BEFORE THE QUEENSTOWN-LAKES DISTRICT COUCIL

IN THE MATTER of a hearing on submissions to the Proposed Queenstown Lakes District Plan pursuant to clause 8B of the First Schedule to the Resource Management Act 1991

ON BEHALF OF JAMES COOPER (400) Submitter

EVIDENCE OF BENJAMIN ESPIE (LANDSCAPE ARCHITECT)

4th APRIL 2017

vivian+espie

1. INTRODUCTION

- 1.1 My name is Benjamin Espie. I reside in Queenstown. I hold the qualifications of Bachelor of Landscape Architecture (with honours) from Lincoln University and Bachelor of Arts from Canterbury University. I am a member of the Southern Branch of the New Zealand Institute of Landscape Architects and was the Chairman of that branch between 2007 and 2016. Since November 2004 I have been a director of Vivian and Espie Limited, a specialist resource management and landscape planning consultancy based in Queenstown. Between March 2001 and November 2004 I was employed as Principal of Landscape Architecture by Civic Corporation Limited, a resource management consultancy company contracted to the Queenstown Lakes District Council (QLDC).
- **1.2** The majority of my work involves advising clients regarding the protection of landscapes and amenity that the Resource Management Act 1991 provides and regarding the landscape provisions of various district and regional plans. I also produce assessment reports and evidence in relation to proposed development. The primary objective of these assessments and evidence is to ascertain the effects of proposed development in relation to landscape character and visual amenity.
- 1.3 Much of my experience has involved providing landscape and amenity assessments relating to resource consent applications and plan changes both on behalf of District Councils and private clients. I have compiled many assessment reports and briefs of Environment Court evidence relating to the landscape and amenity related aspects of proposed regimes of District Plan provisions in the rural areas of a number of districts. I have provided Environment Court evidence in relation to the landscape categorisation of various parts of the Upper Clutha Basin, in relation to a number of proposed plan changes in the area and in relation to many resource consent applications.
- 1.4 I have read the Code of Conduct for Expert Witnesses contained within the Environment Court Practice Note of November 2014 and agree to comply with it. This evidence is within my area of expertise, except where I state that I am relying on information I have been given by another person. I confirm that I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed herein.

- **1.5** In preparing this evidence I have reviewed:
 - A report regarding the landscape categorisation of the Upper Clutha area prepared by Dr Marion Read dated the 1st of April 2014¹ (**Dr Read's original report**);
 - A peer review of Dr Read's original report prepared by Anne Steven dated June 2014² (Ms Steven's peer review);
 - A report prepared by Dr Read that responds to Ms Steven's per review dated the 16th of October 2014³ (**Dr Read's response report**);
 - A statement of evidence prepared by Helen Mellsop dated 17 March 2017 (Ms Mellsop's evidence).

2. SCOPE OF EVIDENCE

2.1 The purpose of this evidence is to assist the Hearings Panel on matters within my expertise of landscape architecture and landscape planning in relation to submission 400 on the Proposed District Plan. I have been asked by James Cooper to prepare evidence in relation to the appropriate landscape categorisation of the Devon Dairy property, a landholding between the Clutha and Hawea Rivers (which is described in detail in Submission 400 and in the evidence of other witnesses). I have particularly been asked to examine the alignment of the line that separates the outstanding natural landscape (ONL) from the non-ONL (i.e. the alignment of the ONL line).

3. EXECUTIVE SUMMARY

3.1 Ms Mellsop considers that the lower terrace lands within the Cooper landholding are part of a wide Clutha River corridor landscape that is an ONL. I consider that the Clutha River itself is an ONF but the terrace lands on its north side are not particularly natural or outstanding and are most correctly categorised as part of the broad surrounding landscape that continues to the north which, while pleasant and of a rural character, is not an ONL.

¹ Marion Read, "Report to QLDC on appropriate landscape classification boundaries within the district, with particular reference to outstanding natural landscapes and features", dated 1st of April 2014.

² Anne Steven, "Peer review of landscape assessment; outstanding natural landscape of the Upper Clutha part of the Queenstown Lakes District", dated June 2014.

³ Marion Read, "Report to QLDC on appropriate landscape classification boundaries within the district, with particular reference to outstanding natural landscapes and features: post review amendments", dated 16th of October 2014.

4. PREVIOUS LANDSCAPE CATEGORIATION REPORTS

- 4.1 Regarding landscape categorisation, the Operative District Plan (ODP) sets out a process in Section 5.4.2.1 for the determination of landscape category. The text of the Proposed District Plan (PDP) contains no such process since the intention is that the planning maps will specify landscape categories. The ODP process involves analysis of the landscape in relation to a list of factors that are known as the "amended Pigeon Bay criteria", which were derived from landscape evidence given to the Environment Court over a number of cases in the early to mid-1990s.
- 4.2 In the landscape planning profession a number of structures or frameworks for landscape analysis have been put forward by various practitioners and academics, and often there is a high degree of similarity between them. The amended Pigeon Bay criteria is one such framework. A revised and updated version of that framework was set out in the Environment Court decision regarding *Maniototo Environmental Society Inc. v Central Otago District Council*⁴ and some further discussion and suggested refinements were set out in subsequent decisions⁵. I have taken guidance from those frameworks (particularly the revised and updated one) and have also taken guidance from a well-used framework set out in the work of Carys Swanwick⁶, and from the work of the United Kingdom's Landscape Institute and Institute of Environmental Management and Assessment⁷. All of these frameworks for analysis take account of all of the aspects of landscape that are listed in the description of the process that is found in Section 5.4.2.1 of the ODP.
- **4.3** I have examined and am familiar with the Objectives and Policies of the ODP and PDP that relate to landscape categories⁸. In relation to ONLs, the ODP and PDP both intend that "*subdivision and development is inappropriate in almost all locations, meaning that successful applications will, on balance, be exceptional cases*"⁹. The PDP seeks to "*avoid subdivision and development*

⁴ Environment Court decision C103/09, 28 October 2009, paragraphs 201 to 203.

⁵ Environment Court decisions [2010]NZEnvC432, Upper Clutha Tracks Trust vs. Q.L.D.C, and [2011]NZEnvC387, High Country Rosehip Orchards Ltd vs. M.D.C.

⁶ Swanwick, Carys. "Landscape Character Assessment – Guidance for England and Scotland". The Countryside Agency and Scottish National Heritage. 2002.

⁷ The Landscape Institute and the Institute of Environmental Management and Assessment. "Guidelines for Landscape and Visual Impact Assessment". Spon Press. London and New York, 2002. Chapter 6.

⁸ Queenstown Lakes Operative District Plan, Objective 4.2.5 and associated Policies, particularly Policies 2 – 5; and Queenstown Lakes Proposed District Plan (notified version), Objectives 6.3.1, 6.3.3, 6.3.4 and 6.3.5.

⁹ Queenstown Lakes Proposed District Plan (notified version), Policy 6.3.1.3; and Queenstown Lakes Operative District Plan, Section 1.5.3(iii)(iii).

that would degrade the important qualities of the landscape character and amenity, particularly where there is little capacity to absorb change"¹⁰.

- 4.4 In July 2011 I prepared a report regarding the landscape categorisation of the relevant landholding that I append to this evidence as Appendix 1 (my 2011 report). My 2011 report responded to a June 2011 report prepared by Mr Richard Denny on behalf of the QLDC. Mr Denny's report found that part of the relevant landholding should correctly be categorised as ONL. My 2011 report found that none of the relevant landholding should be categorised as ONL.
- 4.5 In Dr Read's original report, she adopts the findings of Mr Denny, although she makes a minor change regarding what parts of the identified outstanding natural area constitute a feature, rather than a landscape¹¹. I show the ONL line from Dr Read's original report on Appendix 2 of this evidence. In her peer review report, Ms Steven found that the irrigated pasture of the Cooper landholding was not part of an ONL or ONF¹². I show Ms Steven's ONL line on Appendix 3 of this evidence.
- **4.6** In regard to the Cooper landholding, Dr Read's response report rejects Ms Steven's opinion and adheres to Mr Denny's position¹³. In the notified PDP, Dr Read's landscape categorisation is adopted in relation to the Cooper landholding¹⁴.
- **4.7** Confusingly, in 2013 Dr Read prepared an assessment report regarding proposed development on the Corbridge Estates land (immediately across the Clutha from Block 2 of the Cooper landholding as shown on my Appendix 2) in which she found that the Block 2 part of the Cooper land is not within an ONL/F. Appendix 6 of my evidence is Dr Read's landscape categorisation map from her Corbridge Estates report. In that report she notes that:

"The areas where the course of the Clutha is less canyon-like are around the confluences of the Hawea and Cardrona Rivers and Luggate Creek. All of these rivers have had a similar erosional effect resulting in the creation of open terraces around the confluences. These areas, because they are expansive and flat, have been extensively and intensively developed for agriculture with a subsequent loss of some natural character.

¹² Ibid, pages 17, 18 and Appendices.

¹⁰ Queenstown Lakes Proposed District Plan (notified version), Policy 6.3.4.1.

¹¹ Ibid, paragraphs 3.7.6.5 and 3.7.6.6.

¹³ Ibid, paragraph 3.4.3.

¹⁴ Proposed District Plan Map 18.

Where the landform opens out, around the confluence of the Cardrona and the Hawea Rivers, the high southern terraces remain within the ONF but the northern margin runs along the edge of the more developed ground."¹⁵

- **4.8** In contrast to the above, in her response report, Dr Read opines that the lower terrace of the Cooper landholding and the escarpment faces that adjoin the river corridor and separate the terraces are parts of an ONL/F. I disagree with this opinion as set out on my 2011 report (Appendix 1 to this evidence). I will not repeat the justification and conclusions of my 2011 report here but wish it to be fully considered by the Commissioners. In summary, I consider that:
 - While the relevant parts of the Clutha River itself are an outstanding natural feature, I consider that the extent of this features comprises of the river itself and its immediate escarpment banks. I do not consider that any of the terrace flats or escarpments of the subject site can correctly be considered to be part of the feature of the river. These terrace flats and escarpments are distinct from the river but are not distinct from the surrounding landscape that continues to the north.
 - Furthermore, I do not consider that any of the terraces or escarpments within the subject site can correctly be considered to be outstanding natural features themselves because they are:
 - insufficiently distinct from their surroundings to be correctly termed features;
 - no more natural than the surrounding non-ONL landscape;
 - insufficiently outstanding to be elevated above the landscapes of the district generally.
 - Categorising landscape components such as the relevant escarpments as "outstanding", runs a significant risk of devaluing the term "outstanding". In terms of managing the landscapes of our district in accordance with the Act, we must be careful to reserve the term "outstanding" for landscapes and features that genuinely do stand out from the district's landscapes in general, in terms of merit and naturalness.

...

¹⁵ Marion Read "RM120572 – Corbridge Estates Partnership – Landscape Assessment", dated 1st February 2013, paragraphs 18 and 19.

- Overall, I do not consider that any part of the Cooper landholding is correctly categorised as ONL or ONF.
- **4.9** I show my identified landscape categorisation on Appendix 5 of this evidence.

5. MORE RECENT FARMING DEVELOPMENT OF THE COOPER LANDHOLDING

- 5.1 Since the time of my 2011 report additional farming development of the Cooper landholding has been ongoing, both as permitted activities and via resource consent approvals. I attach to this evidence as Appendix 7 a plan showing the main area of the landholding as it currently exists. Since 2011, further developments on the landholding include:
 - An additional 3-bedroom dwelling for farm workers/managers;
 - A number of additional farm sheds, barns and silos including a large milking shed;
 - Two additional water storage reservoirs;
 - Additional pivot irrigators such that there are now 9 pivot irrigators in the area between Newcastle Road and the Clutha River.
- 5.2 With reference to Appendix 2, the area of ONL/F adjacent to the Clutha River that is identified in the PDP now includes a number of pivot irrigators and consequential pastoral improvements (Pivots 2A, 2B, 9A, 9B and 9C as per the Appendix 7 plan). The photographs that form Appendix 8 to this evidence show the relevant areas of the Cooper landholding.
- **5.3** I consider that the additional farming improvements that have occurred on the Cooper landholding reinforce my findings as set out above; the terrace flats on which these pivots sit are no more natural or outstanding than the surrounding landscape that is identified as RLC (in fact, they are potentially less natural).

6. MS MELLSOP'S EVIDENCE

- 6.1 Paragraphs 8.39 to 8.50 of Ms Mellsop's evidence deal with the Cooper landholding and Submission 400. Ultimately, Ms Mellsop concludes that the appropriate landscape categorisation of the vicinity is as shown on her Figure 8. I show Ms Mellsop's ONL line on Appendix 4 to this evidence. This largely agrees with the PDP categorisation derived from Dr Read's original report (except that Ms Mellsop excludes from the ONL/F the long escarpment face that runs north from the Clutha River and Ms Mellsop categorises the Clutha River corridor as an ONL instead of an ONF).
- **6.2** Ms Mellsop's broad Clutha River corridor landscape can be seen on her Figure 8. It takes in all of the Cooper land below the highest escarpment face. This includes the terrace land that is occupied by Pivots 2A, 2B, 9A, 9B and 9C as per the Appendix 7 plan. From the level of this terrace that accommodates these pivots, a steep escarpment face, some 20 to 30 metres in height, leads down to the waters of the Clutha.
- **6.3** Regarding the broad Clutha River corridor landscape that she categorises as an ONL, Ms Mellsop notes that:

"The escarpments are within 250 to 650 metres of the true left river edge, they visually enclose the corridor and are an integral part of the aesthetic and perceptual values of the river.

...

However, the highest enclosing escarpments and the river terraces below them are outside the immediate margins of the river and in my opinion should not be classified as part of the outstanding river feature. Instead I consider that the ONF of the river is within a larger ONL that extends to the top of the highest enclosing escarpments.⁷¹⁶

6.4 I disagree with Ms Mellsop's finding regarding this broad corridor. I agree that the Clutha River is an ONF. I agree that this feature consists of the river itself and the immediate enclosing escarpments (i.e. the Hydro Generation Zone as identified in the ODP and PDP). I consider that the qualities of the feature of the Clutha River (or at least the relevant part of it) are:

 $^{^{\}rm 16}$ Statement of evidence of Helen Juliet Mellsop, dated 17th March 2017, paragraphs 8.42 and 8.44.

- its distinct definition and containment by its legible immediate bank escarpments;
- its unmodified and dynamic geomorphology in which ongoing formative processes (alluvial erosion and deposition) are legible;
- areas of unmodified vegetation;
- legible and remarkable geomorphological characteristics such as horseshoe bends;
- The unmodified and uncontrolled draining from Lake Wanaka;
- The remarkable and memorable aesthetics that come from a large, sinuous, fastmoving river set within a rugged gorge.
- 6.5 I do not agree that this feature sits within a broader corridor landscape that is an ONL. I consider that the terrace lands that form this broader corridor landscape identified by Ms Mellsop are more logically categorised as part of the surrounding farming landscape that, while pleasant and of a rural character, is not particularly natural or outstanding because these terrace lands are:
 - not genuinely part of the feature of the Clutha River corridor;
 - not distinct from the farmed land that runs away to the north and west. Their management, appearance and vegetative cover is identical to that farmed landscape, in fact they are particularly intensively farmed due to large scale irrigation;
 - no more natural than all of the farmed land that runs away to the north or than the floor of the Upper Clutha Basin in general. While the escarpments are legible as being naturally formed, every part of the Upper Clutha Basin has been formed by natural processes (generally glacial followed by alluvial) and legible landforms of this sort are not uncommon or outstanding;
 - covered in vegetation that is the product of many decades of human use and hence is at the lower end of the spectrum of naturalness. The terrace lands have been

intensively farmed in the past as paddock land and now accommodate a number of pivot irrigators and are part of an extensive dairy operation.

- not elevated above the landscape of the floor of the Upper Clutha Basin generally in terms of aesthetics or landscape merit, they are; they are part of the broader farmed landscape.
- do not display the characteristics of the Clutha River ONF that I set out in my paragraph
 6.5 above.
- 6.6 As cited in my paragraph 6.3, Ms Mellsop notes that her broad corridor is too wide to be a feature. I agree but also consider that it is too narrow to be a landscape it its own right; the terrace lands are simply part of the surrounding landscape. Ms Mellsop's river corridor ONL is often 1.1 to 1.3 kilometres wide as it runs past the Cooper landholding. Environment Court decision C73/2002 gave guidance regarding how large an area of land must be before it can be considered a landscape in its own right¹⁷. Ms Mellsop's river corridor ONL does not accord with that guidance; it is too narrow.
- **6.7** I therefore continue to support the landscape categorisation described in my 2011 report, that while the Clutha River and its immediate corridor are an ONF, none of the Cooper landholding is within this ONF or any ONL.

7. CONCLUSIONS

- **7.1** I confirm the opinion arrived at in my 2011 report that no part of the Cooper landholding is within and ONL or ONF.
- **7.2** Farming developments that have occurred since 2011 mean that the terrace lands within the Cooper landholding are now even more modified and less natural than previously.

¹⁷ Environment Court decision C73/2002, Wakatipu Environmental Society Incorporated vs. Q.L.D.C, paragraph 20.

7.3 Ms Mellsop's identified river corridor ONL is too wide to be and ONF and too narrow to be an ONL. The terrace lands are most logically categorised as part of the surrounding landscape, which is not an ONL.

ATTACHED APPENDICES

- 1 MY 2011 REPORT REGADING LANDSCAPE CATEGORISATION OF THE COOPER LANDHOLDING.
- 2 THE ONL LINE AS PER THE NOTIFIED PDP (WHICH IS ALSO DR READ'S IDENTIFIED ONL LINE).
- 3 THE ONL LINE AS PER ANNE STEVEN'S PEER REVIEW REPORT.
- 4 THE ONL LINE AS PER MS MELLSOP'S EVIDENCE.
- 5 THE ONL LINE AS PER MY EVIDENCE.
- 6 DR READ'S ONL LINE AS PER HER CORBRIDGE ESTTES ASSESSENT REPORT.
- 7 PLAN OF RECENT FARMING DEVELOPMENTS OF THE COOPER LANDHOLDING.
- 8 PHOTOGRAHS.

Ben Espie vivian+espie 4th April 2017



APPENDIX 1:

CAMP HILL / FOREST HILL / GIMMERMORE STATION

LANDSCAPE ASSESSMENT AND CATEGORISATION REPORT

Ben Espie (Landscape Planner)

vivian+espie

29 July 2011

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1 INTRODUCTION

- 1.1 I have been asked to consider the categorisation of the landscape that includes Camp Hill / Forest Hill / Gimmermore Station in relation to the Queenstown Lakes District Plan (the Plan).
- 1.2 Camp Hill / Forest Hill / Gimmermore Station (the site) takes in a large area of the floor of the Upper Clutha Valley, as is shown on Appendix 1 to this report. The floor of the Upper Clutha Valley can be considered to be the generally flat, undulating or terraced lands that are bounded by the Pisa Range to the south, the Grandview Mountains to the east, Mount Maude and Lake Hawea to the north, and Lake Wanaka and Mount Alpha to the west.
- 1.3 Camp Hill / Forest Hill / Gimmermore Station and practically all surrounding land is zoned Rural General Zone in the Plan. Regarding landscape analysis and categorisation within the Rural General Zone, Section 5.4.2.1 gives guidance in that it sets out a three step process in relation to the application of the landscape category based assessment matters. The three steps are:
 - 1) Analysis of the Site and Surrounding Landscape
 - 2) Determination of Landscape Category
 - 3) Application of Assessment Matters
- 1.4 For the purposes of this report, I have carried out steps one and two of this process and set out my findings subsequently.
- 1.5 Regarding the first step of this process, Section 5.4.2.1 directs that:

"An analysis of the site must include a description of those existing qualities and characteristics (both negative and positive), such as vegetation, topography, aspect, visibility, natural features, relevant ecological systems and land use.

An analysis of the surrounding landscape must include natural science factors (the geological, topographical, ecological and dynamic components of the landscape), aesthetic values (including memorability and naturalness), expressiveness and legibility (how obviously the landscape demonstrates the formative processes leading to it), transient values (such as the occasional

presence of wildlife; or its values at certain times of the day or of the year), value of the landscape to Tangata Whenua and its historical associations"¹.

2 ANALYSIS OF THE SITE

- 2.1 The location of the site is shown on Appendix 1. It is approximately 2323 hectares in area and sits between Kane Road, The Clutha River and the Hawea River. In terms of land use, the site has been managed as sheep and cattle grazing farm land for many decades. Consequently, the site includes many elements and characteristics that are typical of a typical large farming operation, such as:
 - Large open areas of grazed pasture separated by stock fences;
 - A network of formed gravel vehicle tracks;
 - Long, straight belts of coniferous shelter trees;
 - Two dwellings (one being the original Gimmermore farm dwelling, one being a newer dwelling accessed off Kane Road);
 - A number of farm buildings in the form of sheds and barns;
 - An airstrip;
 - A number of water storage reservoirs and associated water races;
 - Four large central pivot irrigators
- 2.2 As a result of past and ongoing farming activity, the vegetation within the site is well managed and almost entirely exotic, with the original vegetation cover having been removed many decades ago. The vegetative cover of the site is, of course, an integral part of its productive use. It appears that there is no particularly ecologically valuable vegetation within the site. Large coniferous shelterbelts are the most prominent vegetation on the site, and these shorten views and visually compartmentalise the site.

¹ Queenstown Lakes District Plan, Section 5.4.2.1, page 5-23.



Figure 1: Photograph of view across middle of the site from the north towards the south.

- 2.3 Topography within the site takes the form of a series of terraces that step down from east to west. The treads of the terraces take the form of large flat areas of uniform topography. The risers of the terraces are smooth and even escarpments that range in height from a few metres up to approximately 40 metres. In addition to the risers between the terraces, escarpments also follow the southern and northern boundaries of the site as they verge on the Clutha River to the south and the Hawea River to the north. A smaller part of the site extends north to take in land surrounding Camp Hill. This land is part of a larger flat terrace that extends north to Lake Hawea.
- 2.4 The east to west stepping terrace topography of the site is such that aspect and outlook are broad and open. However, being situated on elevated terraces means that views into the site are limited and views out are generally to the distant mountain ranges, with the foreground valley floor lands often being hidden from view. As alluded to above, the large shelterbelts of the site further obstruct views into and out of the site.
- 2.5 In summary, I would describe the site as representing a large, well managed, productive commercial farming operation in an area of interesting terrace topography. Management appears fastidious and hence there is very little unkempt land or land that accommodates remnant vegetation.

3 ANALYSIS OF THE SURROUNDING LANDSCAPE

3.1 An analysis of any given landscape must be done in a structured way. In the landscape planning profession a number of structures or frameworks for landscape analysis have been put forward by various practitioners and academics, and often there is a high degree of similarity between them. One such framework is "the amended Pigeon Bay criteria" that was discussed by the Environment Court in its decision *Wakatipu Environmental Society Incorporated v. Queenstown Lakes District Council*². A revised and updated version of that framework was set out in the Environment Court decision regarding *Maniototo Environmental Society Inc v Central Otago District Council*³. I have taken guidance from those frameworks (particularly the revised and updated one) and have also taken guidance from a well used and accepted framework set out in the work of Carys Swanwick⁴, and from the work of the United Kingdom's Landscape Institute and Institute of Environmental Management and Assessment⁵. All of these frameworks for analysis take account of all of the aspects of landscape that are listed in the description of step 1 of the 3 step process that is found in Section 5.4.2.1 of the Plan, that I cite in paragraph 1.5 above.

Landscape characteristics

Topography

3.2 In broad terms, the topography of the upper Clutha Valley (as defined in paragraph 1.2) is such that the floor of this broad valley is comprised of gently undulating or terraced lands that are bisected by the Hawea, Clutha and Cardrona Rivers. These rivers are incised into the flats to varying degrees. The mountain slopes that contain this valley floor area are steep and are distinct from the flats. In some parts, the edge between the floor and the containing mountains is marked by fans of deposited material, washed from the mountain catchments. Within the area of the valley floor, but distinct from it in terms of topography are a number of small, distinct landforms such as Mount Barker, Mount Iron, Mount Brown and Camp Hill.

² [2000] NZRMA 59, C180/1999, paragraph 80

³ C103/09, 28 October 2009, paragraphs 201 to 203.

⁴ Swanwick, Carys. "Landscape Character Assessment – Guidance for England and Scotland". The Countryside Agency and Scottish National Heritage. 2002.

⁵ The Landscape Institute and the Institute of Environmental Management and Assessment. "Guidelines for Landscape and Visual Impact Assessment". Spon Press. London and New York, 2002. Chapter 6.

Ecology and land management

- 3.3 As is usual in this district (and others), the line between steep mountain country and gentler, flatter country is also a line between land management regimes that often go back a century or more. The gentler terrain has been cleared of vegetation, cultivated, sown and managed for relatively intensive farming use, generally sheep grazing. The steep terrain has also generally been cleared of pre-human vegetation (although often less diligently) but has been much less intensively managed and farmed and hence has a much more unkempt pattern and appearance.
- 3.4 This land management pattern is broadly reflected in terms of vegetation cover. The fact that the gentler, undulating country has been farmed and managed relatively intensively for a century or so, means that its vegetative composition is typical of rural farming areas. It is very largely covered in pasture grasses but exotic shelter and amenity tree planting typical of farmed and occupied rural areas also abounds. It is relevant to note that in recent decades, the valley floor lands have become increasingly used for residential purposes. Some large areas of rural living land use exist, such as in Hawea Flat. Consequently, vegetation of the valley floor land is no longer entirely reflective of farming.
- 3.5 The mountain slopes that contain the valley floor have a different type of vegetation cover to the floor itself. This vegetation has certainly been modified by human actions (perhaps largely cleared at some point) but has been much less intensively managed. Consequently, vegetation cover of these steeper slopes tends to be made up of pasture grasses interspersed with native grass and small shrub species. Self-seeded species such as hawthorn, briar rose and Douglas fir are also often present. There is however, much more remnant native vegetation on these slopes than on the basin floor, generally in the form of grey shrub and tussock species. Generally, the ratio of native species to wilding exotics increases as one gains altitude on these mountain slopes.

Geology and geomorphology

3.6 In terms of geomorphology, the entire Upper Clutha Valley has been occupied by a number of glaciations. The more recent glaciations being shallower than earlier ones. The mountain slopes that form the walls to the valley effectively contained the glaciations. Lower landforms Mount Iron and Camp Hill were overridden by glaciers and hence have a rounded appearance, often with a

steep bluff on their lee side, indicative of scour and pluck action. The upper mountain slopes and peaks were not overridden and hence have a more rugged, sharp geomorphology.

- 3.7 As the various glaciations retreated, they formed the valley floor to its current state and deposited material in the form of tills and gravels. The retreating glaciers and subsequent alluvial action created the terraces and undulating forms that are evident in the valley floor. The action of the rivers have since incised into the floor itself.
- 3.8 The mountain slopes that contain the valley are comprised of weathered politic and psammitic schist bedrock, while the valley floor consists of deposited Pleistocene tills and gravels.
- 3.9 In terms of geomorphology and geology, the New Zealand Geopreservation Inventory lists the Lake Hawea penultimate terminal moraine ridge to the immediate south of Lake Hawea and the roche moutonnee form of Mount Iron as being of geomorphological interest.

History

- 3.10 The history of the Upper Clutha and Wanaka area is well documented. In previous centuries, Maori used passes and river corridors of the area to reach the West Coast. There were seasonal settlements at Wanaka and Hawea for food gathering purposes. The large farming runs of the Upper Clutha were taken up by colonial settlers in the 1850s and the gold rushes in the Cardrona Valley boosted colonial population in the 1850s and 60s, by which time Wanaka town was established. The valley floor lands surrounding Wanaka and Hawea have been in pastoral farming use since this time, with the steeper mountain slopes also being used for grazing but in a much less intense manner.
- 3.11 A number of historic buildings are protected within the valley floor that are representative of colonial occupation and use.

Existing and zoned activities and development

3.12 The distribution of built development over the floor of the Upper Clutha Valley is closely related to the zoning that is set out by the Plan. I attach to this report as Appendix 2 a plan produced by the Queenstown Lakes District Council (QLDC) showing consented dwellings and building platforms

in relation to zoning. It can be seen that there is considerable residential use of rurally zoned land to the south of the Clutha River and west of the Hawea, while to the east of the Hawea, residential development is more confined to living zones or discrete pockets. Practically all residential land use is confined to the floor of the upper Clutha Valley, rather than spreading up its walls. Consequently, the surficial topography of the valley floor lands is more complex, varied and busy than that of the mountain slopes.

Naturalness

3.13 Following on from the above, the degree to which the landscape surrounding and including the subject site has been modified by human actions (i.e. the degree to which natural, or pre-human patterns and processes are present) varies. No part of the Upper Clutha part of the Queenstown Lakes District is unmodified. The steep mountain slopes (and the slopes of Mount Iron, Camp Hill, etc) have been modified but not in an ongoing, continuously managed way. Hence, natural patterns are more evident here in the form of vegetation patterns (sometimes remnant pre-human patterns, sometimes exotic but self-seeded and unmanaged patterns), unmodified landform (no cut roads or ground cultivation) and a lack of buildings and structures. The undulating valley floor land has been modified to a higher degree and in a more deliberate, ongoing way. Natural vegetation patterns are almost entirely absent, landform has been modified in parts (still to a relatively minor degree overall) and many buildings, fences and structures are present.

Human held values and perceptions associated with the landscape

Guidance from statutory documents

- 3.14 I have conducted no specific survey or study into the community held values that are associated with the site or its vicinity. However, guidance can be taken from some of the relevant statutory documents, which of course have been formulated through public participatory processes.
- 3.15 The Otago Regional Policy Statement deals with landscape issues in its Chapter 5 and states that much of Otago's natural character is derived from its natural features and landscapes and that protection of these from inappropriate subdivision, use and development is required to ensure that they will be available for the enjoyment of future generations and as a basic resource

for recreation and tourism⁶. Chapter 5 of the Policy Statement goes on to set out some more specific provisions relating to outstanding natural landscapes and features. I consider that it is fair to conclude that the Otago community values outstanding natural landscapes and features and seeks their appropriate protection.

3.16 The discussion of landscape values in the Queenstown Lakes District Plan is, of course, more specific. Landscape and visual amenity issues are discussed in a district-wide sense in Section 4 of the Plan and are then dealt with more specifically in following parts. Section 4.2.2 introduces the issues of landscape resources and values and states:

"The District covers a vast, predominantly mountainous region. The mountains are rugged in appearance and form a dramatic backdrop to the valley floors and terraces. Remnant beech forest covers much of the higher reaches, while in the lower area the valley floors and terraces have been converted to pastoral land use and settlement."⁷

3.17 Section 4.2.4 of the Plan identifies issues. It becomes more specific again and states:

"The visual effect of subdivision, development and associated activities may be increased when the form and colour of structures contrast with the surroundings and when they are located in visually sensitive areas. The demand for housing and other developments in the rural area is growing and poor location, siting and appearance of these developments threaten to increase the level of inappropriate modification of the rural landscape. The hill and mountain slopes surrounding the lakes assume greater importance because of their role in providing a setting for the lakes. Likewise the views from roads within the District assume increasing importance as they give visual access to the mountains, lakes and landscape that, in turn, are integral to the economic wellbeing of the District, and provide a sense of place to both visitors and residents"⁸.

and:

"(2) Protection of Outstanding Natural Landscapes and Features:

⁶ Otago Regional Policy Statement, Chapter 5.3.4, Issues.

⁷ Queenstown Lakes District Plan, Section 4.2.2, Resources and Values, page 4-6.

⁸ Ibid, Section 4.2.4(1), General Landscape Issues, page 4-8.

The outstanding natural landscapes are the romantic landscapes - the mountains and the lakes - landscapes to which Section 6 of the Act applies. The key resource management issues within outstanding natural landscapes are their protection from inappropriate subdivision, use and development, particularly where activity may threaten the landscapes openness and naturalness.

(3) Maintenance and Enhancement of Visual Amenity Landscapes:

The visual amenity landscapes are the landscapes to which particular regard is to be had under Section 7 of the Act. They are landscapes which wear a cloak of human activity much more obviously - pastoral (in the poetic and picturesque sense rather than the functional sense) or Arcadian landscapes with more houses and trees, greener (introduced) grasses and tend to be on the District's downlands, flats and terraces. The extra quality that these landscapes possess which bring them into the category of 'visual amenity landscape' is their prominence because they are

- adjacent to outstanding natural features or landscapes; or
- landscapes which include ridges, hills, downlands or terraces; or
- a combination of the above

The key resource management issues for the visual amenity landscapes are managing adverse effects of subdivision and development (particularly from public places including public roads) to enhance natural character and enable alternative forms of development where there are direct environmental benefits.

(4) Other Rural Landscapes:

The other rural landscapes are those landscapes with lesser landscape values (but not necessarily insignificant ones) which do not qualify as outstanding natural landscapes or visual amenity landscapes.⁹

⁹ Ibid, Section 4.2.4(2), (3) and (4), page 4-9

- 3.18 From the above passages, I consider that it can be fairly concluded that in a broad, district-wide sense, the Queenstown Lakes District community seek that the District's landscapes are protected from inappropriate modification and housing and that they place more value on:
 - hill and mountain slopes surrounding the lakes,
 - mountains, lakes and landscapes that are visually accessible from the District's roads,
 - the romantic landscapes of the mountains and lakes,

than on

- pastoral or Arcadian landscapes with more houses and trees and greener (introduced) grasses that tend to be on the District's downlands, flats and terraces, or
- other landscapes.
- 3.19 This is obviously a relatively broad conclusion regarding landscape values. In the following paragraphs I shall analyse more specifically how the landscape surrounding and including the subject site is valued. Again, in doing so I am not relying on any survey regarding landscape values that I have conducted. Rather, I am making findings based on my expertise and experience of the Wakatipu Basin landscape and the Queenstown Lakes District.

Aesthetic values

- 3.20 Most observers will appreciate the character of this vicinity from the various public roads (such as State Highway 6, Newcastle Road, Camp Hill Road and Kane Road) or public walking tracks (such as the Mount Iron Track and the Clutha Trail) as they move through the landscape. It can also be appreciated in a broader sense from elevated viewpoints such as Mount Iron or in the vicinity of Grandview Mountain.
- 3.21 Regarding aesthetic values, I consider that it is fair to conclude that most observers will find the broad vicinity of the floor of the Upper Clutha Valley to be picturesque and pleasant. Topography is relatively uniform but terraces and rolling land provides interest. The considerable stands and lines of mature trees also add interest and traditional New Zealand agricultural character, and

also serve to break up and shorten views. Pasture, stock fences and grazing animals are easily seen from public roads and give a bucolic, agricultural quality to the aesthetic pattern of the valley floor. In parts, it is clear that domestic activity is prevalent and that parts of the floor of this valley are no longer traditionally agricultural in nature.

3.22 The mountain slopes and peaks that surround the Upper Clutha Valley floor are more romantic and sublime in terms of their aesthetic qualities than the valley floor. These are seen sometimes at distances but are generally always visible as a majestic and dramatic surrounding backdrop.

Legibility of formative processes and the degree of perceived naturalness

3.23 A trained observer will easily recognise the formative processes that have led to the current landform in both the valley floor and the mountainous walls. However I consider that an ordinary untrained observer would place little value on such things, although may recognise that the mountain slopes are more rugged and jagged in form and perhaps more dynamic in terms of how they are affected by the actions of water and snow. Aesthetically speaking, I consider that ordinary observers will recognise that these mountain slopes are distinct from the basin floor. They are free from the structures, buildings, roads, pasture, deliberately planted trees, and such like, that characterise the aesthetic pattern of the basin floor. Regarding the perceived degree of naturalness (which can be distinct from the actual degree of naturalness, which I discussed in my paragraph 3.13), I consider that ordinary observers would generally perceive that the mountain slopes are significantly more natural than the basin floor lands. As the eye is drawn up to the skyline, the mountain slopes become increasingly majestic and sublime.

The degree to which the valued aspects of the landscape are transient in nature

3.24 Some of the aesthetic qualities that are valued by observers in this part of the Upper Clutha Valley are transient in nature. Snow, in the form of a white rime on the mountain peaks or a thick blanket extending part of the way down the steep slopes, creates spectacular aesthetic effect at times. The same can be said of autumn colour in the many and varies exotic tree species of the area.

Memorability

3.25 In an overall sense, I consider that ordinary observers (whether visitors or members of the local community) are likely to value the aesthetics of the relevant part of the Upper Clutha Valley to a

relatively high degree and therefore to find them memorable. While the entire environment is appreciated as a whole, I consider that in terms of landscape perception most ordinary observers will view the mountains and mountain slopes as being distinct from the more modified basin floor lands and will associate the floor more with human occupation and activity than the mountain slopes. High, rugged, sublime mountain slopes of this sort, seen at relatively close quarters from a populated area, are relatively unusual in New Zealand, while the valley floor lands have a character that is similar to agricultural lands throughout New Zealand. In this sense, the more romantic and sublime views of the mountain peaks and lakes are more memorable.

Non-aesthetic values such as human held associations, perceptions, memories and cultural values

3.26 In terms of non-aesthetic values that observers may hold regarding the landscape such as historic values, spiritual values, Tangata Whenua values or other cultural values, I note that I have no specific expertise in these fields beyond my qualifications and a general knowledge of the district. As discussed earlier in my paragraph 3.11 in relation to landscape character, there are a number of historic features that are given some protection by the Plan in this vicinity, hence I consider it fair to conclude that the community values the historic aspects of this part of the district I consider that even to an untrained observer who is unaware of these specific protected features, a general sense of the gold mining and colonial agricultural history of the area adds a layer of meaning and appreciation to the landscape experience.

4 LANDSCAPE CATEGORY

Previous findings

- 4.1 The plan attached to this report as Appendix 1 shows previous findings regarding landscape category in the vicinity of the subject site. Relevantly:
 - The sites to the immediate north of Watkins Road have been analysed through a number of resource consent applications over the last decade. In each case, the landscape analysis (whether by the consent applicant or by the QLDC) found the site to be within a visual amenity landscape.

- The sites accessed by Loess Lane off Newcastle Road were created and built on via a number of resource consents. Again, in each case, the landscape analysis (whether by the consent applicant or by the QLDC) found the site, including the terrace riser escarpment, to be within a visual amenity landscape.
- A collection of sites to the north of the Hawea River, immediately opposite the subject site, and on very similar landform to the lower parts of the subject site, were created by a subdivision resource consent process. The landscape analysis by both the applicant and the QLDC found the site to be within a visual amenity landscape.
- A collection of sites known as Poplar Beach to the south of the Clutha River, immediately opposite the subject site, and on very similar landform to the lower parts of the subject site, were created by a subdivision resource consent process. The landscape analysis by both the applicant and the QLDC found the site to be within a visual amenity landscape.
- The site itself was the subject of a resource consent application in 2004 (referenced RM040553). The landscape analysis conducted by the QLDC and the resource consent decision of the QLDC find the site to be part of a visual amenity landscape.
- Environment Court proceedings that led to decision C114/2007 examined the area of the headland between Dublin Bay and the Clutha Outlet. The landscape witnesses involved in this case agreed that the part of the Clutha River adjacent to this land was an outstanding natural feature. The northern edge of this feature is the line of the top of the escarpment that immediately contains the river i.e. the top of the escarpment that rises from the river surface itself.

Current findings

- 4.2 Having examined and analysed the subject site and the surrounding landscape, the issue of landscape category must be resolved in accordance with Section 5.4.2.1 of the Plan. Some degree of guidance can be taken from past analysis.
- 4.3 Following on from all of the above analysis, I find that the valley floor landscape of which the site is a part is a visual amenity landscape because:

- The landform of this landscape is naturally formed and is appreciable as such. However, it is distinct from the surrounding mountain slopes and from the exceptional features within the valley floor such as Mount Iron and Mount Barker.
- The land management of this valley floor has been done by agriculture for many decades, consequently its land cover is almost entirely unnatural and the result of human management. The floor has historically been more managed and occupied than the mountain slopes and the degree to which pre-human ecological systems remain intact is low. In some parts of the valley floor modification is more intense, in the form of rural living areas.
- The characteristics of the valley floor land fit closely with the description of visual amenity landscapes that is set out in the Plan.
- In terms of aesthetics, the valley floor is a picturesque, pleasant farming landscape; and is distinct from the more majestic and sublime aesthetics of the mountain slopes and peaks. While pleasant, the valley floor lands are less remarkable than the mountains and hence are less memorable.
- The formative processes that have created the valley floor (while largely only legible to a trained observer) add to the interest and appreciation of the landscape in aesthetic terms, as do the historic heritage aspects of the landscape.
- A number of past landscape analyses and decisions of the QLDC have found this landscape (including the site itself) to be of the visual amenity landscape category.

Outstanding Natural Features

4.4 I have read a report regarding the subject site prepared by Richard Denny of Lakes Environmental dated 7 June 2011. The result of his analysis is the finding that while much of the site is part of a visual amenity landscape, parts of it constitute an outstanding natural feature. His findings are illustrated in Figure 2 below:

vivian+espie

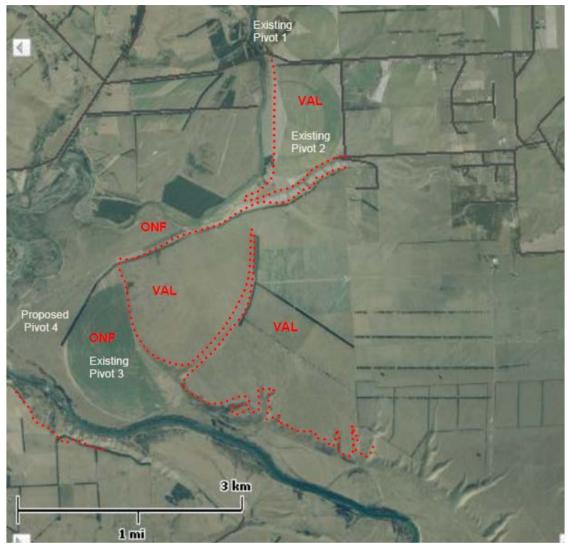


Figure 2: The landscape categorisation findings of Mr Richard Denny

4.5 Mr Denny has followed an appropriate methodology and has made correct reference to the relevant parts of the Plan. With reference to the above figure, Mr Denny finds that

Overall I conclude that the terrace faces and the lower terraces towards the west and south of the property are part of the Clutha River / Mataa–au and Hawea River Outstanding Natural Feature. It is an open landscape where the natural landform dominates over the relatively minor domestic elements. It has clarity and legibility of landform on such a large scale that the processes that have formed it are very evident. Its openness and horizontal form provides a contrasting but complimentary landform to the surrounding mountains and together forms a signature landscape of the upper Clutha valley. Existing pivot 3 and proposed pivot 4 would be located within this landscape.

- 4.6 Regarding the definition of outstanding natural features, Environment Court decision C129/2001 set out that "feature" means "a distinctive or characteristic part of a [landscape]". The decision went on to discuss the importance that a feature is distinct from its surroundings¹⁰.
- 4.7 By the above definition, I consider that a river, or a part of a river, may be an outstanding natural feature (provided it is sufficiently natural and outstanding to warrant such status). I note that in this District, the findings of the Environment Court regarding the outstanding natural feature status of rivers to date has been that parts of our rivers are outstanding natural features¹¹. I am unaware of any finding that an entire river is an outstanding natural feature.
- 4.8 As noted above, the part of the Clutha River near its outlet from the lake has been found to be an outstanding natural feature, with the northern extent of the feature being the line of the top of the escarpment that immediately contains the river.
- 4.9 The extent of the feature identified by Mr Denny is particularly wide since within his identified feature of the river he includes the escarpment face that immediately contains the river, the flat terrace tread that lies above that escarpment, and the escarpment face that then rises above that terrace tread. At its widest point, the feature of the river as identified by Mr Denny's is 1.75 kilometres wide.
- 4.10 I consider that even if we assume that this part of the Clutha River and Hawea River is an outstanding natural feature, the extent of the feature identified by Mr Denny is far too expansive. The large area of flat terrace land and the associated escarpments are not part of the feature of the river. Realistically, the river and its immediate banks form the feature that is definable and distinct from its surroundings. The large terrace and escarpment area identified by Mr Denny is not distinct from its surroundings, rather it is very similar to, and contiguous with, the escarpment landscape that continues to the east across the subject site.

 ¹⁰ Environment Court decision C129/2001, WESI vs. QLDC, paragraphs 33 and 35.
 ¹¹ Environment Court decision 180/1999, WESI vs. QLDC, paragraph 143 (reference in Policy 5 to Kawarau Gorge, Arrow Gorge and Shotover Gorge); Environment Court decision C35/2002, Queenstown Bungy Ltd vs. QLDC, paragraphs 19 to 21 (referring to the upper Shotover Gorge or Skippers Canyon).

- 4.11 Even if we consider Mr Denny's identified terrace tread and risers (i.e. escarpments) to be separate features from the river, I believe that an appraisal of them in relation to the landscape character and values analysis set out above, reveals them to be:
 - insufficiently distinct from their surroundings to be correctly termed features;
 - no more natural than the surrounding identified visual amenity landscape;
 - insufficiently outstanding to be elevated above the visual amenity landscapes of the district.
- 4.12 To expand on the above, I see no merit or justification in separating the escarpments that Mr Denny has identified as having outstanding natural feature status from the flat terrace lands that Mr Denny agrees are part of a visual amenity landscape; or separating them from other escarpments to the east (both within and without the site) that Mr Denny has not identified as outstanding natural features. I consider that these escarpments are an inseparable part of an escarpment-and-terrace landscape; the escarpments are no more natural than the terraces, they are both formed by the same processes and are both entirely modified in terms of vegetation cover. I can see no logical reason to separate the escarpments from the surrounding landscape in general. I believe this landscape is best assessed in a holistic manner rather than separating it into components which are, in reality, equal in terms of naturalness and outstanding-ness.



Figure 3: Photograph of view to the northern escarpment of the subject site from Camp Hill Road.

- 4.13 Regarding the lower flat terrace area that Mr Denny has identified as having outstanding natural feature status, I have set out above why I do not consider this area to be part of the feature of the river itself. If we consider this area on its own, again I find that it is no more natural or outstanding than the flat terrace lands that lie to the east that are agreed to be part of the visual amenity landscape (for example, it is fenced into uniform paddocks of verdant pasture, contains straight shelterbelts of exotic shelter trees, and is almost entirely covered by a large centre-pivot irrigator). In terms of character and values, this area is not distinct from the broader whole.
- 4.14 Furthermore, I believe that categorising landscape components such as Mr Denny's identified escarpments as "outstanding", runs a significant risk of devaluing the term "outstanding". In terms of managing the landscapes of our district in accordance with the Act, we must be careful to reserve the term "outstanding" for landscapes and features that genuinely do stand out from the district's landscapes in general, in terms of merit and naturalness.



Figure 4: Photograph of view to the west across the lower flat terrace area of the site that is identified by Mr Denny as being part of an outstanding natural feature.

- 4.15 I consider that my findings can take support from past landscape analysis and decisions of the QLDC in that:
 - As shown on my Appendix 1, both the collection of sites to the north of the Hawea River immediately opposite the subject site, and the collection of sites known as Poplar Beach to the south of the Clutha River immediately opposite the subject site, are located on landform that is contiguous with land that Mr Denny identifies as being within the outstanding natural feature of the Hawea River, yet past landscape analysis has found this land to be within a visual amenity landscape.

- The sites accessed by Loess Lane shown on my Appendix 1 contain part of the escarpment face that Mr Denny identifies as being part of an outstanding natural feature, yet past landscape analysis has found this land to be within a visual amenity landscape.
- The landscape analysis of the site itself that was done in association with resource consent application RM040553 found the site to be within a visual amenity landscape and identified no outstanding natural features.



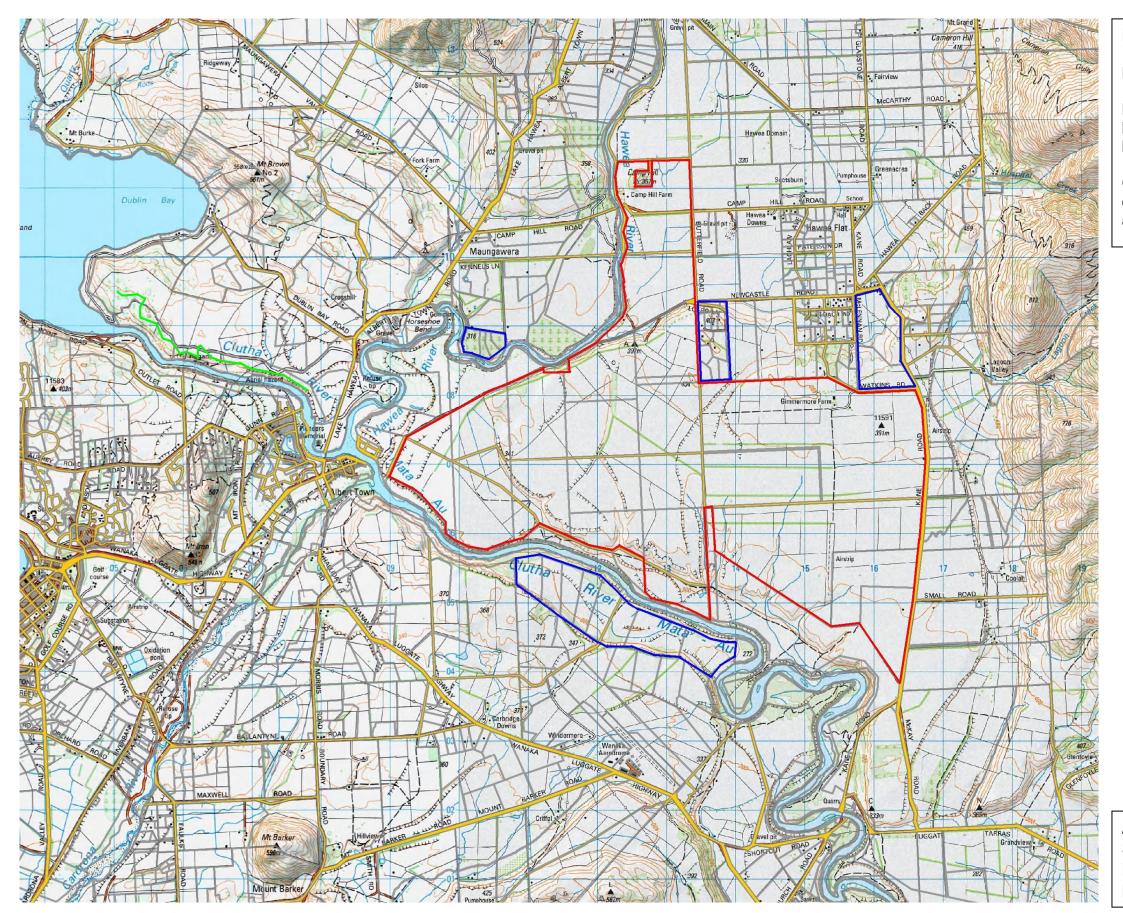
Figure 4: Photograph of the view to the south-east from the lower part of the subject site towards land of the Poplar Beach site.

5 CONCLUSIONS

- 4.16 The subject site takes in a large area of the floor of the Upper Clutha Valley and is a well managed, productive farming operation in an area of interesting terrace topography.
- 4.17 The valley floor landscape of which the site is a part is comprised of natural landform resultant from glacial and alluvial action that is distinct from the containing mountain slopes. It has been relatively intensively managed for agriculture for many decades and contains relatively little in terms of remnant pre-human ecosystems. This landscape is aesthetically pleasant and picturesque and I consider it to be a visual amenity landscape.
- 4.18 While the relevant parts of the Clutha and Hawea Rivers may be outstanding natural features, I consider that the extent of these features comprise of the rivers themselves and their immediate banks. I do not consider that any of the terrace flats or escarpments of the subject site can correctly be considered to be part of the features of the rivers. These terrace flats and escarpments are distinct from the rivers but are not distinct from the surrounding landscape.

- 4.19 Furthermore, I do not consider that any of the terraces or escarpments within the subject site can correctly be considered to be outstanding natural features themselves because they are :
 - insufficiently distinct from their surroundings to be correctly termed features;
 - no more natural than the surrounding identified visual amenity landscape;
 - insufficiently outstanding to be elevated above the visual amenity landscapes of the district.
- 4.20 In an overall assessment, I consider the subject site to be part of a visual amenity landscape and to contain no outstanding natural features.

Ben Espie vivian + espie 29 July 2011



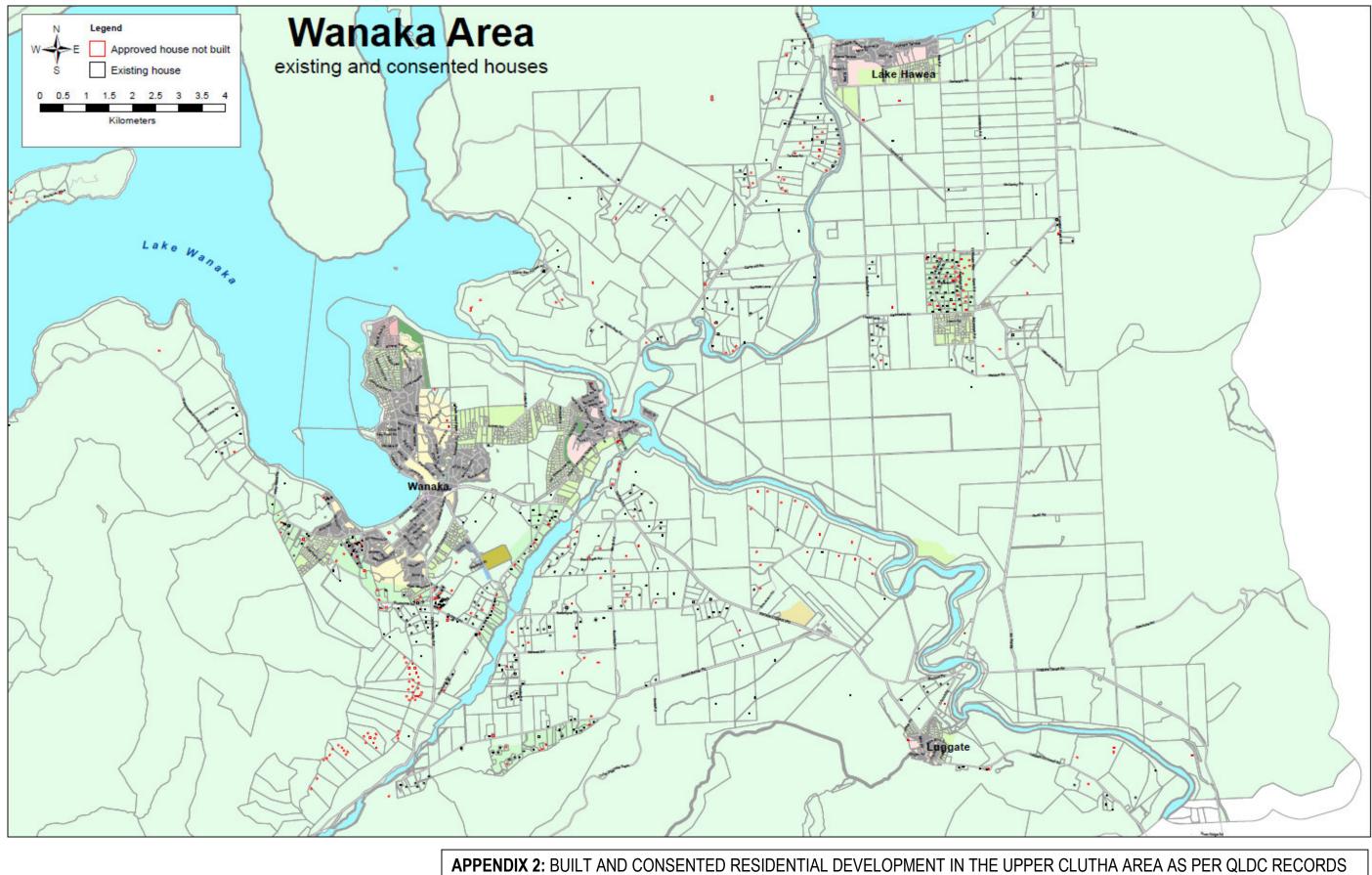
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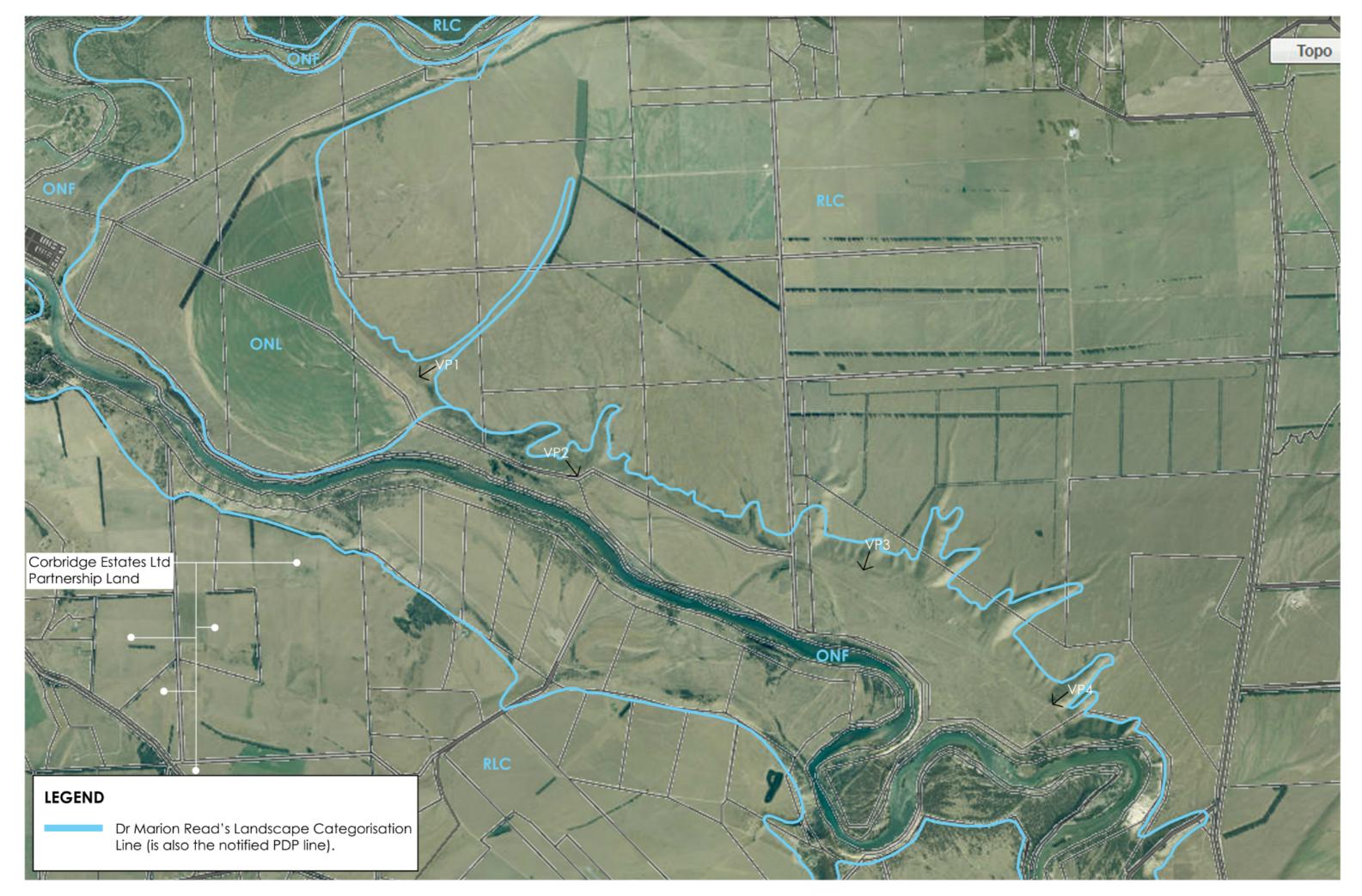
Red Outline indicates the extent of the subject site.

Blue Outline indicates extent of sites that have been found to be entirely of visual amenity landscape status.

Green Outline indicates the northern extent of the outstanding natural feature of the Clutha Rive in the area close to the outlet from Lake Wanaka.

APPENDIX 1: THE LOCATION OF THE SITE AND OTHER SITES THAT HAVE BEEN CATEGORISED IN TERMS OF LANDSCAPE





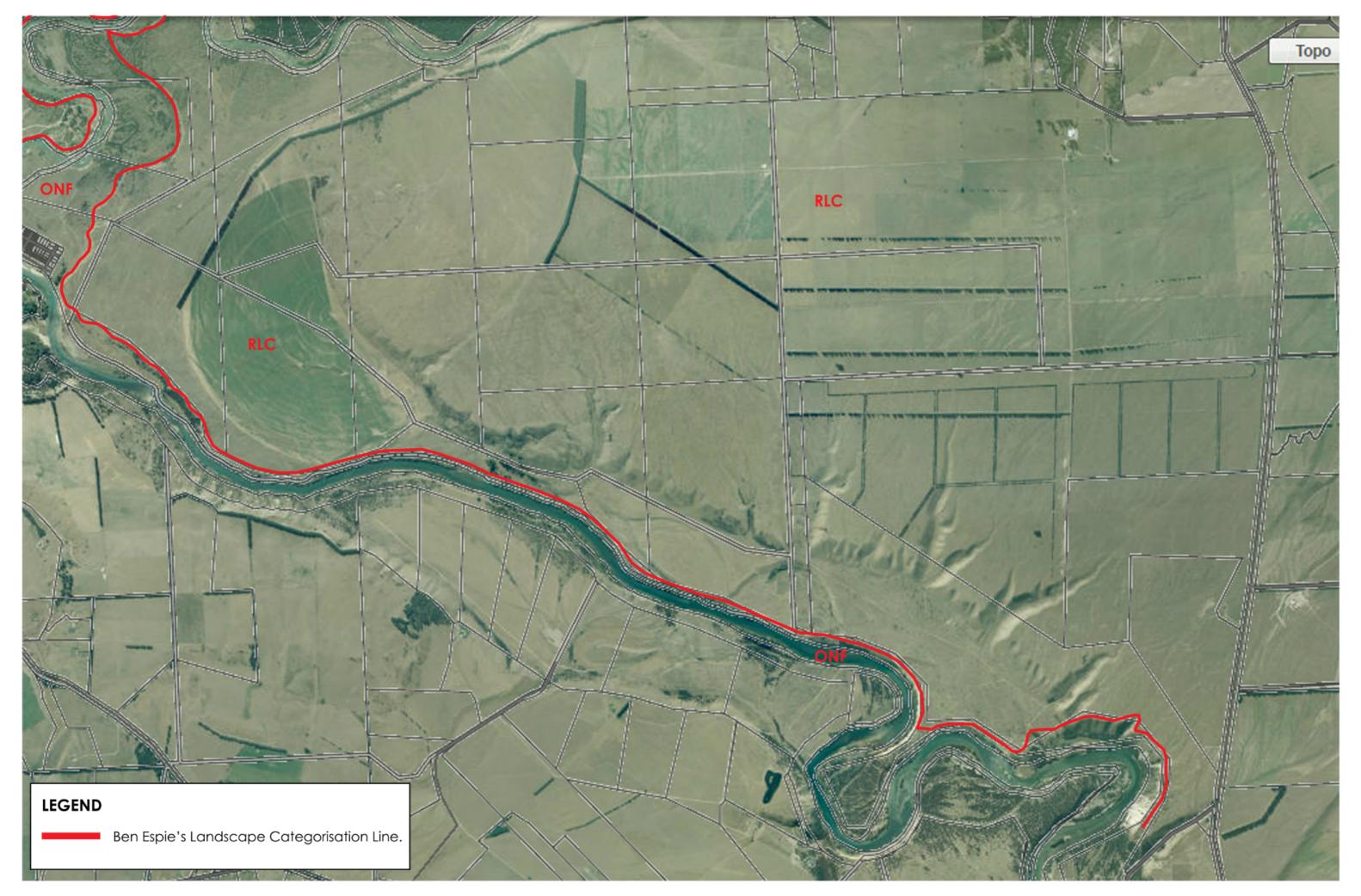






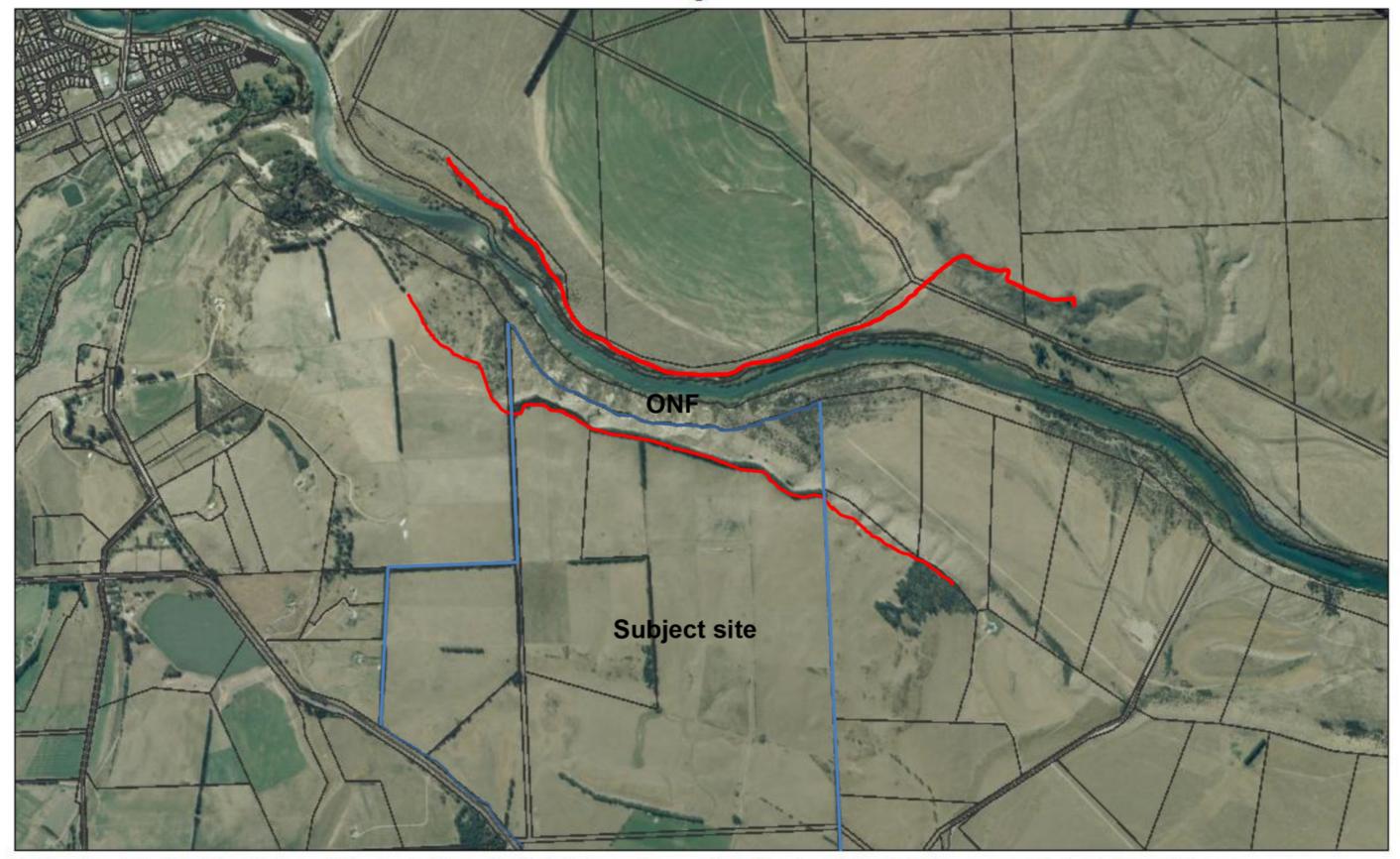








Corbridge ONF



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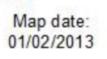


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Map produced by Queenstown Lakes District Council's Dekho GIS viewer

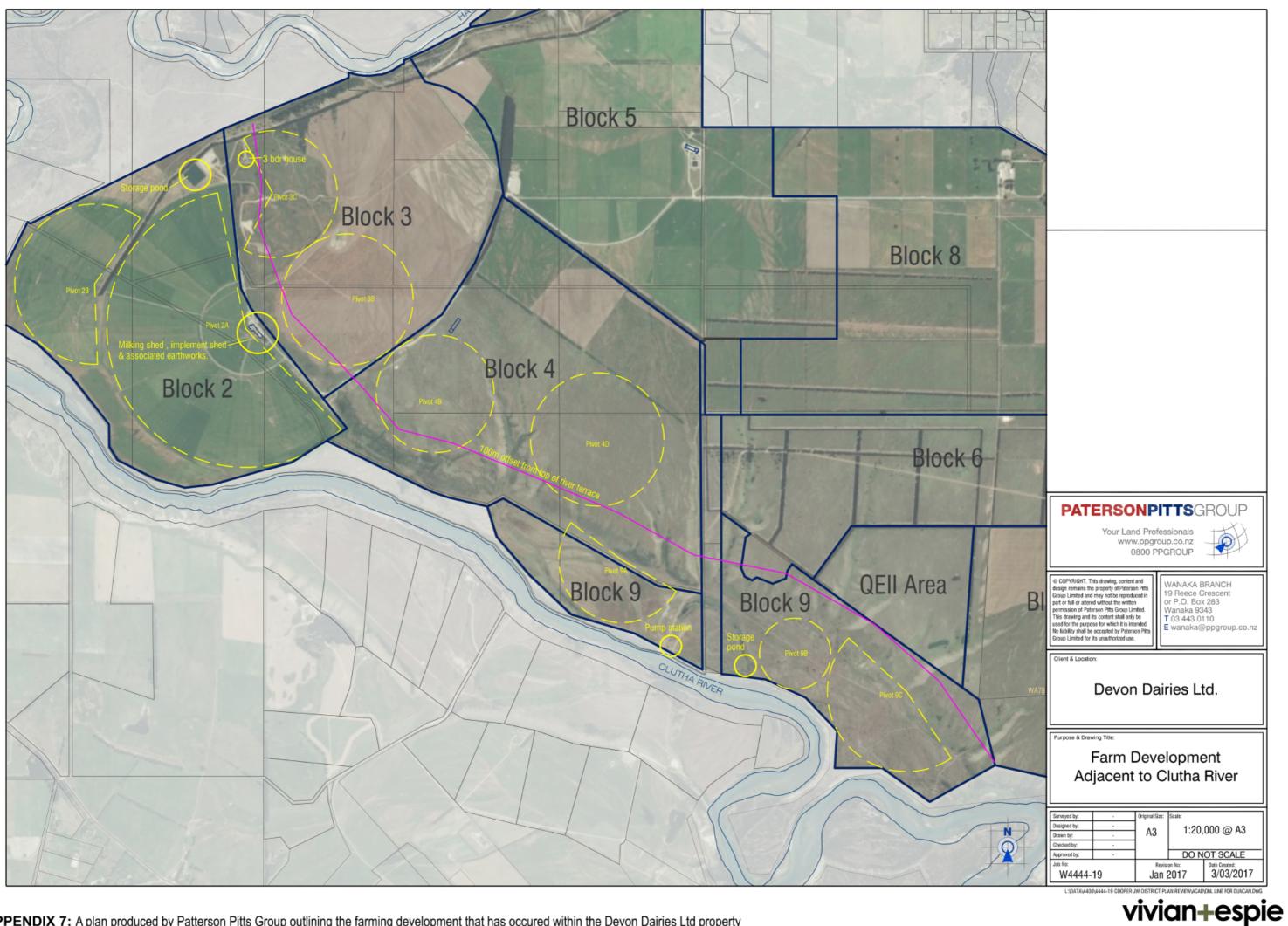
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resource management and landscape plan



APPENDIX 7: A plan produced by Patterson Pitts Group outlining the farming development that has occured within the Devon Dairies Ltd property

resource management and landscape plannin



APPENDIX 8: PANORAMA PHOTOGRAPH 1 - Looking at Block 2 of the terrace lands within the Cooper Land Holding. The bright green foreground is the area of Pivot 2A.



APPENDIX 8: PANORAMA PHOTOGRAPH 2 - Looking over Block 9 of the terrace lands within the Cooper Land Holding. Pivot 9A is recently installed and has not yet started use. It can be seen in the left midground.

APPENDIX 8: Panorama photographs of the relevant terrace lands. All photos taken on the 10th of March 2017 with a fixed focal length of 50mm. Photos point locations are shown on Appendix 2.



resource management and landscape planning



APPENDIX 8: PANORAMA PHOTOGRAPH 3 - Looking over the eastern part of Block 9 of the terrace lands within the Cooper Land Holding. Pivot 9A can be seen on the extreme right, while pivots 9B and 9C can be seen on the left. These pivots are recently installed and have not yet started use.



APPENDIX 8: PANORAMA PHOTOGRAPH 4 - Overlooking the extreme eastern end of Block 9 of the terrace lands within the Cooper Land Holding. Pivot 9C can be seen on the left. This pivot is recently installed and has not yet started use.



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