

3 June 2016

Mackenzie Lifestyle Limited
c/- Vivian Espie
PO Box 2514
Wakatipu
QUEENSTOWN 9349

Attention Carey Vivian

Dear Carey

RM160080 – MACKENZIE LIFESTYLE LIMITED – SH8/TWIZEL

Davie Lovell-Smith Ltd has been requested by Nathan Hole of Mackenzie District Council to assist the Council in the processing of the Mackenzie Lifestyle Limited's application for subdivision and land use of rural zoned land on State Highway 8, Twizel.

Further Information Request

We have reviewed the application and in accordance with Section 92 of the Resource Management Act 1991 (RMA), we request the following further information:

1. Please confirm the legal description of the land being subdivided. We note that the reference to the land on Form 9 and the title page of the AEE appear to be incorrect.
2. Please provide a detailed subdivision consent plan, and in particular for the area containing lots 1-6. This plan needs to contain the following detail:
 - The plan needs to be at a scale to enable measurement of areas and boundaries
 - The dimensions of vehicle crossings and the width of all private vehicular access to enable compliance with the Transportation rules of the Mackenzie District Plan to be determined.
 - The setback distance from the Council sewage ponds needs to be specified
 - Easements need to be identified and described
3. Please provide information confirming that the proposed lots are able to be serviced for electricity, water, sewage treatment and disposal and telecommunications and how this is to be achieved, including the need for related easements. This information shall include the extent to which services are to connect to Council reticulated services and address the requirement to provide for firefighting.
4. Please advise whether the sheds referred to in the land use application are also intended to locate only within the identified building platforms.

5. Please provide information to confirm the access locations are approved crossing points on the State Highway.
6. Please provide a Preliminary Site Investigation for this site in accordance with the National Environmental Standards relating to Soil Contamination.
7. Please confirm that the land use being applied for is the establishment of a dwelling and shed on each of the seven lots.
8. Please advise whether you are intending to supply affected person approvals as we note that Meridian, the Department of Conservation and Mackenzie District Council have interests within the area being subdivided.

Please note that your application will be placed on hold until the all of the requested information has been received.

In accordance with Section 92A of the RMA, please respond within 15 working days from the date of this letter (i.e. by **27 June 2016**) with one of the following:

- 1 The information requested above; or
- 2 Written advice that you agree to provide the information, and the date by which you intend to provide it; or
- 3 Written advice that you refuse to provide the requested information.

Please note that the Resource Management Act requires the Council to publicly notify your application if you do not provide the requested information before the date mentioned above (or an agreed alternative date), or if you refuse to provide the information. It is therefore important that you contact us promptly to discuss an alternative timeframe if you are unable to provide the information within 15 working days of the date of this letter.

Please also note that if the provision of the information requested above raises any additional areas of uncertainty or matters requiring further clarification, your application will remain on hold until sufficient information has been provided to enable processing to continue.

The provision of the further information requested above may reveal the need for written approvals from affected parties in order for the application to be processed on a non-notified basis. If that is the case, we will contact you again after we have received the information to confirm which, if any, written approvals will be required.

Please contact the writer if you have any enquiries regarding this letter or your application.

Yours faithfully



PATRICIA HARTE

for Nathan Hole Planning & Regulations Manager Mackenzie District Council



CH2M Beca

www.ch2mbea.com

AEE Report

Twizel WWTP - Subdivision and NESCE Resource Consents

Prepared for Mackenzie District Council

For Submission to Mackenzie District Council

Prepared by CH2M Beca Ltd




8 October 2015



Revision History

Revision N°	Prepared By	Description	Date
1	Paul Whyte	Draft for client review	1 October 2015
2	Paul Whyte	Final	8 October 2015
3			
4			
5			

Document Acceptance

Action	Name	Signed	Date
Prepared by	Paul Whyte		8 October 2015
Reviewed by	Graeme Jenner		8 October 2015
Approved by	Dave Heiler		8 October 2015
on behalf of	CH2M Beca Ltd		

© Beca 2015 (unless Beca has expressly agreed otherwise with the Client in writing).

This report has been prepared by Beca on the specific instructions of our Client. It is solely for our Client's use for the purpose for which it is intended in accordance with the agreed scope of work. Any use or reliance by any person contrary to the above, to which Beca has not given its prior written consent, is at that person's own risk.

Contents

1	Introduction	1
2	Background	2
2.1	Overview	2
2.2	Proposed Upgrading of the WWTP	3
2.3	Land Tenure Around WWTP	5
2.4	Mackenzie Lifestyle Ltd Subdivision	5
2.5	Other Resource Consents/Notice of Requirement	6
3	Description of the Existing Environment	7
3.1	Location	7
3.2	Legal Description	7
3.3	Surrounding Land Use	7
3.4	Zoning	7
3.5	Cultural/Natural/Landscape Values	8
3.6	Natural Hazards	8
3.7	Soils	8
3.8	Land Contamination	8
4	Description of Proposal	10
4.1	Overview	10
4.2	Easements	10
4.3	Services	11
4.4	Access to Twizel River	11
5	Reason for Application	12
5.1	Resource Management Act	12
5.2	Mackenzie District Plan	12
5.3	NESCES Regulations	13
5.4	Overall Activity Status	14
6	Assessment of Environmental Effects	15
6.1	Introduction	15
6.2	District Plan Section 13 Assessment Matters	15
6.3	Positive Effects	17
6.4	Amenity Effects	17
6.5	Contaminated Soil Effects	17
6.6	Summary	17
7	Consultation	18
8	Objectives and Policies of Planning Documents	19
8.1	Introduction	19

8.2	Canterbury Regional Policy Statement.....	19
8.3	Mackenzie District Plan	19
9	Part 2 of the Act	21
10	Conclusion	22

Appendices

Appendix A

Subdivision Plan

Appendix B

CB45A/677

Appendix C

Identifier 489340

Appendix D

Identifier 489341

Appendix E

RM070082

Appendix F

Twizel Wastewater Treatment Plant –Contamination Assessment of Outfall Trench

Figures

Figure 2-1: Location of Twizel Wastewater Treatment Plant.....	2
Figure 2-2: Aerial view of the Twizel Wastewater Treatment Plant	3
Figure 2-3: Location of the proposed wastewater soakage basins	5

Form 9

Application for Resource Consents under section 88 of the Resource Management Act, 1991

To: Mackenzie District Council
PO Box 52
Fairlie 7949

From: Mackenzie District Council
PO Box 52
Fairlie 7949

1. **Mackenzie District Council applies for the following type of resource consents:**

Subdivision consent to undertake a boundary adjustment to create proposed Lot 1 for the upgraded Twizel Wastewater Treatment Plant (WWTP).

Land use consent under Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health Regulations) 2011 (NESCS Regulations) for subdivision of a HAIL piece of land.

2. **A description of the activity to which the application relates**

A summary of the proposed activity is provided in Section 1 of the attached AEE Report: *Twizel WWTP - Subdivision and NESCE Resource Consents*

3. **The names and addresses of the owners and occupiers of the land to which the application relates**

Mackenzie District Council, PO Box 52, Fairlie

High Country Rosehip Orchards Ltd, State Highway 8, Twizel

4. **The location of the proposed activity**

Twizel Wastewater Treatment Plant, State Highway 8, Twizel

Legal descriptions of the land, which is the subject of the proposed activities, are as follows:

Section 1 SO 18355 and Lot 1 DP 422901

5. **The following additional resource consents are needed for the proposed activity and have been applied for:**

Consent to use land for a wastewater treatment plant and the discharge of treated wastewater into land.

Consent to discharge of contaminants (odour) to air from a wastewater treatment plant.

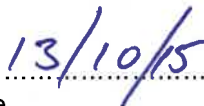
Notice of Requirement to designate the site for "Wastewater Treatment and Disposal" which includes the upgrading, operation, maintenance and repair of the Twizel Wastewater Treatment Plant and associated activities.

6. In accordance with the Fourth Schedule of the Resource Management Act 1991, an assessment of environmental effects is attached in the detail that corresponds with the scale and significance of the effects that the proposed activity may have on the environment.

See attached AEE report: *Twizel WWTP - Subdivision and NESCE Resource Consents*



.....
Bernie Haar - Asset Manager Mackenzie District Council



.....
Date

Address for service of applicant:

CH2M Beca Ltd
PO Box 13960
Christchurch 8141
Telephone No: 03 374 3156
Attention: Graeme Jenner

1 Introduction

Mackenzie District Council (MDC) is making an application for subdivision consent under the Resource Management Act (RMA) to undertake a boundary adjustment in order to create an enlarged site for the proposed upgraded Twizel Wastewater Treatment Plant (WWTP). The WWTP will be contained in proposed Lot 1 which comprises 32.24ha while Lot 2 is the balance lot comprising 220.37ha. The subdivision is shown on the subdivision plan in **Appendix A**.

In addition the subdivision requires resource consent in respect of Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health Regulations) 2011 (NESCO Regulations) and this matter is also addressed in this application.

The RMA requires that the environmental effects of a proposal are assessed as part of the resource consent process. The purpose of the assessment of environmental effects (AEE) process is to ensure consideration is given to the actual and potential effects of the activity.

This AEE will explain the nature of the proposal and measures that can be taken to avoid, remedy or mitigate any adverse effects identified in respect of both the subdivision consent and the NESCO consent. The report has been prepared to satisfy section 88(2) and the Fourth Schedule of the RMA.

2 Background

2.1 Overview

The existing WWTP is located east of State Highway 8 (SH8), approximately 1 km southeast east of Twizel Township (shown as “Oxidation Ponds” on Figure 2-1). The WWTP was commissioned in 1969 and is designated in the Mackenzie District Plan as “Oxidation Pond(s)”. The WWTP is contained in land owned by MDC and is legally described as Section 1 SO 18355 contained in CB45A/677 and comprising 6.35ha (refer to **Appendix B**).

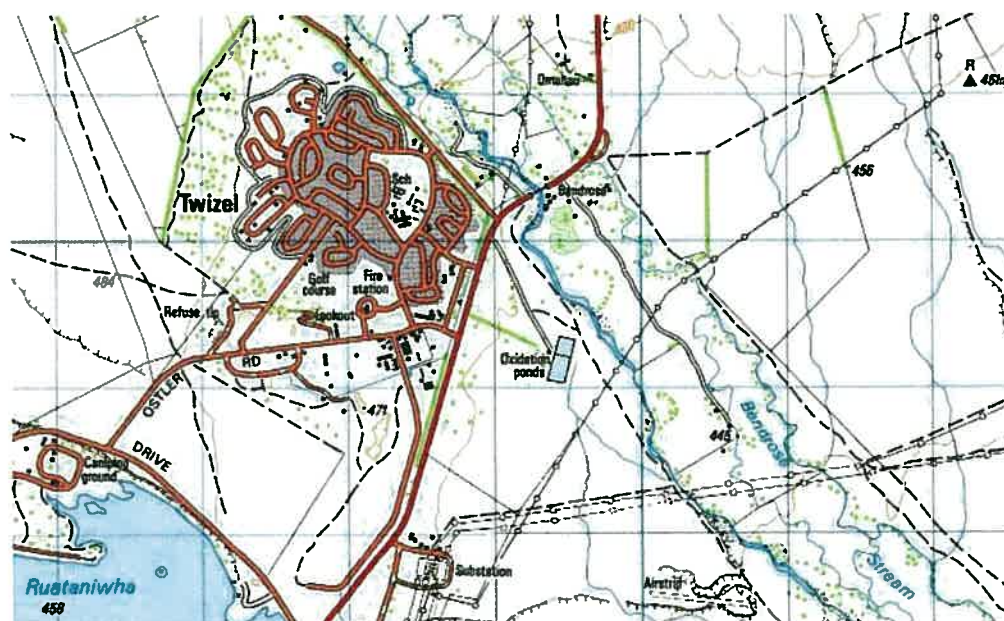


Figure 2-1: Location of Twizel Wastewater Treatment Plant

Raw sewage from Twizel Township gravitates approximately 1.2km in a 375mm steel pipe. East of the highway, the pipe runs along a raised bund that lies beside the WWTP access road (seen in the foreground of Figure 2-2).

The WWTP provides treatment in a series of three ponds prior to discharging into a soakage outfall trench that runs southeast from the plant for over 1500m (refer to Figure 2-2). The plant was first commissioned in 1969 and was designed for a hydroelectric projects construction population of 5,000 people. The original system discharged treated wastewater directly into the Twizel River. This practice was stopped in about 1988 and wastewater is now discharged into the soakage outfall trench. Since 2010, the trench has been fenced for the first 550m from the pond outlet, around the perimeter, with warning signs posted at 100m intervals.

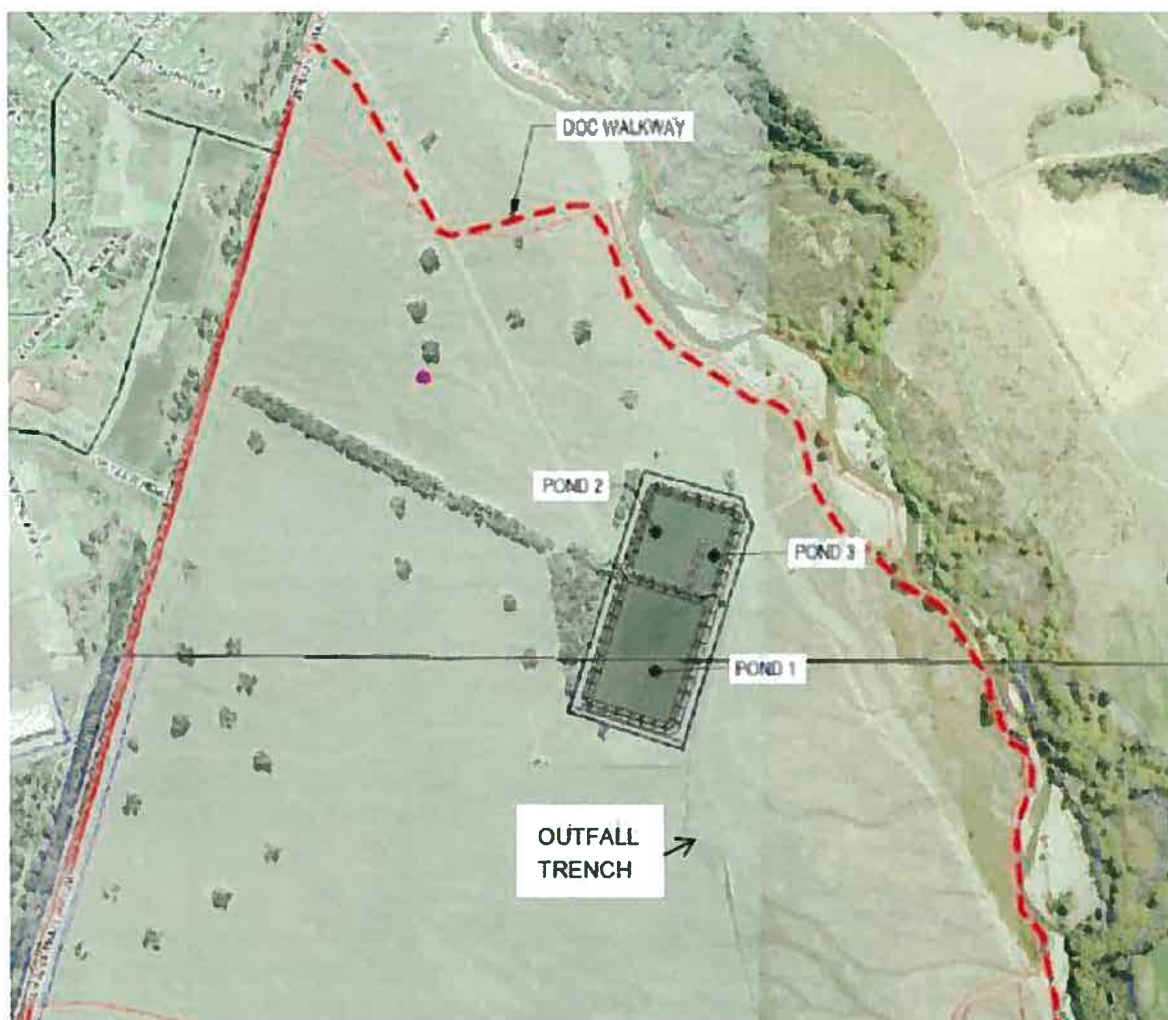


Figure 2-2: Aerial view of the Twizel Wastewater Treatment Plant

2.2 Proposed Upgrading of the WWTP

2.2.1 Overview

The MDC has recently upgraded the WWTP to improve wastewater quality by subdividing Pond 2 into two cells (effectively creating a third pond ie Pond 3). Proposed further upgrading will include the construction of new soakage basins to replace the existing soakage trench, which is not considered an environmentally acceptable disposal option in the long term. In March 2010, MDC was granted resource consent (CRC042915) by Environment Canterbury to continue to discharge treated wastewater to land via the existing soakage trench for a period of ten years. This relatively short term was to enable MDC to obtain additional land, construct a new disposal system and decommission the soakage trench. The upgrade would also enable MDC to effectively “future proof” the WWTP for future population growth.

The upgraded system will consist of the following components:

- Replacement of the existing bar grating with a primary screen to remove gross solids
- A new inlet and outlet flow meters

- Four infiltration basins
- Associated works (such as power supply to the site)

MDC is proposing to commission the new wastewater treatment and disposal system (including decommissioning of the existing trench) by 1 January 2017.

2.2.2 Proposed Infiltration Basins

Four wastewater infiltration basins will be constructed at the southern end of Pond 1 to replace the existing soakage trench. Each basin will be approximately 10m x 100m and be operated on an 8 day rotation (ie 2 days each basin). The basins will allow discharge of the treated wastewater through the underlying substrate to groundwater. Figure 2-3 shows the proposed location of the four infiltration basins.

When the basins are commissioned, the soakage trench will be decommissioned by backfilling it and returning the trench to a similar state as the surrounding area.

2.2.3 Additional Land Required

The upgraded treatment and disposal system will require additional land and accordingly the subdivision will give effect to this, primarily by the creation of Lot 1 which is a boundary adjustment between Section 1 SO 18355 and Lot 1 DP 422901. Lot 1 will comprise 32.24ha and proposed Lot 2, the balance area will comprise 220.37 ha. A number of easements are proposed which will affect proposed Lots 1 and 2 and Lot 2 DP 422901.

The additional land acquired by MDC will also provide for future sludge drying beds and (if required by increased population/trade waste loading) an aerated lagoon adjoining the ponds.

2.2.4 Proposed “no build” Zone

A further 150m-wide “no build” zone is also proposed around the WWTP, beyond the MDC land boundary, which will restrict building within this area. This additional buffer will be located in proposed Lot 2 (ie not MDC land) and the building restriction will be imposed by way of covenant over the title.

2.2.5 HAIL Site

Due to use of the site as a wastewater treatment plant including the outfall trench the site is a Hazardous Activities and Industries List (HAIL) activity (G6) under the NESCS Regulations.

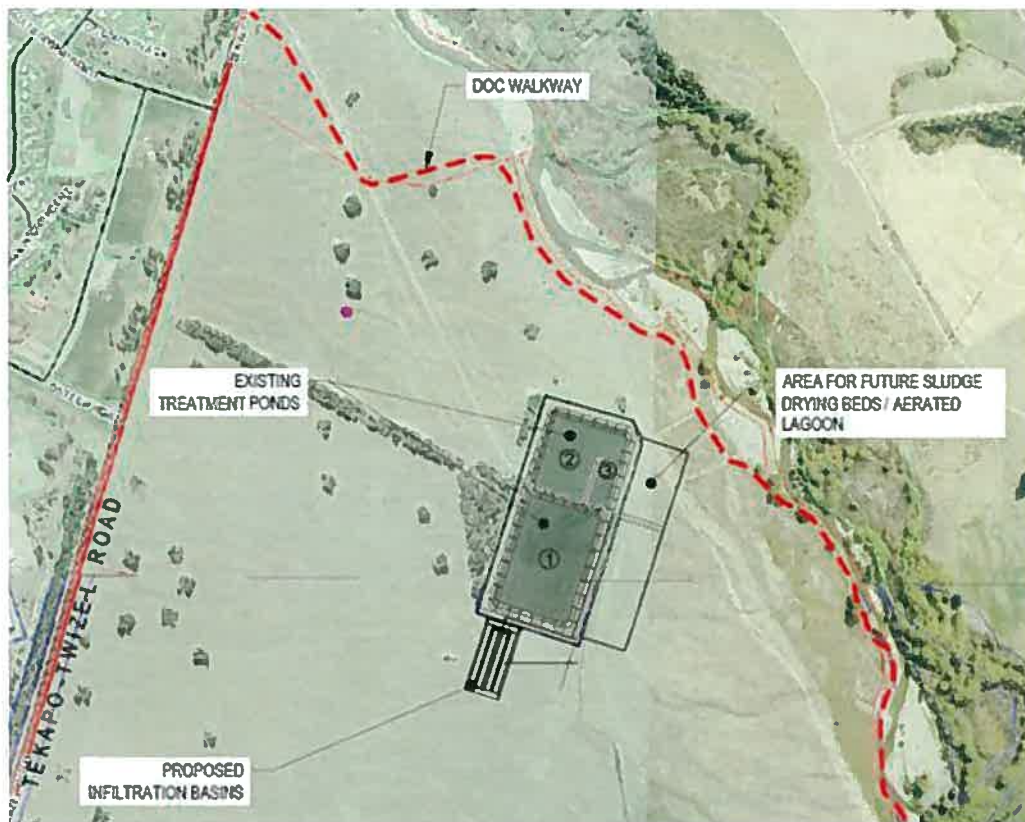


Figure 2-3: Location of the proposed wastewater soakage basins

2.3 Land Tenure Around WWTP

The land around the WWTP is owned by High Country Rosehip Orchards Ltd. The High Country Tenure Review process in the early 2000's resulted in the land adjoining Section 1 Section SO 18355 passing from Crown pastoral lease to fee simple title. This site is legally described as Lot 1 DP 422901 (Identifier 489340) comprising 246.19ha (see **Appendix C**). High Country Rosehip Orchards Ltd also own Lot 2 DP 422901 (Identifier 489341) comprising 13.2ha which is to the north of Lot 1 DP 422901 adjoining SH 8 (See **Appendix D**).

Negotiations are currently underway to allow MDC to acquire the additional land required for Lot 1 from Mackenzie Lifestyle Limited (an associated company of High Country Rosehip Orchards Limited).

2.4 Mackenzie Lifestyle Ltd Subdivision

Mackenzie Lifestyle Limited was granted resource consent (RM070082) by MDC in November 2009 to subdivide (as it was then) Section 1 SO 384036 (now lot 1 DP 422901) to create 49 rural residential lots ranging in size from 1.21ha to 3.18ha. The subdivision is located approximately 500m to the southeast of the WWTP. The subdivision comprises 49 allotments but certificates of title are yet to issue (RM070082 is attached as **Appendix E**).

2.5 Other Resource Consents/Notice of Requirement

The use of the site for the WWTP and discharge of wastewater to the new infiltration basins and discharge to air will require resource consents from Environment Canterbury. MDC will also apply for a Notice of Requirement under section 168A of the Act to designate the enlarged site for "wastewater Treatment and Disposal" purposes. These applications will be submitted separately from the subdivision and NESCS consents application.

3 Description of the Existing Environment

3.1 Location

As indicated above, the existing Twizel WWTP is located east of State Highway 8 (SH8), approximately 1.0km south east of Twizel (refer Figure 2-1). The site comprises the oxidation ponds which are connected to the Twizel main sewer, which is an underground pipeline that runs from the Twizel Township. A vehicle track along the same alignment as the sewer provides access to SH8 from the site. Conifer trees have been planted along the western edge of the ponds and a tree line extends west from the plant to SH8. The balance of the site is generally in pasture, weed species and tussock and used for low intensity grazing.

The Twizel River is located on the northeast boundary of proposed Lot 1 and flows towards the southeast. The river, which has a braided gravel bed that is incised into a flood plain below the river terrace on which the WWTP is located, discharges into the Haldon Arm of Lake Benmore.

3.2 Legal Description

The site is legally described as Section 1 SO 18355 and Lot 1 DP 422901. Section 1 SO 18355 has an easement over Lots 1 and 2 DP 422901 for the drainage of sewage which relates to the main trunk sewer. Section 1 SO 18355 also has an easement over Lot 2 to drain sewage to the Twizel River, a practice which ceased in 1989. There is no formal easement for a right of way (ROW) over the existing access to SH8 and **effectively Section 1 SO 18355 is "land-locked"**. The reason for this is unclear as a ROW is shown on SO 18355 but is not on the Certificate of Title. SO 18355 also shows other easements relating to the conveyance of electricity and the outfall trench but again these are not shown on the Certificate of Title. As indicated above Lot 2 DP 422901 is also of relevance given that an easement will be created over it.

3.3 Surrounding Land Use

The site is surrounded by land which is used primarily for grazing. SH 8 is located approximately 800m west of the site, with the Twizel Township located further to the west on the opposite side of the state highway.

A residence is situated on Lot 2 DP 422901, near the entrance to the WWTP access road, approximately 700m north of the site. The closest properties, within the township, are more than 900m to the west of the site on Ostler Road. These properties contain industrial units and are located behind a row of tall trees.

A Department of Conservation (DOC) walkway follows the southern bank of the Twizel River from SH8 for a distance of about 12km downstream. The walkway can also be accessed by a ROW near the SH8 entrance to the WWTP.

As indicated earlier, Mackenzie Lifestyle Limited was granted resource consent in November 2009 to create 49 rural residential lots approximately 500m southeast of the WWTP. The subdivision consent decision (see **Appendix E**) contains conditions which protects the functioning of the outfall trench and only allows certain lots to be developed along the alignment of the trench when the trench is decommissioned (Condition 18). Clearly, the proposed upgrading of the WWTP described earlier will enable the trench to be decommissioned and allow the Mackenzie lifestyle Limited lots to be developed.

3.4 Zoning

The site is zoned Rural in the Mackenzie District Plan. As indicated earlier, the WWTP is designated in the Mackenzie District Plan as "Oxidation Pond" (No.42) on Map 33 and "Oxidation Ponds, Twizel" on Map 44.

The site is also subject to Plan Change 13 which was publicly notified in 2007 but is not yet operative. Under the plan change, the site is located in the "Mackenzie Basin Subzone". This sub zone recognises that

Mackenzie Basin has a distinctive and highly valued landscape containing outstanding natural landscapes (refer Objective 3A of Plan Change 13).

3.5 Cultural/Natural/Landscape Values

The site is not identified as a site with Natural Significance, Scenic Viewing, High Altitude Area, Geopreservation or Heritage significance in regard to the District Plan. As indicated above a DOC walkway is located along the south bank of the Twizel River.

As indicated earlier, the site is located in the “Mackenzie Basin Subzone” which recognises the outstanding landscape characteristics of the basin.

3.6 Natural Hazards

An area of proposed Lot 1 below the terrace appears to be included within the Flooding Area shown on the Flooding Maps (Twizel Flooding Area) in the District Plan. It is presumed this relates to flooding from the Twizel River. The Flooding Map notation indicates the flooding area is indicative only, but it is noted that there is no record of flooding of the actual WWTP and adjoining area, and in this respect the terrace the WWTP is located on, is approximately 6m above the Twizel River. There are no other identified natural hazards associated with the site in terms of instability or seismic risk. The Ostler Fault Hazard Area which is identified on the planning maps is located to the west of the site.

3.7 Soils

The soil around the Twizel WWTP is classified as Mackenzie Sandy Loam. The depth to gravel is between 0.2 and 0.5m with permeability within these gravels being moderately rapid (approximately 65 to 129mm/hr).

3.8 Land Contamination

Given that the disposal trench is to be decommissioned the existing soil within the disposal trench was investigated as to possible contamination in terms of the NESCS Regulations (see *Twizel Wastewater Treatment Plant – Contamination Assessment of Outfall Trench*, June 2015 in **Appendix F**).

The investigation was undertaken on 1st July 2015 and surface soil samples were collected from 15 locations, including one duplicate sample for quality checking purposes (see sample locations in Figure 3-6). Sample locations included areas of likely future excavation around the WWTP ponds (TP01 and 02), the length of trench currently used for disposal (TP03, 04 and 05) and the southern half of the outfall trench where land may in the future be subdivided (TP06- TP18). Samples were collected from the soil surface.

A copy of the Hill Laboratories sample reports including Chain of Custody forms are included in Appendix G of the appended Beca report.

The assessment criteria were selected in accordance with the hierarchy defined by Ministry for the Environment (MfE) *Contaminated Land Management Guidelines No.2* (MfE, 2002). Assessment criteria for a residential 25% produce land use scenario was adopted as it is understood that a future subdivision to the south of the WWTP would create a number of ‘lifestyle blocks’ ranging from approximately 1200m² to 2Ha. Therefore, the criteria against which the samples were assessed were under a “Residential” scenario with up to 25% of land use as productive, i.e. for edible plants.

The results showed that while background concentrations for cadmium, copper, lead and zinc were exceeded, levels of contamination are below all applicable human health soil contaminant standards for residential (25%) produce under the NESCS Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011. Accordingly, it is concluded that the soils do not pose a health risk to human health.

4 Description of Proposal

4.1 Overview

It is proposed to subdivide Section 1 SO 18355 and Lot 1 DP 422901 by undertaking a boundary adjustment to create proposed Lot 1 which will contain the upgraded Twizel WWTP and the balance area of Lot 2. Proposed Lot 1 comprises 32.24ha and proposed Lot 2 comprises 220.37ha. Proposed Lot 1 will be utilised to accommodate the components of the upgraded WWTP including the new infiltration basins, future sludge drying beds, and a possible future aeration lagoon. The subdivision will also result in the creation of a number of easements involving proposed Lots 1 and 2 and Lot 2 DP 422091.

4.2 Easements

A number of easements and covenants are proposed to be created/extinguished as follows as shown on the subdivision plan:

- i) Extinguish the existing sewage easement over proposed Lot 1 as the pipe will now be contained in this lot – shown as U and V on the subdivision plan.
- ii) An easement for a right of way (ROW) and to convey sewage between proposed Lot 1 and SH8 over proposed Lot 2 and Lot 2 DP 422901 - shown as F and G on the subdivision plan. This easement will provide legal frontage and access to proposed Lot 1 (as indicated earlier there is an existing sewage easement in place but no provision for a ROW in respect of Section 1 SO 18355).

The ROW is intended to be short term until a proposed road to the south of the site, which is part of the Mackenzie Lifestyle Limited subdivision, is in place. When this occurs, the above ROW easement will be surrendered and a new easement created to enable frontage and access to the southern road.

- iii) An easement to the west of proposed Lot 1 to SH8 for the purposes of conveying power and sewage - shown as K on the subdivision plan. This easement, which is 6m in width, will enable an electricity supply to be provided to the WWTP to meet the power requirements for the new screens, flow meters, telemetry unit, wastewater pump, valve actuators and PLCs as well as future site requirements. The easement will also enable MDC to connect the WWTP with the township by a new trunk alignment if this considered desirable in the future.
- iv) A no-build covenant on proposed Lot 2 in respect of the outer 150m odour buffer around the WWTP shown as L on the subdivision plan. In this respect it is suggested the following condition (or similar) be imposed on the subdivision consent:

"A covenant shall be registered on the Certificate of Title of proposed Lot 2 prohibiting the erection of any building in the area shown on attached plan 6510257-GS-001."

- v) A ROW over an existing track on the top of the terrace on proposed Lot 1 in favour of proposed Lot 2.

Easements identified in (ii) – (v) are included as part of the negotiations referred to above between MDC and Mr Lyons.

- vi) Extinguish the easement for the piped discharge of treated wastewater to the Twizel River, given this practice ceased in 1988 –shown as W, X, Y and Z on the subdivision plan.
- vii) The subdivision plan also shows existing easements on proposed Lots 1 and 2 as follows:

- A, B, C, D and E - right to convey power
- H - ROW for the Twizel River walkway
- N and M - right to convey power (Meridian Energy Ltd)

These easements will remain in place.

4.3 Services

Vehicular access to the site will be via the existing formed gravel track to the north east of the site and, in the longer term, via the proposed road from the south. As the existing access to SH8 is already formed and is intended to be short term only, consultation with New Zealand Transport Agency (NZTA) is not considered necessary. It is anticipated that the WWTP will only be visited, on average, once a week for maintenance purposes so vehicle movements will be low.

As indicated, electricity will be supplied underground to the site for operational purposes by way of the easement referred to in Section 4.2 (iii).

At this stage, it is not proposed to supply water to the site. If this is required, the WWTP is likely to utilise the water supply to be supplied by MDC to the Mackenzie Lifestyle Limited development. No toilet facilities are anticipated on the site.

4.4 Access to Twizel River

It is understood issues of esplanade reserves and access to the Twizel River was resolved during the High Country Tenure Review. As indicated above there is a DOC walkway along the Twizel River which is protected by various easements. The walkway is not affected by the proposed subdivision.

5 Reason for Application

5.1 Resource Management Act

Section 14(1) of the RMA states that no person may subdivide land unless the subdivision is allowed by a rule in a district plan or by a resource consent.

Section 44 of the RMA requires compliance with National Environment Standards such as NESCS Regulations.

5.2 Mackenzie District Plan

Section 13 Subdivision, Development and Financial Rules of the Mackenzie District Plan applies to the proposal. As indicated above, the site is zoned Rural in the district plan (and is the underlying zoning for the designation on site) and accordingly, the rural subdivision rules are particularly relevant.

Rule 1(d) Legal Access of Section 13 states all allotments shall comply with Section 321 of the Local Government Act. Section 321 has now been repealed but in respect of proposed Lot 1, legal access will be provided by the proposed right of way over proposed Lot 2 and 2 DP 422901. Section 106 (1)(c) of the RMA enables consideration to be given to legal and physical access issues.

Rule 3 states that any subdivision that complies with all of the Primary and Secondary Subdivision Standards shall be a controlled activity. In this respect, it appears the subdivision complies with all of the relevant standards. In particular, it is noted that there are no provisions in the Primary Standards that are directly applicable to the proposal given the nature of the subdivision and its rural zoning. The proposal complies with Rule 6.a.iii Boundary Adjustments.

In terms of the Secondary standards, the only relevant matter appears to be Rule 7a Allotment Dimensions which requires that allotments in the Rural Zone have a frontage with a minimum length of 5m, provided that this does not apply to allotments for utilities. The definition of a Utility in the plan is as follows:

Utility: means facilities, structures and works necessary for, incidental to and associated with providing the following:

...
c the storage, treatment and conveyance of water and sewage;

...
Accordingly, Rule 7a is not applicable as Lot 1 is for a utility in accordance with the above definition. It is also noted that the right of way for Lot 1 does provide a frontage of 6m to SH 8 and it could therefore be argued that frontage is provided in accordance with Rule 7a (Frontage in the Plan is defined "as the road boundary of any site").

The subdivision is considered to be a controlled activity in terms of the operative plan. The subdivision also complies with other rules of the Plan including the Transportation section. In particular, the proposed access to the site is over an existing access and the number of vehicle movements will be significantly less than 100 per day (Rule 2.0(i)).

Under Plan Change 13, the subdivision is a non-complying activity given that the site is located in the Mackenzie Basin Subzone and is not a controlled, restricted discretionary or discretionary activity (Rule 5.c). This matter may be more of a technical one given that Rule 4.d states a subdivision in the Mackenzie Basin Subzone is a discretionary activity to facilitate an activity, other than a farming activity, where that activity is a permitted activity or land use consent has been obtained or is being sought simultaneously.

In this particular case, it appears that the components of the proposed upgrading are not technically provided for as a permitted utility in the Section 15 Utilities provisions. Under normal circumstances, the subdivision consent would have been submitted with the Notice of Requirement (NOR) application to alter the existing site designation. However, the consent application is being lodged prior to the NOR and accordingly, under Plan Change 13 the subdivision is a non-complying activity.

It is noted that the rules of Plan Change 13 have legal effect given that the plan change was publicly notified in 2007, prior to the 2009 RMA amendment which stipulated that rules only have legal effect when a plan change is operative.

Clause 10 of Section 13 sets out assessment matters for subdivision, which include Plan Change 12 matters. These are discussed further in Section 6.

5.3 NESCES Regulations

Regulation 5 (5) of the NESCES indicates that the regulations apply to any subdivision that contains a piece of land that has a HAIL activity on it which is the situation in respect of this subdivision, given the existing WWTP and the outfall soakage trench.

Regulation 8 (4) states

Subdividing land or changing the use of the piece of land is a permitted activity while the following requirements are met:

- (a) a preliminary site investigation of the land or piece of land must exist:*
- (b) the report on the preliminary site investigation must state that it is highly unlikely that there will be a risk to human health if the activity is done to the piece of land:*
- (c) the report must be accompanied by a relevant site plan to which the report is referenced:*
- (d) the consent authority must have the report and the plan.*

The PSI was unable to conclude that the subdivision is highly unlikely to be a risk to human health and as such is not a permitted activity. Accordingly the proposal is considered as a controlled activity under Section 9(3) which states;

If a requirement described in Regulation 8(4) is not met, the activity is a controlled activity while the following requirements are met:

- (a) a detailed site investigation of the piece of land must exist:*
- (b) the report on the detailed site investigation must state that the soil contamination does not exceed the applicable standard in regulation 7:*
- (c) the consent authority must have the report:*
- (d) conditions arising from the application of subclause (4), if there are any, must be complied with.*

In this particular case all the conditions (a)-(d) are met and accordingly the application can be considered as a controlled activity.

Refer to the Twizel Wastewater Treatment Plant – Contamination Assessment of Outfall Trench, June 2015 in **Appendix F**, for further details.

5.4 Overall Activity Status

Overall, applying the most stringent rule test, resource consent is required for the subdivision and the NESCES consent as a non-complying activity in terms of Section 104D of the RMA, given both applications relate to the same site and the NESCES consent must be resolved as part of the subdivision. Under Section 104D, the Consent Authority can only grant consent if it is satisfied that the effects of the activity on the environment will be minor, or the application is not contrary to the objectives and policies of the relevant plans.

Section 104(1) of the RMA states that in considering a resource consent application the Consent Authority must, subject to Part 2, have regard to among other matters, any actual and potential effects on the environment; the provisions of the regional policy statement and plans, and any other matters considered to be relevant.

Section 104B of the RMA states the Consent Authority may grant or refuse a non-complying application and, if it grants consent, impose conditions under Sections 108 and 220 of the Act.

Section 106 of the RMA also states that a Consent Authority may grant or refuse a subdivision consent in circumstances relating to erosion, subsidence or inundation on the subject land and whether sufficient provision has been made for legal and physical access.

In terms of the Mackenzie District Plan, regard must be had to both the operative provisions and the Plan Change 13 provisions although it is understood that the plan change is far from settled.

6 Assessment of Environmental Effects

6.1 Introduction

There are a number of actual and potential effects associated with the proposal. As indicated earlier, Section 13 of the District Plan lists a number of assessment matters which also incorporate the Plan Change 13 provisions. The relevant provisions are used below to assess the proposal.

In terms of the existing environment, it is noted that this includes the existing WWTP and also the consented rural residential Mackenzie Lifestyle Limited subdivision (RM070082).

6.2 District Plan Section 13 Assessment Matters

6.2.1 Allotment Size

There are no minimum sizes for allotments in the Rural Zone and assessment matters relate to the adequacy of sewage disposal which is not a matter for consideration in this proposal. In any event, the allotment size of Lot 1 is appropriate as it is of sufficient area to accommodate the operation of the upgraded WWTP including the proposed infiltration basins and possible future upgrade works. The area of Lot 2 is still a substantial area and the proposed Mackenzie Lifestyle Limited development is not affected by the subdivision.

6.2.2 Property Access

Property access will, in the short term, be provided over the existing access to SH8 and protected by way of easement. Given the low number of vehicle movements envisaged (on average one visit per week) that will occur on an existing access, no adverse effects are anticipated on SH8. In the longer term, the proposed access from the south will be to a road (that intersects with SH8), which has been approved as part of RM070082. Accordingly, legal and physical access is addressed satisfactorily by these arrangements particularly having regard to Section 106 of the RMA.

6.2.3 Esplanade Provision

No esplanade reserve, in respect of the Twizel River, is required given the area of the lots which exceed 4ha (refer Section 230 of the RMA). As indicated above there is existing provision made for access to and along the Twizel River.

6.2.4 Natural and Other Hazards

As indicated above, an area of proposed Lot 1 below the terrace appears to be included within the Flooding Area shown on the Flooding Maps (Twizel Flooding Area) in the District Plan. It is presumed this relates to flooding from the Twizel River. However the WWTP and the area containing the proposed upgrade is located on the terrace approximately 6m above the Twizel River and will not be affected by the potential flooding. There are no other identified natural hazards associated with the site in terms of instability or seismic risk with the Ostler Fault Hazard Area is located to the west of the site.

Given the above, there is no requirement to refuse consent under Section 106 of the RMA.

The issue of contaminated soils is addressed below.

6.2.5 Sanitary Sewage Disposal, Water Supply, Stormwater Disposal and Energy Supply

No adverse effects will arise in respect of these matters. As indicated above, toilet facilities are not proposed; reticulated water supply if required will be obtained from the proposed Mackenzie Lifestyle Limited development; and there are no hard standing surfaces that will result in stormwater runoff.

Power will be supplied to proposed Lot 1 by way of easement over proposed Lot 2 from SH8.

6.2.6 Vegetation Protection

The only substantial vegetation on proposed Lot 1 is a stand of conifers immediately to the west of the WWTP, which are not considered to be of any significance. However, the trees are unlikely to be disturbed in any event.

6.2.7 Easements

The required easements are identified in Section 4.2 of the AEE.

6.2.8 Heritage Items

There are no identified heritage items affected by the subdivision.

6.2.9 Financial Contributions

No financial contribution is payable under Rule 7.d given the lots are not for residential or visitor accommodation purposes.

6.2.10 Subdivision for Non –farming Activities (Plan Change 13)

Relevant matters under clause 10.2.t include;

iii In the case of subdivision for non-farming activities, the extent to which the proposed lot(s) could provide sites for the proposed buildings and associated development that meets the assessment matters for non-farm activities and buildings.

iv. In all cases, the safety of the proposed access point to the road.

In terms of Item iii, there are no proposed buildings in respect of Lot 1. In terms of the Assessment Matters in clause 16.2.I Non-farming Activities and Buildings of the Rural Zone (which clause 10.2.t refers to), the components associated with the WWTP upgrade will not be readily visible from a public viewpoint.

In this respect, the new infiltration basins, the screen, and possible future works (ie sludge drying beds/aeration lagoon) will be either below ground level or just above ground level. The facilities will be located a substantial distance from SH8 and screened by the existing trees on site. Most of these improvements will not be visible from the Twizel River Walkway. While the proposed primary screen will be set above ground, it will not extend above the height of the existing pond embankments. It is also noted that in terms of existing environment there is an existing WWTP facility which is an accepted part of the landscape and a consented adjoining rural residential subdivision.

Accordingly, any adverse visual effects will be negligible notwithstanding the location of the site in the Mackenzie Basin Subzone.

Access to the site (Item iv) has been addressed earlier.

6.3 Positive Effects

The proposal will have a positive effect by enabling the creation of a lot for the upgrading of the Twizel WWTP. This will enable Twizel's future wastewater treatment and disposal requirements to be met and also result in the removal of the existing outfall trench which does not represent current best practice.

6.4 Amenity Effects

While the subdivision itself will not have adverse amenity effects, the upgraded WWTP may potentially result in the generation of adverse effects such as odour. These matters will be addressed at the Notice of Requirement stage and resource consent application stages but, it is noted that the area of Lot 1 is largely sufficient to accommodate a 150m wide odour buffer. In addition, a 150m "no-build" covenant will also be imposed on part of proposed Lot 2 which will provide for a total 300m wide buffer around the treatment ponds. This overall buffer width is consistent with the requirements of the *Guideline for Design, Construction and Operation of Oxidation Ponds* (Ministry of Works, 1974) –except for the north-eastern boundary.

The operation of the WWTP and its effects was also discussed in RM070082 (Mackenzie Lifestyle Subdivision) and appropriate conditions imposed. The existing environment is also relatively modified in terms of the existing WWTP. The odour buffers will reduce the potential for reverse sensitivity effects in respect of the proposed rural residential subdivision impacting on the future operation of the WWTP.

6.5 Contaminated Soil Effects

The results from the NESCS report (attached as Appendix G) show that while background concentrations for cadmium, copper, lead and zinc were exceeded, levels of contamination in respect of the outfall trench are below all applicable human health soil contaminant standards outlined in the relevant standards. Accordingly it is concluded that the soils do not pose a health risk to human health.

All of the matters outlined in Regulation 9(3) of the NESCS are met and resource consent can be granted.

6.6 Summary

Overall, it is considered there are a number of positive effects and any adverse effects are minor or less.

7 Consultation

Extensive consultation has been undertaken in the last few years with Mr John Lyons of High Country Rosehip Orchards Limited and Mackenzie Lifestyle Development, in respect of the upgrading of the WWTP. As indicated earlier, negotiations are taking place between the parties for the purchase of proposed Lot 1.

8 Objectives and Policies of Planning Documents

8.1 Introduction

The most relevant documents are considered to be the Canterbury Regional Policy Statement (CRPS) and the Mackenzie District Plan (incorporating Plan Change 13). The relevant provisions are set out below.

8.2 Canterbury Regional Policy Statement

The Canterbury Regional Policy Statement (CRPS) is a relatively broad brush document with Chapter 5 Land Use and Infrastructure the most relevant to this proposal. Objective 5.2.2 recognises the importance of integrating land use and regionally significant infrastructure (which is defined as including “sewage collection, treatment and disposal”). Policy 5.3.6(a) recognises the need to avoid development which constrains the on-going ability of existing sewerage infrastructure to be used and developed. Policy 5.3.6(b) is to enable sewerage infrastructure to be developed and used provided adverse effects are appropriately avoided, mitigated and controlled.

In this respect, the subdivision will enable the upgrading of the WWTP which will enhance the on-going development of the existing Twizel Township in manner that results in adverse effects that are less than minor. As part of the subdivision, provision is made for an odour buffer which will enable the upgrading without undue constraints and reduce the potential for reverse sensitivity effects from the adjoining proposed rural residential subdivision.

Accordingly, it is considered that the proposal is in accordance with the relevant provisions of the CRPS.

8.3 Mackenzie District Plan

8.3.1 Introduction

The most relevant sections of the District Plan for the proposal are the Rural; Subdivision, Development and Financial Contributions; and Utilities Sections.

8.3.2 Section 7 Rural

Objective 1 and associated policies relate to safeguarding indigenous biodiversity and ecosystem functioning. The site is not identified as a site of natural significance or containing any significant vegetation. As indicated above, the site is substantially modified with tussock and weed species. It is also noted that biodiversity values was not considered an issue for the adjoining rural residential subdivision (RMA 070082) when it was granted resource consent.

Objective 2 and associated policies relate to the natural character of water bodies and their margins. Lot 1 is set well back from the Twizel River on an upper terrace and will not impact on the river or its margins.

Objective 3A and associated policies relate to Distinctive and Outstanding Landscapes and are inserted as a result of Plan Change 13. The provisions generally require the protection of outstanding features and subdivision and development should not detract from those landscapes. While the site is located in the Mackenzie Basin Subzone, it is considered the proposal will not be contrary to these provisions given that the proposed facilities on Lot 1 will effectively be below or at ground level or set below the existing profile of the WWTP pond embankment; the distance between Lot 1 and the SH8 or the Twizel River; and the relatively modified existing environment in terms of the existing WWTP and the consented rural residential subdivision. The site is also screened from the west by the existing conifer trees on site.

Objective 7 and associated policies relate to natural hazards. While part of Lot 1 is located in the “Twizel Flooding Area” as shown on the planning maps no development of this part of the site is proposed. The site is not subject to any other known natural hazards.

Objective 11 and associated policies relates to rural infrastructure. While the role of the WWTP is essentially to service Twizel Township, the proposal will nevertheless enable the wider community to maintain their economic and social well-being in accordance with Objective 11.

From the above, it is concluded that the proposal is in accordance with the provisions of the Mackenzie District Plan.

8.3.3 Section 13 Subdivision, Development and Financial Contributions

Objective 1 Subdivision Servicing and associated policies is relevant in that safe access can be provided to Lot 1 (Policies 1 and 2).

Objective 2 Cost of Services to be met by Subdividers and Developers and associated policies and Objective 3 Recreation and Reserves and associated policies are not directly relevant given the nature of the subdivision.

Objective 4 Design and Location and associated policies are met given that adverse effects will not arise in respect of such matters as landscape, nature conservation and amenities (Policy 1).

8.3.4 Section 16 Utilities

Objective 1 and associated policies relate to effects of utilities on the environment. It is considered that the proposal will be consistent with these provisions given that the subdivision makes provision to separate potentially incompatible activities through the development of buffer zones and addresses any contaminated soil issues (Policy 1); the subdivision does not affect any identified natural or heritage items (Policy 4); and the upgrading of the existing and upgraded WWTP will have economic and operational benefits (Policy 7).

Objective 2 and associated policies relate to enabling the establishment, use and maintenance of utilities. It is considered that the proposal will be consistent with these provisions given that the upgrading of the utility will ensure its on-going use and efficiency (Policy 1); the upgrading of the existing WWTP has economic benefits (Policy 2); and the WWTP is of significant importance in the operation and viability of Twizel Township (Policies 3 and 6).

8.3.5 Section 18 Natural Hazards

Objective 1 and associated policies relate to avoiding loss of life and minimising the cost of damage and disruption to the community. As indicated above, while part of Lot 1 is located in the “Twizel Flooding Area” as shown on the planning maps, no development of this part of the site is proposed. Development will occur on a terrace that is located significantly above any potential flooding from the Twizel River, which should ensure there are minimal adverse effects in terms of the matters identified in the objective and policies.

8.3.6 Summary

Overall, the proposal is considered to be in accordance with the provisions of the Mackenzie District Plan including Plan Change 13.

9 Part 2 of the Act

The proposal is considered to be in accordance with Part 2 of the Act given that, in terms of Section 5, the subdivision for an upgraded WWTP will enable the community to provide for their social and economic wellbeing, as well as their health, without compromising any of the matters in Section 5 (2)(a)-(c). The NESCS consent has addressed any potential health effects arising from contaminated land.

In terms of the matters in Section 6, the subdivision does not affect any rivers or their margins (including the Twizel River) in any detrimental way and is considered to be an appropriate subdivision given that Lot 1 will be used for the WWTP (Section 6(a)).

While the subdivision is located in an outstanding landscape, the subdivision is considered appropriate and will not detract from the attributes of the landscape (Section 6(b)).

Public access will not be affected by the subdivision (Section 6(d))

In terms of Section 7, the subdivision will result in an efficient use of resources by enable an existing facility to be upgraded (Section 7(c)). The quality of the environment, amenity values and ecosystems will not be adversely affected (Section 7(f), (c) and (d)).

There do not any appear to issues in regard to the subdivision that may affect Maori in terms of Section 6(e), Section 7(a) or Section 8.

10 Conclusion

The proposed subdivision will enable a boundary adjustment between Section 1 SO 18355 and Lot 1 DP422901 to enable the creation of proposed Lot 1 for the proposed upgrade of the Twizel WWTP. Potential adverse effects on human health are addressed in the NESCS application.

Technically, the application is a non-complying activity in terms of Plan Change 13. In respect of Section 104D of the Act, any effects are minor or less and the proposal is not contrary to the objectives and policies. Having regard to Section 104 of the Act resource consent can be granted.

Appendix A

Subdivision Plan

[illegible][illegible]

Beca

Mackenzie District Council	Twizel WWTP
----------------------------	-------------

**PROPOSED BOUNDARY ADJUSTMENT
BETWEEN SECTION 1 SO 18355**

LAND SURVEY

3X02S 1011 01

Appendix B

CB45A/677



COMPUTER FREEHOLD REGISTER UNDER LAND TRANSFER ACT 1952



R. W. Muir
Registrar-General
of Land

Search Copy

Identifier CB45A/677
Land Registration District Canterbury
Date Issued 14 October 1998

Prior References
GN A78080.1

Estate	Fee Simple
Area	6.3566 hectares more or less
Legal Description	Section 1 Survey Office Plan 18355
Purpose	For Sewage Treatment Works

Proprietors
The MacKenzie District Council

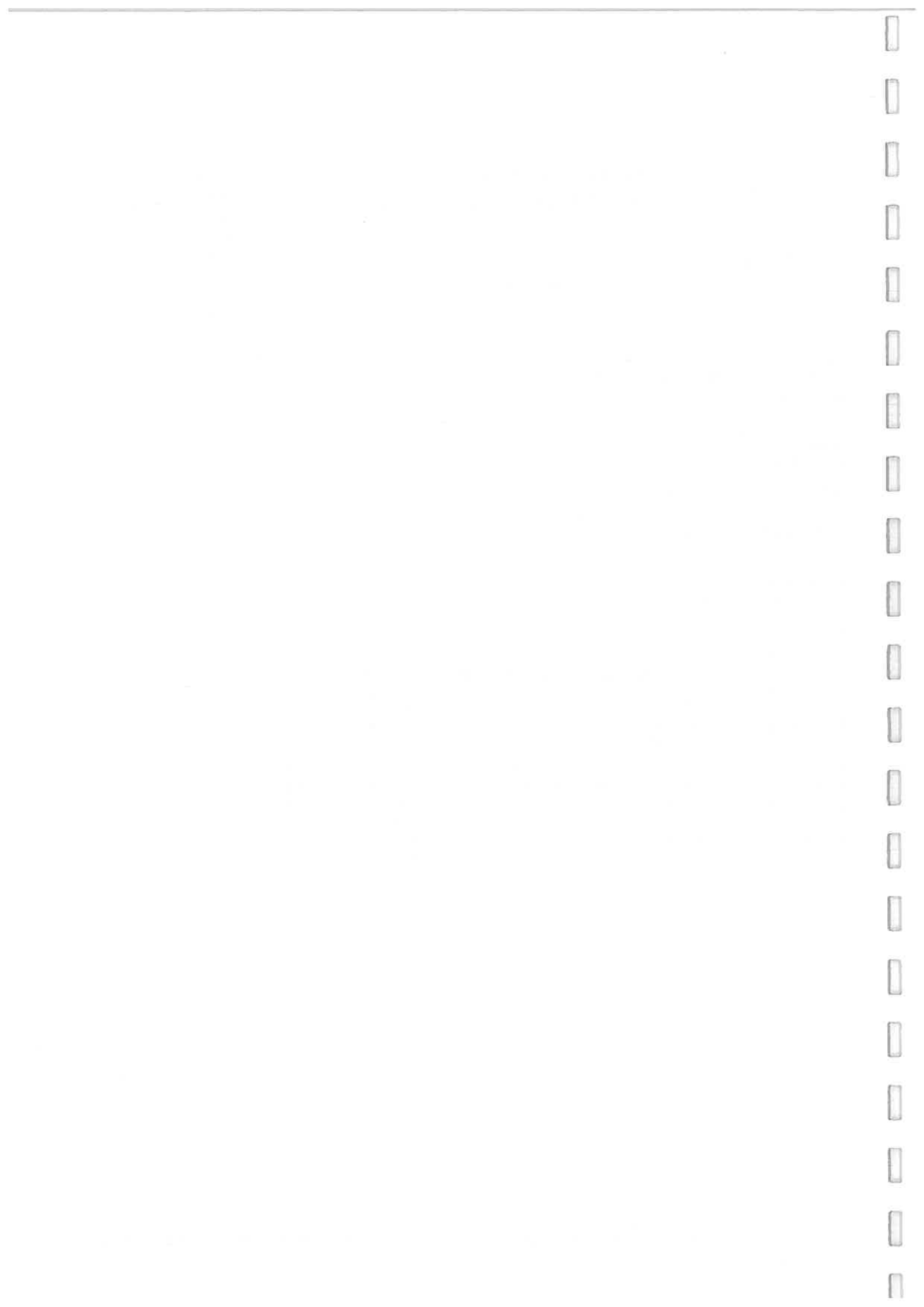
Interests

860231 Gazette Notice creating the following easements - 17.3.1972 at 9.25 am

Type	Servient Tenement	Easement Area	Dominant Tenement
Drain sewage	Part Run 292 - CT CB529/231	Part	Section 1 Survey Office Plan 18355 - herein
Drain sewage	Run 292 - CT CB529/231	Part	Section 1 Survey Office Plan 18355 - herein

45A/687 Deed of Easement - Produced 21.8.1998 at 10.42 am and entered 14.10.1998 at 9.00 am

Type	Servient Tenement	Easement Area	Dominant Tenement
Drain sewage	Part Run 292	B SO 18355	Section 1 Survey Office Plan 18355 - herein
Drain sewage	Part Run 292	Blue SO 11669	Section 1 Survey Office Plan 18355 - herein



Search Copy Dated 17/09/15 10:51 am, Page 2 of 3
Register Only

Search Copy Dated 17/09/15 10:51 am, Page 3 of 3
Register Only

Appendix C

Identifier 489340





COMPUTER FREEHOLD REGISTER UNDER LAND TRANSFER ACT 1952



R.W. Muir
Registrar-General
of Land

Search Copy

Identifier 489340
Land Registration District Canterbury
Date Issued 20 November 2014

Prior References

509804

Estate Fee Simple
Area 246.1960 hectares more or less
Legal Description Lot 1 Deposited Plan 422901

Proprietors

High Country Rosehip Orchards Limited

Interests

817132 Gazette Notice declaring the State Highway Twizel - Omarama Road to be a limited access road - 9.12.1970 at 1.55 pm

Subject to a right to drain sewage over part marked G, H, I and AB on DP 422901 contained in and taken by Gazette Notice 860231 - 17.3.1972 at 9.25 am

Subject to a right to drain sewage over part marked D, J and K on DP 422901 created by Deed of Easement 45A/687 - produced 21.8.1998 at 10.42 am and entered 14.10.1998 at 9:00 am

Subject to Part IVA Conservation Act 1987

Subject to Section 11 Crown Minerals Act 1991

Subject to a right of way (in gross) for purposes of conservation management over part marked AD and a right of way (in gross) for the purposes of public access over part marked AD all on DP 422901 in favour of Her Majesty the Queen created by Easement Instrument 7584791.3 - 19.10.2007 at 9:00 am

Appurtenant hereto is a right of way for the purposes of farm management and stock access and a right to convey water created by Deed of Easement 7584791.4 see CIR 387078 - 19.10.2007 at 9:00 am

8330351.1 Mortgage to Bank of New Zealand - 11.11.2009 at 3:17 pm

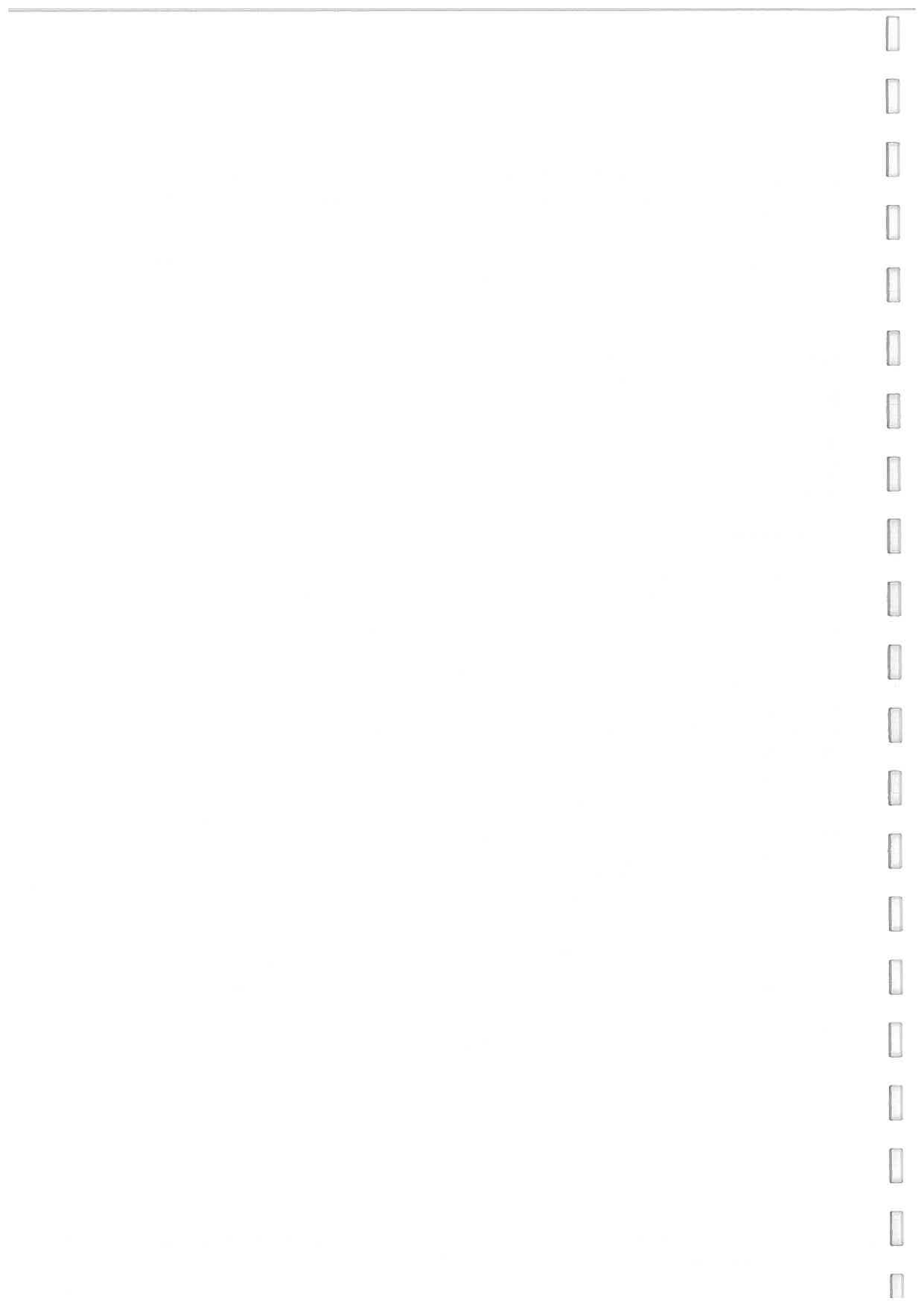
9877186.4 Consent Notice pursuant to Section 221 Resource Management Act 1991 - 20.11.2014 at 2:45 pm

Appurtenant hereto is a right of way, a right to drain sewage and water and a right to convey electricity, telecommunications and water created by Easement Instrument 9877186.5 - 20.11.2014 at 2:45 pm

The easements created by Easement Instrument 9877186.5 are subject to Section 243 (a) Resource Management Act 1991

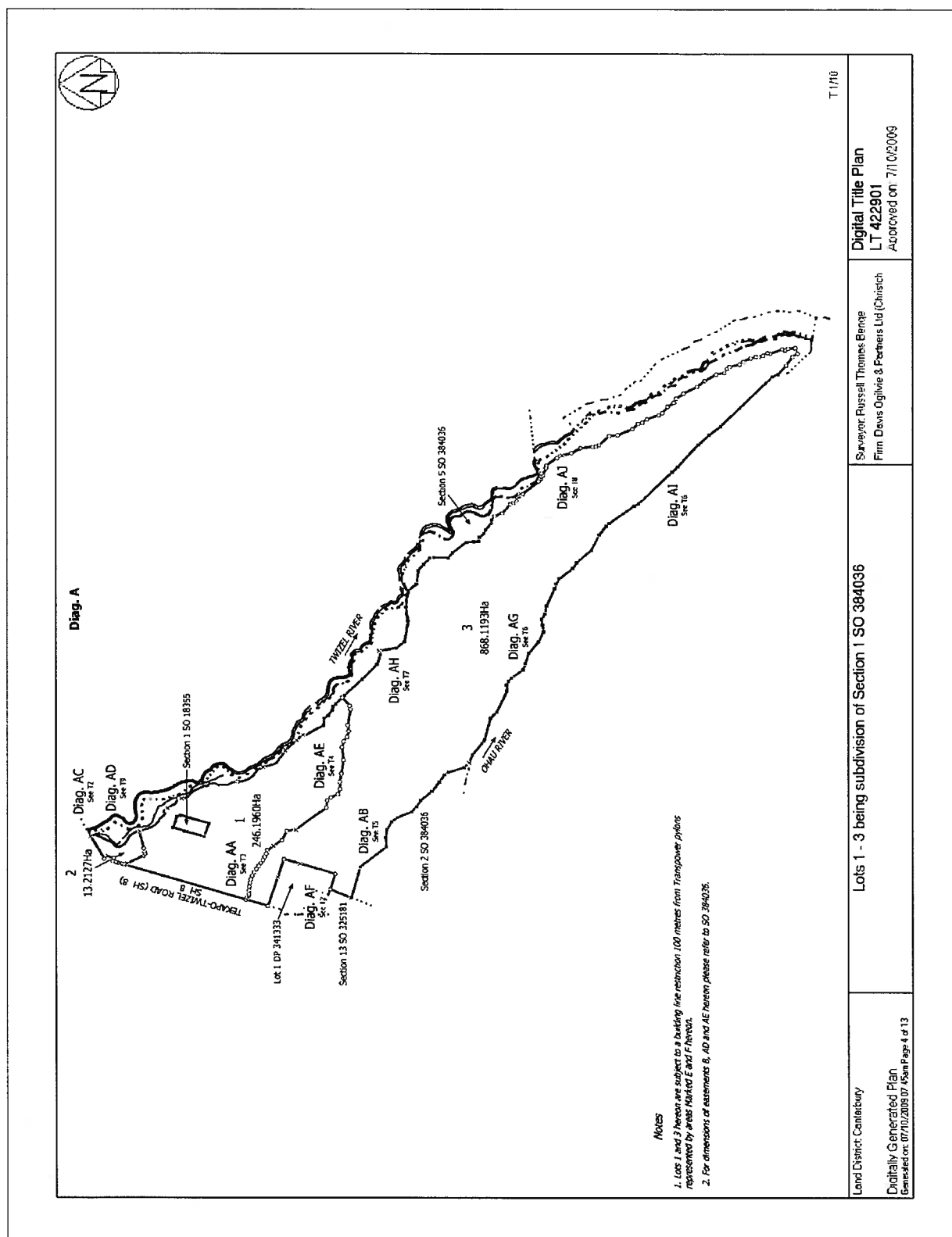
Subject to a right (in gross) to convey electricity over part marked G on DP 478222 in favour of Meridian Energy Limited created by Easement Instrument 9906693.2 - 11.12.2014 at 4:52 pm

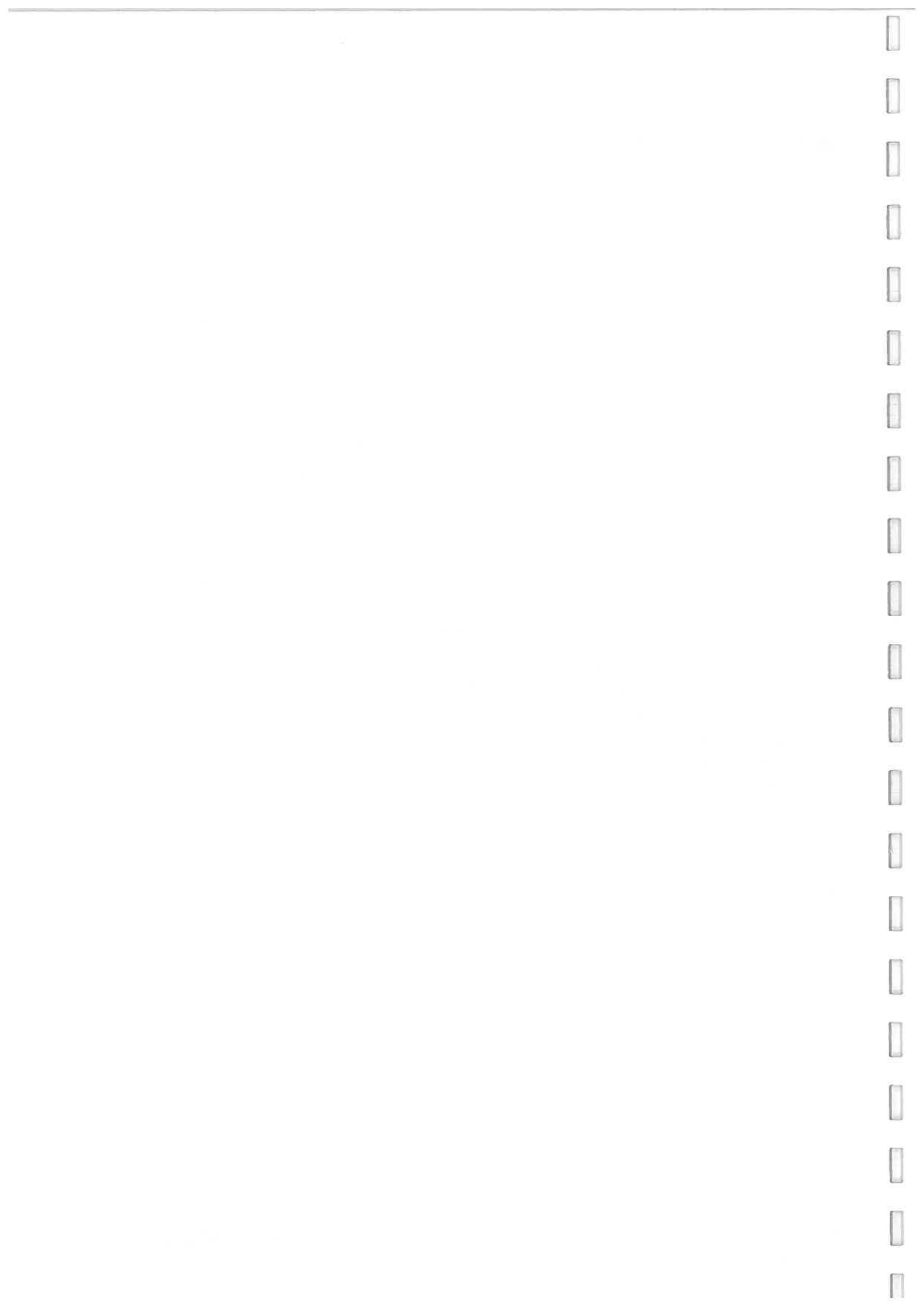
Land Covenant in Easement Instrument 9906693.4 - 11.12.2014 at 4:52 pm



Identifier

489340





Appendix D

Identifier 489341



COMPUTER FREEHOLD REGISTER UNDER LAND TRANSFER ACT 1952



R. W. Muir
Registrar-General
of Land

Search Copy

Identifier 489341
Land Registration District Canterbury
Date Issued 20 November 2014

Prior References

509804

Estate Fee Simple
Area 13.2127 hectares more or less
Legal Description Lot 2 Deposited Plan 422901

Proprietors

High Country Rosehip Orchards Limited

Interests

817132 Gazette Notice declaring the State Highway Twizel - Omarama Road to be a limited access road - 9.12.1970 at 1.55 pm

Subject to a right to drain sewage over part marked G, H, I and AB on DP 422901 contained in and taken by Gazette Notice 860231 - 17.3.1972 at 9.25 am

Subject to a right to drain sewage over part marked G, H, I and AB on DP 422901 created by Deed of Easement 45A/687 - produced 21.8.1998 at 10.42 am and entered 14.10.1998 at 9:00 am

Subject to Part IVA Conservation Act 1987

Subject to Section 11 Crown Minerals Act 1991

Subject to a right of way (in gross) for purposes of conservation management over part marked A, C, G and AB and a right of way (in gross) for the purposes of public access over part marked A, C, G and AB all on DP 422901 in favour of Her Majesty the Queen created by Easement Instrument 7584791.3 - 19.10.2007 at 9:00 am

Appurtenant hereto is a right of way for the purposes of farm management and stock access and a right to convey water created by Deed of Easement 7584791.4 see CIR 387078 - 19.10.2007 at 9:00 am

8330351.1 Mortgage to Bank of New Zealand - 11.11.2009 at 3:17 pm

9877186.4 Consent Notice pursuant to Section 221 Resource Management Act 1991 - 20.11.2014 at 2:45 pm

Subject to a right of way, a right to drain sewage and water and a right to convey electricity, telecommunications and water over part marked A, G, H, I, N and AB on DP 422901 created by Easement Instrument 9877186.5 - 20.11.2014 at 2:45 pm

The easements created by Easement Instrument 9877186.5 are subject to Section 243 (a) Resource Management Act 1991



Digital Title Plan
LT 422901

Surveyor, Russell Thomas Benque
Firm Davis Ogilvie & Partners Ltd (Christchurch)

Lots 1 - 3 being subdivision of Section 1 SO 384036

Land District: Canterbury

Digitally Generated Plan
Generated on: 07/10/2009 07:45am Page 4 of 13

Appendix E

RM070082

IN THE MATTER OF

the Resource Management Act 1991

AND

IN THE MATTER OF

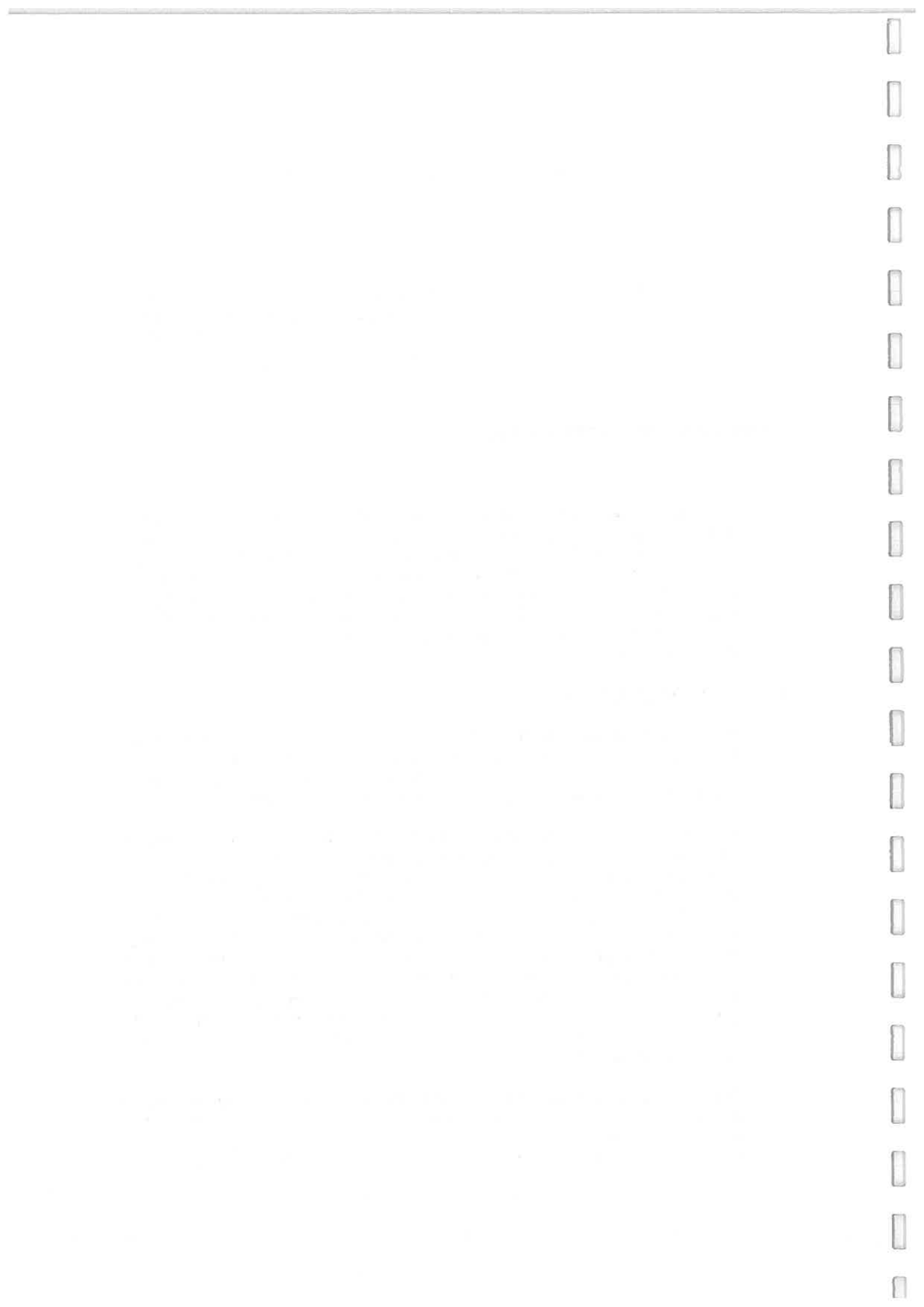
Application RM070082 by Mackenzie Lifestyle Limited for a subdivision to create 53 allotments to the east of State Highway 8 at Twizel.

DECISION OF HEARING COMMISSIONER

1. I was appointed to hear and determine the above application on behalf of the Mackenzie District Council. The hearing of submissions took place in Twizel on 17 September 2009. I also visited the site on the day of the hearing. I adjourned the hearing at the end of the day, and issued a minute to the parties on 18 September through the Council's reporting officer. Following the receipt of responses to this minute, and following a later response to subsequent discussions between the applicant and Meridian Energy, I closed the hearing on 17 November.

Introduction and background

2. The property subject to the application is located to the east of State Highway 8 (SH8) opposite Twizel. The application property is bordered by SH8 to the west, the Twizel River to the east and the Ohau River to the south. Figure 1 illustrates the background and descriptions set out below.
3. The property is legally described as Section 1 SO 384036 with a total area of 1127.5280 hectares. It was subject to subdivision following the recent approval of resource consent RM070080. This consent related to the subdivision of the entire property into three allotments by 'High Country Rosehip Orchards Ltd'. Lot 1 of that approved subdivision comprises 229ha and in turn contains the site subject to this current subdivision proposal. The subdivision proposed through this application is located in the central part of the Lot 1 and is ultimately proposed to comprise 49 allotments in two stages for future rural residential housing. The final plans of the proposed two-stage subdivision of Lot 1 (RM 070082/1 and 070082/2) are attached to the end of this decision. All references in this decision to "the site" refer to that part of Lot 1 subject to the proposed development.
4. The site was described in detail in the officer's section 42a report, and is generally flat, with a terrace along the eastern boundary down to the Twizel River. The site contains three old river terraces that branch off from State Highway 8 at the south-western corner of the site. The applicant's own



dwelling is located in the northwestern corner of the site, close to SH8 and the Twizel River.

5. The Twizel Wastewater Treatment Plant and associated oxidation ponds are also located in the northwestern part of the site in a location separate from the area proposed for the rural residential subdivision further to the southeast. This treatment plant is identified in the district plan as 'Designation 42'. However an 'outfall trench' from the oxidation ponds forms part of the current treatment system, and extends a considerable distance to the southeast into part of the land comprising the proposed rural residential subdivision. This trench is not designated. I understand it is the medium term intention of the Mackenzie District Council to abandon this trench and replace it with an alternative method of treatment.
6. A row of power pylons intersect the property, beginning at the Twizel Substation adjacent to SH8 to the south of the site, crossing the subject property in an east-west direction and passing across the Twizel River. There is also a much smaller 33kv line on poles passing under the pylons in a northerly direction and eventually serving the control gates at the outlet of Lake Pukaki. Also on the application site is a groundwater monitoring well (RTHOW21) which is used for monitoring purposes by Meridian Energy. This well is outside the area identified for subdivision into residential lots. Otherwise, apart from a number of trees on the northwestern part of the site, it is otherwise devoid of development.

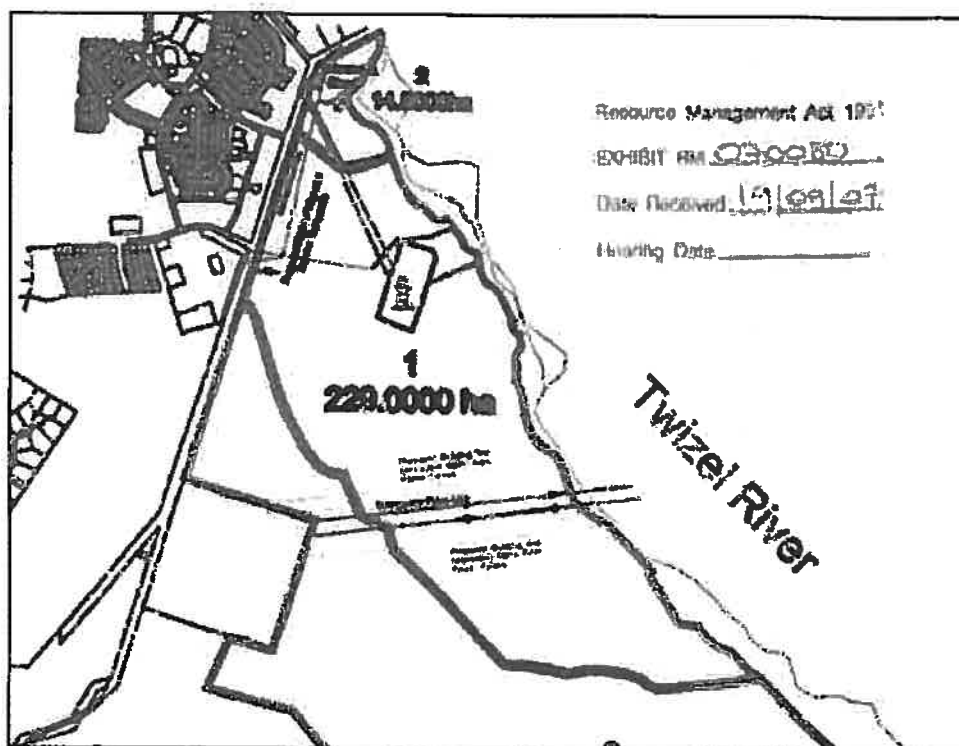


Figure 1: Lot 1 (RM070080)

7. A final matter of background relevance concerns a Certificate of Compliance obtained by the applicant to undertake shelterbelt planting within the site east of State Highway 8 (RM090050). The significance of this is discussed later in this decision.



Certificate of Compliance Plan – Tree planting

8. Under the Certificate of Compliance, the applicant proposed to plant a combination of Arizona Cyprus, Mexican White Cedar, and Lawson's Cyprus. At the time of the hearing, this planting had not been established.

The Proposal

9. Subdivision consent is sought to create 49 rural residential allotments in two stages, a proposed public reserve and access ways, and a new access road to be vested in the Mackenzie District Council (MDC). The 49 rural residential lots range in size from 1.21 hectares to 3.18 hectares. An access lot (road), reserve lots and the balance lot would also be created.

10. In reference to correspondence from the applicant dated 5 August 2009, the Council was informed that the proposed new road access to the subdivision from SH8 was to be amended to adopt an access point approved under resource consent RM070080. This amendment has the effect of moving the proposed access point from 250 metres north of Ostler Road to 830 metres south of Ostler Road. The applicant produced an amended subdivision plan at the hearing.
11. Walking and cycling tracks and public picnic areas with river access are proposed to the south of the proposed lots, as shown on the subdivision plan. Lot 51 (which is approximately 2.1 hectares) is proposed to be a public reserve area and also to provide for public access to the Twizel River. I understand that a Department of Conservation walking track follows the river and could also be accessed from this proposed reserve.
12. SH8 is a Limited Access Road (LAR) in this location. Access to the new lots is proposed to be via a new road (Lot 52) which would be vested in the Council. This road will be constructed to Mackenzie District Council standards and is proposed to intersect with SH8 through a point identified as 'Crossing Point 24'. The significance of this crossing point was debated between the applicant and NZTA during the hearing; my understanding is that it provides legal access to the applicant's property, but does not in itself authorise access for a rural residential subdivision as proposed.
13. No major earthworks are proposed to establish the subdivision. The only excavation proposed is associated with the construction of the road serving the development, which the applicant considers will meet the permitted activity requirements of the District Plan.
14. The applicant anticipates that the subdivision can be connected to Twizel's existing reticulated water supply. Stormwater from the new lots is to be disposed of on site. The applicant intends that the lots be connected to Council's reticulated system. Letters from service providers have been provided confirming that the subdivision can be reticulated with an electricity and telecommunication supply.
15. The site is traversed by high voltage transmission lines. The applicant has requested that the conditions recommended by Transpower are adopted as conditions of consent. This includes a 100m setback from the transmission lines which will have the effect of confining a number of the future rural residential dwellings to approximately only half of the area of each affected lot.
16. Matters relating to state highway safety and efficiency featured very prominently during the hearing, and accordingly some description of the highway in the vicinity is appropriate.
17. SH8 is an arterial road with a carriageway width of 7m. The road is level and straight in the vicinity of the proposed site access, and it was common ground between the traffic engineers for both the applicant and the New Zealand Transport Agency ("NZTA") that although the posted speed limit was 100 km/hour, in reality the 85 percentile traffic speed was at least 110 km/h. The

nearest road junction to the north (830m) is Ostler Road, which provides the southern access to Twizel Township. The more important access is to Twizel via Ruataniwha Road further north. Both of these roads branch off State Highway 8 to the west. There are no left or right turn lanes at the Ostler Road intersection.

18. Approximately 630m to the south of the proposed access point to the subdivision is the intersection of State Highway 8 and Old Iron Bridge Road, which branches off SH8 to the east. This road is much less important in terms of traffic volumes, and serves the Meridian office/substation and a Black Stilt captive management centre.
19. SH8 was described as having an annual average daily volume of 1677 vehicles (two ways) in 2008, measured south of the State Highway 8 intersection. Daily traffic volumes have been measured as having fallen by approximately 5% between 2004 and 2008. Mr. Carr's evidence for the applicant indicated that the highest volumes observed were on weekdays were between 12pm and 4pm, but even then were at most one vehicle approximately every 29 seconds, or one every 21 seconds on a Sunday afternoon. He described three reported crashes in the vicinity between 2004 and 2008, of which one was associated with an intersection movement.

Notification and Submissions

20. The application was processed on a limited notified basis to the following parties:
 - The New Zealand Transport Agency (NZTA)
 - Meridian Energy Ltd.
 - The Asset Department of the Mackenzie District Council
 - Transpower New Zealand
21. The submissions are summarised below as reproduced from the officer's report.

Name	Location of Submitters' Property	Summary of Submission	Relief Sought
NZ Transport Agency	State Highway 8	<ul style="list-style-type: none"> • Increased traffic volumes raise concern for vehicles crossing SH8. • Lack of connectivity for public transport, cycles and pedestrians • The development may encourage and facilitate further urban activity on eastern side of SH8. This could result in cross traffic between Twizel Township 	<p>Opposes proposal.</p> <p>Insufficient access to State Highway</p>

		and development on the eastern side of the highway.	
Meridian Energy	South west of subject site	<ul style="list-style-type: none"> The proposal has potential to adversely affect, both directly and indirectly, a number of Meridian's assets and interests. 	Neutral view based on conditions imposed on proposal
Mackenzie Council District Assets Department	Section 1 SO 18355	<ul style="list-style-type: none"> Concerns of subdivision in the vicinity of the outflow drain will have adverse effects in relation to reverse sensitivity, blockage of the outflow drain and public health. 	Opposes the proposal
Transpower	Power lines run from west to east through subject site	<ul style="list-style-type: none"> If conditions are imposed that have been prepared by Transpower then there is no objection regarding the proposal. 	Neutral view based on conditions imposed on proposal

Statutory provisions

22. The status of the activity was the subject of some dispute during the hearing, and was complicated by two factors. The first of these is Proposed Plan Change 13 ("PPC 13") to the Operative District Plan. The second relates to the status of the activity under the operative plan, given what appears on the face of it, to be a contradiction within the rules framework.
23. The site is located within the **Rural Zone** under the operative Mackenzie District Plan. The zone includes the majority of rural lands including alpine ski areas and national parks.
24. The relevant objectives and policies and rules are contained within Part 7 (Rural Areas), Part 12 (Subdivision), and Part 14 (Transportation) of the operative District Plan.

Section 12 - Subdivision and Development Rules

25. **Rule 3** states that any subdivision which complies with all primary and secondary subdivision standards shall be a Controlled Activity.
26. The subdivision complies with all primary standards, and with one exception, the secondary subdivision standards. The subdivision is a controlled activity in respect of the following matters:
 - Allotment Size and Dimensions
 - Subdivision Design
 - Property Access
 - Esplanade Provision

- Natural and Other Hazards
- Water Supply
- Stormwater Disposal
- Sanitary Sewage Disposal
- Trade Waste Disposal
- Energy Supply and Telecommunications
- Vegetation and Landscape
- Easements
- Building Location
- Design within 20 metres of Transmission Lines

27. In the Rural Zone, lot sizes have no minimum requirements providing the allotment is of sufficient size to provide for disposal of sewage by an on-site field system. The allotment sizes range from 1.21ha to 3.18ha and the application stated that the proposed lots provide sufficient size for on-site sewage disposal.
28. **Rule 4** states that any subdivision which complies with all of the primary subdivision standards but does not comply with any one or more secondary subdivision standards shall be a discretionary activity, in respect of the applicable matter (my emphasis).
29. **Rule 7.b.viii** states that all subdivisions shall comply with the relevant rules for access in section 14.

Section 14 - Transportation rules

30. **Rule 2.o.i.a** requires that no vehicle access shall generate more than 100 vehicle movements per day. It was common ground among the parties to the hearing that the proposed subdivision would generate more than 100 vehicle movements per day.
31. The noncompliance with Rule 2.o.i.a results in the subdivision having to be assessed as a **Discretionary (Restricted) Activity**, with the Consent Authority's discretion restricted to the matter of non-compliance. It was at this point that an element of uncertainty arises.
32. **Rule 2.o III** is headed "Discretionary Activities". It goes on to say that this rule applies where access on to state highways does not comply with standards 2.o.i.a, b or c.
33. **Rule 1** however, under "Status of Activities" at the beginning of the rules component in Section 14, states that "any activity which does not provide for parking, access and loading in accordance with the following standards shall be a **DISCRETIONARY ACTIVITY** in respect to the matter(s) of noncompliance." (my underlining)
34. It was this apparent discrepancy which resulted in conflicting legal submissions and planning evidence of behalf of the applicant and NZTA; Mr. Giddens position appeared to favour that of the applicant. In her submissions Ms Sinott for the NZTA stated that;

"11. A rule in the district plan has the force and effect of a regulation and the normal principles of interpretation apply to those rules. One of the common law principles of interpretation is that where there is a conflict between general and specific provisions, the specific provision should prevail. The specific rule that applies to this application is Rule 2.o.iii of the Transportation Rules.

12. Rule 2.o.iii plainly states that accesses on to state highways that do not comply with 2.o.i.a are "discretionary activities". Rule 2.o.iii does not include any restriction on this, i.e. it does not use a phrase such as "a discretionary activity in respect of the applicable matter".

35. This interpretation was rejected by Mr. Todd for the applicant, who favoured an approach based on the construction of the Transportation rules as a whole.
36. This is an important matter, because if the activity were fully discretionary it could be rejected on grounds such as landscape, let alone access.
37. Having thought about this matter carefully, I have come to support Mr. Todd's interpretation for two reasons. The first is that the introduction to the rules does make it quite clear that noncompliance with any particular standard under the transportation rules (of which access from state highways is one of many) is discretionary *in respect of the particular matter concerned*. Secondly, under Rule 2.o.iii the "discretionary activity" is described as "Access on to State highways.....", not the activity itself. This is reflected for example in the heading of each transportation rule, e.g. "Visibility from accesses" or "Standard of Vehicle Access". This interpretation supports the construction of the rules as set out in section 14 Rule 1, and it would seem to me that any other interpretation would result in the rules being incoherent. There is no doubt that the application could be declined on the grounds of adverse effects resulting from access to the State Highway. However I think it would be drawing a long bow to extend discretion to matters unrelated to access.
38. Turning to PPC 13, Mr. Giddens stated in his report that during "the evolution of the subject application for subdivision consent, Plan Change 13 has been notified, submitted upon, deliberated at a public hearing, and has been formally ratified by the MDC in a decision dated 19 August 2009. This decision was recently notified to the public on 1 September 2009". He added that the purpose of PPC 13 was to;

"...introduce provisions into the District Plan to provide greater protection of the landscape values of the Mackenzie Basin from inappropriate subdivision, use and development".

39. He went on to explain that the decision on PPC13 recognised that there needed to be greater control over the scope for residential and rural residential development throughout the Mackenzie Basin. Non farming subdivision and development activities would be subject to at least fully discretionary activity status in the rural zone.

40. Mr. Giddens stated that the current application was lodged with the MDC on 25 September 2007. At the time of lodgement the applicable rules were those set out in the operative Mackenzie District Plan.
41. Section 88A (1) of the Act states that:
- *"Subsection (1A) applies if—*
 - *an application for a resource consent has been made under section 88; and*
 - *the type of activity (being controlled, restricted, discretionary, or non-complying) for which the application was made under section 88, or for which the activity is treated under section 77C, is altered after the application was first lodged as a result of—*
 - *a proposed plan being notified; or*
 - *a decision being made under clause 10(3) of the First Schedule; or otherwise".*
42. PPC13 was notified on 19 December 2007. Section 88A (1A) requires that *"the application continues to be processed, considered, and decided as an application for the type of activity that it was for, or was treated as being for, at the time the application was first lodged"*.
43. Section 88A (2) is of relevance in the consideration of this application for subdivision whereby it is stated that *"notwithstanding subsection (1), any plan or proposed plan which exists when the application is considered must be had regard to in accordance with section 104(1) (b)"*.
44. I have already come to the view that the status of the subdivision application is a restricted discretionary activity with respect to access from SH8, and a controlled activity in respect to other matters. I must "have regard to" the provisions of PPC13 which quite clearly imposes a more testing regime in terms of both rules and objectives/policies than the operative plan. However given the status of the activity, my discretion is quite severely limited in terms of the scope of the matters I can take into account if I were minded to decline consent.
45. I heard conflicting views from Mr. Todd and Ms. Sinott as to a further complicating matter, that is, the weight to be given to PPC13. I have come to the view that the objectives and policies should be given some weight, given the stage that PPC 13 has reached. Again however, I am constrained by the extent to which the objectives and policies of PPC 13 can be applied, even the status of the activity and the scope of the discretion available to me. I can give little or no weight to the rules.
46. Another issue on which I sought clarification at the hearing was the potential for a conclusion that the application should have been publicly notified, given the contentious nature of residential and rural residential subdivision in the Mackenzie basin, the relatively large scale of the current proposal, and the provisions of section 104(3)(d) of the Act.

47. I was informed that there was an 'awareness' of the proposal in the Twizel area. More importantly however, and again this rests on the status of the application, the only input other parties could have had, except in respect to conditions on the subdivision, related to highway access where the NZTA was a notified and involved party. I was reasonably satisfied that the MDC had undertaken an appropriate process before deciding that the application should be limited notified. None of the other parties at the hearing raised notification as an issue.

The submissions and evidence

For the applicant

48. **Mr. Graeme Todd, of Mac Todd Legal**, appeared at the hearing as legal counsel for the applicant.
49. Mr. Todd opened his client's case by explaining that the application had been amended to incorporate a two-stage subdivision development pending the decommissioning of the Council's outfall trench from the Wastewater Treatment Plant. This would remove any 'reverse sensitivity' odour issue with respect to the initial subdivision stage. He also said that the access point to the subdivision from SH8 was to be relocated south of Ostler Road. He added that discussions had been held with the MDC's Assets Department, which had resolved the matters raised in their submission.
50. He added that the applicant has submitted in opposition to PCC 13 which he described as a controversial plan change. He said his client's submission had been rejected and that he intended to appeal the Council's decision. In his opinion the weight to be given to PCC13 was at the "bottom end".
51. He submitted that the activity was restricted discretionary under the 'bundling approach' taken when components of an activity had a different consent status. However, he insisted that the application could only be declined on the basis of matters relating to access to SH8. He said that a problem with PPC 13 was that although it sought to protect landscapes in the Mackenzie basin, it did not differentiate between landscapes therein. He noted that the applicant had obtained a Certificate of Compliance enabling tree planting east of SH8 which would have the effect of obscuring views over the site towards Lake Benmore, regardless of whether the subdivision proceeded.
52. In respect to notification issues, he said that the MDC had undertaken a full and proper analysis, and therefore it would be safe to issue a decision on the basis that it would not be open to successful challenge under section 104(3)(d) of the Act. He said that the particular circumstances of this application were unlikely to be repeated, given the subsequent notification of PCC13. Accordingly he considered that there was no precedent arising, or risk of "opening the floodgates" to similar applications. He submitted that the application did not raise any matters as under Sections 6 or 8 of the Act. He added that the site as a whole was distinguishable from other parcels of land in the Mackenzie Basin as it was not contiguous with other private land, and was effectively an 'island'.

53. He noted that the applicant still required the consent of the NZTA for access to SH8, and that such consent might be declined. He said there was no requirement that applications of this nature had to be heard together.
54. With respect to the potential aspirations of property purchasers within the future subdivision, he claimed that under the RMA there was no longer the expectation that subdivision consent implied a subsequent right to build.
55. **Andy Carr**, a traffic engineer with the firm of Traffic Design Group, gave evidence of behalf of the applicant.
56. He stated that State Highway 8 in the vicinity of Twizel enjoyed the highest level of service - 'LOS A' - even at peak periods. He stated that the *AUSROADS* guide to traffic engineering practice defined LOS A as;
- "...a condition of free flow in which individual drivers are virtually unaffected by the presence of others in the traffic stream. The freedom to select desired speeds and to manoeuvre within the traffic stream is extremely high and the general level of comfort and convenience provided is excellent"*.
57. The expected traffic generated from a 49 lot development was expected to be in the region of 200 to 400 vehicles per day (2 ways). In his opinion, it was likely to be nearer the lower figure, given that Twizel was a holiday area. He estimated that the maximum hourly movements would be up to 15 vehicle movements in, and 34 vehicle movements out, during the morning 'peak' and 29 in, and 20 out respectively, in the evening peak hour. He anticipated that 80% of these movements would be into Twizel Township on the opposite side of the State Highway. In his opinion, site distances and visibility from the proposed access point were excellent, even to the point beyond which the human eye could see. He considered there was little point in providing an underpass under the state highway.
58. In terms of intersection design, he favoured upgrading the intersection to NZTA "Diagram D" standard, which he considered it consistent with the intersections at Ostler Road and Old Iron Bridge Road. He considered that with the turning volume of traffic expected, LOS A would still be achieved, even at peak times. He estimated that the increase in traffic north and south of Twizel would be less than 1% of existing volumes but would increase between 12 and 23% between the site entrance and Twizel, or an increase in the frequency of vehicle movements from one every 29 seconds to one every 21 seconds. Given the distance involved, he considered there would be few pedestrian movements between the proposed subdivision and Twizel, but drew attention to the applicant's offer to provide cycle and vehicle access along the east side of the highway adjacent to the highway frontage.
59. With specific reference to matters raised in the NZTA submission, he commented as follows;
- turning traffic would only likely to amount to one emerging vehicle every 1.7 minutes in the peak hour;

- through traffic speeds and the level of service would remain unaltered;
 - a walking and cycle trail were offered by the applicant to promote pedestrian and cycle access;
 - there was excellent visibility for vehicles, cycles, or pedestrians crossing State Highway 8;
 - development would have to amount to approximately 600 lots to reduce level of service to LOS C;
 - any further development would require a further resource consent, enabling further assessment and submission;
 - the objectives and policies in the regional and district plans emphasise safe access, and the efficiency and safety of the road network. He considered these objectives would be achieved.
60. He also considered that the proposal would not be inconsistent with the Government Policy Statement on Transport, and the Canterbury Regional Land Transport Strategy.
61. **Ben Esple**, a landscape architect in the firm of Vivian and Esple, then gave evidence.
62. His evidence was largely confined to addressing the landscape evidence and conditions suggested in the Council section 42a report. In general terms, he stated that he supported a comprehensive range of conditions being applied to any grant of consent for the subdivision, and made specific comment on the following matters.
63. He opposed the removal of all exotic trees from the western part of the property near the State Highway. He contended that although wilding pines should be removed, he considered a number of the existing exotic trees had been deliberately planted and were successful in screening the wastewater treatment plant, and to some extent the Meridian facility. He also considered that this western part of the site was unlikely to be a successful location for indigenous planting as suggested by the Council, if indeed this was even possible.
64. He supported the proposed restriction on buildings, exotic trees, shrubs, vehicle tracks/driveways, and fences within 40m of the terrace above the Twizel River (*for the purposes of this description, I understood this to mean proposed lots 38, 39, 46, 48 and 49*). Elsewhere in the subdivision, he considered the large lot sizes would be conducive to tree planting.
65. He said he was opposed to any condition that buildings not be visible, and added that screen planting to achieve this objective would in itself appear unusual in the open environment of the Mackenzie Basin. Finally, he opposed restrictions on all exotic planting within 500 m of SH8. In response to a question, he considered the site could not be made to resemble one of the 'farm-based clusters' provided for under the PPC 13, as it was too close to Twizel.
66. **Mr. Carey Vivian**, a planning consultant and director of Vivian and Esple Ltd, concluded the evidence for the applicant.

67. He began by addressing the issue of notification, submitting that the proposed subdivision was controlled activity, and could not be declined. In terms of the restriction of access to the State Highway, he noted that NZTA were a party affected and present at the hearing. In his paragraph 21 he stated;

"It is my opinion that the Council has gone through a very thorough and correct process, and accordingly the commission (sic) can grant resource consent without fear that the application should have been publicly notified and was not".

68. He emphasised that the application sought consent for subdivision only, and that the erection of subsequent dwellings would be subject to resource consent under Change 13 to the district plan, if the plan change is in fact upheld on appeal. He added however that the applicant had opposed the plan change, at least to the extent of its application to their own land.
69. He supported the proposed restriction on buildings, earthworks and planting within 24m of the existing 33kv power line. He noted that a meeting had been held with the Mackenzie District Council (Asset Department) who had submitted on the application. He noted that a heads of agreement had been reached that the subdivision would be undertaken in two stages, with 10 lots in close proximity to the outfall trench from the wastewater treatment plant, to be developed as a second stage. In the meantime a large lot 53 would be created parallel to the line of the outfall trench. This was based on what I understood to be the intention of the Mackenzie District Council to replace the outfall trench with an alternative form of effluent treatment on an expanded main site near SH8.
70. He accepted the need for a development set back from the old Twizel River escarpment. With respect to design controls, he concurred with the views of Mr. Giddens for the Council that any conditions on the design and appearance of dwellings should form part of a later consent relating to residential dwellings, including such matters as height, use of materials, roof forms, and building size among other factors. He added however that a condition purporting to restrict the visibility of buildings from the State Highway was likely to be *ultra vires* with respect to a subdivision consent. He made reference to Environment Court cases including *Brookes versus Queenstown Lakes District Council C081/94* in support of his contention.
71. He supported the views expressed by Mr. Espie on landscape matters and Mr. Carr on traffic matters. With respect to the Council's proposed condition requiring removal of all exotic trees on the western side of the property, he commented that the proposed condition sought by the Council could undermine the applicant's long-standing intention to establish a golf course on this part of the site, and that the redevelopment of the area for native grassland would be both incongruous in this location, and unnecessary.
72. He confined his comments on objectives and policies to endorsing Mr. Giddens view that the proposal was not contrary to the (pre-PPC13) objectives and policies. He also considered that in terms of Part 2 of the Act,

the proposal was consistent with subsections 7 (b), (c) and (f) and with section 5 of the Act.

Evidence for the submitters

New Zealand Transport Agency(NZTA)

73. **Ms. Clare Sinoff** of Chapman Tripp presented legal submissions on behalf of the NZTA, which was unquestionably the primary submitter on the application. She clearly set out a number of reasons why she considered the application should be declined.
74. Firstly, she considered that the proposal represented ad hoc development on the eastern side of State Highway 8, bisecting the community of Twizel. She stated that this raised an issue of severance which currently did not exist. It appeared likely that any grant of consent would be followed by further development which would rely on the new access road.
75. She also submitted that the NZTA would likely decline any application for access to the State Highway under section 92B of the Government Roading Powers Act 1989, and that there was no right of appeal against any decision made through this procedure. She went on to state that I could not be satisfied that legal and physical access would be available to the site. Furthermore, she stated that this was also a reason for declining consent under section 106 of the Act. In her submission this would put the applicant and potentially other parties, to unnecessary inconvenience and expense.
76. She asserted that notwithstanding that the application had been lodged prior to the notification of PPC13, under the district plan as notified, the application could be declined as a discretionary (unrestricted) activity. She relied on a provision under the rules in the Transport Section of the district plan (described earlier) and added that in the event of a conflict between plan provisions, the specific took precedence over the general. In her view the relevant rule clearly specified that the activity was wholly discretionary.
77. She submitted that the objectives and policies of Plan Change 13 should be given considerable weight, as decisions had now been issued by independent commissioners on submissions made to the change.
78. In her view, little reliance could be placed on the applicant's assertion that subsequent dwellings would be subject to resource consent, as it would be difficult to decline consent given that the purpose of the lots was clearly for residential purposes, and that each application for an individual dwelling in isolation would have only a minor effect on the traffic environment. It was the cumulative effect which was considered important, which could be addressed at the subdivision stage. She added that crossing place authorisations were not for the purposes of authorising new public road intersections.
79. Finally, she considered that the officer's report failed to take into account that the application was not only contrary to the district plan, but also to the

Regional Policy Statement and the Canterbury Regional Land Transport Strategy. She said that the activity could not be classified as controlled, as suggested under the section 42a report.

80. **Mr. Tony Spowart**, Traffic Safety Manager for the Christchurch Region of the NZTA, gave evidence.
81. He was in general agreement with Mr. Carr on the traffic volumes and characteristics expected to be attributable to the development and the effect on the relevant section of State Highway 8. In particular, he emphasised the high traffic speeds that have been recently recorded on the highway.
82. He explained that the procedures for obtaining consent under the limited access road (LAR) provisions were designed to ensure that developers were alerted early in the development process, so as not to be 'surprised' by any subsequent refusal for access to a state highway at a later stage.
83. The primary concern that he expressed was one relating to the broad issue of land use and transport. In his opinion, the development would result in the township straddling the State Highway, which would be used for 'commuter' movements between the two - for example, to take children to school or to shop.
84. Because the NZTA mounted on a strenuous attack on the application based on this central issue, I have reproduced two paragraphs from Mr. Spowart's evidence accordingly;

"21. Community severance is one of the major issues facing the NZTA in its management of the State highway network particularly in rural areas. It gives rise to concerns for the safety of people having to cross the highway when moving about their community. While this applies to vehicular traffic they are of particular relevance to pedestrian and cycle movements, to the extent that such severance discourages people from walking or cycling. In more extreme examples larger communities request bypasses at great expense to the public e.g. Amberley, Woodend and Kalkoura are recent examples.

22. The first reaction from the community is to request a lower speed limit. The NZTA is currently confronted with this issue in a number of communities such as Punakaiki, Franz Josef and Little River. The closest example is Lake Tekapo where the speed limit was lowered and pedestrian facilities installed. Undertaking such measures undermines the utility and efficiency of the State highway as a through road".

85. He estimated that the development would generate approximately 255 vehicle movements per day, which was close to Mr. Carr's 'lower end' estimate. Based on a crash prediction model cited, he estimated that the development could result in one injury crash every 12 years, which given the high speeds along the highway could result in a serious accident. In particular, he was concerned about the degree of exposure for cyclists and pedestrians. In his view the NZTA was unlikely to approve the subdivision.

86. Mr. Spowart emphasised that severance was largely a community issue, rather than a matter related to the level of service or capacity. He emphasised that local community expectations resulted in 'political' pressure to reduce speed limits and hence the functionality of state highways. His salient point was that the subdivision created a problem which could be avoided.
87. **Mr. Steve Higgs**, the Planning Manager for the Canterbury West Coast Region of NZTA then gave evidence.
88. He stated that licensed crossing point 24 had been incorrectly identified as a road intersection rather than an access point to Lot 1. He then went on to explore the status of the activity and came to the view that it was fully discretionary and open to be declined not only on access grounds, but on other grounds as well. He added that it was also a noncomplying activity under PPC13.
89. He acknowledged that a significant number of pedestrian movements across the highway were unlikely, but notwithstanding that, the subdivision would not promote social cohesion as the highway would act as a barrier. He was concerned that further development on the site was highly likely, and that the cumulative effects of this would further compromise the safety and efficiency of the state highway as a physical resource.
90. He argued that the proposed subdivision was a stand-alone development which was contrary to Sections 7(b) and (f) of the Act. In addition, the proposed subdivision was contrary to the Regional Policy Statement and the Canterbury Land Transport Strategy which have a policy emphasis on sustainable development, the integration of transport and land use planning, and reducing the need to travel. It was important to address development implications at the subdivision stage. In response to a question, he agreed there were no specific policies relating to severance, but that the general tenor of the objectives and policies was one of 'promoting' the safety and efficiency of state highways, and of alternative means of transport. The proposed subdivision did not promote these outcomes.
91. He added that the applicant had not applied for approval under section 92B of the Government Roding Powers Act, and hence it could not be established that legal access was available to the subdivision. He said that although neither of the reporting officers would be involved in any NZTA decision on whether access should be granted, he considered that a grant of consent was unlikely. Although clearly preferring that consent be declined, in the event that it was, he sought that a condition be imposed that the approval of NZTA for a new intersection with the state highway be obtained prior to the subdivision being submitted to the Council for approval under section 223 of the RMA.

Meridian Energy Ltd.

92. **Mr. Ben Williams**, legal counsel (Chapman Tripp), presented legal submissions on behalf of Meridian.
93. He noted the importance of Meridian infrastructure in the area, which contributed 20% of New Zealand's electricity and 60% of its lake storage, with Lake Pukaki being the most important component of the system. This served to reinforce the importance of the 33Kv transmission line crossing the applicant's property which provided electricity to the control gates at Lake Pukaki. There was also the need to protect the Meridian monitoring well which was also on the applicant's property.
94. The issue in contention was not the need to protect the infrastructure itself, but rather the means by which this was to be achieved. Meridian's concerns were that the land under the transmission line corridor would fall under multiple ownership, resulting in more potential parties to deal with in the event of access being required to service the lines. Meridian did not support the use of a consent notice as proposed by the applicant, because it could be cancelled or varied by either the applicant or the Council without any provision for third-party involvement. He also considered that the alternative of 'protection' under the provisions of the Electricity Act 1992 was problematic, because it involved potentially complicated and prolonged procedures for obtaining access to private land. I was left in no doubt that ongoing access to the Meridian infrastructure on the site was the key issue of concern.
95. In Mr. Williams opinion the Council had the power to impose an "easement in gross" under section 220 (f) of the Act and which was also provided for under the provisions of the district plan. As it appeared that the activity was at least restricted discretionary in status, and that Meridian's concerns clearly related to a resource management purpose, he considered that the imposition of a condition of this nature was appropriate in the circumstances.
96. **Mr. Paul Lloyd**, the Hydro Maintenance Manager from Meridian's office in Twizel, then gave evidence. He noted that the 33Kv transmission line served the control gates of the largest hydro storage lake in New Zealand, which also had fundamental implications for six downstream hydro stations. In his opinion, access for upgrading was unlikely to result from a need for a facility such as a substation, but might involve changes to the poles and crossarms carrying the lines, or possibly a two pole support structure.
97. He explained that the monitoring well enabled groundwater levels be monitored, and any seepage from the Lake Ruataniwha dam to be measured through manual checks carried out on a monthly basis. He accepted that the proposed subdivision did not adjoin the Ohau River, but observed that for any future subdivision, the river was subject to flood discharges without warning.
98. **Daniel Murray**, a planning consultant with the consultancy URS, was the final witness for Meridian. He stated that the provisions of the district plan including

rural policy 11A, and policies on utilities, strongly supported the protection of existing electrical infrastructure and its upgrading. These provisions were supportive of the imposition of conditions to protect Meridian infrastructure crossing the site.

The officers reports

99. **Mr. Brent Giddens**, a consultant planner with Lakes Consulting Group, gave evidence on behalf of the MDC. His evidence was taken as read.
100. His report explained in detail the background to the application and the identification of the various noncompliances, and undertook an evaluation of the relevant objectives and policies applicable to the application. He stated that the requirement for future dwellings to be subject to a resource consent procedure under PPC 13 was an important influence over the Council's decision to pursue limited notification.
101. He considered that the proposed subdivision design and layout was appropriate. However, noting the evidence of Mr. Cutler, he did not consider that the benefits of the subdivision, such as pedestrian accessways, access to the river, etc. outweighed the adverse landscape effects. He added that design control over future dwellings was not a subdivision matter, but one to be dealt with in subsequent land use consents for future dwellings, should consent be granted.
102. His initial view was that the proposal be classified as a controlled activity. He said the proposed subdivision did not align completely with the objectives and policies for the Rural Zone in the operative district plan, and was contrary to the objectives and policies of PPC 13. Given the status of the activity under the district plan, he considered that consent would have to be granted, and during the course of the hearing he maintained his opinion that consent should still be granted notwithstanding the restricted discretionary status of the activity with respect to access to the state highway.
103. **Mr. Allan Cutler**, a landscape architect with the firm of Morgan and Pollard Associates, then gave evidence on the landscape impacts of the proposal.
104. He noted that the site had been identified in the 2007 Mackenzie Basin Landscape Study as "an area of high vulnerability and having a low capacity to absorb development". He considered that the landscape assessment by the applicant failed to address a number of matters of concern, and confirmed that the mitigation measures proposed could merely qualify the adverse effects of the proposal. He drew attention to comments in the report such as "to a degree" and "as much as possible" as revealing the difficulties in managing the effects of the proposal. He considered the proposed walking and cycling ways constituted compensation, rather than mitigation. He considered the value of additional access to the river corridor was limited.
105. He agreed with the applicant that the escarpments should be avoided in terms of future development. He sought the complete removal of all wilding trees, and opined that the area near the state highway could form the

nucleus of an site set aside for restoration of indigenous vegetation (I understood from the hearing that the applicant's longer-term intentions were to develop this area as a golf course).

106. Mr. Cutler's view was that the proposal was clearly contrary to the objectives and policies off PPC 13, and at least to some degree, the operative district plan as well. He considered the development would have a significant adverse effect on the currently open character of the environment.

Applicant's right of reply

107. Mr. Todd raised a number of points in his right of reply. He said that the proposed development was well known in the area, and no third parties had raised the issue of notification. He considered the issue of notification been thoroughly addressed in the officer's section 93/94 report.
108. He said that the applicant was aware of the NZTA staff position with respect to access to the state highway, and was aware that consent could be declined. He complained that NZTA staff had refused to meet with his clients advisers. However he said that consent from the NZTA for access to the state highway was a separate process to that of subdivision, and the applicant was entitled to pursue these processes separately. In particular, he considered it would be inappropriate for consent to be declined on the basis that another party, the NZTA, might be likely to do so. He made passing reference to the possibility of alternative access from a side road to the east, although this was not pursued at the hearing.
109. He submitted that the proposed subdivision was unlikely to create a precedent given the fact that only two applications had arisen prior to PPC 13 being notified. In any event, he considered the weight to be given to PPC 13 was limited, and reiterated that it had no effect on the statutory status of the activity.
110. With respect to the submission of NZTA, he considered that the generality of the objectives and policies did not warrant consent being declined. He stated that Mr. Carr's report clearly indicated that the effects on the state highway in terms of both efficiency and safety were less than minor, and that in turn of traffic movements there was no "rush hour" in Twizel. He added that while access to the site was classified as a restricted discretionary activity, he submitted that NZTA's claim that noncompliance with the access rule made the activity wholly discretionary, would result from the rules not making any sense.
111. He claimed that the application site could be distinguished as being similar to an 'island' in the area given surrounding land ownership and features, and would not set a precedent for further development on the eastern side of the state highway in general. The proposed development offered the benefits of satisfying demand for rural residential growth in the Mackenzie basin.

ASSESSMENT

112. In undertaking the following assessment, I have also taken into account the assessment matters for subdivision in the district plan.

Traffic effects

113. I accept the State Highway 8 is a physical resource of national importance, and that the protection of its safety and efficiency is of paramount importance. However I do not consider this means that no additional traffic can be introduced through new intersections on to state highways or even LAR's, regardless of circumstances. In some cases, such access may be obtained directly to a side road outside the control of the NZTA. Rather, I consider the impacts of any particular proposal come down to a matter of fact and degree in each case. In this case, there is the overarching principle of community severance arising through development on both sides of the state highway, and the adverse effects that may be reasonably foreseen if consent were granted.
114. Counsel for NZTA put it to me that because consent was unlikely to be granted by the NZTA, I should decline consent for this reason. I do not accept this as being a valid reason for declining consent. I am satisfied that the applicant was, and remains, fully aware that consent to establish an intersection to the state highway serving his subdivision could be declined. It is entirely his risk as to whether he wishes to pursue this course of action. More importantly, I consider my role is to assess the proposal in terms of the provisions of the RMA and the relevant planning instruments. I do not think it appropriate for me to decline the application because another hearing body under different legislation might or might not grant consent. Such a far-reaching submission appeared to at least constitute a jurisdictional issue, although this course of action was only suggested to me at the time that the NZTA presented their submission.
115. I agree that community severance is a valid issue of concern. I also hold Mr. Spowart's extensive experience in highway management matters in respect, and at the level of broad principle I support his contention that development on both sides of a state highway can be undesirable and compromise the safety and efficiency of that highway. I also appreciate that this issue extends beyond that of capacity and level of service. However I consider there are a number of matters which distinguish this case from others generally, even though this activity is only restricted discretionary in status.
116. Firstly, I consider that the pattern of development in Twizel itself is quite different from that of many other rural towns. It is a relatively modern purpose built township specifically set back off the state highway to the west, which is protected by an LAR. The complete lack of direct frontage access to SH8 makes it very different from most other long-established rural townships. Apart from the two roads serving the township, there are no other activities directly fronting the highway to my knowledge.

117. Mr. Spowart referred to Amberley, Woodend and Kaikoura as examples of townships where the through traffic function of the highway had been compromised. In fairness to him, he saw these as extreme cases of severance, and he was not attempting (as I understood it) to draw direct parallels with Twizel. Nevertheless, we are faced with the situation in Twizel where the typical pattern of ribbon development along the highway is absent, as are commercial activities. In Kaikoura for example, a mixture of residential, commercial and industrial development straggles along perhaps 3km of the state highway through the township. I do not consider an access road generating approximately 250 vehicle movements per day, creates a level of effects which is in any way comparable to most of these other rural townships.
118. Secondly, I take on board Mr. Spowart's concerns about the high speeds experienced in the area - it is probably one of the fastest sections of state highway in New Zealand. However offsetting this are the very modest volumes of traffic involved - less than 1700 vpd on average. Although no statistics were produced to the hearing, I suspect that traffic volumes through some of the other towns cited in evidence are very much higher than those through Twizel, which of course has no direct frontage to SH8.
119. Thirdly, I consider the likelihood of the town needing to be bypassed - or of the NZTA facing pressure of this kind - is very unlikely in the foreseeable future given traffic volumes and the lack of direct road frontage. Indeed, I consider that there would have to be very high levels of development on the eastern side of the highway before such a possibility would even be remotely likely. The physical pattern of development that would follow any approval of this subdivision would be quite different to that, say, which has evolved at Franz Josef or Punakaiki. Traffic noise, such as that frequently associated with high volumes and heavy vehicles, is commonly cited as an example of the adverse effects of conflict between land use and transport. Such a situation simply does not arise here. Similarly, for the same reasons, I doubt whether there would be pressure to lower speed limits given the characteristics of the state highway adjacent to Twizel, although with the passage of time there may be speed enforcement issues to be addressed.
120. Fourthly, moving from the level of broad principle to the detailed assessment of effects, the largely uncontested evidence of Mr. Carr was that LOS A would remain unchanged, even if there were development several magnitudes greater to the east of the SH8. This does not indicate the subdivision would have a significant adverse effect on the function of the highway as a through route. The evidence of both witnesses suggested to me that the safety record of the affected section of state highway was excellent, and the prospect of a significantly increased accident rate was remote. It is always possible one spectacular event could confound an assessment like this, but it would be difficult to contemplate where any access, or even increased traffic through an access onto a state highway anywhere, would be acceptable on the basis of the level of risk that could be reasonably anticipated as a consequence of this development. I note that visibility in both directions is excellent and was well within accepted standards.

121. Fifthly, concerns were raised about a lack of community cohesion through splitting development on either side of SH8, particularly in Mr. Higgs evidence. Again, up to a point this is an entirely valid concern, albeit not raised as a concern in Mr. Giddens report of behalf of the MDC. I am aware that further development has taken place more recently to the west of Twizel, itself a low-density community, which now extends at very low densities for a considerable distance beyond the former periphery of the town. The pattern of development in and around Twizel does not appear particularly attractive to pedestrian or cycle travel, and it shows every sign of being a car dependent community, partly based on its function as a holiday destination. I note that the closest part of the proposed subdivision is at least 670m east of SH8, and I expect that pedestrian or cycle movement across the highway to the centre of the Township is likely to be very modest.
122. Improved access will be facilitated to the existing DOC walkway along the Twizel River which may increase existing pedestrian movements across the highway, or vehicle movements to the car park serving the walkway. I accept that the intervening state highway is an important factor in the pattern of transport movement in Twizel, but the potential for alternative transport modes have to be seen in the context of an existing sprawling car dependent holiday community. Given this situation, I am skeptical that diversification of transport options, which are entirely appropriate in larger urban centres, are likely to have much relevance in a place like Twizel.
123. There was some debate at the hearing as to the appropriate standard of access required between the highway and the road serving the subdivision, and whether in particular this should involve a substantial slip lane. It would seem that the standard of such an access would ultimately be determined by the NZTA were it minded to grant approval under its own procedures to this subdivision application.

Meridian infrastructure

124. I heard completely uncontested evidence of the importance of the Meridian 33 Kv transmission line across the application site serving the control gates at Lake Pukaki, and the monitoring well on the applicant's property. It was agreed between the applicant, Meridian, and the Council that a 24m setback for buildings, trees, and earthworks (except roading and services) should be imposed as a condition of consent should the subdivision be approved, and a 5m development exclusion zone around the monitoring well.
125. Apart from this relatively straightforward measure however, the issue in contention was confined to be appropriate *legal mechanism* required for achieving the protection of the essential infrastructure, not its importance per se.
126. The applicants concern with respect to Meridians submissions seeking the imposition of an easement in gross, was that it could enable a wide range of subsequent 'upgrading' or additional works which may be detrimental to the amenity of the subdivision. From Meridian's perspective, I could understand

why a consent notice, or reliance on the provisions of the Electricity Act, might expose them to the possibility of bureaucratic or legal delays should urgent works be required - with particular emphasis on the need for certainty and timely access.

127. In the minute issued following the hearing, I requested that the parties consider suitable wording in the event the consent might be granted. This was subsequently undertaken and the wording agreed has been incorporated in conditions.

Landscape effects

128. The landscape of the subject site, and the impacts of development on it, can be perhaps be summarised in this description contained in paragraph 25 of Mr. Cutler's evidence;

"Views to and across the site are characterised by an expansive and open landscape. While the transmission pylons exist they are not visually dominant or even visually significant features from most viewpoints. From SH8 the landscape is devoid of buildings and domesticating elements and there is no doubt that this landscape exhibits a highly natural character".

129. He went on to express the view that the development of the site was inappropriate, having regard to the adverse visual impacts and the irreversible nature of the changes that would occur. I note that even the applicant's own landscape assessment (Mr. Stephen Quin, 21 September 2007) was equivocal. In assessing the relevant objectives and policies, Mr. Quin stated in his paragraph 53 of the landscape assessment accompanying the application;

"In regard to these policies, the site is highly visible from a significant stretch (approximately, albeit intermittently, 4 kilometres) of SH8, an approximate 1.6 km stretch of the road that leads from SH8 to Lake Benmore, and parts of Twizel Township such as Walrepo Road and the eastern end of Ostler Road. The site currently displays a relatively high degree of naturalness, although it has been modified to an extent by the power pylons that traverse the site and the Council's sewer ponds (which I understand are to be expanded). I consider that future developments such as dwellings, the proposed road, driveways and associated paraphernalia such as cars, fences, gardens, letterboxes etc. will further modify and detract from the naturalness of the site. I consider that these effects could be mitigated by proposing conditions restricting future development (in terms of height design etc.) and through implementing an appropriate landscape plan that will mitigate potential adverse visual effects resulting from development in manner that satisfies the landscape guidelines relating to tree planting in the plan".

130. In landscape terms, these comments are hardly a ringing endorsement of the subdivision proposal. However, because this application has to be assessed against the district plan as notified, and is only a restricted discretionary activity in respect to access to SH8, I am in the position of only being able to impose conditions relating to landscape, not to decline consent on this basis.

The limited discretion available to me also diminishes the application of the objectives and policies, particularly with reference to PPC 13.

131. This creates a significant dilemma in terms of the natural landscape values of the site, which being "expansive and open" in character, results in commonly applied mitigation measures such as screen planting being *in itself* inconsistent with the protection of these natural values.
132. The subdivision will ultimately result in 49 dwellings being built on the site, and while setback a considerable distance from SH8, will nevertheless have a marked impact on current views towards the head of Lake Benmore. The eventual establishment of on-site planting, accessory buildings etc., will to some extent mitigate the visual impact of dwellings and accessory buildings, but still exacerbate the contrast between the open plain and a treed urban area.
133. At the hearing, the applicant, supported by the reporting officer, agreed that there were significant legal difficulties in imposing design conditions for dwellings on a subdivision consent. Initially such conditions were suggested on the application to address matters such as external colour schemes, cladding, and roof pitch by way of example. Instead, as the current application does not include an application for land use consent to construct houses, this will require a subsequent land use consent. These will presumably be applied for not by the applicant, but on a case-by-case basis by subsequent individual landowners.
134. If PPC13 remains largely unchanged, landowners will need consent to direct dwellings by way of an unrestricted discretionary activity application. It was put to me that this would enable input on design controls as a method of mitigation for landscape effects, and by implication, even the ability to decline consent altogether.
135. Given that the provisions of PPC 13 do not change the status of this particular application, my hands are tied. I can only hope that prospective purchasers are aware that resource consent will be required to build on each lot, and that the granting of such consents is not a certainty. I also consider that the Council is in a most difficult position if it attempts to decline consent altogether - I consider that all it can realistically hope to do is to influence the design and colour of the buildings erected on each lot. To this extent, I concur with the somewhat pessimistic view expressed by Mr. Higgs. Furthermore, each application would be dealt with on an ad hoc basis rather than part of an overall design plan. In considering the effects of this application in landscape terms, I have taken it as a given that most or all of this land will be built on as a consequence of the subdivision consent. The landscape values as they *currently exist* cannot be protected or mitigated by conditions. All that can be done is to manage the quality of the *built environment* that will inevitably result from this proposal.
136. This then leads to the mitigation measures put forward. The first of these is that any future structures including dwellings and outbuildings be restricted from being located within 40m of the escarpment south of the Twizel River. This

restriction would also apply to exotic trees, shrubs, vehicle tracks in driveways and fences. The purpose of this restriction is to protect the views from the walkway along the Twizel River. There seemed to be a strong level of agreement that such a condition was appropriate.

137. It was also suggested that a range of other matters be used as "guidance" in the formulation of the landscape plan. This would include planting in accordance with the landscape guidelines of the district plan to screen the development from public roads and public places; the establishment of walkways and tree planting to visually connect the development to the existing (Twizel) township; a planting scheme respecting existing natural character and tree patterns; establishing a strip of natural character associated with the pylon corridor; determining the landscape treatment of the proposed access road, public access reserves, and walking and cycle tracks.
138. Given the circumstances surrounding this proposed subdivision, and the sensitivity of the environment, I have concluded that at least some benefit will be obtained through a condition requiring the preparation of a landscape plan for Council approval. In saying this, I am aware that individual property owners may be free to establish their own on-site planting regimes, subject to any restrictions that might apply with respect to transmission lines.
139. There are some factors that do assist the applicant's case, including the fact that sites having outstanding landscape values have not been specifically identified in the Mackenzie basin. The (eventually to be extended) wastewater treatment facility, and the Meridian substation along the frontage of SH8 also detract - but only to a degree - from the natural landscape values of the site.
140. As a final point under the subject of landscape values, I am conscious that the applicant holds a Certificate of Compliance to establish 'shelter belt planting' east of the SH8, as shown on the aerial photograph at the beginning of this decision. Even if the proposed development does not proceed, once the shelter belts had matured the trees would obscure the views of the landscape beyond including Lake Benmore, which are currently able to be enjoyed from the highway. If the development proceeded, the shelter belts would completely screen buildings in the development from view.
141. Like Mr. Giddens, I understand such planting may or may not in fact be established, and I have not treated it as a decisive issue in considering this application. Nevertheless, as a separate matter to the merits or otherwise of the proposed subdivision, the exercise of the rights available under the Certificate of Compliance does carry some weight when considering the extent to which the current of views from the highway can be lawfully protected. Control of the planting of this nature is (as I understand it) one of the activities that would be able to be controlled under proposed PPC13, were it to come into effect in its current form.
142. I noted this suggestion made by Mr. Cutler for the restoration of path of the site near state Highway 8 as a potential site for the rehabilitation of indigenous

vegetation. However given that little was known about the existing values of the site, I did not feel there was sufficient evidence to proceed with the condition on that basis.

Provision of services

143. The evidence before me was that the subdivision could be serviced for water, sewer, telecommunications and electricity. A resource consent from the Canterbury Regional Council may be required separately for the disposal of stormwater.

Nuisance effects

144. My attention was drawn to the potential adverse effects that would be experienced as a consequence of dwellings being located adjacent to the outfall trench from the wastewater treatment plant. I understand that odours can be detected from the trench from time to time - quite apart from the fact that it is unlikely to be an attractive feature within a rural residential subdivision. It also appears that the legal status of this trench is somewhat uncertain. In any event, I was informed that the MDC has a resource consent applications in process before the Canterbury Regional Council to establish an enlarged wastewater treatment plant which will not require the continued existence of the outfall trench.
145. The applicant intends that the subdivision be staged, so that an area generally within 50m of the trench would form part of the second stage of subdivision. This would comprise eight residential lots and part of a reserve adjacent to the transmission lines, which under the first stage of the subdivision would be part of a larger communal Lot 53. In addition to a range of other conditions, a further condition would be that no certificate would be issued under section 224(c) of the Act until the trench was decommissioned. This arrangement was arrived at immediately prior to the hearing by way of a 'Heads of Agreement' between the applicant and the MDC.

Natural hazards

146. The proposed subdivision is not adjacent to the Ohau River, which can be subject to sudden discharges without warning as part of the management of the Upper Waitaki Hydro scheme. With respect to the much smaller Twizel River, the Council requested that any possible flood hazards be identified and necessary remediation undertaken. There was no suggestion put to me that the flood risk was of a magnitude which would justify declining consent under section 106 of the Act.

Positive effects

147. Where the subdivision to proceed it would make a further contribution to the provision of housing around Twizel and would confer some benefits in terms of walkways and public access to the Twizel River corridor.

Conclusions on effects

148. There were two primary issues raised by this subdivision application, these being landscape values and the potential impacts of development on both sides of the state highway in the vicinity of Twizel.
149. If PPC 13 as modified following Council decisions had been confirmed and in place at the time this application had been received, I would have been minded to decline consent primarily in terms of adverse landscape effects with a subsidiary concern about the initiation of residential development east of the SH8.
150. I can see some merit in terms of the NZTA's contention that it is generally undesirable to split communities by having development on both sides of a state highway, particularly where it is identified as a LAR. However in actually assessing the specific effects of the likely to arise, the evidence did not satisfy me that the likely actual effects on the safety and efficiency of state highway was not a decisive factor in its own right.
151. Unless in the (what I consider to be unlikely) event of PPC 13 failing completely, I agree with Mr. Todd that the likelihood of subsequent applicants successfully using this proposal as a precedent would be very limited.
152. Without in any way wishing to indicate disrespect to the applicant's position, he is indeed fortunate that the timing of this application has resulted in an outcome (if only with respect to these proceedings) in his favour.

OBJECTIVES AND POLICIES

Mackenzie District Plan

153. The subdivision objectives in the operative plan are found in Part 12.
154. **Objective 1** and its associated suite of policies address the adequacy of servicing arrangements for subdivisions. **Objective 2** relates to the cost of services being met by sub-dividers, while **Objective 5** calls for the avoidance of natural hazards. All of these matters were addressed through the hearing, and were either not the subject of submissions, and/or can be addressed through appropriate conditions of consent.
155. There are a significant number of objectives and policies under both the Operative Plan and the PPC13 relating to landscape values. These range from general to specific in nature, although unsurprisingly PPC 13 has more targeted provisions. I am also required to have regard to the objectives and policies under PPC 13, even if these have no effect on the status of the activity in terms of section 88A of the Act until (and if) they become fully operative. With respect to landscape, I am confined to considering the imposition of conditions.

156. Section 7 of the operative plan contains objectives and policies emphasising the distinctive and outstanding natural landscapes of the Mackenzie District. Those having more specific application are the following;

- **"Rural Policy 3D - Impacts of Subdivision, Use and Development**

Avoid or mitigate the effects of subdivision, uses or development which have the potential to modify or detract from areas with a high degree of naturalness, visibility, aesthetic value, including important landscapes, landforms and other natural features".

- **"Rural Policy 6B - Setback of Buildings**

To require residential dwellings to be set back from property boundaries to reduce the probability of the residents of these dwellings being exposed to significant adverse effects from an activity on a neighbouring property, and to maintain the visual character of the rural area particularly as viewed from the state highways".

157. As amended and reinforced following decisions on PPC13, the following provisions apply;

- **"Objective 3A - Distinctive and Outstanding Landscapes**

To protect and sustain the distinctive and outstanding natural landscapes and features of the district from subdivision and development that would detract from those landscapes"

158. This is supported by Policy 3A.

- **"Policy 3B - Landscape Diversity**

To recognise the diversity of physical settings and landscapes within the Mackenzie Basin and the varying capacity of these to absorb further subdivision, buildings and domestication, and in particular to recognise the suitability of existing farm base areas to accommodate and absorb additional buildings".

159. This policy is complemented by Policies 3D and 3E.

160. It would be possible to argue that the proposed subdivision was not consistent even with the provisions of the plan as notified, but those provisions are not supported by the very liberal rules regulating the status of activities. However it does not appear to be contrary (in the sense of being 'repugnant') to the objectives and policies as a whole. However the proposed subdivision, based on the expert evidence of landscape architects, is in my opinion contrary to the policies contained in PPC13. However, all that can be done is to consider these provisions with respect to the imposition of conditions.

161. Turning to matters relating to the *design and appearance* of development under the operative district plan;

- **"Rural Policy 3F - In Harmony with Landscape**

To encourage the use of guidelines for the siting and design of buildings and structures, tracks, and roads, tree planting, signs and fences".

162. This policy is complemented by rural policies 2A and 6D. Under PPC 13;

- **Policy 3F - Design and Appearance of Buildings**

To control the design, scale, appearance and location of residential buildings, and other buildings where reasonable, with regard to the purpose of the buildings, within the Mackenzie Basin to avoid, remedy or mitigate adverse impacts on the landscape and heritage values of the basin subzones".

163. Ultimately, design and appearance matters are not going to be addressed fully through this application, but rather through the limited scope of the landscape plan to be prepared for submission to the Council, and a less than satisfactory and ad hoc basis in subsequent land use consents for individual dwellings. To the extent that building location can be controlled through a set back from the river terrace south of the Twizel River, and more importantly through a landscape plan accompanying a grant of consent, the proposal at least meets the test of not being 'contrary to' these objectives and policies.

164. Turning to relevant provisions relating to the location of residential development, which has some bearing on the submission by NZTA, the following policies under PPC 13 are relevant;

- **"Policy 3D - Adverse Effects of Sporadic Development**

To control non - farming buildings and subdivision in the Mackenzie Basin (outside of existing farm base areas) to ensure adverse effects on the environment of sporadic development and subdivision are avoided and to sustain existing and likely future productive use of farm holdings".

- **"Policy 3E - Limitations on Residential Subdivision and Housing**

To provide for residential subdivision and housing development in the Mackenzie Basin only within identified urban areas of the Basin (Twizel and Lake Tekapo) within the special zone for a possible small settlement at Lake Pukaki and within identified farm base areas".

165. The provisions in the district plan relating to transport and subdivision are found in Section 12 (Subdivision). Objective 1, Policy 1 states as follows;

"1. To integrate subdivision roading with the existing roading network in an efficient manner which reflects expected traffic levels and the safe management of vehicles and pedestrians".

166. Under Section 14 (Transportation), the objective and policy framework is very brief. The rather general Policy 1 states as follows;

"To protect the efficiency, safety and amenity of various activity areas, the state highway network and the road hierarchy in the district by ensuring adequate on-site parking, loading and access provisions exist".

167. Only Mr. Higgs evidence for the NZTA provided any real analysis of provisions relating to transport matters. He drew my attention to objectives and policies which can be categorised under two broad issues - the protection of the safety and efficiency of the strategic roading network, and land use patterns which support alternative (i.e. not car dependent) transport modes. As well as the district plan, he drew attention to the provisions of the Canterbury Regional Policy Statement, Chapter 15.

168. Policy 1 states;

"Protect Canterbury's existing transport infrastructure and land transport corridors necessary for future strategic transport requirements by avoiding, remedying, or mitigating the adverse effects on the use, development or protection of land and associated natural and physical resources on the transport infrastructure".

169. Policy 3 states;

"Promote changes in movement patterns, travel habits and the location of activities, which achieve a safe, efficient and cost-effective use of the transport infrastructure and reduce the demand for transport".

170. Reference was also made to Objective 1, Objective 2, and Policy 2 which are similar to, and complementary in, their content. In addition, Mr. Higgs drew attention to the Canterbury Regional Land Transport Strategy which he described as a "statutory document". To my knowledge, it does not have the status of a regional plan, and if it were to be had regard to, the only possible relevance it might have is under Section 104(1)(c) of the Act. Policy provisions referred to therein by Mr. Higgs related to supporting the greater use of walking, the maintenance and enhancement of the region's strategic road network, and the promotion of (among other things, housing) "to support sustainable transport choices and reduce the need to travel, especially by private motor vehicles".

171. The difficulty I have with the objective and policy framework in all of these documents is their generality. The principle of avoiding development straddling a major arterial road and (depending on fact and degree in each case) is surprisingly not identified at a policy level in any of the relevant planning documents. For this reason, if an applicant can demonstrate that the safety and efficiency of the state highway will not be significantly affected, it would be difficult under the objective and policy framework to conclude that this particular subdivision is *contrary* to the objectives and policies. The evidence given by the applicant's traffic consultant, which was not seriously challenged, was that the effects of the proposed access on to

the state highway would not be significant. The proposed subdivision may not *promote* the transport policies in the RPS, but that is quite another matter to being *contrary* to them.

172. In recent years planning documents have sought to promote alternative transport options to the private car, and this is typically advanced through subdivision design in larger urban areas. This particular subdivision proposal is for low density car dependent development. In that respect however, it appears typical of other recent development adjacent to Twizel and elsewhere in the Mackenzie Basin. Given the size and population of Twizel and its surrounds, it would be difficult to achieve a pattern of peripheral development which was not primarily – indeed overwhelmingly dependent – on the private car.
173. The proposed subdivision is not of a scale as to raise significant issues associated with the efficient use of energy, and is probably more efficient in that respect than development associated with the various rural "farm base" areas provided for under the district plan. It is also located within close proximity of Twizel itself, which provides a range of services to the wider Mackenzie Basin area.

PART 2 RMA

174. The purpose of the Act is to promote the sustainable management of natural and physical resources. The definition of sustainable management is:
- *"managing the use, development and protection of natural and physical resources in a way or at a rate which enables people and communities to provide for their social, economic and cultural well being and for their health and safety while;*
 - *Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and*
 - *Safeguarding the life-supporting capacity of air, water, soil and ecosystems; and*
 - *Avoiding, remedying, or mitigating any adverse effect of activities on the environment."*
175. I consider there are no matters under Section 6 of the Act which arise in terms of this application. Similarly, no matters were drawn to my attention with respect to Section 8 of the Act.
176. I consider the following provisions of Section 7 of the Act are of relevance to the subject application for resource consent; this section states:
- i. *"In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall have particular regard to –*

ii. *(b) The efficient use and development of natural and physical resources;*

iii. *(c) The maintenance and enhancement of amenity values;*

(f) Maintenance and enhancement of the quality of the environment"

177. To the extent that it provides for further housing opportunities in the Mackenzie Basin, the proposed activity will enable prospective property owners to provide for their social and economic well-being. A major difficulty with this proposal is that notwithstanding its impacts on the landscape, it is only restricted discretionary in respect to access to the state highway. As it is a controlled activity with respect to other subdivision matters including landscape effects, it has to be assumed that the effects associated with the development have been anticipated by the district plan. In this respect, the applicant is fortunate in terms of the timing of this application being lodged, and the 'protection' conferred by section 88A. In the context of a *controlled activity* and my ability to impose conditions, I have to conclude that the activity is not contrary to section 5(2)(c) of the Act.

SECTION 104 RMA

178. In considering an application for resource consent, Section 104 (1) of the Act requires that the Consent Authority must, subject to Part 2, have regard to (relevantly in this case):
- *Any actual or potential effects on the environment of allowing the activity; and*
 - *Any relevant provisions of –*
 - (i) ... A plan or proposed plan*
 - (ii) Any other matter the consent authority considers relevant and reasonably necessary to determine the application.*
179. In terms of the nature and scale of subdivision anticipated by the district plan as notified, I have concluded that the proposed subdivision, while at least contrary to some of the objectives and policies of PPC 13, is not contrary to the objectives and policies of the plan as notified.
180. Section 104(2) allows the consent authority to disregard an adverse effect of the activity if the plan permits an activity with that effect. I am aware of the potential for an application to either set a precedent or undermine the integrity of the district plan. However it would be difficult to argue that an activity which has a restricted discretionary status in respect to access to SH8, and is otherwise a controlled activity, could be seen as creating a precedent in terms of the plan as notified. However even more importantly, it is only one of two applications in the very fortunate position of not being 'caught' by the public notification PPC 13. In my opinion it would be difficult for an applicant elsewhere in the district to use any grant of consent to this application as a precedent given the circumstances surrounding this application. I consider that while it seems likely that the Council may find it difficult to resist subsequent applications for dwellings within the subdivision, this does not

necessarily signal any advantage being conferred on subsequent subdivision applications on the site.

Conditions of consent

181. As part of the officers section 42a report, and as arising through the hearing of the application, an extensive suite of conditions were proposed, in the event that consent might be granted. Many of these can be best described as 'standard' and uncontroversial conditions that were acceptable to all parties in this eventuality. However there were a number of matters which were the subject of considerable contention.
182. The first of these related to the relationship between an approval of the subdivision by the MDC, and the consequences arising from any refusal by the NZTA to grant consent for the subdivision to access SH8 under section 92(b) of the Government Roadway Powers Act 1989. This raised something of a "chicken and egg" scenario with respect to the processes involved in this case.
183. Section 106(1)(c) of the Act provides that the consent authority may refuse to grant the subdivision consent, or grant consent subject to conditions, if it considers that sufficient provision has not been made for legal and physical access to each allotment to be created by the subdivision. Legal and physical access will only be possible provided the NZTA grant consent. Certainly, it would be possible to provide physical access to the highway. I have already expressed the view that it would not be appropriate to decline consent *now* on the basis that the NZTA *might or might not* grant consent. Such an approach would also amount to the Council delegating its decision-making powers to another party.
184. I would like to emphasise at this point that it is abundantly clear that the applicant is aware that consent may not be forthcoming from NZTA. Furthermore, I do not consider there is any actual or implied obligation on the NZTA to grant consent on the basis of the decision made on this application.
185. My understanding of section 224(c) of the Act is that the Council can grant consent provided it is satisfied that any conditions have been complied with. If there is no condition that legal or physical access be provided, they would appear to be no grounds for the Council to conclude that the conditions of consent have not been met.
186. The NZTA, supported by the MDC, submitted that was appropriate to impose a condition requiring that the consent holder provide written confirmation that NZTA had given its authorisation *prior* to the applicant lodging an application for approval of the survey plan under section 223 of the Act. My initial inclination was to support the applicant's reluctance to acquiesce to such a condition, but it would appear that such a condition may in fact be appropriate, given that the Council needs to be satisfied that legal and physical access is available before the survey plan is deposited (meaning NZTA approval has been given).

187. In this case there appears to be a logical sequence that the application under the RMA and the district plan be determined now, followed by the application to the NZTA, which in turn finally informs the Council's decision under section 224 of the Act. If for any reason the NZTA decline consent under section 92(b) of the Government Roadway Powers Act, there needs to be a condition to protect the Council's position under section 224 of the Act in that eventuality. This may put the applicant to what is ultimately a failed exercise, but they have clearly indicated that this is a risk that prepared to entertain.
188. The second matter relating to conditions, which was also addressed earlier in this decision, concerns the appropriate legal mechanism for the protection of Meridian infrastructure within the proposed subdivision - specifically a 33Kv transmission line and a monitoring bore. I confess to having found the approach of the applicant and the submitter to resolving what is essentially an important but very narrowly focused legal issue somewhat frustrating. Eventually however, the parties reached an accommodation which is set out in two schedules attached to this decision.
189. The third issue of disagreement related to conditions concerned the removal of wilding pines from the site. The removal of all such trees was opposed by the applicant on the grounds that some of these were not the result of "self seeding". While I have some difficulty in differentiating between a self seeding pine and a wilding pine, I have come to the view that any wilding pines should be removed from the site, with the exception of any pine trees deliberately established by prior landowners, which are to be separately identified on the landscape plan(s) to be submitted to the Council for approval following this decision. The applicant's possession of a Certificate of Compliance for the planting of 'shelter belts' also had some, but not a determinative, influence over my conclusion on this matter.
190. The final issue raised with respect to conditions was one which I explored with the applicant during the hearing. As noted earlier in this decision, there is a widespread perception by purchasers of newly subdivided residential or rural residential lots, which I consider entirely understandable, that they should be able to build on their allotments as of right, subject to any typical bulk and location standards applicable under the district plan. Under PPC13, should it survive in its present form, a resource consent would be required to erect a dwelling or even to undertake other building or planting activity on the site. Being rural residential, the proposed lots are significantly larger and offer more scope for development than typical residential allotments. The key point at which the need for a resource consent to erect a dwelling needs to be known as at the point where an allotment is sold, rather than being picked up at the building permit stage which may be too late.
191. Although a matter of concern to me, I do not have the ability to require that prospective purchasers be informed that a resource consent may be required for the erection of dwellings on newly created allotments. I do not believe I can impose a condition on the application, however well-intentioned, that a resource consent will be required, because the final outcome of PPC13 cannot be known with certainty, and it is doubtful whether a measure of this nature would satisfy the test of being a 'condition'. The best

that can be done in these circumstances is to attach an advice note, recognising however that this is attached to this particular consent, and not any sale and purchase agreement with future purchaser.

DETERMINATION

I have resolved that the application be granted pursuant to Sections 104, 104A, 104C and 108 of the Resource Management Act 1991, subject to the following conditions:

1. The consent holder shall undertake the development in accordance with the attached plans stamped "as approved" on 2 November 2009, prepared by Vivian+Espie for High Country Rosehip/Mackenzie Lifestyle Limited, titled "Proposed Subdivision - Stage 1, Ref: 0415LP3 attached to this decision as **RM 070082/1**, and "Stage 2 Subdivision of Lot 53, Stage 1", Ref: 045LP4, attached to this decision as **RM 070082/2** both dated 16 September 2009 and the application as submitted, with the exception of the amendments required by the following conditions of consent.
2. That unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent shall be at the consent holder's own expense.
3. All engineering works shall be carried out in accordance with the Mackenzie District Council's policies and standards. The Council's engineering department shall review and approve the engineering drawings, specifications and calculations prior to any physical works commencing. An engineering fee of 2% (including GST) of the estimated value of the physical works is payable when the plans and specifications are submitted for approval.
4. Prior to the commencement of any works on the land being subdivided and prior to the Council signing the Title Plan pursuant to Section 223 of the Resource Management Act 1991, the consent holder shall provide to the Mackenzie District Council for approval, copies of specifications, calculations and design plans as is considered by Council to be both necessary and adequate, in accordance with Condition (3), to detail the following engineering works required:

WATER SUPPLY

- a) The provision of a restricted water supply of 1,820 litres of water / day / lot for Lots 1 to 49 to the satisfaction of the Council's Asset Manager and in terms of the Council's standards (SNZ PAS 4509:2003). The costs of the connections shall be borne by the consent holder. The engineering designs shall provide for sufficient capacity to meet the possible future demand generated by the lots created by this subdivision and, in addition, the irrigation requirements of the proposed landscaping. Fire hydrants are to be designed and installed in general accordance with the Fire Service Code of Practice (NZS PAS 4509:2003) for Fire Fighting Water Supplies to the satisfaction of the Asset Manager.

SEWER

- b) The provision of full sewage reticulation system connecting Lots 1 to 49 to the Council's reticulated system in accordance with Council's standards. The cost of the connections shall be borne by the consent holder. Sanitary sewer laterals are to be laid to at least 600mm inside the building area of all lots. The laterals are to be installed at a sufficient depth to ensure fall is available to serve the furthestmost part of the lot. The engineering designs shall provide for sufficient capacity to meet the likely future demand generated by the lots created by this subdivision. Connections shall meet the durability requirements of the building code (i.e. have a minimum life of 50 years). The consent holder shall contribute towards any upgrading of the Council's networks needed to allow the networks to manage the additional demand placed upon it by this development. The maximum contribution shall be the actual cost of upgrading the network to the extent that the upgrading is undertaken to allow servicing of the application site.

STORMWATER

- c) The provision for stormwater treatment and disposal to Lots 1 to 49. Stormwater from within each allotment shall be discharged in accordance with the resource consent requirements of the Discharge Permits authorised by Environmental Canterbury (if consents are necessary). A copy of any resource consent is to be provided to Mackenzie District Council. The design of the soakage pits shall be based on percolation tests to establish the soakage capability of the sub-soils and soakage pits shall be sized on the basis of discharging the flow from a rainfall event of 45mm/ hour for a duration of one hour without surface ponding. The design of the infiltration areas shall be based upon estimating the ability of the surface soils to infiltrate stormwater to the sub-soils below, allowing for any evapotranspiration effects and the soakage capability of the sub-soils, based upon testing previously undertaken. The design of soakage pits and infiltration areas shall be carried out by a competent person who shall provide to the Mackenzie District Council a design report and certification, following construction, that soakage pits and infiltration areas were constructed in accordance with design report.

ROADING & ACCESS

- d) Plans and specification of all roading, right of ways, and all accesses to Lots 1 to 49 in accordance with Council's standards, subject to Condition 5:
- (i) The access road (shown as Lot 52 on the subdivision plans) shall have a legal width of 20 metres, a formed carriageway width of 6.5 metres, and be constructed to comply with the Transportation standards of the District Plan in relation to landscaping, minimum distances between accesses, and visibility to the satisfaction of the Asset Manager.
 - (ii) Lot 52 shall be vested in the ownership of the Council.
 - (iii) All rights-of-way shall have a formed width of at least 4.0 metres and all accesses are to comply with the Transportation Standards of the District Plan, in particular sight distances, culvert construction, and water tabling.

EARTHWORKS

- e) Details and plans of any earthworks. All earthworks undertaken on the site shall be in accordance with NZS 4431:1989.

LIGHTING

- f) Details of any outdoor lighting are to be included with the engineering plans submitted to Council for approval. Lighting is to be bollard lighting only. Certification by an appropriately qualified person that any proposed outdoor lighting complies with the requirements of the Mackenzie District Plan is required prior to the illumination of the outdoor lighting, other than for the purposes of testing the effectiveness of the lighting.

LANDSCAPING

- g) A detailed landscape plan shall be provided to the Manager of Planning & Regulations for approval prior to any development being undertaken on site. The objective of the landscape design is to mitigate visual effects of development on the site and to enhance natural character. Once approved, this landscape plan shall be upheld by way of consent notice of the respective allotments of this subdivision.

The following objectives must be adhered to in the formulation of the landscape plan:

- (i) All existing wilding pines shall be removed from the subject site. Any pines established by planting may be retained, but must be identified on the landscape plan(s) to be submitted for approval under condition 4(g).
- (ii) Any future structures including dwellings and outbuildings shall be located no closer than 40 metres from the edge of the escarpment, as shown on the site plan marked as 'A' **RM070082/3** to this decision. Within this area, exotic trees & shrubs, vehicle tracks & driveways, and fences are prohibited with the exception of post and wire fences.
- (iii) The visual effects of any built development shall be softened and screened from public roads and public places with appropriate vegetation including trees and shrubs in a manner that satisfies the landscape guidelines relating to tree planting in the Operative and Proposed District Plan.

The following objectives shall be used as guidance in the formulation of the landscape plan:

- (i) Visually connect the proposed development to the existing township through appropriate planting.
- (ii) Integrate tree planting into existing natural character and patterns.
- (iii) Create a strip of natural character along the open space strip associated with the power pylons.
- (iv) Detail the treatment (soft and/or hard landscaping) of the proposed road to vest in Council.
- (v) Detail the treatment of the proposed public access reserve.
- (vi) Detail the treatment of the proposed walking and cycling tracks to the public access reserve.

- (vii) The consent holder shall have regard to the landscape requirements under Transpower's Rural Corridor Policy where relevant.
- h) The maintenance of the landscaping and walkways on land to be vested in Council shall be the responsibility of the consent holder for the following periods after Section 224 approval or until the agreed time of the transfer of ownership has occurred (trees - 3 years, all other landscaping - 18 months). The transfer of ownership shall take place at a time agreed with the Council's Asset Manager and Community Facilities Manager.

SURVEY PLAN

- i) The survey plan submitted for section 223 approval shall be in accordance with the plan of proposed subdivision being Vivian+Espie for High Country Rosehip/Mackenzie Lifestyle Limited, titled "Proposed Subdivision- Stage 1, Ref: 0415LP3 attached as **RM 070082/1**, and "Stage 2 Subdivision of Lot 53, Stage 1" Ref: 0415LP4, both dated 16 September 2009, attached as **RM 070082/2** and any other relevant information included in the application. The survey plan shall:
 - (i) Define and label consent notice areas in Lots 1 - 15 being a corridor parallel to the Christchurch - Twizel A transmission line. The width of this corridor shall be 100 metres measured northwards from the centreline of the transmission line.
 - (ii) Define and label consent notice areas in Lots 16 - 24 being a corridor parallel to the Twizel - Deviation A transmission line. The width of this corridor shall be 100 metres measured southwards from the centreline of the transmission line.

ROAD ACCESS

- j) Any intersection of the proposed road (shown as Lot 52 on the subdivision plans) with State Highway 8 shall be designed and constructed to an appropriate standard for a rural State highway/local road intersection.
Note: Refer to advice note (iii).

TELECOMMUNICATION AND ELECTRICITY

- k) That each allotment be provided with the ability to connect to a telecommunications and electrical supply network at the boundary of the net area of the allotment.
 - l) All electricity and telephone lines servicing the subdivision shall be underground.
5. The consent holder shall not submit any survey plan in relation to the subdivision to the Mackenzie District Council for approval under section 223 RMA until:
- (a) The NZTA has granted authorisation for the proposed road (shown as Lot 52 on the subdivision plan) to be used for vehicular access to and from State Highway 8 under section 92(b) of the Government Road Powers Act 1989; and

- (b) The consent holder has provided the Council with written confirmation from the NZTA that the authorisation referred to in paragraph (a) of this condition has been obtained.
6. Prior to the certification pursuant to Section 224(c) of the Resource Management Act 1991, the consent holder shall complete the following:
- a) The submission of 'as-built' plans in accordance with Council's 'as-built' standards, and information required to detail all engineering works completed in relation to or in association with this subdivision.
 - b) The completion of all works detailed in condition (4) above.
 - c) The consent holder shall provide a suitable and usable power supply connection to Lots 1 to 49. These connections shall be underground from any existing reticulation and in accordance with any requirements/standards of Aurora Energy/Delta and Telecom.
 - d) The consent holder shall pay the Council a water supply capital works contribution (plus GST) for each additional allotment (48) prior to approval under section 224 of the Resource Management Act 1991. The capital works contribution payable are those applicable in the Council's Annual Plan for the calendar year that section 224 approval is applied for. The Council will generate an invoice upon receipt of the application for section 224 approval.
 - e) The consent holder shall pay the sanitary sewage capital works contribution (plus GST) for each additional allotment (48) prior to approval under section 224 of the Resource Management Act 1991. The capital works contribution payable are those applicable in the Council's Annual Plan for the calendar year that section 224 approval is applied for. The Council will generate an invoice upon receipt of the application for section 224 approval.
 - f) The consent holder shall pay to the Mackenzie District Council a reserves contribution calculated at the rate of 5% of 1500m² plus GST of the average cash value of the allotments in the subdivision, for 49 additional lots created. The value of the allotment shall be provided by a valuation from a registered valuer, the cost of obtaining this valuation shall be borne by the consent holder. The date of the valuation shall be within six months of the application for approval under section 224. The consent holder is advised that the Council will obtain this valuation on their behalf.
7. Prior to certification pursuant to section 224 of the Act and in accordance with Section 221 of the Resource Management Act 1991, a consent notice shall be registered on the pertinent Certificate of Titles for the performance of the following conditions on a continuing basis:

GENERAL

- a) Works required as part of landscape plan approved under subdivision consent RM070082 (as attached to this Consent Notice) shall be maintained on an on-going basis. All dead or diseased plants shall be replaced on a continuing basis until all planting shown on the Approved Landscape Plan are self-sustaining to the satisfaction of the Manager of Planning & Regulations.
- b) Prior to granting any resource consent for residential building development on any the allotments affected by the presence of the outfall trench from the Twizel Oxidation Pond (being those allotments

within 50m of the outfall trench shown on the plan attached as RM 070082/3 **RM070082/4**, investigation shall be undertaken by a suitably qualified engineer as to whether the land is suitable for the proposed development having regard to ground stability and site contamination. If the land is found to be unsuitable, appropriate remediation shall take place prior to the building development. The consent holder shall provide a certificate signed by a suitably qualified and experienced engineer that is addressed and submitted to the Mackenzie District Council, attention Manager Regulatory Services, certifying that the abovementioned land is suitable for residential building development.

- c) Prior to granting any resource consent for residential building development on any of the allotments, an investigation shall be undertaken by a suitably qualified engineer to confirm whether the land is located within the zone of influence of the Twizel River. Specific regard should be given to flood hazard. If the land, or portions of the land, is found to be unsuitable, appropriate remediation shall take place prior to the building development.
- d) All fencing shall be traditional post-and-wire only although including the post and sheep netting wire fence referred to at condition 16(a). Individual letterboxes shall not be allowed. Communal or clustered letterboxes shall be permitted.
- e) The escarpment face (as shown on the plan appended as 'A' **RM070082/3**) that runs west to east through the southern extent of the proposed rural living subdivision area shall be kept free of all future development.
- f) No building or structure shall be constructed within that part of Lots 1 to 24 shown as 'consent notice area' on the approved subdivision scheme plan.

EARTHWORKS

- g) The owners of Lots 1, 2, 7, 15, 16, 18, 19, 22 and 23 must not excavate or otherwise interfere with any land:
 - (i) At a depth greater than 300mm within 6 metres of the outer edge of the visible foundations of the transmission line tower (pylon); or
 - (ii) At a depth greater than 3 metres, between 6 metres and 12 metres of the outer edge of the visible foundation of the transmission line tower (pylon); or
 - (iii) In such a way as to create an unstable batter.
- h) The owners of Lots 1 - 23 and Lot 52 must not deposit any material (either permanently or temporarily) under or near the Christchurch - Twizel A transmission line or the Twizel - Deviation A transmission line would reduce the vertical distance between the ground and the conductors to less than 7.5 metres.

TREES, VEGETATION & MOBILE PLANT

- i) All newly planted trees or vegetation (exceeding a maximum height of two metres and over at full maturity) on Lots 1 - 24 and Lot 52 must:
 - (i) Be setback by horizontal distance of at least 12 metres either side (total of 24 metres) from the centre line of the Christchurch -

Twizel A transmission line or Twizel - Deviation A transmission line;
and

- (ii) When fully grown not have the potential to fall within 5 metres of the transmission lines.
- j) All machinery and mobile plant operated on lots 1 - 23 and Lot 52 shall maintain a minimum clearance distance of 4 metres from the Christchurch - Twizel and Twizel - Deviation A transmission lines at all times.
- k) All newly planted trees/vegetation (in excess of 2 metres in height at maturity) on proposed Lots 1-7, 11-23 shall be setback by a horizontal distance of at least 12 metres either side (a total of 24 metres) of the centre line of the Christchurch-Twizel-A and Twizel-Deviation-A transmission lines and as shown on the scheme plan prepared by Vivian+Espie for High Country Rosehip/Mackenzie Lifestyle Limited, titled "Proposed Subdivision - Stage 1, dated 16 September 2009 and "Stage 2 Subdivision of Lot 53, Stage 1".
- l) All machinery and mobile plant operated on proposed Lots 1-7, 11-23 and 52 shall maintain a minimum clearance distance of 4 metres from the Christchurch-Twizel-A and Twizel Deviation-A transmission line conductors at all times.
- m) In the case of any tower supporting any conductor, no person may excavate or otherwise interfere with any land:
 - (i) At a depth greater than 300mm within 6 metres of the outer edge of the visible foundations of the tower; or
 - (ii) At a depth greater than 3 metres, between 6 metres and 12 metres of the outer edge of the visible foundation of the tower; or
 - (iii) In such a way as to create an unstable batter.
- n) Excavated or other material shall not be deposited under or near the Christchurch-Twizel A and Twizel-Deviation-A transmission lines so as to reduce the vertical distance from the ground to the conductors to a distance less than (refer Table 4 in NZECP 34:2001):
 - (i) 7.5 metres vertically, across or along driveways or any other land traversable by vehicles;
 - (ii) 5.5 metres vertically, on any land not traversable by vehicles due to inaccessibility; and;
 - (iii) 3.0 metres in any distance other than vertical on all land.Please note that the distances specified include an allowance for mechanic creep (i.e. permanent elongation).

8. If the consent holder:

- (a) Discovers kōiwi Tangata (human skeletal remains), or Māori artefact material, the consent holder shall without delay:
 - (i) Notify the Consent Authority, Tangata whenua and New Zealand Historic Places Trust and in the case of skeletal remains, the New Zealand Police; and
 - (ii) Stop work within the immediate vicinity of the discovery to allow a site inspection by the New Zealand Historic Places Trust and the appropriate runanga and their advisors, who shall determine whether the discovery is likely to be extensive, if a thorough site investigation is required, and whether an Archaeological Authority is required.

Any koiwi Tangata discovered shall be handled and removed by tribal elders responsible for the tikanga (custom) appropriate to its removal or preservation.

Site work shall recommence following consultation with the Consent Authority, the New Zealand Historic Places Trust, Tangata whenua, and in the case of skeletal remains, the New Zealand Police, provided that any relevant statutory permissions have been obtained.

- (b) Discovers any feature or archaeological material that predates 1900, or heritage material, or disturbs a previously unidentified archaeological or heritage site, the consent holder shall without delay:
- (i) Stop work within the immediate vicinity of the discovery or disturbance; and
 - (ii) Advise the Consent Authority, the New Zealand Historic Places Trust, and in the case of Maori features or materials, the Tangata whenua, and if required, shall make an application for an Archaeological Authority pursuant to the Historic Places Act 1993; and
 - (iii) Arrange for a suitably qualified archaeologist to undertake a survey of the site.

Site work shall recommence following consultation with the Consent Authority.

9. All easements shall be granted or reserved.

OVERHEAD CIRCUIT LINES

10. Prior to certification pursuant to section 224 of the Act and in accordance with section 221 of the Resource Management Act 1991, a consent notice shall be registered on the pertinent Certificate of Title for Lots 1 and 2 for the performance of the following conditions on a continuing basis:
- (a) No building is to be constructed, established or occupied within a 24 metre wide corridor centred on the existing 33kV overhead circuit line owned by Meridian Energy without their approval.
 - (b) No earthworks, disturbance or interference with the land (excluding roading and services) shall be permitted within a 24 metre wide corridor centred on the existing 33 kV overhead circuit line owned by Meridian Energy without their approval.
 - (c) No planting of any vegetation which at maturity exceeds a height of 2 metres with the land shall be permitted within a 24 metre wide corridor centred on the existing 33kV overhead circuit line owned by Meridian Energy without their approval.
 - (d) No future owner shall object to Meridian Energy accessing the site (with vehicles and machinery) to maintain the line.
 - (e) All future owners shall be advised of the relevant requirements under the New Zealand Code of Practice for Electrical Safe Distances (NZECP 34:2001) and the Electricity (Hazards from Trees) Regulations 2003. For further information contact Meridian Energy.
11. Prior to certification pursuant to section 224 of the Act and in accordance with section 221 of the Resource Management Act 1991, a consent notice shall be registered on the pertinent Certificate of Title for lot 3 authorised by

RM070080 (or the balance lot as a result of this subdivision) for the performance of the following conditions on a continuing basis:

- (a) That the Meridian Energy observation well RTHOW21 is protected from removal or interference to allow for the upholding of all Meridian Energy's rights under the Electricity Act 1992.
- (b) That the Meridian Energy observation well shall have a 5 metre radius development exclusion zone from the centre of the well.
- (c) That any future landholder shall not prevent Meridian Energy safe and efficient access to the well.
- (d) That the well and development exclusion zone referred to in (b) above may be fenced by Meridian Energy at their expense.

OUTFALL TRENCH AND STAGING

12. The subdivision shall occur in two stages as follows:

- (a) Stage 1 shall create Lots 1-3, 8-15, 19-31, 33-51, 52A and balance Lot 53 and all roading to service the subdivision, as shown on subdivision scheme plan Vivian+Espie for High Country Rosehip/Mackenzie Lifestyle Limited, titled "Proposed Subdivision- Stage 1, dated 16 September 2009, and attached as RM 070082/1.
- (b) Stage 2 shall subdivide balance Lot 53 to create new Lots 4-7, 16-18, 32, and 52B, as shown on subdivision scheme Vivian+Espie for High Country Rosehip/Mackenzie Lifestyle Limited, titled "~~Proposed Subdivision- Stage 1~~ Stage 2 Subdivision of Lot 53, Stage 1, dated 16 September 2009, and attached as RM 070082/2.

13. No part of Lot 38 on subdivision scheme plan Vivian+Espie for High Country Rosehip/Mackenzie Lifestyle Limited, titled "Proposed Subdivision- Stage 1, dated 16 September 2009 (~~RM 070082/2~~ RM070082/1) shall be situated less than 50 metres from any part of the eastern outer boundary of the outfall trench shown on the plan attached as ~~RM 070082/3~~ RM070082/4.

14. Residential buildings and domestic residential activities shall be prohibited on any part of Lot 8 within 50 metres of the eastern outer boundary of the outfall trench shown on BECA plan Figure No.1 attached to this consent as **RM 070082/4**. This condition shall be protected by a consent notice registered against the title to Lot 8 pursuant to section 221 Resource Management Act 1981. Such consent notice to be registered against the title for Lot 8 at the same time as the s224(c) certificate referred to at condition 16 is lodged. Such consent notice to be released by the consent authority when the 224(c) certificate referred to at condition 18 is lodged.

15. Use of Lot 53 shall be limited to rural pastoral purposes and it shall not be used for residential development, until Stage 2 of the subdivision is complete.

16. No certificate for the purposes of section 224(c) of the RMA 1991 may be lodged with the Registrar-General of Lands in respect of Lots 1-3, 8-15, 19-31, 33-51, 52A and balance Lot 53 unless and until the consent holder:

- (a) Erects a 900mm high post and sheep netting wire fence along both sides of the existing outfall trench 50 metres from the outer boundary of the outfall trench except where the fence runs parallel with the access road and over the culvert crossing the outfall trench referred to at

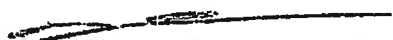
- condition 16(b). The fence and culvert shall be located generally in accord with BECA plan Figure No. 2 attached to this consent as **RM 070082/5**. Save for the section of fence running parallel with the access road, such fence shall run from the point where it leaves the Twizel Waste Water Treatment Plant to and around the end of the outfall trench to prevent residents of and visitors to the subdivision entering the land in which the outfall trench is located;
- (b) Designs and constructs a crossing of the outflow trench on the access road immediately north of Lots 6 and 7 such culvert to be appropriately sized and positioned to pipe all flows that might enter the culvert from the outfall trench;
 - (c) Affixes signs to the fence at intervals of 100m warning of the presence of treated effluent in the outfall trench; and
 - (d) Provides a certificate signed by a suitably qualified and experienced engineer that is addressed and submitted to the Mackenzie District Council, attention Manager Regulatory Services, certifying that the abovementioned fence, culvert, and signage have been established to an appropriate standard in accord with the above conditions so as to protect the public health of future residents, occupants or visitors to Lots 1-3, 8-15, 19-31, 33-51, 52A and balance Lot 53.
17. The fence and culvert referred to at conditions 16(a) and (b) shall remain in place and be maintained by the consent holder in order to protect against both wear and tear, and vandalism or other damage or destruction to the fence or culvert until the 224(c) certificate referred to at condition 18 is lodged.
18. No certificate for the purposes of section 224(c) of the RMA 1991 may be lodged with the Registrar-General of Lands in respect of Lots 4-7, 16-18, 32 and 52B unless and until:
- (a) Soakage basins adjacent to the existing Twizel Wastewater Treatment ponds shown on BECA Plan Figure No. 4 attached to this consent as **RM 070082/6** have been constructed and commissioned;
 - (b) The wastewater outfall trench shown on BECA Plan Figure No. 1 has been decommissioned;
 - (c) A certificate signed by a suitably qualified and experienced wastewater engineer that is addressed and submitted to the Mackenzie District Council, attention Manager Regulatory Services, certifying that the decommissioned outfall trench does not present any public health risks to future residents, occupants or visitors to proposed Lots 4-7, 16-18, 32 and 52B.
19. Residential buildings and domestic residential activities shall be prohibited on any part of Lot 50 within:
- (a) 50 metres of the outer boundary of the outfall trench, as shown by the shaded area on BECA Plan Figure No. 3, and
 - (b) 150 metres of the Twizel Waste Water Treatment Plant, as shown by the shaded area on BECA Plan Figure No. 3 attached to this consent as **RM 070082/7**.

20. Condition 19 shall be protected by a consent notice registered against the title to Lot 50 pursuant to section 221 Resource Management Act 1991. Such consent notice to be registered against the title for Lot 50 at the same time as the s224(c) certificate referred to at condition 16 is lodged. With respect to the condition 19(a), such consent notice to be released by the consent authority when the 224(c) certificate referred to at condition 18 is lodged.
21. The consent holder shall cause to be registered in favour of Meridian Energy Limited easements in gross:
 - (a) In the form attached as Schedule (1A) creating the right to maintain and operate a transmission line (right to convey electricity and telecommunications) within 10 metres either side of that line; and
 - (b) In the form attached as Schedule (1B) creating the right to maintain and operate an observation well (right to monitor groundwater) on that part of the land within a 5 metre radius of the well.
22. The easements under condition 21 shall be registered on or before the later of:
 - (a) The issue of the computer registers for the Land on the subdivision of the Land; or
 - (b) The 5th day after Meridian Energy Limited provides the registered proprietor of the Land a deposited survey plan describing the areas that are to be subject to the easements.

Advice Notes

- i. The Council may elect to exercise its functions and duties through the employment of independent consultants.
- ii. The consent holder should be aware that future consent(s) may be required for land use.
- iii. Any works on the State highway (which includes the State highway road reserve) in order to construct an intersection of the proposed road with the State highway would require authorisation from the NZTA under section 51 of the Government Roading Powers Act 1989 (including NZTA approval of the design of those works). Construction of any part of the proposed intersection of the new road with the State highway that required works to be undertaken on the State Highway could not proceed until such authorisation was obtained.
- iv. No buildings (including residential dwellings) are permitted as of right on new lots created by this consent and resource consent(s) may be required for land use pursuant to Plan Change 13 to the Mackenzie District Plan (which is subject to appeal).

Robert Charles Nixon
Hearing Commissioner



20 November 2009

Agreement Relating to Subdivision Consent

Appendix F

Twizel Wastewater Treatment
Plant –Contamination
Assessment of Outfall Trench

Appendix F

Twizel Wastewater Treatment
Plant –Contamination
Assessment of Outfall Trench



CH2M Beca

www.ch2mbea.com

Report

Twizel Wastewater Treatment Plant - Contamination Assessment of Outfall Trench

Prepared for Mackenzie District Council

Prepared by CH2M Beca Ltd

6 August 2015



Revision History

Revision N°	Prepared By	Description	Date
1	Ben Waterhouse	Final	6 August 2015
2			
3			
4			
5			

Document Acceptance

Action	Name	Signed	Date
Prepared by	Ben Waterhouse		6 August 2015
Reviewed by	Genevieve Smith and Phillip Ware		6 August 2015
Approved by	David Heiler		26 August 2015
on behalf of	CH2M Beca Ltd		

© CH2M Beca 2015 (unless CH2M Beca has expressly agreed otherwise with the Client in writing).

This report has been prepared by CH2M Beca on the specific instructions of our Client. It is solely for our Client's use for the purpose for which it is intended in accordance with the agreed scope of work. Any use or reliance by any person contrary to the above, to which Beca has not given its prior written consent, is at that person's own risk.

Executive Summary

Mackenzie District Council (MDC) commissioned CH2M Beca Ltd (CH2M Beca) to undertake a Contamination Assessment on the outfall trench of Twizel Wastewater Treatment Plant in Mackenzie District. Use of the southern portion of the trench is to be discontinued and is proposed to become a future rural residential subdivision. The investigation of the outfall trench was undertaken to assess contaminants within the trench and the requirements of subdivision activities under the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (NESCS)) Regulations.

Due to use of the site as a wastewater treatment plant, the following activity under the Hazardous Activities and Industries List (HAIL) of the (NESCS) Regulations is applicable:

- G6 – Waste recycling or waste or wastewater treatment

Desk-based review of historical information, historical aerial photography, MDC property files, discharge consents and Environment Canterbury records did not reveal any additional contaminating activities or incidents beyond the above activity.

Heavy metals analysis was undertaken on 15 surface soil samples collected along the outfall trench and showed no exceedances of Human Health criteria for Residential (25% produce) land use. Concentrations of metals exceeded published background concentrations for the following metals:

- Cadmium – All samples (lab detection limit exceeds background, however 5 samples were above the lab detection limit)
- Copper – 13 Samples
- Lead – All samples
- Zinc – All samples

The results show that soils in the outfall trench at the time of sampling are below human health risk criteria for residential (with 25% produce) land use and therefore do not present a risk to this future land use. Risk to human health should not be affected provided the trench is not subject to wastewater outfall or contaminating incidents in future.

The outfall trench soils will not require remediation or removal for human health protection reasons prior to backfilling of the outfall trench.

Land use consent for subdivision and land use change activities must be sought as a Controlled Activity under NESCS Regulation 9(3).

No assessment of consenting requirements for soil disturbance under the NESCS was assessed in this report. If soil disturbance is likely as part of the backfilling of the trench, then this assessment will need to be undertaken. In addition, there are requirements under the proposed Canterbury Water and Land Regional Plan in relation to soil disturbance, should such activities be undertaken.

Contents

1	Introduction	1
1.1	Background	1
1.2	Purpose and Scope	1
2	Site Description	2
2.1	Site Location and Area	2
3	Environmental Setting	3
3.1	Current Land Use	3
3.2	Surrounding Land Use	3
3.3	Topography	3
3.4	Sensitive Receptors/Hydrology	3
3.5	Geology	3
3.6	Hydrogeology	3
4	Information Search	4
4.1	Certificate of Title	4
4.2	Historical Aerial Photographs	4
4.3	Regional Council Information	4
4.4	Mackenzie District Council Information	5
4.5	Site Walkover	5
4.6	Information from people knowledgeable of site operations	5
4.7	Summary of Information Search	6
5	Site Investigation Scope and Rationale	7
5.1	Contaminants of Potential Concern and Investigation Rationale	7
5.2	Soil Sampling Methodology	7
6	Assessment Criteria	9
7	Results	10
7.1	Fieldwork Observations	10
7.2	Summary of Soil Analytical Results	10
7.3	Quality Assurance and Quality Control	10
8	Site Characterisation and Risk Assessment	11
8.1	Risk Assessment from Soil Contamination	11
8.2	Exposure Pathway Assessment	11
8.3	Limitations of Site Characterisation	12
9	Development Implications	13
9.1	Discussion	13
9.2	Consents	13
10	Conclusions	15

11 Limitations

16

Appendices

Appendix A

Certificates of Title

Appendix B

Historical Aerial Photographs

Appendix C

Listed Land Use Information

Appendix D

MacKenzie District Council Information

Appendix E

Sample Location Plan

Appendix F

Hill Laboratories Chain of Custody Form

Appendix G

Soil Analysis Results Summary

1 Introduction

CH2M Beca Ltd (CH2M Beca) has been commissioned by Mackenzie District Council (MDC) to undertake site Contamination Assessment for the outfall trench located at Twizel Wastewater Treatment plant (WWTP). Use of the southern portion of the trench is to be discontinued and is proposed to become a future rural residential subdivision. The investigation of the outfall trench was undertaken to assess potential contaminants within the trench. This information is to be used specifically in relation to the proposed subdivision of the land.

1.1 Background

The current Twizel WWTP includes a 2.5 km long outfall trench that runs through the property to the south of the main WWTP area. The southern portion has not been utilised for a number of years and upgrades of the WWTP are currently proposed to formally discontinue the use of the trench. The trench runs through privately owned land and is proposed to become a future rural residential subdivision. MDC wish to backfill the trench and return the land to the owner, ensuring it is suitable for the proposed use of subdivision.

1.2 Purpose and Scope

The purpose of the desk study was the following:

- Identify potential contaminants in the outfall trench soils as a result of current or historical activities within the area of development.
 - Confirm contaminated land consent requirements for land subdivision under the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (NESC).

The scope of works included a desk-based review of historical background information and soil sampling. The following information sources were reviewed:

- Review the ECan Listed Land Use Register information held for the site;
- Review MDC property files for the site;
- Review historical aerial photographs to ascertain location of former structures or filling areas;
- Undertake a site walkover inspection; and
- Undertake soil sampling at approximately 15 locations (plus one sample for quality assurance purposes) along the outfall trench and within the proposed subdivision area and have soil samples analysed for heavy metals at the laboratory.

This assessment has been undertaken and reported in general accordance with the *Ministry for the Environment (MfE) Contaminated Land Management Guidelines No. 1 – Reporting on Contaminated Sites in New Zealand* (2011) and *MfE Contaminated Land Management Guidelines No. 5 – Site Investigation and Analysis* (2011).

2 Site Description

2.1 Site Location and Area

The site is a wastewater outfall trench located at the Twizel WWTP site on State Highway 8, Twizel, crossing two land parcels. The outfall trench begins directly adjacent to the WWTP (Section 1 SO 18355) and travels south through Lot 1 DP 422901 towards the Ohau River via Lot 3 DP 422901. The location of the property is shown in **Figure 1** below.

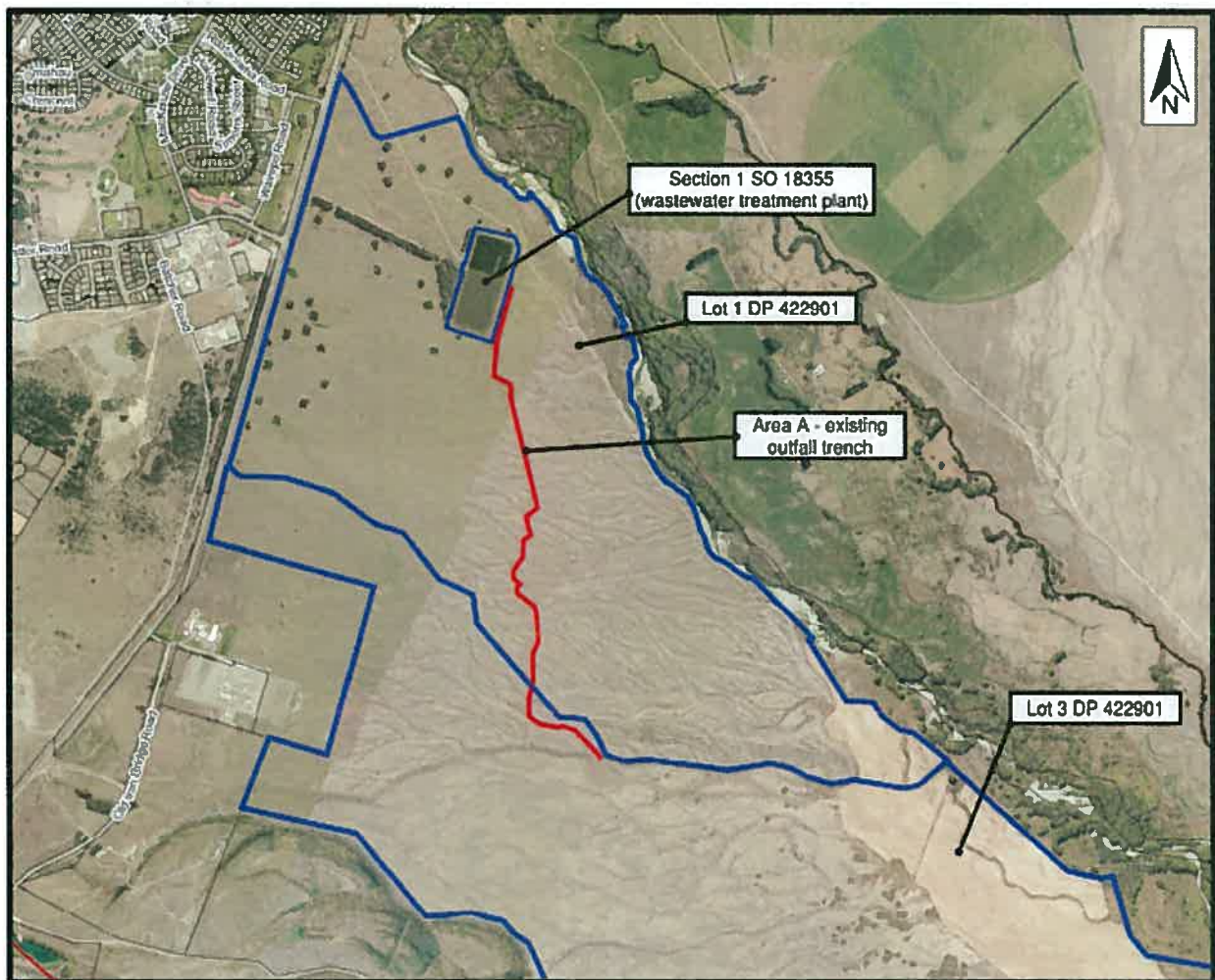


Figure 1: Land parcels (blue outline), the outfall trench (red) and legal descriptions of land areas.

3 Environmental Setting

3.1 Current Land Use

The area of concern is currently a wastewater outfall trench associated with the Twizel WWTP, used for the discharge of treated wastewater.

3.2 Surrounding Land Use

The northernmost 200 m section of the outfall trench is directly adjacent to the Twizel WWTP oxidation ponds. The trench meanders south, with surrounding land comprising grassland with scattered trees. The land located approximately 300-500 m east is pastoral, and there are residential properties over 1 km northwest. Approximately 1 km west of the southern 200 m of Area A is an electrical substation.

3.3 Topography

The land parcel and outfall trench slope slightly to the south-southeast.

3.4 Sensitive Receptors/Hydrology

Ohau River is approximately 650 m from the southern end of the outfall trench, and links Lake Ohau with artificial Lake Ruataniwha. Ohau River flows in a southeasterly direction for 8 km. Twizel River is approximately 350 m east at its closest point to the outfall trench and flows southeast.

3.5 Geology

The underlying geology of the outfall trench and WWTP site is gravel with sand, silt and clay. The New Zealand Institute of Geological and Nuclear Sciences describes the site as: "generally unweathered; variable mixtures of gravel/sand/silt/clay forming extensive terraces or plains¹".

3.6 Hydrogeology

ECan groundwater monitoring wells show local groundwater levels to be variable. West of the site, directly west of SH8 and others southwest of the outfall trench, groundwater levels vary around 15 m below ground level (bgl). Measurements from wells northeast of the site, taken closer to the Twizel River, show groundwater levels at 1-3 m bgl.

There is a groundwater well approximately 350 m south of the southernmost point of the trench that is used for investigative purposes. There are no other wells within 500 m of the site.

¹ Edbrooke, S.W. (custodian) 2014. Geological Map of New Zealand 1:250 000. Institute of Geological & Nuclear Sciences.

4 Information Search

4.1 Certificate of Title

The Certificate of Title (CT) was obtained for the site and is included in **Appendix A**.

CTs detail the current owner of the land as high Country Rosehip Orchards Limited. There was no additional information relating to potentially contaminating activities.

4.2 Historical Aerial Photographs

Historical aerial photographs for the site have been sourced from Opus Photosales for the years 1960 and 1980, with later aerials from 2004 onwards have been sourced from the ECan GIS viewer and Google Earth. The aerial photographs have been reviewed to identify any changes in land use activities on the outfall trench area and the wider site surrounding properties, with the following observations made:

- **1960:** The land parcel is high country grassland with a river to the northeast and to the south. There is a road running along the western border. There is an area east of the northern river that may have been converted to pasture. The remaining surrounding area is highcountry grassland.
- **1980:** The land parcel has a wastewater treatment pond located in the northern area of the eastern boundary, approximately 50 m from the river to the north. A river/stream/trench is running from the southeast corner of the wastewater treatment pond and an access track from the main road approaches the pond from the northeast. Twizel Township has been developed directly on the western side of the road on the western boundary. An electricity substation is located directly southeast of the land parcel. Southwest of the electricity plant, some earthworks are being undertaken.
- **2006 – 2015:** Several trees are now on the western side of the land parcel. Some additional pasture conversion has occurred northeast of the northern river. Southwest of the substation has been flooded to form a lake.

Historical aerial images are provided in **Appendix B**. With reference to the existing site owner as Country Rosehip Orchards Ltd, no evidence of any orcharding activities were visible in the historical aerial photographs that would indicate that the site, or land directly adjacent to the site, has been used for orcharding.

4.3 Regional Council Information

4.3.1 Listed Land Use Register/Selected Land Use Register

Listed Land Use Register (LLUR) Statements were obtained from ECan on 16th June 2015 (**Appendix C**). LLUR Statements indicate whether land uses that appear on the Hazardous Activities and Industries List (HAIL) are known to currently or historically have taken place on site.

The LLUR indicates the WWTP oxidation ponds as “verified HAIL has not been investigated” under the following HAIL code:

- G6 – Waste recycling or waste or wastewater treatment.

The LLUR states that HAIL designation of the oxidation ponds is based on aerial photography from 2004.

4.3.2 Discharge Consents

Information on discharge consents was obtained from the ECan GIS Viewer on 16th June 2015.

A number of consents were applicable to the site historically, relating to gravel excavation from Twizel River. One current and one expired consent relate to the discharge up to 450 cubic metres of oxidation pond effluent per day to the ground in the area adjacent to the ponds – assumed to be in relation to the outfall trench.

4.4 Mackenzie District Council Information

The physical property file for the site was viewed by CH2M Beca on 1st July 2015. Information relevant to the site history and potential contamination sources has been retrieved and reviewed below, and is included in **Appendix D**.

There was little contained in the property file relating to contaminating activities. There was a building consent for a 121.5 m² capacity farm-shed north of the land parcel, for the purpose of vehicle storage, located in the northern land parcel. Plans for a residential house showed a garage area that contained a 'workshop' attached to a two-car garage; however this was likely for residential use.

4.5 Site Walkover

A site walkover was undertaken by a CH2M Beca Environmental Scientist on 1st July 2015. The site had been subject to low temperatures and snowfall in the preceding weeks; however despite snow cover, soils on site had thawed at the time of the visit.

The site is located in a large area of grassland. The northernmost point of the wastewater trench was located adjacent to the east of the wastewater treatment ponds in the northern part of the land parcel. The trench contained the treated wastewater discharge of approximately 500 mm depth for the northernmost 150 m, after which it was dry (apart from variable levels (50-200 mm) of snow) until its terminal point 2.5 km south. In the last 300 m, the depth of the trench became shallower until it was indecipherable from the surrounding grassland, and a farm track ran parallel to the east. The southern half of the trench, in particular the final quarter, appeared not to have been utilised in some time.

The trench contained vegetation such as lupin that had experienced winter dieback, and beneath the snow was grass that appeared healthy.

4.6 Information from people knowledgeable of site operations

Site operations were discussed with CH2M Beca wastewater specialist Graeme Jenner who has an understanding of the site's operational history. The WWTP predominantly services Twizel township, receiving residential wastewater and predominantly that from hospitality businesses. The plant receives no tradewaste and is not used for agricultural waste.

MDC confirmed on 27 July 2015 that the northernmost 500 m of outfall trench remains in regular use; however the southern 2 km (including the entire subject site) has not been used by the WWTP for over 5 years, following works on the trench to retain wastewater within the top 500 m.

MDC also confirmed that the remaining length of trench has been subject only to seasonal change in moisture levels in the last 5 years and has remained predominantly dry in this time.

4.7 Summary of Information Search

The land parcel has predominantly been occupied by high country grassland since the 1960s. The Twizel WWTP was developed in the north of the land parcel in the 1970s, together with a discharge trench running south. As a result of these activities, ECan have the WWTP ponds listed on the LLUR as HAIL activity G6.

Little has changed on the site since the inception of the WWTP, with no discharge consents indicative of contaminating activities other than those associated with the WWTP, which includes discharge of wastewater to the outfall trench.

The site walkover confirmed the presence of the trench, and its use for wastewater outfall. The trench was visible for the majority of its length, however became much shallower towards the end. The southern half appeared not to have been in use for some time.

The Preliminary Site Investigation section of this report is therefore unable to conclude that, due to the use of the site as a wastewater outfall trench, subdivision of the site is not 'highly unlikely' to affect human health.

5 Site Investigation Scope and Rationale

5.1 Contaminants of Potential Concern and Investigation Rationale

Review of the site historical information has identified the following land use activities which may have resulted in the contamination of soil and/or groundwater at the site. Contaminants of potential concern associated with these activities have also been identified.

Table 1: Contaminants of Potential Concern

Activity	HAIL Code	Contaminants of Potential Concern
■ Wastewater oxidation ponds and outfall trench	■ G6 – Waste recycling or waste or wastewater treatment	■ Metals including arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc

The area of the outfall trench located in land to be subdivided has not had wastewater discharge flowing through it for at least five years. This is considered sufficient time for the degradation of biological hazards. Additionally, the WWTP receives domestic wastewater but does not receive trade or agricultural waste. The trench has been periodically dry, further contributing to the low chance of biological hazards remaining. As a result it was considered unlikely that contaminants from such activities would be present, and therefore were not tested for. The contaminant suite therefore considered most likely to be representative of the source, given a period of disuse, is heavy metals.

Sample locations were selected using a systematic approach along the outfall trench. This included areas of likely future excavation around the WWTP ponds and the southern half of the outfall trench where land is to be subdivided. Soil samples were collected from the soil surface at each sampling location at regular intervals based on visual observations and significant geological changes.

5.2 Soil Sampling Methodology

5.2.1 Summary of Field Work

The soil investigation was undertaken on 1st July 2015 and surface soil samples were collected from 15 locations, including one duplicate sample for quality checking purposes. Sample location Plan is provided in **Appendix E**.

Soil samples were collected directly by hand. A clean pair of nitrile gloves was worn for each sample to prevent cross-contamination. Samples were placed in laboratory supplied glass jars as appropriate and chilled prior to dispatch to R J Hill Laboratories Ltd (Hill Laboratories).

All sampling equipment was decontaminated between sampling locations using DECON 90.

Field sampling and relevant sampling management procedures were undertaken in accordance with the MfE *Contaminated Land Management Guidelines No.5 – Site Investigation and Analysis (2011)*.

All chemical laboratory analyses were undertaken by Hill Laboratories. A copy of the Hill Laboratories reports including Chain of Custody forms which detail the required handling and testing instructions are included in **Appendix F**.

A total of 16 soil samples were analysed for heavy metals. Soil samples were selected for analysis to provide spatial coverage of the outfall trench areas of interest. Soil samples not selected for analysis were held cold at the laboratory. A data summary sheet of the results is presented in **Appendix G**.

5.2.1 NESCS Permitted Activity Provisions

Given activities on the Hazardous Activities and Industries List (HAIL) have been undertaken on this site, the *National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health 2011* (NESCS) applies with respect to activities including soil sampling. Where undertaken in accordance with Regulation 8(2) the soil sampling for investigation of contaminated land is a permitted activity. In accordance with Regulation 8(2), measures were in place to minimise human exposure to contaminants before, during and after the sampling programme and the sampling locations were immediately restored to an erosion resistant state upon completion of the sampling program. No soil was removed from the site other than for chemical laboratory analysis.

6 Assessment Criteria

6.1.1 Assessment of Human Health Risk

The adopted assessment criteria for the investigation have been selected in accordance with the hierarchy defined by *Ministry for the Environment (MfE) Contaminated Land Management Guidelines No.2* (MfE, 2002) and are summarised below. Assessment criteria for a residential 25% produce land use scenario have been adopted. It is understood that the proposed subdivision is to create a number of 'lifestyle blocks' ranging from approximately 1200 m² to 2 Ha. Therefore the criteria against which the samples were assessed were under a Residential scenario with up to 25 % of land use as productive, i.e. for edible plants.

- *Resource Management (National Environment Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011. Soil Contaminant Standards for a "Residential 25% produce" scenario;*
- *Guideline on the Investigation Levels for Soil and Groundwater (NEPC 1999).*

7 Results

7.1 Fieldwork Observations

As only surface soil sampling was undertaken, all samples were topsoil with traces of coarse gravel; soil types were consistent for all samples. There were no visual or olfactory indications of soil contamination.

7.2 Summary of Soil Analytical Results

7.2.1 Metals

15 soil samples were analysed for metals. In summary:

- The soil contaminant standards for human health risk for residential (25% produce) were not exceeded in any soil sample analysed;
- Background concentrations were exceeded in all samples for lead and zinc;
- Copper background concentrations were exceeded in all but two samples (SS01 and SS02);
- Cadmium exceeded background concentrations five samples, and had technical exceedances² of background concentrations in all remaining samples
- All other metals tested for were within background and all adopted soil contaminant standards used.

7.3 Quality Assurance and Quality Control

One duplicate soil sample(s) was analysed as part of the investigation. The relative percentage difference (RPD) between the primary and duplicate samples has been calculated. The RPD ranged from 0% to 41%. These results indicate a high level of accuracy in the sampling and analytical methods used in this investigation.

It is considered that the analytical results are considered appropriate and suitable for the purpose of this investigation.

² Technical exceedances refer to assumed exceedances of background concentrations due to laboratory detection limits for cadmium being greater than the background concentration.

8 Site Characterisation and Risk Assessment

8.1 Risk Assessment from Soil Contamination

Although above background concentrations for cadmium, copper, lead and zinc, concentrations of heavy metals were present in soil samples, all concentrations were below adopted criteria for the protection of future residents at the time of sampling.

The results of the sampling show that the site has low level contaminants present in the soils as a result of the wastewater discharge. Provided the land is not subject to contaminating activities or incidents the contaminant levels are unlikely to pose a risk to human health considering a residential land use is proposed.

8.2 Exposure Pathway Assessment

The Conceptual Site Model (CSM) (see Table 2 below) was developed to inform the investigation and to describe the relationship between sources of contamination on site, the human and environmental receptors that may be exposed to those contaminants in the context of future residential use of the site, and the pathways by which those receptors may be exposed.

Overall, recorded soil contaminant concentrations should not prohibit the subdivision of the site.

Table 2: Conceptual Site Model

Source	Receptor	Pathway	Pathway Complete?
■ Heavy metals	Construction workers	Exposure of workers to contaminants in soils and groundwater during site redevelopment – dermal contact, ingestion or inhalation of dust/vapours.	Incomplete Pathway – Concentrations of contaminants below outdoor worker criteria
	Future site users	Exposure of future site users to contaminants in soils – dermal contact, ingestion or inhalation of dust/vapours.	Incomplete Pathway – Concentrations of contaminants below criteria for 'Residential (25% produce)' use and will be capped on backfilling of the trench
	General public	Exposure of general public to contaminants in soils– dermal contact, ingestion or inhalation of dust/vapours.	Incomplete Pathway – Contaminant levels are below Residential (25% produce) criteria

Source	Receptor	Pathway	Pathway Complete?
			and use and will be capped on backfilling of the trench
	Groundwater resources for public consumption	Leaching and migration of soil contaminants into groundwater	The potential completeness of this pathway has not been assessed

8.3 Limitations of Site Characterisation

Characterisation of subsurface conditions is dependent on the number of sample locations, methods of sampling and the uniformity of subsurface conditions. The accuracy of this characterisation is therefore limited by the Scope of works undertaken in accordance with the MfE Guidelines. There is the possibility that contamination present on the site has not been described. Whilst contaminant concentrations may be estimated at chosen sample locations, conditions at any location removed from the specific points of sampling can only be inferred on the basis of geological and hydrogeological conditions and the nature and the extent of identified contamination. Subsurface conditions can vary, resulting in uneven distribution of contaminants across a site which cannot be defined by these investigations. In addition, with time, the site conditions and environmental guidelines could change so that the reported assessments and conclusions are no longer valid. The conclusions of this report are made on the basis that the site conditions revealed by the investigation are representative of the actual conditions across the site at the time of sampling.

9 Development Implications

9.1 Discussion

The results show that contaminants in soils in the outfall trench are below human health risk criteria for residential (with 25% produce) land use and therefore do not present a risk to this future land use. Furthermore, the intention is for the trench to be backfilled with cleanfill, which will separate the material from surface activities and further reduce human health risk.

The outfall trench soils will not require remediation or removal for human health protection reasons prior to backfilling of the outfall trench.

9.2 Consents

9.2.1 National Environmental Standard

The *Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011* (NESCSCS) applies to land as per clause 5(7):

"Land covered:

- (7) *The piece of land is a piece of land that is described by 1 of the following:*
- (a) an activity or industry described in the HAIL is being undertaken on it;*
 - (b) an activity or industry described in the HAIL has been undertaken on it;*
 - (c) it is more likely than not that an activity or industry described in the HAIL is being or has been undertaken on it."*

The following Hazardous Activities and Industries List activities have been identified for this site:

- G6 – Waste recycling or waste or wastewater treatment

The NESCSCS applies to certain activities taking place on HAIL land. The following activities are triggered for this site:

- Subdivision and change in land use

Subdivision and change in land use

The desk study section of this report was unable to state that the subdivision and change in land use was 'highly unlikely' to be a risk to human health due to the area being used for wastewater discharge. Therefore the activity could not meet Permitted Activity criteria (Regulation 8(4) NESCSCS), specifically 8(4)(b):

(b) the report on the preliminary site investigation must state that it is highly unlikely that there will be a risk to human health if the activity is done to the piece of land

As a result the activity is considered a Controlled Activity under Regulation 9 of the NESCSCS.

Soil sampling established that concentrations of heavy metals are below the human health criteria for residential land use (with 25% productive land), which qualifies the subdivision activity as a Controlled Activity under Regulation 9(3) of the NESCSCS, provided that the following additional requirements are met:

(c) the consent authority must have this report

(d) conditions arising from the application of subclause (4), if there are any, must be complied with.

Requirements (a) and (b) under Regulation 9(3) have been met in this report. Subclause 4 relates to the adequacy of this DSI report, which will be assessed by the consent authority against site sampling, laboratory analysis, and risk assessment.

Soil disturbance

It has not yet been determined whether the outfall trench will require any additional soil disturbance or removal as a part of the backfilling works and soil disturbance consenting assessment was outside of the scope of this report. However, should the trench soils be disturbed, the following regulations must be complied with:

(a) controls to minimise the exposure of humans to mobilised contaminants must—

(i) be in place when the activity begins:

(ii) be effective while the activity is done:

(iii) be effective until the soil is reinstated to an erosion-resistant state:

(b) the soil must be reinstated to an erosion-resistant state within 1 month after the serving of the purpose for which the activity was done:

(c) the volume of the disturbance of the soil of the piece of land must be no more than 25 m³ per 500 m²:

(d) soil must not be taken away in the course of the activity, except that,—

(i) for the purpose of laboratory analysis, any amount of soil may be taken away as samples:

(ii) for all other purposes combined, a maximum of 5 m³ per 500 m² of soil may be taken away per year:

(e) soil taken away in the course of the activity must be disposed of at a facility authorised to receive soil of that kind:

(f) the duration of the activity must be no longer than 2 months:

(g) the integrity of a structure designed to contain contaminated soil or other contaminated materials must not be compromised.

The Canterbury Natural Resources Regional Plan (NRRP) and the proposed Canterbury Land and Water Regional Plan (pLWRP) outline Policies and Rules in relation to natural resources within the jurisdiction of ECan. The pLWRP has surpassed the timeframe for additional appeals to the Environment Court and all appeals on stormwater discharge matters have been resolved. Due to this, the pLWRP is considered to have greater weight than the NRRP. There are requirements under the pLWRP in relation to soil disturbance, should such activities be undertaken.

10 Conclusions

The site desk study and historical review established that the site had wastewater treatment ponds and an outfall trench developed between the 1960s and late 1970s that remain on site to the present day. Little other development of the site has been undertaken since then.

The soil investigation focussed on the collection of soil samples in a systematic fashion along the wastewater outfall trench and where the outfall trench passes through the proposed subdivision site. Fifteen surface samples were hand excavated. Background concentrations for cadmium, copper, lead and zinc were exceeded however results show that levels of contamination are below all applicable human health soil contaminant standards for residential (25%) produce under the Resource Management (National Environmental Standard for Assessing and Managing contaminants in Soil to Protect Human Health) Regulations 2011. Soils do not pose a health risk to future residential users.

Soil analytical results do not indicate that the outfall trench has been significantly impacted as a consequence of historical land use activities. Overall, recorded soil contaminant conditions should not prohibit the proposed subdivision activities.

Based on the results of this investigation the subdivision/changing land use activities associated with the project will require land use consent under Regulation 9 of the NESCS as a Controlled Activity.

11 Limitations

This report has been prepared by CH2M Beca Ltd (CH2M Beca) solely for MacKenzie District Council (Client). CH2M Beca Ltd has been requested by the Client to provide a Contamination Assessment for Twizel Wastewater Treatment Plant outfall trench on State Highway 8 in Twizel. This report is prepared solely for the purpose of the assessment of potential soil contamination (Scope). The contents of this report may not be used by the Client] for any purpose other than in accordance with the stated Scope.

This report is confidential and is prepared solely for the Client. CH2M Beca Ltd accepts no liability to any other person for their use of or reliance on this report, and any such use or reliance will be solely at their own risk.

This report contains information obtained by inspection, sampling, testing or other means of investigation. Unless specifically stated otherwise in this report, CH2M Beca Ltd has relied on the accuracy, completeness, currency and sufficiency of all information provided to it by, or on behalf of, the Client or any third party, including the information listed above, and has not independently verified the information provided. CH2M Beca Ltd accepts no responsibility for errors or omissions in, or the currency or sufficiency of, the information provided. Publicly available records are frequently inaccurate or incomplete.

The contents of this report are based upon our understanding and interpretation of current legislation and guidelines ("Standards") as consulting professionals, and should not be construed as legal opinions or advice. Unless special arrangements are made, this report will not be updated to take account of subsequent changes to any such Standards.

This report should be read in full, having regard to all stated assumptions, limitations and disclaimers.

Appendix A

Certificates of Title



**COMPUTER FREEHOLD REGISTER
UNDER LAND TRANSFER ACT 1952**



R. W. Muir
Registrar-General
of Land

Search Copy

Identifier 489340
Land Registration District Canterbury
Date Issued 20 November 2014

Prior References
509804

Estate Fee Simple
Area 246.1960 hectares more or less
Legal Description Lot 1 Deposited Plan 422901

Proprietors
High Country Rosehip Orchards Limited

Interests

817132 Gazette Notice declaring the State Highway Twizel - Omarama Road to be a limited access road - 9.12.1970 at 1.55 pm

Subject to a right to drain sewage over part marked G, H, I and AB on DP 422901 contained in and taken by Gazette Notice 860231 - 17.3.1972 at 9.25 am

Subject to a right to drain sewage over part marked D, J and K on DP 422901 created by Deed of Easement 45A/687 - produced 21.8.1998 at 10.42 am and entered 14.10.1998 at 9:00 am

Subject to Part IVA Conservation Act 1987

Subject to Section 11 Crown Minerals Act 1991

Subject to a right of way (in gross) for purposes of conservation management over part marked AD and a right of way (in gross) for the purposes of public access over part marked AD all on DP 422901 in favour of Her Majesty the Queen created by Easement Instrument 7584791.3 - 19.10.2007 at 9:00 am

Appurtenant hereto is a right of way for the purposes of farm management and stock access and a right to convey water created by Deed of Easement 7584791.4 sec CIR 387078 - 19.10.2007 at 9:00 am

8330351.1 Mortgage to Bank of New Zealand - 11.11.2009 at 3:17 pm

9877186.4 Consent Notice pursuant to Section 221 Resource Management Act 1991 - 20.11.2014 at 2:45 pm

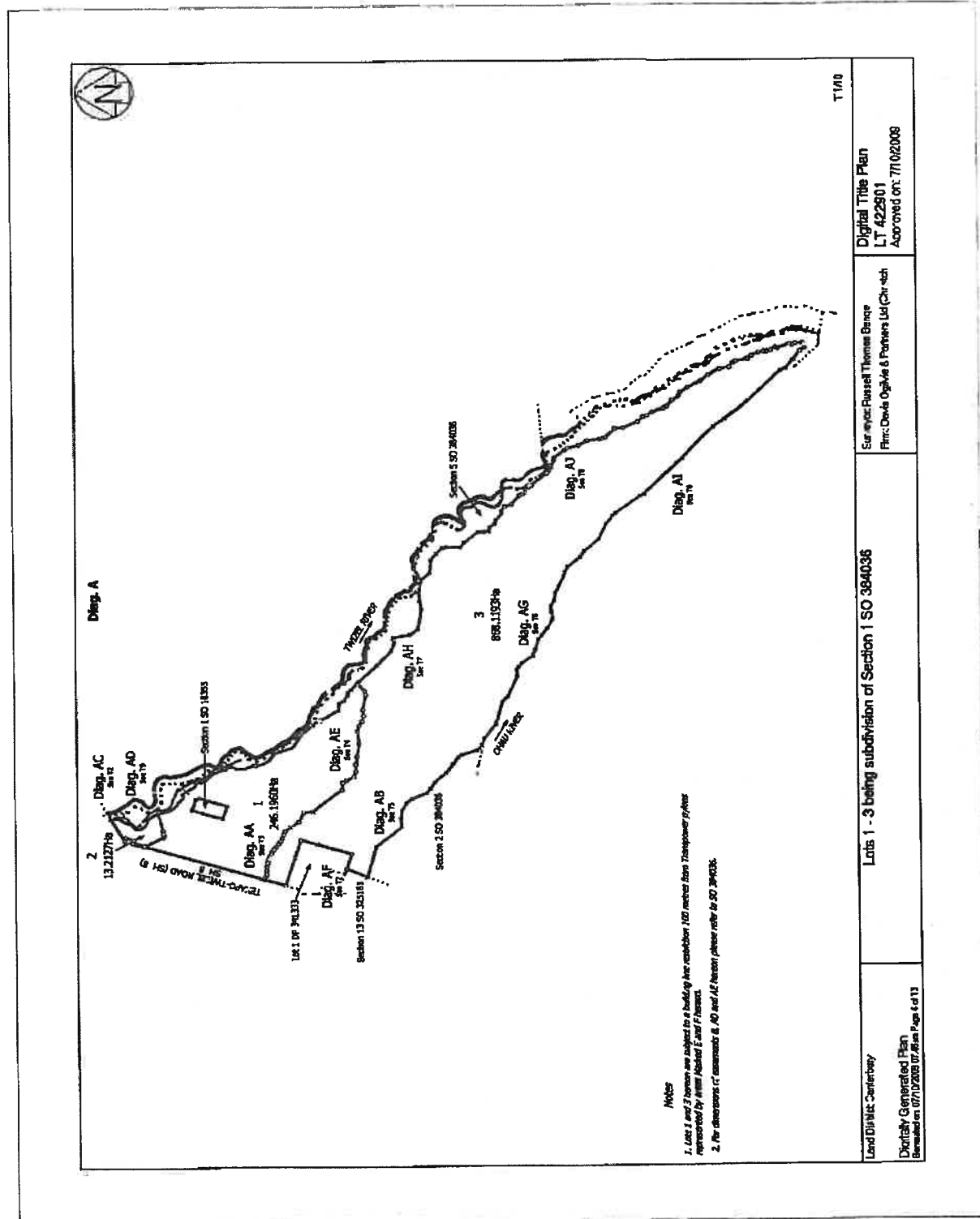
Appurtenant hereto is a right of way, a right to drain sewage and water and a right to convey electricity, telecommunications and water created by Easement Instrument 9877186.5 - 20.11.2014 at 2:45 pm

The easements created by Easement Instrument 9877186.5 are subject to Section 243 (a) Resource Management Act 1991

Subject to a right (in gross) to convey electricity over part marked G on DP 478222 in favour of Meridian Energy Limited created by Easement Instrument 9906693.2 - 11.12.2014 at 4:52 pm

Land Covenant in Easement Instrument 9906693.4 - 11.12.2014 at 4:52 pm

Identifier 489340





**COMPUTER FREEHOLD REGISTER
UNDER LAND TRANSFER ACT 1952**



Search Copy

R.W. Muir
Registrar-General
of Land

Identifier 489341
Land Registration District Canterbury
Date Issued 20 November 2014

Prior References
509804

Estate Fee Simple
Area 13.2127 hectares more or less
Legal Description Lot 2 Deposited Plan 422901
Proprietors
High Country Rosehip Orchards Limited

Interests

817132 Gazette Notice declaring the State Highway Twizel - Omarama Road to be a limited access road - 9.12.1970 at 1.55 pm

Subject to a right to drain sewage over part marked G, H, I and AB on DP 422901 contained in and taken by Gazette Notice 860231 - 17.3.1972 at 9.25 am

Subject to a right to drain sewage over part marked G, H, I and AB on DP 422901 created by Deed of Easement 45A/687 - produced 21.8.1998 at 10.42 am and entered 14.10.1998 at 9:00 am

Subject to Part IVA Conservation Act 1987

Subject to Section 11 Crown Minerals Act 1991

Subject to a right of way (in gross) for purposes of conservation management over part marked A, C, G and AB and a right of way (in gross) for the purposes of public access over part marked A, C, G and AB all on DP 422901 in favour of Her Majesty the Queen created by Easement Instrument 7584791.3 - 19.10.2007 at 9:00 am

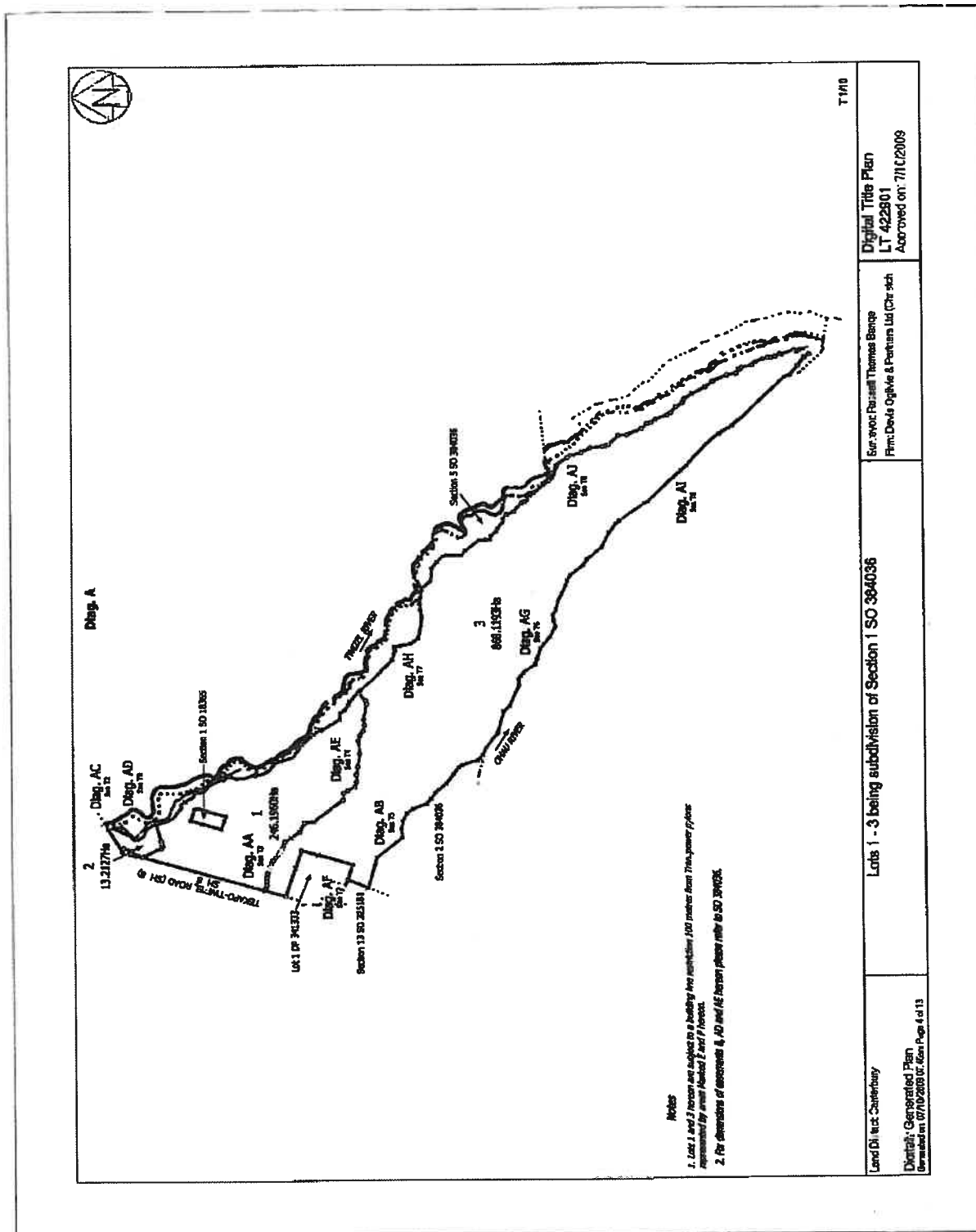
Appurtenant hereto is a right of way for the purposes of farm management and stock access and a right to convey water created by Deed of Easement 7584791.4 see CIR 387078 - 19.10.2007 at 9:00 am

8330351.1 Mortgage to Bank of New Zealand - 11.11.2009 at 3:17 pm

9877186.4 Consent Notice pursuant to Section 221 Resource Management Act 1991 - 20.11.2014 at 2:45 pm

Subject to a right of way, a right to drain sewage and water and a right to convey electricity, telecommunications and water over part marked A, G, H, I, N and AB on DP 422901 created by Easement Instrument 9877186.5 - 20.11.2014 at 2:45 pm

The easements created by Easement Instrument 9877186.5 are subject to Section 243 (a) Resource Management Act 1991

Identifier 489341



**COMPUTER FREEHOLD REGISTER
UNDER LAND TRANSFER ACT 1952**



Search Copy

R. W. Muir
Registrar-General
of Land

Identifier CB45A/677
Land Registration District Canterbury
Date Issued 14 October 1998

Prior References
GN A78080.1

Estate Fee Simple
Area 6.3566 hectares more or less
Legal Description Section 1 Survey Office Plan 18355
Purpose For Sewage Treatment Works

Proprietors
The MacKenzie District Council

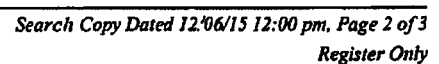
Interests

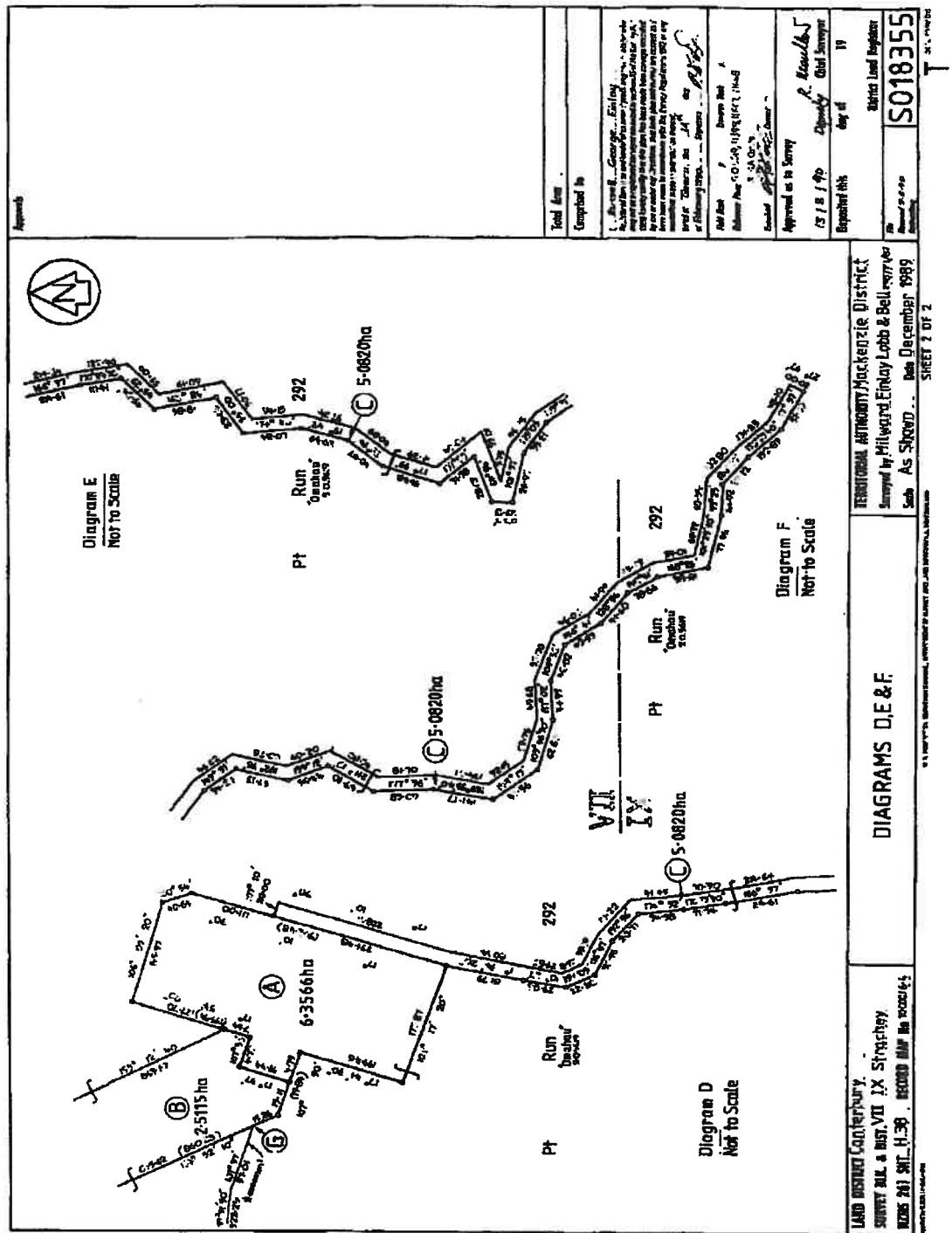
860231 Gazette Notice creating the following easements - 17.3.1972 at 9.25 am

Type	Servient Tenement	Easement Area	Dominant Tenement
Drain sewage	Part Run 292 - CT CB529/231	Part	Section 1 Survey Office Plan 18355 - herein
Drain sewage	Run 292 - CT CB529/231	Part	Section 1 Survey Office Plan 18355 - herein

45A/687 Deed of Easement - Produced 21.8.1998 at 10.42 am and entered 14.10.1998 at 9.00 am

Type	Servient Tenement	Easement Area	Dominant Tenement
Drain sewage	Part Run 292	B SO 18355	Section 1 Survey Office Plan 18355 - herein
Drain sewage	Part Run 292	Blue SO 11669	Section 1 Survey Office Plan 18355 - herein





Appendix B

Historical Aerial Photographs



OPUS

photosale@opus.co.nz
0500 680 690

SN 1061



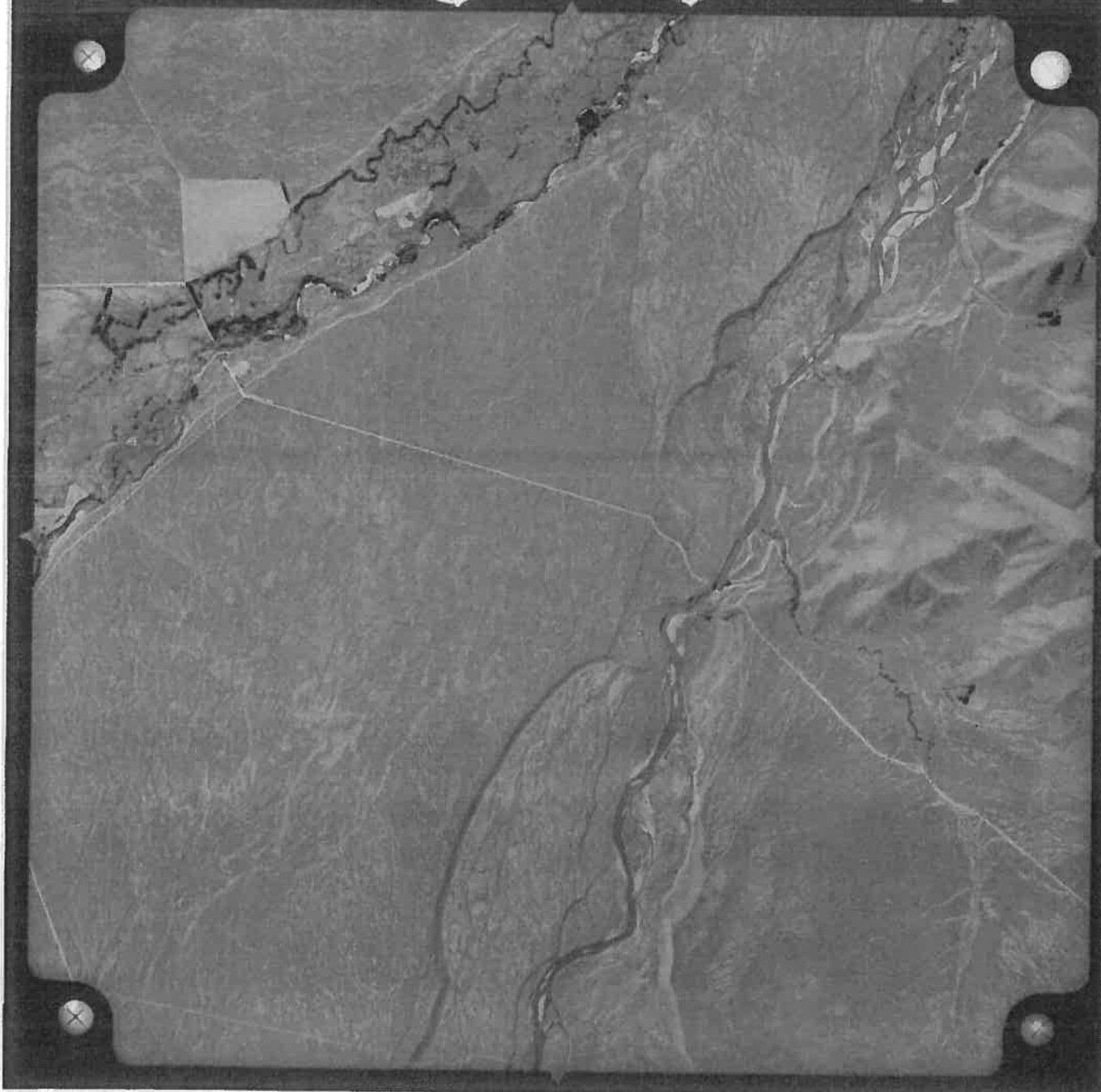
2724/27



25/2/60



1:44000





OPUS

photosales@opus.co.nz
0800 660 620

SN 1061



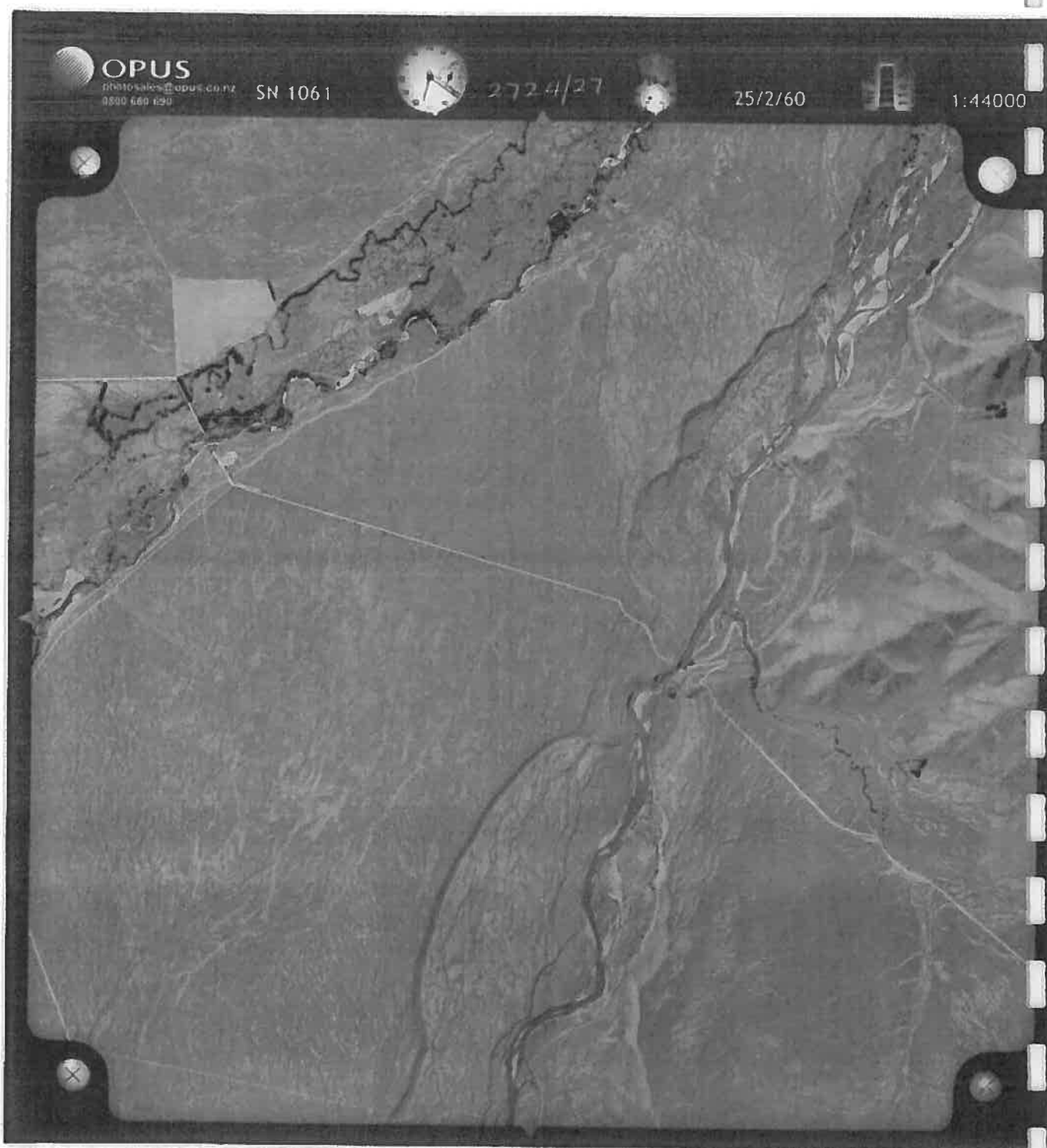
2724/27



25/2/60



1:44000



Appendix C

Listed Land Use Information

Property Statement from the Listed Land Use Register

Visit www.ecan.govt.nz/HAIL for more information about land uses.



Customer Services
P. 03 353 9007 or 0800 324 636

PO Box 345
Christchurch 8140

P. 03 365 3828

F. 03 365 3194

E. ecinfo@ecan.govt.nz

www.ecan.govt.nz

Date:

16 June 2015

Land Parcels:

Section 1 SO 18355

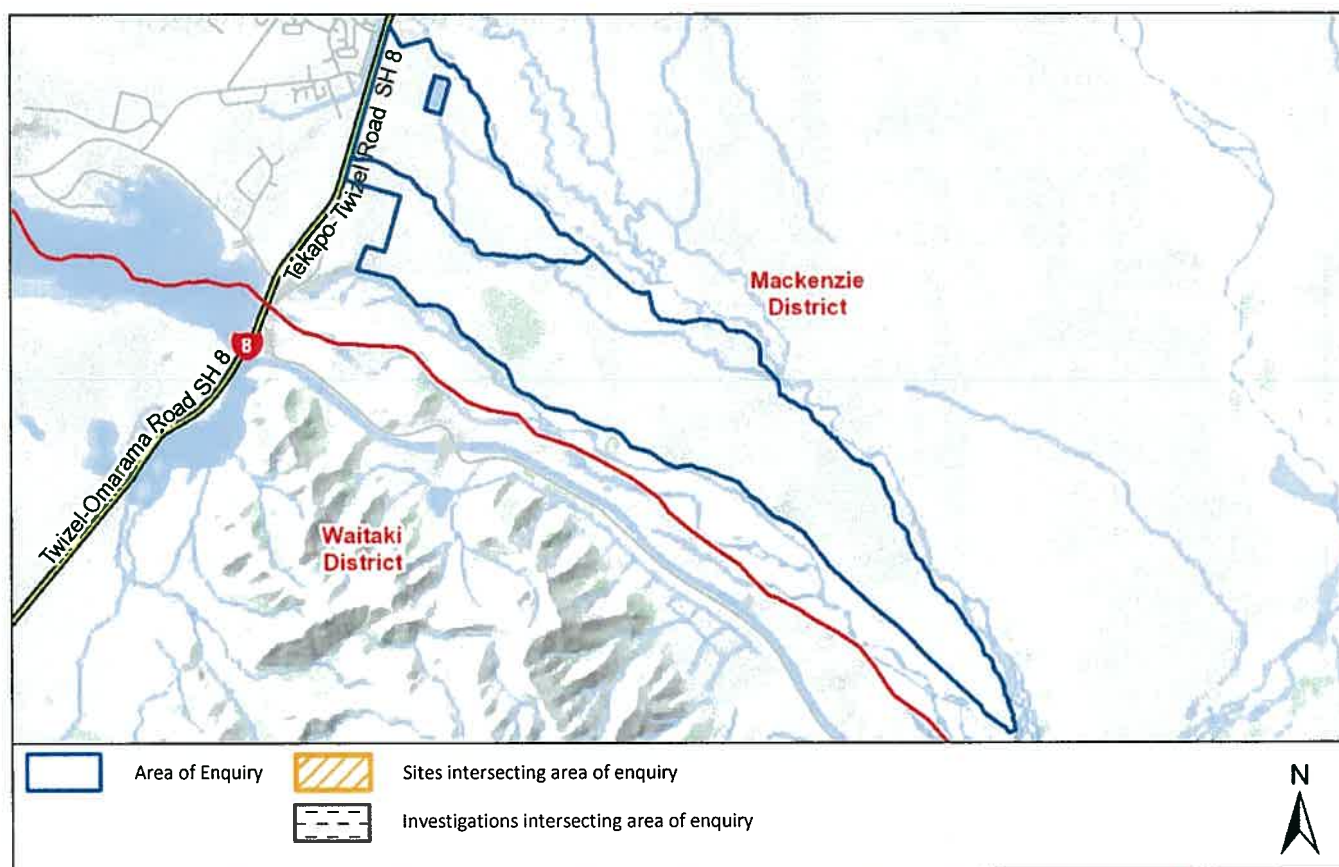
Lot 3 DP 422901

Lot 1 DP 422901

Valuation No(s): 2532000500

Valuation No(s): Not Available

Valuation No(s): Not Available



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

Summary of sites:

Site ID	Site Name	Location	HAIL Activity(s)	Category
25477	Twizel Oxidation Ponds	SH8 Tekapo-Twizel Road, Twizel	G6 - Waste recycling or waste or wastewater treatment;	Not Investigated

Please note that the above table represents a summary of sites and HAILS intersecting the area of enquiry only.

Information held about the sites on the Listed Land Use Register

Site 25477: Twizel Oxidation Ponds (Intersects enquiry area.)

Site Address: SH8 Tekapo-Twizel Road, Twizel
Legal Description(s): Section 1 SO 18355

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

Land Uses (from HAIL):	Period From	Period To	HAIL land use
	Unknown	Current	Waste recycling or waste or wastewater treatment

Notes:

5 Dec 2013 Oxidation ponds observed in 2004 aerial photograph and LINZ topographical map.

Investigations:

There are no investigations associated with this site.

Information held about other investigations on the Listed Land Use Register

For further information from Environment Canterbury, contact Customer Services and refer to enquiry number ENQ98975.

Disclaimer: *The enclosed information is derived from Environment Canterbury's Listed Land Use Register and is made available to you under the Local Government Official Information and Meetings Act 1987 and Environment Canterbury's Contaminated Land Information Management Strategy (ECan 2009).*

The information contained in this report reflects the current records held by Environment Canterbury regarding the activities undertaken on the site, its possible contamination and based on that information, the categorisation of the site. Environment Canterbury has not verified the accuracy or completeness of this information. It is released only as a copy of Environment Canterbury's records and is not intended to provide a full, complete or totally accurate assessment of the site. It is provided on the basis that Environment Canterbury makes no warranty or representation regarding the reliability, accuracy or completeness of the information provided or the level of contamination (if any) at the relevant site or that the site is suitable or otherwise for any particular purpose. Environment Canterbury accepts no responsibility for any loss, cost, damage or expense any person may incur as a result of the use, reference to or reliance on the information contained in this report.

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

Appendix D

**MacKenzie District Council
Information**

APPLICATION PIM/BUILDING CONSENT

SECTION 30-33 BUILDING ACT
Planning and Regulations Department
Direct Dial (03) 685-9017 Facsimile (03) 685-8533



OWNER

Name: JOHN LYONS
Project Site Address: OMAHU RICHARD
ESTATE TWIZEL
Rapid Number: 8585
Telephone: 0274 320 300 Fax: _____

POSTAL ADDRESS

51 FLOWER ST DUNEDIN
Lot No: _____ DP: _____
Valuation No: _____

PROJECT (description of work):

3 BAY FARM SHED
GOLDRINE PRODUCT.

☒ New

PROPOSED USE (use of building or addition):

VEHICLES - STORAGE

FLOOR AREA (new buildings): 121.5 m²

ESTIMATED COMPLETED VALUE OF WORK
(Labour, Materials & GST): \$ 12,000

NAME OF REGISTERED PLUMBER/DRAINLAYER

LIFE INDEFINITE BUT NOT LESS THAN 50 YEARS
UNLESS OTHERWISE STATED:

AGENT (Owners Representative)

Name: AS ABOVE
Address: _____

Telephone: _____ Fax: _____

Application completed by: [Signature]

FEES

Administration \$ _____
Inspection () \$ _____
PIM \$ _____
Plan Check \$ _____
BIA \$ _____
BRANZ \$ _____
TOTAL \$ 325

OFFICE USE

PIM No: _____
BC No: 050012
Receipt No: _____

APPROVALS (Building Consent)

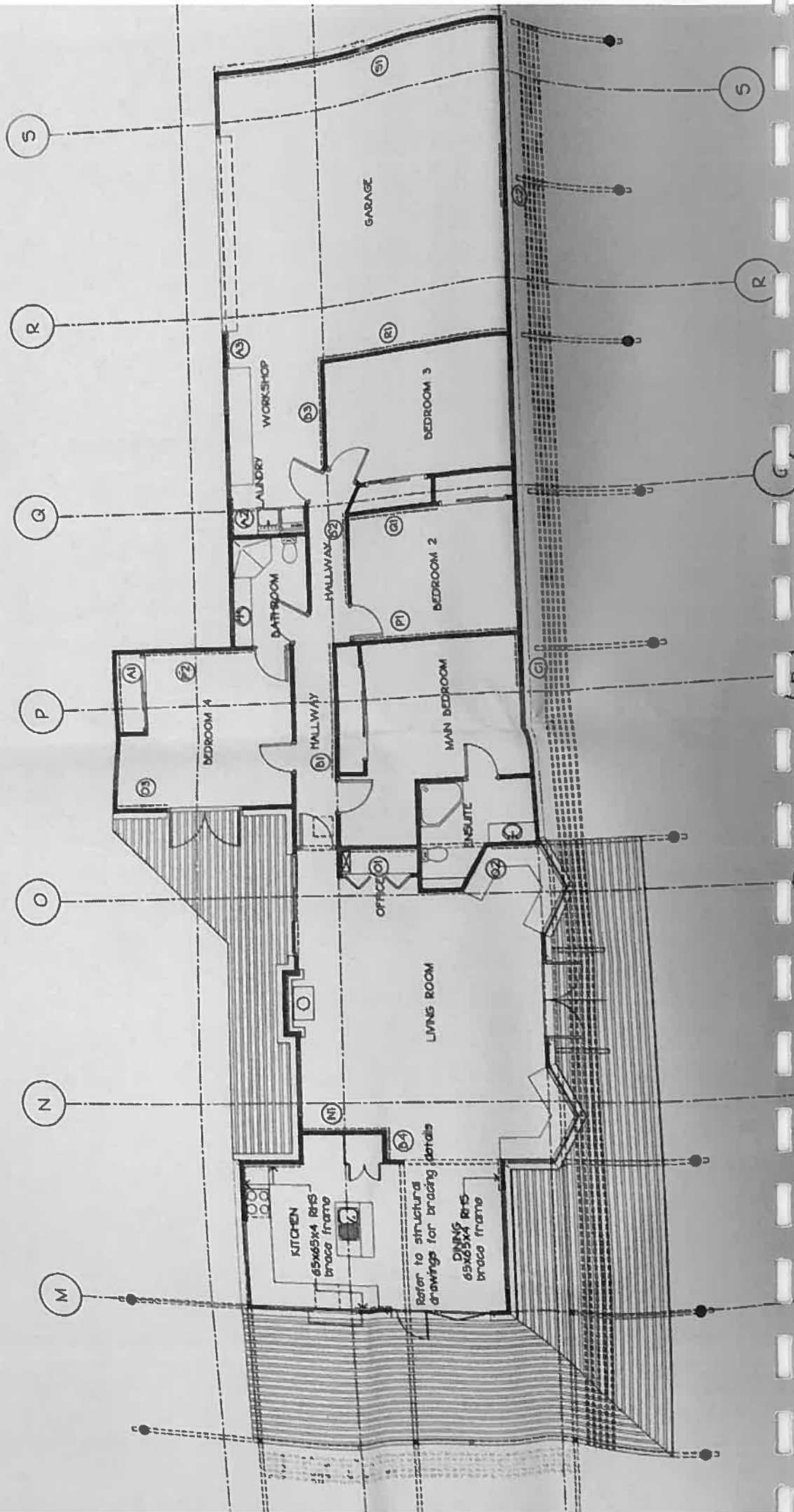
Building: [Signature]
Plumbing/Drainage: _____
Fire: _____

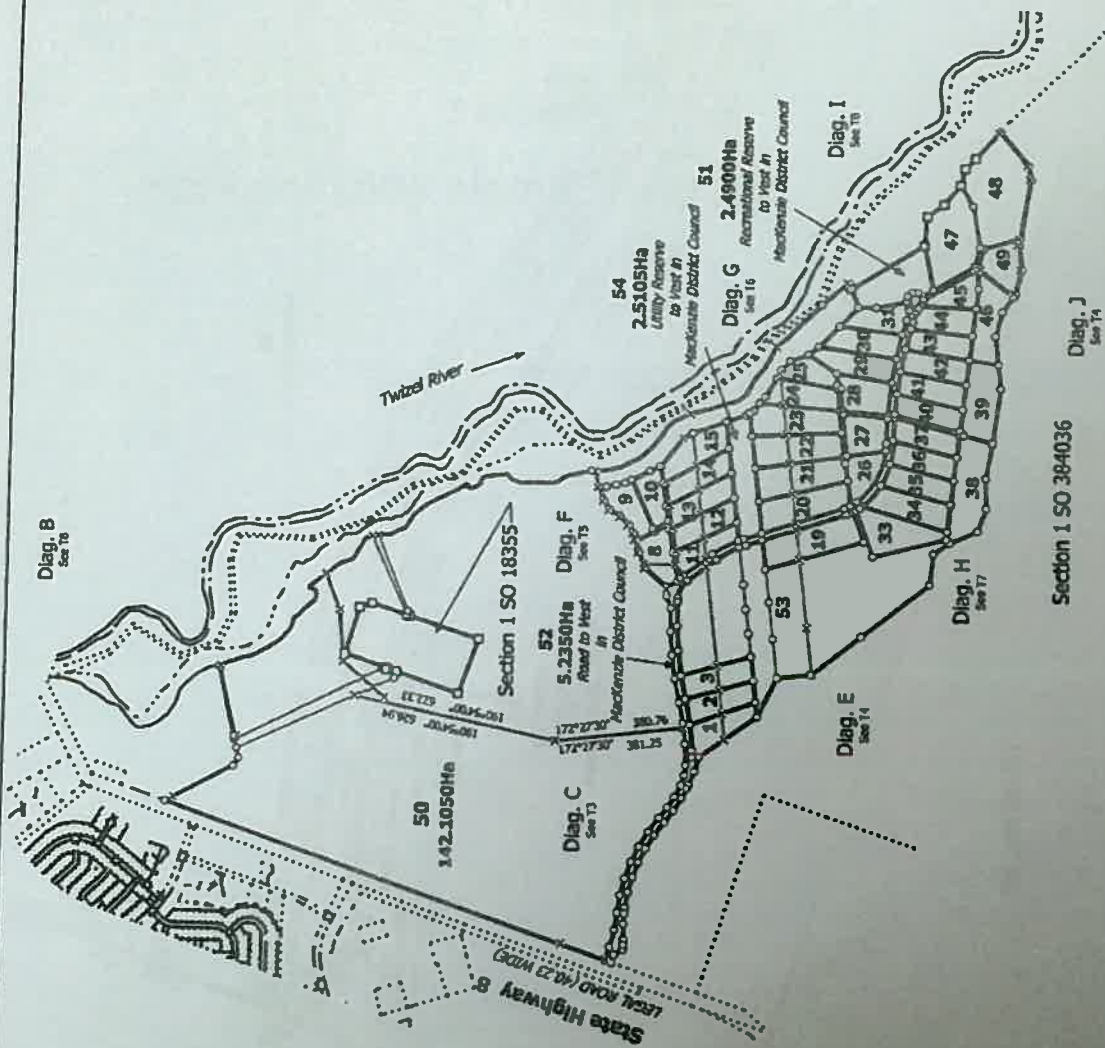
APPROVALS (PIM)

Planning: [Signature]
Dangerous Goods: _____
Health: _____
Roading: _____
Water: _____
Stormwater: _____
Foul Water: _____
Trade Waste: _____

CONDITIONS Yes/No

APPROVING OFFICER





T 1/8

Title Plan
LT 480205
DRAFT

Surveyor: Christopher Paul Hopper
Firm: Davis Ogilvie & Partners Ltd (Christchurch)

LOTS 1 - 3, 8 - 15, 19 - 31 & 33 - 54 BEING A SUBDIVISION OF LOT 1 DP
422901

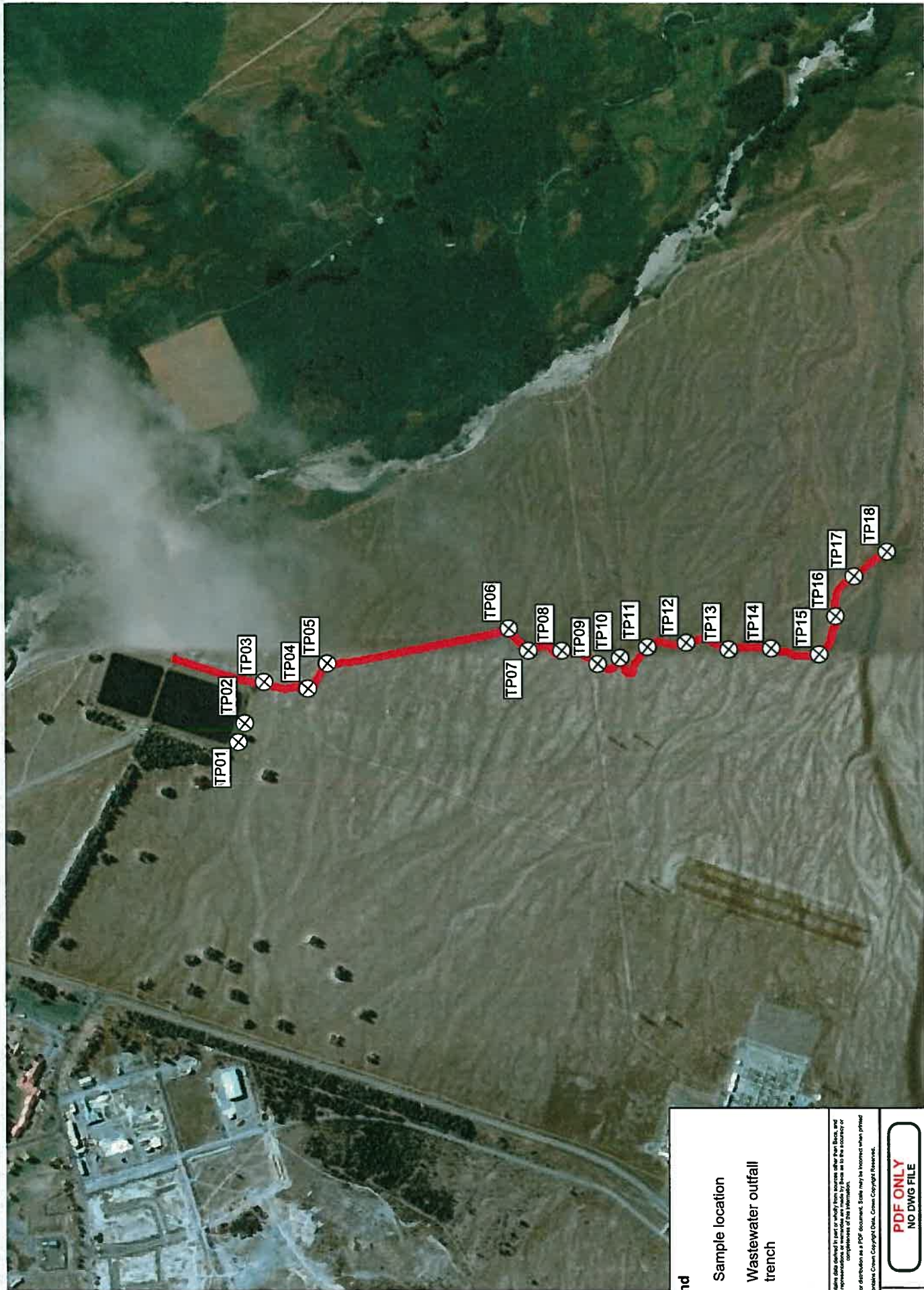
Land District: Canterbury

Digitally Generated Plan

Generated on: 12/11/2014 4:31pm Page 7 of 15

Appendix E

Sample Location Plan



Legend

- ⊗ Sample location
- Wastewater outfall trench

This map contains data derived from aerial photography and other sources. It is not intended to be used as a legal document. It is provided for information only and does not constitute a guarantee of accuracy or completeness of the information.

Map intended for distribution as a PDF document. Scale may be incorrect when printed.

Copyright © 2018 Beca Group. All rights reserved.



PDF ONLY
NO DWG FILE

Drawing Number: ENVIRONMENTAL Drawing Title: SOIL SAMPLING LOCATIONS Drawing Date: --- Drawing Scale: A	
Project: TWIZEL WASTEWATER OUTFALL TRENCH LAND SUBDIVISION Client: MACKENZIE DISTRICT COUNCIL	
Original Scale: 1:1 Revised Scale: 1:1 Date: By: Check: Date: Approved for Construction: Date: Approved for Distribution: Date:	Beca Group Beca 100 Beca Drive Auckland, New Zealand Phone: +64 (0) 9 271 8000 Email: info@beca.co.nz Website: www.beca.co.nz

Appendix F

Hill Laboratories Chain of
Custody Form



Hill Laboratories
BETTER TESTING BETTER RESULTS

R J Hill Laboratories Limited
1 Clyde Street
Private Bag 3205
Hamilton 3240, New Zealand

Tel +64 7 858 2000
Fax +64 7 858 2001
Email mail@hill-labs.co.nz
Web www.hill-labs.co.nz

ANALYSIS REPORT

Page 1 of 2

Client:	Beca Limited	Lab No:	1445905	SPv2
Contact:	B Waterhouse C/- Beca Limited PO Box 13960 CHRISTCHURCH 8141	Date Registered:	03-Jul-2015	
		Date Reported:	16-Jul-2015	
		Quote No:		
		Order No:	15:074	
		Client Reference:	6510257/400/DC	
		Submitted By:	B Waterhouse	

Amended Report

This report replaces an earlier report issued on the 08 Jul 2015 at 3:32 pm
At the client's request, mercury testing has been added.

Sample Type: Soil

Sample Name:	SS001	SS002	SS006	SS007	SS008
	01-Jul-2015 1:00 pm	01-Jul-2015 1:00 pm	01-Jul-2015 1:25 pm	01-Jul-2015 1:30 pm	01-Jul-2015 1:40 pm
Lab Number:	1445905.1	1445905.2	1445905.6	1445905.7	1445905.8

Individual Tests

Total Recoverable Mercury	mg/kg dry wt	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn						
Total Recoverable Arsenic	mg/kg dry wt	3	2	< 2	< 2	< 2
Total Recoverable Cadmium	mg/kg dry wt	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Recoverable Chromium	mg/kg dry wt	10	8	11	11	10
Total Recoverable Copper	mg/kg dry wt	8	7	40	83	53
Total Recoverable Lead	mg/kg dry wt	15.6	14.4	14.5	16.6	14.8
Total Recoverable Nickel	mg/kg dry wt	9	8	9	9	9
Total Recoverable Zinc	mg/kg dry wt	52	45	50	57	57

Sample Name:	SS009	SS010	SS011	SS012	SS013
	01-Jul-2015 1:45 pm	01-Jul-2015 2:00 pm	01-Jul-2015 2:05 pm	01-Jul-2015 2:15 pm	01-Jul-2015 2:20 pm
Lab Number:	1445905.9	1445905.10	1445905.11	1445905.12	1445905.13

Individual Tests

Total Recoverable Mercury	mg/kg dry wt	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn						
Total Recoverable Arsenic	mg/kg dry wt	< 2	< 2	< 2	< 2	< 2
Total Recoverable Cadmium	mg/kg dry wt	0.11	0.14	< 0.10	0.13	0.14
Total Recoverable Chromium	mg/kg dry wt	10	11	10	11	11
Total Recoverable Copper	mg/kg dry wt	179	189	34	117	142
Total Recoverable Lead	mg/kg dry wt	17.7	19.1	13.5	21	19.5
Total Recoverable Nickel	mg/kg dry wt	8	8	9	9	9
Total Recoverable Zinc	mg/kg dry wt	73	75	47	81	84

Sample Name:	SS014	SS015	SS010 DUP	SS016	SS017
	01-Jul-2015 2:30 pm	01-Jul-2015 2:35 pm	01-Jul-2015 2:00 pm	01-Jul-2015 3:00 pm	01-Jul-2015 3:10 pm
Lab Number:	1445905.14	1445905.15	1445905.16	1445905.17	1445905.18

Individual Tests

Total Recoverable Mercury	mg/kg dry wt	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn						
Total Recoverable Arsenic	mg/kg dry wt	< 2	< 2	< 2	< 2	< 2
Total Recoverable Cadmium	mg/kg dry wt	0.17	< 0.10	0.12	< 0.10	< 0.10
Total Recoverable Chromium	mg/kg dry wt	11	10	10	11	9
Total Recoverable Copper	mg/kg dry wt	300	27	125	56	41



IANZ
ACCREDITED LABORATORY

This Laboratory is accredited by International Accreditation New Zealand (IANZ), which represents New Zealand in the International Laboratory Accreditation Cooperation (ILAC). Through the ILAC Mutual Recognition Arrangement (ILAC-MRA) this accreditation is internationally recognised.
The tests reported herein have been performed in accordance with the terms of accreditation, with the exception of tests marked *, which are not accredited.

Sample Type: Soil					
Sample Name:		SS014 01-Jul-2015 2:30 pm	SS015 01-Jul-2015 2:35 pm	SS010 DUP 01-Jul-2015 2:00 pm	SS016 01-Jul-2015 3:00 pm
Lab Number:		1445905.14	1445905.15	1445905.16	1445905.17
Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn					
Total Recoverable Lead	mg/kg dry wt	21	14.4	16.0	22
Total Recoverable Nickel	mg/kg dry wt	9	9	8	8
Total Recoverable Zinc	mg/kg dry wt	102	55	62	67
Sample Name:		SS018 01-Jul-2015 1:15 pm			
Lab Number:		1445905.19			
Individual Tests					
Total Recoverable Mercury	mg/kg dry wt	< 0.10	-	-	-
Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn					
Total Recoverable Arsenic	mg/kg dry wt	< 2	-	-	-
Total Recoverable Cadmium	mg/kg dry wt	< 0.10	-	-	-
Total Recoverable Chromium	mg/kg dry wt	10	-	-	-
Total Recoverable Copper	mg/kg dry wt	50	-	-	-
Total Recoverable Lead	mg/kg dry wt	19.9	-	-	-
Total Recoverable Nickel	mg/kg dry wt	7	-	-	-
Total Recoverable Zinc	mg/kg dry wt	70	-	-	-

SUMMARY OF METHODS

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively clean matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis.

Sample Type: Soil			
Test	Method Description	Default Detection Limit	Sample No
Environmental Solids Sample Preparation	Air dried at 35°C and sieved, <2mm fraction. Used for sample preparation. May contain a residual moisture content of 2-5%.	-	1-2, 6-19
Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn	Dried sample, <2mm fraction. Nitric/Hydrochloric acid digestion, ICP-MS, screen level.	0.10 - 4 mg/kg dry wt	1-2, 6-19
Total Recoverable digestion	Nitric / hydrochloric acid digestion. US EPA 200.2.	-	1-2, 6-19
Total Recoverable Mercury	Dried sample, sieved as specified (if required). Nitric/Hydrochloric acid digestion, ICP-MS, screen level. US EPA 200.2.	0.10 mg/kg dry wt	1-2, 6-19

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Samples are held at the laboratory after reporting for a length of time depending on the preservation used and the stability of the analytes being tested. Once the storage period is completed the samples are discarded unless otherwise advised by the client.

This report must not be reproduced, except in full, without the written consent of the signatory.

Ara Heron BSc (Tech)
Client Services Manager - Environmental Division



Hill Laboratories

A WORLD LEADER IN ANALYTICAL SERVICES

Client

Name Beca Ltd 76225
Address PO Box 13960, Christchurch 8141
Phone 03 366 3521 Fax 03 366 3188
Client Reference 6510257/400/DC
Quote No Order Number 15:074

Primary Contact Ben Waterhouse
Submitted By Ben Waterhouse
Charge To Beca Ltd 76225

Results To ☐ Mail Client ☐ Mail Submitter
☐ Fax Results ben.waterhouse@beca.com
☒ Email Results envirolab@beca.com

ADDITIONAL INFORMATION

Please carry out work in accordance with our standard conditions of engagement, as described in letter dated 24-04-13

Sample Types

Waters	E Effluent	G Geothermal	Pot1 Potable Water (IAS/EU)	Pot2 Potable Water (NZDWS)
	GW Ground Water	L Leachate	<input type="checkbox"/> Audit Monitoring	Pot3 Potable Water (other)
	SW Surface Water	S Saline	<input type="checkbox"/> Check Monitoring	Pool Swimming/Spa Pool
	TW Trade Waste			
Solids	ES Soil	SE Sediment	SL Sludge	PL Plant
Other	O Oil	M Miscellaneous	FS Fish/shellfish/biota	BM BM Biological Material

No.	Sample Name	Sample Date & Time	Sample Type	Tests Required
1	SS001	1/07/2015	ES	Heavy Metals
2	SS002	1/07/2015	ES	Heavy Metals
3	SS003	1/07/2015	ES	Heavy Metals
4	SS004	1/07/2015	ES	Heavy Metals
5	SS005	1/07/2015	ES	Heavy Metals
6	SS006	1/07/2015	ES	Heavy Metals
7	SS007	1/07/2015	ES	Heavy Metals
8	SS008	1/07/2015	ES	Heavy Metals
9	SS009	1/07/2015	ES	Heavy Metals
10	SS010	1/07/2015	ES	Heavy Metals

Continued on next page

144 5905

ANALYSIS

Received by: Liane Burt

R J Hill Laboratories Limited
1 Clyde Street
Private Bag 3205
Hamilton 3240, New Zealand



3114459056

Web www.hill-labs.co.nz

Office use only Job No:

CHAIN OF CUSTODY RECORD

Sent to Hill Laboratories Date & Time: 02/07/15
Name: Ben Waterhouse
Signature: *Ben Waterhouse*

☒ Please tick if you require COC to be faxed back

Received at Hill Laboratories Date & Time:
Name: *W. Burt*
Signature: *W. Burt*

Condition ☐ Room Temp ☐ Chilled ☐ Frozen Temp: 9.4
☐ Sample Analysis details checked
Signature:

Priority

☐ Low ☐ Normal ☒ High
☐ Urgent (ASAP, extra charge applies, please contact the lab first)

Requested Reporting Date:

No.	Sample Name	Sample Date & Time	Sample Type	Tests Required
11	SS011	1/07/2015	ES	Heavy Metals
12	SS012	1/07/2015	ES	Heavy Metals
13	SS013	1/07/2015	ES	Heavy Metals
14	SS014	1/07/2015	ES	Heavy Metals
15	SS015	1/07/2015	ES	Heavy Metals
16	SS010 DUP	1/07/2015	ES	Heavy Metals
17	SS016	.	ES	HM
18	SS017	.	ES	HM
19	SS018	.	ES	HM
20			ES	
21			ES	
22			ES	
23			ES	
24			ES	
25			ES	
26			ES	
27			ES	
28			ES	
29			ES	
30			ES	
31			ES	
32			ES	
33			ES	
34			ES	
35			ES	
36			ES	
37			ES	
38			ES	
39			ES	
40			ES	



Hill Laboratories
BETTER TESTING BETTER RESULTS

R J Hill Laboratories
Limited
1 Clyde Street
Private Bag 3205

Tel +64 7 858 2000
Fax +64 7 858 2001
Email mail@hill-labs.co.nz

Job Information Summary

Page 1 of 1

Client:	Beca Limited	Lab No:	1445905
Contact:	B Waterhouse C/- Beca Limited PO Box 13960 CHRISTCHURCH 8141	Date Registered:	03-Jul-2015 8:07 am
		Priority:	Normal
		Quote No:	
		Order No:	15:074
		Client Reference:	6510257/400/DC
		Add. Client Ref:	
		Submitted By:	B Waterhouse
		Charge To:	Beca Limited
		Target Date:	15-Jul-2015 4:30 pm

Samples

No	Sample Name	Sample Type	Containers	Tests Requested
1	SS001 01-Jul-2015 1:00 pm	Soil	GSoil300	Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn
2	SS002 01-Jul-2015 1:00 pm	Soil	GSoil300	Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn
3	SS003 01-Jul-2015 1:10 pm	Soil	GSoil300	Hold Cold
4	SS004 01-Jul-2015 1:15 pm	Soil	GSoil300	Hold Cold
5	SS005 01-Jul-2015 1:20 pm	Soil	GSoil300	Hold Cold
6	SS006 01-Jul-2015 1:25 pm	Soil	GSoil300	Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn
7	SS007 01-Jul-2015 1:30 pm	Soil	GSoil300	Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn
8	SS008 01-Jul-2015 1:40 pm	Soil	GSoil300	Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn
9	SS009 01-Jul-2015 1:45 pm	Soil	GSoil300	Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn
10	SS010 01-Jul-2015 2:00 pm	Soil	GSoil300	Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn
11	SS011 01-Jul-2015 2:05 pm	Soil	GSoil300	Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn
12	SS012 01-Jul-2015 2:15 pm	Soil	GSoil300	Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn
13	SS013 01-Jul-2015 2:20 pm	Soil	GSoil300	Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn
14	SS014 01-Jul-2015 2:30 pm	Soil	GSoil300	Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn
15	SS015 01-Jul-2015 2:35 pm	Soil	GSoil300	Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn
16	SS010 DUP 01-Jul-2015 2:00 pm	Soil	GSoil300	Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn
17	SS016 01-Jul-2015 3:00 pm	Soil	GSoil300	Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn
18	SS017 01-Jul-2015 3:10 pm	Soil	GSoil300	Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn
19	SS018 01-Jul-2015 1:15 pm	Soil	GSoil300	Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn

SUMMARY OF METHODS

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively clean matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis.

Sample Type: Soil			
Test	Method Description	Default Detection Limit	Sample No
Environmental Solids Sample Preparation	Air dried at 35°C and sieved, <2mm fraction. Used for sample preparation. May contain a residual moisture content of 2-5%.	-	1-2, 6-19
Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn	Dried sample, <2mm fraction. Nitric/Hydrochloric acid digestion, ICP-MS, screen level.	0.10 - 4 mg/kg dry wt	1-2, 6-19
Total Recoverable digestion	Nitric / hydrochloric acid digestion. US EPA 200.2.	-	1-2, 6-19

Appendix G

Soil Analysis Results Summary



CH2M Beca