

BEFORE THE ENVIRONMENT COURT  
AT AUCKLAND

I MUA I TE KŌTI TAIAO O AOTEAROA  
KI TĀMAKI MAKURAU

**Decision No. [2020] NZEnvC 138**

IN THE MATTER of the Resource Management Act 1991  
AND of an appeal pursuant to s 120 of the Act  
BETWEEN EYRE COMMUNITY ENVIRONMENTAL  
SAFETY SOCIETY INCORPORATED  
(ENV-2014-CHC-000057)  
Appellant  
AND CHRISTCHURCH REGIONAL COUNCIL  
and WAIMAKARIRI DISTRICT COUNCIL  
Respondents  
AND WAIMAKARIRI IRRIGATION LIMITED  
Applicant

Court: (Then) Chief Environment Court Judge L J Newhook, now  
Alternate Environment Judge

Judicial Settlement Conference: In Christchurch, 16 June 2020; Final drafts filed 5 August 2020.

Representatives of Parties: E Chapman for the Appellant  
B G Williams for the Applicant  
M C Dysart for the Regional Council  
A J Schulte for the District Council

Date of Decision: 28 August 2020

Date of Issue: 28 August 2020

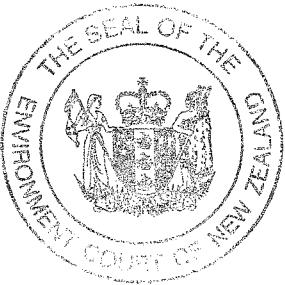
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**FINAL DECISION OF THE ENVIRONMENT COURT**

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A: All consents granted subject to conditions attached to this decision.  
B: Costs reserved.

Eyre Community Environmental Safety Society Incorporated v Canterbury Regional Council & Ors



## REASONS

### **Introduction**

[1] On 10 April 2019, the Court issued a Second Interim Decision on the appeal against consents seeking to authorize the construction and operation of an off-stream storage dam at the corner of Wrights Road and Dixon's Road, Burnt Hill, North Canterbury.<sup>1</sup>

[2] That decision had followed an earlier Interim Decision.<sup>2</sup> In the second interim decision the Court indicated that grant of consent was foreshadowed, subject to it being satisfied as to certain matters called for in the decision; and directing that a revised final set of conditions be lodged within 30 working days of the decision; and that a further 30 working days was set for consultation among parties leading to agreement or further timetable.

[3] As had occurred between the first and second interim decisions, a considerable amount of time went by. It is my understanding that this was occasioned by considerable work and discussion being undertaken among the parties and their experts.

[4] Early this year the parties signaled that they had reached agreement on most of the draft conditions of consent but were stuck on a small number of matters. They invited me to conduct a Judicial Settlement Conference to endeavor to resolve those matters. Government controls on traveling and gatherings due to COVID-19 intervened and delayed the holding of the conference until mid-June.

[5] By the time of the conference the parties had resolved all matters excepting draft conditions about public liability insurance. I indicated that they should each appoint a senior insurance lawyer to advise them, the insurance lawyers then to hold an expert conference to endeavor to reach agreement. This has now occurred after some further delays occasioned by restrictions due to COVID-19.

[6] I have now reviewed the final proposed conditions of consent relating to all consents appealed from decisions of both Canterbury Regional Council and

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<sup>1</sup> *Eyre Community Environmental Safety Society v Canterbury Regional Council and Waimakariri District Council* [2019] NZEnvC 71.

<sup>2</sup> *Eyre Community Environmental Safety Society v Canterbury Regional Council and Waimakariri District Council* [2016] NZEnvC 178.



Waimakariri District Council.

[7] As recorded in the second decision<sup>3</sup> the matters requiring resolution were:

- Seismic assessment (post Kaikoura earthquake)
- Engineering design of the dam
- Quality control for the HDPE liner
- Embankment monitoring and failure detection systems
- Practicality and effectiveness of the Emergency Action Plan and the Emergency Evacuation Plan
- Hydraulic modelling
- Scope relating to de-watering
- Ongoing monitoring of embankments and ponds
- Insurance

[8] With a few minor corrections I have made, I am satisfied with the final drafts of conditions of consent. (My changes relate mainly to requiring approvals of certain steps to be undertaken by the Manager Monitoring and Compliance of the Regional council rather than the whole council itself in some instances, and to require checking and certification in others where not drafted in by the parties).

[9] I attach as Annexure 1 the conditions for the Canterbury Regional Council consents which are now granted on those terms.

[10] I attach as Annexure 2 the conditions for the Waimakariri District Council consents which are now granted on those terms.

[11] Costs are reserved but are very unlikely to be an issue given the high level of constructive input by all parties and their advisors, culminating in solutions largely agreed among the parties in the final stages.



Paragraph [13].

For the court:

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**L J Newhook**  
**Alternate Environment Judge**



## ANNEXURE 1

### CRC122897 - to use land for earthworks associated with the construction, use, and maintenance of storage ponds and associated infrastructure

#### Activity authorised

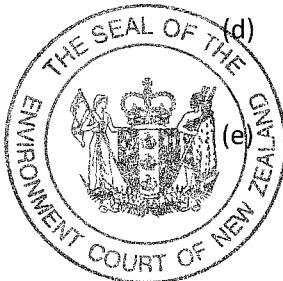
- 1 The works shall be limited to the use of land to excavate material for the purposes of the construction, use and maintenance of storage ponds and associated infrastructure which shall occur on land parcel Lot 1 DP 27020, located on the corner of Wrights Road and Dixons Road, Burnt Hill, at or about map reference Topo BW22:3480-9720, as shown on **Plan CRC122897A** (the site), which forms part of this consent.
- 2 Except as required by the subsequent conditions, the Waimakariri Irrigation Storage Ponds shall be constructed and used in accordance with the information submitted with the application and as amended through the hearing of the applications:
  - (a) in a joint hearing between the Canterbury Regional Council and the Waimakariri District Council;
  - (b) in the hearing of an appeal to the Environment Court, with a final decision of the Environment Court being issued on 28 August 2020, and including:
  - (c) the document entitled *Assessment of Environmental Effects for the Construction and use of Wrights Road Storage Ponds*, prepared for Waimakariri Irrigation Limited by Pattle Delamore Partners, dated November 2013;
  - (d) the report entitled *Waimakariri Irrigation Ponds – Design Report*, prepared for Waimakariri Irrigation Limited by Damwatch (Issue 4 – dated 9 December 2015), including *Construction Drawings (Design Report)*; and *Technical Specifications (Issue 5) (Technical Specifications)*, and in each case inclusive of any approved amendments or updates.

#### Review and certification

- 3 Where a condition of this consent refers to a *review or certification by an independent certifier*, unless the context otherwise requires, that means:
  - (a) the reviewer or certifier shall be a suitably qualified and registered Chartered Professional Engineer and who, where the review or certification relates to matters of dam design, construction, or the preparation and peer review of documentation required for large dams, has a minimum of 10 years' experience in those activities and is a *Category A Recognised Engineer* for the purposes of the *New Zealand Society on Large Dams (NZSOLD) New Zealand Dam Safety Guidelines 2015 (NZSOLD Guidelines)*;
  - (b) the reviewer or certifier shall be independent of the Consent Holder, dam designers and construction contractors;
  - (c) the reviewer or certifier shall be approved by the Manager, RMA Monitoring and Compliance, Canterbury Regional Council;

(d) the Consent Holder is responsible for appointing the reviewer or certifier and all costs of certification;

(e) the Consent Holder shall implement any documentation changes and remedial actions recommended by the reviewer or certifier; and



(f) the Consent Holder shall provide to the Manager, RMA Monitoring and Compliance, Canterbury Regional Council, written certification from the reviewer or 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 Guidelines* including any amendment or update current at the time of certification and the documents listed in condition 2.

*Advisory note: When determining the independent certifier for the purposes of this consent, preference shall be given to, if available, engaging one of the Peer Reviewers involved in the original consent application on the basis of familiarity with the project.*

## PRE-CONSTRUCTION

### **Construction Management Plan**

4 At least three months prior to construction commencing on site, the Consent Holder shall provide to the Manager, RMA Monitoring and Compliance Canterbury Regional Council, a final Waimakariri Irrigation Storage Ponds Construction Management Plan (CMP). The CMP shall:

- (a) be prepared by a suitably qualified and experienced person(s); and
- (b) contain certification by a suitably qualified and experienced person(s) that the CMP meets the objectives and performance standards set out in conditions 8 and 9.

5 Construction work and associated activities shall not commence at the site until: the CMP has been accepted by the Manager, RMA Monitoring and Compliance, Canterbury Regional Council; and the Consent Holder has received written notice of acceptance; and the first meeting is held with the Community Liaison Group (CLG).

6 Should the Manager, RMA Monitoring and Compliance, Canterbury Regional Council refuse to accept the CMP in accordance with the conditions, the Consent Holder shall provide a revised CMP to the Canterbury Regional Council for acceptance as soon as is practicable.

7 All activities authorised under this consent shall be undertaken in accordance with the CMP, which will be monitored by the Waimakariri District Council (WDC) and Canterbury Regional Council.

*Advisory note: where necessary WDC and Canterbury Regional Council will determine which is to be the lead agency on particular aspects of the CMP where joint responsibilities exist and will advise the Consent Holder and the CLG accordingly.*

### **Construction objectives for CMP**

8 The objectives for the CMP for all construction activities managed under it are to:

- (a) ensure that the construction activities achieve compliance with the conditions of consent for these activities;
- (b) minimise the release of sediment, either to water or to air, during construction activities;

provide a method to ensure that the Consent Holder's contractors and agents implement the CMP, so that compliance with conditions of consent for construction effects can be achieved;



- (d) ensure all construction is undertaken in accordance with methods that provide for a review by an independent expert (as determined in accordance with the *NZSOLD Guidelines* in dam quality assurance) of the overall construction methodology;
- (e) ensure a copy of the current CMP is available on-site at all times;
- (f) minimise the extent or time that areas of the site are disturbed; and
- (g) integrate good environmental practice into construction activities.

**Performance standards for CMP**

9 The CMP shall include, but not be limited to:

- (a) the steps that will be undertaken during construction to ensure the Waimakariri Irrigation Ponds - Technical Specification and the conditions of this consent are complied with;
- (b) methods of the works, including but not limited to, the staging of the works, the site layout plan and procedures to be used;
- (c) an erosion and sediment control plan prepared in accordance with conditions 19 and 20 below;
- (d) details of measures to be identified and implemented to avoid the entrainment of oil, fuels or any other hazardous substances in stormwater, with particular emphasis on re-fuelling areas and repair areas;
- (e) details of the interrelationship with the quality assurance programme, including the review by an independent expert in dam quality assurance of construction processes as required by conditions 10 to 16 of this consent;
- (f) details on how compliance with the Worksafe Good Practice Guideline for Excavation Safety (July 2016) will be achieved;
- (g) details of measures to be identified and implemented to prevent unauthorised access to and/or the unauthorised deposition of material into the excavated areas; and
- (h) details addressing the need to avoid rocks puncturing the liner or incorporation of that information into Technical Specification, Section 4.4

**Quality Assurance and Quality Control Plan**

- 10 Prior to construction activities commencing on the site the Consent Holder must prepare a Quality Assurance and Quality Control Plan to be incorporated into the Construction Management Plan.
- 11 The Consent Holder shall appoint a suitably qualified and registered Chartered Professional Engineer who has a minimum of 10 years' experience in dam design, construction, and the preparation and peer review of documentation required for large dams, and who is a *Category A Recognised Engineer* for the purposes of the *NZSOLD Guidelines* to act as an independent certifier to ensure the Quality Assurance and Quality Control Plan is being complied with at all times (the *Quality Assurance Reviewer*).

Construction activities shall not commence at the site until the Quality Assurance and Quality Control Plan has been accepted by the Manager, RMA Monitoring and Compliance,



Canterbury Regional Council and that acceptance advised by notice in writing to the Consent Holder.

- 13 Should the Manager, RMA Monitoring and Compliance, Canterbury Regional Council refuse to accept the Quality Assurance and Quality Control Plan in accordance with these conditions, the Consent Holder shall provide a revised Quality Assurance and Quality Control Plan to the Canterbury Regional Council for acceptance as soon as is practicable.
- 14 All construction activities authorised under this consent shall be undertaken in accordance with the Quality Assurance and Quality Control Plan.

**Objectives of the Quality Assurance and Quality Control Plan**

- 15 The objectives of the Quality Assurance and Quality Control Plan shall be to:
  - (a) ensure that the construction activities achieve compliance with the conditions of consent for these activities;
  - (b) ensure that the Technical Specification is complied with at all times during construction;
  - (c) provide for:
    - (i) quality planning – as to which quality standards are relevant to the construction process throughout the duration of construction;
    - (ii) quality assurance – as to evaluating the construction undertaken on a regular basis to provide confidence that the project will satisfy the relevant quality standards; and
    - (iii) quality control – as to monitoring specific information as necessary to enable determination of compliance with the relevant quality standards as set out in the Technical Specification and the conditions of this consent.

**Performance standards for the Quality Assurance and Quality Control Plan**

- 16 The Quality Assurance and Quality Control Plan shall include, but not be limited to
  - (a) ensuring the embankment construction meets the requirements of section 4.1.3 of the Technical Specification (including all associated piping and control structures) and the conditions of this consent;
  - (b) detail on how the HDPE geomembrane liner complies with the Technical Specification, the conditions of this consent and all management plans, including:
    - (i) the QA/QC Manual and summary inspection test and test plan required by section 6.6.2 of the Technical Specification;
    - (ii) the results of manufacturer and external laboratory testing of the geomembrane liner and the adequacy of testing to ensure it has the properties set out in section 6.5 of the Technical Specifications;
    - (iii) the accurate identification of enhanced geomembrane liner rolls for pond corner areas set out in section 6.9.5 of the Technical Specifications;
    - (iv) the installation of the geomembrane liner and test coupons as required by the Technical Specification and the conditions of this consent and consent CRC120610; and



- (v) methods for ensuring the on-going monitoring complies with the Technical Specification and the conditions of this consent;

and

- (c) the review by the Quality Assurance Reviewer of all information relating to construction activities that is to be received by the Canterbury Regional Council under the conditions of this consent, and procedures to ensure that review.

#### **Maximum depth of excavations**

17 Prior to any construction occurring on the site, the natural ground level shall be identified and recorded utilising conventional land survey methodology. The maximum depth of excavation shall not exceed 6 metres below that established natural ground level.

## **CONSTRUCTION**

#### **Supervision, implementation, and amendment of the Construction Management Plan**

18 The Consent Holder shall comply with the certified CMP and Quality Assurance and Control Plan at all times.

19 The CMP shall include details of the name, experience and qualifications of the Quality Assurance Reviewer.

20 The CMP (including the Quality Assurance and Control Plan) shall be reviewed by the Consent Holder and the person nominated in accordance with condition 19 every three months following the commencement of the construction works. The review shall evaluate the CMP, any entries in the complaints register (as required as a part of the conditions of WDC consent **RC135478**) and any monitoring data and communications to, or from, the WDC and the Canterbury Regional Council. The results of the review shall be recorded in writing and sent to the Manager, RMA Monitoring and Compliance, Canterbury Regional Council, within two weeks of the completion of the review. If necessary, the CMP shall be reviewed by a suitably qualified and experienced person to improve its effectiveness in delivering the objectives and matters provided for in these conditions and to ensure compliance with the conditions of this consent.

#### **Erosion and Sediment Control**

21 Any amendment of the CMP shall be subject to certification in accordance with condition 3 and provided to the Manager, RMA Monitoring and Compliance, Canterbury Regional Council. Construction activities subject to the variation shall not commence until the variation has been accepted by the Canterbury Regional Council and notified in writing to the Consent Holder.

22 The Consent Holder shall:

- (a) adopt and implement the best practicable option to prevent the discharge of sediment and contaminants into excavated land and surface water. This shall include but not be limited to:
  - (i) measures necessary to provide for soakage of stormwater;
  - (ii) inclusion or maintenance of a vegetated strip between earthworks and water races;



- (iii) siting of stockpiles to prevent sediment-entrained runoff entering races or going off-site;
- (iv) stabilisation and maintenance of site entrances from public roads;

and

- (b) ensure that erosion and sediment control measures are established and maintained in general accordance with Environment Canterbury's "*Erosion and Sediment Control Toolbox for the Canterbury Region*" which can be accessed under <http://esccanterbury.co.nz/>.

**Importation of materials**

- 23 Where it is necessary to import material to the site to construct, use and maintain the storage ponds the imported material shall meet the criteria of clean fill (as defined in the Ministry for the Environment guide to Managing Cleanfills).
- 24 The delivery of cleanfill material sourced outside of the site shall be supervised by the Consent Holder (or designated agent) at all times. A record of all material brought onto the site shall be kept. The record shall include:
  - (a) the name of the person and company that delivered the clean fill to the site;
  - (b) the date of deposition;
  - (c) the source of the material;
  - (d) a description of the material;
  - (e) the volume of the material deposited; and
  - (f) where on the site the material is deposited.

**Notification**

- 25 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 and have a copy this consent and shall ensure compliance with consent conditions.
- 26 The Manager, RMA Monitoring and Compliance, Canterbury Regional Council, shall be notified of:
  - (a) the intention to exercise this consent at least three months prior to the commencement of any activities under this consent;
  - (b) the imminent commencement of works, no more than seven days and no less than 48 hours prior to the commencement of the works authorised by this consent;
  - (c) the intention to complete construction works, no more than six months and no less than three months prior to the cessation of construction activity; and

(d) the date construction activity ceases, no more than 48 hours after construction activity ceases.



**Accidental discovery**

27 In the event of any disturbance to Koiwi Tangata (human bones) or taonga (treasured artefacts), the Consent Holder shall immediately follow the Accidental Discovery Protocol set out in Appendix 3 of the Mahaanui Iwi Management Plan, and attached to, this consent as **Attachment CRC122897A**.

**Review**

28 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 dealing with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage.

**Administrative charges**

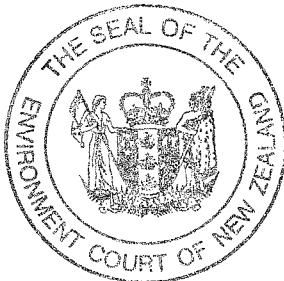
29 The Consent Holder shall pay to the Canterbury Regional Council any administrative charges fixed in accordance with s 36 RMA. The administrative charges shall be paid to the Canterbury Regional Council for the carrying out of its functions in relation to the administration, monitoring and supervision of this consent and for carrying out its functions under s 35 RMA.

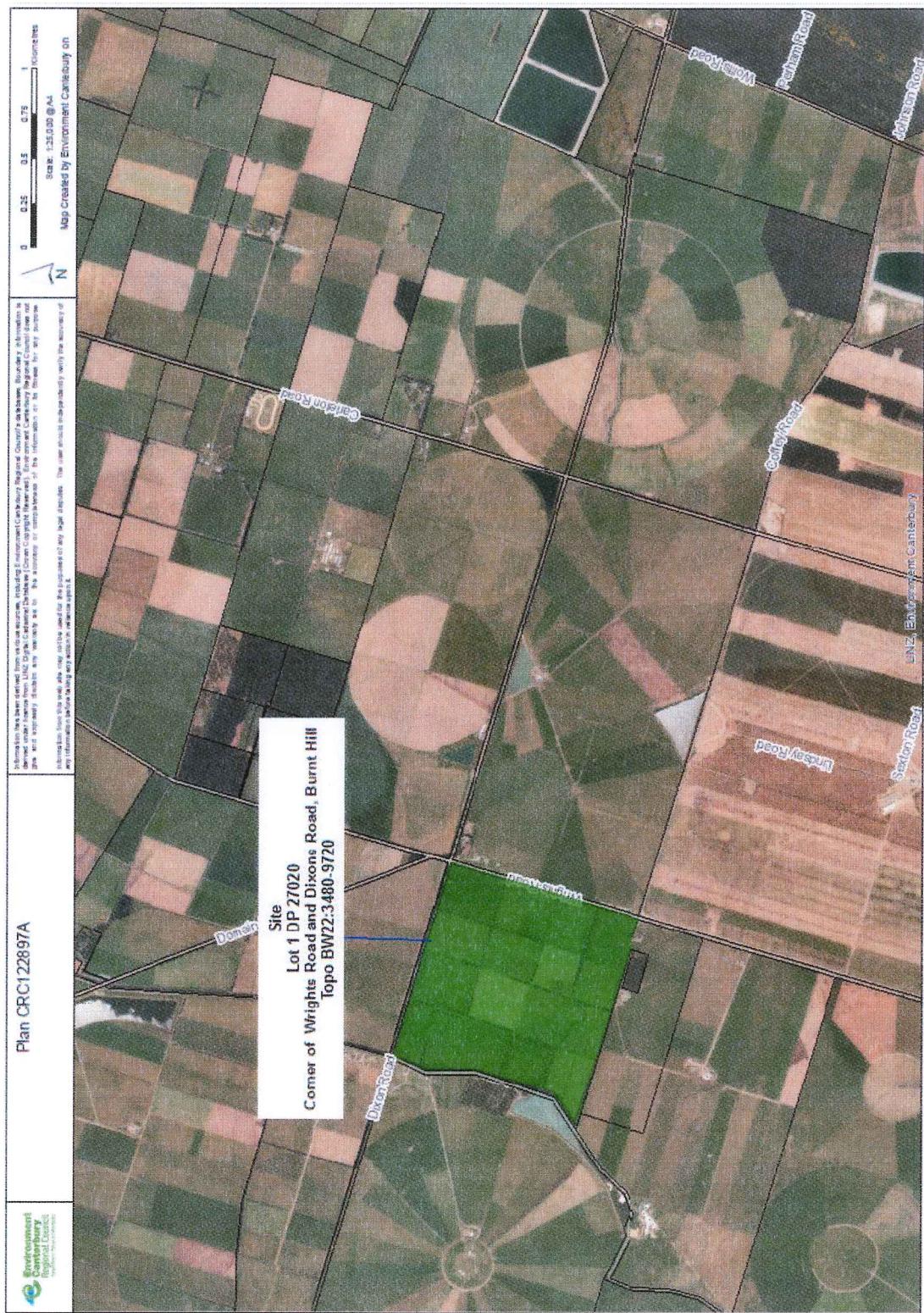
**Other charges or costs**

30 The Consent Holder shall pay all costs relating to certification or engagement of others to undertake any actions or services required in terms of these conditions.

**Lapse date**

31 The lapsing date for the purposes of s 125 shall be five years from the commencement of this consent.





**Accidental Discovery Protocol**

- 1 In the event of any discovery of archaeological material the Consent Holder shall immediately
  - (a) cease earthmoving operations in the affected area and mark off the affected area; and
  - (b) advise the Canterbury Regional Council of the disturbance; and
  - (c) advise the Heritage New Zealand Pouhere Taonga of the disturbance.
- 2 If the archaeological material is determined to be Kōiwi Tangata (human bones) or taonga (treasured artefacts) by the Heritage New Zealand Pouhere Taonga, the Consent Holder shall immediately advise the office, of the appropriate rūnanga/ Kaitiaki Rūnanga (office contact information can be obtained from the Canterbury Regional Council), of the discovery.
- 3 If the archaeological material is determined to be Kōiwi Tangata (human bones) by Heritage New Zealand Pouhere Taonga, the Consent Holder shall immediately advise the New Zealand Police of the disturbance.
- 4 The Consent Holder shall also consult the Kaitiaki Rūnanga on any matters of tikanga (protocol) that are required in relation to the discovery and prior to the commencement of any investigation.
- 5 If kōiwi Tangata (human remains) are uncovered, in addition to the steps above, the area must be treated with utmost discretion and respect, and the kōiwi dealt with according to both law and tikanga, as guided by the Kaitiaki Rūnanga.
- 6 Work may recommence, if Heritage New Zealand Pouhere Taonga, (following consultation with Kaitiaki Rūnanga if the site is of Māori origin) provides a statement in writing to the Manager, RMA Monitoring and Compliance, Canterbury Regional Council, that appropriate action has been undertaken in relation to the archaeological material discovered. The Canterbury Regional Council shall advise the Consent Holder on written receipt from Heritage New Zealand Pouhere Taonga that work can recommence.

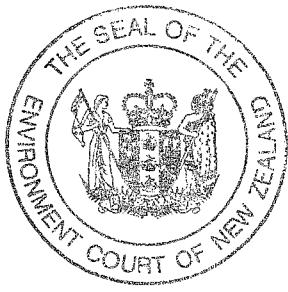
*Advisory:*

- *There may be in addition agreements between the Consent Holder and the Papatipu Rūnanga. (Cultural Site Accidental Discovery Protocol).*
- *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 Māori 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/kōiwi may date to any historic period.*



*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.*



**CRC122898 - to use land to store and use up to 10,000 litres of diesel and other hazardous substances in an above ground portable fuel storage container**

- 1 The land use shall be for the use and storage of diesel fuel oil and oils and greases in mobile or temporary stationary storage containers, and shall include the following:
  - (a) delivery of fuel;
  - (b) refilling the mobile storage containers;
  - (c) dispensing of diesel fuel oil from the mobile storage containers; and
  - (d) dispensing of diesel fuel from delivery trucks.
- 2 The land use described in condition 1 above shall occur at land parcel Lot 1 DP 27020, located on the corner of Wrights Road and Dixons Road, Burnt Hill, at or about map reference Topo BW22:3480-9720, as shown on **Plan CRC122898A**, which forms part of this consent.
- 3 There shall be no storage of fuel or refuelling of machinery within 50 metres of any surface water body or intercepted groundwater.
- 4 The total aggregate storage capacity of the mobile or temporary stationary diesel storage containers shall not exceed 10,000 litres.
- 5 The mobile and temporary diesel storage containers shall be within a bunded enclosure with a containment volume of not less than 110 percent of that of the storage volume.
- 6 The total aggregate quantity of oils and greases stored shall not exceed 300 litres.
- 7 An overfill device shall be used on each storage container, where practicable.
- 8 All mobile storage containers shall comply with the Hazardous Substances (Tank Wagons and Transportable Containers) Regulations 2004.
- 9 All hazardous substances on site shall be stored and used in accordance with the requirements under the Hazardous Substances and New Organisms Act 1996.
- 10 The Consent Holder shall ensure that the hazardous substances are stored and used in a facility that is designed, constructed and managed to prevent the uncontrolled release of substances or contaminated water into the environment.
- 11 The Consent Holder shall ensure stormwater generated on or over any re-fuelling areas and/or vehicle repair areas is managed such that stormwater entrained with oil/fuels/hazardous substances from these areas is not discharged to groundwater or surface waters without treatment to enable it to be disposed of.

The Consent Holder shall provide certification from an independent, suitably qualified and experienced person prior to the use of the containers used for storage of hazardous substances, that the storage system complies with the Hazardous Substances (Emergency Management) Regulations 2001 and Hazardous Substances and New Organism Act 1996.



13 The Consent Holder shall undertake a leak testing programme prior to the use of any diesel storage and provide certification to the Manager, RMA Monitoring and Compliance, Canterbury Regional Council, one month prior to their use, that the containers and any pipework have been tested by a suitably-qualified person, as being free from leaks.

14 The Consent Holder shall establish and maintain a stock reconciliation inventory system. Reconciliation shall be carried out on a monthly basis. Records of the inventory shall be provided to the Manager, RMA Monitoring and Compliance, Canterbury Regional Council upon request.

15 Access to dispensing of diesel oil, oils and greases shall only be via a security system that precludes any public access.

16 The diesel oil, oils and greases shall not be stored or distributed within 50 metres of a bore used to supply drinking water or a surface water body.

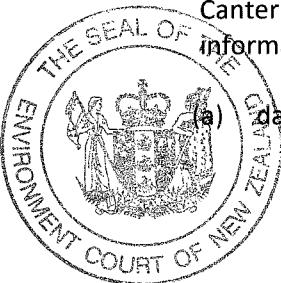
17 Weekly visual inspections of tank connections and piping for leaks shall be carried out and tank connections and piping shall be remediated as necessary. In addition, the bunded areas shall be inspected on a regular basis to ensure there is capacity to cope with a spill of hazardous substances.

18 The Consent Holder shall maintain on site at all times, measures to prevent spills entering land or water bodies, including water races. These measures shall include but not be limited to:

- (a) using a documented tank filling procedure to prevent spills during any fuel delivery. Such procedures shall include but not be limited to:
  - (i) re-fuelling procedure;
  - (ii) emergency spill procedure; and
  - (iii) staff training;
- (b) using storage containers that are free from rust and corrosion;
- (c) using catch trays with a minimum volume of 10 litres under transfer line connections, and fill points on all equipment serviced from portable containers;
- (d) making spill kits available to contain or absorb any spilled diesel fuel oil at or with each storage container;
- (e) maintaining signs to identify the location of spill kits; and
- (f) maintaining written procedures in clearly visible locations that are to be undertaken to contain, remove and dispose of any spilled diesel fuel oil.

19 In the event of an accidental spill of a hazardous substance, with a volume greater than 10 litres, the Consent Holder shall inform the Manager, RMA Monitoring and Compliance, Canterbury Regional Council, within 24 hours of a spill event and shall provide the following information:

- (a) date, time, location and estimated volume of the spill;



- (b) the cause of the spill;
- (c) the type of hazardous substance(s) spilled;
- (d) clean up procedures undertaken;
- (e) details of the steps undertaken to control and remediate the effects of the spill on the receiving environment;
- (f) an assessment of any potential effects of the spill; and
- (g) measures undertaken to prevent a recurrence.

20 The Consent Holder shall use the best practicable option to contain spills or leaks of any hazardous substance from being discharged. This shall include but not be limited to the following:

- (a) undertaking the storage and use of hazardous substances in accordance with a Spill Response Plan which shall be incorporated into the Construction Management Plan;
- (b) communicating the Spill Response Plan to all persons undertaking activities authorised by this consent and keeping a copy on site at all times;
- (c) detailing in the Spill Response Plan the methods and processes by which the Consent Holder shall use the best practicable option to prevent and contain spills or leaks of any hazardous substance from being discharged and shall include, but not be limited to:
  - (i) documenting of the hazardous substances used and stored on site (in a hazardous substance register), including the quantities and substance materials safety data safety sheets (MSDS);
  - (ii) a plan showing the location of the temporary stationary storage diesel storage tanks on the site;
  - (iii) a description of the storage, including labelling, package, storage and bunding, signage, and security;
  - (iv) refuelling, inspection and maintenance procedures;
  - (v) methods for training of staff for appropriate storage, use and emergency measures and containment of spilled hazardous substances;
  - (vi) identification of appropriate emergency measures and containment of spilled hazardous substances; and
  - (vii) details of staff responsibilities and emergency contact phone numbers including the Emergency Contact Information for the Canterbury Regional Council Incident Response Hotline.

21 A copy of the Spill Response Plan shall be prepared in accordance with the conditions of this consent and shall be provided to the Manager, RMA Monitoring and Compliance, Canterbury Regional Council at least 20 working days prior to construction commencing. Any updates or revisions to the spill response plan shall be provided to the Manager, RMA Monitoring



and Compliance, Canterbury Regional Council with 15 working days of that update or revision.

22 Any contaminants or clean up material removed from the site shall be disposed of at an appropriate facility and the Consent Holder shall provide the Manager, RMA Monitoring and Compliance, Canterbury Regional Council with written confirmation of such disposal within 10 working days.

**Administration**

23 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 and have access to the contents of this consent document and shall ensure compliance with consent conditions.

**Review**

24 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 dealing with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage.

**Administrative charges**

25 The Consent Holder shall pay to the Canterbury Regional Council any administrative charges fixed in accordance with s 36 RMA. The administrative charges shall be paid to the Canterbury Regional Council for the carrying out of its functions in relation to the administration, monitoring and supervision of this consent and for carrying out its functions under s 35 RMA.

**Other charges or costs**

26 The Consent Holder shall pay all costs relating to certification or engagement of others to undertake any actions or services required in terms of these conditions.

**Lapse date**

27 The lapsing date for the purposes of s 125 shall be five years from the commencement of this consent.





## **CRC120610 to dam up to 8.2 million m<sup>3</sup> of water**

### **Limits**

1. Water shall be diverted from the Waimakariri Irrigation Limited Buffer Pond on Lot 1 DP 3020 at map reference Topo BW22:3399-9685 and dammed on land parcel Lot 1 DP 27020 at or about map reference Topo BW22:3480-9720, located on the corner of Wrights Road and Dixons Road, Burnt Hill, and as shown on **Plan CRC120610A**, which forms part of this consent.
2. Except as required by the subsequent conditions, the Waimakariri Irrigation Storage Ponds shall be constructed and used in accordance with the information submitted with the application and as amended through the hearing of the applications:
  - (a) in a joint hearing between the Canterbury Regional Council and the Waimakariri District Council;
  - (b) in the hearing of an appeal to the Environment Court, with a final decision of the Environment Court being issued on 28 August 2020

and including:

- (c) the document entitled *Assessment of Environmental Effects for the Construction and use of Wrights Road Storage Ponds*, prepared for Waimakariri Irrigation Limited by Pattle Delamore Partners, dated November 2013;
- (d) the report entitled *Waimakariri Irrigation Ponds – Design Report*, prepared for Waimakariri Irrigation Limited by Damwatch (Issue 4 – dated 9 December 2015); including *Construction Drawings (Design Report)*; and *Technical Specifications (Issue 5) (Technical Specifications)*, and in each case inclusive of any approved amendments or updates.

### **Maximum volume and water depth**

3. The maximum volume of water dammed within the ponds at any one time shall not exceed 8.2 million cubic metres.
4. The depth of water in the dam shall not exceed 11 metres measured from natural ground level, and at all times the Consent Holder shall ensure a freeboard of 1.3 metres is available in all storage ponds. The full supply level of storage pond 1 is RL 226.70 m and that of storage pond 2 is RL 223.00 m (based on the Lyttelton Vertical Datum (LVD-37) with a level of +0.0 mRL).

### **Review and certification**

5. Where a condition of this consent refers to a *review or certification by an independent certifier*, unless the context otherwise requires, that means:
  - (a) the reviewer or certifier shall be a suitably qualified and registered Chartered Professional Engineer and who, where the review or certification relates to matters of dam design, construction, or the preparation and peer review of documentation required for large dams, has a minimum of 10 years' experience in those activities and is a *Category A Recognised Engineer* for the purposes of the *New Zealand Society on Large Dams (NZSOLD) New Zealand Dam Safety Guidelines 2015 (NZSOLD Guidelines)*;



- (b) and the reviewer or certifier shall be independent of the consent holder, dam designers and construction contractors;
- (c) the reviewer or certifier shall be approved by the Manager, RMA Monitoring and Compliance, Canterbury Regional Council;
- (d) the Consent Holder is responsible for appointing the reviewer or certifier and all costs of certification;
- (e) the Consent Holder shall implement any documentation changes and remedial actions recommended by the reviewer or certifier; and
- (f) the Consent Holder shall provide to the Manager, RMA Monitoring and Compliance, Canterbury Regional Council, written certification from the reviewer or 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 Guidelines* including any amendment or update current at the time of certification and the documents listed in condition 2.

*Advisory note: When determining the independent certifier for the purposes of this consent, preference shall be given to, if available, engaging one of the Peer Reviewers involved in the original consent application review on the basis of familiarity with the project.*

## PRE-CONSTRUCTION

### Construction Management Plan

- 6 At least three months prior to construction commencing on site, the Consent Holder shall provide to the Manager, RMA Monitoring and Compliance Canterbury Regional Council for approval, a final Waimakariri Irrigation Storage Ponds Construction Management Plan (CMP). The CMP shall:
  - (a) be prepared by a suitably qualified and experienced person(s); and
  - (b) contain certification by a suitably qualified and experienced independent person(s) that the CMP meets the objectives and performance standards set out in conditions 10 and 11.
- 7 Construction work and associated activities shall not commence at the site until the CMP has been accepted by the Manager, RMA Monitoring and Compliance, Canterbury Regional Council and the Consent Holder has received written notice of acceptance and the first meeting is held with the Community Liaison Group(CLG).
- 8 Should the Manager, RMA Monitoring and Compliance, Canterbury Regional Council refuse to accept the CMP in accordance with these conditions, the Consent Holder shall provide a revised CMP to the Canterbury Regional Council as soon as is practicable.
- 9 All activities authorised under this consent shall be undertaken in accordance with the CMP, which will be monitored by WDC and Canterbury Regional Council collaboratively in accordance with their areas of responsibility

### Construction objectives for CMP

- 10 The objectives for the CMP for all construction activities managed under it are to:



- (a) ensure that the construction activities achieve compliance with the conditions of consent for these activities;
- (b) minimise the release of sediment, either to water or to air, during construction activities;
- (c) provide a method to ensure that the Consent Holder's contractors and agents implement the CMP, so that compliance with conditions of consent for construction effects can be achieved;
- (d) ensure all construction is undertaken in accordance with methods that provide for a review by an independent expert (as determined in accordance with the *NZSOLD Guidelines* in dam quality assurance) of the overall construction methodology;
- (e) ensure a copy of the current CMP is available on-site at all times;
- (f) minimise the extent or time that areas of the site are disturbed; and
- (g) integrate good environmental practice into construction activities.

**Performance standards for CMP**

11 The CMP shall include, but not be limited to:

- (a) the steps that will be undertaken during construction to ensure the *Waimakariri Irrigation Ponds - Technical Specification* and any approved amendments or updates, and the conditions of this consent are complied with;
- (b) methods of the works, including but not limited to, the staging of the works, the site layout plan and procedures to be used;
- (c) methods that are consistent with the dam being managed to High PIC standards under the *NZSOLD Guidelines* including any amendments;
- (d) details of the interrelationship with the quality assurance programme, including the review by an independent expert in dam quality assurance of construction processes as required by conditions 12 to 18 of this consent;
- (e) details on how compliance with the Worksafe Good Practice Guideline for Excavation Safety (July 2016) will be achieved;
- (f) details of measures to be identified and implemented to prevent unauthorised access to and/or the unauthorised deposition of material into the excavated areas;
- (g) details of how the method for construction for the pipe trenches meets health and safety standards; and
- (h) details addressing the need to avoid rocks puncturing the liner or incorporation of that information into Technical Specification, Section 4.4.

**Quality Assurance and Quality Control Plan**

Prior to construction activities commencing on the site the Consent Holder must prepare a Quality Assurance and Quality Control Plan to be incorporated into the Construction Management Plan.



13 The Consent Holder shall appoint a suitably qualified and registered Chartered Professional Engineer who has a minimum of 10 years' experience in dam design, construction, and the preparation and peer review of documentation required for large dams, and who is a recognised *Category A Recognised Engineer* for the purposes of the *NZSOLD Guidelines* to act as an independent certifier to ensure the Quality Assurance and Quality Control Plan is being complied with at all times (the *Quality Assurance Reviewer*);

14 Construction work shall not commence at the site until the Quality Assurance and Quality Control Plan has been accepted by the Manager, RMA Monitoring and Compliance, Canterbury Regional Council and that acceptance advised by notice in writing to the Consent Holder.

15 Should the Manager, RMA Monitoring and Compliance, Canterbury Regional Council refuse to accept the Quality Assurance and Quality Control Plan in accordance with these conditions, the Consent Holder shall provide a revised Quality Assurance and Quality Control Plan to the Canterbury Regional Council for acceptance as soon as is practicable.

16 All construction activities authorised under this consent shall be undertaken in accordance with the Quality Assurance and Quality Control Plan.

**Objectives of the Quality Assurance and Quality Control Plan**

17 The objectives of the Quality Assurance and Quality Control Plan shall be to:

- (a) ensure that the construction activities achieve compliance with the conditions of consent for these activities;
- (b) ensure that the relevant parts of the Technical Specification are complied with at all times during construction;
- (c) provide for:
  - (i) quality planning – as to which quality standards are relevant to the construction process throughout the duration of construction;
  - (ii) quality assurance – as to evaluating the construction undertaken on a regular basis to provide confidence that the project will satisfy the relevant quality standards; and
  - (iii) quality control – as to monitoring specific information as necessary to enable determination of compliance with the relevant quality standards as set out in the Technical Specification and the conditions of this consent.

**Performance standards for the Quality Assurance and Quality Control Plan**

18 The Quality Assurance and Quality Control Plan shall include, but not be limited to:

- (a) ensuring the embankment construction meets the requirements of section 4.1.3 of the Technical Specification (including all associated piping and control structures) and the conditions of this consent;
- (b) detail on how the HDPE geomembrane liner complies with the Technical Specification, the conditions of this consent and all management plans, including:
  - the QA/QC Manual and summary inspection test and test plan required by section 6.6.2 of the Technical Specification;



- (ii) the results of manufacturer and external laboratory testing of the geomembrane liner and the adequacy of testing to ensure the properties set out in section 6.5 of the Technical Specifications;
- (iii) the accurate identification of enhanced geomembrane liner rolls for pond corner areas set out in section 6.9.5 of the Technical Specifications;
- (iv) the installation of the geomembrane liner and test coupons as required by the Technical Specification and the conditions of this consent; and
- (v) methods for ensuring the on-going monitoring complies with the Technical Specification and the conditions of this consent;

and

- (c) procedures that ensure the Review by the Quality Assurance Reviewer of all information relating to construction that is to be received under the conditions of this consent.

## CONSTRUCTION PRE-COMMISSION

### **Embankment construction**

19 The Consent Holder shall ensure that the Embankments are constructed in accordance with the Technical Specification including the requirement that a 500mm layer of silt shall be placed on the upstream face of the fuse plug as shown on drawing WIL1125/30/147.

20 The Consent Holder shall engage the Quality Assurance Reviewer to observe **on site** that the works are undertaken in accordance with the Quality Assurance and Quality Control Plan, including compliance with the Technical Specification.

### **Control system**

21 The dam shall be constructed with a control system installed that enables automatic detection of embankment structural deformation that could lead to an embankment integrity issue, and which includes:

- (a) a Time Domain Reflectometry (TDR) system as detailed in section 9.3 of the Technical Specification that includes:
  - (i) a low-level alert (where a deformed cable indicates a small movement); and
  - (ii) a high-level alert (where a sheared cable may be indicative of possible large magnitude slope failure),

and which has been certified by an independent certifier as being capable of and installed to enable the provision of the warnings set out in conditions 21(a)(i) and (ii). Such certification shall be provided to the Manager, RMA Monitoring and Compliance, Canterbury Regional Council at least three months prior to the installation of the system;



an alternative system that is certified by an independent certifier as being capable of providing equivalent warnings to that set out in conditions 21(a)(i) and (ii). Such certification shall be provided to the Manager, RMA Monitoring and Compliance,

Canterbury Regional Council at least three months prior to the installation of the equivalent system.

#### **Reporting by Quality Assurance Reviewer**

22 At 3 monthly intervals following the commencement of construction works at the site until commissioning of the dam the Quality Assurance Reviewer shall provide a report to the Consent Holder, the Dam Designer, the Contractor and the Manager, RMA Monitoring and Compliance Canterbury Regional Council, in accordance with the Quality Assurance and Quality Control Plan that summarises the results of all information received, the supervision of the Quality Assurance **on-site** and an opinion on compliance on-site with the Technical Specification and the conditions of this consent.

#### **Water Storage Commissioning Plan**

23 At least three months prior to commissioning the Water Storage Ponds (being the first filling of water), the Consent Holder shall provide to the Manager, RMA Monitoring and Compliance Canterbury Regional Council a Water Storage Commissioning Plan. The Water Storage Commissioning Plan shall:

- (a) be prepared by a suitably qualified and experienced person(s); and
- (b) contain certification by a suitably qualified and experienced person(s) that the Water Storage Commissioning Plan meets the objectives and performance standards set out in conditions 24 and 25.

#### **Water Storage Commissioning Plan objectives**

24 The objectives of the Water Storage Commissioning Plan shall be to:

- (a) minimise risks from the initial filling of the ponds, in accordance with *NZSOLD Guidelines* including any amendments or updates; and
- (b) confirm that the infrastructure required for the management of water on site (including control structures and systems, pumps, and monitoring systems) meets the requirements of the Technical Specification.

#### **Water Storage Commissioning Plan performance standards**

25 The Water Storage Commissioning Plan shall include, but not be limited to:

- (a) a description of the water management infrastructure (including that as required by the Technical Specification);
- (b) an outline of the procedures that are to be followed during the commissioning and testing of control structures and systems, pumps, and monitoring systems; and
- (c) detail on the required surveillance of the ponds during commissioning.

26 Following commissioning, the independent certifier who provided the certification for the purposes of condition 23(b) shall provide a further certificate to the Manager, RMA Monitoring and Compliance Canterbury Regional Council confirming that the infrastructure required for the management of water has performed in accordance with the Water Storage Commissioning Plan including the Technical Specification.



### **Dam Safety Management System**

27 The Consent Holder shall engage a suitably qualified and registered Chartered Professional Engineer who:

- (a) has a minimum of 10 years' experience in: dam design; construction; and the preparation and peer review of documentation required for large dams; and
- (b) is a *Category A Recognised Engineer* for the purposes of the *NZSOLD Guidelines*;

to prepare a documented Dam Safety Management System (DSMS) in accordance with the *NZSOLD Guidelines* including any updates or amendments. This includes the Dam Safety Management Plan (DSMP) the objectives of which shall be to minimise risks from the ongoing operation of the ponds.

28 The documented DSMP shall include and not be limited to the following components, in accordance with the *NZSOLD Guidelines* including any amendments or updates:

- (a) governance and people;
- (b) dam and reservoir operation and maintenance (including health and safety);
- (c) surveillance and control systems (including those required for both water management and dam safety);
- (d) monitoring the condition and performance of the geomembrane liner;
- (e) appurtenant Structures and Gate and Valve Systems;
- (f) intermediate dam safety reviews (conducted annually);
- (g) comprehensive dam safety reviews (conducted every 5 years);
- (h) special inspections and dam safety reviews;
- (i) emergency preparedness including emergency equipment and material supplies (and including the relationship between the DSMS and the EAP and EEP);
- (j) identifying and managing dam safety issues;
- (k) information management, including the reporting to the Manager, RMA Monitoring and Compliance, Canterbury Regional Council, the results of any safety reviews; and
- (l) audits and reviews.

29 The DSMP shall incorporate a *Control System Report* that outlines how the Control System complies with the requirements of the *NZSOLD Guidelines* including any amendments and is capable of operating under emergency situations. The Control System Report shall:

- (a) be prepared by the Dam Designer;

(b) provide a detailed outline of the installation and operation of the final control systems (including those required for both water management and dam safety);



30 The DSMP shall address health and safety issues associated with access to the embankment crests during operation of the ponds.

31 The DSMP shall set out how the EAP and the EEP described in conditions 34-41 will be implemented as they relate to dam safety.

32 The DSMP (including the Control System Report) and EAP shall:

- (a) be certified by an independent certifier as appropriate and robust and meeting the requirements of the *NZSOLD Guidelines* including any amendments or updates; and
- (b) address the ability of the dam to operate under emergency conditions; and in particular that the control systems are appropriate and robust and meet the *NZSOLD Guidelines*.

33 The certification at condition 32(a) shall be provided to the Manager, RMA Monitoring and Compliance Canterbury Regional Council at least three months prior to the first filling or partial filling of the storage ponds with water. A copy of the certified DSMP plans shall be kept on the site throughout the commissioning phase, and the Consent Holder shall ensure that all key personnel are made aware of the plans' contents.

#### **Emergency Action Plan**

34 The Consent Holder shall engage a suitably qualified and registered Chartered Professional Engineer who:

- (a) has a minimum of 10 years' experience in dam design, construction and the preparation and peer review of documentation required for large dams; and
- (b) is a *Category A Recognised Engineer* for the purposes of the *NZSOLD Guidelines*;

to prepare an Emergency Action Plan (EAP). The objectives of the EAP shall be to ensure appropriate management of the risk associated with any uncontrolled, abnormal or excessive flow releases from the dams.

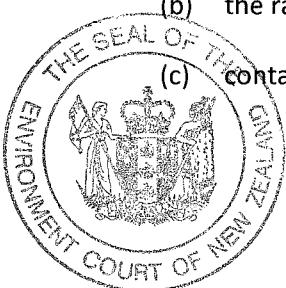
35 The EAP shall form part of the Dam Safety Management System addressed at conditions 27-33 and conditions 54 to 56.

36 The EAP shall be prepared in consultation with the CLG, provided for in RC135478 and shown on **Attachment CRC120610A** which forms part of this consent; and the Civil Defence Emergency Management Group; and shall, as far as practicable, be consistent with any Civil Emergency Management Group Plan governing the Canterbury Region and the Waimakariri District, pursuant to the Civil Defence Emergency Management Act 2002.

37 The EAP shall include as a minimum:

- (a) maps of the land area located between the Eyre and Waimakariri Rivers, including land modelled as being subject to inundation in the event of abnormal or excess flow release, including emergency dewatering;
- (b) the rate of inundation for land identified under 37(a);

(c) contact details for:



- (i) residents and how communications will be undertaken, including contingency plans for alerting (if required) all people within the area between the Eyre River and the Waimakariri River potentially impacted by an inundation or evacuation event; and
- (ii) relevant civil defence authorities;

(d) provision for effective consultation with all property owners including assistance with preparing individual household evacuation plans;

(e) a description of the auto-sensory system and how it alerts the dam owner, manager and engineer in the event of a developing dam breach;

(f) provision for retaining material supplies and equipment available at short notice as specified at 5.6 of the *Wrights Road storage Ponds – EEP (Preconstruction Issue) 9 June 2017 Issue 5*, for use in an emergency situation;

(g) recognition of the Water Storage Commissioning Plan described in conditions 23 to 26;

(h) recognition of the Emergency Evacuation Plan (EEP) described at condition 39;

(i) a timeline showing how the inundation area progresses with time during a dam breach; and

(j) a description as to how access to embankment crests during emergencies is to occur.

38 The EAP shall be consistent with the conditions of this consent (including the other required management plans) and the Technical Specifications as they relate to the design and operation of the Water Storage Ponds.

#### **Emergency Evacuation Plan**

39 The **Emergency Evacuation Plan (EEP)** shall be developed in consultation with the Civil Defence Emergency Management Group, the CLG and people who are resident in the area between the Eyre and Waimakariri Rivers as approved by the Manager Monitoring and Compliance CRC, as identified in condition 37(a). The objectives of the plan shall be to:

- (a) confirm the areas identified in condition 37(a) that may be subject to inundation following a storage pond breach;
- (b) outline the roles and responsibilities of the Consent Holder and other organisations involved in evacuation, with the Consent Holder retaining primary responsibility unless directed otherwise, or replaced by a competent authority;
- (c) provide details on the evacuation procedures to be followed by residents and the information that may be required by other organisations in the preparation of their own evacuation plans.

#### **Performance standards for the EEP**

40 As a minimum the EEP shall include detail on:

- (a) a description of the likely inundation paths (including time delays) that may occur following catastrophic dam failure;



- (b) warning and evacuation areas including a 'Self Evacuation Area', an 'Assisted-Evacuation Area' and a 'Targeted Warning Area';
- (c) the roles and responsibilities of the key organisations and agencies involved in an evacuation (see 39(b));
- (d) the evacuation process (with reference to the Emergency Action Plan), including:
  - (i) detection of an event or incident that has or may develop into a dam safety emergency;
  - (ii) how decisions will be made to trigger a warning and/or evacuation;
  - (iii) how warnings will be provided within the predicted timeframes provided by condition 40(a);
  - (iv) how evacuation of affected people will occur;
  - (v) the provision of shelter for people evacuated; and
  - (vi) the return of people to any area evacuated.
- (e) the signage that will identify evacuation routes;
- (f) how non-permanent (or 'transient') people will be advised of the evacuation area and the possible need to evacuate;
- (g) the limiting factors that might arise in relation to an evacuation and how those factors can be mitigated; and
- (h) an outline of the support that will be available to provide to persons for:
  - (i) the preparation and updating of Household Emergency Plans; and
  - (ii) the procurement of communications devices, such as the "Scada" system, for those residents who may require them and indicate that is their preferred mode of communication of dam emergencies.

41 The EEP shall be certified as meeting the objectives and performance standards set out in conditions 39 and 40 by a suitably qualified and experienced person.

**Testing of notification systems**

42 At least 3 months prior to the first filling or partial filing of the dam, the Consent Holder shall undertake a test of the emergency warning systems described in EEP:

- (a) the testing of the emergency warning systems shall be overseen by a suitably qualified and experienced person approved by the Manager Monitoring and Compliance, CRC;
- (b) following the completion of a successful test(s), the Consent Holder shall provide a certificate to the Manager, RMA Monitoring and Compliance Canterbury Regional Council, certifying that the warning system meets the requirements (including providing warnings within the indicated inundation timeframes and that those warnings are received within the indicated inundation timeframes) described in the EEP.



43 The first filling or first partial filing of the dam shall not commence until such time that the certificate required by condition 42(b) has been provided to the Manager, RMA Monitoring and Compliance Canterbury Regional Council.

**Certification procurement for as-built construction**

44 At least two months prior to the first filling or first partial filling of the storage ponds the Consent Holder shall procure certification from a suitably qualified and registered Chartered Professional Engineer:

(a) who has a minimum of 10 years' experience in dam design, construction and the preparation and peer review of documentation required for large dams; and

(b) who is a *Category A Recognised Engineer* for the purposes of the *NZSOLD Guidelines*;

that the "as built" construction of the dam is in accordance with good engineering practice, including being consistent with:

(c) the *NZSOLD Guidelines* including any amendments or updates current at the time of certification; and

(d) the requirements of the Building Act 2004;

(e) the Construction Management Plan and the Quality Assurance and Quality Control Plan; and

(f) the documents listed at condition 2 above.

45 This certificate shall be provided to the Manager, RMA Monitoring and Compliance Canterbury Regional Council at least one month prior to the first filling of the storage ponds. No filling shall commence until as-built certification is completed.

**Provision of documents**

46 At least two months prior to the first filling or partial filling of the storage ponds with water the following documents shall be provided to the Manager, RMA Monitoring and Compliance, Canterbury Regional Council:

(a) certifications referred to in conditions 21, 23, 26, 32, 41 and 44;

(b) copies of the DSMP, EAP and EEP; and

(c) the Water Storage Commissioning Plan.

## COMMISSIONING

**Commencement of commissioning**

47 The filling or partial filling shall not commence at the site until the DSMP, EAP, EEP and Water Storage Commissioning Plan have been accepted by the Manager, RMA Monitoring and Compliance, Canterbury Regional Council and the Consent Holder has received written notice of the acceptance.



Water storage commissioning

48 The commissioning of the storage ponds and associated activities shall be undertaken in accordance with the certified Water Storage Commissioning Plan described at conditions 23 to 26.

**Plans kept on site**

49 Copies of the DSMP, EAP and EEP shall be kept on the site throughout the Commissioning and Post Commissioning phase, and the Consent Holder shall ensure that all key personnel are made aware of the plans' contents.

**Reporting by Quality Assurance Reviewer**

50 At 3 monthly intervals throughout commissioning of the dam the Quality Assurance Reviewer shall provide a report to the Consent Holder, the Dam Designer, the Contractor and the Manager, RMA Monitoring and Compliance Canterbury Regional Council, that summarises the results of all information received, the supervision of the Quality Assurance **on site**, the Quality Assurance and Quality Control Plan and the EAP and an opinion on compliance with the Technical Specification and the conditions of this consent.

**POST COMMISSIONING**

**EAP and EEP review**

51 The Consent Holder shall:

- (a) update the contact list(s) provided in the EAP annually; and
- (b) review the full EAP and EEP in consultation with the Civil Defence and Emergency Management Group:
  - (i) at least bi-annually, with the timing of any individual review being timed to coincide with any review of the Civil Emergency Management Group Plan referred to in condition 36; and
  - (ii) within 3 months following an event requiring activation of the plan and/or evacuations incorporated.

52 Each review shall be undertaken by an independent appropriately qualified and experienced person approved by the Manager Monitoring and Compliance CRC, and the review shall:

- (a) consider whether the EAP and EEP continue to meet the objectives and performance standards that are set out in these conditions; and
- (b) include an update of residents within the evacuation area (including a review electoral roll and rating database information and any information received from the Consent Holder in the ongoing implementation of the EAP and EEP);

and following their review, the reviewer shall certify that the EAP and EEP (including any amendments that might be recommended by the reviewer) continue to meet the conditions of this consent.

53 The Consent Holder shall comply at all times with the EAP and the EEP and any amendments.



### **Dam Safety Management Plan**

54 The operation, maintenance and surveillance of the storage ponds and associated activities shall be undertaken in accordance with the certified DSMP (as prepared in accordance with the DSMS as required by conditions 27 to 33 and the control system as required by condition 21). The objective of the DSMP shall be to ensure the operation, maintenance and surveillance procedures for the storage ponds are consistent with the dam being managed to High PIC standards under the *NZSOLD Guidelines*. As a minimum the DSMP shall include detail on:

- (a) the various components of the storage ponds (including inlet/outlet controls, emergency spillways, access and appurtenant structures and a description of their operation);
- (b) the responsibilities of the persons/entities involved in the management of the storage ponds;
- (c) the control system, including all equipment required for the management of water and for dam safety, being:
  - (i) the equipment and systems required for the monitoring of water levels in Ponds 1, 2 and the buffer pond, the opening and closing of gates and the operation of pump systems;
  - (ii) the equipment required for assessing any leaks and embankment performance (including deformation); and
  - (iii) contingency systems that ensure the continued operation of the control system (including in events of power supply or sensor failure);
- (d) detail how access to the dam embankments will be maintained in the event of an emergency;
- (e) pond filling and emptying (including in the event of an emergency drawdown);
- (f) maintenance and testing for the ponds and control system equipment;
- (g) the monitoring of the liner including the testing of coupons as required by the Technical Specification; and
- (h) surveillance in accordance with Module 5 Section 4.2 of the *NZSOLD Guidelines*.

55 The DSMP shall be reviewed by the Consent Holder every twelve months, for the first two years of operation following the initial filling of the storage ponds, and thereafter every five years coinciding with Comprehensive Safety Reviews referred to at conditions 58 and 59 and also whenever a trigger event, as identified in the DSMP, occurs. The reviews shall evaluate the DSMP, the results of any inspections and any monitoring data and communications to or from the consent authorities. The review shall include reporting in accordance with Section 6.18 of the Technical Specification on results of monitoring for changes in the properties of geomembrane A2 sized coupons. The results of the review along with any required maintenance or upgrades required to comply with the Technical Specification and the *NZSOLD Guidelines* shall be recorded in writing and sent to the Manager, RMA Monitoring and Compliance, Canterbury Regional Council within one month of the review occurring.



56 The DSMP shall be re-certified by an independent certifier after any change, and at least once every five years. Such re-certifications shall be provided to the Manager, RMA Monitoring and Compliance, Canterbury Regional Council within fifteen working days of recertification.

#### **As built plans and producer statements**

57 Within 12 months of the date of construction activities ceasing, as notified under these conditions, “as built” detailed engineering plans, Producer Statements and a Completion Report shall be provided to the Manager, RMA Monitoring and Compliance, Canterbury Regional Council.

#### **Dam safety reviews**

58 In accordance with the *NZSOLD Guidelines*, a Comprehensive Dam Safety Review (CDSR) shall be undertaken every 5 years and the Review shall be provided, by the Consent Holder within 10 working days of being completed, to the Manager, RMA Monitoring and Compliance, Canterbury Regional Council.

59 In accordance with the *NZSOLD Guidelines*, an Intermediate Dam Safety Review (IDSR) shall be undertaken every year, and the Review shall be provided, by the Consent Holder within 10 working days of being completed, to the Manager, RMA Monitoring and Compliance, Canterbury Regional Council.

60 The DSMP shall be updated to address any dam safety issues identified in an IDSR or CDSR, and the updated plan provided to the Manager, RMA Monitoring and Compliance, Canterbury Regional Council within two months of receipt by the Consent Holder.

#### **Water quality sampling**

61 The Consent Holder shall undertake a water quality sampling and monitoring regime for the dammed water.

62 The water quality of the dammed water shall meet the following water quality standards:

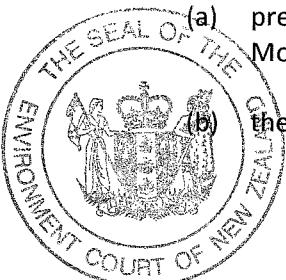
- (a) a maximum Trophic Level Index (TLI) trigger value of < 4.0 (Mesotrophic); and/or
- (b) a maximum trigger level of 5 milligrams per cubic metre of Chlorophyll *a*; and
- (c) if the water stored in the ponds breaches the trigger level set out in condition 62(a) and/or (b), the Consent Holder shall commence monitoring for cyanobacteria according to the Guidelines and any updates to the Guidelines in **Attachment CRC120610B** and undertake remedial action to return the water quality to below the trigger level set out in this condition.

#### **Water quality monitoring plan**

63 At least 30 working days prior to the first filling or partial filling of the storage ponds the Consent Holder shall provide a Water Quality Monitoring Plan to the Manager RMA, Monitoring and Compliance, Canterbury Regional Council. The monitoring and sampling regime shall be:

- (a) prepared by suitably qualified person that has been approved by THE Manager Monitoring and Compliance Canterbury Regional Council;

(b) the plan shall address:



- (i) water quality monitoring for dissolved oxygen (depth profile), temperature (depth profile); and observation of any algal or macrophyte growth and the presence of noxious or pest species of plant, algae, fish or invertebrates;
- (ii) timing of sampling;
- (iii) methods and locations of sampling in the storage ponds;
- (iv) mitigation measures to manage any adverse trends or potential exceedance of appropriate trigger levels identified in condition 62;
- (v) the frequency of reporting.

64 All activities in furtherance of this consent shall be undertaken in accordance with the Water Quality Monitoring Plan.

#### **Race capacity**

65 Prior to commissioning, the Consent Holder shall:

- (a) ensure that the Waimakariri irrigation race network has sufficient capacity to accommodate a discharge of 7.3 cubic metres per second from the Waimakariri Storage Ponds to the Eyre River without overtopping the irrigation race network (including replacing the existing culverts with bridges in the race known as "MR7" on South Eyre Road and Woodstock Road, and the corner of South Eyre Road and Wolffs Road, and in the race known as "R3-4" on Wolffs Road between Harewood Road and the Eyre Siphons); and
- (b) engage a suitably qualified person to undertake an assessment (including modelling where possible) of the impact of a discharge of 7.3 cubic metres on flows in the Eyre River during high flows, taking into account reasonably predicted changes in bed level(s) overtime and the presence of structures. The results of the assessment shall be:
  - (i) provided to the Consent Holder the Manager, RMA Monitoring and Compliance Canterbury Regional Council; and
  - (ii) taken into account by the Consent Holder when preparing the EAP and EEP, including ensuring provision is made for alternative evacuation options should transportation infrastructure within the Eyre River flood path be at risk of being compromised by an additional discharge of 7.3 cubic metres.

#### **Winter water levels**

66 Between 20 April and 1 August in any year the storage of water for irrigation, domestic supply and stockwater purposes shall be limited to an operating level of 223.0 m RL in Pond 1 and 221 m RL in Pond 2 (based on the Lyttelton Vertical Datum (LVD-37) with a level of +0.0 mRL).

## **ADMINISTRATION**

#### **Bonding of construction, operation, maintenance, and remediation**

67 The Consent Holder shall:

- (a) construct, maintain, operate, repair, and remediate the works authorised under this consent.



(b) At least three months prior to commencement of construction works at the site, and during the construction, operational, maintenance, and remediation phases, in relation to this consent; enter into an enforceable written agreement to provide and maintain in favour of the Canterbury Regional Council and Waimakariri District Council (*the Councils*), a cash bond or bank bond pursuant to sections 108(2)(b) and 108A of the Resource Management Act 1991, on terms and conditions satisfactory to the Councils in all respects.

*Advisory note: if there is a cash bond it will be held by the Canterbury Regional Council. However, should conditions of the WDC land use consent RC135478 not be complied with and the non-compliance not be rectified by the consent holder in accordance with the terms of the bond, the WDC will be entitled to access the bond in order to carry out any necessary works.*

68 The bond quantum shall be sufficient to secure compliance with the conditions of this consent in the event of any default by the Consent Holder.

69 Any bank bond shall be in a form used by a bank registered to conduct business in New Zealand and approved by the Councils.

70 The agreement shall include that the Consent Holder shall be and remain liable for meeting:

(a) If construction commences, but is not completed, the cost of:

(i) making safe and mitigating any adverse effects arising from the work undertaken during construction; and

(ii) reinstating land affected by the construction to a state where:

(A) all slopes are stable and safe;

(B) all surfaces are covered in top soil and planted in suitable pasture species; and

(iii) remedying or mitigating any breach of conditions of the consents (in so far as such a breach relates to work undertaken at the time construction ceases).

(b) If construction is completed the cost of:

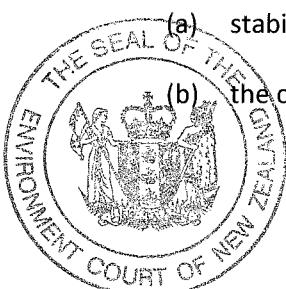
(i) remedying or mitigating any breach of conditions of the consents; and

(ii) avoiding, remedying or mitigating and/or monitoring any significant adverse effect on the environment, and caused by the storage ponds, which becomes apparent during or after the expiry of this consent.

71 The amount of the bond may vary from time to time but at any given time shall be sufficient to cover the estimated costs at that time (including any contingency) of compliance with all conditions including the:

(a) stabilisation of any dam or other structures;

(b) the completion of planting as contemplated by condition 70(a)(ii)(B); and



(c) maintenance and repair of the dam structures for the purposes of achieving conditions 67, 68 and 70.

72 The bond agreement shall also include the terms and conditions on which the bond shall be established maintained, changed, transferred or surrendered. In the event of the Councils not agreeing with the Consent Holder on the terms of the agreement, then the dispute shall be resolved through an agreed disputes resolution process or referred to arbitration.

73 The initial bond quantum shall be determined as follows:

- the Consent Holder shall provide to the Councils a report prepared by a suitably qualified and experienced person approved by the Manager Monitoring and Compliance CRC (an expert report) which: addresses all matters covered by conditions 67 and 68; has estimates of costs; and recommends the initial bond quantum. The Councils shall engage a suitably qualified and experienced person to peer review the bond quantum proposed by the Consent Holder; and
- in the event of the Consent Holder and the Councils not reaching agreement on the initial bond quantum, it shall be assessed by an independent bond assessor appointed by the Councils jointly, and the decision of that person shall be final and binding.

74 The bond quantum may be reviewed and reassessed every two years from the date the initial bond quantum is lodged until a date two years after the date on which this consent has been given effect to. The purpose of the adjustment is to reflect changes in the risk profile of the project and/or the Producer Price Index. After that, the bond quantum shall be reviewed and reassessed by the Consent Holder and the Councils at five yearly intervals for the duration of this consent. The method of the review shall follow the same procedure set out in condition 73.

75 The bond terms and quantum may also be varied or cancelled or renewed at any other time by agreement between the Consent Holder and the Councils, using the methodology described at condition 73.

76 If any time the amount of the bond is varied under conditions 74 or 75 then the Consent Holder, shall within five (5) working days of the replacement bond agreement being executed put in place a new bond for the varied amount or the additional amount required in excess of the existing bond.

77 If the consent is transferred to another party or person, the bond lodged by the transferor shall be retained by the Councils until a replacement bond is entered into by the transferee to ensure compliance with conditions of the consent unless conditions 70 and 71 are already complied with.

78 During the construction, operation, maintenance, and reinstatement phase of the Scheme, a scope of works planned for each phase will be prepared and provided by the Consent Holder to the Councils, both prior to setting the initial bond quantum, and again at each annual reassessment and six months prior to any change in phase, to assist in setting the bond quantum.

79 At all times the Consent Holder shall comply with the terms of the bond(s) or varied bond(s).

80 The Consent Holder shall reimburse the Councils for all reasonable costs incurred in developing the bond agreement and any subsequent reviews or reassessments, that shall



set out the terms and conditions on which the bond shall be established, quantified, maintained, changed, transferred or surrendered.

81 For the avoidance of doubt, the enforceable written agreement may provide for the bond to be held after the expiry of this consent if condition 70 is not complied with.

**Public/General Liability insurance**

82 The Consent Holder shall ensure that, at least three months prior to the construction of the ponds it has in place and taking effect from when construction commences and on an ongoing basis, general/public liability insurance that provides a sufficient sum insured (as determined through conditions 83 to 89 below), to indemnify the Consent Holder in respect of all sums which the Consent Holder becomes legally liable to pay by way of compensation to third parties consequent upon:

- (a) Loss of or destruction or physical damage to any tangible property including resulting loss of use; and
- (b) Loss of use of any tangible property not otherwise physically lost or damaged or destroyed.

83 To assist determining the form and extent of required public/general liability insurance cover, the Consent Holder shall engage a suitably qualified and experienced insurance expert with at least 10 years' experience in determining insurance cover, including the provision of public/general liability insurance policies, approved by the Manager Monitoring and Compliance CRC (*Insurance Expert*).

84 The Insurance Expert shall determine the appropriate sum insured for the purposes of meeting potential legal liability to third parties as required by condition 82, using recognised and standard insurance assessment methodologies. In determining that sum, the Insurance Person shall assess and advise on:

- (a) The maximum potential sum which the Consent Holder may become legally liable to pay by way of compensation to third parties, including that relating to:
  - (i) Infrastructure, including but not limited to houses, buildings, tracks/access routes and fences;
  - (ii) Possessions that may be damaged, including but not limited to chattels and motor vehicles;
  - (iii) The repair and/or replacement of household, farm, and business contents, supplies and stock (including animals);
  - (iv) The repair and/or replacement of landscaping, including and allowing for costs of cleanup, restoration of land, structures and natural environment;
  - (v) Provision for the payment of any costs incurred by third parties associated with the event or evacuation and recovery, including but not limited to temporary accommodation;
  - (vi) Any damage to, and repair of, the assets and infrastructure of the Waimakariri District Council;
  - (vii) Loss of use (including business interruption); and



(viii) Personal injury.

(b) The timeframes within which a review of the limits of indemnity and coverage (and terms of the policy) should occur, with at a minimum reviews taking place:

- (i) at the end of the construction period; and
- (ii) at three yearly intervals thereafter.

85 Following the completion of the assessment required by condition 84(a) and any review as undertaken in accordance with condition 84(b), the Consent Holder shall provide a certificate to the Manager RMA, Monitoring and Compliance, Canterbury Regional Council (as well as the WDC Planning Manager) from the Insurance Expert certifying that the recommended sum insured has been determined in accordance with condition 84. The Insurance Expert shall include an overview of how the extent of required cover has been determined.

86 Without limiting condition 85, the Consent Holder shall further ensure that:

- (a) the Councils have, at all times after construction commences, written confirmation that the insurance required by these conditions is in place and covers all matters set out within condition 84 in the form of an insurer's annual certificate of currency;
- (b) that a copy of the certificate and an overview of the extent of cover and how it has been derived is publicly available on a website maintained by the Consent Holder;
- (c) it provides all relevant information regarding the insurance to the Councils. This obligation includes an express term that the Consent Holder immediately notify the Councils of any non-performance of the terms of insurance; and
- (d) in the event of non-performance of any term of the insurance:
  - (i) it immediately notifies the Councils of the non-performance and the steps taken and to be taken to rectify the non-performance; and
  - (ii) in the case of any non-performance that may adversely impact on the extent of cover in relation to dam breach or dam safety, it immediately deters the dam.

87 The insurance provided under these conditions must:

- (a) be on the basis that the storage ponds are a 'non-natural' use of land; and
- (b) be sufficient to cover all sums which the Consent Holder may become legally liable to pay by way of compensation to third parties as required by condition 82 and shall not be confined to any particular geographic area, including offsite impacts to third party property and persons as described in condition 84 including but not limited to any assets and infrastructure of the WDC, associated with any failure of any part of the proposed ponds, together with reasonable provision for reconstruction and reinstatement of the WDC assets and infrastructure.

88 The Consent Holder shall ensure that the sum insured and the timeframes for its review are no less than that recommended in the assessment undertaken in accordance with



condition 84. A copy of the assessment undertaken will be provided to the WDC District Plan Manager for review and comment prior to obtaining the insurance cover.

89 The limits of indemnity and coverage and terms of the policy are to be reviewed by the Consent Holder, as a minimum, at the intervals recommended by the Insurance Expert in accordance with the process contemplated by condition 84.

**Review**

90 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 dealing with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage.

**Administrative charges**

91 The Consent Holder shall pay to the Canterbury Regional Council any administrative charges fixed in accordance with s 36 RMA. The administrative charges shall be paid to the Canterbury Regional Council for the carrying out of its functions in relation to the administration, monitoring and supervision of this consent and for carrying out its functions under s 35 RMA.

**Other charges or costs**

92 The Consent Holder shall pay all costs relating to certification or engagement of others to undertake any actions or services required in terms of these conditions.

**Lapse date**

93 The lapsing date for the purposes of s 125 shall be five years from the commencement of this consent.





**RC135478 Conditions (18 – 21) - Community Liaison Group (CLG)**

**Community Liaison Group (CLG)**

18 The Consent Holder shall, within one month of its contractor being formally instructed to commence works advertise a public meeting for the purpose of facilitating the establishment of a CLG in order to consult with representatives of the community. As a minimum, the Consent Holder shall invite the following interested parties to be represented in the CLG:

- (a) Te Ngai o Tuahuriri Runanga or a nominated representative;
- (b) ECESS (and/or representatives who reside between the Eyre River and Waimakariri River and who may be impacted by a breach of the Waimakariri Storage Ponds);
- (c) Canterbury Regional Council and WDC;
- (d) Landowners within 1 km of the Waimakariri Irrigation Storage Ponds.

19 The CLG shall be conducted in a manner of good faith and have the following objectives:

- (a) Facilitating information flow between the Consent Holder and the community regarding the implementation and environmental effects of the activities authorised by these consents (including new information, results of monitoring, and studies relevant to such effects);
- (b) Identify any issues of concern that arise during the construction period of the Waimakariri Irrigation Storage Ponds, and on an ongoing basis.
- (c) Identify or discussing appropriate measures to address issues raised;
- (d) Making recommendations for the Consent Holder (and its contractors) to consider in relation to any issues identified in terms of (b) above;
- (e) Providing the residents within the identified inundation area with annual advisories regarding the presence of the Waimakariri Irrigation storage ponds, the existence of the CLG and the availability of assistance for preparing and updating Household Emergency Plans (as part of the Emergency Evacuation Plan, including updates to account for transient or temporary residents at any property.

20 The Consent Holder shall assist the CLG to fulfil its objectives by, amongst other things:

- (a) Arranging an appropriate venue in the area for the meetings of the CLG and meeting any other reasonable costs of the meetings;
- (b) Appointing a community liaison officer with authority to represent it on the CLG and ensuring the community liaison officer attends all of the formal meetings of the CLG;



- (c) Ensuring that a representative of the company responsible for the construction of the Waimakariri Irrigation Storage Ponds under contract with the Consent Holder attends all meetings;
- (d) Providing information to the CLG about progress in relation to the Waimakariri Irrigation Storage Ponds, including the environmental effects of the Waimakariri Irrigation Storage Ponds and compliance with consent conditions and development and review of any and all management plans including the Emergency Action Plan(EAP) and EEP.
- (e) Being prepared to discuss the environmental effects of the Waimakariri Irrigation Storage Ponds, any concerns in relation to human health and safety, and any complaints from the local community, including provision of further information and identification of appropriate measures to address issue raised;

21 The Consent Holder shall use its best endeavours to ensure meetings of the CLG are held as follows (unless otherwise agreed by the CLG):

- (a) The first meeting shall be held at least two months prior to the commencement of construction of the Waimakariri Irrigation Storage Ponds;
- (b) Subsequently, at least once every three calendar months during the construction period;
- (c) One meeting within six calendar months following completion of commissioning; and
- (d) Thereafter on a continuing basis, annually, or on notice if any dam safety issue arises or is raised by any party on the CLG.

*Advisory*

*It is anticipated that the CLG will appoint a chair from amongst its members, and will develop and agree on its Terms of Reference at its first meeting.*

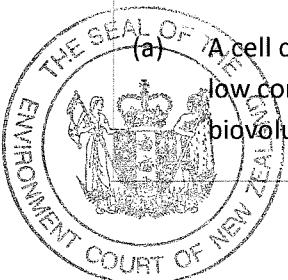


## Decision Chart 1: Alert-level framework for planktonic cyanobacteria

Alert level	Actions  <b>(See section 2.4 for the recommended framework for roles and responsibilities relating to actions, and the text box at the beginning of Section 3 for advice on interpreting the guidance in this table.)</b>
<p><b><i>Surveillance (green mode)</i></b></p> <p><i>Situation 1:</i> The cell concentration of total cyanobacteria does not exceed 500 cells/mL<sup>a</sup></p> <p><i>Situation 2:</i> The biovolume equivalent for the combined total of all cyanobacteria does not exceed 0.5 mm<sup>3</sup>/L.</p>	<ul style="list-style-type: none"> <li>Undertake weekly or fortnightly visual inspection<sup>b</sup> and sampling of water bodies where cyanobacteria are known to proliferate between spring and autumn.</li> </ul>
<p><b><i>Alert (amber mode)</i></b></p> <p><i>Situation 1:</i> Biovolume equivalent of 0.5 to &lt; 1.8 mm<sup>3</sup>/L of potentially toxic cyanobacteria (see Tables 1 and 2); <b>or</b></p> <p><i>Situation 2</i> <sup>c</sup> 0.5 to &lt;10mm<sup>3</sup>/L total biovolume of all cyanobacterial material.</p>	<ul style="list-style-type: none"> <li>Increase sampling frequency to at least weekly.<sup>d</sup></li> <li>Notify the public health unit.</li> <li>Multiple sites should be inspected and sampled.</li> </ul>
<p><b><i>Action (red mode)</i></b></p> <p><i>Situation 1:</i> <math>\geq 12 \mu\text{g/L}</math> total microcystins; <b>or</b> biovolume equivalent of <math>\geq 1.8 \text{ mm}^3/\text{L}</math> of potentially toxic cyanobacteria (see Tables 1 and 2); <b>or</b></p> <p><i>Situation 2</i> <sup>c</sup> <math>\geq 10 \text{ mm}^3/\text{L}</math> total biovolume of all cyanobacterial material; <b>or</b></p> <p><i>Situation 3</i><sup>e</sup>: cyanobacterial scums consistently present.</p>	<ul style="list-style-type: none"> <li>Continue monitoring as for alert (amber mode).<sup>d</sup></li> <li>If potentially toxic taxa are present (see Table 1), then consider testing samples for cyanotoxins.<sup>f</sup></li> <li>Notify the public of a potential risk to health.</li> </ul>

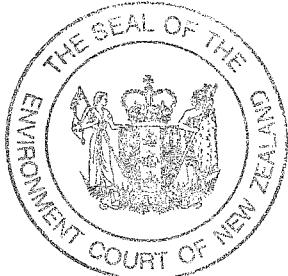
## Footnotes to Alert Level and Action above

(a) A cell count threshold is included at this level because many samples may contain very low concentrations of cyanobacteria and it is not necessary to convert these to a biovolume estimate.



- (b) In high concentrations planktonic cyanobacteria are often visible as buoyant green globules, which can accumulate along shorelines, forming thick scums (see Appendix 3). In these instances, visual inspections of water bodies can provide some distribution data. However, not all species form visible blooms or scums; for example, dense concentrations of *Cylindrospermopsis raciborskii* and *Aphanizomenon issatschenkoi* are not visible to the naked eye (see Appendix 3).
- (c) This applies where high cell densities or scums of 'non-toxigenic' cyanobacteria taxa are present (i.e., where the cyanobacterial population has been tested and shown not to contain known toxins).
- (d) Bloom characteristics are known to change rapidly in some water bodies, hence the recommended weekly sampling regime. However, there may be circumstances (e.g., if good historical data/knowledge is available) when bloom conditions are sufficiently predictable that longer interval sampling is satisfactory.
- (e) This refers to the situation where scums occur at the recreation site for more than several days in a row.
- (f) Cyanotoxin testing is useful to: provide further confidence on potential health risks when a health alert is being considered; enable the use of the action level  $10 \text{ mm}^3/\text{L}$  biovolume threshold (i.e., show that no toxins are present; and show that residual cyanotoxins are not present when a bloom subsides).

**Source of Alert-level framework for planktonic cyanobacteria:** Ministry for the Environment and Ministry of Health. 2009. *New Zealand Guidelines for Cyanobacteria in Recreational Fresh Waters – Interim Guidelines*. Prepared for the Ministry for the Environment and the Ministry of Health by SA Wood, DP Hamilton, WJ Paul, KA Safi and WM Williamson. Wellington: Ministry for the Environment.



**CRC122899 to discharge fugitive dust and combustion products to air during the construction of storage ponds and associated infrastructures**

**Scope**

- 1 Except as required by the subsequent conditions, the Waimakariri Irrigation Storage Ponds shall be constructed and used in accordance with information submitted with the application and as amended through the hearing of the applications:
  - (a) in a joint hearing between the Canterbury Regional Council and the Waimakariri District Council;
  - (b) in the hearing of an appeal to the Environment Court, with a final decision of the Environment Court being issued on [ ],  
and including:
  - (c) the document entitled Assessment of Environmental Effects for the Construction and use of Wrights Road Storage Ponds, prepared for Waimakariri Irrigation Limited by Pattle Delamore Partners, dated November 2013;
  - (d) the report entitled Waimakariri Irrigation Ponds – Design Report, prepared for Waimakariri Irrigation Limited by Damwatch (Issue 4 – dated 9 December 2015); including Construction Drawings (*Design Report*); and Technical Specifications (Issue 5) (*Technical Specifications*), and in each case inclusive of any approved amendments or updates. .
- 2 The discharge of contaminants to air shall be only particulate matter and the products of combustion associated with the construction of the Waimakariri Irrigation Storage Ponds and associated infrastructure at the corner of Wrights Road and Dixons Road, Burnt Hill, at or about map reference Topo BW22:3480-9720, as shown on **Plan CRC122899A**, which forms part of this consent.
- 3 The discharge of contaminants to air shall arise only from:
  - (a) excavation;
  - (b) earthmoving;
  - (c) stripping and stockpiling of soil;
  - (d) transport of materials;
  - (e) formation of dam embankments;
  - (f) screening of aggregate;
  - (g) vehicle movements;
  - (h) placement and anchoring of the geomembrane;

combustion of diesel to power the screening plant; and,

placement of cleanfill materials.



- 4 There shall be no discharge of dust or the products of combustion, as a result of the exercise of this consent, that is noxious, dangerous, offensive or objectionable to the extent that it causes an adverse effect beyond the boundary of the site on which the discharge occurs.
- 5 The rate of aggregate screening on site shall not exceed 60 cubic metres per hour (m<sup>3</sup>/hour).
- 6 The Consent Holder shall prepare and implement a Dust Management Plan (DMP) which shall be incorporated into the Construction Management Plan:
- 7 The DMP shall:
  - (a) be prepared and provided to the Canterbury Regional Council at least 30 working days prior to the exercise of this consent;
  - (b) be reviewed at least biannually by the Consent Holder;
  - (c) include all measures necessary to achieve compliance with the conditions of this consent; and
  - (d) include but not be limited to:
    - (i) description of the dust sources on the site;
    - (ii) the methods to be used for controlling dust at each source during construction, including excavation, earthmoving, stripping and stockpiling of soil, transport of materials, formation of dam embankments, screening of aggregate, vehicle movements, placement of cleanfill and placement and anchoring of the geomembrane on the base of the ponds and the embankments;
    - (iii) a description of the monitoring requirements;
    - (iv) a system of training for employees and contractors to make them aware of the requirements of the DMP;
    - (v) identification of staff responsible for implementing and reviewing the DMP;
    - (vi) a method for recording and responding to complaints from the public;
    - (vii) procedures for managing dust when staff are not on site;
    - (viii) guidance on planning for potentially dusty activities and considering forecasted weather conditions; and
    - (ix) contingency methods for controlling dust when the Total Suspended Particulate (TSP) and wind speed alert levels included in conditions 12 and 13 are exceeded.
- 8 This consent shall not be exercised until the DMP has been accepted and certified by the Manager Monitoring and Compliance Canterbury Regional Council.
- 9 The methods used to control dust shall include, but not be limited to the following:
  - (a) stabilisation of all potentially dusty surfaces using water, chemical dust suppressants, compaction, straw mulching, temporary vegetation, gravelling, or other surface modification methods. The surfaces to be stabilised shall include internal roadways,



the areas being worked by excavators and loaders, stockpiles and exposed soil areas as necessary to comply with condition 3 of this consent;

- (b) locating the aggregate screening plant at least 300 metres from any dwelling on a neighbouring property;
- (c) locating the stockpiles of potentially dusty materials such as topsoil and silt at least 200 metres from any dwelling on a neighbouring property;
- (d) providing water sprays on the screening plant;
- (e) controlling vehicle speeds on site and minimising travel distances and vehicle movements over unconsolidated surfaces where practicable;
- (f) regularly maintaining main access ways by grading and the laying of fresh gravel;
- (g) minimising drop heights when loading and unloading vehicles.

10 At least one month prior to construction activities commencing on site the following shall be installed:

- (a) a meteorological monitoring station that continuously measures and records wind speed, wind direction, rainfall, temperature and relative humidity;
- (b) an instrument that continuously measures and records Total Suspended Particulate concentrations; and the Total Suspended Particulate monitor shall be at one of the locations specified in condition 13 below.

11 The meteorological monitoring station shall be installed and maintained in good working order as far as practical at one location or adjacent to the site, until construction of the ponds is complete.

12 The meteorological monitoring shall be generally in accordance with the following:

- (a) the anemometer shall be installed at a height of at least 6 metres above preconstruction ground level and in accordance with AS 2923- 1987 Ambient Air Guide for Measurement of Horizontal Wind for Air Quality Applications;
- (b) the meteorological monitoring station shall continue operating until the construction of the ponds is complete, including the planting and establishment of permanent vegetation on the embankments;
- (c) the meteorological monitoring instruments shall be established, located and operated to the satisfaction of the manager Monitoring and Compliance Canterbury Regional Council;
- (d) the meteorological monitoring results shall be continuously recorded using an electronic data logging system with an averaging time for each parameter of not more than two minutes. The results shall be available to the operators in real time and the logging system shall be able to send alerts via text message; and

(e) the meteorological data shall be retained and copies provided to the Canterbury Regional Council on request.



13 The Consent Holder shall install and operate up to two instruments capable of continuously monitoring and recording total suspended particulates (TSP). These instruments shall be maintained in good working order for the duration of the works. The location and quantity of monitors shall be as follows:

- one monitor on the western boundary of the site when constructing Pond 1.
- one monitor on the eastern boundary and one monitor on the southern boundary of the site when constructing Pond 2.

14 The TSP monitoring shall be carried out generally in accordance with the following:

- the TSP monitoring shall be undertaken with a continuous monitoring instrument capable of providing real time data that can be compared against 1-hour and 24-hour guidelines;
- the TSP data shall be retained and copies provided to the Canterbury Regional Council on request;
- TSP monitoring shall undergo regular calibration and shall be of an appropriate standard and quality, to be able to indicate compliance with the TSP trigger levels set in conditions 15 and 16 below; and
- the TSP monitoring results shall be continuously recorded using an electronic data logging system with an averaging time for each parameter of not more than two minutes. The results shall be available to the operators in real time and the logging system shall be able to send alerts via text message.

15 The Consent Holder shall review dust sources and dust control measures and implement additional dust control methods when:

- TSP concentrations as measured by instruments installed and operated in accordance with condition 14 of this consent exceed a 1-hour average concentration of 200 micrograms per cubic metre ( $\mu\text{g}/\text{m}^3$ ); or
- TSP concentrations as measured by instruments installed and operated in accordance with condition 14 of this consent exceed a rolling 24-hour average concentration of 80 micrograms per cubic metre ( $\mu\text{g}/\text{m}^3$ ).

16 Site operations shall cease, except for dust mitigation activities, when:

- TSP concentrations exceed a 1-hour average concentration of 220 micrograms per cubic metre ( $\mu\text{g}/\text{m}^3$ ); or
- TSP concentrations exceed a rolling 24-hour average concentration of 120 micrograms per cubic metre ( $\mu\text{g}/\text{m}^3$ ).

17 During dry conditions:

(a) the stripping or placement of potentially dusty material such as silt or topsoil shall not occur within 200 metres upwind of any occupied dwelling, if the wind gust speed (two minute average or less) measured at the site in accordance with condition (7) exceeds 10 metres per second during the previous two consecutive ten minute periods; and



(b) the above works may recommence when wind gust speeds (two minute average or less) are less than 7.5 metres per second (m/s) during the previous two consecutive ten minute periods.

18 The Consent Holder shall provide and maintain on site an adequate supply of water and equipment for watering all potentially dusty areas of the site for the purpose of dust suppression at all times during the construction of the ponds.

19 All exposed surfaces of soil on site at the completion of construction shall be stabilised either by gravelling or vegetation and maintained to prevent the generation of dust.

20 Cleanfill material deposited at the site shall not contain paper or other loose material that may be blown from the site.

21 The Consent Holder shall keep a record of any complaints relating to dust, and shall include (when provided with that information):

- (a) the location where the dust was detected by the complainant;
- (b) the date and time the dust was detected;
- (c) a description of the wind speed and wind direction when the dust was detected by the complainant;
- (d) the most likely cause of the dust detected;
- (e) any corrective action undertaken by the Consent Holder to avoid, remedy or mitigate the dust detected by the complainant; and

this record shall be provided to the Canterbury Regional Council on request.

22 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 a copy of this consent document and shall ensure compliance with consent conditions.

#### **Review**

23 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 dealing with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage.

#### **Administrative charges**

24 The Consent Holder shall pay to the Canterbury Regional Council any administrative charges fixed in accordance with s 36 RMA. The administrative charges shall be paid to the Canterbury Regional Council for the carrying out of its functions in relation to the administration, monitoring and supervision of this consent and for carrying out its functions under s 35 RMA.

#### **Other charges or costs**

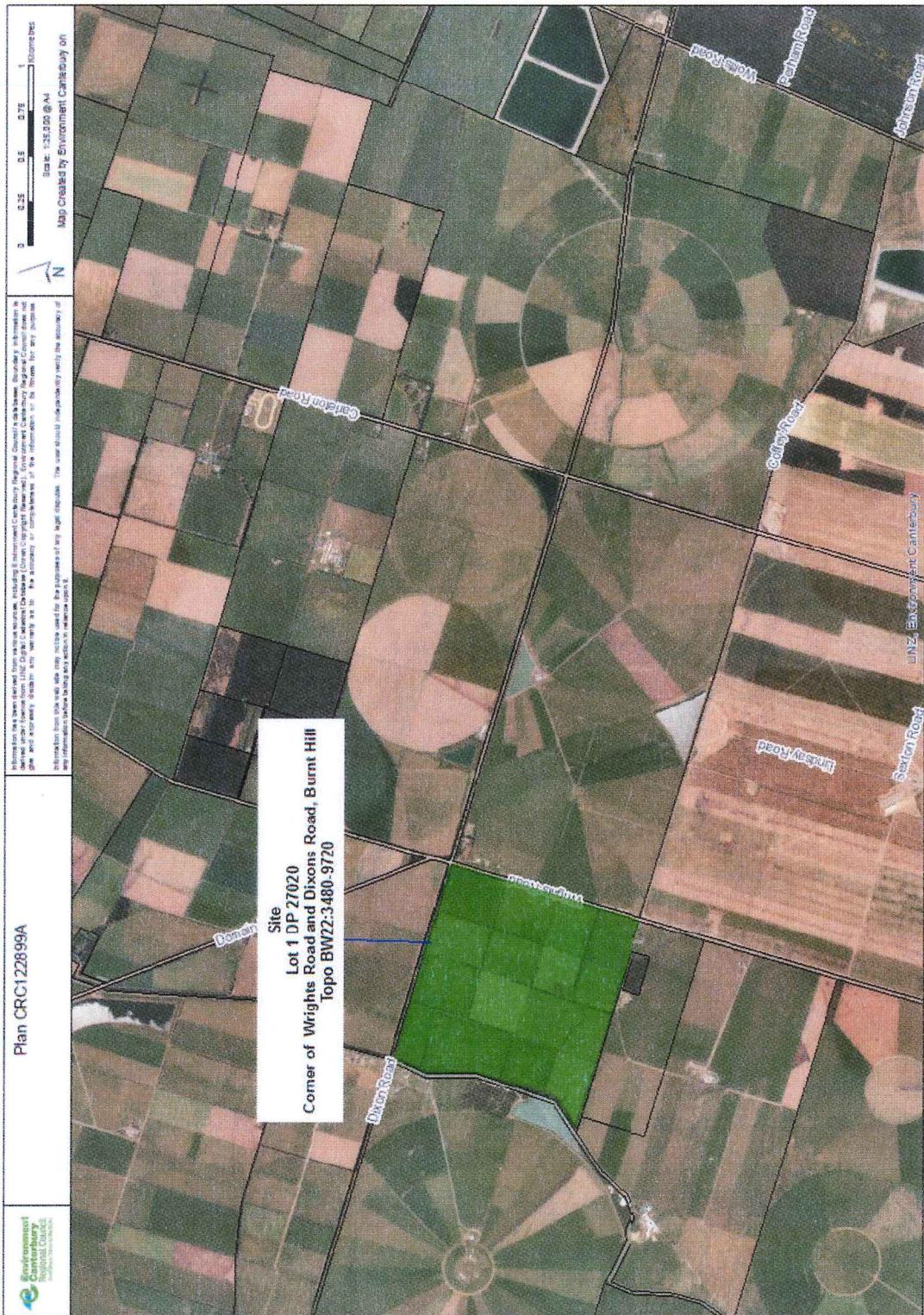
The Consent Holder shall pay all costs relating to certification or engagement of others to undertake any actions or services required in terms of these conditions.



**Lapse date**

26 The lapsing date for the purposes of s 125 shall be five years from the date the consent is issued.





**CRC122900 Consent to discharge stormwater to land during the construction of storage ponds and to discharge post-development stormwater**

**Limits**

- 1 The discharge shall be only:
  - (a) sediment-laden stormwater during site construction; and
  - (b) post development storm water;

associated with the construction and operation of the Waimakariri Irrigation Storage Ponds.
- 2 The discharges described in condition 1 shall only be from the site located at land parcel Lot 1 DP 27020, located on the corner of Wrights Road and Dixons Road, Burnt Hill, at or about map reference Topo BW22:3480-9720, as shown on plan labelled as the "Applicant's Site" on **Plan CRC122900A**, which forms part of this consent.
- 3 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.
- 4 Prior to commencement of works the Consent Holder or its agent shall arrange and conduct a pre-construction site meeting between the Canterbury Regional Council and all relevant parties, including the primary contractor. At a minimum, the following shall be covered at the meeting:
  - (a) scheduling and staging of the 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 amendments;
  - (f) site inspection; and
  - (g) confirmation that all relevant parties have copies of the contents of this consent document and all associated erosion and sediment control plans and methodology.
- 5 During construction, all practicable measures shall be undertaken to minimise discharges of sediment-laden runoff, off-site or into surface water.
- 6 The discharge of construction site stormwater shall only take place during the site construction period at the above mentioned site.

With the exception of the western boundary, no disturbance, earthworks, vegetation removal or other activity capable of altering runoff shall occur within:



- (a) 6 metres of the northern and eastern site boundaries; and
- (b) 8 metres of the southern boundary.

8 The Consent Holder shall ensure stormwater generated on or over any re-fuelling areas and/or vehicle repair areas is managed such that stormwater entrained with oil/fuels/hazardous substances from these areas is not discharged to groundwater or surface waters without treatment. All exposed surfaces shall be stabilised once works are complete or if they are not to be worked for a period of 14 days or more.

9 Erosion and sediment control measures shall be installed before any excavation occurs on-site.

10 The Consent Holder shall prepare an Erosion and Sediment Control Plan for the construction in general accordance with Environment Canterbury's "*Erosion and Sediment Control Toolbox for the Canterbury Region*" which can be accessed under <http://esccanterbury.co.nz/>. The Plan shall be prepared by a suitably qualified person. This plan shall be provided to the Manager, RMA Monitoring and Compliance, Canterbury Regional Council, no later than one month prior to the start of construction. The Erosion and Sediment Control Plan shall include but not be limited to:

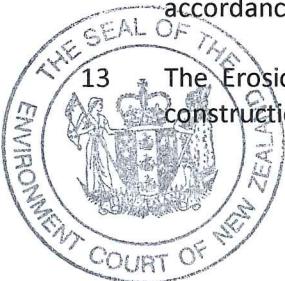
- (a) a location map including:
  - (i) construction site layout;
  - (ii) soil type within any construction stage;
- (b) detailed drawings showing the type and location of sediment control measures, on site catchment boundaries and off-site sources of runoff;
- (c) specifications and localities of designated sediment control practices with supporting calculations;
- (d) a programme of works, which includes but is not limited to, a proposed timeframe for the works;
- (e) criteria for stabilising exposed surfaces; and
- (f) siting of activities which have the potential to introduce sediment to sensitive area.

11 The Consent Holder shall inform the Manager, RMA Monitoring and Compliance Canterbury Regional Council in writing, at least 30 days prior to the commencement of bulk earthworks for the site.

#### **Certification**

12 At least one month prior to bulk earthworks commencing for the site, the Consent Holder shall provide to the Manager, RMA Monitoring and Compliance Canterbury Regional Council a certificate signed by an appropriately qualified and experienced engineer to certify that the appropriate erosion and sediment control measures have been constructed in accordance with the Erosion and Sediment Control Plan and conditions of this consent.

13 The Erosion and Sediment Control Plan may be amended at any time during the site construction. Any amendments shall be:



- (a) only for the purpose of improving the efficiency of the erosion and sediment control measures; and
- (b) consistent with the conditions of this consent; and
- (c) provided to the Manager, prior to any amendment being implemented.

**Spill management and response plan**

- 14 The Consent Holder shall take all practicable measures to avoid spills or any other contaminant within the site.
- 15 In the event of a spill of fuel or any other contaminant, the Consent Holder shall clean up the spill as soon as practicable, inspect and clean the stormwater system and take measures to prevent a recurrence.
- 16 Within 24 hours of a spill event greater than 10 litres, the Consent Holder shall inform the Manager, RMA Monitoring and Compliance Canterbury Regional Council and provide the following information:
  - (a) the date, time, location and estimated volume of the spill;
  - (b) the cause of the spill;
  - (c) the type of contaminant(s) spilled;
  - (d) clean up procedures undertaken;
  - (e) details of the steps taken to control and remediate the effects of the spill on the receiving environment;
  - (f) an assessment of any potential effects of the spill; and
  - (g) measures to be undertaken to prevent a recurrence.

**Decommissioning**

- 17 Once construction of the site has ceased, decommissioning of sediment and erosion measures shall be undertaken.
- 18 Erosion and sediment control measures shall not be decommissioned until the site is stabilised and the stormwater system for the developed site is functioning.

**Post construction**

- 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.

**Review**

- 20 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 dealing with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage.

**Administrative charges**

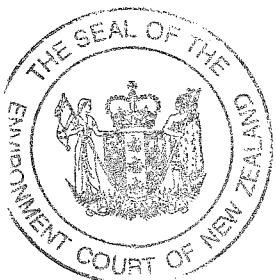
21 The Consent Holder shall pay to the Canterbury Regional Council any administrative charges fixed in accordance with s 36 RMA. The administrative charges shall be paid to the Canterbury Regional Council for the carrying out of its functions in relation to the administration, monitoring and supervision of this consent and for carrying out its functions under s 35 RMA.

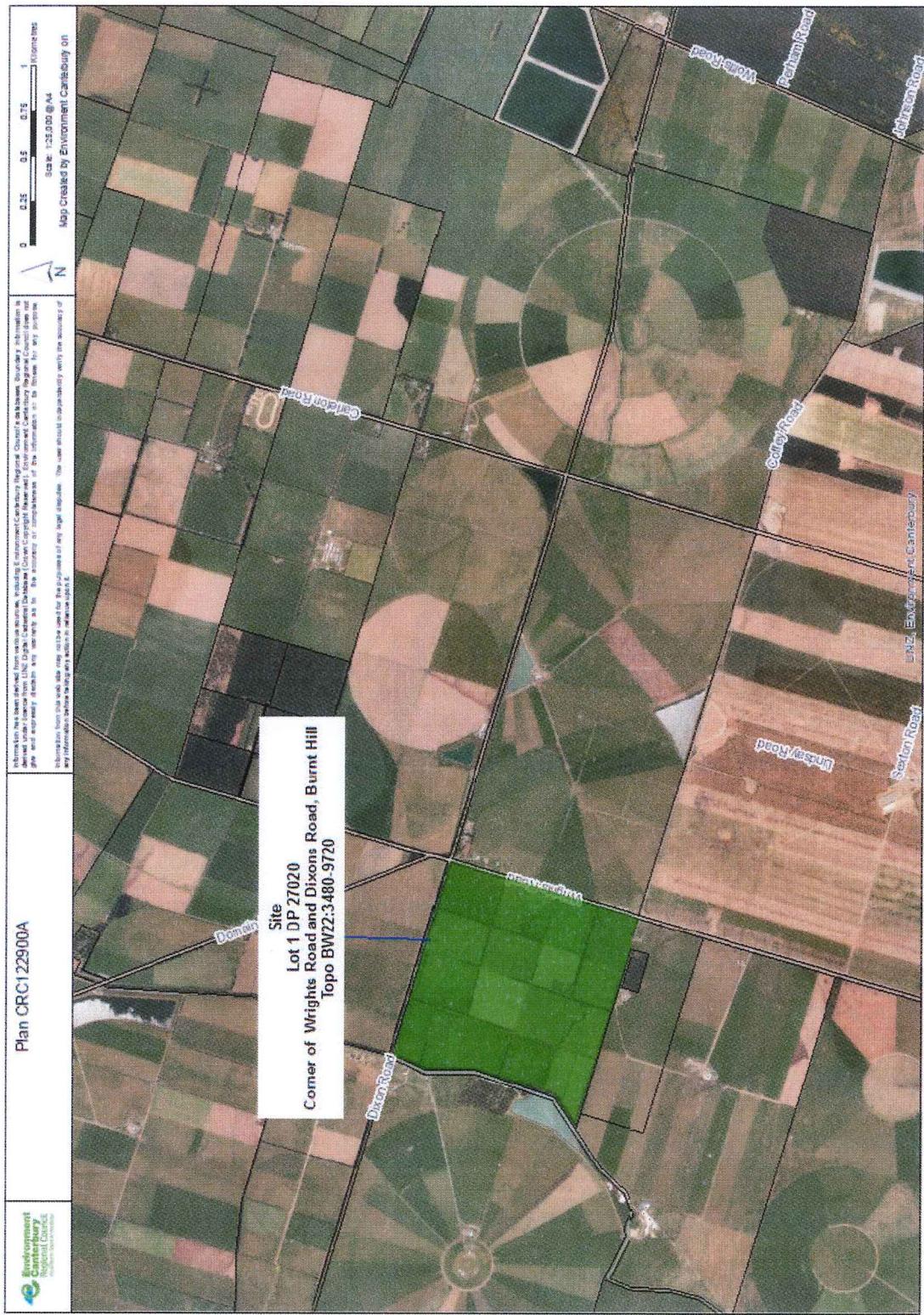
**Other charges or costs**

22 The Consent Holder shall pay all costs relating to peer reviews or engagement of others to undertake any actions or services required in terms of these conditions.

**Lapse date**

23 The lapsing date for the purposes of s 125 shall be five years from the commencement of this consent.





## ANNEXURE 2

### RC135478 - to construct, maintain and use storage ponds and associated structures

#### (Waimakariri District Council (WDC) Consent)

#### GENERAL

##### Activity authorised

- 1 The works shall be limited to the use of land and other associated activities in relation to the construction, use and maintenance of storage ponds and associated infrastructure which shall occur on land parcel Lot 1 DP 27020, located on the corner of Wrights Road and Dixons Road, Burnt Hill, at or about map reference Topo BW22:3480-9720, as shown on **Plan RC135478A** (the site), which forms part of this consent.
- 2 Except as required by the subsequent conditions, the Waimakariri Irrigation Storage Ponds shall proceed in accordance with the information submitted with the application, including the approved application plans, RC135478, and, as amended through the hearing of the applications:
  - (a) in a joint hearing between the Canterbury Regional Council and the Waimakariri District Council (WDC);
  - (b) in the hearing of an appeal to the Environment Court, with a final decision of the Environment Court being issued on 28 August 2020;

and including:

- (c) the document entitled *Assessment of Environmental Effects for the Construction and use of Wrights Road Storage Ponds*, prepared for Waimakariri Irrigation Limited by Pattle Delamore Partners, dated November 2013;
- (d) the report entitled *Waimakariri Irrigation Ponds – Design Report*, prepared for Waimakariri Irrigation Limited by Damwatch (Issue 4 – dated 9 December 2015), including *Construction Drawings (Design Report)*; and *Technical Specifications (Issue 5) (Technical Specifications)*, and in each case inclusive of any approved amendments or updates.

##### Review and certification

- 3 Where a subsequent condition below refers to a *review or certification by an independent certifier*, unless context otherwise requires, that means:
  - (a) the reviewer or certifier shall be a suitably qualified and registered Chartered Professional Engineer and who, where the review or certification relates to matters of dam design, construction, or the preparation and peer review of documentation required for large dams, has a minimum of 10 years' experience in those activities and is a *Category A Recognised Engineer* for the purposes of the *New Zealand Society on Large Dams (NZSOLD) New Zealand Dam Safety Guidelines 2015 (NZSOLD Guidelines)*;



- (b) the reviewer or certifier shall be independent of the Consent Holder, dam designers and construction contractors;
- (c) the reviewer or certifier shall be acceptable to the WDC Planning Manager;
- (d) the Consent Holder is responsible for appointing the reviewer or certifier and all costs of certification;
- (e) the Consent Holder shall implement any documentation changes and remedial actions recommended by the reviewer or certifier; and
- (f) the Consent Holder shall provide to the WDC Planning Manager, written certification from the reviewer or 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 Guidelines* including any amendment or update current at the time of certification and the documents listed in Condition 2.

*Advisory note: When determining the independent certifier for the purposes of this consent, preference shall be given to, if available, engaging one of the Peer Reviewers involved in the original consent application on the basis of their familiarity with the project.*

#### **Notification**

- 4 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 and have access to the contents of this consent document and shall ensure compliance with consent conditions.
- 5 The WDC Planning Manager shall be notified of:
  - (a) the intention to exercise this resource consent at least three months prior to the commencement of any activities under this consent;
  - (b) the imminent commencement of works, no more than seven days and no less than 48 hours prior to commencement of the works authorised by this consent;
  - (c) the intention to complete construction works, no more than six months and no less than three months prior to the cessation of construction activity; and
  - (d) the date construction activity ceases, no more than 48 hours after construction activity ceases.
- 6 A copy of the certified and accepted versions of all relevant management plans shall be kept on the site, and the Consent Holder shall ensure that all key personnel are made aware of each plan's contents.

#### **Public access**

Farm animals and unauthorised persons shall be prevented from accessing the ponds and embankments through provision of the fencing and locked gates as show on Plan **RC135478[X]**.



## PRE-CONSTRUCTION

### **Construction Management Plan**

- 8 At least three months prior to construction commencing on site, the Consent Holder shall provide to the WDC Planning Manager, a final Waimakariri Irrigation Storage Ponds Construction Management Plan (CMP). The CMP shall:
  - (a) be prepared by a suitably qualified and experienced person(s);
  - (b) contain certification by a suitably qualified and experienced person(s) that the CMP meets the objectives and performance standards set out in Conditions 12 and 13.
- 9 Construction work and associated activities shall not commence at the site until the CMP has been accepted by the WDC Planning Manager and the Consent Holder has received written notice of acceptance and the first meeting is held with the Community Liaison Group (CLG).
- 10 Should the WDC Planning Manager refuse to accept the CMP in accordance with the conditions, the Consent Holder shall provide a revised CMP to the WDC Planning Manager as soon as is practicable.
- 11 All activities authorised under this consent shall be undertaken in accordance with the CMP, which will be monitored by WDC and Canterbury Regional Council collaboratively in accordance with their areas of responsibility.

*Advisory note: where necessary WDC and Canterbury Regional Council will determine who is to be the lead agency on particular aspects of the CMP where joint responsibilities exist and will advise the consent holder and the Community Liaison Group (established under conditions 18 – 21 below) accordingly.*

### **Construction objectives for CMP**

- 12 The objectives for the CMP for all construction activities managed under it are to:
  - (a) ensure that the construction activities achieve compliance with the conditions of consent for these activities;
  - (b) provide a method to ensure that the Consent Holder's contractors and agents implement the CMP, so that compliance with conditions of consent for construction effects can be achieved;
  - (c) ensure all construction is undertaken in accordance with methods that provide for a review by an independent expert (as determined in accordance with the NZSOLD Guidelines in dam quality assurance of the overall construction methodology);
  - (d) ensure a copy of the current CMP is available on-site at all times;
  - (e) minimise the extent or time that areas of the site are disturbed; and
  - (f) integrate good environmental practice into construction activities.



### Performance standards

13 The CMP shall include, but not be limited to:

- (a) the steps that will be undertaken during construction to ensure the Waimakariri Irrigation Ponds - Technical Specification and any approved amendments or updates, and the conditions of this consent are complied with;
- (b) methods of the works, including but not limited to, the staging of the works, the site layout plan and procedures to be used;
- (c) details of the interrelationship with the quality assurance programme, including the review by an independent expert in dam quality assurance of construction processes as required by conditions 10 to 16 of Regional Council consent **CRC122897** (also in conditions 12 to 18 of Regional Council consent **CRC120610**);
- (d) details on how compliance with the Worksafe Good Practice Guideline for Excavation Safety (July 2016) will be achieved;
- (e) details of measures to be identified and implemented to prevent unauthorised access to and/or the unauthorised deposition of material into the excavated areas; and
- (f) details addressing the need to avoid rocks puncturing the liner or incorporation of that information into Technical Specification, Section 4.4.

14 Further to Condition 13 above, the CMP shall include the following specific matters:

- (a) The name and 24 hr contact details of the person nominated by the Consent Holder to supervise the implementation of, and adherence to, the CMP;
- (b) The work programme, staging, timing and duration of the works;
- (c) Earthworks management:
  - (i) construction works shall be in general accordance with Environment Canterbury's Erosion and Sediment Control Guidelines (2007);
  - (ii) the control of weeds on stockpiled material;
  - (iii) the control of weeds and pests that may enter the Eyrewell Scientific Reserve from the site;
  - (iv) measures necessary to provide for stormwater disposal and sediment removal;
  - (v) taking all reasonable precautions to prevent any earthworks from damaging or affecting adjacent water races, including the provision and maintenance of a vegetated strip where possible;
  - (vi) siting and management of stockpiles to avoid sediment-entrained runoff entering races or going off-site and to reduce the risk of fugitive dust emissions;



- (vii) avoidance of entrainment of oil, fuels or any other hazardous substances in stormwater, with particular emphasis on re-fuelling areas and repair areas; and
- (viii) stabilisation and maintenance of site entrances from public roads;

(d) Importation of material:

- (i) the Consent Holder will ensure that where it is necessary to import fill material to the site to construct, use and maintain the storage ponds the imported material shall meet the criteria of clean fill (as defined in the Ministry for the Environment guide to Managing Cleanfill, 2002); and
- (ii) control the delivery of cleanfill material sourced outside of the site, which shall be supervised at all times by the Consent Holder (or designated agent); and
- (iii) keep a record of all material brought onto the site, which includes:
  - (A) the name of the person and company that delivered the clean fill to the site;
  - (B) the date and time of deposition;
  - (C) the source of the material;
  - (D) a description of the material;
  - (E) the volume of the material deposited; and
  - (F) where on the site the material is deposited;

(e) Construction noise:

- (i) construction noise shall be assessed and managed in accordance with NZS 6803:1999 "Acoustics – Construction Noise";
- (ii) a construction noise management plan shall be prepared by the applicant. In particular, the construction noise management plan shall address:
  - (A) how potential noise effects of bund formation will be managed at neighbouring residences on adjacent land; and
  - (B) how noise monitoring during construction activities that are closest to residences will occur;



(f) Traffic management:

- (i) the Consent Holder shall engage a suitably qualified and experienced traffic engineer to prepare a Construction Traffic Management Plan (CTMP) as part of the CMP to ensure:
  - (A) that traffic generation during the construction phase is effectively managed so that increases in traffic volume are safely accommodated within the existing roading network; and
  - (B) that all traffic activities in furtherance of this consent, both on and off the site, are undertaken in accordance with the CTMP;

(g) Hazardous substances management:

- (i) the storage and containment of hazardous substances on site shall meet all relevant and applicable HSNO standards appropriate for the storage of hazardous substances. All mobile storage containers shall comply with the Hazardous Substances (Tank Wagons and Transportable Containers) Regulations 2004; and
- (ii) the Consent Holder shall hold an accredited Oil Spill Kit on site and all staff and contractors that are handling hazardous substances shall be trained in its operation;

(h) Complaints register and non-compliance:

- (i) the Consent Holder shall maintain a complaints register at the site office and make this available to officers of the WDC and the Canterbury Regional Council on request. The Complaints Register shall record the following:
  - (A) date and time of the incident that has resulted in the complaint;
  - (B) location of the complainant when the incident was detected;
  - (C) a description of any relevant matters such as, wind speed and wind direction when the effects were detected by the complainant;
  - (D) the possible cause of the incident; and
  - (E) any corrective action undertaken by the Consent Holder to avoid, remedy or mitigate the effects identified by the complainant, including the time of that corrective action;
- (ii) unless otherwise stated within these conditions, in the event of any breach of compliance of the conditions of the CMP the Consent Holder shall notify the WDC Planning Manager within 48 hours of the breach being detected;
- (iii) within five days of any breach, the Consent Holder shall provide written notification to that officer, which explains the cause of the breach and if the cause was within the control of the Consent Holder, steps that were taken to remedy the breach and steps that will be taken to prevent any further occurrence of the breach;



- (i) The CMP shall specify that in the event of any disturbance to koiwi tangata (human bones) or taonga (treasured artefacts), the Consent Holder shall immediately follow the Accidental Discovery Protocol set out in Appendix 3 of the Mahaanui Iwi Management Plan (attached to this consent as **Attachment 1 RC135478**), and shall include the protocol in the CMP;

15 Following acceptance of the CMP and at least one month prior to construction commencing, the Consent Holder shall provide, at no cost, the following material to each residence within 1 km of the site:

- (a) an electronic copy of the resource consents for the Waimakariri Irrigation Storage Ponds;
- (b) an electronic copy of the certified CMP;
- (c) the name and 24 hr contact details of the administrator of the complaints register; and
- (d) the name and 24 hr contact details of the person nominated by the Consent Holder to supervise the implementation of, and adherence to, the CMP.

16 The CMP shall be reviewed by the Consent Holder every three months following the commencement of the construction works. The review shall evaluate the CMP, any entries in the complaints register and any monitoring data and communications to, or from, the WDC (and the Canterbury Regional Council). The results of the review shall be recorded in writing and sent to the WDC Planning Manager within two weeks of the review occurring. If necessary, the CMP shall be amended to improve its effectiveness in delivering the objectives and matters set out in the conditions and provided to the WDC Planning Manager.

17 Once approved the CMP may be varied by the Consent Holder and provided for acceptance by the WDC Planning Manager. Construction activities subject to the variation shall not commence until the variation has been accepted by the WDC Planning Manager and the Consent Holder has received written notice of acceptance.

#### **Community Liaison Group (CLG)**

18 The Consent Holder shall, within one month of its contractor being formally instructed to commence works advertise a public meeting for the purpose of facilitating the establishment of a CLG in order to consult with representatives of the community. As a minimum, the Consent Holder shall invite the following interested parties to be represented in the CLG:

- (a) Te Ngai o Tuahuriri Runanga or a nominated representative;
- (b) ECESS (and/or representatives who reside between the Eyre River and Waimakariri River and who may be impacted by a breach of the Waimakariri Storage Ponds);
- (c) Canterbury Regional Council and WDC;
- (d) Landowners within 1 km of the Waimakariri Irrigation Storage Ponds.



19 The CLG shall be conducted in a manner of good faith and have the following objectives:

- (a) Facilitating information flow between the Consent Holder and the community regarding the implementation and environmental effects of the activities authorised by these consents (including new information, results of monitoring, and studies relevant to such effects);
- (b) Identify any issues of concern that arise during the construction period of the Waimakariri Irrigation Storage Ponds, and on an ongoing basis;
- (c) Identify and discuss appropriate measures to address issues raised;
- (d) Making recommendations for the Consent Holder (and its contractors) to consider in relation to any issues identified in terms of (b) above;
- (e) Providing the residents within the identified inundation area with annual advisories regarding the presence of the Waimakariri Irrigation storage ponds, the existence of the CLG and the availability of assistance for preparing and updating Household Emergency Plans (as part of the Emergency Evacuation Plan: EEP), including updates to account for transient or temporary residents at any property.

20 The Consent Holder shall assist the CLG to fulfil its objectives by, amongst other things:

- (a) Arranging an appropriate venue in the area for the meetings of the CLG and meeting any other reasonable costs of the meetings;
- (b) Appointing a community liaison officer with authority to represent it on the CLG and ensuring the community liaison officer attends all of the formal meetings of the CLG;
- (c) Ensuring that a representative of the company responsible for the construction of the Waimakariri Irrigation Storage Ponds under contract with the Consent Holder attends all meetings;
- (d) Providing information to the CLG about progress in relation to the Waimakariri Irrigation Storage Ponds, including the environmental effects of the Waimakariri Irrigation Storage Ponds and compliance with consent conditions and development and review of any and all management plans including the Emergency Action Plan (EAP) and EEP;
- (e) Being prepared to discuss the environmental effects of the Waimakariri Irrigation Storage Ponds, any concerns in relation to human health and safety, and any complaints from the local community, including provision of further information and identification of appropriate measures to address issue raised;
- (f) Making assistance available for:
  - (i) the preparation and updating of Household Emergency Plans; and
  - (ii) the procurement of communications devices, such as ones utilising the "SCADA" system, for residents who indicate that as their preferred mode of communication of dam emergencies.

21 The Consent Holder shall use its best endeavours to ensure meetings of the CLG are held as follows (unless otherwise agreed by the CLG):



- (a) The first meeting shall be held at least two months prior to the commencement of construction of the Waimakariri Irrigation Storage Ponds;
- (b) Subsequently, at least once every three calendar months during the construction period;
- (c) One meeting within six calendar months following completion of commissioning; and
- (d) Thereafter on a continuing basis, annually, or on notice if any dam safety issue arises or is raised by any party on the CLG.

*Advisory note: It is anticipated that the CLG will appoint a chair, from amongst its members, and will develop and agree on its Terms of Reference at its first meeting.*

## CONSTRUCTION PRE-COMMISSION

### **Hours of construction**

22 Construction at the Waimakariri Irrigation Storage Ponds shall:

- (a) When within 150 m of the notional boundary of any dwelling and when the work involves earthmoving or compacting equipment, only occur during the hours of 8:00 am to 5:00 pm Monday through Friday, with no work on Saturdays, Sundays or public holidays; and
- (b) In all other circumstances, only occur during the hours of 7:30 am to 6:00 pm Monday through Saturday, with no work on Sundays or public holidays.

### **Dam Safety Management Plan**

23 The Consent Holder must prepare a Dam Safety Management Plan (DSMP) and an Emergency Action Plan (EAP) under its Regional Council consent **CRC 120610**, which shall be certified by an independent certifier as meeting the requirements as appropriate and robust and meeting the requirements of the *NZSOLD Guidelines* including any amendments or updates and that the DSMP and EAP address the ability of the dam to operate under emergency conditions; and in particular that the control systems are appropriate and robust and meet the *NZSOLD Guidelines*.

24 Such certification shall also be provided to the WDC Planning Manager at least three months prior to the first filling or partial filling of the storage ponds with water. A copy of the certified DSMP plans shall be kept on the site throughout the commissioning phase, and the Consent Holder shall ensure that all key personnel are made aware of the plans' contents.

### **Emergency Action Plan**

25 The Consent Holder shall engage a suitably qualified and registered Chartered Professional Engineer who has a minimum of 10 years' experience in dam design, construction, and the preparation and peer review of documentation required for large dams, and who is a *Category A Recognised Engineer* for the purposes of the *NZSOLD Guidelines* to prepare the EAP. The objectives of the EAP shall be to ensure appropriate management of the risk



associated with any uncontrolled abnormal or excessive flow releases from the dams. The EAP is part of the Dam Safety Management System.

26 The EAP shall be prepared in consultation with the Community Liaison Group, and the Civil Defence Emergency Management Group, and shall as far as practicable, be consistent with any Civil Emergency Management Group Plan governing the Canterbury Region and the Waimakariri District pursuant to the Civil Defence Emergency Management Act 2002.

27 The EAP shall include as a minimum:

- (a) maps of the land area located between the Eyre and Waimakariri Rivers, including land modelled as being subject to inundation in the event of abnormal or excessive flow release, including emergency dewatering;
- (b) the rate of inundation for the land identified under 27(a);
- (c) contact details for:
  - (i) residents and how communications will be undertaken, including contingency plans for alerting (if required) all people within the area between the Eyre River and the Waimakariri River potentially impacted by an inundation or evacuation event; and
  - (ii) relevant civil defence authorities.
- (d) provision for effective consultation with all property owners including assistance with preparing individual household evacuation plans;
- (e) provision for retaining material supplies at the site and equipment available at short notice, as specified at 5.6 of the *Wrights Road storage Ponds – EAP (Preconstruction Issue) 9 June 2017 Issue 5*, for use in emergency situation;
- (f) recognition of the Emergency Evacuation Plan (EEP) described at Condition 29;
- (g) a timeline showing how the inundation area progresses with time during a dam breach event; and
- (h) a description as to how access to embankment crests during emergencies is to occur.

28 The EAP shall be consistent with the conditions of this resource consent (including the other required management plans) and the Technical Specifications as they relate to the design and operation of the Water Storage Ponds.

#### **Emergency Evacuation Plan**

29 The **Emergency Evacuation Plan** shall be developed in consultation with the Civil Defence Emergency Management Group, the Community Liaison Group and people who are resident in the area between the Eyre and Waimakariri Rivers, as identified in condition 27(a). The objectives of the plan shall be to:

- (a) confirm the areas identified in condition 27(a) that may be subject to inundation following a storage pond breach;



- (b) outline the roles and responsibilities of the Consent Holder and other organisations involved in evacuation, with the Consent Holder retaining primary responsibility unless directed otherwise, or replaced, by a competent authority; and
- (c) provide details on the evacuation procedures to be followed by residents and the information that may be required by other organisations in the preparation of their own evacuation plans.

#### **Performance standards for the EEP**

30 As a minimum the EEP shall include detail on:

- (a) a description of the likely inundation paths (including time delays) that may occur following catastrophic dam failure;
- (b) warning and evacuation areas including a 'Self Evacuation Area', an 'Assisted-Evacuation Area' and a 'Targeted Warning Area';
- (c) the roles and responsibilities of the key organisations and agencies involved in an evacuation (see: 29(b));
- (d) the evacuation process (with reference to the Emergency Action Plan), including:
  - (i) detection of an event or incident that has or may develop into a dam safety emergency;
  - (ii) how decisions will be made to trigger a warning and/or evacuation;
  - (iii) how warnings will be provided;
  - (iv) how evacuation of affected people will occur;
  - (v) the provision of shelter for people evacuated; and
  - (vi) the return of people to any area evacuated.
- (e) the signage that will identify evacuation routes;
- (f) how non-permanent (or 'transient') people will be advised of the evacuation area and the possible need to evacuate;
- (g) the limiting factors that might arise in relation to an evacuation and how those factors can be mitigated; and
- (h) an outline of the support that will be available to provide to persons for:
  - (i) the preparation and updating of Household Emergency Plans; and
  - (ii) the procurement of communications devices, such as the "Scada" system, for those residents who may require them and indicate that is their preferred mode of communication of dam emergencies.

31 The EEP shall be certified as meeting the objectives and performance standards set out in conditions 29, 30, 32 and 33 by a suitably qualified and experienced person. A copy of the certification shall be provided to the WDC Planning Manager.



### Testing of notification systems

32 At least 3 months prior to the first filling or partial filing of the dam, the consent holder shall undertake a test of the emergency warning systems described in EEP:

- (a) the testing of the emergency warning systems shall be overseen by a suitably qualified and experienced person;
- (b) following the completion of a successful test(s), the consent holder shall provide a certificate to the WDC Planning Manager, certifying that the warning system meets the requirements (including providing warnings within the indicated inundation timeframes and that those warnings are received within the indicated inundation timeframes) described in the EEP.

33 The first filling or partial filing of the dam shall not commence until such time that the certificate required by condition 32(b) has been provided to the WDC Planning Manager.

### Landscape management plan

34 The Consent Holder shall prepare a Landscape Management Plan (LMP) for the Waimakariri Irrigation Storage Ponds. The objectives of the LMP shall be to minimise risks to the ponds, provide indigenous biodiversity and mitigate visual effects.

35 The LMP shall include, but not be limited to, the following components:

- (a) Planting, maintenance and management strategy (following a dam safety audit) that is generally in accordance with the recommendations provided by Edge Landscape Projects Limited in their visual impact assessment dated April 15 2013 and the addendum to that report dated October 2013, and any addendums necessary to mitigate adverse environmental effects. Planting on the embankments shall include grassland vegetation or where deemed appropriate (following a dam safety audit) indigenous grass species may also be used; and
- (b) Development and implementation of an annual monitoring plan for the Eyrewell Scientific Reserve shall be undertaken to detect change in health or species composition due to a change in soil moisture. This monitoring shall be undertaken for the first five years of pond operation, and if no changes are detected, then a recommendation from a suitably qualified person of whether further monitoring is necessary shall be provided to Council.

36 The Consent Holder will consult and liaise with Mahaanui Kurataiao Limited on behalf of Te Ngai o Tuahuriri Runanga before finalising the LMP to provide an opportunity for Mahaanui Kurataiao Limited to put forward any cultural considerations it may wish the Consent Holder to consider for inclusion within the LMP.

37 The LMP, certified by a suitably qualified landscape expert as meeting the requirements for the Landscape Management Plan, shall be provided to the WDC Planning Manager at least two months prior to the first filling or partial filling of the storage ponds with water.

The landscaping of the storage ponds and associated activities shall be undertaken in accordance with the LMP accepted by the WDC Planning Manager in accordance with timetables set out in the LMP.



39 The first filling or partial filling of the storage ponds with water shall not occur until the LMP has been accepted by the WDC Planning Manager and implementation of the LMP has commenced.

## COMMISSIONING

### Commencement of commissioning

40 The filling or partial filling shall not commence at the site until the DSMP, EAP and EEP have been provided to the WDC Planning Manager, and the Consent Holder has received written notice of acceptance

### Plans kept on site

41 Copies of the DSMP, EAP and EEP shall be kept on the site throughout the Commissioning and Post Commissioning phase, and the Consent Holder shall ensure that all key personnel are made aware of the plans' contents.

### Reporting by Quality Assurance Reviewer

42 At 3 monthly intervals throughout commissioning of the dam the Quality Assurance Reviewer shall provide a report to the Consent Holder, the Dam Designer, the Contractor and the WDC Planning Manager, that summarises the results of all information received, the supervision of the Quality Assurance **on site**, the Quality Control Plan and the EAP and an opinion on compliance the Technical Specification (including any amendments) and the conditions of this consent.

## POST-COMMISSIONING

### EAP and EEP review

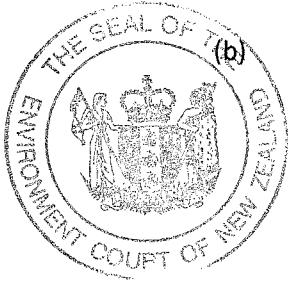
43 The Consent Holder shall :

- (a) update the contact list(s) provided in the EAP annually by 30 March; and
- (b) review the EAP and EEP in consultation with the Civil Defence and Emergency Management Group:
  - (i) at least bi-annually, with the timing of any individual review being timed to coincide with any review of the Civil Emergency Management Group Plan referred to in Condition 26; and
  - (ii) within 3 months following an event requiring activation of the plan and/or evacuations incorporated.

44 Each review shall be undertaken by an independent appropriately qualified and experienced person and the review shall:

- (a) consider whether the EAP and EEP continue to meet the objectives and performance standards that are set out in these conditions; and

include an update of residents within the evacuation area (including a review of the electoral roll and rating database information and any information received from the Consent Holder in the ongoing implementation of the EAP and EEP),



and following their review, the reviewer shall certify that the EAP and EEP (including any amendments that might be recommended by the reviewer) continue to meet the conditions of this consent.

45 The Consent holder shall comply at all times with the EAP and the EEP and any amendments.

#### **Dam Safety Management Plan**

46 The DSMP shall be reviewed by the Consent Holder every twelve months, for the first two years of operation following the initial filling of the storage ponds, and thereafter every five years coinciding with Comprehensive Safety Reviews referred to at Condition 48 and also whenever a trigger event, as identified in the DSMP, occurs. The reviews shall evaluate the DSMP, the results of any inspections and any monitoring data and communications to or from the Consent authorities. The review shall include reporting in accordance with Section 6.18 of the Technical Specification on results of monitoring for changes in the properties of geomembrane A2 sized coupons. The results of the review along with any required maintenance or upgrades required to comply with the Technical Specification and the *NZSOLD Guidelines* shall be recorded in writing and sent to the WDC Planning Manager within one month of the review occurring.

47 The DSMP shall be re-certified by an independent certifier after any change and not less than once every five years. Such re-certifications shall be provided to the WDC Planning Manager within fifteen working days of recertification.

#### **Dam safety reviews**

48 In accordance with the *New Zealand Dam Safety Guidelines 2015*, a Comprehensive Dam Safety Review (CDSR) shall be undertaken every 5 years and the Review shall be provided by the Consent Holder within 10 working days of being completed to the WDC Planning Manager.

49 In accordance with the *New Zealand Dam Safety Guidelines 2015*, an Intermediate Dam Safety Review (IDSR) shall be undertaken every year, and the Review shall be provided by the Consent Holder within 10 working days of being completed to the WDC Planning Manager.

50 The DSMP shall be updated to address any dam safety issues identified in an IDSR or CDSR, and the updated plan provided to the WDC Planning Manager WDC Planning Manager within two months of receipt by the Consent Holder.

## **ADMINISTRATION**

#### **Bonding of Construction, Operation, Maintenance, and Remediation**

51 The Consent Holder shall:

- (a) construct, maintain, operate, repair, and remediate the works authorised under this consent;
- (b) at least three months prior to commencement of construction works at the site, and during the construction, operational, maintenance, and remediation phases, in relation to this consent; enter into an enforceable written agreement to provide and maintain in favour of the Canterbury Regional Council and WDC (*the Councils*), a



cash bond or bank bond pursuant to sections 108(2)(b) and 108A of the Resource Management Act 1991, on terms and conditions satisfactory to the Councils in all respects.

*Advisory note: if there is a cash bond it will be held by the Canterbury Regional Council. However, should conditions of this land use consent not be complied with and the non-compliance not be rectified by the Consent Holder in accordance with the terms of the bond, the WDC will be entitled to access the bond in order to carry out any necessary works.*

52 The bond quantum shall be sufficient to secure compliance with the conditions of this consent in the event of any default by the Consent Holder.

53 Any bank bond shall be in a form used by a bank registered to conduct business in New Zealand and approved by the Councils.

54 The agreement shall include that the Consent Holder shall be and remain liable for meeting:

- (a) If construction commences, but is not completed, the cost of:
  - (i) making safe and mitigating any adverse effects arising from the work undertaken during construction; and
  - (ii) reinstating land affected by the construction to a state where:
    - (A) all slopes are stable and safe;
    - (B) all surfaces are covered in top soil and planted in suitable pasture species; and
  - (iii) remedying or mitigating any breach of conditions of the consents (in so far as such a breach relates to work undertaken at the time construction ceases);
- (b) If construction is completed the cost of:
  - (i) remedying or mitigating any breach of conditions of the consents; and
  - (ii) avoiding, remedying or mitigating and/or monitoring any significant adverse effect on the environment, and caused by the storage ponds, which becomes apparent during or after the expiry of this consent.

55 The amount of the bond may vary from time to time but at any given time shall be sufficient to cover the estimated costs at that time (including any contingency) of compliance with all conditions including the:

- (a) stabilisation of any dam or other structures;
- (b) the completion of planting as contemplated by condition 54(a)(ii)(B); and
- (c) maintenance and repair of the dam structures for the purposes of achieving conditions 51 and 52 and 54.

The bond agreement shall also include the terms and conditions on which the bond shall be established, maintained, changed, transferred, or surrendered. In the event of the Councils



not agreeing with the consent holder on the terms of the agreement, then the dispute shall be resolved through an agreed disputes resolution process or referred to arbitration by an experienced and suitably qualified arbitrator appointed jointly by the Councils and the Consent Holder or, failing agreement, by the Arbitrators and Mediators Institute of New Zealand (AMINZ).

57 The initial bond quantum shall be determined as follows:

- (a) The Consent Holder shall provide to the Councils a report prepared by a suitably qualified and experienced person (an expert report) which addresses all matters covered by conditions 51 and 52, has estimates of costs and recommends the initial bond quantum. The Councils shall engage a suitably qualified and experienced person to peer review the bond quantum proposed by the Consent Holder; and
- (b) In the event of the Consent Holder and the Councils not reaching agreement on the initial bond quantum it shall be assessed by an independent bond assessor appointed by the Councils jointly, and the decision of that person shall be final and binding.

58 The bond quantum may, on the initiation of the Consent Holder, be reviewed and reassessed every two years from the date the initial bond quantum is lodged until a date two years after the date on which this consent has been given effect to. The purpose of the adjustment is to reflect changes in the risk profile of the project and/or the Producer Price Index. After that, the bond quantum shall be reviewed and reassessed by the Consent Holder and the Councils at five yearly intervals for the duration of this consent. The method of the review shall follow the same procedure set out in Condition 57 above.

59 The bond terms and quantum may also be varied or cancelled or renewed at any other time by agreement between the Consent Holder and the Councils, using the methodology described at condition 57.

60 If any time the amount of the bond is varied under conditions 58 or 59 then the Consent Holder, shall within five (5) working days of the replacement bond agreement being executed put in place a new bond for the varied amount or the additional amount required in excess of the existing bond.

61 If the consent is transferred to another party or person, the bond lodged by the transferor shall be retained by the Councils until a replacement bond is entered into by the transferee to ensure compliance with conditions of the consent unless conditions 51 and 52 are already complied with.

62 During the construction, operation, maintenance, and reinstatement phase of the Scheme, a scope of works planned for each phase will be prepared and provided by the consent holder to the Councils, both prior to setting the initial bond quantum, and again at each annual reassessment and six months prior to any change in phase, to assist in setting the bond quantum.

63 At all times the Consent Holder shall comply with the terms of the bond(s) or varied bond(s).

64 The Consent Holder shall reimburse the Councils for all reasonable costs incurred in developing the bond agreement and any subsequent reviews or reassessments that shall set out the terms and conditions on which the bond shall be established, quantified, maintained, changed, transferred or surrendered.



65 For the avoidance of doubt, the enforceable written agreement may provide for the bond to be held by the Canterbury Regional Council after the expiry of consent CRC120610 if condition 54 is not complied with.

#### **Public liability insurance**

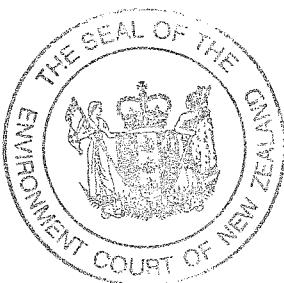
66 The Consent Holder will ensure that, at least 3 months prior to construction of the ponds it has in place and taking effect from when construction commences and on an ongoing basis general/public liability insurance that provides a sufficient sum insured (determined as set out in conditions 67 to 73 below) to indemnify the Consent Holder in respect of all sums which the Consent Holder becomes legally liable to pay by way of compensation to third parties consequent upon:

- (a) Loss of or destruction or physical damage to any tangible property including resulting loss of use; and
- (b) Loss of use of any tangible property not otherwise physically lost or damaged or destroyed.

67 To assist in determining the form and extent of required public liability insurance cover, the Consent Holder shall engage a suitably qualified and experienced insurance expert with at least 10 years' experience in determining insurance cover, including the provision of public liability insurance policies (*Insurance Expert*).

68 The Insurance Expert shall determine the appropriate sum insured for the purposes of meeting potential legal liability to third parties using recognised and standard insurance assessment methodologies. In determining that sum, the Insurance Person shall assess and advise on:

- (a) The extent of potential third party claims relating to property and personal damage, including potential claims as might be contemplated under a standard public insurance liability policy relating to:
  - (i) Infrastructure, including but not limited to houses, buildings, tracks/access routes and fences;
  - (ii) Possessions that may be damaged, including but not limited to chattels and motor vehicles;
  - (iii) The repair and/or replacement of household, farm, and business contents, supplies and stock (including animals);
  - (iv) The repair and/or replacement of landscaping, including and allowing for costs of clean-up, restoration of land, structures, and natural environment;
  - (v) Provision for the payment of any costs incurred by third parties associated with the event or evacuation and recovery, including but not limited to temporary accommodation;
  - (vi) Any damage to, and repair of, the assets and infrastructure of the WDC;
  - (vii) Loss of use (including business interruption); and
  - (viii) Personal injury.



(b) The timeframes within which a review of the limits of indemnity and coverage (and terms of the policy) should occur, with reviews taking place, at a minimum:

- (i) at the end of the construction period; and
- (ii) at three yearly intervals thereafter.

69 Following the completion of the assessment required by condition 68 and any review as undertaken in accordance with condition 68(b), the Consent Holder shall provide a certificate to the WDC Planning Manager (as well the Manager RMA, Monitoring and Compliance, Canterbury Regional Council) from the Insurance Expert certifying that the recommended sum insured has been determined in accordance with condition 68. The Insurance Expert shall include an overview of how the extent of required cover has been determined.

70 Without limiting condition 69, the Consent Holder shall further ensure that:

- (a) that the Councils have, at all times after construction commences, written confirmation that the insurance required by these conditions is in place and cover the matters set out within Condition 68 in the form of an insurer's annual certificate of currency;
- (b) that a copy of the certificate and an overview of the extent of cover and how it has been derived is publicly available on a website maintained by the Consent Holder;
- (c) it provides all relevant information regarding the insurance to the Councils. This obligation includes an express term that the consent holder immediately notify the Councils of any non-performance of the terms of insurance; and
- (d) in the event of non-performance of any term of the insurance:
  - (i) it immediately notifies the Councils of the non-performance and the steps taken and to be taken to rectify the non-performance; and
  - (ii) in the case of any non-performance that may adversely impact on the extent of cover or dam safety in relation to dam breach, it immediately deters the dam.

71 The insurance provided under these conditions must:

- (a) be on the basis that the storage ponds are a 'non-natural' use of land; and
- (b) be sufficient to cover all sums which the Consent Holder may become liable to pay by way of compensation to third parties as required by condition 66 and shall not be confined to any particular geographic area, including offsite impacts to third party property and persons as described in Condition 68, including but not limited to any assets, infrastructure of the WDC, associated with any failure of any part of the proposed ponds, together with reasonable provision for reconstruction and reinstatement of the WDC assets and infrastructure.



72 The Consent Holder shall ensure that the sum insured and the timeframes for its review are no less than that recommended in the assessment undertaken in accordance with condition 68. A copy of the assessment undertaken will be provided to the WDC Planning Manager for review and comment prior to obtaining the insurance cover.

73 The limits of indemnity and coverage and terms of the policy are to be reviewed by the Consent Holder, as a minimum, at the intervals recommended by the Insurance Expert in accordance with the process contemplated by condition 68.

#### **Review**

74 The WDC may, once per year, on any of the last five working days of May or November, serve notice on the Consent Holder under s 128(1) RMA of its intention to review the conditions of these consents that they have administrative responsibility for the following purposes:

- (a) to review the effectiveness of any of the conditions of the consents in avoiding, remedying or mitigating any adverse effects on the environment from the exercise of the consents and, if necessary, to avoid, remedy, or mitigate such effects by way of further or amended conditions;
- (b) to ensure that the conditions are consistent with any policies or rules in a regional plan or National Environmental Standard or Regulation that becomes legally effective after the grant of consent;
- (c) to review the adequacy of, and necessity of, monitoring undertaken by the Consent Holder;
- (d) requiring the adoption of the best practicable option to remove or reduce any adverse effect on the environment; or
- (e) complying with the requirements of a relevant rule in an operative district plan; or
- (f) collecting data about the exercise of the consent.

#### **Administrative charges**

75 The Consent Holder shall pay to the WDC any administrative charges fixed in accordance with s 36 RMA or any charge prescribed in accordance with regulations made under s 360 RMA and s 150 of the Local Government Act 2002. The administrative charges shall be paid to the WDC for the carrying out of their functions in relation to the administration, monitoring and supervision of these consents and for carrying out their functions under s 35 RMA.

#### **Other charges or costs**

76 The Consent Holder shall pay all costs relating to peer reviews or engagement of others to undertake any actions or services required in terms of these conditions.

#### **Lapse date**

77 The lapsing date for the purposes of s 125 shall be 5 years from the commencement of this consent.



**Accidental Discovery Protocol**

- 1 In the event of any discovery of archaeological material:
  - (a) The Consent Holder shall immediately:
    - (i) Cease earthmoving operations in the affected area and mark off the affected area; and
    - (ii) Advise the Canterbury Regional Council of the disturbance; and
    - (iii) Advise the Heritage New Zealand Pouhere Taonga of the disturbance.
- 2 If the archaeological material is determined to be Kōiwi Tangata (human bones) or taonga (treasured artefacts) by the Heritage New Zealand Pouhere Taonga, the Consent Holder shall immediately advise the office of the appropriate rūnanga/ Kaitiaki Rūnanga (office contact information can be obtained from the Canterbury Regional Council) of the discovery.
- 3 If the archaeological material is determined to be Kōiwi Tangata (human bones) by Heritage New Zealand Pouhere Taonga, the Consent Holder shall immediately advise the New Zealand Police of the disturbance.
- 4 The Consent Holder will also consult the Kaitiaki Rūnanga on any matters of tikanga (protocol) that are required in relation to the discovery and prior to the commencement of any investigation.
- 5 If kōiwi Tangata (human remains) are uncovered, in addition to the steps above, the area must be treated with utmost discretion and respect, and the kōiwi dealt with according to both law and tikanga, as guided by the Kaitiaki Rūnanga.
- 6 Work may recommence if Heritage New Zealand Pouhere Taonga (following consultation with Kaitiaki Rūnanga if the site is of Māori origin) provides a statement in writing to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager that appropriate action has been undertaken in relation to the archaeological material discovered. The Canterbury Regional Council shall advise the Consent Holder on written receipt from Heritage New Zealand Pouhere Taonga that work can recommence.

*Advice Note:* This may be in addition to any agreements that are in place between the Consent Holder and the Papatipu Rūnanga. (Cultural Site Accidental Discovery Protocol).

*Advice Note:* 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 Māori 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/kōiwi may date to any historic period.

*Advice Note:* 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.

