Appendix 5 – Conditions

Note: As stated in the summary comments, a number of amendments to the applicant's proposed conditions were required. The discharge consent also needed to be split into construction phase and operational phase consents. Because of this, a full track changes version became too chaotic. Instead, CRC has provided proposed conditions below with a column to assist the panel as to where each condition originated from and has provided track changes for any in condition changes. Please read this document with track changes turned on.

Resource Consent: CRCXXXXXX (s9 – Land Use Consent)

Applicant: Carter's Group Limited

Recommended Duration: 5 years

	Limits	**CRC track changes/comments**
1	The works authorised by this resource consent are limited to the excavation of land associated with the development of an industrial subdivision at 104 Ryans Road ~~(~~and 20 Grays Road~~)~~ legally described as Pt Lot 3 DP 22679, Lot 4 DP 22679 and Pt Lot 1 DP 2837 and has a total area of approximately 57.64 hectares (**ha).**	Original condition from the applicant with track changes from CRC as shown
2	The works shall be undertaken in accordance with the attached design plan, Plan CRCxxxxxx which forms part of this consent	New condition provided by CRC
3	The maximum depth of excavation for the works authorised by this resource consent must not exceed 7m below ground level.	Original condition from applicant

	Advice Note: It will be up to the Consent Holder to demonstrate compliance with the maximum excavation depth. This can be done, for example, via reference to a specified datum and reduced levels from that datum or via site specific survey points or other measurements.	
	Prior to Commencement	
4	All contaminated land must be remedied prior to earthworks occurring.	New condition from CRC
5	Prior to commencement of the works described in Condition (1), all personnel working on the site must be made aware of, and have access to, the following: a. The contents of this resource consent document and all associated documents; b. The Site Environmental Management Plan [XXXXXXXXXX] OR to be submitted under Condition [XX]; and c. Resource Consents and all associated documents, including the Erosion and Sediment Control Plan (ESCP) as set out in Condition (8)	Original condition from applicant

6	At least 15 working days prior to the commencement of works to remediate contaminated land, the consent must submit a Remedial Action Plan (RAP) to Canterbury Regional Council, Attention: Compliance Manager for certification that it complies with the conditions of this consent. The RAP required under condition (#) must: a. Outline the proposed soil sampling procedure to identify the extent of contamination, including guidelines used to analyse samples; b. Detail a procedure for managing any discovery of contaminated soil or material; c. Describe the methodology for soil removal and how soil will be prevented from being entrained in stormwater; d. Outline where the contaminated soil will be disposed of; and e. Describe any validation sampling that will be undertaken	New condition from CRC
7	The RAP may be amended at any time. Any amendments must be: a. Only for the purpose of improving the efficacy of the management of contaminated soil and must not result in an increase of sediment being discharged from the site; and b. Consistent with the conditions of this resource consent; and	New condition from CRC

	c. Submitted in writing to the Canterbury Regional Council, Attention: Compliance Manager, prior to any amendment being implemented.	
8	The ESCP must: a. Include a map showing the location of all works; b. Detailed plans showing the location of sediment control measures, on-site catchment boundaries, and sources of run-off; c. Detail how best practicable measures are taken to minimise discharges of sediment-laden stormwater run-off beyond the boundaries of the site; • Include drawings and specifications of designated sediment control measures, if these are not designed and installed in accordance with the ESCT; • Detail the methodology for stabilising the site entrance and exit points and any measures employed to prevent off-site tracking of sediment and other materials from the site; d. Include a confirmation that the erosion and sediment control devices have been sized appropriately in accordance with the ESCT; e. Include a programme of works, including a proposed timeframe for each stage of the works and the earthworks methodology; f. Detail the management of any stockpiled material; g. Detail inspection and maintenance of the sediment control measures;	New condition from CRC

	h. Detail sampling procedures and protocols; i. Define the discharge points where stormwater is discharged onto land / infiltrates into land; j. Include a description of dust mitigation to be used and details of best practicable options to be applied to mitigate dust and sediment discharge beyond the site boundary; k. Detail the methodology for stabilising the site if works are paused for more than five working days or abandoned; l. Detail the methodology for stabilising the site and appropriate decommissioning of all erosion and sediment control measures after works have been completed; and m. Include measures such as a Chemical Treatment Plan should the use of water treatment chemicals be required. **Advice Note:** *The use of Water treatment chemicals may require additional consent under section 15 of the Resource Management Act*	
9	a. The ESCP must be submitted to the Canterbury Regional Council, Attention: Compliance Manager, after the commencement of resource consent and at least 10 working days prior to works commencing, for approval that it complies with the ESCT and the conditions of this resource consent;	New condition from CRC

	b. The discharge must not commence until approval has been received from the Canterbury Regional Council that the ESCP is consistent with the ESCT or equivalent industry guideline; and c. Notwithstanding Condition (9(a), if the ESCP has not been reviewed and/or approved within ten working days of the Compliance Manager receiving the ESCP, the discharge may commence,	
10.	The ESCP may be amended at any time. Any amendments must be: a. Only for the purpose of improving the efficacy of the erosion and sediment control measures and must not result in reduced discharge quality; and b. For the purpose of applying best practicable measures to mitigate [dust and] sediment transport off-site; c. Consistent with the conditions of this resource consent; and d. Submitted in writing to the Canterbury Regional Council, Attention: Compliance Manager, prior to any amendment being implemented.	New condition from CRC
11	Erosion and sediment control measures must be inspected at least once per day, as well as following any rainfall event that results in more than five millimetres of rainfall at the site. Any accumulated sediment must be removed, and repairs made, as necessary, to ensure effective functioning of measures and devices. Records of any inspections must be kept and provided to the Canterbury Regional Council on request.	New condition from CRC

12	If the consent holder abandons work on-site, or pauses works for more than five working days, adequate preventative and remedial measures must be taken to control sediment discharged from exposed or unconsolidated surfaces. These measures must be maintained for so long as necessary to prevent sediment discharges from the earth worked areas.	New condition from CRC
13	At least 10 working days prior to the commencement of works on site, the Canterbury Regional Council, Attention: Compliance Manager (via ECInfo@ECan.govt.nz) must be informed of the commencement of works.	Original condition from applicant
14	At least 10 working days prior to the commencement of works on site, the consent holder must request a pre-construction site meeting with the Canterbury Regional Council, Attention: Compliance Manager (via ECInfo@ECan.govt.nz), and all relevant parties, including the primary contractor. At a minimum, the following must be covered at the meeting: a. Scheduling and staging of the works; b. Responsibilities of all relevant parties, including confirmation that the person [or persons] implementing the ESCP on the site is [are] suitably trained and/or experienced; c. Contact details for all relevant parties; d. Expectations regarding communication between all relevant parties;	Original condition from applicant

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	e. Procedures for implementing any amendments; f. Site inspection; and g. Confirmation that all relevant parties have copies of the contents of this resource consent document and all associated erosion and sediment control plans and any other discharge treatment methodologies employed.	
	During Works	
15	All practicable measures must be taken to: a. Minimise soil disturbance to that necessary to carry out the works described under Condition 1; b. Prevent soil erosion; c. Avoid placing excavated material in a position where it may enter: i. Any neighbouring site; ii. A surface water body; and/or iii. The [Territorial Authority's] reticulated stormwater network, or any other private or public stormwater devices.	Original condition from applicant

16	All earthworks shall be managed to avoid the potential for cross-contamination of materials to occur, in particular movement of contaminated soil around the site and/or deposition of contaminated soil on other parts of the site shall be avoided.	New condition from CRC
17	Tracking of material off-site during the works must be avoided at all times. In the event that material is tracked off-site, the tracked material must be removed as soon as practicable.	Original condition from applicant
18	Excess soil or waste materials removed from the application site shall be taken to a consented site whose waste acceptance criteria would be met. Evidence of waste disposal such as weighbridge receipt shall be reported in the SVR.	New condition from CRC
	Installation of Culverts	
19	Need conditions in here- still working on with the applicant- will need fish passage and fish stranding in here too	Will continue to work with the applicant on these conditions
	Discovery of Contaminated Soil or Materials	
20	In the event that any contaminated soil or material is uncovered by the works, a contamination discovery protocol must be implemented, including but not limited to the following steps:	Original condition from the applicant

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	a. Earthworks within ten metres of discovered contaminant soil or material must cease immediately; b. All practicable steps must be taken to prevent the contaminated material becoming entrained in stormwater. Immediate steps must include, where practicable: i. Diverting any stormwater runoff from surrounding areas away from the contaminated material; and ii. Minimising the exposure of the contaminated material, including covering the contaminants with an impervious cover; c. Notification of the Canterbury Regional Council, Attention: Contaminated Sites Manager, within 24 hours of the discovery; d. Earthworks within ten metres of discovered contaminant soil or material must not recommence until a suitably qualified and experienced contaminated land practitioner (SQEP) confirms to Canterbury Regional Council, Attention: Compliance Manager, that continuing works does not represent a significant risk to the environment; All records and documentation associated with the discovery must be kept and copies must be provided to the Canterbury Regional Council upon request.	
21	a.Any material removed from the site during the works that is potentially or confirmed as contaminated, must be disposed of at a facility authorised to receive such material.	Original condition from applicant with CRC track changes- addition of b.

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	b. Disposal dockets shall be retained and provided to Canterbury Regional Council upon request, Attention: Compliance Manager.	
	Spills	
22	All practicable measures must be taken to avoid spills of fuel or any other hazardous substances within the site. These measures must include: a. Refuelling of machinery and vehicles must not occur within 20 metres of: i. Open excavations; ii. Exposed groundwater; and iii. Stormwater devices. b. A spill kit must be kept on site that is capable of absorbing the quantity of oil and petroleum products that may be spilt on site at any one time, remains on site at all times. c. In the event of a spill of fuel or any other hazardous substance, the spill must be cleaned up as soon as practicable, the stormwater system must be inspected and cleaned, and measures taken to prevent a recurrence; d. The Canterbury Regional Council, Attention: Compliance Manager, must be informed within 24 hours of a spill event exceeding five litres and the following information provided:	Original condition from applicant

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	i. The date, time, location and estimated volume of the spill; ii. The cause of the spill; iii. The type of hazardous substance(s) spilled; iv. Clean up procedures undertaken; v. Details of the steps taken to control and remediate the effects of the spill on the receiving environment; vi. An assessment of any potential effects of the spill; and Measures to be undertaken to prevent a recurrence.	
	Artesian Aquifer Interception	
23	In the event of an interception of unanticipated levels of artesian flows, all practicable measures must be undertaken to remedy or mitigate any change in aquifer pressure water quality or temperature. This must include: a. The contractor must immediately cease all works within the immediate area of excavation that caused the interception of the artesian flows; b. The contractor must determine and document whether the flow is constant or increasing, if the turbidity is constant or increasing and if the flow is confined to the excavation. c. The contractor must notify the site engineer and/or other appropriate personnel to determine the emergency measures required to arrest the artesian flow. Emergency measures must include, but not be limited to:	New condition from CRC

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	a. The installation of a layer of impermeable material to the extent required to reform a capping layer over the aquifer to prevent the upward movement of groundwater through the confining layer; or b. Inserting a vertical pipe in the aquifer interception point (if practicable) and provide for a secure seal against the pipe to enable the stabilisation of the artesian flow in the pipe, and to determine the above ground water level to assess any further measures. d. The temporary artesian flow beyond the excavation must be controlled and mitigated with appropriate erosion and sediment control measures; e. The Canterbury Regional Council, Attention: Compliance Manager must be notified as soon as practicable but no later than two working days after the interception; and Upon remediation and arresting of flow from the aquifer interception, the construction methodology must be reconsidered and, if required, revised to avoid future interceptions of the aquifer.	
	Accidental Discovery of Archaeological Material	
24-	a. Any activity which may modify, damage or destroy a pre-1900 archaeological site or material must follow the archaeological authority process under the Heritage New Zealand Pouhere Taonga Act 2014. An archaeological authority is required from Heritage New Zealand to modify, damage or destroy any archaeological site, whether recorded or not in the New Zealand Heritage List/Rārangi Kōrero.	Original condition from applicant

	b. In the event of accidental discovery of any archaeological material, all works must cease immediately in the part of the site known, or suspected, to be an archaeological site. c. The Canterbury Regional Council, Heritage New Zealand Pouhere Taonga and Papatipu Rūnanga, as well as the New Zealand Police in the case of discovery of kōiwi/human bones, must be informed immediately of the disturbance, and the archaeological authority process under the Heritage New Zealand Pouhere Taonga Act 2014 must be followed. d. In the event of the accidental discovery of Māori archaeological sites or material, the attached accidental discovery protocol for Māori archaeology must be followed in addition to the process under the Heritage New Zealand Pouhere Taonga Act 2014. e. To ensure that all statutory and cultural requirements have been met, any works in the part of the site subject to the archaeological discovery must not recommence until authorised by the Canterbury Regional Council and: i. Upon completion of the archaeological authority process referred to under (c); and ii. In the event of the accidental discovery of Māori archaeological sites or material, and in addition to (c) upon completion of the process referred to under (d); and iii. In the event of the discovery of kōiwi/human bones, immediately advise the New Zealand Police.	

	Management of Geranium retrorsum	
25	a. Prior to the commencement of any earthworks or construction activities, the consent holder shall engage a suitably qualified ecologist or botanist to undertake a survey of the development site to determine the presence of the indigenous plant species *Geranium retrorsum*. b. The findings of the survey shall be documented in a brief report and submitted to Canterbury Regional Council, Attention: Compliance Manager (via ECInfo@ECan.govt.nz) at least 10 working days before construction begins.	Original condition from applicant
26-	a. In the event that *Geranium retrorsum* is identified on site, the consent holder shall ensure that individual plants are carefully removed and translocated into appropriately sized pots by appropriately qualified persons. Translocation shall occur between late autumn and early spring to support plant viability. b. The consent holders qualified person shall maintain and propagate the plants as necessary as required in (d).. c. Upon completion of construction works, original and/or propagated plants shall be replanted in suitable locations within the development site, at a minimum ratio of 2:1 compared to the number of plants removed.	Original condition from applicant with track changes to b. from CRC

	d. Replanting shall occur between late autumn and early spring, in areas that are regularly maintained or where appropriate weed management practices are in place to support successful re-establishment.	
	Fish Protection	
27	The consent holder shall ensure that all practicable measures shall be undertaken to ensure that there is no stranding of fish in pools or channels up and downstream of the works.	Original condition from applicant
28	A Fish Management Plan shall be prepared by a suitably qualified freshwater ecologist and submitted to the Canterbury Regional Council for their records (via ECInfo@ECan.govt.nz. The plan should include the following as a minimum: a. Locations where the plan will be implemented; b. Methods to ensure fish cannot access works areas c. Protocols to be followed including methods to rescue and relocate fish; d. Person/s responsible ensuring the plan is implemented; e. Protocols if pest fish are encountered; f. Protocols to ensure fish are not entrained in pumps during pumping (water pumping should have fish screens with a maximum mesh width and height size of three millimetres).	Original condition from applicant
29	In the event that fish are required to be salvaged and relocated to an appropriate waterway. The fish salvage must include the following measures:	Original condition from applicant with track change to b. from CRC

	a. Be conducted by or under supervision of a certified, suitably qualified and experienced freshwater ecologist; b. Be in general accordance with Canterbury Regional Council and Christchurch City Council's "Fish Salvage Guidance for Works in Waterways" (12 October 2017) attached as Appendix CRCXXXXXX; c. The fish must be relocated to a habitat deemed suitable by the certified, suitably qualified and experienced freshwater ecologist; d. The certified, suitably qualified and experienced freshwater ecologist must hold any necessary permits and approvals required by the Ministry for Primary Industries, Department of Conservation and Fish and Game to conduct fish salvage;	
30	Following the completion of works, the consent holder shall provide to the Canterbury Regional Council records (via ECInfo@ECan.govt.nz) of any fish captured and relocated. This record shall include: a. The location where fish were captured; b. The species and number of fish captured; and c. The location where fish were relocated.	Original condition from applicant
	After Completion of Works	
31	Within two weeks of the completion of each stage of works authorised by this resource consent: a. All disturbed areas must be stabilised and/or revegetated; and b. All spoil and other waste materials from the works must be removed from site.	Original condition from the applicant

	Advice Note: The use of polymers for site stabilisation purposes, including those forming a component of hydro-seeding formulas, may require separate authorisations under the Resource Management Act 1991. Further, polymers are not considered a long term or permanent stabilisation technique and may require repeated application to ensure the site remains stabilised.	
32	Within 3 months of the completion of earthworks on the site, a Site Validation Report (SVR) shall be provided to Canterbury Regional Council. The SVR shall be prepared by a SQEP in contaminated land.	New condition from CRC
	Administration	
33	The Canterbury Regional Council may annually, on the last working day of May or November, serve notice of its intention to review the conditions of this resource consent for the purposes of: a. Dealing with adverse effect on the environment which may arise from the exercise of this resource consent, and which is not appropriate to deal with at a later stage; or b. Requiring the adoption of the best practicable option to remove or reduce any adverse effect on the environment.	Original condition from applicant

34	If this resource consent is not exercised before 31 December 2030, it lapses in accordance with Section 125 of the Resource Management Act 1991. ***Advice note:*** *'Exercised' is defined as implementing any requirements to operate this consent and undertaking the activity as described in these conditions and/or application documents*.	Original condition from the applicant

Appendix CRCXXXXXX

Fish Salvage Guidance for Works in Waterways

12 October 2017

Greg Burrell (CCC) and Duncan Gray (ECAN)

1. Background

Freshwater fish, including eels, are found in a range of aquatic environments, ranging from native forest streams through to wetlands, ponds, and highly modified urban drains and artificial waterways. There is a responsibility under several Acts of Parliament to protect these fish, which has implications for anybody undertaking works in and around waterways. Individuals or groups attempting to obtain a resource consent for an activity that will adversely impact fish communities may be required to carry out fish salvage. It is important to note that fish salvage should not be the first mitigation considered. If it is possible to preserve the habitat of fish from effects, that should occur preferentially. The ability to salvage any fish present does not mitigate against unnecessary habitat destruction.

This document provides guidance around fish salvage[1] in Canterbury, to help address uncertainties around what is required of contractors and councils working in waterways. In particular, the purpose of this document is to provide guidance as to:

- Where fish salvage needs to be considered in relation to waterway works.
- What kinds of activities may trigger the need for fish salvage.
- What types of salvage methods are available.
- Who needs to be involved.

This information will be critical in the preparation of an Assessment of Environmental Effects (AEE) to avoid requests for further information and ensure the smooth processing of a consent application or compliance assessment.

Many of New Zealand's freshwater fish species are endemic, which means they are native to this country and found nowhere else. Native fish (found naturally in New Zealand and elsewhere) are found in waterbodies throughout Canterbury (Figure 1); commonly encountered species include several bully species, inanga (a whitebait species), and eels (Figure 2 and Figure 3). Rare and threatened species, such as Canterbury mudfish, lamprey or lowland longjaw galaxiids tend to have more restricted ranges.

When working in rivers the Freshwater Fisheries Regulations 1983 dictate that indigenous, or native, fish shall not be knowingly destroyed, as detailed under Section 70:

Section 70 No killing of indigenous fish

(1) No person shall in any water intentionally kill or destroy indigenous fish.

[1] We define fish salvage here as removing fish from a work area prior to commencing works, with the aim of avoiding and minimising impacts of work activities on aquatic species. Note that fish passage is a separate matter, which is generally better provided for through the resource consent process.

(2) No person, having taken indigenous fish from any water, shall leave the fish upon the bank or shore of any stream or lake, except where such indigenous fish is used in accordance with any provisions of a District Anglers Notice relating to lures.

Many organisations and contractors are unaware of the legal requirements that may apply to, and may require, fish salvage to be undertaken for waterway projects and maintenance. Permits, consents or approvals must be obtained under any relevant legislation (including the Resource Management Act 1991, the Freshwater Fisheries Regulations 2003, the Fisheries Act 1996, and/or the Conservation Act 1987). Offences could be committed under these Acts and Regulations for not having an appropriate approval, taking the wrong fish or using the wrong method to take them, or killing fish.

Note that this document does not cover all of the legal requirements associated with working around waterways, and only provides guidance for fish salvage. For example, works in or around waterways will usually trigger the need for a resource consent under the Resource Management Act. Seek the advice of an expert before conducting any works around waterways.

This document was prepared by Christchurch City Council and Environment Canterbury with input from internal and external construction and drainage engineers, ecologists and planners.

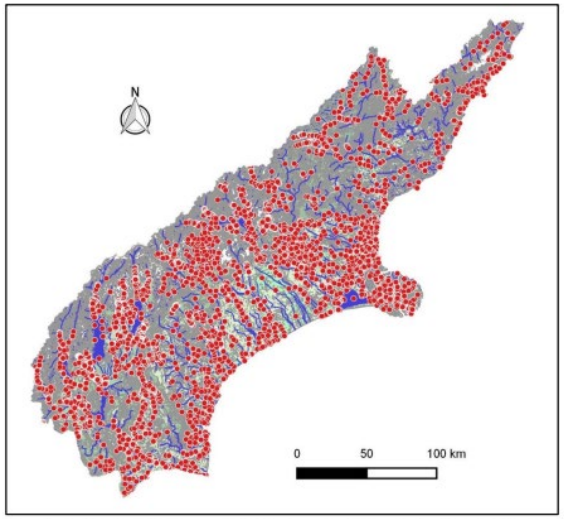


Figure 1: Location of native fish recorded in Canterbury, extracted from the New Zealand Freshwater Fish Database on 22 March 2017. Note that the absence of a record at a given location may simply mean the site has not been sampled, not that fish are absent from that location.

Figure 2: A large longfin eel caught in a Canterbury waterway. Longfin eels are an At Risk species in decline[2].

[2] Goodman, J. M., Dunn, N. R., Ravenscroft, P. J., Allibone, R. M., Boubee, J. A. T., David, B. O., Griffiths, M., Ling, N., Hitchmough, R. A., and Rolfe, J. R. (2014). Conservation status of New Zealand freshwater fish, 2013. New Zealand Threat Classification Series 7, Department of Conservation.

Figure 3: An adult inanga. Juvenile inanga are commonly known as whitebait. Inanga are classified as an At Risk species in decline[2].

2. Where is Fish Salvage Necessary?

General Advice: If a watercourse has water in it most of the time and the water depth is more than one or two centimetres, then it may contain fish and fish salvage may be required.

While deeper waterways provide habitat for a greater range of species, even very small streams, or concrete and timber-lined drains with minimal water, will often contain small-bodied species such as bullies or juvenile eels. Several species of fish, notably eels and lamprey, will burrow into stream beds or banks during times of low flow such that a temporary absence of water does not indicate an absence of fish. Fish are also highly mobile, recolonising a previously dewatered reach rapidly once flow returns. Even waterways that are mostly dry may include isolated pools that contain fish.

3. What Activities may Require Fish Salvage?

General Advice: If the activity involves channel dewatering or will disturb the bed and submerged banks of a watercourse, and the watercourse may contain fish that might be harmed or killed by the activity, then fish salvage or other mitigation will likely be required.

Particular activities that may require fish salvage or other mitigation include:

- Decommissioning waterways prior to piping or realigning.
- Waterway restoration projects.
- Installation of fish passes.
- Channel dewatering (including isolated areas).
- Bank protection works.
- Bridges and other structures on the bank – both new builds and repairs.
- Sediment removal (including routine waterway maintenance).

The Freshwater Fisheries Regulations 1983 make no distinction regarding the scale of the activity, so fish salvage or other mitigation should always be considered, regardless of the size of the project. However, the scale and specifics of the activity will determine the most appropriate method of salvage or other mitigation. The most appropriate methods should be determined with the guidance of a council or consulting freshwater ecologist who can tell you the most appropriate methods of fish salvage and ensure the work is done correctly. An activity that involves dewatering of an area of stream will likely require fish salvage to be carried out

by an ecologist or other suitably trained and permitted person under the guidance of an ecologist.

Activities that may result in fish being stranded on the bank will require fish to be returned to a suitable stretch of water by an ecologist or suitably trained person. Such activities include the removal of weed and sediment using a digger or dredging methods. Activities with the potential to impact downstream water quality to the detriment of fish should be mitigated primarily through monitoring of water quality (with trigger levels that dictate when works should cease) and changing the timing of the works, but fish salvage may be required in the event of fish stranding or suffocation.

General Advice: Speak to a council or consulting ecologist during the project planning or consent application phase to determine if and how fish salvage should be undertaken.

A Case study of Waterway Maintenance

Many lowland waterways are subjected to regular aquatic plant and fine sediment removal to aid drainage and mitigate against flooding. Studies have highlighted the ecological and water quality effects of standard practice methods of drainage clearance and the need for associated fish salvage.[3,4,5] Consequently, Environment Canterbury's "Code of Practice for Defences Against Water and Drainage Schemes" states on page 24 that:

Where works are undertaken in water and there is potential for fish to be stranded, the person or organisation undertaking the works shall ensure that native and sport fish recovery is conducted for the duration of the works and at least one day after they have been completed. Fish recovery shall be conducted both instream (for suffocating fish) and bank side (for stranded fish). Recovered fish shall be returned upstream of the targeted section of waterway.

The Environment Canterbury Code of Practice for Defences Against Water and Drainage Schemes provides an example of an approach to fish salvage developed between engineers and ecologists.

4. What Fish Salvage Methods should be used?

General Advice: A range of fish salvage methods are available, but the method used should be effective at avoiding and minimising fish mortality, and be appropriate for the scale and significance of potential effects caused by the activity.

Prior to conducting any work, an initial fish population assessment may be helpful to identify the scale and significance of potential effects and the most appropriate fish salvage method or mitigations to employ. Timing of the works in relation to sensitive periods (e.g., fish spawning or migration) is a key first consideration for avoiding and minimising effects. The next step is ensuring all practicable steps have been taken to isolate the worksite (e.g., by

[3] Hudson, H.R. and Harding, J.S., 2004. Drainage management in New Zealand; A review of existing activities and alternative management practices. Department of Conservation, Science for Conservation 235.
[4] Ballantine, D. and Hughes, A., 2012. The effects of drain clearing on water quality of receiving environments; Water quality effects of drain clearing. Prepared by NIWA for Environment Southland. May 2012.
[5] James, A., 2013. A review of the ecological effects of macrophyte management in soft-bottomed waterways. Waikato Regional Council Technical Report 2013/03. Prepared by EOS Ecology for Waikato Regional Council, January 2013.

using sheet piling). The types of fish salvage methods that may be used include electric fishing, trapping (e.g., fyke nets and minnow traps), and seine netting. If the activity may result in fish stranding on the bank (e.g., weed clearance or sediment removal), then salvage may involve both in-channel salvage (e.g., trapping or electric fishing) as well as examining the banks (including sediment spoil piles) for stranded fish. The decision on which method to use should be made with the guidance of a council or consulting ecologist.

All fish salvage methods assume appropriate permissions, permits, and controls are in place. The method chosen will rely on expert judgement and will depend on factors such as fish species present, water depth and velocity, fine sediment depth, and macrophyte (weed) cover.

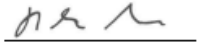
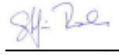
5. Who should be Involved?

General Advice: A freshwater ecologist should be involved in any project likely to require fish salvage and they can advise on mitigations.

A council or consulting freshwater ecologist with fisheries experience is the appropriate person to assess whether fish salvage is required and what methods should be used.

Fish salvage requires a Special Permit under Section 97 of the Fisheries Act 1996, and the permits are issued by the Ministry for Primary Industries (MPI). Additional authorisations are also typically required from the Department of Conservation, Fish and Game, and rūnanga. While "general authorisation" Special Permits may be valid for a wide range of projects, they still usually require that MPI and other organisations are notified in advance of any salvage work being conducted. In addition, there are a number of activities not covered by general authorisations (e.g., relocating fish outside of the catchment it was caught from) that may require a project-specific Special Permit and associated authorisations from the Department of Conservation, Fish and Game, and rūnanga.

Special Permits and other authorisations typically include a reporting requirement (usually an annual report in the case of Special Permits), including as a minimum what species were caught and their abundance.

	Environment Canterbury Regional Council	Christchurch City Council
Peer reviewed by:		
Signature:		
Position:	Surface Water Manager	Waterways Ecologist
Date:	1 March 2018	26 March 2018
Approved by:		
Signature:		
Position:	Director, Science	Manager, Planning & Delivery WWW
Date:	1 March 2018	26 March 2018

Resource Consent: CRCXXXXXX (s14 – Water Permit)

Applicant: Carter's Group Limited

Recommended Duration: 5 years

	Limits	**CRC track changes/comments**
1	The activities authorised by this consent shall be limited to: a. The temporary instream damming of the Paparua Water Race Network at 104 Ryans Road and 20 Grays Road legally described as, Pt Lot 3 DP 22679, Lot 4 DP 22679 and Pt Lot 1 DP 2837 to facilitate the take and use of water for non-consumptive purposes; and ~~a.~~ b. The temporary non-consumptive take and use of water from the Paparua Water Race Network ~~that sits within the road reserve and extends the 920m length along the frontage of the site~~ at 104 Ryans Road and 20 Grays Road legally described as, Pt Lot 3 DP 22679, Lot 4 DP 22679 and Pt Lot 1 DP 2837 for the purpose of bypassing flows around the locations of culvert installations.	Original condition from applicant with track changes from CRC
2	Water may only be taken under Condition (1) for no longer than 12 weeks as an overall total with each stage being no longer than 2 weeks continuous. ***Note:*** *this work will occur in stages to complete the installation of the culverts, and the take must only occur for the time required to carry out the works within the stage.*	Amended condition provided by the applicant

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	Water Take	
3	Over-pumping of the Paparua Water Race Network must be carried out at a rate that maintains existing water levels at the time of pumping. Over-pumping must not result in a reduction of water levels in the upstream reach.	New condition from CRC
4	Water taken from over-pumping the Paparua Water Race Network and removing water from the culvert installation sites shall be returned to the Paparua Water Race Network, immediately downstream of the culvert installation sites.	New condition from CRC, rather than applicant's original condition 4.
	Fish Protection	
5	Any pump used to take water in accordance with Condition (1) must be fitted with fish screens in general accordance with the Christchurch City Council's "Standards for Temporary Fish Screens on Christchurch City Council Projects" (2023) attached as Appendix CRCXXXXXX.	Original condition from applicant's condition 9. Applicant's original conditions 8,10-12 belong in S9 consent conditions (will be part of culvert conditions)
	Records of Water Taken	
6	A record of all water taking procedures within the site shall be kept and provided to the Canterbury Regional Council on request. This record shall include: a. The date, time, rate and duration of the water take.	Original condition from applicant with track change amendment from CRC
	Prior to commencement of works- conditions 5-7 from applicant	CRC have removed these conditions from the water permit as they belong in the S9 and s15 consent conditions. CRC have added these as conditions xxxx in the S9

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		conditions and conditions xxx in the S15 conditions
	Administration	
7	The Canterbury Regional Council may, once per year, on any of the last five working days of May or November, serve notice of its intention to review the conditions of this consent for the purposes of: a. Dealing with any adverse effect on the environment that may arise from the exercise of the consent or b. Requiring the adoption of the best practicable option to remove or reduce any adverse effect on the environment.	New condition from CRC
8	If this resource consent is not exercised before 31 December 2030, it lapses in accordance with Section 125 of the Resource Management Act 1991. ***Advice note:*** *'Exercised' is defined as implementing any requirements to operate this consent and undertaking the activity as described in these conditions and/or application documents*.	New condition from CRC

Christchurch City Council

Standard for Temporary Fish Screens on Christchurch City Council Projects

1. Purpose of this Standard

All manner of temporary fish screen designs and materials have been employed in the past on construction Council projects; many have failed. This standard provides guidance on how and where to place a temporary fish screen when works in a waterway are required as part of a Christchurch City Council ("Council") project. It is very difficult to state with any certainty that there are no fish within any given body of water, even for an expert ecologist, therefore where a fish screen is required this standard shall apply **as a minimum**.

2. Exceptions

On a project specific basis, where a suitably qualified and experienced freshwater ecologist (who is registered on the Council's Freshwater and Marine Ecology panel) provides advice that contradicts or supersedes this standard, the advice of the ecologist will apply. In such instances, the ecologist will need to describe in writing the reason for the exception and either: detail the new fish screen design; or explain the reason why screening is not necessary.

This standard only applies to temporary screens for works in waterways. For permanent fish screens, refer to separate guidance for fish screen facilities[1].

3. Fundamental Considerations

Fish screens are used to keep fish out of an area that may cause them harm, such as when physical works occur in a waterway, and/or when a section of waterway needs to be dewatered to undertake work. The underwriting principal of a fish screen is to create a barrier which fish cannot pass, but which allows the passage of water with the minimum of impediment. The greater the degree of flow impairment, the greater the risk of the fish screen failing due to water pressure.

The most common forms of fish screen failure include:

- Incorrect mess size.
  If the mesh size is too course, it will not prevent the passage of all fish. If the mesh size is too fine, it will impede flow too greatly.
- Water pressure at the base and/or sides of the fish screen exceeds the structural integrity of the screen.
  This causes the screen to disconnect from the bed and/or banks of the watercourse, creating a pathway through which fish can pass the screen.
- The fish screen is not high enough.
  Rising water level on the upstream side of the screen (due to a rain event or because the screen and/or trapped debris impedes the flow too much) causes the screen to be overtopped. As a minimum this creates a pathway for fish to pass the screen, but it may also cause the screen to fail completely.
- The screen fails completely.
  Overtopped, washed away, damaged by debris. Whatever the cause, the materials used to construct the fish screen are now just more flotsam in a waterway.

If a fish screen fails, works within the isolated area must cease until the fish screen is replaced and an ecologist has undertaken fish salvage from within the isolated area, and the new fish screen has been accepted.

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[1] Hickford M, Jellyman P, Bowie S, McCormick T, McNally S, Meredith A, Morgan P, Webb M, Pringle BZ. 2023. Toward national guidance for fish screen facilities to ensure safe passage for freshwater fishes. Report prepared by NIWA for SFF Project 4405972: Adoption of good practice fish screening, Milestone 14 - Final Report, May 2023.

4. Constructing a Fish Screen

Material such as windbreak or shade cloth is often used to provide a screen of appropriate mesh size. The drawback of such soft material is that it requires structural support to retain shape and integrity in a flowing water environment, especially where water depth/velocity may increase in response to storm events or other activities. Use of steel mesh is preferable where this is available.

There are two commonly used types of fish screen; for the purposes of this Standard, they are referred to as a 'fence' and a 'box'. Fence refers to a fish screen that spans the full width of waterway; box refers to a cage like fish screen that is used to enclose a discrete intake, such as a pipe or pump. An image of each type of fish screen is shown below.

On Council projects, fences are typically used where fish must be excluded from a length of waterway where the passage of water must be maintained. They work well in steep sided waterways such as box culverts. Box screens are most commonly employed on a pump intake hose and can be used in any waterway that is large enough to accommodate a suitably sized box.

Example of a 'fence' type fish screen.

Example of a 'box' type fish screen.

5. Installation

They key requirements for an effective fish screen are:

5.1 General

- The fish screen must be constructed with a mesh size of 2-3mm gaps.
- If a soft material like shade cloth is used for the fish screen this will need to be supported by a strong wire mesh within a frame (e.g. hurricane fencing or concrete reinforcing mesh for a fence, a gabion basket or IBC frame for a box). This will provide strength and support to the screen material with minimal reduction in cross sectional area relative to flow.
- If the fish screen becomes regularly clogged with debris, consider installing an additional trash screen upstream of the fish screen to trap larger debris. This will facilitate easier cleaning and minimise damage/blocking of the fish screen.
- Check the fish screen prior to commencing any works and regularly thereafter to ensure it has not been damaged or failed in any way and to remove any collected debris.
    - Once satisfied that the screen is effective, works can commence, with ongoing regular checks. More frequent checks (every 1-2 hours) will be needed in locations with higher water velocities and/or soft sediments, due to the greater risk of erosion and screen failure, or when there is a lot of debris (e.g. leaves) that may clog the screen and result in it overtopping.

5.2 Fence Screens

- Install a fence on an angle (30-45^0) to increase cross sectional area and minimise risk of the screen being undercut or bypassed (or blowing out completely) due to flow pressure on the screen. It will also encourage debris to slide down the fence to the lowest corner; this will help keep the fence clear and also make debris clearance easier from the bank.
- Ensure a fence is well keyed into the bed and banks of the waterway and use sandbags to ensure no gaps along the bottom edge of the fence. Ensure a fish screen fence extends far enough up the bank to ensure it is not overtopped if the flow backs up.
- Ensure any pump intake hose is positioned away from the fence by at least 1m to avoid fish and debris getting sucked onto or through the screen.
- If a fence is used in a waterway with shallow banks, it is important to ensure there are no gaps at the sides/ends of the fence. Consider using a sheet pile or steel plate (or similar) pushed into the bank to create a straight vertical surface the fence can butt up against and be fixed to securely.

5.3 Box Screens

- A suitably sized box screen must be used on any pump intake.
- If the pump is 4" or smaller a box screen should be at least 500mm on a side, if the pump is larger than 4" the box screen should be 1m on a side[2].
- The bottom of the box must be covered with a solid sheet (e.g. plywood) that prevents fish entry as well as disturbance/induction of bed sediments.
- Ensure the box and the pump hose are both adequately secured/supported (e.g. using warratahs or fence posts) so that the box screen does not get tipped over by the weight of the hose.
- A pump intake hose must be capped with a rose with the smallest hole diameter available for that pump size/make, and the rose should be suspended mid water depth. Avoid resting on the base where possible.
- If a box is used in a flowing water environment, install the box at 45^0 to the direction of flow to encourage debris to slide of the box.

6. Other Related Requirements

Council holds a number of resource consents which in unison authorise the damming, diversion and bypass pumping of surface water. Therefore, the following considerations must also be allowed for when planning to installation and use a fish screen:

- The pump intake and discharge must be set up in a way that does not generate suspended sediment or cause scour/erosion of the bed banks of the waterway, particularly at the discharge point. The discharge water quality will need to be to a standard that is acceptable to Council and Environment Canterbury.
- To avoid fish stranding, ensure sections beyond the area of works do not go dry because of dewatering or bypass pumping activities. This is a particular risk in small waterways with little flow. In such waterways, it may be necessary to walk some distance downstream, to ensure the entire flow is not lost to the bed.

[2] In small/narrow waterways, boxes of these dimensions may not always be practicable. Where this is the case, form a box that fully encompasses the pump intake with as much space between the box and the intake as possible so as to minimise damage to the fish screen and chocking of the pump intake. Alternatively, seek expert advice from an ecologist.

Christchurch City Council

Fish Screen Installation Checklist

Item Not	Yes	No	N/A
1. General			
a) Screen mesh gaps no greater than 3 mm?			
b) If mesh is soft material, is it adequately supported?			
c) Are screen checks frequent enough for this operation/environment?			
2. Fence Screens			
a) Is the screen at an appropriate angle to flow?			
b) Is the screen sufficiently keyed into the bed and banks?			
c) Confirmed the screen is not being undermined? (look and feel under the screen)			
d) Sandbags in place?			
e) Is the screen far enough up the bank?			
f) If the screens have overtopped, has fish salvage occurred again?			
3. Box Screens – For All Pumps			
a) Is the pump intake fully enclosed within a box screen?			
b) Is the box screen big enough for the pump (see Section 5.3 above)?			
c) Is the bottom of the box solid?			
d) Are the pump and hose adequately supported?			
e) Are the pump intake holes the smallest available for pump size/type?			
f) Is the box installed at an angle to the flowing water, if applicable?			
4. Other Related Requirements			
a) Has the person doing the work read this standard & the accompanying Plan?			
b) Has the work been done or checked by experienced workers?			
c) Are appropriate erosion & sediment controls in place?			
d) Is there sufficient flow downstream to prevent fish stranding?			
Notes (include any observable non-conformance, non-standard alterations, or adjustments undertaken)			

Resource Consent: CRCXXXXXX (s15 – Discharge Permit – Construction Phase)

Applicant: Carter's Group Limited

Recommended Duration: 5 years

	Limits	
1	The discharges authorised under this resource consent is limited to: a. The discharge of surface water to the lateral channel of the Paparua Water Race Network at 104 Ryans Road and 20 Grays Road legally described as, Pt Lot 3 DP 22679, Lot 4 DP 22679 and Pt Lot 1 DP 2837 associated with the non-consumptive take and use authorised by resource consent CRCXXXXXX b. Sediment-laden stormwater from exposed areas during earthworks to land via temporary soak pits within the site at 104 Ryans Road and 20 Grays Road legally described as, Pt Lot 3 DP 22679, Lot 4 DP 22679 and Pt Lot 1 DP 2837. ~~a.~~c.	Original condition with track changes from CRC
2	Sediment laden stormwater must be discharged: a. In accordance with the Erosion and Sediment Control Plan (ESCP) required by Condition (6) of this resource consent. b. Onto and/or into land via temporary soak pits.	New condition from CRC
	Prior to Commencement of Works	
3	Prior to commencement of the works described in Condition (1), all personnel working on the site must be made aware of, and have access to, the following: a. The contents of this resource consent document and all associated erosion and sediment control plans and other discharge treatment methodologies; and	New condition from CRC

	b. Resource Consents CRCXXXXXX and CRCXXXXXXX and all associated documents.	
4	All erosion and sediment control measures detailed in the ESCP required by Condition (6) of this resource consent must be installed prior to the commencement of any earthworks or stripping of vegetation and topsoil occurring on the site.	New condition from CRC
5	At least five 10 working days prior to the commencement of works on site, the Canterbury Regional Council, Attention: Compliance Manager (via ECInfo@Ecan.govt.nz) must be informed of the commencement of works.	Original condition from applicant with track changes from CRC
	Erosion and Sediment Control	
6	The discharges authorised under this resource consent must occur in accordance with an ESCP. The ESCP must: a. Detail best practicable sediment control measures that will be implemented to ensure compliance with the conditions of this resource consent; b. Be prepared by a suitably qualified person with experience in erosion and sediment control in accordance with: i. Canterbury Regional Council's *Erosion and Sediment Control Toolbox for the Canterbury Region* (ESCT), which can be accessed under http://esccanterbury.co.nz/; or ii. An equivalent industry guideline. If an alternative guideline is used, the ESCP must provide details of the relevant alternative methods used and an explanation of why they are more appropriate than the ESCT; and c. Be signed by an engineer or suitably qualified person with experience in erosion and sediment control, confirming that the erosion and sediment control measures for the site are appropriately sized and located in accordance with the ESCT or alternative guideline.	New condition from CRC

7	The ESCP must: a. Include a map showing the location of all works; b. Detailed plans showing the location of sediment control measures, on-site catchment boundaries, and sources of run-off; c. Detail how best practicable measures are taken to minimise discharges of sediment-laden stormwater run-off beyond the boundaries of the site; i. Include drawings and specifications of designated sediment control measures, if these are not designed and installed in accordance with the ESCT; ii. Detail the methodology for stabilising the site entrance and exit points and any measures employed to prevent off-site tracking of sediment and other materials from the site; d. Include a confirmation that the erosion and sediment control devices have been sized appropriately in accordance with the ESCT; e. Include a programme of works, including a proposed timeframe for each stage of the works and the earthworks methodology; f. Detail the management of any stockpiled material; g. Detail inspection and maintenance of the sediment control measures; h. Detail sampling procedures and protocols; i. Define the discharge points where stormwater is discharged onto land / infiltrates into land; j. Include a description of dust mitigation to be used and details of best practicable options to be applied to mitigate dust and sediment discharge beyond the site boundary;	New condition from CRC

	k. Detail the methodology for stabilising the site if works are paused for more than five working days or abandoned; l. Detail the methodology for stabilising the site and appropriate decommissioning of all erosion and sediment control measures after works have been completed; and a. Include measures such as a Chemical Treatment Plan should the use of water treatment chemicals be required. ***Advice Note:*** *The use of Water treatment chemicals may require additional consent under section 15 of the Resource Management Act.*	
8	The ESCP must be submitted to the Canterbury Regional Council, Attention: Compliance Manager, after the commencement of the resource consent and at least 10 working days prior to works commencing.	New condition from CRC
9	The ESCP may be amended at any time. Any amendments must be: a. Only for the purpose of improving the efficacy of the erosion and sediment control measures and must not result in reduced discharge quality; and b. For the purpose of applying best practicable measures to mitigate sediment transport off-site; c. Consistent with the conditions of this resource consent; and d. Submitted in writing to the Canterbury Regional Council, Attention: Compliance Manager, prior to any amendment being implemented.	New condition from CRC
10	Erosion and sediment control measures must be inspected at least once per day, as well as following any rainfall event that results in more than five millimetres of rainfall at the site. Any accumulated sediment must be removed, and repairs made, as necessary, to ensure effective functioning of	New condition from CRC

	measures and devices. Records of any inspections must be kept and provided to the Canterbury Regional Council on request.	
11	If the consent holder abandons work on-site, or pauses works for more than five working days, adequate preventative and remedial measures must be taken to control sediment discharged from exposed or unconsolidated surfaces. These measures must be maintained for so long as necessary to prevent sediment discharges from the earth worked areas.	
	During the Works	
12	The discharge to surface water described in Condition (1)(a) must not at any time: a. Have a concentration of Total Suspended Solids (TSS) exceeding 50 milligrams per litre; and b. Result in within the receiving waterbodies: i. the production of any oil or grease films; ii. the production of any floatable or suspended materials; iii. the production any sludge or emulsion deposited on the bed.	Original condition from applicant with track changes from CRC
13	a. Prior to the discharge of water in accordance with Conditions (1)(a) of this resource consent, a set of laboratory calibrated samples must be made up in clear bottles containing the following concentrations of TSS: i. 0 milligrams per litre; ~~i. 25 milligrams per litre;~~ ii. 50 milligrams per litre; iii. 100 milligrams per litre; b. The calibrated samples must be: i. prepared using representative soil samples from the site and then calibrated by a suitable laboratory to the unique	Original condition from applicant with track changes from CRC

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	combination of soil types at the site and the TSS concentrations detailed under (a); and ii. be replaced by a newly prepared sample every six months. c. The set of calibrated samples must be held on site. d. Records of the laboratory calibration, including records of replacement samples prepared must be kept and provided to Canterbury Regional Council on request.	
14	During the discharge to surface water described in Condition (1)(a), samples of discharge water must be: ~~the construction and earthworks, samples of discharge water must be:~~ a. Taken by a suitably qualified person and in accordance with best practicable sampling methodology; b. Collected in clean containers at the end of the sediment treatment system prior to the discharge to land or water; c. Collected one, two, four, and 24 hours after the discharge has commenced, and once per day thereafter if discharge exceeds one working day; and d. Visually compared to the calibrated samples prepared in accordance with Condition (13).	Original condition from applicant with track changes from CRC
15	If it becomes apparent at any stage during water quality monitoring detailed in Conditions (13) and/or (14) that a maximum TSS concentration of 50 milligrams per litre in the discharge will not, or is unlikely to be achieved, or if the visual assessment and observations undertaken in accordance with Condition (14) indicate a sheen of oil or grease or discoloration, or any sludge or emulsion below the water surface, then: a. The discharge must cease immediately;	Original condition from applicant with track changes from CRC

	b. The discharge can only recommence once amendments have been made to the treatment process such that: i. a TSS concentration of 50~~100~~ milligrams per litre in the treated discharge is achieved; or ii. the source of the sheen of oil or grease, discoloration, or any sludge or emulsion below the water surface, has been removed.	
16	All practicable measures must be taken to: a. Minimise soil disturbance to that necessary to minimise the potential for sediment-laden stormwater runoff to be generated; b. Prevent soil erosion as a result of stormwater runoff generated from the works area; c. Avoid placing excavated material in a position where it may become entrained in stormwater runoff and discharged to: i. any surface water body; ii. any neighbouring site; and iii. the Christchurch City Council's reticulated stormwater network, or any other private or public stormwater devices.	New condition from CRC
17	a. Tracking of material off-site during the works must be avoided at all times. b. In the event that material is tracked off-site, the tracked material must be removed as soon as practicable.	New condition from CRC
	Discovery of Contaminated Soils or Materials	
18	In the event that any contaminated soil or material is uncovered by the works, a contamination discovery protocol must be implemented, including but not limited to the following steps:	New condition from CRC

	a. Earthworks within ten metres of discovered contaminant soil or material must cease immediately; b. All practicable steps must be taken to prevent the contaminated material becoming entrained in stormwater. Immediate steps must include, where practicable: i. diverting any stormwater runoff from surrounding areas away from the contaminated material; and ii. minimising the exposure of the contaminated material, including covering the contaminants with an impervious cover. c. Notification of the Canterbury Regional Council, Attention: Contaminated Sites Manager, within 24 hours of the discovery; d. Earthworks within ten metres of discovered contaminant soil or material must not recommence until a suitably qualified and experienced contaminated land practitioner (SQEP) confirms to Canterbury Regional Council, Attention: Compliance Manager that continuing works does not represent a significant risk to the environment; and e. All records and documentation associated with the discovery must be kept and copies must be provided to the Canterbury Regional Council upon request.	
	Stockpiling of Contaminated Material/Soil	
19	Stockpiling of contaminated material or soils must be avoided where possible. In the event that temporary stockpiling of suspected contaminated or contaminated material is required, then the contaminated material stockpiles must be managed as below: a. Stockpiled contaminated material or soils must be kept separate from uncontaminated excavated soils stockpiles and any virgin aggregate or other material also stockpiled on-site; and	New condition from CRC

	b. Stockpiled contaminated material must be placed on polythene sheeting or similar impervious material to prevent contamination of underlying material; and c. Stockpiled contaminated material must include a perimeter bund or berm installed to prevent runoff leaving the area and stormwater from other areas entering the stockpile area; and d. Stockpiled material must be covered or dampened during dry and windy conditions so as to prevent wind erosion; and e. If any rainfall is forecasted that has the potential to cause runoff from the stockpiles, or if the stockpiles are left overnight, over the weekend or over public holidays, the stockpiled material must be covered with plastic sheeting or a suitable material such as clean topsoil, or otherwise stabilised, to prevent stormwater runoff coming into contact with contaminated material. ***Advice Note:*** *For the purpose of this condition, temporary stockpiling means material being stockpiled for no longer than the overall construction period or the stage of construction if construction occurs in stages, whichever is the shorter period, and only for as long as reasonably necessary. The overall requirement to avoid, where possible, the stockpiling of contaminated material or soils prevails.*	
	Spills	
20	All practicable measures must be taken to avoid spills of fuel or any other hazardous substances within the site. These measures must include: a. Refuelling of machinery and vehicles must not occur within 20 metres of: i. open excavations; ii. exposed groundwater; iii. surface water bodies; or	Original condition from applicant

	iv. stormwater devices. b. A spill kit must be kept on site that is capable of absorbing the quantity of oil and petroleum products that may be split on site at any one time, remains on site at all times; c. In the event of a spill of fuel or any other hazardous substance, the spill must be cleaned up as soon as practicable, the stormwater system must be inspected and cleaned, and measures taken to prevent a recurrence; d. The Canterbury Regional Council, Attention: Compliance Manager, must be informed within 24 hours of a spill event exceeding five litres and the following information provided: i. the date, time, location and estimated volume of the spill; ii. the cause of the spill; iii. the type of hazardous substance(s) spilled; iv. clean up procedures undertaken; v. details of the steps taken to control and remediate the effects of the spill on the receiving environment; vi. an assessment of any potential effects of the spill; and vii. measures to be undertaken to prevent a recurrence.	
	Upon Completion of Works	
21	Erosion and sediment control measures must not be decommissioned until the site is stabilised and the stormwater system for the developed site is functioning. Decommissioning of the measures must be undertaken in the following order: a. All disturbed areas must be stabilised and re-vegetated within two weeks of the completion of the works; b. Any visible debris, litter, sediment and hydrocarbons must be removed from all sediment control measures and disposed at a suitable facility; and c. Erosion and sediment control measures must be removed.	New condition from CRC

	Advice Note: *The use of polymers for site stabilisation purposes, including those forming a component of hydro-seeding formulas, may require separate authorisations under the Resource Management Act 1991. Further, polymers are not considered a long-term or permanent stabilisation technique and may require repeated application to ensure the site remains stabilised.*	
22	Upon completion of works and the removal of erosion and sediment control measures, any visible sediment accumulated on impervious surfaces within or immediately adjacent to the works site must be removed to minimise the risk of sediment becoming entrained in stormwater. All sediment removed must be disposed of at a suitable facility.	New condition from CRC
	Administration	
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: a. Dealing with any adverse effect on the environment that may arise from the exercise of the consent or b. Requiring the adoption of the best practicable option to remove or reduce any adverse effect on the environment.	Original condition from applicant
24	If this resource consent is not exercised before 31 December 2030, it lapses in accordance with Section 125 of the Resource Management Act 1991. ***Advice note:*** *'Exercised' is defined as implementing any requirements to operate this consent <u>and</u> undertaking the activity as described in these conditions and/or application documents*.	Original condition from applicant

Resource Consent: CRCXXXXXX (s15 – Discharge Permit – Operational Phase)

Applicant: Carter's Group Limited

Recommended Duration: 35 years

	Limits	**CRC track change/comments**
1	The activity authorised under this resource consent is limited to the discharge of stormwater generated from: a. Roofs; b. Roads; c. Berms; d. Foodpaths; e. Hardstand areas; f. Impervious areas; associated with the proposed industrial subdivision of Pt Lot 3 DP 22679, Lot 4 DP 22679 and Pt Lot 1 DP 2837, located at 104 Ryans Road and 20 Grays Road, as show on Plan CRCXXXXXXA attached to and forming part of this consent.	Original condition with track changes from CRC
2	Stormwater must only be discharged onto and into land within the boundary of the site in accordance with Conditions (4) to (17) of this resource consent.	New condition from CRC
3	Unless treatment is provided, the discharge of roof stormwater must not arise from: a. Copper building materials; or b. Unpainted galvanised sheet materials.	Original condition from applicant
	Individual Lot Stormwater Systems	

4	Stormwater must be discharged into land~~/surface water/pipe~~ via the following stormwater system: a. Stormwater from roofs shall be discharged via a sealed system that excludes all other stormwater to soakage pits; b. A minimum of one infiltration test at the location of each of the proposed soakage pits; c. Stormwater from hardstand and impervious areas on individual lots must be discharged via an onsite proprietary treatment device for treatment of the 'first flush' flow prior to disposal to ground via soakage pits; d. The soakpits and associated detention shall have a minimum capacity to attenuate and dispose all rainfall events up to and including the 24 hour duration two percent annual exceedance probability event from the contributing catchment; e. Stormwater in excess of the specified event in Condition (4)(d) must be directed towards the roading reserve.	Original condition from applicant with track changes from CRC
5	The proprietary treatment device shall be designed and constructed to: a. Have the capacity to treat stormwater flows equal to runoff from a minimum of 5 mm/rainfall intensity on the contributing impervious catchment before bypassing.	Original condition from applicant
6	The individual lot soakpits must: a. Along with its associated detention, store and dispose of all rainfall events up to and including the 24 hour duration two percent annual exceedance probability event from the contributing catchment; b. Have a base that extends into free draining soil strata; and c. Have a factor of safety of three~~]~~ incorporated into the soak pit design to account for reduction of infiltration performance over time (clogging);	Original condition from applicant with track changes from CRC

	d. Be sized and designed based on infiltration tests completed at the proposed soakpit location and target depth; e. Have a maximum depth to the base of 7 meters below natural ground level.	
7	Treatment of the first flush runoff shall be via one of the following systems: a. A raingarden designed in accordance with CCC's Rain Garden Design Construction and Maintenance Manual 2015; b. A soil absorption basin or sedimentation basins and wetland treatment train designed in accordance with WWDG to treat a volume of runoff equal to that generated from 25mm rainfall depth c. One of the following proprietary treatment devices designed to treat the flow generated from a 5mm/hr intensity rainfall event: • Hynds UpFlo Filter with CPZ Media • Stormwater 360 Stormfilter with ZPG Media • Stormwater 360 Filterra • SPEL Hydrosystem • SPEL Spelfilter	Original condition from applicant
8	Stormwater generated within each individual site must only be discharged onto and into land within the boundary of each individual site.	Original condition from applicant
9	The discharges must not arise from a site where any of the activities or industries listed in Schedule 3 of the Land and Water Regional Plan attached as Appendix CRCXXXXXX, which forms part of this consent, are conducted or operated.	Original condition from applicant with track changes from CRC
10	For the avoidance of doubt, Conditions (11) to (17) do not apply to the individual lot discharges covered by Conditions (4) to (9).	New condition from CRC
	Overall Subdivision Stormwater System	
11	Stormwater from roads, footpaths, berms, hardstand areas, impervious surfaces, and excess stormwater run-off from residential lots must be	New condition from CRC

	conveyed via kerb and channel to submerged outlet sumps and treated via a first flush infiltration basin and/or soakpits system to meet the water quality requirements of the Land and Water Regional Plan water quality outcomes and standards set out in Table 1, Schedules 5 and 8 and Section 5 to 15 (whichever applies) are being met or will be met prior to being discharged to ground as shown on the attached Plans CRCXXXXXXXB and CRCXXXXXXXC which forms part of this resource consent.	
12	The infiltration basin and/or soakpits shall: a. Along with its associated detention, store and dispose of all rainfall events up to and including the 24 hour duration two percent annual exceedance probability event from the contributing catchment; b. Have a base that extends into free draining soil strata; and c. Have a factor of safety of [three] incorporated into the soak pit design to account for reduction of infiltration performance over time (clogging); d. Be sized and designed based on infiltration tests completed at the proposed soakpit location and target depth. e. Have a maximum depth to the base of 7 meters below natural ground level.	New condition from CRC
13	Where the capacity of the primary stormwater system is exceeded, stormwater must be directed towards the internal roading network	Original condition from applicant
14	All sumps must be fitted with submerged outlets capable of trapping at least 60 litres of hydrocarbons.	Original condition from applicant
15	Stormwater shall not pond in any open detention area for longer than 48 hours after the cessation of any storm event.	Original condition from applicant
16	Stormwater shall only be discharged onto and into land via the stormwater system detailed under Condition (13) of this resource consent.	New condition from CRC

17	Stormwater management for the site shall be in general accordance with Stormwater Management Report prepared by PDP, attached to and forming part of this resource consent.	Original condition from applicant
	Design Plans	
18	At least 20 working days prior to the installation of the reticulated stormwater system, the consent holder or lot owner shall submit to the Canterbury Regional Council, Attention: Compliance Manager: a. Final detailed design plans for the stormwater system/component. b. A certificate signed by a Chartered Professional Engineer (CPEng) with stormwater system design and construction experience confirming that: i.The stormwater system has been designed in accordance with the Conditions of this resource consent; and c. A statement signed by the CPEng confirming that they are competent to certify the engineering work.	Original condition from applicant
19	Within 10 working days of the installation of the stormwater system, the consent holder shall submit to the Canterbury Regional Council, Attention: Compliance Manager: a. All as built design plans of the [stormwater system/component/etc.] installed; b. A certificate signed by a CPEng with stormwater system design and construction experience confirming that confirming that the installed [stormwater system/component/etc.] complies with the conditions of this resource consent; and c. A statement signed by the CPEng confirming that they are competent to certify the engineering work.	Original condition from applicant
	Inspections and Maintenance	

20	The stormwater system shall be maintained by: a. Inspecting the [list of components] at least once every [three/six/twelve] month(s) depending on which first flush treatment solution has been designed for the individual site. b. Removing any visible hydrocarbons, debris or litter within ten working days of the inspection. c. Removing any accumulated sediment in the [infiltration components] within five working days of the inspection. d. Removing any accumulated sediment in the sumps and [component] when the sediment occupies more than one quarter of the depth below the invert of the outlet pipe. e. Repairing any scour or erosion within ten working days of the inspection.	Original condition from applicant
21	Any material removed from the devices in accordance with Condition (20) shall be disposed of at an appropriate location.	Original condition from applicant
22	The [proprietary treatment device] shall be installed and maintained in accordance with the Manufacturers Specifications.	Original condition from applicant
	Records and Reporting	
23	Records of the inspection and maintenance of the stormwater system must be kept. The records must include, but not be limited to, information that demonstrates compliance with Conditions (20), (21) and (22) of this consent. Copies of these records must be provided to the Canterbury Regional Council on request. These records must include, but not be limited to: a. Date and details of inspections of the stormwater system; b. Date and details of any maintenance work, repairs and upgrades to the stormwater system, including removal of material and its disposal; c. Any complaints received about the stormwater discharge.	New condition from CRC

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	Spills	
24	All practicable measures shall be taken to avoid spills of fuel or any other hazardous substances within the site. In the event of a spill of fuel or any other hazardous substance: a. The spill shall be cleaned up as soon as practicable, the stormwater system shall be inspected and cleaned, and measures shall be taken to prevent a recurrence; b. The Canterbury Regional Council, Compliance Manager shall be informed within 24 hours of a spill event exceeding five litres and the following information provided: i. The date, time, location and estimated volume of the spill; ii. The cause of the spill; iii. The type of hazardous substance(s) spilled; iv. Clean up procedures undertaken; v. Details of the steps taken to control and remediate the effects of the spill on the receiving environment; vi. An assessment of any potential effects of the spill; and vii. Measures to be undertaken to prevent a recurrence.	Original condition from applicant
25	All best practicable options shall be used to contain spills or leaks of any hazardous substance from being discharged via the stormwater system. These shall include, but not be limited to the following: a. Using a tank filling procedure to minimise spills during any fuel delivery; b. Making spill kits available to contain or absorb any hazardous substances used or stored on the site; c. Maintaining signs to identify the location of the spill kits; and d. Maintaining written procedures in clearly visible locations that are to be undertaken to contain, remove and dispose of any spilled hazardous substance.	Original condition from applicant

	Administration	
26	The Canterbury Regional Council may, once per year, on any of the last five working days of May or November, serve notice of its intention to review the conditions of this consent for the purposes of: a. Dealing with any adverse effect on the environment that may arise from the exercise of the consent or b. Requiring the adoption of the best practicable option to remove or reduce any adverse effect on the environment.	Original condition from applicant
27	If this resource consent is not exercised before 31 December 2030, it lapses in accordance with Section 125 of the Resource Management Act 1991. ***Advice note:*** *'Exercised' is defined as implementing any requirements to operate this consent and undertaking the activity as described in these conditions and/or application documents*.	Original condition from applicant

APPENDIX CRCXXXXXXX

Schedule 3 Hazardous Industries and Activities

A. Chemical manufacture, application and bulk storage

1. Agrichemicals including commercial premises used by spray contractors for filling, storing or washing out tanks for agrichemical application
2. Chemical manufacture, formulation or bulk storage
2. Commercial analytical laboratory sites
3. Corrosives including formulation or bulk storage
4. Dry-cleaning plants including dry-cleaning premises or the bulk storage of dry-cleaning solvents
5. Fertiliser manufacture or bulk storage
6. Gasworks including the manufacture of gas from coal or oil feedstocks
7. Livestock dip or spray race operations
8. Paint manufacture or formulation (excluding retail paint stores)
9. Persistent pesticide bulk storage or use including sport turfs, market gardens, orchards, glass houses or spray sheds
10. Pest control including the premises of commercial pest control operators or any authorities that carry out pest control where bulk storage or preparation of pesticide occurs, including preparation of poisoned baits or filling or washing of tanks for pesticide application
11. Pesticide manufacture (including animal poisons, insecticides, fungicides or herbicides) including the commercial manufacturing, blending, mixing or formulating of pesticides
12. Petroleum or petrochemical industries including a petroleum depot, terminal, blending plant or refinery, or facilities for recovery, reprocessing or recycling petroleum-based materials, or bulk storage of petroleum or petrochemicals above or below ground
13. Pharmaceutical manufacture including the commercial manufacture, blending, mixing or formulation of pharmaceuticals, including animal remedies or the manufacturing of illicit drugs with the potential for environmental discharges
14. Printing including commercial printing using metal type, inks, dyes, or solvents (excluding photocopy shops)
15. Skin or wool processing including a tannery or fellmongery, or any other commercial facility for hide curing, drying, scouring or finishing or storing wool or leather products
16. Storage tanks or drums for fuel, chemicals or liquid waste
17. Wood treatment or preservation including the commercial use of anti-sapstain chemicals during milling, or bulk storage of treated timber outside

B. Electrical and electronic works, power generation and transmission

1. Batteries including the commercial assembling, disassembling, manufacturing or recycling of batteries (but excluding retail battery stores)
2. Electrical transformers including the manufacturing, repairing or disposing of electrical transformers or other heavy electrical equipment
3. Electronics including the commercial manufacturing, reconditioning or recycling of computers, televisions and other electronic devices
4. Power stations, substations or switchyards

C. Explosives and ordinances production, storage and use

1. Explosive or ordinance production, maintenance, dismantling, disposal, bulk storage or re-packaging
2. Gun clubs or rifle ranges, including clay targets clubs that use lead munitions outdoors
3. Training areas set aside exclusively or primarily for the detonation of explosive ammunition

D. **Metal extraction, refining and reprocessing, storage and use**

1. Abrasive blasting including abrasive blast cleaning (excluding cleaning carried out in fully enclosed booths) or the disposal of abrasive blasting material
2. Foundry operations including the commercial production of metal products by injecting or pouring molten metal into moulds
3. Metal treatment or coating including polishing, anodising, galvanising, pickling, electroplating, or heat treatment or finishing using cyanide compounds
4. Metalliferous ore processing including the chemical or physical extraction of metals, including smelting, refining, fusing or refining metals
5. Engineering workshops with metal fabrication

E. **Mineral extraction, refining and reprocessing, storage and use**

1. Asbestos products manufacture or disposal including sites with buildings containing asbestos products known to be in a deteriorated condition
2. Asphalt or bitumen manufacture or bulk storage (excluding single-use sites used by a mobile asphalt plant)
3. Cement or lime manufacture using a kiln including the storage of wastes from the manufacturing process
4. Commercial concrete manufacture or commercial cement storage
5. Coal or coke yards
6. Hydrocarbon exploration or production including well sites or flare pits
7. Mining industries (excluding gravel extraction) including exposure of faces or release of groundwater containing hazardous contaminants, or the storage of hazardous wastes including waste dumps or dam tailings

F. **Vehicle refuelling, service and repair**

1. Airports including fuel storage, workshops, washdown areas, or fire practice areas
2. Brake lining manufacturers, repairers or recyclers
3. Engine reconditioning workshops
4. Motor vehicle workshops
5. Port activities including dry docks or marine vessel maintenance facilities
6. Railway yards including goods-handling yards, workshops, refuelling facilities or maintenance areas
7. Service stations including retail or commercial refuelling facilities
8. Transport depots or yards including areas used for refuelling or the bulk storage of hazardous substances

G. **Cemeteries and waste recycling, treatment and disposal**

1. Cemeteries
2. Drum or tank reconditioning or recycling

3. Landfill sites
4. Scrap yards including automotive dismantling, wrecking or scrap metal yards
5. Waste disposal to land (excluding where biosolids have been used as soil conditioners)
6. Waste recycling or waste or wastewater treatment

H. Any land that has been subject to the migration of hazardous substances from adjacent land in sufficient quantity that it could be a risk to human health or the environment.

I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment.