K240545-2

30 June 2025

Geotechnical Engineering Investigation
Pound Road Industrial Development
2-94 Barters Road, 111 & 173 Pound Road, 4, 22 - 48 Hasketts Road, 570 & 578 Waterloo Road, Islington
Canterbury

Prepared For:

NTP Development Holdings Ltd

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REPORT ISSUE AUTHORISATION

Geotechnical Engineering Investigation
Pound Road Industrial Development
2-94 Barters Road, 111 & 173 Pound Road,
4, 22 - 48 Hasketts Road, 570 & 578 Waterloo Road
Islington
Canterbury

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EXECUTIVE SUMMARY

Geotechnical Engineering Investigation
Pound Road Industrial Development
2-94 Barters Road, 111 & 173 Pound Road,
4, 22 - 48 Hasketts Road, 570 & 578 Waterloo Road
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<table>
<tr><td rowspan="3">SUB-SOIL CONDITIONS</td><td>Lithology</td><td colspan="3">The sub-surface conditions generally comprise silty and sandy soils overlying dense gravels of variable depth. Refer to KGA Drawing 1.3</td></tr>
<tr><td>Soil Classification as per NZS 1170.5:2004</td><td colspan="3">Class 'D' (deep and/or soft soil sites)</td></tr>
<tr><td>Groundwater Depth</td><td colspan="3">Considered to exist at significant depth, approximately between 15m to 16m depth below ground level</td></tr>
<tr><td rowspan="3">SEISMIC ASSESSMENT</td><td rowspan="2">Horizontal Movement</td><td colspan="2">Lateral Spreading</td><td>Lateral Stretch</td></tr>
<tr><td colspan="3">Negligible</td></tr>
<tr><td rowspan="2">Seismic Technical Categorisation (Residential Equivalent)</td><td>MBIE</td><td colspan="2">N/A – Rural non-residential</td></tr>
<tr><td>Site Specific</td><td colspan="2">TC1-equivalent (as shown on KGA Drawing 1.4)</td></tr>
<tr><td>GEOTECHNICAL CONSIDERATIONS</td><td colspan="4">• We recommend that additional onsite testing is undertaken prior to the start of Stage 2 subdivision earthworks in the areas depicted on KGA Drawing 1.5.
• Lot-specific geotechnical investigations should also be undertaken at the building consent stage below each of the future industrial developments. Any remnant slopes should be considered.</td></tr>
<tr><td>SUBDIVISION ASSESSMENT</td><td colspan="4">According to our assessment of the site against the RMA requirements, the site is suitable for subdivision and land use in terms of geotechnical constraints. Please refer to Section 11 and Table 6 of this report.</td></tr>
<tr><td>REPORT DISTRIBUTION</td><td colspan="4">A full copy of this report must be provided to all relevant parties involved in the project. This should include, but not be limited to, owner, architectural designers, engineers (civil and structural) and the earthworks/building contractor.</td></tr>
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1. INTRODUCTION

At the instruction of NTP Development Holdings Ltd (NTP), we have undertaken a geotechnical engineering investigation on the properties 2-94 Barters Road, 111 & 173 Pound Road, 4, 22 - 48 Hasketts Road, 570 & 578 Waterloo Road in Islington, Canterbury (hereafter referred to as 'the site). The work was carried out in accordance with our Agreement dated 27 August 2024.

As part of our investigation, we have undertaken a detailed site and environs walkover inspection and referenced available information from the New Zealand Geotechnical Database (NZGD), Environment Canterbury (ECan) and Christchurch City Council (CCC) websites. We conducted a subsurface investigation comprising machine excavated test pits with associated Scala penetrometer tests, in order to assess ground conditions and likely behaviour of the ground, as well as to provide guidance for the proposed development in support of a subdivision and land use consent application. We have also referenced geotechnical investigation data from the existing KGA Geotechnical Engineering Investigation reports of 86 Barters Road (Ref: K230858-1, dated: 20 December 2023) and 173 Pound Road (Ref: K220216-1, dated: 26 April 2022).

The investigation was conducted with reference to the Ministry for the Environment (MfE) and MBIE document "Planning and engineering guidance for potentially liquefaction-prone land" - Revision 0.1, dated September 2017, MBIE (2012) Guidelines and subsequent updates, as well the relevant New Zealand Geotechnical Society (NZGS) and MBIE Modules; "Earthquake Geotechnical Engineering Practice". Although the proposed development is non-residential, we consider that the principles of the MBIE (2012) Guidance are still relevant.

This report presents our findings and conclusions. It has been prepared in the context of providing geotechnical information for use in assessing the suitability of the land for proposed subdivision and land use consent application under the Fast Track Approval Act.

2. SITE DESCRIPTION

'The site' generally comprises fourteen rural-residential properties including 2, 38, 64, 86 & 94 Barters Road, 111 & 173 Pound Road, 4, 22, 30, 40 & 48 Hasketts Road and 570 & 578 Waterloo Road, with a combined area of roughly 60 hectares (ha) (see Figure 1). The legal description of each property included in the development are (order by Lot number and corresponding address):

- *2 Barters Road & 578 Waterloo Road: Lots 1-2 DP 20738*
- *86 & 64 Barters Road:* Lots 1-2 DP 38418
- *94 Barters Road:* Lot 7 DP 23834
- *38 Barters Road:* Lot 10 DP 23834
- *570 Waterloo Road, 111 & 173 Pound Road:* Lots 1-3 DP 33334
- *48, 40 & 4 Hasketts Road:* Lots 1-2 & 6 DP 23834
- *30 & 22 Hasketts Road:* Lots 1-2 DP 24156.

Figure 1: Properties included within this Fast Track Application

The site is irregular in shape, and is located to the west of Pound Road, east of Barters Road, southeast of Hasketts Road, and south of Templeton Country Club/Golf Course, as shown on Figure 1 above and our site plan attached to this report as KGA Drawing 1.1. Hedges and trees form shelter belts along some boundaries.

The site does not appear to be near any major river systems and appears relatively level; however, several minor drainage channels and defined paleochannel features extend through or adjacent to site. Important geomorphological features onsite and surrounding the site are shown on KGA Drawing 1.1 in the attachments.

3. EXISTING STRUCTURES AND PROPOSED DEVELOPMENT

3.1 Existing Structures

Most properties currently comprise rural-residential dwellings generally located near accessways extending from adjacent road infrastructure, with ancillary structures around dwellings or scattered across the remainder of sites, including but not limited to farm structures, garages, water troughs and/or irrigation services. Dwellings generally comprise single and double storey structures of lightweight or heavy construction, supported by concrete foundation slabs (Type C1 or C2 as per the MBIE Guidance) or concrete perimeter ring foundations with internal piles (Type B1 or B2). Ancillary structures also comprise a combination of foundation types but mainly concrete slab-on-grade.

The remainder of the site, away from existing buildings, has generally been or is currently used for agricultural farming.

A review of the historical aerial photographs circa 1940 to present, as obtained from the ECan database, indicate:

- Formation of area wide road infrastructure circa 1940.
- Establishment of first dwelling circa 1940, with most constructed circa 1990. Minor variations observed between 1990 to present.
- Historic paleochannels extend across the site and the wider region (refer to KGA Drawing 1.1)

- A historic drain extended through the central portion of the site circa 1990 but appears to have since been filled (refer to KGA Drawing 1.1). We note that the western section of this drain is inferred across 86 and 94 Barters Road.
- Various equestrian facilities have been formed across the site since the early 1970s, with some remaining at present.
- Majority of the site has remained undeveloped.
- Quarrying opposite Hasketts Road started in the early 2010s and is ongoing.

3.2 Proposed Development

We have been provided with a development plan by DLS titled 'Pound Road Industrial Subdivision' (Ref: E20739, dated: June 2025), detailing the extent of the proposed development. We understand that it is proposed to subdivide the site into 77 Lots; 74 designated for industrial use and 3 designated for Utility Reserves. DLS has advised that the Utility Reserves will include stormwater basins which will be approximately 1.5m deep with 1 to 4 slope batters. Worst case scenario is that the basins will hold water for 48 hours. We have included these plans in Appendix A.

We understand that the subdivision earthworks will be staged with the Barters Road properties (Lots 1 to 2, 26 to 29, 42 to 61 and 202) completed as part of Stage 1, Stage 2 comprising Lots 7 to 21, 30 to 41, 55 to 70 and 201, Stage 3 comprising 3 to 6, 22 to 25, 62 to 65, 71 to 73 and 202, and Stage 4 comprising Lot 74 (balance lot to the north). We note that the exact stages are not confirmed at the time of writing this report. As part of these works, all existing channels will be backfilled.

We note that no intrusive investigation or site walkover has been completed across Lot 73. Specific investigations will be required prior to development as indicated elsewhere in this report

4. BACKGROUND INFORMATION

4.1 Sources Consulted

The following third party information sources were consulted and referred to in this report:

- Existing KGA Reports
- New Zealand Geotechnical Database (NZGD)
- Environment Canterbury (ECan)
- Christchurch City Council (CCC)

A summary of our understanding of the third party information is presented below. We note that the below summary of information is limited to that considered relevant to the geotechnical assessment of the property and is intended to present facts and opinions as contained in third party sources and does not constitute interpretation or endorsement by KGA.

4.2 Existing KGA Reports

KGA have previously issued two geotechnical letter reports pertaining to parts of the site. These are as follows:

- 'Technical Category Classification, Proposed Development – 173 Pound Road, Islington' (Ref: K220216-1, dated: 26 April 2022).
- 'Geotechnical Engineering Investigation, Proposed Future Development, 86 Barters Road, Islington' (Ref: K230858-1, dated: 20 December 2023).

A summary of key information contained in these reports is provided below:

- A total of ten machine excavated test pits and associated Scala penetrometer tests were completed across both sites. Scala penetrometer tests terminated between 0.7m to 3.4m depth below ground level (bgl), with test pits progressed to 2.5m to 3.8m.
- Ground conditions between sites were generally consistent, comprising up to 0.4m of topsoil overlying silt/sand to between 0.7m to 3.4m depth, before encountering competent gravel.
- Gravels were generally encountered within the upper 2m except locally towards the southern end of 86 Barters Road where gravels were encountered at 3.4m depth.
- Groundwater was not encountered during the test pit investigations. However, it was considered to fluctuate between 13m to 17m depth bgl based on ECan well data.

- The risk of liquefaction and lateral spreading were considered negligible, though we recommended the influence of relevant slope(s) to the development should be reassessed once details of the proposed development are available.
- The sites were considered likely to perform similar to MBIE Technical Category 1 (TC1) sites.

We also note that all KGA investigation data was uploaded to the NZGD on completion of these reports.

4.3 New Zealand Geotechnical Database (NZGD) & Environment Canterbury (ECan)

The NZGD and ECan websites were searched for geotechnical information in the form of relevant well/test pit logs, and Cone Penetrometer Test (CPT) data. In addition to the KGA investigation data described in Section 4.2 above, six machine excavated test pits, one CPT, one hand auger borehole, and nine ECan wells were found either on or in the vicinity of the site. Whilst the ECan well logs do not provide accurate geotechnical data for the underlying soils, they are useful in providing a general indication of prevailing ground conditions below the termination depth of other testing. The logs from these tests are reproduced in Appendix C and are referenced further in Section 7.

The ECan website indicates that the site is overlaying a “Unconfined/Semiconfined Aquifers”.

The Ecan (2012) Liquefaction Assessment area map indicates the site mapped within a zone of “Damaging Liquefaction Unlikely”.

The site is at least 9km to the northeast of the eastern arm of the Greendale fault. Specific fault detail is provided in Section 6.

The site is located outside the NZGD observation boundaries and hence no information about groundwater depth, ground cracks or lateral movement was available at the time of preparing this report. However, based on review of google earth imagery, dated 4 September 2010, liquefaction ejecta was not observed at this site.

A summary of Peak Ground Acceleration (PGA) experienced on the site during the major earthquake events of the Canterbury Earthquake Sequence (CES) is given in Table 1. We have also scaled the PGA to a magnitude 7.5 event to be able to compare the recorded PGA to the ULS and SLS values recommended in the MBIE Guidance ($PGA_{7.5}$(ULS)=0.35g, $PGA_{7.5}$(SLS)=0.13g). For the magnitude scaling factor assessment, it is important to note that the 13 June and 23 December 2011 aftershocks each comprised two separate earthquakes. In both cases, the second of the two earthquakes was the more damaging, but the first earthquake is inferred to have caused elevated pore water pressure and increased the susceptibility for liquefaction to occur.

To take the two earthquakes into consideration for modelling purposes, the Tonkin & Taylor Liquefaction Vulnerability Study considers the second earthquake with an increased magnitude to include the effects of the first one. The design earthquake magnitude for each event is presented in Table 1.

Table 1: Summary Desk Study Information

	September 2010 (M 7.1)	February 2011 (M 6.2)	June 2011 (M 6.0)	December 2011 (M 5.9)
PGA (g)	0.32	0.17 – 0.19	0.09	0.09
Scaled $PGA_{7.5}$ (g)[4]	0.29	0.12 – 0.13	0.06	0.06

[1] *Scaled to M7.5 using Idriss and Boulanger recommendations (2008)*

4.4 Christchurch City Council (CCC) – Flooding Risk

According to the online CCC database, the site is not within a CCC District Plan Flood Management Area. There are currently no recommended Finished Floor Levels for this site, and we recommend the CCC is contacted for details. It is also recommended that the floor levels for new buildings are elevated well above the surrounding ground level to provide a default level of protection from surface flooding.

4.5 Environment Canterbury (ECan) – Listed Land Use Register

ECan has identified sites where hazardous activities and industries have been located throughout Canterbury and maintains the Listed Land Use Register (LLUR) database which alerts about potential contamination before site works commence. After consultation of the database regarding the site, the following information was obtained for majority of the site: “The Listed Land Use Register does not currently have any information about a Hazardous Activities and Industries List site on your selected land parcel”, except locally at 40 Hasketts Road and 173 Pound Road where the LLUR indicates “the Listed Land Use Register has information relating to your selected land parcels”. The information provided indicates the following HAIL activities:

- A10 – Persistent pesticide bulk storage or use.
- A11 – Pest Control.
- A17 – Storage tanks of drums for fuel, chemicals or liquid waste.

The relevant extracts from the LLUR are presented in Appendix C.

We understand that Momentum Environmental Consultants have undertaken a Detailed Site Investigation (DSI) which will form part of the Fast Track Application.

5. SITE OBSERVATIONS

The following observations were noted during our site walkover on 03 September 2024 (relevant site photographs are included within Appendix B):

- Existing dwellings appear in good condition, with no obvious external damage, though detailed assessments of each dwelling were not completed.
- Historic paleochannel features extend across the site with approximate locations presented on KGA Drawing 1.1. Paleochannel features vary in scale but generally have an elevation difference of 1m to 2m depth below adjacent ground level. The lateral continuity of these features was difficult to track onsite, though it appears these continue into neighbouring properties across the wider region.
- Embankments of paleochannel features are gently to moderately inclined (slope angles between 5˚ to 20˚).
- Barters drain, roughly 1m deep and up to 1.5m wide, extends along the southwestern boundary of site. Approximately 200mm of standing water was observed within the drain.

- Existing drains were identified on the properties of 86 and 94 Barters Road, but were mostly dry at the time of our walkover, except for the western portion of 94 Barters Road immediately north of the existing dwelling.
- Drains across 86 and 96 barters road were generally minor (0.5m deep).
- Minor surface undulations were observed across paddocks.
- Either side of the defined paleochannel features, the site is near level.
- No evidence of land damage observed during our walkover.
- No observations of 111 Pound Road, 578 Waterloo Road, 2 Barters Road or any of the properties along Hasketts Road were made at the time of our walkover due to contractual restrictions. The extent of the area not investigated is included on Drawing 1.1.

6. GEOLOGY

The GNS Science published geology of the Christchurch Area shows the site is underlain by grey river alluvium comprising gravel, sand, and silt, beneath plains or low-level terraces. These deposits can range from veneers of sediment up to many tens of meters thick.

Further to the above, we have made reference to the published Geomorphological Map of Eastern Canterbury (2015) which indicates that the site is underlain by a river plain or channel deposits, and localised incised channel deposits below the southeastern portion (see Figure 2). We also have reviewed the original and digitised versions of the mid 1800s Canterbury Black Maps as per the ECan online database. The original maps indicate that the site is underlain by plain deposits with a stream channel/paleochannel aligned northwest to southeast located along the northern boundary.

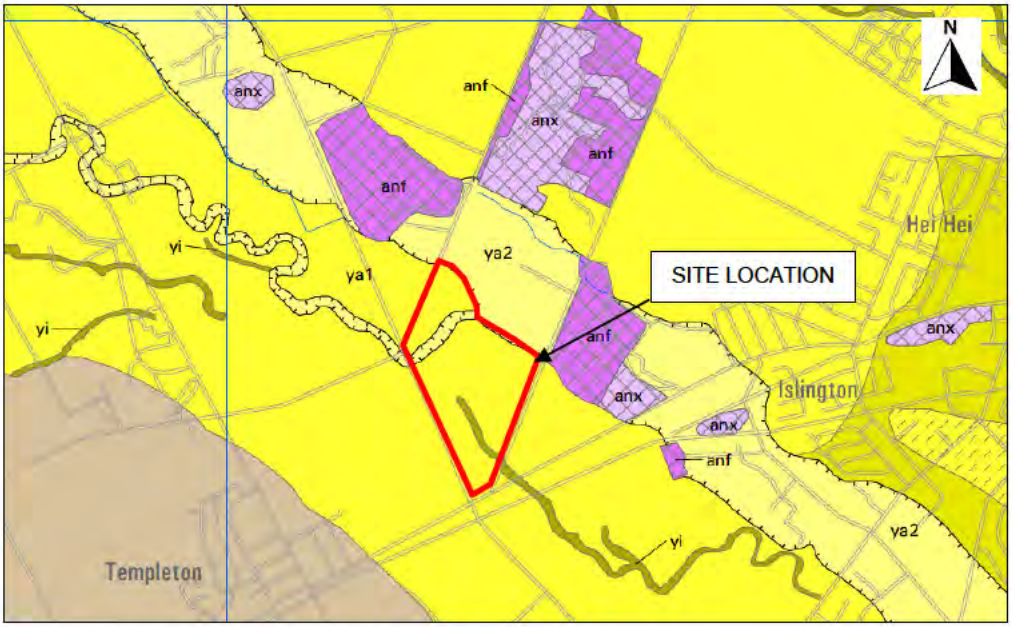

Figure 2: Geomorphological Map of Eastern Canterbury (2015)

We have also reviewed the GNS 1:250,000 scale fault line map titled "Surface Traces of Onshore Active Faults" (updated 5 November 2022). This map indicates that the Greendale Fault, trending west to east, is the closest mapped active fault to the site and is approximately 9km to the west. Details for the Greendale fault are provided in Table 2.

Table 2: Nearby Fault Detail

Fault Name	Approximate Distance from Site (km)	Fault Sense	Reoccurrence Interval (thousands of years)	Slip Rate
Greendale	9 – 10 (west)	Dextral (right-handed)	10 – 20	Low

7. GROUND INVESTIGATION

7.1 Existing Ground Information

A search of the ECan and NZGD websites identified six machine excavated test pits, one CPT, one hand auger borehole, and nine ECan well logs either on or in the vicinity of the site. KGA have also previously undertaken ten machine excavated test pits across 86 Barters Road and 173 Pound Road, as detailed in Section 4.2. We have considered these tests relevant and the investigation logs are reproduced in Appendix C, and the data points are listed in Tables 3A, 3B and 3C. We note the corresponding Scala data for any referenced test is presented as a secondary value alongside the termination depth of the primary investigation, i.e., 3.0m/1.8m and so forth.

Table 3A: Existing KGA Investigations

Test Reference	Source	Source Reference	Probe Depth (m)	Approx. Distance From Site (m)
TP1	KGA Geotechnical	K220216-1	3.0 / 0.7	Onsite (173 Pound Road)
TP2			3.0 / 1.85	
TP3			3.0 / 1.85	
TP4			3.0 / 1.8	
TP01/SP01	KGA Geotechnical	K230858-1	3.8 / 3.4	Onsite (86 Barters Road)
TP02/SP02			3.5 / 1.0	
TP03/SP03			3.5 / 1.6	
TP04/SP04			2.5 / 1.7	
TP05/SP05			3.5 / 0.7	
TP06/SP06			3.2 / 1.5	

Table 3B: NZGD Data

Test Reference	Source	Source Reference	Probe Depth (m)	Approx. Distance From Site (m)
HA_63046	BECA	3390861. HA04	2.0	Onsite
TP_63066		3390861.TP03	3.5	
TP_63067		3390861.TP04	3.5	
TP_63068		3390861.TP05	3.3	
TP_63059		3390861.PP08	1.2	5 (east)
TP_76278	Tonkin & Taylor	53128.001.TP02	4.2	30 (east)
CPT_106200	Geotechnics Ltd	1001562.0.9999.0.CPT07	1.6	50 (northwest)
TP_76269	BECA	3390861.TP06	4.0	100 (southwest)

Table 3C: ECan Well Data

Test Reference	Type	Probe Depth (m)	Approx. Distance From Site (m)
BX23/0959	Machine borehole for well	33.0	Onsite
M35/6158		36.0	
M35/17723		35.5	
BX23/0788		21.0	40 (west)
M35_6333 (6332)		29.0	70 (southwest)
M36/5889		40.0	100 (southwest)
M35_6300		29.4	100 (northwest)
M35/1102	Groundwater Monitoring	23.5	Onsite
M35/1109		23.6	200 (north)

Well records M35_1102 and 1109 provide indication of the long-term groundwater table. Considering that the elevation of measuring points of these wells is similar to the site, measurements are likely representative of groundwater depths below the site. Details regarding groundwater levels are discussed in Section 7.6. Locations of the existing investigations referenced in Tables 3A to 3C are shown on KGA Drawing 1.2.

7.2 Current Ground Investigation

To supplement the existing ground information, a project specific shallow ground investigation for subsoil identification and bearing capacity purposes was undertaken. The subsurface conditions on site were further explored by excavating an additional six machine test pits (TP01 to TP06) and performing six Scala penetrometer tests (SP01 to SP06) within the test pit locations as shown in Table 4 to infill areas of no geotechnical information. The test pits were completed by Moore Construction under KGA supervision on 03 September 2024. A description of the testing is given in the following sections.

We note that we were unable to test/access Lots 63 to 67 and 73 due to sensitive livestock in these paddocks. We recommend a condition requiring additional testing be undertaken prior to the start of Stage 2 subdivision earthworks. We also note that Lot 74 was not accessible due to contractual obligations and further testing will be required to confirm ground conditions across the entire lot. A supplementary geotechnical report will be required to confirm that conclusions of this report are applicable to Lot 74.

Table 4: Schedule of Exploratory Holes

Test Type	Test Ref.	Depth (m)	Reason for Termination	Date of Test
Machine Excavated Test Pit	TP01	4.1	Target depth	3 September 2024
	TP02	3.3		
	TP03	2.5	Refusal, sidewall collapse	
	TP04	3.3	Target depth	
	TP05	3.0		
	TP06	3.1		
Scala Penetrometer Test (Test Pit Locations)	SP01	4.5	Target depth	3 September 2024
	SP02	3.05		
	SP03	2.7		
	SP04	2.5		
	SP05	0.85		
	SP06	1.15		

The test pit locations were selected to provide representative indications of the subsurface ground conditions within the area being assessed. The locations of the test pits are indicated on our site plan, attached as KGA Drawing 1.2.

7.3 Machine Excavated Test Pits

The test pits were excavated using a 13 Tonne Sumitomo excavator with an approximate 1.0m wide trenching bucket. The test pits were to be excavated to a minimum depth of 3m, increasing to at least 4m where shallow gravels were absent or effective refusal, whichever was shallower.

7.4 Scala Penetrometer Tests

The Scala penetrometer probe consists of a hand operated dynamic cone penetrometer and is used to evaluate the penetration resistance of a soil. A 9kg hammer weight is dropped over a distance of 510mm driving a 20mm diameter cone into the ground. The number of hammer blows is recorded for each 50mm of penetration. Testing is in accordance with Test 6.5.2:1988 of NZS 4402. Scala penetrometer tests were intended to be taken to a depth where effective refusal was reached to determine the depth to competent gravel. The machine excavated test pit and Scala logs are attached to this report.

7.5 Subsurface Conditions

The subsurface ground conditions encountered are briefly described and summarised in Table 5. For a full detailed description, reference should be made to the borehole and test pit logs. In order to prepare a subsurface model of the site, the subsurface conditions encountered have been inferred between our test pit locations. It must be accepted that the conditions are likely to vary between each test pit exploratory hole location, particularly when the distance between test locations is large.

Table 5: Subsurface Conditions

Geotechnical Unit		Depth to Base (m)	Description	Scala Penetrometer Reading (blows per 100mm)**
1	TOPSOIL	0.3 – 0.5	Organic SILT with variable gravel, sand and rootlets. Gravel is typically absent except where shallow gravels encountered	--
2	SILT / SAND	0.5 – 4.5	SILT with variable sand content and possible gravel inclusions	2 – 4
			Fine to medium SAND, silty SAND and/or sandy SILT	2 – 15
3	GRAVEL*	40+	Silty/sandy fine to coarse GRAVEL with thin, discontinuous sand interbeds and discrete 'pebble' or 'fine' gravel layers through the soil profile, moderately packed	2 – 30+

** Unit and/or depth interpreted from onsite machine excavated test pits and nearby ECan well logs.*
*** Scala penetrometer readings based on KGA 2024 investigations.*

Based on our review of all relevant geotechnical investigations, the depth to gravels is variable across the site as shown on KGA Drawing 1.3, though when encountered, are considered to extend to significant depth below the site with minor silt/sand interbedded layers through the soil column.

As mentioned above, there was an area we were unable to access and test. We consider the ground conditions in this area will be similar as the rest of the subdivision based on our knowledge of the wider area; however, additional investigations will be required prior to the start of Stage 2 earthworks to confirm our conclusions and the subgrade must be checked by an experienced geotechnical engineer or geologist. Intrusive investigations will also be required across Lot 74 (Hasketts Road properties) to confirm appropriateness of conclusions of this report.

For a full detailed description, reference should be made to the attached investigation logs and KGA Drawing 1.3 for depth to the top of the gravel layer and base of the gravels.

7.6 Groundwater

Groundwater was not encountered during our site testing or nearby shallow testing. However, two ECan Wells M35/1102 and M35/1109 surround the site and provide groundwater measurements dated between 1980 to 1988. These wells indicate that groundwater generally fluctuates between 13m to 17m, with a long-term average between 15m to 16m depth bgl. This is generally within the range of "initial" water level indicated on the other ECan wells indicated in Table 3C.

8. SITE DESIGNATION & HAZARD ASSESSMENT

8.1 Site Designation

We have assessed the site subsoil class as Class "D" – (Deep or soft soil) for structural design purposes in accordance with Clause 3.1.3 of the New Zealand design standard NZS 1170.5:2004. This assumption is based on the following:

- Our ground investigation encountered dense natural gravel within 5m depth overlain by silts and sands. We therefore consider that Class "E" soil conditions are not present.
- Based on our knowledge of the local geology and the GNS geological map data, we infer that dense to very dense gravel type soils extend to significant depth below this site.

The site experienced M_w 7.5 scaled peak ground accelerations (PGAs) of 0.06g to 0.29g, as per Table 1. Therefore, it may be classified as 'sufficiently tested' for an SLS event for the September 2010 event according to Section 13.5 of the MBIE Guidance document (a level of shaking more than 170% of design SLS), though has not been tested to ULS levels of shaking.

8.2 Liquefaction Hazard

The site is situated in a N/A – Rural and unmapped area as per MBIE mapping available on the NZGD, and indicated as "liquefaction damage is unlikely" in the ECan mapping. Based on the ground conditions encountered onsite and depth to groundwater, we consider that the site has a negligible risk of liquefaction equivalent to a TC1 site if the site was residential.

8.3 Lateral Spreading Potential & Slope Stability

There is a defined slope that extends adjacent to the northern property boundary, a distinctive paleochannel through the central-northern portion of the site, and minor drainage channels locally through the western and central areas of the site (see KGA Drawing 1.1). Based on our observations, encountered ground conditions, depth to groundwater, and negligible liquefaction risk, we consider the lateral spreading potential for this site is likely to be low.

Details of proposed stormwater basins were not available at the time of preparing this report although we understand that they will be less than 1.5m deep and likely to have gentle slopes . There are also minor slopes and bunds along the north elevation of the site and along Barters Road. The impact of any stormwater infrastructure and any existing/permanent slopes around the site should be considered at the time of lot-specific investigations. However, this would be to provide recommendations for good engineering practice based on proposed development adjacent to the slopes and building specific foundation design.

We also recommend that the backfilling and infilling of drains/open channels and historic paleochannels is completed under geotechnical supervision.

8.4 Long Term Static Settlement Potential

Based on existing onsite testing and competency of the silt/sand capping layer and near-surface gravels, we consider the risk of static settlement to be low under ‘normal’ industrial/commercial building loads.

8.5 Shrink-Swell Characteristics

Based on the near-surface non-plastic silt and sand-based alluvium soils, as noted in existing onsite and nearby geotechnical investigations, and our experience of similar soils elsewhere, the shallow soils are considered to be susceptible to very minor swelling and shrinking movements under seasonal variations of water content.

8.6 Technical Land Classification

Based on the above, we consider the site likely to perform equivalent to a TC1 classification if considered as a residential site in accordance with Table 3.1 of the MBIE Guidance (see KGA Drawing 1.4). We note that the proposed development is industrial and not residential; however, we consider that the Technical Categorisation still provides a good insight into the likely performance of the land and future development.

9. SITE FORMATION WORKS

As part of the proposed earthworks at this site, the following should be adhered to:

- Any proposed earthworks are to be undertaken in accordance with recommendations and guidance contained within NZS 4431:2022.
- All existing buildings and associated foundations, and tree trunks and associated roots must be removed. The resultant excavations should be backfilled with engineered hardfill to NZS 4431:2022 standard. Any filling should only be completed once the geotechnical engineer has reviewed appropriateness of the subgrade.
- Paleochannel features and existing drainage channels must also be appropriately backfilled in accordance with the above recommendations and standard. Any filling should be undertaken under supervision of a geotechnical engineer and after their confirmation that remnant subgrade is acceptable with all unsuitable material removed from the base and sides.
- Any existing tailings or obvious non-engineered fill to be removed.
- Subgrade to be checked by an experienced geotechnical engineer or geologist across any historic paleochannel infill.
- Backfill of existing drains/open channels to be completed under geotechnical supervision.
- Additional testing to be completed within the highlighted area as per Drawing 1.5 prior to Stage 2 subdivision earthworks.

10. GEOTECHNICAL CONSIDERATIONS FOR SUBDIVISION

10.1 Geotechnical Considerations

Based on our investigation results and observations, the following information should be considered for the proposed subdivision (excluding Lot 74):

- Topsoil was identified up to 0.5m depth, underlain by silt/sand deposits to between 0.5m and 4.5m depth overlying dense natural gravel to significant depth. The depth to gravel varies across the site.
- The local groundwater was not encountered during investigations on site, but based on nearby information is likely to fluctuate between 13m to 17m depth bgl.
- According to our assessment, the property is likely to behave as equivalent to a TC1 site as defined in the MBIE Guidance document for residential sites, though we acknowledge that the site will be industrial thus the classification is merely an indication of future land performance.
- Based on Scala testing, the natural soil below the topsoil appears to have a minimum blow count of 2 blows per 100mm penetration.
- Additional investigations required within the highlighted area as per Drawing 1.5 prior to Stage 2 subdivision earthworks.

10.2 Subdivision Level Investigations

We note that certain areas were not accessible at the time of our investigations. Additional investigations will be required to confirm that the ground conditions and to ensure our recommendations remain valid across these areas prior to the start of Stage 2 subdivision earthworks. Additional testing will also be required on Lot 74. These areas are shown on KGA Drawing 1.5.

10.3 Building Consent Level Investigation

Considering the area of proposed allotments and unknown location of building developments, Lot-specific geotechnical investigations should be undertaken at the building consent stage to accurately assess ground conditions below each of the future industrial developments. The effect of remnant slopes should also be considered.

11. SUITABILITY OF SITE FOR SUBDIVISION

Section 106 of the Resource Management Act (RMA) states that a consent authority may refuse to grant subdivision consent, or may grant conditional subdivision consent, if it considers that:

- There is significant risk from natural hazards.
- Sufficient provision has not been made for legal and physical access to each allotment to be created by the subdivision.

Our assessment of the site against the requirements of Section 106 is presented in Table 6.

Table 6: Assessment of the site against the RMA requirements

Hazard	Potential Susceptibility	
	Current (Section 106, 1A)	Post Development (Section 106, 1Ac)
Erosion	No evidence of erosion or gullying across site.	Provided stormwater is discharged in a controlled manner and appropriate engineering design is implemented, erosion is unlikely to worsen due to development or have significant adverse effects on the development.
Falling Debris	The site is relatively flat and located away from any hills, with no risk of falling debris.	--
Slippage/ Lateral Movement	Potential for slope instability for proposed Lots adjacent to existing slope(s) and proposed channels and/or stormwater retention basins	We recommend KGA or a suitably qualified geotechnical engineer is engaged to review the slope stability of the site at building consent stage once detailed development plans are available.
Subsidence	Very low long-term settlement hazard and liquefaction hazards is present at this site.	Significant damage is unlikely to occur to the proposed development provided building foundations are appropriately designed in line with relevant good practice guidelines. Lot specific testing shall be carried out at the building consent stage.
Inundation	The site is not currently located within a flood management area delineated by the CCC. However, the CCC should be contacted to comment on floor level requirements.	Provided stormwater discharge is appropriately managed, any CCC finished floor level requirements are respected and/or advice is sought from an experienced civil engineer, we consider that the risk of inundation will not be exacerbated by developing the land and may be appropriately managed.

Based on these considerations, we believe on reasonable grounds that the site is suitable for the proposed subdivision in terms of geotechnical constraints. A Statement of Professional Opinion on the Suitability of Land for Subdivision is presented in Appendix D. It should be noted that other natural hazards not specifically included in Table 6 are outside of the scope of works for our geotechnical investigation.

12. FURTHER WORKS

We recommend the following:

- Additional geotechnical investigations are undertaken as per Section 10.2 above in the areas depicted on KGA Drawing 1.5.
- Subgrade to be checked by a geotechnical engineer or geologist across the historical paleochannel infill.
- Backfilling of drains, tree and building excavations, and open channels to be completed with geotechnical supervision.
- KGA or a suitably qualified geotechnical engineer is engaged to review the slope stability potential of the site once building consent level development plans are finalised.

We understand that these proposed further works have been addressed/included within the proposed conditions to application.

13. LIMITATIONS

Our report was prepared in line with the current MBIE Guidance. To satisfy the requirements of the Building Code and the New Zealand Standard “NZS 1170 - Structural Design Actions”, foundations must be designed so that the building must remain functional under SLS level loads; minor damage is acceptable provided the damage is readily repairable, and the building does not collapse under ULS level loads, but could suffer moderate to significant structural damage.

Desk study data was obtained from several investigation and modelling study sources made available to the public and engineering industry post the Canterbury Earthquake Sequence. Acknowledgment is given regarding the free use of the New Zealand Geotechnical Database, Christchurch City Council and Environment Canterbury websites. The data is used in good faith and no responsibility can be taken for the accuracy or completeness of the data.

This report was prepared in the context defined in Section 1 above and must not be relied upon by any other party other than our Client, for whom it was prepared, and the relevant Territorial Authority. It has been compiled with respect to the brief given to us, and must not be relied upon in any other context, recreated for any other purpose, or used by any person who is not our Client without first obtaining our written permission.

We point out that our conclusions are based on desk study material, a visual surface inspection of the site, third party investigation data from nearby sites and discrete exploratory hole positions. Ground conditions may vary between investigation points. The recommendations given in this report are provided as an overall strategy to minimise risks from geotechnical hazards. It should be noted that they are unlikely to remain effective if they are adopted in a piecemeal manner.

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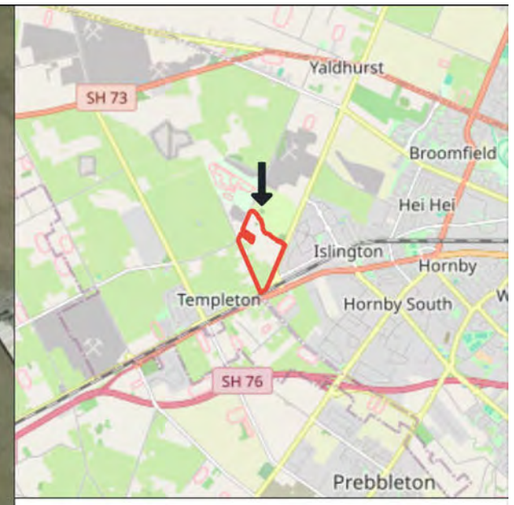
ATTACHMENTS



Legend

- Site Boundary
- Main inferred paleochannel features (approximately 1m to 2m depth) intersecting or adjacent to the site
- Minor drainage channels (<1m depth)
- Barters Drain (<1m depth)
- Pond feature (<1m depth)
- No observations during recent site visit (dated: 03 September 2024) due to contractual restrictions; geomorphological features therefore inferred from publicly available aerial photographs

0 50 m 100 m

KGA GEOTECHNICAL
Auckland - 09 478 6655
Christchurch - 03 343 5302

Produced by **Datanest.earth**

Title: Site Location Plan & Geomorphology		
Client: NTP Development Holdings Ltd		Size: A3
Project: Pound Road Industrial Development	Drawn: JB	Drawing: 1.1
Date: 29-05-2025	Checked: RK	
Proj No: K240545	Scale: 1:5500	Version: 0

Legend

- Site Boundary
- KGA machine excavated test pit (Ref: K220216, dated: 12 April 2022)
- KGA machine excavated test pit (Ref: K230858-1, dated: 05 December 2023)
- KGA machine excavated test pit (dated: 03 September 2024)
- NZGD sourced hand auger borehole test
- NZGD sourced machine excavated test pit
- NZGD sourced Cone Penetrometer Test (CPT)
- ECan Well data sourced from Canterbury Maps

0 50 m 100 m

KGA GEOTECHNICAL
Auckland - 09 478 6655
Christchurch - 03 343 5302

Produced by **Datanest.earth**

Title: Test Location Plan		
Client: NTP Development Holdings Ltd		Size: A3
Project: Pound Road Industrial Development	Drawn: JB	Drawing: 1.2
Date: 29-05-2025	Checked: RK	
Proj No: K240545	Scale: 1:5500	Version: 0

Legend

- KGA machine excavated test pit (Ref: K220216, dated: 12 April 2022)
- KGA machine excavated test pit (Ref: K230858-1, dated: 05 December 2023)
- KGA machine excavated test pit (dated: 03 September 2024)
- NZGD sourced hand auger borehole test
- NZGD sourced machine excavated test pit
- NZGD sourced Cone Penetrometer Test (CPT)
- ECan Well data sourced from Canterbury Maps

Note: - Depth to the top of the gravel & base of gravels indicated beside test location.

- Site Boundary

0 50 m 100 m

KGA GEOTECHNICAL
Auckland - 09 478 6655
Christchurch - 03 343 5302

Produced by **Datanest.earth**

Title: Depth to the top & bottom of Gravel		
Client: NTP Development Holdings Ltd		Size: A3
Project: Pound Road Industrial Development	Drawn: JB	Drawing: 1.3
Date: 29-05-2025	Checked: RK	
Proj No: K240545	Scale: 1:5500	Version: 0

Legend

Technical Category 1 (TC1) equivalent land as defined by the MBIE Guidance for residential sites

Note: - Future developments will likely comprise industrial rather than residential sites; however, we consider that the Technical Categorisation still provides a good insight into the likely performance of the land and future development.

Site Boundary

0 100 m 200 m

KGA GEOTECHNICAL
Auckland - 09 478 6655
Christchurch - 03 343 5302

Produced by **Datanest.earth**

Title: Technical Categorisation Plan		
Client: NTP Development Holdings Ltd		Size: A3
Project: Pound Road Industrial Development	Drawn: JB	Drawing: 1.4
Date: 29-05-2025	Checked: RK	
Proj No: K240545	Scale: 1:6500	Version: 0

Legend

- Area where additional geotechnical investigations will be required prior to the starte of Stage 2 subdivision earthworks
- Additional tests required for subdivision
- KGA machine excavated test pit (Ref: K220216, dated: 12 April 2022)
- KGA machine excavated test pit (Ref: K230858-1, dated: 05 December 2023)
- KGA machine excavated test pit (dated: 03 September 2024)
- NZGD sourced hand auger borehole test
- NZGD sourced machine excavated test pit
- NZGD sourced Cone Penetrometer Test (CPT)
- ECan Well data sourced from Canterbury Maps
- Site Boundary

0 100 m 200 m

KGA GEOTECHNICAL
Auckland - 09 478 6655
Christchurch - 03 343 5302

Produced by **Datanest.earth**

Title: Additional Investigations Required Prior to Stage 2 Earthworks		
Client: NTP Development Holdings Ltd		Size: A3
Project: Pound Road Industrial Development	Drawn: JB	Drawing: 1.5
Date: 29-05-2025	Checked: RK	
Proj No: K240545	Scale: 1:6000	Version: 0

TEST PIT AND SCALA LOG

Job No.:	**K240545**
Hole No.:	**TP01/SP01**
Date:	3/09/2024
Logged By:	KF
Sheet:	2.1

Client: NTP Development Holdings Ltd

Project: Geotechnical Investigation

Location: Pound Road Plan Change

Coordinates: E 1558588.9, N 5178574.2 **Ground Level:** 38.8

RL	Subsurface Conditions	Depth (m)	Groundwater	Geological Unit	Graphic Log
38.3	Organic SILT, some sand, trace rootlets, dark brown, moist, non-plastic, non-dilatant; sand, fine to medium; organics, amorphous.	0.5	Groundwater Not Encountered	TOPSOIL	
37.8	Fine to medium SAND, some silt, yellowish brown with orange mottling. Medium dense, dry to moist, poorly graded.	1.0		SPRINGSTON FORMATION (TERRESTRIAL)	
	Silty SAND, yellowish brown with orange mottling. Medium dense, moist, poorly graded; sand, fine to medium.	1.5			
	1.50m - 4.10m: Occasional silty lenses but generally thin and discontinuous through the soil profile.	2.0			
		2.5			
		3.0			
		3.5			
34.7		4.0			
	4.10m: End of test pit (target depth).	4.5			

Scala Penetrometer
(blows / 50mm)

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

0 | 1 1 1 1 1 1 | 2 2 | 3 4 3 3 3 3 3 | 2 2 2 2 2 2 2 2 2 2 2 2 | 3 3 3 3 3 3 | 5 5 5 5 5 5 5 5 | 3 | 4 4 4 4 | 3 | 4 4 4 4 4 4 4 4 | 5 6 5 | 4 | 3 | 4 | 3 | 4 4 | 6 | 3 | 4 | 5 5 | 4 | 7 | 4 | 5 | 3 | 4 4 4 4 4 | 5 5 | 4 | 4 4 4 4 4 | 5 | 7 | 20>>

Notes & Abbreviations

Soils logged in accordance with 'The guidelines for the classification and description of soil and rock for engineering purposes' December 2005, NZGS. Co-ordinates are in NZTM unless otherwise specified.

Water

- ▼ Standing Water Level
- ▽ Water Level At Time Of Drilling
- ◁– Out Flow –▷ In Flow

Shear Vane

Corrected as per NZGS Guidelines
Vane No.:
UTP = Unable To Penetrate
+ = Peak Exceeded
- = No Result

Other Comments

KGA GEOTECHNICAL

Printed: 6/09/2024 1:21:00 pm

TEST PIT AND SCALA LOG

Job No.:	**K240545**
Hole No.:	**TP02/SP02**
Date:	3/09/2024
Logged By:	KF
Sheet:	2.2

Client: NTP Development Holdings Ltd

Project: Geotechnical Investigation

Location: Pound Road Plan Change

Coordinates: E 1558430.8, N 5178441.8 **Ground Level:** 38.9

RL	Subsurface Conditions	Depth (m)	Groundwater	Geological Unit	Graphic Log
38.5	Organic SILT, some sand, trace rootlets, dark brown, moist, non-plastic, non-dilatant; sand, fine to medium; organics, amorphous.	0.0	Groundwater Not Encountered	TOPSOIL	TS
37.5	Fine to medium SAND, some silt, yellowish brown with orange mottling. Medium dense, dry to moist, poorly graded.	0.5		SPRINGSTON FORMATION (TERRESTRIAL)	
36.2	Sandy SILT, yellowish brown with orange mottling, moist, non-plastic, non-dilatant; sand, fine to medium.	1.5			
35.6	Sandy GRAVEL, trace cobble and silt, greyish brown. Dense, moist, well graded; cobble, subrounded, sandstone; gravel, fine to coarse, subangular to subrounded, sandstone; sand, fine to coarse. 2.95m: Very dense.	2.5			
	3.30m: End of test pit (target depth).	3.5			
		4.5			

Scala Penetrometer
(blows / 50mm)

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

1 1 1 1 1 1 2 2
1 1 1 1 1 1 1 1 1 1 3 2 2 2 1 2 2 2 2 2 2 2
4 4 4 4 4 4 4 4 4 4 4 4 4 5 6 6 6 6 9 5 7 6 7 8 4 5
4 4 4 4 10 12 18 >>

Notes & Abbreviations

Soils logged in accordance with 'The guidelines for the classification and description of soil and rock for engineering purposes' December 2005, NZGS. Co-ordinates are in NZTM unless otherwise specified.

Water

- Standing Water Level
- Water Level At Time Of Drilling
- Out Flow / In Flow

Shear Vane

Corrected as per NZGS Guidelines
Vane No.:
UTP = Unable To Penetrate
+ = Peak Exceeded
- = No Result

Other Comments

KGA GEOTECHNICAL

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Printed: 6/09/2024 1:21:01 pm

TEST PIT AND SCALA LOG

Job No.:	**K240545**
Hole No.:	**TP03/SP03**
Date:	3/09/2024
Logged By:	KF
Sheet:	2.3

Client: NTP Development Holdings Ltd

Project: Geotechnical Investigation

Location: Pound Road Plan Change

Coordinates: E 1558472.0, N 5178600.7 **Ground Level:** 38

RL	Subsurface Conditions	Depth (m)	Groundwater	Geological Unit	Graphic Log
37.5	Organic SILT, some sand, trace rootlets, dark brown, moist, non-plastic, non-dilatant; sand, fine to medium; organics, amorphous.	0.5	Groundwater Not Encountered	TOPSOIL	TS
37.2	Sandy GRAVEL, some silt, trace rootlets, brown. Loose, moist, well graded; gravel, fine to coarse, subangular to subrounded, sandstone; sand, fine to coarse.				
37	Fine to coarse GRAVEL, minor sand, grey. Loose, moist to wet, poorly graded; gravel, subrounded to rounded, sandstone; sand, fine to coarse.	1.0		SPRINGSTON FORMATION (TERRESTRIAL)	
	Sandy GRAVEL, some silt, trace rootlets, brown. Loose, moist, well graded; gravel, fine to coarse, subangular to subrounded, sandstone; sand, fine to coarse.				
	1.35m: Medium dense.	1.5			
	2.00m: Dense.	2.0			
35.7					
35.5	SILT, some sand, trace gravel, greyish brown with orange mottling, moist, non-plastic, non-dilatant; gravel, fine to medium, subangular to subrounded, sandstone; sand, fine to medium.	2.5			
	2.50m: End of test pit (refusal, sidewall collapse).	3.0			
		3.5			
		4.0			
		4.5			

Scala Penetrometer
(blows / 50mm)

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

0 1 0 1 1 1 1 1 1 1 2 1 1 2 1 1 1 2 1 2 1 2 2 1 1 2 2 2 2 2 2 3 3 2 3 3 3 3 5 4 3 5 4 4 6 8 6 9 12 11 10 14 15

Notes & Abbreviations

Soils logged in accordance with 'The guidelines for the classification and description of soil and rock for engineering purposes' December 2005, NZGS. Co-ordinates are in NZTM unless otherwise specified.

Water

- Standing Water Level
- Water Level At Time Of Drilling
- Out Flow / In Flow

Shear Vane

Corrected as per NZGS Guidelines
Vane No.:
UTP = Unable To Penetrate
+ = Peak Exceeded
- = No Result

Other Comments

KGA GEOTECHNICAL

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Printed: 6/09/2024 1:21:01 pm

TEST PIT AND SCALA LOG

Job No.:	**K240545**
Hole No.:	**TP04/SP04**
Date:	3/09/2024
Logged By:	KF
Sheet:	2.4

Client: NTP Development Holdings Ltd

Project: Geotechnical Investigation

Location: Pound Road Plan Change

Coordinates: E 1558299.6, N 5178617.8 **Ground Level:** 40.2

RL	Subsurface Conditions	Depth (m)	Groundwater	Geological Unit	Graphic Log
39.8	Organic SILT, some sand, trace rootlets, dark brown, moist, non-plastic, non-dilatant; sand, fine to medium; organics, amorphous.	0.0	Groundwater Not Encountered	TOPSOIL	TS
39.3	Fine to medium SAND, some silt, yellowish brown with orange mottling. Medium dense, dry to moist, poorly graded.	0.5			
37.7	Sandy SILT, yellowish brown with orange mottling, moist, non-plastic, non-dilatant; sand, fine to medium.	1.0		SPRINGSTON FORMATION (TERRESTRIAL)	
36.9	Sandy GRAVEL, some silt, trace cobble and silt, greyish brown. Moderately packed, moist, well graded; cobble, subrounded, sandstone; gravel, fine to coarse, subangular to subrounded, sandstone; sand, fine to coarse.	1.5			
	3.30m: End of test pit (target depth).	2.0			
		2.5			
		3.0			
		3.5			
		4.0			
		4.5			

Scala Penetrometer
(blows / 50mm)

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

0 1 0 1 0 1 1 1 1 2 1 1 1 1 1 1 1 1 1 2 2 2 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 1 1 2 3 4 3 3 12 20 >>

Notes & Abbreviations

Soils logged in accordance with 'The guidelines for the classification and description of soil and rock for engineering purposes' December 2005, NZGS. Co-ordinates are in NZTM unless otherwise specified.

Water

- Standing Water Level
- Water Level At Time Of Drilling
- Out Flow / In Flow

Shear Vane

Corrected as per NZGS Guidelines
Vane No.:
UTP = Unable To Penetrate
+ = Peak Exceeded
- = No Result

Other Comments

KGA GEOTECHNICAL

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TEST PIT AND SCALA LOG

Job No.:	**K240545**
Hole No.:	**TP05/SP05**
Date:	3/09/2024
Logged By:	KF
Sheet:	2.5

Client: NTP Development Holdings Ltd

Project: Geotechnical Investigation

Location: Pound Road Plan Change

Coordinates: E 1558478.5, N 5178906.9 **Ground Level:** 41

RL	Subsurface Conditions	Depth (m)	Groundwater	Geological Unit	Graphic Log
40.5	Organic SILT, some sand, trace rootlets, dark brown, moist, non-plastic, non-dilatant; sand, fine to medium; organics, amorphous.	0.5	Groundwater Not Encountered	TOPSOIL	
40.1	SILT, some sand, trace rootlets, yellowish brown with orange mottling, moist, non-plastic, non-dilatant; sand, fine to medium.	1.0		SPRINGSTON FORMATION (TERRESTRIAL)	
39.5	Sandy GRAVEL, some silt, trace rootlets, greyish brown. Moderately packed, moist, well graded; gravel, fine to coarse, subangular to subrounded, sandstone; sand, fine to medium. 1.10m: Trace silt, sand becomes fine to coarse, rootlets absent.	1.5			
39.3	Fine to medium SAND, trace silt, greyish brown. Moist, poorly graded.	2.0			
38	Sandy GRAVEL, some silt, trace cobble, greyish brown. Moderately packed, moist, well graded; cobble, subrounded, sandstone; gravel, fine to coarse, subangular to subrounded, sandstone; sand, fine to medium. 2.00m - 2.30m: Trace rootlets.	2.5			
	3.00m: End of test pit (target depth).	3.0			
		3.5			
		4.0			
		4.5			

Scala Penetrometer
(blows / 50mm)

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

0 0 1 1 1 1 1 1 1 2 2 2 3 15 18 >> 20 >>

Notes & Abbreviations

Soils logged in accordance with 'The guidelines for the classification and description of soil and rock for engineering purposes' December 2005, NZGS. Co-ordinates are in NZTM unless otherwise specified.

Water

- ▼ Standing Water Level
- ▽ Water Level At Time Of Drilling
- ◁ Out Flow ▷ In Flow

Shear Vane

Corrected as per NZGS Guidelines
Vane No.:
UTP = Unable To Penetrate
+ = Peak Exceeded
- = No Result

Other Comments

KGA GEOTECHNICAL

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TEST PIT AND SCALA LOG

Job No.:	**K240545**
Hole No.:	**TP06/SP06**
Date:	3/09/2024
Logged By:	KF
Sheet:	2.6

Client: NTP Development Holdings Ltd

Project: Geotechnical Investigation

Location: Pound Road Plan Change

Coordinates: E 1558171.8, N 5178931.8 **Ground Level:** 40.5

RL	Subsurface Conditions	Depth (m)	Groundwater	Geological Unit	Graphic Log
40.1	Organic SILT, some sand, trace rootlets, brown, dry to moist, non-plastic, non-dilatant; sand, fine to medium; organics, amorphous.	0.0	Groundwater Not Encountered	TOPSOIL	TS
39.6	SILT, minor sand, trace gravel and rootlets, brown, dry to moist, non-plastic, non-dilatant; gravel, fine to coarse, subangular to subrounded, sandstone; sand, fine to medium. 0.50m: Rootlets absent.	0.5		SPRINGSTON FORMATION (TERRESTRIAL)	
39.3	Silty GRAVEL, some sand, dark brown. Moderately packed, moist, well graded; gravel, fine to coarse, subangular to subrounded, sandstone; sand, fine to medium.	1.0			
37.4	Sandy GRAVEL, trace cobble, silt and rootlets, grey. Moderately packed, moist, well graded; cobble, subrounded, sandstone; gravel, fine to coarse, subangular to subrounded, sandstone; sand, fine to coarse. 1.40m: Light grey, loosely packed, dry. 1.80m: Grey, moderately packed, moist.	1.5 2.0 2.5 3.0			
	3.10m: End of test pit (target depth).	3.5 4.0 4.5			

Scala Penetrometer
(blows / 50mm)

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

1 0 1 0 1 1 1 1 1 1 1 1 1 1 1 6 10 6 6 13 13 15 16

Notes & Abbreviations

Soils logged in accordance with 'The guidelines for the classification and description of soil and rock for engineering purposes' December 2005, NZGS. Co-ordinates are in NZTM unless otherwise specified.

Water

- ▼ Standing Water Level
- ▽ Water Level At Time Of Drilling
- ◁ Out Flow ▷ In Flow

Shear Vane

Corrected as per NZGS Guidelines
Vane No.:
UTP = Unable To Penetrate
+ = Peak Exceeded
- = No Result

Other Comments

KGA GEOTECHNICAL

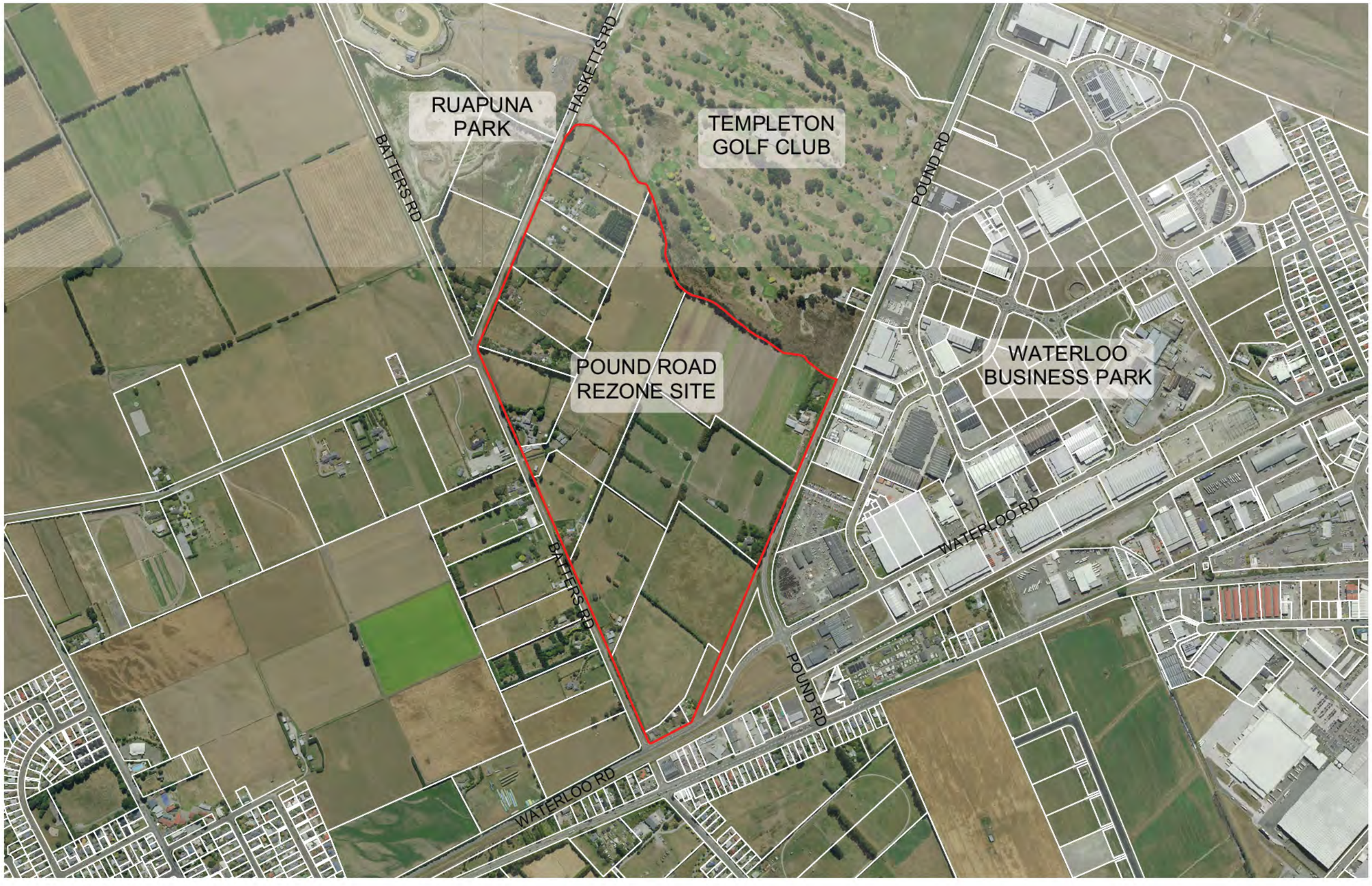
Produced with Core-GS

Printed: 6/09/2024 1:21:04 pm

APPENDIX A

Third Party Documents

. SITE LOCATION PLAN



LEGEND

Site Boundary

SCALE: 1:10,000 @ A3

AMENDMENTS :		
AMENDMENT	DATE	DESCRIPTION
R3	12/05/25	LAYOUT AMENDED & SCHEDULE UPDATED
R4	26/05/25	LOT 202 SHIFTED AND SURROUNDING LOTS AMENDED
R5	18/06/25	LAYOUT AMENDED

NOTES :

1. Areas and dimensions are approximate only and are subject to final survey and deposit of plans.
2. Service easements to be created as required.
3. This plan has been prepared for subdivision concept & discussion purposes only. No liability is accepted if the plan is used for any other purposes.

NORTH

Lot 2 DP 403260

Lot 3 DP 403260

Haskett's Road

74 Balance Lot 8.6018ha

STAGE 4

14 13838m²

15 4446m²

13 15608m²

12 11758m²

STAGE 2

11 7326m²

10 5036m²

9 5653m²

8 5673m²

7 5026m²

16 3562m²

17 1103m²

18 822m²

19 822m²

20 822m²

21 1282m²

37 825m²

38 823m²

39 821m²

40 820m²

41 1726m²

42 1240m²

43 1401m²

44 4.0758ha

45 2988m²

46 2703m²

47 2700m²

48 2700m²

49 2700m²

50 2700m²

51 4363m²

52 4046m²

53 2999m²

54 4499m²

55 4499m²

56 5709m²

57 5527m²

58 2678m²

59 4080m²

60 4080m²

61 4496m²

62 1.1421ha

63 1.1401ha

64 1.1400ha

65 1.1047ha

66 2191m²

67 2200m²

68 2200m²

69 2346m²

70 2969m²

71 8839m²

72 13622m²

73 5.3283ha

22 6043m²

23 6099m²

24 6108m²

25 7687m²

26 3794m²

27 3500m²

28 3512m²

29 4940m²

30 829m²

31 828m²

32 826m²

33 825m²

34 823m²

35 822m²

36 1146m²

201 6148m² Local Purpose (Utility) Reserve to vest in CCC

202 2216m² Local Purpose (Utility) Reserve to vest in CCC

TEMPORARY TURNING AREA

6 9585m²

TEMPORARY TURNING AREA

5 7941m²

4 7855m²

3 9740m²

2 5605m²

1 6326m²

200 2.9166ha Local Purpose (Utility) Reserve to vest in CCC

STAGE 1

STAGE 3

Barters Road

Pound Road

Waterloo Road

Lot 101 DP 472402

Lot 10 DP 472402

Lot 100 DP 472402

Lot 1 DP 472402

Lot 99 DP 472402

Lot 2 DP 472402

AREA TABLE		
TYPE	LOT MIX	NUMBER
Type A	< 3000	32
Type B	3001 - 5000	13
Type C	5001 - 7500	12
Type D	7501 - 9999	6
Type E	> 10,000	10
BALANCE LOT	86018	1

Total Area :

Comprised in:

DAVIE LOVELL-SMITH
PLANNING SURVEYING ENGINEERING

116 Wrights Road P O Box 679 Christchurch 8140, New Zealand
Telephone: 03 379-0793 Website: www.dls.co.nz E-mail: office@dls.co.nz

JOB TITLE:
Pound Road Industrial Subdivision

SHEET TITLE:
Site Layout Plan Option C2

DRAWING STATUS
For Discussion Purposes

SCALE : 1:2000@A1 1:4000@A3

DATE : June 2025

CAD FILE : J:\20739\SUBCON\20739_Option C2_R5.dwg

REVISION : R5

DRAWING No : E20739

SHEET No: 1 OF 1

APPENDIX B

Site Photographs

173 Pound Road

Existing slope along the northern boundary

Existing ancillary structure

Concrete pavements supporting ancillary structure

Agricultural paddocks across the W portion of site

Agricultural paddocks across the W portion of site

Typical ground conditions across this site

38 Barters Road & 570 Waterloo Road

Near-level ground across E paddocks

Minor paleochannel feature near N boundary

Paleochannel extending through E paddock

Near-level paddocks N of paleochannel

Undeveloped paddocks forming 570 Waterloo Road

Ancillary shed with concrete flooring

64 Barters Road

Undeveloped land & ancillary structure (top right)

Undeveloped paddocks

Ancillary structures in SE corner

Two storey dwelling in S corner

Minor paleochannel/depression in S corner

Typical ground conditions (TP04)

86 Barters Road

Existing Drain adjacent to S boundary of site along Barters Road

Ancillary structure in SW corner

Existing dwelling and detached garage

Eastern elevation of garage

Equestrian facility in SE corner

Potential soakage pit S of equestrian facility

Timber stock yards N of dwelling

Water troughs observed across the site

Ancillary structure located near the centre of the property

Minor drainage channel extending through the centre of the site

Paleochannel extending through the central-northern portion of site

Burn pit within paleochannel

N portion of site

N corner, facing S

N portion of site

N portion of site

Slope adjacent to N boundary

Slope adjacent to N boundary

94 Barters Road

W portion of site

Paleochannel extending through W portion

N-S arm of historic drain identified in our aerial photograph review

Minor pond N of dwelling

Two storey dwelling across S portion

In-ground swimming pool W of dwelling

W-E arm of historic drain identified in our aerial photograph review

W-E arm of historic drain identified in our aerial photograph review

Soil bund along S boundary, comprising construction debris/non-engineered fill

Soil bund along S boundary, comprising construction debris/non-engineered fill

Paleochannel extending through W portion

Overview of Barters Drain adjacent to S boundary.

APPENDIX C

Background Information Documents

Legend

- KGA Test Pit & Scala locations (dated 5 December 2023).
- Existing Dwelling & Garage
- Ancillary Structures
- Historic Stock Yards
- Horse Training area
- Soil / Fill Bund
- Burn Pit
- Inferred Soakage Pit
- Inferred Paleochannels intersecting or adjacent to site
- Drainage channels (<1m depth) intersecting or adjacent to the site
- Site Boundary

0 25 m 50 m

KGA GEOTECHNICAL

Produced by **Datanest.earth**

Title: Site Location Plan		
Client: Davie Lovell-Smith		Drawing No.: 1
Project: 86 Barters Road, Templeton	Drawn: KF	Size: A3
Date: 05-12-2023	Checked: RK	
Proj No.: K230858	Scale: 1:2500	Version: draft

TEST PIT AND SCALA LOG

Job No.:	**K230858**
Hole No.:	**TP01/SP01**
Date:	5/12/2023
Logged By:	KF
Sheet:	2.1

Client: Davie Lovell-Smith

Project: Geotechnical Investigation

Location: 86 Barters Road, Templeton

Coordinates: E 1558341.4, N 5178719.2 **Ground Level:** 41

RL	Subsurface Conditions	Depth (m)	Groundwater	Geological Unit
40.7	Organic SILT, minor sand, trace rootlets, dark brown, dry to moist, non-plastic, non-dilatant; sand, fine to medium; organics, amorphous.	0.0		TOPSOIL
40.2	Silty SAND, trace rootlets, light greyish brown. Medium dense, dry to moist, poorly graded; sand, fine to medium.	0.5		SPRINGSTON FORMATION (TERRESTRIAL)
39.6	Sandy SILT,trace rootlets, brownish grey, dry to moist, non-plastic, non-dilatant; sand, fine to medium.	1.0		
	SILT, some sand, trace rootlets, greyish brown with orange mottling, moist, non-plastic, non-dilatant; sand, fine.	1.5	Groundwater Not Encountered	
	2.20m: No rootlets.	2.0		
	2.80m: Grey with orange mottling.	2.5		
37.6		3.0		
37.4	Sandy GRAVEL, trace silt and cobble, grey. Moderately packed, moist, well graded; gravel, fine to coarse, subangular to subrounded, sandstone; sand, fine to coarse	3.5		
	3.60m: End of hole (target depth).			

Scala Penetrometer (blows / 50mm)

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	1	1	2	3	2	3	2	3	5	5	4	4	5	4	4
2	2	1	1	1	1	2	2	1	2	4	4	5	3	3	4
3	4	4	4	4	4	4	4	4	4	4	4	5	6	7	6
6	4	4	4	4	6	7	7	9	10	10	8	9	10	10	14
11	11	12	14	15											

Notes & Abbreviations

Soils logged in accordance with 'The guidelines for the classification and description of soil and rock for engineering purposes' December 2005, NZGS. Co-ordinates are in NZTM unless otherwise specified.

Water

- ▼ Standing Water Level
- ▽ Water Level At Time Of Drilling
- ◁– Out Flow –▷ In Flow

Shear Vane

Corrected as per NZGS Guidelines
Vane No.:
UTP = Unable To Penetrate
+ = Peak Exceeded
- = No Result

Other Comments

Scala undertaken from ground level adjacent to test pit. The influence of skin friction should therefore be considered for results below 1.0m depth.

KGA GEOTECHNICAL

Produced with Core-GS

Printed: 6/12/2023 12:17:22 pm

TEST PIT AND SCALA LOG

Job No.:	**K230858**
Hole No.:	**TP02/SP02**
Date:	5/12/2023
Logged By:	KF
Sheet:	2.2

Client: Davie Lovell-Smith

Project: Geotechnical Investigation

Location: 86 Barters Road, Templeton

Coordinates: E 1558372.5, N 5178914.6 **Ground Level:** 41

RL	Subsurface Conditions	Depth (m)	Groundwater	Geological Unit	Graphic Log
40.7	Organic SILT, minor sand, trace rootlets, dark brown, dry to moist, non-plastic, non-dilatant; sand, fine to medium; organics, amorphous.	0	Groundwater Not Encountered	TOPSOIL	
40.3	SILT, some sand, trace rootlets, greyish brown with orange mottling, moist, non-plastic, non-dilatant; sand, fine to medium.	0.5		SPRINGSTON FORMATION (TERRESTRIAL)	
	Sandy GRAVEL, some silt, trace rootlets, grey. Moderately packed, moist, well graded; gravel, fine to coarse, subangular to subrounded, sandstone; sand, fine to coarse.	1.0			
	1.00m - 1.10m: Fine to medium SAND, trace silt, greyish brown, moist.				
	1.10m: Trace silt and rootlets.				
	1.50m: Trace cobble (subangular to subrounded, sandstone).	1.5			
		2.0			
		2.5			
		3.0			
37.5	3.50m: End of hole (target depth).	3.5			

Scala Penetrometer (blows / 50mm)

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

2 2 2 2 1 2 2 2 2 2 6 6 12 7 10 10 11 11 15

Notes & Abbreviations

Soils logged in accordance with 'The guidelines for the classification and description of soil and rock for engineering purposes' December 2005, NZGS. Co-ordinates are in NZTM unless otherwise specified.

Water

- ▼ Standing Water Level
- ▽ Water Level At Time Of Drilling
- ◁ Out Flow ▷ In Flow

Shear Vane

Corrected as per NZGS Guidelines
Vane No.:
UTP = Unable To Penetrate
+ = Peak Exceeded
- = No Result

Other Comments

Scala met practical refusal within sandy gravel.

Sand lense between 1.0m to 1.1m is discontinuous.

KGA GEOTECHNICAL

Produced with Core-GS

Printed: 6/12/2023 12:17:23 pm

TEST PIT AND SCALA LOG

Job No.:	**K230858**
Hole No.:	**TP03/SP03**
Date:	5/12/2023
Logged By:	KF
Sheet:	2.3

Client: Davie Lovell-Smith

Project: Geotechnical Investigation

Location: 86 Barters Road, Templeton

Coordinates: E 1558488.6, N 5178995.4 **Ground Level:** 41

RL	Subsurface Conditions	Depth (m)	Groundwater	Geological Unit	Graphic Log
40.7	Organic SILT, minor sand and rootlets, dark brown, dry to moist, non-plastic, non-dilatant; sand, fine to medium; organics, amorphous.	0	Groundwater Not Encountered	TOPSOIL	TS
39.6	SILT, some sand, trace rootlets, greyish brown with orange mottling, dry to moist, non-plastic, non-dilatant; sand, fine to medium. 0.80m: Moist. 1.00m: Some sand.	0.5 1.0		SPRINGSTON FORMATION (TERRESTRIAL)	
37.5	Sandy GRAVEL, trace cobble, silt and rootlets, grey. Moderately packed, moist, well graded; gravel, fine to coarse, subangular to subrounded, sandstone; sand, fine to coarse.	1.5 2.0 2.5 3.0			
	3.50m: End of hole (target depth).	3.5			

Scala Penetrometer (blows / 50mm)

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

1 1 2 1 2 2 1 2 2 2 2 2 2 2 2 2 2 2 2 3 3 1 1 1 1 1 1 2 3 12 14 15

Notes & Abbreviations

Soils logged in accordance with 'The guidelines for the classification and description of soil and rock for engineering purposes' December 2005, NZGS. Co-ordinates are in NZTM unless otherwise specified.

Water

- Standing Water Level
- Water Level At Time Of Drilling
- Out Flow / In Flow

Shear Vane

Corrected as per NZGS Guidelines
Vane No.:
UTP = Unable To Penetrate
+ = Peak Exceeded
- = No Result

Other Comments

Scala met practical refusal within sandy gravel.

Discrete lenses of fine to medium 'pea' gravel within deeper soil profile.

KGA GEOTECHNICAL

Produced with Core-GS

Printed: 6/12/2023 12:17:24 pm

TEST PIT AND SCALA LOG

Job No.:	**K230858**
Hole No.:	**TP04/SP04**
Date:	5/12/2023
Logged By:	KF
Sheet:	2.4

Client: Davie Lovell-Smith

Project: Geotechnical Investigation

Location: 86 Barters Road, Templeton

Coordinates: E 1558463.7, N 5179126.9 **Ground Level:** 41

RL	Subsurface Conditions	Depth (m)	Groundwater	Geological Unit	Graphic Log
40.6	Organic SILT, minor sand and rootlets, dark brown, dry to moist, non-plastic, non-dilatant; sand, fine to medium; organics, amorphous.	0.0	Groundwater Not Encountered	TOPSOIL	TS
	Silty SAND, trace rootlets, light greyish brown. Loose, dry to moist, poorly graded; sand, fine to medium.	0.5		SPRINGSTON FORMATION (TERRESTRIAL)	
	0.70m: Greyish brown, moist.	1.0			
	1.40m: Medium dense.	1.5			
39.4	Sandy GRAVEL, trace cobble, silt and rootlets, grey. Moderately packed, moist, well graded; gravel, fine to coarse, subangular to subrounded, sandstone; sand, fine to coarse.	2.0			
38.5	2.50m: End of hole (refusal, hole collapse).	2.5			
		3.0			
		3.5			

Scala Penetrometer (blows / 50mm)

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	1	2													
	1	2													
		2													
		1													
		2													
		2													
		2													
	1														
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	1														
		2													
		2													
			3												
				5											
					8										
						10									
							13								
								15							

Notes & Abbreviations

Soils logged in accordance with 'The guidelines for the classification and description of soil and rock for engineering purposes' December 2005, NZGS. Co-ordinates are in NZTM unless otherwise specified.

Water

- Standing Water Level
- Water Level At Time Of Drilling
- Out Flow / In Flow

Shear Vane

Corrected as per NZGS Guidelines
Vane No.:
UTP = Unable To Penetrate
+ = Peak Exceeded
- = No Result

Other Comments

Excavation terminated due unstable sidewall and prevention of cavity formation.

KGA GEOTECHNICAL

Produced with Core-GS

Printed: 6/12/2023 12:17:25 pm

TEST PIT AND SCALA LOG

Job No.:	**K230858**
Hole No.:	**TP05/SP05**
Date:	5/12/2023
Logged By:	KF
Sheet:	2.5

Client: Davie Lovell-Smith

Project: Geotechnical Investigation

Location: 86 Barters Road, Templeton

Coordinates: E 1558502.8, N 5179186.0 **Ground Level:** 39

RL	Subsurface Conditions	Depth (m)	Groundwater	Geological Unit	Graphic Log
38.7	Organic SILT, minor sand and rootlets, dark brown, dry to moist, non-plastic, non-dilatant; sand, fine to medium; organics, amorphous.	0.0	Groundwater Not Encountered	TOPSOIL	TS
38.3	SILT, some sand, trace rootlets, greyish brown with orange mottling, dry to moist, non-plastic, non-dilatant; sand, fine to medium. 0.60m: Trace gravel (fine to medium, subangular to subrounded, sandstone).	0.5		SPRINGSTON FORMATION (TERRESTRIAL)	
	Sandy GRAVEL, some silt, trace rootlets, grey. Moderately packed, moist, well graded; gravel, fine to coarse, subangular to subrounded, sandstone; sand, fine to coarse. 1.00m: No rootlets. 1.40m: Minor silt, trace cobble (subangular to subrounded, sandstone). 2.00m: Moist.	1.0 1.5 2.0 2.5 3.0			
35.5	3.50m: End of hole (target depth).	3.5			

Scala Penetrometer (blows / 50mm)

0–1	1–2	2–3	3–4	4–5	5–6	6–7	7–8	8–9	9–10	10–11	11–12	12–13	13–14	14–15
1	2	2	2	2	2	2	2	1	2	3	14	20 >>		
1	2	2	2	2	2	2	2	1						

Notes & Abbreviations

Soils logged in accordance with 'The guidelines for the classification and description of soil and rock for engineering purposes' December 2005, NZGS. Co-ordinates are in NZTM unless otherwise specified.

Water

- ▼ Standing Water Level
- ▽ Water Level At Time Of Drilling
- ◁– Out Flow –▷ In Flow

Shear Vane

Corrected as per NZGS Guidelines
Vane No.:
UTP = Unable To Penetrate
+ = Peak Exceeded
- = No Result

Other Comments

Scala met practical refusal within sandy gravel.
Test pit located at the base of a paleochannel, approximately 2m below surrounding ground level.
Discrete lenses of fine to medium 'pea' gravel within deeper soil profile.

KGA GEOTECHNICAL

Produced with Core-GS

Printed: 6/12/2023 12:17:26 pm

TEST PIT AND SCALA LOG

Job No.:	**K230858**
Hole No.:	**TP06/SP06**
Date:	5/12/2023
Logged By:	KF
Sheet:	2.6

Client: Davie Lovell-Smith

Project: Geotechnical Investigation

Location: 86 Barters Road, Templeton

Coordinates: E 1558490.3, N 5179251.4 **Ground Level:** 41

RL	Subsurface Conditions	Depth (m)	Groundwater	Geological Unit	Graphic Log
40.7	Organic SILT, minor sand and rootlets, dark brown, dry to moist, non-plastic, non-dilatant; sand, fine to medium; organics, amorphous.	0	Groundwater Not Encountered	TOPSOIL	
39.8	Silty SAND, trace rootlets, light greyish brown. Medium dense, dry to moist, poorly graded; sand, fine to medium. 0.50m: No rootlets, greyish brown, moist, loose.	0.5			
39.6	SILT, some sand, trace gravel and rootlets, greyish brown with orange mottling, moist, non-plastic, non-dilatant; gravel, fine to medium, subangular to subrounded, sandstone; sand, fine to medium.	1.0		SPRINGSTON FORMATION (TERRESTRIAL)	
37.8	Sandy GRAVEL, trace cobble, silt and rootlets, grey. Moderately packed, moist, well graded; gravel, fine to coarse, subangular to subrounded, sandstone; sand, fine to coarse. 3.20m: End of hole (target depth).	1.5 2.0 2.5 3.0 3.5			

Scala Penetrometer (blows / 50mm)

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

1 1 2 1 2 1 | 2 2 2 1 1 2 1 1 1 1 1 1 1 | 2 2 2 2 2 | 3 4 4 7 | 16 20 >>

Notes & Abbreviations

Soils logged in accordance with 'The guidelines for the classification and description of soil and rock for engineering purposes' December 2005, NZGS. Co-ordinates are in NZTM unless otherwise specified.

Water

- Standing Water Level
- Water Level At Time Of Drilling
- Out Flow / In Flow

Shear Vane

Corrected as per NZGS Guidelines
Vane No.:
UTP = Unable To Penetrate
+ = Peak Exceeded
- = No Result

Other Comments

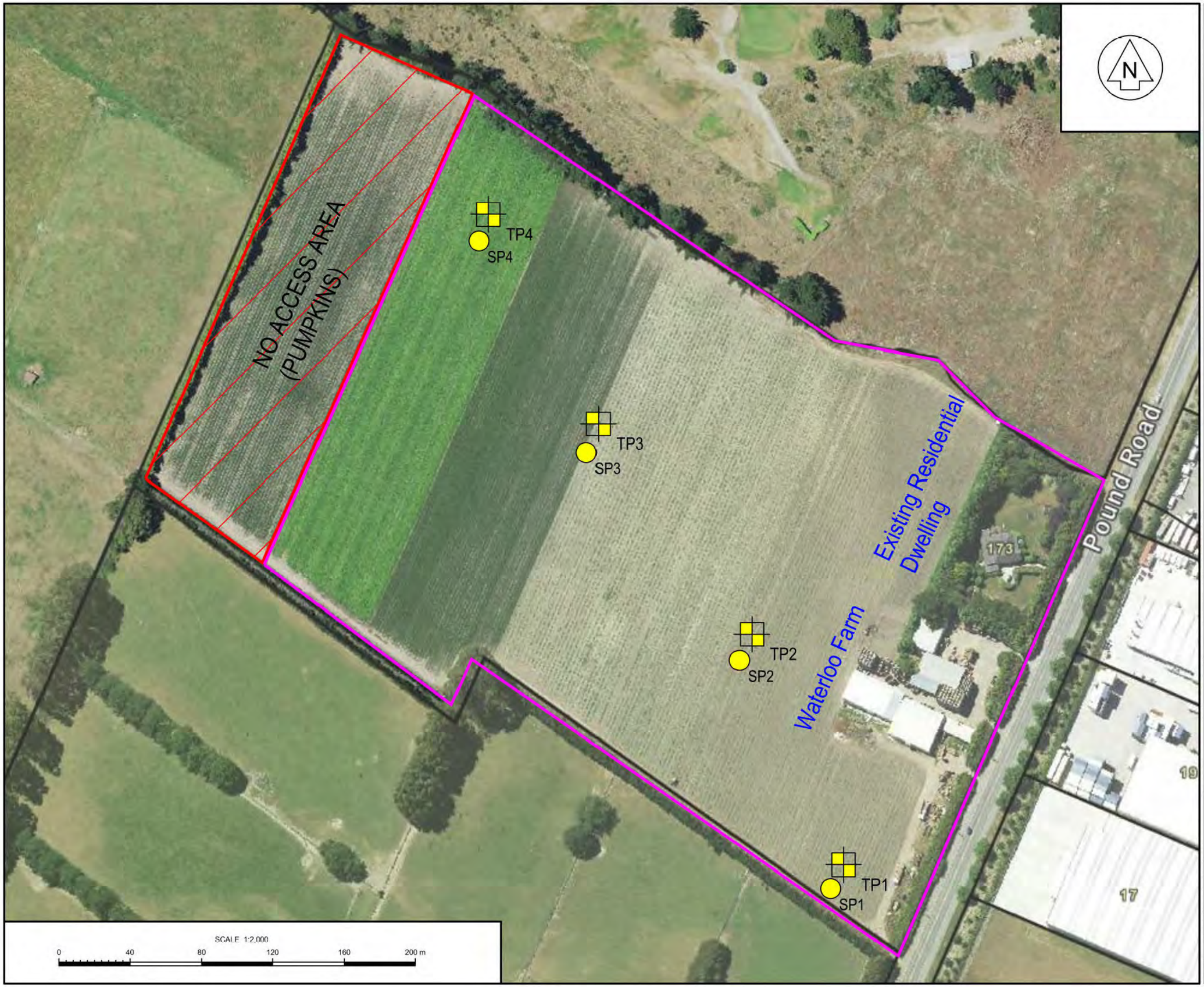
Scala met practical refusal within sandy gravel.

Discrete lenses of fine to medium 'pea' gravel within deeper soil profile.

KGA GEOTECHNICAL

Produced with Core-GS

Printed: 6/12/2023 12:17:26 pm



LEGEND

- TP1 — TEST PIT
- SP1 — SURFACE SCALA PENETROMETER
- NO ACCESS AREA (PUMPKINS)
- SITE BOUNDARY

NOTES

1. LOCATIONS OF FEATURES AND GROUND INVESTIGATION POINTS ARE APPROXIMATE ONLY.
2. AERIAL IMAGE SOURCED FROM CANTERBURY MAPS WEBSITE.

REV	DATE	REVISION DESCRIPTION	BY	CHK	APP

Auckland | Christchurch
09 478 6655 | 03 343 5302
www.kga.co.nz
KGA GEOTECHNICAL

CLIENT
NGAI TAHU DEVELOPMENT HOLDINGS

PROJECT TITLE
PROPOSED DEVELOPMENT
173 POUND ROAD
ISLINGTON

DRAWING TITLE
SITE PLAN

DESIGNED		DATE		CHECKED		DATE	
DRAWN		DATE		APPROVED		DATE	

STATUS

SCALE	SIZE
1:2,000	A3

COORDINATE SYSTEM	HEIGHT DATUM
NZTM	AKL 1946

PROJECT NUMBER	DRAWING NUMBER	REVISION
K220216	KGA 1	A

TEST PIT AND SCALA LOG

Job No.:	**K220216**
Hole No.:	**TP1**
Date:	12/04/2022
Logged By:	KD/KF
Sheet:	

Client: Ngai Tahu Development Holdings

Project: Geotechnical Investogation

Location: 173 Pound Road, Islington, Christchurch

Coordinates: E 1558822.1, N 5178737.7 **Ground Level:** 0

Subsurface Conditions	Depth (m)	Groundwater	Geological Unit	Graphic Log	Scala Penetrometer (blows / 50mm)	Vane Shear Strength (refer notes for details)
Organic SILT with some fine sand; brownish grey. Loose, moist to wet, no plasticity. No dilatancy, organic amorphous.			TOPSOIL	TS	2, 1, 2, 2, 1, 2, 1, 2	
Silty SAND(fine); brownish grey. Loose, moist.	0.5				1, 3, 4, 8, 15, 20 >>	
Fine to coarse GRAVEL with some fine to coarse sand and silt; brownish grey. Loose, moist. Fine to coarse gravel; well graded, sub rounded to sub angular.						
Sandy(fine to coarse) GRAVEL(fine to coarse); brownish grey. Moist to wet, well graded, sub rounded to sub angular.	1.0	Groundwater Not Encountered	SPRINGSTON FORMATION (TERRESTRIAL)			
1.30m: Becomes moist to wet with trace sub rounded cobbles.	1.5					
	2.0					
	2.5					
3.00m: End of Hole (Target depth 3.0).	3.0					
	3.5					

Scala Penetrometer scale: 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Notes & Abbreviations

Soils logged in accordance with 'The guidelines for the classification and description of soil and rock for engineering purposes' December 2005, NZGS.
Co-ordinates are in NZTM unless otherwise specified.

Water

- Standing Water Level
- Water Level At Time Of Drilling
- Out Flow / In Flow

Shear Vane

Corrected as per NZGS Guidelines Vane No.:

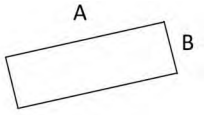
UTP = Unable To Penetrate
+ = Peak Exceeded
- = No Result

Other Comments

Strike of Face A: 0 (degrees)

Length of Face A: 3.7 (Metres)

Length of Face A: 1.3 (Metres)



KGA GEOTECHNICAL

Produced with Core-GS

Printed: 12/04/2022 2:42:08 PM

TEST PIT AND SCALA LOG

Job No.:	**K220216**
Hole No.:	**TP2**
Date:	12/04/2022
Logged By:	KD/KF
Sheet:	

Client: Ngai Tahu Development Holdings

Project: Geotechnical Investogation

Location: 173 Pound Road, Islington, Christchurch

Coordinates: E 1558806.8, N 5178827.8 **Ground Level:** 0

Subsurface Conditions	Depth (m)	Groundwater	Geological Unit	Graphic Log	Scala Penetrometer (blows / 50mm)	Vane Shear Strength (refer notes for details)
Organic SILT with some fine sand; brownish grey. Loose, moist to wet, no plasticity. No dilatancy, organic amorphous.	0	Groundwater Not Encountered	TOPSOIL		2, 3, 2, 2, 2, 1	
SAND(fine to medium) with some silt; brownish grey. Loose, moist to wet, well sorted.	0.5		SPRINGSTON FORMATION (TERRESTRIAL)		2, 2, 1, 2, 1, 1, 1, 2, 1, 1, 1, 1, 1, 1	
Sandy(fine) SILT; brownish grey. moist to wet, no plasticity. Non dilatant.	1.0				2, 1, 1, 1, 1, 1, 2, 2, 2, 2, 3	
SAND(fine to medium) with some silt; brownish grey. Loose, moist to wet, well sorted.	1.5				4, 14	
GRAVEL(fine to coarse) trace fin to coarse sand; brownish grey with mottled orange inclusions. Loose, moist to wet. Fine to coarse gravel; well graded, sub rounded to sub angular.					15, 15, 15	
Sandy(fine to coarse) GRAVEL(fine to coarse), trace cobbles; brownish grey. Moist to wet, well graded, sub rounded to sub angular.	2.0					
	2.5					
3.00m: End of Hole (Target depth).	3.0					
	3.5					

Scala Penetrometer (blows / 50mm) scale: 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Notes & Abbreviations

Soils logged in accordance with 'The guidelines for the classification and description of soil and rock for engineering purposes' December 2005, NZGS.
Co-ordinates are in NZTM unless otherwise specified.

Water

- Standing Water Level
- Water Level At Time Of Drilling
- Out Flow / In Flow

Shear Vane

Corrected as per NZGS Guidelines Vane No.:

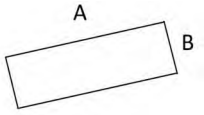
UTP = Unable To Penetrate
+ = Peak Exceeded
- = No Result

Other Comments

Strike of Face A: 0 (degrees)

Length of Face A: 3.7 (Metres)

Length of Face A: 1.3 (Metres)



KGA GEOTECHNICAL

Produced with Core-GS

Printed: 12/04/2022 2:41:50 PM

TEST PIT AND SCALA LOG

Job No.:	**K220216**
Hole No.:	**TP3**
Date:	12/04/2022
Logged By:	KD/KF
Sheet:	

Client: Ngai Tahu Development Holdings

Project: Geotechnical Investogation

Location: 173 Pound Road, Islington, Christchurch

Coordinates: E 1558734.3, N 5178943.4 **Ground Level:** 0

Subsurface Conditions	Depth (m)	Groundwater	Geological Unit	Graphic Log	Scala Penetrometer (blows / 50mm)	Vane Shear Strength (refer notes for details)
Organic SILT with some fine sand; dark brown. Moist to wet, non dilatant; fine sand, organic amorphous.	0	Groundwater Not Encountered	TOPSOIL	TS	1 2 1 1 0 1	
SAND(fine to medium) with some silt; brownish grey. Loose, moist to wet, well sorted.	0.5		SPRINGSTON FORMATION (TERRESTRIAL)		2 1 2 1 2 1 1 1 1 2 1 1 1 1	
Sandy(fine) SILT; brownish grey. moist to wet, no plasticity. Non dilatant.	1.0				2 1 1 1	
SAND(fine to medium) with some silt; brownish grey. Loose, moist to wet, well sorted.					2 1 1 1 2 3	
Sandy(fine to medium) GRAVEL, minor silt; brownish grey. Loose to moderately packed. gravel; sub rounded to sub angular, poorly graded.	1.5				6 11 12 10 8 14 15 15	
3.00m: End of Hole (Target depth).	2.0 / 2.5 / 3.0 / 3.5					

Scala Penetrometer scale: 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Notes & Abbreviations

Soils logged in accordance with 'The guidelines for the classification and description of soil and rock for engineering purposes' December 2005, NZGS.
Co-ordinates are in NZTM unless otherwise specified.

Water

- Standing Water Level
- Water Level At Time Of Drilling
- Out Flow / In Flow

Shear Vane

Corrected as per NZGS Guidelines Vane No.:

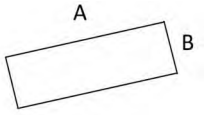
UTP = Unable To Penetrate
+ = Peak Exceeded
- = No Result

Other Comments

Strike of Face A: 0 (degrees)

Length of Face A: 3.7 (Metres)

Length of Face A: 1.3 (Metres)



KGA GEOTECHNICAL

Produced with Core-GS

Printed: 12/04/2022 2:41:00 PM

TEST PIT AND SCALA LOG

Job No.:	**K220216**
Hole No.:	**TP4**
Date:	12/04/2022
Logged By:	KD/KF
Sheet:	

Client: Ngai Tahu Development Holdings

Project: Geotechnical Investogation

Location: 173 Pound Road, Islington, Christchurch

Coordinates: E 1558653.1, N 5179042.8 **Ground Level:** 0

Subsurface Conditions	Depth (m)	Groundwater	Geological Unit	Graphic Log	Scala Penetrometer (blows / 50mm)	Vane Shear Strength (refer notes for details)
Organic SILT with some fine sand; brownish grey. Loose, moist to wet, no plasticity. No dilatancy, organic amorphous.	0	Groundwater Not Encountered	TOPSOIL	TS	1, 2, 2, 1, 1, 1	
SAND(fine to medium) minor silt; brownish grey. Loose, moist to wet, poorly graded.	0.5		SPRINGSTON FORMATION (TERRESTRIAL)		2, 1, 2, 1, 1, 2, 1, 2, 1, 2, 2, 1, 1, 1, 2, 1, 2, 1, 1, 1	
Sandy(fine) GRAVEL trace cobbles: grey. Loose to moderately packed, wet. Well graded; fine to coarse gravel, sub-angular to sub-rounded; sand fine to coarse, cobbles, sub-angular to sub-angular.	1.5				6, 6, 3, 2, 3, 7, 13, 20 >>	
3.00m: End of Hole (Target depth).	2.0					
	2.5					
	3.0					
	3.5					

Scala Penetrometer (blows / 50mm) axis: 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Notes & Abbreviations

Soils logged in accordance with 'The guidelines for the classification and description of soil and rock for engineering purposes' December 2005, NZGS. Co-ordinates are in NZTM unless otherwise specified.

Water

- Standing Water Level
- Water Level At Time Of Drilling
- Out Flow / In Flow

Shear Vane

Corrected as per NZGS Guidelines Vane No.:

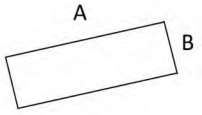
UTP = Unable To Penetrate
+ = Peak Exceeded
- = No Result

Other Comments

Strike of Face A: 0 (degrees)

Length of Face A: 3.7 (Metres)

Length of Face A: 1.2 (Metres)



KGA GEOTECHNICAL

Produced with Core-GS

Printed: 12/04/2022 2:37:50 PM

Nearby NZGD Data:

Notes:

1. Aerial photograph sourced from NZ Geotechnical Database.
2. Site boundary indicated by red boundary.
3. Not all investigations were used in this assessment, merely those deemed useful to our assessment. Refer to KGA Drawing 1.2.

Beca

BOREHOLE No: **HA04**

HAND AUGER LOG

SHEET 1 of 1

PROJECT: SH1 Barters Road Upgrade — JOB NUMBER: 3390861

SITE LOCATION: Templeton — CLIENT: NZTA

CIRCUIT: Mount Pleasant Circuit 2000 — AUGER LOCATION: Middle of field west of Pound Rd

COORDINATES: N 804,902.7 m — R L: 1 m

E 380,649 m — DATUM: Mean Sea Level

DEPTH (m)	WATER LEVEL	GRAPHIC LOG	USCS	MOISTURE	SOIL / ROCK DESCRIPTION	GEOLOGICAL UNIT	Scala (Blows/100mm)	SV	τ (kPa)	SAMPLES	R L (m)
			ML	M	Very soft SILT, trace fine sand, trace clay, trace amorphous organics; dark brown; moist, low plasticity. [Topsoil]		0				
					Firm.		1				
							2				
			ML	M	Stiff fine sandy SILT, trace clay; light brown; moist, low plasticity.	Springston Formation	3				
0.5			ML	M	Stiff fine sandy SILT; light brown; moist, non plastic.		3				0.5
			SM	M	Medium dense silty fine SAND; light brown; moist, non plastic.		3				
							4				
							5				
1.0			ML	M	Very stiff SILT; light brown; moist, non plastic.		5				0.0
							4				
							5				
			SP	M	'Medium dense' fine SAND, minor silt; orangish brown; moist, non plastic.						
1.5											-0.5
					Trace clay.						
			ML	M	'Stiff' SILT, minor clay, trace fine sand; orangish brown; moist, low plasticity.						
			SM	M	'Dense' silty fine SAND; light brown; moist, non plastic.						
2.0					END OF LOG @ 2 m						-1.0
2.5											-1.5
3.0											-2.0
3.5											-2.5
4.0											-3.0
4.5											-3.5

DATE AUGERED: 14/6/11 — DIAMETER: 50mm

LOGGED BY: DPG — METHOD: Hand Auger

SHEAR VANE No:

COMMENTS:
HA terminated at 2.0m. No further recovery or progress made due to scraping on gravel layer.

FOR EXPLANATION OF SYMBOLS AND ABBREVIATIONS SEE KEY SHEET

Revision A

HAND AUGER P:\339\339086\1TGE\SITE INVESTIGATIONS\FIELD LOGS\LOGS.GPJ BECA.GDT 12/8/11

A4 Scale 1:25

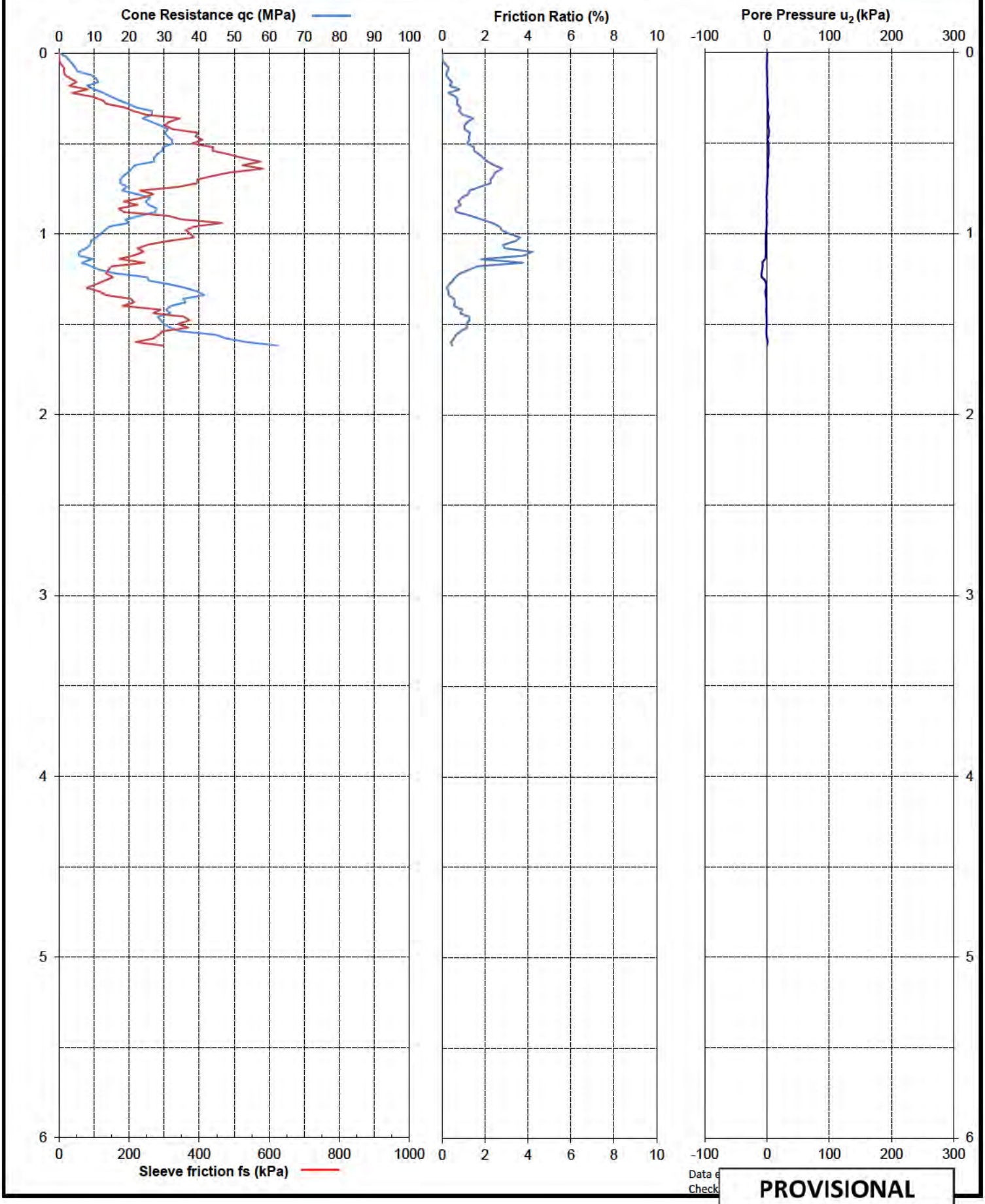
CPT07 Lot 13 Innovation Park - 15 December, 2016

45a Parkhouse Rd, Christchurch
e. christchurch@geotechnics.co.nz
p.+64 (0)3 361 0300

GEOTECHNICS

Pre-Drill: 0m **NZMG** 2468154mE 5740644mN 39m(amsl)
Assumed GWL: Not encountered **Other Tests:** None
Operator: Mark Wilson **Comments:** Test refusal at 1.62m
Located By: Hand GPS/GE (el)

Geotechnics Ref: 1001562.0.9999.0



Data e
Check

PROVISIONAL

These results have not yet passed our entire quality assurance process
They should be used with caution and may be subject to change

NZGD ID: CPT_106200

Beca

BOREHOLE No: **PP08**

TEST PIT LOG

SHEET 1 of 1

PROJECT: SH1 Barters Road Upgrade — JOB NUMBER: 3390861

SITE LOCATION: Templeton — CLIENT: NZTA

CIRCUIT: Mount Pleasant Circuit 2000 — TEST PIT LOCATION: Pound Rd

COORDINATES: N 805,088.1 m — R L: 1 m

E 380,864.7 m — DATUM: Mean Sea Level

DEPTH (m)	WATER LEVEL	GRAPHIC LOG	USCS	MOISTURE	SOIL / ROCK DESCRIPTION	GEOLOGICAL UNIT	Scala	SV	τ (kPa)	SAMPLES	R L (m)
			GW	M	Tightly packed fine to coarse GRAVEL; brown; moist, non plastic. Gravel: rounded greywacke.	Fill					
0.5			ML	D	SILT, trace clay; dark brown; dry, low plasticity.	Springston Formation? / Fill?					0.5
			ML	D	SILT; light yellowish brown; dry, non plastic.						
1.0											0.0
					No description of gravel layer.					B1	
					END OF LOG @ 1.2 m						
1.5											-0.5
2.0											-1.0
2.5											-1.5
3.0											-2.0
3.5											-2.5
4.0											-3.0
4.5											-3.5

DATE EXCAVATED: 9/6/11 — CONTRACTOR: The Pothole People Ltd

LOGGED BY: YHA — EQUIPMENT: Mini-digger

SHEAR VANE No: — METHOD: Excavation

COMMENTS:
Nuclear Density Meter test at 1.1m

FOR EXPLANATION OF SYMBOLS AND ABBREVIATIONS SEE KEY SHEET

Revision A

A4 Scale 1:25

TEST PIT P:\3390\3390861\TGE\SITE INVESTIGATIONS\FIELD LOGS\LOGS.GPJ BECA.GDT 12/8/11

Beca

BOREHOLE No: **TP03**

TEST PIT LOG

SHEET 1 of 1

PROJECT: SH1 Barters Road Upgrade — JOB NUMBER: 3390861

SITE LOCATION: Templeton — CLIENT: NZTA

CIRCUIT: Mount Pleasant Circuit 2000 — TEST PIT LOCATION: Field west of Pound Rd adjacent to eastern fence line

COORDINATES: N 804,873 m, E 380,733.1 m — R L: 1 m — DATUM: Mean Sea Level

DEPTH (m)	WATER LEVEL	GRAPHIC LOG	USCS	MOISTURE	SOIL / ROCK DESCRIPTION	GEOLOGICAL UNIT	Scala	SV	τ (kPa)	SAMPLES	R L (m)
0			ML	M	SILT, trace fine sand, trace clay, trace amorphous organics; brown; moist, low plasticity. [Topsoil]						0.5
0.5			ML	M	Fine sandy SILT; light brown mottled light grey and orange; moist, non plastic.	Springston Formation					0.0
1.0					Mottling absent.					B1	
1.5			SM	M	Silty fine SAND; orange brown; moist, non plastic.						-0.5
2.0										B2	-1.0
2.5											-1.5
3.0			SW	M	Fine to coarse gravelly fine SAND, minor silt; orange brown; moist, non plastic. Gravel: rounded siltstone.						-2.0
3.5					END OF LOG @ 3.5 m						-2.5
4.0											-3.0
4.5											-3.5

DATE EXCAVATED: 14/6/11 — CONTRACTOR: The Pothole People Ltd

LOGGED BY: DPG — EQUIPMENT: 12T Excavator

SHEAR VANE No: — METHOD: Excavation

COMMENTS:

FOR EXPLANATION OF SYMBOLS AND ABBREVIATIONS SEE KEY SHEET

Revision A

TEST PIT P:\3390\3390861\TGE\SITE INVESTIGATIONS\FIELD LOGS\LOGS.GPJ BECA.GDT 12/8/11

A4 Scale 1:25

Beca

BOREHOLE No: **TP04**

TEST PIT LOG

SHEET 1 of 1

PROJECT: SH1 Barters Road Upgrade — JOB NUMBER: 3390861

SITE LOCATION: Templeton — CLIENT: NZTA

CIRCUIT: Mount Pleasant Circuit 2000 — TEST PIT LOCATION: Field east of Barters Rd adjacent to NW fence line

COORDINATES: N 804,831.1 m — R L: 1 m

E 380,523.4 m — DATUM: Mean Sea Level

DEPTH (m)	WATER LEVEL	GRAPHIC LOG	USCS	MOISTURE	SOIL / ROCK DESCRIPTION	GEOLOGICAL UNIT	Scala	SV	τ (kPa)	SAMPLES	R L (m)
			MH	M	SILT, some clay; brown; moist, high plasticity. [Topsoil]						
0.5			ML	M	Fine sandy SILT, trace clay; light brown; moist, low plasticity.	Springston Formation					0.5
1.0											0.0
1.5											-0.5
2.0										B1	-1.0
2.5			SW	M	Fine to coarse gravelly fine SAND, minor silt, trace cobbles; orange brown; moist, non plastic.						-1.5
3.0			GW	M	Fine sandy fine to coarse GRAVEL, trace cobbles; orange brown; moist, non plastic.						-2.0
3.5					END OF LOG @ 3.5 m						-2.5
4.0											-3.0
4.5											-3.5

DATE EXCAVATED: 14/6/11 — CONTRACTOR: The Pothole People Ltd

LOGGED BY: DPG — EQUIPMENT: 12T Excavator

SHEAR VANE No: — METHOD: Excavation

COMMENTS:

FOR EXPLANATION OF SYMBOLS AND ABBREVIATIONS SEE KEY SHEET

Revision A

A4 Scale 1:25

TEST PIT P:\3390\3390861\TGE\SITE INVESTIGATIONS\FIELD LOGS\LOGS.GPJ BECA.GDT 12/8/11

Beca

BOREHOLE No: **TP05**

TEST PIT LOG

SHEET 1 of 1

PROJECT: SH1 Barters Road Upgrade — JOB NUMBER: 3390861

SITE LOCATION: Templeton — CLIENT: NZTA

CIRCUIT: Mount Pleasant Circuit 2000 — TEST PIT LOCATION: Field east of Barters Rd adjacent to SE fence line

COORDINATES: N 804,655.4 m — R L: 1 m

E 380,621.9 m — DATUM: Mean Sea Level

DEPTH (m)	WATER LEVEL	GRAPHIC LOG	USCS	MOISTURE	SOIL / ROCK DESCRIPTION	GEOLOGICAL UNIT	Scala	SV	τ (kPa)	SAMPLES	R L (m)
0			ML	M	SILT, trace fine sand, trace clay, trace amorphous organics; dark brown; moist, low plasticity. [Topsoil]						0.5
0.5			ML	M	Fine sandy SILT, trace clay; light brown; moist, low plasticity.	Springston Formation				B1	0.0
1.0											-0.5
1.5			GW	M	Fine to medium sandy fine to coarse GRAVEL, trace cobbles; orange brown; moist, non plastic.						-1.0
2.0											-1.5
2.5										B2	-2.0
3.0					END OF LOG @ 3.3 m						-2.5
3.5											-3.0
4.0											-3.5
4.5											

DATE EXCAVATED: 14/6/11 — CONTRACTOR: The Pothole People Ltd — COMMENTS:

LOGGED BY: DPG — EQUIPMENT: 12T Excavator

SHEAR VANE No: — METHOD: Excavation

FOR EXPLANATION OF SYMBOLS AND ABBREVIATIONS SEE KEY SHEET — Revision A

TEST PIT P:\3390\3390861\TGE\SITE INVESTIGATIONS\FIELD LOGS\LOGS.GPJ BECA.GDT 12/8/11

A4 Scale 1:25

Beca

BOREHOLE No: **TP06**

TEST PIT LOG

SHEET 1 of 1

PROJECT: SH1 Barters Road Upgrade — JOB NUMBER: 3390861

SITE LOCATION: Templeton — CLIENT: NZTA

CIRCUIT: Mount Pleasant Circuit 2000 — TEST PIT LOCATION: Middle of field at the corner Barters Rd & Waterloo Rd

COORDINATES: N 804,577.1 m — R L: 1 m

E 380,441.9 m — DATUM: Mean Sea Level

DEPTH (m)	WATER LEVEL	GRAPHIC LOG	USCS	MOISTURE	SOIL / ROCK DESCRIPTION	GEOLOGICAL UNIT	Scala	SV	τ (kPa)	SAMPLES	R L (m)
0			ML	M	SILT, minor clay, trace fine sand, trace amorphous organics; brown; moist, low plasticity. [Topsoil]						
0.5			ML	M	Fine sandy SILT; light brown; moist, non plastic.	Springston Formation					0.5
1.0			SP	M	Fine SAND, minor silt; light brown; moist, non plastic.					B1	0.0
1.5			SW	M	Fine to coarse gravelly fine SAND, trace silt; light brown; moist, non plastic. Gravel: rounded to subrounded siltstone.						-0.5
2.0											-1.0
2.5			GW	M	Fine to coarse sandy fine to coarse GRAVEL, minor cobbles; greyish brown; moist, non plastic. Gravel: rounded to subrounded siltstone.					B2	-1.5
3.0											-2.0
3.5											-2.5
4.0					END OF LOG @ 4 m						-3.0
4.5											-3.5

DATE EXCAVATED: 13/6/11 — CONTRACTOR: The Pothole People Ltd

LOGGED BY: DPG — EQUIPMENT: 12T Excavator

SHEAR VANE No: — METHOD: Excavation

COMMENTS:

FOR EXPLANATION OF SYMBOLS AND ABBREVIATIONS SEE KEY SHEET

Revision A

A4 Scale 1:25

TEST PIT P:\339\3390861\TGE\SITE INVESTIGATIONS\FIELD LOGS\LOGS.GPJ BECA.GDT 12/8/11

TONKIN & TAYLOR LTD

EXCAVATION LOG

EXCAVATION No: TP02
Hole Location: Pound Road, bottom western end
SHEET 1 OF 1

PROJECT: Islington Park		LOCATION: Christchurch	JOB No: 53128.001
CO-ORDINATES: 5178369 mN 1558751 mE		EXPOSURE TYPE:	EXCAV. STARTED: 31/7/12
		EQUIPMENT: Excavator	EXCAV FINISHED: 31/7/12
R.L.		OPERATOR: Blakelys (Rob)	LOGGED BY: JIMB
DATUM NZTM		DIMENSIONS: 1.0m x 4.0m x 4.2m	CHECKED BY:

EXCAVATION TESTS					ENGINEERING DESCRIPTION						GEOLOGICAL	
PENETRATION 1 2 3	SUPPORT	WATER	SAMPLES, TESTS	R.L. (m) / DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	SOIL NAME, PLASTICITY OR PARTICLE SIZE CHARACTERISTICS, COLOUR, SECONDARY AND MINOR COMPONENTS	MOISTURE CONDITION / WEATHERING	STRENGTH / DENSITY CLASSIFICATION	ESTIMATED SHEAR STRENGTH (kPa) 10 25 50 100 200	ORIGIN TYPE, MINERAL COMPOSITION, DEFECTS, STRUCTURE	UNIT
				0.0			TOPSOIL. Brown. Moist.	M				
				0.5		ML	SILT with minor fine sand. Light Brown. Moist.					
				1.0		SM	Silty fine SAND. Light Brown. Moist.					
				1.5		ML	SILT. Grey with orange mottling. Moist.					
				2.0								
				2.5								
				3.0		SM	Fine SAND. Light brown with orange mottling.					
				3.5								
				4.0		ML	SILT. Grey.					
						GW	GRAVEL. Some cobbles, trace boulders and sand.					
				4.5			**Extent of pit 4.2 m**					

Springston Formation

T+T DATATEMPLATE.GDT jimb

Log Scale 1:25

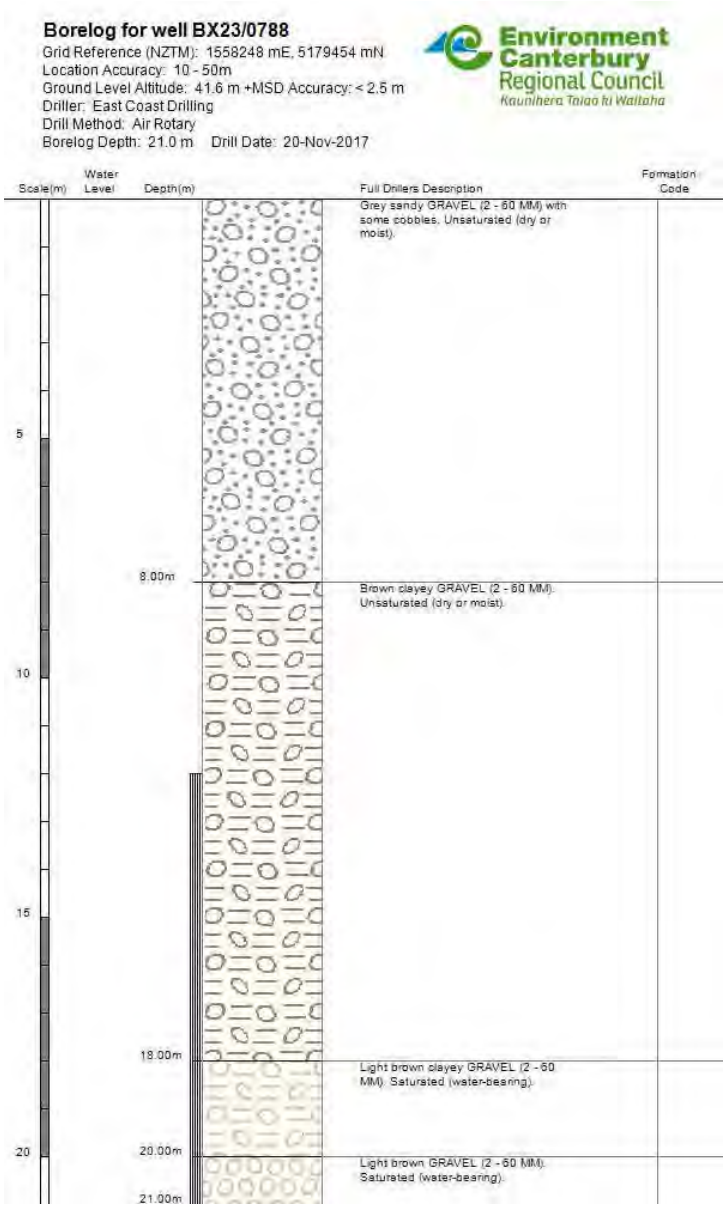
EXCAVATION BORELOGS.GPJ 3/9/12

Nearby ECan Well Data:

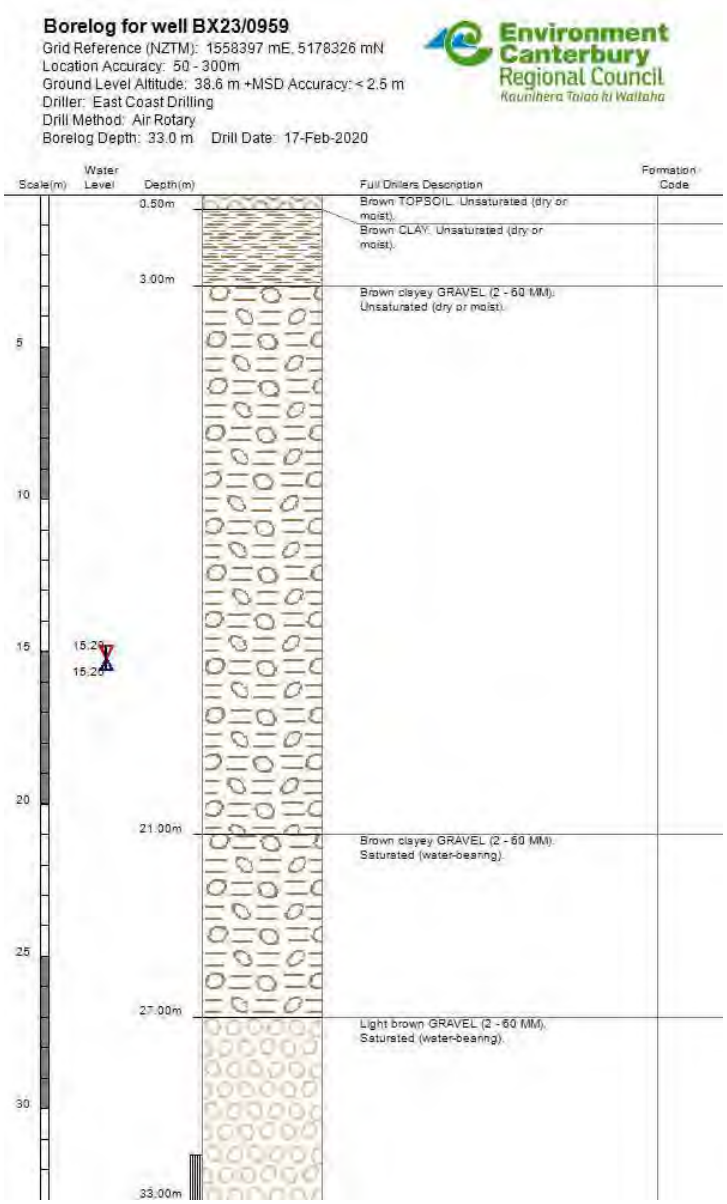
Notes:

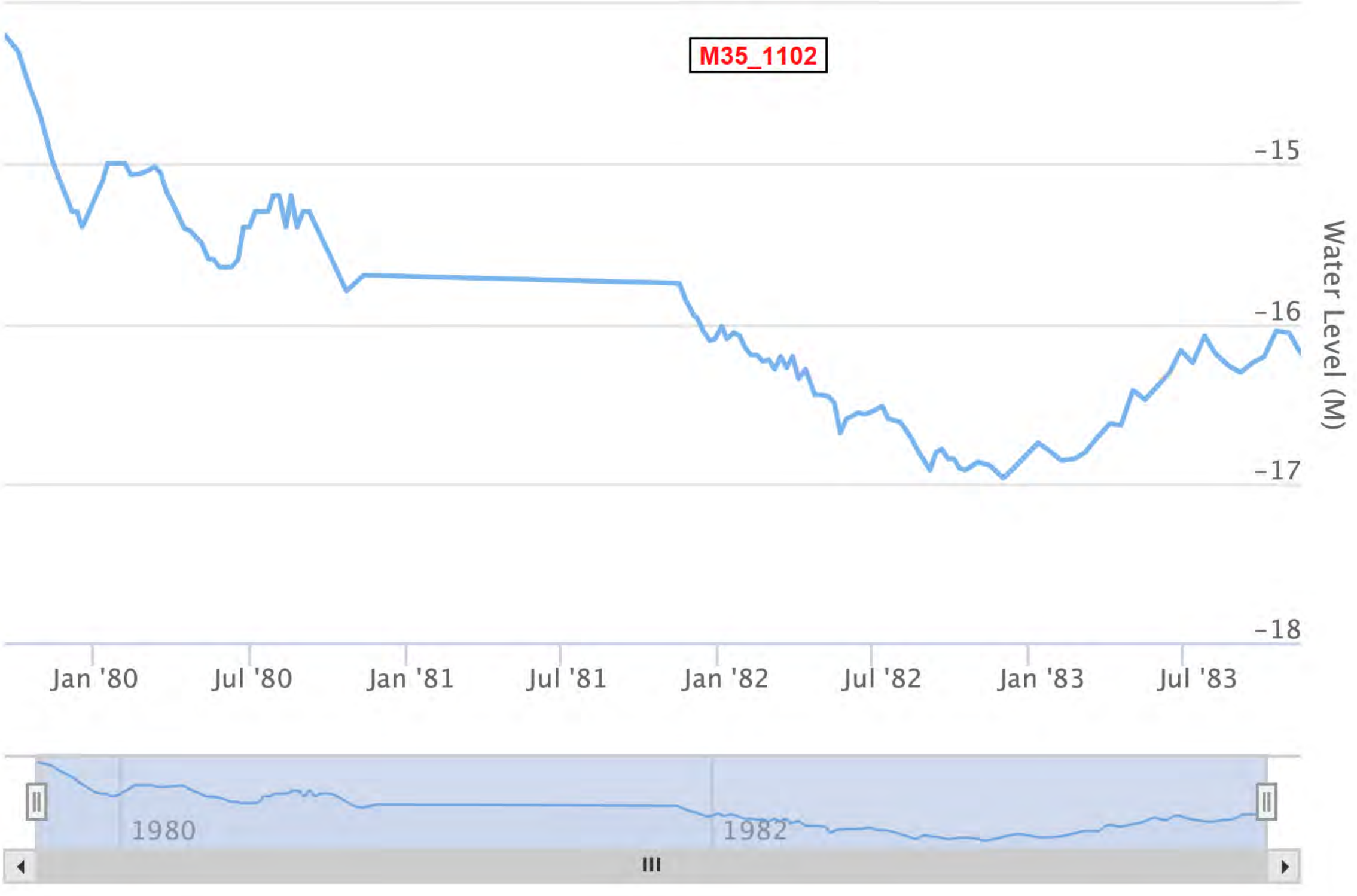
1. *Aerial photograph sourced from ECan Canterbury Maps Database.*
2. *Site boundary indicated by red boundary.*
3. *Not all investigations were used in this assessment, merely those deemed useful to our assessment. Refer to KGA Drawing 1.2.*

BX23/0788 details

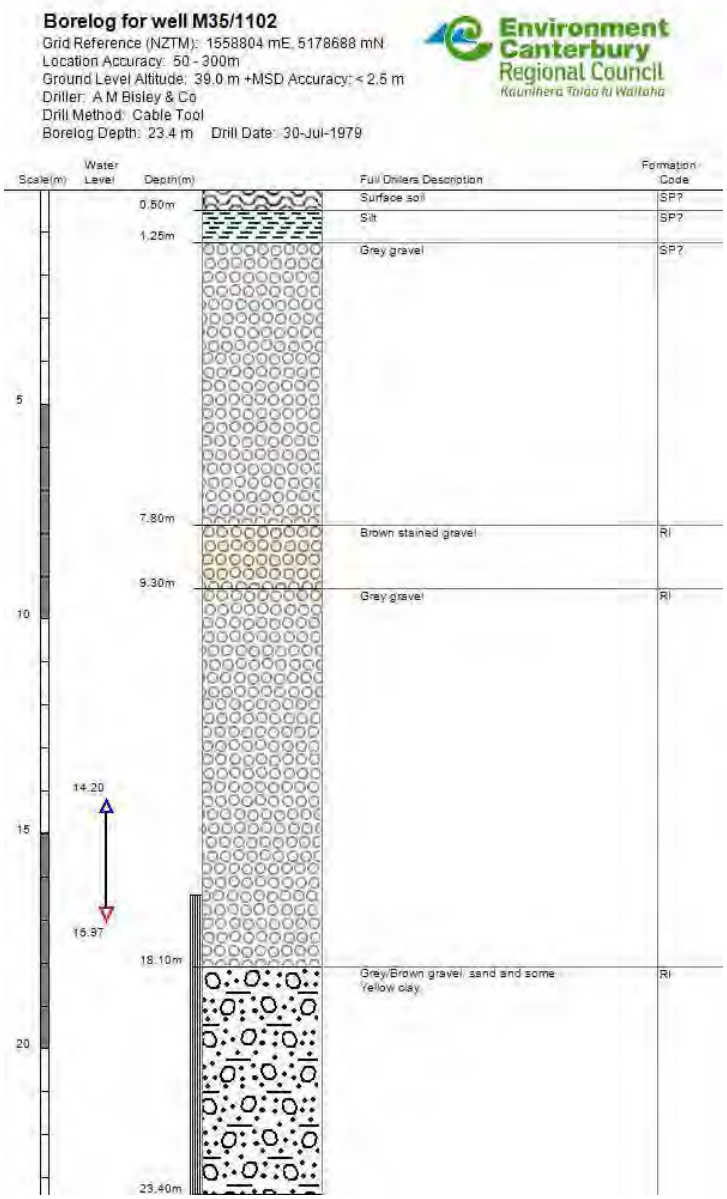


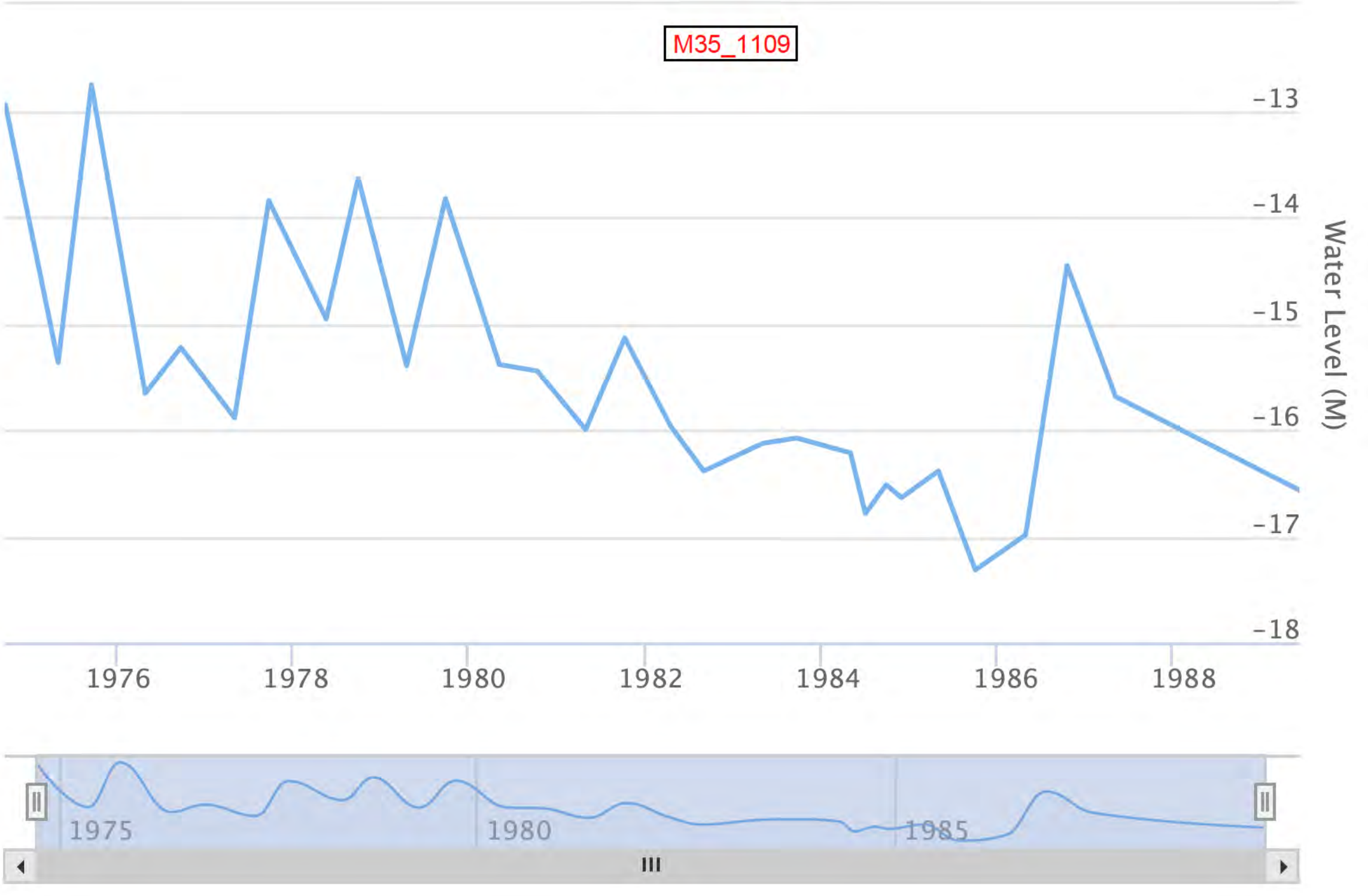
BX23/0959 details



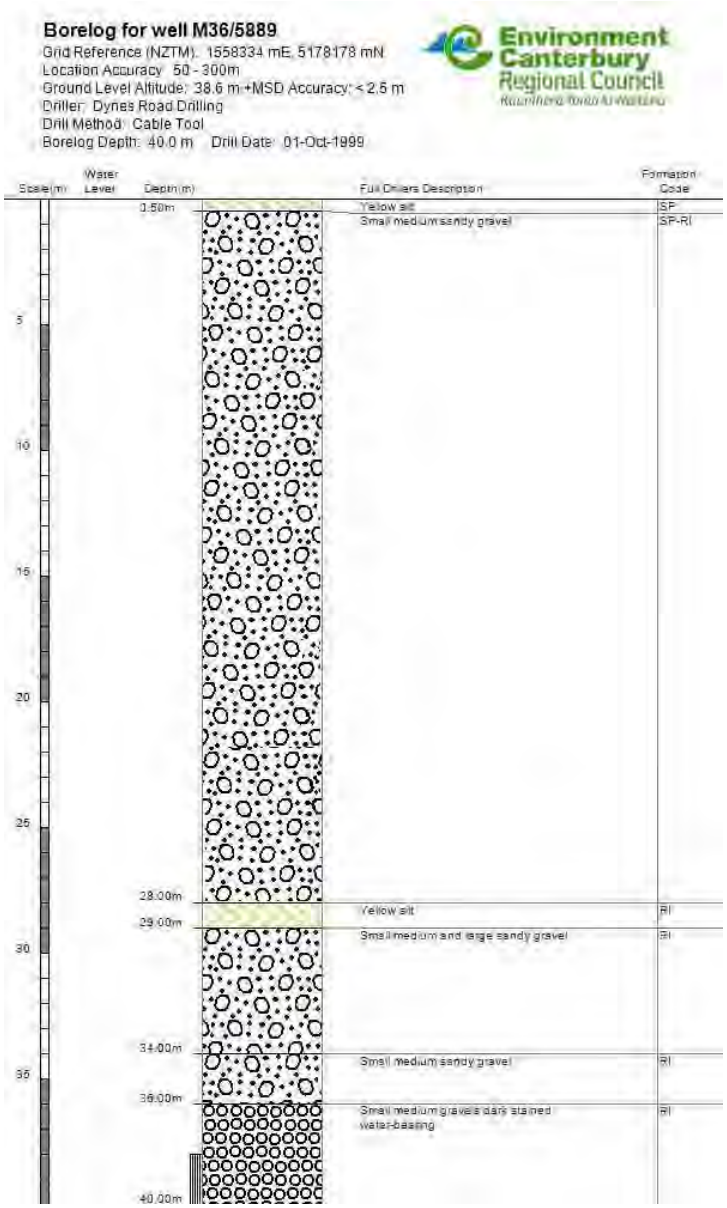

M35_1102
-15
-16
-17
-18
Water Level (M)
Jan '80
Jul '80
Jan '81
Jul '81
Jan '82
Jul '82
Jan '83
Jul '83
1980
1982

M35/1102 details



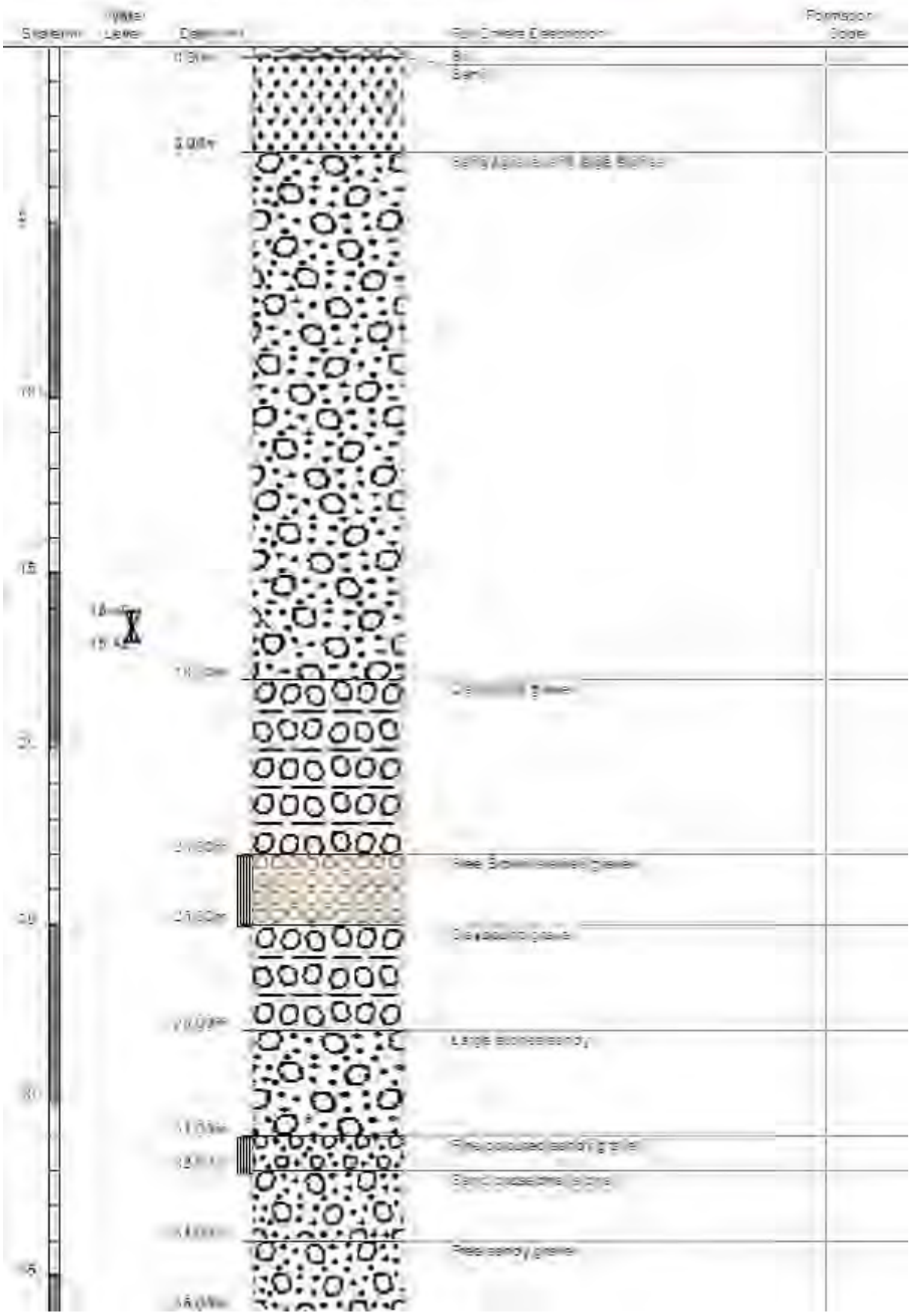

M35_1109
-13
-14
-15
-16
-17
-18
Water Level (M)
1976
1978
1980
1982
1984
1986
1988
1975
1980
1985

M36/5889 details

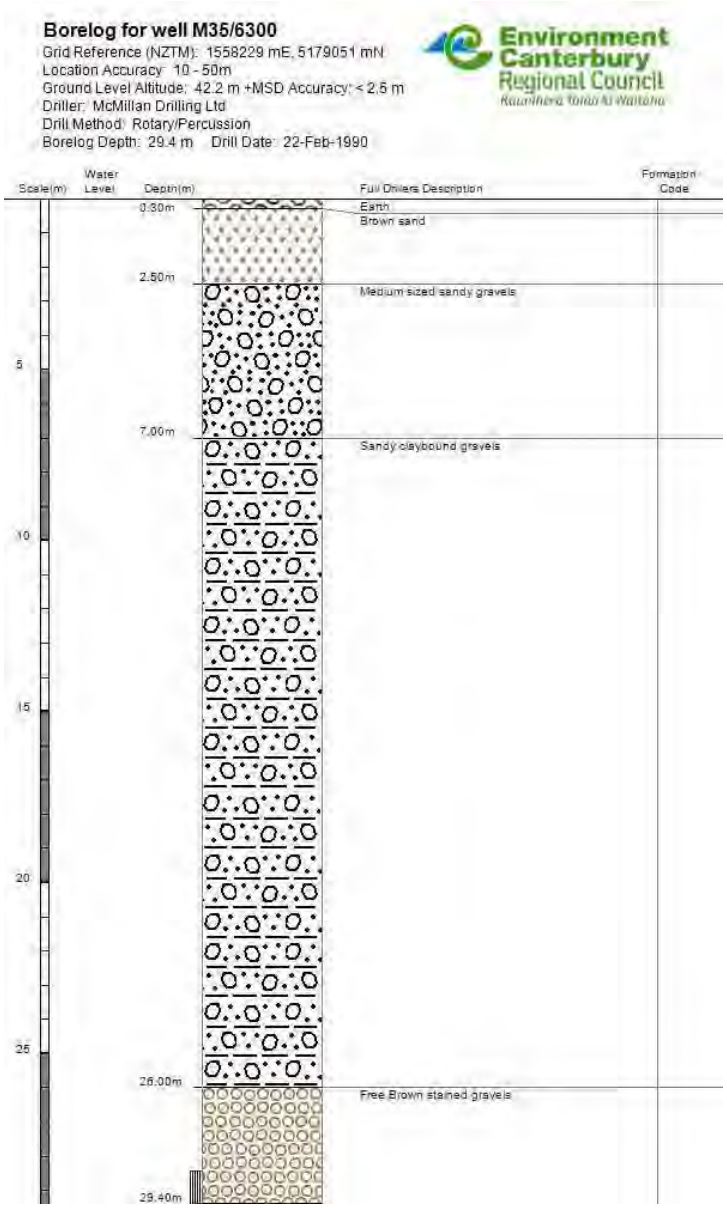


Borelog for well M35/6158

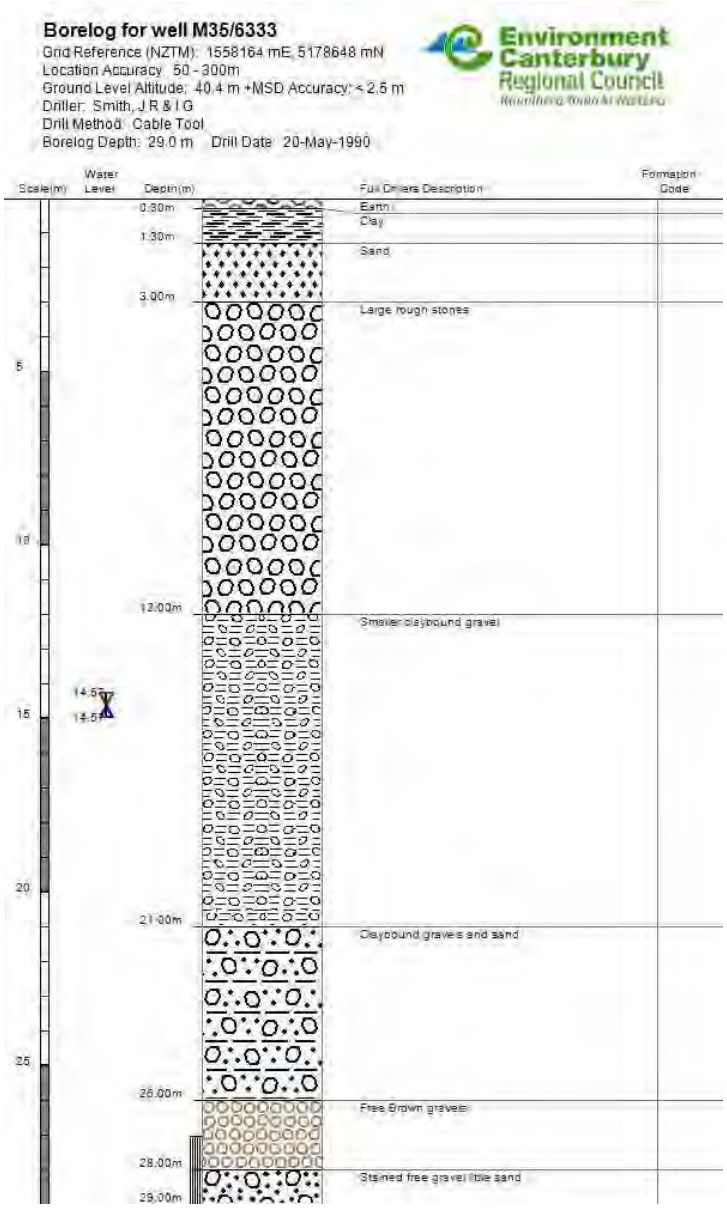
Grid Reference (NZTM): 1658851 mE 5173[illegible] mN
Location Accuracy: 2 - 15m
Ground Level Altitude: 40.1 m +MSD Accuracy: +/- 0.6 m
Driller: Smith, J R & I G
Drill Method: Cable Tool
Borelog Depth: 16.0 m Drill Date: 01-Jul-19[illegible]



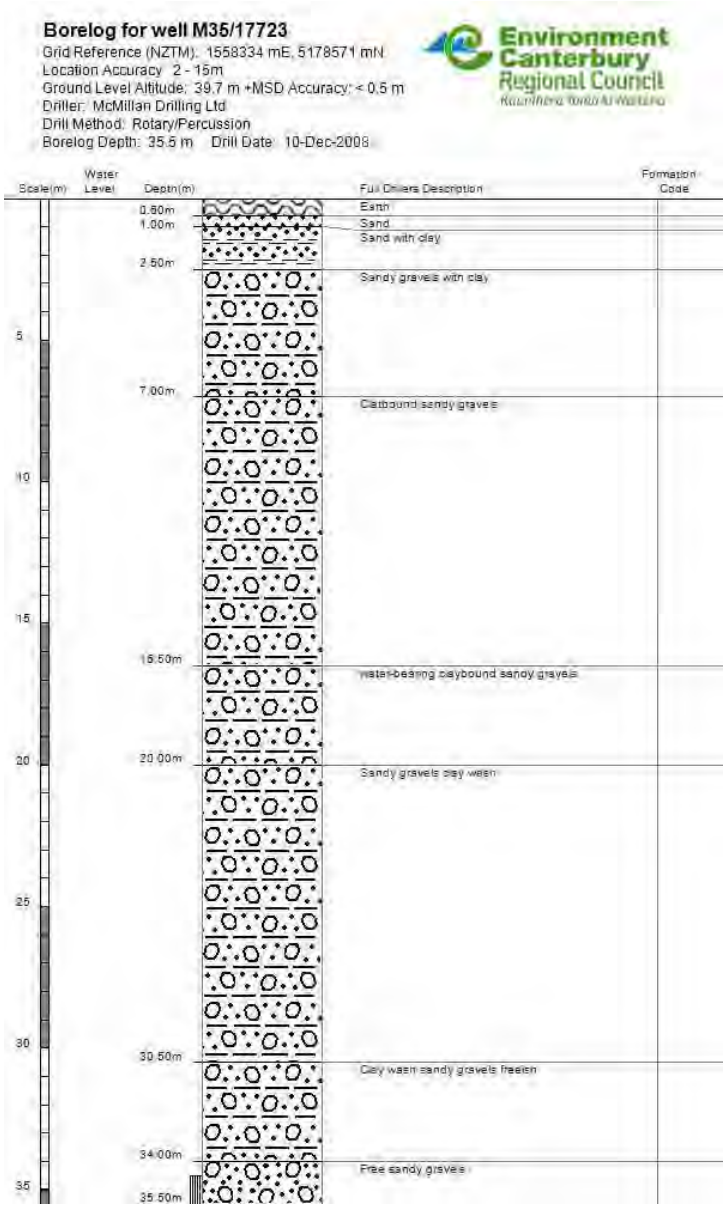
M35/6300 details



M35/6333 details



M35/17723 details



LLUR Extracts:

173 Pound Road

Listed Land Use Register (LLUR)

The Listed Land Use Register (LLUR) is a publicly available database of sites where hazardous activities and industries have been located throughout Canterbury. Environment Canterbury has identified these sites and maintained the database for some years. Research projects into historical land use are conducted on a district-by-district basis, starting in 2014 and due to finish in 2023.

Start your LLUR search here

Type into the search bar below to find properties by address or legal description. Alternatively you can search using the interactive map.

Having trouble finding your address?

Search by address or legal description

Reset search

You have the following **Land Parcels** selected. These are being used to search for intersecting records in the Listed Land Use Register.

Reset Search

Legal Description	Titles	Valuation No
173 Pound Road		
RES 3418	707741	2351230102
Lot 3 DP 33334	CB13A/921	2351230102
RES 5094	707741	2351230102

Thank you for your enquiry

Summary

Need help understanding these results?

The Listed Land Use Register has information relating to your selected land parcels.
If you would like a property statement, please click or tap the *Request a Property Statement* button below.

I would like to...

Request a Property Statement

What is a Property Statement?

Detailed Results

The following **HAIL Activities** were found within your search area.

What is a HAIL Activity?

No.	HAIL
ACT23051	A10 - Persistent pesticide bulk storage or use
ACT333	A17 - Storage tanks or drums for fuel, chemicals or liquid wastes

The following **Sites** were found within your search area.

What is a Site?

No.	Site Category	Site Name
SIT1425	Not Investigated	Templeton Country Club

Environment Canterbury
Regional Council
Kaunihera Taiao ki Waitaha

Customer Services
P. 03 353 9007 or 0800 324 636

PO Box 345
Christchurch 8140

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

www.ecan.govt.nz

Dear Sir/Madam

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

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

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

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

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

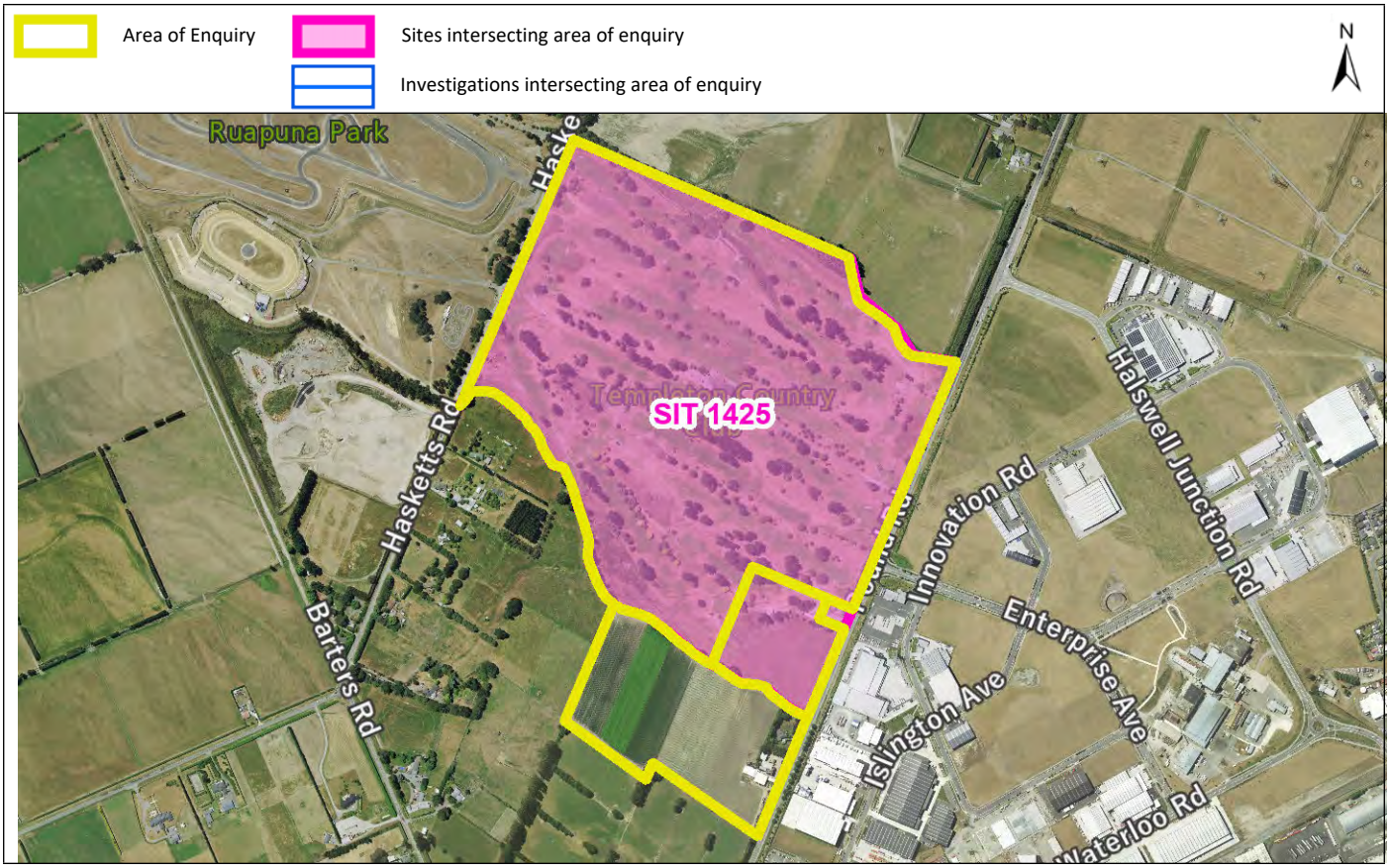
Yours sincerely

Contaminated Sites Team

Property Statement
from the Listed Land Use Register

Visit ecan.govt.nz/HAIL for more information or
contact Customer Services at ecan.govt.nz/contact/ and quote ENQ390279

Date generated: 11 September 2024
Land parcels: Lot 3 DP 33334
RES 2418
RES 5094



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

Sites at a glance

Sites within enquiry area

Site number	Name	Location	HAIL activity(s)	Category
1425	Templeton Country Club	Pound Road, Templeton, Christchurch	A17 - Storage tanks or drums for fuel, chemicals or liquid waste;A10 - Persistent pesticide bulk storage or use;	Not Investigated

More detail about the sites

Site 1425: Templeton Country Club (Intersects enquiry area.)

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

Location: Pound Road, Templeton, Christchurch
Legal description(s): RES 2418; RES 5094; RS 38609; Lot 1 DP 34947

HAIL activity(s):

Period from	Period to	HAIL activity
?	1993	Storage tanks or drums for fuel, chemicals or liquid waste
Pre 1965	2011	Persistent pesticide bulk storage or use including sports turfs, market gardens, orchards, glass houses or spray sheds

Notes:

5 Jul 1999 1993: Two underground storage tanks on site, one 2350 L UST 3(a) product, and one 2300 L UST 3(c) product.

Land use = ?-1999: Golf Course

16 Nov 2017 Area defined from: 1965-2011 ECan Aerial Photographs Note: A sport turf golf course was noted on aerial photographs reviewed. 16/10/2013

Investigations:

There are no investigations associated with this site.

Disclaimer

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

Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

Listed Land Use Register

What you need to know

Everything is connected

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.

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.)

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.

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)

Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

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.

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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

Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

E13/102

111 Pound Road

Listed Land Use Register (LLUR)

The Listed Land Use Register (LLUR) is a publicly available database of sites where hazardous activities and industries have been located throughout Canterbury. Environment Canterbury has identified these sites and maintained the database for some years. Research projects into historical land use are conducted on a district-by-district basis, starting in 2014 and due to finish in 2023.

Start your LLUR search here

Type into the search bar below to find properties by address or legal description. Alternatively you can search using the interactive map.

Having trouble finding your address?

Search by address or legal description

Reset Search

You have the following **Land Parcels** selected. These are being used to search for intersecting records in the Listed Land Use Register.

Legal Description	Titles	Valuation No	
111 Pound Road			
Lot 2 DP 33334	CB13A/920	2351291.01	X

Reset Search

Thank you for your enquiry

Need help understanding these results?

Summary

The Listed Land Use Register does not currently have any information about a Hazardous Activities and Industries List site on your selected land parcel.

If you would like a property statement, please click or tap the *Request a Property Statement* button below.

I would like to...

Request a Property Statement

What is a Property Statement?

Environment Canterbury
Regional Council
Kaunihera Taiao ki Waitaha

Customer Services
P. 03 353 9007 or 0800 324 636

PO Box 345
Christchurch 8140

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

www.ecan.govt.nz

Dear Sir/Madam

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

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

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

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

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

Yours sincerely

Contaminated Sites Team

Property Statement
from the Listed Land Use Register

Visit ecan.govt.nz/HAIL for more information or
contact Customer Services at ecan.govt.nz/contact/ and quote ENQ390274

Date generated: 11 September 2024
Land parcels: Lot 2 DP 33334

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

Sites at a glance

Sites within enquiry area

There are no sites associated with the area of enquiry.

More detail about the sites

There are no sites associated with the area of enquiry.

Disclaimer

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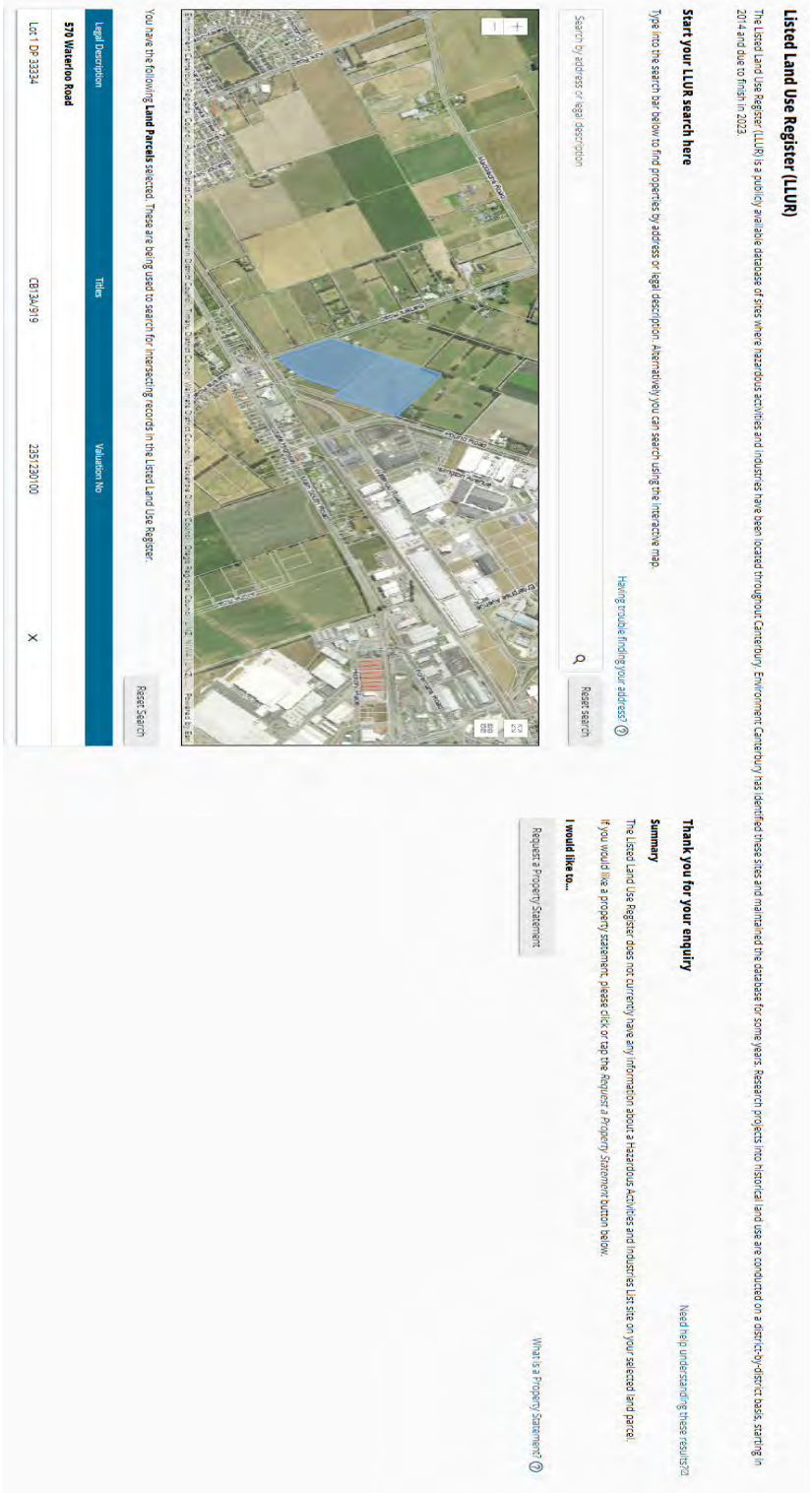
570 Waterloo Road



Listed Land Use Register (LLUR)

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Having trouble finding your address?

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Reset search

Thank you for your enquiry

Summary

The Listed Land Use Register does not currently have any information about a Hazardous Activities and Industries List site on your selected land parcel.

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I would like to...

Request a Property Statement

Need help understanding these results?

What is a Property Statement?

You have the following **Land Parcels** selected. These are being used to search for intersecting records in the Listed Land Use Register.

Reset Search

Legal Description	Titles	Valuation No	
570 Waterloo Road			
Lot 1 DP 33934	CB13A/919	2351230100	×

Environment Canterbury
Regional Council
Kaunihera Taiao ki Waitaha

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

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Yours sincerely

Contaminated Sites Team

Property Statement
from the Listed Land Use Register

Visit ecan.govt.nz/HAIL for more information or
contact Customer Services at ecan.govt.nz/contact/ and quote ENQ390273

Date generated: 11 September 2024
Land parcels: Lot 1 DP 33334

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Sites at a glance

Sites within enquiry area

There are no sites associated with the area of enquiry.

More detail about the sites

There are no sites associated with the area of enquiry.

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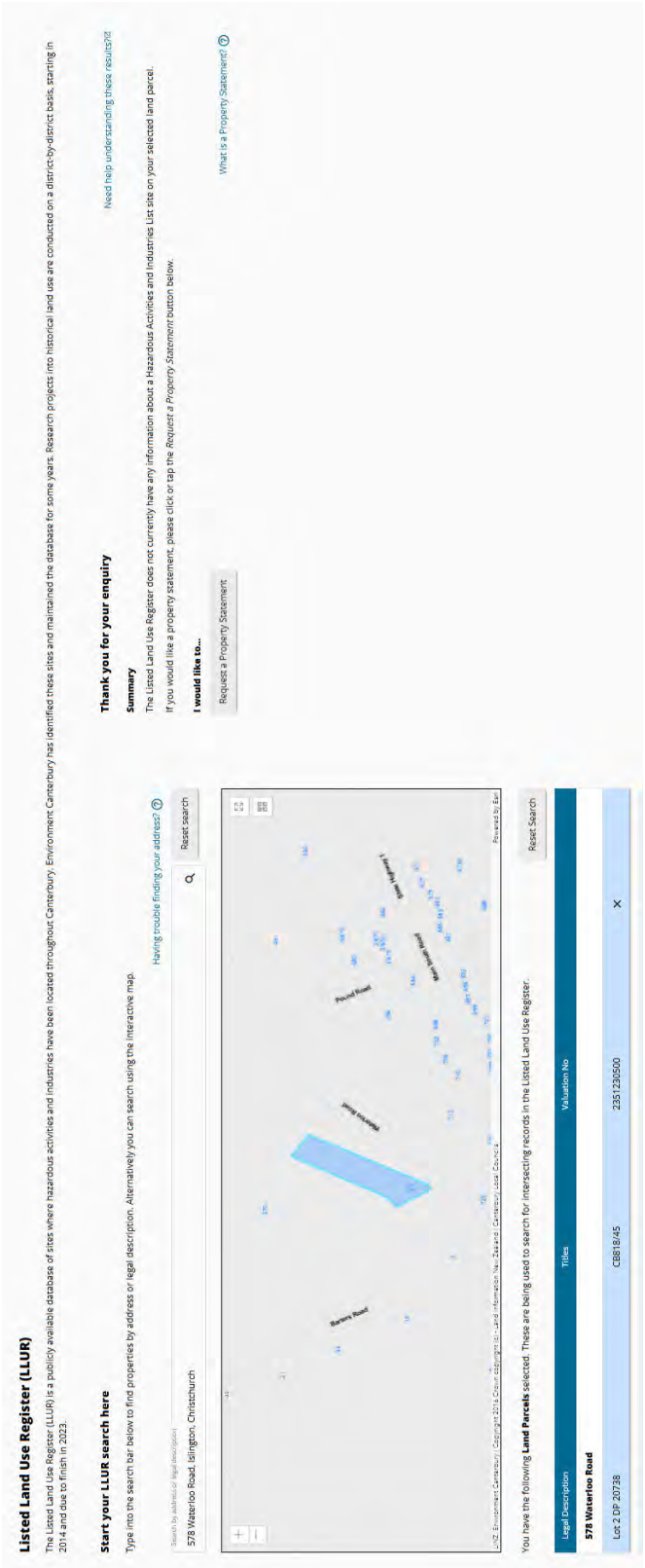
578 Waterloo Road



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Kaunihera Taiao ki Waitaha

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

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

Yours sincerely

Contaminated Sites Team

Property Statement
from the Listed Land Use Register

Visit ecan.govt.nz/HAIL for more information or
contact Customer Services at ecan.govt.nz/contact/ and quote ENQ397508

Date generated: 18 November 2024
Land parcels: Lot 2 DP 20738

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

Sites at a glance

Sites within enquiry area

There are no sites associated with the area of enquiry.

More detail about the sites

There are no sites associated with the area of enquiry.

Disclaimer

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2 Barters Road

Listed Land Use Register (LLUR)

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Start your LLUR search here

Type into the search bar below to find properties by address or legal description. Alternatively you can search using the interactive map.

Having trouble finding your address?

Search by address or legal description

Reset search

Thank you for your enquiry

Need help understanding these results?

Summary

The Listed Land Use Register does not currently have any information about a Hazardous Activities and Industries List site on your selected land parcel.

If you would like a property statement, please click or tap the *Request a Property Statement* button below.

I would like to...

What is a Property Statement?

Request a Property Statement

You have the following **Land Parcels** selected. These are being used to search for intersecting records in the Listed Land Use Register.

Reset Search

Legal Description	Titles	Valuation No
2 Barters Road		
Lot 1 DP 20738	CB821/98	2351230400

Environment Canterbury
Regional Council
Kaunihera Taiao ki Waitaha

Customer Services
P. 03 353 9007 or 0800 324 636

PO Box 345
Christchurch 8140

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

www.ecan.govt.nz

Dear Sir/Madam

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

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

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

Yours sincerely

Contaminated Sites Team

Property Statement
from the Listed Land Use Register

Visit ecan.govt.nz/HAIL for more information or
contact Customer Services at ecan.govt.nz/contact/ and quote ENQ397509

Date generated: 18 November 2024
Land parcels: Lot 1 DP 20738

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

Sites at a glance

Sites within enquiry area

There are no sites associated with the area of enquiry.

More detail about the sites

There are no sites associated with the area of enquiry.

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.

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

38 Barters Road

Listed Land Use Register (LLUR)

The Listed Land Use Register (LLUR) is a publicly available database of sites where hazardous activities and industries have been located throughout Canterbury. Environment Canterbury has identified these sites and maintained the database for some years. Research projects into historical land uses are conducted on a district-by-district basis starting in 2014 and due to finish in 2023.

Start your LLUR search here

Type into the search bar below to find properties by address or legal description. Alternatively you can search using the interactive map.

Having trouble finding your address?

Search by address or legal description

Reset search

You have the following **Land Parcels** selected. These are being used to search for intersecting records in the Listed Land Use Register.

Reset Search

Legal Description	Titles	Valuation No
38 Barters Road		
Lot 10 DP 23934	CB4C/986	2351250000

Thank you for your enquiry

Need help understanding these results?

Summary

The Listed Land Use Register does not currently have any information about a Hazardous Activities and Industries List site on your selected land parcel.

If you would like a property statement, please click or tap the *Request a Property Statement* button below.

I would like to...

Request a Property Statement

What is a Property Statement?

Environment Canterbury
Regional Council
Kaunihera Taiao ki Waitaha

Customer Services
P. 03 353 9007 or 0800 324 636

PO Box 345
Christchurch 8140

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

www.ecan.govt.nz

Dear Sir/Madam

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

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

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

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

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

Yours sincerely

Contaminated Sites Team

Property Statement
from the Listed Land Use Register

Visit ecan.govt.nz/HAIL for more information or
contact Customer Services at ecan.govt.nz/contact/ and quote ENQ390272

Date generated: 11 September 2024
Land parcels: Lot 10 DP 23834

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

Sites at a glance

Sites within enquiry area

There are no sites associated with the area of enquiry.

More detail about the sites

There are no sites associated with the area of enquiry.

Disclaimer

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64 Barters Road

Environment Canterbury
Regional Council
Kaunihera Taiao ki Waitaha

Customer Services
P. 03 353 9007 or 0800 324 636

PO Box 345
Christchurch 8140

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

www.ecan.govt.nz

Dear Sir/Madam

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

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

Yours sincerely

Contaminated Sites Team

Property Statement
from the Listed Land Use Register

Visit ecan.govt.nz/HAIL for more information or
contact Customer Services at ecan.govt.nz/contact/ and quote ENQ390271

Date generated: 11 September 2024
Land parcels: Lot 2 DP 38418

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

Sites at a glance

Sites within enquiry area

There are no sites associated with the area of enquiry.

More detail about the sites

There are no sites associated with the area of enquiry.

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86 Barters Road

Listed Land Use Register (LLUR)

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Start your LLUR search here

Type into the search bar below to find properties by address or legal description. Alternatively you can search using the interactive map.

Having trouble finding your address?

Search by address or legal description

86 Barters Road, Templeton, Christchurch

Reset search

Thank you for your enquiry

Summary

The Listed Land Use Register does not currently have any information about a Hazardous Activities and Industries List site on your selected land parcel.

If you would like a property statement, please click or tap the *Request a Property Statement* button below.

I would like to...

Request a Property Statement

What's a Property Statement?

Need help understanding these results?

You have the following **Land Parcels** selected. These are being used to search for intersecting records in the Listed Land Use Register.

Reset Search

Legal Description	Titles	Valuation No
86 Barters Road		
Lot 1 DP 38418	CB30A/840	2351228800

Environment Canterbury
Regional Council
Kaunihera Taiao ki Waitaha

Customer Services
P. 03 353 9007 or 0800 324 636

PO Box 345
Christchurch 8140

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

www.ecan.govt.nz

Dear Sir/Madam

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

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

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

Yours sincerely

Contaminated Sites Team

Property Statement
from the Listed Land Use Register

Visit ecan.govt.nz/HAIL for more information or
contact Customer Services at ecan.govt.nz/contact/ and quote ENQ390281

Date generated: 11 September 2024
Land parcels: Lot 1 DP 38418

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

Sites at a glance

Sites within enquiry area

There are no sites associated with the area of enquiry.

More detail about the sites

There are no sites associated with the area of enquiry.

Disclaimer

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94 Barters Road

Listed Land Use Register (LLUR)

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Start your LLUR search here

Type into the search bar below to find properties by address or legal description. Alternatively you can search using the interactive map.

Having trouble finding your address?

Search by address or legal description

Reset search

You have the following **Land Parcels** selected. These are being used to search for intersecting records in the Listed Land Use Register.

Reset Search

Legal Description	Titles	Valuation No	
94 Barters Road			
Lot 7 DP 23834	CB4C/383	2351229700	X

Thank you for your enquiry

Need help understanding these results?

Summary

The Listed Land Use Register does not currently have any information about a Hazardous Activities and Industries List site on your selected land parcel.

If you would like a property statement, please click or tap the *Request a Property Statement* button below.

I would like to...

Request a Property Statement

What's a Property Statement?

Environment Canterbury
Regional Council
Kaunihera Taiao ki Waitaha

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

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

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

Yours sincerely

Contaminated Sites Team

Property Statement
from the Listed Land Use Register

Visit ecan.govt.nz/HAIL for more information or
contact Customer Services at ecan.govt.nz/contact/ and quote ENQ390267

Date generated: 11 September 2024
Land parcels: Lot 7 DP 23834

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

Sites at a glance

Sites within enquiry area

There are no sites associated with the area of enquiry.

More detail about the sites

There are no sites associated with the area of enquiry.

Disclaimer

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4 Hasketts Road

Environment Canterbury
Regional Council
Kaunihera Taiao ki Waitaha

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

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

Yours sincerely

Contaminated Sites Team

Property Statement
from the Listed Land Use Register

Visit ecan.govt.nz/HAIL for more information or
contact Customer Services at ecan.govt.nz/contact/ and quote ENQ391373

Date generated: 20 September 2024
Land parcels: Lot 6 DP 23834

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

Sites at a glance

Sites within enquiry area

There are no sites associated with the area of enquiry.

More detail about the sites

There are no sites associated with the area of enquiry.

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22 Hasketts Road

Listed Land Use Register (LLUR)

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Start your LLUR search here

Type into the search bar below to find properties by address or legal description. Alternatively you can search using the interactive map.

Having trouble finding your address?

Search by address or legal description

Reset search

Thank you for your enquiry

Need help understanding these results?

Summary

The Listed Land Use Register does not currently have any information about a Hazardous Activities and Industries List site on your selected land parcel.

If you would like a property statement, please click or tap the *Request a Property Statement* button below.

I would like to...

Request a Property Statement

What is a Property Statement?

You have the following **Land Parcels** selected. These are being used to search for intersecting records in the Listed Land Use Register.

Reset Search

Legal Description	Titles	Valuation No
22 Hasketts Road		
Lot 2 DP 24156	CB39D/83	2351229400

Environment Canterbury
Regional Council
Kaunihera Taiao ki Waitaha

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

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

Yours sincerely

Contaminated Sites Team

Property Statement
from the Listed Land Use Register

Visit ecan.govt.nz/HAIL for more information or
contact Customer Services at ecan.govt.nz/contact/ and quote ENQ391375

Date generated: 20 September 2024
Land parcels: Lot 2 DP 24156

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

Sites at a glance

Sites within enquiry area

There are no sites associated with the area of enquiry.

More detail about the sites

There are no sites associated with the area of enquiry.

Disclaimer

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30 Hasketts Road

Listed Land Use Register (LLUR)

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Start your LLUR search here

Type into the search bar below to find properties by address or legal description. Alternatively you can search using the interactive map.

Search by address or legal description

Having trouble finding your address?

Reset search

You have the following **Land Parcels** selected. These are being used to search for intersecting records in the Listed Land Use Register.

Reset Search

Legal Description	Titles	Valuation No.
30 Hasketts Road		
Lot 1 DP 24156	CB5C/28	2351229300

Thank you for your enquiry

Need help understanding these results?

Summary

The Listed Land Use Register does not currently have any information about a Hazardous Activities and Industries List site on your selected land parcel.

If you would like a property statement, please click or tap the *Request a Property Statement* button below.

I would like to...

Request a Property Statement

What is a Property Statement?

Environment Canterbury
Regional Council
Kaunihera Taiao ki Waitaha

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

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

Yours sincerely

Contaminated Sites Team

Property Statement
from the Listed Land Use Register

Visit ecan.govt.nz/HAIL for more information or
contact Customer Services at ecan.govt.nz/contact/ and quote ENQ391577

Date generated: 23 September 2024
Land parcels: Lot 1 DP 24156

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

Sites at a glance

Sites within enquiry area

There are no sites associated with the area of enquiry.

More detail about the sites

There are no sites associated with the area of enquiry.

Disclaimer

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40 Hasketts Road

Listed Land Use Register (LLUR)

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Start your LLUR search here

Type into the search bar below to find properties by address or legal description. Alternatively you can search using the interactive map.

Search by address or legal description

Reset search

Having trouble finding your address?

You have the following **Land Parcels** selected. These are being used to search for intersecting records in the Listed Land Use Register.

Legal Description	Titles	Valuation No	
40 Hasketts Road			
Lot 2 DP 23934	CB45/378	2351229200	X

Reset Search

Thank you for your enquiry

Need help understanding these results?

Summary

The Listed Land Use Register has information relating to your selected land parcel.

If you would like a property statement, please click or tap the *Request a Property Statement* button below.

I would like to...

Request a Property Statement

What is a Property Statement?

Detailed Results

The following **HAIL Activities** were found within your search area.

What is a HAIL Activity?

No.	HAIL
ACT29260	A11 - Pest control

The following **Sites** were found within your search area.

What is a Site?

No.	Site Category	Site Name
SIT29261	Not Investigated	29261

Environment Canterbury
Regional Council
Kaunihera Taiao ki Waitaha

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

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

Yours sincerely

Contaminated Sites Team

Property Statement
from the Listed Land Use Register

Visit ecan.govt.nz/HAIL for more information or
contact Customer Services at ecan.govt.nz/contact/ and quote ENQ391376

Date generated: 20 September 2024
Land parcels: Lot 2 DP 23834

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

Sites at a glance

Sites within enquiry area

Site number	Name	Location	HAIL activity(s)	Category
29261	29261	Paparua	A11 - Pest control;	Not Investigated

More detail about the sites

Site 29261: 29261 (Intersects enquiry area.)

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

Location: Paparua
Legal description(s): Lot 2 DP 23834

HAIL activity(s):

Period from	Period to	HAIL activity
Pre 1973	Pre 1984	Pest control including the premises of commercial pest control operators

		or any authorities that carry out pest control where bulk storage or preparation of pesticide occurs, including preparation of poisoned baits or filling or washing of tanks for pesticide application

Notes:

16 Oct 2013 Area defined from: 1973-1984 ECan Aerial Photographs.

Note: A poultry farm was noted in early aerial photographs an a glass house was noted in later photographs reviewed.

Investigations:

There are no investigations associated with this site.

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.

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.

48 Hasketts Road

Listed Land Use Register (LLUR)

The Listed Land Use Register (LLUR) is a publicly available database of sites where hazardous activities and industries have been located throughout Canterbury. Environment Canterbury has identified these sites and maintained the database for some years. Research projects into historical land use are conducted on a district-by-district basis, starting in 2014 and due to finish in 2023.

Start your LLUR search here

Type into the search bar below to find properties by address or legal description. Alternatively you can search using the interactive map.

Having trouble finding your address?

Search by address or legal description

Reset search

You have the following **Land Parcels** selected. These are being used to search for intersecting records in the Listed Land Use Register.

Reset Search

Legal Description	Titles	Valuation No
48 Hasketts Road		
Lot 1 DP 23934	CB4C/377	2351229100

Thank you for your enquiry

Summary

The Listed Land Use Register does not currently have any information about a Hazardous Activities and Industries List site on your selected land parcel.

I would like to...

If you would like a property statement, please click or tap the *Request a Property Statement* button below.

Request a Property Statement

Need help understanding these results?

What is a Property Statement?

Environment Canterbury
Regional Council
Kaunihera Taiao ki Waitaha

Customer Services
P. 03 353 9007 or 0800 324 636

PO Box 345
Christchurch 8140

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

www.ecan.govt.nz

Dear Sir/Madam

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

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

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

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

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

Yours sincerely

Contaminated Sites Team

Property Statement
from the Listed Land Use Register

Visit ecan.govt.nz/HAIL for more information or
contact Customer Services at ecan.govt.nz/contact/ and quote ENQ391380

Date generated: 20 September 2024
Land parcels: Lot 1 DP 23834

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

Sites at a glance

Sites within enquiry area

There are no sites associated with the area of enquiry.

More detail about the sites

There are no sites associated with the area of enquiry.

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APPENDIX D

Statement of Suitability

Statement of Professional Opinion on the Suitability of Land for Subdivision

(Appendix I to the Infrastructure Design Standard)

Issued by: *KGA Geotechnical Group Limited*
(Geotechnical engineering firm or suitably qualified engineer)

To: *NTP Development Holdings Ltd*
(Owner/Developer)

To be supplied to: *Christchurch City Council*
(Territorial authority)

In respect of: *Land Subdivision*
(Description of proposed infrastructure/land development)

At: *2-92 Barters Road, 111 & 173 Pound Road, 4, 22 - 48 Hasketts Road, 570 & 578 Waterloo Road, Islington, Cantebury*
(Address)

I *(Geotechnical engineer)* *R. Kamuhangire* on behalf of *(Geotechnical engineering firm)* *KGA Geotechnical Group Limited*

hereby confirm:

1. I am a suitably qualified and experienced geotechnical engineer and was retained by the owner/developer as the geotechnical engineer on the above proposed development.

2. My/the geotechnical assessment report, dated *30 June 2025* has been carried out in accordance with the Department of Building and Housing *Guidelines for geotechnical investigation and assessment of subdivisions* and includes:
   (i) Details of and the results of my/the site investigations.
   (ii) A liquefaction assessment.
   (iii) An assessment of rockfall and slippage, including hazards resulting from seismic activity.
   (iv) An assessment of the slope stability and ground bearing capacity confirming the location and appropriateness of building sites.
   (v) Recommendations proposing measures to avoid, remedy or mitigate any potential hazards on the land subject to the application, in accordance with the provisions of Section 106 of the Resource Management Act 1991.

3. In my professional opinion, I consider that Council is justified in granting consent incorporating the following conditions:

   Following recommendations described in Section 10, Section 11 and Table 6 of KGA Geotechnical Report K240545-2, dated 30 June 2025

4. This professional opinion is furnished to the territorial authority and the owner/developer for their purposes alone, on the express condition that it will not be relied upon by any other person and does not remove the necessity for the normal inspection of foundation conditions at the time of erection of any building.

5. This certificate shall be read in conjunction with my/the geotechnical report referred to in Clause 2 above, and shall not be copied or reproduced except in conjunction with the full geotechnical completion report.

6. The geotechnical engineering firm issuing this statement holds a current policy of professional indemnity insurance of no less than $ *2M*
(Minimum amount of insurance shall be commensurate with the current amounts recommended by IPENZ, ACENZ, TNZ, INGENIUM.)

..... [redacted] .....
(Signature of Engineer)

Date: *30 June 2025*

Qualifications and experience: *BSc (Civil Hons), MSc, CEng, MICE, CMEngNZ, CPEng*