Campana Road, Wiri

Preliminary Site Investigation

for: Campana Landowners Consortium c/ Capstone Projects Limited.

Job No: 66948

Version: Final

eTrack No: 200047106

Date of Issue: 15/12/2023

EXECUTIVE SUMMARY

Babbage Consultants Limited (Babbage) has been engaged Campana Landowners Consortium c/ Capstone Projects Limited to undertake a Preliminary Site Investigation (PSI) to support a Private Plan Change (PPC) Request to rezone land which forms Allot 190 PSH FO Manurewa, Lot 2 DP 402013, Lot 1 DP 402013, Lot 2 DP 71211, and Lot 3 DP 71211 (the site) to Light Industrial zoning.

. The findings of this investigation are summarised as follows:

1 The site has been primarily horticultural use for at least 51 years. Prior to that, the site was used for pastoral purposes.

2 Site history review indicates that the site has been subjected to activities on the Hazardous Activities and Industry List (HAIL). The NESCS[1] will apply to the site as the proposed development will not meet the NESCS permitted activity thresholds[2].

3 The site has potential contaminants in particular metals, organochlorine pesticides (OCPs), and organophosphates (OPPs) from horticultural activity and chemical mixing/storage; asbestos from existing structures; metals, OCPs and polycyclic aromatic hydrocarbons (PAHs) from uncharacterised fill and burn pits; PAHs, BTEX (benzene, toluene, ethylbenzene, and xylenes) and hydrocarbons from workshops and fuel storage; and nitrogen from domestic wastewater treatment.

4 The conceptual site model indicates that there is a source and pathway link to human/ecological receptors.

5 Pursuant to regulation 8(4)(b) of the NESCS, it is likely that there will be a risk to human health if the activity is done to the piece of land, therefore the activity is not permitted.

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

[2] Less than 5 m^3 of soil disposal and 25 m^3 of soil disturbance.

ACKNOWLEDGEMENT OF SUBMISSION

This report was prepared by Charlotte Lucas and reviewed by Hiram Garcia.

Respectfully submitted

Babbage Consultants Limited

Charlotte Lucas
Environmental Consultant

Hiram Garcia
Principal Environmental Consultant

I have assessed the site in accordance with current New Zealand Regulations and guidance documents and reported in accordance with the current edition of Contaminated Land Management Guidelines No 1: Reporting of Contaminated Sites in New Zealand.
I am considered by Babbage Consultants Limited as a suitably qualified and experienced practitioner (SQEP) pursuant to the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011, based on the company's definition of a SQEP as given below.
Name: Hiram Garcia

Signed: Date:15/12/2023

Babbage Consultants Limited: SQEP Definition

Babbage Consultants Limited requires that a SQEP has the following Qualifications/Experience:

- Tertiary education in environmental science, engineering, or other relevant field;
- Ten years of relevant post graduate environmental experience;
- A commitment to continuing professional development; and
- Full membership of an appropriate professional body requiring a commitment to operating in accordance with a professional code of ethics.

Date	Version	eTrack No.	Author(s)	Reviewer(s)
15/12/2023	Final	200047106	Charlotte Lucas	Hiram Garcia

TABLE OF CONTENTS

List of Tables

List of Figures

List of Appendices

1 INTRODUCTION AND BACKGROUND

Babbage has been engaged by Capstone Projects Limited c/ Capstone Projects Limited to undertake a PSI at Campana Road, Wiri, Auckland (the site) to support a Private Plan Change (PPC) Request to rezone land which forms Allot 190 PSH FO Manurewa, Lot 2 DP 402013, Lot 1 DP 402013, Lot 2 DP 71211, and Lot 3 DP 71211 (the site) to Light Industrial zoning (See **Figure 1**).

The scope of work for the PSI was set out in our proposal dated 13 October 2023 which includes a site visit. The key aims of the PSI were to determine:

- The site history based on historical aerials, landowner interviews, previous investigations, and Auckland Council (AC) site contamination enquiry request, whether historic use is likely to have resulted in ground contamination and verify whether activities detailed on the HAIL, issued by the Ministry for the Environment (MfE)[3], apply to the site.
- Nature and source of potential contaminants if applicable.
- Known or potential human and ecological receptors that could be exposed to contaminants if applicable.
- Known or potential pathways by which identified receptors could be exposed to potential contaminants under current or known proposed future land use if applicable.

The site identification details are presented in **Table 1**.

Table 1. Site identification.

Address	Legal description	Area (m^2)
467 Puhinui Road	Allot 190 PARISH OF MANUREWA	33,134
485 Puhinui Road	Lot 2 DP 402013	71,636
5 Campana Road,	Lot 1 DP 402013	20,000
11 Campana Road	Lot 2 DP 71211	81,240
10 and 12 Campana Road	Lot 3 DP 71211	99,021

Note: Source – Land Information New Zealand (LINZ) data service website[4].

Babbage has not sighted future development plans at this time.

[3] MfE 24 March 2021. Land – Guidance and guidelines on contaminated land. Retrieved from https://www.mfe.govt.nz/land/hazardous-activities-and-industries-list-hail

[4] LINZ data service 13 November 2023. Retrieved from https://data.linz.govt.nz/layer/50772-nz-primary-parcels

The PSI performed follows the general reporting and investigation methodology presented in the MfE Contaminated Land Management Guidelines (CLMG) No. 1[5].

[5] MfE 2021. Contaminated Land Management Guidelines No. 1. Reporting on Contaminated Sites in New Zealand (Revised 2021)

Babbage

Babbage Consultants Limited
Level 4, 68 Beach Road, Auckland 1010
PO Box 2027, Shortland Street
Auckland 1140, New Zealand
T 09 379 9980 F 09 377 1170
E admin@babbage.co.nz www.babbage.co.nz

CLIENT / PROJECT

Capstone Projects Limited

Campana Road, Wiri, Auckland

MAP TITLE

Site location and layout

MAP REVISIONS

13/11/2023 Initial version by CL.

Legend

Site Boundary

NOTES
Aerial Images: LINZ Basemap

DISCLAIMER:
This map/plan is not an engineering draft.
This map/plan is illustrative only and all information should be independently verified on site before taking any action.

SCALE

1:4,000 @ A3

MAP NO.

FIGURE-01

2 SITE DESCRIPTION

The site is located on along the east and west sides of Campana Road and the north side of Puhinui Road, in the suburb of Wiri, Auckland. The site currently contains some horticultural activity, a steel distribution company (no manufacturing), a civil engineering company, and three residential properties.

The AC GeoMaps website shows the site is slopes radially from the centre to the north, south, east and west, with a fall of some 10 m. Stormwater surface runoff generated at the site runs off into Manukau Harbour. Several overland flow paths originate from the site centre and drain towards Manukau Harbour.

Published geological information[6] shows the site to be underlain by pumiceous mud, sand and gravel with muddy peat and lignite, rhyolite pumice, including non-welded ignimbrite, tephra and alluvial pumice deposits; massive micaceous sand of the Puketoka Formation and lithic tuff, comprising comminuted pre-volcanic materials with basaltic fragments, and unconsolidated ash and lapilli deposits of well-sorted basalt and basanite fragments of the Kerikeri Volcanic Group to the north.

The current surrounding property use is presented in **Table 2**.

Table 2. Surrounding property use.

Direction	Observation
North	To the north of the site is a Manukau Harbour inlet.
South	To the south of the site is Puhinui Road with pastoral land beyond.
East	To the east of the site is agricultural land with Manukau Memorial Gardens beyond.
West	To the west of the site is pastoral land with Manukau Harbour inlet and Auckland Airport beyond.

Note: Source – Based on site observations supported with information from AC GeoMaps website.

Babbage performed a site inspection on 14 November 2023 A summary of observed conditions is presented in **Table 3**. A photographic log of the site is presented as Appendix A.

[6] Institute of Geological and Nuclear Sciences (GNS). 21 November 2023.Geology 2.0.0 Webmap NZ 1:250k Geological unit. Retrieved from *https://data.gns.cri.nz/geology/index.html?map=NZ%20Geology* .

Table 3. Site condition.

Direction	Observation
Surface water	Not observed on site.
Local sensitive environments	Manukau Harbour runs along the northern, eastern and western boundary.
Visible signs of plant stress	Not observed on site.
Visible signs of potential contamination sources	- Horticultural activity. - Chemical mixing shed/spraying. - Onsite above ground storage tank on 467 Puhinui Road. - Potential above ground storage tank in locked gated area on Campana Road easement owned by third party (Channel Infrastructure NZ). - Asbestos containing material (ACM) structures. - Workshop. - Outside storage of machinery and parts - Small burn pit.

3 HISTORICAL SITE USE

3.1 Historical Aerials

Babbage has reviewed historic aerial photographs dating back to 1940 held on the Retrolens website[7] and AC GeoMaps. A summary of selected historic aerial photography is presented in **Table 4**, and the historical aerial photographs are shown in Appendix B.

Table 4. Summary of historical aerial photographs.

Year	Site	Surrounding land use
1940	Most of the site appears to be used for pastoral purposes. At 467 Puhinui Road there appears to be a residential dwelling at the south- eastern end of the site. At 485 Puhinui Road there appears to be two residential dwellings at the southern end of the site.	The site was surrounded by mostly pastoral land use with scattered horticultural land use. There are some scattered residential properties. Campana and Puhinui Road are present.
1959	The site still appears to be used mostly for pastoral purposes. A structure is now present at the northern tip of 467 Puhinui Road and the western boundary. At 485 Puhinui Road there is a structure in the centre of the property with dividing walls. A channel appears to cross the western boundary of 10 Campana Road.	No significant changes to the surrounding area.
1972	Most of 485 Puhinui Road appears to be being used for horticulture land use with the construction of some structures in the centre of the property. The southwestern corner of 11 Campana Road and the western half of 5 Campana Road appear to be used for horticultural practices. The southern dwelling on 467 Puhinui Road has been demolished.	There has been an increase in horticultural land use in the surrounding land as well as an increase in residential properties.

[7] Local Government Geospatial Alliance 13 November 2023. Retrolens Historic Image Resource. Retrieved from http://retrolens.nz/

1980	5, 10 and 11 Campana Road as well as 485 Puhinui Road appear to be used for horticultural purposes. Several structures appear in the southeastern corner of 10 Campana Road. 467 Puhinui Road now has a circular track.	There is now a cemetery east of the site. There is also an increase in horticultural land use, but the majority is still pastoral land use.
1996	At 11 Campana Road several greenhouses have been constructed on the western boundary of the site and a new structure on the southwestern corner. There are a couple more structures at the northern tip of 467 Puhinui Road.	There is an increase in horticultural land use in surrounding area,
2008	At 5 Campana Road there now appears to be a commercial structure. There appears to be some earth works occurring to north of the structure. The structure towards the centre of 485 Puhinui Road appears to be used for a commercial activity. 467 Puhinui Road also appears to be used as some form of commercial activity.	No significant changes apparent in surrounding area.
2017	There are now some structures in the centre of 10 Campana Road. There appears to be several small orchards along the eastern boundary of 11 Campana Road. 5 Campana Road has a new structure on northern boundary in the centre of the site with a square pond nearby.	The cemetery has further developed. No other significant changes apparent in surrounding area.
2023	The commercial activity, which appears to be a workshop, at 467 Puhinui Road has expanded to cover half the property. The two dwellings and cluster of commercial structures at 485 Puhinui Road have been demolished and removed from site.	There appears to be some development to the south of the site and south of the cemetery

	The building at 5 Campana Road appears to now be a residential property with a greenhouse.	

A site contamination information request was received from AC on 21 November 2023, and the response is provided in Appendix C. The AC response is summarised below:

- Council records indicate this site has possibly been subjected to the following HAIL activities:
  - HAIL Item (A6) – Fertiliser manufacture or bulk storage
  - HAIL Item (A10)- Persistent pesticide bulk storage or use including sport turfs, market gardens, orchards, glass houses or spray sheds.
  - HAIL Item (A17)- Storage tanks or drums for fuel, chemicals, or liquid waste.
  - HAIL Item (F4)- Motor vehicle workshops
  - HAIL Item (G6) -Waste recycling or waste or wastewater treatment.
- Aerial images dated 1996 indicate that 5 Campana Road, 10 Campana Road, 11 Campana Road, and 485 Puhinui Road have been subject to historical horticultural and market garden activities which may include the utilisation of persistent pesticides.
- Records indicate that 485 Puhinui Road is utilised as a Society of Prevention of Animal Cruelty (SPCA) centre. Consent conditions indicate that the site held/holds hazardous waste. The site also has its own wastewater treatment and disposal system including two 10,000L settlement tanks and a permit to discharge 15,000L/day of treated wastewater to land. Treatment system is Innoflow Advantex AX200.
- A garage/workshop was permitted at 10 Campana Road in 1977.
- A fertilizer drying room was permitted at 467 Puhinui Road in 1968.
- Council records indicate the installation of four bores within 200 m of the site for irrigation purposes.

3.2 Landowner Interviews

Babbage gathered the following information from the landowners of the five properties within the site boundary.

Table 5- Landowner interviews

Address	Response
467 Puhinui Road Adam Cato	• Previous land use is believed to be agricultural. • A few outbuildings have been removed and disposed at landfill sometime around 2020. • An old farmhouse and a couple of sheds remain onsite. • Diesel tank (above ground storage) onsite with proprietary bund. • Slurry ponds on site are used to dry out excavated material/slurry generated from tunnelling projects. Tunnelling projects occur through natural soils at depth. The material is left to dry out for a week or two and is then reloaded back onto a truck and disposed of at Dirtworks disposal facility in Waimauku. • Hazardous substance registers and risk assessment was provided.
485 Puhinui Road SPCA	• Has a detailed site investigation (DSI) and site management plan (SAP) for the property as part of a previous investigation. • ACM structures have been removed from site.
5 Campana Road Francie Perry	• The property has been used for horticultural purposes (strawberry nursery) since 2008. • Pesticide mixing onsite located at the eastern end of the warehouse. • There was no building on the property prior to purchase. • Chemicals applied via motorised knapsack. • Chemical diary provided dating back to 2005. A consent for the wastewater treatment system was also provided. Both are attached in Appendix D • There is a wastewater system located north of the packing warehouse which is used for effluent discharge for the packing warehouse (now steel distributor). • The domestic wastewater feeds into a surface mounted dripline irrigations which is mulched and planted. The wastewater is treated

	using a Reflection Treatment Systems Ltd recirculating sand filter. No chemical treatment listed on the information provided. • Wastewater from the fruit washing did discharge to land via a sprinkler system and was treated with HarvestCide Granules. A Safety Data Sheet (SDS) of this was provided and is attached in Appendix D. Since the warehouse is no longer for packing fruit this is no longer operational. • The pond behind the residential property is a stormwater settlement pond to catch overflow from flooding. This has not occurred since the steel distributor has been on site. • Current commercial structure is being rented by a steel distributor (storage) but was previously a strawberry packing house. There is no fuel storage onsite and have a refuelling truck that is called out as needed.
11 Campana Road Doug Anderson	• The property was previously used for viticulture (growing grape root stock). • One structure was present at time of purchase but have built various tunnel houses (type of green house) over 35 years on site. Two fibreglass greenhouses have been demolished and disposed around 1989 and disposed to Auckland landfills. • The property has continually been cropped since 1989, primarily salad greens. • There is a pesticide mixing shed onsite next to the spray locker. • The property has been cultivated via rotary hoes, periodically ripped to a depth of 600mm. • No fuel storage as a part of the operation and have a refuelling truck that is called out as needed. • Chemical list (pesticides) was provided.
10 and 12 Campana Road Mark Goodwin	• There are two dwellings on the property which were there prior to purchase • There is a pesticide mixing station on the site.

	• A potential hotspot for contamination is located where the spray tank filling station is.

3.3 Previous Investigations

Table 6- Previous investigations

Location	Investigation	Findings
485 Puhinui Road	2022 Site Contaminated Land Assessment for SPCA[8]	There were exceedances of the NESCS Soil Contaminant Standard (SCS) for lead and arsenic above the residential land use criteria in the proposed development area. There were exceedances of zinc above the Auckland Unitary Plan permitted activity (AUP PA) criteria[9]. Asbestos was detected within the soil above the New Zealand Guidelines for Assessing and Managing Asbestos in Soil (NZGAMAS)[10] human health soil guideline values. Soil sample results outside of proposed developed area were below the NESCS criteria for commercial/ industrial land use. According to the DSI ACM structures were in the process of being demolished in 2020 and almost completely gone in 2022.

[8] Tonkin and Taylor 2022. Contaminated Land Assessment prepared for the Society for the Prevention of Animal Cruelty (SPCA), November 2022, Job #1013178 v2

[9] Auckland Council 2016. Auckland Unitary Plan Chapter E30.6.1.4 permitted activity soil acceptance criteria

[10] Building Research Association of New Zealand (BRANZ) 2017. New Zealand Guidelines for Assessing and Managing Asbestos in Soil

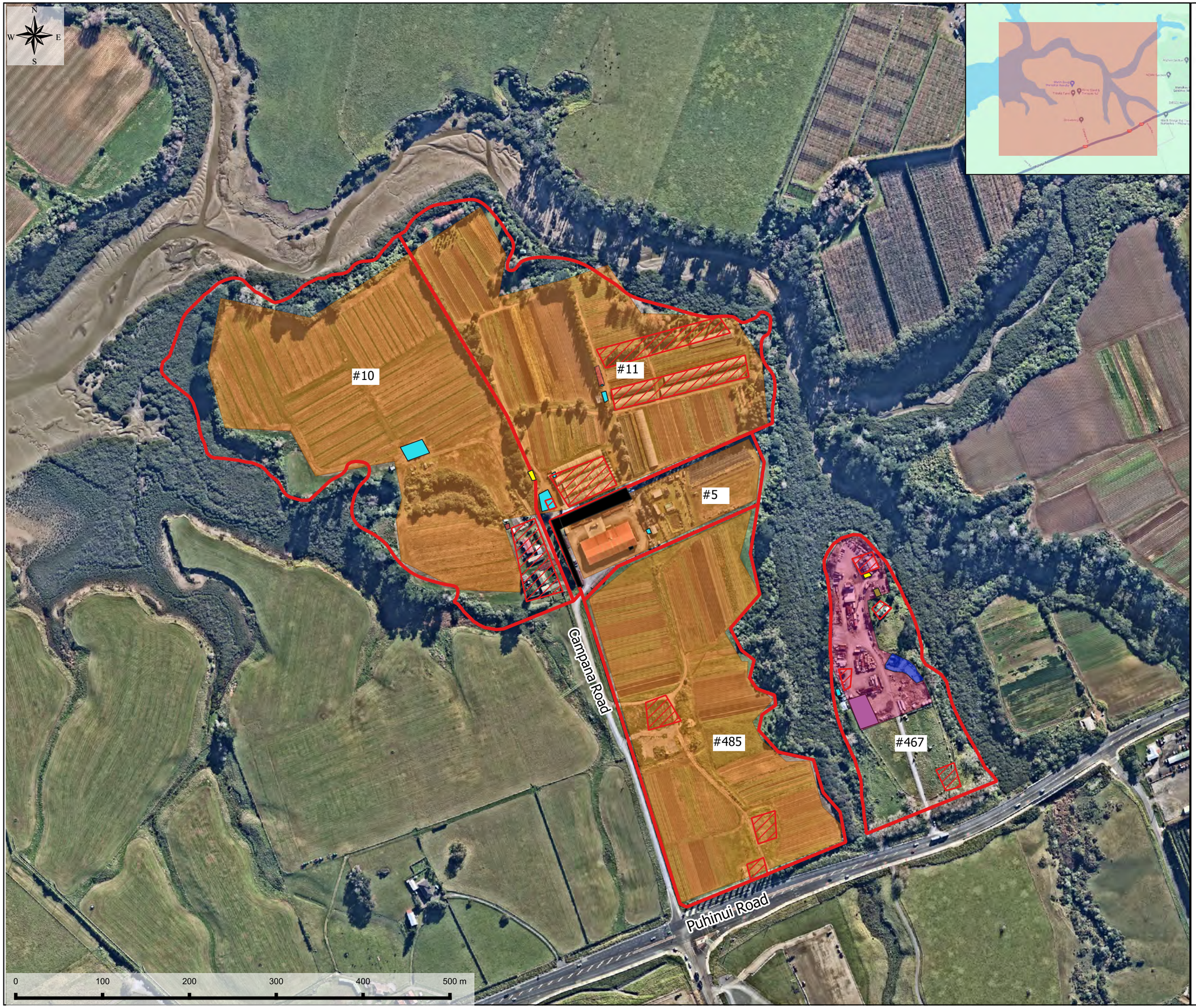
4 POTENTIAL FOR CONTAMINATION

Based on review of historical aerial photographs and AC records, it is concluded that the site has been subjected to an activity on the HAIL The HAIL activities identified are listed below:

Table 7- HAIL activities

HAIL Category	Description	Location
HAIL Item (A6)	Fertiliser manufacture or bulk storage associated with AC report of a fertiliser drying room.	ormer drying room on 467 Puhinui Road.
HAIL Item (A10)	Persistent pesticide bulk storage or use associated with current/former market gardens, orchards, and chemical storage areas.	5 Campana Road, 10 Campana Road, 11 Campana Road, 467 Puhinui Road, and 485 Puhinui Road.
HAIL Item (A17)	Storage of tanks or drums for fuel, chemicals or liquid waste associated with above and below ground storage.	Easement between 10 and 11 Campana Road associated with potential third party owned above ground storage tank (within locked gated area). 467 Puhinui Road associated with above ground storage tank.
HAIL Item (E1)	Asbestos products manufacture or disposal, including sites with buildings containing asbestos products know to be in a deteriorated condition.	Potential deteriorated ACM on buildings/structures built before 1999 on 10 and 12 Campana Road, 11 Campana Road, 485 Puhinui Road, and 467 Puhinui Road.
HAIL Item (F4)	Motor vehicle workshop associated with civil engineering company and previous workshop report by AC.	10 Campana Road and 467 Puhinui Road.
HAIL Item (G5)	Waste disposal to land associated with slurry identified on site.	Soil drying ponds on 467 Campana Road.

HAIL Item (G6)	Waste recycling or waste or wastewater treatment associated with washing fruit from the former packhouse (process water) and domestic wastewater.	5 Campana Road
HAIL Item (I)	Burn pit	10 Campana Road
	Uncharacterised fill associated with stockpiles.	467 Puhinui Road



Babbage

Babbage Consultants Limited
Level 4, 68 Beach Road, Auckland 1010
PO Box 2027, Shortland Street
Auckland 1140, New Zealand
T 09 379 9980 F 09 377 1170
E admin@babbage.co.nz www.babbage.co.nz

CLIENT / PROJECT

Capstone Projects Limited

Campana Road, Wiri, Auckland

MAP TITLE

Site location showing HAIL activities.

MAP REVISIONS

12/12/2023 Initial version by CL.

Legend

- Site Boundary

HAIL (A10)
- Horticultural Activity
- Chemical mixing and storage

HAIL (A17)
- Above ground fuel storage

HAIL (A6)
- Potential Fertiliser drying room

HAIL (E1)
- ACM Containing structures

HAIL (F4)
- Workshop

HAIL (G5)
- Slurry

HAIL (G6)
- Wastewater treatment and disposal

HAIL (I)
- Burnpit
- Uncharacterised Fill

NOTES
Aerial Images: LINZ Basemap

DISCLAIMER:
This map/plan is not an engineering draft.
This map/plan is illustrative only and all information should be independently verified on site before taking any action.

SCALE

1:4,000 @ A3

MAP NO.

FIGURE-01

5 RISK ASSESSMENT

A conceptual site model (CSM) for the site has been developed to assess risk. For a contaminant to present a risk to human health or the environment, the following components are required to be present and connected:

- Sources/Contaminants – the known and potential sources of contamination and contaminants of concern.
- Pathways – likely and complete exposure pathways by which the identified receptors could be exposed to the contaminants, under current or known proposed future land use.
- Receptors – human and ecological receptors.

Based on the data for the site, the potential source, pathway, and receptor linkages are presented in **Table 8**.

Table 8. Conceptual site model.

Source	Exposure pathway	Potential receptor	Acceptable risk?
Horticultural Activity: Metals, organophosphates (OPPs), and organochlorine pesticides (OCPs)	Direct contact. Ingestion of soil. Inhalation of airborne dust. Off-site discharge.	Site re-development workers. Current site users. Future site users. Surrounding residents. Receiving environment (in surrounds and at disposal facility).	**Unlikely** Due to the area of application and the duration of activity (multiple decades) there is more likely than not to be a risk to human health or the environment. Soil sampling will be required to determine actual risk.
Chemical storage and mixing- Metals, OPPs and OCPs	Direct contact. Ingestion of soil. Inhalation of airborne dust. Off-site discharge.	Site re-development workers. Current site users. Future site users. Surrounding residents. Receiving environment (in surrounds and at disposal facility).	**Unlikely** Due to the duration of activity (multiple decades) and dedicated storage/mixing areas, there is more likely than not a risk to human health and/or the environment. Soil sampling will be required to determine actual risk.

Uncharacterised fill (stockpiled)- Metals, asbestos, OPPs, OCPs and polycyclic aromatic hydrocarbons (PAHs)	Direct contact. Ingestion of soil. Inhalation of airborne dust. Off-site discharge.	Site re-development workers. Current site users. Future site users. Surrounding residents. Receiving environment (in surrounds and at disposal facility).	**Unlikely** Due to unknown nature of the fill, there is more likely than not a potential risk to human health and/or the environment. Soil sampling will be required to determine actual risk.
Spills to ground associated with workshop- PAHs; Hydrocarbons; Benzene, toluene, ethylbenzene, and total xylene (BTEX), solvents.	Direct contact. Ingestion of soil. Inhalation of airborne dust. Off-site discharge.	Site re-development workers. Current site users. Future site users. Surrounding residents. Receiving environment (in surrounds and at disposal facility).	**Unlikely** Due to the duration of activity (multiple decades) and likelihood of spills to ground associated with the workshops it is more likely than not that there could be a risk to human health or the surround environment. Soil sampling will be required to determine actual risk.
Slurry ponds- Metals and PAHs	Direct contact. Ingestion of soil. Inhalation of airborne dust. Off-site discharge.	Site re-development workers. Current site users. Future site users. Surrounding residents. Receiving environment (in surrounds and at disposal facility).	**Unlikely** According to interviews the ponds are disposed as cleanfill, however due to lack of knowledge on where the material has originated from there is still potentially a risk to human health. Soil sampling will be required to determine actual risk.
Fruit process water discharge - OCPs and OPPs from washed fruit	Direct contact. Ingestion of soil. Inhalation of airborne dust. Off-site discharge.	Site re-development workers. Current site users. Future site users. Surrounding residents. Receiving environment (in surrounds and at disposal facility).	**Unlikely** According to interviews the fruit process water is treated with a food safe product (HarvestCide) however due to lack of knowledge on potential chemicals on fruit washed there is still potentially a risk to human health. Soil

			sampling will be required to determine actual risk.
Domestic Wastewater- Nitrogen	Direct contact. Ingestion of soil. Inhalation of airborne dust. Off-site discharge.	Site re-development workers. Current site users. Future site users. Surrounding residents. Receiving environment (in surrounds and at disposal facility).	**Unlikely:** While the domestic wastewater has been treated there is still potentially a risk to human health. Soil sampling will be required to determine actual risk.
Fuel storage- PAHs, Hydrocarbons, BTEX.	Direct contact. Ingestion of soil. Inhalation of airborne dust. Off-site discharge.	Site re-development workers. Current site users. Future site users. Surrounding residents. Receiving environment (in surrounds and at disposal facility).	Above ground storage tank 467 Puhinui Road: **Likely** Due to a lack of staining around the fuel storage and proprietary bund it is unlikely to have a risk to human health.
			Above ground storage tank on easement 10 and 11 Campana Road: **Unlikely** Due to being unable to access the area the presence of above ground tank is unknows.
Asbestos in structures	Direct contact. Inhalation of airborne dust.	Site re-development workers. Current site users. Future site users. Surrounding residents. Receiving environment (in surrounds and at disposal facility).	**Likely** If structures have undergone regular maintenance and upkeep, it is unlikely to have a risk to human health.
Burn pit- Metals and PAHs	Direct contact. Ingestion of soil. Inhalation of airborne dust. Off-site discharge.	Site re-development workers. Current site users. Future site users. Surrounding residents.	**Likely-** If the burn pit (to a depth of 0.5m) is disposed to the appropriate facility it is

		Receiving environment (in surrounds and at disposal facility).	unlikely to have a risk to human health.

Based on the source, pathway and receptor linkage, metals, asbestos, PAHs, OPPs, OCPs, and nitrogen are likely to have the potential to pose a risk to the health of future land users and/or the environment.

Pursuant to regulation 8(4)(b) of the NESCS, it is likely that there will be a risk to human health if the activity is done to the piece of land, therefore the is not permitted.

6 CONCLUSIONS

Based on the PSI, Babbage concludes the following:

1 The site history review indicates that the site has been subjected to more than one activity on the HAIL.

2 The site has potential contaminants in particular metals, OCPs, and OPPs from horticultural activity and chemical mixing/storage; asbestos from existing structures; metals, OCPs and PAHs from uncharacterised fill and burn pits; PAHs, BTEX and hydrocarbons from workshops and fuel storage; and nitrogen from domestic wastewater treatment

3 The conceptual site model indicates that there is a source and pathway link to human / ecological receptors.

4 Pursuant to regulation 8(4)(b) of the NESCS, it is likely that there will be a risk to human health if the activity is done to the piece of land, therefore the is not permitted.

APPLICABILITY AND LIMITATIONS

Restrictions of Intended Purpose

This report has been prepared solely for the benefit of Campana Landowners Consortium c/ Capstone Projects Limited. as our client with respect to the brief. The reliance by other parties on the information or opinions contained in the report shall, without our prior review and agreement in writing, be at such party's sole risk.

Legal Interpretation

Opinions and judgements expressed herein are based on our understanding and interpretation of current regulatory standards, and should not be construed as legal opinions. Where opinions or judgements are to be relied on they should be independently verified with appropriate legal advice.

Maps and Images

All maps, plans, and figures included in this report are indicative only and are not to be used or interpreted as engineering drafts. Do not scale any of the maps, plans or figures in this report. Any information shown here on maps, plans and figures should be independently verified on site before taking any action. Sources for map and plan compositions include LINZ Data and Map Services and local council GIS services. For further details regarding any maps, plans or figures in this report, please contact Babbage Consultants Limited.

Reliability of Investigation

Babbage has performed the services for this project in accordance with the standard agreement for consulting services and current professional standards for environmental site assessment. No guarantees are either expressed or implied.

Recommendations and opinions in this report are based on discrete sampling data. The nature and continuity of matrix sampled away from the sampling points are inferred and it must be appreciated that actual conditions could vary from the assumed model.

There is no investigation that is thorough enough to preclude the presence of materials at the site that presently, or in the future, may be considered hazardous. Because regulatory evaluation criteria are constantly changing, concentrations of contaminants present and considered to be acceptable may in the future become subject to different regulatory standards, which cause them to become unacceptable and require further remediation for this site to be suitable for the existing or proposed land use activities.

Appendix A

Site Photographs

Client name:	Site location:	Photo dates:
Capstone Projects Limited	**Campana Road and surrounding properties**	**14 November 2023**

Photo No. ***1.***	
Direction Photo Taken: East	
Description: Freska Farm horticultural activity at 11 Campana Road.	
Photo No. ***2.***	
Direction Photo Taken: South	
Description: Horticultural plant storage shed at 11 Campana Road.	

Client name:	Site location:	Photo dates:
Capstone Projects Limited	**Campana Road and surrounding properties**	**14 November 2023**

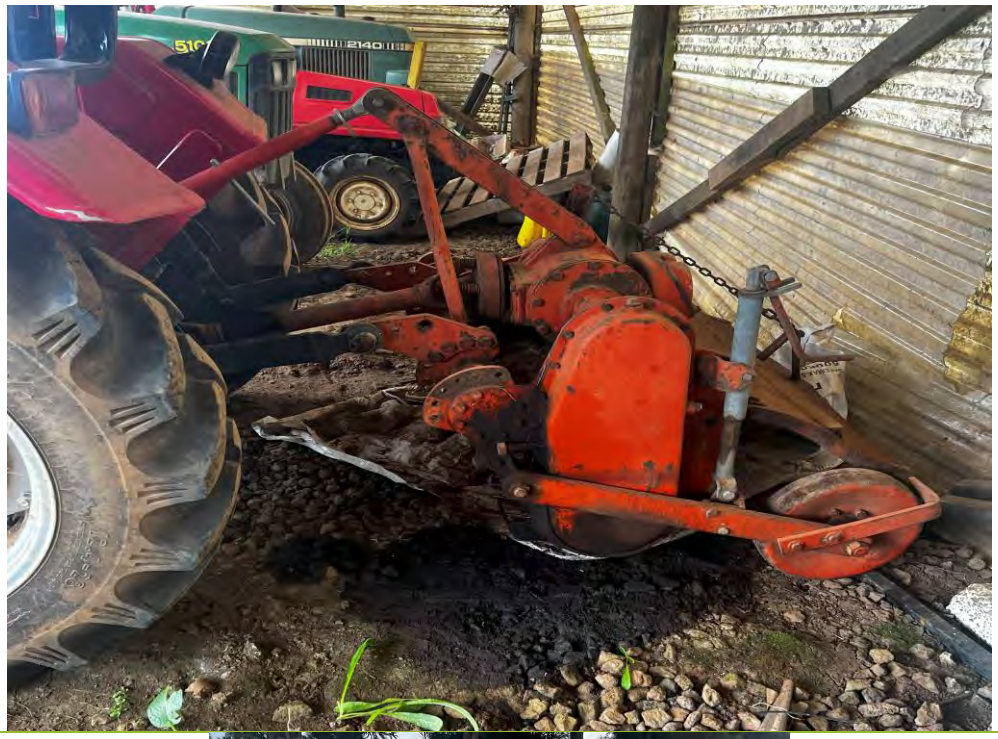
Photo No.	***3.***
Direction Photo Taken: N/A	
Description: Example of leak within vehicle storage shed at 11 Campana Road.	

Photo No.	***4.***
Direction Photo Taken: North	
Description: Chemical Storage shed at 11 Campana Road.	

Client name:	Site location:	Photo dates:
Capstone Projects Limited	Campana Road and surrounding properties	14 November 2023

Photo No. ***5.***	
Direction Photo Taken: South	
Description: Chemical mixing shed at 11 Campana Road.	

Photo No. ***6.***	
Direction Photo Taken: North	
Description: Potential above ground fuel storage in locked gated shed on the easement between 10 and 11 Campana	

Client name:	Site location:	Photo dates:
Capstone Projects Limited	Campana Road and surrounding properties	14 November 2023

Photo No. ***7.***	
Direction Photo Taken: East	
Description: Orchard at 11 Campana Road.	

Photo No. ***8.***	
Direction Photo Taken: East	
Description: Greenhouse filled with crops at 11 Campana Road.	

Client name:	Site location:	Photo dates:
Capstone Projects Limited	**Campana Road and surrounding properties**	**14 November 2023**

Photo No. ***9.***	
Direction Photo Taken: East	
Description: Alrite Steel services at 5 Campana Road.	
Photo No. ***10.***	
Direction Photo Taken: South	
Description: Greenhouse in the centre of 5 Campana Road.	

Client name:	Site location:	Photo dates:
Capstone Projects Limited	Campana Road and surrounding properties	14 November 2023

Photo No. ***11.***	
Direction Photo Taken: N/A	
Description: Floor of greenhouse showing separation by concrete.	
Photo No. ***12.***	
Direction Photo Taken: North	
Description: Back property of 5 Campana Road. Visible greenhouse and flood discharge pond.	

Client name:	Site location:	Photo dates:
Capstone Projects Limited	Campana Road and surrounding properties	14 November 2023

Photo No. ***13.***	
Direction Photo Taken: South	
Description: Horticultural and Viticul-tural activity at back of 5 Campana Road.	
Photo No. ***14.***	
Direction Photo Taken: South	
Description: Horticultural activity at 485 Puhinui Road.	

Client name:	Site location:	Photo dates:
Capstone Projects Limited	Campana Road and surrounding properties	14 November 2023

Photo No.	***15.***
Direction Photo Taken: East	
Description: Chemical storage/mixing shed at 10 Campana Road.	

Photo No.	***16.***
Direction Photo Taken: North	
Description: Horticultural activity at 10 Campana Road.	

Client name:	Site location:	Photo dates:
Capstone Projects Limited	**Campana Road and surrounding properties**	**14 November 2023**

Photo No.	***17.***
Direction Photo Taken: West	
Description: Burn pit at 10 Campana Road with horticultural activity be-yond.	

Photo No.	***18.***
Direction Photo Taken: North	
Description: Dwelling at 10 Campana Road.	

Client name:	Site location:	Photo dates:
Capstone Projects Limited	Campana Road and surrounding properties	14 November 2023

Photo No.	***19.***
Direction Photo Taken: East	
Description: Showing above ground fuel storage and truck wash chemicals stored at 467 Puhinui Road.	

Photo No.	***20.***
Direction Photo Taken: N/A	
Description: Outside storage of metals, plastics, and wood at 467 Puhinui Road.	

Client name:	Site location:	Photo dates:
Capstone Projects Limited	**Campana Road and surrounding properties**	**14 November 2023**

Photo No. ***21.***	
Direction Photo Taken: North	
Description: Potential ACM dwelling at 467 Puhinui Road.	
Photo No. ***22.***	
Direction Photo Taken South:	
Description: Slurry ponds to dry out excavated offsite material at 467 Puhinui Road.	

Client name:	Site location:	Photo dates:
Capstone Projects Limited	**Campana Road and surrounding properties**	**14 November 2023**

Photo No. ***23.***	
Direction Photo Taken: West	
Description: Outdoor storage of unidentifiable chemicals at 467 Puhinui Road.	
Photo No. ***24.***	
Direction Photo Taken: South	
Description: Stockpiled material at 467 Puhinui Road.	

Appendix B

Selected Historical Aerials


N
W
E
S
Babbage
0 100 200 300 400 500 m
Date: 1940 Aerial
Source: AC Geomaps


N
W
E
S
Babbage
0 100 200 300 400 500 m
Date: 1959 Aerial
Source: AC Geomaps


N
W
E
S
Babbage
0 100 200 300 400 500 m
Date: 1972 Aerial
Source: Retrolens


N
W
E
S
Babbage
0 100 200 300 400 500 m
Date: 1980 Aerial
Source: Retrolens


N
W
E
S
Babbage
0 100 200 300 400 500 m
Date: 1996 Aerial
Source: AC Geomaps


N
W
E
S
Babbage
0 100 200 300 400 500 m
Date: 2008 Aerial
Source: AC Geomaps


N
W
E
S
Babbage
0 100 200 300 400 500 m
Date: 2017 Aerial
Source: AC Geomaps


N
W
E
S
Babbage
0 100 200 300 400 500 m
Date: 2023 Aerial
Source: AC Geomaps

Appendix C

Auckland Council Contamination Enquiry

21/11/2023

Babbage Consultants Limited
PO Box 2027 Shortland Street
Auckland

Attention: Aditi Borker

Dear Aditi

Site Contamination Enquiry – *437 Puhinui Road, Wiri and Adjacent Sites*

This letter is in response to your enquiry requesting available site contamination information within Auckland Council records for the above site. Please note this report does not constitute a site investigation report; such reports are required to be prepared by a (third-party) Suitably Qualified and Experienced Practitioner.

The following details are based on information available to the Contamination, Air & Noise Team in the Resource Consent Department. The details provided may be from former regional council information, as well as property information held by the former district/city councils. For completeness the relevant property file should also be requested to obtain all historical records and reports via 09 3010101 or online at:

https://www.aucklandcouncil.govt.nz/buying-property/order-property-report/Pages/order-property-file.aspx.

1. Hazardous Activities and Industries List (HAIL) Information

This list published by the Ministry for the Environment (MfE) comprises activities and industries that are considered likely to cause land contamination as a result of hazardous substance use, storage, and/or disposal.

Council's records indicate this site has possibly been subject to the following activity that fall within the HAIL:

- HAIL Item (A6) - Fertiliser manufacture or bulk storage.
- HAIL Item (A10) - Persistent pesticide bulk storage or use including sport turfs, market gardens, orchards, glass houses or spray sheds.
- HAIL Item (A17) - Storage tanks or drums for fuel, chemicals or liquid waste.
- HAIL Item (F4) - Motor vehicle workshops.
- HAIL Item (G6) - Waste recycling or waste or wastewater treatment.

The Aerial image below dated 1996 indicates the following sites have been subject to historical horticultural and market garden activities which may include the utilisation of persistent pesticides (***11 Campana Road Papatoetoe, 5 Campana Road, 485 Puhinui Road Papatoetoe. 437 Puhiunui Road, 10 Campana Road*** (*Lot 3 DP 72111*))

A Resource consent evaluation dated 2008 indicates the site ***5 Campana Road***, has utilised a wastewater treatment/ disposal system onsite for a packhouse. The peak discharge flow during the picking/packing season was indicated to be 28000L domestic wastewater per day.

Records indicate the site ***485 Puhinui Road*** is utilised as an SPCA centre. Consent conditions indicate the site has held/holds hazardous goods onsite in association with the rescue centre. It was also indicated the site has its own wastewater treatment and disposal system including two 10,000L settlement tanks and has a permit for the *discharge of 15,000L/day of treated wastewater to land from operation of SPCA Animal Centre. Treatment system Innoflow Advantex AX200.*

An application for a garage/workshop on the site ***10 Campana Road*** (Lot 3 DP 71211) was permitted in 1977.

An application for a fertilizer drying room on the site ***467 Puhinui Road*** was permitted and issued in 1968.

There is no contamination information held within Council's records for the site ***507 Puhinui Road***.

Please note:

- *If you are demolishing any building that may have asbestos containing materials (ACM) in it, you have obligations under the Health and Safety at Work (Asbestos) Regulations 2016 for the management and removal of asbestos, including the need to engage a Competent Asbestos Surveyor to confirm the presence or absence of any ACM.*
- *Paints used on external parts of properties up until the mid-1970's routinely contained lead, a poison and a persistent environmental pollutant. You are advised to ensure that soils affected by old, peeling or flaking paint are assessed in relation to the proposed use of the property, including high risk use by young children.*

2. Consents and Incidents Information (200m radius of the selected site)

The Council database was searched for records of the following activities within approximately 200 metres of the site and results are displayed in Figure 1 below:

- Pollution Incidents (including air discharges, oil or diesel spills)
- Bores
- Contaminated site and air discharges, and industrial trade process consents
- Closed Landfills
- Air quality permitted activities
- Identified HAIL activities

Figure 1: Selected Consents, Incidents and HAIL activities within approximately 200m of the subject site

Legend:

Relevant details of any pollution incidents and consents and HAIL activities are appended to this letter (Attachment A). Please refer to the column titled 'Property Address' on the spreadsheet to aid in identifying corresponding data on the map.

For any identified HAIL sites, please refer to the tab "HAIL activities" for more information (Column C and D include HAIL activity details where these are available).

Please note:

The HAIL activity hatching in Figure 1 only reflects whether a site has been identified as a HAIL site (both verified and non-verified) by the Council and the type of HAIL associated with the site. This does not confirm whether the site has been formally investigated or the contamination status of the property (e.g. contaminated, remediated etc.). Additionally, due to limitations within Council's records, the specific HAIL activity is not included in the data for all properties. For further information on any of

these known HAIL sites, a subsequent site contamination enquiry can be lodged for the specific property (up to 5 adjacent properties can be covered in one request).

While the Auckland Council has carried out the above 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.

If you wish to clarify anything in this letter that relates to this site, please contact contaminatedsites@aucklandcouncil.govt.nz. Any follow up requests for information on other sites must go through the online order process.

Should you wish to request any of the files referenced above and/or listed in the attached spreadsheet 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 the files will be available).

Please note Auckland Council cost recovers officer's time for all site enquiries. As such an invoice for $128 for the time involved in this enquiry will follow shortly.

Yours Sincerely,

Contamination, Air and Noise Team
Specialist Unit | Resource Consents
Auckland Council

ONSENT_NUMBE	ILE_REFERENC	ACTIVITY	CONSENT_HOLDER	CONSENT_STATUS	GRANTED_DATE	REVIEW_DATE	EXPIRY_DATE	ROCESSING_OFFICE
40143	23014	Take	Fresh Herb and Salad Company Ltd	Issued	20120528	20140630	20370531	_Nick Hazard
41023	21783	Stream Work	Watercare Services Limited	Issued	20130214	20110731	20450903	Aimee Simons
40717	23305	Take	Subhash Chander & Nishi Chander	Issued	20130422	20170630	20370531	Reginald Samuel
64	AG660064	Take	R E BELL	Cancelled	19690408			
3283	AG812832	Take	PERFECTION PARTNERSHIP	Replaced	19820216		19901231	
3452	AG823045	Take	LAM & SONS	Cancelled	19820623		19901231	
6688	AG886530	Take	MBH REESBY	Replaced	19890828		19951231	
7634	AG907540	Take	NORAH NAOMI TRUST	Expired	19910712		19970531	
10485	14/17/247	Bore	MBH REESBY	Expired	19881212		19891215	Andrew Millar
12771	H949666	Coastal Structure	Z Transport Agency Attention: Tammy Muharer	Issued	19940826		20290810	_Quentin Smith
14307	AG956530	Take	Freska Produce Limited	Replaced	19970317	20021231	20071231	_Jonathan Moores
14075	C512-12-1616	Bore	MANUKAU CONSULTANTS	Expired	19950815		19960815	_Gillian Crowcroft
34250	6530	Take	Freska Produce Limited	Issued	20071109	20121231	20221231	_Karyn Sands
34734	20017	Stormwater Discharge	Perry's Berrys Limited	Issued	20071126		20411231	Mike Dunphy
34151	19858	Coastal Structure	Watercare Services Limited	Issued	20100903	20110730	20450903	_Euan Williams
36081	20748	Wastewater Discharge	Perry's Berrys Limited	Issued	20080820	20090331	20231231	_Nicholas Browne
36710	21177	Stream Work	Auckland Council	Expired	20091103	20100731	20140430	_John Kennedy
36350	C512-12-4296	Bore	Perry's Berrys Limited	Expired	20080930		20091002	Reginald Samuel
36351	20917	Take	Perry's Berrys Limited	Issued	20090828	20121201	20221231	Reginald Samuel

PURPOSE
To authorise the taking and use of groundwater from the Manukau Kaawa aquifer for irrigation of 7 ha of market garden baby lettuce crop.
To authorise the construction of pipe crossings over and in watercourses and to construct discharge outfalls in watercourses
To take up to 175m3/day and 10,000 m3/year of groundwater from the Manukau Kaawa aquifer for irrigation of 5 hectares of market garden.
Take groundwater for cowshed and troughs
TO TAKE GROUNDWATER FROM A BORE FOR HORTICULTURE~IRRIGATION~~~
To take from a Bore up to 280 cmpd for - Orchards and Market Gardening
TO TAKE GROUND WATER FOR IRRIGATION OF UP TO~8 HECTARES OF MARKET GARDEN AND SHADEHOUSE CROPS~~~
TO TAKE GROUNDWATER FOR IRRIGATION OF A 6.0 HECTARE~ORCHARD.~~~
Authorize the construction of a bore for the extraction of groundwater for irrigation requirements.
To construct and use a bridge, to remove a culvert and reclamation material and to occupy land of the Crown for that purpose should such a consent be legally necessary.
TO TAKE GROUNDWATER FOR IRRIGATION OF UP TO 7 HA MARKET GARDEN CROPS AND 1 HA GLASS HOUSE CROPS.
Authorize the construction of a bore for the extraction of groundwater for stock and domestic supply
To authorise the taking and use of groundwater from the Manukau Waitemata Sandstone aquifer, for irrigation of up to 8.12 hectares of market garden and greenhouse crops in accordance with Section 14 of the Resource Management Act 1991.
To authorise the diversion and discharge of stormwater from an impervious area of 4592m2 associated with a packing-house in accordance with Sections 14 (1)(a) and 15 (1)(a)-(b) of the Resource Management Act 1991.
To authorise works in the CMA including the construction of a pipebridge over Waiokauri Creek tributary 2 and a trenched crossing of the Waiokauri Creek main channel, outfall structures, removal of mangroves and the associated occupation and use of these
To authorise the discharge of treated domestic wastewater from a strawberry packhouse to ground disposal in accordance with Section 15 of the Resource Management Act 1991.
To authorise approximately 0.44 hectares of earthworks associated with construction of a bridge and connecting carriageway.
To authorise the construction of one bore for irrigation and use in a pack house.
To authorise the taking and use of groundwater from the Manukau Waitemata Sandstone aquifer for irrigation of 0.5 hectare of strawberry nursery and use in a strawberry pack house in accordance with Section 14 of the Resource Management Act 1991.

WORKS_DESCRIPTION
A 100mm diameter, 52 metre deep Manukau Kaawa aquifer bore (ID 28655).
Deep well bore
A 100 MM DAIMETER BORE~~~~
A 150MM DIAMETER BORE LOCATED APPROX 100 METRES EAST~OF CAMPANA ROAD~~~
A 100MM DIAMETER BORE LOCATED APPROXIMATELY 50 METRES~SOUTH OF PUHINUI ROAD, PAPATOETOE.~~~
Construction of a 150mm dia. bore to approx. 230m depth and installation of steel casing to approx. 91m.
Road bridge
A 150 MM DIAMETER BORE LOCATED APPROXIMATELY 100 M EAST OF CAMPANA ROAD.
Construction of a 100mm dia. bore to approx. 250m depth and installation of PVC casing to approx. 90m.
WorksCatchment area- imperviousCatchment area- perviousDesign StandardSwaleBase width 0.8mBatters 3:1 (h:v)Depth 0.5mLength 162mGradient 1%4,592m2n/a75% TSS removal
4.The key system components are at least the following dimensions and standards:(a)Wastewater Treatment Systemo (1x) 10,000 litre flow balancing tank;o (1x) 5,100 litre septic tank;o (1x) Zoeller solids discharge filter; (1x) 5,100 litre recirc
The construction of a 104mm diameter bore to an approximate depth of 250m. Installation of PN9 PVC casing material to an approximate depth of 90m. Proposed grouting to 30m.
A 100mm diameter bore 210m deep Waitemata aquifer bore located 100m east of Campana Road.

EASTING	NORTHING	ACTIVITY_ID	ACTIVITY_STATUS
1762179	5904187	20948	Occurring
1762856	5903820	21425	Completed
1762485	5903895	20971	Occurring
1763292	5903930	2294	
1763292	5903930	2291	
1763185	5904080	2287	NoLongerOccurring
1762417	5904147	2282	Occurring
1763292	5903930	2290	
1762417	5904147	313	Drilled
1762893	5903785	20534	Constructed
1762417	5904147	2282	Occurring
1761998	5903513	4878	Drilled
1762417	5904147	2282	Occurring
1762565	5904195	21766	Proposed
1761869	5904408	23095	Proposed
1762390	5904120	21065	Proposed
1763222	5904077	21354	Completed
1762450	5904080	23223	Drilled
1762450	5904080	20780	Occurring

ACTIVITY_DESCRIPTION
An application to take groundwater for irrigation purposes.
Change Appl # 41023 - Amend general condition 2 to reflect proposed works at 83 Thomas Rd, 70 Aspiring Ave, 283 Kirkbride Rd, 1 Ascot Rd, 99s mountain RdExisting Consent # 37810 - Construction, operation and maintenance of a new watermain extending from
An application to take groundwater for irrigation purposes.
For cowshed and troughs
To take from a Bore up to 280 cmpd for - Orchards and Market Gardening
A replacement groundwater take application to take up to 200 cubic metres per day and 20000 cubic metres per year of groundwater from a Manukau Waitemata sandstone aquifer bore for irrigation of 6 ha market garden and a 0.5ha glasshouse.
Construction of a 150mm dia. bore to approx. 230m depth and installation of steel casing to approx. 91m.
approximately 16 m x 8 m = 128 m2concrete bridge (Previously Bridge 1419)
A replacement groundwater take application to take up to 200 cubic metres per day and 20000 cubic metres per year of groundwater from a Manukau Waitemata sandstone aquifer bore for irrigation of 6 ha market garden and a 0.5ha glasshouse.
A replacement groundwater take application to take up to 200 cubic metres per day and 20000 cubic metres per year of groundwater from a Manukau Waitemata sandstone aquifer bore for irrigation of 6 ha market garden and a 0.5ha glasshouse.
To discharge stormwater from 4592 square metres of impervious area associated with the redevelopment of the Perrys Berry site including the construction of a packing shed, relocation of greenhouse, establising a planting nursery and includes subdivision i
Construction, operation and maintenance of a new watermain extending from Redoubt North Reservoir in Manukau Heights to Campbell Crescent in Epsom. Works include construction of a pipebridge over a tributary and trenched crossing of the Waiokauri Creek,
To discharge up to 2.8 cmpd from a pack house operation for up to 70 staff.
streamworks associated with the temporary installation of a culvert in Waokauri Creek.
To authorise the construction of one bore for irrigation and use in a pack house.
To take water for the irrigation of a strawberry plant nursery, a 1/2 ha strawberry greenhouse and a strawberry packhouse.

SITE_NAME	SITE_DESCRIPTION	DATE_CREATED	PROPERTY_ADDRESS	LOC_TYP	MONITORING_OFFICER
Fresh Herb & Salad	10 Campana Road	2/06/2017	10 Campana Road Papatoetoe Manukau	Point	Kerry Flynn
Watercare-Hunua No.4 Watermain	installation of bridge piles in the bed of a perm	2/06/2017	A 396 Redoubt Road Manukau Central Manukau	Point	Lachlan Ward
S & N Chander	485 Puhinui Rd, Manukau	2/06/2017	485 Puhinui Road Papatoetoe Manukau	Point	Kerry Flynn
		2/06/2017	420 Puhinui Rd West Manukau City	Point	
		2/06/2017	436 Puhinui Road Papatoetoe Manukau	Point	
		2/06/2017	431 PUHINUI RD PAPATOETOE Manukau City	Point	
Freska Produce	11 Campana Rd, Papatoetoe	2/06/2017	11 Campana Road Papatoetoe Manukau	Point	
		2/06/2017	436 Puhinui Road Papatoetoe Manukau	Point	
	11 CAMPANA ROAD, MANUKAU CITY,	2/06/2017		Point	
Bride Waiokauri Creek	F THE WAIOKAURI CREEK IN THE MANUKAU H/	2/06/2017	Bride Waiokauri Creek Puhinui Road Manukau Harbour MCC	Point	_Paul White
Freska Produce	11 Campana Rd, Papatoetoe	2/06/2017	11 Campana Road Papatoetoe Manukau	Point	_Naveen Kumar
Manukau Consultants	Nyllie Ltd 'Papahinui'Location from 1996 GPS s	2/06/2017	507 Puhinui Road Papatoetoe Manukau	Point	
Freska Produce	11 Campana Rd, Papatoetoe	2/06/2017	11 Campana Road Papatoetoe Manukau	Point	Kerry Flynn
Perrys Berries	5 Campana Rd	2/06/2017	5 Campana Road Papatoetoe Manukau	Point	Jos Fryer
Hunua No. 4 trunk water main	3km long starting from Redoubt North Reservo	2/06/2017	A 396 Redoubt Road Manukau Central Manukau	Point	_Paul White
Perrys Berrys Limited	5 Campana Road, Papatoetoe	2/06/2017	5 Campana Road Papatoetoe Manukau	Point	Jos Fryer
Manukau Memorial Gardens		2/06/2017	397 Puhinui Road Papatoetoe Manukau	Point	Lachlan Ward
Perry's Berrys Limited	5 Campana Road, Wiri.	2/06/2017	5 Campana Road Papatoetoe Manukau	Point	
Perry's Berrys	5 Campana Rd, Wiri	2/06/2017	5 Campana Road Papatoetoe Manukau	Point	Kerry Flynn

PREVIOUS_INSPECTION_DATE	NEXT_INSPECTION_DATE
Invalid Date	Invalid Date
Invalid Date	Invalid Date
Invalid Date	Invalid Date
Invalid Date	Invalid Date
Invalid Date	Invalid Date
Invalid Date	Invalid Date
Invalid Date	Invalid Date
Invalid Date	Invalid Date
Invalid Date	Invalid Date
Invalid Date	Invalid Date
5/02/2003	30/06/2012
10/12/2007	15/02/2008
Invalid Date	Invalid Date
4/12/2009	1/01/2011
7/10/2016	1/11/2016
Invalid Date	Invalid Date
4/04/2009	1/03/2014
Invalid Date	Invalid Date
19/03/2009	Invalid Date
4/12/2009	1/12/2011

Appendix D

Interview Documents

MULLINS Nursery and Elite - Planted 9 & 10.11.18	Nursery Elite mullins	Nursery Elite mullins	Nursery Elite mullins	Nursery Elite mullins	Nursery Elite mullins	Nursery Elite mullins	Nursery Elite mullins	Nursery Elite mullins	Nursery Elite mullins	Nursery Elite mullins	Nursery Elite	Nursery Elite	Nursery Elite	PRE LIFT NURSERY after rain	PRE LIFT NURSERY after rain	PRE LIFT NURSERY after rain	ELITE	ELITE	ELITE	PRE LIFT ELITE BULK			
SPRAY NO.	START	1	2	3	4	5	6	7	8 motor	9 motor	10a	10	11	12	13	14	13	14	15		12		15
DATE SPRAYED	26.10.20	15.11.20	31.10.19	22.11.19	8.12.19	24.12.19	23.2.20	19.2.20	28.2.20	15.3.20	13.4.17	1.4.20	22.4.20	06.05.20	15.5.17	21.5.17	16.06.15	01.07.15	23.07.15	24.07.15			
WATER USED	40	60	60	60	60	80 x 20	100	100	100	140	100	140	180	250	250	150	40	40	40		50		50
FUNGICIDES																							
FOSTONIC DIP											XXXX												
ZEBA DIP																							
ALTO																							
FOSTONIC SPRAY																							
BARRAK Bravo					XXXX			XXX													ALT/BOT		
PRISTINE				XXXX					ALT/BOT/LS														
CURATOR Octave																			LS/PM				
VALDIUS SYSTHANE 20EW			LS/PM			LS/PM											LS/B						
KOCIDE OPTI													PYTHIUM					PYTHIUM					
TALENDO																							
GOLDAZIM Prolific																							
SWITCH	xxx									XXX					XXXX	XXXX							
TARATEK														RHIZTONIA									
TELDOR																							
THIRAM 40F	xxx	Rabbits			Rabbits								PYTHIUM			PYTHIUM		PYTHIUM					
IPPON 500												XXX	FUSARIUM		FUSARIUM			FUSARIUM					
APHICIDES																							
CHESS				XXXX					APHIDS														
CYRUS						APHIDS														APHIDS			
MITICIDES																							
FENAMITE NO SLOW DRY/FROST x 2					MITES				MITES	MITES		MITES							MITES				
MIT E MEC		MITES																					
APOLLO Gemini			MITE EGG					MITES									MITES						
MAVRIK			MITE ADULT					MITES									MITES						
VERDEX			NO stock																				
VYDATE																							
INSECTICIDES																							
LANCER (FULL SAFETY EQUIPMENT)							XXXX																
SPARTA/ Delegate X 4						LF/THRIP		LF/THRIP													LF/THRIP		
SUCCESS				LF/THRIP	LF/THRIP							XXXX											
TOPSTAR / Calypso (Autumn)						lh/cat				xxxx			lh/cat						lh/cat				
DIAZOL 500																							
SUFFICANTS																							
BIND-R		XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXX	XXX	XXX	XXXX	XXXX	XXXX	XXXX	XXX	XXXX	XXXX		XXXX		
VAPORGARD																				XXXX			XXXX
FOLIAR																							
BORTRAC - GROCAL do not mix																							
GROCAL - PERK & IPPON do not mix																					XXXX		
KELPAK																							
GRAMITREL										xxxx		XXX	XXX										
MEGAFOL (replacement for Kelpac)			XXXX											xxxx									
MANTRAC																							
PERK (foschek) - Grocal & Stopit DO NOT MIX				XXXX											xxxx	xxxx	XXXX	NO IPPON	XXXX				
WUXAL TOP-N					XXXX	XXXX		XXXX	XXXXX									XXXX					
STOP IT - Perk DO NOT MIX																							

MULLINS Nursery and Elite - Planted 9 & 10.11.18	Nursery Elite mullins	Nursery Elite mullins	Nursery Elite mullins	Nursery Elite mullins	Nursery Elite mullins	Nursery Elite mullins	Nursery Elite mullins	Nursery Elite mullins	Nursery Elite mullins	Nursery Elite mullins	Nursery Elite	Nursery Elite	Nursery Elite	PRE LIFT NURSERY after rain	PRE LIFT NURSERY after rain	PRE LIFT NURSERY after rain	ELITE	ELITE	ELITE	PRE LIFT ELITE BULK			
SPRAY NO.	START	1	2	3	4	5	6	7	8 motor	9 motor	10a	10	11	12	13	14	13	14	15		12		15
DATE SPRAYED	28.9.19	18.10.19	31.10.19	22.11.19	8.12.19	24.12.19	23.2.20	19.2.20	28.2.20	15.3.20	13.4.17	1.4.20	22.4.20	06.05.20	15.5.17	21.5.17	16.06.15	01.07.15	23.07.15	24.07.15			
WATER USED	40	60	60	60	60	80 x 20	100	100	100	140	100	140	180	250	250	150	40	40	40		50		50
FUNGICIDES																							
FOSTONIC DIP											XXXX												
ZEBA DIP																							
ALTO																							
FOSTONIC SPRAY																							
BARRAK Bravo					XXXX			XXX													ALT/BOT		
PRISTINE				XXXX					ALT/BOT/LS														
CURATOR Octave																			LS/PM				
VALDIUS SYSTHANE 20EW			LS/PM			LS/PM											LS/B						
KOCIDE OPTI													PYTHIUM					PYTHIUM					
TALENDO																							
GOLDAZIM Prolific																							
SWITCH	xxx									XXX					XXXX	XXXX							
TARATEK														RHIZTONIA									
TELDOR																							
THIRAM 40F	xxx	Rabbits			Rabbits								PYTHIUM			PYTHIUM		PYTHIUM					
IPPON 500												XXX	FUSARIUM		FUSARIUM			FUSARIUM					
APHICIDES																							
CHESS				XXXX					APHIDS														
CYRUS						APHIDS															APHIDS		
MITICIDES																							
FENAMITE NO SLOW DRY/FROST x 2					MITES				MITES	MITES		MITES							MITES				
MIT E MEC		MITES																					
APOLLO Gemini			MITE EGG					MITES									MITES						
MAVRIK			MITE ADULT					MITES									MITES						
VERDEX			NO stock																				
VYDATE																							
INSECTICIDES																							
LANCER (FULL SAFETY EQUIPMENT)							XXXX																
SPARTA/ Delegate X 4						LF/THRIP		LF/THRIP													LF/THRIP		
SUCCESS				LF/THRIP	LF/THRIP							XXXX											
TOPSTAR / Calypso (Autumn)						lh/cat				xxxx			lh/cat						lh/cat				
DIAZOL 500																							
SUFFICANTS																							
BIND-R		XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXX	XXX	XXX	XXXX	XXXX	XXXX	XXXX	XXX	XXXX	XXXX		XXXX		
VAPORGARD																				XXXX			XXXX
FOLIAR																							
BORTRAC - GROCAL do not mix																							
GROCAL - PERK & IPPON do not mix																					XXXX		
KELPAK			XXXX																				
GRAMITREL										xxxx		XXX	XXX										
MEGAFOL (replacement for Kelpac)														xxxx									
MANTRAC																							
PERK (foschek) - Grocal & Stopit DO NOT MIX				XXXX											xxxx	xxxx	XXXX	NO IPPON	XXXX				
WUXAL TOP-N					XXXX	XXXX		XXXX	XXXXX									XXXX					
STOP IT - Perk DO NOT MIX																							

MULLINS Nursery and Elite - Planted 9 & 10.11.18	Nursery Elite mullins	Nursery Elite mullins	Nursery Elite mullins	Nursery Elite mullins	Nursery Elite mullins	Nursery Elite mullins	Nursery Elite mullins	Nursery Elite mullins	Nursery Elite mullins	Nursery Elite mullins	Nursery Elite	Nursery Elite	Nursery Elite Bulk	PRE LIFT NURSERY after rain	PRE LIFT NURSERY after rain	PRE LIFT NURSERY after rain	ELITE	ELITE	ELITE	PRE LIFT ELITE BULK			
SPRAY NO.	start	1	2	3	4	5	6	7	8 motor	9 motor	10a	10b	11	12	13	14	13	14	15		12		15
DATE SPRAYED	11.11.18	18.11.18	28.11.18	23.12.18	11.1.19	11.2.19	17.3.19	19.3.19	5.4.19	17.4.19	13.4.17	29.4.17	6.5.17	14.5.17	15.5.17	21.5.17	16.06.15	01.07.15	23.07.15	24.07.15			
WATER USED	60	60	60	60	60	80 x 20	240	200	200	250	250	250	250	250	250	150	40	40	40		50		50
FUNGICIDES																							
FOSTONIC DIP											XXXX												
ZEBA DIP																							
ALTO																							
FOSTONIC SPRAY																							
BARRAK Bravo					XXXX			XXX													ALT/BOT		
PRISTINE				XXXX					ALT/BOT/LS														
CURATOR Octave																			LS/PM				
VALDIUS SYSTHANE 20EW			LS/PM			LS/PM											LS/B						
KOCIDE OPTI													PYTHIUM					PYTHIUM					
TALENDO																							
GOLDAZIM Prolific																							
SWITCH	xxx									XXX					XXXX	XXXX							
TARATEK														RHIZTONIA									
TELDOR																							
THIRAM 40F	xxx	Rabbits			Rabbits								PYTHIUM			PYTHIUM		PYTHIUM					
IPPON 500												XXX	FUSARIUM		FUSARIUM			FUSARIUM					
APHICIDES																							
CHESS				XXXX					APHIDS														
CYRUS						APHIDS															APHIDS		
MITICIDES																							
FENAMITE NO SLOW DRY/FROST x 2					MITES				MITES	MITES		MITES							MITES				
MIT E MEC		MITES																					
APOLLO Gemini			MITE EGG					MITES									MITES						
MAVRIK			MITE ADULT					MITES									MITES						
VERDEX																							
VYDATE																							
INSECTICIDES																							
LANCER (FULL SAFETY EQUIPMENT)							XXXX																
SPARTA/ Delegate X 4						LF/THRIP		LF/THRIP				XXXX									LF/THRIP		
SUCCESS				LF/THRIP	LF/THRIP																		
TOPSTAR / Calypso (Autumn)						lh/cat							lh/cat						lh/cat				
DIAZOL 500																							
SUFFICANTS																							
BIND-R		XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXX	XXX	XXX	XXXX	XXXX	XXXX	XXXX	XXX	XXXX	XXXX		XXXX		
VAPORGARD																				XXXX			XXXX
FOLIAR																							
BORTRAC - GROCAL do not mix																							
GROCAL - PERK & IPPON do not mix																					XXXX		
KELPAK			XXXX																				
MEGAFOL (replacement for Kelpac)														xxxx									
MANTRAC																							
PERK (foschek) - Grocal & Stopit DO NOT MIX				XXXX						XXXX		XXXX			xxxx	xxxx	XXXX	NO IPPON	XXXX				
WUXAL TOP-N					XXXX	XXXX		XXXX	XXXXX				XXXX					XXXX					
STOP IT - Perk DO NOT MIX																							

MULLINS Nursery and Elite	Nursery Elite	Nursery Elite	Nursery Elite	Nursery Elite	Nursery Elite to run off	Nursery Elite	Nursery Elite	Nursery Elite	Nursery Elite drone 2.7ha	Nursery Elite	Nursery Elite	Nursery Elite Bulk	PRE LIFT NURSERY after rain	PRE LIFT NURSERY after rain	PRE LIFT NURSERY after rain	ELITE	ELITE	ELITE	PRE LIFT ELITE BULK			
SPRAY NO.	1	2	3	4	5	6m	7m	8	9	10a	10b	11	12	13	14	13	14	15		12		15
DATE SPRAYED	28.11.17	27.12.17	19.1.18	16.2.18	10.3.18	6.3.18	7.4.18	29.4.18	7.4.17	13.4.17	29.4.17	6.5.17	14.5.17	15.5.17	21.5.17	16.06.15	01.07.15	23.07.15	24.07.15			
WATER USED	210	250	250	250	250	250	250	250	250	250	250	250	250	250	150	40	40	40		50		50
FUNGICIDES																						
FOSTONIC DIP										XXXX												
ZEBA DIP																						
ALTO																						
FOSTONIC SPRAY																						
BARRAK Bravo				ALT/BOT/LS			ALT/BOT/LS													ALT/BOT		
PRISTINE			XXXX					ALT/BOT/LS														
CURATOR Octave																		LS/PM				
VALDIUS SYSTHANE 20EW		LS/PM			LS/PM											LS/B						
KOCIDE OPTI	Leaf Spt											PYTHIUM					PYTHIUM					
TALENDO																						
GOLDAZIM Prolific																						
SWITCH									XXX					XXXX	XXXX							
TARATEK													RHIZTONIA									
TELDOR																						
THIRAM 40F	Rabbits			Rabbits								PYTHIUM			PYTHIUM		PYTHIUM					
IPPON 500											XXX	FUSARIUM		FUSARIUM			FUSARIUM					
APHICIDES																						
CHESS			XXXX					APHIDS														
CYRUS					APHIDS															APHIDS		
MITICIDES																						
FENAMITE NO SLOW DRY/FROST x 2				MITES				MITES	MITES		MITES							MITES				
MIT E MEC	MITES																					
APOLLO		MITE EGG					MITES									MITES						
MAVRIK	MITE ADULT						MITES									MITES						
VERDEX																						
VYDATE						CYCLAMEN																
INSECTICIDES																						
SPARTA/ Delegate X 4					LF/THRIP		LF/THRIP				XXXX									LF/THRIP		
SUCCESS			LF/THRIP	LF/THRIP																		
TOPSTAR / Calypso (Autumn)					lh/cat							lh/cat						lh/cat				
DIAZOL 500																						
SUFFICANTS																						
BIND-R	XXXX	XXXX	XXXX	XXXX	XXXX		XXXX	XXXX	XXX	XXX	XXX	XXXX	XXXX	XXXX	XXXX	XXX	XXXX	XXXX		XXXX		
VAPORGARD																			XXXX			XXXX
FOLIAR																						
BORTRAC - GROCAL do not mix																						
GROCAL - PERK & IPPON do not mix																				XXXX		
KELPAK	XXXX	XXXX																				
MEGAFOL (replacement for Kelpac)													xxxx									
MANTRAC																						
PERK (foschek) - Grocal & Stopit DO NOT MIX			XXXX						XXXX		XXXX			xxxx	xxxx	XXXX	NO IPPON	XXXX				
WUXAL TOP-N				XXXX	XXXX		XXXX	XXXXX				XXXX					XXXX					
STOP IT - Perk DO NOT MIX																						

AUCKLAND Nursery and Elite	Nursery Elite	Nursery Elite	Nursery Elite	Nursery Elite	Nursery Elite to run off	Nursery Elite	Nursery Elite	Nursery Elite	Nursery Elite	Nursery Elite	Nursery Elite	Nursery Elite Bulk	PRE LIFT NURSERY after rain	PRE LIFT NURSERY after rain	PRE LIFT NURSERY after rain	PRE LIFT NURSERY after rain	ELITE	OHAKUNE REPLACE MENTS	PRE LIFT ELITE BULK			
SPRAY NO.	1	2	3	4	5	6m	7m	8	9	10a	10b	11	12	13	14	13	14	15		12		15
DATE SPRAYED	09.11.16	01.12.16	21.12.16	6.1.17	4.2.17	20.04.16	20.2.17	22.3.17	7.4.17	13.4.17	29.4.17	6.5.17	14.5.17	15.5.17	21.5.17		01.07.15	26.9.17				
WATER USED	80	80	80	100	540	250	250	250	250	250	250	250	250	250	150	40	40	40		50		50
FUNGICIDES																						
FOSTONIC DIP										XXXX												
ZEBA DIP																						
ALTO																						
FOSTONIC SPRAY																						
BARRAK Bravo							ALT/BOT/LS													ALT/BOT		
PRISTINE								ALT/BOT/LS														
CURATOR Octave				LS/PM																		
VALDIUS SYSTHANE 20EW		LS/PM			LS/PM																	
KOCIDE OPTI	Leaf Spt											PYTHIUM					PYTHIUM					
TALENDO																						
GOLDAZIM Prolific			ls/pm																			
SWITCH									XXX					XXXX	XXXX							
TARATEK													RHIZTONIA					xxx				
TELDOR																						
THIRAM 40F	Rabbits			Rabbits								PYTHIUM			PYTHIUM		PYTHIUM					
IPPON 500											XXX	FUSARIUM		FUSARIUM			FUSARIUM					
APHICIDES																						
CHESS			APHIDS					APHIDS														
CYRUS					APHIDS															APHIDS		
MITICIDES																						
FENAMITE NO SLOW DRY/FROST x 2				MITES				MITES	MITES		MITES											
MIT E MEC	MITES																					
APOLLO		MITE EGG					MITES									XXX		MITES				
MAVRIK		MITE ADULT					MITES									XXXX		MITES				
VERDEX																						
VYDATE						CYCLAMEN																
INSECTICIDES																						
SPARTA/ Delegate X 4			LF/THRIP	LF/THRIP	LF/THRIP		LF/THRIP				XXXX									LF/THRIP		
TOPSTAR / Calypso (Autumn)			lh/cat		lh/cat							lh/cat										
DIAZOL 500																						
SUFFICANTS																						
BIND-R	XXXX	XXXX	XXXX	XXXX	XXXX		XXXX	XXXX	XXX	XXX	XXX	XXXX	XXXX	XXXX	XXXX	XXX	XXXX	XXXX		XXXX		
VAPORGARD																			XXXX			XXXX
FOLIAR																						
BORTRAC - GROCAL do not mix																						
GROCAL - PERK & IPPON do not mix																				XXXX		
KELPAK	XXXX	XXXX			XXX NUR																	
MEGAFOL (replacement for Kelpac)																						
MANTRAC																						
PERK (foschek) - Grocal & Stopit DO NOT MIX									XXXX		XXXX			xxxx	xxxx	XXX	NO IPPON	XXXX				
WUXAL TOP-N			XXXX	XXXX	XXXX ELITE		XXXX	XXXXX				XXXX					XXXX					
STOP IT - Perk DO NOT MIX																						

AUCKLAND Nursery and Elite	Nursery Elite	Nursery Elite	Nursery Elite	Nursery Elite	Nursery Elite	Nursery Elite	Nursery Elite	Nursery Elite	Nursery Elite	Nursery Elite Bulk	PRE LIFT NURSERY after rain	ELITE	ELITE	ELITE	ELITE	PRE LIFT ELITE BULK			
SPRAY NO.	1	2	3	4	5	6m	7m	8	9	10	11	12	13	14	15		12		15
DATE SPRAYED	15.12.15	05.01.16	29.01.16	20.2.16	4.3.16	20.04.16	15.03.16	26.4.16	NOT DONE	03.05.16	16.5.15	30.05.15	16.06.15	01.07.15	23.07.15	24.07.15			
WATER USED	60	120	200	200	200	250	250	250	250	240	60 Albion	40	40	40	40		50		50
FUNGICIDES																			
FOSTONIC DIP																			
ZEBA DIP																			
ALTO																			
FOSTONIC SPRAY																			
BARRAK Bravo							ALT/BOT/LS										ALT/BOT		
PRISTINE								ALT/BOT/LS											
CURATOR Octave				LS/PM					LS/PM			LS/PM			LS/PM				
VALDIUS SYSTHANE 20EW		LS/PM			LS/PM								LS/B						
KOCIDE OPTI	Leaf Spt									PYTHIUM				PYTHIUM					
TALENDO																			
GOLDAZIM Prolific			ls/pm																
SWITCH											XXXX								
TELDOR																			
THIRAM 40F	Rabbits			Rabbits						PYTHIUM				PYTHIUM					
IPPON 500										FUSARIUM				FUSARIUM					
APHICIDES																			
CHESS			APHIDS					APHIDS											
CYRUS					APHIDS							APHIDS					APHIDS		
MITICIDES																			
FENAMITE NO SLOW DRY/FROST x 2				MITES				MITES	MITES						MITES				
APOLLO		MITE EGG					MITES						MITES						
MAVRIK		MITE ADULT					MITES						MITES						
VERDEX																			
VYDATE						CYCLAMEN													
INSECTICIDES																			
SPARTA/ Delegate X 4			LF/THRIP	LF/THRIP	LF/THRIP		LF/THRIP										LF/THRIP		
TOPSTAR / Calypso (Autumn)			lh/cat		lh/cat					lh/cat		IH/CAT			lh/cat				
DIAZOL 500																			
SUFFICANTS																			
BIND-R	XXXX	XXXX	XXXX	XXXX	XXXX		XXXX	XXXX	XXX	XXXX	XXXX	XXXX	XXX	XXXX	XXXX		XXXX		
VAPORGARD																XXXX			XXXX
FOLIAR																			
BORTRAC - GROCAL do not mix																			
GROCAL - PERK & IPPON do not mix																	XXXX		
KELPAK																			
MANTRAC																			
PERK (foschek) - Grocal & Stopit DO NOT MIX	XXXX	XXXX							XXXX			XXXX	XXXX	NO IPPON	XXXX				
WUXAL TOP-N			XXXX	XXXX	XXXX		XXXX	XXXXX		XXXX				XXXX					
STOP IT - Perk DO NOT MIX																			

AUCKLAND Nursery, Elite, Greenhouse & Tubs

	Nursery Elite G/House Tubs	Nursery Elite G/House Tubs	Nursery Elite G/House Tubs	Nursery Elite G/House Tubs	Nursery Elite Bulk	Nursery Elite Bulk	Nursery Elite Bulk	Nursery Elite Bulk	Nursery Elite Bulk	Nursery Elite Bulk	PRE LIFT NURSERY after rain	ELITE	ELITE	ELITE	ELITE	PRE LIFT ELITE BULK			
SPRAY NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15		12		15
DATE SPRAYED	14.11.14	05.12.14	17-18.01.15	29.01.15	05.03.14	23.03.15	4.4.15	20.04.15	05.05.15	09.05.15	16.5.15	30.05.15	16.06.15	01.07.15	23.07.15	24.07.15			
WATER USED	60	60	160	160	110	110	110	110	160	160	60 Albion	40	40	40	40		50		50
FUNGICIDES																			
FOSTONIC DIP																			
ZEBA DIP																			
ALTO																			
FOSTONIC SPRAY																			
BARRAK Bravo							ALT/BOT/LS										ALT/BOT		
PRISTINE									LS/B										
CURATOR Octave					LS/PM			LS/PM				LS/PM			LS/PM				
VALDIUS SYSTHANE 20EW		LS/PM	LS/PM			LS/PM							LS/B						
KOCIDE OPTI	Leaf Spt									PYTHIUM				PYTHIUM					
TALENDO																			
GOLDAZIM Prolific				ls/pm															
SWITCH											XXXX								
TELDOR																			
THIRAM 40F	Rabbits				Rabbits					PYTHIUM				PYTHIUM					
IPPON 500										FUSARIUM				FUSARIUM					
APHICIDES																			
CHESS				APHIDS				APHIDS											
CYRUS						APHIDS						APHIDS					APHIDS		
MITICIDES																			
FENAMITE NO SLOW DRY/FROST x 2					MITES			MITES	MITES						MITES				
APOLLO		MITE EGG	MITE EGG				MITES						MITES						
MAVRIK		MITE ADULT	MITE ADULT				MITES						MITES						
VERDEX																			
VYDATE																			
INSECTICIDES																			
SPARTA/ Delegate X 4				LF/THRIP	LF/THRIP	LF/THRIP	LF/THRIP										LF/THRIP		
TOPSTAR / Calypso (Autumn)				lh/cat		lh/cat						IH/CAT			lh/cat				
DIAZOL 500																			
SUFFICANTS																			
BIND-R	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXX	XXXX	XXXX	XXXX	XXX	XXXX	XXXX		XXXX		
VAPORGARD																XXXX			XXXX
FOLIAR																			
BORTRAC - GROCAL do not mix																			
GROCAL - PERK & IPPON do not mix																	XXXX		
KELPAK																			
MANTRAC																			
PERK (foschek) - Grocal & Stopit DO NOT MIX	XXXX	XXXX						XXXX	XXXX			XXXX	XXXX	NO IPPON	XXXX				
WUXAL TOP-N			XXXX	XXXX	XXXX	XXXX	XXXX			XXXX				XXXX					
STOP IT - Perk DO NOT MIX																			

AUCKLAND Nursery, Elite, Greenhouse & Tubs

	Nursery Elite G/House Tubs	Nursery Elite G/House Tubs	Nursery Elite	Nursery Elite Bulk	Nursery Elite Bulk	Nursery Elite Bulk	Nursery Elite Bulk	PRE LIFT NURSERY	ELITE & ALBION	ELITE & ALBION	ELITE & ALBION				PRE LIFT ELITE BULK	
SPRAY NO.	1	2	3 motor	4	5	6	7	LIFTING	8	9	10	10	11	12	8	15
DATE SPRAYED	23.12.13	7.1.14	26.2.14	18.03.14	01.04.14	24.4.14	18.05.14	DONE	12.06.14	14.07.14						
WATER USED	60	70	100	100	120	120	120	120	60	60	60	120	50	50		50
FUNGICIDES																
FOSTONIC DIP																
ZEBA DIP																
ALTO (no NITROSOL)																
FOSTONIC SPRAY																
BARRAK Bravo						ALT/BOT/LS								ALT/BOT		
PRISTINE										LS/B			ALT/BOT			
CURATOR Octave				LS/PM					LS/PM			LS/PM				
VALDIUS SYSTHANE 20EW		LS/PM			LS/PM											
KOCIDE OPTI	Leaf Spt						PYTHIUM				PYTHIUM					
TALENDO																
GOLDAZIM Prolific			ls/pm													
SWITCH																
TELDOR																
THIRAM 40F	Rabbits			Rabbits			PYTHIUM				PYTHIUM					
IPPON 500							FUSARIUM				FUSARIUM					
APHICIDES																
CHESS			APHIDS						APHIDS							
CYRUS					APHIDS									APHIDS		
MITICIDES																
FENAMITE NO SLOW DRY/FROST x 2												MITES				
APOLLO		MITE EGG				MITES				MITES						
MAVRIK		MITE ADULT				MITES				MITES						
VERDEX																
INSECTICIDES												4 x Sparta				
SPARTA/ Delegate X 4			LF/THRIP	LF/THRIP	LF/THRIP	LF/THRIP						LF/THRIP	LF/THRIP	LF/THRIP		
TOPSTAR / Calypso (Autumn)			lh/cat			lh/cat						lh/cat				
DIAZOL 500																
SUFFICANTS																
BIND-R	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX		XXXX	XXX	XXXX	XXXX	XXXX	XXXX		
VAPORGARD								XXXX							XXXX	XXXX
FOLIAR																
BORTRAC - GROCAL do not mix																
GROCAL - PERK & IPPON do not mix													XXXX	XXXX		
KELPAK												XXXX				
MANTRAC																
PERK (foschek) - Grocal & Stopit DO NOT MIX	XXXX	XXXX				XXXX			XXXX		XXXX					
WUXALL TOP-N			XXXX	XXXX	XXXX		XXXX			XXXX						
STOP IT - Perk DO NOT MIX																

AUCKLAND 2012	row 29	row 30				MOTOR	MOTOR	MOTOR	MOTOR	MOTOR	MOTOR ELITE	MOTOR ELITE	MOTOR ELITE	MOTOR ELITE
SPRAY NO.	TRIAL	TRIAL	1	2	3	4	5	6	7	8	9	10	11	12
DATE	11.12.12	11.12.12	15.12.12	13.01.13	10.2.13	08.03.13	27.3.13	27.04.13	10&24.05.13	12.05.13	11.06.13	18.06.13	05.07.13	20.7.13
WATER	1	1	90	100	120	80	120	120	180	120	50	50	50	50
FUNGICIDES														
FOSTONIC DIP														
ALTO (no NITROSOL)														
FOSTONIC														
BARRAK Bravo														
CURATOR Octave			XXXX		XXXX	XXXX			XXXX			XXXX		
PRISTINE														XXXX
VALDIUS SYSTHANE 200EW								XXXX					XXXXX	
KOCIDE Opti (hydropro)			XXXX								XXXX			
TALENDO														
GOLDAZIM Prolific				XXXX			XXXX							
SWITCH														
THIRAM 40F														
IPPON 500														
CAPTAN - no JMS 14 days														
APHICIDES														
CHESS					XXXX			XXXX			XXXX			XXXX
CYRUS														
MITICIDES														
FENAMITE NO SLOW DRY/ROST				XXXX	XXXX							XXXX	XXXX	
APOLLO														
MAVRIK														
VERDEX	XXXX	XXXX					XXXX		XXXX					
JMS Oil - no BOND or CAPTAN 14 DAYS	XXX 1%	XXX 2%	XXX 2%	XXX 2%	XXX 2%	XXXX								
INSECTICIDES														
SPARTA														XXXX
TOP STAR/ Calypso - AUTUMN					XXXX	XXXX					XXX			
DIAZOL 800														
DELEGATE												XXXX		
DELFIN NOT REQUIRED WITH DELEGATE				XXXX			XXXX		XXXX					
SUFFICANTS														
BOND - no JMS 14 DAYS			XXXX	NONE					XXXX		XXXX	XXXX	XXXX	XXXX
BIND-R														
VAPORGARD - NO JMS 14 DAYS										XXXX				
FOLIAR														
BORTRAC - GROCAL do not mix														
GROCAL - PERK & IPPON do not mix			XXXX		XXXX			XXXX				XXXX		
KELPAK (root development)							XXXX				XX			
PERK - Grocal & Stopit DO NOT MIX													XXXXX	XXXX
STOP IT - Perk DO NOT MIX						XXXX								
HERBICIDES														
BUSTER														
GLYPHOSHATE														
KIWI COVER														

	SPRAY NO.		1	2	3	4	5	6	7	8	9	10	11	12														
						MOTORISED	MOTORISED	MOTORISED	MOTORISED	MOTORISED	MOTORISED	MOTORISED	MOTORISED	CHOPPER														
AUCKLAND NURSERY & Elite 2011-2012	DATES		22.12.11	06.01.12	19.01.12	18.02.12	09.03.12	11.04.12	02.05.12	19.5.12	15.06.12										16 to 19 April	29 Mar / 3 April			DATES		**AUCKLAND NURSERY**
	LITRES/ha		100	215	120	75	75	75	75	75	25	750	750	1100	250	250	250	1410	980	1100	1375				LITRES/ha		
	RATE/100L																							RATE/100L		
FUNGICIDES																										**FUNGICIDES**
FOSTONIC DIP	200	gms									BALANCE	BALANCE												200	gms	FOSTONIC DIP
FOSTONIC SPRAY	250	gms									PUHINUI	PUHINUI								XXXX		XXXX		250	gms	FOSTONIC SPRAY
HYDROPRO Koside	250	gms										PLUS												250	gms	HYDROPRO Koside
KOCIDE Opti (hydropro)	90	gms	XXXX								XXXX	TOP STAR														
GOLDAZIM Prolific	300	mls		XXXX		XXXX		XXXX		XXXX							XXXX	XXXX	XXXX					300	mls	GOLDAZIM Prolific
OCTAVE / Curator	50	gms	XXXX		XXXX		XXXX		XXXX			XXXX	XXXX		XXXX	XXXX		XXXX				XXXX		50	gms	OCTAVE / Curator
SWITCH	80	gms												XXXX										80	gms	SWITCH
CAPTAN	150	gms																						150	gms	CAPTAN
ALTO (no NITROSOL)	40	mls																	XXXX					40	mls	ALTO (no NITROSOL)
APHICIDES																										**APHICIDES**
BRAVIUM (Chess)	40	mls																								
CHESS	20	gms			XXXX				XXXX			XXXX	XXXX				XXXX					XXXX		20	gms	CHESS
MITICIDES																										**MITICIDES**
FENAMITE NO SLOW DRY/ROST	50	mls		XXXX	XXXX		XXXX	XXXX																50	mls	FENAMITE NO SLOW DRY/ROST
APOLLO (2 sprays fruiting beds)	40	mls							XXXX		XXXX			XXXX												
INSECTICIDES																										**INSECTICIDES**
DIPEL 2X	50	gms	XXXX	XXXX		XXXX	XXXX					XXXX												50	gms	DIPEL 2X
SUCCESS	40	mls	XXXX		XXXX			XXXX		XXXX	XXXX		XXXX		XXXXX	XXXX		XXXX	XXXX			XXXX		40	mls	SUCCESS
TOP STAR Leaf Hoppers - AUTUMN	30	gms			XXXX	XXXX	XXXX	XXXX				XXXX														
LANNATE	120	mls												XXXX										120	mls	LANNATE
SUFFICANTS																										**SUFFICANTS**
BOND	100	mls	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX			XXXX	XXXX					100	mls	GUARD / Rhino
REACH (expensive)	250	mls																						250	mls	REACH
FOLIAR FERTILISERS																										**FOLIAR FERTILISERS**
Vaporgard	1										XXXX															
Terra (3 weekly expensive)	300	mls	XXXX																					300	mls	Terra (3 weekly expensive)
CALCIUM	250						XXXX		XXXX			XXXX														
VERTEX Wuxal Top N	1000	mls																						1000	mls	Azolon
BORON	250							XXXXX		XXXX																
PERK	250/500	mls												XXXX										750	mls	PERK / Phoschek
SEAMAC PT	500	mls		XXXX																				500	mls	SEAMAC PT
NITROSOL	750	mls																						750	mls	NITROSOL
HERBICIDES																										**HERBICIDES**
GLYPHOSHATE	1	mls																						1	mls	GLYPHOSHATE
BUSTER	1.3/1	mls																						1.3/1	mls	BUSTER
KIWI COVER	1	mls																						1	mls	KIWI COVER

	SPRAY NO.		2	3	4	5	6	7	8	9	10	11	12															
									MOTORISED	MOTORISED	MOTORISED	MOTORISED	CHOPPER															
TAKANINI NURSERY 2010-2011	DATES		07.12.10	23.12.10	14.01.11	28.01.11	10.02.11	05.02.11	07&08.03.11	23&24.03.11	09.04.11	20.04.11	04.05.11								16 to 19 April		29 Mar / 3 April			DATES		**TAKANINI NURSERY**
	LITRES/ha		90	215	330	350	400	450	750	750	750	750	1100	250	250	250	1410	980	1100	1375					LITRES/ha		
	RATE/100L																								RATE/100L		
FUNGICIDES																											**FUNGICIDES**
FOSTONIC DIP	200	gms																							200	gms	FOSTONIC DIP
FOSTONIC SPRAY	250	gms						XXXX											XXXX				XXXX		250	gms	FOSTONIC SPRAY
HYDROPRO Koside	250	gms																							250	gms	HYDROPRO Koside
KOCIDE Opti (hydropro)	90	gms																									
GOLDAZIM Prolific	300	mls		XXXX		XXXX			XXXX		XXXX					XXXX	XXXX	XXXX							300	mls	GOLDAZIM Prolific
OCTAVE / Curator	50	gms	XXXX		XXXX		XXXX			XXXX		XXXX		XXXX	XXXX		XXXX					XXXX			50	gms	OCTAVE / Curator
SWITCH	80	gms											XXXX												80	gms	SWITCH
CAPTAN	150	gms																							150	gms	CAPTAN
ALTO (no NITROSOL)	40	mls																XXXX							40	mls	ALTO (no NITROSOL)
APHICIDES																											**APHICIDES**
BRAVIUM (Chess)	40	mls																									
CHESS	20	gms	XXXX			XXXX			XXXX			XXXX				XXXX						XXXX			20	gms	CHESS
MITICIDES																											**MITICIDES**
FENAMITE NO SLOW DRY/ROST	50	mls	XXXX	XXXX						XXXX	XXXX														50	mls	FENAMITE NO SLOW DRY/ROST
APOLLO (2 sprays fruiting beds)	40	mls			XXXXX								XXXX														
INSECTICIDES																											**INSECTICIDES**
DIPEL 2X	50	gms			XXXXX	XXXX				XXXX	XXXX														50	gms	DIPEL 2X
SUCCESS	40	mls		XXXX			XXXX					XXXX		XXXXX	XXXX		XXXX	XXXX				XXXX			40	mls	SUCCESS
TOP STAR Leaf Hoppers - AUTUMN	30	gms									XXXX																
LANNATE	120	mls											XXXX												120	mls	LANNATE
SUFFICANTS																											**SUFFICANTS**
GUARD / Rhino	100	mls	XXXX	XXXX		XXXX	XXXX		XXXX	XXXX	XXXX	XXXX	XXXX	XXXX			XXXX	XXXX							100	mls	GUARD / Rhino
REACH (expensive)	250	mls			XXXX																				250	mls	REACH
FOLIAR FERTILISERS																											**FOLIAR FERTILISERS**
Terra (3 weekly expensive)	300	mls					XXXX		XXXX		XXXX														300	mls	Terra (3 weekly expensive)
VERTEX Wuxal Top N	1000	mls					XXXX		XXXX		XXXX														1000	mls	Azolon
PERK / Phoschek	750	mls							XXXX	XXXX			XXXX												750	mls	PERK / Phoschek
SEAMAC PT	500	mls			XXXX																				500	mls	SEAMAC PT
NITROSOL	750	mls																							750	mls	NITROSOL
HERBICIDES																											**HERBICIDES**
GLYPHOSHATE	1	mls																							1	mls	GLYPHOSHATE
BUSTER	1.3/1	mls																							1.3/1	mls	BUSTER
KIWI COVER	1	mls																							1	mls	KIWI COVER

PUHINUI NURSERY	DATES		05.12.09	19.12.09	31.12.09	09.01.10	28.01.10	22.02.10	12.03.10	20.03.10	31.03.10	18.04.09	22-23.03.08	11-12.04.08		31.03.06				16 to 19 April	29 Mar / 3 April			DATES		OHAKUNE 2004 / 2005
	LITRES/ha						240		120	240	90	800	625	1000	750	1500	1410	980	1100	1375				LITRES/ha		
	RATE/100L																							RATE/100L		
FUNGICIDES																										**FUNGICIDES**
FOSTONIC DIP	200	gms																						200	gms	FOSTONIC DIP
FOSTONIC SPRAY	250	gms																	XXXX			XXXX		250	gms	FOSTONIC SPRAY
HYDROPRO Koside	250	gms																						250	gms	HYDROPRO Koside check rates
GOLDAZIM Prolific	300	mls	XXXX		XXXX		XXXX		XXXX		XXXX	XXXX	XXXX			XXXX	XXXX	XXXX						300	mls	GOLDAZIM Prolific
OCTAVE / Curator	50	gms		XXXX		XXXX		XXXX						XXXX	XXXX		XXXX				XXXX			50	gms	OCTAVE
SWITCH	80	gms																						80	gms	SWITCH
CAPTAN	150	gms																						150	gms	CAPTAN
ALTO (no NITROSOL)	40	mls																XXXX						40	mls	ALTO (no NITROSOL)
APHICIDES																										**APHICIDES**
CHESS	20	gms	XXXX			XXXX		XXXX				XXXX	XXXX			XXXX					XXXX			20	gms	CHESS
MITICIDES																										**MITICIDES**
FENAMITE NO SLOW DRY/ROST	50	mls	XXXX	XXXX			XXXX	XXXX		XXXX	XXXX		XXXX	XXXX										50	mls	FENAMITE NO SLOW DRY/ROST
INSECTICIDES																										**INSECTICIDES**
DIPEL 2X	50	gms			XXXX	XXXXX				XXXX	XXXX															
SUCCESS	40	mls		XXXX	XXXX		XXXX		XXXX			XXXX		XXXXX	XXXX		XXXX	XXXX			XXXX			40	mls	SUCCESS
LANNATE	120	mls																						120	mls	LANNATE
SUFFICANTS																										**OTHER**
GUARD / Rhino	100	mls	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX		XXXX	XXXX	XXXX	XXXX			XXXX	XXXX						100	mls	GUARD
FOLIAR FERTILISERS																										**OTHER**
Terra (3 weekly expensive)	300	mls						XXXX		XXXX	XXXX	XXXX												50	mls	VAPORGARD ALONE sunlight
Azolon	1000	mls						XXXX		XXXX	XXXX															
PERK / Phoschek	750	mls										XXXX												500/750	mls	PERK / Fosguard
NITROSOL	750	mls							XXXX															500/750	mls	PERK / Fosguard
HERBICIDES																										
GLYPHOSHATE	1	mls																						1	mls	GLYPHOSHATE
BUSTER	1.3/1	mls																						1.3/1	mls	BUSTER
KIWI COVER	1	mls																						1	mls	KIWI COVER

1. GREENHOUSE Knapsack Diary - spray before 7am

DUPLICATE on 17.3.17 = spray 8 NUCLEAR

SPRAY NO.		1	2	3	4	5	5	6	7	8a	8b	9	10	11	12	13	13a	14
DATE SPRAYED		21.11.20	3.12.19	22.4.21	7.1.20	28.1.20	3.3.20	2.4.20	22.4.20	20.5.20	1.7.20	24.7.20	12.8.20	12.9.18	16.10.18	20.11.18	21.11.18	28.11.18
WATER USED		5	5	10	10	10	10	10	10	10	10	10	10	5	5	5	2	5
FUNGICIDES	**PEST**																	
SURRENDER																		
TRI FILM																		
FOSTONIC DIP	Root Rot & Pythium																XXXX	
BARRACK Bravo	Leaf Spot & Botrytis					XXX	XXX								XXXX			
PRISTINE	Leaf Spot & Botrytis								XXXX									XXXX
OCTAVE (Curator)	Leaf Spot & Powdery Mildew				XXXX						XXX			XXXX				
VALIDUS SYSTHANE	Leaf Spot & Powdery Mildew											XXXX						
KOCIDE Opti	Leaf Spot, Botrytis Pythium	XXXX																
TALENDO																		
GOLDAZIM Prolific Protek	Leaf Spot, Powdery Mildew & Botrytis			XXXX				XXX		XXXX								
SWITCH	Botrytis, anthracnose & Rhizophus										XXX		XXX			XXXX		
TARATEK	trytis, anthracnose, Rhizoctonia s	Systemic																
TELDOR																		
THIRAM 40F	Leaf Spot & Botrytis	XXXX																
IPPON do not mix GROCAL	Botrytis, Alternaria, Pythium & Fusarium																	
MERPAN do not mix APOSTLE	Leaf Spot, Botrytis & Pythium																	
APHICIDES																		
CHESS	Aphids		XXXX	XXXX					XXXX									XXXX
CYRUS (4 X BB)	Systemic Aphids & Thrips											XXX	XXX		XXXX			
PIRITEK	Aphids																	
MITICIDES																		
APOLLO			XXXX					XXX										
FENAMITE/Pyromite x 4	Red, Two Spotted & Cyclamen Mites								XXX	XXXX		XXXX	XXXX		XXX	XXX		XXXX
MAVRIK (apply with Apollo)	Adult Mites & Thrips		XXXX					XXX							XXX	XXX		
MIT E MEC (3 x BB)	Red, Two Spotted & Cyclamen Mites	XXXX		XXXX	XXXX	XXX	XXX											
OBERON	Mites - trial on small area																	
VERDEX (only 1 other chem to mix)	Two Spotted Mites																	
VYDATE (1 new growth-1mth x1 BF)	Cyclamen Mites																	
INSECTICIDES																		
LANCER (autumn and 1 July) Caterpillars	grass Grubs & Aphids																	
PIRITEK	Aphids																	
TOP STAR	leaf hopper													XXXX				
SPARTA / Delegate(4 x BB)	Leaf Roller & Thrips			success	XXXX	success	success	success										
.																		
BIND-R		XXXX	XXXX	XXXX	XXXX	XXX	XXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	xxxx	XXX	xxxx	XXXX
FOLIAR																		
BORTRAC - GROCAL do not mix																		
GROCAL - PERK & IPPON do not mix			XXXX															
KELPAK		XXXX						XXXX										XXXX
MEGAFOL replaces Kelpak																		
PERK - Grocal & Stopit DO NOT MIX																		
STOP IT - Perk DO NOT MIX																		

1. GREENHOUSE Knapsack Diary - spray before 7am

DUPLICATE on 17.3.17 = spray 8 NUCLEAR

SPRAY NO.		1	2	3	4	5	5	6	7	8a	8b	9	10	11	12	13	13a	14
DATE SPRAYED		10.11.19	3.12.19	24.12.19	7.1.20	28.1.20	3.3.20	2.4.20	22.4.20	20.5.20	1.7.20	24.7.20	12.8.20	12.9.18	16.10.18	20.11.18	21.11.18	28.11.18
WATER USED		5	5	10	10	10	10	10	10	10	10	10	10	5	5	5	2	5
FUNGICIDES	**PEST**																	
SURRENDER																		
TRI FILM																		
FOSTONIC DIP	Root Rot & Pythium																XXXX	
BARRACK Bravo	Leaf Spot & Botrytis					XXX	XXX								XXXX			
PRISTINE	Leaf Spot & Botrytis								XXXX									XXXX
OCTAVE (Curator)	Leaf Spot & Powdery Mildew				XXXX						XXX			XXXX				
VALIDUS SYSTHANE	Leaf Spot & Powdery Mildew											XXXX						
KOCIDE Opti	Leaf Spot, Botrytis Pythium	XXXX																
TALENDO																		
GOLDAZIM Prolific Protek	Leaf Spot, Powdery Mildew & Botrytis			XXXX				XXX		XXXX								
SWITCH	Botrytis, anthracnose & Rhizophus										XXX		XXX			XXXX		
TARATEK	trytis, anthracnose, Rhizoctonia s	Systemic																
TELDOR																		
THIRAM 40F	Leaf Spot & Botrytis	XXXX																
IPPON do not mix GROCAL	Botrytis, Alternaria, Pythium & Fusarium																	
MERPAN do not mix APOSTLE	Leaf Spot, Botrytis & Pythium																	
APHICIDES																		
CHESS	Aphids		XXXX	XXXX					XXXX									XXXX
CYRUS (4 X BB)	Systemic Aphids & Thrips											XXX	XXX		XXXX			
PIRITEK	Aphids																	
MITICIDES																		
APOLLO			xxxx					XXX										
FENAMITE/Pyromite x 4	Red, Two Spotted & Cyclamen Mites								XXX	XXXX		XXXX	XXXX		xxx	XXX		XXXX
MAVRIK (apply with Apollo)	Adult Mites & Thrips		XXXX					XXX							XXX	XXX		
MIT E MEC (3 x BB)	Red, Two Spotted & Cyclamen Mites	XXXX		XXXX	XXXX	XXX	XXX											
OBERON	Mites - trial on small area																	
VERDEX (only 1 other chem to mix)	Two Spotted Mites																	
VYDATE (1 new growth-1mth x1 BF)	Cyclamen Mites																	
INSECTICIDES																		
LANCER (autumn and 1 July) Caterpillars	grass Grubs & Aphids																	
PIRITEK	Aphids																	
TOP STAR	leaf hopper													XXXX				
SPARTA / Delegate(4 x BB)	Leaf Roller & Thrips			success	XXXX	success	success	success										
.																		
BIND-R		XXXX	XXXX	XXXX	XXXX	XXX	XXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	xxxx	XXX	xxxx	XXXX
FOLIAR																		
BORTRAC - GROCAL do not mix																		
GROCAL - PERK & IPPON do not mix			XXXX															
KELPAK		XXXX						XXXX										XXXX
MEGAFOL replaces Kelpak																		
PERK - Grocal & Stopit DO NOT MIX																		
STOP IT - Perk DO NOT MIX																		

1. GREENHOUSE Knapsack Diary - spray before 7am

DUPLICATE on 17.3.17 = spray 8 NUCLEAR nuclear

SPRAY NO.		1	2	3	4	5	6	7	8a	8b	9	10	11	12	13	13a	14	15	16	18	19	20
DATE SPRAYED		20.11.18	21.11.18	28.11.18	18.1.19	11.2.19	19.3.19	11.4.19	20.5.19	18.06.19	2.7.18	31.7.18	12.9.18	16.10.18	20.11.18	21.11.18	28.11.18	28.12.18	12.10.16			
WATER USED		5	5	5	10	10	10	10	10	10	15	5	5	5	5	2	5	5	5	10	10	10
FUNGICIDES	**PEST**																					
SURRENDER																						
TRI FILM																						
FOSTONIC DIP	Root Rot & Pythium															XXXX						
BARRACK Bravo	Leaf Spot & Botrytis						XXX							XXXX								
PRISTINE	Leaf Spot & Botrytis							XXXX									XXXX					
OCTAVE (Curator)	Leaf Spot & Powdery Mildew				XXXX					XXX			XXXX									XXXX
VALIDUS SYSTHANE	Leaf Spot & Powdery Mildew					XXX					XXXX											
KOCIDE Opti	Leaf Spot, Botrytis Pythium	XXXX																				
TALENDO																						
GOLDAZIM Prolific Protek	Leaf Spot, Powdery Mildew & Botrytis			XXXX					XXXX										XXXX			
SWITCH	& Rhizophus									XXX		XXX			xxxx					XXXX		
TARATEK	trytis, anthracnose, Rhizoctonia s	Systemic																				
TELDOR																						
THIRAM 40F	Leaf Spot & Botrytis	XXXX																				
IPPON do not mix GROCAL	Botrytis, Alternaria, Pythium & Fusarium																	XXXX	XXXX			
MERPAN do not mix APOSTLE	Leaf Spot, Botrytis & Pythium																					
APHICIDES																						
CHESS	Aphids		XXXX	XXXX				XXXX									XXXX					
CYRUS (4 X BB)	Systemic Aphids & Thrips					XXX					XXX	XXX		xxxx								
PIRITEK	Aphids																					
MITICIDES																						
APOLLO			xxxx				XXX											XXXX				
FENAMITE/Pyromite x 4	Red, Two Spotted & Cyclamen Mites							XXX			XXXX	XXXX		xxx	XXX		XXXX					XXXX
MAVRIK (apply with Apollo)	Adult Mites & Thrips		XXXX				XXX							XXX	XXX			XXXX				
MIT E MEC (3 x BB)	Red, Two Spotted & Cyclamen Mites	XXXX		XXXX	XXXX				XXXX	XXXX												
OBERON	Mites - trial on small area																					
VERDEX (only 1 other chem to mix)	Two Spotted Mites																					
VYDATE (1 new growth-1mth x1 BF)	Cyclamen Mites																					
INSECTICIDES																						
LANCER (autumn and 1 July) Caterpillars	grass Grubs & Aphids																					
PIRITEK	Aphids																					
TOP STAR	leaf hopper					XXX							XXXX						XXXX			
SPARTA / Delegate(4 x BB)	Leaf Roller & Thrips			success	XXXX	XXX	XXX		XXXX													
.																						
BIND-R		XXXX	XXXX	XXXX	XXXX	XXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	xxxx	XXX	xxxx	XXXX	XXXX	XXXX			
FOLIAR																						
BORTRAC - GROCAL do not mix																						
GROCAL - PERK & IPPON do not mix			XXXX																			
KELPAK		XXXX					XXXX										XXXX	XXXX	XXXX			
MEGAFOL replaces Kelpak																						
PERK - Grocal & Stopit DO NOT MIX																				XXX		
STOP IT - Perk DO NOT MIX																						
TOP N					XXXX	XXX		XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	xxxx	xxxx							

1. GREENHOUSE Knapsack Diary - spray before 7am

DUPLICATE on 17.3.17 = spray 8 NUCLEAR nuclear

SPRAY NO.		1	2	3	4	5	5A	6	7	8a	8b	9	10	11	12	13	13a	14	15	16	18	19	20
DATE SPRAYED		27.10.17	28.11.17	30.12.17	13.1.18	16.2.18	6.3.18	17.3.18	21.3.18	5.4.18	8.5.18	2.7.18	31.7.18	12.9.18	16.10.18	20.11.18	21.11.18	28.11.18	28.12.18	12.10.16			
WATER USED		5	5	10	5	10	10	10	10	10	15	15	5	5	5	5	2	5	5	5	10	10	10
FUNGICIDES	**PEST**																						
SURRENDER																							
TRI FILM																							
FOSTONIC DIP	Root Rot & Pythium																XXXX						
BARRACK Bravo	Leaf Spot & Botrytis					XXXX									xxxx								
PRISTINE	Leaf Spot & Botrytis								XXXX									XXXX					
OCTAVE (Curator)	Leaf Spot & Powdery Mildew				XXXX						XXX			XXXX									XXXX
VALIDUS SYSTHANE	Leaf Spot & Powdery Mildew											XXXX											
KOCIDE Opti	Leaf Spot, Botrytis Pythium	XXXX																					
TALENDO																							
GOLDAZIM Prolific	Leaf Spot, Powdery Mildew & Botrytis			XXXX				XXXX		XXXX										XXXX			
SWITCH	Botrytis, anthracnose & Rhizophus						XXX				XXX		XXX			xxxx					XXXX		
TARATEK	trytis, anthracnose, Rhizoctonia s	Systemic																					
TELDOR																							
THIRAM 40F	Leaf Spot & Botrytis	XXXX																					
IPPON do not mix GROCAL	Botrytis, Alternaria, Pythium & Fusarium																		XXXX	XXXX			
MERPAN do not mix APOSTLE	Leaf Spot, Botrytis & Pythium																						
APHICIDES																							
CHESS	Aphids		XXXX	XXXX														XXXX					
CYRUS (4 X BB)	Systemic Aphids & Thrips											XXX	XXX		xxxx								
PIRITEK	Aphids																						
MITICIDES																							
APOLLO			xxxx		XXXX		XXX												XXXX				
FENAMITE/Pyromite x 4	Red, Two Spotted & Cyclamen Mites											XXXX	XXXX		xxx	XXX		XXXX					XXXX
MAVRIK (apply with Apollo)	Adult Mites & Thrips		xxxx		XXXX		XXX								XXX	XXX			XXXX				
MIT E MEC (3 x BB)	Red, Two Spotted & Cyclamen Mites	XXXX		XXXX		XXXX		XXXX	XXXX	XXXX	XXXX												
OBERON	Mites - trial on small area																						
VERDEX (only 1 other chem to mix)	Two Spotted Mites																						
VYDATE (1 new growth-1mth x1 BF)	Cyclamen Mites																						
INSECTICIDES																							
LANCER (autumn and 1 July) Caterpillars	grass Grubs & Aphids																						
PIRITEK	Aphids																						
TOP STAR	leaf hopper				XXXX									XXXX						XXXX			
SPARTA / Delegate(4 x BB)	Leaf Roller & Thrips			success	XXXX	XXXX		XXXX		XXXX													
.																							
BIND-R		XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	xxxx	XXX	xxxx	XXXX	XXXX	XXXX			
FOLIAR																							
BORTRAC - GROCAL do not mix																							
GROCAL - PERK & IPPON do not mix			XXXX																				
KELPAK		XXXX																XXXX	XXXX	XXXX			
MEGAFOL replaces Kelpak																							
PERK - Grocal & Stopit DO NOT MIX									XXXX												XXX		
STOP IT - Perk DO NOT MIX																							
TOP N					XXXX	XXXX	XXXX	XXXX		XXXX	XXXX	XXXX	XXXX	XXXX	xxxx	xxxx							

1. GREENHOUSE Knapsack Diary - spray before 7am

DUPLICATE on 17.3.17 = spray 8 NUCLEAR nuclear

SPRAY NO.		1	2	3	4	5	5A	6	7	8a	8b	9	10	11	12	13	14	15	16	18	19	20
DATE SPRAYED		09.11.16	29.11.16	12.12.16	6.1.17	17.1.17	4.2.17	17.2.17	4.3.17	21.3.17	28.4.17	25.5.17	23.6.17	9.10.17	28.6.16	15.7.16	25.07.16	19.9.16	12.10.16			
WATER USED		5	5	5	5	10	10	10	10	15	15	15	5	15	15	15	15	10	5	10	10	10
FUNGICIDES	**PEST**																					
SURRENDER																						
TRI FILM																						
FOSTONIC DIP	Root Rot & Pythium																					
BARRACK Bravo	Leaf Spot & Botrytis					XXXX									XXXX							
PRISTINE	Leaf Spot & Botrytis		XXXX						XXXX								XXXX					
OCTAVE (Curator)	Leaf Spot & Powdery Mildew				XXXX						XXX			XXXX								XXXX
VALIDUS SYSTHANE	Leaf Spot & Powdery Mildew											XXXX										
KOCIDE Opti	Leaf Spot, Botrytis Pythium	XXXX																				
TALENDO																						
GOLDAZIM Prolific	Leaf Spot, Powdery Mildew & Botrytis			XXXX				XXXX		XXXX									XXXX			
SWITCH	Botrytis, anthracnose & Rhizophus						XXX				XXX		XXX			XXXX		XXXX		XXXX		
TARATEK	trytis, anthracnose, Rhizoctonia s	Systemic																				
TELDOR																						
THIRAM 40F	Leaf Spot & Botrytis	XXXX																				
IPPON do not mix GROCAL	Botrytis, Alternaria, Pythium & Fusarium																		XXXX			
MERPAN do not mix APOSTLE	Leaf Spot, Botrytis & Pythium																					
APHICIDES																						
CHESS	Aphids			XXXX													XXXX					
CYRUS (4 X BB)	Systemic Aphids & Thrips											XXX	XXX	XXX	XXXX							
PIRITEK	Aphids																					
MITICIDES																						
APOLLO			XXXX		XXXX		XXX											XXXX				
FENAMITE/Pyromite x 4	Red, Two Spotted & Cyclamen Mites											XXXX			XXX	XXX	XXXX					XXXX
MAVRIK (apply with Apollo)	Adult Mites & Thrips		XXXX		XXXX		XXX						XXX		XXX	XXX		XXXX				
MIT E MEC (3 x BB)	Red, Two Spotted & Cyclamen Mites	XXXX				XXXX		XXXX	XXXX	XXXX	XXXX											
OBERON	Mites - trial on small area																					
VERDEX (only 1 other chem to mix)	Two Spotted Mites																					
VYDATE (1 new growth-1mth x1 BF)	Cyclamen Mites																					
INSECTICIDES																						
LANCER (autumn and 1 July) Caterpillars	grass Grubs & Aphids																					
PIRITEK	Aphids																					
TOP STAR	leaf hopper			XXXX		XXXX								XXXX					XXXX			
SPARTA / Delegate(4 x BB)	Leaf Roller & Thrips			XXXX	XXXX	XXXX		XXXX		XXXX												
.																						
BIND-R		XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXX	XXXX	XXXX	XXXX			
FOLIAR																						
BORTRAC - GROCAL do not mix																						
GROCAL - PERK & IPPON do not mix			XXXX																			
KELPAK		XXXX															XXXX	XXXX	XXXX			
MEGAFOL replaces Kelpak																						
PERK - Grocal & Stopit DO NOT MIX									XXXX											XXX		
STOP IT - Perk DO NOT MIX																						
TOP N				XXXX	XXXX	XXXX	XXXX	XXXX		XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX						

1. GREENHOUSE Knapsack Diary - spray before 7am

nuclear

SPRAY NO.		1	2	3	4	4A	5	6	7	8	9	10	11	12	13	14	15	16	18	19	20
DATE SPRAYED		21.11.15	16.12.15	07.01.16	4.2.16	18.02.16	3.3.16	17.03.16	6.4.16	29.4.16	13.05.16	28.5.16	14.6.16	28.6.16	15.7.16	25.07.16	19.9.16	12.10.16			
WATER USED		5	5	5	5	5	5	5	5	5	15	15	15	15	15	15	10	5	10	10	10
FUNGICIDES	**PEST**																				
SURRENDER																					
TRI FILM																					
FOSTONIC DIP	Root Rot & Pythium																				
BARRACK Bravo	Leaf Spot & Botrytis						XXXX							xxxx							
PRISTINE	Leaf Spot & Botrytis								XXXX							XXXX					
OCTAVE (Curator)	Leaf Spot & Powdery Mildew				XXXX					XXX			XXXX								XXXX
VALIDUS SYSTHANE	Leaf Spot & Powdery Mildew		XXXX								XXXX										
KOCIDE Opti	Leaf Spot, Botrytis Pythium	XXXX																			
TALENDO																					
GOLDAZIM	Leaf Spot, Powdery Mildew & Botrytis			XXXX				XXXX										XXXX			
SWITCH	Botrytis, anthracnose & Rhizophus									XXX		XXX			xxxx		XXXX		XXXX		
TELDOR																					
THIRAM 40F	Leaf Spot & Botrytis	XXXX																			
IPPON do not mix GROCAL	Botrytis, Alternaria, Pythium & Fusarium																	XXXX			
MERPAN do not mix APOSTLE	Leaf Spot, Botrytis & Pythium																				
APHICIDES																					
CHESS	Aphids			XXXX												XXXX					
CYRUS (4 X BB)	Systemic Aphids & Thrips										XXX	XXX	XXX	xxxx							
PIRITEK	Aphids																				
MITICIDES																					
APOLLO			xxxx			XXX											XXXX				
FENAMITE/Pyromite x 4	Red, Two Spotted & Cyclamen Mites													xxx	XXX	XXXX					XXXX
MAVRIK (apply with Apollo)	Adult Mites & Thrips		xxxx			XXX						XXX		XXX	XXX		XXXX				
MIT E MEC (3 x BB)	Red, Two Spotted & Cyclamen Mites						XXXX	XXXX	XXXX	XXXX											
OBERON	Mites - trial on small area																				
VERDEX (only 1 other chem to mix)	Two Spotted Mites																				
VYDATE (1 new growth-1mth x1 BF)	Cyclamen Mites																				
INSECTICIDES																					
LANCER (autumn and 1 July) Caterpillars	grass Grubs & Aphids																				
PIRITEK	Aphids			XXXX																	
TOP STAR				XXXX	XXXX		XXXX	XXXX					XXXX					XXXX			
SPARTA / Delegate(4 x BB)	Leaf Roller & Thrips																				
.																					
BIND-R		XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	xxxx	XXX	XXXX	XXXX	XXXX			
FOLIAR																					
BORTRAC - GROCAL do not mix																					
GROCAL - PERK & IPPON do not mix																					
KELPAK																XXXX	XXXX	XXXX			
PERK - Grocal & Stopit DO NOT MIX		XXXX	XXXX						XXXX										XXX		
STOP IT - Perk DO NOT MIX																					
TOP N				XXXX	XXXX	XXXX	XXXX	XXXX		XXXX	XXXX	XXXX	XXXX	xxxx	xxxx						

1. GREENHOUSE Knapsack Diary - spray before 7am

REFER TO AUCKLAND FOR FIRST FEW SPRAYS

SPRAY NO.	1	2	3	3a	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
DATE SPRAYED	Ref Akl 14.11.14	Ref Akl 05.12.14	Ref Akl 17-18.01.15	12.02.15	Ref Akl 29.01.15	06.03.15	17.03.15	09.04.15	22.04.15	11.05.15	30.05.15	12.6.15	27.06.15	13.09.15	31.07.15						
WATER USED	6	5	5	5	5	5	5	5	5	10	5	5	5	10	10	10	10	10	10	10	10
FUNGICIDES																					
SURRENDER																					
TRI FILM																					
FOSTONIC DIP																					
BARRACK Bravo						XXXX															
PRISTINE								XXXX							XXXX	XXXX					
OCTAVE (Curator)									XXX			XXXX									XXXX
VALIDUS SYSTHANE		XXXX								XXXX			xxxx								
KOCIDE Opti	XXXX																				
TALENDO																					
GOLDAZIM			XXXX		XXXX		XXXX				XXXX										
SWITCH									XXX					xxxx					XXXX		
TELDOR																					
THIRAM 40F	XXXX																				
IPPON do not mix GROCAL																		XXXX			
MERPAN																		XXXX			
APHICIDES																					
CHESS			XXXX		XXXX										XXXX						
CYRUS (4 X BB)										XXX	XXX	XXX	xxx								
PIRITEK																					
MITICIDES																					
APOLLO		xxxx		xxxx																	
MAVRIK (apply with Apollo)		xxxx		xxxx							XXXX										
FENAMITE NO SLOW DRY/FROST x 2													xxx	xxxx	xxxx			XXXXXX			XXXX
MIT E MEC (3 x BB)						XXXX	XXXX	XXXX	XXXX												
VERDEX (only 1 other chem to mix)																					
VYDATE																					
INSECTICIDES																					
CYRUS (4 x BB)														xxxx							
PIRITEK																					
TOP STAR			XXXX		XXXX																
SPARTA / Delegate(4 x BB)			XXXX		XXXX	XXXX	XXXX					XXXX				XXXX					
.																					
BIND-R	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	xxxx	xxx							
FOLIAR																					
BORTRAC - GROCAL do not mix																					
GROCAL - PERK & IPPON do not mix																					
KELPAK														xxxx		XXXX	XXXX				
PERK - Grocal & Stopit DO NOT MIX	XXXX	XXXX																	XXX		
STOP IT - Perk DO NOT MIX																					
TOP N			XXXX		XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	xxxx		xxxx						

1. GREENHOUSE Knapsack Diary - spray before 7am

x 2 in erro

SPRAY NO.	1	2	3	3a	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
DATE SPRAYED	Ref Akl 23.12.13	Ref Akl 7..01.14	04.03.14	05.03.14	25.03.14	02.04.14	16.04.14	07.05.14	23.05.14	26.06.14	07.07.14 31.07.14										
WATER USED	6	5	5	5	5	5	5	5	5	10	5	5	5	10	10	10	10	10	10	10	10
FUNGICIDES																					
SURRENDER																					
TRI FILM																					
FOSTONIC DIP																					
BARRACK Bravo																					
PRISTINE								XXXX							XXXX	XXXX					
OCTAVE (Curator)						XXXX			XXX			XXXX									XXXX
VALIDUS SYSTHANE		XXXX								XXXX			XXXX								
KOCIDE Opti	XXXX																				
TALENDO																					
GOLDAZIM			XXXX		XXXX		XXXX				XXXX			XXXX							
SWITCH									XXX										XXXX		
TELDOR																					
THIRAM 40F	XXXX																				
IPPON do not mix GROCAL																		XXXX			
MERPAN																		XXXX			
APHICIDES																					
CHESS			XXXX			XXXX						check	check		XXXX						
CYRUS (4 X BB)										XXX	XXX	XXX	XXX								
PIRITEK																					
MITICIDES																					
APOLLO		XXXX		XXXX																	
MAVRIK (apply with Apollo)		XXXX		XXXX							XXXX										
VERDEX (only 1 other chem to mix)					XXXX								XXXX	XXXX							
FENAMITE NO SLOW DRY/FROST x 2															XXXX	XXXX		XXXXXX			XXXX
MIT E MEC (3 x BB)							XXXX	XXXX	XXXX												
INSECTICIDES																					
CYRUS (4 x BB)																					
PIRITEK																					
TOP STAR			XXXX																		
SPARTA / Delegate(4 x BB)			XXXX		XXXX	XXXX	XXXX									XXXX					
SUFFICANTS																					
BIND-R	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX										
FOLIAR																					
BORTRAC - GROCAL do not mix												XXXX									
GROCAL - PERK & IPPON do not mix																					
KELPAK													XXXX	XXXX	XXXX	XXXX	XXXX				
PERK - Grocal & Stopit DO NOT MIX	XXXX	XXXX																	XXX		
STOP IT - Perk DO NOT MIX																					
TOP N			XXXX		XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX										

GREENHOUSE 2012-2013 - spray before 7am

RATES, TIMEFRAMES & TARGE *manual all loc spraying / YTD SPRAY I*														
SPRAY NO.	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**
DATE	**26.10.12**	**13.11.12**	**05.12.12**	**13.12.12**	**08.01.13**	**22.02.13**	**11.03.13**	**27.3.13**	**26.04.13**	**14.05.13**	**10.06.13**	**21.06.13**	**05.07.13**	**26.07.13**
WATER	**6**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**10**	**10**
FUNGICIDES														
SURRENDER														
TRI FILM														
FOSTONIC DIP														
BARRACK Bravo														
PRISTINE														**XXXX**
OCTAVE (Curator)			**XXXX**		**XXXX**		**XXXX**			**XXXX**	**XXXX**			
VALIDUS SYSTHANE									**XXXX**			**XXXX**		
KOCIDE Opti	**XXXX**													
SWITCH										**XXXX**				
CAPTAN		**XXXX**												
TELDOR														
IPPON do not mix GROCAL														
THIRAM 40F														
GOLDAZIM				**XXXX**		**XXXX**		**XXXX**					**XXXX**	
APHICIDES														
CHESS		**XXXX**			**XXXX**				**XXXX**		**XXXX**			**XXXX**
CYRUS														
PIRITEK														
MITICIDES														
APOLLO														
MAVRIK														
VERDEX				**XXXX**			**XXXX**	**XXXX**				**XXXX**	**XXXX**	
FENAMITE		**XXXX**	**XXXX**			**XXXX**	**XXXX**			**XXXX**				**XXXX**
MIT E MEC														
JMS Oil - no BOND or CAPTAN 14 DAYS			**XXXX**		**XXXX 1%**		**XXXX 1%**	**XXXX**						
INSECTICIDES														
DELEGATE											**XXXX**		**XXXX**	
DELFIN	**XXXX**	**XXXX**		**XXX**		**XXXX**		**XXXX**		**XXXX**				
LANNATE														
SUCCESS	**XXXX**		**XXXX**		**XXXX**		**XXXX**		**XXXX**					
SPARTA														
SUFFICANTS														
BOND - no JMS 14 DAYS			**XXXX**									**XXXX**		**XXXX**
BIND-R														
FOLIAR														
BORTRAC - GROCAL do not mix						**XXXX**	**XXXX**				**XXXX**			
GROCAL - PERK & IPPON do not mix		**XXXX**			**XXXX**				**XXXX**					
KELPAK								**XXXX**		**XXXX**		**xxxx**	**XXXX**	**XXXX**
PERK - Grocal & Stopit DO NOT MIX														
STOP IT - Perk DO NOT MIX			**XXXX**	**XXXX**										

GROWSAFE CERTIFICATE
DATE CERTIFICATE ISSUED
NAME OF CHEMICAL APPLICATOR
CROP

YEAR HARVESTED
HW GROWER No.
GROWER NAME
PROPERTY NAME

YEAR HARVESTED 2005
HW GROWER No. 11304
GROWER NAME PERRYS BERRYS LTD
PROPERTY NAME NUCLEAR STOCK
1.02.12

SPRAY EARLY MORNING ONLY

3 WEEKLY GREENHOUSE	KNAPSACKS		1	2 (12 pB)	3	4	5	6	7	8	9	10	11	12	13	14	15	16	14	1	1	1	1
	DATES		02.11.11	14.11.11	22.11.11	02.12.11	17.12.11	04.1.12	19.01.12	21.02.12	22.02.12	22.03.12	02.04.12	04.05.12	11.06.12	19.06.12	24.07.12	25.07.12	04.08.11	06.09.08			
	LITRES/ha		15	15	10	7.5	7.5	10	10	13	5	15	10	10	10	10	10	10	Motorised	Motorisde	Motorised	Motorised	Motorised
	RATE/100L																		gmp	gmp			
FUNGICIDES																							
ALIETTE DIP	200	gms																					
HYDROPRO	250	gms																					
GOLDAZIM	300	mls				XXXX		XXXX		XXXX			XXXX		XXXX								
OCTAVE (Curator)	50	gms			XXXX		XXXX		XXXX			XXXX		XXXX			XXXX					XXXX	
CAPTAN	150	gms																					
SWITCH	80	gms		XXXX					XXXX							XXXX	XXXX			XXXX			XXXX
TELDOR	150	mls																					
BELEAR	300	mls																					
MERPAN Captan	150	gms	XXXX	XXXX				XXXX											XXXX				
KOCIDE Opti	90	mls																					
ALTO (no nitrosol)	40	mls																			XXXX		
PYRUS (cheaper)																							
ROVRAL WP	100	gms																	XXXX				
IPPON	100	gms								XXXX				XXXX		XXXX			XXXX				
APHICIDES																							
BRAVIUM Chess	40	mls					XXXX													XXXX	XXXX		XXXX
CHESS	20	gms											XXXX										
MITICIDES																							
APOLLO/Archilles	50		XXXX			XXXX								XXXX			XXXX						
PYROMITE/Fenamite	50	mls			XXXX				XXXX	XXXX		XXXX				XXXX			XXXXXX			XXXX	XXXX
MIT E MEC	75	mls									XXXX												
INSECTICIDES																							
SUCCESS	40	mls		XXXX	XXXX		XXXX		XXXX			XXXX			XXXX		XXX		XXXX	XXXX	XXXX	XXXX	
DIPEL	50	gms	XXXX	XXXX		XXXX	XXXX	XXXX					XXXX	XXXX									
LANNATE	120	mls																					
OTHER																							
VAPORGARD	1																						
KELPAK (root development	200	mls																XXXX					
PERK (check Kelpak compa	250 /500	mls							XXXX							XXXX				XXX			XXXX
BOND	100	mls	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX		XXXX	XXXX	XXXX									
SEAMAC PT	500	mls				XXXX																	
TERRA	300	mls				XXXX		XXXX															
VERTEX Wuxal Top N	1000	mls			XXXX		XXXXX																
BORON	250												XXXX		XXXX								
CALCIUM	250										XXXX	XXXX		XXXX									
PANDA	225	mls																					
JET	112	mls																					
NIRVANA Buster	1.3/1	mls																					
GLYPHOSHATE	1	mls																					
DIURON																							
SIMAZINE																							
KIWI COVER	1	mls																					
PROPLANT																							

GROWSAFE CERTIFICATE
DATE CERTIFICATE ISSUED
NAME OF CHEMICAL APPLICATOR
CROP

YEAR HARVESTED
HW GROWER No.
GROWER NAME
PROPERTY NAME

YEAR HARVESTED 2005
HW GROWER No. 11304
GROWER NAME PERRYS BERRYS LTD
PROPERTY NAME NUCLEAR STOCK

SPRAY EARLY MORNING ONLY

3 WEEKLY GREENHOUSE	KNAPSACKS		1	2	3	4	6	5	7	8	9	10	11	Left Over PB	Left Over PB	12	13 gmp	14 gmp	1	1	1	1
	DATES		10.11.10	08.12.10	24.12.10	11.01.11	03.01.11	24.02.11	21.03.11	01.04.11	11.04.11	05.05.11	02.06.11	14.06.11	23.06.11	24.06.11	8.7.11	04.08.11	06.09.08			
	LITRES/ha		15	15	7.5	7.5	8	8	12	13	15	Motorised	Motorised	KNAPSACK	KNAPSACK	Motorised	Motorised	Motorised	Motorisde	Motorised	Motorised	Motorised
	RATE/100L																					
FUNGICIDES																						
ALIETTE DIP	200	gms																				
HYDROPRO	250	gms	XXXXX											XXXX								
GOLDAZIM	300	mls		XXXX		XXXX	XXXX		XXXX			XXXX			XXXX		XXXX					
OCTAVE (Curator)	50	gms			XXXX			XXXX			XXXX					XXXX					XXXX	
SWITCH	80	gms								XXXX									XXXX			XXXX
TELDOR	150	mls																				
BELEAR	300	mls																				
MERPAN Captan	150	gms																XXXX				
ALTO (no nitrosol)	40	mls																		XXXX		
PYRUS (cheaper)																						
ROVRAL WP	100	gms														XXXX		XXXX				
IPPON	100	gms								XXXX			XXXX				XXXX	XXXX				
APHICIDES																						
BRAVIUM Chess	40	mls		XXXX				XXXX				XXXX			XXXX				XXXX	XXXX		XXXX
CHESS	20	gms																				
MITICIDES																						
APOLLO/Archilles	50					XXXX							XXXX			XXXX						
PYROMITE/Fenamite	50	mls		XXXX	XXXX				XXXX		XXXX	XXXX					XXXX	XXXXXX			XXXX	XXXX
INSECTICIDES																						
SUCCESS	40	mls	XXXX		XXXX		XXXX				XXXX		XXXX	XXXX	XXXX			XXXX	XXXX	XXXX	XXXX	
DIPEL	50	gms				XXXX		XXXX	XXXX							XXXX	XXXX					
LANNATE	120	mls																				
OTHER																						
VAPORGARD	50	mls																				
PHOSGARD	500/750	mls		XXXX					XXXX					XXXX	XXXX				XXX			XXXX
GUARD	100	mls		XXXX	XXXX									XXXX		XXXX						
SEAMAC PT	500	mls				XXXX																
TERRA	300	mls					XXXXX				XXXX	XXXX										
VERTEX Wuxal Top N	1000	mls					XXXXX					XXXX										
PANDA	225	mls																				
JET	112	mls																				
NIRVANA Buster	1.3/1	mls																				
GLYPHOSHATE	1	mls																				
DIURON																						
SIMAZINE																						
KIWI COVER	1	mls																				
PROPLANT																						

GROWSAFE CERTIFICATE
DATE CERTIFICATE ISSUED
NAME OF CHEMICAL APPLICATOR
CROP

YEAR HARVES YEAR HARVESTED 2005
HW GROWER I HW GROWER No. 11304
GROWER NAM GROWER NAME PERRYS BERRYS LTD
PROPERTY NA PROPERTY NAME NUCLEAR STOCK

SPRAY EARLY MORNING ONLY

3 WEEKLY	KNAPSACKS		1	1		1	1		1	1		1		1	1	1	1	1	1	1
GREENHOUSE	DATES		08.11.09	05.12.09	19.12.09	31.12.09	09.01.10	28.01.10	22.02.10	12.03.10	18.03.10	07.04.10	25.05.10	10.06.10		18.08.08	06.09.08			
	LITRES/ha		125	125		125	125	125	125	125	MOTORX2	Motorised	Motorised	Motorised	Motorised	Motorised	Motorisde	Motorised	Motorised	Motorised
	RATE/100L																			
FUNGICIDES																				
ALIETTE DIP	200	gms																		
HYDROPRO	250	gms	XXXXX																	
GOLDAZIM	300	mls		XXXX		XXXX		XXXX		XXXX				XXXX						
OCTAVE	50	gms			XXXX		XXXX		XXXX						XXXX				XXXX	
SWITCH	80	gms										XXXX	XXXX				XXXX			XXXX
TELDOR	150	mls										XXXX	XXXX							
BELEAR	300	mls																		
MERPAN Captan	150	gms																		
ALTO (no nitrosol)	40	mls																XXXX		
PYRUS (cheaper)																				
ROVRAL WP	100	gms																		
IPPON	100	gms																		
APHICIDES																				
BRAVIUM Chess	80	mls		XXXX			XXXX		XXXX					XXXX			XXXX	XXXX		XXXX
CHESS	20	gms																		
MITICIDES																				
APOLLO/Archilles	50															XXXX				
FENAMITE	50	mls	XXXX	XXXX	XXXX			XXXX	XXXX					XXXX	XXXX				XXXX	XXXX
INSECTICIDES																				
SUCCESS	40	\	XXXX		XXXX	XXXX		XXXX					XXXX		XXXX		XXXX	XXXX	XXXX	
DIPEL	50	gms				XXXX	XXXX			XXXX										
LANNATE	120	mls																		
OTHER																				
VAPORGARD	50	mls																		
FOSCHEK	500/750	mls		XXXX											XXXXX		XXX			XXXX
GUARD	100	mls		XXXX	XXXX	XXXX		XXXX	XXXX	XXX		XXXX	XXXX	XXXX						
TERRA	300	mls								XXX										
VERTEX Azalon	1000	mls								XXX										
PANDA	225	mls													XXXX					
JET	112	mls					XXXX													
NIRVANA Buster	1.3/1	mls																		
GLYPHOSHATE	1	mls																		
DIURON																				
SIMAZINE																				
KIWI COVER	1	mls																		
PROPLANT																				

GROWSAFE CERTIFICATE
DATE CERTIFICATE ISSUED
NAME OF CHEMICAL APPLICATOR
CROP

YEAR HARVES YEAR HARVESTED 2005
HW GROWER I HW GROWER No. 11304
GROWER NAM GROWER NAME PERRYS BERRYS LTD
PROPERTY NA PROPERTY NAME NUCLEAR STOCK

SPRAY EARLY MORNING ONLY

3 WEEKLY	KNAPSACKS		1	1		1	1		1	1		1		1	1	1	1	1	1	1
GREENHOUSE	DATES		08.11.09	05.12.09	19.12.09	31.12.09	09.01.10	28.01.10	22.02.10	12.03.10	18.03.10	07.04.10	25.05.10	10.06.10		18.08.08	06.09.08			
	LITRES/ha		125	125		125	125	125	125	125	MOTORX2	Motorised	Motorised	Motorised	Motorised	Motorised	Motorisde	Motorised	Motorised	Motorised
	RATE/100L																			
FUNGICIDES																				
ALIETTE DIP	200	gms																		
HYDROPRO	250	gms	XXXXX																	
GOLDAZIM	300	mls		XXXX		XXXX		XXXX		XXXX				XXXX						
OCTAVE	50	gms			XXXX		XXXX		XXXX						XXXX				XXXX	
SWITCH	80	gms										XXXX	XXXX				XXXX			XXXX
TELDOR	150	mls										XXXX	XXXX							
BELEAR	300	mls																		
CAPTAN	150	gms																		
ALTO (no NITROSOL)	40	mls																XXXX		
PYRUS																				
ROVRAL FLO	200	mls																		
ROVRAL WP	100	gms																		
IPPON	100	gms																		
APHICIDES																				
METAFORT	100	mls																		
BRAVIUM Chess	20	gms		XXXX			XXXX		XXXX					XXXX			XXXX	XXXX		XXXX
MITICIDES																				
APOLLO/Archilles	50															XXXX				
KELTHANE	200	gms									XXXX	XXXX								
FENAMITE	50	mls	XXXX	XXXX	XXXX			XXXX	XXXX					XXXX	XXXX				XXXX	XXXX
INSECTICIDES																				
CHLOROPYRIFOS	50	gms																		XXXX
SUCCESS	40	\	XXXX		XXXX	XXXX		XXXX					XXXX		XXXX		XXXX	XXXX	XXXX	
DIPEL	50	gms				XXXX	XXXX			XXXX										
LANNATE	120	mls																		
OTHER																				
VAPORGARD	50	mls																		
PERK / Fosguard	500/750	mls		XXXX											XXXXX		XXX			XXXX
CONTACT	25	mls																		
GUARD	100	mls		XXXX	XXXX	XXXX		XXXX	XXXX	XXX		XXXX	XXXX	XXXX						
TERRA	300	mls								XXX										
AZOLON	1000	mls								XXX										
PANDA	225	mls													XXXX					
JET	112	mls					XXXX													
BUSTER	1.3/1	mls																		
GLYPHOSHATE	1	mls																		
DIURON																				
SIMAZINE																				
KIWI COVER	1	mls																		
PROPLANT																				

GROWSAFE CERTIFICATE
DATE CERTIFICATE ISSUED
NAME OF CHEMICAL APPLICATOR
CROP

YEAR HARVES YEAR HARVESTED 2005
HW GROWER I HW GROWER No. 11304
GROWER NAM GROWER NAME PERRYS BERRYS LTD
PROPERTY NA PROPERTY NAME NUCLEAR STOCK

SPRAY EARLY MORNING ONLY

3 WEEKLY	KNAPSACKS		1	1		1	1		1	1	1	1	1	1	1	1	1	1
GREENHOUSE	DATES		05.12.08	16.01.09	18.03.09	15.04.09	15.05.09	10.06.09	23.06.09	22.07.09	18.08.09	09.06.08	17.07.08	18.08.08	06.09.08			
	LITRES/ha		125	125		125	125	125	125	125	Motorised	Motorised	Motorised	Motorised	Motorisde	Motorised	Motorised	Motorised
	RATE/100L																	
FUNGICIDES																		
ALIETTE DIP	200	gms																
HYDROPRO	250	gms	XXXXX															
GOLDAZIM	300	mls		XXXX	XXXX		XXXX		XXXX	XXXX		XXXX						
OCTAVE	50	gms				XXXX		XXXX					XXXX				XXXX	
SWITCH	80	gms									XXXX				XXXX			XXXX
BELEAR	300	mls																
CAPTAN	150	gms																
ALTO (no NITROSOL)	40	mls														XXXX		
ROVRAL FLO	200	mls																
ROVRAL WP	100	gms																
IPPON	100	gms																
APHICIDES																		
METAFORT	100	mls																
CHESS	20	gms		XXXX											XXXX	XXXX		XXXX
MITICIDES																		
KELTHANE	200	gms			XXXX			XXXX						XXXX	XXXX	XXXXX		XXXX
APOLLO/Archilles	50										XXXX			XXXX				
FENAMITE	50	mls	XXXX	XXXX													XXXX	XXXX
INSECTICIDES																		
CHLOROPYRIFOS	50	gms																XXXX
SUCCESS	40	\	XXXX		XXXX						XXXX		XXXX		XXXX	XXXX	XXXX	
DIPEL	50	gms				XXXX	XXXX		XXXX	XXXX		XXXX						
LANNATE	120	mls																
OTHER																		
VAPORGARD	50	mls																
PERK / Fosguard	500/750	mls		XXXX	XXXX	XXXX	XXXX		XXXX		XXXX		XXXXX		XXX			XXXX
CONTACT	25	mls																
GUARD	15	mls		XXXX				XXXX	XXXX	XXX	XXXX							
TERRA	300	mls								XXX								
AZOLON	1000	mls								XXX								
PANDA	225	mls											XXXX					
JET	112	mls				XXXX	XXXX											
BUSTER	1.3/1	mls																
GLYPHOSHATE	1	mls																
DIURON																		
SIMAZINE																		
KIWI COVER	1	mls																
PROPLANT																		

GROWSAFE CERTIFICATE
DATE CERTIFICATE ISSUED
NAME OF CHEMICAL APPLICATOR
CROP

YEAR HARVESTED 2005
HW GROWER No. 11304
GROWER NAME PERRYS BERRYS LTD
PROPERTY NAME NUCLEAR STOCK

SPRAY EARLY MORNING ONLY

3 WEEKLY	KNAPSACKS		1	1		1	1	1	1	1	1	1	1	1	1	1
GREENHOUSE	DATES		12.12.07	27.12.07	26.01.08	18.02.08	17.03.08	18.04.08	18.05.08	09.06.08	17.07.08	18.08.08	06.09.08			
	LITRES/ha		125	125		125	125	125	Motorised	Motorised	Motorised	Motorised	Motorisde	Motorised	Motorised	Motorised
	RATE/100L															
FUNGICIDES																
ALIETTE DIP	200	gms														
HYDROPRO	250	gms	XXXXX													
GOLDAZIM	300	mls				XXXX		XXXX		XXXX						
OCTAVE	50	gms		XXXX	XXXX		XXXX		XXXX		XXXX				XXXX	
SWITCH	80	gms											XXXX			XXXX
BELEAR	300	mls														
CAPTAN	150	gms														
ALTO (no NITROSOL)	40	mls												XXXX		
ROVRAL FLO	200	mls														
ROVRAL WP	100	gms														
IPPON	100	gms														
APHICIDES																
METAFORT	100	mls														
CHESS	20	gms		XXXX									XXXX	XXXX		XXXX
MITICIDES																
KELTHANE	200	gms			XXXX	XXXX		XXXX	XXXX			XXXX	XXXX	XXXXX		XXXX
APOLLO/Archilles	50											XXXX				
FENAMITE	50	mls	XXXX	XXXX			XXXX	XXXX							XXXX	XXXX
INSECTICIDES																
CHLOROPYRIFOS	50	gms														XXXX
SUCCESS	40	\	XXXX		XXXX			XXXX	XXXX		XXXX		XXXX	XXXX	XXXX	
DIPEL	50	gms				XXXX	XXXX			XXXX						
LANNATE	120	mls														
OTHER																
VAPORGARD	50	mls														
PERK / Fosguard	500/750	mls									XXXXX		XXX			XXXX
CONTACT	25	mls														
GUARD	15	mls		XXXX												
PANDA	225	mls									XXXX					
JET	112	mls				XXXX										
BUSTER	1.3/1	mls														
GLYPHOSHATE	1	mls														
DIURON																
SIMAZINE																
KIWI COVER	1	mls														
PROPLANT																

GROWSAFE CERTIFICATE
DATE CERTIFICATE ISSUED
NAME OF CHEMICAL APPLICATOR
CROP

YEAR HARVESTED 2005
HW GROWER No. 11304
GROWER NAME PERRYS BERRYS LTD
PROPERTY NAME NUCLEAR STOCK

SPRAY EARLY MORNING ONLY

3 WEEKLY	KNAPSACKS		1	1		1	1	1	1	1	1	1	1	1	1	1
GREENHOUSE	DATES		18.12.06	15.01.07	21.01.07	16.03.07	16.04.07	12.05.07	29.05.07	20.06.07	19.07.07	18.05.06	30.06.06			
	LITRES/ha		125	125		125	125	125	Motorised	Motorised	Motorised	Motorised	Motorisde	Motorised	Motorised	Motorised
	RATE/100L															
FUNGICIDES																
ALIETTE DIP	200	gms														
HYDROPRO	250	gms	XXXXX													
GOLDAZIM	300	mls			XXXX			XXXX					XXXX			
OCTAVE	50	gms		XXXX		XXXXX	XXXX		XXXX		XXXX	XXXX			XXXX	
SWITCH	80	gms														XXXX
BELEAR	300	mls														
CAPTAN	150	gms														
ALTO (no NITROSOL)	40	mls								XXXX				XXXX		
ROVRAL FLO	200	mls							XXXX							
ROVRAL WP	100	gms														
IPPON	100	gms														
APHICIDES																
METAFORT	100	mls														
CHESS	20	gms		XXXX	XXXX		XXXX		XXXX	XXXX			XXXX	XXXX		XXXX
MITICIDES																
KELTHANE	200	gms		XXXX				XXXX		XXXXX			XXXX	XXXXX		XXXX
FENAMITE	50	mls	XXXX			XXXX	XXXX				XXXX	XXXX			XXXX	XXXX
INSECTICIDES																
CHLOROPYRIFOS	50	gms														XXXX
SUCCESS	40	\	XXXX			XXXX		XXXX			XXXX	XXXX	XXXX	XXXX	XXXX	
LANNATE	120	mls		XXXX			XXXX									
OTHER																
VAPORGARD	50	mls														
PERK / Fosguard	500/750	mls											XXX			XXXX
CONTACT	25	mls														
GUARD	15	mls		XXXX												
PANDA	225	mls														
JET	112	mls				XXXX										
BUSTER	1.3/1	mls														
GLYPHOSHATE	1	mls														
DIURON																
SIMAZINE																
KIWI COVER	1	mls														
PROPLANT																

GROWSAFE CERTIFICATE
DATE CERTIFICATE ISSUED
NAME OF CHEMICAL APPLICATOR
CROP

YEAR HARVESTED 2005
HW GROWER No. 11304
GROWER NAME PERRYS BERRYS LTD
PROPERTY NAME NUCLEAR STOCK

SPRAY EARLY MORNING ONLY

3 WEEKLY	KNAPSACKS		1	1	1	1	1	1	1	1	1	1	1	1	1
GREENHOUSE	DATES		25.10.2005	26.10.2005	19.11.05	13.12.05	28.12.05	27.01.06	09.03.06	13.04.06	18.05.06	30.06.06			
	LITRES/ha		125	125	125	125	125	Motorised	Motorised	Motorised	Motorised	Motorisde	Motorised	Motorised	Motorised
	RATE/100L														
FUNGICIDES															
ALIETTE DIP	200	gms													
HYDROPRO	250	gms	XXXX												
GOLDAZIM	300	mls			XXXX		XXXX			XXXX		XXXX			
OCTAVE	50	gms				XXXX		XXXX			XXXX			XXXX	
SWITCH	80	gms													XXXX
BELEAR	300	mls													
CAPTAN	150	gms													
ALTO (no NITROSOL)	40	mls							XXXX				XXXX		
ROVRAL FLO	200	mls													
ROVRAL WP	100	gms													
IPPON	100	gms													
APHICIDES															
METAFORT	100	mls													
CHESS	20	gms			XXXX	XXXX		XXXX	XXXX			XXXX	XXXX		XXXX
MITICIDES															
KELTHANE	200	gms					XXXX	XXXX	XXXXX			XXXX	XXXXX		XXXX
FENAMITE	50	mls	XXXX		XXXX	XXXX				XXXX	XXXX			XXXX	XXXX
INSECTICIDES															
CHLOROPYRIFOS	50	gms													XXXX
SUCCESS	40	mls	XXXX		XXXX	XXXX	XXXX	XXXX		XXXX	XXXX	XXXX	XXXX	XXXX	
LANNATE	120	mls													
OTHER															
VAPORGARD	50	mls													
PERK / Fosguard	500/750	mls										XXX			XXXX
CONTACT	25	mls													
GUARD	15	mls													
PANDA	225	mls													
JET	112	mls													
BUSTER	1.3/1	mls													
GLYPHOSHATE	1	mls		XXXX											
DIURON				XXXX											
SIMAZINE				XXXX											
KIWI COVER	1	mls		XXXX						XXXX					
PROPLANT							XXXX								

SPRAY EARLY MORNING ONLY

GROWSAFE CERTIFICATE		YEAR HARVESTED	2005
DATE CERTIFICATE ISSUED		HW GROWER No.	11304
NAME OF CHEMICAL APPLICATOR		GROWER NAME	PERRYS BERRYS LTD
CROP		PROPERTY NAME	NUCLEAR STOCK
			Suresh Suresh

3 WEEKLY	KNAPSACKS		1	1	0.75	1	1	1	1	1	1	1	1	1
GREENHOUSE	DATES		16.11.04	02.12.04	17.12.04	03.01.05	25.01.05	10.02.05	29.03.05	19.04.05	29.04.05	23.05.05	24.06.05	18.07.05
	LITRES/ha		125	125	125	125	Motorised	Motorised	Motorised	Motorised	Motorisde	Motorised	Motorised	Motorised
	RATE/100L													
FUNGICIDES														
ALIETTE DIP	200	gms												
HYDROPRO	250	gms												
GOLDAZIM	300	mls		XXXX		XXXX					XXXX			
OCTAVE	50	gms	XXXX		XXXX		XXXX		XXXX				XXXX	
SWITCH	80	gms						XXXX						XXXX
BELEAR	300	mls												
CAPTAN	150	gms												
ALTO (no NITROSOL)	40	mls										XXXX		
ROVRAL FLO	200	mls												
ROVRAL WP	100	gms								XXXX				
IPPON	100	gms												
APHICIDES														
METAFORT	100	mls			XXXX									
CHESS	20	gms		XXXX		XXXX		XXXX				XXXX		XXXX
MITICIDES														
KELTHANE	200	gms		XXXX			XXXX				XXXX	XXXXX		XXXX
FENAMITE	50	mls	XXXX		XXXX			XXXX	XXXX				XXXX	XXXX
INSECTICIDES														
CHLOROPYRIFOS	50	gms												XXXX
SUCCESS	40	mls	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX		XXXX	XXXX	XXXX	
LANNATE	120	mls												
OTHER														
VAPORGARD	50	mls												
PERK / Fosguard	500/750	mls				XXXX					XXX			XXXX
CONTACT	25	mls												
GUARD	15	mls							XXX					
PANDA	225	mls												
JET	112	mls												
BUSTER	1.3/1	mls												
GLYPHOSHATE	1	mls												
KIWI COVER	1	mls		XXXX	XXXX	XXX			XXXX					

GROWSAFE CERTIFICATE
DATE CERTIFICATE ISSUED
NAME OF CHEMICAL APPLICATOR
CROP

YEAR HARVESTED 2004
HW GROWER No. 11304
GROWER NAME PERRYS BERRYS LTD
PROPERTY NAME NUCLEAR STOCK

NOTE SHOULD BE 10 KNAPSACKS

3 WEEKLY	KNAPSACKS	0.5	0.75	0.75	1	1	1	1	1	1																		
ALL	DATES	14.12.03	9.1.04	7.02.04	1.03.04	04.03..04	21.03.04	28.04.04	25.05.04	20.06.04						3.04.03	15.04.03	26.04.03	11.05.03	23.05.03	4.06.03	10.06.03	20.06.03	4.07.03	23.07.03	24.08.03	DATES	TE Pukaki R
AGRICHEMICALS	LITRES/ha	125	125	125	125	125	Motorised	125	125	125						Motorised	Motorised	Motorised	Motorised	Motorised	Motorised	Motorised	Motorised	Motorised	Motorised	Motorised	LITRES/ha	AGRICHEMICA
	RATE/100L																										RATE/100L	
FUNGICIDES																												FUNGICIDE
ALIETTE DIP Foston	200 grams																										200 grams	ALIETTE DIP
HYDROPRO	250 grams																										250 grams	HYDROPRO
GOLDAZIM	300 mls		XXXX		XXXX								XXXX			XXXX			XXXX					XXXX			300 mls	GOLDAZIM
OCTAVE	50 grams	XXXX		XXXX				XXXX			XXXX				XXXX		XXX						XXXX				50 grams	OCTAVE
SWITCH	80 grams								XXX			XXXX		XXXX													80 grams	SWITCH
BELEAR	300 mls																					XXXX			XXXX		300 mls	BELEAR
																									XXXX	XXXX	150 mls	CAPTAN
ALTO (NO Nitrosol)	40 mls									XXXX								XXXX		XXXX							40 mls	ALTO
APHICIDES																												APHICIDES
METAFORT	100 mls			XXXX				XXXX					XXXX			XXXX							XXXX				100 mls	METAFORT
CHESS	20 grams		XXXX		XXXX		XXXX			XXXX		XXXX			XXXX			XXXX						XXXX			20 grams	CHESS
MITICIDES																												MITICIDES
KELTHANE	200 grams		XXXX				XXXX	XXXX		XXXX		XXXX			XXXX					XXXX				XXXX		XXXX	200 grams	KELTHANE
FENAMITE	50 mls	XXXX		XXXX					XXXX		XXXX			XXXX			XXXX		XXXX				XXXX				50 mls	FENAMITE
INSECTICIDES																												INSECTICID
CHLOROPYRIFOS	50 gms									XXXX			XXXX			XXXX												50 gms	CHLOROPYRI
SUCCESS	40 mls	XXXX	XXXX	XXXX	XXXX		XXXX	XXXX			XXXX	XXXX		XXXX		XXXX	XXXX		XXXX	XXXX		XXXX			XXXX	XXXX	40 mls	SUCCESS
LANNATE	120 mls					XXXX			XXXX																		120 mls	LANNATE
VAPORGARD	50 mls																										50 mls	VAPORGARD
PERK / Phosguard	500/750 mls				XXXX				XXX			XXXX		XXXX			XXXX			XXXX			XXXX	XXXX	XXXX	XXXX	500/750 mls	PERK / Fosgu
CONTACT	25 mls																										25 mls	CONTACT
HEADLAND GUARD	100 mls							XXX																			15 mls	GUARD
PANDA	250 mls																					XXXX					225mls	PANDA
JET	250 mls																				XXXX						112mls	JET
																											1 ltr	BUSTER
																											1 ltr	BUSTER
PROPLANT	1.8L / 2.7m		XXXX	XXXX	XXX																						1 ltr	BUSTER

Water Projects Limited June 2008

Resource Consent Application to
Discharge Domestic Wastewater
Perrys Berrys
485 Puhinui Road
Mangere

Resource Consent
Evaluation
Design
Report

Water Projects Limited June 2008

Contents:

APPLICATION FOR RESOURCE CONSENT

To Discharge Domestic Wastewater

Auckland Regional Council
TE RAUHITANGA TAIAO

APPLICATION FOR RESOURCE CONSENT

To Discharge Domestic Wastewater

TO: The Manager, Consent Services
Auckland Regional Council
Private Bag 92012
AUCKLAND
PH: (09) 366 2000
Fax: (09) 366 2155

Office Use Only
File No:
Consent No:
WBS/Project No:
Fee: $
Customer No:

PART A: Contact Details

Please note: These details must be completed in full

1* Applicant(s) Details

Company Name: Perrys Berrys

Name(s): Francie Perry

Nature of Applicant: Owner
(i.e. owner, leasee, prospective purchaser, developer)

Postal Address: 11A Campana Rd
Mangere

Street Address (if different from above): 485 Puhinui Rd
Mangere

Phone Number: Business 09 6222350 Private
Mobile 021 737792 Fax 09 2789579

Email Address: francie@perrysberrys.co.nz

Name of Contact Person: Francie Perry

2* Consultant/Agent Details (if applicable)

Consultancy/Agent Company Name: Water Projects Limited

Postal Address: PO Box 288
Waiuku 2341

Phone Number: Business 09 2356992 Private
Mobile 021 2769677 Fax 09 2355138

E-mail address: paul@waterprojects.co.nz

Name of Contact Person: Paul Chester

3* All correspondence relating to this application should be sent to

☐ Applicant ☑ Consultant Other (specify)

4* Is the consultant/agent an experienced wastewater system design engineer/consultant?

Yes ☑ No ☐

Is the consultant / agent familiar with and had regard to ARC TP 58 (3rd ed.) in wastewater desgin and in the preparation of this application

Yes ☑ No ☐

5* **Are there any previous existing discharge consents relating to this proposal or other wastewater discharges on the site?**

☑ No ☐ Yes

If yes, give Reference Number(s) and Description -

6* **Activity Type**

What is the Legal Status of the proposed Discharge Activity?

Controlled ☐ Discretionary ☑ Relevant Regional Rule

7* **List any other consents required for this proposal and site**

	Consent Status		
	Current Consent* (Consent No.)	Current Application (Application No.)	Application Status Pending (Tick only)
ARC TLA Subdivision Consent			
TLA Land Use Consent			
ARC Water Take			
Bore ✓			
Coastal			
Earthworks			
Surface Water			
Contaminated Site			
Divert Surface Water			
Air Consent			
Industrial Discharge			
Stormwater Discharge			
Other			

* If current please attach copy

PART B: Property Details

1* **Property for which this application relates**

Physical Address of Property: 485 Puhinui Road, Mangere

Territorial Local Authority*: Manukau City Council

Total Property Area*: 20,000 m²

Map Grid Reference of Property*: NZMG 2672826.2, 6465857.5

2* **Legal description of land (as shown on Certificate of Title)**

Lot 1 DP 71211 CT N/A 38A/1059

Other (specify)

Please attach a copy of the Certificate of Title. If you do not supply this, the cost of obtaining a copy will be included in the consent processing costs.

PART C: Point of Discharge

1* **Location**

Is the wastewater disposed of on the site of origin? Yes ☑ No ☐

2* **If the site on which the wastewater is to be discharged is not on the property in Part B above, please indicate**

a. Name of owner

Address/Location

b. Legal Description of land where discharge point is situated

Lot DP CT

Other (specify)

c.* Is a plan included showing the location of the point of discharge or disposal area, in relation to the property.

Provide plan showing location of discharge site.

Yes ☐ No ☐

3* **Map reference of the point of discharge for the disposal area** NZMS

PART D: General Site Assessment

1 **Desk Study**

a. Has a Desk Study been undertaken for this property Yes ☑ No ☐

If yes, please specify the findings of the Desk Study, and if not please specify why this was not considered necessary

Desk study done to collect property information.

2* **Topography**

a. Is a site contour plan attached? Yes ☐ No ☑

b. Is the proposed disposal area situated on a slope? Yes ☐ No ☑ Approx. Slope ☐ °

c. Are there any water courses, stormwater drains or springs on the site? Yes ☑ No ☐

Location Waokauri Creek on the eastern boundary.

3 Site Stability

a. Has expert evaluation of the site stability been undertaken? Yes ☐ No ☑

If No, why not: Site is flat.

Report attached Yes ☐ No ☑ If yes, please attach a copy of the stability report

b. Are there any signs of instability (eg slips, fissures)? Yes ☐ No ☑

If yes, please detail:

c.* Has a Slope Stability Assessment been carried out on the proposed disposal area? Yes ☐ No ☑

If no, why not: Site is flat

If yes, please give details or report (and if possible, please attach report):

Author:

Company/Agency

Date of reoprt

Brief description of report findings or provide reference to where this is covered in above report

4* Site Characteristics

Provide descriptive details below or **specify where this is covered in accompanying application report**

Performance of adjacent systems: Secondary systems in area performing satisfactorally.

Estimated rainfall seasonal variation: 1000 - 1250 mm p/a

Vegetation cover: Bare soil and long grass at time of site visit.

Slope shape: Site is flat

Slope anlge: Site is flat

Surface water drainage characteristics: Drains to the east.

Flooding potential: Yes ☐ No ☑

If yes, specify relevant flood levels on appended site plan, i.e. one in 5 year and/or 20 year and/or 100 year return period flood level, realtive to disposal area or specify **where this is covered in accompanying application report.**

Surface water separation distance: 30 m +

Site clearances:

Site characteristics: Rural pack house

5* Site Geology of subject property

Geological Map Reference Number Auckland Geological MapSheet 3

6 Aspect

What aspect(s) does the proposed disposal system face (please tick)

North	☑	North-West	☑	North-East	☐	East	☐
West	☐	Sout-West	☐	South-East	☐	South	☐

7 Other Site Constraints

a. Are there any water supply bores or springs on the property Yes ☐ No ☑

Details

The nearest water bore to the disposal area (if less than 100m) is approx 20 m

b. Is the site within 100m of coastal marine area Yes ☑ No ☐

Distance of boundary from Mean High Water Spring (MHWS) approx 30 m

8* Site Clearance

Separation from:	Treatment Separation Distance (m)	Disposal Field Separation Distance (m)
Boundaries	5	1.5
Surface water	30 +	30 +
Stands of trees/shrubs	n/a	n/a
Wells, water bores	approx 20	approx 10
Embankments/ retaining walls	n/a	n/a
Buildings	26	14
Other (specify):		

PART E: Subsoil Investigation

1* **Please identify the soil profile determination method**

Test Pit [ ] (Depth_____m) No of Test Pits [ ]

Bore Hole [✓] (Depth 1 m) No of Bore Holes [1]

Is Test Pit or Bore Log attached? Yes [✓] No [ ]

Other (specify) [ ] Soil report attached Yes [ ] No [✓]

Specify where futher information on soil profiles and bore logs provided in accompanying application report [ ]

2* **Has percolation testing been carried out?**

Yes [ ] No [✓]

If Yes, please specify the method

[ ]

[ ]

Test report attached Yes [ ] No [ ]

If yes specify page in attached report [ ]

3* **Please state the depth of the seasonal water table**

Winter [2.5 −] month [June]

Summer [2.5 +] month [Jan]

Please indicate whether measured [ ] or estimated [✓] (please tick)

4* **Was fill material intercepted during the subsoil investigation?**

Yes [✓] No [ ]

If Yes,please specify the effect of the fill on anticipated disposal area soakage characteristics.

Disposal field will be located on earth bunds constructed on-site from top soil.

5 **Are surface water interception/diversion drains required?**

Yes [✓] No [ ]

If Yes,please show on site plan

See drawing no. 7101-02

6* **Are there any potential short circuit paths?**

Yes [ ] No [✓]

If Yes,please explain how these have been addressed or specify where this is covered in accompanying application report.

[ ]

[ ]

[ ]

[ ]

[ ]

7* **Based on the results of subsoil investigation in Part E 1 and Part E 2 above please indicate the disposal field soil category.**

Is Topsoil present? Yes If so, Topsoil Depth [.6] m

Soil Category	Description	Drainage	Tick One
1	Gravel, coarse sand;	rapid draining	☐
2	Coarse to medium sand	free draining	☐
3	Medium-fine and loamy sand	good drainage	☐
4	Sandy loam, loam and silt loam	moderate drainage	✓
5	Sandy clay-loam, clay-loam and silty clay-loam	moderate to slow drainage	☐
6	Sandy clay, non-swelling clay and silty clay	slow draining	☐
7	Swelling clay, grey clay, hardpan	poorly or non-draining	☐

Reasons for placing in stated category (refer Section 5 TP 58)

Samples as compared to Table 5.1 TP58

PART F: Discharge Details

1* **Please indicate the water supply source for the property identified in section A**

Rainwater (roof collection) ✓ Bore/well ✓ Public supply ☐

2* **Are meter readings available** Yes ☐ No ✓ Peak recorded discharge volume [ ] litres per day

3 **Discharge Volume**

Using the table on the following page please calculate the maximum daily volume of wastewater to be discharged. [2800] litres per day

If further details of flow calculations are provided in an attached repotr, please specify where in the report this is covered:

Calculation sheet + appendix E report

If differing volumes are proposed please provide a justification for this in an attached report.

Wastewater Flow Volume Calculation Table*
Based on Table 6.2: "Domestic Wastewater Flow Allowances per Capita"

SOURCE	Maximum Occupancy (Person numbers)	Typical Wastewater Flow Allowance (in Litres/Person/Day) [Note 1 and Note 2]		Total Volume (litres/day)
		On-site Roof Water Tank Supply	Reticulated Community or Bore Water Supply	
Permitted Activity Flow Allowances in the Auckland Region [Note 3]				
A. Up-market/Luxury households with Extra Wastewater Producing Fixtures [Note 4]		220	220	
B. Households with Standard Fixtures [Note 5]		180 – 200	200	
C. Households with 11/5.5 or 6/3 litre Flush Toilet and Standard Fixtures [Note 6]		160	180	
D. Households with 6/3 Flush Toilet And Standard Water Reduction Fixtures [Note 7]		145	165	
A water meter required where the design per capita flow rate is less than 145L/p/d and sites without permanent electricity supply where the per capita design flow is less than 120 l/p/d.				
E. Households with Full Water Reduction Fixtures on all water outlets, and no bath [Note 8]		120	145	
F. Households with Full Water Reduction Fixtures Without Permanent Electricity Supply [Fixtures as per Note 7 and Note 9]		100 – 120	120	
For The Use of the Flow Allowances Below a Discharge Consent Is Required in the Auckland Region				
G. Decreased Flow Allowances for Households with Full Water Reduction Facilities and no bath) [Note 10]		100 to <115	135	
H. Households with Full Water Reduction Facilities Plus Reclaimed Water Recycling [Note 11]		95 to 100	100 to 115	
I. Households – Black water Only and 11 litre flush toilet [Note 12]		66		
J. Households – Black water Only (based on a 11/5.5 flush toilet)		45		
K. Households – Black water Only and 6/3 flush toilet		25		
L. Households – Grey water Only with Extra Water Reduction Fixtures [Note 13]		95 to 100	100 to 115	
Commercial Flow Allowances for Standard Fixtures				
Motels/Hotels [Note 14] - guests, resident staff - reception rooms - bar trade (per customer) - restaurant (per diner)		220 30 15 to 20 30		
Restaurant/Bar/Cafe [Note 15] - per dinner patron - per lunch patron - per bar patron		30 25 15 to 20		
Lunch Bar (per customer) - without restroom facilities - with restroom facilities		10 15	15 25	
Community Halls - banqueting - meetings		20 10	30 15	
Marae [Note 16] - day only visitors - day + overnight visitors		40 150		
Schools [Note 17]		12 to 15	15 to 20	
Public Toilets [Note 18]		10 – 20	10 – 20	
Camping Grounds - fully serviced - recreation areas [Note 19]		100 50	130 65	
Rest Homes/Hospitals [Note 20]		220	250	
Retirement Home - Per Resident - Per Day Staff [Note 20]		200 40	220 50	
Day Staff - For all Standard Facilities [Note 21 and 22]	70	40		2800
			Total maximum discharge volume (for designed purpose)	2800

4* **Do you propose to install**

a Water conservation devices Yes [✓] No [ ]

b Water recycling Yes [ ] No [✓]

If you have answed Yes, please provide additional information including the estimated reduction in water usage

Client advises dual flush cisterns will be provided.

PART G:* Primary Treatment

Please indicate below the number and capacity (litres) of all septic tanks including type (single/dual/grease traps) to be installed or currently exisiting

No. of Tanks	Type of Tank	Capacity (litres)
1	Flow balance primary	10,000
1	Primary septic	5,100
1	Recirc tank	5,100
1	Treated effluent pump chamber	5,100
	Total Capacity	25,300

Outlet Filter(s) Type Zoeller

PART H:* Secondary and Tertiary Treatment

1 **Please indicate below the type of additional treatment, if any, proposed to be installed in the system**

		Type(s)/Brand	Capacity and Dimensions
Home Aeration Plant	[ ]		
Commercial Aeration Plant	[ ]		
Clarification Tank	[ ]		
Intermittent Sand Filter	[ ]		
Recirculating Sand Filter	[✓]	Reflections	20 m²
Storage Tank(s)	[ ]		
Ultraviolet Disinfection System	[ ]		
Tertiary Filtration System	[ ]		
Chlorination	[ ]		
Pump Chamber	[ ]		
Textile Filter	[ ]		
Other _____	[ ]		
Other _____	[ ]		

Pump Head required [ ] m

PART I: Disposal Method

1 Please identify the type(s) of disposal method proposed for this site

Surface Drip Irrigation	☑				
Sub-surface Drip Irrigation	☐				
Sub-surface LPED	☐				
Trench	☐	No.		Length	m
Deep Trench	☐	No.		Length	m
Spray Irrigation	☐	No.		Length	m
Mound	☐				
Evapo-transpiration beds	☐				
Other (specify)					

2* Please identify the loading rate you propose for the option selected in 1.0 above stating the reasons for selecting this loading rate.

Land Application Area: Basal area ____ m² Areal area 934 m²

Loading Rates: Basal ____ litres/m²/day (mm/day) Areal 3 litres/m²/day (mm/day)

(required for subsurface Disposal Systems)

Explanation

Conservative loading rate suited to this design

3 Please provide a detailed Site Plan showing the locationof the key components of the treatment system and dimensions of the land application system including details of the contours of the site and location of any watercourses and/or water bores.

Plan attached Yes ☑ No ☐

PART J: Assessment of Environmental Effects (AEE)

1* Is an AEE included with the application?

Yes ☑ No ☐

2* Please ensure the following items have been addressed in the AEE

Tick

a. ☐ The potential for the proposed system to have any impact on ground and surface water

b. ☐ Details of separation distances: of land application system from winter groundwater levels, from surface waters (stormwater drains and/or streams within 100m) and from any coastal waters (Mean High Water Spring if within 100m).

c. ☐ Details (where appropriate) of any seasonal fluctuations in flows and how this may affect the seasonal or long term performance or capacity of the system

d. ☐ Details of mitigation/contingency measures proposed in the design to minimise any adverse effects

e. ☐ availability of reserve area including percentage of area that is available and allocated (show on plan)

f. ☐ details of those parties who may be interested in or potentially affected by the proposal (including names and addresses of any adjacent land owners within 100m of the land application system) and any consultation undertaken with them

PART K Is The Application Complete

1* In order to provide a complete application have you remembered to

- Fully complete this application form ☐
- Include a location plan (with scale bar) ☐
- Include a site plan ☐
- Enclose a Certificate of Title (if not included ARC will provide at a minimum cost of $ 15) ☐
- Attach an Assessment of Environmental Effects ☐
- Attach the deposit fee. Cheques payable to Auckland Regional Council ☐
- Provide 2 copies of application ☐

2* Declaration

I hereby certify that, to the best of my knowledge and belief, the information given in this application is true and correct. **I undertake to pay all actual and reasonable application processing costs incurred by the Regional Council.**

Name: Paul Chester Signature:

Position: Site Evaluator Date: 24 June 2008

Resource Management Act 1991

FOURTH SCHEDULE
ASSESSMENT OF EFFECTS ON THE ENVIRONMENT

1. **Matters that should be included in an assessment of effects on the environment** - Subject to the provisions of any policy statement or plan, an assessment of effects on the environment for the purposes of section 88(6)(b) should include-

a. A description of the proposal.

b. Where it is likely that an activity will result in eny significant adverse effect on the environment, a description of any possible alternetive locations or methods for undertaking the activity.

c. *Repealed, as from 7 July 1993, by s 225 Resource Management Amendment Act 1993 (1993 No 65).*

d. An assessment of the actual or potential effect on the environment of the proposed activity.

e. Where the activity includes the use of hazardous substances and installations, an assessment of any risks to the environment which are likely to arise from such use.

f. Where the activity includes the discharge of any contaminant, a description of-

(i) The nature of the discharge and the sensitivity of the proposed receiving environment to adverse effects; and

(ii) Any possible alternative methods of discharge, including discharge into any other receiving environment:

g. A description of the mitigation measures (safeguards and contingency plans where relevant) to be undertaken to help prevent or reduce the actual or potential effect.

h. An identification of those persons interested in or affected by the proposal, the consultation undertaken, and any response to the views of those consulted.

i. Where the scale or significance of the activity's effect are such that monitoring is required, a description of how, once the proposal is approved, effects will be monitored and by whom.

2. **Matters that should be considered when preparing an assessment of effects on the environment** - Subject to the provisions of any policy statement or plan, any person preparing an assessment of the effects on the environment should consider the following matters:

a. Any effect on those in the neighbourhood and, where relevant, the wider community including any socio-economic and cultural effects.

b. Any physical effect on the locality, including any landscape and visual effects.

c. Any effect on ecosystems, including effects on plants or animals and any physical disturbance of habitats in the vicinity.

d. Any effect on natural and physical resources having aesthetic, recreational, scientific, historical, spiritual, or cultural, or other special value for present or future generations.

e. Any discharge of contaminants into the environment, including any unreasonable emission of noise and options for the treatment and disposal of contaminants.

f. Any risk to the neighbourhood, the wider community, or the environment through natural hazards or the use of hazardous substances or hazardous installations.

Assessment of Environmental Effects

Perrys Berrys
485 Puhinui Road
Mangere

Description of Proposal

Perrys Berrys have constructed a new pack house primarily for the processing and packaging of strawberries. This will incorporate toilet and wash facilities, which will be utilised by up to 70 employees.
The purpose of this application is to obtain consent to discharge a peak flow of 2800 litres of domestic wastewater per day. The operation is seasonal and operates over a 5-month period. We have been advised the staff numbers on site are as follows (including 6 full time office and maintenance staff)

September	10-15 Persons	
October	15-30 Persons	
October (mid)	30-50 Persons	
November	50 Persons	
December	50-70 Persons	
January	70 Persons	

Because of the intermittent loads we propose the use of a recycling sand filter capable of processing 2.8 m3 of daily flow. The system will incorporate a septic tank, dosing pump chamber, discharge pump chamber and sand filter along with 934m2 of surface mounted dripline irrigation, which will be mulched and planted.

The process water from the strawberry processing and packaging is recycled, with the excess water being irrigated onto the surrounding strawberry crops and not processed though the proposed treatment system.

Site Description

This site (legal description DP 71211) has a land area of approximately 20000m2 and is located on the eastern side of Campana Road, Mangere
It is bounded by Waokauri creek to the east and farm/cropping land on the other boundaries.

The proposed new treatment system will be located on the northern boundary along with the proposed disposal field (see site plan).

Wastewater Volume

In calculating the wastewater flows we have allowed for load from the pack house operations incorporating all seasonal staff, full time office and maintenance staff, totalling 70 persons and have applied a wastewater daily flow of 40 litres per person, per day giving a total daily flow of 2800 litres.
In order to provide on-site treatment for the loads shown we have averaged the loads out over the week and propose the use of a flow balancing system to receive all the wastewater, store it, and then load it into a Reflection Treatment Systems Ltd recirculating sand filter capable of handling 2.8m3 per day. This system will consist of 1x 10000 litre flow balance tank, 1x 5100 litre septic tank complete with Zoeller solids discharge filter, 1x 5100 litre recirculation tank, 1x 5100 litre treated effluent tank, 20m2 sand filter, (allowance 140mm per day, peak load).
For the purpose of monitoring and operating the system a water meter will be fitted to the outlet of the system to record the output volume along with, as per A.R.C recommendations, a data logger.

Wastewater Quality

The secondary treatment system that is proposed will treat the wastewater to a high standard prior to irrigation using dripline, into purpose-designed and landscaped disposal fields, where the removal of nutrient will continue both in the receiving soils and by plant uptake.
The system will be capable of producing reductions in Biochemical Oxygen Demand, Total Suspended Solids, Nitrogen, and Coliforms to a standard that meets or exceeds the consent requirements.
The system will cater for the wastewater requirements of the pack house (domestic wastewater) and will not service any trade waste sources.

Proposed Treatment System

The objective of the treatment system is to reduce and remove as much of the contaminants from the wastewater prior to discharge into the receiving soil. This will improve the long-term performance of the disposal field as well as reducing the risk to the receiving environment.
We propose the use of a Reflection Treatment Systems Ltd recirculating sand filter. The system will consist of:

- Flow Balancing/Storage Tank
- Primary septic tank
- Recirculation Tank
- Treated effluent pump chamber
- Control panel with audio and visual alarms
- Dripline disposal field

The system is constructed using pre-cast reinforced concrete tanks. The system produces treated effluent with BOD <15 mg/l, Suspended solids <15 mg/l, and Total N <15 mg/l (based on manufacturers testing).

Maintenance Requirements

The maintenance requirement of this system is minimal, with the system fully alarmed and automated. The system requires little input from the operator apart from the regular cleaning of the outlet filter between the treatment system and the dripline field. All other maintenance interventions must be carried out by servicepersons familiar with the operation of the system and approved by the manufacturer.
The disposal field is quite possibly the most important and sensitive part of the treatment system and requires a reasonable amount of maintenance to keep it functioning well. Any leaking or damaged dripline must be fixed quickly using the appropriate materials, the planting must be maintained, weeds removed and grass kept cut. The dripline should be kept covered with a suitable bark, mulch, or topsoil. Warning signs such as ponding, odours, and signs of excessive growth act as an indicator to possible problems.

Monitoring of the System

The volume of water being treated can be recorded from the system meter and should be recorded regularly to ensure that the volumes are within the systems treatment capacity. The treated effluent should be tested regularly to ensure that the effluent quality is being achieved. Sludge levels must be monitored by servicepersons, and sludge regularly removed from the system to prevent damage to the system or process.

Irrigation System

The proposed irrigation system uses pressure-compensating dripper lines ensuring an even delivery of moisture over the entire irrigation field. The dripline will be layed out at 1m spacings and have a dripper spacing of 1m. The dripline will be protected by a disk filter to help prevent blockage of the drippers. This filter will require cleaning during servicing of the system. It is proposed that the irrigation be surface applied, covered by mulch and planted with suitable high transpiration plants. This disposal field shall not be subjected to vehicular traffic or grazing animals so that soil compaction or interference with the function of the land application area is minimised.

Management Plan for increased staff levels exceeding 70 persons

In the event that more than the 70 staff allowed for are required the operators of the system understands that Portaloos may have to be provided along with the commitment to tanker off excess daily load. It is anticipated that this will not occur but in the event that it does (which would only be in the peak of the strawberry season) the above can be actioned quickly.

Domestic Sewage Treatment Plant – Disposal Area Calculations

Owner: Perrys Berrys Consent No: _____

Site Address: 485 Puhinui Road, Mangere

Plant Type: Reflections Recirculating Sand Filter

Treatment Capacity: 20m3 Process Type: Primary

- Number of Bedrooms or other rooms that maybe used for accommodation _____-
- Occupancy deemed to be (TP58) 70 day staff
- Water Source
  - Community or Borehole supply [•]
  - Roof water tank supply [ ]
- Wastewater flow allowance – litres per person per day 40
- Disposal Method
  - Surface application using dripline [ ]
  - Sub Surface application using dripline [•]
  - LPED [ ]
  - Standard Trench [ ]
- Loading Rate -mm per square per day: 3
- Calculation: 70 x 40 = 2800 / 3 = 933.33
- Disposal Area – square metres 933.33

Determination of Gross Lot Area to Discharge Volume Ratio

Gross Lot Area 20000

Max Daily Flow 2800

A:V Ratio 7.14

A:V Ratio greater than or equal to 1.5 [•]
A:V Ratio greater than or equal to 3 [•]

Secondary Treatment Required [•]
Discharge Consent Required [•]

Reserve Area

Disposal Method: Surface Mounted Dripline Irrigation

Reserve Requirement: 33% **50%** 100%

Appendix E

On-site Wastewater Disposal Site Evaluation Investigation Checklist

On-site Wastewater Disposal Site Evaluation Investigation Checklist

PART A: Contact Details

1.Applicant Details:

Applicant Name	Perrys Berrys	
Company Name	Perrys Berrys	
	First Name(s)	Surname
Property Owner Name(s)	Francie	Perry
Nature of Applicant*		

(i.e. Owner, Lessee, Prospective Purchaser, Developer)*

2.Consultant/Site Evaluator Details:

Consultant/Agent Name	Water Projects Limited			
Site Evaluator Name	Paul Chester			
Postal Address	P.O.Box 288 Waiuku			
Phone Number	Business	(09) 2356992	Private	
	Mobile	021 2769677	Fax	(09) 2355138
Name of Contact Person	Paul Chester			
E-mail Address	paul@waterprojects.co.nz			

3. Are there any previous existing discharge consents relating to this proposal or other waste discharge/disposal on the site?

Yes		No	✔

If yes, give Reference Number(s) and Description

4. List any other consents in relation to this proposal site and indicate whether or not they have been applied for or granted.
If so, specify Application Details and Consent No.):
(e.g. Land Use, Water Take, Subdivision, Earthworks Stormwater Consents)

Building consents

PART B: Property Details

1. Property for which this application relates:

Physical Address of Property	485 Puhinui Road Mangere
Territorial Local Authority	Manukau City Council
Regional Council	Auckland Regional Council
Legal Status of Activity	Permitted: ☐ Controlled: ☐ Discretionary: ✔
Relevant Regional Rule(s) [Note 1]	
Total Property Area (m^2)	20000
Map Grid Reference of Property [Note 2]	About NZMG: 2672876.7, 6465721.4

Notes:

1. In the Auckland Region, the relevant Permitted Activity criteria is as specified in the ARC Proposed Regional Plan: Air Land and Water (ARC: ALWP) Decision Version October 2004 Rule 5.5 20-23 (refer Appendix C and in particular C5, in TP58).

2. NZMS 260 series, scale 1:50,000

2. Legal description of land (as shown on Certificate of Title):

Lot No.	1	DP No.	71211	CT No.	NA38A/1059
Other (specify)					

Please ensure copy of Certificate of Title is attached.

PART C: Site Assessment – Surface Evaluation

(Refer TP58 – Sn 5.1 General Purpose of site Evaluation and Sn 5.2.2(a) Site Surface Evaluation)
Note: Underlined terms defined in Table 1, attached

1. Has a Desk Study been undertaken for this property

Yes ✔ No ☐ (Please tick one)

If yes, please specify the findings of the Desk Study, and if not please specify why this was not considered necessary.

To collect property information

2. Has a Slope Stability Assessment been carried out on the property?

Yes ☐ No ✔ (Please tick one)

If No, why not?

Flat site not considered a stability risk

If Yes, please give details of report (and if possible, please attach report):

Author:	
Company/Agency	
Date of Report	
Brief Description of Report Findings	

3. Site Characteristics (See Table 1 attached):
Provide descriptive details below:

Performance of Adjacent Systems:
Secondary systems in area performing satisfactorily
Estimated Rainfall and Seasonal Variation:
1250mm - 1500mm P/A
Vegetation Cover:
Topsoil at time of inspection
Slope Shape:
Generally flat
Slope Angle:
Generally less than 5 degrees over most of site
Surface Water Drainage Characteristics:
Generally to the East
Flooding Potential: YES/NO
No
If yes, specify relevant flood levels on appended site plan, i.e. one in 5 year and/or 20 year and/ or 100 year return period flood level, relative to disposal area.
Surface Water Separation:
30m
Site Clearances (Provide general description and specific dimensions in Part 6 below and in Site Plan :
As per site plan
Site Characteristics:
Rural (Airport zone)

4. Site Geology of the subject property

Geological Map Reference Number	

5. What Aspect(s) does the proposed disposal system face (please tick)?

North	✔	**West**	
North-West		**South-West**	
North-East		**South-East**	
East		**South**	

6. Site clearances, which should also be shown on the site plan:

Separation Distance from	Treatment Separation Distance (m)	Disposal Field Separation Distance (m)
Boundaries	5	1.5
Surface water	30	30
Groundwater	1.5 +	1.5 +
Stands of Trees/Shrubs	n/a	n/a
Wells, water bores	approx 20	approx 10
Embankments/retaining walls	n/a	n/a
Buildings	10	10
Other (specify):		

PART D: Site Assessment – Subsoil Investigation

(Refer TP58 – Sn 5.1 General Purpose of Site Evaluation, Sn 5.2.2(b) Site Surface Evaluation and Sn 5.3 Subsurface Investigations)
Note: Underlined terms defined in Table 2, attached

1. Please identify the soil profile determination method:

Test Pit		(Depth____m)		No. of Test Pits	
Bore Hole		(Depth____m)		No. of Bore Holes	
Other (specify)	Raised Bed constructed from topsoil excavated from site				
Soil Report Attached?	Yes		No	✔	(Please Tick)

2. Was fill material intercepted during the subsoil investigation?

Yes	✔	No		(Please tick)

If yes, please specify the effect of the fill on wastewater disposal

No Effect

3. Has percolation testing been carried out?

Yes		No	✔	(Please tick)

If yes, please specify the method

Test Report Attached? (Please tick)		Yes		No	✔

4. Are surface water interception/diversion drains required?

Yes		No	✔	(Please tick)

If Yes, please show on site plan

5. Please state the depth of the seasonal water table:

Winter	2.5 -	(m)			
Summer	2.5 +	(m)			
Please indicate whether measured			or estimated	✔	(please tick)

6. Are there any potential <u>short circuit paths</u>?

Yes		No	✔	(Please tick)

If the answer is yes, please explain how these have been addressed

7. Based on results of subsoil investigation above please indicate the disposal field soil category
***(Refer TP58 Table 5.1)*:**

Is Topsoil Present?	✔	If so, Topsoil Depth?	.6	(m)

Soil Category	Description	Drainage	Tick One
1	Gravel, coarse sand	Rapid draining	
2	Coarse to medium sand	Free draining	
3	Medium-fine & loamy sand	Good drainage	✔
4	Sandy loam, loam & silt loam	Moderate drainage	
5	Sandy clay-loam, clay loam & silty clay-loam	Moderate to slow drainage	
6	Sandy clay, non-swelling clay & silty clay	Slow draining	
7	Swelling clay, grey clay, hardpan	Poorly or non-draining	

Reasons for placing in stated category

Raised disposal field constructed from top soil

PART E: Discharge Details

1. Water supply source for the property (please tick):

Rainwater (roof collection)	
Bore/well	✔
Public supply	

2. Calculate the maximum daily volume of wastewater to be discharged, unless accurate water meter readings are available *(Refer TP58 Table 6.1 and 6.2)*:

Number of Bedrooms	-	
Design Occupancy	70	(Number of people)
Per capita Wastewater Production	40	*(Litres per person per day)*
Other - Specify		
Total Daily Wastewater Production	2800	(Litres per day)

3. Do you propose to install:

a) Full Water Conservation Devices?	Yes	✔	No	(Please tick)
b) Water Recycling – what %?	%		No ✔	(Please tick)

If you have answered Yes, please provide additional information including the estimated reduction in water usage:

Client advises dual flush cisterns will be provided

4. Is Daily Wastewater Discharge Volume more than 2000 litres:

Yes	✔	(Please tick)
No		(Please tick)

Note if the answer to the above is yes an ARC wastewater discharge permit will be required

5. Gross Lot Area to Discharge Ratio:

Gross Lot Area	20000	m^2
Total Daily Wastewater Production	2800	(Litres per day) (from above)
Lot Area to Discharge Ratio	7.14	

6. Does this proposal comply with the Auckland Regional Council Gross Lot Area to Discharge Ratio of greater than 1.5)

Yes	✔	No		(Please tick)

7. Does this proposal comply with the Auckland Regional Council Gross Lot Area to Discharge Ratio of greater than 3

Yes	✔	No		(Please tick)

8. Is an Auckland Regional Council Discharge Consent Required?

Yes	✔	No		(Please tick)

PART F: Primary Treatment *(Refer TP58 Section 7.2)*

1. Please indicate below the no. and capacity (litres) of all septic tanks including type (single/dual chamber grease traps) to be installed or currently existing:

Number of Tanks	Type of Tank	Capacity of Tank (Litres)
1	Flow Balance Primary	10000
1	Primary Septic	5100
1	Recirc Tank	5100
1	Treated effluent pump chamber	5100
	Total Capacity	25300

2. Is a Septic Tank Outlet Filter to be installed?

Yes	✔	No		(Please tick)

If Yes, please state the type

Zoeller

PART G: Secondary and Tertiary Treatment
(Refer TP58 Section 7.3, 7.4, 7.5 and 7.6)

1. Please indicate the type of additional treatment, if any, proposed to be installed in the system (please tick):

Secondary Treatment	
Home aeration plant	
Commercial aeration plant	
Intermittent sand filter	
Recirculating sand filter	✔
Recirculating textile filter	
Clarification tank	
Tertiary Treatment	
Ultraviolet disinfection	
Chlorination	
Other	

Specify

PART H: Land Disposal Method *(Refer TP58 Section 8)*

1. Please indicate the proposed loading method (please tick):

Gravity	
Dosing Siphon	
Pump	✓

2. Is a high water level alarm being installed in pump chambers?

Yes	✓	No		(Please tick)

3. If a pump is being used, please provide the following information:

Total Design Head	26	(m)
Pump Chamber Volume	5100	(Litres)
Emergency storage volume	2800	(Litres)

4. Please identify the type(s) of land disposal method proposed for this site (please tick) *(Refer TP58 Sections 9 and 10):*

Surface Dripper Irrigation	✓	
Sub-surface Dripper Irrigation		
Standard Trench		
Deep Trench		
Mound		
Evapo-transpiration Beds		
Other (Please Specify)		

5. Please identify the loading rate you propose for the option selected in Part H, Section 4 above stating the reasons for selecting this loading rate:

Loading rate		3	**(Litres/m²/day)**
Disposal Area	Basal		**(m²)**
	Areal	934	**(m²)**

Explanation *(Refer TP58 Sections 9 and 10)*

Conservitave loading rate suited to this design

6. What is the available reserve wastewater disposal area *(Refer TP58 Table 5.3)*

Reserve Disposal Area (m²)	50
Percentage of Primary Disposal Area (%)	467

7. Please provide a detailed description of the design and dimensions of the disposal field and attach a detailed plan of the field relative to the property site:

Description and Dimensions of Disposal Field:

934m Dripline disposal as per plan

Plan Attached ?	Yes	✔	No		(Please tick)

If not explain why not

PART I: Maintenance & Management *(Refer TP58 Section 12.2)*

1. Has a maintenance agreement been made with the treatment and disposal system suppliers?

Yes	✔	No		(Please tick)

PART J: Assessment of Environmental Effects

1. Is an assessment of environmental effects (AEE) included with application?
(Refer TP58 section 4 (particularly 4.4.2), section 5, and section 11 (parts 11.1 & 11.8). Ensure all issues concerning potential effects addressed)

Yes	✔	No		(Please tick)

2. Are there any specific environmental constraints?

Yes		No	✔	(Please tick)

If Yes, please explain

PART K: Is Your Application Complete?

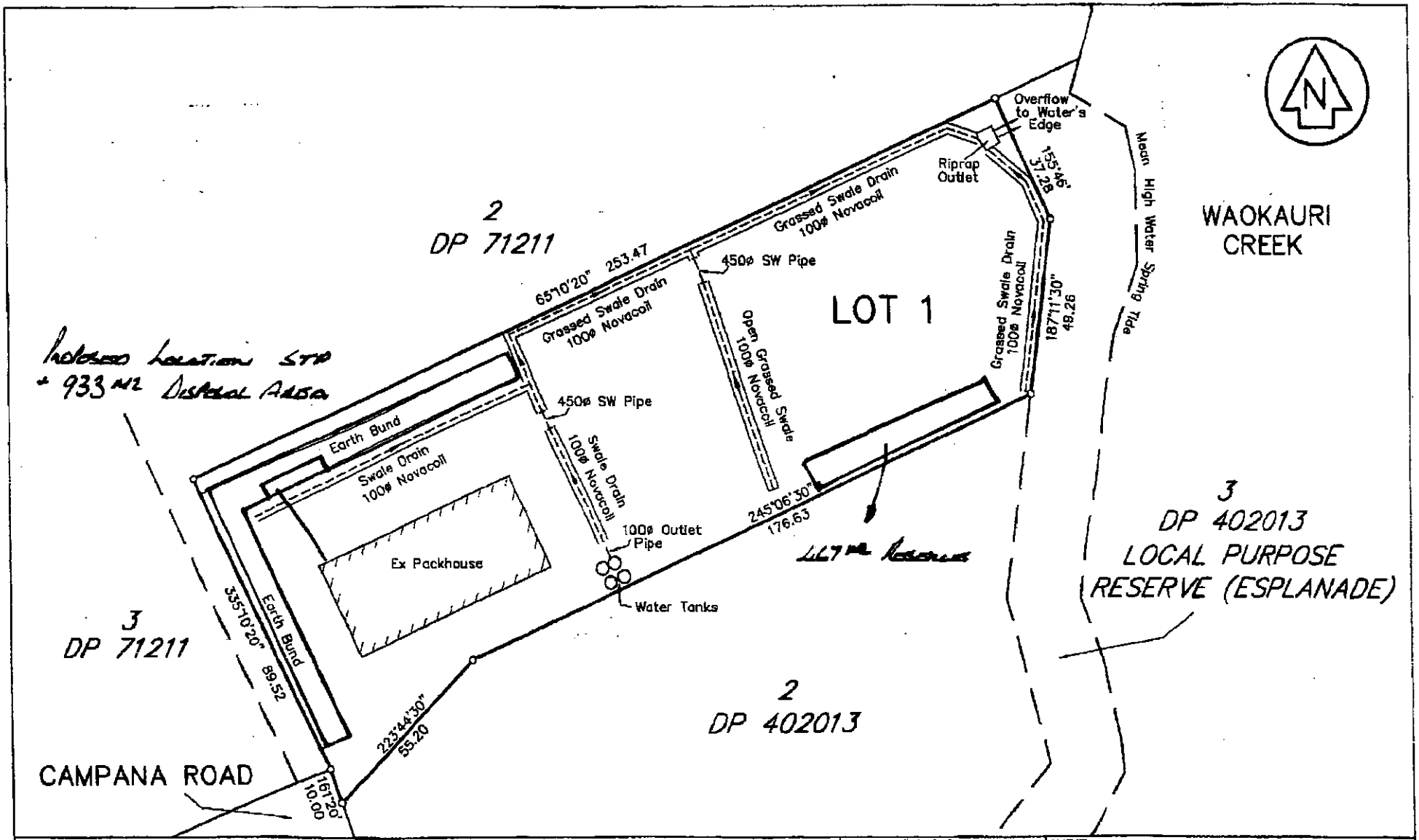
1. In order to provide a complete application you have remembered to:
(Refer to TP58 section 3.5 for summary list of information to be covered):

Fully Complete this Assessment Form	✔
Include a *Location Plan and Site Plan* (with Scale Bars)	✔
Include a Property Title (Certificate of Title)	
Attach an Assessment of Environmental Effects (AEE)	✔

2. Declaration

I hereby certify that, to the best of my knowledge and belief, the information given in this application is true and complete.

Name	Paul Chester	**Signature**	
Position	Site Evaluator	**Date**	25-Jun-2008

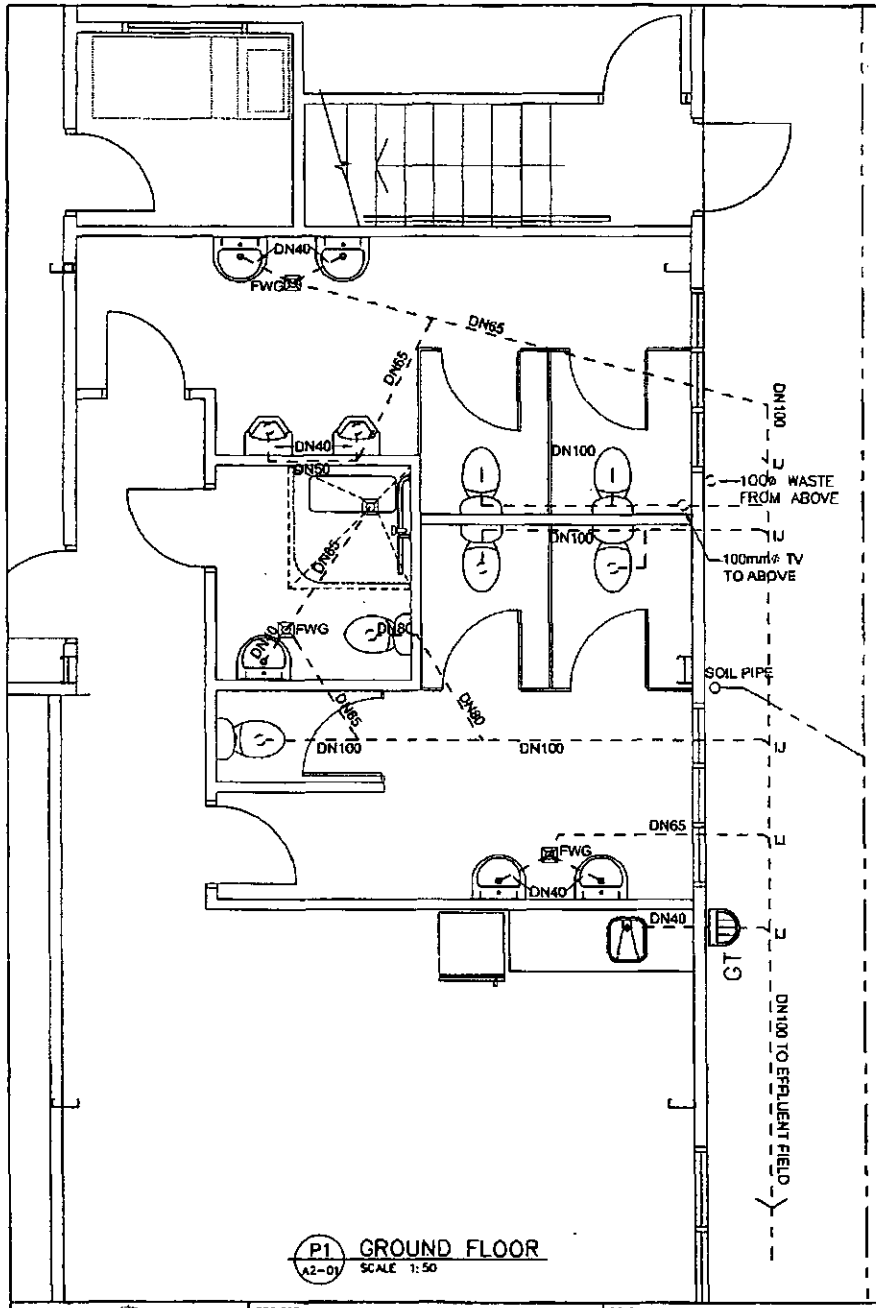


CHURCHILL TIMMS LTD
Land Development Consultants
P.O. Box 84-245
Botany Downs
Manukau 2142
Tel : 273-4182
Fax: 273-4309
Email: admin@ctltd.co.nz

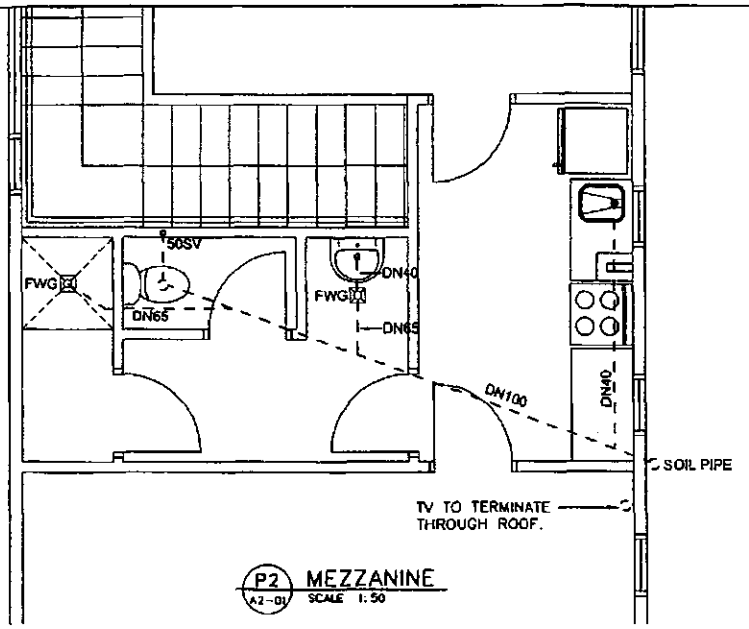
LOT 1 DP 402013
AT 485 PUHINUI ROAD, MANGERE

AMENDMENT SCHEDULE

CLIENT: PERRYS BERRYS
AUTOCAD: L:\DWGS\7101-Swale ASB.dwg | SCALE: 1:1000 (A3)
CIVILCAD: 7101-BERRY_LT.ccx | DATE DRAWN: MAR 2008
SURVEYOR: JLH DRAWN: JLH
DESIGNED: CHECKED: MKA
7101-ASB



P1 GROUND FLOOR
A2-01 SCALE 1:50



P2 MEZZANINE
A2-01 SCALE 1:50

NORTH

2
DETAIL DELETED

PLUMBING/DRAINAGE LEGEND

_ DN _	SANITARY SEWER DRAINAGE/DRAIN WASTE
TV	TERMINAL VENT
SV	SOIL VENT
FWG	FLOOR WASTE GULLY WITH EASI-CLEAN TRAP
IJ	INSPECTION JUNCTION

NOTES:

1. ALL PLUMBING AND DRAINAGE TO COMPLY WITH AS/NZS 3500.2
2. CLEANING EYE SHALL BE PROVIDED ON ALL PIPES BEFORE PASSING THROUGH CONCRETE SLAB AND AT ALL CHANGES OF DIRECTIONS
3. RIGHT ANGLE BEND SHALL BE MADE USING 2/45° FITTINGS
4. PROVIDE 20ø CISTERN OVERFLOW FROM WCs TO DISCHARGE IN ACCORDANCE WITH THE LOCAL AUTHORITY

Q Designz Limited
Architects - Engineers - Interior Designers
PO Box 99548 Newmarket
Level 1, 10 McColl Street Newmarket
Ph (09) 522 3388 Fax (09) 523 3148

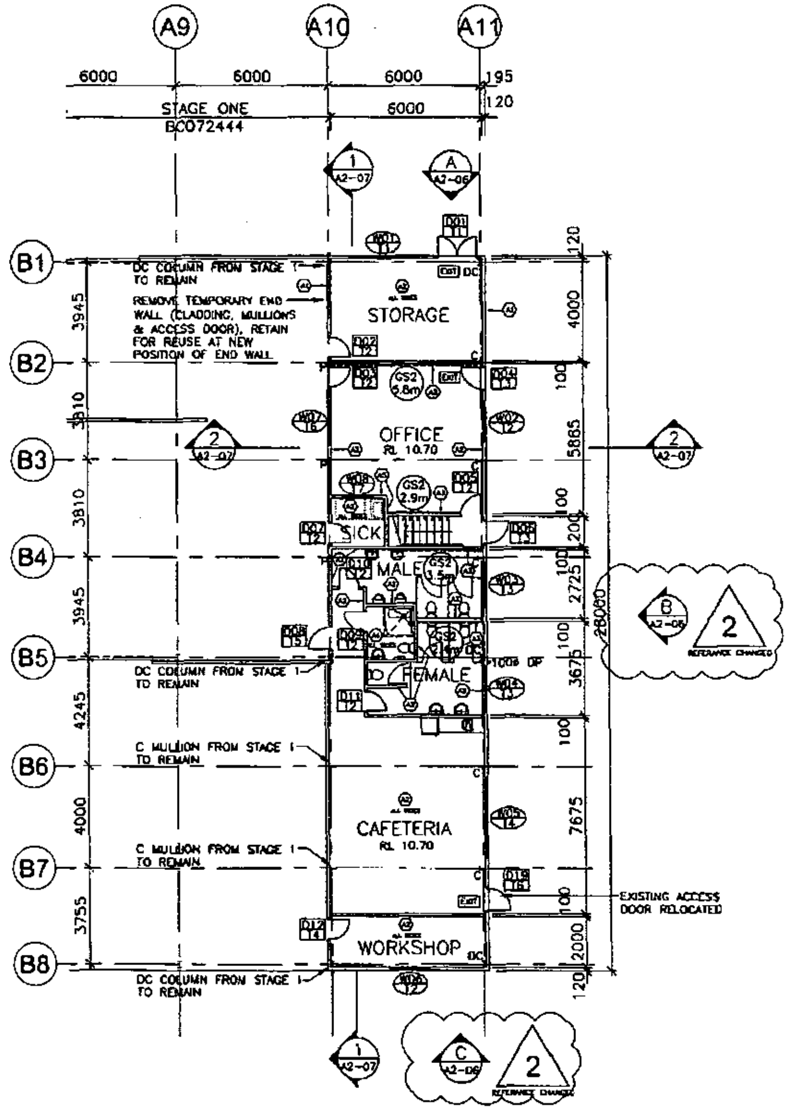
PROJECT
STAGE 2
PERRYS BERRYS PACKHOUSE
485 PUHINUI RD, MANGERE

TITLE
PLUMBING & DRAINAGE PLAN

1. All works shall comply with the current NZBC.
2. All framing and fixing shall comply with the current NZS 3604.
3. All glazing work shall comply with the current NZS 4223 & NZBC E3/AS1.
4. Contractor shall verify all dimensions on site before commencement of work.

Designed					Rev.	Amendment	Date	Rev.	Amendment	Date	
Drawn	D YOUNG	Date	AUG 07		1	BUILDING CONSENT ISSUE	03.09.07				
Checked		Date			2	COOL ROOM DRAINAGE DELETED	28.09.07				
Job No.	07024										
Cad Ref.	07024/CAD/ARCH/A2-01-SITE										
Scale	1:50 @ A3										

Sheet No. A2-11
Revision 2
BUILDING CONSENT



NOTES

THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE ENGINEERS DETAILS

FOR DOOR & WINDOW SPECIFICATION, REFER TO A2-09

STRUCTURAL COLUMNS AS DESIGNED BY ENGINEER
- DC DOUBLE C25024 COLUMN
- C C25024 MULLION
- P 90SHS5 POST

WALL LEGEND

(A1) T-RIB CLADDING TO ROOF/WALL ON SPECIFIED FRAMING

(A2) 10mm THK GIB BD ON H1.2 EX 100X50 TIMBER STUDS AT 600mm CRS & NOGS AT 800mm CRS
- PAINT FINISH

(A3) GIB GS2 BRACING SYSTEM –
10mm THK GIB BD ON BOTH SIDES ON H1.2 EX 100X50 TIMBER FRAMING. LENGTH AS SPECIFIED ON PLAN.
REFER TO GIB MANUAL FOR FIXING DETAILS & INSTRUCTIONS

(A4) 10mm THK GIB AQUALINE LINING ON SPECIFIED FRAMING
- PAINT FINISH

(A5) 10mm THK GIB BD ON SPECIFIED FRAMING
- PAINT FINISH

NOTE: INTUMESCENT PAINT TO ACHIEVE 30FRR ON ALL STEEL SURFACE UNDERNEATH THE MEZZANINE FLOOR

Q Designz Limited
Architects · Engineers · Interior Designers
PO Box 99689 Newmarket
Level 1, 10 McColl Street Newmarket
Ph (09) 522 3398 Fax (09) 523 3146

PROJECT
STAGE 2
PERRYS BERRYS PACKHOUSE
485 PUHINUI RD, MANGERE

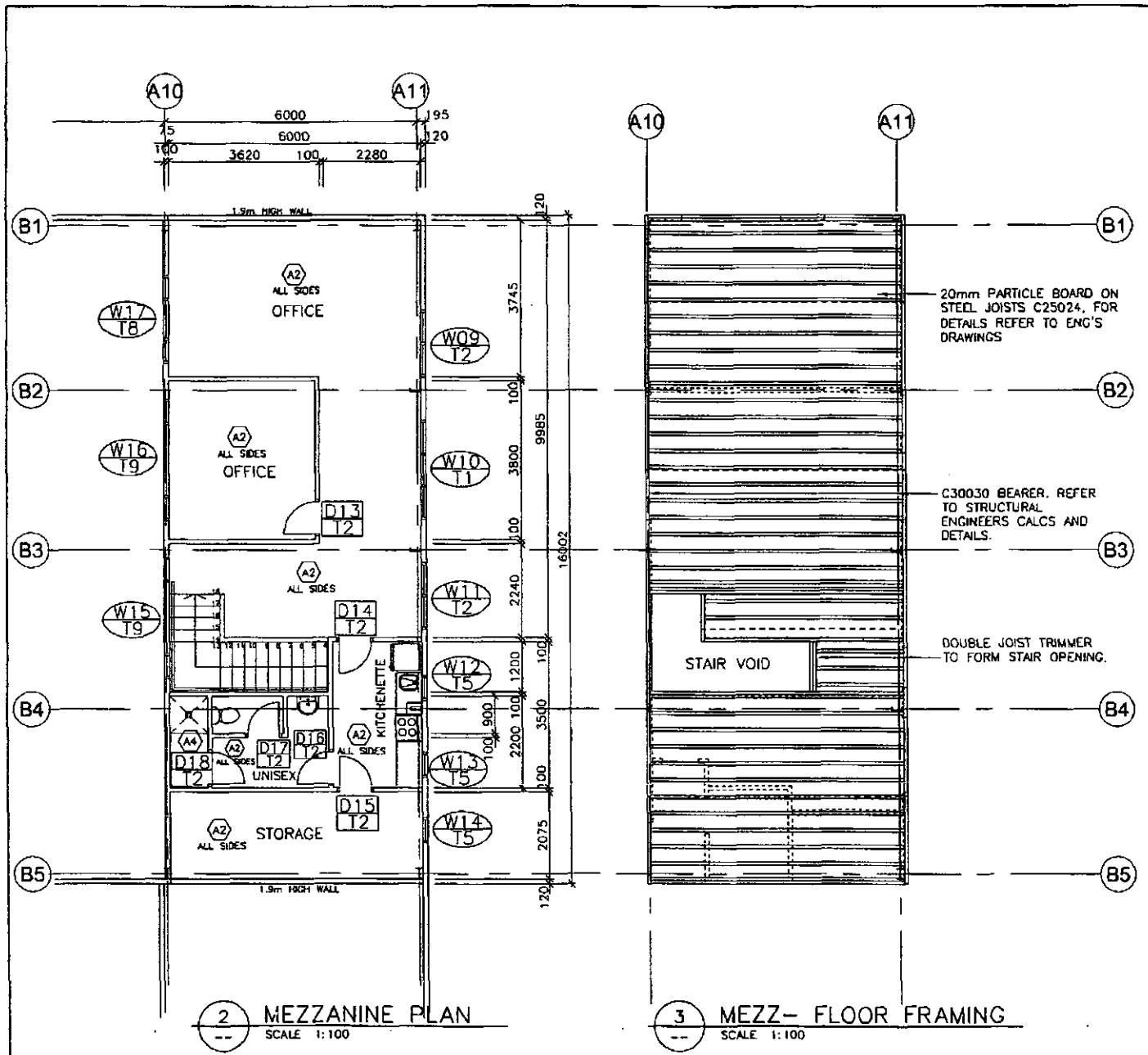
TITLE
FLOOR LAYOUT PLAN

Designed			
Drawn	D YOUNG	Date	AUG 07
Checked		Date	
Job No.	07024		
Cad Ref.	07024/CAD/ARCH/A2-02-FLOOR		
Scale	1:200 @ A3		

Rev.	Amendment	Date	Rev.	Amendment	Date
1	BUILDING CONSENT ISSUE	03-09-07			
2	REFERENCE CHANGED	29-10-07			

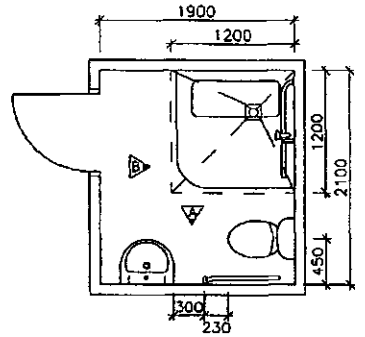
Sheet No: A2-02
Revision: 2

BUILDING CONSENT

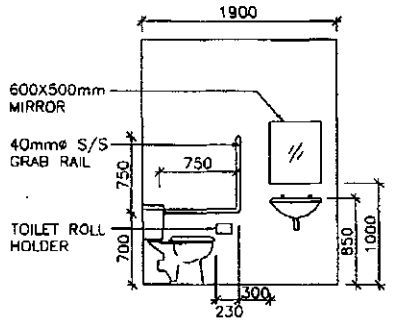


2 MEZZANINE PLAN
SCALE 1:100

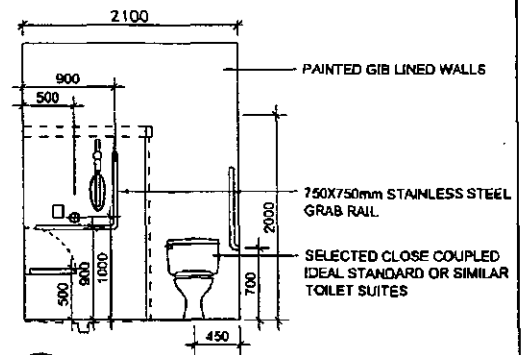
3 MEZZ- FLOOR FRAMING
SCALE 1:100



1 DISABLED BATHROOM
SCALE 1:50



A ELEVATION
SCALE 1:50



B ELEVATION
SCALE 1:50

Q Designz Limited
Architects - Engineers - Interior Designers
PO Box 80689 Mount Maunganui
Level 1, 10 McCord Street Mount Maunganui
Ph (09) 572 3366 Fax (09) 572 3145

PROJECT
STAGE 2
PERRYS BERRYS PACKHOUSE
485 PUHINUI RD, MANGERE

TITLE
MEZZANINE FLOOR AND FLOOR FRAMING PLAN
BATHROOM PLAN

1. All works shall comply with the current NZBC.
2. All framing and fixing shall comply with the current NZS 3604.
3. All glazing works shall comply with the current NZS 4223 & NZBC F2/AS1.
4. Contractor shall verify all dimensions on site before commencement of work.

Designed				
Drawn	D YOUNG	Date	AUG 07	
Checked		Date		
Job No.	07024			
Cad Ref.	07024/CAD/ARCH/A2-03-MEZZANINE			
Scale	1:100 @ A3			

Rev.	Amendment	Date
1	BUILDING CONSENT ISSUE	03-09-07

Rev.	Amendment	Date

Sheet No: A2-03
Revision: 1
BUILDING CONSENT

Westpac

Otahuhu
1 King Street, Otahuhu, Auckland, NZ

DATE 22/7/18

Auckland - Regional - Council

THE SUM OF Two - thousand - dollars

Only

$2000-00

PERRY'S BERRYS LIMITED T/A PERRYS BERRYS

[signature]

⑈ 100884 ⑈ 030219⑆ 0332800⑈00 ⑈

Auckland Regional Council
TE RAUHITANGA TAIAO

RECEIPT

12406

DATE 22 / Jul / [illegible]

RECEIVED

FROM	DETAILS	AMOUNT
Perrys Berrys c/o 4/a	Resource Consent -	
Perrys [illegible]	Discharge Domestic Wastewater	
		TOTAL RECEIVED $ [illegible]

FOR DIRECTOR OF FINANCE [illegible]

EFTPOS/C.C ☐
CASH ☐
CHEQUE ☑

REGISTRATION No.: 10-010-276

WHITE COPY - CUSTOMER   YELLOW COPY - ACCOUNTS   GREEN COPY - BOOK COPY

Puhinui Yard
CHEMICAL PRODUCT / HAZARDOUS SUBSTANCE REGISTER & RISK ASSESSMENT

The following chemical product and/or hazardous substances exist on site. A copy of the SDS has been placed on file for reference by persons' responsible for First Aid.
Updated on: 27/11/2023

Chemical/Substance Name	Manufacturer/ Supplier	Application	Product Labelled Yes/No	MSDS Obtained Yes/No	Held on-site By	Maximum Quantity to be stored on site	Location stored on site	Is the product Hazardous Yes/No	Risk Assessment (Low, Med, High)	Control/s required based on the risk class (eg. Isolation, Engineering, PPE)
Mobil Diesel	Mobil	Fuel	Yes	Yes	S Beazley	4750 L	Storage Container	Yes	Med	Store in cool, dry, protected area. Restrictions on Storage apply. Refer to Full Report. Dispose of this material and its container at hazardous or special waste collection point. Keep away from food, drink and animal feeding stuffs.
Epcon C6 Plus	Ramset	Adhesive	Yes	Yes	S Beazley	1200 ml	Storage Container	Yes	Med	Store in a cool, dry, well ventilated area.
Adblue	Anglomoil	Lubricant	Yes	Yes	S Beazley	1000 L	Storage Container	No	Low	Store in original containers. Keep containers securely sealed. Store in a cool, dry, well-ventilated area
Roundup Weedkiller	Evergreen	Herbicide	Yes	Yes	S Beazley	540 ml	Storage Container	Yes	Med	Store in closed original container in a cool dry well-ventilated place, away from sunlight, out of reach of children, and away from food and drink.
Rocol RTD Metalcutting Liquid	ITW Polymers & Fluids	Metal cutting lubricant	Yes	Yes	S Beazley	20 L	Storage Container	No	Low	Store in original containers. Keep containers securely sealed.
Restorall Interior Dressing	Pacer	Liquid	Yes	Yes	S Beazley	20 L	Storage Container	No	Low	Store away from high temperatures and sunlight. Do not store near to food or feedstuffs. Keep containers closed at all times.
Jaybro Spot Marking Paint	Jaybro	Spray Paint	Yes	Yes	S Beazley	5 L	Storage Container	Yes	Low	Store in a cool (below 30°C), well ventilated area. Protect from direct sunlight.
Hitachi Genuine Hydraulic Oil	Hitachi	Lubricant	Yes	Yes	S Beazley	20 L	Storage Container	Yes	Low	Store in original containers. Keep containers securely sealed.
Dulux Luxathane HPX Standard Part B	Dulux	Paint	Yes	Yes	S Beazley	10 L	Storage Container	Yes	Med	Store in original containers in approved flammable liquid storage area. Store away from incompatible materials in a cool, dry, well-ventilated area. DO NOT store in pits, depressions, basements or areas where vapours may be trapped.
Clark Products Megawash	Clark	Truck wash	Yes	Yes	S Beazley	40 L	Storage Container	No	Low	Store in original containers. Keep containers securely sealed.
Dulux Weathershield Gloss	Dulux	Surface coating	Yes	Yes	S Beazley	20 L	Storage Container	No	Low	Store in original containers. Keep containers securely sealed.
Carbon Dioxide	BOC	Compressed gas	Yes	Yes	S Beazley	45 Kg	Storage Container	No	Low	Cylinders should be stored below 65°C in a secure area, upright and restrained to prevent, cylinders from falling. Cylinders should also be stored in a dry, well ventilated area constructed of non-combustible material with firm level floor (preferably concrete), away from areas of heavy traffic and emergency exits.

11 Campana Road Chemical List

Date 25/10/23

INSECTICIDE

K POD	3 x 5kg
Pirate	4 x 1kg
PYLON	3LT
LANNATE	2.5LT
ENTRUST	2 x 1LT
MAVRIK	4LT
TRANSFOR	1.4LT
STEWARD	1LT
BENEVIA	6LT

FUNGICIDE:-

THIRAM 40F	9LT
PROCYMIDONE	2.5LT
CHLOROTHALONIL	6LT
STAND BYE	9LT
RIDOMIL GOLD	8kg
Foschek	4x20LT

HERBICIDE

BASTNATE	20LT
SPEEDY 250	19LT
GRASIDIM	3LT
AFALON	8LT
MAX OUT 540	30LT
RAMROD	2LT
ALAKEN 480 EC	5LT
TAIPAN	700ml

Rainguard	14LT
Wetting Agent	16LT
DRIFTEX	5LT

Auckland

Address | Level 4, 68 Beach Road, Auckland 1010

Post | PO Box 2027, Shortland Street, Auckland 1140, New Zealand

Ph | 64 9 379 9980

Fax | +64 9 377 1170

Email | contact-us@babbage.co.nz

Hamilton

Address | Unit 1, 85 Church Road, Pukete, Hamilton 3200

Post | PO Box 20068, Te Rapa, Hamilton 3241, New Zealand

Ph | +64 7 850 7010

Fax | +64 9 377 1170

Email | contact-us@babbage.co.nz

Christchurch

Address | 128 Montreal Street, Sydenham, Christchurch 8023

Post | PO Box 2373, Christchurch 8140, New Zealand

Ph | +64 3 379 2734

Fax | +64 3 379 1642

Email | solutions@babbage.co.nz

Babbage Consultants Australia Pty Ltd – Melbourne

Address | Level 2, 1 Southbank Boulevard, Southbank, Melbourne, Victoria 3006, Australia

Ph | +61 3 8539 4805

Email | contact-us@babbage.co.nz