

In the matter of The Resource Management Act 1991

And

In the matter of Resource consent applications CRC084132 (discharge permit to discharge stormwater onto and into land and into water), CRC084133 (water permit to divert surface water), and CRC084135 (land use consent to excavate land undertake works and place structures in a waterway) by the Waimakariri District Council related to a proposed new stormwater treatment system, near Rangiora

Decision of hearing commissioner

Mike Freeman

Date and location of hearing

20 November 2008 at the Waimakariri district Council

Appearances

Applicant

- (a) Ms Claire Penman, MWH New Zealand Ltd.
- (b) Yvette Rodrigo, MWH New Zealand Ltd.
- (c) Kalley Simpson, MWH New Zealand Ltd.
- (d) Shelley McMurtrie, EOS Ecology
- (e) Murray Binnie, Waimakariri District Council

SUBMITTERS

- (i) Professor Walter Clark, Representing the Cam River Consent Group
- (ii) Regan Clark, representing Ms Angela Waghorn

REPORTING OFFICERS

1. Kelly Menchenton, Canterbury Regional Council
2. Tim Ensor, Canterbury Regional Council

1. Background

- 1.1 On 28 April 2008 the Waimakariri District Council (WDC) applied for three resource consent applications required for a proposed new stormwater treatment system proposed to be located adjacent to Spark Lane on the south side of Northbrook Road, Rangiora. The stormwater treatment system is proposed to accept stormwater from the recently re-zoned 90 hectare East Rangiora Outline Development Area (ODA). The proposed new system would involve discharging treated stormwater into the North Brook and realigning and enhancing a spring-fed creek to run alongside the stormwater treatment system.
- 1.2 A thorough description of the proposed new stormwater system was provided at the hearing by the applicant's representatives together with a comprehensive suite of proposed consent conditions.
- 1.3 A site visit was carried out in the early evening of 20 November 2008. I was accompanied by Ms Clare Penman (MWH) and Ms Shelley McMurtrie (EOS Ecology) who assisted to ensure that I understood the location of the proposed stormwater treatment basin, the proposed location of the realignment of Crayfish Creek, and the various proposed discharge and monitoring points. No other parties present at the adjournment of the hearing wished to attend the site visit.

2. Notification and submissions

- 2.1 The applications were publicly notified on 11 June 2008 and notice was served on landowners in the immediate vicinity and up to 1 kilometre downstream from the proposed treatment site, and nine other parties considered by the Canterbury Regional Council (Environment Canterbury, ECan) to be potentially adversely affected.
- 2.2 Six submissions were received by ECan; two were in support, three were in opposition and two were neutral.

3. Summary of the evidence heard

The applicant's representatives

- 3.1 **Ms Penman**, an Environmental Planner, outlined the background to the applications, the legal and planning context, the consultation undertaken by the applicant and the applicant's response to issues raised by submitters. The evidence was in addition to an extensive assessment of environmental effects provided with the application and the provision of further information as requested by ECan under section 92 of the Resource Management Act (RMA). A comprehensive suite of proposed

consent conditions was also provided that had been developed in consultation with ECan officers.

- 3.2 **Mr Binnie**, a Civil Engineer, explained the reasons for choosing the proposed site and the rationale for taking a catchment wide approach to stormwater management. Mr Binnie also explained in some detail the consultation processes followed by WDC and the specific actions proposed to meet concerns raised by submitters.
- 3.3 **Ms McMurtrie**, an Environmental Scientist, provided detailed evidence relating to the ecological assessment of environmental effects of the proposal. In particular her evidence focussed on freshwater ecological values and issues relating to 'Crayfish Creek' adding to the information provided in a comprehensive report provided with the assessment of environmental effects. Ms McMurtrie explained in detail the issues relating to the diversion and enhancement of Crayfish Creek and the wider amenity proposals for the area.
- 3.3 **Mr Simpson**, a Water/Wastewater Engineer, gave an overview of the stormwater design considerations and alternatives that were considered as well as detailing the operational hydrological and stormwater quality treatment performance expectations. He described the site constraints that lead to the choice of final design, particularly the high groundwater levels in the north west of the site which restricted the available 'footprint' for the treatment system. Mr Simpson also explained the proposed construction methodology and the precautions planned to ensure that the diversion of Crayfish Creek would be successful and to ensure that groundwater was prevented from rising up into the stormwater treatment basin.

THE SUBMITTERS

- 3.4 **Professor Clark**, an emeritus professor of zoology, gave evidence on behalf of the Cam River Consent Group. He outlined the group's concerns about the Cam River system and the historical and current pressures on the water quality and habitat of the river system. He presented a detailed description of the life cycle of lampreys with particular reference to the Cam River and its tributaries.
- 3.5 **Mr Regan Smith**, gave evidence on behalf of Mr Angela Waghorn who is concerned that her land is not included within the catchment area to be serviced by the proposed stormwater system. Mr Smith detailed the communication that had occurred between Ms Waghorn and the WDC.

THE REPORTING OFFICERS

- 3.6 **Ms Menchenton**, a Consents Investigating officer, provided a comprehensive section 42A report on the discharge permit application which included input from water quality and hydrology experts. The report highlighted that constructive communication had occurred between WDC representatives and ECan officers on key issues relating to flooding and water quality. Ms Menchenton concluded that the adverse effects of the

proposal are acceptable and recommended that the discharge permit be granted. A suite of proposed conditions were also included with the section 42A report.

- 3.7 **Mr Ensor**, a Consent Investigating Officer, provided a comprehensive section 42A reports on the water permit and land use applications. The report provided an audit of a range of actual and potential adverse effects associated with the proposed development particularly relating to Crayfish Creek, groundwater flows, flooding and construction. Mr Ensor concluded that, provided the recommended conditions are imposed, the adverse effects would be minor and consequently recommended that the applications be granted.

The Hearing

- 3.8 At the hearing I asked a number of questions of clarification relating to the certainty and clarity of the suite of conditions that had been agreed to by the applicant and the reporting officers. Ms Penman agreed to further develop the conditions and circulate a revised site of conditions to the parties who would have an opportunity to comment on them.
- 3.9 The hearing was adjourned at approximately 5.30 pm on the date of the hearing pending receipt of a revised set of proposed resource consents conditions. I issued a Memorandum of Proceedings on 11 December suggesting that a period of ten working days should be an adequate time for submitters and the reporting officers to respond to the revised set of conditions. I received a revised set of proposed resource consent conditions and a Right of Reply from Ms Penman via email on 17 December 2008.
- 3.10 The submitters and reporting officers were given until 28 January 2009 to respond to the final set of proposed conditions. Ms Kelly Menchenton, provided some very useful and constructive comments on the proposed discharge permit conditions. The hearing was closed on 30 January 2009.

4. THE PRINCIPAL ISSUES, EVALUATION AND FINDINGS OF FACT

- 4.1 In summarising the principal issues and evaluating them I have considered the original application and the associated assessment of environmental effects, the further information provided in response to section 92 requests, all submissions made in response to the applications, the section 42A reports and all the evidence provided at and subsequent to the hearing.
- 4.2 The principal issues or actual or potential adverse effects have been discussed in some detail in the section 42A reports and can be summarised as the following adverse effects on:

- surface water quality and aquatic ecosystems – during construction of the stormwater system, during further development of the catchment and after full development,
- flooding frequency and severity,
- stream bank stability and erosion – during and after construction,
- groundwater levels, spring discharges and quality,
- tangata whenua values,
- general construction adverse effects,
- existing users of water from Crayfish Creek and/or further downstream, and
- amenity values.

WATER QUALITY AND ECOSYSTEM EFFECTS

4.3 There was agreement that the measures proposed by the applicant will ensure that the stormwater treatment system will achieve the following minimum performance standards:

Stormwater quality variable	Minimum reduction
Total suspended solids	50%
Oil and grease	70%
Nutrients (TP & TN)	50%
Heavy metals	50%
COD & BOD	50%

- 4.4 Both the applicant’s technical representatives and the reporting officers agreed that a higher level of performance than outlined in the above table was expected. The applicant also agreed that measures in addition to those proposed initially would be appropriate and would improve the quality of stormwater prior to entering the stormwater system, such measures include sediment control measures undertaken during subdivision earthworks and during new house building.
- 4.5 The applicant’s technical representatives and the reporting officers agreed that provided all the new proposed conditions are included with any consent that is granted and that there is full compliance with those conditions, then aquatic life would not be adversely affected by the development in terms of the adverse effects relating to the construction process, short-term discharges as land is developed or the longer-term discharge when all the ODA land is fully developed.
- 4.6 While the minimum level of total suspended solids treatment appears low compared to some other treatment systems that are reported as having a treatment efficiency of greater than 75%, there are a number of matters that need to be considered to put these comparisons in context. Key considerations are that the proposed discharge is from a relatively large 90 hectare catchment with some specific site constraints and includes a range of proposed conditions that would significantly reduce the amount of

sediment that would enter the stormwater system. As outlined at the hearing, it is accepted that the greatest risk of sediment discharges occurs during the development of an area, specifically during subdivision and individual building site earthworks. With the proposed conditions, specifically including proactive 'catchment controls', the amount of sediment in stormwater entering the treatment basin will be significantly less than would otherwise occur.

4.7 The positive effects that will result from the proposed re-alignment and enhancement of Crayfish Creek are also an important consideration. Considerable evidence was heard both from the applicant's freshwater ecology expert Ms McMurtrie and also from Professor Clark about the presence of significant numbers of freshwater crayfish or koura in the creek. The evidence clearly identified that Crayfish Creek provides a valuable habitat, rarely found in Canterbury, that provides an ideal environment for freshwater crayfish. The realignment and enhancement of Crayfish Creek will provide significant ecosystem benefits for this catchment.

4.8 The key conditions that the applicant proposed including amendments, are as follows:

- A controlled treatment system designed to provide treatment up to a 50 year Annual Recurrence Interval storm,
- A low flow weir and pipe system that restricts the flow to 80 litres per second with a detained volume of 6,000 cubic metres,
- A main outlet pipe that restricts the flow to 970 litres per second with a detained volume of 8,200 cubic metres,
- Realignment and enhancement of Crayfish Creek, and
- Catchment controls over subdivision and building site developments.

4.9 The applicant has proposed that a specific receiving water standard not be included in the resource consent conditions. Instead a 'response' condition was proposed based on a 20% clarity reduction trigger. This is of concern. While I have a high level of confidence that the proposed design and associated conditions will operate as designed and for the vast majority of storm events will result in a discharge that is in accordance with the specific requirements of the Waimakariri River Regional Plan (WRRP). However, to provide a clear signal that the discharge must not result in a breach of the critical receiving water quality standards during relatively frequent storm events, I consider that it is appropriate to impose an appropriate post-construction receiving water quality standard that is consistent with the requirements of the WRRP. The most relevant standards are those that relate to suspended solids and visual clarity. On the basis of the information provided to me as part of this hearing process, I am satisfied that a post-construction receiving water standard that requires the clarity change to not exceed 20% during storm events that do not involve a discharge over the overflow bund will ensure that there is no material breach of the water quality standards specified in the WRRP

(WAIM-TRIB Condition (2)), and therefore ensure that the objectives of the WRRP are not compromised. This requirement will not involve any additional water quality monitoring.

- 4.10 I accept that the proposed trigger – response approach is appropriate for the construction phase of the development. However, I consider that a reporting requirement needs to be added to the response requirement to inform the consent authority when requirement is activated.
- 4.11 I am not satisfied that all the water quality monitoring jointly agreed to by the applicant and the reporting officers is needed to be assured that the discharge complies with the key requirements of the WRRP and that the stormwater treatment system is functioning effectively. Consequently, I have reduced the proposed water quality monitoring requirement frequency. I consider that the applicant's resources would be more appropriately invested in proactive construction site and catchment sediment control management initiatives.
- 4.12 I am satisfied that the overall result of the proposed stormwater treatment system together with the catchment stormwater quality mitigation measures, additional conditions and the enhancement of Crayfish Creek will be that the overall adverse effects on surface water quality and associated ecosystems will be less than minor.

FLOODING FREQUENCY AND SEVERITY

- 4.13 As a consequence of discussions between ECan's technical expert and the applicant's engineering designer, the currently proposed system incorporates a number of measures designed to concurrently meet both water quality and flood mitigation goals. The current design is accepted by ECan's technical expert as hydraulically neutral for a 2% annual exceedence probability (AEP) critical duration event, i.e., no increase in flooding for events up to this magnitude.
- 4.14 I agree with these conclusions and am therefore satisfied that the proposed discharge will have less than a minor adverse effect on flood risk.

Stream bank stability and erosion – during and after construction

- 4.15 The applicant has detailed the proposed new structures and the measures that would be taken during construction to minimise erosion or bank instability. These measures are incorporated into the final proposed suite of consent conditions.
- 4.16 I am therefore satisfied that the proposed works will have less than minor adverse effects on river bank stability and erosion risk.

Groundwater levels, spring discharges and quality

- 4.17 The construction of the stormwater treatment basin and the realignment of Crayfish Creek will require careful management of groundwater levels, sealing of the stormwater treatment basin and restoration of groundwater levels. It is critical that groundwater is prevented from discharging into the stormwater treatment basin and that groundwater continues to recharge the realigned Crayfish Creek. The proposed methodology and the final proposed suite of consent conditions address these issues.
- 4.18 There is a risk that dewatering operations during construction of the stormwater treatment basin could adversely affect groundwater levels in two nearby bores used to supply domestic water. However, there was agreement between the applicant and the reporting officer that given the available depth of groundwater and the estimated drawdown, that even the 'worst case scenario' is unlikely to have any significant adverse effects.
- 4.19 Spring discharges would be affected by the proposed dewatering process. However, this would be part of a longer-term development and enhancement programme and an essential part of the process of realigning Crayfish Creek. While the location of some spring discharge points may change, the overall development plan is to maintain the overall spring flows and the proposed conditions will assist to ensure that this occurs.
- 4.20 The design of the stormwater treatment basin combined with the nature of the surface confining soil layer in the area will ensure that there would be no significant adverse effects on groundwater quality. I am satisfied that the proposed construction process and conditions will ensure that any adverse effects on groundwater levels, spring discharges and groundwater users will be less than minor.

Tangata whenua values

- 4.21 The applications were notified to Tuahuriri Runanga and Te Runanga O Ngai Tahu and no submissions were received by either party. After considering the overall proposal, including the enhancement work and my conclusion that the adverse effects would be less than minor together with the lack of submissions on the proposal, I consider that there would be no significant adverse effects on tangata whenua values.

General construction adverse effects

- 4.22 A range of general adverse effects could occur during the construction of the stormwater treatment basin and realignment of Crayfish Creek, including visual/amenity impacts, dust, noise and traffic. These potential adverse effects can arise as a consequence of authorising the resource consents applied for and are therefore valid issues to consider.
- 4.23 The construction period is likely to be approximately three to six months and the proposed conditions for the land use consent propose among

other matters limiting the period of operation from 7 am to 6 pm Monday to Saturday and exclude works during public holidays. I therefore conclude that the adverse effects arising from general construction activities to be less than minor.

Existing users of water from Crayfish Creek and/or further downstream

4.24 The section 42A report indicates that there are no water permit holders authorised to abstract water from Crayfish Creek. There are authorised abstractions from the North Brook and further downstream. However, the evidence strongly indicated that there would be no overall changes in flows in the North Brook because the proposal, both during construction and during operation, would not change the overall recharge to the surface waters. Therefore I consider that there would not be any adverse effects on existing authorised abstractors.

Amenity values

4.25 There will be some short-term impacts on amenity values during construction of the stormwater treatment system and realignment of Crayfish Creek. However, there is agreement between the parties that there will be a significant overall positive effect on amenity values as a consequence of the realignment and enhancement of Crayfish Creek, the landscaping of the stormwater basin area and Crayfish Creek, and the integration of the stormwater treatment basin with the North Brook environment. I agree with this conclusion and therefore I consider that the overall adverse effects on amenity values to be less than minor.

Submitters' evidence

4.26 The evidence from Professor Clark was useful and reinforced the technical evidence provided by Ms McMurtrie about the ecological values of both Crayfish Creek and the wider proposed receiving waters.

4.27 The evidence from Mr Clark, representing Ms Waghorn, raised issues that are not relevant for consideration under this process. The issue of the extent of the catchment that should be served by this or a future stormwater system is a matter that the submitter should discuss with the Waimakariri District Council. It is not a matter that I can make a decision on.

General comments on proposed conditions

4.28 I commend the applicant's and ECan's representatives for the constructive approach taken to developing an agreed suite of proposed consent conditions. I have accepted the majority of these conditions. However, I have made a number of changes as a consequence of: the evidence heard, the issues discussed above, the need to keep the conditions as certain and as simple as possible, the need to maximise consistency

between consents and to avoid duplication of, or contradiction between, conditions

5. STATUTORY PROVISIONS

Status of the applications

5.1 The applicant and reporting officers agreed that the status of the applications are as follows:

Consent number	Consent type	Applicable plan	Activity categorisation
CRC084132	Discharge permit	Waimakariri River Regional Plan, Transitional Regional Plan, Proposed Natural Resource Regional Plan	Discretionary
CRC084133	Water permit to divert surface water	Waimakariri River Regional Plan, Transitional Regional Plan, Proposed Natural Resource Regional Plan	Discretionary
CRC084135	Land use consent to excavate land undertake works and place structures in a waterway	Waimakariri River Regional Plan, Transitional Regional Plan, Proposed Natural Resource Regional Plan	Non-complying

5.2 Ms Penman indicated in her evidence that it may be appropriate to 'bundle' the consents. As I noted at the hearing, I favour this approach; for two reasons. Firstly, because of the case law (e.g., Environment Court, *Darby v Queenstown District Council*, CO69/07) that strongly indicates that consents that are inextricably linked to each other should be considered in a holistic manner applying the strictest category to the 'bundle' of consents. Secondly, because there is a possibility that the discharge permit application may be a non-complying activity because of the difficulties in interpreting the extent to which a stormwater discharge of this nature would at all times fully comply with the water quality standards specified in the Waimakariri River Regional Plan (WRRP).

5.3 The WRRP water quality standards apply after "reasonable mixing" and "...disregard the effect of any natural perturbations that may affect the water body". The applicant has suggested that 50 metres would be an appropriate distance for a "mixing zone".

5.4 The application of water quality standards and mixing zones to stormwater discharges is difficult, primarily because of the highly variable and

transient nature of most stormwater discharges. A “natural perturbation” would exclude the effects of some stormwater discharges. However, I do not consider that it would have been the intention that the use of such a term would exclude all stormwater discharges.

5.5 While limited information was presented on application of the WRRP, I consider that there is a possibility that the WAIM-TRIB water quality standard “There shall be no production of conspicuous oil or grease films, scums or foams, or floatable or suspended materials.” may be breached for short periods even during a relatively small storm event when concentrations of suspended solids may be discharged (the condition requires no production of “suspended materials” beyond the ‘mixing zone’). This is potentially a wider issue because of the use of the term “suspended materials” in section 107 of the Resource Management Act. Under Rule 6.2 of the WRRP this could mean that the discharge would be a non-complying activity.

5.6 As a consequence of these considerations, particularly the ‘bundling’ case law, I will consider the consent applications as a ‘bundle’ and apply the non-complying tests.

5.7 Section 104(1) of the RMA requires that the consent authority must, subject to Part 2, have regard to:

“(a) any actual and potential effects on the environment of allowing the activity; and

(b) any relevant provisions of –

(i) a national policy statement;

(ii) a New Zealand Coastal Policy Statement;

(iii) a regional policy statement or proposed regional policy statement;

(iv) a plan or proposed plan; and

(c) any other matter the consent authority considers relevant or reasonably necessary to determine the application.”

Regional Policy Statement and operative and proposed regional plans

5.8 A detailed analysis of the relevant objectives of the Regional Policy Statement (RPS), the relevant operative regional plans (the Transitional Regional Plan (TRP) and the WRRP) and the Proposed Natural Resources Regional Plan (PNRRP) has been provided in the section 42A reports by Ms Menchenton and Mr Ensor. Both the reporting officers and the applicant agree that the proposed development is consistent with all the relevant objectives and policies in the RPS and plans. I will not repeat the comprehensive information provided in those reports. Instead I will highlight what I consider to be the key objective and policies set out in the WRRP. These are Objective 6.1 and policies 6.1 and 6.2. There are a range of other objectives and policies that are applicable. However, in the context of the central activity for which consents are sought, i.e., a discharge of stormwater, this objective and the policies are particularly

relevant. Therefore I put considerable weight on this objective and the policies in terms of their specificity and because the WRRP is an operative regional plan.

“Objective 6.1

Enable present and future generations to gain cultural, social, recreational, economic, health and other benefits from the rivers, lakes and wetlands in the Waimakariri River Catchment while:

- (a) safeguarding their existing value for efficiently providing sources of drinking water for people and their animals;*
- (b) safeguarding the life-supporting capacity of the water, including its associated: aquatic ecosystems, significant habitats of indigenous fauna, and areas of significant indigenous vegetation;*
- (c) safeguarding their existing value for providing mahinga kai for Tangata Whenua;*
- (d) protecting wahi tapu and other wahi taonga of value to Tangata Whenua;*
- (e) preserving the natural character of rivers, lakes and wetlands and protecting them from inappropriate use and development;*
- (f) protecting outstanding natural features and landscapes from inappropriate use and development;*
- (g) maintaining and enhancing amenity values; and*
- (h) protecting the significant habitat of trout and salmon.”*

“Policy 6.1

Set and maintain water quality standards for, and control the discharge of contaminants into, surface water bodies in the Waimakariri River Catchment as outlined in Figure 6 and defined in Map 2 to:

...

- (c) ensure water quality is suitable for drinking water for animals, fisheries, fish spawning, aquatic ecosystems and is not altered in those characteristics that have a direct bearing upon the aesthetic values of water, in the Kaiapoi River, Styx River, Otukaikino Creek downstream of the Groynes picnic area, and their tributaries; and...”*

“Policy 6.2

Promote land management practices in:

- (a) the Waimakariri River Catchment which assist in achieving water quality standards; and...”*

5.9 I agree with the views of the reporting officers and the applicant that the proposal is consistent with the applicable objectives and policies and in particular, consistent with Objective 6.1 and policies 6.1 and 6.2 of the WRRP.

5.10 As indicated, I am considering these three consent applications as a bundled package and therefore section 104D applies, which states:

“... a consent authority may grant a resource consent for a non-complying activity only if it is satisfied that either -

- (a) the adverse effects of the activity on the environment (other than any effect to which section 104(3)(b) applies) will be minor; or*
- (b) the application is for an activity that will not be contrary to the objectives and policies of -*
 - (i) the relevant plan, if there is a plan but no proposed plan in respect of the activity; or*
 - (ii) the relevant proposed plan, if there is a proposed plan but no relevant plan in respect of the activity; or*
 - (iii) both the relevant plan and the relevant proposed plan, if there is both a plan and a proposed plan in respect of the activity.”*

5.11 I have assessed the applications against the relevant objectives and policies of the RPS, the WRRP and the PNRRP and conclude that given the proposed mitigation, the activity will not be contrary to any of the relevant objectives and policies of either the WRRP or the PNRRP. I also conclude as detailed in section 4 of this report that the effects of the activity on the environment will be less than minor.

6. DECISION AND REASONS

Part 2 Matters

6.1 In considering these applications, I have considered the relevant principles outlined in sections 6, 7 and 8 of the RMA as well as the overall the purpose of the RMA as presented in section 5.

Section 5

6.2 This section of the RMA defines sustainable management. I consider the present applications are consistent with the definition in the RMA, noting particularly that the discharge of stormwater from an integrated catchment system:

- (a) will allow current and future residents of Rangiora to provide for their social and economic needs and their health and safety,
- (b) will not compromise the reasonable needs of future generations, nor will it result in adverse effects on the life supporting capacity of water or ecosystems, and
- (c) the adverse effects of the discharges can be avoided or mitigated through the conditions imposed on the consents granted.

Section 6

6.3 Section 6 of the RMA lists seven matters of national importance that must be recognised and provided for in this decision. With the exception of sections 6(a) (“The preservation of the natural character of the coastal environment (including the coastal marine area) rivers and their margins, and the protection of them from inappropriate subdivision and development”) and 6(e) (“The relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga”), none of these matters are particularly relevant to the present applications.

- 6.4 The impacts of the natural character and margins of the North Brook and Crayfish Creek are considered to be minor in the context of the total proposal including the retention and enhancement of Crayfish Creek.
- 6.5 The applications were notified to Tuahuriri Runanga and Te Runanga O Ngai Tahu and no submissions were received by either party. After considering the overall proposal, including the enhancement work and my conclusion that the adverse effects would be less than minor together with the lack of submissions on the proposal I consider that there would be no significant adverse effects on tangata whenua values.

Section 7

- 6.6 This section of the RMA lists matters that I must have particular regard to. The only matter of potential relevance to the present applications is section 7(f), "maintenance and enhancement of the quality of the environment". I am satisfied that the adverse effects of granting the consents on the terms and conditions listed in this decision will be less than minor.

Section 8

- 6.7 The information provided to me indicates that granting the applications would not be inconsistent with the Principles of the Treaty of Waitangi (Te Tiriti o Waitangi).

DECISION

- 6.8 For the reasons detailed above and under sections 104, 107 and 108 of the Resource Management Act 1991 I determine that resource consent applications CRC084132, CRC084133 and CRC084135 be granted subject to the following conditions:



.....
Mike Freeman
Hearing commissioner

Date: 19 February 2009

CRC084132 To discharge contaminants onto land and into water

Subject to the following conditions:

Limits

- (1) The discharge shall be only stormwater arising from roofs, roads and hardstand areas associated with residential developments within the Eastern Outline Development Area (ODA), at East Belt, Kippenberger Avenue and Northbrook Road, Rangiora, labelled as “Applicant’s site” on attached Plan CRC084132A.
- (2) The discharge may also include:
 - (f) Stormwater generated during construction;
 - (g) Clean or pure water generated during dewatering operations.

Developed Site

Stormwater System

- (3) Stormwater shall be discharged into the stormwater treatment system as shown conceptually on attached Plans CRC084132B and CRC084132C.
- (4) Treated stormwater shall be discharged from the stormwater treatment system into the North Brook at map reference NZMS 260 M35:7827-6608.

Design

- (5) The stormwater system, with the exception of the overflow bund, which shall be between 50 metres and 100 metres in length as shown on attached Plan CRC084132B, in the stormwater treatment basin, shall be designed and constructed to ensure stormwater does not:
 - (a) Mix with spring water that flows into Crayfish Creek; or
 - (b) Discharge directly into Crayfish Creek.
- (6) The stormwater treatment system shall be designed with the following features:
 - (a) A swale upstream of Northbrook Road;
 - (b) A stormwater treatment basin; and
 - (c) An outfall into North Brook.
- (7) The swale shall be designed and constructed:

- (a) With sufficient capacity to be able to adequately convey peak discharge in response to a rainfall event of 50-year Average Recurrence Interval (ARI) of two-hour duration; and
 - (b) To prevent erosion or scour of soil in the swale.
- (8) The stormwater treatment basin, referred to as “basin”, shall be designed in general accordance with attached plans CRC084132B and CRC084132C, which form part of this consent. Key features of the design shall include but not be limited to:
- (a) A trapezoidal shaped main basin shaped with a minimum first flush storage volume of at least 6000 cubic metres;
 - (b) Capture of runoff resulting from at least the first 15 millimetres of rainfall in any storm event;
 - (c) A vegetated ponding or detention area to the west of the main basin opposite the overflow bund;
 - (d) No overflow into Crayfish Creek from the compartment located between Northbrook Road and the first gravel check dam;
 - (e) A minimum gradient of one vertical to 500 horizontal shall be provided on the invert, with the fall being towards the North Brook;
 - (f) A total storage volume in the basin of at least 12,500 cubic metres shall be provided before any discharge into Crayfish Creek occurs;
 - (g) The basin shall drain completely within 72 hours after the cessation of rainfall for all storm events;
 - (h) A series of gravel check dams in general accordance with attached plan CRC084132B;
 - (i) An outfall structure comprised of a low flow pipe, low level weir, and main outlet pipe;
 - (j) A restricted flow outlet and an overflow bund;
 - (k) A lining on the base and sides that shall effectively prevent groundwater from rising into the basin and stormwater from entering groundwater;
 - (l) An under-drainage system that assists to prevent groundwater from entering into the basin, and directs groundwater towards Crayfish Creek;
 - (m) A topsoil layer at least 150 millimetres deep located above the lining;
 - (n) A full cover of vegetation such as grass and/or ground cover plants;

- (o) An average detention time of stormwater of at least 24 hours under design event conditions.
- (9) The restricted flow outlet shall be designed with the following features:
- (a) A low level weir and low flow pipe allowing a maximum outflow rate of 80 litres per second, detaining a volume of at least 6,000 cubic metres within the basin below crest level of the low level weir.
 - (b) A main outlet pipe allowing a maximum outflow rate of 970 litres per second with a detained volume in the basin of at least 8,200 cubic metres.
- (10) (a) Outflow from the basin shall be limited to a maximum of 2.7 cubic metres per second through the combination of the outfall structure and overflow bund in response to the two hour 50-year ARI rainfall event.
- (b) The detained volume within the basin under the two hour 50-year ARI rainfall event shall be at least 12,500 cubic metres.
- (11) The overflow bund shall be designed with the following features:
- (a) Batters no steeper than one vertical to three horizontal;
 - (b) A low-gradient fully vegetated margin on the side adjacent to Crayfish Creek which falls towards Crayfish Creek;
 - (c) Protected from erosion and scour via geotextile matting or other appropriate material until vegetation is fully established;
 - (d) Fully vegetated with grass.
- (12) The discharge shall not cause erosion or scour of the bed or banks of North Brook or Crayfish Creek.
- (13) The stormwater treatment basin shall be at least 80 percent vegetated prior to any discharge into the system.
- (14) At least one month prior to the construction of the stormwater system, detailed design plans of the stormwater system to be installed shall be submitted to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager. The design plans shall be certified by a suitably experienced chartered professional engineer (CPEng) as being in accordance with the design requirements of this consent.
- (15) Within one month of completion of the stormwater treatment basin, the following, signed by a suitably experienced chartered professional engineer (CPEng), shall be submitted to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager:
- (a) As-built plans, and

- (b) Certification that installation has been carried out in accordance with Conditions (3) to (13) of this consent.

Operations, Inspections and Maintenance

- (16) The stormwater reticulation system, including sumps and/or swales, and the stormwater treatment system, including the swale, culvert, basin, outlets, overflow bund, and outfall shall be inspected at least once every six months:
 - (a) Any visible litter or debris shall be removed immediately; and
 - (b) Within five days of each inspection any visible hydrocarbons and accumulated sediment shall be removed and any erosion or scour shall be repaired.
- (17) The vegetation in the grassed swale, stormwater treatment basin, and on the overflow bund shall be:
 - (a) Maintained in a healthy and uniform state;
 - (b) Replanted where there has been any loss of grass cover; and
 - (c) Grass cover shall be maintained at a length between 50 and 150 millimetres.
- (18) Any material removed in accordance with Condition (16) shall be disposed of at a facility authorised to receive such material, and the consent holder shall provide the Canterbury Regional Council with written confirmation of such disposal upon request.
- (19) The consent holder shall keep records of the inspection and maintenance of the stormwater system and shall provide the records to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, upon request.
- (20) The consent holder shall:
 - (a) provide written advice to holders of building consents and subdivision consents for sites within the ODA on how to minimise the discharge of sediment from building sites and subdivision developments, and
 - (b) undertake an inspection programme to assist persons responsible for subdivision developments and building sites within the ODA to minimise the discharge of sediment from these locations into the stormwater system.
- (21)
 - (a) A Stormwater Management Plan (SMP) shall be submitted to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, at least two months prior to construction of the stormwater system.

- (b) The SMP shall set out how the stormwater system will be operated, maintained and monitored to enable compliance with this consent.
- (c) The SMP shall include details of the measures that the Waimakariri District Council will implement to minimise the discharge of sediment from subdivision development and individual building sites into the stormwater system.

Soil Monitoring

(22) A representative soil sample shall be taken from within the swale, the first compartment of the basin, and at least two other compartments of the basin:

- (a) At least once every five years.
- (b) From a depth of between zero and 50 millimetres below the ground surface at the point of lowest elevation.
- (c) By a suitably experienced and qualified person.

(23) Each soil sample shall be analysed for the following contaminants:

- Total lead
- Total copper
- Total zinc
- Benzo(a)Pyrene
- Total petroleum hydrocarbons C7-C9
- Total petroleum hydrocarbons C10-C14

(24) The soil samples shall be analysed using the most appropriate scientifically recognised and current method by a laboratory that is accredited for that method of analysis by International Accreditation New Zealand (IANZ) or an equivalent accreditation organisation that has a Mutual Recognition Arrangement with IANZ. If there is no laboratory in New Zealand with accreditation for a specific analysis then the analysis may be undertaken by a laboratory that has accreditation for similar analyses.

(25) If any of the contaminants analysed in accordance with Condition (23) and (24) exceed the trigger levels, in milligrams per kilogram dry weight soil, set out below:

Total lead	300
Total copper	100
Total zinc	300
Benzo (a) Pyrene	25
Total petroleum hydrocarbons C7-C9	500

Total petroleum hydrocarbons C10-C14 31000

- (a) Further testing as directed by a suitably experienced and qualified person shall be undertaken to determine the extent of the contamination.
 - (b) Contaminated soil shall be removed and replaced with uncontaminated soil and the affected area shall be re-vegetated.
- (26) The results of the analyses undertaken in accordance with Conditions (23) and (24) shall be provided to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, within two months of sampling.

Water Quality Monitoring

- (27) Samples of water from the North Brook shall be taken at approximately five metres upstream and at approximately 50 metres downstream of the discharge point from the basin and analysed for the following variables:

- Total Lead
- Total Copper
- Total Zinc
- Dissolved Reactive Phosphorus
- Total Nitrogen
- Nitrate + Nitrite Nitrogen
- Ammoniacal Nitrogen
- Temperature (field measurement)
- Total Suspended Solids
- Clarity (field measurement – black disc or equivalent method)

Sampling and field measurements shall be undertaken by a suitably qualified and experienced person.

- (28) These samples shall be collected and field measurements made:
- (a) Prior to construction commencing, at least three sampling rounds shall be undertaken, with each sample taken during a period when there has been at least seven days beforehand with no rain in the catchment and with at least one week between sampling events, to provide baseline data for these variables;
 - (b) At least two times per year for the first five years after construction of the stormwater treatment system when stormwater is being

discharged from the outlet structure but not via the overflow bund;
and

- (c) At least once per year thereafter when stormwater is being discharged from the outlet structure but not via the overflow bund.
- (29) Samples (excluding field measurements) shall be analysed using the most appropriate scientifically recognised and current method by a laboratory that is accredited for that method of analysis by International Accreditation New Zealand (IANZ) or an equivalent accreditation organisation that has a Mutual Recognition Arrangement with IANZ.

Aquatic Ecology Monitoring

- (30) Soft sediment depths and invertebrate surveys shall be carried out in the North Brook, at approximately five metres upstream and 50 metres downstream of the discharge point using a “Before-After-Control-Impact” monitoring programme. These surveys shall be undertaken by suitably experienced and qualified personnel, at the following frequencies:
- (a) Annually for the first five years after construction of the stormwater treatment system commences; and
 - (b) Once every five years thereafter.
- (31) Invertebrate surveys under Condition (30) shall include, but not be limited to, the collection of at least three replicate invertebrate samples and an assessment of macrophyte and periphyton cover, streambed substrate composition, and substrate embeddedness.
- (32) Soft sediment depth surveys under Condition (30) shall include, but not be limited to, measuring soft sediment depth from at least 10 points across the stream channel.
- (33) Soft sediment and invertebrate surveys shall also be carried out before construction of the stormwater basin commences to provide baseline data for these variables.

Monitoring Programme

- (34) Prior to the exercise of this consent, the consent holder shall prepare and submit a monitoring programme to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager. This report shall include but not be limited to:
- (a) The variables to be sampled or monitored in accordance with the conditions of this consent;
 - (b) Locations where monitoring will be undertaken;
 - (c) Methods for undertaking monitoring, including frequency and timing;

- (d) How the monitoring results will be analysed and compared with the baseline data and previous monitoring results;
 - (e) Identification of a level of a 'significant adverse effect' that may trigger further monitoring and/or mitigation in accordance with Condition (38)(d);
 - (f) A timetable for reporting to the Canterbury Regional Council.
- (35) The monitoring programme submitted under Condition (34) shall be certified by a suitably qualified and experienced person as being prepared in accordance with:
- (a) The conditions of this consent;
 - (b) Best practice; and
 - (c) The appropriate industry methods and standards.

Receiving water quality standard

- (36) The discharge shall not result in a water clarity change exceeding 20% in the North Brook as measured at the monitoring sites specified in Condition (27), as a result of a discharge that does not involve a discharge over the overflow bund.
- (37) The discharge shall not result in any conspicuous oil or grease films, scums or foams beyond 50 metres downstream of the discharge point.

Annual Reporting

- (38) The consent holder shall prepare and submit an annual report before the end of December each year to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager. This report shall include but not be limited to:
- (a) All monitoring results from sampling undertaken in the preceding 12 months.
 - (b) An analysis and interpretation of these results by a suitably qualified and experienced person(s), including an interpretation of receiving water quality data based on previous monitoring results, and baseline data collected prior to the construction of the stormwater treatment system.
 - (c) An assessment of the effectiveness of the stormwater treatment system.
 - (d) Recommendations on any further monitoring, mitigation or stormwater treatment changes that may be required to investigate or address any significant adverse effects that may have been identified.

- (e) The action that the consent holder has done or proposes to do in response to any recommendations in the annual report.

Construction of the treatment system and development in the catchment

Pre Construction

- (39) The consent holder shall ensure that all personnel working on the stormwater treatment site are made aware of and have access to the contents of this consent document and all associated erosion and sediment control plans and methodology.
- (40) At least ten working days prior to the commencement of bulk earthworks on the stormwater treatment site, the consent holder shall inform the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, in writing of the start date of the works.

Construction Management Plan

(41)

- (a) A Construction Management Plan (CMP) shall be prepared and submitted to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, at least one month prior to the start of construction of the stormwater system.
- (b) The CMP shall include, but not be limited to:
 - (i) A locality map.
 - (ii) Detailed drawings showing the type and location of erosion and sediment control measures, on-site catchment boundaries, and off-site sources of run-off.
 - (iii) Dewatering measures to be adopted and locations of all reticulation and outflow points.
 - (iv) A map clearly identifying the locations of monitoring to be undertaken in accordance with Conditions (50) of this consent.
 - (v) Drawings and specifications of all designated erosion and sediment control measures with supporting calculations.
 - (vi) A programme of works, which includes but is not limited to, a proposed timeframe for the works.
 - (vii) The inspection and maintenance programme for erosion and sediment control measures.
 - (viii) Details of when the erosion and sediment control measures are to be established and decommissioned.

- (ix) The measures that will be undertaken to minimise the discharge of sediment from the construction phase of the project. These measures shall be in accordance with the Canterbury Regional Council's Erosion and Sediment Control Guidelines (2007), Report No. R06/23). Measures shall include, but not be limited to:
 - (a) Stabilised site exit(s);
 - (b) A wheel wash system at site exit(s);
 - (c) Silt fences and hay bale barriers;
 - (d) Diverting clean water away from exposed areas;
 - (e) Using sediment settlement systems or devices prior to discharging into North Brook;
 - (f) Limiting the extent of exposed areas and vegetation removal to the immediate works areas; and
 - (g) Progressive stabilisation of exposed areas.
- (x) The measures to be undertaken in the catchment to minimise the discharge of sediment from subdivision and building developments into the stormwater system.
- (xi) Emergency procedures to be undertaken should erosion and sediment control measures fail and result in sediment-laden discharges into any watercourse.
- (c) During construction, measures shall be undertaken in accordance with the CMP to minimise discharges of sediment beyond the boundary of the site to the practicable minimum.
- (42) The CMP may be amended at any time. Any amendments shall be:
 - (a) Only for the purpose of improving the efficiency of the erosion and sediment control measures and shall not result in reduced discharge quality into North Brook; and
 - (b) Consistent with the conditions of this resource consent; and
 - (c) Submitted in writing to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, at least five working days prior to any amendment being implemented.

During Construction

- (43) During construction of the stormwater treatment system there shall be no discharges of construction phase stormwater into Crayfish Creek.
- (44) During construction, discharges of dewatering water, consisting of clean or pure water only, may be discharged to Crayfish Creek to maintain

existing spring flows. The discharges shall not cause erosion or scour to the bed or banks of Crayfish Creek.

- (45) Bulk earthworks during construction of the stormwater treatment system shall not occur in the months May to August inclusive.
- (46) No cut vegetation, debris, or any other excavated material, shall be placed in a position such that it may move into a watercourse. Note: this excludes material placed intentionally to create in-stream habitat, such as stream substrate from Crayfish Creek, woody debris, and leaf litter.
- (47)
 - (a) All exposed surfaces shall be stabilised once works are complete or if the exposed surfaces are not to be worked for a period of 14 days or more.
 - (b) Stabilisation shall be achieved by:
 - (i) 80 percent vegetated cover established via conventional grassing or hydro-seeding; or
 - (ii) 100 percent cover established via mulching; and
 - (iii) Geo-synthetic erosion control systems in areas of short steep cuts or areas that are identified during earthworks as highly erosion prone.

Monitoring during Construction

- (48) Soft sediment depth surveys shall be carried out in the North Brook 50 metres downstream of the discharge point from the construction discharges at least once every two months during the construction period in accordance with the methodology specified in Conditions (30 - 32).
- (49) During construction, all erosion and sediment control structures shall be inspected at least once every working day and whenever there is a discharge into the North Brook.
- (50) During construction, whenever there is a discharge via the erosion and sediment control systems into the North Brook, water clarity in the North Brook shall be monitored and recorded, at least once a day:
 - (a) Using a water clarity tube;
 - (b) At approximately five metres upstream and at approximately 50 metres downstream of each discharge point;
 - (c) By a suitably experienced and qualified person.
- (51) (a) If, over two consecutive monitoring rounds undertaken in accordance with Condition (50), an average decrease in water clarity of 20 percent or greater is measured at the downstream site(s) when compared to the upstream site(s), then further mitigation measures

shall be implemented as soon as possible to reduce the sediment load of the discharge.

- (b) If a clarity decrease of 20% or more is measured, a report on the results and the measures taken to reduce the sediment load of any future discharges shall be provided to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, within five working days of undertaking the second clarity change calculation.
- (52) Prior to the exercise of this consent, the consent holder shall prepare and submit a construction phase monitoring programme to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager. This report shall include but not be limited to:
- (a) The variables to be sampled or monitored in accordance with the conditions of this consent;
 - (b) Locations where monitoring will be undertaken;
 - (c) Methods for undertaking monitoring, including frequency and timing;
 - (d) Establishment of the triggers for further monitoring and/or mitigation;
 - (e) The additional mitigation measures that may be required in accordance with the Canterbury Regional Council's Erosion and Sediment Control Guidelines (2007), Report No. R06/23i.
 - (f) How and when any updates or amendments to the programme shall be provided to the Canterbury Regional Council.
- (53) The consent holder shall prepare and submit a report to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, at least once every two months during construction of the stormwater treatment basin. This report shall include but not be limited to:
- (a) All monitoring results;
 - (b) An analysis and interpretation of the results;
 - (c) An evaluation of these results in relation to previous monitoring results.
 - (d) Any further monitoring or mitigation that was undertaken as a result of the analyses undertaken.
 - (e) An assessment of any potential adverse effects on the receiving waters.

Spill Management

- (54) A spill kit suitable for use with the machinery and volume of hazardous substances that will be used on site shall be kept on-site in an accessible location.
- (55) In the event of a spill of hazardous substance, the consent holder shall
- (a) Use the spill kit to clean up the spill and to minimise any adverse effects;
 - (b) Record and provide to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager within 24 hours of a spill:
 - The date, time, location and volume of the spill;
 - The hazardous substance spilt; and
 - The measures taken to prevent the spilt substance being discharged into Crayfish Creek or the North Brook;
 - (c) Determine the extent of the area considered to be contaminated;
 - (d) Remove any material considered to be contaminated;
 - (e) Provide a report, detailing the action taken and any potential or actual adverse effects of the spill on the receiving waters to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, within one month of the detection of a hazardous substance being spilt.

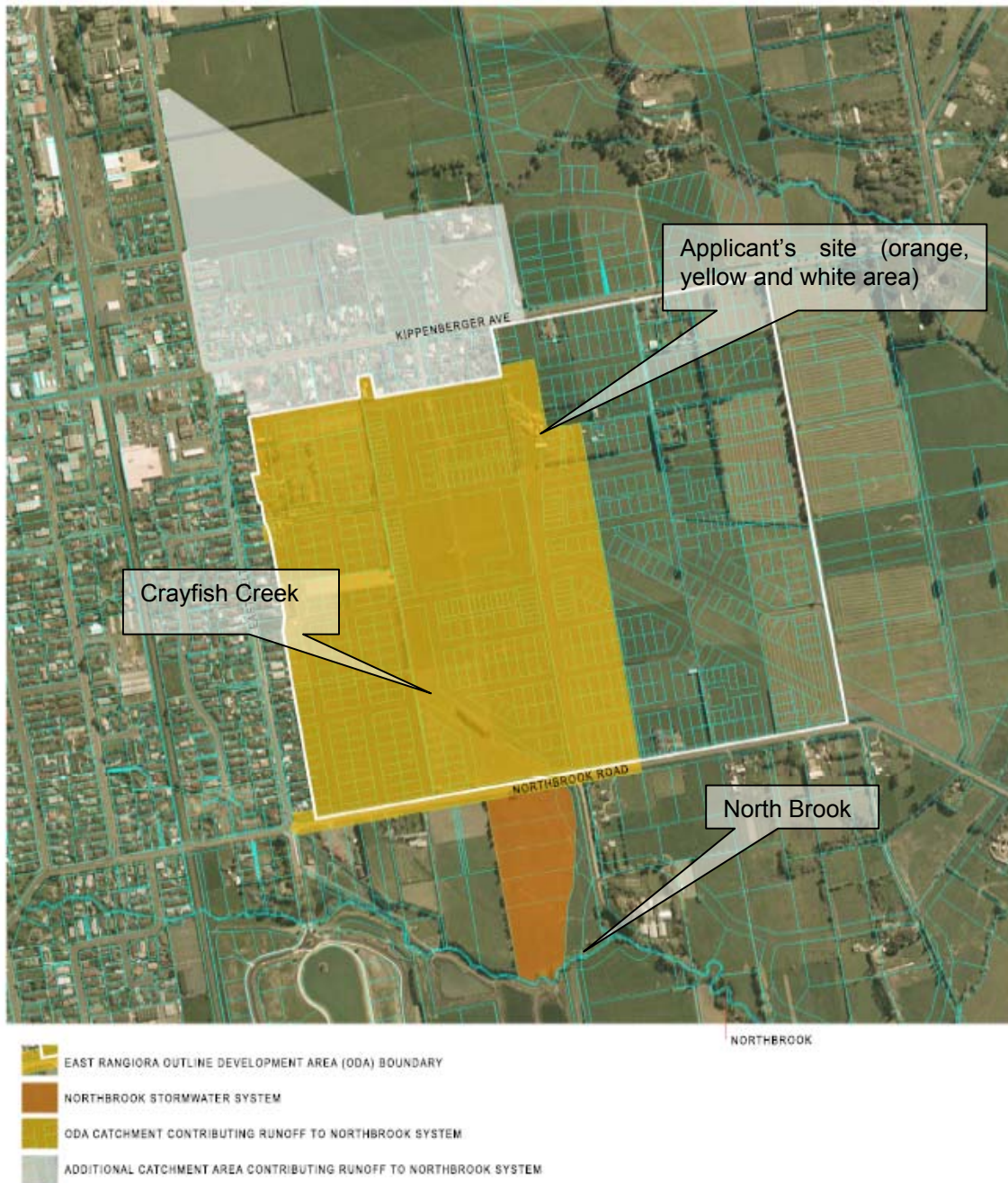
Administration

- (56) The lapsing date for the purposes of section 125 of the Resource Management Act (1991) shall be 31 December 2018.
- (57) The Canterbury Regional Council may, once per year, on any of the last five days of May or November, serve notice of its intention to review the conditions of this consent for the purposes of:
- (a) Dealing with any adverse effect on the environment which may arise from the exercise of this consent and which it is 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; or
 - (c) Requiring the consent holder to carry out monitoring and reporting instead of, or in addition to, that required by the consent.

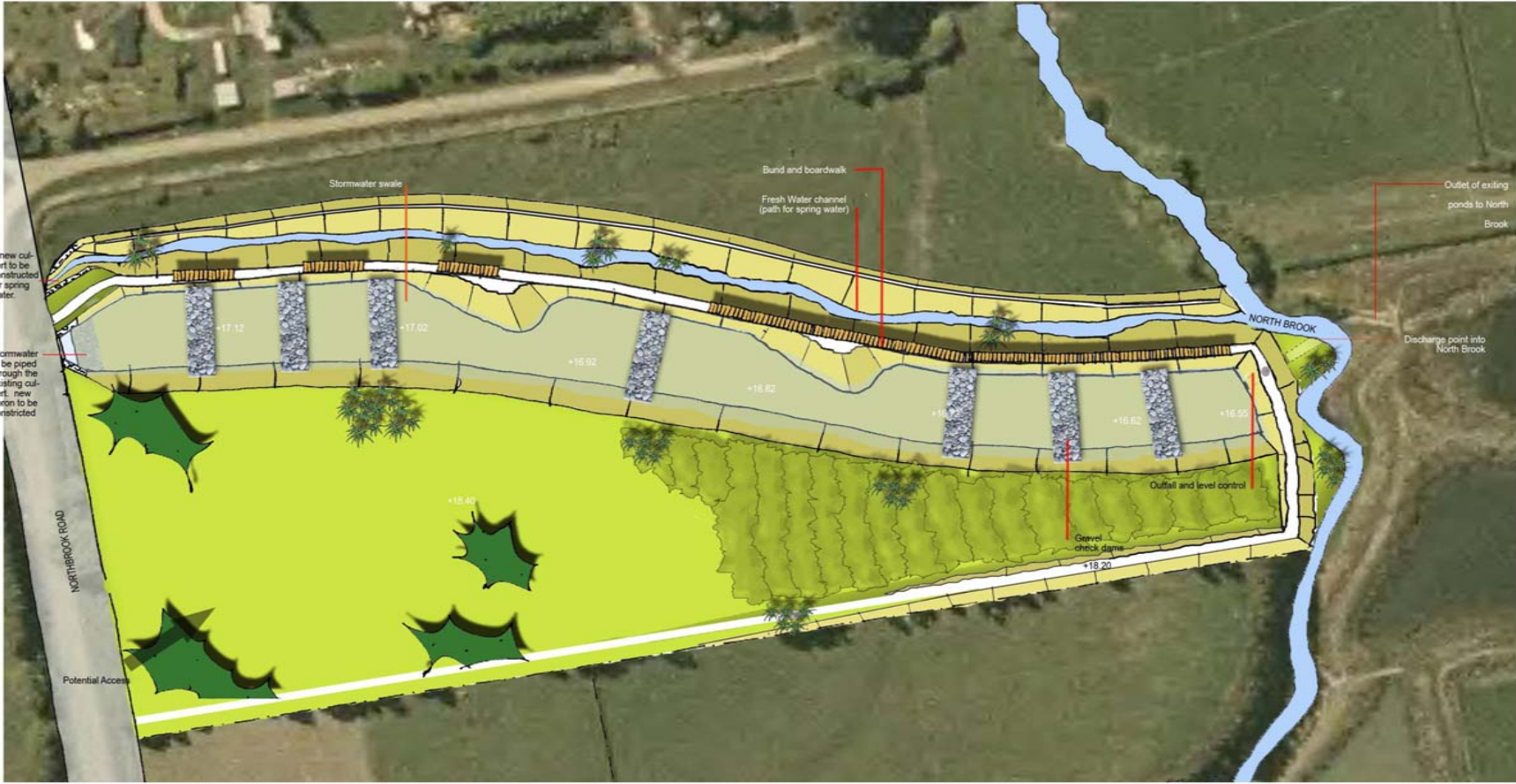
Term of consent

- (58) This consent shall expire 35 years after the date of commencement of the consent.

CRC084132A, CRC084133A, CRC084135A



CRC084132B, CRC084133B, CRC084135B



NOT FOR CONSTRUCTION



NORTHBROOK STORMWATER TREATMENT CONCEPT DESIGN - B

DRAWN:	DCM	08/07	STATUS STAMP:	CONCEPT DESIGN
CHECKED:	TB, YR	08/07	DATE STAMP:	22/18/2007
APPROVED:			PROJECT NO.:	21394106
			FIGURE NO.:	E1
			REVISION:	C

CRC084132C, CRC084133C, CRC084135C



Notes

This plan remains the property of Earthwork Landscape Architects. Unauthorised copying of this plan is prohibited without permission from Earthwork Landscape Architects. It is the contractors responsibility to verify all levels, scale and set out information prior to commencing any work.

Preliminary Design

Waimakariri District Council

'Waikōura' Recreation, Ecology and Stormwater Reserve

scale: 1:1000 @ A3
date: 16.12.08
drawn: BQ
file: E06706 sheet: 1 of 1
designing with **respect**
to land and people

CRC084133 To divert Crayfish Creek

Subject to the following conditions:

- (1) The diversion of water shall occur along Crayfish Creek which begins at or about map reference NZMS 260 M35:7804-6651 to its confluence with the North Brook at or about map reference NZMS 260 M35:7831-6610 as shown on the attached plans attached CRC084133A, CRC084133B and CRC084133C.
- (2) The Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, shall be notified not less than 48 hours prior to the diversion of Crayfish Creek.
- (3) Prior to commencing diversion, a copy of this resource consent shall be given to all persons undertaking activities authorised by this consent.
- (4) The new channel shall be constructed and stabilised prior to the decommissioning of the old channel and diversion of the spring flow through the new channel.
- (5) All practicable measures shall be taken to minimise adverse effects of the diversion.

This shall include, but not be limited to, the following:

- (a) Heavy machinery shall be kept at least 0.5 metres away from edge of the bank adjacent to the 'hawthorn hedge' section of Crayfish Creek (as identified on attached Plan CRC084133C).
- (b) The root structure of the existing hawthorn hedge shall be retained when it is replaced with native vegetation.

Note: This will require cutting down the hedge and leaving the roots in the ground.

- (c) The new channel alignments shall be constructed under dry conditions.
- (d) During construction of the new channel section(s) there shall be no direct linkage to the existing channel section(s), and flows shall be maintained in the original channel during this time.

- (e) Following connection of the realigned sections, flows shall be maintained, as far as practicable, in both the new and old channels, until such a time that invertebrates and fish can be relocated to the new channel.
 - (f) The colonisation of the new channel shall be facilitated by transferring habitat and food resources (invertebrates, coarse substrate, woody debris and leaf litter, macrophytes, some fish species, and crayfish) from the old channel section(s) into the new channel section(s).
 - (g) The new channel section(s) shall be constructed and stabilised prior to the decommissioning of the old channel and diversion of the spring flow through the new channel.
 - (h) The construction of the new channel section(s) shall ensure, as far as possible, that some connection with groundwater is retained (i.e., the streambed shall not be completely sealed from groundwater).
- (6) The works shall ensure that the capacity of the realigned channel is not reduced from the capacity that existed immediately prior to works commencing.
 - (7) The existing spring flows to Crayfish Creek shall not be reduced as a result of the diversion authorised by this consent, except where flows are temporarily split between the old and new channels in accordance with Condition (5)(e).
 - (8) Machinery shall be prevented from entering flowing water as far as practicable.
 - (9) To prevent the spread of Didymo or any other aquatic plant pest, the consent holder shall, for all vehicles and machinery that come into contact with water, prior to their use in the vicinity of a different waterway:
 - (a) Thoroughly clean machinery and vehicles, including tyres, with detergent or bleach. This shall involve spraying, scrubbing or soaking the underside of the vehicle and machinery and any other parts of the vehicle that have had contact with river water. The cleaning solution shall be left for at least one minute before being rinsed off with clean water (i.e., from a town supply). Detergent, bleach or rinse water shall not discharge into surface water; or

- (b) Leave vehicles and machinery to dry completely to the touch and then leave at least a further 48 hours before being used in a different waterway.
- (10) 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 this consent and which it is appropriate to deal with at a later stage.
- (11) The lapsing date for the purposes of section 125 of the Resource Management Act shall be 31 December 2018.
- (12) This consent shall expire 35 years after the date of commencement of the consent

CRC084135 To install a structure in the bed of the North Brook and to undertake earthworks over an unconfined aquifer in the riparian zone

Subject to the following conditions:

- (1) Works shall only be carried out for the construction of a stormwater treatment system and outfall and the realignment of Crayfish Creek, at Northbrook Road, Rangiora, in the area shown in the attached plan CRC084135A and in general accordance with the attached plans CRC084135B and CRC084135C as follows:
 - (a) The excavation of the stormwater treatment pond to invert level required to convey stormwater; and
 - (b) Earthworks in the bed of the North Brook for the purposes of placing a rock chute outfall for the discharge of stormwater; and
 - (c) The placement of a rock chute outfall structure at or about map reference NZMS 260 M35:7827-6608.
 - (d) The excavation of the Crayfish Creek realignment.
- (2) The outfall into North Brook shall be designed and constructed as a stabilised rock chute angled downstream in the direction of flow.
- (3) The outfall structure shall be designed, constructed and maintained in general accordance with the provisions of Chapter 14.7 of Part B of the Christchurch City Council 2003 publication "Waterways, Wetlands and Drainage Guide – Ko Te Anga Whakaora mō Ngā Arawai Rēpō."
- (4) The Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, shall be notified not less than 48 hours prior to the commencement of works.
- (5) Prior to commencing diversion, a copy of this resource consent shall be given to all persons undertaking activities authorised by this consent.
- (6) Works shall only be carried out between the hours of 7am and 6pm inclusive, Monday to Saturday, and works shall not be carried out on public holidays.
- (7) Works associated with the installation of the stormwater outfall to the North Brook shall be undertaken in dry weather conditions and specifically

at least two days after a rainfall event where greater than 10 millimetres of rain falls in a 24 hour period.

(8)

- (a) A Construction Management Plan (CMP) shall be prepared and submitted to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, at least one month prior to the start of construction of the stormwater system.
- (b) The CMP shall include, but not be limited to:
 - (i) A locality map;
 - (ii) Detailed drawings showing the type and location of erosion and sediment control measures, on-site catchment boundaries, and off-site sources of run-off;
 - (iii) Dewatering measures to be adopted and locations of all reticulation and outflow points;
 - (iv) A map clearly identifying the locations of monitoring to be undertaken in accordance with Condition (15) of this consent.
 - (v) Drawings and specifications of all designated erosion and sediment control measures with supporting calculations;
 - (vi) A programme of works, which includes but is not limited to, a proposed timeframe for the works;
 - (vii) The inspection and maintenance programme for erosion and sediment control measures;
 - (viii) Details of when the erosion and sediment control measures are to be established and decommissioned;
 - (ix) The measures that shall be undertaken to minimise the discharge of sediment from the construction phase of the project. These measures shall be in accordance with the Canterbury Regional Council's Erosion and Sediment Control Guidelines (2007), Report No. R06/23). The measures shall include, but not be limited to:
 - (a) Stabilised site exit(s);
 - (b) A wheel wash system at site exit(s);

- (c) Silt fences and hay bale barriers;
 - (d) Diverting clean water away from exposed areas;
 - (e) Using sediment settlement systems or devices prior to discharging into North Brook;
 - (f) Limiting the extent of exposed areas and vegetation removal to the immediate works areas; and
 - (g) Progressive stabilisation of exposed areas.
- (x) Measures to be undertaken in the catchment to minimise the discharge of sediment from subdivision and building developments into the stormwater system.
 - (xi) Emergency procedures to be undertaken should erosion and sediment control measures fail and result in sediment-laden discharges into any watercourse.
- (c) During construction, measures shall be undertaken in accordance with the CMP to minimise discharges of sediment beyond the boundary of the site to the practicable minimum.
- (9) The CMP may be amended at any time. Any amendments shall be:
- (a) Only for the purpose of improving the efficiency of the erosion and sediment control measures and shall not result in reduced discharge quality into North Brook; and
 - (b) Consistent with the conditions of this resource consent; and
 - (c) Submitted in writing to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, at least five working days prior to any amendment being implemented.
- (10) During construction there shall be no discharges of construction phase stormwater into Crayfish Creek.
- (11) During construction, discharges of dewatering water, consisting of clean or pure water only, may be discharged to Crayfish Creek to maintain existing spring flows. The discharges shall not cause erosion or scour to the bed or banks of Crayfish Creek.
- (12) No cut vegetation, debris, or any other excavated material, shall be placed in a position such that it may move into a watercourse.

(13)

- (a) All exposed surfaces shall be stabilised once works are complete or if the exposed surfaces are not to be worked for a period of 14 days or more.
 - (b) Stabilisation shall be achieved by:
 - (i) 80 percent vegetated cover established via conventional grassing or hydro-seeding; or
 - (ii) 100 percent cover established via mulching; and
 - (iii) Geo-synthetic erosion control systems in areas of short steep cuts or areas that are identified during earthworks as highly erosion prone.
- (14) During construction, all erosion and sediment control structures shall be inspected at least once every working day and whenever there is a discharge into the North Brook.
- (15) During construction, whenever there is a discharge via the erosion and sediment control systems into the North Brook, water clarity in the North Brook shall be monitored and recorded, at least once a day:
- (a) Using a water clarity tube;
 - (b) At approximately five metres upstream and at approximately 50 metres downstream of each discharge point;
 - (c) By a suitably experienced and qualified person.
- (16) (a) If, over two consecutive monitoring rounds undertaken in accordance with Condition (15), an average decrease in water clarity of 20 percent or greater is measured at the downstream site(s) when compared to the upstream site(s), then further mitigation measures shall be implemented as soon as possible to reduce the sediment load of any future discharges.
- (b) If a clarity decrease of 20% or more is measured, a report on the results and the measures taken to reduce the sediment load of any future discharges shall be provided to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, within five working days of undertaking the second clarity change calculation.

- (17) Excavation works shall be carried out in stages to ensure exposure of the aquifer is minimised.
- (18) Any excavation works associated with the stream realignment and the construction of a stormwater basin shall be completed and stabilised prior to any water being diverted.
- (19) Dewatering of the excavated area during construction shall be undertaken via the most appropriate method for the site, which may include, but is not limited to:
 - (a) Well points around the boundary of the excavation;
 - (b) Larger pumped shallow wells around the perimeter of the excavation; or
 - (c) Field drains
- (20) All practicable measures shall be undertaken to minimise wind erosion from areas of exposed soil (including stockpiles), including but not limited to the following methods: wetting, dust suppression films, mulch and vegetation cover.
- (21) Works shall not cause the erosion of the banks or bed of the North Brook,
- (22) The outfall structure shall be inspected at least once every six months and maintained in sound structural condition. The consent holder shall keep a record of any maintenance undertaken and forward a copy of any records to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, upon request.
- (23) All disturbed areas on the banks of the North Brook shall be stabilised and/or re-vegetated as soon as possible following completion of the works.
- (24) All spoil and waste material shall be removed from the site on completion of the works.
- (25) The works shall not prevent the passage of fish, or cause the stranding of fish in pools or channels, except trout passage may be prevented where it is in relation to a purpose built trout barrier which may be located in the section of Crayfish Creek downstream of Northbrook Road.
- (26) Machinery shall be prevented from entering flowing water as far as practicable.

- (27) To prevent the spread of Didymo or any other aquatic pest, the consent holder shall, for all vehicles and machinery that come into contact with water, prior to their use in the vicinity of a different waterway:
- (a) Thoroughly clean machinery and vehicles, including tyres, with detergent or bleach. This shall involve spraying, scrubbing or soaking the underside of the vehicle and machinery and any other parts of the vehicle that have had contact with river water. The cleaning solution shall be left for at least one minute before being rinsed off with clean water (i.e., from a town supply). Detergent, bleach or rinse water shall not discharge into surface water; or
 - (b) Leave vehicles and machinery to dry completely to the touch and then leave at least a further 48 hours before being used in a different waterway.
- (28)
- (a) All practicable measures shall be undertaken to prevent oil and leaks from vehicles and machinery.
 - (b) There shall be no storage of fuel or refuelling of vehicles and machinery within 20 metres of any water body.
 - (c) Fuel shall be stored securely or removed from the site overnight.
- (29) A spill kit suitable for use with the machinery and volume of hazardous substances that will be used on site shall be kept on-site in an accessible location.
- (30) In the event of a spill of hazardous substance, the consent holder shall:
- (a) Use the spill kit to clean up the spill and to minimise any adverse effects;
 - (b) Record and provide to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager within 24 hours of a spill:
 - The date, time, location and volume of the spill;
 - The hazardous substance spilt; and
 - The measures taken to prevent the spilt substance being discharged into Crayfish Creek or the North Brook;
 - (c) Determine the extent of the area considered to be contaminated;

- (d) Remove any material considered to be contaminated;
 - (e) Provide a report, detailing the action taken and any potential effects of the spill on the receiving waters to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, within one month of the detection of a hazardous substance being spilt.
- (31) In the event of any disturbance of Koiwi Tangata (human bones) or taonga (treasured artefacts), the consent holder shall immediately:
- (a) Advise the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager of the disturbance;
 - (b) Advise the Upoko Runanga of Tuahiwi, or their representative, and the New Zealand Historic Places Trust, of the disturbance; and
 - (c) Cease earthworks operations in the affected area until an area has been marked off around the site of cultural value and written feedback has been received from the Canterbury Regional Council, if no written feedback is received from the Canterbury Regional Council within two working days of providing advice earthworks may recommence.

Note: This condition is in addition to any agreements that are in place between the consent holder and the Upoko Runanga (Cultural Site Accidental Discovery Protocol).

- (32) 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 this consent and which it is appropriate to deal with at a later stage.
- (33) The lapsing date for the purposes of section 125 shall be 31 December 2018.
- (34) This consent shall expire 35 years after the date of commencement of the consent.