

PRELIMINARY SITE INVESTIGATION (PSI)

301 BUCKLAND ROAD, PUKEKOHE



Reference Number: REP-1258/PSI/NOV18

PREPARED FOR: FRANKLINS PLUMBERS & BUILDERS SUPPLIES LTD, c/- SCOTT WILKINSON PLANNING

16 NOVEMBER 2018



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Statement

This site investigation has been prepared in accordance with the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011. It has been managed by a suitably qualified and experienced practitioner (SQEP); and reported on in accordance with the current edition of the Ministry for the Environment's *Contaminated Land Management guidelines No.1 – Reporting on Contaminated Sites in New Zealand*.

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Thank you for the opportunity to carry out this investigation. Should you have any queries regarding this report please do not hesitate to contact us on 09 475 0222.

TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
1 INTRODUCTION	2
2 PROPERTY DETAILS	2
3 PROPOSED CHANGE IN LANDUSE AND DEVELOPMENT	2
4 STANDARDS AND REGULATIONS	3
4.1 NATIONAL ENVIRONMENTAL STANDARD (NES).....	3
4.2 AUCKLAND UNITARY PLAN (OPERATIVE IN PART) (AUP(OP)).....	3
5 PSI OBJECTIVES	3
6 SCOPE OF WORKS	4
7 ENVIRONMENTAL CONTEXT	4
7.1 GEOLOGY & GEOHYDROLOGY	4
7.2 TOPOGRAPHY AND DRAINAGE.....	4
8 SITE HISTORY	5
8.1 CERTIFICATE OF TITLE	5
8.2 HISTORIC AERIAL PHOTOGRAPHS	5
8.2.1 <i>Summary of Historic Aerial Imagery</i>	6
8.3 PROPERTY FILE	7
8.4 CONTAMINATED LAND DATABASE SEARCH.....	7
8.5 FORMER INVESTIGATIONS.....	7
9 SITE INSPECTION & INFRASTRUCTURE	7
10 POTENTIAL FOR CONTAMINATION	8
11 CONCLUSIONS	9
11.1 NATIONAL ENVIRONMENTAL STANDARD (NES).....	9
11.2 THE AUCKLAND UNITARY PLAN (OPERATIVE IN PART) (AUP(OP)).....	9
12 RECOMMENDATIONS / FURTHER INVESTIGATIONS REQUIRED	10
13 REFERENCES	11
14 LIMITATIONS	12

LIST OF TABLES

TABLE 1	CURRENT & FORMER HAIL ACTIVITIES AND POTENTIAL HAZARDOUS SUBSTANCES
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LIST OF FIGURES

FIGURE 1	SITE LOCATION
FIGURE 2	IDENTIFIED FEATURES
FIGURE 3	POTENTIAL HAIL

APPENDICES

APPENDIX A	PROPOSED EARTHWORKS PLAN
APPENDIX B	CERTIFICATE OF TITLE
APPENDIX C	HISTORIC AERIAL PHOTOGRAPHS
APPENDIX D	PROPERTY FILE EXTRACTS
APPENDIX E	CONTAMINATED LAND DATABASE SEARCH
APPENDIX F	PREVIOUS INVESTIGATIONS EXTRACTS
APPENDIX G	SITE PHOTOGRAPHS

EXECUTIVE SUMMARY

Geosciences Ltd (GSL) has been requested by Scott Wilkinson Planning on behalf of their client, Franklins Plumbers & Builders Supplies Ltd, to conduct a Preliminary Site Investigation (PSI) of the property located at 301 Buckland Road, Buckland (“the site”). It is proposed to develop the through the removal of existing structures on site, and construction of a commercial warehouse, showroom, and office complex. The site is located on the southern edge of Pukekohe’s light industrial zone, in an area where historical and current horticultural farming is common.

The PSI included a review of the property file held by Auckland Council, the available historic aerial photographs, the certificates of title, and any available previous investigations at the site. Following the desktop review, a site inspection was undertaken to confirm findings in the review. The aim of the PSI was to identify whether any activities on the Ministry for the Environment’s (MfE) Hazardous Activities and Industries List (HAIL) are more likely than not to currently be, or historically have been, occurring on site.

The historic photograph investigation revealed that the property has been used for pastoral farming for the majority of its recorded history. However, possible horticultural practices (HAIL Item A.10) prior to the 1960s cannot be conclusively ruled out based on aerial photographs of the site between 1942 and 1961. Recent aerial photographs revealed the migration of sediment from the neighbouring horticultural field onto the site (HAIL Item H), confirmed by the site inspection. As the dwelling has been located on the site since before 1942, the use of lead-based paint is likely (HAIL Item I).

The review of a recent geotechnical investigation suggests that unverified fill material (HAIL Item I) may be present on site. While it is likely the fill material encountered is locally derived material disturbed by pastoral farming activities, the lack of records regarding potential filling activities warrants further investigation. This should include the areas of buried concrete and building rubble located in the pasture west of the residential dwelling, where a pre-1940 building was located before its demolition, as well as the stockpiles of material located along the southern boundary of the site.

The investigation, carried out in accordance with the MfE contaminated land management guidelines, has found evidence to suggest it is more likely than not that the site has been the location of possible historic and current HAIL activity. Consequently, the site does not meet the definition of *Land not covered* under Regulation (9) of the National Environmental Standard (NES) for Assessing and Managing Contaminants in Soil to Protect Human Health. A Detailed Site Investigation (DSI) will therefore be required to determine the activity status of the proposed development under the NES and the Auckland Unitary Plan (AUP(OP)) *Chapter E.30 Contaminated Land*.

1 INTRODUCTION

Geosciences Ltd (GSL) has prepared the following report for Scott Wilkinson Planning on behalf of Franklins Plumbers & Builders Supplies Ltd in accordance with the GSL proposal, Ref: *Pro-1613/Oct18*, dated 19 October 2018.

This report has been prepared in accordance with the Ministry for the Environment (MfE) Contaminated Land Management Guidelines (CLMG): No. 1 - "*Guidelines for Reporting on Contaminated Sites in New Zealand*", and No. 5 – "*Site Investigation and Analysis of Soils*" (References 1 and 2).

2 PROPERTY DETAILS

Location:	301 Buckland Road, Pukekohe
Legal Description:	Pt Lot 1 DP 3363
Size:	4.36 Ha
Zoning:	Future Urban Zone

The property at the above address, hereafter referred to as 'the site' in this report, is located on a moderate slope on the southern end of Pukekohe's light industrial zone, overlooking the Pukekohe Park raceway to the east (Figure 1). It is bounded by agricultural land to the west, and lifestyle blocks with pastures to the south. The site currently functions as leased pasture for livestock and horses, with stables and animal pens in the south eastern corner.

3 PROPOSED CHANGE IN LANDUSE AND DEVELOPMENT

It is proposed to develop the site through the construction of a commercial showroom, offices, storerooms, and warehouse for Franklin Plumbers & Builders Supplies Ltd. The proposed development will include significant cut-to-fill earthworks to create a three-tiered split level surface for construction of the proposed buildings. The resulting configuration will include approximately 25,492 m² impermeable surfaces (including buildings), and approximately 17,745 m² permeable landscaped surfaces.

To achieve this, approximately 31,785 m³ of cut, and 42,086 m³ of fill work is proposed, with approximately 10,300 m³ of engineered cleanfill material required to be imported to create the platform below the main warehouse and pipe storage building. Where cut material is deemed unsuitable for use in construction, it will be removed from site for disposal at an appropriate facility. A copy of the proposed earthworks plan is attached in Appendix A.

The proposal therefore involves change in landuse of the site from agricultural to commercial / industrial alongside soil disturbance development activities.

4 STANDARDS AND REGULATIONS

Because of the change in landuse, and proposed development outlined above it will be necessary to address the requirements of the following standards, rules, and regulations applicable for the site.

4.1 NATIONAL ENVIRONMENTAL STANDARD (NES)

The *National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health* (NES) (Reference 3) ensures that land affected by contaminants in soil is appropriately identified and assessed. When soil disturbance and/or land development activities take place it should be, if necessary, remediated or the contaminants contained to make the land safe for human use.

Under the NES, land is considered to be actually or potentially contaminated if an activity or industry on the MfE Hazardous Activities and Industries List (HAIL) has been, is, or is more likely than not to have been, undertaken on the land. Consequently, a change in landuse, subdivision, or development requires a preliminary site investigation (PSI) of the land to determine if there is a risk to human health because of any current or former activities that are occurring, or may have occurred, on the land under investigation.

4.2 AUCKLAND UNITARY PLAN (OPERATIVE IN PART) (AUP(OP))

Section 30(1)(f) of the RMA provides the Auckland Council with a statutory duty to investigate land for the purposes of identifying and monitoring contaminated land and for the control of discharges of contaminants into or onto land or water and discharges of water into water.

The Auckland Unitary Plan (Operative in Part) (AUP(OP)), which was formally notified on 30 September 2013, is a combined regional policy statement, regional coastal plan, regional plan, and district plan. Auckland Council notified an operative in part version of the plan on 15 November 2016 (Reference 4).

Chapter E.30 of the AUP(OP) deals specifically with contaminated land and maintains that Council is required to manage both the use of land containing elevated levels of contaminants and the discharge of contaminants from land containing elevated levels of contaminants. As no appeals have been lodged on Chapter E.30, the provisions of that section can be considered operative under Section 87 of the Resource Management Act 1991. For all purposes of this investigation, the relevant provisions of the AUP(OP) relating to soil contamination have legal jurisdiction and those provision have been considered where they may have an impact on the proposed development.

5 PSI OBJECTIVES

The objectives of this investigation were to assess:

- if the land is covered by the NES as a result of current or former HAIL activities;
- the extent of current or former HAIL activities on site, if any;
- if the activity can comply with NES permitted activity conditions;

- what, if any, contaminated land rules of the AUP(OP) apply to the proposed development; and
- the need, if any, for further detailed investigations.

6 SCOPE OF WORKS

To achieve the objectives of the PSI, GSL has undertaken the following:

- an historical appraisal of the property by a study of historical aerial photographs;
- a review of the certificates of titles of the property;
- a review of the property files held by council;
- a search of the Auckland Council's contaminated land database;
- a review of previous environmental / geotechnical reports (if any);
- a site visit and walkover of the property; and
- the preparation of a report in accordance with Contaminated Land Management Guideline No. 1 – "Reporting on contaminated Sites in New Zealand" (Ministry for the Environment, 2011) detailing the findings of this investigation and the recommendations, if any, for further work.

7 ENVIRONMENTAL CONTEXT

7.1 GEOLOGY & GEOHYDROLOGY

The local geology is described by Edbrooke (Reference 5) as fine-grained and coarse-grained, porphyritic, olivine basalt, basanite and hawaiite lava flows of the Kerikeri Volcanic Group of the South Auckland Volcanic Field.

7.2 TOPOGRAPHY AND DRAINAGE

The site has a moderate slope from south-east to north-west from its highest point at approximately 85.5m above sea level (asl) in the southern corner, to its lowest point in the northern corner at approximately 61.5m asl.

Stormwater dissipation is currently through soakage and surface runoff, with no apparent connections to a stormwater control system. The site contains only minor overland flow paths which lead into larger overland flow paths in engineered stormwater swales along Buckland Road. The largest of the overland flow paths enters the site from the neighbouring horticultural field to the west of the site. The engineered stormwater swales along Buckland Road channel surface stormwater runoff from the site, into the Tuatenui Stream approximately 260 m north-east of the site. The site does not fall within any flood prone areas, flood plains, or flood sensitive areas due to its slope. However, a flood prone area is located on the neighbouring property to the north of the site, which may receive stormwater from the site via the swales along Bucklands Road.

The site falls within three aquifer management area overlays of the AUP(OP):

- Natural Resources: High-Use Aquifer Management Areas Overlay [rp] - Pukekohe Kaawa Aquifer (Chapter D1)
- Natural Resources: High-Use Aquifer Management Areas Overlay [rp] - Pukekohe Central Volcanic (Chapter D1)
- Natural Resources: Quality-Sensitive Aquifer Management Areas Overlay [rp] - Franklin Volcanic Aquifer (Chapter D2)

8 SITE HISTORY

A desktop study of publically available files and photographs was undertaken to determine the history of the site with respect to any current or historic potentially contaminating landuses.

8.1 CERTIFICATE OF TITLE

GSL has reviewed a copy of the Certificate of Title for the aforementioned property, including any instruments on the title which detail relevant property information such as: current ownership, registered interests, easements, covenants, lease restrictions and transmissions, to determine if pre-existing consent notices or other restrictions / notifications which may be relevant to historic uses or potential soil contamination are held against the property. No notes of interest were recorded on the titles. Copies of these documents are attached in Appendix B.

8.2 HISTORIC AERIAL PHOTOGRAPHS

Historic aerial photographs from 1942, 1961, 1975, 1978, 1981, 1988, and 2003 are available for the site on the Retrolens website (Reference 6), while images from 2001, 2006, 2008, 2010, and 2017 are available on the Auckland Council GEOMaps website (Reference 7). Additional satellite images are available from Google Earth from 2001, 2009, and 2010 to 2018. The findings of the historic aerial photograph review are summarised below, while copies of these aerial photographs have been attached in Appendix C.

- 1942** This is the earliest photograph of the site, when it formed part of a larger property encompassing what is now part of Pukekohe Park on the eastern side of Buckland Road. The fields on site are in a larger configuration, with shelterbelts defining their boundaries and livestock identifiable in the south eastern field. The residential dwelling currently on site is already present in this image, as well as shed like structures located under the trees to the west of the house. A gully runs from south to north across the central field. The surrounding land contains a mix of pasture and horticulture to the north, south, and west, and the Pukukohe Park raceway to the east.
- 1961** The site appears in the same configuration as the 1942 image. However, the neighbouring fields to the west are being used for horticulture. The south eastern field on the site has a different appearance to the other fields, but it is not clear whether it is being used for horticulture or whether the grass has been mechanically cut as feed for the grazing livestock.

- 1975-1978** The 1975 aerial image is of very low quality, but appears to be very similar to the 1978 image. By 1975, the stables in the south western corner of the site have been constructed, and the large field configuration across the site removed. Smaller paddocks containing livestock are clearly visible across the site in the 1978 image. It appears that the northern end of the site is being prepared for the new road layout of Buckland Road.
- 1981-1988** By 1981 construction on Buckland Road has been completed, defining the current property boundary. The quality of the 1988 image is relatively low, and as such no significant differences with the 1981 image were noted.
- 2001-2006** The first colour image of the site, the 2001 image shows significant changes to the south western section of the site. The shed and trees west of the house have been removed to form a large paddock while the stables have been extended to include livestock pens on the northern end. The garage and shed adjacent to the house have also been removed, and a car port installed. The small pens in front of the stables have been removed and replaced with a training circle for horses. The rest of the site remains unchanged. No significant changes are visible between the 2001, 2003, and 2006 images.
- 2008** The site appears disused in the 2008 image, with the fields fallow, no livestock visible, and the livestock sheds appearing in apparent disrepair.
- 2009-2015** By 2009 the site appears to be once again used for pasture while wrapped bails are visible in the northern and southern paddocks, along with livestock. The horse training circle appears to have been grassed over, but no other significant changes are noted in the 2010 and 2015 images.
- 2017** A band of material can clearly be seen extending from the corner of the southern horticultural field on the neighbouring property in a north easterly direction along an overland flow path on the site. This material is clearly visible in the Auckland Council aerial photograph, and two satellite images from Google Earth in April 2017 demonstrating sedimentation runoff from the neighbouring property.
- 2018** The plume of material visible in the 2017 image is no longer visible in the 2018 satellite image from Google Earth. The site appears otherwise unchanged.

8.2.1 SUMMARY OF HISTORIC AERIAL IMAGERY

It is not clear whether the configuration of the site prior to 1975 was limited to pasture farming, or whether some localised horticultural activities took place. The neighbouring property to the west of the site appears to have been horticultural since at least 1961 while the layout of Buckland Road was altered between 1978 and 1981, resulting in the current triangular boundary of the site.

The residential dwelling has been present on site since before the earliest aerial photograph was captured in 1942. However, the shed like structures and trees to the west of the house, and the shed and garage adjacent to the house were removed at some time during the 1990s. The stables in the south western corner were constructed prior to 1975, with livestock pens later added during the 1990s.

The site appears to have been used exclusively for pasture since 1975, with no obvious signs of filling, dumping, or earthworks occurring on site visible in the aerial images. However, material can

clearly be seen to have migrated from the neighbouring horticultural field onto the site via an overland flow path.

8.3 PROPERTY FILE

GSL requested the property file from Auckland Council for review of historic activities. Recent investigations into the site, submitted as part of the current resource consent application, have been reviewed under Section 8.5 *Former Investigations* below. Copies of relevant historic plans have been attached in Appendix D. The following note of interest was found:

- 1996** Proposed plans, ref: *38706/398.02*, dated 17 December 1996, were submitted by a prospective buyer outlining the conversion of the existing stables on site into sheds for abrasive sand blasting of metal and for chemical stripping of wooden objects. However, no further correspondence regarding the matter is held on file and there is no evidence on site that the stables were ever converted, and as such these plans are considered negligible.

8.4 CONTAMINATED LAND DATABASE SEARCH

A request was made to Auckland Council for a search of the subject address against their contaminated land database which retains existing records of any investigated land contaminating activities that may have occurred at the site address and which were subsequently investigated by council. It should be noted that while there may be no information held on file this does not necessarily provide conclusive evidence that no potentially contaminating activities have taken place at the site address. A copy of the site contamination enquiry is provided in Appendix E. No items of note were on the file.

8.5 FORMER INVESTIGATIONS

The following former investigations have been conducted at the site:

- 2018** Geotechnical Investigation Report by Lander Geotechnical, ref: *J00858*, dated 23 July 2018. The investigation encountered fill material in four boreholes across the site, but was unable to determine whether it was placed fill material or locally derived disturbed material from the historic farming practices on the site. The description of the fill material is consistent with the description of the natural material on site. Minor gravel inclusions were encountered in HA7 and P1, both near to Buckland Road.
- 2018** Assessment of Environmental Effects by Scott Wilkinson Planning, ref: *4161.01*, dated August 2018. As part of the assessment of environmental affects, the site's history was reviewed and no evidence of HAIL activities occurring or having occurred on the site identified. Details of the review were not included.

Relevant pages from the above investigations have been extracted and attached in Appendix F.

9 SITE INSPECTION & INFRASTRUCTURE

At the time of the inspection, the property appeared identical to the 2018 satellite photograph. The structures in the south west corner were confirmed to be cinder block stables with concrete

floors and corrugated iron roofs on the southern half of the building, and timber frame livestock pens with dirt floors and corrugated iron roofs on the northern half of the building. A livestock loading race is located behind the southern end of the stables. There were no structures on the site that could have been spray races or dips.

The single residential dwelling on the southern boundary of the site appeared in relatively good condition, with no noticeable damage to the exterior of the building. A gravel driveway in a state of disrepair extends along the southern boundary of the property, from Buckland Road to Webb Street. Minor surficial rubbish around the house was noted, but no signs of significant dumping or buried rubbish were identified. A small grassed stockpile of soil lies along the southern boundary opposite the timber-frame car port, and is most likely locally derived material stockpiled during the construction of the house. The remnants of a horse training circle is located in front of the stables, with shallow coarse sand overlying geotextile material present beneath the current layer of grass.

Partially buried and grassed concrete and building rubble was encountered in three locations across the site; next to the gate onto Webb Street in the south western corner of the site, under the trees at the northern end of the livestock pens, and in the centre of the southern paddock, halfway between the stables and the residential dwelling. The material under the trees and in the south western corner appeared to be temporary emplacements left on site and eventually grassed over, whereas the partially buried material in the southern paddock is believed to be the remains of a shed visible in the historic aerial images, removed at some point during the 1990s. There were no visible signs of potentially contaminating materials such as lead-painted wood or asbestos containing materials. All materials encountered were inert brick, cinder block or other such concrete based products.

There are currently no visible signs on site of horticulture having occurred. However, it was noted that material from the neighbouring horticultural farm to the west of the site has migrated across the site along an overland flow path during heavy rain events. The horticultural field to the west is slightly elevated above the level of the site, with an earth berm running from north to south along the boundary line. It appears that this bund, and the boundary between the north and south horticultural fields forms a ‘dam’ where sediment accumulates during rainfall. The earth berm on the boundary does not appear to be structurally reinforced, so it is considered that periods of prolonged or heavy rain result in material migrating along the overland flow path as water moves from the horticultural field down gradient onto the site. This migration is visible in the 2017 aerial photograph.

Identified features appear on Figure 2, and site photographs are attached in Appendix G.

10 POTENTIAL FOR CONTAMINATION

The results of the investigation have indicated that the following potential sources of soil contamination exist on site (Figure 3):

TABLE 1. CURRENT & FORMER HAIL ACTIVITIES AND POTENTIAL HAZARDOUS SUBSTANCES

ACTIVITY	POTENTIAL HAZARDOUS SUBSTANCES
Migration of soil from neighbouring horticultural fields (Item H)	Persistent pesticides, including arsenic, copper, lead, and organochlorine pesticides (OCPs)

Possible historic horticulture (Item A.10)	Persistent pesticides, including arsenic, copper, lead, and organochlorine pesticides (OCPs)
Lead based paint on old buildings (Item I)	Lead
Non-engineered, unidentified, fill (Item I)	Non-uniform heavy metal, petroleum and hydrocarbon contamination

11 CONCLUSIONS

GSL has conducted a desktop study, in accordance with the MfE Contaminated Land Management Guidelines to determine the location and extent of current and / or former HAIL Activities on site and the potential for soil contamination, and the associated risk to human health and the environment, as a result. GSL has consequently concluded that:

- the site has been predominantly pasture grazing for the majority of its recent past;
- there is no evidence of any sheep dips or races on site;
- there is historical photographic evidence that suggests horticultural / production activities may have been conducted on the site prior to the 1960s (HAIL Item A.10);
- buildings have been present on site since prior to 1942, with reasonable probability of lead-based paint being used during their lifetime (considered HAIL Item I);
- there is the possibility of unverified fill (HAIL Item I) on site, however, it is considered to be low risk as it is more likely than not locally derived material disturbed during farming practices;
- buried building material (possible HAIL Item I) is present on site, with the exact extent and composition unknown; and
- soil from the neighbouring horticultural fields has been confirmed to have migrated onto the site (HAIL Item H) via an overland flow path during rain events.

Based on the above investigation, GSL concludes that it is more likely than not that the site has been the location of activities listed on the MfE Hazardous Activities and Industries List (HAIL).

11.1 NATIONAL ENVIRONMENTAL STANDARD (NES)

Portions of the land under redevelopment meets the definitions of HAIL land and will therefore require a detailed site investigation including soil sampling and analysis prior to the development being approved. The specific areas of the site that have been identified as being the location of HAIL landuses have been indicated in Figure 3. The NES regulations apply only to these pieces of land.

11.2 THE AUCKLAND UNITARY PLAN (OPERATIVE IN PART) (AUP(OP))

To satisfy the requirements of the AUP(OP), a detailed site investigation will be required to determine the possible extent of any potential contamination and whether the activity can subsequently meet the applicable environmental permitted activity criteria.

12 RECOMMENDATIONS / FURTHER INVESTIGATIONS REQUIRED

As a result of the findings of this report as outlined above, any subdivision, change in landuse, soil disturbance, or development projects conducted on the areas of the property where historic HAIL activities have been identified (refer Figure 3), are required to address the requirements of the NES, and the AUP(OP), and a suitable detailed site investigation, which includes the analysis of representative soil samples for the presence of potential contaminants of concern, will be required.

Following the analysis of the soil samples further actions may be required which may include the remediation of areas of contaminated soil and / or on-going site management and monitoring.

As the buildings on site were constructed prior to 1 January 2000, they require a suitable asbestos survey prior to demolition.

13 REFERENCES

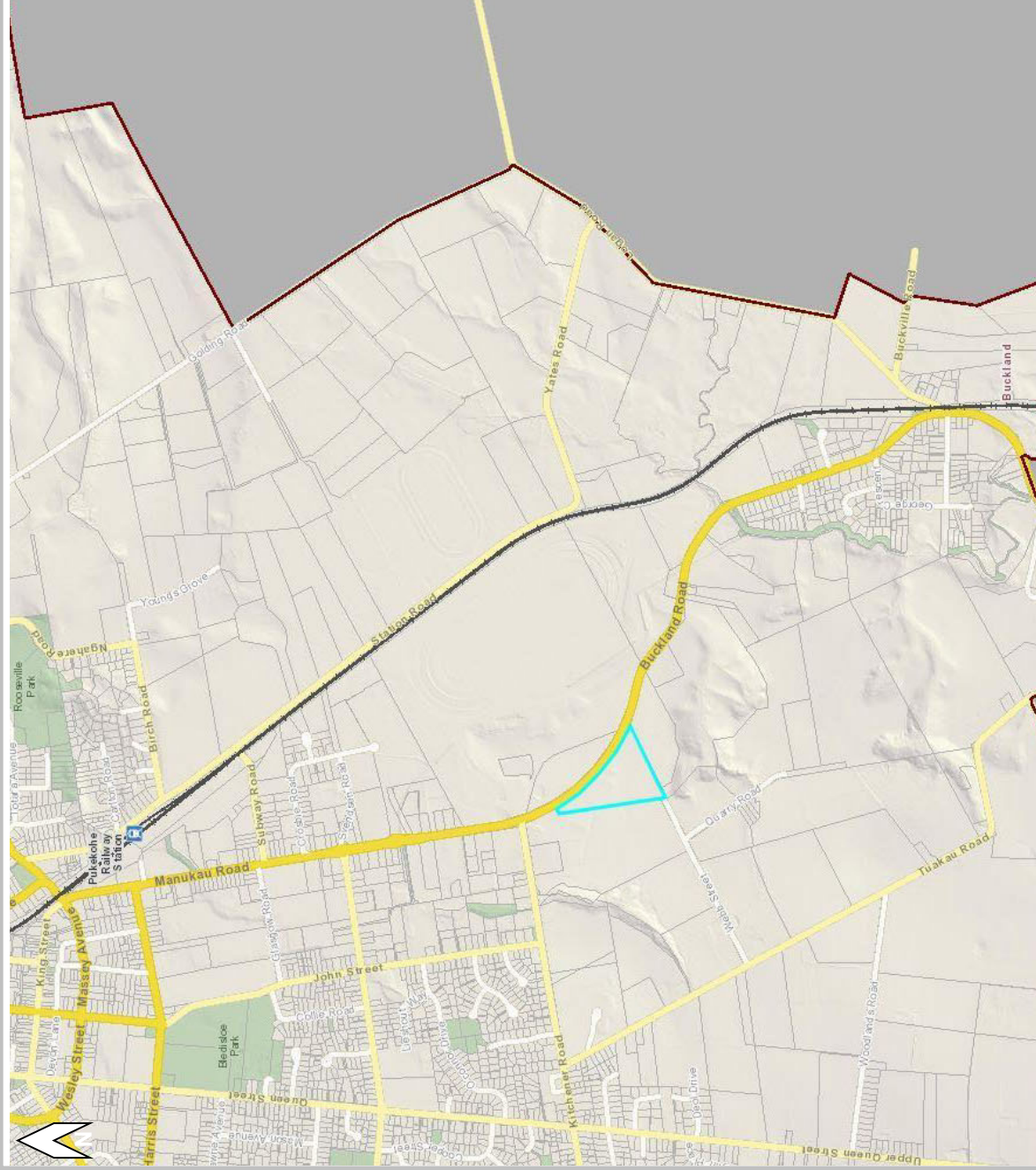
1. Ministry for the Environment (2003) — *Contaminated Land Management Guidelines No.1: Reporting on contaminated Sites in New Zealand*. Ministry for the Environment, Wellington, New Zealand.
2. Ministry for the Environment (2003) — *Contaminated Land Management Guidelines No.5: Site Investigation and Analysis of Soils*. Ministry for the Environment, Wellington, New Zealand.
3. Ministry for the Environment (2012) - *Users Guide National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health*. Ministry for the Environment, Wellington, New Zealand.
4. Auckland Council (2013) – *Auckland Unitary Plan (Operative in Part) Chapter E30 Contaminated Land*, Auckland, New Zealand.
5. Edbrooke, S.W (2001) — *Geology of the Auckland Urban Area* Institute of Geological and Nuclear Sciences Geological Map 3, Lower Hutt, New Zealand.
6. Retolens Historical Image Resource - www.retolens.co.nz
7. Auckland Council (2011) - *Auckland Council GEOMAPS*.
<http://geomapspublic.aucklandcouncil.govt.nz/viewer/index.html>

14 LIMITATIONS

The conclusions and all information in this Report are given strictly in accordance with and subject to the following limitations and recommendations:

1. The assessment undertaken to form this conclusion is limited to the scope of work agreed between GSL and the client, or the client's agent as outlined in this Report. This report has been prepared for the sole benefit of the client and neither the whole nor any part of this report may be used or relied upon by any other party.
2. The investigations carried out for the purposes of the report have been undertaken, and the report has been prepared, in accordance with normal prudent practice and by reference to applicable environmental regulatory authority and industry standards, guidelines and assessment criteria in existence at the date of this report.
3. This report should be read in full and no excerpts are to be taken as representative of the findings. No responsibility is accepted by GSL for use of any part of this report in any other context.
4. This Report was prepared on the dates and times as referenced in the report and is based on the conditions encountered on the site and information reviewed during the time of preparation. GSL accepts no responsibility for any changes in site conditions or in the information reviewed that have occurred after this period of time.
5. Where this report indicates that information has been provided to GSL by third parties, GSL has made no independent verification of this information except as expressly stated in the report. GSL assumes no liability for any inaccuracies in or omissions to that information.
6. Given the limited Scope of Works, GSL has only assessed the potential for contamination resulting from past and current known uses of the site.
7. Environmental studies identify actual sub-surface conditions only at those points where samples are taken and when they are taken. Actual conditions between sampling locations may differ from those inferred. The actual interface between materials may be far more gradual or abrupt than an assessment indicates. Actual conditions in areas not sampled may differ from that predicted. Nothing can be done to prevent the unanticipated and GSL does not guarantee that contamination does not exist at the site.
8. Except as otherwise specifically stated in this report, GSL makes no warranty or representation as to the presence or otherwise of asbestos and/or asbestos containing materials ("ACM") on the site. If fill has been imported on to the site at any time, or if any buildings constructed prior to 1970 have been demolished on the site or materials from such buildings disposed of on the site, the site may contain asbestos or ACM .
9. Except as specifically stated in this report, no investigations have been undertaken into any off-site conditions, or whether any adjoining sites may have been impacted by contamination or other conditions originating from this site. The conclusion set out above is based solely on the information and findings contained in this report.
10. Except as specifically stated above, GSL makes no warranty, statement or representation of any kind concerning the suitability of the site for any purpose or the permissibility of any use, development or re-development of the site.
11. The investigation and remediation of contaminated sites is a field in which legislation and interpretation of legislation is changing rapidly. Our interpretation of the investigation findings should not be taken to be that of any other party. When approval from a statutory authority is required for a project, that approval should be directly sought by the client.
12. Use, development or re-development of the site for any purpose may require planning and other approvals and, in some cases, environmental regulatory authority and accredited site auditor approvals. GSL offers no opinion as to whether the current or proposed use has any or all approvals required, is operating in accordance with any approvals, the likelihood of obtaining any approvals, or the conditions and obligations which such approvals may impose, which may include the requirement for additional environmental works.
13. GSL makes no determination or recommendation regarding a decision to provide or not to provide financing with respect to the site. The on-going use of the site and/or planned use of the site for any different purpose may require the owner/user to manage and/or remediate site conditions, such as contamination and other conditions, including but not limited to conditions referred to in this report.
14. Except as required by law, no third party may use or rely on, this report unless otherwise agreed by GSL in writing. Where such agreement is provided, GSL will provide a letter of reliance to the agreed third party in the form required by GSL.
15. To the extent permitted by law, GSL expressly disclaims and excludes liability for any loss, damage, cost or expenses suffered by any third party relating to or resulting from the use of, or reliance on, any information contained in this Report. GSL does not admit that any action, liability, or claim may exist or be available to any third party.
16. Except as specifically stated in this section, GSL does not authorise the use of this report by any third party.

FIGURES



Worobell Road



Title:

Project name:

Figure 1 - Site Location

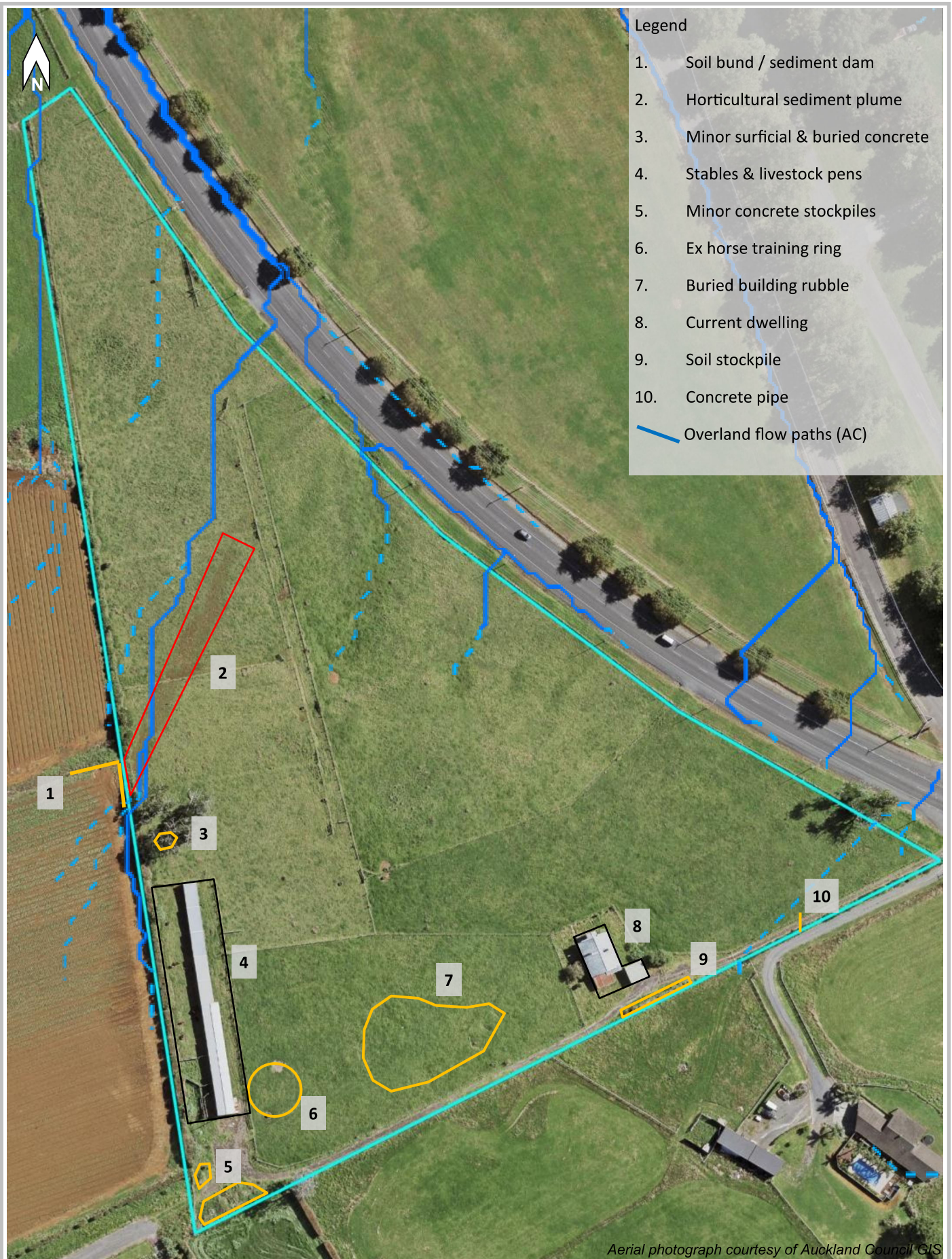
301 Buckland Road, Buckland

Reference: J1258

Date: 15-11-2018

Drawn: CD

Approved: COB

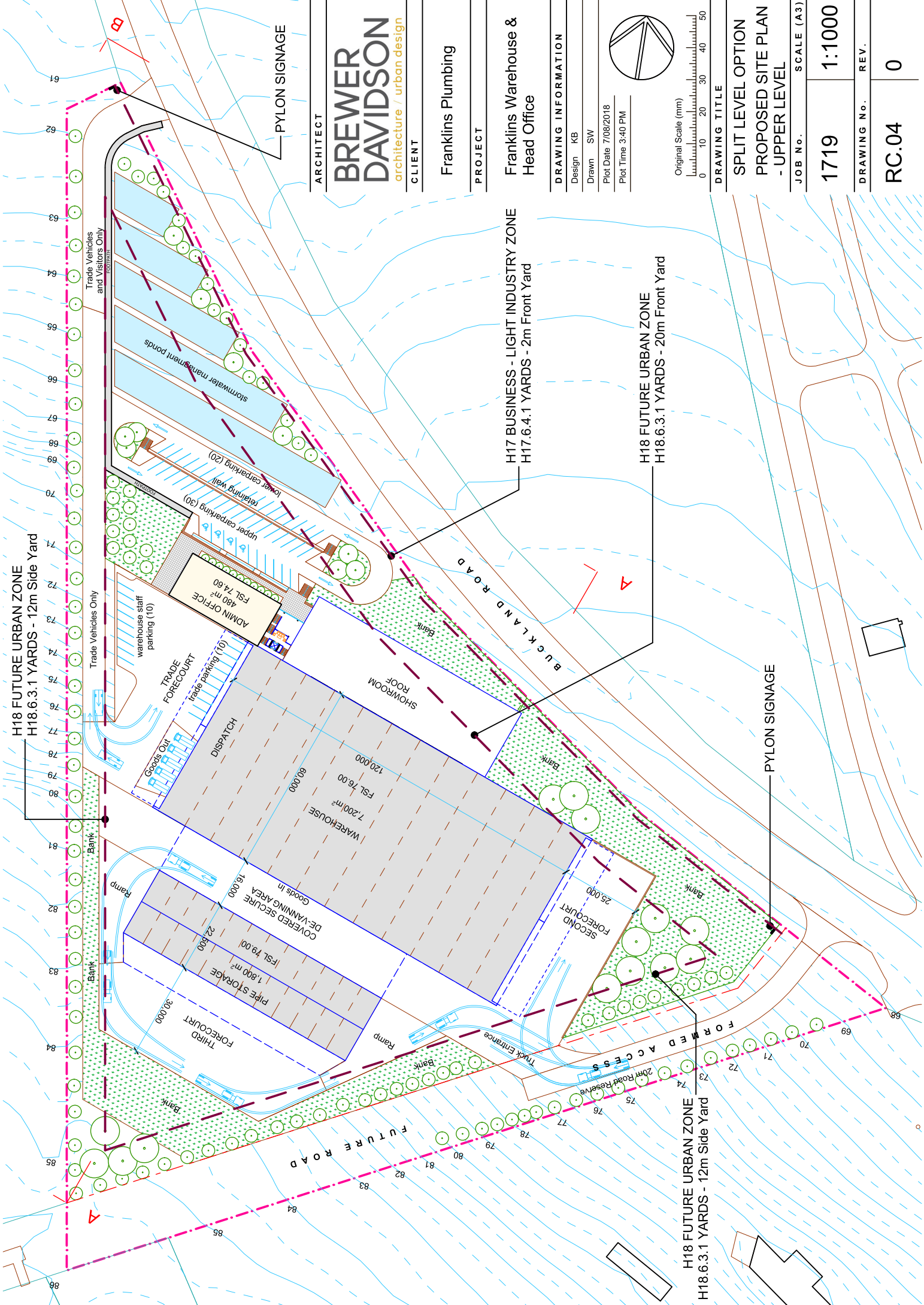


Title:	Figure 2 - Identified Features	Reference: J1258
Project name:	301 Buckland Road, Buckland	Date: 15-11-2018
geosciences <small>ltd</small> <small>ENVIRONMENTAL</small>	Level 1, 47 Clyde Road, Browns Bay, 0630, Tel: (09) 475 0222	Drawn: CD
		Approved: COB



Title:	Figure 3 - Potential HAIL	Reference: J1258
Project name:	301 Buckland Road, Buckland	Date: 15-11-2018
geosciences ltd ENVIRONMENTAL	Level 1, 47 Clyde Road, Browns Bay, 0630, Tel: (09) 475 0222	Drawn: CD
		Approved: COB

APPENDIX A PROPOSED EARTHWORKS PLAN



H18 FUTURE URBAN ZONE
H18.6.3.1 YARDS - 12m Side Yard

H18 FUTURE URBAN ZONE
H18.6.3.1 YARDS - 12m Side Yard

H17 BUSINESS - LIGHT INDUSTRY ZONE
H17.6.4.1 YARDS - 2m Front Yard

H18 FUTURE URBAN ZONE
H18.6.3.1 YARDS - 20m Front Yard

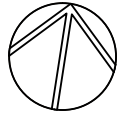
H18 FUTURE URBAN ZONE
H18.6.3.1 YARDS - 12m Side Yard

ARCHITECT
BREWER DAVIDSON
architecture / urban design

CLIENT
Franklins Plumbing

PROJECT
Franklins Warehouse & Head Office

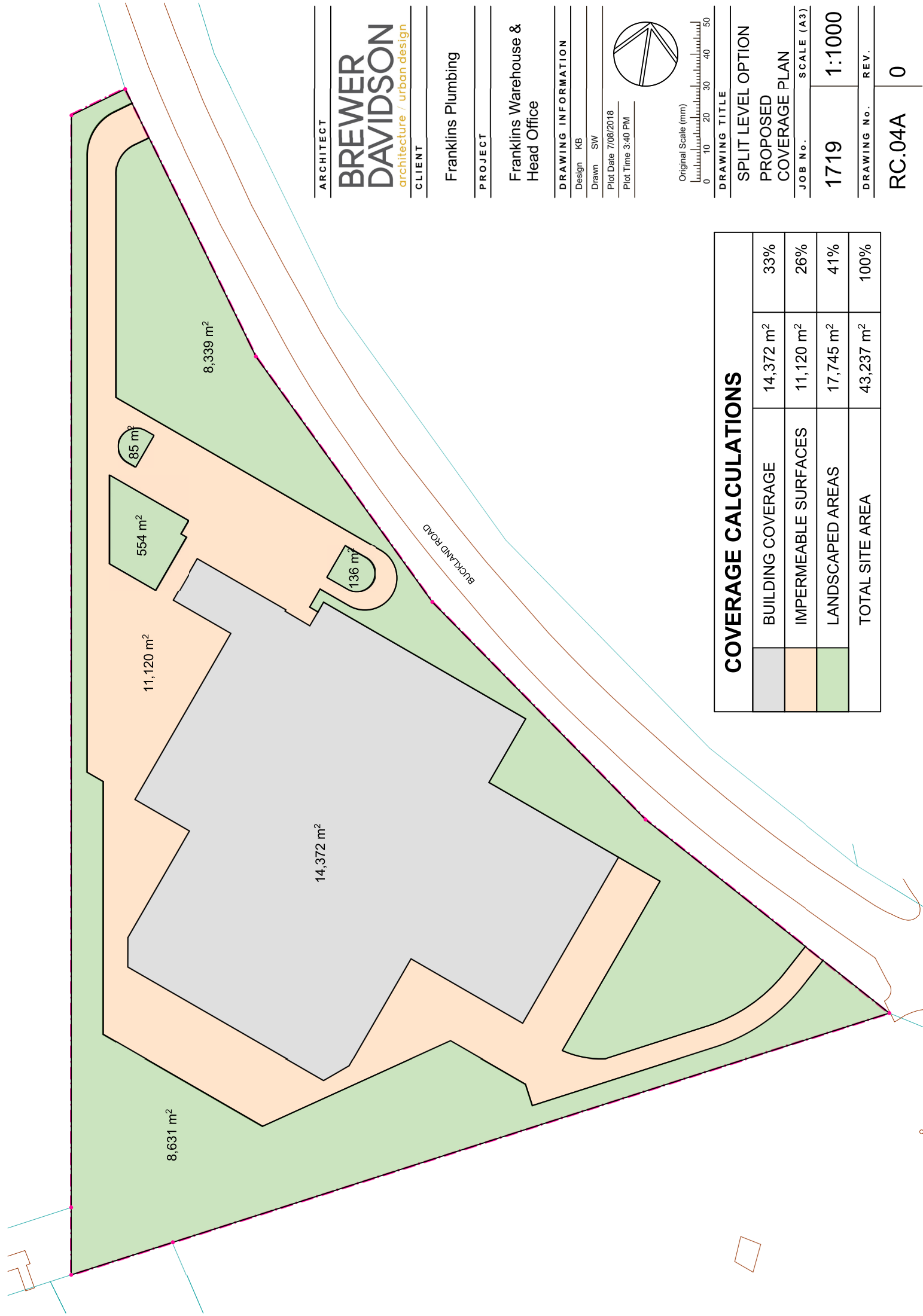
DRAWING INFORMATION
Design KB
Drawn SW
Plot Date 7/08/2018
Plot Time 3:40 PM



Original Scale (mm)
0 10 20 30 40 50

DRAWING TITLE
SPLIT LEVEL OPTION
PROPOSED SITE PLAN
- UPPER LEVEL

JOB No.	SCALE (A3)
1719	1:1000
DRAWING No.	REV.
RC.04	0



COVERAGE CALCULATIONS

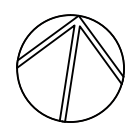
BUILDING COVERAGE	14,372 m ²	33%
IMPERMEABLE SURFACES	11,120 m ²	26%
LANDSCAPED AREAS	17,745 m ²	41%
TOTAL SITE AREA	43,237 m²	100%

ARCHITECT
**BREWER
 DAVIDSON**
 architecture / urban design

CLIENT
 Franklins Plumbing

PROJECT
 Franklins Warehouse &
 Head Office

DRAWING INFORMATION
 Design KB
 Drawn SW
 Plot Date 7/08/2018
 Plot Time 3:40 PM

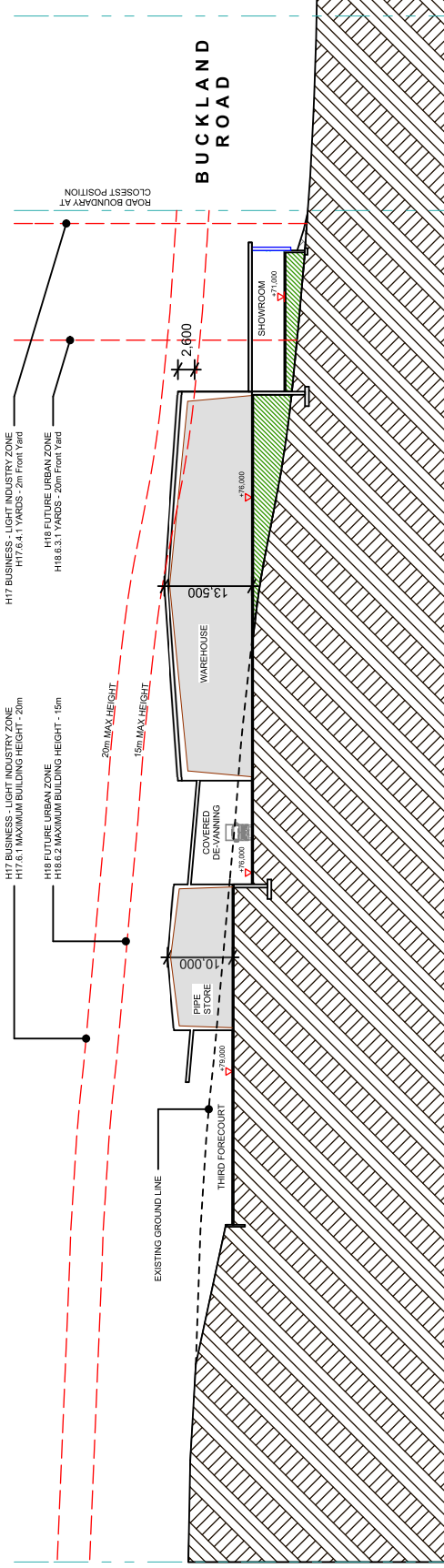


Original Scale (mm)
 0 10 20 30 40 50

DRAWING TITLE
 SPLIT LEVEL OPTION
 PROPOSED
 COVERAGE PLAN

JOB No. SCALE (A3)
 1719 1:1000

DRAWING No. REV.
 RC.04A 0

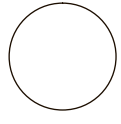


ARCHITECT
BREWER DAVIDSON
 architecture / urban design
 CLIENT

Franks Plumbing
 PROJECT

Franks Warehouse &
 Head Office

DRAWING INFORMATION
 Design KB
 Drawn SW
 Plot Date 7/08/2018
 Plot Time 3:40 PM



Original Scale (mm)
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DRAWING TITLE
SPLIT LEVEL OPTION
SECTION A-A

JOB No.	SCALE (A3)
1719	1:750
DRAWING No.	REV.
RC.05	0

EARTHWORKS NOTES:

1. ALL WORKS TO COMPLY WITH THE RELEVANT LOCAL AUTHORITY STANDARDS.
2. EROSION CONTROL MEASURES MUST BE INSTALLED PRIOR TO ANY WORKS COMMENCING AND SHALL BE INSTALLED IN ACCORDANCE WITH AC GD005 'EROSION AND SEDIMENT CONTROL GUIDE FOR LAND DISTURBING ACTIVITIES'.
3. REFER TO EARTHWORKS SPECIFICATION FOR EARTH FILL REFER TO EARTHWORKS SPECIFICATION FOR EARTH FILL OPERATIONS (PRIOR TO REMOVAL OF UNSUITABLE) VOLUMES, AGAIN AFTER UNSUITABLE REMOVAL FOR VOLUMES.
4. ALL MATERIAL FROM GULLIES DEEMED BY THE ENGINEER TO BE UNSUITABLE SHALL BE EXCAVATED, STOCKPILED AND STRIPPED FROM STEEP AREAS/GULLIES USING EXCAVATOR/TRACTOR AND SCOOP. SHALL BE CLASSIFIED AS SUBSOIL/TOPSOIL STRIPPING.
5. ALL GULLIES SHALL BE SURVEYED AFTER CLEARING OPERATIONS (PRIOR TO REMOVAL OF UNSUITABLE) VOLUMES, AGAIN AFTER UNSUITABLE REMOVAL FOR VOLUMES.
6. UNSUITABLE MATERIAL SHALL BE CLASSIFIED AS SOILS DEEMED BY THE ENGINEER TO HAVE EXCESSIVE NATURAL WATER CONTENT AND/OR ORGANIC CONTENT REQUIRING MULTIPLE HANDLING, DRYING/CONDITIONING AND STOCKPILING/STRIPPING.
7. THE LOCATION OF ALL STOCKPILES ARE WHOLLY THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE LOCATED CLEAR OF ALL EARTHWORKS OPERATIONS AND AWAY FROM GEOTECHNICALLY UNSTABLE LAND. NO PAYMENT SHALL BE MADE FOR RELOCATION OF ANY STOCKPILES THAT HAVE BEEN FOUND TO HAVE BEEN RELOCATED TO AN UNSUITABLE LOCATION.
8. IT IS THE CONTRACTOR'S RESPONSIBILITY FOR HEALTH & SAFETY & SECURITY ON SITE, APPROPRIATE FENCING AND SIGNAGE SHALL BE ERCTED AND MAINTAINED AT ALL TIMES TO KEEP THE GENERAL PUBLIC OFF SITE. FINAL QUANTITIES AND EXTENT OF EARTHWORKS TO BE DETERMINED BY THE ENGINEER.

EARTHWORKS LEGEND:

85 — PROPOSED CONTOURS - MAJOR (1.0)

EARTHWORKS CUT-FILL TABLE				
FROM	TO	UNIT	CLOUR	RANGE VOLUME (m ³)
0	1	m	Green	42086
0	-1	m	Red	-31785



2
DP 411744

FOR CONSENT

Issue Description	Checked	Date	Date	Scale:
01 PRELIMINARY	GW	26.03.18	22.07.18	1:1250
02 ISSUED FOR CONSENT	SS	30.07.18	22.07.18	(A3 Original)
			30.07.18	
			30.07.18	

Job No: **W3150** Dwg No: **210** Rev: **02**

PROPOSED EARTHWORKS PLAN
CUT FILL

WAREHOUSE AND HEAD OFFICE
FRANKLIN PLUMBING
301 BUCKLAND ROAD, PUKEKOHE

Auckland Office:
A: 25 Broadway, Newmarket
P: 09 524 7029
Hamilton Office:
A: 103 Market Street, Hamilton
P: 07 849 9921
Te Awamutu Office:
A: 103 Market Street, Te Awamutu
P: 07 871 6144

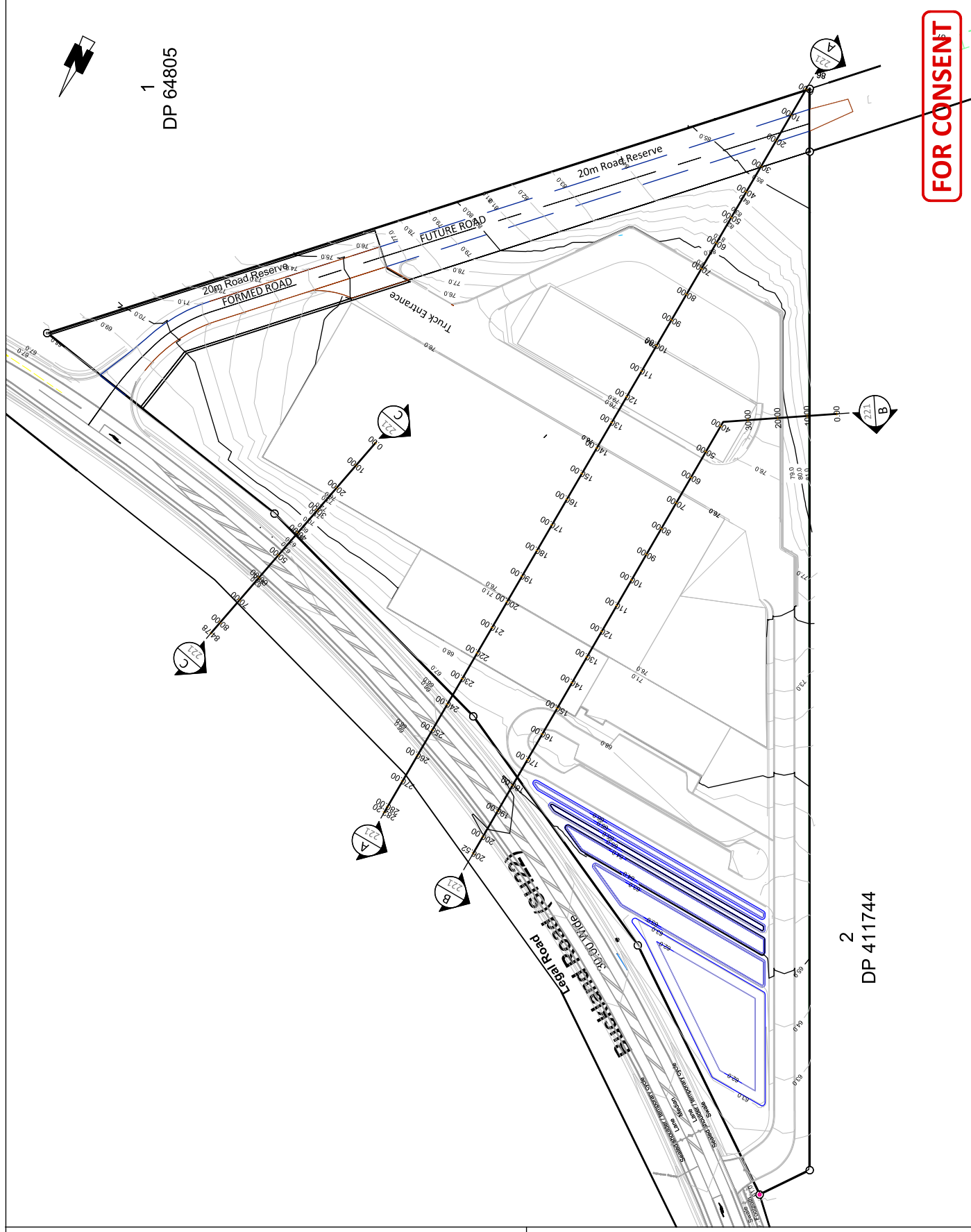
Planning | Surveying | Engineering | Environmental

EARTHWORKS NOTES:

1. ALL WORKS TO COMPLY WITH THE RELEVANT LOCAL AUTHORITY STANDARDS.
2. EROSION CONTROL MEASURES MUST BE OPERATIONAL PRIOR TO ANY WORKS COMMENCING AND SHALL BE INSTALLED IN ACCORDANCE WITH AC GD005 'EROSION AND SEDIMENT CONTROL GUIDE FOR LAND DISTURBING ACTIVITIES'.
3. REFER TO EARTHWORKS SPECIFICATION FOR EARTHILL AND EARTHWORKS TO BE UNDERTAKEN IN ACCORDANCE WITH GEOTECHNICAL INVESTIGATION REPORT. CONTRACTOR TO VIEW THE REPORT TO INFORM THEMSELVES.
4. ALL MATERIAL FROM GULLIES DERIVED BY THE ENGINEER TO BE UNSUITABLE SHALL BE EXCAVATED, STOCKPILED AND STRIPPED FROM THE SITE.
5. AREAS/GULLIES USING EXCAVATOR/TRACTOR AND SCOOP SHALL BE CLASSIFIED AS SUBSOIL/TOPSOIL STRIPPING.
6. ALL GULLIES SHALL BE SURVEYED AFTER CLEARING OPERATIONS (PRIOR TO REMOVAL OF UNSUITABLE) VOLUMES. AGAIN AFTER UNSUITABLE REMOVAL FOR UNSUITABLE MATERIAL SHALL BE CLASSIFIED AS SOILS DEEMED BY THE ENGINEER TO HAVE EXCESSIVE NATURAL WATER CONTENT AND/OR ORGANIC CONTENT REQUIRING MULTIPLE HANDLING, DRYING/CONDITIONING AND STOCKPILING/SPREADING AS DIRECTED.
7. GULLIES ARE WHOLLY THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE LOCATED CLEAR OF ALL EARTHWORKS OPERATIONS AND AWAY FROM GEOTECHNICAL UNSTABLE LAND. NO PAYMENT SHALL BE MADE FOR RELOCATION OF ANY STOCKPILES THAT HAVE BEEN FOUND TO HAVE BEEN RELOCATED TO BE UNDERTAKEN BY THE CONTRACTOR.
8. IT IS THE CONTRACTORS RESPONSIBILITY FOR HEALTH & SAFETY ON SITE, APPROPRIATE FENCING AND SIGNAGE SHALL BE ERCTED AND MAINTAINED AT ALL TIMES TO KEEP THE GENERAL PUBLIC OFF SITE. FINAL QUANTITIES AND EXTENT OF EARTHWORKS TO BE DETERMINED BY THE ENGINEER.

EARTHWORKS LEGEND:

— 85 — PROPOSED CONTOURS - MAJOR (1:0)



1
DP 64805

2
DP 411744

FOR CONSENT

Issue Description	Checked	Date	Scale:
01 ISSUED FOR CONSENT	SS	30.07.18	1:1250
		Designed: MJW 22.07.18	
		Drawn: MJW 22.07.18	
		Checked: SS 30.07.18	
		(A3 Original)	
		Job No: W3150	Rev: 01
		Dwg No: 220	

PROPOSED EARTHWORKS SECTION LINES PLAN

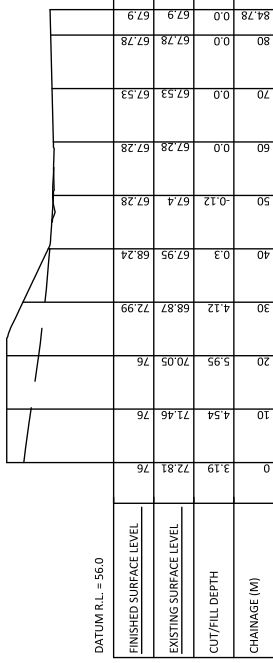
**WAREHOUSE AND HEAD OFFICE
FRANKLIN PLUMBING
301 BUCKLAND ROAD, PUKEKOHE**

Auckland Office:
A: 25 Broadway, Newmarket
P: 09 524 7029
Hamilton Office:
A: 1000 Hamilton Road, Hamilton
P: 07 849 9921
Te Awamutu Office:
A: 103 Market Street, Te Awamutu
P: 07 871 6144

CKL
Planning | Surveying | Engineering | Environmental

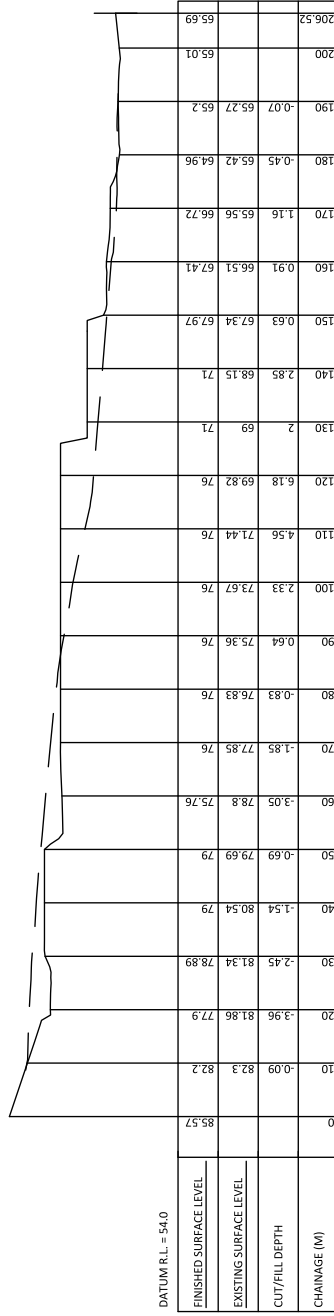
EARTHWORKS NOTES:

1. ALL WORKS TO COMPLY WITH THE RELEVANT LOCAL AUTHORITY STANDARDS.
2. EROSION CONTROL MEASURES MUST BE OPERATIONAL PRIOR TO ANY WORKS COMMENCING AND SHALL BE INSTALLED IN ACCORDANCE WITH AC GD005 'EROSION AND SEDIMENT CONTROL GUIDE FOR LAND DISTURBING ACTIVITIES'.
3. REFER TO EARTHWORKS SPECIFICATION FOR EARTHILL CONSTRUCTION. CONSTRUCTION OF ALL EARTHWORKS TO BE UNDERTAKEN IN ACCORDANCE WITH GEOTECHNICAL INVESTIGATION REPORT. CONTRACTOR TO VIEW THE REPORT TO INFORM THEMSELVES.
4. ALL MATERIAL FROM GULLIES DEEMED BY THE ENGINEER TO BE UNSUITABLE SHALL BE EXCAVATED, STOCKPILED AND STRIPPED FROM THE SITE. MATERIAL THAT CAN BE STRIPPED FROM STEEP AREAS/GULLIES USING EXCAVATOR/TRACTOR AND SCOOP SHALL BE CLASSIFIED AS SUBSOIL/TOPSOIL STRIPPING.
5. ALL GULLIES SHALL BE SURVEYED AFTER CLEARING OPERATIONS (PRIOR TO REMOVAL OF UNSUITABLE) VOLUMES. AGAIN AFTER UNSUITABLE REMOVAL FOR DEEMED BY THE ENGINEER TO HAVE EXCESSIVE NATURAL WATER CONTENT AND/OR ORGANIC CONTENT REQUIRING MULTIPLE HANDLING, DRYING/CONDITIONING AND STOCKPILING/RESPREADING AS DIRECTED.
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7. IT IS THE CONTRACTORS RESPONSIBILITY FOR HEALTH & SAFETY & SECURITY ON SITE, APPROPRIATE FENCING AND SIGNAGE SHALL BE ERCTED AND MAINTAINED AT ALL TIMES TO KEEP THE GENERAL PUBLIC OFF SITE. FINAL QUANTITIES AND EXTENT OF EARTHWORKS TO BE DETERMINED BY THE ENGINEER.



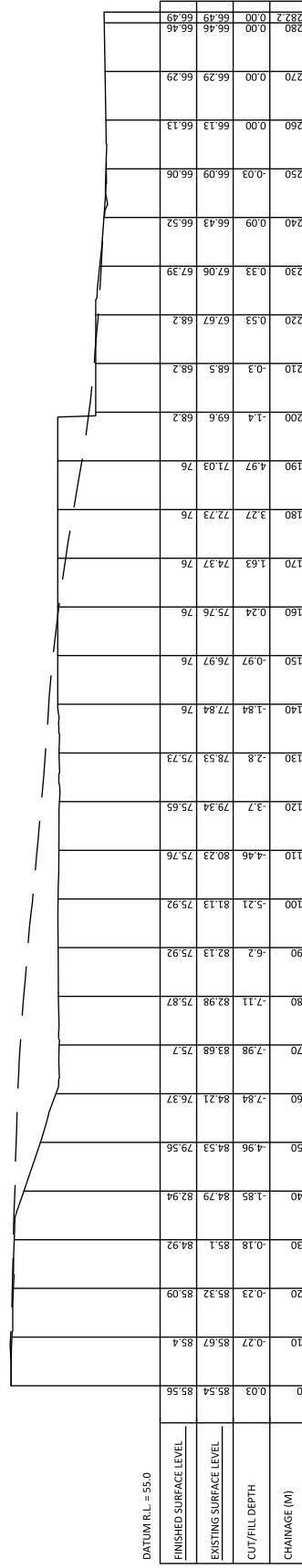
EARTHWORKS LONGITUDINAL SECTION - SECTION C

HORIZONTAL SCALE 1:1000
VERTICAL SCALE 1:1000



EARTHWORKS LONGITUDINAL SECTION - SECTION B

HORIZONTAL SCALE 1:1000
VERTICAL SCALE 1:1000



EARTHWORKS LONGITUDINAL SECTION - SECTION A

HORIZONTAL SCALE 1:1000
VERTICAL SCALE 1:1000

FOR CONSENT

Issue Description	Checked	Date	Scale
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		Designed: MJW 22.07.18	
		Drawn: MJW 22.07.18	
		Checked: SS 30.07.18	
		(As Original)	
		Job No: W3150	Rev: 01
		Dwg No: 221	

**PROPOSED EARTHWORKS PLAN
EARTHWORKS SECTIONS**

**WAREHOUSE AND HEAD OFFICE
FRANKLIN PLUMBING
301 BUCKLAND ROAD, PUKEKOHE**

Auckland Office:
A: 25 Broadway, Newmarket
P: 09 524 7029
Hamilton Office
A: 100 Galloway Road, Hamilton
P: 07 849 8921
Te Awamutu Office
A: 103 Market Street, Te Awamutu
P: 07 871 6144



APPENDIX B

CERTIFICATE OF TITLE



COMPUTER FREEHOLD REGISTER UNDER LAND TRANSFER ACT 1952



Search Copy


R. W. Muir
Registrar-General
of Land

Identifier NA56A/559
Land Registration District North Auckland
Date Issued 22 August 1984

Prior References

NA127/194

Estate	Fee Simple
Area	4.3639 hectares more or less
Legal Description	Part Lot 1 Deposited Plan 3363

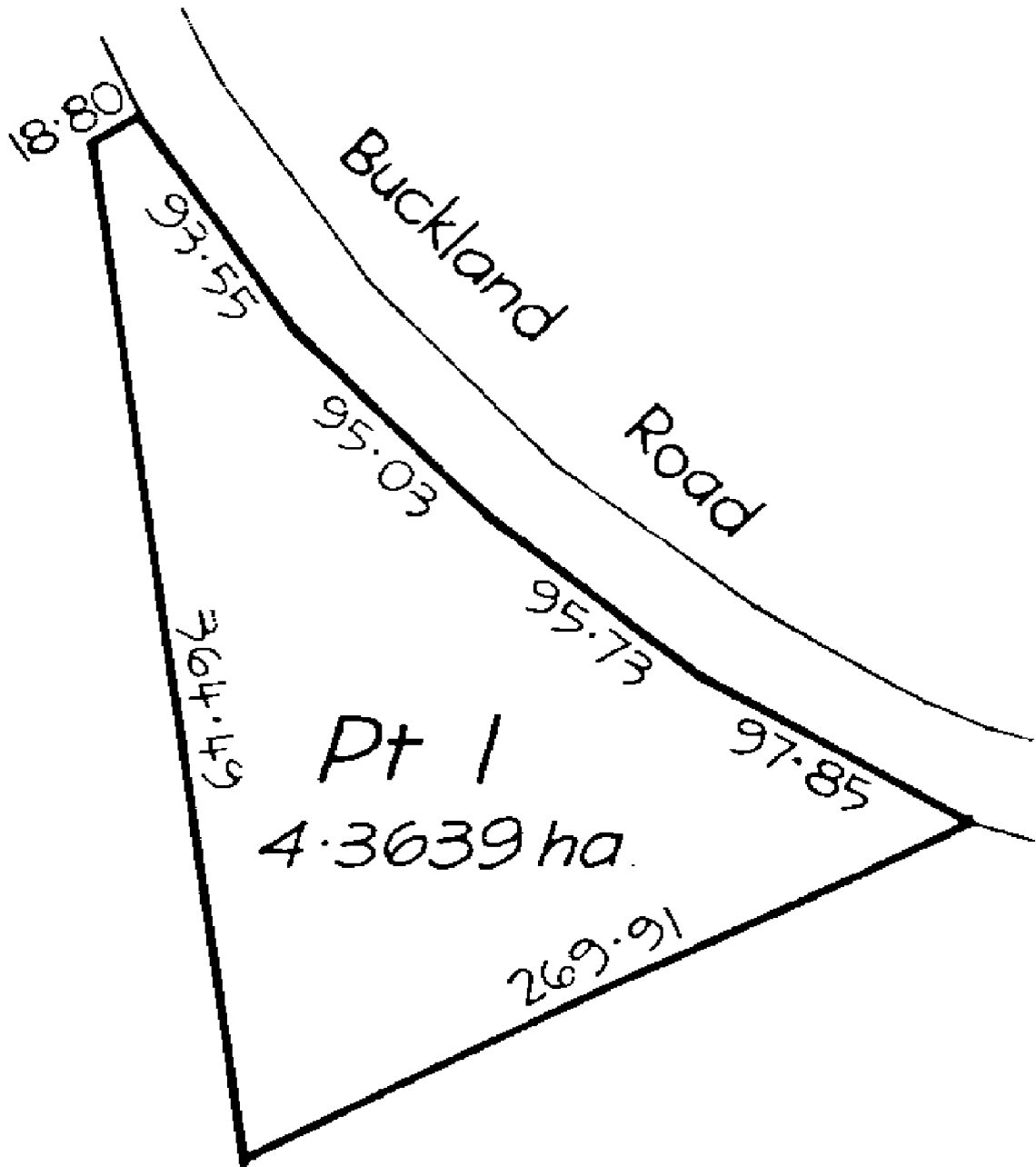
Proprietors

Peterex Properties Limited

Interests

762464.1 Compensation Certificate by The Ministry of Works and Development - 10.3.1980 at 10.36 am

10474167.3 Mortgage to ASB Bank Limited - 1.7.2016 at 3:48 pm





COMPUTER FREEHOLD REGISTER UNDER LAND TRANSFER ACT 1952



Historical Search Copy


R. W. Muir
Registrar-General
of Land

Identifier NA56A/559
Land Registration District North Auckland
Date Issued 22 August 1984

Prior References

NA127/194

Estate Fee Simple
Area 4.3639 hectares more or less
Legal Description Part Lot 1 Deposited Plan 3363

Original Proprietors

Raceway Developments Limited

Interests

762464.1 Compensation Certificate by The Ministry of Works and Development - 10.3.1980 at 10.36 am
D560806.3 Mortgage to BNZ Finance Limited - 27.11.2000 at 2.10 pm
7040458.1 Discharge of Mortgage D560806.3 - 22.9.2006 at 9:00 am
7040458.2 Mortgage to ASB Bank Limited - 22.9.2006 at 9:00 am
10441751.1 Discharge of Mortgage 7040458.2 - 30.5.2016 at 3:44 pm
10441751.2 Transfer to Yao and Hao Holdings Limited - 30.5.2016 at 3:44 pm
10441751.3 Mortgage to Westpac New Zealand Limited - 30.5.2016 at 3:44 pm
10474167.1 Discharge of Mortgage 10441751.3 - 1.7.2016 at 3:48 pm
10474167.2 Transfer to Peterex Properties Limited - 1.7.2016 at 3:48 pm
10474167.3 Mortgage to ASB Bank Limited - 1.7.2016 at 3:48 pm

No. 56A / 559

References

Prior C/T 127/194

Land and Deeds 69

Transfer No. B.322023.4

N/C. Order No.



REGISTER

CERTIFICATE OF TITLE UNDER LAND TRANSFER ACT

This Certificate dated the 22nd day of August one thousand nine hundred and eighty four under the seal of the District Land Registrar of the Land Registration District of NORTH AUCKLAND

WITNESSETH that DAVID WINSTON SPENCER and DONALD THOMAS ALEXANDER both of Pukekohe, veterinary surgeons are seised of an estate in fee simple as tenants in common in equal shares

is, seised of an estate in fee simple (subject to such reservations, restrictions, encumbrances, liens, and interests as are notified by memorial underwritten or endorsed hereon) in the land hereinafter described, delineated with bold black lines on the plan hereon, be the several admeasurements a little more or less, that is to say: All that parcel of land containing 4.3639 hectares more or less being part Lot 1 Deposited Plan 3363 being part Allotment 80 Parish of Pukekohe



Interests at date of issue:

762464.1 Compensation Certificate by Ministry of Works and Development - 10.3.1980 at 10.36 o/c

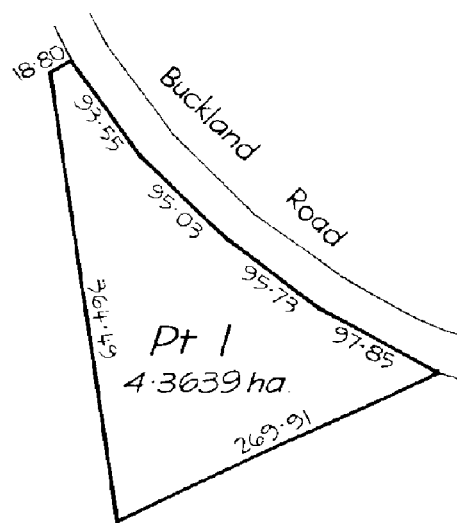
B.322023.5 Mortgage of ANZ Banking Group (New Zealand) Limited - 22.8.1984 at 1.35 o/c

B.519508.1 Mortgage of King Gerrard Securities Limited - 25.3.1986 at 1.35 o/c (B.907521.1)

B.519508.2 Transfer of an undivided one-third share to David John Sweeney of Pukekohe veterinary surgeon - 25.3.1986 at 1.35 o/c

B.519508.3 Memorandum of Priority making Mortgage B.519508.1 a first mortgage and Mortgage B.322023.5 a second mortgage - 25.3.1986 at 1.35 o/c

PUKEKOHE BOROUGH



OVER.....

Measurements are Metric

DP 3363

FJM Ex: A1

WB

No. 56A / 559

CERTIFICATE OF TITLE No. 56A / 559

B.522703.1 Variation of terms of Mortgage B.519508.1 - 8.4.1986 at 2.05oc

[Signature]
A.L.R.

B.714804.1 Variation of terms of Mortgage B.519508.1 - 7.8.1987 at 2.14 oc

[Signature]
A.L.R.

B.797899.1 Variation of terms of Mortgage B.519508.1 -23.3.1988 at 2.07oc

[Signature]
A.L.R.

D229968.2 Transfer to Robert John Good and Jacqueline Susan Good

D229968.3 Mortgage CHANGED Corporation

Both 22.12.1997 at 11.08

[Signature]
for DLR

D284019.1 Variation of Mortgage D229968.3 23.6.1998 at 1.40

[Signature]
for DLR

D560806.2 Transfer to Raceway Developments Limited

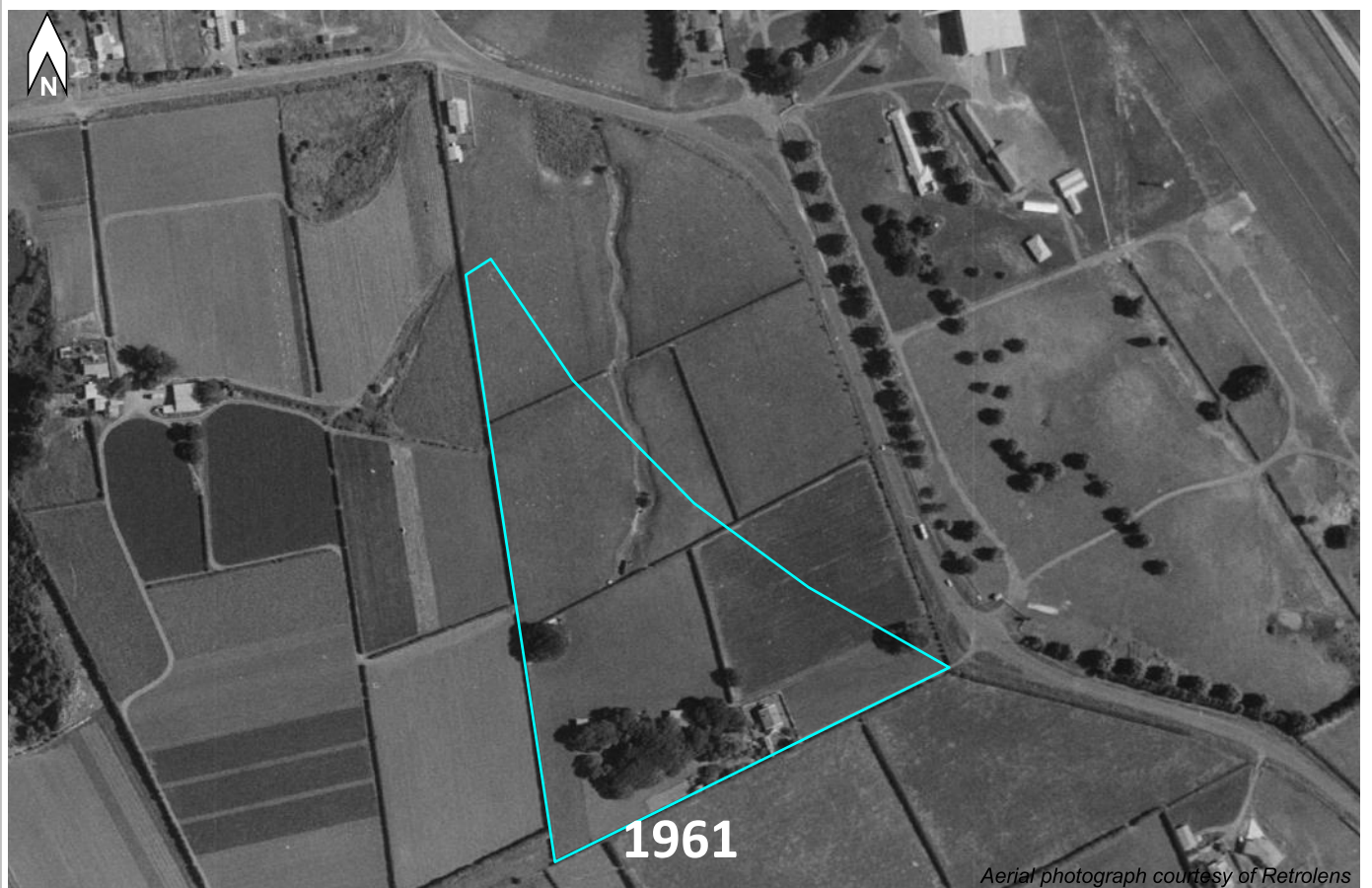
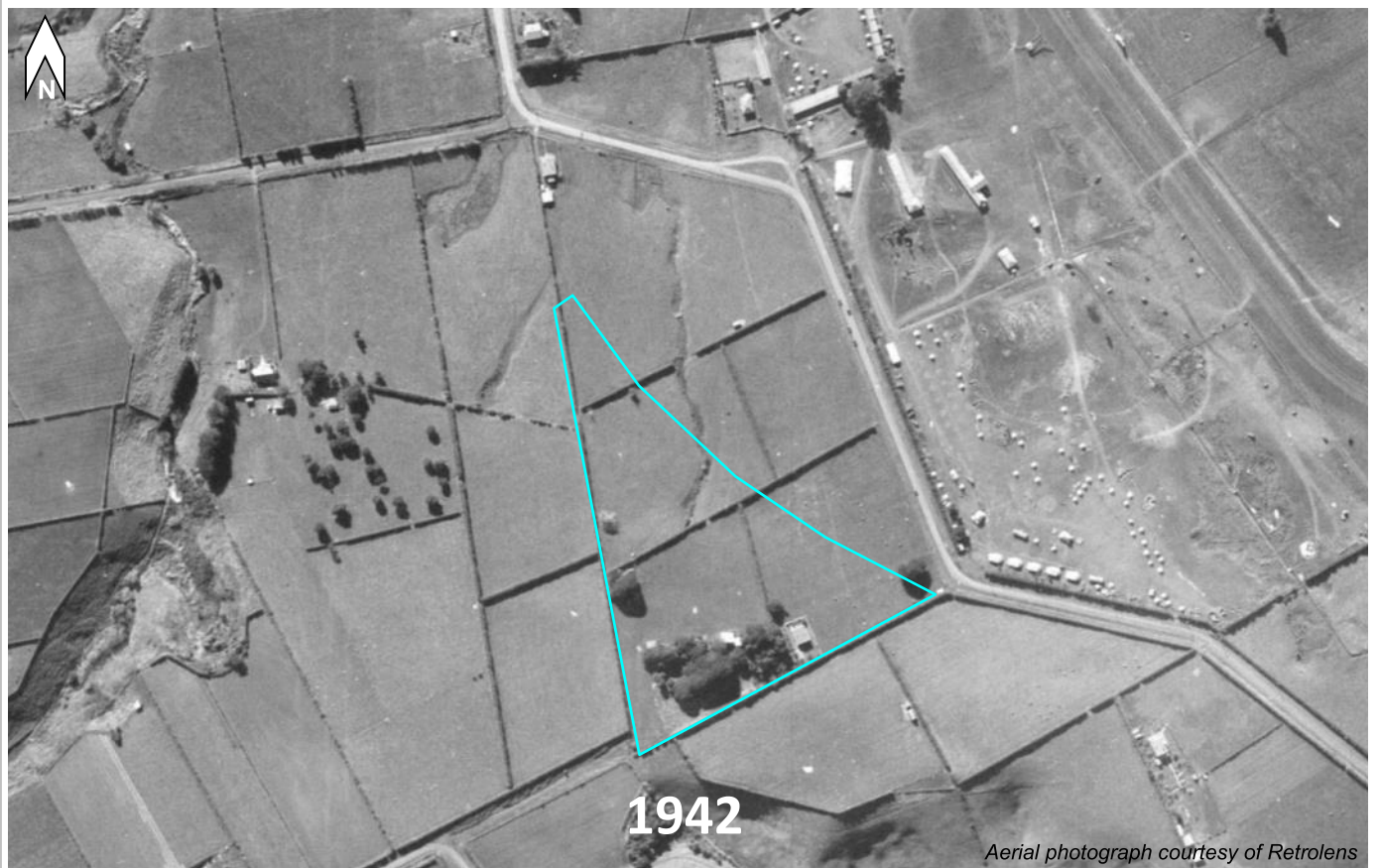
D560806.3 Mortgage to BNZ Finance Limited

All 27.11.2000 at 2.10

[Signature]
for RGL




APPENDIX C HISTORICAL AERIAL PHOTOGRAPHS




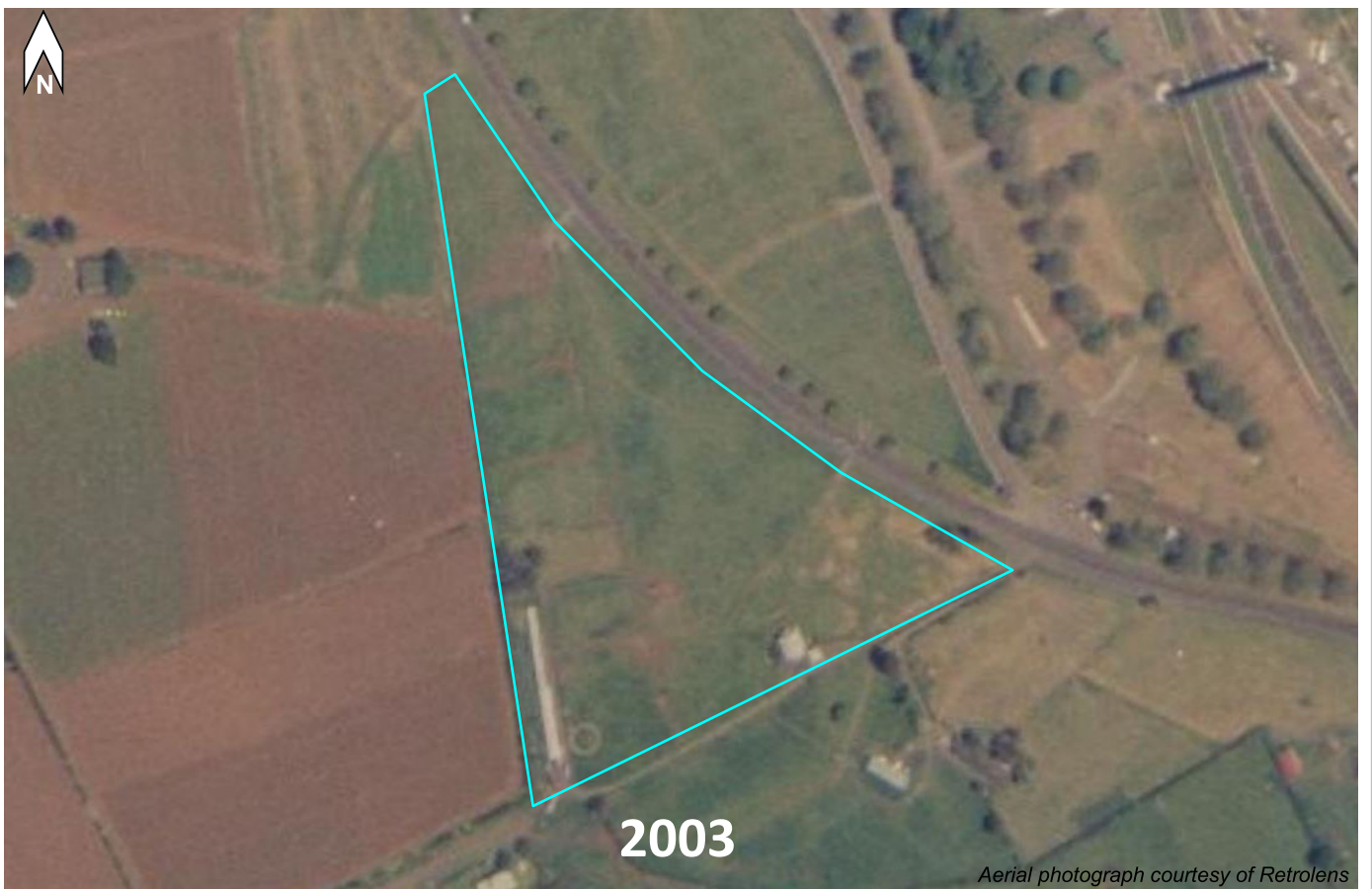
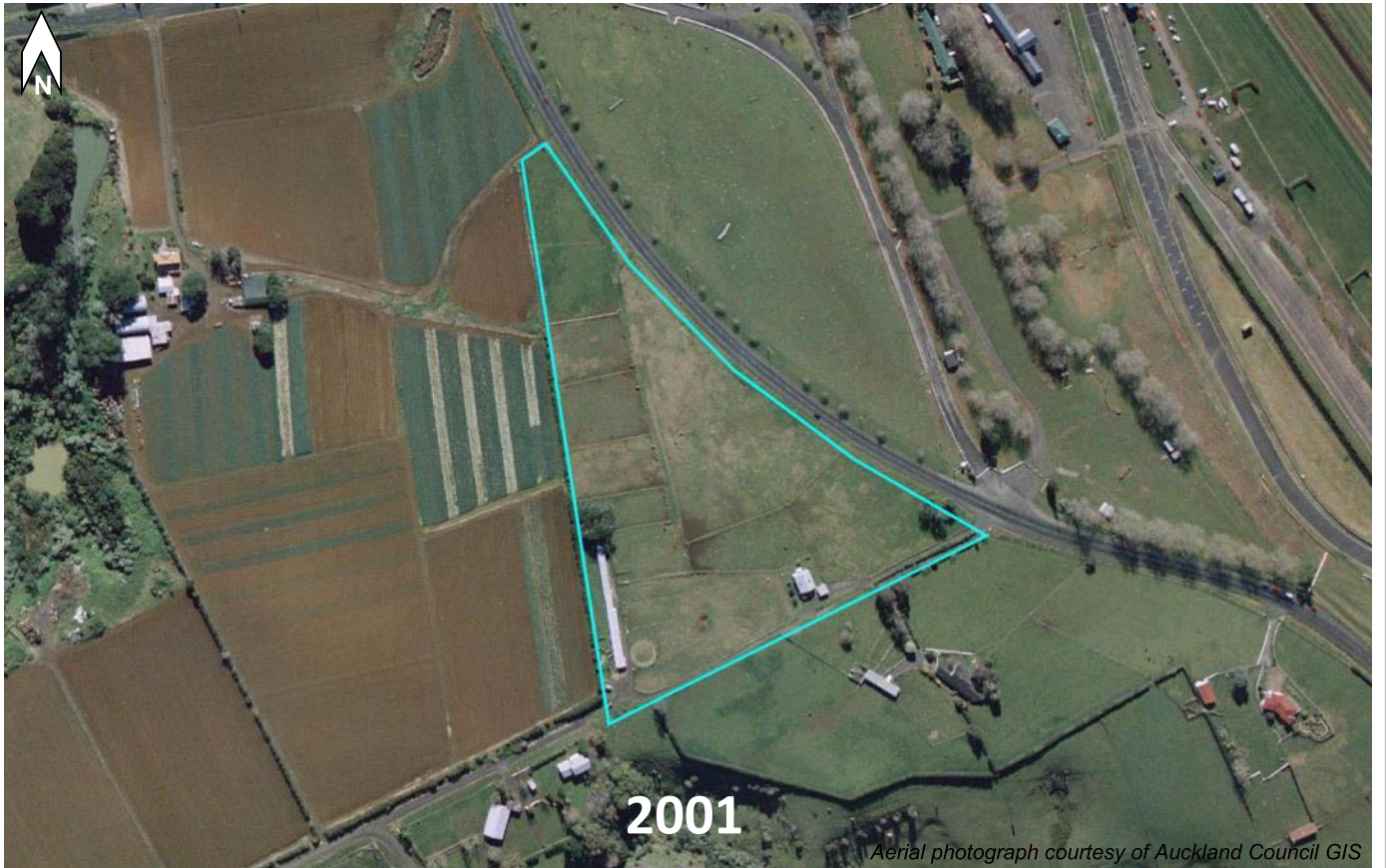
Title:	Appendix C - Historic aerial photographs	Reference: J1258
Project name:	301 Buckland Road, Buckland	Date: 13-11-2018
geosciences <small>ltd</small> <small>ENVIRONMENTAL</small>	Level 1, 47 Clyde Road, Browns Bay, 0630, Tel: (09) 475 0222	Drawn: CD
		Approved: COB




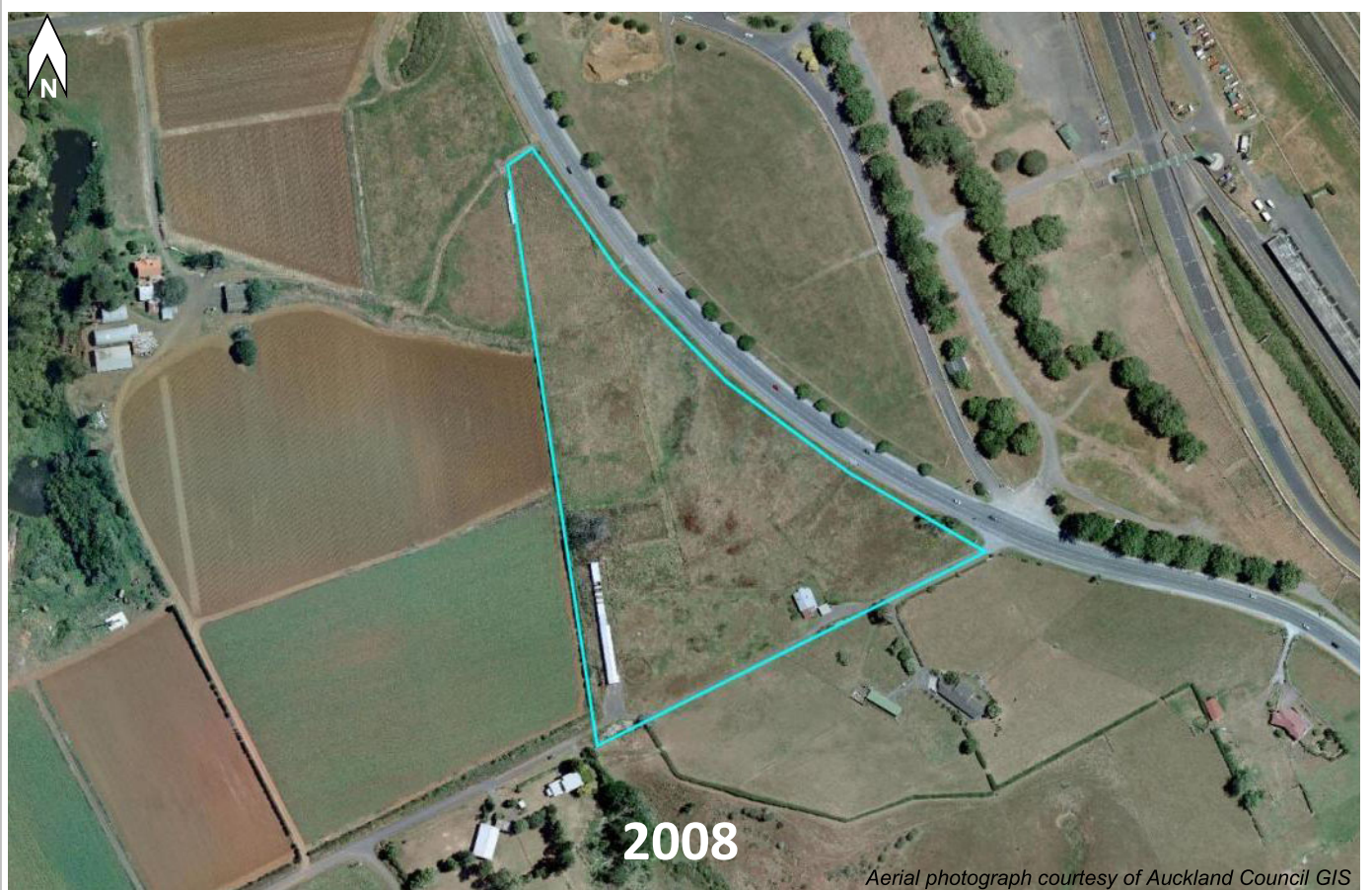
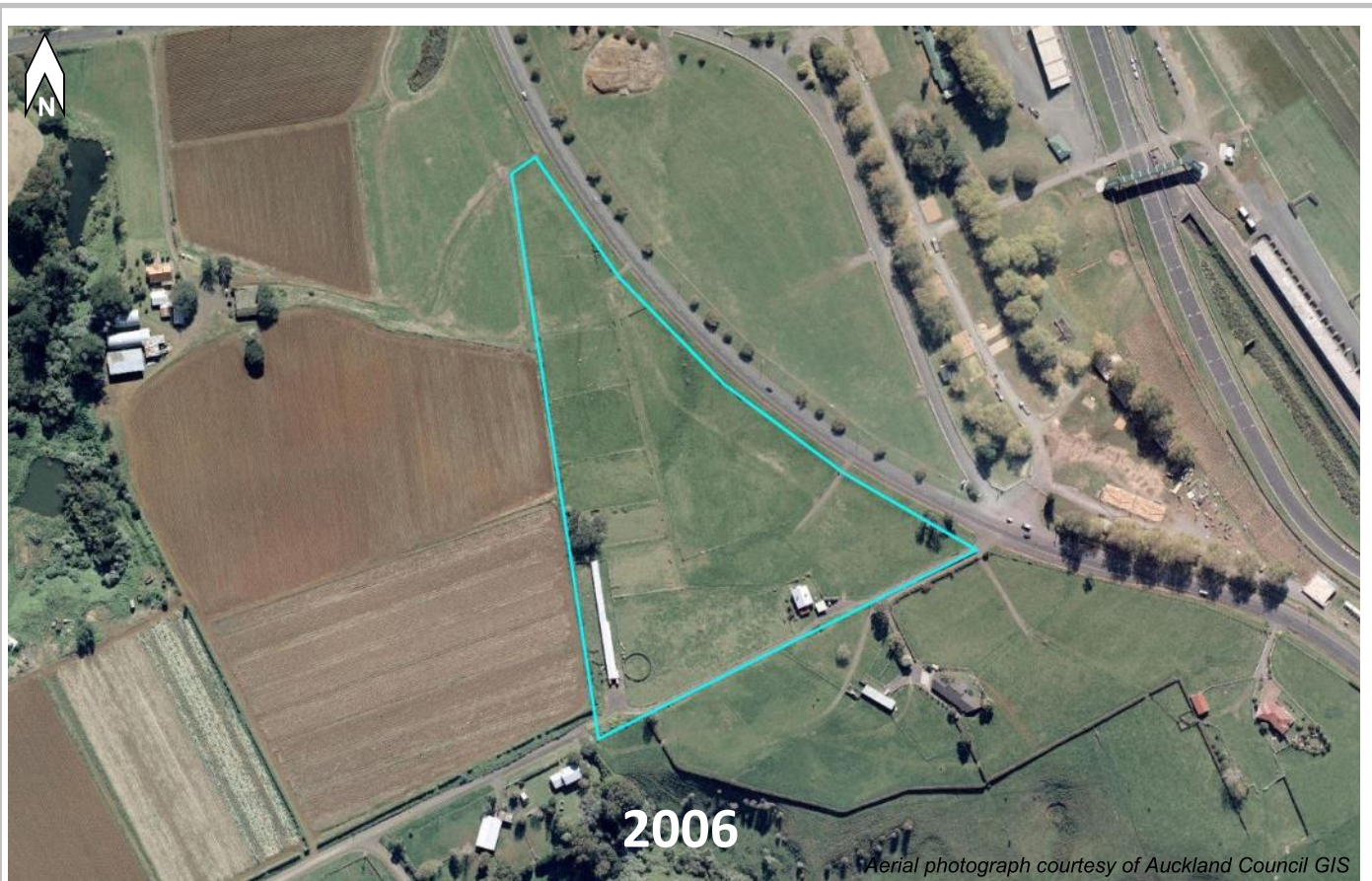
Title:	Appendix C - Historic aerial photographs	Reference: J1258
Project name:	301 Buckland Road, Buckland	Date: 13-11-2018
	Level 1, 47 Clyde Road, Browns Bay, 0630, Tel: (09) 475 0222	Drawn: CD
		Approved: COB




Title:	Appendix C - Historic aerial photographs	Reference: J1258
Project name:	301 Buckland Road, Buckland	Date: 13-11-2018
	Level 1, 47 Clyde Road, Browns Bay, 0630, Tel: (09) 475 0222	Drawn: CD
		Approved: COB



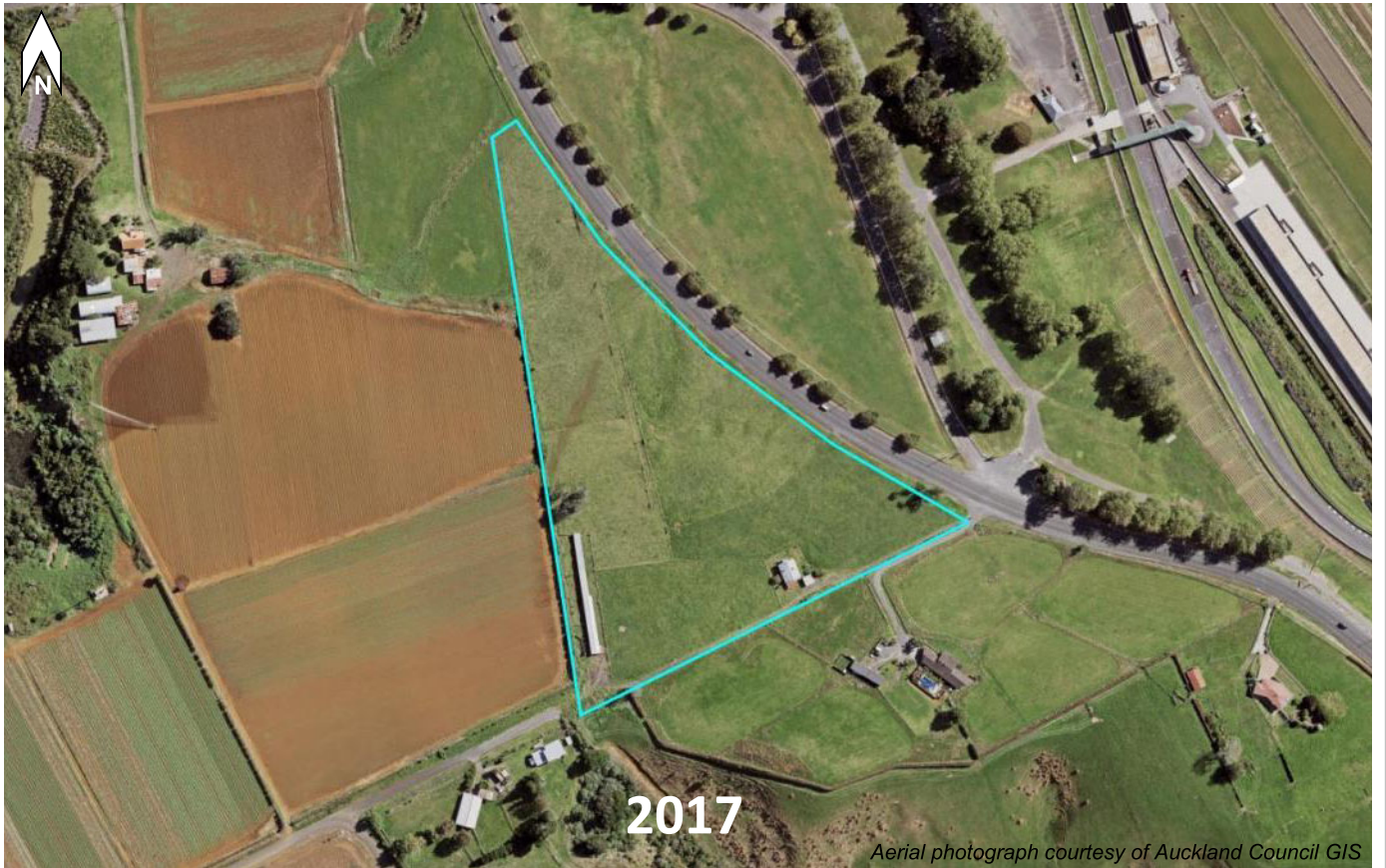
Title:	Appendix C - Historic aerial photographs	Reference: J1258
Project name:	301 Buckland Road, Buckland	Date: 13-11-2018
	Level 1, 47 Clyde Road, Browns Bay, 0630, Tel: (09) 475 0222	Drawn: CD
		Approved: COB




Title:	Appendix C - Historic aerial photographs	Reference: J1258
Project name:	301 Buckland Road, Buckland	Date: 13-11-2018
	Level 1, 47 Clyde Road, Browns Bay, 0630, Tel: (09) 475 0222	Drawn: CD
		Approved: COB

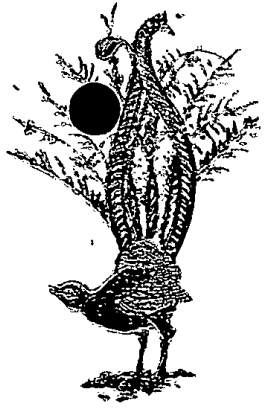


Title:	Appendix C - Historic aerial photographs	Reference: J1258
Project name:	301 Buckland Road, Buckland	Date: 13-11-2018
geosciences <small>ltd</small> <small>ENVIRONMENTAL</small>	Level 1, 47 Clyde Road, Browns Bay, 0630, Tel: (09) 475 0222	Drawn: CD
		Approved: COB

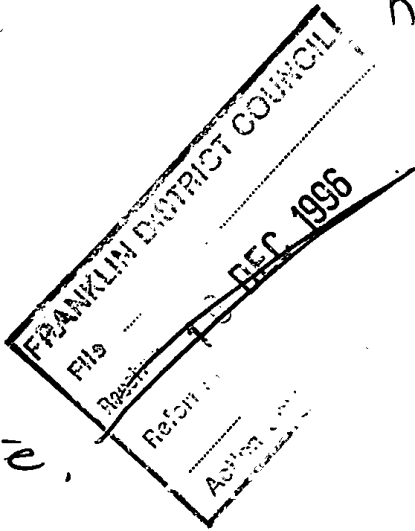


Title:	Appendix C - Historic aerial photographs	Reference: J1258
Project name:	301 Buckland Road, Buckland	Date: 13-11-2018
	Level 1, 47 Clyde Road, Browns Bay, 0630, Tel: (09) 475 0222	Drawn: CD
		Approved: COB

APPENDIX D PROPERTY FILE EXTRACTS



file ⇒ 38706/308.02



17 December 1996
47 Prospect Tce
Pukekohe.

2384617

Dear Julie,

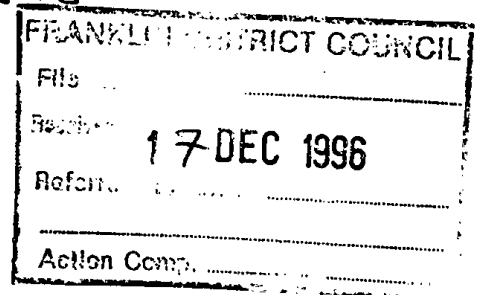
I hope these plans are sufficient to gain a urgent assessment, as I've explained we have put an offer on this property. It should be going unconditional on the 2nd of January, depending on whether these plans meet upon your approval + Environmental officer, is too weather we can on this property.

Could you please call me ASAP. with a answer, sorry to have to rush you, this close to Christmas

Merry Christmas

Yours sincerely

Mrs Lynne Lewis



Resource management
proposal on OP 3363.
4.3602 ha.

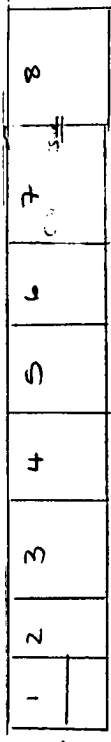
home occupation

1)

East

to east boundary 12m

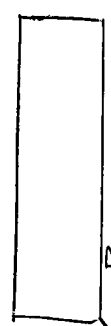
(same ramp)



8 Bays black concrete storage sheds

30m

130m

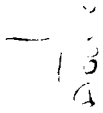


Bungalow Noodien House

Boundary of Buckland Rd

20m from East boundary to nearest neighbour

South



nearest South neighbour



100m

North

Kitchener Rd

West

Buckland Rd

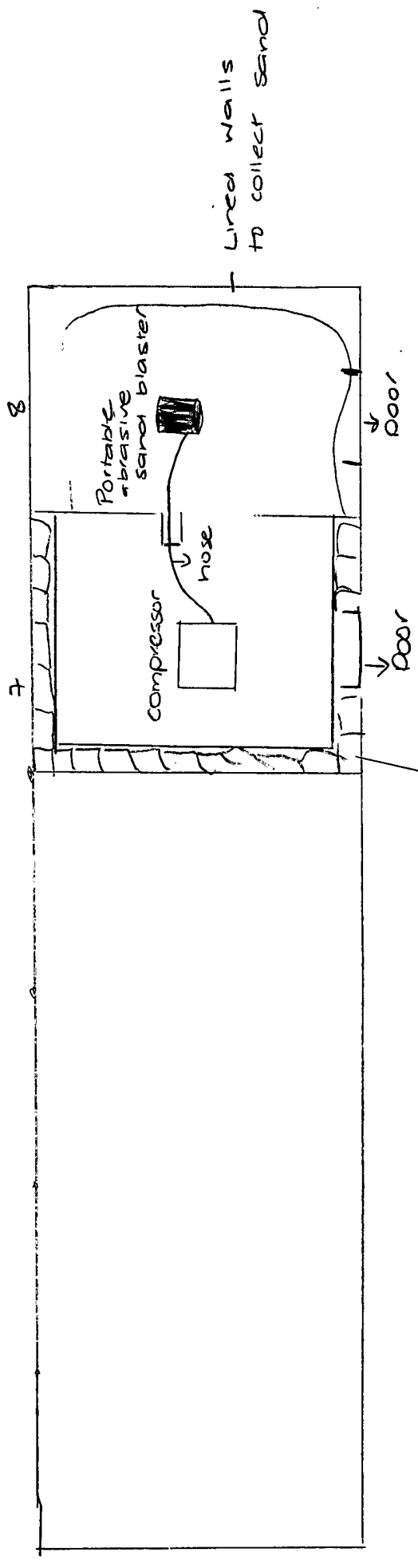
orientation

Resource Management Proposal
 For Permit of Sandblasting
 of metal objects, i.e. machinery.

on DP 2863

Home Occupation 2

8 Bay concrete Block Storage
 Sheels

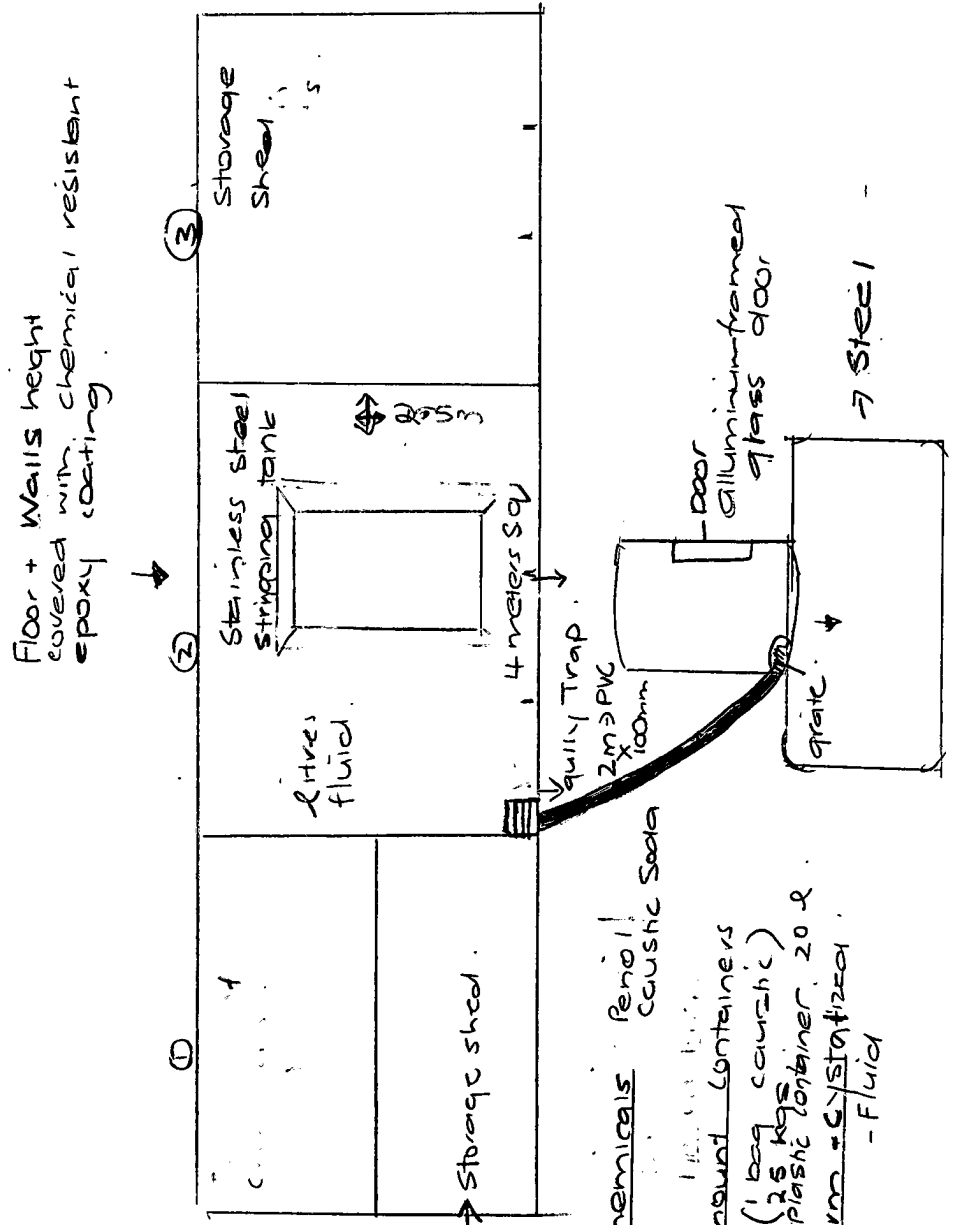


Minimizing Environmental
 and Noise Pollution, to
 Neighbours and Surrounding
 areas.

Sound proofing
 Batts => (pink batts)
 contained within jib board.

- Sand contained within 2 working spaces, at furthest end from neighbours
- Walls lined with sound proofing batts (Bradford) to limit sand conduction from working area.
- Lined walls in 70 eight sheet to prevent v. of sand entering environment

Resource Management Proposal:
 for home occupation - on DP 23603
 for stripping of wooden objects
 i.e. doors, skirting boards in chemicals
 → caustic / phenol



Floor + Walls height covered with chemical resistant epoxy coating

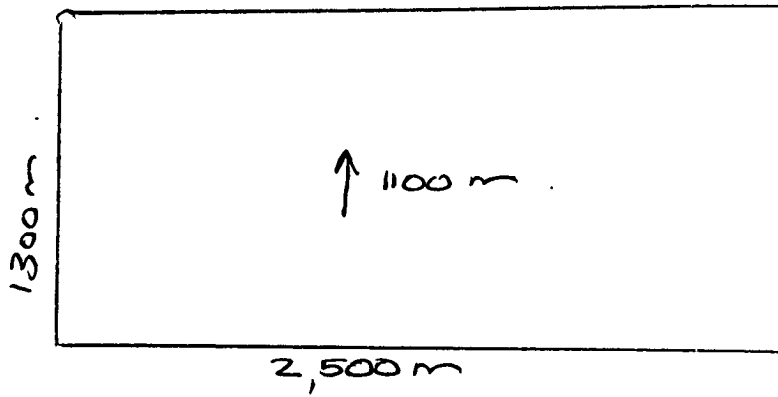
- lockable bars on window

Chemicals: Phenol, Caustic Soda
 Amount containers:
 (1 bag caustic)
 (2.5 kg caustic)
 Plastic container, 20 L
 Form - Cystatized - Fluid

- Stainless steel tank buried under ground to collect & contain water / wastes from water blasting
- Stripping fluids in stainless steel container
 - prevents ground contamination
 - lockable shed - prevents blowing?
- Waste materials removed from waste management → sewage
 (Truck to another truck)

Home Occupation Resource Management - proposal DP 3363 (4)

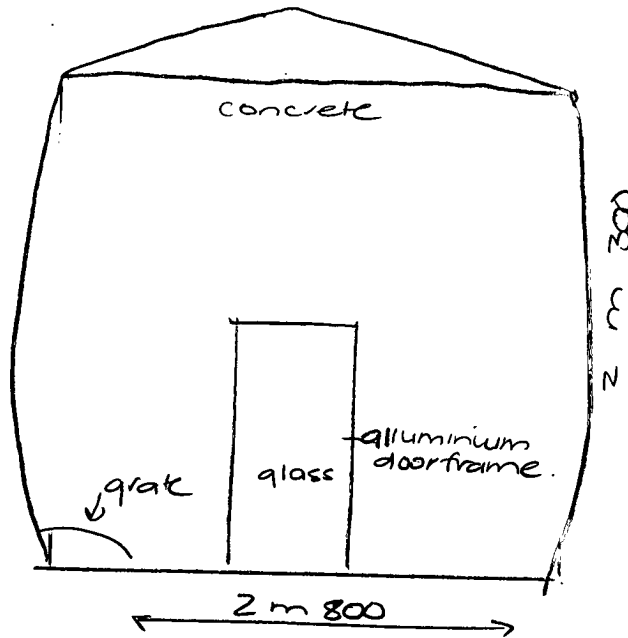
1)



Steel container

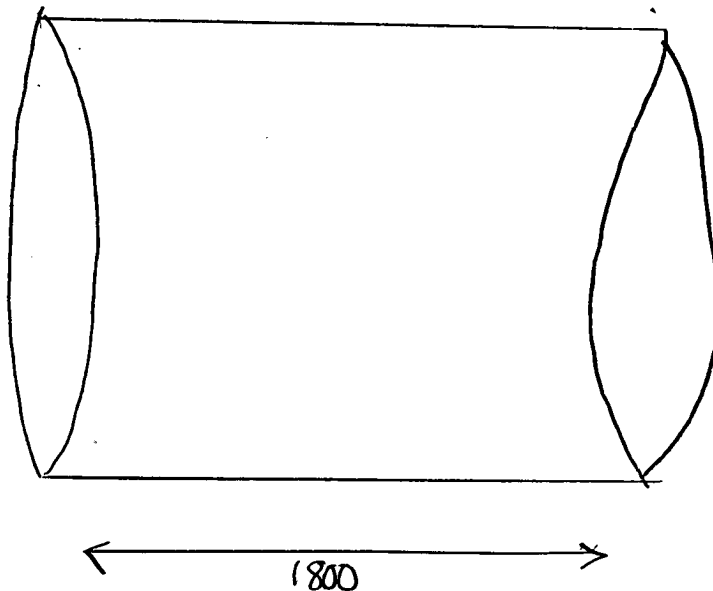
Stripping fluid within steel complex

2)



→ Water blasting area

3



Waste container from water of furniture

steel

↑ 1700

- Effects on Rural → land. (Sandblasting.)
- Noise - would minimize effects, operation as Pg ① carried out - from hrs of 8am → 5pm.
- ↑ of Traffic would be from Webb St excess only, - we would run a Pick up + delivery service
- Sand protection Bradford batts would be installed

Stripper

- Contamination of soil by spillage only.
- Waterblasting would be done in a enclosed area as stated.
- a certified Waste Disposal company -
ie United Waste Management would cart away.
Waste. Alan Young Waste Management
Simon Moos. NZ Ltd.
- Epoxy Resin resistant to chemicals, laid on floor + up walls, to prevent contamination.

APPENDIX E CONTAMINATED LANDUSE DATABASE SEARCH

7 November 2018

Geosciences Limited Auckland

PO Box 35366
Browns Bay
Auckland 0753

Attention: Chris Davies

Dear Chris

Site Contamination Enquiry – 301 Buckland Road, Buckland

This letter is in response to your enquiry requesting available site contamination information for the above site. The following details are based on information available from the former Auckland Regional Council records system and information currently held by the Auckland Council Natural Resources and Specialist Input Unit. The details provided below exclude any property information held by the former district/city councils.

No pollution incident files regarding spills/contamination were found for the above site. The general catchment file and site visit file for the catchment 720 were not searched. These files contain pollution incidents where the source of pollution was not traced to a particular site, site visits where no follow-up correspondence was required and some information from archived files.

If the above site is coastal or beside a river, it is possible that historic, unconsented reclamation may have occurred. The Auckland Council Specialists Unit Coastal Team may be able to provide further information.

The records reviewed as part of this Site Contamination Enquiry search do not identify individual horticultural sites in the region. However, there is a possibility that horticultural activities may have occurred at the site. The local Auckland Council customer service centre, specific to the area of the site may be able to provide relevant information where former horticultural sites have been mapped.

If you are concerned that a historic land use (such as filling) may have caused the underlying soils to become contaminated, it is recommended that you obtain an independent environmental assessment of the site. Staff from the Auckland Council Earthworks and Contaminated Land Team can provide advice on the results of any evaluation in terms of site remediation and/or potential consent requirements.

The former Auckland Regional Council and current databases were searched for records of **closed landfills, bores, air discharge, industrial and trade process consents, contaminated site discharge consents, and environmental assessments** within approximately 200 metres of the site. No consents were identified.

The details provided are in accordance with the obligation to make information publicly available upon request. While the Auckland Council has carried out the search using its best practical endeavours, it does not warrant its completeness or accuracy and disclaims any responsibility or liability in respect of the information. If you or any other person wishes to act or to rely on this information, or make any financial commitment based upon it, it is recommended that you seek appropriate technical and/or professional advice.

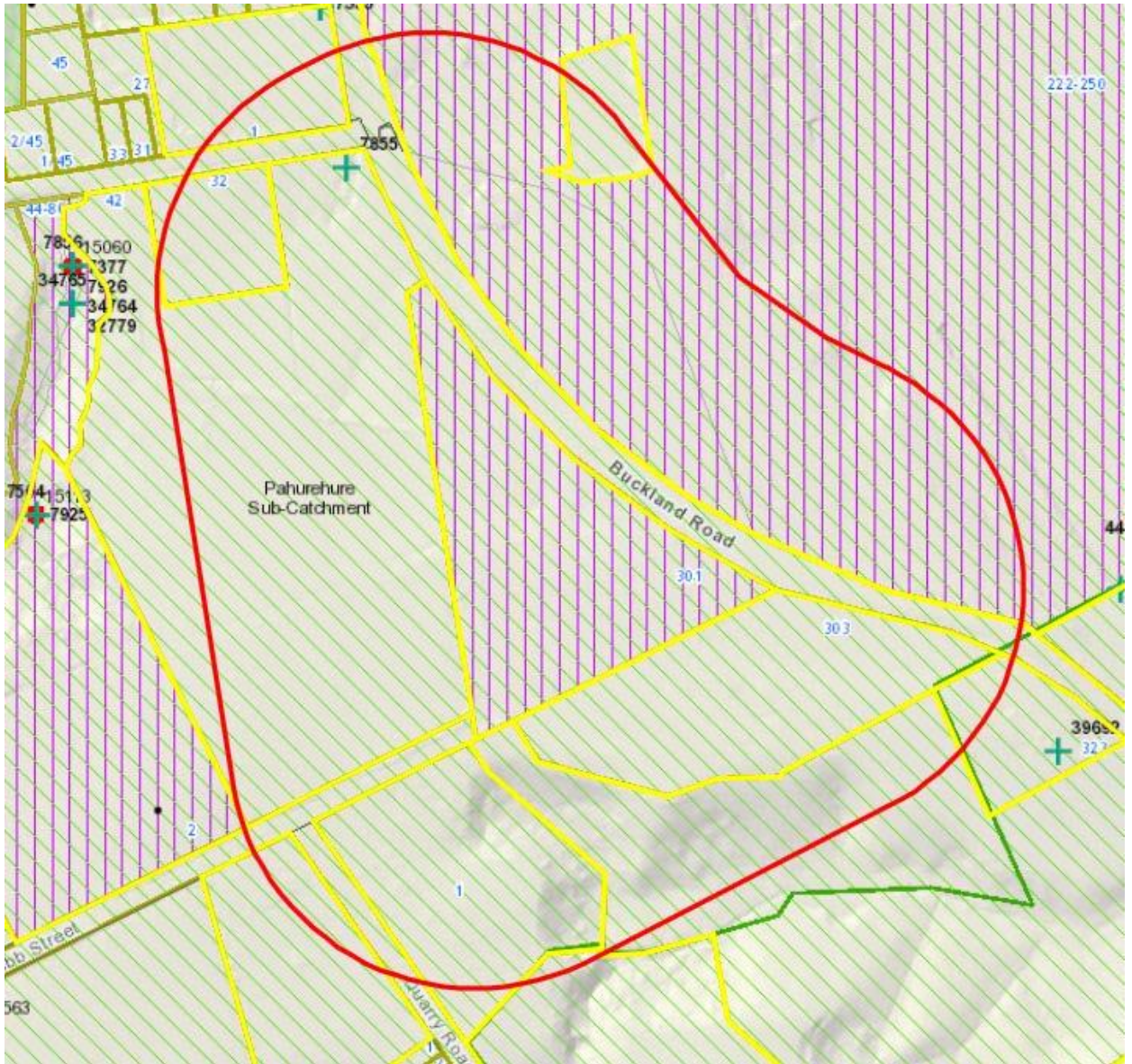
In addition, further site specific pollution incidents may be held at the area office below. It is recommended that you contact the local customer service centre of the Auckland Council, specific to the site being investigated: Ground Floor, Kotuku House, 4 Osterley Way, Manukau Central as they also may hold files with further relevant information.

I trust that this answers your query. If you wish to discuss the matter further, please contact **Andrew Kalbarczyk** on 301 0101. Should you wish to request any of the files listed above for viewing, please contact the Auckland Council Call Centre on 301 0101 and note you are requesting former Auckland Regional Council records (the records department requires three working days' notice to ensure files will be available).

Please note: the Auckland Council cost recovers officer's time for all site enquiries. A basic enquiry takes approximately 1 - 2.5 hours to search the files and databases in which information is held. As such an invoice for the time involved in this enquiry will follow shortly.

Yours sincerely

pp. SR
Jared Osman
**Team Leader – Contaminated Air, Noise
Specialist Unit | Resource Consents**



APPENDIX F PREVIOUS INVESTIGATIONS EXTRACTS



FRANKLIN PLUMBING AND BATHROOMWARE

PROPOSED WAREHOUSING AND
DISTRIBUTION CENTRE (TRADE SUPPLIER)



301 BUCKLAND ROAD, PUKEKOHE

ASSESSMENT OF ENVIRONMENTAL EFFECTS

August 2018

4161.01

used within the development. The signs will not include any flashing, illumination or moving parts that could create any adverse effects on the surrounding traffic environment. The two freestanding signs will be located close to the two separate entrances but within the front yard setback for efficiency of wayfinding for oncoming traffic.

As a result, the signs will be informative, provide a visual amenity that allows display of an iconic Pukekohe Business (named after and directly associated with the locality) and in locations that is considered appropriate for this development.

6.2.6.9 POSITIVE EFFECTS

The proposal will result in several positive effects on the environment. This proposal, on land zoned Future Urban (and earmarked for rezoning as Light Industry) will establish a high quality industrial and commercial site that will be a landmark and standard for future light industry development that is envisaged within Pukekohe. This development will consequently assist in providing jobs and much needed industrial land.

The proposal will also allow Franklin to consolidate its warehousing, training, display and trade retail functions in a single purpose-built facility while remaining in Pukekohe and the Franklin locality which bares its name.

The site will be constructed to a high-quality design and fundamentally serve several purposes and activities on site. The development will improve the vegetation and biodiversity on site by planting several different possible habitats with a mixture of native and non-native vegetation.

The development will also be effectively upgrading the surrounding wastewater system, including a wastewater gravity main, not only for the site but for future development in the area.

It is therefore considered that the positive effects of the proposal will be significant for the environment.

6.2.6.10 ENVIRONMENTAL EFFECTS SUMMARY

The above assessment of effects represents those actual and potential adverse effects on the environment arising from the proposal. Each potential adverse effect has been identified and assessed as being no more than minor on its own or in combination with other adverse effects. The positive effects of the proposal have been considered and the proposal will positively contribute to the to the provision of industrial activity in a location that currently has a critical shortage.

6.3 RELEVANT PROVISIONS OF PLANNING INSTRUMENTS – S104(1)(B)

6.3.1 NATIONAL ENVIRONMENTAL STANDARDS

There are three national environmental standards (NESs) that relate to development activity.

Assessing and Managing Contaminants in Soil to Protect Human Health

The history of the site has been reviewed and no activity that appears on the Hazardous Activities and Industries List is likely to have occurred on the site. It is therefore considered that the proposal meets the permitted activity requirements of section 8(4) of this NES.

Sources Human Drinking Water Standard

The NES for Sources Human Drinking Water Standard is not considered relevant as the site is not



Geotechnical Investigation Report

301 BUCKLAND ROAD, PUKEKOHE

For
PETEREX LIMITED

5 FIELDWORK

The fieldwork for this stage of the development was conducted between 22 and 24 January 2018 and comprised of the following tests in the locations indicated on the appended site plan (Figure 01).

- 9 Hand Auger Boreholes (HA) to depths up to 5.0m.
- 4 Machine Boreholes (MH) a depth of 10.5m.
- 1 Falling Head Percolation test to 2.5m.

Following completion of these works, two cross sections were measured by means of electronic level and tape measure. From this data two cross sections were generated and are appended (Figures 02 and 03).

Soil samples were recovered from our boreholes for the following subsequent laboratory testing:

- Allophane Content: HA01 (1.5-2.0m), HA05 (1.5-2.1m)
- Atterberg Limits: HA01 (1.5-2.0m), HA05 (1.5-2.1m)
- Particle Size Distribution: HA01 (1.5-2.0m), HA05 (1.5-2.1m)

A brief summary of the ground conditions and groundwater monitoring measurements are summarised in Section 6 below. Results of all in-situ soil tests, together with detailed descriptions and depths of strata encountered during the drilling of the boreholes are given in Appendix 2 and laboratory results in Appendix 3.

6 SUMMARY OF GROUND CONDITIONS

6.1 Geology

According to published GNS geology maps the site is underlain by fine grained and course grained basalt and basanite rock associated with the Kerikeri Volcanic Group of the South Auckland Volcanic Field. The rock is often mantled by significant depths of ash and tuff which weathers to an orange and brown cohesive clay, with some gravels.

6.2 Investigation Findings

Typical ground conditions are summarised on cross-sections A-A' and B-B.' Details are as follows below:

6.2.1 Topsoil

Topsoil was encountered in all boreholes to depths of between 100mm and 500mm.

6.2.2 Filling

Filling was encountered in boreholes HA05, HA06 and HA07 and P1 to depths of between 100mm and 600mm, consisting of brown and orange/brown clayey silt. This may in fact simply be disturbed ground associated with previous horticultural activities, rather than placed fill. Nevertheless, given the farm environment where the investigation was carried out, the presence of old ofal pits or rubbish pits outside of our test locations can never be discounted.

6.2.3 Natural Ground

The natural subsoils investigated by our boreholes comprised of weathered ash deposits overlying weathered tuff. These soils consisted of inorganic, grey, orange/brown and red/brown, clayey silts. Shear strengths were generally between 80 and 140+kPa indicating stiff to very stiff soil.

Firm soils were observed to be underlying these soils from depths of between 4.5m and 9.0m (within the machine boreholes only).

Soil sensitivities generally ranged between 1.7 and 5.0, indicating insensitive to sensitive soils, however, some “quick” sensitivities were also recorded, meaning they are prone to near complete loss of shear strength once peak values are exceeded and could be prone to disturbance from heavy earthworks machinery trafficking.

SPT 'N' values within the machine boreholes ranged from 1 to 19, but were generally less than 5. These values are considered to be typical of the range expected for weathered cohesive volcanic ash and tuff soils. SPT results are shown in the appended borehole records.

The firm shear strength readings within the machine boreholes may be conservatively low due to soil disturbance through the drilling process, and some soil sensitivities may be conservatively high due to drilling disturbance also.

It should be noted that HA04 did not reach target depth of 5m and was terminated upon an inferred gravelly (tuff) soil matrix at 0.5m depth. A basal penetrometer sounding here loose to medium dense materials with occasional very dense bands interlayered, and was terminated at 1.5m depth on near refusal blow counts (i.e. greater than 20 blows per 100mm).

No basalt rock was encountered over the depths drilled at the locations tested.

6.2.4 Groundwater

Standing groundwater levels of between 2.5m and 4.2m were recorded in our hand auger boreholes at the completion of our fieldwork.





Eight days following the completion of the drilling programme, water levels were measured in the machine boreholes under assumed equilibrium conditions – it should be noted that the standpipe in MH04 was damaged and no readings were able to be taken.

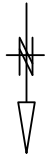
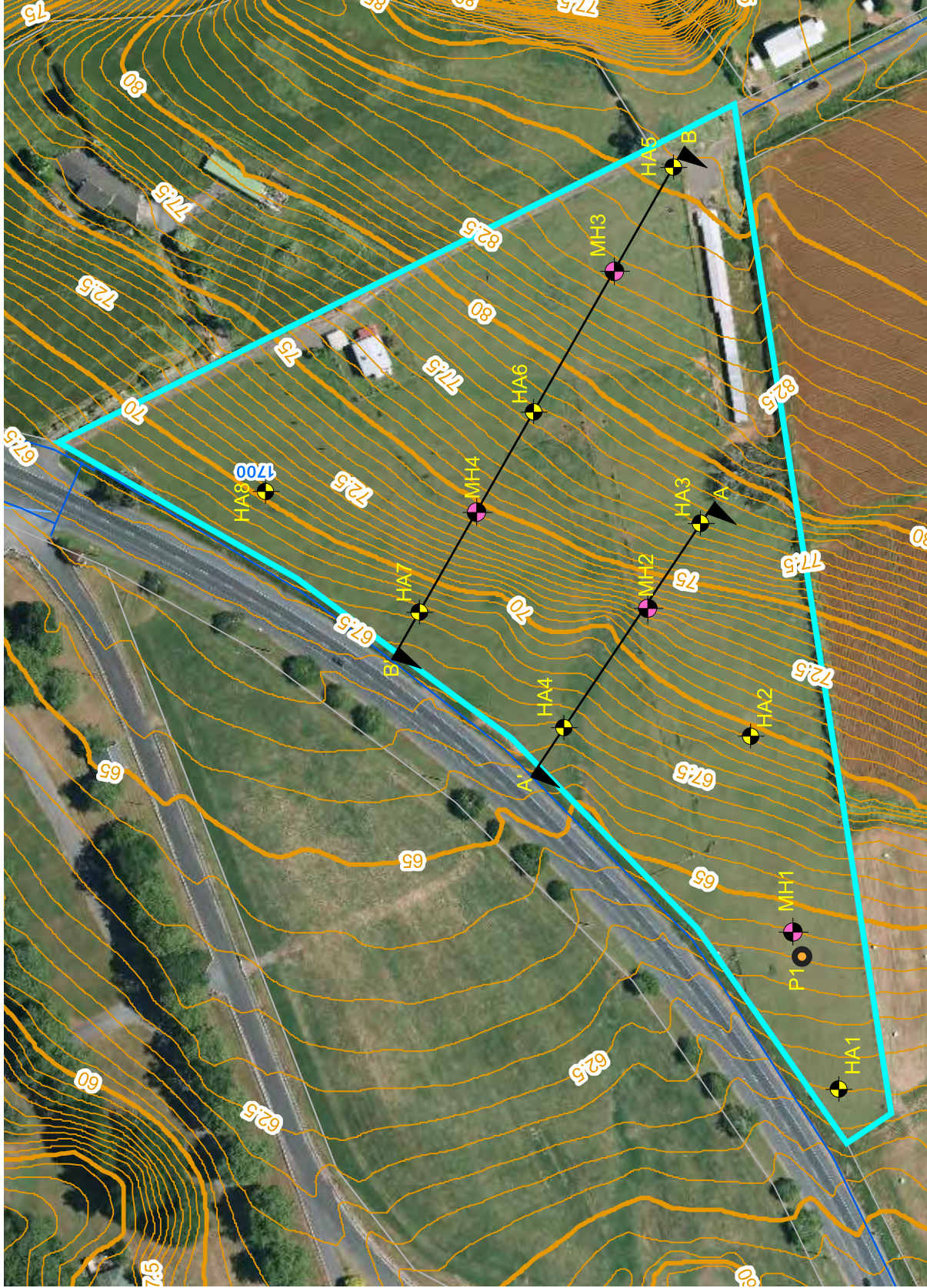
The following table summarises all results:

Table 1: Measured Groundwater Levels

Borehole No.	Depth (metres) / Date Measured
MH01	3.65m / 1.02.18
MH02	3.0m / 1.02.18
MH03	4.73m / 1.02.18
MH04	Damaged* / 1.02.18
HA01	3.7m / 22.01.18
HA02	4.2m / 22.01.18
HA03	4.1m / 22.01.18


Legend and/or Notes:

-  Hand Auger Borehole
-  Machine borehole
-  Falling Head Percolation Test
-  Cross Section





revision	description	drawn	approved	date

drawn	approved	KIM	client:
date	2.02.18	SGI	PETEREX LIMITED
scale	1:1500	2.02.18	project:
original size	A3	1:1500	1700 BUCKLAND ROAD, PUKEKOHE
			title:
			SITE PLAN
			project no: J00858
			figure no: 01



drawn	approved	KIM	client:
date	2.02.18	SGI	PETEREX LIMITED
scale	1:1500	2.02.18	project:
original size	A3	1:1500	1700 BUCKLAND ROAD, PUKEKOHE
			title:
			SITE PLAN
			project no: J00858
			figure no: 01

Client : PETEREX LIMITED
Project Location : 1700 BUCKLAND ROAD, PUKEKOHE

Auger Borehole No. HA01
 Sheet 1 of 9

Job Number: J00858

Vane Head: 1900
 Logged By: LJ
 Processor: LJ
 Date: 22.01.18

Borehole Location: mN mE Ground R.L.
 Description: Refer to site plan

SOIL DESCRIPTION

TOPSOIL, with minor rootlet inclusions

clayey SILT, mottled orange/brown and yellow/brown. Very stiff, moist, low plasticity, moderately sensitive, with minor limonite [ASH]

becoming yellow/brown, without limonite

becoming moist to wet

becoming light grey/white and yellow/brown mottled red/pink, intermixed with light grey/white, high plasticity silty clay

becoming yellow/brown, hard, without silty clay

becoming soft to firm, wet, with minor fine to medium sand sized white clast inclusions

becoming slightly clayey SILT, mottled red/pink, yellow/brown and grey, hard, no to low plasticity, intermixed with minor grey, high plasticity silty clay

becoming brown, loose to medium dense, no plasticity

becoming clayey SILT, yellow/brown, stiff, saturated, low plasticity, insensitive

becoming slightly clayey SILT, brown, hard, no to low plasticity

with minor manganese oxidation

EOB at 5.0m. Target Depth.

Legend	Depth (m)	Standing Water Level	Vane Shear (kPa) peak / residual	Soil Sensitivity	Sample and Laboratory / Other Test Details
	0.5		188/54	3.5	Sample 1 Disturbed 0.5-1.0m
	1.0		154/65	2.4	
	1.5		127/38	3.3	Sample 2 Disturbed 1.5-2.0m
	2.0		204/84	2.4	
	2.5		239+		Sample 3 Disturbed 2.5-3.0m
	3.0	UTP			
	3.5	▽	89/47	1.9	
	4.0		UTP		
	4.5		239+		
	5.0		239+		
	5.5				
	6.0				



Comments:
 Groundwater encountered 3.4m.
 UTP = unable to penetrate.
 EOB = end of borehole.

Borehole Diameter: 50mm
 Checked: Km

Topsoil	Sand	Sandstone	Plutonic
Fill	Gravel	Siltstone	No Core
Clay	Organic	Limestone	
Silt	Pumice	Volcanic	

Client : PETEREX LIMITED
Project Location : 1700 BUCKLAND ROAD, PUKEKOHE

Auger Borehole No. HA02
 Sheet 2 of 9

Job Number: J00858

Vane Head: 1900
 Logged By: LJ
 Processor: LJ
 Date: 22.01.18

Borehole Location:	mN	mE	Ground R.L.
Description: Refer to site plan			

SOIL DESCRIPTION

TOPSOIL, with minor rootlet inclusions

clayey SILT, light grey and pink/red mottled orange/brown. Very stiff, moist, low plasticity, moderately sensitive, with minor limonite, with minor organic staining [ASH]
 becoming red/brown mottled orange/brown, without organic staining

becoming slightly clayey SILT, light grey mottled orange/brown and red/brown, hard, no to low plasticity, sensitive, with minor light grey, high plasticity silty clay
 becoming brown, without silty clay

becoming grey/brown

becoming moderately sensitive

becoming brown, moist to wet

becoming clayey SILT, very stiff, low plasticity, with trace to minor manganese oxidation

becoming yellow/brown, wet, low to medium plasticity, without manganese oxidation
 becoming stiff

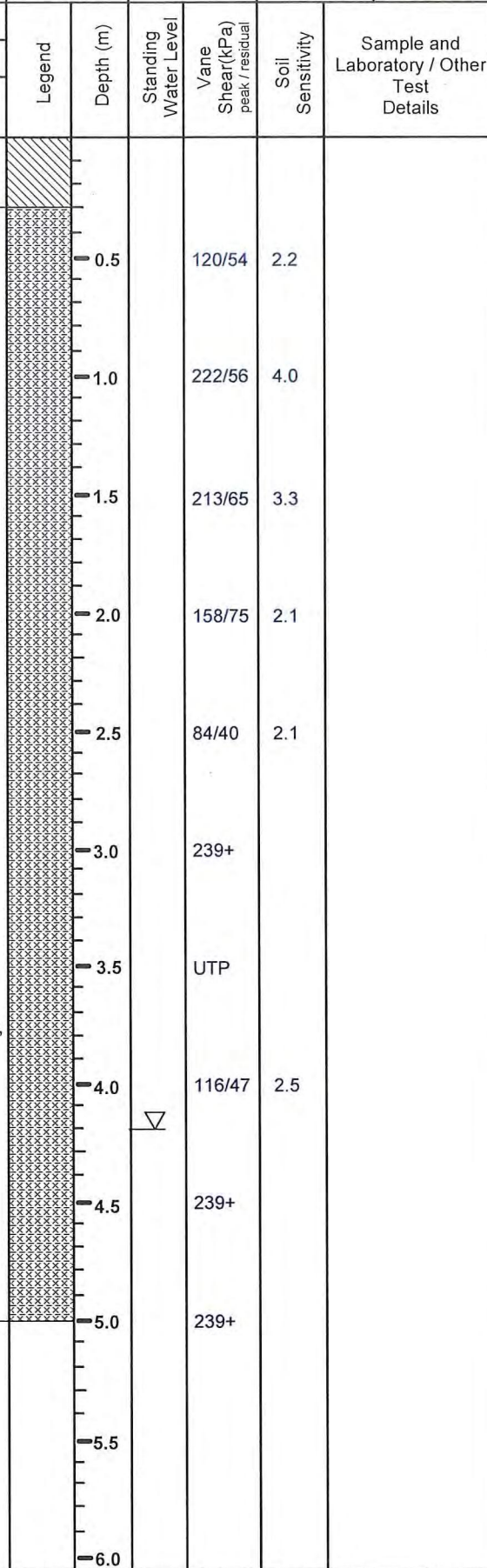
becoming slightly clayey SILT, brown, moist, no to low plasticity

becoming orange/brown, hard, wet, no plasticity

becoming clayey SILT, yellow/brown, very stiff, wet to saturated, low to medium plasticity, moderately sensitive

becoming slightly clayey SILT, brown, saturated, no to low plasticity, with minor manganese oxidation

becoming hard



EOB at 5.0m. Target Depth.

	Comments: Groundwater encountered 3.8m. UTP = unable to penetrate. EOB = end of borehole.	Borehole Diameter:	Topsoil	Sand	Sandstone	Plutonic
		50mm	Fill	Gravel	Siltstone	No Core
		Checked: <i>km</i>	Clay	Organic	Limestone	
			Silt	Pumice	Volcanic	

Client : PETEREX LIMITED
Project Location : 1700 BUCKLAND ROAD, PUKEKOHE

Auger Borehole No. HA03

Sheet 3 of 9

Job Number: J00858

Vane Head: 1900
 Logged By: LJ
 Processor: LJ
 Date: 23.01.18

Borehole Location:	mN	mE	Ground R.L.
Description: Refer to site plan			

SOIL DESCRIPTION

Legend	Depth (m)	Standing Water Level	Vane Shear (kPa) peak / residual	Soil Sensitivity	Sample and Laboratory / Other Test Details
	0.0 - 0.5		232/40	5.8	
	0.5 - 1.0		239+		
	1.0 - 1.5		193/88	2.2	
	1.5 - 2.0		186/80	2.3	
	2.0 - 2.5		195/81	2.4	
	2.5 - 3.0		195/88	2.2	
	3.0 - 3.5		97/34	2.9	
	3.5 - 4.0	▽	127/56	2.3	
	4.0 - 4.5		135/29	4.7	
	4.5 - 5.0		83/47	1.8	
	5.0 - 5.5				
	5.5 - 6.0				

TOPSOIL, with minor rootlets

clayey SILT, orange/brown. Hard, moist, low plasticity, sensitive, with minor manganese oxidation [ASH] at 0.5m, without manganese oxidation

becoming brown

becoming red/brown
 becoming very stiff, moderately sensitive

becoming wet


becoming stiff

becoming very stiff

becoming saturated, sensitive
 becoming slightly clayey SILT, black mottled red/pink, no to low plasticity, with minor manganese oxidation

at 5.0m, becoming stiff, insensitive

EOB at 5.0m. Target Depth.

	Comments: Groundwater encountered 4.5m. UTP = unable to penetrate. EOB = end of borehole.	Borehole Diameter:	Topsoil	Sand	Sandstone	Plutonic
		50mm	Fill	Gravel	Siltstone	No Core
		Checked: Km	Clay	Organic	Limestone	
			Silt	Pumice	Volcanic	

Client : PETEREX LIMITED
Project Location : 1700 BUCKLAND ROAD, PUKEKOHE

Auger Borehole No. HA04
 Sheet 4 of 9

Job Number: J00858

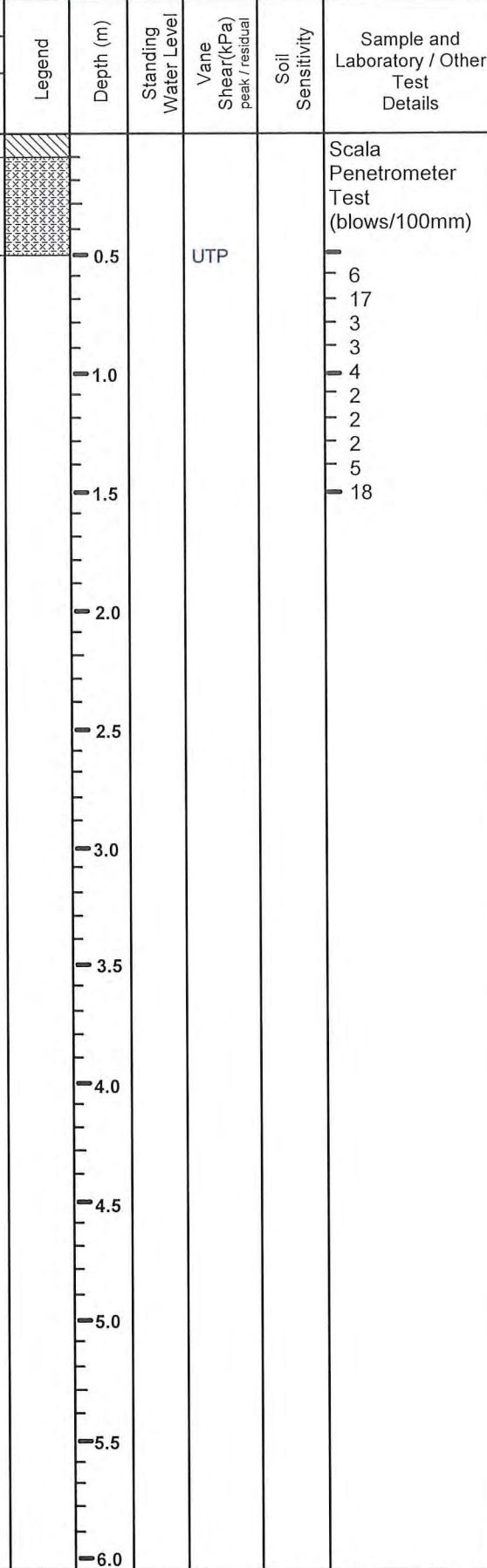
Vane Head: 1900
 Logged By: LJ
 Processor: LJ
 Date: 23.01.18

Borehole Location:	mN	mE	Ground R.L.
	Description: Refer to site plan		


SOIL DESCRIPTION


TOPSOIL
 slightly clayey SILT, yellow/brown. Loose to medium dense, moist, no plasticity, with some fine to medium gravel [TUFF]

EOB at 0.5m. Too dense to auger further. Scala penetrometer test commenced. Unable to overcore



	Comments: Groundwater not encountered. UTP = unable to penetrate. EOB = end of borehole.	Borehole Diameter:	Topsoil	Sand	Sandstone	Plutonic
		50mm	Fill	Gravel	Siltstone	No Core
		Checked:	Clay	Organic	Limestone	
		<i>Km</i>	Silt	Pumice	Volcanic	

Client : PETEREX				Auger Borehole No. HA05					
Project Location : 1700 BUCKLAND ROAD, PUKEKOHE				Sheet 5 of 9					
Job Number: J00858				Vane Head: 946	Logged By: KM	Processor : RG	Date: 22.01.18		
Borehole Location:	mN	mE	Ground R.L.	Legend	Depth (m)	Standing Water Level	Vane Shear (kPa) peak / residual	Soil Sensitivity	Sample and Laboratory / Other Test Details
Description: Refer to site plan									
SOIL DESCRIPTION									
TOPSOIL									
clayey SILT with trace fine to medium sand, light brown, mottled orange/brown. Very stiff moist, low plasticity [FILL]									
silty CLAY, orange/brown. Hard, moist, medium plasticity [ASH]					0.5		186+		Sample 1 Disturbed 0.5-1.2m
clayey SILT, orange/brown. Hard, moist, low plasticity					1.0		186+		
becoming very stiff, wet, sensitive					1.5		186+		
becoming slightly clayey SILT, orange/brown and red/brown, hard, wet					2.0		111/22	5.0	Sample 2 Disturbed 1.5-2.1m
becoming clayey SILT, orange/brown, very stiff					2.5		UTP		
becoming moderatley sensitive					3.0		168/67	2.5	Sample 3 Disturbed 2.5-3.0m
becoming red/brown					3.5		124/57	2.2	
becoming mottled black with some ash streaks					4.0		186+		
becoming stiff, without black mottling, insensitive					4.5		81/43	1.9	
at 5.0m, becoming very stiff, moderately sensitive					5.0		124/57	2.2	
EOB at 5.0m. Target Depth.					5.5				
					6.0				
	Comments: Groundwater not encountered. UTP = unable to penetrate. EOB = end of borehole.			Borehole Diameter: 50mm	Topsoil	Sand	Sandstone	Plutonic	+++++
				Checked: <i>KM</i>	Fill	Gravel	Siltstone	No Core	
					Clay	Organic	Limestone		
					Silt	Pumice	Volcanic		

Client : PETEREX LIMITED Project Location : 1700 BUCKLAND ROAD, PUKEKOHE Job Number: J00858				Auger Borehole No. HA06 Sheet 6 of 9					
				Vane Head: 946	Logged By: KM	Processor : RG	Date: 22.01.18		
Borehole Location:	mN	mE	Ground R.L.	Legend	Depth (m)	Standing Water Level	Vane Shear(kPa) peak / residual	Soil Sensitivity	Sample and Laboratory / Other Test Details
Description: Refer to site plan									
SOIL DESCRIPTION									
TOPSOIL									
clayey SILT, brown mottled orange/brown. Very stiff, moist, low plasticity [TUFF/FILL?]									
silty CLAY, orange/brown. Hard, moist, low plasticity [ASH]					0.5		186+		
clayey SILT with trace fine sand, orange/brown. Hard, moist, low plasticity					1.0		186+		
becoming very stiff, moderately sensitive becoming wet					1.5		184/73	2.5	
becoming orange/brown mottled red/brown					2.0		184/92	2.0	
becoming slightly clayey SILT, orange/brown, hard					2.5		UTP		
becoming clayey SILT, very stiff					3.0		126/57	2.2	
becoming red/brown, hard					3.5		186+		
becoming very stiff					4.0		168/61	2.8	
becoming red/brown mottled orange/brown, insensitive					4.5		122/70	1.7	
at 5.0, becoming moderately sensitive					5.0		100/38	2.6	
EOB at 5m. Target Depth.					5.5				
					6.0				
	Comments: Groundwater not encountered. UTP = unable to penetrate. EOB = end of borehole.			Borehole Diameter:	Topsoil	Sand	Sandstone	Plutonic	
				50mm	Fill	Gravel	Siltstone	No Core	
				Checked:	Clay	Organic	Limestone		
				Km	Silt	Pumice	Volcanic		

Client : PETEREX LIMITED
Project Location : 1700 BUCKLAND ROAD, PUKEKOHE

Auger Borehole No. HA07
 Sheet 7 of 9

Job Number: J00858

Vane Head: 946
 Logged By: KM
 Processor: LJ
 Date: 22.01.18

Borehole Location:	mN	mE	Ground R.L.
	Description: Refer to site plan		

SOIL DESCRIPTION

Legend	Depth (m)	Standing Water Level	Vane Shear (kPa) peak / residual	Soil Sensitivity	Sample and Laboratory / Other Test Details
TOPSOIL	0.0 - 0.3				
clayey SILT, brown mottled orange/brown. Very stiff, moist, low plasticity, sensitive, with trace fine gravel [FILL] at 0.3m, with occasional black and red mottles	0.3 - 0.5		120/28	4.3	
clayey SILT, light brown/grey streaked orange/brown. Very stiff, wet, low plasticity, sensitive [ASH] at 0.8m, becoming grey	0.5 - 1.0		183/39	4.7	
becoming wet	1.0 - 1.5		113/43	2.6	
becoming grey streaked orange, moderately sensitive	1.5 - 2.0		130/49	2.7	
becoming stiff	2.0 - 2.5	▽	70/27	2.6	
becoming hard, with trace fine to medium sand and fine pumiceous gravel	2.5 - 3.0		186+		
becoming slightly clayey SILT, orange/brown, no to low plasticity, without sand and gravel	3.0 - 3.5		186+		
becoming orange/brown mottled red/brown, low plasticity	3.5 - 4.0		57/23	2.5	
becoming stiff, poor sample recovery to 3.9m due to groundwater suction	4.0 - 4.5		UTP		
becoming red/brown, with normal sample recovery	4.5 - 5.0		171/62	2.8	
becoming hard	5.0 - 5.5		186+		
at 5.0m, becoming hard	5.5 - 6.0				
EOB at 5.0m. Target Depth.					

	Comments: Groundwater encountered 2.7m. UTP = unable to penetrate. EOB = end of borehole.	Borehole Diameter:	Topsoil	Sand	Sandstone	Plutonic
		50mm	Fill	Gravel	Siltstone	No Core
		Checked: KM	Clay	Organic	Limestone	
			Silt	Pumice	Volcanic	


Client : PETEREX LIMITED
Project Location : 1700 BUCKLAND ROAD, PUKEKOHE


Auger Borehole No. HA08
 Sheet 8 of 9

Job Number: J00858

Vane Head: 1900
 Logged By: LJ
 Processor: LJ
 Date: 23.01.18

Borehole Location:	mN	mE	Ground R.L.	Legend	Depth (m)	Standing Water Level	Vane Shear (kPa) peak / residual	Soil Sensitivity	Sample and Laboratory / Other Test Details
Description: Refer to site plan				SOIL DESCRIPTION					
TOPSOIL				[Hatched pattern]					
clayey SILT, orange/brown. Hard, moist, low plasticity [ASH]				[Cross-hatch pattern]					
becoming moderately sensitive				[Cross-hatch pattern]					
becoming wet, with minor fine to coarse sand sized white clast inclusions				[Cross-hatch pattern]					
becoming slightly clayey SILT, no to low plasticity, extra sensitive				[Cross-hatch pattern]					
becoming clayey SILT, very stiff, wet, low to medium plasticity				[Cross-hatch pattern]					
becoming moderately sensitive becoming brown, moist, low plasticity				[Cross-hatch pattern]					
becoming hard				[Cross-hatch pattern]					
intermixed with moderately thin bed of light grey, high plasticity silty clay				[Cross-hatch pattern]					
becoming very stiff				[Cross-hatch pattern]					
becoming orange/brown, with minor limonite silt clast inclusions				[Cross-hatch pattern]					
EOB at 5.0m. Target Depth.				[Cross-hatch pattern]					

	Comments: Groundwater not encountered. UTP = unable to penetrate. EOB = end of borehole.	Borehole Diameter:	Topsoil	Sand	Sandstone	Plutonic
		50mm	Fill	Gravel	Siltstone	No Core
		Checked: Km	Clay	Organic	Limestone	
			Silt	Pumice	Volcanic	

Client : PETEREX LIMITED				Auger Borehole No. P1					
Project Location : 1700 BUCKLAND ROAD, PUKEKOHE				Sheet 9 of 9					
Job Number: J00858				Vane Head: 1900	Logged By: LJ	Processor: LJ	Date: 22.01.18		
Borehole Location:	mN	mE	Ground R.L.	Legend	Depth (m)	Standing Water Level	Vane Shear (kPa) peak / residual	Soil Sensitivity	Sample and Laboratory / Other Test Details
Description: Refer to site plan									
SOIL DESCRIPTION									
TOPSOIL									
clayey SILT, brown/grey streaked black. Very stiff, moist, low plasticity, with trace fine gravel [TUFF/FILL?]									
silty CLAY, orange/brown. Very stiff, moist, medium plasticity, moderately sensitive [ASH]									
with occasional manganese oxidation					0.5		177/49	3.6	
clayey SILT, orange/brown. Very stiff, moist, low plasticity, moderately sensitive					1.0		158/54	2.9	
with minor manganese oxidation					1.5		195/84	2.3	
becoming yellow/brown and light grey mottled red/pink, insensitive, intermixed with light grey, high plasticity silty clay, without manganese oxidation					2.0		154/86	1.8	
at 2.5m, becoming moderately sensitive					2.5		177/69	2.6	
EOB at 2.5m. Target Depth.					3.0				
					3.5				
					4.0				
					4.5				
					5.0				
					5.5				
					6.0				
	Comments: Groundwater not encountered. UTP = unable to penetrate. EOB = end of borehole.			Borehole Diameter:	Topsoil	Sand	Sandstone	Plutonic	
				50mm	Fill	Gravel	Siltstone	No Core	
				Checked:	Clay	Organic	Limestone		
				Km	Silt	Pumice	Volcanic		

APPENDIX G SITE PHOTOGRAPHS



PLATE 1: DWELLING WITH STOCKPILE ALONG FENCE ON LEFT



PLATE 2: PARTIALLY BURIED CONCRETE AND STONE IN SW CORNER



PLATE 3: PARTIALLY BURIED STOCKPILE IN SW CORNER



PLATE 4: TREES SURROUNDING PARTIALLY BURIED CONCRETE



PLATE 5: SOIL BUND AND SEDIMENT 'DAM' ON NEIGHBOURING PROPERTY



PLATE 6: LOOKING NE FROM SOIL BUND (PLATE 5) ALONG OVERLAND FLOW PATH



PLATE 7: FILL IN EX HORSE TRAINING CIRCLE WITH UNDERLYING GEOTEXTILE MATERIAL



PLATE 8: PARTIALLY BURIED RUBBLE FROM PREVIOUSLY REMOVED BUILDING WEST OF HOUSE



PLATE 9: POSSIBLE HISTORIC HORTICULTURAL FIELD



PLATE 10: LOOKING SOUTH UP-GRADIENT FROM NORTHERN CORNER OF PROPERTY