

**IN THE MATTER OF**

The Resource Management Act 1991

**AND**

**IN THE MATTER OF**

Application to the Canterbury Regional  
Council for  
Land Use Consent - CRC173284

Water Permit to dam water – CRC173285

Water Permit to take groundwater for  
dewatering purposes – CRC173286

Discharge Permit to discharge construction  
phase stormwater –CRC173287

Discharge Permit to discharge dust and  
contaminants to air – CRC173288

Discharge Permit to discharge seepage  
water to land – CRC173289

**AND**

An application to the Ashburton District  
Council for  
Land Use Consent – LUC16-0110

**Both to construct, operate and maintain a  
1.6M cubic metre water storage pond for  
irrigation purposes near Methven**

**APPLICANT**

Barrhill Chertsey Irrigation Limited

**CONSENT AUTHORITY**

**Ashburton DISTRICT COUNCIL and  
Canterbury REGIONAL COUNCIL**

**JOINT REPORT AND DECISION OF INDEPENDENT HEARINGS COMMISSIONER**

**Mr. Paul Rogers**

**1 September 2017**

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## **SUMMARY OF DECISION**

- 1 For the reasons outlined in this Decision, it is the decision of the Canterbury Regional Council and the Ashburton District Council, pursuant to sections 104, 104(B) and 108, and subject to Part 2 of the RMA, to **GRANT** the following

resource consents subject to the consent conditions set out in Appendix A to G and attached to and forming part of this decision:

- (a) *Land use consent*: LUC16-0110 for the construction, operation and maintenance of the Ākarana Storage Pond as described in the Application by Barrhill Chertsey Irrigation Limited (**ADC consent**); and
- (b) *Land use consent*: CRC173284 to excavate and deposit material over an unconfined/semi confined aquifer; and
- (c) *Water Permit*: CRC173285 to dam up to 1.6 million m<sup>3</sup> of water outside the bed of a river; and
- (d) *Water Permit*: CRC173286 to take, use and discharge groundwater for the purpose of site dewatering during the construction of the ASP; and
- (e) *Discharge Permit*: CRC173287 to discharge water and contaminants (sediment) to land during the construction of the ASP; and
- (f) *Discharge Permit*: CRC173288 to discharge fugitive dust from bulk earthworks and contaminants from internal combustion equipment during the construction of the ASP; and
- (g) *Discharge Permit*: CRC173289 to discharge seepage water from the base of the ASP to land.

Consents listed in 1(b) to (g) above, collectively referred to as the **regional council consents**.

## INTRODUCTION AND DECISION APPROACH

- 2 I was appointed by the Ashburton District Council, (**ADC**), and Canterbury Regional Council (**CRC**) to decide<sup>1</sup> an application (the **Application**) by Barrhill Chertsey Irrigation Limited (the **Applicant**) for resource consents associated with a proposal for the construction, operation and maintenance of a 1.6 million cubic metre water storage pond for irrigation purposes at 577 Barkers Road, Methven, known as the Ākarana Storage Pond, (**ASP**).
- 3 Consent is being sought for a proposal as described above. However there are a range of resource consent applications to two territorial authorities. In this decision, usually by references in headings, I discuss effects and plan provisions relevant to each individual resource consent application.

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<sup>1</sup> In accordance with section 100A and 102 of the RMA.

## BACKGROUND AND PROCEDURAL MATTERS

- 4 Separate reports were produced pursuant to section 42A of the Resource Management Act 1991 (**RMA**) by ADC's Reporting Officer, Nick Boyes who reported on ADC resource consent LUC16-0110 and by CRC's Reporting Officer, Natalia Ford who reported on the regional council consents. Collectively I refer to these two reports as the "S42A Reports".
- 5 The S42A Reports provided an analysis of the matters requiring consideration and recommended the resource consents sought by the Applicant be granted, subject to recommended consent conditions.
- 6 The Applicant holds existing resource consent CRC143165 for the take and diversion of water from the Rangitata Diversion Race (**RDR**) and Rakaia River for irrigation. It is proposed that the use of water for storage in the ASP will fall under that consent. The Applicant has advised<sup>2</sup>, that a variation to CRC 143165 will be sought for the activity of the use of water for water storage after the resource consents which are the subject of this Decision are granted. Ms Ford, the S42A reporting officer agrees with this approach because the change required to CRC 143165 is minor.
- 7 The Applicant has also confirmed that a building consent under the Building Act 2004 is required pursuant to the Building (Dam Safety) Regulation 2008 and that this will be applied for once the resource consents sought from ADC and CRC are obtained.
- 8 There were a total of eight submissions. Six of those submitters were in support<sup>3</sup> of the ASP proposal with one submitter wishing to be heard<sup>4</sup>. Fish and Game (Central South Island) (**Fish & Game**) neither supported nor opposed the ASP proposal but raised some issues within its submission that it believed should be given strong consideration to by the Applicant. Te Rūnanga o Arowhenua and Te Rūnanga o Ngāi Tahu (**Ngāi Tahu**) supported the ASP proposal subject to certain concerns being addressed by the Applicant.
- 9 Since the close of the submissions, the Applicant has consulted with Ngāi Tahu and Fish & Game to address the concerns of both parties. Consequently, Ngāi Tahu is now recorded as supporting the Application and Fish & Game has withdrawn its right to be heard.

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<sup>2</sup> Pattle Delamore Partners Limited, 2016, BCIL Ākarana Storage Pond Consenting Application and AEE, Page 4, Section 2.4

<sup>3</sup> Ian Fredrick Hydes & Ronald Hydes, Brian Alexander Callaghan, Geoff Corbett, Federated Farmers (Mid Canterbury Province), Andrew William Luddington and Robert William Wightman

<sup>4</sup> Federated Farmers (Mid Canterbury Province)

- 10 The Applicant has obtained written approval from the seven<sup>5</sup> immediately adjoining private landowners as well as three other parties<sup>6</sup>.
- 11 The Application was put on hold between 12 December 2016 and 9 February 2017 while the Applicant responded to a s92 RMA further information request. The Application was also put on hold between 16 November 2016 to 7 December 2016 in accordance with section 88E RMA while additional written approvals from affected parties were sought.
- 12 On 23 August I received a letter from the Applicant addressing paragraphs 79b and c of Ms Ford's report. On consideration I prefer the approach recommended by Ms Ford. In respect of paragraph 79c, this deals with the possible discharge of dam spillway water to water. Ms Ford is of the view that this activity does not qualify as an emergency work in terms of section 330 of the RMA. Taking into account the matters raised by the Applicant in its letter dated 23 August 2017, I am of the view such an activity would qualify as an emergency work under section 330 RMA for the reasons advanced in that letter. This outcome is also consistent based on the advice contained in that letter with CRC's approach for emergency spillway structures located at the Central Plains Water Sheffield Storage Pond.
- 13 In any event, I do not think a great deal turns on this point as Ms Ford is comfortable that the Application can proceed without any emergency discharge of dam spillway water being applied for. In any event, if an emergency discharge of dam spillway of water occurs, the Applicant will need to make out the case that, that discharge is covered by section 330 RMA.

## THE APPLICATION AND RESOURCE CONSENTS

### The Application

- 14 The Applicant has provided, within its Application a detailed description of the proposed ASP including a site and area description and construction methodology<sup>7</sup> (the **ASP Proposal**). I adopt that information provided in the Application and provide the following summary.
- 15 The ASP Proposal, as described in the Application includes the construction of a storage pond with a maximum capacity of approximately 1.6 million cubic metres of water. The water used to fill the storage pond will be sourced from the RDR

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<sup>5</sup> Robert Watson, Methven Dairies LP, Francis Patrick Royston, J A Wright Farm Limited, Brian Alexander Callaghan, Grant Robert Kind & Denise Elizabeth Strachan King and David & Sandra Wright

<sup>6</sup> Ashburton District Council (in respect of Council's roading network), Electricity Ashburton Limited and Rangitata Race Diversion Race Management Limited

<sup>7</sup> Pattle Delamore Partners Limited, 2016, BCIL Ākarana Storage Pond Consenting Application and AEE, Pages 4-7, Section 2.5-2.6

canal which flows through the project site, with the proposed pond being located to the south of the canal. Water taken from the canal is proposed to be filled by a siphon and/or pump at a maximum rate of 3m<sup>3</sup>/s. The ASP Proposal shall including the following works<sup>8</sup>:

- (a) strip topsoil to stockpile;
- (b) excavation and deposition of onsite materials;
- (c) the placement, compacting and shaping of fluvioglacial outwash materials to form the ring embankment which will have an approximate height of 10m above existing (natural) ground level and set back at least six metres from boundaries;
- (d) uploading, placement and shaping of loess/silt liners on pond invert, using materials recovered during the excavation of the pond footprint. The loess/silt liner shall have a minimum thickness of 1.0m;
- (e) the placement of high density geomembrane liner system on the upstream embankment slopes and extending 30 metres into the pond invert;
- (f) uploading of topsoil and placement on the outside slopes of the embankment together with the sowing and cultivation of grass;
- (g) the construction of civil works including the flow control structure and point outlet conduit;
- (h) inlet structure (consisting of steel pipe siphon and/or pump) from the RDR at a maximum flow of 3.0m<sup>3</sup>/s;
- (i) one outlet structure, controlled by hydraulic date, restricted to a maximum outflow of 2.0m<sup>3</sup>/s;
- (j) an emergency spillway, located on the northeast embankment, to prevent potential damage; and
- (k) the use of 12,000L diesel fuel to be stored in a tank on-site during construction phase.

16 The ASP crest level will be a maximum of 340.3m RL, with the crest having a minimum width of 4m.

17 The ASP will have a maximum operating level of 339.0m RL and a minimum freeboard of 1.3m.

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<sup>8</sup> Ibid

## **Resource Consents - ADC**

- 18 The Applicant has applied for the following resource consents from ADC to authorise the construction of the ASP:

### **LUC16-0110 Land Use Consent**

- 19 The Applicant seeks a land use consent for the construction, operation and maintenance of the ASP. Under the Ashburton District Plan (**ADP**) the activity status for this consent is 'discretionary'<sup>9</sup>.
- 20 The proposed consent duration for this consent is 35 years.

## **Resource Consents – CRC**

### **CRC173284 Land Use – Excavate and Deposit Material**

- 21 The Applicant seeks a land use consent to excavate and deposit material. The use of land to excavate more than 100m<sup>3</sup> of material over an unconfined or semi-confined aquifer is classed as restricted discretionary under the Land and Water Regional Plan.
- 22 The use of land for the deposition of more than 50m<sup>3</sup> of any material in any 12 month period is classified as controlled under the Land and Water Regional Plan.
- 23 The proposed consent duration is 35 years.

### **CRC173285 Water Permit – To Dam Water**

- 24 The Applicant seeks a resource consent to dam up to 1.6 million m<sup>3</sup> of water and to use land to store water. Under the Land and Water Regional Plan, this activity is discretionary.
- 25 The proposed duration of the consent is 35 years.

### **CRC173286 Water Permit – To take and use groundwater**

- 26 The Applicant seeks a resource consent to take, use and discharge groundwater for the purpose of site dewatering during the construction of the ASP. This activity is restricted discretionary under the Land and Water Regional Plan.
- 27 The proposed duration of the consent is 5 years.

### **CRC173287 Discharge Permit - Discharge of water and contaminants to land**

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<sup>9</sup> Rule 14.7, specifically rule 14.7.4d

28 The Applicant seeks a resource consent to discharge water and contaminants (sediment) to land during the construction of the ASP. This activity is discretionary under the Land and Water Regional Plan.

29 The proposed duration of the consent is 5 years.

**CRC173288 Discharge Permit - Discharge of contaminants to air**

30 The Applicant seeks a resource consent to discharge fugitive dust and combustion product to air during the construction of the ASP.

31 The Applicant also proposes to combust diesel in a stationary large scale fuel burning device with an output not exceeding 300kw. This is discretionary under the Natural Resources Regional Plan and Proposed Canterbury Air Regional Plan (decisions version).

32 The proposed duration of consent is 5 years.

**CRC173289 Discharge Permit – Discharge Seepage Water to Land**

33 The Applicant seeks a discharge permit to discharge seepage water to land. This is discretionary under the Land and Water Regional Plan.

34 The proposed duration is 35 years.

**Summary of consent status under the relevant plans**

Table 1: Summary of activities requiring consent		
Consent number	Activities requiring consent	Overall activity status
LU16-0110	To construct and operate a 1.6M m <sup>3</sup> water storage pond	Discretionary
CRC173284	To excavate and deposit material over an unconfined/semi-confined aquifer	Restricted discretionary
CRC173285	To dam up to 1.6M m <sup>3</sup> of water outside a bed or river	Discretionary
CRC173286	Take groundwater for dewatering	Restricted discretionary

CRC173287	Discharge of construction-phase stormwater and dewatering to land	Discretionary
CRC173288	Discharge of contaminants to air from the handling and outdoor storage of bulk solid materials, and the discharge of contaminants to air from the internal combustion of fuel in a large scale fuel burning device	Discretionary
CRC173289	Discharge of seepage water from the base of the ASP to land	Discretionary

- 35 It is standard practice that where there are various consent applications, with different statuses, the most restrictive status must be applied. On this basis, the above resource consents are to be treated as bundled, and therefore, the ASP Proposal shall be classed as a **discretionary** activity.
- 36 Included as part of the Application are a range of management plans relating to the consents described above. Those plans include:
- (a) Dam Safety Management Plan;
  - (b) Emergency Action Plan;
  - (c) Emergency Evacuation Plan.

## LOCATION

- 37 The project site of the proposed ASP development (**project site**) is located on a piece of land located at 577 Barkers Road, approximately five kilometres north-east of Methven township, South Canterbury. The land parcel is currently owned by Mr Mark and Mrs Helen Callaghan. The Applicant proposes to purchase 40 hectares of this land from the Callaghans for the ASP development.
- 38 The RDR runs along the northern boundary of the project site and flows from the south-west to the north-east. Barkers Road bounds the project site to the south-east and runs in a south-west to north-east direction.
- 39 The Rakaia River is located approximately four kilometres north-east of the project site and flows in a south-easterly direction.
- 40 The approximate location of the project site is shown in Figure 1 and 2 below:





Figure 1: Aerial photograph of project site in relation to Methven and Rakaia River. Indicative location of project site shown in red

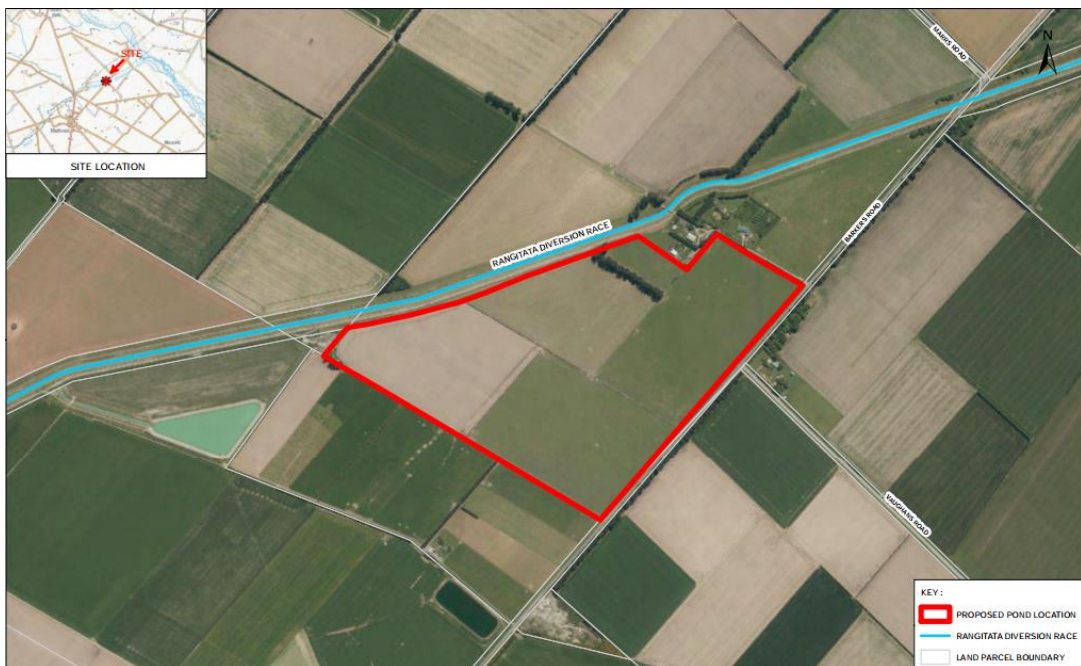


Figure 2: Aerial photograph of project site in relation to RDR and Barkers Road. Indicative boundary of project site shown in red.

41 There are seven properties immediately adjoining the project site.

## PLANNING FRAMEWORK

### Statutory Considerations

- 42 Part 3 of the RMA sets out duties and restrictions under the Act.
- 43 Section 9 states:
- "(1) No person may use land in a manner that contravenes a national environmental standard unless the use—*
    - (a) is expressly allowed by a resource consent; or*
    - (b) is allowed by section 10; or*
    - (c) is an activity allowed by section 10A; or*
    - (d) is an activity allowed by section 20A.*
  - (2) No person may use land in a manner that contravenes a regional rule unless the use—*
    - (a) is expressly allowed by a resource consent; or*
    - (b) is an activity allowed by section 20A.*
  - (3) No person may use land in a manner that contravenes a district rule unless the use—*
    - (a) is expressly allowed by a resource consent; or*
    - (b) is allowed by section 10; or*
    - (c) is an activity allowed by section 10A.*
  - (4) No person may contravene section 176, 178, 193, or 194 unless the person obtains the prior written consent of the requiring authority or the heritage protection authority.*
  - (5) This section applies to overflying by aircraft only to the extent to which noise emission controls for airports have been prescribed by a national environmental standard or set by a territorial authority.*
  - (6) This section does not apply to use of the coastal marine area."*
- 44 The activities associated with the ASP Proposal that are affected by section 9 are:
- (a) Excavating and depositing material over an unconfined/semi confined aquifer; and
  - (b) The use of land for storing diesel in a portable container.
- 45 There are no NES regulations applying to these activities. I also note that, as the activity is proposed, section 20A does not apply. There are regional rules that apply to both of these activities and these are discussed below. If these activities contravene a permitted activity rule consent will be required.
- 46 Section 14 states:
- "(1) No person may take, use, dam, or divert any open coastal water, or take or use any heat or energy from any open coastal water, in a manner that contravenes a national environmental standard or a regional rule unless the activity—*

- (a) *is expressly allowed by a resource consent; or*
  - (b) *is an activity allowed by section 20A.*
- (2) *No person may take, use, dam, or divert any of the following, unless the taking, using, damming, or diverting is allowed by subsection (3):*
  - (a) *water other than open coastal water; or*
  - (b) *heat or energy from water other than open coastal water; or*
  - (c) *heat or energy from the material surrounding geothermal water.*
- (3) *A person is not prohibited by subsection (2) from taking, using, damming, or diverting any water, heat, or energy if—*
  - (a) *the taking, using, damming, or diverting is expressly allowed by a national environmental standard, a rule in a regional plan as well as a rule in a proposed regional plan for the same region (if there is one), or a resource consent; or*
  - (b) *in the case of fresh water, the water, heat, or energy is required to be taken or used for—*
    - (i) *an individual's reasonable domestic needs; or*
    - (ii) *the reasonable needs of an individual's animals for drinking water,—**and the taking or use does not, or is not likely to, have an adverse effect on the environment; or*
  - (c) *in the case of geothermal water, the water, heat, or energy is taken or used in accordance with tikanga Maori for the communal benefit of the tangata whenua of the area and does not have an adverse effect on the environment; or*
  - (d) *in the case of coastal water (other than open coastal water), the water, heat, or energy is required for an individual's reasonable domestic or recreational needs and the taking, use, or diversion does not, or is not likely to, have an adverse effect on the environment; or*
  - (e) *the water is required to be taken or used for firefighting purposes.”*

47 The activities associated with the ASP Proposal that are affected by section 14 are:

- (a) Damming of water outside the bed of a river; and
- (b) The taking of groundwater for dewatering.

48 These activities can only be carried out if they are expressly allowed by an NES, a regional rule or a resource consent. There are no NES regulations applying to these activities however there are regional rules that are applicable. The activities are assessed against these rules below.

49 Section 15 states:

- "(1) *No person may discharge any—*
  - (a) *contaminant or water into water; or*

- (b) *contaminant onto or into land in circumstances which may result in that contaminant (or any other contaminant emanating as a result of natural processes from that contaminant) entering water; or*
- (c) *contaminant from any industrial or trade premises into air; or*
- (d) *contaminant from any industrial or trade premises onto or into land—*  
*unless the discharge is expressly allowed by a national environmental standard or other regulations, a rule in a regional plan as well as a rule in a proposed regional plan for the same region (if there is one), or a resource consent.*
- (2) *No person may discharge a contaminant into the air, or into or onto land, from a place or any other source, whether moveable or not, in a manner that contravenes a national environmental standard unless the discharge—*
  - (a) *is expressly allowed by other regulations; or*
  - (b) *is expressly allowed by a resource consent; or*
  - (c) *is an activity allowed by section 20A.*
- (2A) *No person may discharge a contaminant into the air, or into or onto land, from a place or any other source, whether moveable or not, in a manner that contravenes a regional rule unless the discharge—*
  - (a) *is expressly allowed by a national environmental standard or other regulations; or*
  - (b) *is expressly allowed by a resource consent; or*
  - (c) *is an activity allowed by section 20A.*
- (3) *This section shall not apply to anything to which section 15A or section 15B applies."*

50 Section 15(1) requires that any discharge of a contaminant into water or to land where it may enter water requires consent unless the discharge is expressly authorised by an NES or other regulations or a rule in a regional plan. The following discharges are relevant to the proposal:

- (a) Discharge of construction-phase stormwater to land;
- (b) Discharge of seepage water from the base of the water storage pond to land;
- (c) Discharge of contaminants to air from the storage or transfer of petroleum products;
- (d) Discharge of water to water; and
- (e) Discharge of dam spillway water to water.

51 The discharges listed above are not authorised by an NES or any other regulations. Compliance with the relevant regional rules are discussed below.

- 52 Sections 15(2) and (2A) require that any discharge of contaminants into air only require consent if they contravene an NES or a regional rule. The following discharges are relevant to the proposal:
- (a) Discharge of contaminants to air from the handling of bulk solid materials;
  - (b) Discharge of contaminants to air from the outdoor storage of bulk solid materials;
  - (c) Discharge of contaminants to air from the internal combustion of fuel in a large scale fuel burning device; and
  - (d) Discharge of contaminants to air from the storage or transfer of petroleum products.
- 53 These activities are covered by regional rules and compliance with these rules is discussed below.
- 54 Pursuant to section 104(1), and subject to Part 2 of the RMA, which contains the purpose and principles, I must to have regard to:
- (a) Any actual and potential effects on the environment of allowing the activity;
  - (b) Any relevant provisions of a national environmental standard, other regulations, a national policy statement, a New Zealand coastal policy statement, a regional policy statement or a proposed regional policy statement, a plan or proposed plan; and
  - (c) Any other matters the consent authority considers relevant and reasonably necessary to determine the Application.
- 55 Under section 104(2) RMA, when forming an opinion for the purposes of section 104(1)(a) RMA regarding actual and potential effects on the environment, I may disregard an adverse effect of the activity on the environment if a national environmental standard or the plan permits an activity with that effect.
- 56 In terms of section 104(3) RMA, in considering the Application, I must not have regard to (relevantly), any effect on a person who has given written approval to the Application.
- 57 Under section 104B RMA, I may grant or refuse the Application, and if granted, I may impose conditions under section 108 RMA.
- 58 Part 2 consideration is detailed later in this decision.

## National Environmental Standards

### National Environmental Standards for Sources of Human Drinking Water Regulations 2007 (NES REG)

- 59 The NES REG came into effect on 20 June 2008 and sets out the requirements for protecting sources of human drinking water from becoming contaminated.
- 60 For the purpose of the NES REG, a human drinking water source is a natural body of water such as a river, lake or groundwater that is used to supply people with drinking water.
- 61 The NES REG sets out various restrictions in respect of the granting or discharge of water permits that have the potential to affect a registered drinking water supply that provides no fewer than 25 people with drinking water for not less than 60 days per year.

### National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health 2011 (NES HH)

- 62 The NES HH came into force on 10 October 2011, the provisions of which apply in the following circumstances:
- (a) *...when a person wants to do an activity described in any of the subclauses (2) to (6) on a piece of land described in sub-clause (7) or (8);*
  - (b) *do not apply when a person wants to do an activity described in any of subclauses (2) to (6) on a piece of land described in subclause (9).*
- 63 On that basis, whether or not the regulations apply depends on whether the project site is classified as a 'piece of land' under sub-clause (7):
- (a) *an activity or industry described in the HAIL is being undertaken on it;*
  - (b) *an activity or industry described in the HAIL has been undertaken on it;*
  - (c) *it is more likely than not that an activity or industry described in the HAIL is being or has been undertaken on it.*
- 64 Sub-clause (8) sets out that these regulations only apply to production land, if a person wants to:
- (b) *sample or disturb –*

- (i) *soil under existing residential buildings on a piece of land;*
  - (ii) *soil used for the farmhouse garden or other residential purposes in the immediate vicinity of existing residential buildings;*
  - (iii) *soil that would be under proposed residential buildings on the piece of land;*
  - (iv) *soil that would be used for the farmhouse garden or other residential purposes in the immediate vicinity of proposed residential buildings.*
- (c) *subdivide land in a way that causes the piece of land to stop being production land;*
  - (d) *change the use of the piece of land in a way that causes the piece of land to stop being production land.*

65 The RMA defines 'production land' as "...any land and auxiliary buildings used for the production (but not processing) of primary products (including agricultural, pastoral, horticultural, and forestry products)..."<sup>10</sup>

*National Environmental Standard for Air Quality (NES AQ) and National Policy Statement for Freshwater Management (NPS)*

- 66 Ms Ford explains in this circumstance the discharge of dust and smoke and fumes from diesel combustion are not prohibited and the activity is outside of an air shed. Therefore the proposal does not need to be considered against NESAQ.
- 67 The NPS came into force on the 4 July 2014 and provides the objectives and policies to manage water in an integrated and sustainable way, while providing for economic growth within set limits.
- 68 Ms Ford assessed the relevance of the NPS within her report, noting that where the NPS refers to damming, it is in the context of abstracting or stemming flows that will subsequently affect allocation limits. Ms Ford outlined that the Applicant already holds consents to abstract water that have been assessed against the flow and allocation limits for the relevant surface water bodies.
- 69 I agree with Ms Ford's assessment and adopt her approach that the NES AQ and the NPS do not need to be considered.

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<sup>10</sup> Section 2 RMA

## Regional Plans

### Canterbury Regional Policy Statement (CRPS)

- 70 Section 104(1)(b)(v) of the RMA requires a consent authority to have regard to the relevant provisions of a regional policy statement.
- 71 The CRPS became operative on 15 January 2013 and provides the objectives, policies and methods to achieve integrated management of natural and physical resources in the Canterbury region.
- 72 The relevant parts of the CRPS to the ASP Proposal are:
- (a) Chapter 5: Land-Use and Infrastructure and in particular:
    - (i) Policy 5.3.11(2) - advocates that consented community irrigation infrastructure is enabled to be operated, maintained, and updated to be more effective.
  - (b) Chapter 7: Fresh Water, and in particular:
    - (i) Objectives 7.2.1 and 7.2.3 - advocate that freshwater is managed sustainably and its intrinsic and riparian values are protected;
    - (ii) Policies 7.3.1 and 7.3.8 - identifies that the natural character values of freshwater bodies and their margins are preserved, maintained and, where degraded, they are improved and that efficiency in the allocation of freshwater is improved while ensuring and recognising a number of factors including the importance of the reliability of supply for irrigation;
    - (iii) Policy 7.3.10 - recognises the potential benefits of harvesting and storing surface water for a variety of reasons, including, improving the reliability of irrigation water and in turn, efficiency of use;
    - (iv) Policy 7.3.12 - recognises and provides for continuation of existing irrigation schemes which involve substantial investment in infrastructure.
  - (c) Chapter 9: Ecosystems and Indigenous Biodiversity
    - (i) Ms Ford explains that there are no sites of significant ecosystems or biodiversity values in the vicinity of the activity so Chapter 9 need not be considered.



- (d) Chapter 11: Natural Hazards, and in particular:
  - (i) Objective 11.2.1 - seeks to avoid or mitigate and new subdivisions, use and development of land that increases the risk of natural hazards to people, property and infrastructure;
  - (ii) Objective 11.2.4 - outlines the need to establish effective integration between authorities to manage and prepare for natural hazards;
  - (iii) Policy 11.3.1 - reflects objective 11.2.1 in outlining that high hazard areas are avoided for any future development.
- (e) Chapter 14: Air Quality, and in particular:
  - (i) Objective 14.2.2 - sets out to enable discharges to air provided there are no significant localised adverse effects;
  - (ii) Policy 14.3.3 - requires that standards, conditions and terms are set to avoid, remedy, and mitigate localised effects on air quality.
- (f) Chapter 17: Contaminated Land, and in particular:
  - (i) Policy 17.2.1 - seeks to protect people and the environment from both on-site and off-site adverse effects of contaminated land; and
  - (ii) Policy 17.3.2 - requires that where land is developed and there are contaminants, that the potential effects of that contamination or discharges from the contaminated land, shall be avoided, remedied or mitigated.

Canterbury Natural Resources Regional Plan (NRRP)

- 73 Section 104(1)(b)(vi) of the RMA requires a consent authority to have regard to the provisions of any relevant provisions of a plan or proposed plan. The NRRP became operative on 11 June 2011.
- 74 Policies AQL2 and AQL6 of the NRRP are relevant to the ASP Proposal:
  - (a) AQL2 - relates to the controlling of particular odour and emissions from fuel burning devices.
  - (b) AQL6 - requires that the discharge of dust must not be corrosive, noxious, dangerous, objectionable, or offensive to the extent that it has or is likely

to cause an adverse effect on the environment beyond the boundary of the site.

Land and Water Regional Plan (LWRP)

75 The LWRP imposes rules to improve the quality of water throughout the Canterbury Region. The following objectives are considered to be relevant to the ASP Proposal:

- (a) Objective 3.1 – states that land and water should be managed as integrated natural resources to recognise and enable Ngāi Tahu culture, traditions, customary uses and relationships with land and water;
- (b) Objective 3.2 – water management should apply the ethic of ki uta ki tai, “from the mountains to the sea”;
- (c) Objective 3.3 – nationally and regionally significant infrastructure is enabled;
- (d) Objective 3.4 – a regional network of water storage and distribution facilities provides for sustainable, efficient and multiple use of water;
- (e) Objective 3.6 – water is recognised as essential to all life and is respected for its intrinsic values;
- (f) Objective 3.7 – fresh water should be managed prudently as a shared resource with many in-stream and out-of-stream values;
- (g) Objective 3.8A – high quality fresh water must be available to meet actual and reasonably foreseeable needs to community drinking water supplies;
- (h) Objective 3.11 – recognises water as an enabler of the economic and social wellbeing of the region;
- (i) Objective 3.13 – groundwater resources remain a sustainable source of high quality water which is available for abstraction and maintaining surface water bodies;
- (j) Strategic policies 4.2 and 4.3 – relate to the management of groundwater and surface water and ensuring that these are managed to meet water quality and quality limits;
- (k) Policies 4.13, 4.14, 4.18 and 4.19 – contain requirements for the discharge of contaminants to land or water and specifically set out that the effects are to be minimised, but that if this is not possible, best practicable options should be undertaken;

- (l) Policy 4.14B – requires regard is to be had to Ngāi Tahu values, and in particular those expressed within an iwi management plan when considering applications for discharges which may adversely affect statutory acknowledgement areas, nohoanga sites, and cultural landscapes identified in the plan or in any iwi management plan;
- (m) Policy 4.23 – requires protection of onsite and community drinking water supplies;
- (n) Policy 4.48 – damming and diversion of water and insuring that the dam is sited, designed and operated in a way that minimises any risk of overspill, leakages, slips or other dam failure and the risk on people and communities;
- (o) Policy 4.76 – requires subsidence and other effects of dewatering to be avoided by limiting the rate or duration of pumping or other measures.

Canterbury Air Regional Plan (decisions version) (CARP)

- 76 CARP is at appeal stage and has not yet been made operative.
- 77 The purpose of CARP is to provide for management of air pollution from home heating, industry and other sources such as outdoor burning, dust and odour.
- 78 The following objectives and policies are relevant to the ASP Proposal:
  - (a) Objective 5.5 – air quality to be managed in a way that provides for the cultural values of Ngāi Tahu;
  - (b) Objective 5.6 – amenity values of the receiving environment are to be maintained;
  - (c) Objective 5.7 – discharges from new activities are appropriately located to take account of adjacent land uses and sensitive activities;
  - (d) Objective 5.9 – offensive and objectionable effects and noxious or dangerous effects on the environment are to be avoided;
  - (e) Policy 6.1 – requires that discharges to air do not affect human health and wellbeing, ecosystems, visibility or soiling and corrosion of structures and property;
  - (f) Policy 6.2 – recognises the value of air quality as a taonga to Tangata Whenua and manage adverse effects of discharges into air on wāhi tapu, wāhi taonga and places of significance to Ngāi Tahu;

- (g) Policy 6.5 – offensive and objectionable effects are unacceptable and actively managed by plan provisions and the implementation of management plans;
- (h) Policy 6.6 – discharges into air from new activities are to be appropriately located and adequately separated from sensitive activities in line with the district plan and the sensitivity of the receiving environment;
- (i) Policy 6.7A – states that when evaluating resource consent applications, recognise locational constraints on activities when imposing terms and conditions;
- (j) Policy 6.10 – cumulative effects to be minimised by consented activities utilising best practicable options; and
- (k) Policy 6.11 – recognises the contribution of nationally and regionally significant infrastructure to peoples’ social and economic wellbeing and provide for the discharges associated with the development, operation and maintenance of that infrastructure.

Canterbury Water Management Strategy (CWMS)

- 79 The Environment Canterbury (Temporary Commissioners and Improved Water Management) Act 2010 directs<sup>11</sup> CRC to have particular regard to the visions and principles of the CWMS when considering any proposed regional policy statement or plan.
- 80 The CWMS identifies water storage, particularly from the alpine rivers, as being of long term and significant benefit to the Canterbury Region. The desired outcome of the CWMS is:

*“to enable present and future generations to gain the greatest social, economic, recreational and cultural benefit from our water resources within an environmentally sustainable framework”.*

**District Plans**

- 81 Under the Ashburton District Plan (ADP), the project site is zoned rural.<sup>12</sup> The relevant objectives and policies are found in the Rural Volume of the ADP and are as follows:

- (a) Objective 3.1: Rural Primary Production – *to enable primary production to*

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<sup>11</sup> Section 63 Environment Canterbury (Temporary Commissioners and Improved Water Management) Act 2010

<sup>12</sup> Rural B – Planning Map 39 Ashburton District Plan

*function efficiently and effectively in the Rural A and B Zones, through the protection and use of highly versatile and/or productive soils and the management of potential adverse effects;*

- (b) Policy 3.1A – *provide for the continued productive use through farming activities and protection of highly productive and/or versatile soils, and their associated irrigation resources, by ensuring that such land is not developed for intensive residential activity and/or non-rural activities and the extent of coverage by structures or hard surfaces is limited;*
- (c) Policy 3.1E – *Protect highly productive and/or versatile soils by discouraging activities such as earthworks and extractive processes that significantly deplete the topsoil or the subsoil;*
- (d) Objective 3.5: Rural Character and Amenity – *To protect and maintain the character and amenity values of the District’s rural areas, considering its productive uses whilst providing for non-rural activities that meet the needs of local and regional communities and the nation;*
- (e) Objective 14.1: Effects from Utilities on Amenity and the Environment – *to provide for the construction, installation, operation, upgrading and maintenance of utilities where adverse effects on amenity and the surrounding environment can be appropriately avoided, remedied or mitigated;*
- (f) Policy 14.1A – *to avoid, remedy or mitigate adverse environmental effects arising from the construction, installation, operation, upgrading and maintenance of utilities;*
- (g) Policy 14.1C – *Ensure the health and safety of the community is protected when utilities are constructed and utilised;*
- (h) Policy 14.1D – *Consider the locational, economic, operational and technical requirements of utilities in assessing their location, design and appearance, and their importance to the economic functioning of the District, Region and/or Nation;*
- (i) Objective 14.5: Rural Water – *the ongoing operation, maintenance and upgrade of rural irrigation and stock water systems;*
- (j) Policy 14.5A – *to recognise and provide for the continuing efficient use and development of irrigation (including associated water storage facilities) and stock water systems, and various water reticulation systems in the District, including recognition of their importance to the wellbeing of the District’s people and wider communities;*

- (k) Policy 14.5B - *to encourage the efficient use of water abstracted from these systems, and from other water sources, for irrigation and stock water;*
- (l) Policy 14.5C - *to encourage rural water reticulation operators to adopt their own monitoring systems to ensure that the effects of these systems on the environment are regularly evaluated to achieve efficiencies and to avoid, remedy or mitigate any adverse effects;*
- (m) Objective 16.1: Management of Hazardous Substances - *to ensure that adequate measures are taken to avoid, remedy or mitigate any adverse effects during the manufacture, storage, transport and disposal of hazardous substances to:*
  - *human health,*
  - *the health of livestock and other farm animals or domestic animals,*
  - *the health of flora and fauna,*
  - *the amenity of residential or other similarly sensitive areas,*
  - *the natural environment, and*
  - *the life-sustaining capacity and amenity values of waterbodies, land and soil resources;*
- (n) Policy 16.1B - *to allow appropriate quantities and classes of hazardous substances to be stored to provide for land use activities that are consistent with the District Plan objectives and policies for those areas;*
- (o) Policy 16.1C - *to ensure hazardous substances are stored under conditions which reduce the risk of any leaks or spills contaminating land or water;*
- (p) Policy 16.1D - *to limit manufacturing and storage, and avoid disposing of hazardous substances near any of the following areas:*
  - *Waterbodies or wetlands.*
  - *Significant ecological sites.*
  - *Sites of particular heritage or cultural value.*
  - *Popular recreational areas.*

- *Residential units, other than a residential unit on the same site as the activity;*

(q) Policy 16.1H - *to control the manufacture, storage, transport and disposal of hazardous substances so as to avoid, remedy or mitigate adverse environmental effects due to accidental spillages or poor management practices.*

82 Appendix 3-2 of Section 3: Rural Zones of the ADP identifies areas of outstanding natural landscape.

83 The closest outstanding natural landscape (**ONL**) to the project site is the Hakatere Basin as identified in the ADP however this is some considerable distance from the project site. There are no identified outstanding natural features in the vicinity of or near the project site.

#### **Iwi Management Plans (IMPs)**

84 IMPs set out the values of tangata whenua as they relate to natural resources in general and the values associated with particular areas.

##### *Mahaanui IMP*

85 The Mahaanui IMP is a manawhenua planning document which provides a statement of Ngāi Tahu objectives, issues and policies for natural resource and environmental management in most of the Canterbury Region. For the purpose of this Application the Mahaanui IMP is to be read in conjunction with Te Whakatau Kaupapa which is Te Rūnanga o Ngāi Tahu's resource management strategy for the Canterbury Region.

86 Part 5 sets out the regional issues and policies relevant to these applications, being those related to Ranginui (air), Wai Maori (water) and Papatuanuku (land), in particular:

(a) Ranginui (air):

- (i) Ngā Paetae Objective 1 – seeks to protect the mauri of air from adverse effects related to the discharge of contaminants to the air;
- (ii) Ngā Paetae Objective 2 – ensures that Ngāi Tahu are involved in the regional decision making on air quality issues;
- (iii) Policy R1.1 – seeks to protect the mauri of air from adverse effects associated with discharge to air activities;

- (iv) Policy R1.2 – requires all regional councils to recognise and provide for the relationship of Ngāi Tahu with air.

(b) Wai Maori (water):

- (i) Policy WM9.3 – states the intention of rūnanga to support in principle the storage of water subject to robust and critical assessment of the effects on Ngāi Tahu values;
- (ii) Policy WM9.4 – seeks to ensure that the water storage or scheme in question is critically assessed against the policies within the Mahaanui IMP related to water management, including water quality, quantity and sites of significance, to ensure the proposal is consistent with the values of Ngāi Tahu;
- (iii) Policy WM9.5 – seeks to explore the potential for positive effects to be developed in relation to Ngāi Tahu values such as through the development or enhancement of wetlands, reducing pressure on groundwater resources, requirement for better on-farm management of water resources and a requirement for a service levy to be imposed on the water supplier;
- (iv) Policy WM9.7 – outlines the preference for any scheme to instate a contingency fund to be used for remediation or any unanticipated effects on water quality

(c) Papatuanuku (land):

- (i) Ngā Patae Objective 4 – seeks to ensure that any rural and urban land use occurs in a manner that is consistent with land capability, the assimilative capacity of catchments and the limits and availability of resources;
- (ii) Policy 11.1 – seeks to assess proposal for earthworks whilst having particular regard to various potential effects.

87 Chapter 6.12 of the Mahaanui IMP covers the takiwā from the Rakaia River to the Hakatere River. The key issues identified within this chapter are:

- (a) The mauri of surface water, in particular, the Hakatere (Ashburton) and Rakaia Rivers;
- (b) Land use;
- (c) Cultural landscape;



- (d) Over allocation of water resources; and
  - (e) Groundwater and surface water quality.
- 88 Chapter 6.12 contains relevant Policy RH5.1 which requires effective controls to regulate discharge to land activities associated with intensive agricultural and industrial activities in the lower catchment with particular attention to:
- (a) The cumulative impact of agricultural land use activities in the area; and
  - (b) Diffuse pollution from industrial discharges.

*Kati Huirapa IMP*

- 89 The relevant policies of the Kati Huirapa IMP state:
- (a) All sewage, all waste discharges are to be kept out of out of the rivers, lakes sea, all natural waters;
  - (b) All waters to be the highest classified standard of water quality, with no waste discharges.

#### **RULE ASSESSMENT AND OVERALL ACTIVITY STATUS**

- 90 The Application states resource consents sought from ADC and CRC for the ASP are to be assessed as Discretionary Activity pursuant to the ADP.
- 91 Within their respective S42A Reports, Ms Ford, at paragraphs 66-77 of her report and Mr Boyes at paragraphs 24-38 of his report undertook an assessment of the rules triggered by the ASP Proposal in respect of the ADP. I accept their assessments.
- 92 As discussed earlier in this Decision, where various consents are sought, the consents are bundled and the most restrictive status applied.
- 93 I therefore agree the status of the activity is **Discretionary**.

#### **FURTHER INFORMATION AND INFORMATION GAPS**

- 94 A request for further information was made by CRC pursuant to section 92 of the RMA on 9 December 2016, in particular, CRC requested the following:
- (a) in respect of Potential Failure Mode 6, provision of storage volume for the

purpose of comparing this volume to the volume at normal operating level;

- (b) clarification of the discrepancy between the maximum embankment height of 10m at the southern point of the storage to the maximum embankment breach depth of 8.5m at location 1B;
- (c) in respect of the higher peak dam breach hydrograph for sensitivity (which was considered by CRC to not be discernibly different to the base case (641 v 588) - provision of an assessment that considers the sensitivity to a much larger peak hydrograph, e.g. 700-800m<sup>3</sup>m/s (i.e. an upper bound);
- (d) provision of depth velocity maps, particularly for the residences and areas immediately downstream of the storage;
- (e) provision of the following plans:
  - (i) A Dam Safety Management Plan;
  - (ii) An Emergency Action Plan; and
  - (iii) An Emergency Evacuation Plan;
- (f) clarification regarding the spillway design and how it will prevent erosion of the embankment or downstream area during operation and where the anticipated flow path for spillway flow is for when this is operating;
- (g) clarification regarding the operation of low level discharge capability in an emergency situation;
- (h) provision of an independent peer review of the design of the dam and associated dam break assessment;
- (i) an analysis as to the feasibility of the preliminary engineering design in respect of embankment stability;
- (j) an assessment on the likely performance of the geomembrane liner;
- (k) further, more recent information in respect of groundwater level conditions at the site;
- (l) expected seepage rates including a range of best practice, to measured rates in some of the Applicant's existing ponds;
- (m) an analytical or modelled solution of potential groundwater mounding over

the area which should include use of a range of aquifer parameters and seepage rates to provide an indication of the potential scale of effects; and

- (n) provision of information in respect of any groundwater monitoring proposed during the excavation of the ASP.

95 The Applicant responded to the request for further information on the 9 February 2017. The response included the following:

- (a) Letter from Pattle Delamore Partners Limited to CRC dated 9 February 2017 responding to the s92 RMA further information request;
- (b) Letter from Damwatch to Applicant dated 10 February 2017: Barrhill Chertsey Irrigation Limited – Request for Further Information (C17C/30576) which included further information on the ASP design, in particular, depth velocity maps, a draft dam safety management plan, a draft emergency action plan and a draft emergency evacuation plan;
- (c) Letter from Pattle Delamore Partners Limited to Applicant dated 24 January 2017: Peer Review Report on Ākarana Dam Preliminary Design (C17C/30580).

#### **NOTIFICATION AND SUBMISSIONS**

96 The Application was publically notified with CRC in March 2017; with Notice appearing on 8 March in The Press and the Ashburton Guardian and on 9 March in The Courier (Ashburton).

97 As noted in the Background and Procedural Matters of this Decision, eight submissions were received. Six of those submitters were in support. The submitters in support are:

- (a) Ian Fredrick Hydes & Ronald Hydes;
- (b) Brian Alexander Callaghan;
- (c) Geoff Corbett;
- (d) Federated Farmers (Mid Canterbury Province);
- (e) Andrew William Luddington; and
- (f) Robert William Wightman.

- 98 Commonly identified reasons for supporting the Application include (in no particular order):
- (a) Intergenerational benefits as farming will be viable for future generations with water security;
  - (b) Improved water reliability;
  - (c) Reduced dependence on irrigation supply from deep bores;
  - (d) Increased water use efficiency; and
  - (e) Improved economic productivity and employment opportunities.
- 99 Fish & Game neither supported nor opposed the ASP Proposal but raised concern about there being no mention or assessment within the Application of the ASP becoming a habitat for waterfowl. Fish & Game considers that due to the size of the ASP, waterfowl will congregate on the pond and that the Applicant should have a method or plan in place addressing how birds will be moved from the ASP during the first two weeks of the gamebird hunting season.
- 100 Ngāi Tahu supported the ASP Proposal subject to certain concerns being addressed by the Applicant. In particular, Ngāi Tahu were concerned:
- (a) That the fish screen currently being operated by Rangitata Diversion Limited has been shown to be ineffective in keeping native fish species from entering the drains. Ngāi Tahu seeks that the Applicant operate an effective fish screen and actively relocates fish where they enter the Applicant's irrigation network for the purpose of protecting the fish species in the area; and
  - (b) With the proposal to deposit sediment that has been removed from the ASP into waterways. Ngāi Tahu claimed that this has negative ramifications for in-stream values and requested that it instead be disposed of an appropriate land-based location;
  - (c) That water to be stored at the project site will not be used just for surety of supply for existing users, but for irrigation to new users or expanding existing irrigation. Ngāi Tahu was concerned that increased irrigation in the surrounding areas of the project site will lead to increased leaching or nitrates into the environment. Ngāi Tahu was of the view that this would undermine mauri of the waterways both in the immediate vicinity and downstream.

- 101 Ngāi Tahu was disappointed that Manawhenua were not consulted before the Application was lodged and requested early consultation with the Applicant should the Applicant undertake any further future developments.
- 102 Since the close of the submissions, the Applicant has consulted with Ngāi Tahu and Fish & Game to address the concerns of both parties. Consequently, Ngāi Tahu is now recorded as supporting the Application and Fish & Game has withdrawn its submission provided that the applicant includes the following condition:
- "In consultation with Central South Island Fish and Game the consent holder shall actively deter waterfowl from using the Pond over the first two weeks of each year's duck hunting season, to reduce the likelihood of it becoming a water fowl refuge. Methods to deter birds may include physical disturbance or other non-audible methods as necessary"*
- 103 The Applicant has obtained written approval from the following seven immediately adjoining private landowners:
- (a) Robert Watson – Lot 2 and 4 DP 647780 and Lot 5 DP 473541;
  - (b) Methven Dairies Limited – Lot 2 DP 446224, Lot 1 & 2 DP 473541, Lot 1 & 2 DP 421883 and Lot 1 DP 29144 (357 Back Track);
  - (c) Francis Patrick Royston – RS 37715 (488 Highbank Cairnbrae Road);
  - (d) J A Wright Farm Limited – Lot 1 DP 446224 (360 Barkers Road);
  - (e) Brian Alexander Callaghan – Lot 1 DP 18185 (246 Vaughans Road);
  - (f) Grant Robert Kind & Denise Elizabeth Strachan Kind (465 Barkers Road);  
and
  - (g) David and Sandra Wright – RS 37578 (366 Darts Road).
- 104 The Applicant has also submitted written approvals from the following parties:
- (a) Ashburton District Council in respect of the effects on ADC's roading network;
  - (b) Electricity Ashburton Limited; and
  - (c) Rangitata Diversion Race Management Limited.
- 105 Any adverse effects of the ASP on those people/entities that have provided written approval of the ASP Proposal have been disregarded.

106 Accordingly there are seven remaining submissions that must be considered. They are:

- (a) Andrew William;
- (b) Ian Frederick Hydes & Ronald F Hydes;
- (c) Federated Farmers of New Zealand
- (d) Brian Alexander Callaghan;
- (e) Robert William Wightman;
- (f) Te Rūnanga o Arowhenua & Te Rūnanga o Ngāi Tahu;
- (g) Geoff Corbett.

## **ASSESSMENT**

107 In assessing the Application, I have considered the Application documentation and AEE, the S42A Reports and all submissions received.

108 In making my assessment I am required to consider the actual and potential effects of the Application on the existing environment.

### **Status of the Application**

109 Earlier in this Decision, I set out my agreement that the status of this Application is Discretionary.

## **EXISTING ENVIRONMENT**

110 First I need to appreciate the existing environment. The Applicant provided a detailed description of the immediate and surrounding residential, open space, and riverine environments in the Application<sup>13</sup>. I agree with that description and summarise it below.

### **Physical Features**

#### **Topography**

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<sup>13</sup> Pattle Delamore Partners Limited, 2016, BCIL Ākarana Storage Pond Consenting Application and AEE, Pages 14-19, Section 4.0

- 111 The project site and surrounding landscape is currently used for agricultural land uses and consists of paddocks, shelterbelts and trees, residential and agricultural building and roads. The land is in a highly modified state. The Methven and Highbank storage ponds are located near to the project site and are smaller in size than the proposed ASP. The general character and amenity of the surrounding environment is therefore typical of rural landscapes in the Canterbury Plains.
- 112 Ms Ford refers in her S42A report to CRC's GIS database which shows that the topography of the site decreases in elevation in a general south/south-east direction.

### **Geology and soils**

- 113 70% of the soils in the vicinity of the project site are identified as belonging to the Templeton family, classified as typic immature pallic soils. The texture of these soils is described as silty loam, and is well draining. The remaining 30% of soil comprises pallic firm brown soils identified as belonging to the Lismore Family, also considered a well-drained silty loam.
- 114 The project site is underlain by recent fluvioglacial outwash sediments of the Late Quaternary/Late Pleistocene age and generally consist of poorly sorted silty gravels. The fluvioglacial outwash materials have been found to be free-draining with little fines content.
- 115 The Application notes there are 10 active faults within 30 kilometres of the project site. The most significant fault being the Mt Hutt (Peel) Fault which is the second closest to the project site at 12.5km. There are no historic earthquake ruptures along the Mt Hutt-Mt Peel Fault Zone.<sup>14</sup> The Mt Hutt Fault has an estimated recurrence interval of 6,300-6,400 years.<sup>15</sup>
- 116 The Alpine Fault is located 88km to the north-west of the site and an unnamed inactive fault trace runs south-west to north-east approximately two kilometres north-west of the project site.
- 117 The proposed ASP is located over an unconfined/semi-confined aquifer. Within its Application, the Applicant refers to groundwater information on the CRC online GIS database which indicates that the depth to groundwater at the project site is not more than 6m bgl.

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<sup>14</sup> Pattle Delamore Partners Limited, 2016, BCIL Ākarana Storage Pond Consenting Application and AEE, Appendix J - The Preliminary Engineering Design Report (Dam Watch Engineering, 2016a)

<sup>15</sup> Ibid

- 118 The Applicant has undertaken an assessment of the highest depth to groundwater at the project site and considers that it could be higher than the deepest excavation depth which is approximately 8m bgl.
- 119 The Applicant also arranged for a preliminary site investigation which identified historic waste disposal to land within the proposed ASP footprint. This is considered to be an activity within the Hazardous Activities and Industries List (HAIL).
- 120 The Applicant further reviewed CRC's GIS database in respect of groundwater bores and identified nine groundwater bores within a two kilometre radius of the project site<sup>16</sup>. The Applicant noted that of these nine bores, eight are for geotechnical investigations and one is for water level observations. There were no community water supply and domestic water supply bores within the two kilometre radius and no community drinking water protection zones intersect the project site.

#### **Surface waterways**

- 121 The ASP will hold water from the RDR and no damming works will occur on any rivers, streams or adjacent waterways<sup>17</sup>. The RDR receives water from the Rangitata River as well as water pumped from the Rakaia River however the ASP is not located in the vicinity of either river.
- 122 The project site is not located in a floodable area<sup>18</sup>.

#### **Air Environment**

- 123 The project site is not located in a Canterbury Air Shed, nor is it located in or near a Canterbury Regional Air shed. The Applicant notes, within the Application that as the project site is not located within a polluted air shed, the air quality is expected to be good.<sup>19</sup>
- 124 However, some wind-dispersed dust is expected to occur due to the surrounding rural landscape and typical farming operations taking place in the surrounding area of the project site.

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<sup>16</sup> Pattle Delamore Partners Limited, 2016, BCIL Ākarana Storage Pond Consenting Application and AEE, Section 4.3.6, page 18

<sup>17</sup> Ibid, Section 4.4, page 18

<sup>18</sup> Ashburton District Plan Flood Maps, Map F02

<sup>19</sup> Pattle Delamore Partners Limited, 2016, BCIL Ākarana Storage Pond Consenting Application and AEE, Section 4.5, page 18



- 125 Prevailing wind is from the north with an average wind speed of 4.81 m/s and 2.66 m/s respectively. Airborne dust may be generated as a result of wind-blown dust from exposed surfaces and stockpiles.<sup>20</sup>

### **Vegetation**

- 126 The project site and surrounding landscape is currently farmland. The project site is currently divided into paddocks which are used for grazing livestock or for cropping.
- 127 There is no significant native vegetation on the project site. Further, the proposed ASP is not located within or near a conservation site, ONL, riparian area or an area of significant conservation value.
- 128 The project site is not located within any geoconservation sites or areas.
- 129 There are no protected trees or group of trees on the project site.

### **Rakaia River**

- 130 The Rakaia River is located approximately four kilometres north-east of the project site and is classified in the ADC as an Outstanding Natural Landscape (ONL). The Rakaia River flows in a south-easterly direction.

## **Associative Aspects**

### **Heritage and Archaeological sites**

- 131 There are no known heritage sites on or in the immediate vicinity of the project site.

### **Tangata whenua**

- 132 The project site sits within the rohe of Te Runanga o Arowhenua.
- 133 The project site is not recognised in the ADP as being of any cultural significance.

### **Recreation**

- 134 Recreational use of the project site and surrounding area is low. The project site and surrounding area are privately owned farms.

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<sup>20</sup> Ibid, Section 4.5, page 18 and 19

## **Visual Aspects**

### **Aesthetics**

- 135 Most of the project envelope has rural character and is relatively featureless. As mentioned earlier in this Decision, there are other smaller storage ponds within the vicinity of the project site as well as artificial water courses, the RDR.

### **Views and visibility**

- 136 Visibility of the project site is restricted. The settlement density surrounding the project site is low (being farmland). There are four residential dwellings within the immediate vicinity of the ASP:
- (a) 465 Barkers Road;
  - (b) 336 Darts Road;
  - (c) 246 Vaughans Road; and
  - (d) 147 Vaughans Road.
- 137 The Applicant has noted within the Application that there are shelterbelts around most of these properties.
- 138 The project site is relatively remote. The nearest state-highway is SH77 (Mount Hutt Station Road) which is located 2.7 kilometres south-west of the project site.
- 139 Barkers Road runs adjacent to the project site along the south-east boundary however the view of the project site is blocked from view by an existing shelterbelt.

## **KEY ISSUES IN TERMS OF EFFECTS**

- 140 The most contentious issues presented in respect of the ASP are highlighted by the S42A Reports and are discussed below. These key issues are:
- (a) Dam breach effects;
  - (b) Traffic effects;
  - (c) Noise effects;
  - (d) Earthworks and dust effects;

- (e) Effects on Rural Landscape and visual amenity;
- (f) Hazardous substance storage;
- (g) Natural Hazards;
- (h) Effects on water quality;
- (i) Effects on water quantity;
- (j) Effects on drinking water supplies;
- (k) Effects on air quality;
- (l) Cultural values;
- (m) Positive effects.

141 Pursuant to section 104(3) of the RMA, the effects on those who have provided written approval for the ASP Proposal must be disregarded. Those parties and the location of their properties are detailed earlier in this decision.

#### **DAM BREACH EFFECTS – NZSOLD ASSESSMENTS AND REQUIREMENTS – ADC LAND USE AND CRC 173285**

142 The primary issue arising from the ASP Proposal is the potential effects arising from a dam failure or breach. The Applicant and both reporting officers agree that a potential dam failure/breach is remote, however they also note the RMA requires assessment of a potential effect of low probability where that effect has a high potential impact<sup>21</sup>. I agree with this approach and therefore consider the effects of a potential dam breach below.

143 Before progressing I do need to record, the Applicant requires a building consent under the Building Act for the dam. The Building Act contains extensive provisions for dam construction and safety and includes the includes the following requirements for the development of all new large dams as summarised from NZSOLD (2105):

- (a) An application for a building consent, from the Owner to the Regional Authority. The application must be in the prescribed form and be accompanied by sufficiently detailed drawings, specifications, design reports and review reports to demonstrate compliance with the Building

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<sup>21</sup> Section 3 RMA

Act, Building Regulations, and other guidelines or codes of practice considered appropriate by the Regional Authority.

- (b) A project information memorandum, from the relevant Regional Authority to the Owner, which outlines planning and land use issues which relate to the building consent application.
- (c) A building consent, from the relevant Regional Authority to the Owner, for the dam building work.
- (d) An application for a code compliance certificate, from the Owner to the relevant Regional Authority, for all building work completed under a building consent.
- (e) A code compliance certificate, from the Regional Authority to the Owner, following satisfactory completion of all building work completed under a building consent. While not specifically stated in the Building Act, Regional Authorities may require confirmation of acceptable dam performance before issuing a code compliance certificate.

144 As indicated above, the requirements that must be met in relation to dam safety and construction under the Building Act are extensive. The consent under the RMA is limited to being a section 14 water permit to dam water. So in considering this consent my focus is on what the actual or potential of effects of this activity are and how these can be avoided, remedied or mitigated.

#### **NZSOLD (2015) Consequence Assessment and Dam Potential Impact Classification.**

145 Before advancing an RMA based effects assessment we do need to understand a little of NZSOLD (2015). This is because once the consequences assessment of a dam breach are better understood and a potential impact classification for this dam is determined, then a more comprehensive assessment of effects of the activity and its possible effects on the environment is possible.

146 The Applicant engaged Damwatch Engineering to undertake a comprehensive dam breach analysis in accordance with the dam safety guidelines developed by the New Zealand Society of Large Dams (**NZSOLD**). The results of the assessment have been used to evaluate the Potential Impact Classification (**PIC**) of the dam.

147 NZSOLD also specifies the requirement to undertake dam safety management, emergency preparedness assessments, design and planning. After first considering PIC related matters I will briefly touch on these other requirements.

148 NZSOLD provides that:

*"A dam's classification, termed its Potential Impact Classification (PIC), is purely a function of the consequences of a hypothetical failure breach or other uncontrolled release of the stored contents. It has no correlation with the probability of the dam failing or experiencing a dam safety incident*

*In broad terms, the process for classification requires the identification of people, property and the environment that would be impacted by a hypothetical dam failure, or dam safety incident. These potential impacts can change with time and, given the long life expectancy of most dams, their PICs need to be reviewed periodically to ensure the classification remains consistent with the potential hazard."*

149 The PIC reflects the potential impact a hypothetical dam failure/breach could have on downstream people, property and the environment. The Applicant has advised<sup>22</sup> that the purpose of the PIC is to ensure appropriate criteria are used in the design and safety evaluation of a dam and that an appropriate level of care is reflected in operational procedures. Damwatch assessed the ASP's PIC as medium.

150 The Damwatch assessment considered the effects from a breach from four different hypothetical embankment breach locations. The causes of the breach are described as potential failure modes or PFMs. These PFMs could result in uncontrolled release of the stored water via a dam breach. The three failure modes arise and relevant details are set out in table 8 included within Ms Ford's report which I include below:

Table 8: Summary of credible Potential Failure Modes and their impacts		
Initiating Hazard	Potential Failure Mechanism	Impact on the Structure
Normal operation	Geomembrane liner failure (on either the pond embankment, pond base extending 30 m into pond invert, or at interface with concrete structure) due to unidentified construction defect, wind damage or long-term degradation.	Concentrated seepage through embankment, foundation or at conduit interface leads to internal erosion of embankment which advances undetected resulting in piping failure of embankment.
Seismic	Extreme seismic ground shaking causes deformation (e.g. dynamic settlement, cracking) of embankment and failure of geomembrane liner.	Concentrated seepage through embankment leads to internal erosion of embankment which advances undetected resulting in piping failure of

<sup>22</sup> Pattle Delamore Partners Limited, 2016, BCIL Ākarana Storage Pond Consenting Application and AEE, Section 5.2, page 20

		embankment.
Seismic	Extreme seismic ground shaking causes cracking of embankment and liner at interface with concrete structure.	Concentrated seepage through embankment leads to internal erosion of embankment which advances undetected resulting in piping failure of embankment

- 151 The four breach locations were selected in relation to the greatest potential downstream impact and are shown in Figure 3 below:

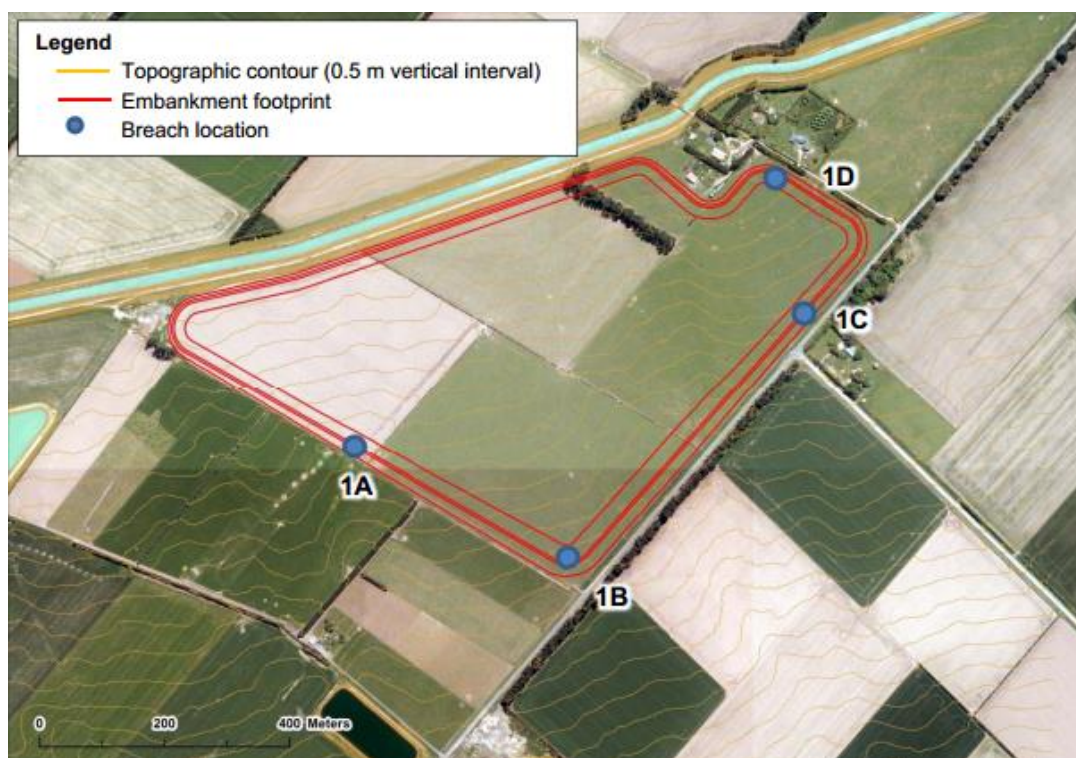


Figure 3: Breach locations

- 152 The Applicant has used the three credible PFMs to model the likely inundation areas and depths of flooding in these areas as a result of breaches in the locations identified in **Figure 3** above. The most recent inundation maps, which include composite maps showing breaches at all locations can be viewed in Attachment A of the Letter from Damwatch to the Applicant dated 10 February 2017: Barrhill Chertsey Irrigation Limited – Request for Further Information (C17C/30576).
- 153 As a result of modelling of the likely inundation areas and flooding depths, the likely effects of these scenarios have been quantified as part of the consequence assessment and are described below:

#### Population at risk

- 154 Population at risk (**PAR**) is defined in the NZSOLD guidelines as:

*"the number of people who would be directly exposed to inundation greater than 0.5m in depth if they took no action to evacuate."*

- 155 This definition includes both permanent populations (residences) and temporary populations (road users, farm workers). The day together with the time of day/night must also be considered.

#### Individual life

- 156 The Damwatch assessment also considered the potential loss of life in the event of a dam break and established that a breach at location 1B provided the worst case with up to 10 people at risk during the day time and 8 people at night time. The Applicant explains within the Application that the potential loss of life was determined using United States Department of the Interior Bureau of Reclamation (USBR) RCEM – Reclamation Consequence Estimating methodology (2014) and loss of life was estimated to be less than one for all breach locations and that it was therefore not considered "highly likely that a life will be lost".

#### Residential houses

- 157 An inundation level greater than 0.5m is considered by NZSOLD to be life threatening. The Damwatch assessment found that an embankment breach at location 1C provided the worst case impact on residential houses. For this breach location, a total of 16 residential houses have the potential to be inundated by the dam-break flood, with one of these residences at risk of being flooded to a depth greater than 0.5m above natural ground level and the remaining 15 residences at risk of being flooded to a depth less than 0.5m.
- 158 The resident at risk of being flooded to a depth greater than 0.5m is, according to the Damwatch assessment, likely to suffer moderate (repairable) to severe (irreparable) structural damage as well as damage to building contents and interiors. Depending on the depth of flooding relative to the building floor level, the remaining 15 residences may experience light to minor non-structural damage with possible damage to building contents.

#### Land and other farming infrastructure

- 159 Mr Boyes considers within his report that, in farming situations, it may not be the case that the dwelling is the largest value capital asset on the property. Mr Boyes contends that the Applicant has largely ignored potential effects on other investments, specifically, existing irrigation infrastructure, crops and livestock located within the breach zone.
- 160 Mr Boyes refers to the Inundation Maps provided as Appendix B to the Damwatch assessment and notes that there are properties within 2 kilometres of

the project site that will be inundated by flood depths between one to two metres in depth. Mr Boyes goes on to state that flood depths of more than one metre through a property can conservatively be described as adverse effects that are more than minor. He points out that it was for this very reason that the Application was publically notified under s95A(2)(a) of the RMA.

- 161 No submissions have been received pursuant to that notification raising the issue of potential dam failure and inundation of downstream properties.

Critical or major infrastructure

- 162 The Applicant notes, and the reporting officers appear to agree within their respective S42A Reports that the only critical infrastructure within the vicinity of the project site is the powerlines/pylons which pass through the dam break flood zone and which would be significantly damaged by a breach.
- 163 Numerous rural roads would also be affected. However, as pointed out by the Applicant and Mr Boyes, the ADC's Property-Commercial Manager has provided written approval to the ASP Proposal and therefore, any adverse effects on the ADC's infrastructure can be disregarded.

Natural Environment

- 164 The Damwatch assessment considered, in the event of a dam breach, a moderate level of damage could occur, corresponding to a significant but recoverable effect to the natural environment.
- 165 Mr Boyes explained within his report that damage to the natural environmental will primarily be siltation, deposition of debris and erosion within the estimated dam break flood inundation zone, in particular along paleo-channels where flow will be concentrated.
- 166 Mr Boyes goes on to state that the project site is located on land currently used for agricultural activities and is considered to be highly modified from its natural state.
- 167 Neither the project site, nor the inundation zone contain any areas of ecological importance.

Community recovery time

- 168 The Applicant acknowledges that potential negative impacts on the community resulting from dam break flooding could include erosion, siltation on farmland, loss of stock, destruction of fencing and other farm utilities and damage to road



and residential dwellings. Other effects include route travel disruption and road diversions until roads are repaired.

- 169 My Boyes explains in his report that community recovery time is considered to be the period of time it takes for the community to return to their normal way of life and for any damages to be sufficiently repaired. The Applicant, and Mr Boyes concur that community recovery time is expected to take a number of months.
- 170 Nathan Fletcher the CRC dam expert has audited the Applicant's assessment of PFMs, flood inundation modelling and the resulting classification of the PIC as medium. Mr Fletcher advises that he supports the Medium PIC determination.
- 171 The peer review of the applicant's assessment by PDP, notes that sufficient detail was supplied by the Applicant in relation to PFMs and PIC.
- 172 Further to the audit by Mr Fletcher and the peer review by PDP, there is further quality control under the Building Consent process. Section 135 of the Building Act requires that the owner of the dam must supply a PIC assessment and certificate from an engineer to the regional council. Furthermore under s139, the owner must re-review the dam classification every 5 years.
- 173 So NZSOLD (2015) provides that the consequences of a dam failure should be understood so that appropriate design, construction and management actions can be applied to protect people, property and the environment.
- 174 There are a number of other important design features such as dam crest width, free-board, and the design of the spill-way that all require consideration. The appropriate design feature need respond to the PFMs identified.
- 175 Ms Ford discusses the credible PFMs being a failure caused or linked to earthquakes and or a failure under normal operations caused by an unidentified construction defect, wind damage or long-term degradation of the HDPE liner and the applicant's dam design responses. This discussion and consideration is set out in her paragraphs 119 through to 132 inclusive.
- 176 Most importantly for me, Ms Ford records that the peer review of this part of the Applicant's assessment undertaken by PDP confirms that sufficient detail has been supplied by the Applicant in relation to seismic natural hazards to enable a proper evaluation of the Applicant's design response. Similarly, Mr Nathan Fletcher has reviewed the same assessment and he did not raise any concerns about either the methodology or the result provided.
- 177 I place reliance on and adopt both the PDP peer review and Mr Nathan Fletcher's independent expert analysis of these parts of the Applicant's NZSOLD assessments. I do observe that in terms of the HDPE failure scenario Mr Nathan

Fletcher has reviewed the available information regarding geomembrane liner failure and raises concerns that limited information was provided by the Applicant regarding the likely performance of the proposed geomembrane liner as a result of embankment cracking/deformation.

#### Dam Safety Management

- 178 NZSOLD module 5 contains a number of detailed requirements for dam safety management systems. The fundamental dam safety objective is to protect people, property and the environment, present and future, from the harmful effects of the dam failure or an uncontrolled release of the reservoir contents.
- 179 Ms Ford in her report at paragraphs 133 to 138 considers the Applicant's response to these requirements which are expressed in a Draft Dam Safety Management Plan (**DSMP**). She records that Nathan Fletcher has reviewed the available information regarding geomembrane liner failure and raises concerns that limited information was provided by the applicant regarding the likely performance of the proposed geomembrane liner as a result of embankment cracking/deformation.
- 180 However he notes that this analysis will be completed as part of detailed design and that the preliminary design is based upon engineering precedence, but the applicant should demonstrate the feasibility of the preliminary engineering design provided. Mr Fletcher considers that an assessment of likely liner performance as a result of embankment cracking/deformation is required to assess the hazard posed by the proposed pond to people and infrastructure given the integrity of the geomembrane liner is judged critical to dam safety.
- 181 The applicant provided further information regarding the liner in their s92 response (C17C/30576) which is listed in full below:
- "The materials proposed for the construction of the embankment have a low fines content and therefore are unlikely to form open cracks during a seismic event. However, if they were to occur then we have assessed that both transverse and longitudinal cracks caused by the SSE would be of the order of 80 mm and a maximum of 3.3 m deep for the transverse cracks. We confirm that the proposed 1.5mm thick HDPE liner is capable of spanning this size of crack under the given heads of water without failing."*
- 182 Mr Fletcher reviewed this information and has not commented specifically on this response but does note that in general the design does not appear out of the ordinary and the s92 responses are satisfactory.

183 Ms Ford points out in her report there is further quality control in relation to the DSMP under the Building Act, with the following provisions applying:

- (a) Sections 142 and 143 require that a copy of the Dam Safety Assurance Programme must be provided to the Regional Authority, who can approve or refuse it.
- (b) Sections 146 and 150 require that a medium PIC dam must have a review of the Dam Safety Assurance Programme within 10 years of the date of approval and then at intervals of no more than 7 years. In addition the dam owner is required to apply to the Regional Authority annually for a certificate of compliance for the Dam Safety Assurance Programme.

184 So while Mr Fletcher's review appears to be adequate I take some support from Ms Ford's advice as to these further quality control being available under the Building Act.

185 I further note that Ms Ford has made recommendations to include in the consent conditions that relate to the preparation and adherence to a DSMP. In particular she recommends conditions that require the DSMP is certified by an independent certifier. She also recommends conditions that require a review of the DSMP. I agree with those recommendations and note that they are consistent with the requirements of NZSOLD.

#### Emergency Preparedness

186 NZSOLD within Module 6 requires that emergency preparedness be addressed through the provision of an Emergency Action Plan (**EAP**). The purpose of such a plan is to minimise the potential for dam failure through pre-planned or pre-conceived intervention actions should a dam safety and emergency event arise and, in the event that the dam failure cannot be prevented, to limit the effects of a dam failure on people, property and the environment.

187 The Applicant has provided a draft EAP as part of a response to a further information request. The Applicant has also supplied a draft Emergency Evacuation Plan (**EEP**).

188 Nathan Fletcher has reviewed both the draft EAP and draft EEP and advised that it is satisfactory in its current draft form for this stage of the resource consenting process. In addition Mr Fletcher notes that:

- (a) The EAP should be clearer as to the distinction of notifying authorities and which properties will be directly notified, and considers that BCI should directly notify the local/nearest houses to the dam then the other authorities would manage the district wide emergency management.

- (b) The EEP is not a requirement under NZSOLD (2015) - rather it is recommended that the EAP be supplied to the likes of CDEM to assist with the local community emergency management planning. This EEP however would be useful in forming the basis for the emergency planning with local and regional authorities.
  - (c) Most of the EEP is incomplete or to be confirmed, as it needs consultation with authorities. It is not the best place for engineers to be determining the EEP, rather the focus should be on the EAP (preventing and managing dam safety issues and emergencies) and the EEP is more emergency authority and community driven, with the owner and engineer supporting with the information (e.g. inundation maps).
- 189 The Applicant has proposed that the EAP will be provided to CRC prior to first filling of the dam and it will be consistent with NZSOLD (2015) and be prepared in consultation with Civil Defence Emergency Management Group, including the ADC and CRC. Ms Ford considers that these are appropriate as conditions and she recommended an addition of a requirement for an annual EAP review and that these conditions be extended out with further detail in line with the conditions of similar consents granted for large dams recently. I agree with these recommendations.

Dam Breach Affected Parties- Residential Houses.

- 190 Paragraph 156 above details dwellings likely to be an undated with floodwaters in any dam breach scenario involving an extent of discharge of the water over 2000 m from the ponds site.
- 191 However all properties with dwellings that are located in the modelled inundation zone within 2000 m of the dam have supplied written approval. Accordingly effects on these properties can be disregarded.

Land and other farming infrastructure

- 192 I tend to agree with Mr Boyes that the Applicant has not addressed the effects on land and other infrastructure of a dam breach. However I also agree with Mr Boyes given we have effected party consents from those who occupy the dwellings in the same area combined with the fact that they are no submissions in opposition on this point that should influence my thinking on the scale and significance of this effect. Farming activities will be affected and while far from certain it is likely farm machinery and perhaps buildings could be damaged.
- 193 Mr Boyes raises the potential adverse effect of worry and stress of those persons located near the dam and within the dam breach scenario flood path. He

elaborates suggesting this will cause them to effectively live in fear that something might go wrong and negatively impact on the day to day living. He acknowledges and I agree with them appropriately that based on the submissions received no submitter has raised that issue. In fact the remaining submissions are fully supportive of the proposal.

- 194 Trying to adopt a realistic approach in circumstances where an activity establishes a locality where that activity has the potential to cause harm provided no harm occurs my observation is that over time anxiety and worry decrease. However I do acknowledge worry and stress is a real effect.

#### Critical or major infrastructure

- 195 As noted above Mr Boyes identifies rural roads as being infrastructure that could be affected by water from a dam breach. However, as pointed out by the Applicant and Mr Boyes, the ADC's Property-Commercial Manager has provided written approval to the ASP Proposal and therefore, any adverse effects on the ADC's infrastructure can be disregarded.
- 196 The Applicant identified one piece of critical or major infrastructure that could be affected which is a powerline in pylons. The owner of the infrastructure, Electricity Ashburton Limited has supplied written approval and therefore I can disregard effects on this infrastructure.

#### Natural Environment

- 197 I have already discussed above the effects of a dam breach causing water to flow over the natural environment. There will be effects caused by the movement of water and to debris over the natural environment. No significant ecological areas have been identified within the land area affected by a dam breach. Such effects are in any event unlikely to be permanent though costs of repair and remediation are unknown.

#### Mitigation of Dam Breach effects

- 198 In addition to the mitigation measures identified and discussed when considering NZSOLD earlier in this decision, the Applicant and reporting officers have identified additional mitigation measures. These measures include:

#### **Building consent plans:**

- 199 As outlined previously, building consent is required for the dam and this will be sought after any consent has been obtained from CRC. The Building Consent process is more thorough in relation to the engineering design standards etc. and will involve the production of more detailed and final design plans.

- 200 The Applicant has proposed a condition that except as required by the subsequent conditions, the dam shall be constructed and maintained in accordance with the design plans as authorised by the approved Building Consent for the dam. Ms Ford consider this condition appropriate but she also recommend an additional requirements that the 'as built' dam plans are supplied within 12 months of construction so that CRC has a copy of the final design should any changes occur. I agree with both recommendations for the reasons she advances.

**Certification requirements:**

- 201 The Applicant has proposed conditions requiring the consent holder to obtain independent certification that the dam and its construction are in accordance with good engineering practice, including being consistent with the NZSOLD New Zealand Dam Safety Guidelines 2015, including any amendment or update current at the time of certification, and the requirements of the Building Act 2004.
- 202 I agree with Ms Ford inclusions of such conditions are appropriate.

**Water Storage Commissioning Plan:**

- 203 The Applicant has proposed conditions that prior to first filling of the dam that all control structures and systems, pumps, and monitoring systems are tested to the satisfaction of a CPEng. Upon first filling of the dam the Engineer will be present to note any faults with a further inspection within 5 days of first filling. All faults are recorded in a report with recommendations of repairs that will be carried out which is forwarded to CRC.
- 204 Ms Ford considers these conditions appropriate and has recommended these conditions, with some additional wording, be included in a Water Storage Commissioning Plan. I agree for the reasons she advances.

**Inspections:**

- 205 The Applicant has proposed a number of conditions relating to inspections of the dam, and has proposed that the records of the Comprehensive Dam Safety Reviews are forwarded to CRC. A number of actions have also been proposed in relation to if there is a dam safety concern. I agree with Ms Ford conditions of this sort are appropriate.

**Public Liability Insurance:**

- 206 Both Ms Ford and Mr Boyes recommend that public liability insurance is held by the applicant and they both recommend conditions of consent to that effect. The

wording of the condition they recommend includes noting they consent authority as an additional insured party. The purpose of the insurance is to provide cover for damage caused by a dam breach. While the risk of a dam failure occurring is very low damage caused by such a breach could be high. Having insurance in place to cover damage to others is an appropriate mitigation measure. I have included conditions adopting the recommendations provided by both Ms Ford and Mr Boyes.

**Other mitigation:**

- 207 The Applicant has also proposed conditions relating to sediment removal, water fowl and algal growth.
- 208 Ngāi Tahu raised concerns in their submission regarding what would happen with any sediment removed from the storage pond. They advocated that any sediment that was removed must be discharged via an appropriate land based location rather than to surface water. After consultation with the submitter, the applicant has proposed a condition of consent that should any sediment be removed that it will be disposed of onto land.
- 209 Central South Island Fish & Game originally submitted on the proposal in relation to concerns about waterfowl using the pond as a refuge during the first two weeks of duck shooting season each year. They later withdrew their submission after consultation with the applicant resulted in a condition being proposed that in consultation with Central South Island Fish & Game, waterfowl would be actively deferred from using the dam over this period.
- 210 The Applicant has also proposed a condition relating to inspections for nuisance algae growths at least once every three months, with appropriate action shall be undertaken to manage the effects of the nuisance growths if they are encountered.
- 211 Ms Ford while observing such conditions are not necessary given the activity is damming of water she nevertheless considers them acceptable and recommends consent conditions. Essentially so as to address submitter concerns I agree and support the inclusion.
- 212 She also recommended a consent condition requiring that copies of the consent and certified EAP are kept on site at all times and all key personnel are made aware of their contents and that the operation of the dam and associated activities are carried out in accordance with these documents at all times. Such conditions are intended to assist with compliance and I agree with Ms Ford for the reasons she advances it is appropriate to include them.

*Evaluation of Dam Breach effects for CRC 173285 – ADC Land use*

- 213 Accepting that compliance with NZSOLD and Building Act is a matter for the future, the Applicant's assessments under both have been peer and independently reviewed. The opinion of the peer and independent reviewers is to the effect that they consider the Applicant's assessments had been carried out satisfactorily and are consistent with the purpose and outcome sought under NZSOLD (2015).
- 214 Ultimately Compliance with NZSOLD and the Building Act should ensure that the dam is constructed in an appropriate seismic location and is designed to appropriately provide for the risk of seismic events effecting the integrity of the pond structure so as to avoid a catastrophic water release.
- 215 In addition a range of management plans and conditions of consent are designed and intended to mitigate the potential effects of a storage pond breach to the extent that is possible. Conditions including dam management safety plans and public liability insurance cover other type of conditions I am referring to.
- 216 In addition a range of further mitigating conditions are proposed or recommended. Those conditions relate to a range of matters including dam design, inspections and observing the dam during and after first filling for defects and the like.
- 217 These matters combined with the assessment that the risk of a dam breach is low further combined with the effected party consents led me to the conclusion, notwithstanding the impacts of a dam breach will be significant if not severe, overall I consider the effects of granting consent with conditions to be acceptable.

**TRAFFIC EFFECTS- LUC-0110**

**Construction traffic effects**

- 218 The Application anticipates a construction period of four to six months for the ASP. As such effects caused by construction traffic are expected to be temporary.
- 219 The Applicant considers that all temporary construction related effects will only affect those properties located immediately adjacent to the project site. As already mentioned, the Applicant has obtained written approval for the ASP Proposal from those adjoining property owners. As a result, the Application lacks information on the vehicle movements associated with construction activity.



- 220 Mr Boyes states within his S42A Report that off-site traffic movements are expected to occur over two peak periods, site establishment and at the completion of the construction of the ASP. The traffic movements in between these two periods will largely be restricted to worker's vehicles coming and going as well as vehicles delivering materials to the project site, for example the liner, inlet and outer structures.
- 221 The Application explains that topsoil will be stripped to stockpile and then reused on the outer slopes of the surrounding embankments to as to sow and cultivate grass. This activity will restrict vehicle movements on the roading network as heavy vehicles will not be required for the purpose of removing topsoil from the project site. As a result, the majority of vehicular activity will be heavy earth moving equipment operating within the project site itself, rather than on the surrounding roading network.
- 222 The Applicant notes that temporary traffic management will be in place as required under other legislative requirements during the construction phase. A traffic management plan has not been requested by ADC and the Applicant has obtained written approval for the ASP Proposal from ADC's roading asset managers.

*Evaluation of Construction Traffic Effects*

- 223 I consider potential adverse construction traffic effects to be low. The traffic movements associated with the construction will be limited to staff vehicles, and vehicle movements bringing lining materials. The majority of the vehicular activity will be on the project site itself.
- 224 Any traffic effects will be temporary during the course of the construction period, being four to six months.
- 225 It is considered the only parties likely to be affected by any construction traffic are the property owners immediately adjacent to the project site who have provided the Applicant with their written approval for the ASP Proposal. Further, the Applicant has obtained approval from ADC's roading asset managers and a traffic management plan has not been requested.
- 226 On this basis, I consider that any construction traffic effects will be minimal and can be managed through the recommended conditions of consent.

## NOISE EFFECTS- LUC-0110

### Construction Noise Effects

- 227 As mentioned, construction is expected to occur over a four to six month period and as such, any construction noise effects are expected to be temporary. The Applicant states within the Application that any noise effects will further be restricted as construction will be undertaken during normal business hours, Monday to Saturday and will not occur on Sundays or public holidays.
- 228 Mr Boyes notes in his S42A Report that any construction noise effects will primarily relate to the movement of vehicles and machinery within the project site stripping topsoil, excavating and forming the embankments.
- 229 The Applicant states, within the Application that any construction noise effects will be in accordance with noise standard NZS 6803:1999 and therefore the ADP noise limits will not be exceeded.
- 230 As noted by Mr Boyes in his report, notwithstanding compliance with construction noise standards, section 16 of the RMA imposes a duty on all persons to "avoid unreasonable noise".
- 231 The parties expected to be most sensitive to any noise effects are those property owners located within 100m of the ASP embankment, with another dwelling located approximately 300m to the south-west of the project site. The owners of these properties have provided the Applicant with their written approval for the ASP Proposal and therefore any adverse construction noise effects on them are to be disregarded.
- 232 Mr Boyes has, within his S42A Report suggested the imposition of consent conditions to address any adverse noise effects. In particular, he considers restricting the hours of construction to between 6:30am to 7:00pm Monday to Saturday to be appropriate (excluding Sundays and public holidays). Further, Mr Boyes suggests construction activities are managed in accordance with the requirements of NZ6803:1999 Acoustics – Construction Noise and that any noise generated shall comply with the limits given in table 2 of that standard.

#### *Evaluation of Construction Noise Effects*

- 233 I accept the points raised by the Applicant and Mr Boyes and consider any construction noise effects generated by the ASP Proposal will be less than minor and can be effectively managed through the imposition of conditions.

#### **Other Noise Effects-operational phase**

- 234 As the ASP is not classified as a lake under the ADP, recreational activity is permitted. However the Application is silent on this matter.
- 235 My Boyes recommends, within his S42A Report that a condition preventing the use of motorised recreational craft on the ASP. He goes on to point out that such a condition should not apply to any craft/device used by the Applicant for the purpose of maintaining the ASP or used for deterring waterfowl from using the storage dam, particularly during the duck hunting season.

#### *Evaluation of Other Noise Effects*

- 236 As the ASP is located on privately owned land and the purpose of the ASP is not for recreational use, I consider any recreational noise effects to be less than minor and can be effectively mitigated through recommended conditions.

#### **EARTHWORKS AND DUST EFFECTS AND AIR QUALITY EFFECTS -LUC-0110- CRC**

- 237 Mr Boyes notes that they vary as construction activities will generate the potential for dust to be generated from the site. These activities relate to the excavation, stockpiling and various heavy vehicle movements within the site to construct the storage dam.
- 238 He further records key mitigation of such fugitive dusts is the availability of water for dust suppression. However he notes the Applications is silent on the availability and use of water for such purpose. He notes that the Applicant intends to appear and provide a dust management plan which it will adhere to. The Applicant has also volunteered a condition that any dust discharge beyond the project site will not cause an offensive or objectionable effect. Mr Boyes expresses the view that compliance with such condition will be difficult particularly given the size of the construction project.
- 239 Ms Ford advised the key discharge from construction sites is dust, which is dominated by larger particle sizes that create nuisance rather than health effects. This is created from a number of sources, and for this proposal dust will be generated predominantly from bulk handling of material, screening/crushing the material and stockpiling.
- 240 She also noted discharges of combustion products to air will also occur from stationary and fixed sources (vehicle engines and a screening plant). These will occur from a small number of relatively small sources spread across the site. She considered given this and the amount of dilution that occurs in an open site of this nature the effects of these discharges are likely to be minimal beyond the site boundary. I agree.

- 241 Potential dust nuisance effects are normally confined relatively close to a site although this depends on the size of the site, the type of dust mitigation used, the amount of bare land at any given time and operational factors such as vehicle numbers and speeds. Ms Ford noted that it is difficult to quantify this distance but given the nature of the BCI site, even if no mitigation was used it would be unlikely that offensive or objectionable dust impacts would occur beyond a distance of 500 m from the site footprint. I agree with that assessment.
- 242 However Ms Ford notes primarily because of the size of the site it will be difficult to control dust under all circumstances particularly during conditions of high wind speed. Intense bursts of strong nor westerly winds do occur in this location. They will however be of limited duration and the impact of these winds will be dependent on how well the Applicant manages the site.
- 243 The Applicant within its application materials describes potential dust effects on nearby dwellings in particular 246 the forms road and 577 Barkers Road. However the owners who are the occupiers of both dwellings had given approval for the entire proposal which includes the consent application to discharge contaminants to air.
- 244 Ms Ford is of the view given other dwellings are a minimum of 800 m from the site they are unlikely to be affected by dust discharges. I agree.
- 245 Dust being blown from a construction site can also effect plants and animals. However given my findings in relation to dwellings I consider the effects on plants and animals are also likely to be negligible.
- 246 The Applicant does not specifically propose dust mitigation but has promoted the use of a Dust Management Plan (**DMP**). The objective of the plan is to ensure that at each stage of the construction works in general development of the proposal the most appropriate mitigation is used.
- 247 Ms Ford accepts that this is an appropriate approach to develop the dust management plan in this way. She has recommended conditions requiring development of the DMP subject to part of the approval of CRC. I agree with that approach which has been carried through to conditions.

*Evaluation of Earthworks and Dust Effects Evaluation of Effects on Air Quality*

- 248 Essentially given that those persons who occupy dwellings in close proximity to the site have given affected party consent of the effects on persons that have not provided written approval are likely to be in my view negligible.

- 249 The development and approval of a DMP that meets the objectives specified at paragraph 215 of Ms Ford's report will certainly minimise in my opinion dust effects beyond the site. Ultimately this results in my view in an outcome where dust effects on people plants and animals are likely to be negligible.
- 250 Given the written approvals received, the level of community support the project established through submissions and the mitigation proposed and the Application provided that there is a dust management plan and provided CIC grants the new discharge permit is sought it is his conclusion that the dust effects will be acceptable. I agree.

#### **EFFECTS ON RURAL LANDSCAPE AND VISUAL AMENITY EFFECTS - OPERATIONAL PHASE-LUC-0110**

- 251 Section 7(c) of the RMA requires the particular regard to the maintenance and enhancement of amenity values.
- 252 In regard to rural amenity and character, objective 3.5 of the ADP states the following in respect of rural character and amenity values of the rural zone:
- "To protect and maintain the character and amenity values of the District's rural areas, considering its productive uses whilst providing for non-rural activities that meet the needs of local and regional communities and the nation."*
- 253 The primary visual impact of the ASP is the ring embankment which is located adjacent to Barkers Road. The maximum height of the embankment height is 10m (measured from dam crest to the lowest elevation at the outside limit of the dam). The bottom of the embankment will be set back six metres from the Barkers Road boundary, which, as stated by Mr Boyes, is the most obvious viewing point of the ASP. The embankment batter slope is 2:1 which means it will be roughly 26m from the project site boundary where full height is reached.
- 254 In his report, Mr Boyes notes that based on previous assessments undertaken in relation to similar proposals compared to the Application, it is considered any visual effects extend to a radius of 500m from the project site, beyond which any adverse effects are considered less than minor.
- 255 The nature and extent of the visual effects arising as a result of the ASP will therefore depend on the viewer's proximity and aspect.
- 256 Within his report, Mr Boyes notes that the proposed embankment is considered to have moderate to substantial localised effect on the landform, due to the changes in the existing flat site. He goes on to note however that utility

structures such as ponds and reservoirs are not unusual within the agricultural landscape. This point is supported by the additional existing smaller storage ponds in the area as well as the artificial RDR adjacent to the project site.

- 257 The external slopes of the embankments will be sown with grass and cultivated to blend the ASP with the surrounding pastoral landscape.

#### **Visual Amenity Effects from Public Viewpoints**

- 258 The project site for the ASP is located on private rural land to which the public does not have access.
- 259 There is a concern however that the 10m high embankment will be an imposing barrier when viewed by those travelling on Barkers Road, particularly as there is currently no planting or shelterbelt to screen the embankment from the road. The embankment runs approximately 750m across the Barkers Road frontage of the project site.
- 260 In saying this, the project site is remote and the nearest state highway is SH77 (Mt Hutt Station Road) which is located 2.7 kilometres south-west of the project site. The Applicant pointed out in the Application that based on this, the ASP is unlikely to be regularly seen by the public.
- 261 Any visual impact to the public is only likely to be experienced by those driving along Barkers Road. Such views are considered to be limited as Bakers Road is a rural road and likely to only be used by surrounding property owners who have provided their written approval of the ASP. Those members of the public that do use Barkers Road are anticipated to only be passing through the area and as such, any visual impacts of the ASP embankment along Barkers Road is considered to be brief.
- 262 The Applicant has proffered some mitigation techniques to reduce the visual impact of the embankment, including:
- (a) Planting and cultivating 100mm of grassed topsoil on the external embankment slopes; and
  - (b) Retaining existing shelterbelts as well as planting new trees (Douglas Fir) along the south-west boundary of the ASP to obscure visibility of the pond from that direction.
- 263 Mr Boyes has further suggested that any adverse visual effects can be mitigated by the establishment of shelter planting along the Barkers Road frontage of the project site to screen the view of the embankment from Barkers Road. Mr Boyes' recommendation is supported by Ms Yvonne Pfluger from Boffa Miskell Limited

who reviewed the need for additional screening along Barkers Road and agreed that such additional screening is required. It was determined that Douglas Firs would not be appropriate on the basis that they could interfere with the powerlines along Barkers Road. The Applicant contended such a condition would create maintenance issues as a clearance of a minimum of three metres would have to be maintained from the lines. As such, as part of her review, Ms Pfluger provided a list of species appropriate for such planting. Such species were selected on the basis that they would not reach a height that will interfere with the powerlines. She considered that the planting did not need to be continuous along the frontage and that small gaps of 10-15m between planting clusters of 50m in length would be acceptable.

- 264 The Rakaia River is four kilometres north-east of the project site. The Applicant has expressed in the Application that the ASP is not expected to lead to the loss or adverse effects on the public's access or viewpoints to the Rakaia River.
- 265 The Applicant has noted within its Application that views of the mountains may be obscured at Barkers Road in the immediate vicinity of the ASP however considers that the overall effect on the public's access or viewpoints of the mountains will be less than minor.

*Evaluation of Visual Effects from Public Locations*

- 266 I agree with the Applicant and My Boyes that the project site is in a remote location. I further agree that the proposed ASP will be consistent with existing land uses and landscape in the area. Given the land surrounding the project site is rural with already established artificial water courses (the RDR and existing smaller storage ponds) I also consider that the ASP will not adversely affect the natural character of the area.
- 267 Further, as the project site is on and surrounded by privately owned land, the only 'angle' of visibility for the public is from Barkers Road which is a rural road. I consider any use of Barkers Road by the public to be limited given its location. Additionally, as the surrounding area is private farmland, any members of the public using Barkers Road are likely only to be passing through and therefore any visual impacts of the ASP on them will be brief.
- 268 Due to the distance between the project site and mountains, I agree with the Applicant that any adverse effects on the public's view of the mountains as a result of the ASP will be less than minor.
- 269 I consider that any adverse visual effects on the public will be minimal and can be managed and mitigated through consent conditions.

### **Visual Amenity Effects on Private Properties**

- 270 As mentioned earlier in this Decision, there are four dwellings in the immediate vicinity of the project site<sup>23</sup>. As stated in the Application, there are existing shelterbelts around most of these properties.
- 271 The Applicant has obtained written approval from all immediate land owners with dwellings within approximately 500m of the proposed ASP. These parties were also directly served notice of the Application and no submissions opposing the ASP Proposal have been received.

#### *Evaluation of Visual Amenity Effects on Private Properties*

- 272 Given the provision of written approvals from all immediately adjacent land owners, any adverse visual effects on these parties will not be considered.

### **Hazardous Substance Storage**

- 273 Mr Boyes refers to this matter in his report. He notes within the applicants assessment of environmental effects it records a non-compliance with the hazardous substance rule 16.7.1 of the ADP. This occurs because the applicant intends to store and a mobile fuel tank truck 12,000 L of diesel petrol well the district plan provides for a level of 5000 L. Mr Boyes notes this activity is a discretionary activity in terms of the ADP.
- 274 However he draws attention to the fact that other legislation namely the Hazardous Substances and New Organisms Act and associated regulations adequately deals with the safe storage and handling of diesel.
- 275 As the mitigation of risks associated with the storing and handling of diesel and other fuel type products on the project site are dealt with under this legislation he considers that there is no need to consider this matter any further. I agree with that opinion.
- 276 In any event a recommended condition includes the approvals required under the HASNO regulations being supplied to the Ashburton district Council.

### **Public Safety and Health**

- 277 Mr Boyes points out in his report that it is standard practice the developments such as that proposed to include a condition requiring the site be secured based during construction and operation particular given the proximity to the public road.

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<sup>23</sup> 465 Barkers Road, 336 Darts Road, 246 Vaughans Road and 147 Vaughans Road



- 278 The other relevant matter in terms of public health and safety points out is the potential to encounter waste material and/or soil contamination during the earthworks to construct the storage dam.
- 279 This he points out that a preliminary site investigation has been undertaken by the applicant and the proposal is a discretionary activity under the NES for assessing and managing contaminants in soil to protect human health. He recommends to adequately deal with such an issue a condition is included relating to an Accidental Discovery Protocol relating to waste materials and contaminated soils. Mr Boyes points out the conditions proposed is the same as that proposed on regional Council consent CRC 173284.
- 280 I agree with these recommendations.

#### **Effects on Ashburton District Council Infrastructure- Stockwater Race**

- 281 Mr Boyes explained that one of the ADC's important stock water races servicing the districts is adjacent to the project site. The ADC was concerned that the proposed activities could possibly adversely affect or undermine the uninterrupted and ongoing operation of the water race.
- 282 To address this possible issue Mr Boyes recommended a condition of consent which requires the Applicant, as consent holder to achieve a continuity of stock water supply in accordance with the ADC's level of service in place at the time of construction as set out in chapter 15 of the Ashburton District Council bylaws. The condition does provide some flexibility in that provision of an alternate supply at the cost of the consent holder is an option.
- 283 Mr Boyes was of the opinion, and I agree with him, that provided this condition is imposed on any consent any effects on the stock water race network will be adequately mitigated.

#### **EFFECTS ON WATER QUALITY - CRC173284, CRC173286, & CRC173287 (to use land for excavation and deposition of material, to take groundwater for dewatering and to discharge stormwater and dewatering water to land)**

- 284 The proposed stormwater and dewatering water discharges to land and the excavation of material over the semi-confined/unconfined aquifer have the potential to adversely affect groundwater quality and groundwater users as a result of infiltration of stormwater and contaminants through the soil.
- 285 Ms Ford explains that the hires depth groundwater at the site is not clear however there is the possibility that the deepest level of excavation could be

deeper than the highest groundwater level. In addition the RDR canal is within 50 m. For these reasons she explained consent is required for the excavation and the position of material over and unconfined or semi-confined aquifer.

- 286 The key water quality affect is discharge of sediment into water. To deal with this the Applicant has proposed that an Erosion and Sediment Control Plan (ESCP) be prepared and adhered to. The purpose of that plan will be to provide mechanisms to avoid or minimise any sediment entering exposed groundwater or surface water or being tracked into roadways or neighbouring properties.
- 287 Ms Ford considers such an approach is appropriate. She also points out the Applicant has proposed a condition that during construction all practical measures shall be undertaken to minimise exposed groundwater. She considers this approach to be appropriate. She also observes that the Applicant is seeking consent for dewatering. The consequence of this she suggests is that it may be unlikely that should groundwater behind the warrant dewatering that any groundwater would be left exposed in any event. I accept her recommendation in relation to the condition and her comments relating to dewatering.
- 288 She advises Rangitata Diversion Race Management Limited which operates the irrigation canal which flows past the site have provided written approval therefore I have disregarded any effects of the activity on this canal.
- 289 Ms Ford further points out the Applicant has proposed a condition that during construction, all practical measures shall be undertaken to minimise discharges of sediment-laden in run-off. She recommends those conditions and I agree.
- 290 She advises that the site is not recorded on the listed land use register as having any HAIL activities however a preliminary site investigation included within the application has identified a former waste pit within the footprint of the storage pond.
- 291 To deal with this circumstance it is proposed that should waste material be encountered that the Accidental Discovery Protocol will be followed. Ms Ford relayed advice to the effect that the proposed activity poses a low risk.
- 292 Given this it was her view particular you take into account that the Applicant is seeking consent from ADC under the NES for assessing and managing contaminants in soil to protect human health that the proposed mitigation is sufficient. She did not think in the circumstances that a requirement that all of the material from the historical waste pit areas is removed was needed under these CRC consents.

- 293 Based on her analysis, I agree with her recommendations, particularly as it relates to inclusion of conditions.
- 294 Ms Ford also addressed the risk of water being contaminated by accidental spills of the substances such as fuels. The Applicant has proposed that all practicable measures will be taken to avoid spills of fuel and any other hazardous substances within the site and should a spill occur it will be cleaned up immediately and reported to CRC.
- 295 Ms Ford considered this an appropriate approach. She also recommended as a condition of consent that any hazardous material removed off-site in accordance with the exercising of this consent shall be disposed of at a facility authorised to receive such materials. I agree such a condition is appropriate.
- 296 Ms Ford also recommended that the importation of the materials be addressed particularly in the context of water quality. She advised such materials utilised for constructing the dam can also be a source of water contamination. She recommended a condition requiring that all imported materials for the Dams invert lining shall be comprised of cleaning materials. She proposed such a condition and I agree inclusion is appropriate.

*Evaluation of Effects on Water Quality*

- 297 Taking into account the effected party consent is available and the proposed conditions I reach the conclusion that any adverse effects of the earthworks, taking groundwater for dewatering, and discharge of stormwater on water quality are likely to be minor.

**CRC173289 to discharge seepage from the pond**

- 298 Ms Ford considered the discharge of seepage from the pond. She detailed that the Applicant will line the base of the pond with a minimum of 1 m Loess/silt liner so as to prevent seepage. It was her assessment the seepage from the pond was a low risk. She considered any spills from the RDR, concluding such a spill was unlikely to be of the volume required that contaminants would be detectable in the seepage from the pond.
- 299 Nevertheless she recommended a condition requiring that if at any time there is a spill either directly into the pond or as a result of a spill into the RDR race prior to water entering the pond the Applicant reports and assesses the effects of the contamination on water quality and reports on measures undertaken to prevent a re-occurrence.
- 300 It was her considered view that the risk of contamination of the pond and the likelihood of any contamination of groundwater due to seepage from the pond

was a very low risk. She also concluded that the condition I have described above is sufficient to address any potential adverse effects. I agree and I support the inclusion of the condition.

- 301 I agree with Ms Ford for the reasons she sets out in her report that any adverse effects on water quality as a result of seepage from the storage pond are likely to be minor.

**EFFECTS ON WATER QUANTITY - CRC173286, CRC173289 (to take water for dewatering)**

- 302 The issue here is whether or not taking of groundwater for dewatering to enable earthworks to install the ASP and other structures will lower the water table to impact on the volumes of water available to other close by bores to abstract.
- 303 Ms Ford identified the relevant nearby bores that were not covered by written approvals. She discovered that none of these bores were in use concluding that they would not be impacted by any reduction in water levels.
- 304 She further observed that the dewatering operation is unlikely to last longer than six months. Notwithstanding she recommended a consent condition requiring the taking in combination with other takes must not cause ground subsidence and that the take shall not lower the ground water level more than 0.5 m below the deepest excavation. I agree with that approach and support the inclusion of the condition Ms Ford recommends.
- 305 Ms Ford also considered that discharge seepage from the ASP which is relevant in particular to CRC 173289. She observed the Applicant had calculated, taking into account tests on the permit ability of the silt layer, a seepage rate of 450mm per year. She had no disagreement with that calculation but observed the actual seepage rate was heavily dependent upon construction methods.
- 306 It was her conclusion that any seepage of water is a loss of water that can be supplied therefore it is in the Applicant's best interest to ensure that the lining is appropriately placed during construction maintained and that seepage rates are minimised. She did not recommend inclusion of any condition in relation to the quantity of seepage or maintenance of the liner. I agree with this approach for the reasons she explained.
- 307 I conclude for these reasons that the adverse effect on water quantity as a result of the discharge of seepage is likely to be minor.

*Evaluation of Effects on Water Quantity*

- 308 For the reasons already advanced and taking into account the conditions recommended I conclude that any adverse effects on groundwater quantity and

discharge of seepage are likely to be minor and any adverse effects on groundwater users are likely to be less than minor.

#### **EFFECTS ON DRINKING WATER SUPPLIES**

- 309 Given that any adverse effects on water quality and water quantity are likely to be minor, and the large separation distances to sources of drinking water, I agree with Ms Ford that any adverse effects on sources of drinking water are likely to be less than minor.
- 310 In particular Ms Ford notes that the closest downgradient community drinking water supply intakes are located more than 10,000 m away and there are no cross gradient registered supply intakes within more than 2000 m. I have already earlier commented upon domestic bore concluding that those bores not covered by affected party approvals are unaffected by this activity.

#### **EFFECTS ON AIR QUALITY**

- 311 Ms Ford advised the key discharge from construction sites is dust, which is dominated by larger particle sizes that create nuisance rather than health effects. This is created from a number of sources, and for this proposal dust will be generated predominantly from bulk handling of material, screening/crushing the material and stockpiling.
- 312 She also noted discharges of combustion products to air will also occur from stationary and fixed sources (vehicle engines and a screening plant). These will occur from a small number of relatively small sources spread across the site. She considered given this and the amount of dilution that occurs in an open site of this nature the effects of these discharges are likely to be minimal beyond the site boundary. I agree.
- 313 Potential dust nuisance effects are normally confined relatively close to a site although this depends on the size of the site, the type of dust mitigation used, the amount of bare land at any given time and operational factors such as vehicle numbers and speeds. Ms Ford noted that it is difficult to quantify this distance but given the nature of the BCI site, even if no mitigation was used it would be unlikely that offensive or objectionable dust impacts would occur beyond a distance of 500 m from the site footprint. I agree with that assessment.

- 314 However Ms Ford notes primarily because of the size of the site it will be difficult to control dust under all circumstances particularly during conditions of high wind speed. Intense bursts of strong nor westerly winds do occur in this location. They will however be of limited duration and the impact of these winds will be dependent on how well the applicant has managed the site.
- 315 The Applicant within its application materials describes potential dust effects on nearby dwellings in particular 246 Vaughans road and 577 Barkers Road. However the owners who are the occupiers of both dwellings had given approval for the entire proposal which includes the consent application to discharge contaminants to air.
- 316 Ms Ford is of the view given other dwellings are a minimum of 800 m from the site they are unlikely to be affected by dust discharges. I agree.
- 317 Dust being blown from a construction site can also affect plants and animals. However given my findings in relation to dwellings I consider the effects on plants and animals are also likely to be negligible.
- 318 The Applicant does not specifically propose dust mitigation but has promoted the use of a Dust Management Plan (**DMP**). The objective of the plan is to ensure that at each stage of the construction works in general development of the proposal the most appropriate mitigation is used.
- 319 Ms Ford accepts that this is an appropriate approach to develop the DMP in this way. She has recommended conditions requiring development of the DMP subject to part of the approval of CRC. I agree with that approach which has been carried through to conditions.

*Evaluation of Effects on Air Quality*

- 320 Essentially given that those persons who occupy dwellings in close proximity to the site have given affected party consent of the effects on persons that have not provided written approval are likely to be in my view negligible.
- 321 The development and approval of a DMP that meets the objectives specified at paragraph 215 of Ms Ford's report will certainly minimise in my opinion dust effects beyond the site. Ultimately this results in my view in an outcome where dust effects on people plants and animals are likely to be negligible.

## CULTURAL EFFECTS

- 322 The project site is not classified by the ADP as being of cultural significance.
- 323 Within her report Ms Ford carefully reviews relevant objectives and policies of the LWRP and the relevant iwi management plans. Overall she concludes the proposal is in general consistent with the objectives and policies of the Iwi Management Plans and that the effects on Tangata Whenua values are likely to be less than minor. I agree with and adopt both the analysis and the conclusions of that analysis.
- 324 In any event any potential adverse cultural effects of the ASP Proposal are considered to have been dealt with by the Applicant through consultation with Ngāi Tahu. This is supported by a letter submitted on 26 May 2017 from Ngāi Tahu, stating that Te Rūnanga o Arowhenua and Te Rūnanga o Ngāi Tahu no longer wish to be heard in relation to the submission previously lodged and now support the Application. Both Ms Ford and Mr Boyes are of a similar opinion.

## POSITIVE EFFECTS

- 325 As outlined within the Application, the ASP Proposal will improve the operational efficiency and reliability of water supply to the Applicant's shareholders. The ability to store water as proposed in the Application, will enable a buffer to be established whereby more reliable water is able to be provided.
- 326 Mr Boyes comments in his S42A Report that the operational efficiency of the ASP Proposal comes from the increased ability to store water taken from the gravity fed Rangitata River. The alternative option to this is to take water from the Rakaia River which requires pumping to enter the scheme at Highbank Power Station.
- 327 He also refers me to the Canterbury Water Management Strategy which identifies water storage particularly from alpine rivers as being of long-term and significant benefit to Canterbury.
- 328 The increased reliability and consequential economic benefits have not been quantified by the Applicant in the Application. However Mr Boyes points out with increased reliability, there is generally recognised to be an increased ability for farmers to mitigate financial risk and to accept a higher risk profile with respect to the farm production practices. I agree with that opinion

- 329 Ms Ford, within her S42A Report, refers to the submissions made in support of the ASP Proposal which include potential positive effects resulting from the grant of the ASP Proposal:
- (a) Improved efficiency in water use;
  - (b) Improved economy through improved supply of water for irrigation;
  - (c) Less pressure on groundwater resources due to increased reliability of scheme water; and
  - (d) Enhanced social outcomes as a result of the above.
- 330 Ms Ford agrees with these submitters and considers it to be clear that the ASP Proposal will provide increased reliability for the users of the water resource which will likely lead to other associated positive effects.
- 331 Ms Ford goes on to refer to the original submission made by Federated Farmers of New Zealand who provided an economic analysis based on other regional schemes and which provided evidence to the possible extent to which the ASP Proposal will provide economic and social benefits. Ms Ford, noted that although there is general agreement that the ASP Proposal will result in some positive effects, the beneficial extent of those effects is not entirely clear.

*Evaluation of Positive Effects*

- 332 I agree with reporting officers and Applicant that overall, the ASP will create positive effects for the Applicant's shareholders. I accept Mr Boyes opinion relating to the impacts of increased reliability of supply and enabling farmers to accept a higher risk profile with respect to farm production practices. This may in due course lead to employment and new market opportunities.

**CONSIDERATION OF ALTERNATIVES**

- 333 Schedule 4 of the RMA sets out that an AEE must include a description of any possible alternative locations or methods of undertaking the activity where it is likely the activity will result in adverse effects.
- 334 In this case it cannot be said that the activity will result in adverse effects. The expert assessment suggests that the severe adverse effects arising from a breach of the ASP are a highly unlikely occurrence. There are two alternatives to the larger scale embankment proposed that would potentially avoid a breach



scenario; being smaller on farm storage and construction of the pond using greater excavation and reducing the height of the embankment.

- 335 A brief assessment of alternative sites and locations was set out on page 64 of the Applicant's AEE (in reference to Assessment Matter 14.9 f). It states that several sites were initially chosen for consideration. It was considered that the alternative sites posed more risk in the unlikely event of a dam breach. The Applicant's assessment noted that to be operationally effective the storage needs to be in close proximity to existing delivery pipelines operated by the Applicant's scheme, which reduces the potential to consider alternatives.

## **RELEVANT STATUTORY PLANNING DOCUMENTS**

- 336 I set out the relevant statutory planning documents earlier in the Decision. In summary, I agree with both Mr Ford and Mr Boyes that these are:

- (a) The NES REG;
- (b) The NES HH;
- (c) The NES AQ;
- (d) The NPS;
- (e) The CRPS;
- (f) The NRRP;
- (g) The LWRP;
- (h) The CARP;
- (i) The ADP.

- 337 The relevant statutory planning framework and relevant provisions within that framework have been thoroughly identified and explored within the Applicant's AEE and within both of the S42A reports.

- 338 While I have undertaken a careful review of those documents I will keep my reference to the relevant document brief.

- 339 Section 104(1)(b)(i) of the RMA states that I shall have regard to the relevant provisions of a National Environmental Standard (NES).

## **NES REG**

340 Ms Ford addressed the provisions of the NES REG within her report and was satisfied that due to the large separation distances from the project site to any supply intakes that the ASP Proposal does not need to be considered against the NES REG. The closest down-gradient registered drinking water supply intakes are located more than 10,000m away from the project site and there are no up or cross-gradient registered supply intakes within more than 2,000m.

341 I concur with Ms Ford's and adopt her analysis and conclusions.

## **NES HH**

342 As outlined by Mr Boyes in his report, the project site will be inundated and it will no longer be capable of being productive.

343 The Application states that the NES HH permitted activity requirements will not be met as the earthworks required result in a change of use and will be more than 25m<sup>3</sup> per 500m<sup>2</sup>, soil may be taken away during the construction and the duration of the activity will be more than two months.

344 A PSI was completed for the project site and submitted as part of the Application. It identified two historical waste pit areas within the ASP footprint however the PSI demonstrates that it is highly unlikely that there is any risk to future site users post construction of the ASP. However, as Mr Boyes points out and as detailed site investigation has not been undertaken, the restricted discretionary are not met and as such the ASP Proposal is a discretionary activity under Regulation 11 NES HH.

345 However Mr Boyes recommends in the interim a resource consent condition dealing with this issue. I think that his recommendation is appropriate. I note that Ms Ford in her report also refers to the point that the Applicant intends to seek and NES consent from the ADC relating to the two areas of historical waste disposal identified as per figure 14 of her report.

## **NES AQ**

346 The NES AQ prohibits a number of specific discharges to air occurring and provides restrictions relating to other discharges within an air shed as per the definition in section (3)(1) of the NES AQ. The discharge of dust and smoke and fumes from diesel combustion are not prohibited and the activity is outside of an air shed. Therefore the ASP Proposal does not need to be considered against NES AQ.

## NPS

- 347 Section 104(1)(b)(iii) of the RMA states that the consent authority shall have regard to the relevant provisions of a National Policy Statement (NPS).
- 348 Ms Ford assessed the consistency between the ASP Proposal and NPS objectives and policies within her report. Ms Ford concluded that no adverse effects on water quality and ecosystems were likely and noted the involvement of Tāngata Whenua throughout the Application process. Ms Ford considered that the ASP Proposal is consistent with the objectives and policies of the NPS.
- 349 I agree and adopt her analysis and its outcomes.

## CRPS

- 350 Under Section 104(1)(b)(v) of the RMA, I am required to have regard to the relevant provisions of a regional policy statement. The Canterbury Regional Policy Statement became operative on 15 January 2013.
- 351 I consider that the following policies are relevant to the ASP Proposal as discussed below:

### Chapter 5: Land-Use and Infrastructure

- 352 **Policy 5.3.11(2)** advocates that consented community irrigation infrastructure is enabled to be operated, maintained, and updated to be more effective.
- 353 The BCI irrigation scheme is consented for its water takes and I consider that by construction and using a large dam to store water, the irrigation scheme will be more effective due to increase reliability of supply.

### Chapter 7: Fresh Water

- 354 **Objectives 7.21 and 7.23** advocate that freshwater is managed sustainably and its intrinsic and riparian values are protected.
- 355 **Policies 7.3.1 and 7.3.8** identify that the natural character values of freshwater bodies and their margins are preserved, maintained and where degraded they are improved and that efficiency in the allocation of freshwater is improved while ensuring and recognising a number of factors including the importance of the reliability of supply for irrigation.

- 356 **Policies 7.3.10** recognises the potential benefits of harvesting and storing surface water for a number of reasons including improving the reliability of irrigation water and therefore the efficiency of use.
- 357 **Policy 7.3.12** recognises and provides for continuation of existing irrigation schemes which involved substantial investment in infrastructure.
- 358 The effects of the ASP Proposal on water quality have been assessed as being minor, while the storage of water will improve the reliability of supply to irrigators.

#### Chapter 9: Ecosystems and Indigenous Biodiversity

- 359 Chapter 9 has a number of objectives and policies in relation to protecting significant indigenous ecosystems and biodiversity.
- 360 There are no sites of significant ecosystems or biodiversity values in the vicinity of the activity.

#### Chapter 11: Natural Hazards

- 361 **Objective 11.2.1** advocates that new subdivisions, use and development of land that increases the risk of natural hazards to people, property, and infrastructure is avoided or mitigated. The development and use of land for water storage could increase the risk of damage to people, property and infrastructure during an earthquake, however this has been accounted for in the design of the dam and the risks reduced.
- 362 **Objective 11.2.4** outlines the need to establish effective integration between authorities to manage and prepare for natural hazards. The applicant has prepared an emergency response plan and has proposed consent conditions that require consultation with CRC and other parties before building the dam to ensure that all potential hazard mitigation measures are agreed upon.
- 363 **Policy 11.3.1** reflects objective 11.2.1 in outlining that high hazard areas are avoided for any future development. The dam site is located approximately 8.8 km from the nearest active fault, which I consider a reasonable separation distance given the number of faults present on the Canterbury Plains.
- 364 I consider the ASP Proposal is consistent with the relevant policies on Natural Hazards.

#### Chapter 14: Air Quality

- 365 **Objective 14.2.2** sets out to enable discharges to air provided there are no significant localised adverse effects.
- 366 **Policy 14.3.3** requires that standards, conditions and terms are set to avoid, remedy, and mitigate localised effects on air quality.
- 367 I consider there are unlikely to be any significant localised adverse effects and a number of conditions have been recommended to avoid such effects.

#### Chapter 17: Contaminated Land

- 368 **Policy 17.2.1** seeks to protect people and the environment from both on-site and off-site adverse effects of contaminated land.
- 369 **Policy 17.3.2** requires that where land is developed and there are contaminants that the potential effects of that contamination or discharges from the contaminated land shall be avoided remedied, or mitigated.
- 370 There are two known landfill sites within the dam footprint. The Applicant has proposed a number of mitigation measures and protocol to ensure that this material when encountered is removed and disposed of appropriately.
- 371 So I consider having regard to the conditions imposed the proposal is consistent with the relevant policies on contaminated land.

#### **NRRP**

- 372 Under Section 104(1)(b)(vi) of the RMA, I am required to have regard to the provisions of the any relevant provisions of a plan or a proposed plan.
- 373 I consider **policies AQL2 and AQL6** are relevant to the ASP Proposal. Policy AQL2 relates to the controlling of particular odour and emissions from fuel burning devices while AQL6 requires that the discharge of dust must not be corrosive, noxious, dangerous, objectionable, or offensive to the extent that it has or is likely to cause an adverse effect on the environment beyond the boundary of the site.
- 374 As outlined in the assessment of effects of the discharge to air, the discharge of both dust and emissions from fuel burning devices should not result in any offensive or objectionable effects beyond the site boundary.

375 Accordingly I consider the ASP Proposal is consistent with the relevant policies  
relating to controlling odour and emissions from fuel burning and dust.

## LWRP

### Operative LWRP including PC1

376 The following objectives are considered relevant to this proposal:

377 **Objective 3.1** states that land and water should be managed as integrated  
natural resources to recognise and enable Ngāi Tahu culture, traditions,  
customary uses and relationships with land and water.

378 **Objective 3.2** states that water management should apply the ethic of ki uta ki  
tai – from the mountains to the sea.

379 **Objective 3.3** states that nationally and regionally significant infrastructure is  
enabled.

380 **Objective 3.4** advocates that a regional network of water storage and  
distribution facilities provides for sustainable, efficient and multiple use of water.

381 **Objective 3.6** states that water is recognised as essential to all life and is  
respected for its intrinsic values.

382 **Objective 3.7** states that fresh water should be managed prudently as a shared  
resource with many in-stream and out-of-stream values.

383 **Objective 3.8A** states that high quality fresh water must be available to meet  
actual and reasonably foreseeable needs for community drinking water supplies.

384 **Objective 3.11** recognises water as an enabler of the economic and social  
wellbeing of the region.

385 **Objective 3.13** states that groundwater resources remain a sustainable source of  
high quality water which is available for abstraction and maintaining surface  
water bodies.

386 As outlined above the effects on water quality are likely to be no more than  
minor and the storage of water will enable greater reliability of supply with  
associated social and economic benefits. I consider the ASP Proposal is  
consistent with these objectives.

387 The following policies are relevant to the ASP Proposal:

- 388 **Strategic policies 4.2 and 4.3** relate to the management of groundwater and surface water and ensuring that these are managed to meet water quality and quality limits. The effects on groundwater and surface water quality and quantity have been assessed as minor and therefore the ASP Proposal complies with these policies.
- 389 **Policies 4.13, 4.14, 4.18, and 4.19** set out requirements for the discharge of contaminants to land or water and that the effects are minimised and if not possible, that best practicable options are undertaken. Best practicable options should also be used to prevent sediment entering surface water and that contaminated land is managed to minimise contamination of groundwater. Appropriate mitigation including an ESCP and Accidental Discovery Protocol (contaminated land) have been proposed and are recommended as conditions of consent. I consider the ASP Proposal is consistent with these policies.
- 390 **Policy 4.23** requires the protection of onsite and community drinking water supplies. Any adverse effects on drinking water supplies have been assessed as being less than minor.
- 391 **Policy 4.48** relates to the damming and diversion of water and insuring that the dam is sited, designed and operated to minimise any risk of overspill, leakages, slips or other dam failure and the risk on people and communities. As outlined in this report, the design of the dam is consistent with NZSOLD (2015) and appropriate mitigation has been proposed to minimise the risk of failure. I consider that this proposal is consistent with this policy.
- 392 **Policy 4.76** requires subsidence and other effects of dewatering to be avoided by limiting the rate or duration of pumping or other measures. The dewatering should it need to occur, will be for a maximum of 6 months and the Applicant has agreed to other mitigation including ensuring that groundwater is not dewatered to more than 0.5 m below the deepest excavation. I consider that the proposal is consistent with this policy.

#### **Canterbury Air Regional Plan (decisions version) (pCARPd)**

- 393 The following objectives and policies of the pCARPd are relevant to this proposal:
- 394 **Objective 5.5** advocates that air quality is managed in a way that provides for the cultural values and traditions of Ngāi Tahu.
- 395 **Objective 5.6** states that amenity values of the receiving environment are maintained.

- 396 **Objective 5.7** advocates that discharges from new activities are appropriately located to take account of adjacent land uses and sensitive activities.
- 397 **Objective 5.9** states that offensive and objectionable effects and noxious or dangerous effects on the environment are generally avoided.
- 398 **Policy 6.1** requires that discharges to air do not affect human health and wellbeing, ecosystems, visibility or soiling and corrosion of structures and property.
- 399 **Policy 6.2** recognises the value of air quality as a taonga to Tangata Whenua and manage adverse effects of discharges into air on wāhi tapu, wāhi taonga, and places of significance to Ngāi Tahu.
- 400 **Policy 6.5** states that offensive and objectionable effects are unacceptable and actively managed by plan provisions and the implementation of management plans.
- 401 **Policy 6.6** requires that discharges into air from new activities, are appropriately located and adequately separated from sensitive activities in line with the district plan and the sensitivity of the receiving environment.
- 402 **Policy 6.7A** states that when evaluating resource consent applications recognise locational constraints on activities, when imposing terms and conditions.
- 403 **Policy 6.10** requires that cumulative effects are minimised by consented activities utilising the best practicable options.
- 404 **Policy 6.11** recognises the contribution of nationally and regionally significant infrastructure to people's social and economic wellbeing and provide for the discharges associated with the development, operation, and maintenance of that infrastructure.
- 405 As outlined previously, the effects of air quality are likely to be minor and any effects on those who have not supplied written approval are likely to be less than minor. I consider the ASP Proposal is consistent with the policies and objective of the pCARPd.

#### **ADP**

- 406 Under Section 104(1)(b)(vi) of the RMA, I am required to have regard to the provisions of the any relevant provisions of a plan or a proposed plan.
- 407 The relevant objectives and policies found in the Rural Volume of the ADP are set out and assessed below.



- 408     **Objective 3.1:** Rural Primary Production - To enable primary production to function efficiently and effectively in the Rural A and B Zones, through the protection and use of highly versatile and/or productive soils and the management of potential adverse effects.
- 409     **Policy 3.1A:** Provide for the continued productive use through farming activities and protection of highly productive and/or versatile soils, and their associated irrigation resources, by ensuring that such land is not developed for intensive residential activity and/or non-rural activities and the extent of coverage by structures or hard surfaces is limited.
- 410     **Policy 3.1E:** Protect highly productive and/or versatile soils by discouraging activities such as earthworks and extractive processes that significantly deplete the topsoil or the subsoil. The ASP Proposal will result in the loss of approximately 40ha of land from agricultural production. However, it is obvious that the Applicant considers that the value of the land for storage and overall benefit to agricultural production within the scheme area outweighs its value for agricultural production. It is this increase in overall agricultural production that means that this proposal is considered in accordance with the objectives and policies relating to primary production.
- 411     **Objective 3.5:** Rural Character and Amenity - To protect and maintain the character and amenity values of the District's rural areas, considering its productive uses whilst providing for non-rural activities that meet the needs of local and regional communities and the nation. The concern regarding the potential adverse effects of utility structures on rural character and amenity is continued in the objectives and policies contained in Chapter 14 of the ADP.
- 412     **Objective 14.1:** Effects from Utilities on Amenity and the Environment - To provide for the construction, installation, operation, upgrading and maintenance of utilities where adverse effects on amenity and the surrounding environment can be appropriately avoided, remedied or mitigated.
- 413     **Policy 14.1A:** To avoid, remedy or mitigate adverse environmental effects arising from the construction, installation, operation, upgrading and maintenance of utilities. The key aspect for consideration in relation to rural character and amenity is the visual effects of the proposed embankment structure. As described above, the 10m high ring embankment is located in close proximity to Barkers Road, which is a public view point. However, Barkers Road is not a known tourist route.
- 414     Mitigating these adverse effects is the written approvals that have been obtained from the owners/occupiers of the closest dwellings in the vicinity of the embankment, and the lack of submissions raising adverse effects on rural

character and amenity arising from the public notification of the proposal. On that basis, there is considered to be a relatively high degree of acceptance of the Project by road users and rural residents since the new storage pond landform is in keeping with a rural infrastructure.

415 On the basis that the embankments are formed and maintained as set out in the application it is considered that any adverse visual effects of the proposal will not compromise the rural character and amenity of the locality. As signalled above, there is a potential measure available to remedy the adverse visual effects from Barkers Road, in the form of planting along the boundary, which I consider necessary.

416 **Policy 14.1C:** Ensure the health and safety of the community is protected when utilities are constructed and utilised. The health and safety of the public, particularly during the construction phase can be maintained by appropriate fencing. With any water storage proposal, there is a risk to life and property in the event of dam breach/failure. As assessed above, such risks have been adequately considered and the appropriate dam safety measures, monitoring and emergency response preparations can be secured through appropriate conditions imposed, in this case primarily by way of the applicable regional consent (CRC173285).

417 **Policy 14.1D:** Consider the locational, economic, operational and technical requirements of utilities in assessing their location, design and appearance, and their importance to the economic functioning of the District, Region and/or Nation. The zone statement for the Rural B zone refers to the important role this area plays in both the regional and national economy. The explanation and reasons contained in the District Plan states:

*"The irrigation and stock water systems in the District are extremely important to the ongoing economic wellbeing of the community of the District and are likely to continue to be important for future generations.*

*...*

*These irrigation and stock water systems have therefore been recognised in the District Plan as important utilities necessary for the continued well-being of the Resource consent application LUC16-0110 BCIL, 577 Barkers Road Planning Report 30 community and appropriate rules have been included which will allow the efficient operation, maintenance and upgrade of the systems."*

418 The proposal for water storage is considered in keeping with **Policy 14.1D**.

- 419     **Objective 14.5:** Rural Water - The ongoing operation, maintenance and upgrade of rural irrigation and stock water systems.
- 420     **Policy 14.5A:** To recognise and provide for the continuing efficient use and development of irrigation (including associated water storage facilities) and stock water systems, and various water reticulation systems in the District, including recognition of their importance to the wellbeing of the District's people and wider communities.
- 421     **Policy 14.5B:** To encourage the efficient use of water abstracted from these systems, and from other water sources, for irrigation and stock water.
- 422     **Policy 14.5C:** To encourage rural water reticulation operators to adopt their own monitoring systems to ensure that the effects of these systems on the environment are regularly evaluated to achieve efficiencies and to avoid, remedy or mitigate any adverse effects.
- 423     The proposal represents and upgrade of the existing BCIL irrigation scheme. This upgrade facilitates the economic and social wellbeing of the people and communities of the District, which, as acknowledged in the District Plan, "is to a large extent dependent on the continued productive use of the large areas of productive and versatile soils".
- 424     **Objective 16.1:** Management of Hazardous Substances - To ensure that adequate measures are taken to avoid, remedy or mitigate any adverse effects during the manufacture, storage, transport and disposal of hazardous substances to:
- (a)     human health,
  - (b)     the health of livestock and other farm animals or domestic animals,
  - (c)     the health of flora and fauna,
  - (d)     the amenity of residential or other similarly sensitive areas,
  - (e)     the natural environment, and
  - (f)     the life-sustaining capacity and amenity values of waterbodies, land and soil resources.
- 425     **Policy 16.1B:** To allow appropriate quantities and classes of hazardous substances to be stored to provide for land use activities that are consistent with the District Plan objectives and policies for those areas.

- 426 **Policy 16.1C:** To ensure hazardous substances are stored under conditions which reduce the risk of any leaks or spills contaminating land or water.
- 427 **Policy 16.1D:** To limit manufacturing and storage, and avoid disposing of hazardous substances near any of the following areas:
- (a) Waterbodies or wetlands.
  - (b) Significant ecological sites.
  - (c) Sites of particular heritage or cultural value.
  - (d) Popular recreational areas.
  - (e) Residential units, other than a residential unit on the same site as the activity.
- 428 **Policy 16.1H:** To control the manufacture, storage, transport and disposal of hazardous substances so as to avoid, remedy or mitigate adverse environmental effects due to accidental spillages or poor management practices. The proposed short-term storage of 12,000L of diesel over the 4 to 6-month construction period is considered in accordance with the above objectives and policies. As noted above, the management of this activity is largely determined through compliance with other HASNO legislation.

### *Summary*

- 429 Based on the assessment above, the water storage upgrade of existing irrigation water infrastructure is considered to not compromise the rural character and amenity of the area and will contribute to the continued economic and social well-being of the District. It is finely balanced whether additional planting along Barkers Road is required in order to maintain current levels of rural amenity (as set out in Objective 3.5). However, Objective 3.5 makes it clear this assessment must be undertaken considering the use of the rural area for productive uses. I have concluded the Barkers Road planting is required.

### **OTHER MATTERS- S104(1) RMA**

- 430 Iwi management plans are relevant other matters. They are considered earlier in this decision. I also note the application is not known as being of any cultural significance. I conclude that the proposal is not considered to challenge the resource management outcomes sought by any of the relevant Iwi management

plans. Finally I record a letter has been received from Ngai Tahu recording support for the proposal.

## **PART 2 OF THE RMA**

### **Section 6 RMA**

431 I agree with both Ms Ford and Mr Boyes after consideration none of the matters listed in section 6 are engaged by this proposal.

### **Section 7 RMA**

432 I have had particular regard to the matters in section 7 of the RMA. I consider the proposal has had regard in particular to the efficient use and development of natural resources and the maintenance and enhancement of the quality of the environment.

### **Section 8 RMA**

433 In achieving the purpose of the RMA, I have taken into account as required by section 8 RMA, the principles of the Treaty of Waitangi (Te Tiriti o Waitangi).

### **Section 5 RMA**

434 The purpose of the RMA is to promote the sustainable management of natural and physical resources. That is, the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural well-being and for their health and safety while:

- (a) sustaining the potential of natural and physical resources to meet the reasonably foreseeable needs of future generations; and
- (b) safeguarding the life supporting capacity of air, water, soil, and ecosystems; and
- (c) avoiding, remedying, or mitigating any adverse effects of activities on the environment.

435 The Application relates primarily to earthworks being undertaken to facilitate the damming and storage of water. This activity will ultimately enable the use of freshwater resources in a more efficient manner contributing to the social, economic and cultural well-being of the district and its people.

- 436 Dam breach is the most significant potential effect. The definition of the effect under the RMA provides that a high impact effect however unlikely is a relevant consideration.
- 437 In my view dam breach effects have been carefully and appropriately considered by the applicant. This is demonstrated in the rating chosen by the applicant's consultant Dam Watch with a dam been given a medium potential impact classification(PIC).
- 438 The applicant has proposed many conditions which have been included within the conditions suite that are intended to avoid and if required mitigate some of the effects of a dam breach including public liability insurance and an emergency response plan.
- 439 For the district council consent visual effects are a consideration and I have agreed that further shelter planting along Barkers Road frontage of the application site adjacent to the proposed embankment subject to that planting being able to be maintained to remain clear of the existing power lines is appropriate.
- 440 Overall I consider that the proposal taking into account the conditions imposed is consistent with the purpose of the RMA as it promotes the sustainable management of natural and physical resources.

#### **CONSIDERATION OF CONSENT DURATION**

- 441 The Applicant has sought a duration of 35 years for CRC173285 to dam surface water and CRC173289 to discharge seepage. A 5 year duration is sought for the other consents. A 5 year lapse date has been requested for all consents.
- 442 **Policy 4.73** of the LWRP requires that water permits are given a three year lapse date in which the applicant may give effect to their consent unless a longer lapsing period is justified due to the scale and complexity of the activity. No guidance is given in relation to other consent types.
- 443 I consider that a 5 year lapse date for the dam permit CRC173285 is appropriate given the proposal is of a large scale. As the seepage discharge application CRC173289 is associated with the presence of the pond, I consider that it is appropriate for that to also have a 5 year lapse date specified on the consent. This is consistent with the default lapsing date of 5 years under s125(1)(a) of the RMA.
- 444 In regards to specifying a 5 year lapsing date on the remaining consents, I consider that this is not needed as if the activities are going to take longer than 5 years to complete or they cannot commence until after 5 years. This is

because a new consent will need to be applied for and therefore there is no benefit in specifying this for these consents, as the lapse date will not be able to be extended beyond the consent expiry date.

- 445 Accordingly I accept Ms Fords recommendation that the consent conditions specify no lapse date and the consent will just lapse if the consent is not used by the expiry date.
- 446 **Policy 4.74** of the LWRP is relevant to the duration of consents for water permits, and seeks to limit durations to periods not exceeding 15 years except in the case of regionally significant infrastructure.
- 447 It is considered that the proposed dam can be classified as regionally significant infrastructure. In recognition of this, and given the applicant's existing consents and the lifetime of a dam structure, I consider it appropriate that consent CRC173285 and associated discharge permit CRC173289 be granted for a duration of 35 years.
- 448 The other applications are for temporary activities and I consider that a 5 year expiry date is appropriate.

## CONCLUSION

- 449 On the basis of the evidence before me and for the reasons set out above, I consider that the purpose of the RMA can best be achieved by granting the resource consents relating to the construction and operation and maintenance of the ASP with the imposition of consent conditions.
- 450 I accept the Applicant's evidence that the ASP will have positive effects in terms of water storage and the efficient use of water
- 451 Also I accept the Applicant has given extensive and robust consideration to the natural and physical resource values of the project site in developing and designing the ASP.
- 452 I accept the ASP will have some effects on the environment. However in my view the Applicant has demonstrated through its evidence and through the proposed conditions how those effects can be appropriately avoided remedied or mitigated as far as practicable.
- 453 In my view and based upon all of the evidence I have received from the Applicant the fact there are submitters in support and section 42A officers reports it is my view the project site is an appropriate location for a storage pond and that the

construction and operation and maintenance of the ASP will promote the sustainable management of natural and physical resources in accordance with Part 2 of the RMA.

- 454 Overall it is my decision that the ASP aligns well with and is broadly consistent with the relevant objectives and policies of the all of the national environment standards, national policy statements and and regionalonal and District Plans I have consdiered.

## CONDITIONS

- 455 I have carefully considered and reviewed the conditions and I am satisfied that, with my amendments, they serve an appropriate resource management purpose, that they are certain and clear and that they will ensure that the actual and potential adverse effects of the ASP are appropriately avoided remedied or mitigated in accordance with the expert advice I have received.
- 456 The conditions have been **attached** to this decision in **Appendix A to G** (conditions relating to the construction and operation of ASP).

## DECISION

- 457 For the reasons outlined above, it is the decision of the ADC, pursuant to sections 104, 104(B) and 108, and subject to Part 2 of the RMA, to GRANT the following resource consents subject to the consent conditions set out in Appendix A to G and attached to and forming part of this decision:
- (a) *Land use consent:* LUC16-0110 for the construction, operation and maintenance of the Ākarana Storage Pond as described in the Application by Barrhill Chertsey Irrigation Limited; and
  - (b) *Land use consent:* CRC173284 to excavate and deposit material over an unconfined/semi confined aquifer; and
  - (c) *Water Permit:* CRC173285 to dam up to 1.6 million m<sup>3</sup> of water outside the bed of a river; and
  - (d) *Water Permit:* CRC173286 to take, use and discharge groundwater for the purpose of site dewatering during the construction of the ASP; and
  - (e) *Discharge Permit:* CRC173287 to discharge water and contaminants (sediment) to land during the construction of the ASP; and
  - (f) *Discharge Permit:* CRC173288 to discharge fugitive dust from bulk earthworks and contaminants from internal combustion equipment during



the construction of the ASP; and

- (g) *Discharge Permit*: CRC173289 to discharge seepage water from the base of the ASP to land.

**Dated 01 September 2017**



**Paul Rogers**

## **APPENDIX A**

<b>CONSENT AUTHORITY:</b>	Ashburton District Council
<b>CONSENT HOLDER:</b>	Barrhill Chertsey Irrigation Limited
<b>CONSENT TYPE:</b>	Land Use Consent LU16-0110
<b>ACTIVITY AUTHORISED:</b>	The construction and operation of the Ākarana Storage Pond
<b>SITE LOCATION:</b>	577 Barkers Road, Highbank 7782, Canterbury
<b>CONSENT DURATION:</b>	35 years

### **DEFINITIONS**

For the purposes of this consent, the following terms are defined:

- Application means: BCIL's Application, the assessment of Environmental Effects (BCIL Akarana Storage Pond Consenting), and all supporting technical documents and plans as provided to the Ashburton District Council.
- BCIL means: Barrhill Chertsey Irrigation Limited.
- Construction Works means: all and any physical works required to build the Dam and associated infrastructure.
- Council means: the Ashburton District Council or its successors.
- Dam means: the proposed Akarana Storage Pond subject of the Application.

### **SCOPE**

- 1 The Ākarana Storage Pond and all incidental works and activities authorised by this consent shall be undertaken in general accordance with the information contained in the Application as provided to the Ashburton District Council dated 16 November 2016 and the further information provided 9 February 2017, except where modified by specific conditions set out below or the plans authorised by the Building Consent for the dam storage facility issued by Environment Canterbury.

### **LIMITS**

- 2 The Construction Works shall be limited to the use of land for:
  - (a) the establishment of a utility Dam; and

- (b) Storage of diesel onsite.

#### **STORAGE OF HAZARDOUS SUBSTANCES**

- 3 Diesel or other hazardous substances stored onsite during construction in mobile above ground storage containers shall not be stored within 20m of a surface water body, exposed groundwater or a bore.
- 4 BCIL shall promptly clean up any accidental spill of diesel or other hazardous substances.

#### **OTHER APPROVALS**

- 5 At least 10 working days prior to the date upon which the Consent Holder intends to commence activity, the Consent Holder shall provide the Ashburton District Council District Planning Manager all necessary permissions required and/or obtained under other legislation and from other consent authorities, including:
  - (a) Building Consent Plans as approved by the Canterbury Regional Council;
  - (b) Erosion and Sediment Control Plan as certified by the Canterbury Regional Council in accordance with CRC173284 and CRC173287.
  - (c) Dam Safety Management System as certified by the Canterbury Regional Council in accordance with CRC173285.
  - (d) Emergency Action Plan as certified by the Canterbury Regional Council in accordance with CRC173285.
  - (e) Dust Management Plan as certified by the Canterbury Regional Council in accordance with CRC173288.
  - (f) Any certificate for hazardous substance storage obtained or required under HASNO Act or other relevant legislation.

#### **COMPLAINTS REGISTER**

- 6 The Consent Holder shall maintain a complaint register for all construction operations. It shall include the date, time and type of complaint, possible cause of the complaint, and the corrective action taken by the Consent Holder to avoid, remedy or mitigate the effects identified by the complainant, including the time of that corrective action.

#### **HOURS OF WORK**

- 7 Construction of the storage pond shall typically be undertaken in accordance with the following restrictions:
  - (a) Work shall be limited to between 0630 - 1900 hours.

- (b) There shall be no construction activity on Sundays or any public holidays.

#### CONSTRUCTION NOISE LIMITS

- 8 All construction activity shall be conducted so that noise emissions do not exceed the noise limits contained in the following table. Sound levels shall be measured and assessed in accordance with the provisions of NZS 6803:1999 "Acoustics – Construction Noise". These limits shall apply at all occupied residential units that have not provided written approval.

Time of week	Time period	Duration of work					
		Typical duration (dBA)		Short-term duration (dBA)		Long-term duration (dBA)	
		Leq	Lmax	Leq	Lmax	Leq	Lmax
Weekdays	0630-0730	60	75	65	75	55	75
	0730-1800	75	90	80	95	70	85
	1800-2000	70	85	75	90	65	80
	2000-0630	45	75	45	75	45	75
Saturdays	0630-0730	45	75	45	75	45	75
	0730-1800	75	90	80	95	70	85
	1800-2000	45	75	45	75	45	75
	2000-0630	45	75	45	75	45	75
Sundays and public holidays	0630-0730	45	75	45	75	45	75
	0730-1800	55	85	55	85	55	85
	1800-2000	45	75	45	75	45	75

	2000-0630	45	75	45	75	45	75
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#### **PUBLIC ACCESS**

- 9 Public access to the embankments and storage pond, and farm animals and unauthorised persons shall be prevented from accessing the pond and embankments through provision of secure barriers such as fencing and locked gates and/or other such combination of measures that inhibits or prevents access.

#### **MOTORISED CRAFT**

- 10 That the surface of the pond shall not be used by motor craft (including but not limited to water skiing boats and jet skis) for the purpose of recreation. Note: this limitation shall not apply to motor craft being used for purposes associated with the maintenance, survey and general operation of the pond or for the purpose of deterring waterfowl from using the storage dam over the first two weeks of each year's duck hunting season.

#### **COUNCIL WATER RACE**

- 11 The Consent Holder is to identify and outline procedures to manage and minimise any disruption to the stock water race along the north-eastern boundary of the proposed storage pond during construction and/or operation to the satisfaction of the District Planning Manager prior to commencement of the works on site. As a minimum, this is to achieve a continuity of stock water supply in accordance with the Ashburton District Council 'levels of service' in place at the time of construction (*as set out in Chapter 15 of the Ashburton District Council By Laws*). This may involve the provision of an alternative supply at the cost of the Consent Holder if required.

#### **ACCIDENTIAL DISCOVERY PROTOCOL – ARCHAEOLOGICAL MATERIAL**

- 12 In the event of any disturbance of Koiwi Tangata (human bones) or taonga (treasured artefacts), the Consent Holder shall immediately:
- (a) Advise the Te Rūnanga o Arowhenua, Te Rūnanga o Ngāi Tahu, or their representative, and the Ashburton District Council of the disturbance;
  - (b) Cease earthmoving operations in the affected area until the area containing the Koiwi Tangata or taonga has been clearly demarcated, and Kaumatua and archaeologists have certified that it is appropriate for earthmoving to recommence.
- 13 In the event of accidental discovery of archaeological remains, the following steps shall be taken:

- (a) All activity affecting the immediate area shall cease and the Regional Archaeologist of Heritage New Zealand shall be contacted;
  - (b) The site shall be secured to ensure that the remains are not further disturbed;
  - (c) Further works affecting the remains will not commence until either:
    - (i) The Regional Archaeologist of Heritage New Zealand has confirmed in writing that the archaeological provisions of the Heritage New Zealand Pouhere Taonga Act 2014 do not apply; or
    - (ii) The requirements of the archaeological provisions of Heritage New Zealand Pouhere Taonga Act 2014 have been met, and if required, and archaeological authority has been granted by Heritage New Zealand.
    - (iii) If human remains / koiwi tangata are located, in addition to the above steps, the Runanga representative for the area and the New Zealand Police must be contacted.
- 14 The above protocol shall only be amended in consultation with Heritage New Zealand, Te Rūnanga o Arowhenua and Te Rūnanga o Ngāi Tahu. Once finalised copies shall be lodged with those parties and the Ashburton District Council prior to any construction commencing.

#### **ACCIDENTAL DISCOVERY PROTOCOL - WASTE MATERIALS/CONTAMINATED SOILS**

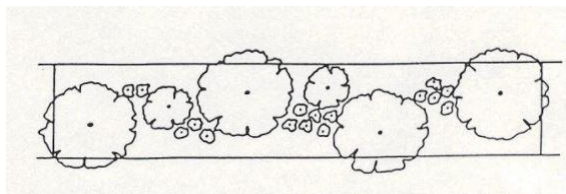
- 15 In the event of encountering visual or olfactory indicators of waste materials and/or soil contamination or an uncontrolled discharge of contaminants (i.e. inadvertent rupturing/dislodgement of containers or drums that may be present containing liquid) the consent holder or its contractors shall immediately comply with the 'Accidental Discovery Protocol for Encountering Waste Materials/Contaminated Soils – Water Storage Pond Construction at 577 Barkers Road, Methven', prepared by PDP Ltd dated 15 August 2016.

#### **PLANTING**

- 16 The Consent Holder shall, within six months of the completion of Construction Works, plant Douglas Fir trees along the southwestern boundary of the site to obscure the visibility of the pond from this direction, as shown on Plan **LUC16-0110A**, which forms part of this consent.
- 17 The Consent Holder shall, within six months of the completion of Construction Works, establish planting along the Barkers Road boundary to obscure the visibility of the pond from the road, break up the views to the nearby embankment and to provide visual interest, as shown on Plan **LUC16-0110B**, which forms part of this consent.

This planting shall consist of native shrub and grass species from the list outlined in the Table below. Please note that the selection of plants therein does not include species that would grow to more than 5m in height to avoid maintenance issues in relation to the electricity line.

The plants shall be spaced at 1.5-2m apart to achieve a screening effect as outlined in the Figure below and be locally (eco)sourced to ensure that they are suitable for the local climate.



The plants may be grouped in clusters, being not less than 50m in length along the boundary, with a gap to the next 'cluster' of not more than 15m.

Plant Species Name	Latin Name
Lemonwood	<i>Pittosporum eugenioides</i>
Kohuhu	<i>Pittosporum tenuifolium</i>
Flax / Harakeke	<i>Phormium tenax</i>
Broadleaf	<i>Griselinia littoralis</i>
Kowhai	<i>Sophora microphylla</i>
Cabbage tree	<i>Cordyline australis</i>
Toe	<i>Austroderia richardii</i>
Hebe/ Koromiko	<i>Hebe salicifolia</i>
Mingi	<i>Coprosma propinqua</i>

- 18 All landscaping required for this consent shall be maintained to ensure that the embankment remains partially screened from view. Any dead, diseased, or damaged landscaping is to be replaced immediately with plants of a similar species.

#### POST CONSTRUCTION MAINTENANCE

- 19 The vegetation on the embankment areas or the strips adjacent to the races shall be maintained in a healthy and uniform state, with the exception of seasonal browning off. Maintenance shall include, but not be limited to:

- (a) Removal of weeds; and

- (b) Re-planting of vegetation where erosion or die-off has resulted in bare or patchy soil cover.

#### **PUBLIC LIABILITY INSURANCE**

- 20 The Consent Holder shall, all at times after construction has commenced, have in place public liability insurance on terms suitable in all respects to the Ashburton District Council. The insurance shall be obtained on the following conditions:
  - (a) The Ashburton District Council shall be the additional insured party of the insurance policy and shall be able to enforce its terms;
  - (b) The Consent Holder shall ensure that the Ashburton District Council has, at all times after construction commences, written confirmation that the insurance required by this condition is in place.
  - (c) The Consent Holder shall ensure that the insurer is required to copy all relevant information regarding the insurance to the Ashburton District Council. This obligation includes an express term that the insurer must immediately notify the Ashburton District Council of any non-performance of the terms of insurance by the Consent Holder.
  - (d) In the event of non-performance of any term of the insurance, the Ashburton District Council shall be given the opportunity to rectify the non-performance before the insurance is cancelled.
- 21 The insurance provided under this condition must be sufficient to cover all reasonable insurable contingent risks associated with the operation of the ASP, including offsite impacts to third party property associated with any reasonable foreseeable failure of any part of the proposed pond, together with a reasonable provision for reconstruction and reinstatement; and the proceeds of the insurance policy shall be applied for those purposes only.
- 22 The Consent Holder will, at its cost, prior to arranging the insurance policy, obtain advice from a person qualified and experienced within the insurance industry to determine the limit of indemnity and coverage provided for by this insurance policy. In providing that advice, that person is to ensure the purpose of the policy is met, which is to provide coverage and protection in sufficient quantum to compensate for third party losses in the instance of a failure of the works authorised under this consent.
- 23 A copy of the advice relating to the insurance policy will be provided to the Ashburton District Council District Planning Manager for review and comment, and any comments and suggestions that are provided to the Consent Holder will be taken into account and provided for within the insurance policy.



- 24 If the parties cannot agree on the terms of insurance cover, the coverage, or indemnity value, the dispute shall be referred to arbitration.
- 25 The limits of indemnity and coverage and terms of the policy are to be reviewed by the Consent Holder at least every three years, and if that review results in amendment or alteration to the insurance cover, then agreement of the Ashburton District Council to any such amendments or alterations will be required.

#### **AS BUILT PLANS**

- 26 Within twelve months of the date of first filling the storage pond, the Consent Holder shall provide a complete set of "as built" detailed engineering plans confirming the location of works to the Ashburton District Council, District Planning Manager.

#### **ADMINISTRATION**

- 27 The lapsing date for the purposes of Section 125 of the RMA 1991 shall be 5 years from the date consent is issued.
- 28 The Ashburton District Council may, within a period of three months commencing on each anniversary of the date of commencement of this resource consent, serve notice of its intention to review the conditions of this consent for the purposes of dealing with any adverse effect on the environment which may arise from the exercise of this consent.

#### ***Advice notes:***

- (a) *This resource consent only provides approval under the Resource Management Act 1991. Should the storage pond require authorisation under other legislation the Consent Holder will need to obtain the relevant approval prior to works commencing. This may include an Authority to destroy, damage or modify that site or building from Heritage New Zealand under the Heritage New Zealand Pouhere Taonga Act 2014.*
- (b) *The Council will require payment of its administrative charges in relation to monitoring, as authorised by the provisions of section 36 of the Resource Management Act 1991.*

## **APPENDIX B**

<b>CONSENT AUTHORITY:</b>	Canterbury Regional Council
<b>CONSENT HOLDER:</b>	Barrhill Chertsey Irrigation Limited
<b>CONSENT TYPE:</b>	To excavate and deposit material over an unconfined aquifer
<b>ACTIVITY AUTHORISED:</b>	CRC173284
<b>SITE LOCATION:</b>	577 Barkers Road, Highbank 7782, Canterbury
<b>CONSENT DURATION:</b>	35 years

### **SCOPE**

- 1 All activities authorised by this consent shall be undertaken in general accordance with the Application submitted to Canterbury Regional Council on 16 November 2016, and the subsequent minor amendments to the application made on 24 February 2017, except where the Application and amendments are inconsistent with these conditions (in which case these conditions prevail.)

### **LIMITS**

- 2 The works shall be limited to the use of land to:
  - (a) Excavate material; and
  - (b) Deposit materialfor the purposes of and to the extent required for the construction of the Ākarana Storage Pond ("the Dam") and associated infrastructure on land within Lot 6 DP 1996, 577 Barkers Road, at or about map reference Topo50 BX21:9408-7217 as shown on Plan CRC173285, which forms part of this consent.

### **PRE-CONSTRUCTION**

- 3 The consent holder shall:
  - (a) be responsible for all the contracted operations relating to the exercise of this consent including the Construction Works; and
  - (b) ensure compliance with consent conditions.

- 4 Prior to commencement of any physical works required to build the Dam and associated infrastructure (hereafter referred to as the 'Construction Works') the consent holder or its agent or contractor shall arrange and conduct a pre-construction site meeting between the Canterbury Regional Council and all persons involved in the Construction Works. At a minimum, the following shall be covered at the meeting:
- (a) Scheduling and staging of the Construction Works;
  - (b) Responsibilities of all relevant parties;
  - (c) Contact details for all relevant parties;
  - (d) Expectations regarding communication between all relevant parties;
  - (e) Procedures for implementing any changes to the Construction Works;
  - (f) Site inspection; and
  - (g) Confirmation that all persons involved in the Construction Works have copies of the contents of this consent document, the Erosion and Sediment Control Plan (ESCP) and all plans required under resource consents CRC173285, CRC173286, CRC173287, CRC173288, CRC173289 and LUC16-0110.
- 5 Erosion and sediment control measures recommended in the ESCP prepared under Condition (6) shall be installed before any excavation occurs on site.

#### **EROSION AND SEDIMENT CONTROL PLAN**

- 6 The consent holder shall prepare an ESCP, subject to the following conditions:
- (a) No less than one month before the commencement of any Construction Works, a copy of the ESCP shall be submitted to the Canterbury Regional Council: Attention Regional Leader – Monitoring and Compliance for review and certification. All activities authorised by this consent must be carried out in accordance with the ESCP.
  - (b) Unless Canterbury Regional Council provides notice in writing that it is unable to certify the ESCP within 20 working days of receipt of a draft ESCP, it is deemed to be certified by the Canterbury Regional Council. For the purposes of this condition, "Certification" means that the ESCP contains all the information specified in Condition 6(c).
  - (c) The ESCP shall include:
    - (i) A site drainage plan;
    - (ii) Details of any anticipated earth excavation and compaction requirements;

- (iii) A schedule detailing the anticipated staging of the Construction Works including:
  - (iv) Site preparation works;
  - (v) Any equipment or plant mobilisation necessary for carrying out the construction works;
  - (vi) Any field verification requirement.
  - (vii) Measures to avoid or minimise any sediment entering exposed groundwater or Rangitata Diversion Race or being tracked onto roadways or neighbouring properties;
  - (viii) Details of compliance checks, and any maintenance necessary to ensure that measures required under the ESCP or this consent are performing effectively.
  - (ix) Identification of persons responsible for carrying out the actions within the ESCP including their contact details.
- (d) Any amendments or revisions to the ESCP must be submitted to Canterbury Regional Council: Attention Regional Leader – Monitoring and Compliance.
- 7 During construction, all practicable measures shall be undertaken to minimise exposed groundwater.

## **CONSTRUCTION**

- 8 The Dam shall have an HDPE geomembrane lining on the inside embankment slopes, extended 30 m into the invert of the Dam.
- 9 The Dam invert will be lined with compacted loess/silts of sufficient depth to control seepage through the base of the pond.
- 10 Any imported materials for the Dam invert lining shall comprise of clean material(s). For the purposes of this consent, 'clean materials' are defined as material not sourced from a site listed on Canterbury Regional Council's Listed Land Use Register and/or Schedule 3 of the Land and Water Regional Plan.
- 11 The crest and outside embankment slopes shall be sown with grass within one month of the completion of Construction Works, if completed during period September through April. Should construction of the dam be completed outside of this period, the embankments will where necessary to prevent erosion be stabilised with suitable matting (or equivalent), and sown with grass no later than the following September.

## **HAZARDOUS SUBSTANCE MANAGEMENT**

- 12 The consent holder shall take all practicable measures to avoid spills of fuel or any other contaminants. In the event of a spill of fuel or any other hazardous substances, the following shall be undertaken:
- (a) All practicable measures shall be taken to prevent the spill being discharged into land via the stormwater system;
  - (b) The spill shall be cleaned up as soon as practicable and any contaminants that accumulate in the stormwater system shall be removed and the spill area shall be inspected and cleaned, and measures shall be taken to prevent reoccurrence.
  - (c) The consent holder shall provide the Canterbury Regional Council, Attention: Regional Leader Monitoring and Compliance, with the following information within 24 hours of a spill:
    - (i) The date, time, location and estimated volume of the spill;
    - (ii) The cause of the spill;
    - (iii) The type of contaminant(s) spilled;
    - (iv) Clean up procedures undertaken including evidence of appropriate disposal;
    - (v) Details of the steps taken to control and remediate the effects of the spill on the receiving environment;
    - (vi) An assessment of any potential effects of the spill; and
    - (vii) Measures to be undertaken to prevent a reoccurrence.
- 13 Any material, including sediment, hydrocarbons and other contaminants, removed in the exercising of this consent shall be disposed of at a location or facility authorised to receive such material.

## **ACCIDENTAL DISCOVERY PROTOCOL – ARCHAEOLOGICAL MATERIALS**

- 14 In the event of any discovery of archaeological material the consent holder shall immediately:
- (a) Cease work within 10 metres of any part of the discovery and mark off the affected area;
  - (b) Advise the Canterbury Regional Council and Ashburton District Council of the discovery; and
  - (c) Advise Heritage New Zealand Pouhere Taonga of the discovery.

- 15 If the archaeological material is determined to be Koiwi Tangata (human bones) of Maori origin or taonga (treasured artefacts) by Heritage New Zealand Pouhere Taonga, the consent holder shall immediately:
- (a) advise the office of Upoko Runanga o Arowhenua of the discovery; and
  - (b) consult Upoko Runanga o Arowhenua on any matters of tikanga (protocol) that are required in relation to the discovery and prior to the commencement of any investigation, and perform those requirements.
  - (c) Advise the New Zealand Police of the discovery in relation to Koiwi Tangata (human bones).
- 16 Iwi representatives, Canterbury Regional Council, Attention: RMA Monitoring and Compliance Manager and Heritage New Zealand Pouhere Taonga Trust shall be afforded the opportunity to visit the site within up to three working days of the discovery (if and as they consider it necessary), and such persons shall be given a reasonable time to record and recover archaeological features discovered before work may recommence on the site. The site inspection shall occur within 6 working days of the discovery being made.
- 17 The consent holder may recommence any work if Heritage New Zealand Pouhere Taonga (following consultation with Kaitiaki Runanga if the material is of Maori origin) provides a statement in writing to the Council that appropriate action has been undertaken in relation to the archaeological material discovered.

#### **Advice Notes**

- (a) *Under the Heritage New Zealand Pouhere Taonga Act 2014 an archaeological site is defined as any place associated with pre-1900 human activity, where there is material evidence relating to the history of New Zealand. For sites solely of Maori origin, this evidence may be in the form of accumulations of shell, bone, charcoal, burnt stones, etc. In later sites, artefacts such as bottles or broken glass, ceramics, metals, etc., may be found or evidence of old foundations, wells, drains, tailings, races or other structures. Human remains/koiwi may date to any historic period.*
- (b) *It is unlawful for any person to destroy, damage, or modify the whole or any part of an archaeological site without the prior authority of Heritage New Zealand Pouhere Taonga. This is the case regardless of the legal status of the land on which the site is located, whether the activity is permitted under the District or Regional Plan or whether a resource or building consent has been granted. The Heritage New Zealand Pouhere Taonga Act 2014 provides for substantial penalties for unauthorised damage or destruction. An authority from Heritage New Zealand Pouhere Taonga Trust may be required.*

#### **ACCIDENTAL DISCOVERY PROTOCOL – WASTE MATERIALS/ CONTAMINATED SOILS**

- 18 In the event of encountering visual or olfactory indicators of waste materials and/or soil contamination or an uncontrolled discharge of contaminants (i.e. inadvertent rupturing/dislodgement of containers or drums that may be present containing liquid) the consent holder or its contractors shall immediately comply with the Accidental Discovery Protocol prepared for the site by Pattle Delamore Partners Limited, titled Accidental Discovery Protocol for Encountering Waste Materials/Contaminated Soils – Water Storage Pond Construction at 577 Barkers Road, Methven, dated 15 August 2016, attached to and forming part of this consent.

#### **DECOMISSIONING**

- 19 Once the Construction Works have been completed the consent holder shall decommission the sediment and erosion measures required by condition 6. Erosion and sediment control measures shall not be decommissioned until the site is stabilised and the stormwater system for the developed site is functioning.

#### **ADMINISTRATION**

- 20 The lapsing date for the purposes of Section 125 of the RMA 1991 shall be 5 years from the date consent is issued.
- 21 Canterbury Regional Council may, once per year, on any of the last five working days of November, serve notice of its intention to review the conditions of this consent for the purposes of:
- (a) Dealing with any adverse effect on the environment which may arise from the exercise of this consent; or
  - (b) Requiring the consent holder to carry out monitoring and reporting instead of, or in addition to, that required by the consent.

## **APPENDIX C**

<b>CONSENT AUTHORITY:</b>	Canterbury Regional Council
<b>CONSENT HOLDER:</b>	Barrhill Chertsey Irrigation Limited
<b>CONSENT TYPE:</b>	To dam water
<b>ACTIVITY AUTHORISED:</b>	CRC173285
<b>SITE LOCATION:</b>	577 Barkers Road, Highbank 7782, Canterbury
<b>CONSENT DURATION:</b>	35 years

### **SCOPE**

- 1 All activities authorised by this consent shall be undertaken in general accordance with the Application submitted to Canterbury Regional Council on 16 November 2016, and the subsequent minor amendments to the application made on 24 February 2017, except where the Application and amendments are inconsistent with these conditions (in which case these conditions prevail.)
- 2 Water shall only be dammed within the land contained in Lot 6 DP 1996, located at 577 Barkers Road, at or about map reference Topo50 BX21:9408-7217 in the area labelled as the Ākarana Storage Pond ("the Dam") on Plan CRC173285, which forms part of this consent.
- 3 The dammed water shall only be water authorised by take and use consents, held or lawfully exercised by the consent holder, limited runoff from the Dam embankments, and rainfall over the Dam.
- 4 The Dam shall be constructed and maintained in accordance with the design plans as authorised by the approved Building Consent. Where the conditions of Consent CRC173285 are more restrictive than the Building Consent, the conditions of CRC173285 shall prevail.

### **MAXIMUM VOLUME AND WATER DEPTH**

- 5 The maximum operating level of the dam shall be 339.0 metres Reduced Level (RL).
- 6 The maximum volume of water dammed at maximum operating level shall not exceed 1.6 million cubic metres.



- 7 For the purposes of controlling the maximum depth of water, the construction of the dam shall be limited to the following parameters:
- (a) The maximum dam embankment height, as measured from the dam crest to the lowest elevation at the outside limit of the dam (excluding the excess material bund), shall not exceed 10.0 metres and the dam crest level shall not exceed 340.3 metres RL; and
  - (b) The minimum freeboard shall be 1.3 metres above the maximum operating level.
- 8 Any sediment that accumulates in the Dam and is removed shall be disposed of to a land-based location.

***Advice note:*** Any deposition of sediment will need to be deposited in a way that either does not contravene a permitted activity rule in a proposed or operative regional plan or is authorised by a resource consent.

## CERTIFICATION

- 9 Where Conditions (13), (16), (30), and (31) refer to 'certification by an independent certifier', this shall mean the following:
- (a) the certifier shall be a Chartered Professional Engineer (CPEng), suitably qualified and experienced in the design, construction and documentation required for medium Potential Impact Classification dams in accordance with the New Zealand Society on Large Dams (NZSOLD) New Zealand Dam Safety Guidelines 2015, and shall be independent of the Consent Holder, dam designers and construction contractors;
  - (b) the certifier shall be authorised by Canterbury Regional Council, Attention Regional Leader – Monitoring and Compliance, as meeting Condition (9)(a);
  - (c) the Consent Holder is responsible for appointing the certifier and all costs of certification;
  - (d) the Consent Holder shall implement any documentation changes and remedial actions recommended by the certifier; and
  - (e) the Consent Holder shall provide to the Canterbury Regional Council, Attention Regional Leader – Monitoring and Compliance, written certification from the certifier that the documentation, design, system or processes subject of the respective consent condition(s) are in accordance with good engineering practice and are consistent with

the NZSOLD New Zealand Dam Safety Guidelines 2015 and any updates, including any amendment or update current at the time of certification.

#### **BUILDING CONSENT PLANS**

- 10 At least one month prior to the commencement of construction of the dam, the Consent Holder shall provide to the Canterbury Regional Council, Attention Regional Leader – Monitoring and Compliance the approved Building Consent Plans.
- 11 Within 12 months of the date of first filling of the dam, “as built” detailed engineering plans shall be provided to Canterbury Regional Council, Attention Regional Leader – Monitoring and Compliance.
- 12 All activities authorised under this consent shall be undertaken in accordance with the approved Building Consent plans.

#### **CERTIFICATION PROCUREMENT**

- 13 Prior to first filling of the dam, the Consent Holder shall obtain certification from an independent certifier that the design of the dam and its construction are in accordance with good engineering practice, including being consistent with the NZSOLD New Zealand Dam Safety Guidelines 2015, including any amendment or update current at the time of certification, and the requirements of the Building Act 2004. Certification of the design of the dam is to certify that the seismic assessment and the design parameters are appropriate and consistent with the NZSOLD New Zealand Dam Safety Guidelines 2015. This certificate shall be submitted to the Canterbury Regional Council, Attention Regional Leader – Monitoring and Compliance, prior to first filling of the dam.
- 14 In the event that the Consent Holder cannot obtain certification in accordance with Condition (13), the Consent Holder shall implement all necessary alterations to obtain certification prior to first filling.

#### **WATER STORAGE COMMISSIONING PLAN**

- 15 The Consent Holder shall prepare a Water Storage Commissioning Plan for the dam. The objectives of the Water Storage Commissioning Plan shall be to minimise risks from the initial filling of the dam, in accordance with NZSOLD (2015) New Zealand Dam Safety Guidelines. The Water Storage Commissioning Plan shall include:
  - (a) the commissioning and testing of control structures and systems, pumps, and monitoring systems; and
  - (b) methods outlining surveillance of the dam during commissioning and reporting requirements.

- 16 The Water Storage Commissioning Plan shall be certified by an independent certifier. Such certification shall be provided to the Canterbury Regional Council, RMA Monitoring and Compliance Manager no less than 20 working days before the first filling or partial filling of the dam.
- 17 The initial filling of the dam shall be undertaken in accordance with the certified Water Storage Commissioning Plan.
- 18 Upon first filling of the dam:
  - (a) The consent holder shall ensure that the designer of the pond is present and notes any faults observed, and again inspects the Dam within five days of first filling.
  - (b) The consent holder shall procure that the designer of the pond records any faults or findings that could potentially lead to Dam failure, and recommend the appropriate remedial works. A report of these findings and recommended remedial actions shall be prepared and a copy of which shall be provided to the Canterbury Regional Council, Attention: Regional Leader – Monitoring and Compliance, within one month of the inspection.
  - (c) The consent holder shall immediately undertake any remedial works or corrective action recommended by the designer of the pond and notify the Canterbury Regional Council, Attention Regional Leader – Monitoring and Compliance, within one week of completion.

#### **CERTIFIED MANAGEMENT PLANS TO BE HELD ON SITE**

- 19 The Consent Holder shall ensure that a copy of this Consent, and a copy of the certified Emergency Action Plan, as required by Condition (32), are available on site at all times, and that all key personnel are made aware of the contents of each plan prior to first filling of the dam. The operation of the dam and associated activities shall be undertaken in accordance with the certified Dam Safety Management System at all times.

#### **PUBLIC LIABILITY INSURANCE**

- 20 The Consent Holder shall, all at times after construction has commenced, have in place public liability insurance on terms suitable in all respects to the Canterbury Regional Council. The insurance shall be obtained on the following conditions:
  - (a) The Canterbury Regional Council shall be the additional insured party of the insurance policy and shall be able to enforce its terms;
  - (b) The Consent Holder shall ensure that the insurer is required to copy all relevant information regarding the insurance to the Canterbury

Regional Council. This obligation includes an express term that the insurer must immediately notify the Canterbury Regional Council of any non-performance of the terms of insurance by the Consent Holder.

- (c) In the event of non-performance of any term of the insurance, the Canterbury Regional Council shall be given the opportunity to rectify the non-performance before the insurance is cancelled.
- 21 The Consent Holder shall supply to Canterbury Regional Council: Attention Regional Leader Monitoring and Compliance, a Certificate of Currency within 10 working days after any premium payment is due.
- 22 Within 10 working days of a premium payment being due in accordance with condition (21), the consent holder shall advise Canterbury Regional Council: Attention Regional Leader Monitoring and Compliance when the next insurance premium payment is due.
- 23 The insurance provided under condition (20) must be sufficient to cover all reasonable insurable contingent risks associated with the operation of the Ākarana Storage Pond, including offsite impacts to third party property associated with any reasonable foreseeable failure of any part of the proposed pond, together with a reasonable provision for reconstruction and reinstatement; and the proceeds of the insurance policy shall be applied for those purposes only.
- 24 The Consent Holder will, at its cost, prior to arranging the insurance policy, obtain advice from a person qualified and experienced within the insurance industry to determine the limit of indemnity and coverage provided for by this insurance policy. In providing that advice, that person is to ensure the purpose of the policy is met, which is to provide coverage and protection in sufficient quantum to compensate for third party losses in the instance of a failure of the works authorised under this consent.
- 25 A copy of the advice relating to the insurance policy shall be provided to Canterbury Regional Council: Attention Regional Leader Monitoring and Compliance for review and comment, and any comments and suggestions that are provided to the Consent Holder will be taken into account and provided for within the insurance policy.
- 26 If the parties cannot agree on the terms of insurance cover, the coverage, or indemnity value, the dispute shall be referred to arbitration.
- 27 The limits of indemnity and coverage and terms of the policy are to be reviewed by the Consent Holder at least every three years, and if that review results in amendment or alteration to the insurance cover, then agreement of the

Canterbury Regional Council to any such amendments or alterations will be required.

#### **DAM SAFETY MANAGEMENT SYSTEM**

- 28 The Consent Holder shall engage a suitably experienced and qualified professional engineer to prepare a Dam Safety Management System, in accordance with the NZSOLD New Zealand Dam Safety Guidelines 2015 or any subsequent revisions to this guideline. The Objectives of the Dam Safety Management System shall be to minimise risks from the ongoing operation of the dam.
- 29 The documented Dam Safety Management System shall include but not be limited to the following components, in accordance with the NZSOLD New Zealand Dam Safety Guidelines 2015 or any subsequent revisions to this guideline:
- (a) governance and people;
  - (b) dam and reservoir operation and maintenance; including monitoring of the performance of the HDPE liner;
  - (c) surveillance;
  - (d) appurtenant Structures and Gate and Valve Systems;
  - (e) intermediate dam safety reviews;
  - (f) comprehensive dam safety reviews;
  - (g) special inspections and dam safety reviews;
  - (h) emergency preparedness;
  - (i) identifying and managing dam safety issues, including providing for the immediate inspection of the dam and its associated components and accessory structures as soon as practicable after any earthquake with an intensity of VII (Very Strong) on the Modified Mercalli Scale occurs at the dam;
  - (j) information management, including the reporting to the Canterbury Regional Council, RMA Monitoring and Compliance Manager, of the results of any safety reviews; and
  - (k) audits and reviews.
- 30 The Dam Safety Management System shall be certified by an independent certifier as complying with conditions (28) and (29) of this consent. Such certification shall be provided to the Canterbury Regional Council, RMA Monitoring and Compliance Manager, prior to first filling of the dam.

- 31 The Dam Safety Management System shall be reviewed as follows:
- (a) The reviews shall be undertaken every twelve months, for the first two years of operation following the initial filling of the dam, and thereafter every five years coinciding with Comprehensive Safety Reviews and also whenever a trigger event occurs, as identified in the Dam Safety Management System.
  - (b) The reviews shall evaluate the Dam Safety Management System, the results of any inspections and any monitoring data and communications to or from the Ashburton District Council and the Canterbury Regional Council.
  - (c) The results of the review shall be recorded in writing and sent to the Canterbury Regional Council: Attention Regional Leader – Monitoring and Compliance within one month of the review occurring.
  - (d) The Dam Safety Management System shall be re-certified by an independent certifier after any change that is more than a minor or inconsequential change, and not less than once every five years. Such re-certifications shall be provided to the Canterbury Regional Council: Attention Regional Leader – Monitoring and Compliance within fifteen working days of re-certification.

#### **EMERGENCY ACTION PLAN**

- 32 No less than 20 working days before the first filling of the dam, an Emergency Action Plan (EAP) shall be submitted to the Canterbury Regional Council: Attention Regional Leader – Monitoring and Compliance for review and certification. Unless Canterbury Regional Council provides notice in writing that it is unable to certify the EAP within 20 working days of receipt of a draft EAP, it is deemed to be certified by Canterbury Regional Council. For this purposes of this condition, "Certification" means that the EAP contains all the information specified in condition (34).
- 33 The EAP shall be prepared in consultation with the Civil Defence Emergency Management Group, including the Ashburton District Council and the Canterbury Regional Council, and shall, as far as practicable, be consistent with the NZSOLD New Zealand Dam Safety Guidelines 2015, and with any Civil Defence Emergency Management Group Plan governing the Regional and District Councils pursuant to the Civil Defence Emergency Management Act 2002.
- 34 The EAP shall contain as a minimum:
- (a) Maps of land areas modelled as being subject to inundation in the event of abnormal or excess flow release and contact details for people

resident within those areas, and strategic infrastructure providers with infrastructure in those areas, where they can be ascertained;

- (b) Contingency plans for alerting people and strategic infrastructure providers with infrastructure within the identified areas of inundation and relevant Civil Defence authorities of the risk of such events;
- (c) A procedure for the identification and implementation of alternative access routes for vehicles in the event of inundation or damage to a State highway or local road, including procedures to close roads and divert vehicles away from the potential dam-break flood inundation zone in a dam safety emergency.

- 35 No less than 20 working days before the first filling of the dam, a copy of the EAP shall be provided to the Canterbury Regional Council: Attention Regional Leader – Monitoring and Compliance, the Ashburton District Council, the Canterbury District Health Board, the NZ Police, the NZ Fire Service, and the NZ Transport Agency for their information. Any input to the EAP those organisations provide will be taken into account within the EAP by the Consent Holder.
- 36 The Consent Holder shall review the EAP at least annually, timed to coincide with a review of the Civil Defence Emergency Management Group Plan specified in Condition (33).
- 37 Any emergencies associated with the activities authorised by this consent shall be undertaken in accordance with the EAP and a copy of the EAP and this resource consent shall be made available to every person involved in the operation and maintenance of the Dam.

#### **INSPECTION**

- 38 The consent holder shall ensure that a Comprehensive Dam Safety Review (CDSR) is carried out every five years by a Chartered Professional Engineer (CPEng) who is suitably qualified and experienced in the design, construction, and maintenance of medium Potential Impact Classification dams in accordance with the NZSOLD (2015) Dam Safety Guidelines. A copy of each CDSR shall be forwarded to the Canterbury Regional Council: Attention Regional Leader – Monitoring and Compliance within 30 days of the completion of each CDSR.
- 39 In the event that the inspections required by condition (38) of this Consent show, in the opinion of the Engineer, that there is a dam safety concern, the consent holder shall immediately:
- (a) Report the event to the Canterbury Regional Council: Attention Regional Leader – Monitoring and Compliance; and the Ashburton District Council, Attention: Roading and Street Services manager; and

- (b) Consult a Chartered Professional Engineer (CPEng) who is suitably qualified and experienced in the design, construction, and maintenance of medium Potential Impact Classification dams who shall be employed to take responsibility for:
  - (i) further inspection of the Dam;
  - (ii) the identification of remedial action required;
  - (iii) the recording of the details of the inspection, reasons for the fault and remedial action required, in a report, a copy of which shall be forwarded to the Canterbury Regional Council: Attention Regional Leader – Monitoring and Compliance, and the Ashburton District Council, Attention: Roading and Street Services Manager, within one month of the inspection; and
  - (iv) undertaking any required remedial works or corrective action;
- (c) The consent holder shall notify the Canterbury Regional Council: Attention Regional Leader – Monitoring and Compliance, and the Ashburton District Council, Attention: Roading and Street Services Manager, within one week of completion of the remedial action referred to above.

40 In the event of Dam failure, the consent holder shall immediately:

- (a) enact the EAP required under condition (32); and
- (b) contact a Chartered Professional Engineer (CPEng) who is suitably qualified and experienced in the design, construction, and maintenance of medium Potential Impact Classification dams who shall complete a report detailing the cause of failure and the action taken. A copy of this report shall be forwarded to the Canterbury Regional Council: Attention Regional Leader – Monitoring and Compliance, and the Ashburton District Council, Attention: Roading and Street Services Manager, within one month of the event.

#### **WATER QUALITY**

41 The dam shall be visually inspected for nuisance algae growths at least once every three months. Appropriate action shall be undertaken to manage the effects of the nuisance growths if they are encountered.

#### **WATERFOWL**

42 In consultation with Central South Island Fish & Game, the consent holder shall actively deter waterfowl from using the Dam over the first two weeks of each year's duck hunting season, to reduce the likelihood of it becoming a waterfowl



refuge. Methods to deter birds may include physical disturbance or other non-audible methods as necessary.

#### **ADMINISTRATION**

- 43 The lapsing date for the purposes of Section 125 of the RMA 1991 shall be 5 years from the date consent is issued.
- 44 Pursuant to Section 128(1) of the Resource Management Act 1991, the Consent Authority may serve notice of its intention to review the conditions of this consent within a period of three months commencing on each anniversary of the date of issue of the consent for any of the following purposes:
- (a) To deal with any adverse effects on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage; or
  - (b) To require the Consent Holder to adopt the best practicable option to mitigate any adverse effect upon the environment; or
  - (c) To deal with any other adverse effect on the environment on which the exercise of the consent may have any influence.
- 45 If this consent is not exercised before 30 September 2022, it shall lapse in accordance with section 125 of the Resource Management Act 1991.

## **APPENDIX D**

<b>CONSENT AUTHORITY:</b>	Canterbury Regional Council
<b>CONSENT HOLDER:</b>	Barrhill Chertsey Irrigation Limited
<b>CONSENT TYPE:</b>	To take groundwater for dewatering
<b>ACTIVITY AUTHORISED:</b>	CRC173286
<b>SITE LOCATION:</b>	577 Barkers Road, Highbank 7782, Canterbury
<b>CONSENT DURATION:</b>	5 years

### **SCOPE**

- 1 All activities authorised by this consent shall be undertaken in general accordance with the Application submitted to Canterbury Regional Council on 16 November 2016, and the subsequent minor amendments to the application made on 24 February 2017, except where the Application and amendments are inconsistent with these conditions (in which case these conditions prevail.)
- 2 The take of water shall be limited to the taking of water for the purposes of site dewatering during site earthworks at the site labelled Ākarana Storage Pond (the "Dam") located within Lot 6 DP 1996, 577 Barkers Road, Methven, at or about map reference Topo50 BX21:9408-7217, as shown on Plan CRC173285, which forms part of this consent.
- 3 The dewatering operation shall:
  - (a) Not exceed six months from the commencement of dewatering (which for the avoidance of doubt may commence after the commencement of the Construction Works); and
  - (b) Be limited to that reasonably necessary to lower and sustain the level of groundwater to no more than 0.5 metres below the deepest excavation;
  - (c) Not, in combination with other takes, cause ground subsidence.

### **ADMINISTRATION**

- 4 The lapsing date for the purposes of Section 125 of the RMA 1991 shall be 5 years from the date consent is issued.

- 5       The Canterbury Regional Council may annually, on the last working day of May or November, serve notice of its intention to review the conditions of this consent for the purposes of:
- (a)     Dealing with adverse effect on the environment which may arise from the exercise of this consent and which is not appropriate to deal with at a later stage; or
  - (b)     Requiring the adoption of the best practicable option to remove or reduce any adverse effect on the environment.

## **APPENDIX E**

<b>CONSENT AUTHORITY:</b>	Canterbury Regional Council
<b>CONSENT HOLDER:</b>	Barrhill Chertsey Irrigation Limited
<b>CONSENT TYPE:</b>	To discharge construction-phase stormwater and dewatering water to land
<b>ACTIVITY AUTHORISED:</b>	CRC173287
<b>SITE LOCATION:</b>	577 Barkers Road, Highbank 7782, Canterbury
<b>CONSENT DURATION:</b>	5 years

### **SCOPE**

- 1 All activities authorised by this consent shall be undertaken in general accordance with the Application submitted to Canterbury Regional Council on 16 November 2016, and the subsequent minor amendments to the Application made on 24 February 2017, except where the Application and amendments are inconsistent with these conditions (in which case these conditions prevail.)
- 2 The discharge shall be only:
  - (a) Sediment-laden stormwater during site construction; and
  - (b) Dewatering water during site construction.
- 3 The discharges described in Condition (2) shall only be from the site labelled Ākarana Storage Pond ("the Dam") located within Lot 6 DP 1996, 577 Barkers Road, Methven, at or about map reference Topo50 BX21:9408-7217, as shown on Plan CRC173285, which forms part of this consent.

### **EROSION AND SEDIMENT CONTROL PLAN**

- 4 The consent holder shall prepare an ESCP, subject to the following conditions:
  - (a) No less than one month before the commencement of any Construction Works, a copy of the ESCP shall be submitted to the Canterbury Regional Council: Attention Regional Leader – Monitoring and Compliance for review and certification. All activities authorised by this consent must be carried out in accordance with the ESCP.

- (b) Unless Canterbury Regional Council provides notice in writing that it is unable to certify the ESCP within 20 working days of receipt of a draft ESCP, it is deemed to be certified by the Canterbury Regional Council. For the purposes of this condition, "Certification" means that the ESCP contains all the information specified in Condition 7(c).
- (c) The ESCP shall include:
- (i) A site drainage plan;
  - (ii) Details of any anticipated earth excavation and compaction requirements;
  - (iii) A schedule detailing the anticipated staging of the Construction Works including:
    - Site preparation works;
    - Any equipment or plant mobilisation necessary for carrying out the construction works;
    - Any field verification requirement.
  - (iv) Measures to avoid or minimise any sediment entering exposed groundwater or Rangitata Diversion Race or being tracked onto roadways or neighbouring properties;
  - (v) Details of compliance checks, and any maintenance necessary to ensure that measures required under the ESCP or this consent are performing effectively.
  - (vi) Identification of persons responsible for carrying out the actions within the ESCP including their contact details.
- (d) Any amendments or revisions to the ESCP must be submitted to Canterbury Regional Council: Attention Regional Leader – Monitoring and Compliance.

#### **GENERAL**

- 5 During construction, all practicable measures shall be undertaken to minimise discharges of sediment-laden runoff, including the construction of a bund along the pond construction site and the boundary of the property.
- 6 The Consent Holder shall be responsible for all the contracted operations relating to the exercise of this consent and shall ensure that all personnel working on the site are aware of the consent conditions, have access to the contents of this consent document and shall ensure compliance with consent conditions.

## **HAZARDOUS SUBSTANCE MANAGEMENT**

- 7 The consent holder shall take all practicable measures to avoid spills of fuel or any other contaminants. In the event of a spill of fuel or any other hazardous substances, the following shall be undertaken:
- (a) All practicable measures shall be taken to prevent the spill being discharged into land via the stormwater system;
  - (b) The spill shall be cleaned up as soon as practicable and any contaminants that accumulate in the stormwater system shall be removed and the spill area shall be inspected and cleaned, and measures shall be taken to prevent reoccurrence.
  - (c) The consent holder shall provide the Canterbury Regional Council, Attention: Regional Leader Monitoring and Compliance, with the following information within 24 hours of a spill:
    - (i) The date, time, location and estimated volume of the spill;
    - (ii) The cause of the spill;
    - (iii) The type of contaminant(s) spilled;
    - (iv) Clean up procedures undertaken including evidence of appropriate disposal;
    - (v) Details of the steps taken to control and remediate the effects of the spill on the receiving environment;
    - (vi) An assessment of any potential effects of the spill; and
    - (vii) Measures to be undertaken to prevent a reoccurrence.
- 8 Any material, including sediment, hydrocarbons and other contaminants, removed in the exercising of this consent shall be disposed of at a location or facility authorised to receive such material.

## **ACCIDENTAL DISCOVERY PROTOCOL – WASTE MATERIALS/ CONTAMINATED SOILS**

- 9 In the event of encountering visual or olfactory indicators of waste materials and/or soil contamination or an uncontrolled discharge of contaminants (i.e. inadvertent rupturing/dislodgement of containers or drums that may be present containing liquid) the consent holder or its contractors shall immediately comply with the Accidental Discovery Protocol prepared for the site by Pattle Delamore Partners Limited, titled Accidental Discovery Protocol for Encountering Waste Materials/Contaminated Soils – Water Storage Pond Construction at 577 Barkers Road, Methven, dated 15 August 2016, attached to and forming part of this consent.

#### **ADMINISTRATION**

- 10 The lapsing date for the purposes of Section 125 of the RMA 1991 shall be 5 years from the date consent is issued.
- 11 The Canterbury Regional Council may, once per year, on any of the last five working days of May or November, serve notice of its intention to review the conditions of this consent for the purposes of:
  - (a) Dealing with any adverse effect on the environment which may arise from the exercise of this consent; or
  - (b) Requiring the consent holder to carry out monitoring and reporting instead of, or in addition to, that required by the consent.

## **APPENDIX F**

<b>CONSENT AUTHORITY:</b>	Canterbury Regional Council
<b>CONSENT HOLDER:</b>	Barrhill Chertsey Irrigation Limited
<b>CONSENT TYPE:</b>	To discharge contaminants (dust and smoke) to air
<b>ACTIVITY AUTHORISED:</b>	CRC173288
<b>SITE LOCATION:</b>	577 Barkers Road, Highbank 7782, Canterbury
<b>CONSENT DURATION:</b>	5 years

### **SCOPE**

- 1 All activities authorised by this consent shall be undertaken in general accordance with the Application submitted to Canterbury Regional Council on 16 November 2016, and the subsequent minor amendments to the application made on 24 February 2017, except where the Application and amendments are inconsistent with these conditions (in which case these conditions prevail.)
  - (a) The discharges of contaminants into air shall only be:
  - (b) dust produced from the following activities:
  - (c) Excavation;
  - (d) Earthmoving;
  - (e) Stripping and stockpiling soil;
  - (f) Transport of materials;
  - (g) Formation of dam embankments;
  - (h) Screening of aggregate and excavated material;
  - (i) Vehicle movements;
  - (j) Placing and anchoring of geomembrane; and
  - (k) Placement of clean, engineered materials.
  - (l) smoke and fumes from the combustion of diesel to power screening plant.



- 2 The discharges described in Condition (2) shall only be from the site labelled Ākarana Storage Pond (the "Dam") located within Lot 6 DP 1996, 577 Barkers Road, Methven, at or about map reference Topo50 BX21:9408-7217, as shown on Plan CRC173285, which forms part of this consent.
- 3 There shall be no discharge of dust or the products of combustion as a result of the exercise of this consent that causes a noxious, dangerous, offensive or objectionable effect beyond the boundary of the site on which the discharge occurs.

#### **DUST MANAGEMENT PLAN**

- 4 Prior to the commencement of the activities referred to in Condition (2), the Consent Holder shall prepare and implement a Dust Management Plan (DMP) subject to the following conditions:
  - (a) No less than one month before the commencement of the activities referred to in Condition (2), a copy of the DMP shall be submitted to the Canterbury Regional Council: Attention Regional Leader – Monitoring and Compliance for review and certification. All activities authorised by this consent must be carried out in accordance with the DMP.
  - (b) Unless Canterbury Regional Council provides notice in writing that it is unable to certify the DMP within 10 working days of receipt of a draft DMP, it is deemed to be certified by the Canterbury Regional Council. For the purpose of this condition, "Certification" means that the DMP contains all the information specified in Condition 5 (c).
  - (c) The DMP shall include:
    - (i) A description of the dust sources on site;
    - (ii) Methods used for controlling dust at each source during construction, including excavation, earthmoving, stripping and stockpiling of materials, transport of materials, formation of dam embankments, screening of aggregate, vehicle movements;
    - (iii) An implementation schedule detailing the anticipated time of stages associated with the construction works; including
    - (iv) Site preparation works;
    - (v) Any equipment or plant mobilisation necessary for carrying out the construction works;
    - (vi) Works staging, and any field verification requirements;
    - (vii) Procedures for managing dust when staff are not on site;

- (viii) Details of inspection of site management measures, and any maintenance necessary to ensure that measures are performing effectively;
- (ix) A method for recording and responding to complaints;
- (x) Identification of persons responsible for carrying out the actions within the DMP; and
- (xi) Any amendments or revisions to the DMP must be submitted to Canterbury Regional Council.

#### **GENERAL**

- 5 The Consent Holder shall be responsible for all the contracted operations relating to the exercise of this consent and shall ensure that all personnel working on the site are aware of the consent conditions, and the DMP, and have access to the contents of this consent document and DMP and shall ensure compliance with these documents.

#### **COMPLAINTS**

- 6 The Consent Holder shall record the details of any complaints received regarding the discharge of dust, fumes and smoke arising from the activities referred to in Condition (2). The record shall include but not be limited to:
- (a) Location where the discharge was detected by the complainant;
  - (b) Date and time when the discharge was detected;
  - (c) A description of the wind speed and wind direction when the discharge was detected by the complainant;
  - (d) The most likely cause of the discharge detected; and
  - (e) Any corrective action undertaken by the Consent Holder to avoid, remedy or mitigate the discharge detected by complainant.
- 7 A copy of the record shall be provided to Canterbury Regional Council: Attention Regional Leader – Monitoring and Compliance, on request.

#### **ADMINISTRATION**

- 8 The lapsing date for the purposes of Section 125 of the RMA 1991 shall be 5 years from the date consent is issued.
- 9 The Canterbury Regional Council may annually on the last five working days of May or November each year, serve notice of its intention to review the conditions of this resource consent for the purposes of:

- (a) Dealing with any adverse effect on the environment which may arise from the exercise of this onset and which it is appropriate to deal with at a later stage; or
- (b) Requiring the consent holder to carry out monitoring and reporting instead of, or in addition to, that required by the consent.

## APPENDIX G

<b>CONSENT AUTHORITY:</b>	Canterbury Regional Council
<b>CONSENT HOLDER:</b>	Barrhill Chertsey Irrigation Limited
<b>CONSENT TYPE:</b>	To discharge contaminants to land and from pond seepage
<b>ACTIVITY AUTHORISED:</b>	CRC173289
<b>SITE LOCATION:</b>	577 Barkers Road, Highbank 7782, Canterbury
<b>CONSENT DURATION:</b>	35 years

### SCOPE

- 1 All activities authorised by this consent shall be undertaken in general accordance with the Application submitted to Canterbury Regional Council on 16 November 2016, and the subsequent minor amendments to the Application made on 24 February 2017, except where the Application and amendments are inconsistent with these conditions (in which case these conditions prevail.)
- 2 The discharge shall be only contaminants from seepage water from the Ākarana Storage Pond.
- 3 The discharge described in Condition (2) shall only be from the Ākarana Storage Pond located at Lot 6 DP 1996, 577 Barkers Road, Methven, at or about map reference Topo50 BX21:9408-7217, as shown on Plan CRC173285, which forms part of this consent.

### HAZARDOUS SUBSTANCE MANAGEMENT

- 4 The consent holder shall take all practicable measures to avoid:
  - (a) spills of fuel or any other contaminants directly into the Ākarana Storage Pond; or
  - (b) water that has been contaminated via spills of fuel or any other contaminants being used to fill the Ākarana Storage Pond.
- 5 In the event of contamination of the Ākarana Storage Pond occurring via either mechanism referred to in condition (4), the consent holder shall provide the Canterbury Regional Council, Attention: Regional Leader Monitoring and Compliance, the following information within 24 hours of a contamination event:

- (a) The date, time, location and estimated volume of contaminants entering the pond;
- (b) The cause of the contamination;
- (c) The type of contaminant(s) present;
- (d) Details of any steps taken to control and remediate the effects of the contamination on water quality due to seepage from the pond;
- (e) An assessment of any potential effects of the contamination on water quality due to seepage from the pond; and
- (f) Measures to be undertaken to prevent a reoccurrence.

#### **ADMINISTRATION**

- 6 The lapsing date for the purposes of Section 125 of the RMA 1991 shall be 5 years from the date consent is issued.
- 7 The Canterbury Regional Council may, once per year, on any of the last five working days of November, serve notice of its intention to review the conditions of this consent for the purposes of:
  - (a) Dealing with any adverse effect on the environment which may arise from the exercise of this consent; or
  - (b) Requiring the consent holder to carry out monitoring and reporting instead of, or in addition to, that required by the consent.
- 8 If this consent is not exercised before 30 September 2022, it shall lapse in accordance with section 125 of the Resource Management Act 1991.