

ISSUED FOR
TENDER
2003/2012

Sheets

Designed L. Edwards
Drawn E.R. Wilson
Reviewed P. Road
Approved P. Road

Feb'12
Feb'12
Feb'12
Feb'12

CPG

CPG New Zealand Ltd
65 Shand Road, Herby
Christchurch 8141
Phone 03 374 8315
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christchurch@cpg.co.nz

WAIMAKARIRI
DISTRICT COUNCIL

Project Title

MANDEVILLE AND OHOKA
WASTEWATER SCHEME
- PIPELINE CONSTRUCTION

Sheet Title

OVERALL SITE PLAN

Scale (A1 Original)

1:20000

Project No

705137

Sheet

OV01

Revision

Notes:
1. This drawing is for the purpose of tender only. It is not to be used for construction.
2. The design is based on the information provided by the client. The client is responsible for the accuracy of the information.
3. The design is based on the information provided by the client. The client is responsible for the accuracy of the information.

Appendix D

Mainpower confirmation letter

Network Reference: 6524

14 February 2012

Tyler McMillan
P O Box 31159
Christchurch
8444

Attention: Tyler

Dear Tyler

**Re. Power Connection for Proposed Subdivision.
474 Bradleys Road, Ohoka**

MainPower confirms that the 11kV lines on Bradleys Road Ohoka have the capacity to supply the proposed subdivision.

Please do not hesitate to contact me on 03 311 8316 if you have any questions.

Yours faithfully



John Penney
New Connections Coordinator.

Appendix E

Chorus confirmation letter

The Subdivision Group
55 Shands Rd, Homby 8042
PO Box 1374, Christchurch 8140
Telephone: (03) 339 3402
Facsimile: (03) 338 0133
Email: tsg@chorus.co.nz



Sub Div Ref: OHK17479
Your Ref: Dev Ref

15 February 2012

The Developer
c/- e2 Environment Ltd
Unit 2/29 Archeron Drive
P O Box 31159
Christchurch

Attn: Tyler McMillan

Dear Sir/Madam

RE: Subdivision: OHK: Badleys Road, Ohoka - 68 lot subdivision-FTTP (ABF)

Subdivision Location: Badleys Road, Ohoka

Thank you for your enquiry and scheme plan for the above subdivision. This letter is to confirm that Chorus will install Fibre to the Premises (FTTP) reticulation for the subdivision.

Fibre reticulation will enable the delivery of high bandwidth internet connections for new multi-media services, internet-based applications and phone services. This is why Chorus is currently laying thousands of kilometres of fibre optic cable to bring ultra-fast broadband to more than 800,000 homes and businesses across New Zealand.

Important information about premises wiring

It is important for you to know that the wiring requirements for premises in a subdivision connected by fibre are different from the requirements for connecting to the traditional copper network. Premises wiring is the responsibility of the homeowner. Any new homes built in the subdivision should be installed with telecommunications cabling that complies with the Telecommunications Carriers' Forum's *Premises Wiring Code*. Information about this code and wiring requirements is available on our website at chorus.co.nz/wiring

Failing to install telecommunications wiring that meets the standard in the Code may mean services will not function as expected within the home. It is therefore important that information about wiring requirements and service delivery is passed on to your electricians, builders and potential property owners for this subdivision.

Service provider - WorldxChange

Broadband and phone services delivered over Chorus' fibre network are currently only available through WorldxChange. This means that homeowners will initially be limited in their choice of service provider and may need to change from their existing service provider when they move in. However, other service providers are expected to begin offering services over fibre as the number of New Zealand homes connected by fibre increases.

To find out more about specific services offered by WorldxChange, and how to set up phone and internet access, visit the WorldxChange website at wxc.co.nz or call 0800 123 456.

If the developer wishes to reticulate the subdivision and install connection points on the boundaries prior to selling sections, they'll need to commit to a Chorus Subdivision Reticulation Agreement and pay the required subdivision fees. The charge for Chorus to provide reticulation for this subdivision of 68 lots/units is \$140,760.00 (G.S.T inclusive). This quote is valid for **three months** from the date of this letter.

The charge is a contribution to Chorus' total costs to extend its network and infrastructure to the lots in the supplied plan. Chorus' costs include network design, supply of telecommunications specific materials and supervising installation.

The quote above also assumes that the Developer, or their nominated contractor, will supply and reinstate trenches, and install Chorus plant within the subdivided area and along the frontage of the subdivision if required.

Payment option

The subdivision charge can be split into two payments. The first payment will be a contribution to the cost of the network design, with the second payment covering the balance of the reticulation charges.

Please note that early payment of the Chorus network design fee payment will be required as the Chorus network design details need to be integrated with the overall civil engineering planning. The lead time for material ordering will be 12 weeks, after the total reticulation fee balance has been paid.

Easements

In any areas where Chorus Network is not installed in public road reserve vested to the Local Council, the subdivider is to ensure that a legal easement is registered over the route and Network in favour of Chorus New Zealand Limited. The easement should provide for an "easement in gross for Telecommunications purposes". Chorus has standard forms for easements transfer where an easement is being granted to Chorus as part of the requirements associated with the depositing of a subdivisional plan

I hope that this information assists with your enquiry and look forward to hearing from you in due course if a Reticulation Agreement is required.

Yours faithfully



Nuncy Maposa
Sub Division Specialist

Appendix F

ECan flood risk assessment

Customer Services
P. 03 353 9007 or 0800 324 636

58 Kilmore Street
PO Box 345
Christchurch 8140

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

www.ecan.govt.nz

22 March 2012

E2 Environmental Ltd.
PO Box 31159
Christchurch 8444
Attn: Bevan Pratt

Dear Bevan

FLOOD RISK – PT RS 2561 & RS 2010 – 474 - 494 BRADLEYS ROAD, OHOKA

Based on historical flooding records and floodplain modelling studies, the property is outside of areas considered to be at risk of flooding from the major rivers in the area (Waimakariri and Ashley).

1. Local Flooding

The property is located outside of the main recorded flood ponding areas. Information on flooding from local runoff is generally limited to photographs of the area taken following rainfall events in March and August 1986. In both cases the return period of the rainfall events is estimated at less than 5 years.

The enclosed photographs No. **116** (13/03/1986) and No. **119** (11/08/1986) both show runoff following depressions across the property and in some instances ponding behind barriers to overland flow. Note that these photos may not show flooding at its peak.

2. Cust River/Cust Main Drain

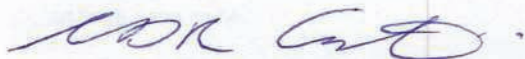
The property is bounded by the Cust Main Drain to the north. Historical flood records held by Environment Canterbury do not indicate recent flooding from the Cust River/Cust Main Drain at this location, although a detailed floodplain study has not been undertaken for this river.

The Cust Main Drain is stopbanked in its lower reaches and maintained by Environment Canterbury. The stopbank system is designed to contain a flow of 184 m³/sec with 600 mm freeboard. A flow of this magnitude has an estimated return period of 50 years (2% annual exceedance probability). There is a risk of flood breakouts occurring from the river should the design standard of the stopbank system be exceeded.

Our Ref: HAZA/FLD/ASS/CHC/12431
Your Ref:
Contact: Nick Griffiths

Until a detailed floodplain study and flood modelling is undertaken for the Cust River/Cust Main Drain it is not possible to give an accurate assessment of the potential extent of any flooding or the degree of flood risk that the river poses to the property. The potential extent of flooding that may result from more significant local rainfall events than those documented in the enclosed photographs is also unable to be defined based on current information.

Yours sincerely



Nick Griffiths

HAZARD ANALYST

Encl. Photo No. 116 (13/03/1986)
Photo No. 119 (11/08/1986)

0907 9AM 21

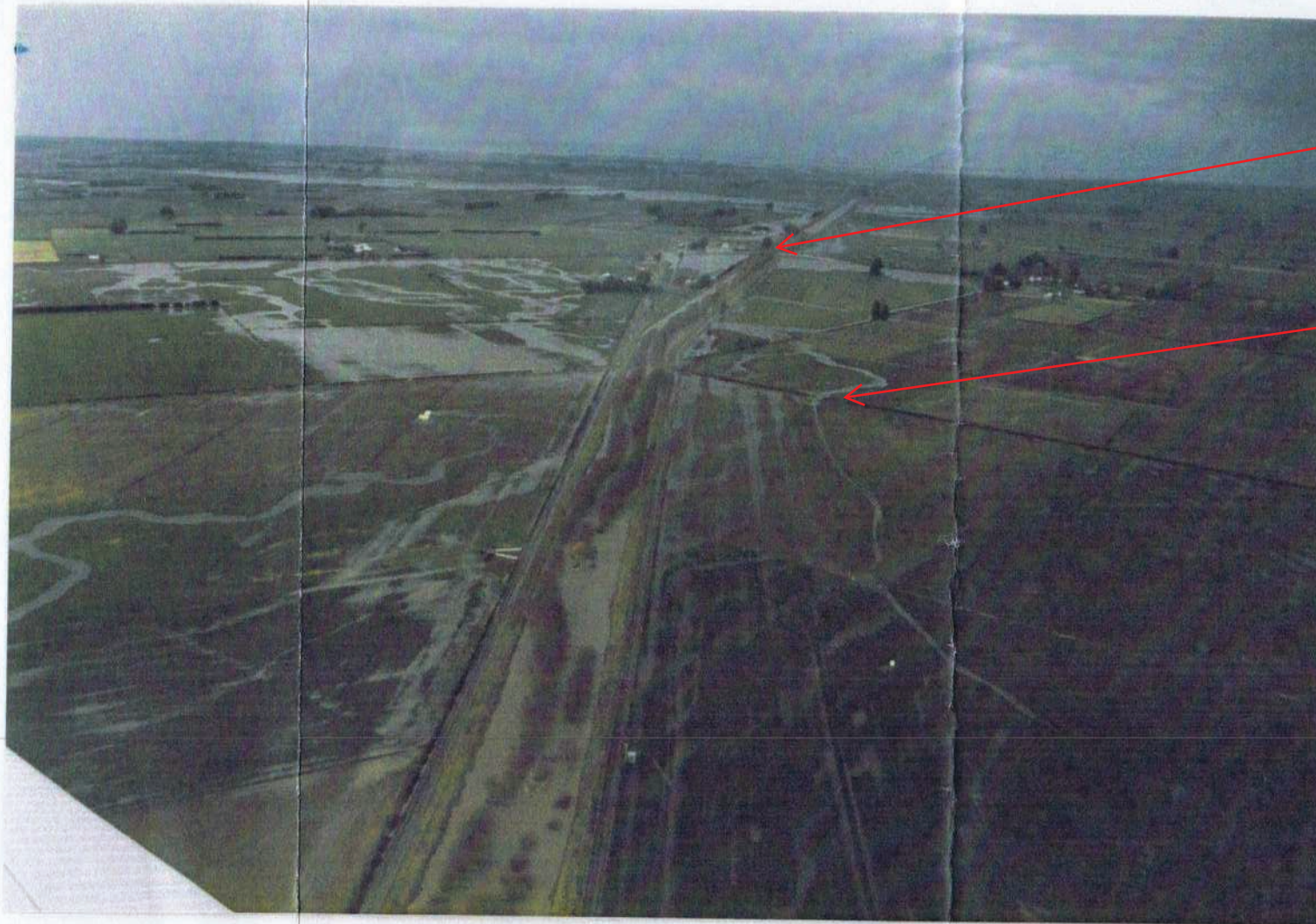
13 MAR 1986



Armstrong Drain

Threlkelds Rd
Bridge

116 Looking upstream (northwest) along Cust Main
Drain, Threlkelds Road Bridge centre right



Threlkelds Rd
Bridge

Breakout from
Armstrong Drain

Armstrong Drain

119

Cust Main Drain from downstream of Bradleys Road (east)

11/08/1986

Annexure 10

Environmental Site Assessment by Pattle Delamore Partners Ltd



29 March 2012

Peter and Ann Bagrie
474 Bradleys Road
Ohoka RD2
KAIAPOI 7692

Dear Peter and Ann

PHASE 1 ENVIRONMENTAL SITE ASSESSMENT (SITE HISTORY) FOR 474 BRADLEYS ROAD, OHOKA

1.0 Introduction

Pattle Delamore Partners Limited (PDP) has been engaged to carry out a Phase 1 environmental site assessment (site history) for a property located at 474 Bradleys Road, Ohoka. The objective of the assessment is to identify potential sources of contamination from past and present site activities. The site history assessment has been conducted through the inspection of relevant historical records, including historical aerial photographs, certificates of title and council documents and conducting a site walkover and interview with the current site owner.

A site location map is appended as Figure 1.

2.0 Site Details

2.1 Site Identification and Zoning

The site is located at 474 Bradleys Road, Ohoka, approximately 20 km north of central Christchurch. The site covers an area of approximately 78.26 ha and is legally described as Part Rural Section 2561 and Rural Section 2010. A plan showing the layout of the two land parcels is appended as Figure 2.

The site was originally zoned Rural (RU) as per the Waimakariri District Plan, however it is understood the site is in the process of being re-zoned to Rural Residential. The grid reference for the centre of the site is NZMS 260 M35:7633-6117.

2.2 Site Description and Current Land Use

The site is situated in a rural setting and comprises a residence, buildings associated with a broiler chicken farm (poultry grown for meat consumption), general farming storage sheds and horse stables in the northern portion of the site. The remainder of the site comprises a horse training track and numerous open paddocks used for general cattle, deer and sheep grazing. An aerial photograph showing the existing site layout is presented as Figure 3 while photographs of the site are appended.

2.3 Proposed Site Development

The western and southern portion of the site (approximately 35.8 ha) is being earmarked for future residential land use while the remaining areas of the property will continue to be used as a broiler chicken farm, horse stables and general grazing. A proposed residential subdivision concept plan for the site is presented as Figure 4.

3.0 Environmental Setting

3.1 General Setting

The site and surrounding areas are essentially level with some natural low points and channels within the property. The site is bordered by residential properties to the west and predominantly grazing farmland to the north, south and east.

The nearest surface waterbody is the Main Drain (a diverted open channel of the Cust River), which is located adjacent to the north eastern site boundary. The upper tributary of Ohoka Stream is also located 140 m south west of the site. There are no other watercourses or significant environmental features in the locality.

3.2 Geology and Hydrogeology

The NZ Geological Survey Map 1:250,000, Sheet 18, Hurunui (D.R. Gregg, 1964) shows the site to be underlain by river gravel, sand and silt of older post-glacial fans (Springston Formation).

A total of 52 wells were identified on Environment Canterbury's (ECan) GIS database as being located within a 500 m radius of the site. Of these, 38 are active-existing, 11 are not used, one is capped, one was not drilled and one is listed as no information/expired bore consent. Of the 38 active-existing wells, 15 are used for domestic supply, 15 for domestic and stockwater, four for irrigation purposes and four for stock supply. Three of the active-existing wells (M35/0314, M35/4777 and M35/4778) are located near the centre of the site. These wells were drilled to depths ranging between 10.7 and 15.8 m below ground level (bgl) and are used for irrigation, domestic and stockwater and domestic supply. A plot showing groundwater wells listed on the ECan database within a 500 m radius of the site is appended.

The ECan GIS database shows that groundwater depth in the area ranges from approximately 1.8 to 3.1 m bgl and flows in a general south easterly direction towards the coast. Some localised groundwater flow variation may occur beneath the site due to the presence of the Main Drain (Cust River) adjacent to the north eastern boundary and an upper tributary of Ohoka Stream located 140 m south west of the site.

4.0 Desktop Review of Site History

A desktop assessment was undertaken to provide an overview of any chemical residues that may be present at the site as a result of any documented past and present activities. The following information was sourced in order to establish the history of the site:-

- ✧ Historical Aerial Photographs;
- ✧ Historical Certificates of Title;
- ✧ Environment Canterbury Listed Land Use Register;
- ✧ Environment Canterbury Resource Consents Database;
- ✧ Waimakariri District Council Land Information Memorandum;
- ✧ Waimakariri District Council Property File;
- ✧ Site Inspection; and
- ✧ Interview with the Current Site Owner.

4.1 Historical Aerial Photographs

Historical aerial photographs of the site from 1941 onwards have been reviewed. The photographs inspected were obtained by New Zealand Aerial Mapping Limited while the 2006 and 2011 aerial photographs were sourced from Google Earth Pro.

The 1941 photograph shows the site in a rural setting and largely comprising open paddocks possibly used for general grazing activities. It appears a residence/homestead with some small sheds/structures are situated in the northern portion of the site which is accessed from Bradleys Road. A stream or open channel is evident adjacent to the north eastern boundary.

The 1963 photograph shows no major changes to the site from the 1941 photograph. The residence and associated farming sheds are clearly visible toward the northern portion of the site while the remainder of the site comprises paddocks which appear to be used for general grazing.

The 1973 photograph shows several sheds/barns have been constructed around the existing residence while a horse training track has been established near the centre of the site. The remainder of the land comprises open paddocks used for general grazing.

The 1984 photograph shows the original residence has been removed and replaced with a new homestead further north towards Bradleys Road. A small shed/barn has been also been constructed to the west of the existing sheds. The horse training track is still present near the centre of the site while the remainder of the site appears to be used for general grazing.

The 2001 photograph shows a large, elongated shed/barn has been constructed directly north of the existing horse track. Several rows of trees have also been established along the western boundary and within the property. The remainder of the site is largely unchanged from the 1984 photograph.

The 2006 photograph site shows no major changes to the site from the 2001 photograph.

The 2011 photograph shows the site in its current layout with little or no major changes evident from the 2006 photograph.

The historical aerial photographs reviewed are appended.

4.2 Historical Certificates of Title

Certificates of title for the site were obtained from Terranet. The site is contained within two current Certificates of Title as follows:-

- ✦ CB382/45 (Part Rural Section 2561); and
- ✦ CB384/184 (Rural Section 2010).

A sequence of ownership of the site based on the historical title records originating from the above documented current titles are summarised below. The current titles are appended to this letter.

CB382/45 (Part Rural Section 2561):-

From	To	Owner
17 December 1992	Present	Peter Bagrie (farmer) and Anthea Bagrie
7 November 1986	17 December 1992	William Bagrie (retired), Margaret Bagrie, Peter Bagrie (farmer) and Anthea Bagrie
23 August 1985	7 November 1986	William Bagrie (retired) and Margaret Bagrie
14 September 1966	23 August 1985	William Bagrie (company manager)

From	To	Owner
15 August 1947	14 September 1966	William Kearns (farmer)
31 May 1927	15 August 1947	Public Trustee
11 August 1926	31 May 1927	Hugh Kearns (farmer) and John Catherwood (retired farmer)

CB384/184 (Rural Section 2010):-

From	To	Owner
17 December 1992	Present	Peter Bagrie (farmer) and Anthea Bagrie
1 August 1978	17 December 1992	Peter Bagrie (farm worker)
29 October 1970	1 August 1978	Graham Wells and Robert Wells (farmers)
4 April 1946	29 October 1970	Raymond Walter (farmer)
22 September 1926	4 April 1946	Claude Skinner (farmer)

It should be noted that interpretation of these titles are based on hand written script of low quality, and may not be completely accurate.

4.3 Environment Canterbury Listed Land Use Register

A written request was made for information from ECan's Listed Land Use Register (LLUR). This Register is used to hold information about sites that have used, stored or disposed of hazardous substances, based on activities detailed in the Ministry for the Environment's (MfE) Hazardous Activities and Industries List (HAIL) (MfE, 2011).

The investigation site is not included on ECan's LLUR. However, the ECan information states that although the property is not 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 at the site. The LLUR is not complete, and new sites are regularly being added as ECan receives information and conduct their own investigations into current and historic land uses.

The LLUR information for the property is appended.

4.4 Resource Consents Issued By Environment Canterbury

Resource consent information held by ECan was inspected using their web based GIS database. A total of 90 resource consents issued by ECan were identified within a 500 m radius of the site. A total of 26 of these consents are current. Two of the current consents have been issued for the site. These consents are water permits to take groundwater (CRC000084.1) from bore M35/4778 for irrigation of up to 35 ha and to take surface water (CRC000085.1) from the Cust Main Drain for irrigation of up to 74 ha. Section 3.2 provides further information on the groundwater bores located at the site.

A table and plot showing the resource consents listed on the ECan database within a 500 m radius of the site are appended.

4.5 Waimakariri District Council Land Information Memorandum

The Land Information Memorandum (LIM) documentation for the property was obtained from the Waimakariri District Council (WDC). The LIM documents are appended to this letter while relevant information for the two land parcels are summarised below.

474 Bradleys Road, Ohoka (Part RS 2561):-

- ✧ A building permit to erect a broiler shed (B003775) was issued in August 1970;

- ✧ A building permit to erect a haybarn (C057609) was issued in December 1970;
- ✧ A building permit to erect a dwelling and garage (H118142) was issued in March 1978;
- ✧ A building permit to erect deer sheds (J080189) was issued in April 1980;
- ✧ A building permit to erect horse stables (O53098) was issued in October 1985;
- ✧ A building consent to erect a broiler chicken shed (930720) was issued in July 1993 (code of compliance certificate issued in November 2000);
- ✧ A building consent to install a metro pioneer log fire (991550) was issued in December 1999 (code of compliance certificate issued in March 2000);
- ✧ A building consent to erect a shed with smoko room and bathroom facilities (O41681) was issued in February 2005 (code of compliance certificate issued in November 2011);
- ✧ A building consent for the earthquake demolition and reconstruction of a broiler house was applied for but has not been issued to date;
- ✧ A letter is attached to the LIM regarding poultry farming operations in Ohoka. The LIM notes that the property located at 405 Bradleys Road is spreading liquid farm effluent and that any developed on 474 Bradleys Road will require to comply with the District Plan rules pertaining to spreading of effluent;
- ✧ There is an open public drain along the southern boundary of the property; and
- ✧ No information on licences/environmental health for the property.

494 Bradleys Road, Ohoka (RS 2010):-

- ✧ There is an open public drain along the south eastern boundary of the property;
- ✧ No building consents or permits have been issued for this property; and
- ✧ No information on licences/environmental health for the property.

4.6 Waimakariri District Council Property File

The two property files for site were reviewed at the WDC, however no other relevant information additional to that provided in the LIM for each parcel of land was identified.

4.7 Site Inspection and Interview

An experienced PDP environmental scientist inspected the site on 26 March 2012, with the objective of identifying any:-

- ✧ Structures and storage areas including underground tanks, waste pits and lagoons, hazardous materials storage, electrical transformers and hydraulic equipment, septic tanks and drain fields, etc; and
- ✧ Obvious visual contamination indicators such as disturbed vegetation, discoloured, oily or disturbed soil, or the presence of any odours.

Mr Peter Bagrie, the current property owner, was present on site during the inspection and was interviewed about current and historic site activities. Photographs taken by PDP during the site inspection are appended.

4.7.1 Site Use

At the time of the inspection, the site comprised a residence, sheds associated with a poultry farm, horse stables, a haybarn, implement shed and general farm storage area and various paddocks used for grazing.

Mr Bagrie noted that the first chicken sheds were erected in 1966 when the property was purchased by the Bagrie family. Prior to the 1960s the property was used for sheep grazing.

The three older chicken sheds were constructed between 1966 and 1973 while the newer (southern) chicken shed was constructed in the last 10-15 years. Today, approximately 70,000 chickens per annum are farmed inside the sheds for Tegal Foods Limited (Tegal). The broiler chickens are delivered to the property when they are only a few days old and are grown over a 40 day period (i.e. one batch) within the temperature controlled barns (the sheds are heated by bottled gas and electricity). After each batch, the chickens are collected by Tegal and taken off-site for processing. Tegal also collects the chicken manure inside the sheds before being washed down. The wash-down water is diverted into sumps located on concrete slabs adjacent to the sheds then into open drains within the property as ground soakage. Any dead chickens are frozen and collected by a contractor for disposal off-site. Mr Bagrie commented that no chemical sprays were used during the broiler chicken farming operations.

Several horse stables and a haybarn, implement shed and general farm storage area are located directly west of the chicken sheds while a horse training track is located near the centre of the site. The remaining paddocks around the site are used for general grazing by sheep and cattle.

4.7.2 Groundwater Abstraction

Mr Bagrie indicated there was one functional well on site which supplied water for domestic use, the chicken breeding operations and for supplying water for the drinking troughs around the property. The water used for irrigating the grazing paddocks around the property is sourced from the Main Drain (Cust River) located adjacent to the north eastern site boundary.

4.7.3 Hazardous Substance Storage Tanks and Containers

An above ground storage tank containing diesel and petrol (approximately 2,000 L) was located within the haybarn, implement shed and general farm storage area. Mr Bagrie had no knowledge of any underground storage tanks within the property. Several empty unnamed containers and drums were located with the general storage area and inside some implement sheds.

4.7.4 Sheet Dips / Foot Rot Troughs

Mr Bagrie had no knowledge of any former sheep dips or foot rot troughs within the property and noted that any spraying was understood to be from a mobile spraying system. During the inspection, a suspected former foot rot trough or sheep dip was encountered within a sheep yard complex adjacent to the general farm storage area. Mr Bagrie could not confirm whether or not this was an actual foot rot trough or sheep dip but may have been used during the previous sheep grazing operations.

4.7.5 Waste/Offal Pits

Many farms have on-site waste/offal pits for disposal of farm and domestic waste. Mr Bagrie indicated a waste pit was located near the south eastern boundary of the site which contained some sheep carcasses. No other waste pits were identified by Mr Bagrie during the inspection.

4.7.6 Septic tanks

Mr Bagrie confirmed that there were two septic tanks within the property. One septic tank was located near the main residence while the second was located near the farm workers smoko room/toilet building west of the main chicken shed area.

4.7.7 Additional Information

With regard to the possible spreading of farm effluent on the subject site from 405 Bradleys Road (as noted in the LIM), Mr Bagrie commented that no waste from off-site sources were ever spread of the 474 Bradleys Road property.

A small area of burnt paper was located to the west of the haybarn, implement shed and general farm storage area. The paper originates from the chicken sheds which is placed on the surface of the sheds when they are cleaned after each batch (i.e. 40 day period).

No knowledge of any use of persistent chemicals such as DDT were used over the site.

5.0 Summary of Site History and Potential Contaminants of Concern

The available historical information based on aerial photographs, title records, council documentation and a site walkover and interview with the current site owner has provided information from which the potential for land contamination has been evaluated. The historical information suggests the site was largely used for general stock grazing until the site was developed into a broiler chicken farm in the 1960s. An area of the site continues to be used as a chicken farm with several associated sheds, while a residence, horse stables and a haybarn, implement shed and general farm storage area are also located near the northern portion of the site (i.e. Part RS 2561). The remainder of the site comprises a horse training track and paddocks used for general sheep, cattle and deer grazing.

Potential sources of site contamination are largely associated with the past and present farming practise, which include (but may not be restricted to) the following:-

- ✧ The storage of petrol and diesel within an above ground storage tank within the general farming storage area;
- ✧ The storage of small quantities of oils, fuels, pesticides, paints, etc within the general farming storage area;
- ✧ Possible former sheep dip/foot rot trough within the sheep yard area;
- ✧ The burial of animal carcasses in waste/offal pits;
- ✧ Burning of waste (paper from chicken sheds) directly west of the general farming storage area; and
- ✧ The on site waste water disposal system via septic tanks.

The main contaminants of concern associated with the above sources include (but may not be limited to) heavy metals, hydrocarbons, pesticides and polycyclic aromatic hydrocarbons. Site plans showing the location of the main contaminant sources are presented as Figure 5a and 5b.

6.0 Discussions and Conclusions

The site subject to this assessment is located at 474 Bradleys Road, covers an area of approximately 78.26 ha and is legally described by two land parcel (Part RS 2561 and RS 2010). It is understood that approximately 35.86 ha of the site is being considered for future residential development (as shown in Figure 4).

It is important to note the new National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (NES) came into the effect in January 2012. The NES requires territorial authorities to enforce the regulations for particular 'land' and 'activity' criteria. The objective of this site history was to identify potential sources of contamination from past and present site activities and the findings of the assessment used to determine whether any HAIL activities occurred on the property which would trigger the application of the NES due to the land being proposed for subdivision and residential development.

As mentioned in Section 5.0, several past and present land use activities have been identified which may have resulted in site contamination and classified on the HAIL. These include the storage tanks or drums for fuel, chemicals or liquid waste and livestock dips or spray operations. However, with the exception of an offal pit located adjacent to the southern boundary, all of the contamination sources which are classified as HAIL activities are located outside of the proposed residential subdivision boundary and therefore the NES does not apply for this subdivision

redevelopment. The nearest of these HAIL activities is the possible sheep dip/foot rot trough located approximately 175 m north east of the property boundary of the proposed residential subdivision. It is important to note that offal pits are not specifically listed on the HAIL. However, it is recommended the offal pit in the southern portion of the site is removed and backfilled with clean fill during the site redevelopment works. In addition, due to the long history of farming activities across the site, it is recommended that an accidental discovery protocol is incorporated into the site redevelopment management plan to address the procedures and steps to be taken in the event potential contamination sources from historical farming practises (such as domestic and farming waste/offal pits) are encountered during the site redevelopment works. Furthermore, if a future residential development was earmarked for any areas of the site identified in this assessment as a potential source of site contamination (i.e. outside the proposed subdivision area of Figure 4), then the requirements of the NES would apply and intrusive investigations be required to determine whether the soils in these areas are suitable for the proposed residential land use.

7.0 References

Ministry for the Environment, 2011. *Hazardous Activities and Industries List*. Ministry for the Environment, Wellington.

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

New Zealand Geological Survey, 1964. *Geological Map of New Zealand Map 1:250,000, Sheet 18, Hurunui*. Department of Scientific and Industrial Research.

8.0 Limitations

This letter has been prepared based on readily available information about the site along with site observations on 26 March 2012 undertaken by Pattle Delamore Partners Limited. Information obtained from third parties has not been independently verified by Pattle Delamore Partners Limited.

The information contained within this letter applies to the time at which it was written. With time, the site conditions could change, so that the reported assessment and conclusions are no longer valid. Thus, in the future, the letter should not be used without confirming the validity of the letter's information at that time.

This letter has been prepared for Peter & Ann Bagrie according to their instructions for the particular objectives described in the letter. The information contained in the letter should not be used by anyone else or for any other purposes.

Yours sincerely

PATTLE DELAMORE PARTNERS LIMITED

Prepared by:



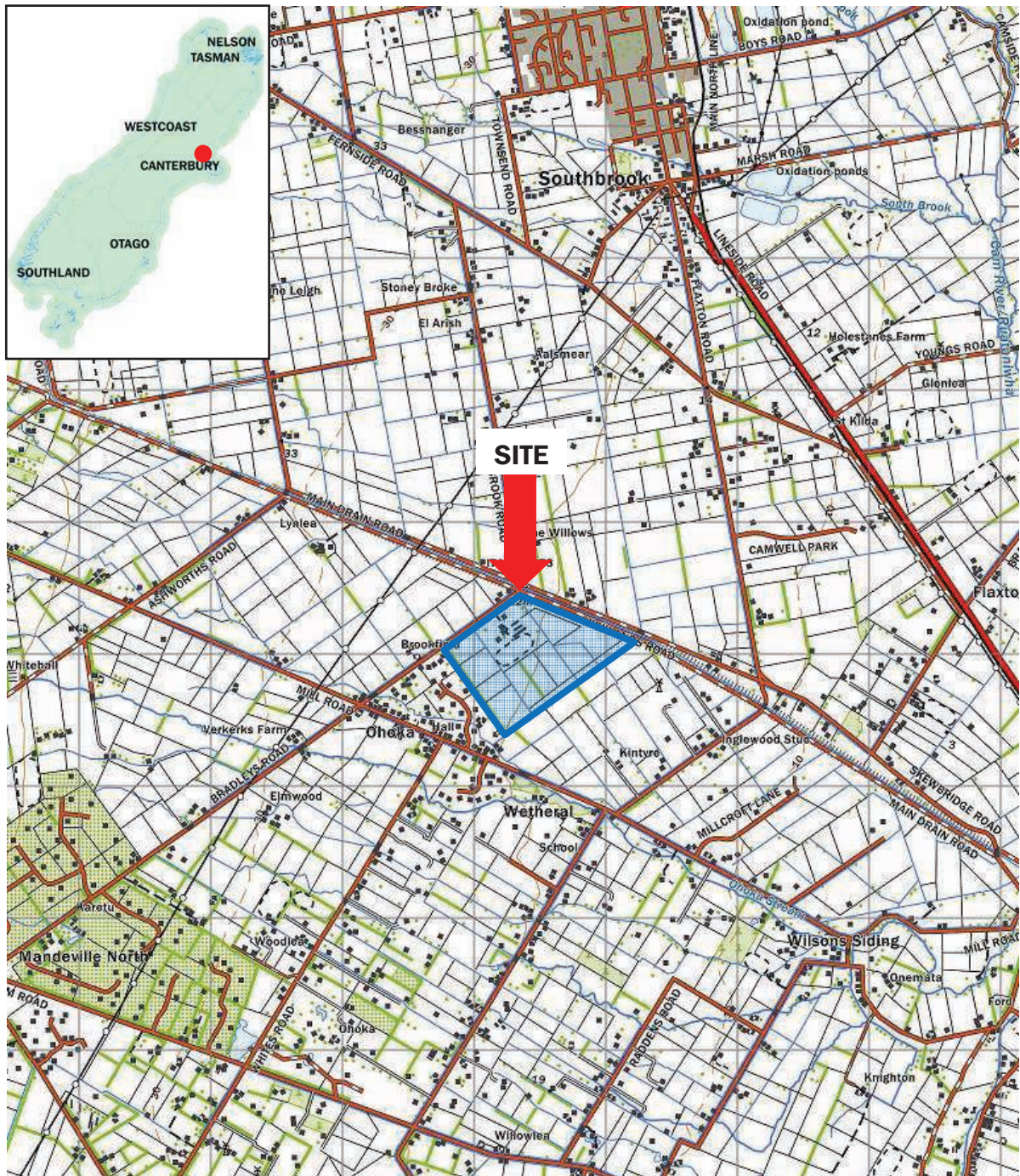
Gerard Stark
Environmental Scientist

Reviewed by:



Guy Knoyle
Environmental Scientist

Encl.



NZMS 260 Map M35.

SCALE 1 : 50,000 (A4)

Sourced from Land Information
New Zealand data.
Crown Copyright Reserved.

Figure 1 : Site Location



Figure 2 : Layout of Land Parcels

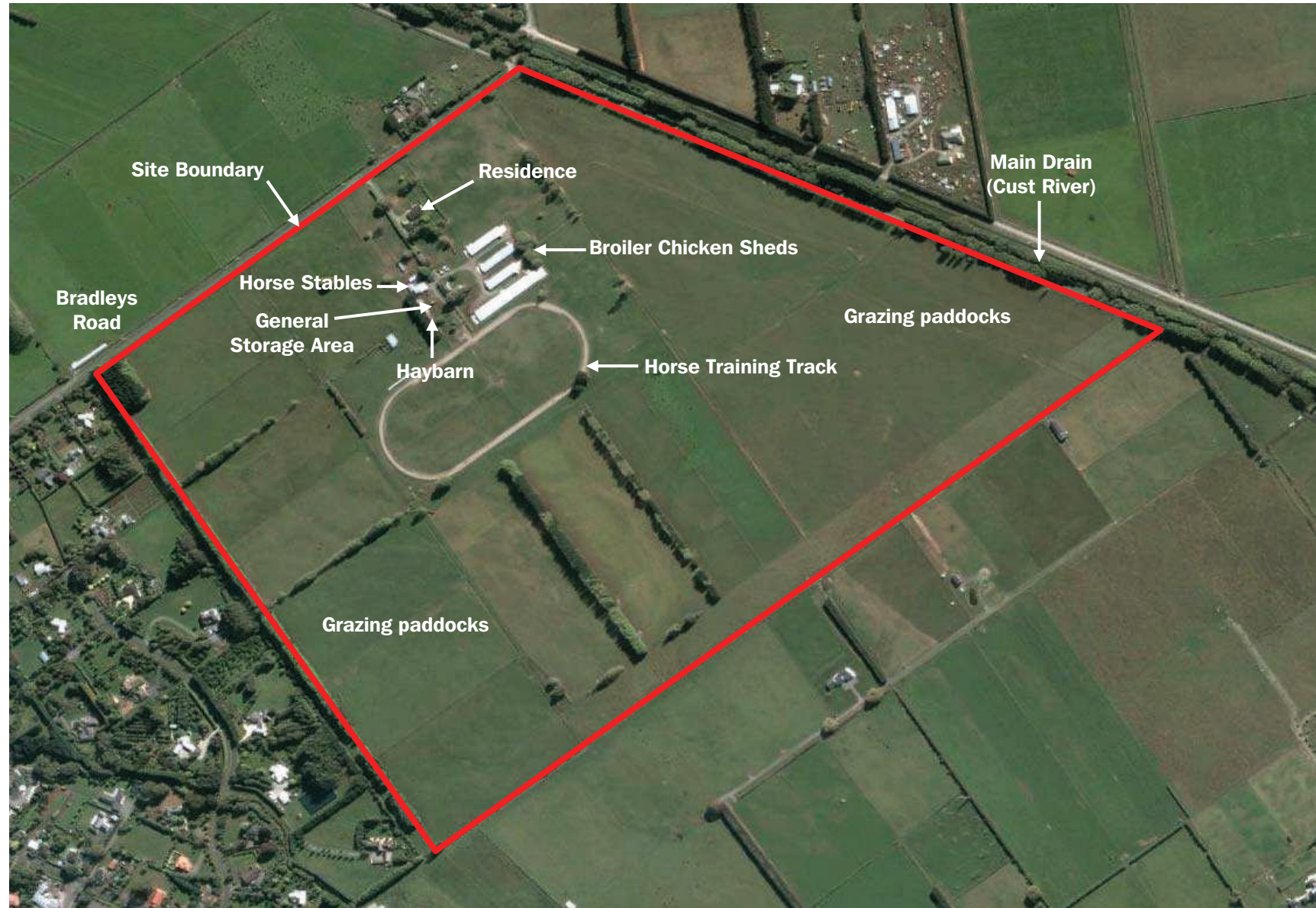


Figure 3 : Site Layout

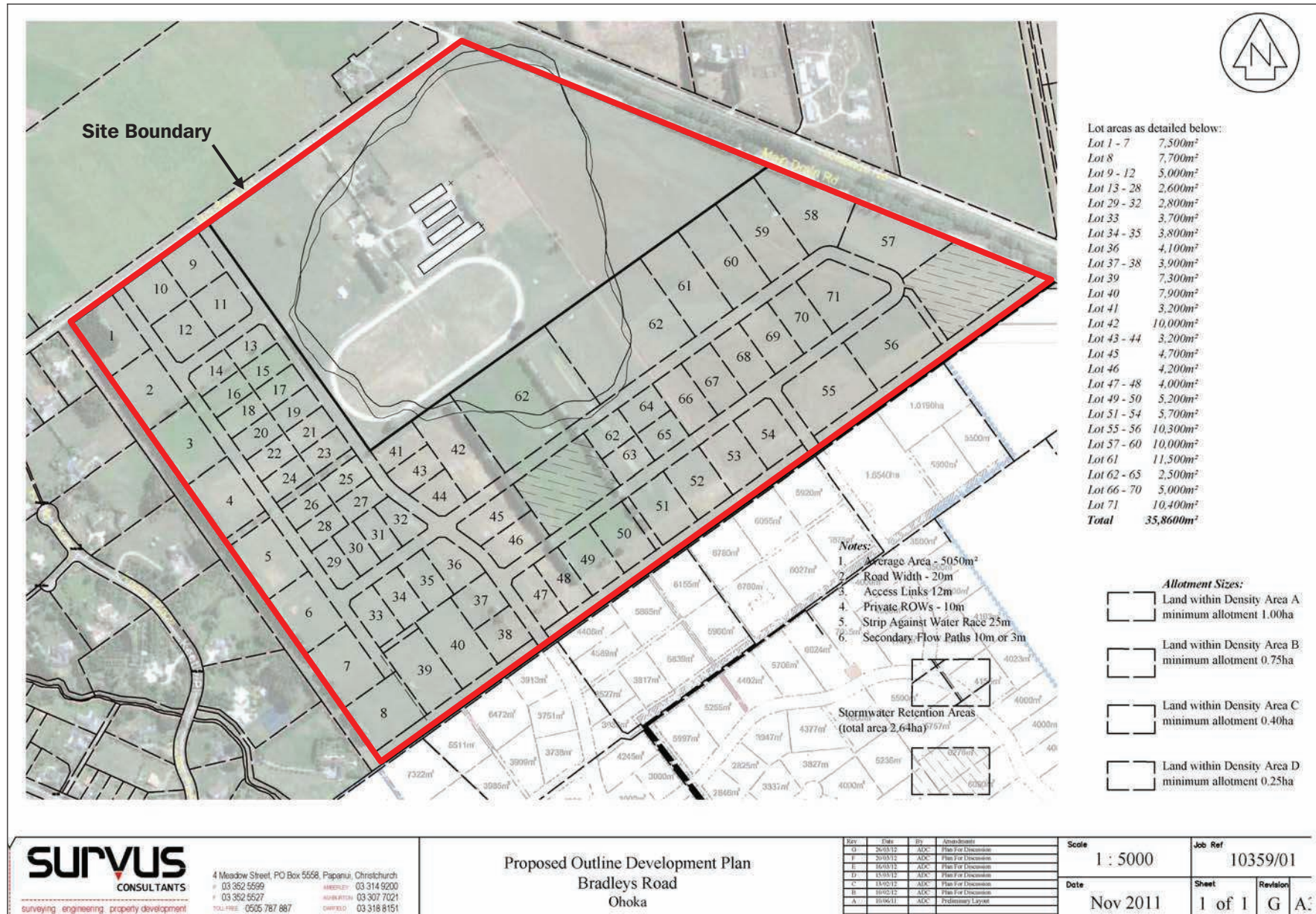


Figure 4 : Proposed Residential Subdivision Plan

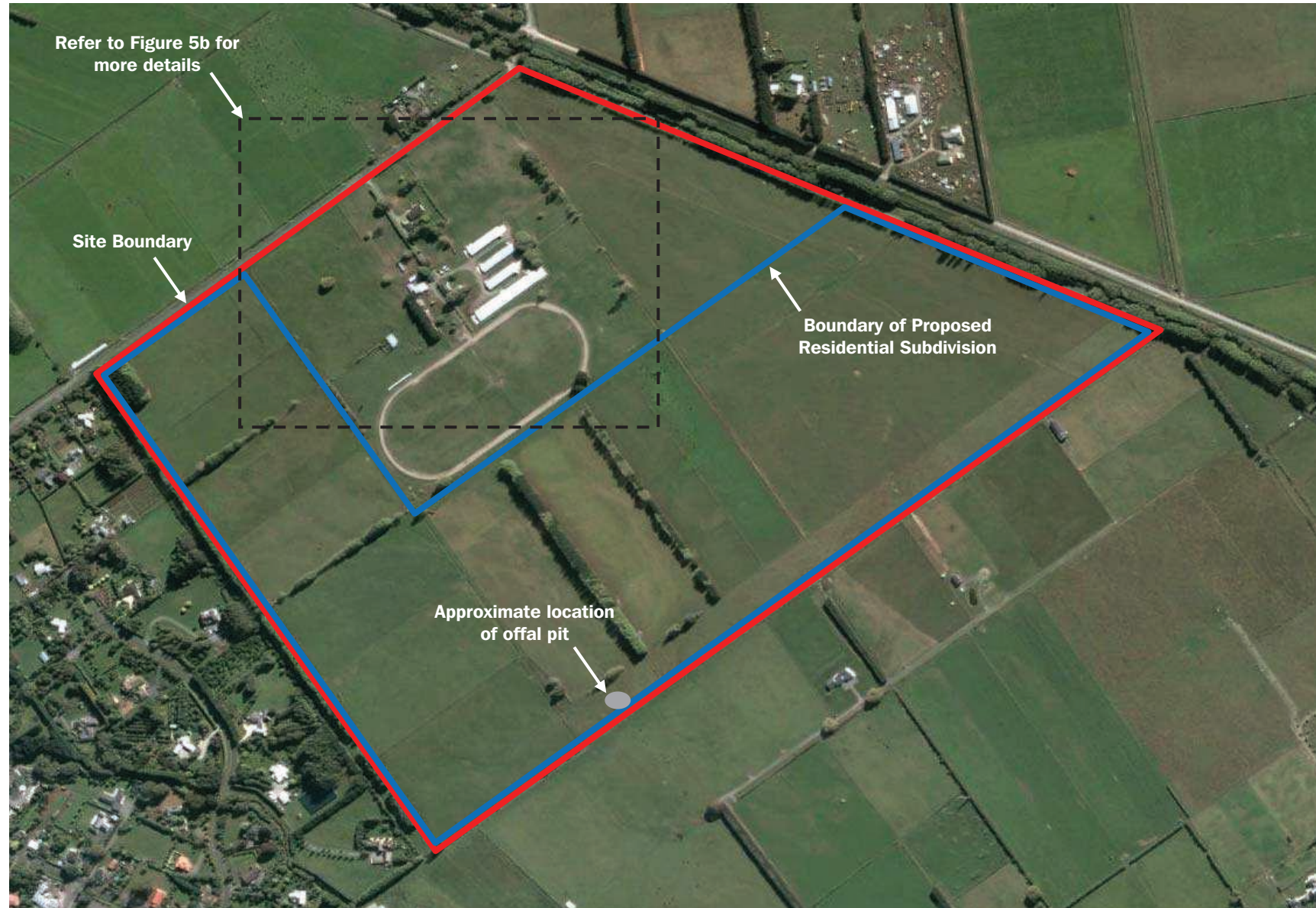


Figure 5a : Potential Sources of Site Contamination



Figure 5b : Potential Contamination Sources