also have had fill placed in them. Contaminants of concern include heavy metals, TPH, PAH, OCP, landfill gas.

H - Any land that has been subject to the migration of hazardous substances from adjacent land in sufficient quantity that it could be a risk to human health or the environment

It is considered unlikely that any contaminants would have migrated onto the subject site from either the brick kilns or poultry farm to the north of the subject site. It is also considered unlikely that the subject site will have been subject to migration of contaminants from the livestock dip noted in the 1975 aerial to the east of the subject site. The subject site is separated from the dip by a road and there is no indication that any livestock would have passed through the dip and onto the subject site.

9 Basis for Soil Guideline Values (SGV)

9.1 Activity Description

This report has been written for the following potential activities:

- A proposed planning change that involves a change of use of the land from rural to a mixture of residential, recreational and commercial use
- Future subdivision of the site
- Earth disturbing activities associated with the above use and development of the site

9.2 Zoning

The subject site is currently zoned Rural Outer Plains.

9.3 Soil Guideline Values

Human health soil contaminant standards for a group of 12 priority contaminants were derived under a set of five land-use scenarios, and are legally binding under The Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Health) Regulations 2011 (NES). These standards have been applied where applicable. For contaminants other than the 12 priority contaminants, the hierarchy as set out in the Ministry for the Environment Contaminated Land Management Guidelines No 2 has been followed. For soil, guideline values are predominantly risk based, in that they are typically derived using designated exposure scenarios that relate to different land uses. For each exposure scenario, selected pathways of exposure are used to derive guideline values. These pathways typically

include soil ingestion, inhalation and dermal adsorption. The guideline values for the appropriate land use scenario relate to the most critical pathway.

The land-use scenarios applicable for the proposed use of this site and any associated earth disturbing activities include 'residential 10% produce', 'recreational' and 'commercial /industrial/outdoor workers' both for the commercial areas and as a proxy value to protect the health of construction workers. The appropriate guideline value for any given area of the site should be selected once development plans are finalised.

10 Site Characterisation and Recommendation

The majority of the subject site has been used for forestry and then general pastoral use for all its known history and this use is not considered to pose a risk to human health or the environment. There is no evidence of HAIL activities or industries having occurred on the majority of the subject site, now or in the past. This part of the subject site is considered suitable for residential use with no further investigations required.

However, the investigations undertaken have indicated two possible risk areas at the western end of the site. These areas are shaded red on **Figure 2** below. In the north-west corner of the subject site is a confirmed landfill area. This is known to have been used to dispose of poisoned possums but could also contain other waste. South of this area is another potential former quarry pit which may have been filled with waste. These are confirmed HAIL activities and there may be a risk to human health from potentially contaminated soils.

The confirmed possum pit area is likely to pose geotechnical issues as well as possible contamination risks. Once confirmed development proposals are known a remediation action plan to excavate the pit and dispose of any possum remnants and contaminated soils is recommended.

It is also recommended that a Detailed Site Investigation, in terms of the Ministry for the Environment's Contaminated Land Management Guidelines, be undertaken on the area to the south where potential fill may have been placed.



Figure 2 – Risk Areas Plan

11 Planning Status

In terms of the NESCS section 5 (7) states that the land is considered to be covered if an activity or industry described in the HAIL is being undertaken on it; or has been undertaken on it; or it is more likely than not that an activity is being or has been undertaken on it. Section 6 describes the methods for determining whether the land is as described in section 7. Method 6 (3) is to rely on a Preliminary Site Investigation.

This Preliminary Site Investigation has found that there is evidence of an activity or industry described in the HAIL occurring on the subject site now or in the past. In terms of planning status at the time of writing of this report, the NESCS does apply to the identified risk areas of the site and resource consent is required for activities listed in the NESCS.

12 Conclusion

The investigations undertaken have identified a risk of soil contamination associated with a former poisoned possum disposal pit, and other potential waste material disposed to a former quarry pit. Both of these areas are on the western side of the site and affect only a small portion of the overall site. These are confirmed HAIL activities and there may be a risk to human health from potentially contaminated soils.

A Remediation Action Plan for the possum pit should be developed and remediation should occur as part of the overall development of the site. It is also recommended that a Detailed Site Investigation, in terms of the Ministry for the Environment's Contaminated Land Management Guidelines, be undertaken on the area to the south where potential fill may have been placed. It is noted that neither of these risk areas would preclude the proposed plan change from occurring. Any remediation required to ensure safe future uses could be physically and economically achieved within the total development.

The rest of the subject site has been used for general pastoral or rural residential use for all its known history. This use is not considered to pose a risk to human health or the environment. No further investigation is considered to be required for the majority of the subject site.

13 Limitations

Malloch Environmental Limited has performed services for this project in accordance with current professional standards for environmental site assessments, and in terms of the client's financial and technical brief for the work. Any reliance on this report by other parties shall be at such party's own risk. It does not purport to completely describe all the site characteristics and properties. Where data is supplied by the client or any third party, it has been assumed that the information is correct, unless otherwise stated. Malloch Environmental Limited accepts no responsibility for errors or omissions in the information provided. Should further information become available regarding the conditions at the site, Malloch Environmental Limited reserves the right to review the report in the context of the additional information.

Opinions and judgments expressed in this report are based on an understanding and interpretation of regulatory standards at the time of writing and should not be construed as legal opinions. As regulatory standards are constantly changing, conclusions and recommendations considered to be acceptable at the time of writing, may in the future become subject to different regulatory standards which cause them to become unacceptable. This may require further assessment and/or remediation of the site to be suitable for the existing or proposed land use activities. There is no investigation that is thorough enough to preclude the presence of materials at the site that presently or in the future may be considered hazardous.

No part of this report may be reproduced, distributed, publicly displayed, or made into a derivative work without the permission of Malloch Environmental Ltd, other than the distribution in its entirety for the purposes it is intended.

Report written by:



Frances Hobkirk
Environmental Scientist

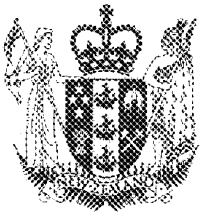
Report reviewed and certified by a suitably qualified and experienced practitioner as prescribed under the NES (soil):



Nicola Peacock, CEnvP
Principal Environmental Engineer



Appendix A – Historic Certificates of Title



COMPUTER FREEHOLD REGISTER UNDER LAND TRANSFER ACT 1952



Historical Search Copy


R. W. Muir
Registrar-General
of Land

Identifier CB39B/123
Land Registration District Canterbury
Date Issued 02 June 1994

Prior References

GN A113380.1

Estate	Fee Simple
Area	30.7561 hectares more or less
Legal Description	Section 1 Survey Office Plan 1227
Purpose	plantation

Original Proprietors

Selwyn Plantation Board Limited

Interests

Land Covenant in Transfer A141854.1 - 29.10.1994 at 11:45 am
6182948.1 Revocation of Covenant A141854.1 - 14.10.2004 at 9:00 am
6247341.1 Departmental dealing correcting the estate by deleting the purpose of Plantation - 9.12.2004 at 2:21 pm
8629529.1 Transfer to Rupert Jack Wright and Catherine Elizabeth Wright - 18.11.2010 at 12:15 pm

References

Prior C/T
Gazette Notice A113380/1
Transfer No.
N/C. Order No. A115916/1



Land and Deeds 69

REGISTER

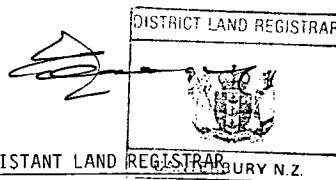
No. 39B / 123

CERTIFICATE OF TITLE UNDER LAND TRANSFER ACT

This Certificate dated the 2nd day of June one thousand nine hundred and ninety four
under the seal of the District Land Registrar of the Land Registration District of CANTERBURY

WITNESSETH that SELWYN PLANTATION BOARD for plantation purposes ---

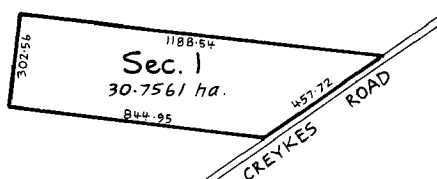
is seized of an estate in fee-simple (subject to such reservations, restrictions, encumbrances, liens, and interests as are notified by memorial underwritten or endorsed hereon) in the land hereinafter described, delineated with bold black lines on the plan hereon, be the several admeasurements a little more or less, that is to say: All that parcel of land containing 30.7561 hectares or thereabouts being Section 1 Survey Office Plan 1227 ---



Transfer A141854/1 to Selwyn Plantation
Board Limited at Darfield (Covenant) -
29.10.1994 at 11.45am

[Signature]
for A.L.R.

Selwyn District



Ref: S.O. 1227
Measurements are Metric

No. 39B / 123

ARC

CERTIFICATE OF TITLE No. /





NEW ZEALAND
GOVERNMENT GAZETTE
PROVINCE OF CANTERBURY.

Published by Authority.

VOL. XXII.

MONDAY, AUGUST 9, 1875.

No. XXXVI.

PROCLAMATION.

IN accordance with the recommendation of the Provincial Council in that behalf, I, WILLIAM ROLLESTON, Superintendent of the Province of Canterbury, do hereby with the advice of the Executive Council, make the following Reserves of the extent and for the purposes indicated in the Schedule hereunto attached, and do hereby direct that the said Schedule, together with a complete description of the said Reserves shall be published in the *Government Gazette* of the Province.

Given under my hand at Christchurch, this 19th day of June, one thousand eight hundred and seventy-five.

WM. ROLLESTON,

Superintendent.
VOL. XXII, No. 36.

No. IN RED.	QUANTITY. (More or less)			DESCRIPTION.	ROAD DISTRICT.
	A.	R.	P.		
				boundary of section 19185, on the westward by I.P.Rs. on run No. 65, and on the southward by a line parallel to and fifteen chains distant from the northern boundary. Subject to roads. For Provincial Government purposes.	
1748	226	0	0	Situate in the Upper Christchurch District; bounded on the southward by reserve No. 1332 (in red), on the eastward by Creyke's road, on the westward by reserves Nos. 1333 and 1334, and on the northward by a line parallel to and fifteen chains distant from the southern boundary. Subject to roads. For Provincial Government purposes.	Courtenay
1749	202	0	0	Situate in the Upper Christchurch District; bounded on the northward by reserve 1332 (in red), on the eastward by Creyke's Road, on the westward by the road forming the south-eastern boundary of section 19215, and on the southward by a line parallel to and fifteen chains distant from the northern boundary. Subject to roads. For Provincial Government purposes.	Courtenay
1750	52	0	0	Situate in the Upper Christchurch District; bounded on the eastward by the Telegraph Road, on the southward by reserve 1332 (in red), on the westward by section 17452, and on the northward by a line parallel to and fifteen chains distant from the southern boundary; save and except reserve No. 1512 (in red), which is included within the above-described boundaries. Subject to roads. For Provincial Government purposes.	Courtenay
1751	315	0	0	Situate in the Upper Christchurch District; bounded on the south-eastward by reserve No. 1748 (in red), on the south-westward by reserve No. 1333 (in red), on the north-westward by section No. 19815, and on the north-eastward by I.P.R.Z., on run No. 49, and also by a line parallel to and fifteen chains distant from the south-western boundary. Subject to roads. For Provincial Government purposes.	Courtenay
1752	90	0	0	Situate in the Oxford District; bounded on the northward by reserve No. 727 (in red), and a line in continuation of the southern boundary thereof, and also by the road forming the southern boundary of section 8894, on the south-west by the Coal Tramway Reserve, on the southward by section 16807, on the eastward by section 21233, and also by section 8894, above mentioned. Subject to roads. For Provincial Government purposes.	Courtenay
1753	42	0	0	Situate in the Upper Christchurch District; bounded on the south-westward by the Coal Tramway Reserve, on the south-eastward by reserve 1328 (in red), and on the north-westward by section 21624, and on the north-eastward by a line parallel to the south-western boundary, and fifteen chains distant therefrom. Subject to roads. For Provincial Government purposes.	Courtenay
1754	790	0	0	Situate in the Upper Christchurch District; bounded on the north-eastward by the Coal Tramway Reserve, on south-eastward by the road forming the north-western boundary of section 7578, on the north-westward by the road forming the eastern boundary	Courtenay

No. 971988/1 Change
of Abbeclation whereby
part of the within land
is now Section 1 S.O.
1227 (30.7561 ha)
— 23.12.1991 at 9.01am
(added 21.6.94)

IN THE MATTER of the Land Transfer Act 1952

OCT A115916/1 } C.T. 398/123
2.6.1994 } in no. 601
Section 1 S.O.
1227

PAGE 279 PROVINCIAL GAZETTE 1875

Particulars entered in the Register at the date
and at the time recorded below

District Land Registrar
Assistant of the District of Canterbury

To: The District Land Registrar

Please register as to Reserve 1749 only.

BUDDLE FINDLAY

Per: *John Buchan*

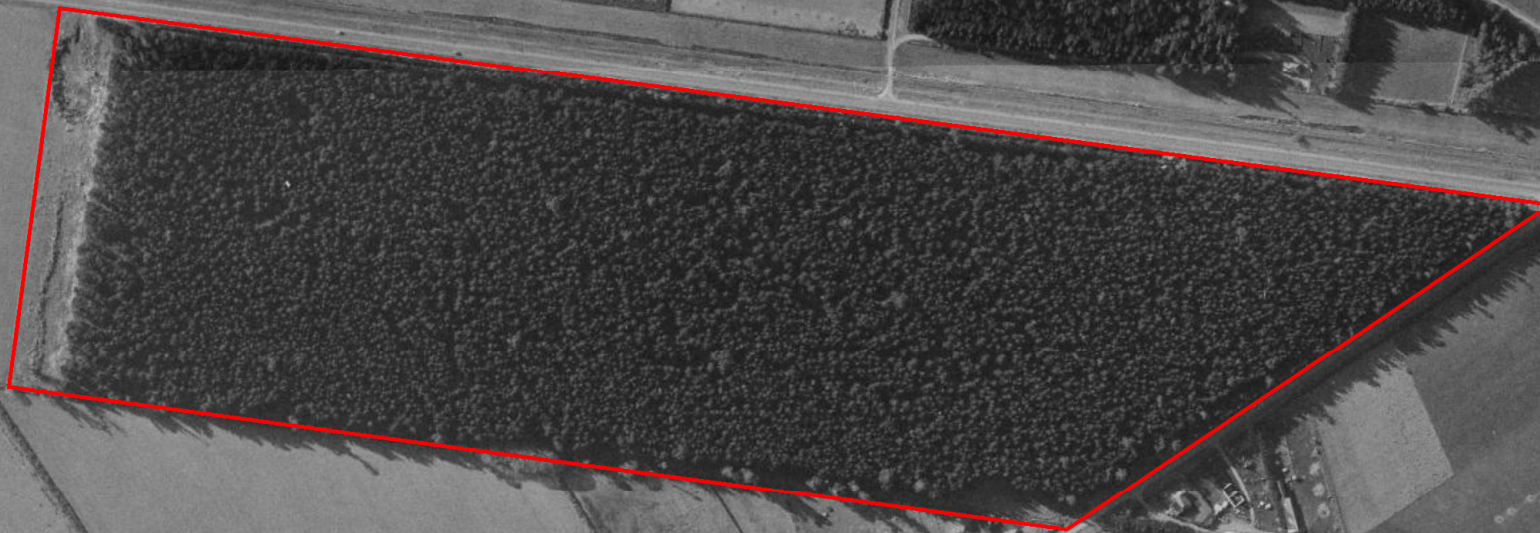
John Buchan

BUDDLE FINDLAY
SOLICITORS
CHRISTCHURCH

11.53 19.MAY94 A 113330/1
PARTICULARS ENTERED IN REGISTER
LAND REGISTRY CANTEBURY
2007-05-19 11:53

Appendix B – Historic Aerials

















Appendix C – LLUR Statement

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:	01 December 2017	
Land Parcels:	Section 1 SO 1227	Valuation No(s): 2420009402



The information presented in this map is specific to the area within a 100m radius of property you have selected. Information on properties outside the search radius may not be shown on this map, even if the property is visible.

Summary of sites:

Site ID	Site Name	Location	HAIL Activity(s)	Category
572	W.D. Boyes & Sons Limited	1-7 Horndon Street, Darfield	A17 - Storage tanks or drums for fuel, chemicals or liquid waste;	Not Investigated
118988	15 Horndon St	15 Horndon St	A10 - Persistent pesticide bulk storage or use;	Not Investigated
120025	Section 1 SO 1227, West Coast Road	Section 1 SO 1227, West Coast Road	G3 - Landfill sites;	Not Investigated
120031	354 Creyke Road, Darfield	354 Creyke Road, Darfield	A8 - Livestock dip or spray race operations;	Not Investigated

Please note that the above table represents a summary of sites and HAILS intersecting the area of enquiry within a 100m buffer.

Information held about the sites on the Listed Land Use Register

Site 572: W.D. Boyes & Sons Limited (Within 100m of enquiry area.)

Site Address:	1-7 Horndon Street, Darfield
Legal Description(s):	Lot 4 DP 55935

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

Land Uses (from HAIL):	Period From	Period To	HAIL land use
	1975	Current	Storage tanks or drums for fuel, chemicals or liquid waste

Notes:

23 Mar 1998 2 tanks: both 2273 litres, one holds diesel, the other petrol, probably put in in 1975

Investigations:

There are no investigations associated with this site.

Site 118988: 15 Horndon St (Within 100m of enquiry area.)

Site Address:	15 Horndon St
Legal Description(s):	Lot 1 DP 376965

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

Land Uses (from HAIL):	Period From	Period To	HAIL land use
	1975	Present	Persistent pesticide bulk storage or use including sports turfs, market gardens, orchards, glass houses or spray sheds

Notes:

5 Nov 2014 This record was created as part of the Selwyn District Council 2015 HAIL identification project.

5 Nov 2014 Poultry farm

5 Nov 2014 Area defined from 1975 to Present aerial photographs. A poultry farm (persistent pesticides) was noted in aerial photographs reviewed.

Investigations:

There are no investigations associated with this site.

Site 120025: Section 1 SO 1227, West Coast Road (Intersects enquiry area.)

Site Address:	Section 1 SO 1227, West Coast Road
Legal Description(s):	Section 1 SO 1227

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

Land Uses (from HAIL):	Period From	Period To	HAIL land use
	1942	1998	Landfill sites

Notes:

7 Dec 2015 This record was created as part of the Selwyn District Council 2015 HAIL identification project.

Investigations:

There are no investigations associated with this site.

Site 120031: 354 Creyke Road, Darfield (Within 100m of enquiry area.)

Site Address: 354 Creyke Road, Darfield

Legal Description(s): Part Lot 1 DP 6651

Site Category: Not Investigated

Definition: Verified HAIL has not been investigated.

Land Uses (from HAIL):	Period From	Period To	HAIL land use
	1975	Present	Livestock dip or spray race operations

Notes:

7 Dec 2015 This record was created as part of the Selwyn District Council 2015 HAIL identification project.

7 Dec 2015 Area defined from 1975 to Present aerial photographs. A livestock dip or spray race was noted in aerial photographs reviewed.

Investigations:

There are no investigations associated with this site.

Information held about other investigations on the Listed Land Use Register

1 Aug 2012 **INV 13355: Preliminary Site Investigation, Darfield Development, Creyke Road, Darfield, Canterbury**
(Preliminary Site Investigation)
Golder Associates

Summary of investigation(s):

Investigation objective: An assessment of the site history was undertaken to assess the residential property. The site consists of a dwelling and extensive gardens. A new dwelling is to be placed on the site, and there is the potential that the site may be subdivided in future.

The site history was assessed using historical certificates of title and aerial photographs, LINZ records of orchards, regional and district council records, and soil contamination investigations for nearby properties. The review appears to have been undertaken generally in accordance with best practise. The report identifies that the site appears to have been pastoral until the house and associated buildings were constructed in the 1970s. It is noted that a sheepdip was located on land adjacent to the north-west.

The report identifies that it appears unlikely that a sheep dip or persistent pesticide application has been undertaken at the site. Burning rubbish and migration from the sheep dip on the adjacent property were considered to be potential sources of contamination.

A targeted investigation was undertaken in a low point in the north-western corner of the site, near the water race, where it was thought most likely that contamination would be present if there had been migration from the sheep dip on the neighbouring site. In addition, the investigation was targeted to a number of burn piles on the eastern part of the site. Soil sampling was primarily undertaken using an X-ray fluorescence spectrometer (XRF). XRF analysis was undertaken at three locations in the north-western corner at 50-100mm and 300mm depths in each location. XRF analysis was also undertaken at 5 locations in the eastern part of the site where burning had been undertaken. The XRF analysis was undertaken for arsenic, chromium, copper, lead, mercury, nickel and zinc. Laboratory analysis was undertaken for arsenic only from five samples; and for a suite of seven metals (arsenic, cadmium, chromium, copper, nickel and zinc) and polycyclic aromatic hydrocarbons (PAHs) in one sample collected from the burn pile near the proposed house location.

Results: The soil sampling results indicated that arsenic was elevated above background levels in the north-western corner of the site, suggesting that there has been some migration from the nearby sheep dip site; however, no samples exceeded the soil contaminant standards for residential land-use with 10% produce consumption or rural-residential land-use. The XRF sampling results did not indicate elevated concentrations of contaminants in soil in the burned areas, which could have arisen from burning of treated timber or other materials. A sample from only one of the burn piles was analysed for PAHs; however, the sample result was below the laboratory limit of detection.

Conclusions: The report concludes that the majority of the site does not contain contamination, but that the north-western corner of the site has been subject to migration of arsenic from the neighbouring site. It is agreed that the risk of contamination from the burn piles is relatively low, and the investigation has provided sufficient information to indicate that the burn pile areas should not be considered a HAIL activity.

For further information from Environment Canterbury, contact Customer Services and refer to enquiry number ENQ185813.

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.

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