

Before the Commissioners appointed by Canterbury Regional Council

IN THE MATTER OF The Resource Management Act 1991

AND

IN THE MATTER OF Applications by Southdown Holdings Ltd, Five Rivers Ltd,
Williamson Holdings Ltd and Killermont Station Ltd for Water
Permits to take and use surface water and Land Use Permits to
disturb the bed of Lake Ohau and the Ahuriri River

STATEMENT OF EVIDENCE OF STEPHEN KENNETH BROWN ON BEHALF OF THE APPLICANTS

Introduction

1. My name is Stephen Kenneth Brown. I hold a Bachelor of Town Planning (Auckland) and a post-graduate Diploma of Landscape Architecture (Lincoln). I am a Fellow of the New Zealand Institute of Landscape Architects and an Affiliate Member of the NZ Planning Institute. I have practised as a landscape architect for 27 years. During that period I have specialised in landscape assessment and planning, helping to develop regional and district strategies for landscape management, but also addressing the landscape, natural character and amenity implications of individual development proposals.
2. A Curriculum Vitae, fully outlining my qualifications and experience is attached to this statement as **Appendix A**.
3. In relation to the current applications, I appear on behalf of Southdown Holdings Ltd, Williamson Holdings Ltd, Five Rivers Ltd and Killermont Station Ltd, and have been asked to assess the landscape effects of their combined implementation. In undertaking that evaluation, I have focused upon the following:
 - key components of the applications that would, or could, have landscape implications;
 - existing landscape character, including my own assessment and interpretation of values within the Waitaki Basin – both at present and as they are currently evolving;
 - the catchments and audiences likely to be affected by the proposed water abstraction and irrigation;

- changes to the landscape character and values of the Waitaki Basin; and
 - determination of the appropriateness of such effects in relation to the current statutory environment that manages the landscape of the Waitaki area.
4. As a result of the above, my statement concludes with both findings in relation to the impacts of the water take / irrigation proposals for each property, together with a number of suggested mitigation measures designed to address specific effects.
5. Although this is not a Court sitting, I have prepared my evidence in accordance with the Environment Court's Code of Conduct for expert witnesses contained in the Environment Court Practice Note (2006) and agree to comply with it. As such, I confirm that I have considered all the material facts that I am aware of that might alter or detract from the opinions that I express, and that the evidence presented is within my area of expertise. In other words, I regard my role as one of informing and assisting the commissioners with their decisions in relation to the current applications.

Key Components of the Applications

6. The nature of the applications is clearly spelt out in the application documents. However, a number of components of the proposals are critical in terms of the combined applications. From my point of view, these comprise:
- The **Lake Ohau water intake** structures and pipeline connections to the Southdown Holdings (Glen Eyrie Downs Station) and Five Rivers (Ohau Downs) properties. I understand that the 'infiltration gallery' option – involving both submerged intake galleries and a pumping station buried at the coastline edge – are currently preferred for both the Southdown Holding and Five Rivers applications. Although theoretically visible near Maori Cove on the southern and eastern shorelines of Lake Ohau when viewed from the DoC reserve and a gravel accessway near the lake's canal gate and channel (Annexure 1), these would actually have very limited exposure to the wider landscape and potential audiences.
 - The two new **Ahuriri water intakes** on the Ahuriri River (Annexure 2): these comprise the 'Woolshed Intake' near the southern end of Killermont Station and the WHL Killermont intake just south-west of the Pebbly Block (Killermont Station). Both new intakes would be sited in close proximity to SH8, on the side of the Ahuriri River; the WHL Killermont intake is also located close to

the Clay Cliffs Outstanding Natural Landscape. The intake proposal for Killermont Station and the two options being considered for the WHL Killermont land involve the use of screens (potentially rotary screens) that, together with underwater concrete galleries, would be embedded in the river channel against the south side of the Ahuriri River corridor. The Woolshed Intake proposal involves a pumping station being located within the river-bank, and another on the terrace across SH8, near the main entry to Killermont Station. Option 1 of the WHL Killermont proposals would also involve a pumping station being buried in the bank adjacent to the Ahuriri River, whereas Option 2 would utilise a gravity fed pipe carrying water to the main irrigation fields directly across SH8. I further understand that the intake proposals may require the periodic use of earthmoving equipment in the Ahuriri river-bed to ensure that a continuous flow of water is maintained to the inflow and this is not disrupted by relocation of the river braids during higher rainfall sequences and 'freshes'. Even so, this part of the proposal primarily involves mostly underwater and underground structures that would be essentially hidden from public view, including that part of SH8 near the Ahuriri River and 'Clay Cliffs'.

I am now also aware that Williamson Holdings Ltd has identified another possible intake for WHL Killermont some 3kms west of the intake location that I have just described – within the mouth of the Lindis Pass. However, I have not visited that site and will not address it in this statement.

- The **Tara Hills (Pebbly Block) Frosty Gully and Manuka Creek intakes**, all utilise an existing intake and pipeline, while – in the case of Frosty Gully – an existing dam will also continue to be employed. All three intakes are effectively isolated from the public domain by intervening blocks of private land.
- **Rotary irrigators** on all four application properties. These would be located as per the attached diagrams (Annexures 3A – 3D) and would comprise the most visible structural components of the irrigation schemes proposed. They would also, in conjunction with fertiliser enhancement of the subject properties, result in the greatest direct change to the landscape of the southern Waitaki Basin, with the irrigation process would – by its very nature – result in direct modification of the vegetation cover profile of that part of the application properties which is subject to irrigation. Consequently, although such modification may well be regarded as an effect in its own right, it is also a 'component' of change associated with the proposed irrigation system that would generate its own effects in relation to the wider Waitaki landscape.

- **Linear & K-Line Irrigation** of the southern part of Killermont Station (Killermont Station Ltd), covering some 41ha (additional to the current 28ha) at three locations – near the foot of the Dunstan Range and above a terrace bank approximately 0.5km south of SH8 and the Ahuriri River.
 - Additional **K-line irrigation** on the Pebbly Block part of Killermont Station between the Ahuriri River and SH8. This would result in modification of a strip of land that is currently covered in a mixture of coarse grasses, scattered pines (mainly strung along the Ahuriri River bank), some remnant tussock, sweet brier and other weed species – within the immediate foreground ‘apron’ of the Ahuriri River and ‘Clay Cliffs’. The irrigated area would be exposed to users of SH8.
7. Further details are provided about the components just described in Aqualinc’s description of the key structures contained within each application.
8. Furthermore, although not part of the current applications, my statement also addresses the potential effects of cubicle barns – large concrete floored sheds that are each capable of housing up to 650 cows at a time, and may well do so in the future in excess of 6 months of the year. These structures are typically in the order of 30m wide, up to 6.7m high at their roof apex, and are either approximately 125m long without rotary milking plant attached, or around 155m long with the rotary milking plant appended to the main shed (Annexures 4A & 4B). These sheds would be paired and linked to slurry holding ponds in their immediate vicinity. Possible locations for these structures are also shown in the irrigation diagrams for the Williamson Holdings (south-eastern) part of Killermont Station, Glen Eyrie Downs Station and both sides of Lake Ohau Rd within Ohau Downs Station. It is not certain that the barns will, in fact, be developed on Ohau Downs as they are associated with two dairy conversion options, but not the third. However, I understand that all necessary District Council consents (including Certificates of Compliance) have been obtained for the construction of all of the cubicle barns that I discuss in this statement.

The Applications’ Landscape Setting

9. The Mackenzie Basin is an extensive tract of central high country which extends down the eastern side of the main divide from Burkes Pass in the north to the Lindis Pass in the south. It is bounded to the west by the glaciated ranges of the Southern Alps, by the Two Thumb Range to the north, the Dalgety, Grampian, Kirkliston and Benmore ranges to the east, and the Barrier Range and Lindis Hills to the west. Within its impressively scaled expanse a series of lakes – from Tekapo down to Ohau and a man-made Lake Ruataniwha – provide focal-points for recreation and scenic appreciation of the MacKenzie Country. The

landscape has been physically shaped and remains substantially dominated by the natural mountain building, glacial and fluvial processes that have given rise to its geomorphic structure. Extremes of climate in Summer and Winter further shape the land, its vegetative cover and activities across the MacKenzie and Waitaki Basins.

10. With its expansive mantle of tussock and grasslands affording a foundation for panoramic, and frequently spectacular, views to the Southern Alps, the Mackenzie Country has long held a strong sense of place and identity in the folklore and perception of both the South Island and New Zealand. Indeed, even before the advent of European occupation Maori quarried stone for tools, fished for eel, hunted birds (including moa), and established summer camps along the rivers and lakes. As a result, Maori place names were given to the inland lakes – Tekapo, Te Kaupururu (Alexandrina), Otetoto (MacGregor), Pukaki, and Ohau.
11. Yet anyone now visiting the Mackenzie Country and the Upper Waitaki Basin, which it merges with, can clearly see that the productive nature of these ‘plateau grasslands’ has evolved very substantially since Maori first told early settlers of its grassy plains within the South Island’s interior. It has been a key focus for energy production since the Hay Report of 1904 and the realisation of that potential (with commencement of development in 1938) has long been evidenced by the chain of canals from Lake Tekapo southwards (Annexure 5) and the artificial nature of Lakes Benmore and Ruataniwha (constructed in the 1980s) – to name but two at the top of the Waitaki River sequence of hydroelectric schemes and storage lakes.
12. Within the vast expanse of the wider basin embracing both the Mackenzie and Upper Waitaki catchments, Twizel – the “town of trees” – has, together with the smaller settlements of Tekapo, Omarama, and nearby farms, provided the focus for a more gradual, but equally pervasive, shift in the very content and character of the landscape. Douglas fir and pines (Annexure 6) – often within road reserves – have left their mark on an increasing proportion of the Waitaki Basin, increasingly so around Lakes Tekapo and Pukaki, while the gradual march of conifers across the conjoint basins is also very marked near the foot of Ben Ohau and down the western and southern flanks of the Upper Waitaki. More over, a patina of rural-residential development west of both the town and the Ohau Canal (Annexure 7) is emerging in association with the increase in woodlots, shelterbelts and wilding plantings that is starting to re-cast the character of both basins. It is, as someone recently described it to me, becoming more like Canada than the high country of yesteryear that would have been recognised by James MacKenzie in the 1850s.
13. Pastoral farming is, of course, the other land use component directly associated with the Upper Waitaki Basin, with the progressive evolution of top dressing, use of rye grasses and clover, border dyke

irrigation, together with the more recent advent of rotary irrigation, matched by the progressive transition from sheep to dry stock and dairy farming over recent decades. South of Twizel and Lake Ruataniwha, running through to Omarama, this transition is especially marked, with pivot irrigators, new milking sheds, houses and accessways an increasingly pervasive feature of the local landscape. Consequently, parts of the Basin have a similar appearance to many of the other productive rural landscapes found throughout New Zealand. Even so, pine and fir shelterbelts remain a feature of the general landscape and still articulate the boundaries between properties and paddocks, as well as the location of farmhouses and buildings. They have never been as wide-spread as in other parts of rural New Zealand, so that there remains a balance between the open landscape of irrigated paddocks and the greater enclosure found close to road and property margins. Nevertheless, the extended boom structures of the irrigators have become an increasingly pervasive feature of the south Waitaki landscape, much more so when parked next to the likes of SH8, while the built content of the landscape has also subtly increased both in intensity and extent (Annexure 8).

14. Despite all of these changes, the landscape of the Upper Waitaki remains very substantially defined by the mountains and foothills that frame it. Around the southern Waitaki, a very prominent Ben Ohau, with the Ben Ohau Range at its back and the Diadem Range to the west, then – south to south-east of Omarama – the St Cuthbert, Ewe, Wether / St Bathans and Dunstan Ranges all contain and lend their wild, montane qualities to the basin / plateau landscape. Depending upon the time of year, they reinforce the natural elements and processes at play within this environment through their mantle of snow and ice, or lend it an austere, even desiccated, quality, with their bare rock and scree. This, much more raw and elemental, landscape layer is reinforced by the very open, exposed, nature of the local lakes, which are often whipped up by winds descending from the main divide.
15. They are also key focal-points within the Basin, while more localised ponds, kettleholes, terraces, moraine fields and wetlands, such as those around the Red Lagoon, Raupo Lagoon, Swan Lagoon and Wairepo Creek – near the southern end of Lake Ohau – together with a series of small scale foothills and ridges – such as those running from Cloud Hill through to Benmore Station – further enhance its landscape value. This combination of features lends specific parts of the Waitaki landscape a sense of local identity, in part because they subdivide the landscape up into smaller catchments that have their own distinctive character, make it more legible by providing both landmarks and points of definition (assisting with 3 dimensional spatial legibility), and reinforce the landscape's apparent naturalness – even if this is illusory in some locations. This balance and interplay of elements within the Upper Waitaki and Mackenzie Country is creating an increased demarcation between the natural and cultural halves of the landscape as a whole. Although Lakes Ohau, Ruataniwha, Pukaki, Tekapo and Benmore remain key centrepieces

across the greater basin, and the various mountain ranges on its fringe are clearly key landscape touchstones, much of the central plains and terrace landscape is now as much defined by farming and other human activities as it is by the landform profiles which underpin it. There is an increasing level of contrast between the more natural periphery of this 'central grasslands' landscape and its montane perimeter, with the tussocklands that were once central to the identity of both basins increasingly pushed back by woodlots, wilding or what might equally be called 'unintentional' afforestation, and the evolution of farming activity. This pattern is already clearly established and has already changed the identity of the area very significantly from when I first experienced it in 1980.

16. In looking to the future of the Upper Waitaki in the context of the current applications, it is also important to acknowledge that much of the land already employed for grazing has changed fundamentally from its tussock dominated, pre-European state to an almost depauperate state, with coarse grasses now intermixed with remnant pockets of tussock, but also matagouri, hieracium ('hawkweed'), sweet briar and other weed species. Left as is, most of this land will remain physically and ecologically impoverished.
17. Options for future use are severely limited by these 'pre-conditions', but include dry stocking, cropping (potentially for biodiesel or similar), dairy conversion and - subject to resolution of concerns expressed in the past by power generation companies – forestry. All of these have, or would continue to have, a direct impact on the nature and values of the Waitaki Basin landscape. Indeed, even the 'do nothing' option would have a significant impact insofar as rabbits and hares, combined with spreading weeds (including wilding pines and Douglas fir), would continue to encroach upon the natural parts of the high country: there is no ecological stasis that can be relied on to maintain the landscape status quo. Within this range of potential land uses, irrigation and dairy farming is far from the most extreme option in terms of landscape change.

Ohau Downs & Glen Eyrie Downs Station

18. Both farms occupy the alluvial terraces south of Lake Ohau and, for the most part, occupy land that has been subject to grazing for a considerable period of time. In the case of Glen Eyrie Downs Station (Annexures 9A, 9B & 10A) an area of approximately 1200ha was until recently occupied by a dense copse of wilding pines – abutting Ribbonwood Station, which is still clearly defined by the shelterbelts both within its farmed area and along the margins of the Serpentine and Wairepo Creeks (Annexure 10). Stands of conifers also mark the entrance and curtelage of the homestead on Ohau Downs Station (Annexure 11A).

19. Much of the landscape of both stations is open and almost flat, although Ohau Downs ascends towards an area of terminal moraine closer to Lake Ohau and also descends into a lower river terrace north of Lake Ohau Rd (Annexure 11B). The bulk of both properties has been used regularly for pasture – including that on more undulating terrain between Six Mile Creek and Quailburn Creek and Road, which is presently covered in a mixture of coarse grass species, weeds and the odd remnant clump of tussock. Closer to Quailburn Rd, Glen Eyrie Downs Station is also covered in the remains of a canola (biodiesel) crop. Regardless, these parts of the Ohau Downs / Glen Eyrie Downs Station landscape are clearly modified and their paucity of vegetation cover, combined with limited landform variation, give much of it a rather bleak and austere character, although a stand of pines and the shelterbelts on adjoining Ribbonwood Station lend the fringe landscape a slightly more bucolic, if even less endemic and natural, character.
20. On the other hand, from around the Wairepo Stream through to Quailburn Rd the landscape descends into a sequence of localised stream terraces, wetlands and depressions around the Wairepo Stream corridor, and feeder ponds further south. DoC maintains a sizeable tussock / pond / wetland reserve – the Quailburn Conservation Area – around these features and a sizeable part of the Wairepo Stream corridor. The reserve is almost surrounded by Glen Eyrie Downs, effectively separating the application property into two halves, and the land within its southern ‘half’ rises from the vicinity of the Wairepo Stream through a series of secondary ridges and saddles, before descending again towards the Quailburn Stream and Road.
21. Closer to Lake Ohau (Annexure 11C), the landscape also undulates through a series of terraces, ridges and spurs wrapped around perched wetlands, bogs, and ponds south of Maori Cove. This highly variable environment, together with that near the Wairepo Stream, is dominated by tussock and matagouri – contrasting with the coarse grass cover and weeds so prevalent within the adjacent areas of pasture. Much of the area physically embracing, and proximate to, the Red Lagoon, Raupo Lagoon and Swan Lagoon within the Ohau Downs property is subject to a QEII covenant and protection.

WHL Killermont (Williamson Holdings Limited)

22. The great bulk of the WHL Killermont land that would be subject to irrigation comprises a sequence of extensive colluvial terraces that are almost entirely devoid of vegetation and features of any significance. Pines and other plants are more evident around the WHL Killermont farmhouse and yards, on the edge of the main river terrace at the point of transition into the Dunstan and Wether Ranges, as well as around Broken Hut Rd, west of the Tara Hills Research Station. Yet, impressions of the Williamson Holdings Ltd

Block, are overwhelmingly dominated by its barren expanse of little used pasture gradually falling from the direction of Broken Hut Rd towards the Ahuriri River and SH8 (Annexure 12A).

Killermont Station (Killermont Station Ltd)

23. Although Killermont Station to the south is slightly less austere and impoverished (Annexure 12B), and also benefits – visually – from interconnection with both hill ranges in its very immediate backdrop, the actual farm area displays limited naturalness and endemic character, with its limited overall appeal mainly related to the interplay just described. This is more apparent around the Dunstan Range, around the gateway to the Lindis Pass, but also in longer distance views from SH8 towards the Ewe and St Cuthbert Ranges.
24. Similarly, the area of mainly open ‘grassland’ captured by the Pebbly Block – in actuality another block of land dominated by hieracium, sweet briar, coarse grasses and matagouri, with a thin ‘trickle’ of tussock running diagonally across its centre towards the Ahuriri River – has limited appeal in its own right (Annexure 12C). However, it also acts as the ‘frontispiece’ for views from SH8 towards the Ahuriri River and, more particularly, the ‘Clay Cliffs’, that are a signature feature of both the river corridor and Omarama. As a result, it is difficult to separate the pastoral foreground of this Block from the two key features that lie directly beyond it in such views.

Values

25. In order to help explore the wider physical and perceptual context for the proposed applications, I have considered the identification of Outstanding and Amenity landscapes, together with lake and river margins that display high Natural Character values – referencing relevant case law and my own experiences in the field of strategic landscape assessment.

Outstanding Landscapes

26. Section 6(b) of the Resource Management Act identifies “*The protection of outstanding natural features and landscapes from inappropriate subdivision, use, and development*” as a matter of national importance. The so called ‘modified Pigeon Bay’ factors, that emerged in the findings of the Environment Court in the *Pigeon Bay Aquaculture Limited v Canterbury Regional Council* case and subsequent *Wakatipu Environmental Society Inc v Queenstown Lakes District Council* cases, are now largely accepted as a starting point for the identification of such landscapes:

- a) *natural science factors -the geological, topographical, ecological and dynamic components of the landscape;*
- (b) *aesthetic values including memorability and naturalness;*
- (c) *expressiveness (legibility): how obviously the landscape demonstrates the formative processes leading to it;*
- (d) *transient values: occasional presence of wildlife; or its values at certain times of the day or of the year;*
- (e) *whether values are shared and recognised;*
- (f) *the landscape's value to tangata whenua;*
- (g) *its historical associations.*

27. At the very least they provide a comprehensive check list landscape 'layers' that may or should be addressed in making determinations about the relative values to be attributed particular landscapes, including whether or not they are outstanding. However, the analysis of landscapes in terms of the modified Pigeon Bay factors does not automatically lead to such identification in its own right. Other considerations also have to be taken into account, as I will explain.

28. Adopting a somewhat different tack in relation to the identification of highly valued landscapes, Prof. Simon Swaffield and John Fairweather (of Lincoln University) have also undertaken extensive research into New Zealanders attitudes towards different landscapes in various parts of New Zealand (from 1997 onwards). An analysis of those studies, ranging from Kaikoura in 1998, through Westland in 2000, to the Auckland Region in 2004¹ reveals a remarkable degree of consistency in the appreciation of, and attachment of values to, New Zealand's landscapes, based on repeated "Q Sort" testing of public attitudes to a wide range of landscapes and landscape types. As a result, Swaffield and Fairweather have identified two main paradigms that help to explain most New Zealanders' responses to landscape and their assignment of values to different types of landscape. The '*wild nature*' paradigm, repeatedly identified in their research, is strongly correlated with the native endemic character of landscape scenes and the predominance of natural elements and patterns within them. The second, '*cultured nature*'

¹ *Public Perceptions of Outstanding natural Landscapes In The Auckland Region, Research Report No. 273, John R Fairweather, Simon R Swaffield, David G Simmons. 2004*

Understanding Visitors' Experiences In Kaikoura Using Photographs Of Landscapes & Q Sort. Report No. 5. John R Fairweather, Simon R Swaffield, David G Simmons. 1998

Understanding Visitors' And Locals' Experiences Of Rotorua Using Photographs Of Landscapes & Q Sort. Report No. 13. John R Fairweather, Simon R Swaffield, David G Simmons. 2000

Visitors' And Locals' Experiences Of Westland, New Zealand. Report No.23. John Fairweather, Bronwyn Newton, Simon R Swaffield, David G Simmons. 2001

Public Perceptions Of Natural And Modified Landscapes Of The Coromandel Peninsula, New Zealand. Research Report No. 241. John R Fairweather, Simon R Swaffield. October 1999

paradigm, is more accepting of exotic vegetation and productive rural uses, but again shows a strong aversion to obvious signs of development and buildings in the landscape.

29. Whereas the range of landscape factors or variables identified in the Pigeon Bay and WESI cases establish a platform for more detailed 'expert based' examination of biophysical and perceptual landscape values, the 'Swaffield studies' focus upon landscape perception and evaluation in a holistic sense. Notwithstanding this, the public preference testing has led to the identification of a number of key landscape 'traits' that consistently correlate with high preference, including those found in most outstanding landscapes:
- Naturalness - correlated with apparent levels of development or lack of development
 - Endemic Values / 'NZness' (related to sense of place)
 - Strong Landscape Structure - related to landform & the interaction of land with sea / water
 - Strong Landscape Patterns - typically related to vegetation and land uses
 - Visual Drama (memorability)
 - Visual Diversity
30. Many of the modified Pigeon Bay factors appear to substantially correlate with these 'criteria', especially in terms of *Natural Science Factors*, *Aesthetic Values*, *Expressiveness*, and *Shared and Recognised Values*. However, the other key landscape variables / factors identified in the *Pigeon Bay* case – *Transient Values*, *Tangata Whenua Values* and *Historical Associations* – depart somewhat from the Swaffield landscape models. *Transient Values* are very temporal (reflecting different times of the day and year) and are affected by different weather conditions, tides, the presence or wildlife, etc – all of which rely upon lengthy analysis while, in a somewhat different vein, *Tangata Whenua Values* are often very site specific and as they often relate to taonga and privately recognised waahi tapu that are usually subject to restricted disclosure. Nor do such values always translate from one area of tribal or hapu affiliation to others. In my experience, such connections often need careful teasing out and are difficult to address at the more strategic level. Similarly, *Historical Associations* are more readily addressed at the site specific or locality levels, as opposed to the macro level.
31. Just as important, however, while the *modified Pigeon Bay* factors are useful in identifying the different strands of landscape that may be appropriately addressed in analysing landscapes they do not – as I have alluded to, and unlike some of the Swaffield / Fairweather research – establish clear thresholds of value that need to be crossed in order for a landscape to be regarded as outstanding. In this respect, the Environment Court's (again Judge Jackson's) expressed view in *Wakatipu Environmental Society* case

that the word 'outstanding' means "... *conspicuous, eminent, especially because of excellence remarkable in*" (p.48) perhaps come closer to identifying such thresholds. As a result, the attachment of higher order values to particular landscapes is reliant upon far more than just the layers, factors or paradigms that affect the way in which we respond to landscapes. It also necessarily involves an appreciation of the greater whole, the landscape as both the product of its components and, in some cases, much more than that – especially where landscapes are considered to be conspicuous, eminent, remarkable and outstanding.

Amenity

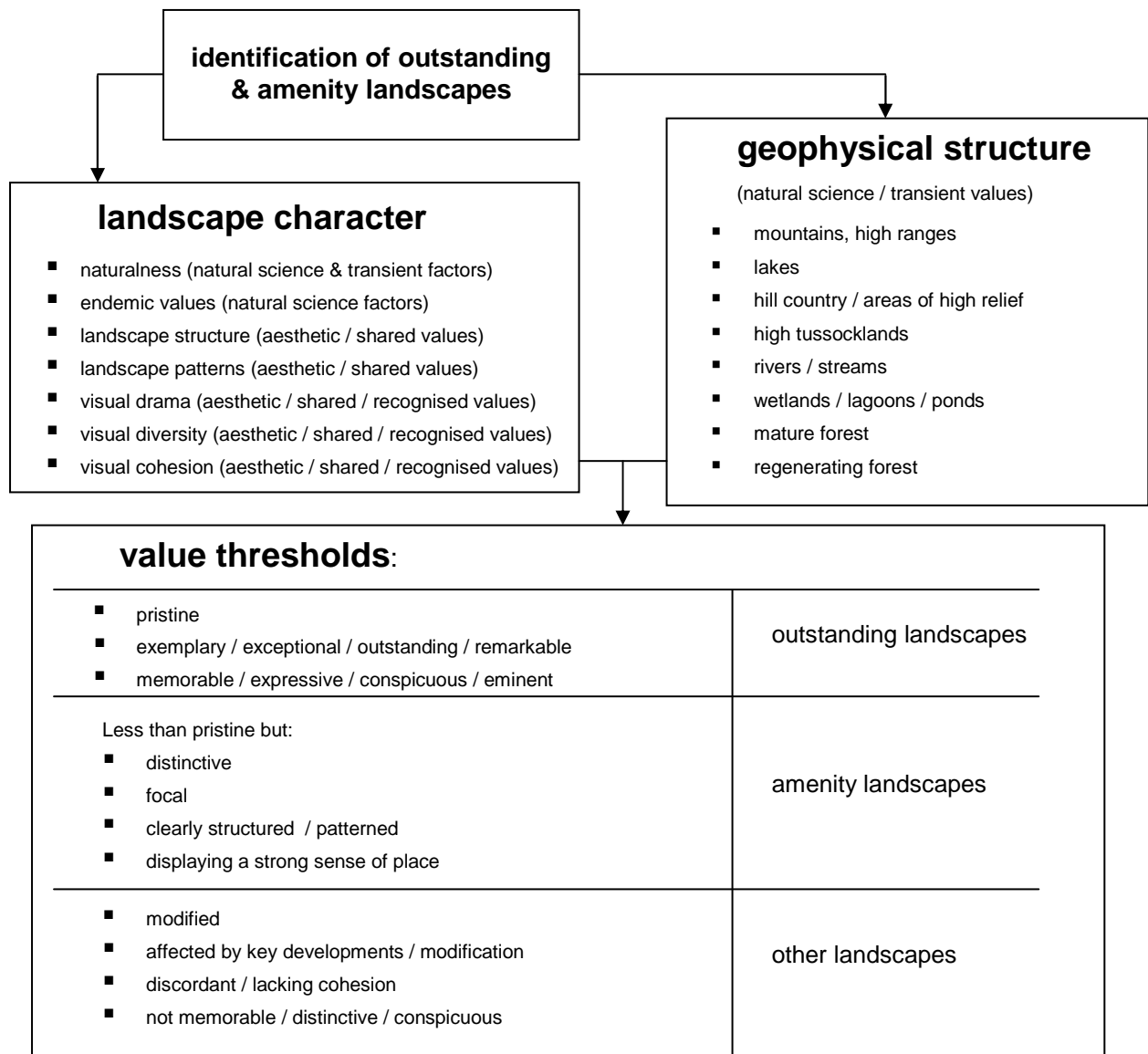
32. Section 7(c) of the Resource Management Act states that those exercising power under the Act shall have regard to (among other matters) "*The maintenance and enhancement of amenity values*". Such values are defined as being "*those natural or physical qualities and characteristics of an area that contribute to people's appreciation of its pleasantness, aesthetic coherence, and cultural and recreational attributes*". Thus, the concept of "amenity" is often bound up in the identification and maintenance of values that have even more to do with qualities and dynamics experienced at the local or location specific level, than "landscape". For instance, whereas the concept of landscape may pertain to a wide ranging mixture of open pasture, remnant bush, hill backdrop and farm buildings that create a certain bucolic imagery and distinctive sense of place, amenity values may relate to the outlook to a single hill, ridge, stand of trees, stream course or other feature that is of little significance to the wider community. Consequently, amenity tends to be bound up much more in locally 'known' and appreciated elements and features, and a more subtle array of locality specific, landscape patterns.
33. Although such values may therefore pertain to specific views from settlements, residential properties, roads and walking trails to key features, including mountain ranges, rivers, lakes and forests, rural character *per se* is perceived as a result of exposure to a much more wide-spread matrix of natural and cultural elements. Rural amenity values (much like landscape values) tend to be higher where the wider landscape remains underpinned by the enduring dominance of non man-made elements, although rural structures and activities are clearly 'part and parcel' of such environs.
34. The essence of all amenity landscapes, however, regardless of their underlying nature (rural, peri-urban, coastal, montane, etc), is an existing character that is glued together by a certain consistency of expression and unity of elements that gives rise to it being 'pleasant', 'aesthetically cohesive' or having cultural and recreational appeal. In looking to 'maintain and enhance' such values, it is therefore important to – at the very least – retain the major landscape building blocks that contribute most to a locality's present-day appearance and imagery: these are often very similar features and elements to

those found in outstanding landscapes (such as rivers, hills and stands of native forest), but are often smaller scale and more sporadically located / experienced.

35. In looking to describe such landscapes, they are frequently described as being 'distinctive', with more emphasis upon a locality's immediate sense of place and identity. They also retain at least some of the key elements or components – typically landform profiles, vegetation cover and particular types of coastline – which lend a shared New Zealand or regional identity.

Summary

36. To provide some guidance about the distribution of ONLs and Amenity Landscapes around the Waitaki Basin and application sites, I therefore employed the following assessment framework and criteria:



37. Translating these interpretations to the landscape of the Upper Waitaki, it is my opinion that only limited parts of the application properties qualify as true Outstanding Natural Landscape (ONL). Even so:
- The QEII covenanted part of the Ohau Downs property contains a number of ponds, bogs and wetlands, together with rock outcrops and tussock country, south of Lake Ohau and Maori Cove that, in my opinion display significant naturalness, endemic quality, expressiveness, legibility and cohesion. Although perhaps not outstanding when viewed in isolation, I consider that the covenanted area still qualifies as such when appreciated as part of a much more extensive ONL which also embraces an iconic Lake Ohau, the dramatic profile of Ben Ohau, and the alpine backdrop of the Ohau Range.
 - The north-western corner of Glen Eyrie Downs Station similarly 'runs up against', and physically embraces, part of the same area of wetlands, ponds and kettleholes – focusing upon Six Mile Creek and Red Lagoon – which comprise part of the wider ONL that I have just described. Again, these are concentrated within the QEII protected area (not within Glen Eyrie Downs).
 - The WHL Killermont land and great majority of Killermont Station is not, in my assessment, an ONL. However, the Pebbly Block, lies adjacent to both the Ahuriri River and the Clay Cliffs, which are signature features within the basin catchment south of Omarama. As well as being highly legible and expressive features at the junction of Omarama's alpine and basin landscapes, they are both very revealing of natural processes and *natural science values*, and have significant *aesthetic value*. Furthermore, they are also exposed to SH8, a key conduit for locals and tourists alike between Canterbury's high country and Central Otago. Consequently, I regard both the river and cliffs as comprising interconnected outstanding natural features within a wider ONL, though not the Pebbly Block. The remaining parts of Killermont Station potentially subject to irrigation and fertiliser enhancement are not, in my assessment, part of any outstanding landscapes, although they do sit on the margins of the true high country that qualifies as such – from the St Cuthbert Range near Omarama to the mouth of the Lindis Pass and Dunstan Range. As a result, most of the Killermont Station land within the broad floor of the Waitaki Basin still sits in the foreground of views to the St Cuthbert, Ewe, Wether and Dunstan Ranges, which I do consider to be part of a much wider alpine / montane ONL.
38. The Waitaki District Council has, with the assistance of Graeme Densem, identified a series of ONLs and Rural Scenic Zones within Amendment Plan R9/3 dated July 2009 (Annexure 13) that are reflected in the more detailed maps accompanying Proposed Variation 2 and Plan Change 2. The ONLs in the plan attached to Variation 2 capture:
- the St Cuthbert, Ewe, Wether and Dunstan Ranges – south to north-east of Killermont Station;

- the Ahuriri River corridor, including the Clay Cliffs and the chain of hills immediately west of the River that focus upon Cloud Hill – including the river edge of the Pebbly Block, but not the great bulk of that property;
- the Diadem and Ohau Ranges;
- the southern margins of Lake Ohau and an area embracing the various lagoons, wetlands, moraine and tussock areas around and south of Maori Cove – extending into the QEII protected part of Ohau Downs and the very northern corner of Glen Eyrie Downs Station; and
- the Quailburn Conservation Area.

39. Furthermore, all of the surrounding land, including the full extent of the application properties, is identified as sitting within the Rural Scenic Zone, which appears to equate to an Amenity Landscape classification or very similar.

40. In my opinion, the identification of ONLs is generally consistent with my own interpretation of the distribution of local landscape values, as I have already outlined. Even so, I disagree with Variation 2 in relation to one area: the Quailburn Conservation. In my assessment, its proposed ONL is not consistent with application of the various factors and thresholds that I have already described. Whilst accepting that the various features around the Wairepo Stream do indeed coalesce to form a ‘greater landscape whole’ than its individual stream courses, ponds, wetlands and tussock areas, particularly in a *natural sciences* sense, I do not regard that ‘whole’ as being sufficiently expressive, or ultimately conspicuous, eminent or remarkable enough, to qualify as an ONL. I acknowledge that such judgement reflects disparities between the assessment of the Quailburn Conservation Area as a biophysical landscape entity, versus its role as a perceived landscape, and some landscapes may indeed be outstanding in one respect alone. However, in relation to the Quailburn Conservation Area, I consider that such disparities are simply too marked, and its undoubted ecological / habitat value is not sufficient to warrant being identified as an ONL.

41. Turning to the issue of Variation / Plan Change 2’s Rural Scenic Zone, I support the concept of rural landscapes being part of a much wider environment – in this case the entire Waitaki Basin and its wall of perimeter mountains – that incorporate and integrate areas which are subject to work and production with areas that are more explicitly natural and scenic. It is noteworthy in this respect that Mr Densem’s classification of Rural Scenic areas includes farmland (including that adjacent to the Williamson Holdings Block) that is already subject to pivot irrigation and dairy intensification, including that immediately south of Omarama, between SH8 and Broken Hut Rd, as well as both sides of the state highway closer to Lake Ruataniwha.

42. Regardless, it is clear that the landscapes generally identified as having rural scenic, or amenity, value retain a strong sense of openness, expansive views, and domination by the wider natural environment, even if awareness of the latter is mainly derived from exposure to the main divide and the second tier ranges closer to Omarama and the Ahuriri River, together with awareness of the planar nature of the more immediate landform.
43. This situation appears to leave significant latitude for change within the Rural Scenic Zone, providing it doesn't compromise or undermine the very values that I have just described. For example, on-going rural activities that maintain the open and rural character of the landscape may well be appropriate, especially if they protect its largely unbuilt appearance, or low intensity of built forms, and tussock / grassland dominated land cover. This could conceivably cropping, dry stocking, dairy farming or even grape growing. By contrast, wide spread afforestation would rapidly erode the Upper Waitaki's expansive, planar, character and would dramatically reduce the feeling of interconnection between the Basin and both its lakes and montane hinterland.
44. Recognising the values inherent in the proposed Scenic Rural Areas and the type of landscape management implied by its distribution, I therefore generally agree with Mr Densem's identification of 'amenity landscapes' south of Lake Ohau through to the Lindis Pass. I do, however, given my previous comments, consider that the Quailburn Conservation Area should become part of this Zone, rather than remaining as proposed ONL. This would be one the one significant change that I would make to his identification of landscape values, as per Amendment Plan R9/3 and my Annexure 13.

Natural Character Values

45. Section 6(a) of the Act states that it is matter of national importance to "*preserve the natural character of the coastal environment, including lakes, rivers and their margins*". The current water abstraction and irrigation proposals would occur within the physical 'apron' of Lake Ohau's southern shoreline, in close proximity to the Wairepo Stream together with related wetland / pond / bog areas, and both within and next to the Ahuriri River. Water abstraction would also continue to occur – without significant change to existing intake structures – at Frosty Creek and Manuka Gully.
46. Throughout the first decade of the Resource Management Act's application, the determination of natural character values largely revolved around three broad categories of evaluation focusing upon:
- Natural Processes

- Natural Elements
 - Natural Patterns
47. To try and establish a more stable and consistent foundation for determining Natural Character values, with emphasis upon the 'perception' of such values, the Ministry for the Environment and Boffa Miskell Ltd hosted a workshop on the subject in February 2002. Held in Wellington, and drawing together a wide cross-section of local and regional planning staff, consultants and educators, the workshop set out to determine a set of 'environmental indicators' appropriate to the assessment of Natural Character. As a result the following indicators were subject to general agreement and have since been employed in a wide variety of locations - from Southland to North-eastern Rodney:
- Abiotic factors (landform).
 - Vegetation type (native / endemic and exotic vegetation).
 - Vegetation cover and patterns (quality of vegetation and evident relationship to landform, climate, mature historic land use and ecological factors).
 - Land uses / activities: buildings and structures (their presence / absence).
 - Seascapes and water areas.
 - Natural processes.
48. For its part, the Environment Court also discussed how to determine the degree of natural character that a landscape contained in the *Wakatipu Environmental Society* decision and determined that:
- "The word 'natural' does not necessarily equate with the word 'pristine' except in so far as landscape in a pristine state is probably rarer and of more value than landscape in a natural state. The word 'natural' is a word indicating a product of nature and can include such things as pasture, exotic tree species (pine), wildlife ... and many other things of that ilk as opposed to man-made structures, roads, machinery." (p.197)*
49. In that same case, the Court went on to say that:
- "The absence or compromised presence of one or more of these criteria does not mean that the landscape is non-natural, just that it is less natural. There is a spectrum of naturalness from a pristine natural landscape to a cityscape." (p.52)*
50. Looking at the subject properties in this context, it is again clear that the areas already described as displaying higher landscape values around the southern margins of Lake Ohau, near the Wairepo Stream and bordering the Ahuriri River, are also the locations in which higher natural character values are evident. At the first two locations the marginal environment comprises a mixture of perched wetlands and bogs, ponds (most notably, the Red Lagoon, Raupo Lagoon and Swan Lagoon) surrounded by lake and river terracing, moraine and rock outcrops. These landforms are overlain by tussock, coarse pastoral grasses, hieracium and matagouri.

51. Although scattered pines are also evident near the northern tip of Glen Eyrie Downs and the border of Ribbonwood Station, the margins of Lake Ohau – extending as far south as the Raupo Lagoon and Six Mile Creek – retain significant natural character value in my opinion. The often complex array of natural elements already described creates an environment that clearly reveals both its formative processes and a complex array of natural patterns. Views to Lake Ohau, Ben Ohau and the Ohau Range, complement this by creating a high degree of interconnectedness between the lagoons and wetlands around Ohau Downs and Glen Eyrie Downs Station, and these signature features of the wider alpine / lakes landscape.
52. While the Wairepo Stream corridor is also flanked by areas of long standing pastoral use within Glen Eyrie Downs Station, it is my assessment that the actual stream, nearby wetlands, ponds and their tussock areas – broadly contained within the Quailburn Conservation Area – also retain a reasonably high degree of natural character. This is despite the more isolated physical nature of this collection of features and the way in which their natural character is already diminished, in a strictly perceptual sense, because of the visual interaction with adjoining areas of rural production.
53. Near Killermont Station and the Pebbly Block, the landscape of the Ahuriri River is dominated by its very dynamic 'fairway', with a complex array of gravel braids, intermixed in places with willows, channelise the water flows down its corridor. Shingle and clay banks frame the margins of the river channel, while the very distinctive profile of the deeply etched and eroded 'clay cliffs' afford an immediate backdrop to the river. Closer to SH8, a gently unfolding sequence of river terraces is covered in coarse grasses and remnant pockets of tussock, while a scattering of mature pines and sweet briar cling to the actual river banks. The Pebbly Block has historically been employed for grazing and does not display high levels of natural character in its own right; however, as I have already indicated, it is strongly associated with the actual river and clay cliffs which display much higher natural character values.

Effects In General

54. In the following sections I will briefly explore some of the landscape implications of the proposed components of the irrigation applications, before addressing the specific sites and related effects.

Pivot & Other Irrigation Systems

55. Pivot irrigators are perhaps the structural components most directly associated with the current applications, and before embarking on analysis of the proposed applications, it is worthwhile exploring the effects of irrigation schemes that have already been developed in reasonably close proximity to the subject properties. Annexure 14 contains a series of photos of existing pivot irrigators and irrigated land at a variety of distances, with different backdrops – hills and shelterbelts for the most part. All of these photos were taken of schemes either found between SH8 and Broken Hut Rd (abutting Killermont Station) or next to SH8 north of Omarama and Lake Ohau Rd.
56. The key points to emerge from looking at the various images in Annexure 14 are:
- Pivot irrigators do add a structural dimension to its landscape setting; yet given the highly permeable, lightweight, nature of most irrigators, they have much less impact than buildings or – referencing other landscape elements – the likes of forestry and woodlots.
 - The distance that the pivots are set back from vantagepoints and the location in which irrigators are parked also has a very large bearing on their perceived intrusiveness and overall impact. Even large irrigators have a limited effect, providing they are parked well away from vantagepoints and only intermittently swing close to the likes of highways, roads, scenic lookouts and other parts of the public domain.
 - Both background and foreground planting can help to break up the profile of irrigators; but the skeletal nature of most irrigators means that the presence of such elements is less significant overall than viewing distance. They are often ‘lost’ against background landforms and vegetation, regardless of its height, when viewed over sufficient distance for the irrigators to sit within the middle distance. This contrasts with situation where they are sufficiently close that they protrude above the horizon and into the (often) more homogenous plane of the sky.
 - Foreground planting can, nevertheless, add 3 dimensional layers and visual complexity to the landscape that helps to break up, or diminish the profile of, even quite nearby irrigators – helping to reduce their visual presence and visually subdivide them into smaller scale ‘bits’ that are more readily assimilate into other middle distance and background elements.
57. Linear and K-Line irrigation (both of which are proposed for Killermont Station) generally has a lower, smaller scale, profile and less visual presence than pivot irrigation. This is especially so in the case of K-Line, whose ‘mushroom’ like emitters sit on the ground, connected by transportable hoses. Linear irrigation has a more elevated structure, but lacks the physical height, extent and movement that are associated with pivot irrigators.

The Greening of Irrigated Areas

58. Water abstraction and irrigation has traditionally led to the marked greening of both the Mackenzie Country and Upper Waitaki Basin. This has sped the transition from a rather ad-hoc intermixing of rye / browntop based pasture with tussock, hieracium and (in even more marginal locations) matagouri and sweet briar, into a land cover pattern that is much more clearly differentiated – with pasture under irrigation while tussock and other plants (mostly weed species) lie outside the irrigated ‘zones’. As a result, parts of the Mackenzie Basin and, even more noticeably, the Upper Waitaki have witnessed a visible ‘re-ordering’ of the landscape. Overall, it has become much more ordered or structured and, in places, also more cultural (overtly man-made) and domesticated.
59. Yet this is a far from black and white situation; fertilising and the use of clover mixes to fix nitrogen is an established process across much of the grassland plateau of both basins and – focusing more directly on the application properties – all of the areas proposed for irrigation have already been subject to pastoral use. In the case of Glen Eyrie Downs Station, this also extends to trial canola and wheat cropping. Much of this ‘pastoral’ land is currently in an impoverished physical state, to the extent that weeds, including hieracium, are all too apparent across large tracts of the WHL Killermont land in particular. Such land is caught between two stools, both ecologically and in terms of its landscape character: it is not natural at present, nor could it easily revert to the tussock covered plains of the past; but equally it is far from productive or likely to be so without massive changes to its nutrient levels and vegetative content.
60. Furthermore, just as large parts of the Waitaki landscape north and south of Omarama have already been subject to irrigation, the related dairy conversions have also left an indelible mark on the local landscape. As indicated at the beginning of my statement, the entire Waitaki / Mackenzie plains landscape is in a state of transition and its related ‘greening’ is particularly marked around the Symonds Hills and south of both Twizel and Lake Ruataniwha. Just as important, such transition remains concentrated within the floors of both basins, just as pastoralism, forestry (deliberate and unintentional), electricity generation schemes and residential development also are. Contrasting with this, the Upper Waitaki’s key landscape features – its lakes, foothills, remnant tussock margins and mountains – generally remain in a rather more natural state, even if wilding pines, hieracium and sweet briar remain a persistent problem.
61. Consequently, any proposals for further irrigation within the Upper Waitaki Basin will necessarily reinforce the broad transitional patterns just described, but they also represent incremental change, rather than a construct that is new or in any way ‘revolutionary’.

Intake Structures & Pipelines

62. I have already described the nature of the proposed structures that would draw down water from Lake Ohau and the Ahuriri River: apart from earthmoving equipment employed periodically in the bed of the River, the proposed intakes – including screens, galleries and pumping stations – would all substantially meld into the lake and river margins that comprise their immediate setting. Although the diggers / tractors employed to reshape the shingle fan above the Ahuriri intakes would be more apparent, such activities would be intermittent and are common in many South Island river-beds, with river shingle a common source of road ballast and material for farm tracks.
63. The Frosty Creek and Manuka Gully intakes would not change in terms of their structural profile and effects.

Cubicle Barns (WHL Killermont, Glen Eyrie Downs Station & Ohau Downs Station)

64. I have also described the cubicle barns and slurry holding ponds that are proposed for parts of the WHL Killermont Block and Glen Eyrie Downs Station, and that are also being considered for Ohau Downs. They do not form part of the current applications, but so that there remain no illusions about the full extent of the proposed irrigation and dairy conversion proposals, I have been asked to address their potential effects. Some 29 cubicle barns could conceivably be located on the subject properties (as per Annexures 3A, 3C & 3D); they would be paired and would share milking sheds and sewage ponds to reduce the scattering of buildings across both stations. This ‘pairing’ would also rationalise infrastructure and access.
65. I have visited and reviewed a number of operative cubicle barns near Waimate and the schematic architectural illustrations in Annexure 4A together with photos in Annexure 4B, provide a clear understanding of the type of buildings and ancillary structures proposed. In general, cubicle barns have a very elongated, horizontally aligned, profile and, with their roof areas potentially extending for as much as 155m from end to end, they are also exceptionally long – and large – buildings.
66. More positively, their elongated, low slung, built forms mimic – to a degree at least – the planar, often quite emphatically horizontal, landforms which characterise much of the Waitaki Basin floor. The elevated river and terrace embankments on the south side of the Ahuriri River and SH8 appear likely to assist with the screening and integration of such structures into the broad plain of Killermont Station, the northern half of Glen Eyrie Downs Station, and the south side of Ohau Downs, whereas the much more undulating terrain found within the rest of Glen Eyrie Downs Station (south of the Wairepo Stream) and within the northern half of Ohau Downs, would help to screen and break up the profile of such development at those

locations. Indeed, much of Glen Eyrie Downs Station, in particular, is effectively isolated by the amphitheatre of hills that stretch from near Benmore to Cloud Hill, then into the Diadem Range, and the margins of the Ohau Range.

Landscape Effects: WHL Killermont

67. The WHL Killermont land lies south and east of SH8, between Omarama and the mouth of the Lindis Pass, and is under contract to Williamson Holdings Ltd. It is, in turn, flanked to the south by a gravel road, then Killermont Station (Killermont Station Ltd). Running through to the edge of Broken Hut Rd, its northern boundary fronts a neighbouring farm – distinguished by a series of shelterbelts – on which pivot irrigation is already employed, and it is solely for this part of the wider 'Killermont Station' that cubicle barns are presently proposed.
68. The entire WHL Killermont Block that would subject to pivot and linear (K-Line) irrigation scheme is spread (as I have already indicated) across river terraces, together with the gravel fans of the Omarama and Manuka Streams near the confluence of the Ewe and Wether Ranges. Accordingly, the proposed irrigators and – in part – cubicle barns would be spread across part of the Waitaki Basin that often has the appearance of being unremittingly flat, albeit with areas of terrace downcutting and a gradual rise from near the Ahuriri River and SH8 towards the mountains that arc north-eastwards from the Lindis Pass. Significantly, the terrain is much more variable near both the state highway and Ahuriri River, with a sequence of terrace edges and banks physically separating the great bulk of the WHL Killermont land from both the river fairway and highway.
69. Travelling south from Omarama this results in the main terrace on which the subject land sits becoming increasingly elevated – relative to SH8 – with an inclined terrace, then series of banks and natural mounds, visually segregating the future irrigation fields from the state highway. A much more clearly defined bank emerges opposite the southern end of the Pebbly Block (on the other side of SH8) and this curves inland, extending as far as 550m south of the state highway. This bank effectively divides both the WHL Killermont land and Killermont Station (KSL) into two halves: a lower shelf extending across SH8 to the Ahuriri River that would largely be retained as non-irrigated pasture, and a more elevated shelf on which the proposed pivot, linear and K-Line irrigation would be located.
70. The proposed pivot irrigation on the WHL Killermont Block, between SH8 and Broken Hut Rd, would lie within a reasonably open and – in part – quite visually exposed, part of the basin landscape. As a result,

when travelling south, from Omarama, much more of the open plain occupied by the northern end of this Block would, in the future be clearly modified by the introduction of pivot irrigators (Annexure 15). On the other hand, they would come into view immediately after the adjoining farm (to the north), which already employs pivot irrigation, and the southern two-thirds of the WHL Killermont Block would be screened by the intervening terrace bank just described (Annexure 16). That bank increases in scale towards, and across, the adjacent Killermont Station further south again. Although the very northern end of the WHL Block therefore remains visible from SH8, it clearly registers as an arid, weed infested, expanse of land with no distinguishing features or value in its own right.

71. While it, together with neighbouring properties closer to Omarama, also act as the foreground in views towards the mountain ranges beyond, a number of other factors also have to be taken into account:
- Some 4.4kms out of the 5.1kms of combined Williamson Holdings / Killermont Station highway frontage offers significant to complete screening of the irrigation areas and systems because of intervening terrace 'edges' and embankments.
 - A very large expanse of land beyond those edges is concerted together – visually – so that little of it is clearly legible: as a result, the background ranges, foothills and even shelterbelts near Broken Hut Rd are frequently much more significant than the intervening land, which reads as little more than an intervening line or strip of undifferentiated 'pasture' (in reality, mostly coarse grasses and weeds).
72. In my assessment, this suggests that up to 3 pivot irrigators at the northern end of the WHL Killermont Block may well be visible. Of these, only the northern-most one would be readily apparent, and even this irrigator would not break the skyline or be dominant in its own right. Its effects could be further minimised by ensuring that it is parked well away from the highway. As a result, even though the proposed structures would – en masse – modify the local landscape's character to some extent, the more recessive location of the other 6 irrigators proposed, combined with the dynamic experience of seeing them in combination with other (existing) pivot irrigation systems when travelling along SH8, would limit such effects to an acceptable level.
73. The associated greening of pasture under the irrigators would also be reasonably apparent near the 'top' of the Williamson Holdings Block. This would almost certainly result in much clearer demarcation between the productive and more peripheral, non-productive, areas of land cover, together with greater domestication of the landscape as a whole. However, given that this division would mainly be apparent near areas of existing irrigation and would not in any way intrude into views of, or towards, the full sweep

of ranges arrayed around the Omarama / Ahuriri catchment, it is my opinion that such effects would be incremental and would have a low impact overall – even in conjunction with the pivot irrigators.

74. I also recognise that when looking across the Williamson Holdings Block from the vicinity of Broken Hut Rd, there are fewer intervening terraces or vegetation of any significance – apart from a small stand of pines near its junction with the gravel access road – that would intercede between road users and the proposed irrigation areas. Nor, however, is there the same sense of proximity to, or interaction with, surrounding mountains above and beyond Killermont Station. The margins of the road corridor convey even more clearly the feeling of a working rural landscape, with the Tara Hills Research Facility and various other farm buildings and structures scattered among both open pasture and copses of trees. Even a control tower for the local model aircraft owners club sits at the eastern end of the application site.
75. I accept that the combination of pivot irrigators and areas of nitrified / irrigated pasture would still be more apparent from this quarter. But, bearing in mind my previous comments about the accepted and ‘skeletal’ nature of modern pivot irrigation systems, the entirely impoverished state of that subject land at present, and the general landscape having a sense of being even more productive than is obvious closer to SH8, it seems likely that the applications would still have a quite limited impact on perception of the wider basin / ranges landscape.

Cubicle Barns

76. Three ‘pairs’ of cubicle barns would be centrally located within the Williamson Holdings part of Killermont Station. These would be sited some 1.2kms or more from both SH8 and Broken Hut Rd. As will become apparent later in my statement, I have also recommended that each cluster of barns be painted mid to dark grey, using matt paint, with bunding and tussock planting on their outer periphery – facing both roads. This should leave between approximately 1.0 and 5.0m visible above the bunds and surrounding terrain.
77. With distances of 750m to 1.0km further separating the cubicle barn clusters from one another, I am of the view that this would ensure a pattern of development that is reasonably consistent with the present, low density, distribution of farm buildings, sheds and houses within the wider rural landscape. The roof profiles would be kept sufficiently low and remote – in relation to public vantagepoints – that they would have little real presence, despite their actual scale, and should in fact largely meld into the gently undulating contours of the wider terrace landscape. Individually and cumulatively, they should therefore

be sufficiently recessive that they would have little impact either on the general landscape's character or more specific views to the ranges beyond Killermont Station.

78. While views from Broken Hut Rd across the subject property have a more elevated starting point and overlook much of Williamson Holdings block, I consider that the barns would still sit low within the visible area of terracing, and their profiles would be partially broken up by the local terrain, bunding and even the pivot irrigators. Again, therefore, I believe that they would generate quite limited awareness, with their form and colours helping to merge them with the terrace contours around them. Even if visible rising slightly above the terrace, they would sit within a complex part of the landscape where the margins of the Ahuriri River, including river-side vegetation, meet the ridges and slopes either side of Cloud Hill and the jumble of landforms around the Clay Cliffs.
79. As a result, it is my assessment that the cubicle barns would have a low level of impact in relation to their wider landscape setting.

Landscape Effects: Killermont Station

80. South-east of SH8 and running through to the edge of the Wether and Dunstan Ranges lies the bulk of Killermont Station (though not the Pebbly Block, which I will address shortly). Within this landholding, both pivot and linear irrigation are proposed, supplementing existing areas of irrigation on that property. This would be located, as I have previously explained, on a river fan and terrace at the foot of both the mountain ranges just mentioned and the
81. The pivot and linear irrigation systems proposed for the main part of Killermont Station would be much more physically remote from SH8 than those on the Williamson Holdings land. More over, the terrace bank south of SH8 that I described in relation to the WHL Block reaches its maximum height and furthest 'inland' extent between Killermont Station and the highway. As a result, the pivot and linear irrigation system proposed by Killermont Station Ltd, together with related areas of irrigation, would be both more physically remote and even more effectively screened from SH8, in particular, by the profile of the intervening terrace bank (Annexure 16). The WHL Killermont block, together with a small stand of pines and other vegetation near Broken Hut Rd, would also help to visually isolate Killermont Station from that secondary road.

82. It is conceivable that some, more elevated, pivot irrigation components might still be visible from SH8 and Broken Hut Rd, although I consider this unlikely (some tour buses may be sufficiently elevated to accommodate such exposure). However, with the pivot irrigators set back 600m or more from the highway, I anticipate that any such components would so small scale and light-weight that they would be entirely absorbed by the backdrop of the Ewe and Wether Ranges. They would scarcely register in their own right and are unlikely to have any appreciable impact on the character and values associated with either the southern-most reaches of the Upper Waitaki Basin or the gateway to the Lindis Pass.
83. The additional greening of pasture on Killermont Station would be even more effectively obscured by the intervening terrace bank, and would have no impact on public perception of either the Waitaki Basin floor or its montane periphery.

The Pebbly Block

84. The situation is somewhat different in relation to the Pebbly Block. It abuts a DoC reserve between the state highway and the Ahuriri River and, as I have already stated, provides the foundation for views both to the River and the Clay Cliffs. In my assessment, any structures or overt man-made development that intrudes into views across this apron of land would, in all likelihood, threaten the integrity of the composite ONL identified by Graeme Densem that focuses upon the Ahuriri and its immediate backdrop.
85. I don't believe, though, that the K-line irrigation proposed for the Pebbly Block – with its transportable, low lying hoses and mushroom like, emitters - would generate such intervention. Instead, the lines and emitters would hug the ground and would have little presence in their own right. As a result, they would have little impact on the landscape character of the Ahuriri River and its physical margins, and would do little to disturb or disrupt the natural and endemic qualities of those margins. Consequently, they would have little impact on the overall unity and visual cohesion presently apparent within the wider river landscape.
86. Any greening of the Pebbly Block is also a matter that needs to be carefully considered. Currently the property has a very 'bony' character: large parts of it are covered by hieracium, sweet briar and other weeds, interspersed with exposed schist and river stones. Aerial photos also reveal braiding underlying a shallow soil layer across most of the Block. These are clearly associated with past 'freshes'. As I have already indicated, remnant pockets of tussock are also evident, running through the middle of the property. Nevertheless, it has also been subject to dry stock grazing in the past and I recognise that pastoral use already is, and will remain, associated with the Pebbly Block to some degree.

87. In my opinion, greening of the Pebbly Block would create a degree of domestication and modification that is discernible by the general, public. However, it would not – in its own right – obstruct or intrude into, views of the adjacent river and Clay Cliffs, and even though the land cover content of the immediate foreground would change, particularly when viewed from the vicinity of SH8, the Ahuriri's channels, braids, banks and foothill margins would not be physically touched by such modification. Perception of these landscape components would be affected to a limited degree.
88. Having said this, I must also acknowledge that the current prevalence of weed species and – in areas – bare ground does nothing to enhance the intrinsic landscape values of the Block; indeed, quite the opposite. Furthermore, a number of alternative land uses – cropping or forestry in particular – would be far more damaging in terms of the overall landscape character and value of the Ahuriri River and its backdrop: the current proposal avoids the magnitude of change and more fundamental re-engineering of the local landscape that would emerge in conjunction with such options. Consequently, I consider the more limited irrigation and stocking proposals for the Pebbly Block to be acceptable.
89. I understand that an alternative area is available for irrigation on the southern (main) part of Killermont Station that might be employed instead of the Pebbly Block. This would infill between the pivot and linear irrigation already proposed (Annexure 3A), but would still remain behind the elevated terrace bank that separates the bulk of proposed irrigation areas from the Ahuriri River and SH8.
90. Given a choice between these two options, I would prefer use of the alternative irrigation site as it lies within part of Killermont Station that would already be affected and modified the proposed irrigation, and avoids any form of interaction with the Ahuriri River and Clay Cliffs. More over, there would not be the same close exposure to irrigation in this alternative area, and the irrigators would – as with the other irrigation proposed on Killermont Station – have a lower profile and less visual presence overall.

Landscape Effects: The Ahuriri River Intakes

91. I have already described the intakes in a general fashion (excluding the WHL proposal for the Lindis Pass). The exact location of all three intakes that I am familiar with – the Woolshed Intake, the WHL Killermont Intake and existing Tara Hills intake – would be located at the foot of a clay embankment within the bed of the Ahuriri River, at varying distances from SH8. All three sites would be tucked in against the side of the near river bank, relative to the highway, and screened by the natural river-side topography. As

a result, the screens, intake galleries and river-side pumping stations (at the Woolshed Intake and WHL Killermont Option 1) would still remain both physically and visually recessed, to the point where they would have little, if any, impact on appreciation of the wider river fairway.

92. The main pumping station planned for the Woolshed Intake might be somewhat more prominent, but it would be located across the state highway from the more sensitive river environment and would be strongly linked to the existing entryway to Killermont Station and its farm buildings.
93. In reality, therefore, only the activity associated with a digger or other earthmoving equipment within the river-bed might appreciably affect perceptions of the river. But such activity would be intermittent and is not entirely out 'of synch' with river-bed operations frequently undertaken by farmers and gravel extraction operators in the South Island's river environs – as I have already stated.
94. Option 2's gravity fed line would appear most unlikely to aggravate these effects or generate any new effects, beyond those that I have just described. Consequently, any significant landscape effects associated with the intake and pipeline would realistically be confined to the construction phase and would have a relatively short duration.

Landscape Effects: Glen Eyrie Downs Station

95. The western side of Cloud Hill and the chain of foothills extending northwards to Benmore and Lake Ohau Rd, wraps around the eastern side of Glen Eyrie Downs Station (Southdown Holdings Ltd), while the Diadem and Ohau Ranges enclose it to the South and west respectively. As a result, most of the station is enclosed within a bowl formed by the surrounding mountains and foothills.
96. It is accessed via Quailburn Rd, a minor access road that services farm properties in the vicinity of the application; however, a series of ridges, as well as a pine woodlot and shelterbelts on neighbouring Ribbonwood Station, screen most of the farm from that road corridor. Even though some 13 pivot irrigators are proposed south of the Wairepo Stream and Quailburn Conservation Area, many of the proposed irrigators north of the Serpentine Creek and an associated ridgeline would be 'lost' over that ridge.
97. The farm is also distantly exposed to Lake Ohau Rd, but with the nearest part of Glen Eyrie Downs Station some 3kms from that road – which provides access to the Ohau Ski Area some 10kms to the west

– the proposed irrigation and greening of the station landscape would tend to register within the far middle distance, or background, of views from this quarter. This would be reinforced by the flat viewing angle across an intervening Ohau Downs Station, while the much more dissected moraine landscape closer to Six Mile Creek and Raupo Lagoon, significantly screens the Station from viewing closer to both Lake Ohau and the ski field.

98. Even when visible from Lake Ohau Rd, the combination of viewing distance, the lightweight nature of the pivot irrigators and the backdrop of both pasture and shelterbelts on the Ribbonwood property would substantially absorb the major components of the application – including both the pivot irrigators and cubicle barns. In all likelihood, the irrigators would emerge as a fine filigree of structural components that are almost entirely absorbed, visually, by the background terraces and land cover of both the subject property and neighbouring station. They would have little presence in their own right.
99. Although the 4 pairings of cubicle barns north of the Quailburn Conservation Area, within Lake Ohau Rd's theoretical visual catchment, would be physically more substantial, their location some 4kms or more from Lake Ohau Rd and dispersal across some 1600has of the Glen Eyrie Downs Station landscape would minimise their impact. Potentially subject to the same mitigation measures and orientation (relative to roads) as the barns already discussed in relation to Killermont Station, they would also sit low within the physical canvas south of Ohau Downs and would remain visually recessive, avoiding any direct interaction with the main landscape features of the area – focusing upon Ben Ohau, the Ohau Range and Lake Ohau – or conflict with views to them.
100. The same situation would not apply next to Quailburn Rd, with one pair of cubicle barns and ancillary structures / infrastructure located directly adjacent to the roadway. Yet, this is precisely the sort of clustering of farm buildings and activity which already occurs on local stations and both of the barn pairs proposed would sit within a relatively discreet part of the rural landscape that has much more limited connection with both the key features that I have just described and the general public. In effect, a greater degree of impact would be visited upon part of the Waitaki environment that is already strongly associated with working farm environments and that is somewhat less sensitive to the sort of changes proposed than other parts of the Basin environment that are more visually open and expansive, directly interconnected with the key features that I have just described, and also more overtly 'public' in nature.
101. In this context, it is also noteworthy that while the Quailburn Conservation Area is clearly a feature of the application site, it is much more remote and recessive in relation to those parts of the Upper Waitaki that are accessible to, and which are accessed by, the wider community. In reality, it fulfils the clear role of a

conservation area whose function as an ecological reserve is enhanced by its physical isolation. However, it is not an obvious, let alone eminent or conspicuous, ONF. I support its protection and the avoidance of it by the irrigation proposals, but do not believe that its virtual encirclement by pivot irrigators is of real moment in relation to landscape values and effects.

Landscape Effects: Ohau Downs

102. Lake Ohau Rd is, as I have just indicated, a significant public thoroughfare. More over, it reveals important introductory views of Ben Ohau – just past a 220kV transmission corridor near the eastern boundary of Ohau Downs Station (Five Rivers Ltd) – as well as Lake Ohau and the Ohau Range from atop the moraine around Swan and Raupo Lagoons.
103. However, as Five Rivers Ltd has already covenanted the ‘moraine’ area around, and including, both lagoons with QEII and this protection extends to the margins of Maori Swamp and Cove. In addition a trapezoid of open space would be maintained either side of Lake Ohau Rd, protecting key views to Ben Ohau and the slightly more distant Ohau Range. This now extends to another triangle of land directly west of the 220kV line across part of Ohau Downs, which would accommodate an initial 600-700m of open space set-back precisely at the point where views free up to the iconic form of Ben Ohau, just past the transmission line – for those heading towards the Ohau Ski Area. Although two irrigators would come closer to the road corridor approximately 800m past the transmission line, this would occur well after this key viewshaft (Annexure 10A) within an area already clearly employed for dry stocking. The two irrigators near this part of the road would still sit below the outline of Table Hill and the base of Ben Ohau, reducing their potential intrusion or incursion.
104. All of the other irrigators and areas of nutrient enhancement would be set well back from the road: 900m or more to the south – beyond Six Mile Creek – and in excess of 650m to the north. The southern irrigators would be all but impossible to discern, while those north of Lake Ohau Rd would be concentrated on a slightly depressed (lower) river terrace that becomes increasingly divorced from the main terrace either side of the road as one moves towards Swan Lagoon and Lake Ohau. Indeed, a large linear mound of moraine material effectively separates the road from the main area of proposed irrigation closer to Table once 2kms or more west of the transmission corridor. As a result, perhaps 40 – 50% of the pivot irrigators north of Lake Ohau Rd would be difficult to see at all and the bulk of remaining irrigators would sit well below the skyline – receding into the broad mantle of Table Hill to the north or the expanse of terraces, foothills and mountains around Glen Eyrie and Ribbonwood Stations to the south.

105. Therefore, much as described in relation to views across the Williamson Block abutting SH8, the combination of flat viewing plane, foreshortened viewing perspective and viewing distance would reduce most of the irrigators to thin skeletal elements that substantially merge with the much more substantial landforms which afford a backdrop to them. Both sets of pivot irrigators would also sit within, or more likely beyond, parts of Ohau Downs that are already stocked, with fencing, feed-out areas and stockpiled hay bales a common feature of present-day views both sides of Lake Ohau Rd.
106. Closer to Lake Ohau, the much more jumbled moraine landscape around Swan and Raupo Lagoons would screen most of the irrigators from view when travelling from the west (Lake Ohau and the Ohau Ski Area). At the same time as they become visible a very marked transition become apparent between the slightly dishevelled, natural landforms and land cover loosely framing both the lagoons and Six Mile Creek, and the almost flat, much more orderly and managed farm landscapes that extend from Table Hill southwards to a distant Ribbonwood Station. The pivot irrigators would sit firmly within the cultural landscape of this farmland, with little sense of connection to the alpine and moraine landscapes closer to Lake Ohau, which lie effectively at one's back.
107. It is therefore considered that the proposed irrigation system would affirm a pattern of use and division between the more natural and managed halves of the Waitaki landscape that is already well established. Much the same would apply in relation to those parts of the Station that are subject to irrigation and nutrient enhancement. For the most part, all of the areas subject to 'greening' are located within parts of the local landscape that are already subject to well established pastoral use, with their grass cover and fenced off areas clearly reflecting this. In other words, the proposed irrigation would simply affirm a pattern of land use and land cover that is already very marked within and around the Ohau Downs.
108. I have indicated previously that fourteen cubicle barns are also proposed for Ohau Downs at 3 sites south of Lake Ohau Rd and 4 north of it. In reality, it is still unclear as to whether or not these barns will be constructed on Ohau Downs. However, assuming that is the case, 3 southern pairings would sit low down in the planar landscape south of Lake Ohau Rd, well beyond Six Mile Creek, in entirely recessive location that would make them all but impossible to see except for a very time when descending from the moraine area near of Swan Lagoon. Even at this juncture, however, they would be so lying and viewed over such a distance that they would have little real presence or impact (Annexures 10A & 10B).
109. The four pairs of cubicle barns to be located north of Lake Ohau Rd would – as with most of the proposed irrigators – sit on the depressed river terrace north of the road corridor. Two, perhaps 3 of those

groupings would be all but totally screened by the moraine 'strip' at the edge of the terrace, while one pair of barns would be located some 2.6kms from the road. Again, the combination of all 8 barns' low profile, recessive location and viewing distance would further assist to meld them into the wider Ohau landscape. As such, it is my opinion that even though 14 barns seems like a sizeable number, this combination of factors would maintain the open character of the basin landscape and minimise the barns' actual effects. Again, they would not have a significant impact on public perception of key local features, in particular Ben Ohau, the Ohau Range and – closer to Swan and Raupo Lagoons – Lake Ohau.

Landscape Effects: Lake Ohau Water Intakes

110. Although theoretically visible from a gravel accessway and informal lookouts on the south-eastern side of Lake Ohau, near the Ohau Canal control gates and weir, the use of underwater galleries, combined with underground pumping and piping, and the 1.5km distance would render this part of the irrigation scheme all but invisible post construction. A public boat ramp, near the outlet weir and boats on the Lake potentially offer even closer visual access to the intakes, but any appreciable effects should be restricted to the period of intake construction and remediation immediately after that.

Cumulative Effects

111. Looking at the combined applications and their likely implications for the greater Waitaki Basin together with near parts of the Mackenzie Country in a cumulative sense, it is clear that they would reinforce trends that are already well established within the combined plateau area. In particular, greater public accessibility to the northern end of Killermont Station, the Pebbly Block, Ohau Downs and parts of Glen Eyrie Downs Station would reinforce the concentration of dairy conversions south of Lake Ruataniwha.
112. Conversely, most of the Killermont Station (south of Broken Hut Rd and the Pebbly Block) and much of Glen Eyrie Downs Station are sufficiently remote – in relation to major roads and other areas of public activity – that they would be much less influential in this respect.
113. In looking at potential cumulative effects three key factors need to be taken into account:
 - Large areas of farmland around and south of Lake Ruataniwha have already been subject to dairy conversion and pivot irrigation: the proposed applications would consolidate, rather than start, this trend. Even farms like Ribbonwood Station, which have not experienced this transition, display a

rather bucolic mix of green paddocks with extensive shelterbelts that are as far removed from the 'tall tussock' landscape often associated with the Waitaki and Mackenzie Basins as those farms that have already been 'converted'.

- Much of the farmland to be irrigated is already used for grazing, including much of the larger southern 'half' of Killermont Station and Ohau Downs, while part of Glen Eyrie has been employed for canola production over recent years. The related amalgam of pasture, fencing, hay bales, feed blocks, buildings and other farming paraphernalia within these localities already contributes to the impression of much of the Waitaki Basin being occupied by 'farmland', as distinct from the much more native, naturalistic, moraine and tussock country that is found closer to its main ranges, lakes and wetlands.
- Areas that have in the past been employed for grazing but which are now marginal at best for that purpose – such as the Williamson Holdings land and even parts of the Pebbly Block and northern Glen Eyrie Downs Station – are both weed infested and physically impoverished. They might be part of the Waitaki Basin grasslands, but only in a very loose and generic sense. Consequently, much of this degraded land is caught between two stools: without water and nutrient inputs, its future will not be as productive pasture; nor – without very significant, and entirely philanthropic, expenditure by landowners – can it be 'naturalised' and effectively revert to high tussockland.

114. As such, irrigation and the greening of parts of the Waitaki Basin represents a stage of landscape evolution that began with the earliest sheep and cattle runs starting near Lake Tekapo in the 19th Century. It is clear to me that the combined irrigation proposals would result in increased demarcation between the rural, productive parts of the Upper Waitaki – mainly occupying the basin floor and river / lake terraces – and the remnant natural areas found closer to its lakes, wetlands, ponds, moraine areas and hill margins. In my opinion, this transition would be incremental, but also significant.

115. Yet, it is difficult to see any easy alternatives to both such rationalisation and the related consolidation of predominantly cultural and natural landscapes within different parts of the Waitaki and Mackenzie Country. Continued farming of the high country without water and nutrient supplementation will almost inevitably result in more of the existing 'grasslands' succumbing to hieracium, other weeds, and rabbits; and thus create an alternative dichotomy – high country tussockland versus wasteland. In my opinion, this would afford little benefit to either the wider community or individual landowners.

116. Consequently, I must concede that I am not entirely comfortable with the idea of dairy farms and pivot irrigation occupying large parts of the South Island high country. But I also recognise that the landscape is

a dynamic entity and there are no easy courses open for a landscape that has already changed very fundamentally from its natural state. As a result, I accept that the sort of modifications already described in relation to the individual applications and properties would occur (should consent for them be granted) and these changes would have a quite discernible cumulative impact. However, it is also my opinion that such change is predicated by an historic sequence of land management practices – it is not just a present day issue – and the incremental effects of granting the current water abstraction and irrigation applications are acceptable in the context of the evolving high country environment and, just as importantly, would actually be more positive than perpetuating the gradual physical impoverishment of the subject properties.

Statutory Considerations

117. The following are brief extracts from strategies, objectives and policies that are relevant to evaluation of the water abstraction and irrigation proposals at the Regional and district level.

Canterbury Regional Policy Statement

118. The policy statement provides for the identification of issues affecting Canterbury's high country, and objectives and policies related to the protection of its landscape values:

Chapter 8; Landscape, Ecology and Heritage states

Objective 2

Protection or enhancement of the natural features and landscapes that contribute to Canterbury's distinctive character and sense of identity, including their associated ecological, cultural, recreational and amenity values.

Principal Reasons

So that the value to the Canterbury region of its characteristic natural features and landscapes will be retained or increased.

Policy 3

Natural features and landscapes that meet the relevant criteria of sub-chapter 20.4(1) should be protected from adverse effects of the use, development, or protection of natural and physical resources, and their enhancement should be promoted. Activities that may have adverse effects include those involving the clearance or modification of areas of indigenous vegetation (particularly tall tussock), earthworks, alteration to landforms, tree planting, or the erection of structures. The particular sensitivity of these natural features and landscapes to regionally significant adverse effects in terms of sub-chapter 20.4(2) should be reflected in the provisions of district plans in the region.

Assessments of effects should be made by considering:

- (i) aesthetic values;*
- (ii) expressiveness;*

- (iii) transitory value;
- (iv) natural science factors

119. The Canterbury Regional Policy Statement identifies the role of District Councils in preparing provisions that protect and enhance natural features and landscapes, with the reference to 20.4(1) supported by the following text:

- (e) *Landscapes and natural features that are distinctive, unique to, characteristic of, or outstanding within the Canterbury region, including the processes that maintain them;*
In identifying landscapes and natural features, factors to be considered include whether a site, place or area is:
 - (i) *Identified as being a regionally outstanding landscape or natural feature in the Canterbury Regional Landscape Study;*
 - (ii) *A geopreservation site of regional significance and/or identified in the Geopreservation Inventory of the New Zealand Geological Society;*
 - (iii) *An area identified as an Area of Significant Conservation Value;*
 - (iv) *An area identified as a Recommended Area for Protection in a Protected Natural Areas Report; or*
 - (v) *In the sub-alpine or alpine zone.*

Partially Operative Waitaki District Plan (WDP)

120. The Waitaki Landscape Study and the proposed Variation 2 / Plan Change 2 use the terms “Outstanding Landscape Area” (OLA) in place of Outstanding Natural Landscape and “Significant” or Rural Scenic Zone synonymously with Visual Amenity Landscape. In discussing strategies to protect, maintain and enhance such landscapes (and amenity values), the District Plan states:

“The District’s landscapes are of significant value but are vulnerable to adverse change as a result of the effects of some land use activities“

Landscape Explanation 16.8.1

... the District is endowed with a rich diversity of landscapes, varying from vast spacious high country landscapes, to rugged coastal seascapes and headlands. These landscapes are of significant value to the people who live, work or visit the District. Most experience of the landscape is gained from within settlements and the main transport routes; however an increasing number of visitors are exploring the Districts more remote locations by vehicle or foot. The landscapes are undoubtedly a drawcard for recreationalists and tourists. Accordingly there is a need to protect the Districts unique mixture of landscapes, and in particular its outstanding or significant landscapes, for both present and future generations.”

121. The Waitaki District Plan (WDP) goes on to state the following policy:

“To assist in the development and establishment of land management practices that do not adversely affect landscape values, by providing information and guidelines to local landholder groups concerning landscape values. ‘

122. It is then explained that the WDP is in the process of being 'refined' in terms of the provisions relating to landscape values and that proposed Variation 2 / Plan Change 2, relating to landscape, are presently subject to appeal. An explanation as to the reasons for the proposed Variations is given as follows:

"In order to identify the landscapes of importance for the district, the Council commissioned a landscape study which identified areas containing outstanding natural features and landscapes and significant natural features and landscapes.

Following a review by the Council, the areas boundaries to the Rural Scenic Zone were amended to include the identified significant landscapes... A 'shared values' approach to the management of the landscapes in the district has been developed, which has involved a consultative process with landowners, tangata whenua and other interest groups in order to obtain their opinions about the landscapes and natural features in order to further develop and refine both the areas and the related policies and rules.

Some of the high country landscapes in the Upper Waitaki catchment are considered outstanding because of their high degree of openness and naturalness.

These upper basin and mountain areas are spectacular – and are 'landscapes' of the type to which section 6 of the Act applies. The outstanding landscapes sit within the Rural Scenic Zone that broadly extends from the Upper Waitaki catchment down the Hawkdun, St Mary's and Kakanui Mountains (and Horse Range) towards the coast and on to the schist uplands on each side of Macraes Flat. The Rural Scenic Zone continues to be recognised as having particular visual amenity associated with the dominance of open-space vistas and landforms and the lack of intensive subdivision and land use and the overall absence of buildings and structures.

Therefore, much of the Rural Scenic Zone can be considered to contain "visual amenity landscapes" in terms of section 7 of the Act."

123. At present, however, there are no definitive objectives or policies contained within the District Plan that might usefully be employed to 'test' the current irrigation applications against.

Officers Reports

124. I have read the officers reports, in particular that prepared by Chris Glasson addressing landscape effects. I agree with his description of the core characteristics and values of the Waitaki Basin. The reference to Dr O'Connor assessment of change within the Basin's tussock and grassland communities, followed by discussion of the landscape 'threats' and change associated with wilding conifers, weeds, animal pests, development and infrastructure, is also very apt (para.s 30 - 37).
125. Focusing more directly on the current irrigation proposals and their effects, the following are summaries of key points raised by Mr Glasson. They are accompanied by amelioration / mitigation recommendations. I have reviewed these, and will now briefly address points from my perspective in relation to each of them

(it should be noted that although I only quote from the Landscape Audit of Individual Sites, I have also taken into account Mr Glassen's analysis and assessment of proposals in relation to Landscape Units 4 – Quailburn: 5 – Lake Ohau; and 6 – Omarama):

Five Rivers - CRC061154 - New

Adverse Effects:

- *The location of the proposed irrigation area adjacent to Lake Ohau and mountain tarns, and within the moraine hills, will create significant adverse effects that require mitigation.*
- *Geometrically shaped edges to the proposed irrigation area creates moderate adverse landscape effects which require mitigation.*
- *Absence in the proposal as to the extent of irrigated areas, assuming that the whole proposed irrigation area will not be irrigated at any one time. If undertaken in a spotty and discontinuous manner then significant adverse landscape effects will be created and these will require mitigation.*

Suggested mitigation:

- *Proposal requires modifying the irrigated area so that there is a significant buffer from the irrigated area to moraine hills, lake edge and road edge. Do not include these areas in the proposed irrigation area.*

Modify the area so that it is compatible with landform patterns on both sides of the road so as to retain a consistent landscape. The shape of the irrigated area must be made compatible with the landforms. This means avoiding the moraine hills, mountain tarn, and that there needs to be a significant buffer from the road. Boundary edge of site to be compatible with landform pattern.

Comment:

126. Since the landscape peer review report was prepared, it appears that many of the comments in relation to the Five Rivers Scheme have, in fact, been addressed. The proposed areas of irrigation have been pulled back from the QEII covenant areas (Annexure 3D), with irrigation concentrated on two terraces that are physically segregated from most of Lake Ohau Rd and the covenanted areas by 'dray land grazing areas'. Although 2 – 3 irrigators would site close to the northern side of the road corridor, a substantial buffer has therefore been established and the 'introductory viewshaft' that I identified from Lake Ohau Rd to Ben Ohau originating immediately west of the transmission line would remain – with views over the northern irrigation field.
127. Providing irrigators near the road are parked as far away from it as possible any view intrusion should be kept to an acceptable level, given that the paddocks abutting the road corridor at that same point are already 'hall marked' by significant pastoral / rural activity.
128. I therefore consider that most, if not all, of the issues and mitigation measures identified by Mr Glassen in relation to Ohau Downs have already been addressed.

Killermont Station – CRC041331 – New

It is a highly visible site with views across this site to the notable Clay Cliffs which is considered to be an outstanding landscape area (WDP). Sensitive to changes, high naturalness with a wildness, sense of place and a consistent landscape. Low absorption capacity.

Adverse effects:

- *The location of the proposed irrigation areas adjacent to the road will create significant adverse landscape effects that require mitigation.*

Mitigation Measures:

Due to the high natural character, proximity to the views of Clay Cliffs and the continuity of the landscape on both sides of SH8 it is suggested that an alternative site on the property be found.

Comment:

129. I have already addressed the issue of the Pebbly Block at some length and can only reiterate that I think the use of portable K-line irrigation and a related stocking regime is acceptable. I do, however, consider that the use of alternative locations within the southern (main) part of Killermont Station – as an alternative to irrigation of the Pebbly Block – is ultimately preferable because it would effectively divorce that irrigation from the Ahuriri River and Clay Cliffs, and would generate no new effects in relation to SH8.

Killermont Station - CRC041777 & CRC041798

Highly visible and sensitive to changes, expansive landscape and is in travellers visual catchment on SH8. Low absorption capacity.

Adverse effects:

Absence of a buffer between the proposed irrigation area and road will create significant landscape effects that require mitigation.

Suggested Mitigation:

Significant buffer required between irrigated land and SH8. The buffer should consist of tussock grassland and shrubland vegetation.

Comment:

130. Although the lower level terrace directly flanking SH8 clearly is highly sensitive, the proposed linear and pivot irrigation areas on a higher terrace – closer to Manuka Creek – is well contained and screened by the intervening terrace bank, as I have already discussed. Furthermore, the proposed pivot irrigation would be located 600m or more from the highway. As a result, I consider that the irrigation systems and fields would be sufficiently remote and small scale – visually – that any effects generated by these proposals would be minor, and potentially de minimis. I do not believe that there is any need for additional screening or buffering.

Southdown Holdings Ltd – CRC 040835 – New

The “Outstanding Landscape” (WDP) within this site is a very important wetland area. The northern most site of this application is located within an “Outstanding Landscape Area” (WDP). The edge to the area is incompatible with the landform patterns of the moraine hills.

Adverse effects:

Absence of a buffer between the proposed irrigation area and road will create moderate adverse landscape effects that require mitigation.

No mention of retention and protection and a buffer for the Wairepo Lakes and surrounding landscape where significant adverse landscape effect would be created without mitigation.

Absence of retention of tussock grassland on moraine hills will create moderate adverse landscape effects that require mitigation.

Geometrically shaped edges to the proposed irrigation area creates a moderate adverse landscape effect which requires mitigation.

Suggested Mitigation:

A significant buffer from the road is required. Protection of ONL area should be a very large area around the wetlands to give them a sense of place. Boundaries should be compatible with landform patterns, retain hillocks/hills within the site as tussock grassland. The northern site is an incompatible one with the location. It is suggested that this be removed.

Comment:

131. I agree that irrigation across Glen Eyrie Downs Station would impinge on the rural character and amenity experienced from Quailburn Rd and the Quailburn Conservation Area. Again, I have already addressed these matters. In brief, however:

- I consider the environment exposed to Quailburn Rd to be a working rural landscape. It benefits from exposure to the Diadem and Ohau Ranges, together with the western flank of Cloud Hill and associated foothills, but it is also enclosed by working farms, shelterbelts and pine woodlots. It is also effectively isolated from the more significant public realm associated with SH8, Lake Ohau Rd and even Omarama. As a result, I don't attribute the landscape around Quailburn Rd the same degree of sensitivity or value that Mr Glassen does. In my opinion, the proposed pivot irrigation system could be accommodated within this relatively contained landscape without affecting the core values of the much wider Waitaki Basin and its key landscape features, like Lake Ohau, Ben Ohau, and the lagoons and moraine field within and close to Ohau Downs' QEII covenanted area.
- In a similar vein, while accepting that the Quailburn Conservation Area, focusing upon the Wairepo Creek has significant ecological value, and may well display high levels of naturalness, coherence and integrity, I do not believe that it comprises an ONL in the sense of a landscape or feature that is eminent, conspicuous or remarkable in terms of its perceived, as well as biophysical, values. In looking at the wider landscape structure and character of the Upper Waitaki, it is my opinion that Glen Eyrie Downs Station is, in fact, relatively recessive and self-

contained. It is also strongly associated with a heavily modified Ribbonwood Station. Consequently, I believe that in relation to the Waitaki as whole, Glen Eyrie offers an acceptable location for irrigation and dairy conversion.

132. Cropping or the sort of 'accidental' forestry that emerged across some 1200 has of the Station prior to Southdown Holdings Ltd acquisition would, in my opinion, have a much more deleterious impact on landscape values than the current irrigation proposals. As such, I do not agree with the concerns expressed by Mr Glassen in relation to the Glen Eyrie applications.

Southdown Holdings Ltd - CRC073115 & CRC041788 - New

High natural character and high landscape and visual amenity. It is part of a very expansive and open landscape and in the view catchment of travellers on SH8. Low absorption capacity.

Adverse effects:

Absence of a buffer between the proposed irrigation and road will create significant adverse landscape effects that require mitigation.

Suggested mitigation:

Significant buffer required between irrigated land and SH8. This should consist of retaining the landform and cover and allowing for tussock grassland and shrubland to regenerate. The edge of the irrigated area should relate to the landform patterns.

Comment:

133. Irrigation across the WHL Killermont Block would be more exposed to SH8 and Broken Hut Rd than that on the adjoining Killermont Station Limited property. I have already indicated that with much of the irrigation field screened by the intervening terrace bank and all 6 cubicle barns set well back from both roads, that I consider the current proposals to be acceptable. Again, one has to bear in mind the current, physically degraded, state of the property, the presence of pivot irrigation on the adjoining farm to the immediate north (closer to Omarama), and the limited range of effects identified in relation to other pivot irrigators in the general vicinity of Killermont Station. Land use alternatives for the site also come into any overall weighing up of the current applications.
134. On balance, I think that the current proposals for the WHL Killermont land are acceptable, even appropriate. However, I have already indicated that I think there should be bunding near all of the cubicle barns, with additional hedging along the northern and western sides (facing SH8) of the northern-most barn. I also consider that the pivot irrigators should be parked as far away from the public domain as possible. Finally, I agree with Mr Glasson that the highway margins and any spaces between the irrigation fields should be utilised for a mixture of tussock revegetation and shrub planting, perhaps intermixed with

the odd Halls Totara or similarly robust native trees where there is more space for such species. In my opinion, a buffer of planting – at least 4m deep – should be established along the highway margins. This would run from the northern end of the property to the point where the terrace bank starts to deviate from the highway frontage and provide greater separation (as well as screening) from the highway.

Mitigation & Proposed Conditions

135. Turning, therefore, to mitigation for all of the applications, the following is a précis of the mitigation measures that I think would be appropriate for the individual sites:

Killermont Station south of SH8:	<ul style="list-style-type: none"> ▪ use of underwater galleries for the Woolshed Intake
Killermont Station – Pebbly Block:	<ul style="list-style-type: none"> ▪ relocation of the proposed K-Line irrigation to the ‘alternative’ locations within the southern part of Killermont Station <u>OR</u> retention of a 6m strip of non-irrigated land next to SH8 within the Pebbly Block
WHL Killermont:	<ul style="list-style-type: none"> ▪ use of underwater galleries at the Ahuriri River Intake ▪ painting of cubicle barns mid–dark matt grey approximately 10% darker in tone than the surrounding land cover ▪ location of a 2.0m bund along the northern and western faces of those cubicle barns exposed to SH8 ▪ planting of tussock along those same bunds ▪ planting of hedgerow-type “amenity planting” along the crest of the northern-most bund – Halls totara at 1.5m centres topped at approximately 3m ▪ planting of tussock along a 4m wide strip next to the highway to the point where the terrace bank next to SH8 arcs inland, away from the highway (opposite the southern end of the Pebbly Block) ▪ planting of native shrubs & Halls totara (or similar) in the gaps between irrigator fields next to SH8 behind that strip of tussock
Glen Eyrie Downs Station:	<ul style="list-style-type: none"> ▪ painting of cubicle barns mid–dark matt grey approximately 10% darker in tone than the surrounding land cover ▪ no additional measures
Ohau Downs:	<ul style="list-style-type: none"> ▪ painting of cubicle barns mid–dark matt grey approximately 10% darker in tone than the surrounding land cover (if barn options proceed for this property) ▪ no additional measures

Ahuriri River Intakes & Pipeline:	▪ restoration of land around and above the intake and pumping structures, including the river margins
Lake Ohau Intakes & Pipelines:	▪ restoration of land around and above the intake and pumping structures, including the lake margins

136. I have reviewed the conditions proposed in conjunction with the applications; however, none of them directly address landscape matters. Consequently, I would support a range of conditions being appended to any grant of consent that reflects the specific matters that I have just identified.

Conclusions

137. Landscapes are dynamic entities and the rural landscape of the Waitaki Basin is no exception to this general rule. In this instance, the spectacle of the South Island's central plateau and grasslands is complicated by the physical degradation of much of the valley floor and the changes already evident across it, including existing irrigation and dairy conversion schemes, but also attempts at cropping and both deliberate and inadvertent afforestation.
138. In my opinion, we are moving inexorably towards a situation in which there will emerge an even more marked bifurcation of the landscape into 'more natural' and 'more cultural' halves. This is inevitable, given that it is now virtually impossible for the native tussock / browntop matrix that once dominated both the Mackenzie Country and Waitaki Basin to re-assert its physical primacy – both in a physical and perceptual sense. The simplicity and austere beauty of the high country grassland has been affected by all of the changes and development that I described at the beginning of my statement, and the Permitted status of a wide range of rural land use options, including forestry, can only compound this transition over time.
139. Clearly, irrigation and dairy conversion cannot remedy this situation; in many eyes it will compound the change that has occurred already. Yet, *hieracium* and *pinus contorta* offer a much more radical and physically impoverished vision of the potential future for the Upper Waitaki. The current state of the WHL Killermont Block and the past state of much of Glen Eyrie Downs Station offer clear testament to this. In focusing more directly on the current irrigation proposals I have not, therefore, considered the romantic recreation of tussockland or similar as being a realistic alternative to the dairy conversion proposals:

cropping, dry stocking and forestry are the alternatives in reality and all of these would still stamp a productive, rural mark on the Waitaki landscape, as in deed they already do.

140. Rather, I have focused on the degree to which the proposal would impact on the core landscape values associated with the Waitaki as whole, and the key landscape features and patterns, including ONLs, that define its internal character and sense of place. In my opinion, the incremental changes anticipated in relation to all of the current applications would have an effect, but those effects are both manageable and consistent with a well established pattern of land use change that has already reshaped much of the Basin landscape.
141. In my opinion, none of the irrigation applications – subject to the mitigation measures described – would have a significant impact on the ONLs identified in the Waitaki District Plan Variation 2 / Plan Change 2, apart from the Quailburn Conservation Area. Yet, I do not consider that that particular feature truly qualifies as an ONL or ONF, as I have already indicated. More over, concern for the protection of the reserve has to also recognise that Glen Eyrie Downs Station – surrounding the stream corridor – was until recently covered in a mass of wilding pines. The removal of those pines has been wholly beneficial in terms of the Station’s landscape’s character and values, as well as those of the wider basin.
142. The WHL Killermont Block, Killermont Station, Pebbly Block and Ohau Downs all lie within the foreground of views from major public thoroughfares to the likes of the Ewe and Wether, Ohau and Ben Ohau Ranges, as well as the Ahuriri River and Clay Cliffs. Nevertheless, it is my opinion that a range of factors would ultimately limit the degree of physical incursion into such views and changes to their visual ‘base plates’ to an acceptable level. Those factors include:
- careful siting of some of the irrigation fields and cubicle barns – eg. the physically remote and well screened main fields on Killermont Station;
 - modifications to the original irrigation proposals – eg. the use of K-Line irrigation on the Pebbly Block;
 - regard for the integrity of the QEII covenanted areas and Lake Ohau / moraine margins; and
 - adoption of appropriate mitigation measures.
143. Indeed, many of the issues raised in Mr Glassen’s report have become effectively redundant precisely because of modifications to the layout of the proposed irrigation fields and the mitigation proposed.

144. In my opinion, the current proposals would also help to maintain the very openness and austerity of the high country landscape, and the strong sense of interaction, counterpoint even, between its basin floor, lakes and the mountain chains that so emphatically define its perimeter.
145. Overall, therefore, much as I might personally prefer to see all of the Mackenzie / Waitaki high country revert to tussock, I professionally regard the current proposals for WHL Killermont, Killermont Station, Glen Eyrie Downs Station and Ohau Downs as being appropriate in terms of the landscape and statutory contexts that presently exist.

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