Before the Regulation Hearing Committee appointed by Canterbury Regional Council

IN THE MATTER OF The Resource Management Act 1991

AND

IN THE MATTER OF Application CRC051792 by Messrs A G & P G Wilson for a discharge permit to discharge contaminants to land.

Section 42A Officer's Report

Date of Hearing:

Report of Amy M^{c}Ewan and Jacqui Todd

1. My name is Jacqueline Ann Todd. I am a Senior Planner at Golder Associates (NZ) Ltd (Golder), a ground engineering and environmental consulting firm. I am an associate member of the New Zealand Planning Institute and have ten years experience in planning and resource management. This includes my current role as a Senior Planner, and previous employment as a Consents Investigating Officer and Senior Compliance Monitoring Officer at Environment Canterbury (ECan). Golder was engaged by Environment Canterbury (ECan) to undertake this audit.

2. This report was prepared by Amy McEwan who was previously employed by Golder. Ms McEwan audited the consent. My involvement with this resource consent application began in October 2009 when I reviewed the report and finalised the proposed consent conditions.

3. This report presents the audit of the application and addresses the relevant information and issues raised. It should be emphasised that any conclusions reached or recommendations made in this report are not binding on the Regulation Hearing Committee.

4. This report is subject to the Golder report limitations attached as Appendix 1.

INTRODUCTION

5. Messrs A G & P G Wilson (the applicant) have applied for resource consent to discharge contaminants into land.

6. The application relates to the discharge of domestic wastewater into land from a lodge, tree house accommodation, and restaurant known as Hapuku Lodge, located on State Highway 1, Hapuku, as shown on Plans CRC051792A and Plan CRC051792B (attached to the proposed conditions in Appendix 2).

7. Ross Davis of Davidson Partners Limited submitted the application on behalf of the applicant.

8. I have not undertaken a site visit during the processing of this application.

Background

9. The applicant states that building consent for the lodge was obtained from Kaikoura District Council between 1999 and 2001 and the lodge opened in 2002. The wastewater discharge commenced in 2002 without resource consent.

10. The applicants applied for a discharge permit to discharge wastewater from the lodge in December 2004. Further information was requested by ECan on 17 February 2005. The applicants provided the further information on 1 February 2007.

11. After an audit of the initial application and the further information supplied, it was decided that additional information was still required in order to assess the application. This was requested by ECan on 9 February 2007. The applicants provided some of the requested information on 20 February 2007 and advised that the rest would be provided as soon as possible. The remainder of the information was provided on 13 April 2007.

12. After auditing all the information received, ECan decided that the proposal didn't meet the criteria for non-notification under the Resource Management Act 1991 (the RMA or Act), and the application was publicly notified on 6 June 2007, as detailed in the following section.

13. In early 2008 a section 42A Officer's Report for this activity was prepared by Ms Jenny Vince and a tentative date was scheduled for the consent to be decided by ECan's Regulation Hearing Committee (RHC). It is not clear if the consent application was presented to the RHC, as there is no record of this occurring. Upon seeing the report, the applicant decided that there was a possibility that the application could be declined. The applicant then opted to redesign their stormwater system, and asked for a timeframe extension (under section 37 of the RMA) in April 2008. They extended timeframes until February 2009 when a revised consent application was submitted.

14. The application was passed to Golder to audit in April 2009. An amendment to the application was received by Golder on 01 May 2009. The amendment involved increasing the maximum daily volume of wastewater and adding a wetland to the proposed treatment system.

15. The applicant then sought further timeframe extensions to provide time to answer questions about the proposal and consider the recommended conditions. The timeframe extension requested by the applicant ended on 5 February 2010.

Notification

16. This application was publicly notified on 2 June 2007 in the Christchurch Press and on 6 June 2007 in the Kaikoura Star, with the following wording:

Applicant: **A G & P G Wilson** **Address:** **C/- Ross Davis, Davidson Partners Ltd, Davidson Ayson House, 4 Nelson Street, P O Box 256, Blenheim.**
CRC051792 – to discharge 7,000 litres of sewage effluent per day to land from a lodge, café and bar, known as Hapuku Lodge. The sewage effluent will be discharged into land via shallow trenches into gravel, at an application rate of 34.6 millimetres per day. The land is located on the corner of State Highway 1 and Station Road, Hapuku, at or about map reference NZMS 260 P31:7079-7693. The contaminants in sewage effluent are known to include organic material, nitrogen, phosphorus, heavy metals and micro-organisms. The requested duration of consent is 35 years.

Note: Hapuku Lodge has been operating at this location since 2002.

17. No submissions were received on the resource consent application.

DESCRIPTION OF THE PROPOSED ACTIVITY

18. Based on the amended application (submitted 01 May 2009), the applicant now proposes the following.

Location

19. The discharge will occur on Pt Section 58 Kincaid Run, Kaikoura DIST, located on State Highway 1, Hapuku, at or about map reference NZMS 260 P31:7079-7693.

20. The area of the land parcel on which the discharge is to occur is 20.9 hectares.

21. Plan CRC051792B (Appendix 2) shows the location of the land application system on the land parcel.

Type of contaminant discharged

22. The discharge will be only wastewater from a lodge, tree house accommodation, café and bar / restaurant

Volume of contaminant discharged

23. The maximum volume of wastewater to be discharged is 13,240 litres per day (L/day).

24. This is comprised of an updated design wastewater volume of 10,840 L/day and an additional event guest volume of 2,400 L/day.

25. This is an increase on the 7,000 L/day proposed in the original application and is due to:

    (a) the inclusion of wastewater generated from the use of the Lodge's event facilities, which has capacity for up to 100 guests; and

    (b) an update of the design loading based on measurements of total daily wastewater volumes.

26. The applicant states that the key outcome of their wastewater measurements is that wastewater volume per guest-night (311 L) is significantly higher that what was originally expected (180 L). This is possibly due to the inclusion of spa baths in the guest bedrooms.

27. The applicant's estimate of wastewater volume is based on the following:

Source	(Source) x (volume)	Total (L/day)
Total guests	28 x 220 L/day	6,160
Fulltime staff	12 x 40 L/day	480

Source	(Source) x (volume)	Total (L/day)
Laundry	40 x 25 L/day	1,000
Restaurant/resident guests	40 x 65 L/day	2,600
Restaurant, additional non-residential guests.	20 x 30 L/day	600
Total		**10,840**

28. The applicant states that the additional wastewater volume for the restaurant as a result of 100 wedding guests would be about 3,000 L per sitting. However, they reduce this to 2,400 L per sitting stating that some of the wedding guests would be likely to be staying at the complex.

29. Golder's Senior Wastewater Engineer has reviewed the applicant's wastewater volume predictions. He concludes that the applicant's assessment is conservative and appears appropriate for the proposed activity and notes that the additional guest volume is periodic.

Wastewater System

30. Following the amendment to the application received on 01 May 2009, the wastewater treatment and disposal system now consists of the following:

    (a) Wastewater from the tree houses will flow into an existing 4,500 L septic tank with effluent filter and 2,000 L pump chamber.

    (b) Wastewater from (a), along with wastewater generated in the lodge and café will flow into an existing 15,000 L septic tank with Zabel A300 effluent filter and 5,000 L pump chamber.

    (c) A grease trap will be installed to filter the cafe kitchen waste before it enters the septic tank.

    (d) A new 4,500 L pump chamber will then pump effluent via a pipeline to a horizontal subsurface flow wetland (HSFW, wetland). The dimensions of the wetland will be 25 metres (m) by 14.5 m.

    (e) Wastewater that has passed through the wetland will then be discharged to ground via the existing nine shallow trenches, each will be a minimum of 30 m in length and 0.75 m in width.

    (f) The wastewater will be discharged to land at a maximum application rate of 50 mm/day to comply with the AS/NZS 1547:2000 standards for wastewater that has received secondary treatment being discharged into Category 1 soils.

Installation

31. As per the original application, the applicant states that the trenches will consist of the following:

(a) The trenches will be installed with the base being 300 millimetres (mm) below ground level, as shown on Plan CRC051792C (Appendix 2).

(b) The trenches will contain 100 mm of topsoil and 200 mm of crushed metal.

(c) The wastewater will discharge into the crushed metal layer via a low pressure distribution pipe.

(d) The land application system will be located 37 m from the northern property boundary and 18 m from the eastern property boundary.

32. The wetland will be positioned directly north of the existing effluent field, approximately 15 m from the property boundary and 35 to 40 m from the nearest private dwelling.

33. The wetland will be lined with a heavy duty polyethylene sheet to avoid any discharge to ground, and will be slightly raised to avoid any stormwater inflow from the surrounding area.

34. In the report by Mr Andrew Dakers (submitted on behalf of the applicant) dated 29 April 2009, and attached to the amendment to the application, the applicant states that the two primary functions of the wetland are to:

(a) Produce secondary treated effluent in order to improve soakage and permit a higher loading rate as per AS/NZS 1547:2000.

(b) Increase nitrogen removal to mitigate the risk of nitrate contamination of groundwater.

35. They further state that the wetland provides a complex humus and wetland ecology for transforming and stabilising contaminated waters. They state that the treatment processes in the wetland are:

(a) Dilution

(b) Some nutrient retention and removal - Nutrient removal includes adsorption, plant uptake, volatization and micro-ecology transformation. The main nutrient in the cleaning agent will be phosphorus and the long-term ability of subsurface wetlands to remove phosphorus is low.

(c) Organic breakdown – the root zone provides both aerobic and anaerobic micro-zones for very effective microbiological organic breakdown and BOD removal.

(d) Physical filtering of suspended solids.

(e) pH buffering.

36. The specifications of the wetland are shown on Plan CRC051792D (Appendix 2).

Maintenance and Monitoring

37. The applicant proposes monitoring of the discharge and a more detailed assessment of the risks to the environment if the following trigger values are exceeded:

(a) Faecal coliforms – 20,000 per 100 millilitres

(b) Total nitrogen – 30 mg/L

38. Annual maintenance of the wastewater treatment and disposal system is proposed, and the grease trap will be cleaned at least once every three months.

Scope

39. The amendment to the application (made after the application was notified) has increased the proposed volume of wastewater being discharged (from 7,000 L to 13,240 L) and changed the wastewater treatment system by including a wetland for additional treatment. While this is a change to what the applicant originally proposed, I do not consider that the application requires re-notification, for the reasons discussed below.

40. In *Coull v Christchurch CC EnvC C077/06*, the Court concluded that there were three effective tests which should be applied to any change to an application to assess whether the circumstances are within jurisdiction. These are:

(a) Does it increase the scale or intensity of the activity?

(b) Does it exacerbate or mitigate the impacts of the activity, both in terms of adverse effects and in terms of the plan and other superior documents?

(c) Would parties who have not made submissions have done so if they were aware of the change?

41. I have assessed the amendments in accordance with the tests raised above and note the following:

(a) Although the original application that was notified stated that the discharge volume was 7,000 L/day, the original application outlined the nature of the activities on site that were generating the wastewater, and these activities have not changed.

(b) The actual volume of wastewater being discharged has not changed. The volumes have just been reassessed, rather than estimated, following measurements of the actual wastewater used by the facility.

(c) The inclusion of the proposed wetland may improve the quality of the wastewater discharged into land from the site.

(d) It is unlikely that there are any potential submitters that would have submitted on the amended application because:

(i) The discharge quality is likely to have improved;

(ii) The closest groundwater well is over 200 m away; and

(iii) All surrounding wells within at least 500 m of the site are over 40 m deep.

LEGAL AND PLANNING MATTERS

The Resource Management Act 1991 (RMA)

42. Section 15(1)(b) of the Resource Management Act (1991) states that:

"No person may discharge any contaminant onto or into land in circumstances which may result in that contaminant…entering water…unless the discharge is expressly allowed by a rule in a regional plan and in any relevant proposed regional plan, a resource consent or regulations."

43. The discharge contains contaminants that have the potential to contaminate groundwater, and is not expressly allowed by a rule in a regional plan or any proposed regional plan, therefore it requires authorisation.

Regional Plans

Nelson-Marlborough Transitional Regional Plan (NMTRP)

44. The application does not comply with condition 13.3A of the General Authorisation for Septic Tank Waste because the discharge exceeds the daily volume for the size of the property on which it is located.

45. On this basis, the discharge of domestic wastewater requires resource consent for a **discretionary** activity.

Proposed Natural Resources Regional Plan (PNRRP)

46. This PNRRP was notified on 3 July 2004. As the application was receipted by ECan on 24 December 2004, the status of the discharge is affected by the notification of this plan.

47. As stated by Ms Vince in the original section 42A Officer's Report, the application does not comply with:

- Condition 2 of Rule WQL8 because the maximum volume of the system exceeds 2 m^3/day.
- Condition 3 of Rule WQL8 because the maximum volume of the discharge exceeds the amount specified for the size of the property.
- Condition 10(a) of Rule WQL8. Compliance is uncertain because the depth to groundwater is not known.
- Condition 12(a) of Rule WQL8 because the discharge is less than 50 from the down-gradient (eastern) property boundary.
- Condition 14 of Rule WQL8 because the land application system installed is different to those outlined in this condition.

48. These reasons for consent remain unchanged by the amendments made to the application in May 2009. The discharge of domestic wastewater is therefore a **discretionary** activity and resource consent is required under Rule WQL57 of the PNRRP[1].

[1]It is noted that Variation 14 of Rule WQL8 was notified on 20 October 2007 and in accordance with section 88A(1)(A) of the RMA, this does not affect the activity classification.

CONSULTATION

49. Prior to notification of the application in its original form, the applicant obtained written approvals from the owners of the three closest down-gradient land parcels.

50. The applicant has not undertaken any additional consultation as a result of the amendments to the application. I note that no submissions were received as a result of the public notification of the application in June 2007.

51. Given that the amendment to the application reflects an improvement in treatment which will result in the same or less adverse effects than the original proposal, I consider that further consultation is not necessary.

DESCRIPTION OF THE AFFECTED ENVIRONMENT

52. The table below outlines the affected environment as described by the applicant (middle column) and by Ms Vince's audit of the information originally provided (right column). This audit is still considered relevant for the site as Ms McEwan has checked the details and found no changes.

53. The main tools Ms Vince used to audit the applicants' information were ECan's GIS database system (Mojo) and ECan's wells database.

	Applicant	**Ms Vince's Audit**
Topography of land	Flat	Mojo shows that the site is flat.
Surface water	There are no surface water bodies within 20 m of the edge of the land application area. The closest water course is located approximately 310 m southwest of the land application area.	Mojo shows that this is correct.

Soil types	Clay/silt overlying sandy gravel.	According to Mojo, the general soil type in the area is Ruapuna stony silt loam, bouldery phase. The bore log of well P31/0014 located approximately 360 m northeast of the proposed site shows layers of clay and claybound gravels. The bore log of well P31/0016 located approximately 420 m northeast of the proposed site shows layers of claybound gravels. The bore log of well P31/0019 located approximately 760 m northwest of the proposed site shows layers of claybound gravels.
Depth to groundwater	A well on a lower terrace has a water level of approximately 28 m below the ground level of the proposed site. There are three wells in the area showing a depth of 22 m to the water table. A 4.2 metre deep test hole was excavated and no groundwater was observed. There was no evidence of mottling or iron stains.	There is no groundwater depth information available on ECan's GIS. The only depth information available is as follows: Well P31/0014 is 47.5 m deep and has an initial water level reading of -22.25 m. Well P31/0016 is 47.5 m deep and has an initial water level reading of -21.14 m. Well P31/0019 is 42 m deep and has an initial water level reading of -12.9 m.
Direction of groundwater flow	West to east.	Topographic maps show that groundwater is likely to be flowing east or southeast towards the coast. Comments from ECan Groundwater scientist Mr John Weeber confirm that groundwater is likely to be flowing towards the coast.
Groundwater quality	Unknown.	Mojo shows that there are no ECan groundwater monitoring sites within 1,000 m of the proposed site.
Other activities that may contribute to cumulative effects (~1,000 m)	Information not requested in application form.	Mojo shows that there is one current discharge permit to discharge domestic wastewater to land within 1,000 m of the proposed site.

54. In addition I note that the coast is approximately 1.2 km to the east.

55. In addition to the information about groundwater provided by the applicant and audited by Ms Vince, I note the following about wells in the area:

- There are 6 wells recorded on ECan's GIS database down-gradient (east, north east or south east) of the proposed discharge location.

- These down-gradient wells range in depth from 5 to 47.5 m. With the exception of one particularly shallow well (P31/0012, 5 m deep), all wells are screened at 26 m or deeper, and the bore logs show claybound silts, sands and gravels to depths of approximately 20 m or deeper.

- The well which is 5 m deep (P31/0012) is located approximately 1 km to the south east, and appears to be located in a stream bed. The bore log for this well records the substrata as river run gravels. Given this, and that this differs from information obtained from all other down-gradient wells (which are deeper and show claybound soil layers as described above) I do not consider that this well is indicative of soil and groundwater conditions below the discharge area.

56. I consider the sensitivity of the environment to be moderate to low given that there are a small number of downgradient wells, there appears to be a claybound layer approximately 20 m deep in the area where the proposed discharge is located, and there are no surface waterways nearby.

ASSESSMENT OF ACTUAL AND POTENTIAL EFFECTS

57. The resource consent application included the following amendments provided by the applicant:

- A report dated 29 April 09 that set out the amendments to the application. This report set out the expected contaminant removal rates in the proposed wetland and associated plan requirements.

- A revised site plan (which is attached as Plan CRC051792C).

- A supplementary report by Andrew Dakers of EcoEng Limited dated 29 April 2009. This report sets out the details of the proposed wetland, including what contaminants it expects to remove and how.

- A supplementary report by Andrew Dakers of EcoEng Limited dated 17 June 2008 detailing the wastewater monitoring results and volume estimates.

58. The above information was reviewed with assistance from a Golder wastewater engineer and Golder hydrogeologist.

59. The following actual and potential effects have been identified and will be discussed below. It is noted that these are similar to those effects identified and discussed in the original section 42A Officer's Report:

- Adverse effects on groundwater quality and groundwater users;

- Cumulative adverse effects on groundwater quality;

- Adverse effects of the discharge on surface water bodies; and

- Adverse effects of the discharge on public health and odour.

Adverse effects on groundwater quality and groundwater users

60. The discharge of wastewater has the potential to lead to contamination of groundwater which could adversely affect down-gradient well owners, although I note that no down-gradient well owners submitted on this resource consent application.

61. In relation to contamination of groundwater with pathogens in the discharge, the applicant considers that the soils have the ability to deal with the contaminants discharged such that the effect on groundwater quality will be unmeasurable. They note that there is over 250 m to the nearest downstream well, and that there is at least 20 m depth to the water table. Given this, and the silty, sandy gravel soils at the site, they consider that there will be rapid attenuation of pathogens in the soils below the discharge trench. They provided the results of studies on bacterial reduction in soils to demonstrate that faecal coliform levels are likely to be reduced to low levels within 500 mm of the base of the trench. On this basis, they consider that the effects of the discharge of pathogens on groundwater quality and down-gradient groundwater users will be minor.

62. In relation to nutrients in the discharge, nitrogen is the key contaminant of concern, given that nitrates in groundwater can pose a health risk to humans. The applicant states that the proposed wetland will reduce nitrogen levels from 70 milligrams per litre (mg/L) to less than 30 mg/L for raw effluent passing through the wetland.

63. The applicant also states that the contaminant concentrations present after treatment via the wetland are similar to, if not better than, that achieved in sand-based discharge control trenches.

64. I have discussed the applicant's assessment with a Golder hydrogeologist and considered the well logs for the area, as discussed earlier in this report and I agree with the applicant's conclusion that pathogens in the discharge are likely to be attenuated by the soils below the discharge trench. This is largely based on:

    - The depths of the wells.
    - Well logs which suggest that there is a silty, sandy clay layer below the discharge area; and
    - Agreement from the Golder hydrogeologist that the research referred to by the applicant suggests that pathogens are likely to be rapidly attenuated in the subsoils below the discharge area, as stated by the applicant.

65. I agree with the applicant that nitrogen contamination of groundwater to the extent that down-gradient users are adversely affected is unlikely, given the depth of the down-gradient wells, and separation distance to these wells.

66. Therefore, I agree with the applicant's assessment that adverse effects on surrounding groundwater users will be no more than minor. However, as a precaution, a condition requiring monitoring of discharge quality is recommended, to verify that the discharge quality is consistent with that predicted by the applicant.

Cumulative adverse effects on groundwater quality

67. According to ECan's GIS database, there is only one current discharge permit within 1000 m of the site, which authorises the discharge of domestic wastewater to land.

68. Given this, and the depth to groundwater in the area I consider that the cumulative adverse effects on groundwater quality are likely to be less than minor.

Adverse effects of the discharge on surface water bodies

69. The applicant's site plan shows that the closest surface waterbody is a watercourse located approximately 310 m southwest of the discharge. Given this separation distance, I consider that contamination of the surface waterbody through runoff of ponded wastewater. I consider that contamination via hydraulically connected groundwater is unlikely given the above assessment and audit where I conclude that groundwater contamination is unlikely.

Adverse effects of the discharge on public health and odour

70. Ponding of wastewater could cause adverse health effects people come into direct contact with contaminants in the discharge. Of relevance for the proposed wastewater system is the exposure of wastewater within the wetland, and the capacity of the soakage trenches to dispose of the wastewater.

71. The applicant has stated that as the horizontal subsurface wetland proposed uses subsurface flow, there will be no exposed wastewater on the surface. They have provided a cross section plan of the wetland (attached to the conditions as Plan CRC051792D) which shows that the wetland will contain a series of course gravels, gravel and course sand within an impermeable lining that the wastewater will flow through.

72. In addition, Golder's wastewater engineer has checked the capacity of the wetland and agrees that it will have capacity for the maximum wastewater volume.

73. The capacity of the soakage trenches to cope with the maximum predicted discharge has also been assessed. The proposed maximum application rate is 350 mm/week, which equates to an average of 50 mm/day. This is in accordance with the AS/NZS 1547:2000 standards for wastewater that has received secondary treatment being discharged into Category 1 or 2 soils. Given this, I agree with the applicant that ponding of wastewater, and associated adverse effects of the discharge on public health and odour will be no more than minor.

74. As a precaution I recommend the inclusion of a consent condition requiring that there is no ponding of wastewater.

ADDITIONAL MITIGATION MEASURES

75. In addition to the mitigation proposed by the applicant, I recommend the following conditions which the applicant has agreed to.

- The discharge shall not cause an odour, which is offensive or objectionable, beyond the boundary of the property on which this consent is exercised.
- There shall be no ponding of wastewater.
- Annual monitoring and maintenance of the septic tanks, wetland and distribution pipes.
- A condition allowing ECan to review the conditions of consent if necessary.

CONSIDERATION OF ALTERNATIVES

76. In the original application, the applicant considered two alternatives, being discharge via a soakage pit or treatment by an aerated system. They considered that a soakage pit would be too primitive while an aerated system would be unnecessarily technical and unreliable.

77. They have now amended the application to include treatment via a wetland, which they consider will provide a much higher level of treatment than the trench system originally proposed. Having assessed the resulting environmental effects following treatment of the wastewater in the wetland, I agree with the applicant, that the treatment supplied in the wetland is sufficient for the receiving environment and that alternatives do not need to be considered further.

POLICIES AND OBJECTIVES

Regional Policy Statement (RPS)

78. The Regional Policy Statement (CRC 1998), Chapter 9 Water, contains the following Objectives and Policies that are relevant to this application:

79. Objective 3

"Enable present and future generations to gain cultural, social, recreational, economic, health and other benefits from the water quality in Canterbury's water bodies…while:

(a) Safeguarding the existing value of water bodies for efficiently providing sources of drinking water for people…"

80. Policy 9

"To manage point and non-point source discharge and set water quality conditions and standards and terms in plans, and conditions on resource consents, that achieve… Objective 3. Adverse effects of discharges on existing water quality should be avoided, remedied or mitigated and, where appropriate, degraded water quality should be enhanced".

81. Policy 11

"Promote land use practices which maintain and where appropriate enhance water quality".

82. The proposed discharge is being treated to avoid degrading the water quality and to safeguard the existing value of the groundwater as a drinking water supply for people. On this basis, the proposal is consistent with the objective and policies above.

Proposed Natural Resources Regional Plan (PNRRP)

83. As noted by Ms Vince in the original section 42A Officer's Report the PNRRP, Chapter 4 Water Quality, contains the following Objectives and Policies that are relevant to this application:

84. Objective WQL2 – (2)(b)(i)

"In semi-confined, unconfined, and other confined aquifers or parts of these aquifers, where the water quality is affected by human activities, the groundwater quality shall meet the following values:

For nitrate-nitrogen, the maximum concentration shall not increase by more than two milligrams per litre above the maximum concentration measured between 1996 and 2001, and reported in 2002, and the maximum concentration shall not exceed 11.3 milligrams per litre".

85. Policy WQL6 –(2)(a)

"Subject to Policy WQL6(1), where a dwelling or premises is serviced by an individual on-site sewage effluent treatment and disposal system, and the system is installed after 3 July 2004, the system shall be located, constructed, operated and maintained to ensure that:

(i) the effluent is effectively treated before it is discharged so that adverse effects on groundwater quality beyond the property boundary are avoided; and

(ii) the separation distance between the discharge and any other sewage system or a well is sufficient to allow for the natural decay or attenuation of pathogenic micro-organisms in the contaminant plume so that the discharge will not be a significant risk to drinking water quality".

86. Policy WQL6 – (3)(a)(i)

"Avoid adverse effects on water quality from the cumulative effects of discharges into land from individual onsite sewage effluent treatment and disposal systems by requiring the installation of a network and treatment system for sewage effluent where the density of existing or proposed systems, are or are likely to:

(i) adversely affect the quality of water in wells used for drinking water supply or other purposes:

(ii) be significant sources of contaminants in groundwater in the proximity of a settlement, or in an area where the quality of the groundwater does not meet Objective WQL2(2)(b)".

87. Given the treatment of wastewater in the proposed wetland and the recommended conditions (including a limit on the amount of nitrate-nitrogen that can be discharged) I consider that the proposal is consistent with the above objective and policies.

PART 2 MATTERS

Purpose of the RMA (s5)

88. The purpose of the RMA (**s5**) is to promote sustainable management of natural and physical resources. The proposed wastewater system, in conjunction with compliance requirements specified in the conditions on the consent, will ensure that the quality of the underlying water table is sustained. On this basis, I consider the proposal to be consistent with the purpose of the RMA.

Matters of National Importance (s6)

89. **Section 6** of the RMA requires the consent authority to recognise and provide for a number of matters of national importance. There are no matters of national importance particularly relevant to the proposal.

Other Matters (s7)

90. **Section 7** sets out other matters for the consent authority to have particular regard to. I consider the following sub-section of section 7 to be relevant to these applications:

(f) Maintenance and enhancement of the quality of the environment;

91. I consider that the applicant has proposed adequate mitigation to maintain the quality of the environment by proposing a wastewater system that is largely in keeping with the PNRRP requirements. On this basis, the proposal is consistent with section 7 of the RMA.

Principles of the Treaty of Waitangi (s8)

92. Section 8 of the RMA requires the consent authority to take into account the principles of the Treaty of Waitangi (Te Tiriti o Waitangi). Kaikoura Rununga were contacted on 6 January 2005 and asked to provide comment by 18 January 2005. No comment has been received at the date of this report. In addition, Kaikoura Runanga were sent a letter regarding the notification of the application at the time of the public notification and they did not submit on the application.

OTHER RELEVANT MATTERS

Decisions of the Environment Court

93. I am not aware of any decisions made by the Environment Court that have any direct relevance to this application.

Previous Council Decisions

94. I am not aware of any resource consents being granted for the discharge of wastewater from a treatment and wetland disposal system similar to that proposed. However, ECan have issued resource consents for domestic wastewater discharges to land from individual dwellings or subdivisions within approximately 3 km of the site (for example CRC061306, CRC060050, CRC083155 and CRC083195).

Section 105

95. Section 105(1) of the RMA applies because the applications are for a discharge permit. Section 105(1) sets out matters that the consent authority must have regard to, in addition to the matters set out in section 104(1). The matters have been considered in the audit of actual and potential effects and consideration of alternatives.

Section 107

96. Section 107 of the RMA sets out restrictions on the grant of certain discharge permits. This includes the requirement for a discharge consent application to be declined if, after reasonable mixing, the discharge is likely to give rise to all or any of the effects set out in section 107 of the RMA. On the basis of the audit of the assessment of effects I consider that the proposal is unlikely to give rise to any of these effects. Therefore, I consider that section 107 does not prevent the granting of this application.

RECOMMENDATION

Grant or Decline

97. Based on the audit of the applicant's amended proposal, and having considered all relevant matters under sections 104 and 104B, I recommend that the application for consent be granted subject to conditions outlined below.

Duration

98. The applicant has requested a duration of 35 years.

99. Chapter 1 (section 1.3.5) of the PNRRP sets out matters to have particular regard to when considering the duration of any resource consent to be granted. The matters have been taken into account, no reasons to grant a shorter duration than requested have been identified. Therefore, I recommend a 35 year duration, as requested by the applicant.

RECOMMENDED CONDITIONS

CRC051792: To discharge wastewater to land

(1) The contaminants discharged shall be only:

(a) Wastewater from a lodge and tree house accommodation with a maximum occupancy of 28 guests per night; and

(b) Wastewater from a restaurant with a daily maximum of 100 patrons and 12 staff.

(2) The wastewater from the café kitchen shall pass through a grease trap prior to entering the septic tank. The grease trap shall be inspected at least once every three months and any sludge or scum shall be removed.

(3) The wastewater treatment and land application system shall not include chlorine disinfection.

(4) The volume of wastewater discharged shall not exceed 13.24 cubic metres per day and 76 cubic metres per week.

(5) (a) The wastewater treatment and disposal system shall be located on Pt Section 58 Kincaid Run, Kaikoura DIST, State Highway 1, Hapuku, as shown on Plan CRC051792A, which forms part of this consent.

(b) The wastewater shall be only discharged into land at or about map reference NZMS 260 P31:7079-7693, via the treatment and land application system labelled on Plan CRC051792B, Plan CRC051792C, and Plan CRC051972D, which form part of this consent.

(6) Wastewater from the tree house accommodation, lodge and restaurant shall be discharged to land via a septic tank and pump chamber to a horizontal subsurface wetland then to a land application system as shown on Plan CRC051792B.

(7) The horizontal subsurface wetland shall:

(a) have a minimum surface area of 336 square metres;

(b) have a minimum depth of sand/gravel of 0.5 metres;

(c) have a minimum width of 25 metres; and

(d) be constructed in accordance with Plan CRC051792D.

(8) The wastewater shall be discharged via a land application system as follows:

a) The land application system shall have an area of at least 264 square metres.

b) The wastewater shall be evenly dosed in fixed quantities over the land application system.

c) The wastewater shall be discharged at a loading rate not exceeding 350 millimetres per week.

(9) The discharge shall not result in any wastewater being visible at the land surface.

(10) (a) There shall be no discharge within 20 metres of any surface water body.

(b) There shall be no discharge to surface water as a consequence of the exercise of this consent.

(11) The discharge shall not occur within the following distances from bores that existed or were authorised before 24 December 2004:

a) 1,000 metres up-gradient (in relation to the direction of groundwater flow) and 200 metres in any other direction of any bore from which more than 20 cubic metres per day of water is taken for community supply purposes; and

b) 200 metres up-gradient (in relation to the direction of groundwater flow) and 50 metres in any other direction of any bore from which less than 20 cubic metres per day of water is taken for community supply purposes; and

c) 50 metres up-gradient (in relation to the direction of groundwater flow) and 30 metres in any other direction of any bore not used for community supply purposes.

(12) The discharge shall not cause an odour, which is offensive or objectionable, beyond the boundary of the property on which this consent is exercised.

(13) A representative wastewater sample shall be taken from the outlet of the horizontal subsurface wetland:

(a) At least once every year;

(b) By a suitably qualified person.

(14) Wastewater samples taken in accordance with condition 13 shall be analysed:

(a) For the following contaminants:

(i) Total nitrogen (in milligrams per litre)

(ii) Faecal coliforms

(b) By a laboratory accredited for that method of analysis by International Accreditation New Zealand (IANZ) or an equivalent authority.

(15) Should any of the contaminants analysed in accordance with condition 14 above exceed the trigger levels set out below:

Total nitrogen	30 milligrams per litre
Faecal coliforms	20,000 per 100 millilitres

(a) The consent holder shall undertake an assessment to determine the risk to the environment from the exceedances and provide within two months of receipt of the sampling results a report detailing recommended proposed actions, if any, and timeframes for completion of such actions to be undertaken to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager.

(16) (a) The consent holder shall advise the Canterbury Regional Council, attention: RMA Compliance and Enforcement Manager within one month of a connection to a reticulated sewerage system becoming available for the property on which this consent is exercised.

(b) For the purpose of this condition, “available” means:

i. A sewerage pipeline network system passes within 30 metres of the property boundary; and

ii. The network operator will accept the discharge.

(17) (a) The wastewater treatment and land application system shall be serviced at least once per year by a person suitably qualified and experienced in the maintenance of such systems.

(b) The servicing shall include, but shall not be limited to:

i. Measuring the depth of solids and scum in the wastewater treatment tanks.

ii. Pumping out the wastewater treatment tanks if the solids and scum layers combined are greater than one half of the depth of the wastewater treatment tanks.

iii. Inspecting the outlet filter and cleaning it if necessary.

iv. Checking that the pump and float switches are working and replacing the pump as required.

v. Evaluate the condition of the horizontal subsurface wetland. This should include, but not be limited to commenting on the change and/or health of wetland fauna, biomass harvesting if required, hydraulic condition (overloading, short circuiting, or presence of overland flow).

vi. Flushing the distribution lines until water runs clear and then pressure testing.

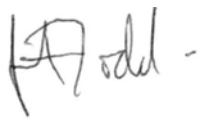
(c) Following every service a written report shall be prepared and kept by the consent holder. In addition, the consent holder shall keep written records of all repairs made to any part of the wastewater treatment and land application system.

(d) The consent holder shall forward a copy of the written reports and records of repairs to the Canterbury Regional Council, attention: RMA Compliance and Enforcement Manager on request.

(18) The Canterbury Regional Council may, once per year, on any of the last five working days of March or September 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 the 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.



Signed: _____ Date: 5 February 2010

Amy McEwan/Jacqui Todd

Golder Associates

Reviewer's comments:

Signed: _____ Date: _____

(Name)

Team Leader Consents Investigations (Land and Effluent Team)

REFERENCES

Canterbury Regional Council 2004. Proposed Natural Resources Regional Plan – Chapter 4 Water Quality.

Canterbury Regional Council 1998. Regional Policy Statement. Report No R98/4. ISBN 1-86937-337-5.

Canterbury Regional Council 2001. The Transitional Regional Plan for the Nelson-Marlborough Region as it applies within the Kaikoura District incorporating plan changes 1 & 2.

The Resource Management Act 1991. Consolidated version including the Resource Management Amendment Act 1995. August 2005.

APPENDIX 1 – GOLDER ASSOCIATES REPORT LIMITATIONS

REPORT LIMITATIONS

This Document has been provided by Golder Associates (NZ) Ltd ("Golder") subject to the following limitations:

(i). This Document has been prepared for the particular purpose outlined in Golder's proposal and no responsibility is accepted for the use of this Document, in whole or in part, in other contexts or for any other purpose.

(ii). The scope and the period of Golder's Services are as described in Golder's proposal, and are subject to restrictions and limitations. Golder did not perform a complete assessment of all possible conditions or circumstances that may exist at the site referenced in the Document. If a service is not expressly indicated, do not assume it has been provided. If a matter is not addressed, do not assume that any determination has been made by Golder in regards to it.

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(iv). In addition, it is recognised that the passage of time affects the information and assessment provided in this Document. Golder's opinions are based upon information that existed at the time of the production of the Document. It is understood that the Services provided allowed Golder to form no more than an opinion of the actual conditions of the site at the time the site was visited and cannot be used to assess the effect of any subsequent changes in the quality of the site, or its surroundings, or any laws or regulations.

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(vi). Where data supplied by the client or other external sources, including previous site investigation data, have been used, it has been assumed that the information is correct unless otherwise stated. No responsibility is accepted by Golder for incomplete or inaccurate data supplied by others.

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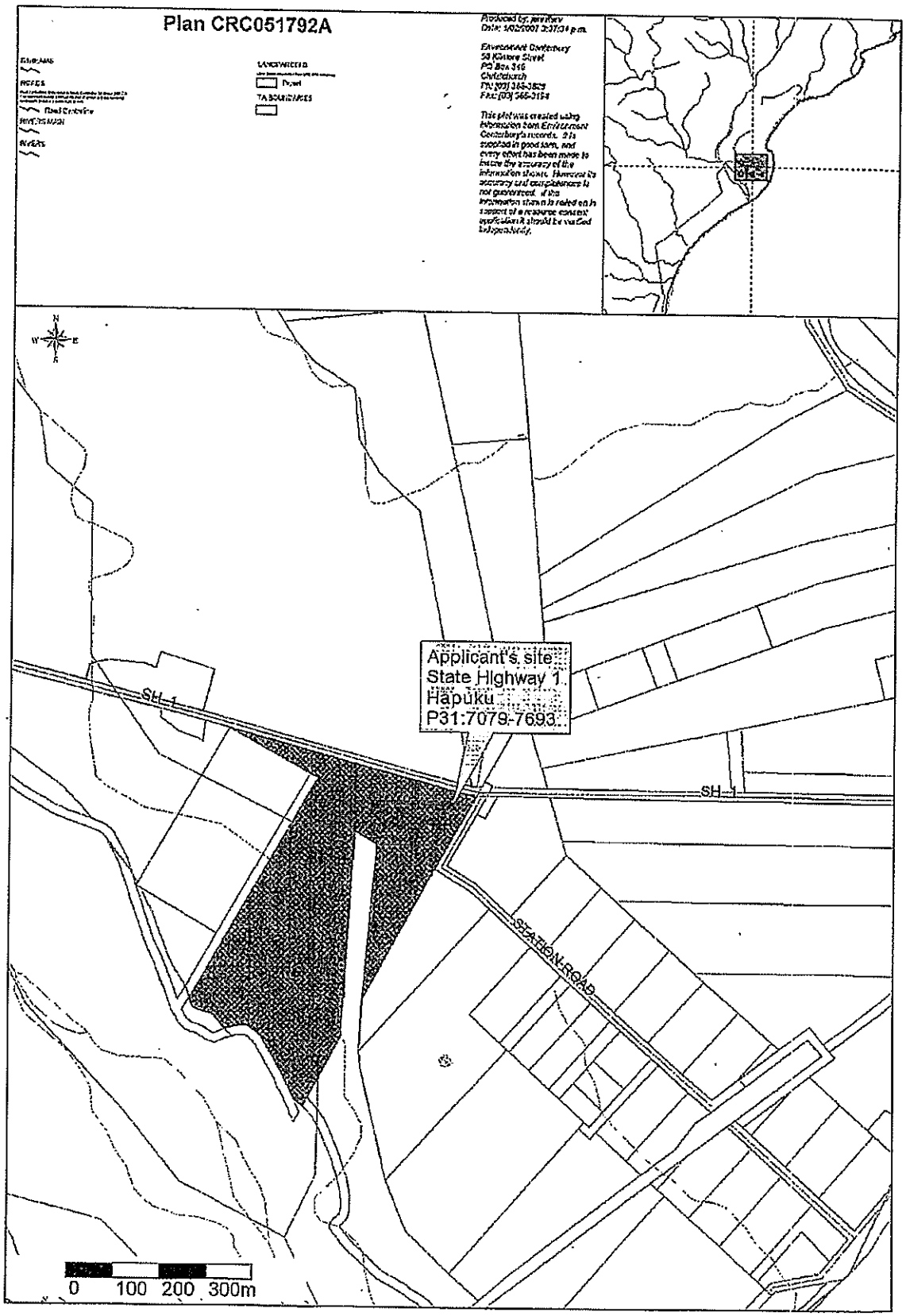
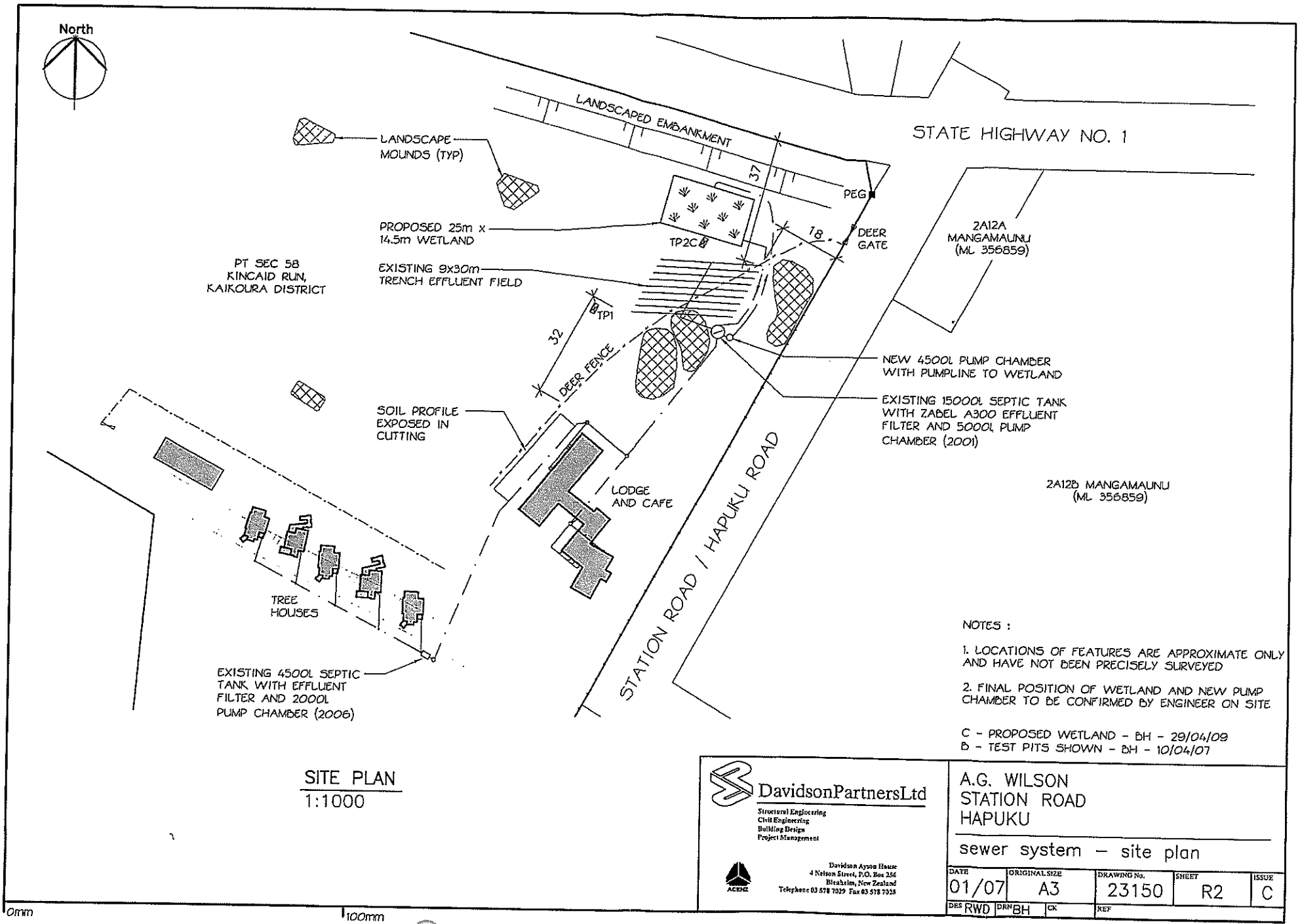
APPENDIX 2 – CRC051792 ATTACHMENTS


Plan CRC051792A
Applicant's site
State Highway 1
Hapuku
P31:7079-7693
SH 1
SH 1
STATION ROAD
0 100 200 300m



SITE PLAN
1:1000

NOTES :

1. LOCATIONS OF FEATURES ARE APPROXIMATE ONLY AND HAVE NOT BEEN PRECISELY SURVEYED

2. FINAL POSITION OF WETLAND AND NEW PUMP CHAMBER TO BE CONFIRMED BY ENGINEER ON SITE

C - PROPOSED WETLAND - BH - 29/04/09
B - TEST PITS SHOWN - BH - 10/04/07

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ACENZ

A.G. WILSON
STATION ROAD
HAPUKU

sewer system – site plan

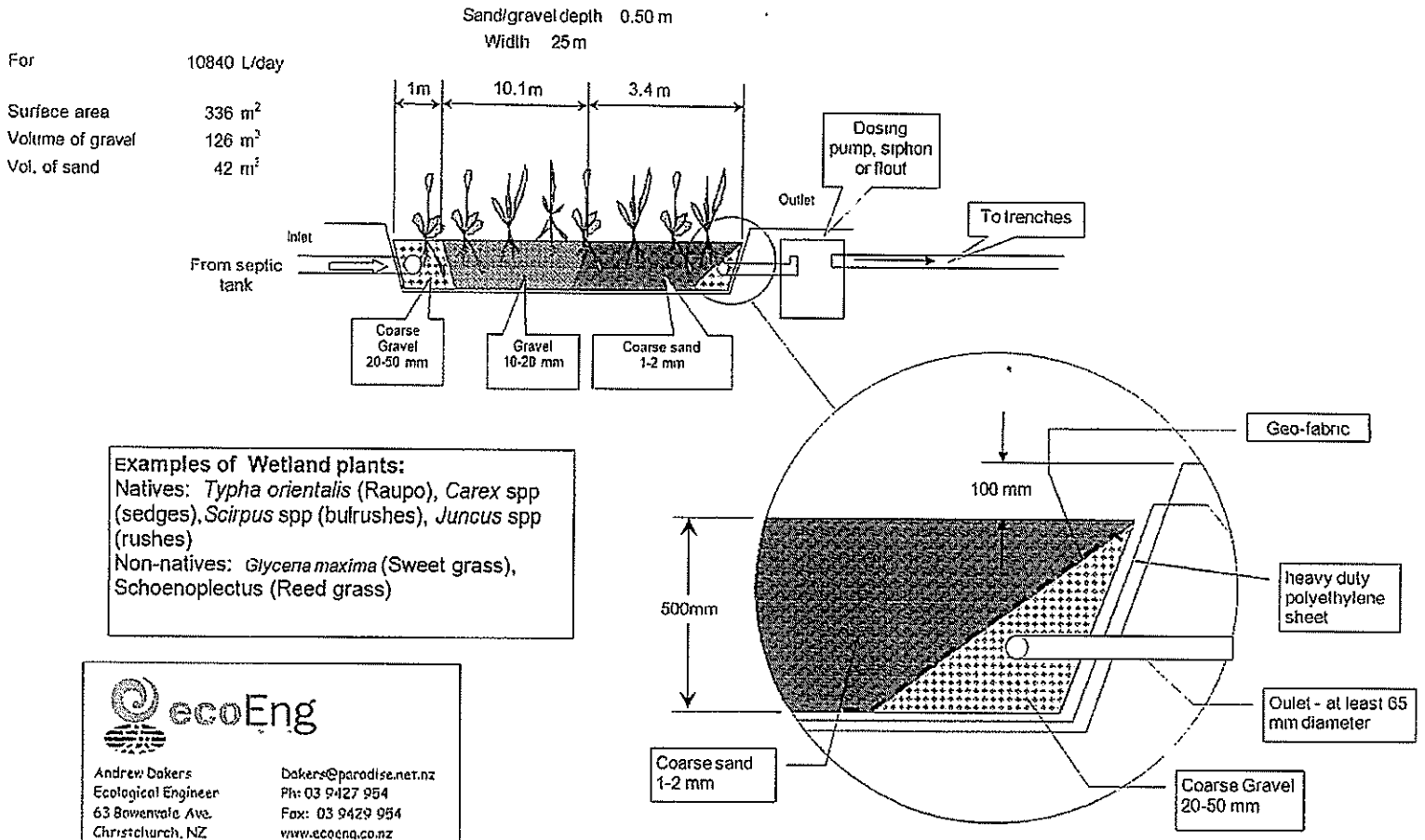
DATE	ORIGINAL SIZE	DRAWING No.	SHEET	ISSUE
01/07	A3	23150	R2	C

DES RWD DRN BH CK REF

0mm 100mm

Plan CRC051792 B

Figure 4. HSFW Specifications



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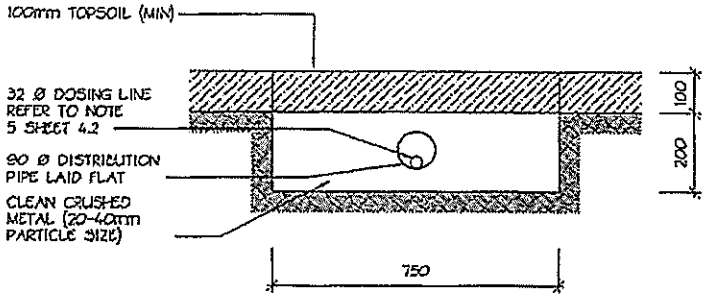
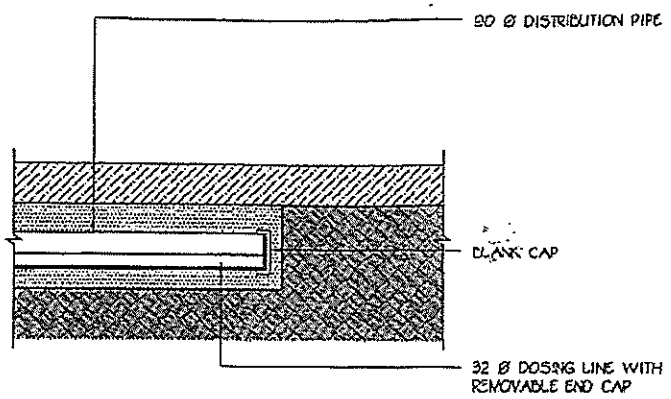
Plan CRC051792 O

Plan CRC051792C

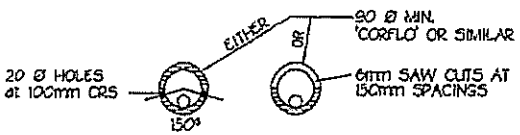


SHALLOW TRENCH
1:10

'Land Application System'



TRENCH END DETAIL
1:10



DISTRIBUTION DRAINS
1:10

TRENCH DETAILS

(1) 9 x 30m SHALLOW TRENCHES WITH DOSED PRESSURE PIPE LOADING (270m total length)

(2) DISTRIBUTION PIPES TO BE 90 Ø MIN. AND LAID FLAT.

(3) ENDS OF 32 Ø LOW PRESSURE LINE TO BE CAPPED WITH REMOVEABLE CAP TO ENABLE MAINTENANCE FLUSHING

DavidsonPartnersLtd

HAPUKU, WILSON LODGE
STATION ROAD, MANGAMAUNU
KAIKOURA

low pressure effluent distribution typical details

DATE	ORIGINAL SIZE	DRAWING No.	SHEET	ISSUE
07/01	A3	6000	4.4	A

DES RWD DRN MJH APP CAD C:\ACAD\6000\6000E