

BEFORE the Canterbury Regional Council

**IN THE MATTER of the Resource Management Act
1991**

AND

**IN THE MATTER of applications by Central Plains
Water Trust**

STATEMENT OF EVIDENCE OF KEVIN BLIGH

Qualifications and Experience

1. My name is Kevin Bligh and I hold the position of Resource Management Adviser with Winstone Aggregates, a division of Fletcher Concrete & Infrastructure Ltd (Winstone). My qualifications include a Bachelor of Resource Studies from Lincoln University specialising in Environmental Policy and Planning and a Masters of Resource and Environmental Planning with First Class Honours from Massey University. I am eligible for full membership of the New Zealand Planning Institute.
2. I have 5 years professional experience in planning and resource management. I joined Winstone in 2005 having previously been employed since 2003 as a Development Planner with Rodney District Council.

Scope of Evidence

3. My evidence will cover the following matters:
 - Winstone's Operations in Canterbury
 - Background of Winstone's Yaldhurst site in the context of the Rural Q (Quarry) Zone
 - Extent of resource at Winstone's Yaldhurst Quarry
 - Regulatory authorisations held for Winstone's Yaldhurst Quarry

- Implications for Compliance with Regulatory Authorisations arising from increased groundwater levels
- The effect that the groundwater increase would have on Winstone's operation
- The implications for Winstone to apply for a consent to dig below groundwater in the Rural Q zone and in the NRRP recharge area 1
- Practical issues in finding other available gravel supplies
- The strategic value of the current rate in terms of accessibility; lack of housing in close proximity, etc

Winstone's Operations in Canterbury

4. Within the Canterbury Region, Winstone has operations at Yaldhurst, Amberley, and the Kowai River (near Amberley). Winstone's operations at Yaldhurst comprise the bulk of its activities in Canterbury and are those specifically affected by the applications for resource consent made by Central Plains Water Trust.
5. The Winstone property at Yaldhurst is located at 233 Old West Coast Road and covers an area of approximately 89 hectares being legally described as Lot 1 DP 27763 and Lots 1-6 DP 26999 and contained within Certificate of Title CB32A/432. A site location plan showing the Winstone property is included as Appendix 1.
6. A detailed site plan is included as Appendix 2 showing the key locations on the site for extraction, processing, stockpiling, cleanfilling, rehabilitation (including those areas where rehabilitation has been completed) and water management.

Background of Winstone's Yaldhurst Quarry in the context of the Rural Q Zone

7. Winstone's Yaldhurst site is contained entirely within the Rural Quarry (Rural Q) Zone of the Christchurch City Council's District Plan (hereafter 'the City Plan'). It is my understanding that similar quarry zonings under preceding District Schemes and Plans of the Papanui County Council have applied to the Winstone site since it was initially quarried in the early 1970's. Winstone's Yaldhurst site was acquired by Certified Concrete (Christchurch) Limited in 1970 and subsequently transferred to Firth Certified Concrete Limited (later Firth Industries, a division of Fletcher Concrete & Infrastructure Ltd) in 1989. The title ownership was amended to reflect Fletcher Concrete & Infrastructure Ltd in 2001, with the site having been operated by Winstone since the mid 1990s.
8. As set out in the City Plan, the Rural Q zone comprises two areas. The first, referred to as the Miners Road area, is situated between Old West Coast Road and State Highway 73 and includes Winstone's Yaldhurst operation, while the second is situated between Pound Road and Hasketts Road and adjacent to Leggat Road, and is referred to as the Pound Road area.

9. The Rural Q Zone provides for the extraction and processing of sand and gravel together with associated ancillary activities such as stockpiling, sale and transportation as a permitted activity subject to compliance with relevant performance standards set out in the City Plan. With many of the quarries within the Rural Q zone predating the current City Plan, existing use rights also apply in some circumstances.
10. Under the proposed Natural Resources Regional Plan (PNRRP), the Winstone site is identified as being in the Christchurch Groundwater Protection Zone 1C. Under the proposed Variation 6 to NRRP rules, the Winstone site is identified as being within the Christchurch Groundwater Protection Zone Subzone 1B.
11. As recognised by the Environment Court, much of the land zoned Rural Q has already been worked out, placing even greater importance on those resources which remain. I am aware from the application documents and the evidence of Mr Peter Callendar that within the Rural Q zone, groundwater rises, attributable to the Central Plains Water Trust (CPWT) proposal, of approximately 2 metres are predicted.

Extent of resource at Winstone's Yaldhurst Quarry

12. Of the total site area of approximately 89 hectares, there remains approximately 35 hectares of unworked resource. In calculating this area, I have taken into account the yard restrictions in the City Plan which require a 20 metre set back on excavation from the zone boundary or a road boundary and a 6 metre set back from adjoining allotments which are not held in common ownership and for which written agreement of the adjoining owner has not been obtained.¹
13. The thickness of extractable resource that remains in those unworked areas of the site is on average approximately 8-10 metres deep. Overburden of up to a metre (with variations across the site) is excluded from the value of the resource. In addition the City Plan prevents extraction within a metre of maximum recorded groundwater levels without resource consent.
14. The total remaining resource volume on site has been estimated at approximately 3 million Loose Cubic Metres (LCM), or 2.4 million Bank Cubic Metres (BCM).²
15. Production from Winstone's Yaldhurst Quarry is currently in the vicinity of 200,000 LCM per annum, meaning that at current rates of production, the estimated life of Winstone's Yaldhurst Quarry would be in the vicinity of 15 years. In reality however, demand is unlikely to remain constant, and is predicted to increase considerably as a result of increased market demand and as other sources of supply are exhausted or face production constraints.

¹ Christchurch City District Plan Rules 3.3.4 (a) and (b)

² The conversion rate is approximately 1.25 from BCM to LCM

16. Ms Keri-Davis Miller on behalf of the Christchurch City Council (CCC) has discussed how CCC estimates that aggregate resources within the Christchurch City territorial boundary are limited to approximately 10 years, while also recognising, consistent with the work of Canterbury Regional Council³ (ECAN) and decisions of the Environment Court⁴, that river resources are over-allocated and will not be able to meet predicted demand for aggregates in the medium term without supplementary land based resources. Obviously any further reduction in the volume of material available from within the Rural Q zone will reduce the remaining life expectancy of the district's aggregate resources even further.

17. Any over-allocation in river systems such as the Waimakariri will have an increased flow-on effect on the value of land-based resources.

Regulatory Authorisations held for Winstone's Yaldhurst Quarry

18. Winstone operates at Yaldhurst under a combination of the City Plan's Rural Q zone's provisions, existing use rights, and a number of resource consents issued by ECAN, listed in Table 1 below, and which are included in full as Appendix 3.

Table 1: Resource Consents held by Winstone for Yaldhurst Quarry

| | | |
|-----------|---|------------|
| CRC972294 | Land structure for storing, transferring & using contaminants | April 2017 |
| CRC971466 | Discharge dust to air | Feb 2032 |
| CRC971464 | Take groundwater from Bore M35/4497 | July 2032 |
| CRC020238 | Discharge to Land & Air from Cleanfill | Dec 2016 |
| CRC971465 | Discharge to Land | Nov 2032 |

19. This combination of regulatory authorisations provides for the activities undertaken at Winstone's Yaldhurst Quarry, including but not limited to extraction, cleanfilling, rehabilitation, water takes and discharges, storage of hazardous substances, sale and transportation of aggregates from the site.

20. In operating the site under the above authorisations, Winstone complies with performance standards pertaining to the City Plan's Rural Q zone, and conditions of consent specified in the consents listed in Table 1 above.

21. In addition to its regulatory authorisations, Winstone also operates in accordance with its own Environment Policy, Biodiversity Action Plan, Community Relations Policy and Policy for Consultation with Iwi, Hapu and Whanau which are attached as Appendix 4. Winstone's Yaldhurst operations are undertaken in accordance with a Site Environmental Management Plan that has been developed

³ Regional Gravel Management Report (July 2006)

⁴ *Road Metals v Christchurch City Council and Canterbury Regional Council 163/05*

in accordance with Winstone's Environmental Policy. The Site Environmental Plan sets out objectives and measures to maintain and enhance environmental performance while avoiding, remedying and mitigating adverse environmental effects.

Implications for Compliance with Regulatory Authorisations arising from increased groundwater levels

22. The predicted increase in groundwater levels from the CPWT proposal has serious implications for Winstone in its ability to comply with its regulatory authorisations, and therefore to continue to undertake its operations legitimately or without obtaining further approvals from both CCC and ECAN. The main implications for Winstone's ability to comply with its consent conditions are in relation to Rule 3.4.5 of the City Plan and Conditions 8 and 18 of CRC020238, as set out below.

City Plan

3.4.5 Protection of groundwater - Mineral extraction activities

No extraction of sands, gravels or other materials shall take place to a depth greater than 1m above maximum recorded groundwater level.

(Maximum recorded groundwater level will be determined upon consultation with the Canterbury Regional Council.)

23. Critical Standard 3.4.5 replicated above is the primary restriction in the City Plan on the depth of extraction which can take place within the Rural Q zone, limiting extraction to a depth no deeper than 1 metre above maximum recorded groundwater levels. While the maximum recorded groundwater level varies throughout the Rural Q zone and across individual sites, in the case of the Winstone site, extraction is directly limited (by this provision) to a maximum depth of 9-11 metres below original ground level.
24. Obviously any increase in groundwater levels in the Rural Q zone will directly affect the maximum depth to which future extraction can take place resulting in a direct loss of extractable resource throughout the zone, unless consent can first be obtained for a non-complying activity in accordance with Rule 3.1.1(d) of the City Plan to extract to a depth greater than 1 metre above maximum recorded groundwater levels. As will be discussed in Section 37 below, consent would also be required from ECAN for any extraction into groundwater.

Resource Consent CRC 020238

25. In addition to rights to fill authorised by the City Plan and existing use rights established under former plans such as the Paparua County District Planning

Scheme, filling on the site is authorised by resource consent CRC 020238. The importation of fill material enables restoration of the site to occur, while also diverting material away from landfills, thereby increasing the life of resources such as Kate Valley.

26. Conditions 8 and 18 replicated below set limitations on filling through direct linkages to highest recorded groundwater levels.

8) *Material shall not be deposited below a level one metre above the highest recorded groundwater level on site. The base of the pit below any area of fill deposition shall be lined with clay or silt material having a depth of at least 300 millimetres.*

18) *Concrete slurry material shall only be deposited within a bunded area that is lined with clay or silt material having a depth of at least 300 millimetres. The bunded area shall be at least 10 metres above the highest recorded groundwater level at the site and shall not be located above any fill material.*

27. As with the extraction operation, obviously any increase in groundwater levels will directly affect the maximum depth at which filling can take place. This will in turn impact upon the manner of rehabilitation for areas that have been excavated but which are yet to commence any programme of progressive filling of the quarried area. To achieve compliance with the above conditions for such areas, which presently total 20 hectares, the ground level would first need to be raised to be consistent with the height of any groundwater increase, using completely clean material - ultimately requiring this area to be filled with aggregate extracted from elsewhere in the quarry. As will be discussed in Sections 28 - 39 below, this will result in further loss of processable resource and have additional financial implications for Winstone.

The effect that the groundwater increase would have on Winstone's operation

28. The loss of 2 metres of resource that would arise were these applications to proceed would have a significant effect on the operation of the Yaldhurst site and also the ongoing provision of aggregates to the Canterbury market, as is discussed in the evidence of Brian Warren. In addition however, there would also be numerous other costs and implications for Winstone arising from the proposed groundwater increase which are discussed below.

Direct Losses

29. Working on a loss of 2 metres of processable resource over an area of 35 hectares, the estimated loss of resource from the Yaldhurst site were the groundwater levels as to rise predicted, would be in the order of approximately 875,000 LCM reducing the life of the quarry by 20 percent or 3 ½ years at current rates of

production. Based on an average selling price of \$15m³, this would result in a direct loss of revenue in excess of \$13 million.

30. In addition to the direct loss of resource arising from reduced extraction depths, there are also other major implications that will arise for the Quarry should groundwater levels rise by 2 metres. The existing ground level throughout the 20 hectares of the site currently excavated would have to be raised by 2 metres to ensure ongoing compliance with the conditions of CRC020238 for future rehabilitation as discussed in Section 27 above, and to prevent water management, stockpiling and processing areas from being inundated when groundwater levels are high.
31. To raise the ground level by 2 metres across this 35 hectare area will involve the further loss of 500,000 LCM, at a direct loss of revenue of 7.5 million, and reducing the life of the quarry by a further 2 ½ years, bringing the total reduction in the life of the quarry to 6 years.
32. Additionally, significant expenditure would be incurred in the machine and labour costs of excavating and placing this material. It is estimated that a further \$2 million of expenditure would be required, based on a cost of \$4/BCM.
33. Although difficult to quantify, there would then be the further additional costs associated with reconstructing and reconfiguring the site infrastructure such as rebuilding the haul roads, water treatment devices, stockpiles and relocating and re-establishing the processing plant including foundations and electrical infrastructure at the new quarry floor level.

Summary

| | |
|---|--------------------|
| Direct revenue loss at today's values from unquarried gravels | \$13,125,000 |
| Direct costs of material required to raise ground levels | \$7,500,000 |
| Machinery and labour costs | <u>\$2,000,000</u> |
| Total | \$19,625,000 |

Plus unquantified site infrastructure costs

34. We acknowledge that effects rather than costs or loss of profit is the benchmark for consideration of this hearing but these costs serve to show the significant effects that this application is having on the valuable and limited, gravel resource within Canterbury.

Indirect Costs

35. In addition to direct costs discussed above, indirect costs have been identified which would result from the predicted increase in groundwater levels.
36. With quarries, much of the quarry infrastructure is “sunk”, that is, it is not readily transferable to another site. Accordingly, any reduction in the life of the quarry will effectively increase the costs of aggregate recovered over the shorter production period and consequently lead to an increase in the local market price for aggregates. To further compound the issue a shorter operating life brings forward the costs associated with the decommissioning of the built infrastructure used within the quarry such as the processing plant, offices, workshops, foundations, electrical infrastructure, water treatment devices, fencing, signage, haul roads, again further increasing the costs of extraction. In my experience, the significant costs associated with constructing, what may appear to be even the most simple quarry infrastructure, such as haul roads, water treatment devices and foundations are often not fully appreciated.
37. In the case of this proposal, the predicted reduction in quarry life would involve a significant loss on investment - based on the current market demand and pricing (even without taking into account the current forecast increase in demand as discussed in Section 15 of my evidence above). The commercial reality to such a situation is that the selling price for aggregate will increase to provide the required return.
38. Should consent be granted for extraction of aggregates within the two metre band that will be subject to the predicted groundwater increase, complications will arise in extraction and processing of these aggregates increasing costs and the time to process these aggregates. As the aggregates extracted will be wet, they will first need to be drained prior to processing. This will require the aggregates to be extracted, stockpiled, and then transported to the processing plant. This ‘double handling’ creates economic inefficiencies due to increased machine and labour hours undertaking this work, and time when these machines and operators cannot be used for other work on the site.
39. The costs set out above, coupled with the unquantified indirect costs will make the ongoing operation of Winstone’s Yaldhurst Quarry following a 2 metre groundwater increase highly marginal to say the least.

The implications for Winstone to apply for a consent to dig below groundwater in the Rural Q zone and in the NRRP recharge area 1

40. Having considered the implications for Winstone of the predicted groundwater level rise, it is necessary to consider whether consents could be obtained to overcome the regulatory implications and loss of resource otherwise attributable to the predicted rise in groundwater levels. It is my understanding that to undertake excavation and filling activities into groundwater would require the following resource consents under the relevant planning documents:

Table 2: Consents Required for Excavation and Filling into Groundwater

| Relevant Document | Excavation into groundwater | Backfilling into groundwater | Overall Status |
|-----------------------------------|--|--|----------------|
| City Plan | Non-complying due in accordance with Part 4 Rule 3.1.1(d) if exceeds Part 4 Rule 3.4.5 | Discretionary in accordance with Part 9 Rule 5.5.2 | Non-complying |
| Proposed PNRRP | Restricted Discretionary under WQL40(c) | Discretionary under WQL 58 | Discretionary |
| Proposed Variation 6 to the PNRRP | Discretionary under amended rule WQL40(d) | Unchanged from notified NRRP | Discretionary |

The relevant rules are contained in Appendix 5.

41. Overall consents would be required for a Non-Complying activity from CCC and a Discretionary activity from ECAN. The effect is that any activity would be assessed as a non-complying activity.
42. On the whole, proposed Variation 6 takes a much more onerous approach to managing effects on groundwater quality from activities taking place within the Christchurch Groundwater Protection Zone, introducing further prohibited and non-complying activity statuses for a number of activities ancillary to quarrying and Objectives and Policies focussed on avoidance as opposed to mitigation of adverse effects, and Winstone has made submissions to this effect on the variation.
43. The implications for Winstone of applying for such consents are as follows:
 - Detailed application preparation and assessment work, including specialist groundwater assessment and analysis would need to be undertaken at considerable cost to Winstone
 - Potential for applications to go to the Environment Court placing additional costs on Winstone and uncertainty over the future economic viability of the operation
 - Considerable monitoring and management measures would need to be put in place to ensure effects on groundwater were avoided, remedied and mitigated, at considerable cost to Winstone
 - If consent was obtained to extract within groundwater, then practical difficulties would arise as to how such areas are to be restored. Unless approvals were obtained to fill back into groundwater, it would need to be left as an open water body (at least when groundwater levels are high). If back

filling required totally clean material, in reality this would have to involve the placement of aggregate from the quarry, nullifying the purpose of the extraction in the first place.

44. I have already discussed in Sections 28 - 39 of my evidence, the implications that will arise from the inundation of quarry infrastructure during high groundwater levels. Another significant environmental concern worth noting however, and as discussed in the evidence of Peter Callendar that may arise from the increase in groundwater levels proposed would be the potential for material that has already been deposited back into excavated areas to be infiltrated and contamination of groundwater to subsequently occur. If this were to occur, subsequent remediation work may be required at considerable cost.

Practical issues in finding other available gravel

45. A number of practical difficulties exist in finding workable sources of aggregates, particularly within Christchurch City but also the Canterbury Region generally which lead me to the conclusion that it is imperative that existing resources within the Rural Q Zone are extracted to their optimal potential.

Future Supplies of Aggregate in Christchurch City

46. The principal potential source of coarse aggregates (excluding natural sands) in proximity to the key urban areas within the Canterbury Region and in particular Christchurch City where resources are in greatest demand are alluvial gravels, both those which have been deposited in the past and those that presently exist within fluvial systems, such as the Waimakariri River.
47. The quality of these gravels varies due to weathering effects and access is mostly prevented by urban or rural residential development. Operations which extract river gravels are facing significant reductions in volumes due to recent work by ECAN⁵ which has identified considerably smaller sustainable yields and aggradation levels than had previously been thought to exist.

Land Based Resources

48. While there are potential areas within proximity to Christchurch City in which commercially extractable minerals may exist, it is important to understand that such areas are considered prospective on the basis of being a suitable place to look for aggregates by virtue of their rock types. Following more detailed investigations, only a small proportion of these prospective areas are likely to result in the identification of resources of sufficient size, quality and characteristics for economic extraction even before taking into account the

⁵ Regional Gravel Management Report (July 2006)

planning and environmental constraints on such development. Ultimately, few if any of these areas are likely to now be developed as quarries, due to various constraints or practical requirements. These include but are not limited to sterilisation of the resource by urban development and conservation restrictions.

49. As noted in paragraph 4 of Ms Keri Davis-Miller's evidence, the City Plan does not provide for dry land mineral extraction outside of the Rural Q Zone, with the exception Issac Conservation Area in Coutts Island, and that a recent CCC desktop study illustrated very limited possibilities within Christchurch for future quarry zonings. CCC is now in the process of investigating the economic cost of sourcing aggregate from outside the Christchurch area.
50. Even where new resources can be extracted, investment costs in developing a new quarry are relatively high and that much of the infrastructure is "sunk", that is, it is not readily transferable to another site. Coupling this with the fact that there is a significant time factor required to obtain approvals and then "open" new quarries, I consider it imperative that existing resources are utilised fully. As the case of the recent Road Metals quarry expansion, granted consent by the Environment Court in December 2006⁶ demonstrates, it took more than 4 years from initial outset and planning until consents were able to be obtained for this extraction. It should be noted that this was only for a small add-on to their existing quarry and was not in the nature of a green fields quarry development at a new site.

River Resources

51. Gravel extracted from rivers has traditionally played a significant role in providing a supply of aggregates for the Canterbury Region and Christchurch City in particular. However, in the recently published ECAN Regional Gravel Management Report (July 2006) and as noted in the evidence of Ms Davis-Miller, ECAN has estimated that the sustainable gravel yield from most Canterbury Rivers is well below what is currently being extracted with bed levels in many cases also not being as aggraded as previously assumed.
52. The report estimates that demand for aggregate in Canterbury is expected to increase from 2,843,000m³ in 2005 to 6,137,000m³ in 2015, although the actual sustainable yield from the rivers is likely to be approximately only 750,000m³ per annum. It is noted that this is a regional estimate, however the Environment Court in C163/05 expected the local demand (for the Greater Christchurch Urban area) to rise to at least 4.5 million m³ by 2015, with Ms Davis-Miller stating that CCC predicts that demand will be in the order of 8 million tonnes (approximately 5 million m³) by 2025.
53. With less material being available from the rivers than in the past, it is clearly recognised that land based resources are the key primary alternative source of

⁶ *Road Metals v Christchurch City Council and Canterbury Regional Council 163/05*

aggregate. With the limitations I have set out above that exist to developing such resources, any reduction in the available volumes of land based resource in the Rural Q zone will seriously compromise the ability of Christchurch City and the wider area to meet its ongoing demand for aggregate. Such a reduction in resource availability closest to centres of demand, will require aggregate to be sourced from much further away at a significantly higher cost, which will ultimately be experienced by the people of the Region (i.e. as ratepayers and consumers).

Recycling

54. Recycling of materials into aggregates is unlikely to contribute significantly to the production of high quality aggregates in the region due to the variability of quality and shortage of large volumes of suitable materials.

The strategic value of the current rate in terms of accessibility; lack of housing in close proximity, etc

Transport

55. The relatively high costs of transporting heavy aggregates or bulky rock means that the needs of a community for aggregates are best served when quarries and extraction and processing sites are located close to where that material is used.
56. As at May 2008⁷, it is estimated that on average, the cost of transporting aggregates within the Canterbury Region exceeds the cost of the aggregates themselves at around a 60 -65 km round trip(based on an average selling price of \$15 per cubic metre and cartage of \$3.70 per kilometre for a truck and trailer with an average load of 18m³). As this cost is ultimately passed onto to the people of the Region, it does not make sense for aggregates to have to be provided at significantly higher costs than they need to be, considering they are an essential commodity on which everyone relies.
57. The transport costs associated with the movement of aggregate incorporate both the running costs of operating vehicles (such as fuel, oil, tyres, road user charges and distance-related vehicle depreciation) as well as the standing (or time) costs associated with owning and operating a vehicle (time-related vehicle depreciation, insurance, driver's wages and required return on capital). However, in addition to the direct economic costs incurred as set out above there are also external effects associated with road transport, which need to be taken into account.
58. Firstly, there are the environmental costs associated with road transport including the emission of CO₂ and other pollutants.

⁷ Winstone data obtained 26/5/08

59. Secondly, as will always be the case when significant additional vehicle movements are added to the roading network there are potential road accident costs, including the costs to other traffic and public health and policing agencies.
60. And thirdly there are the congestion effects of road transport for other road users. Congestion costs in this context relate to the higher vehicle running and standing costs and travel time costs for users of the road other than the trucks carting aggregate.

Sensitivity Effects

61. By their very nature, extraction, processing and transportation activities associated with aggregates generate adverse effects which are incompatible with sensitive development such as residential dwellings. An advantage of Winstone's site in the Rural Q zone is that there are limited sensitive receivers (of noise, dust and visual effects etc) within close proximity of the site and in particular the processing plant is well screened from nearby rural residential development.

Mitigation Measures

62. The Gravel Extractors Group have met with CPW/ACWT representatives in early June (Lewthwaite, URS and Watson ("GEG")) to discuss mitigation measures.
63. CPW expressed the view that acquiring more land with aggregate resources available on it would be the most feasible "mitigation measure" because the effects arising from the rise in ground water could not be mitigated. From Winstone's perspective, this option of simply acquiring more land is entirely fanciful and has no recognition of the difficulty in finding accessible resources or other long term issues relating to the establishment of a quarry operation.

Conclusion

64. Aggregate demand within Canterbury and the Christchurch City in particular is predicted to increase considerably over the next 10-20 years. A sustained supply of aggregate resources will be required to provide for building, construction and roading projects, but also to maintain and redevelop existing infrastructure. Such growth and development should not be compromised by aggregate availability.
65. An increase in groundwater levels in the Rural Q zone will considerably reduce the amount of aggregate resource available to meet this demand, which in turn will lead to aggregate shortages or material having to be sourced from further away at significantly higher economic and environmental costs. The value for operators such as Winstone of even continuing to operate such sites in the face of the direct and indirect costs that would arise from the increase groundwater levels

predicted by CPWT is marginal to say the least, and may result in these sites having to shut altogether far earlier than they otherwise would.

66. I consider that the resources that remain within the Rural Q zone of the City Plan are of great significance and will help provide for the present and future needs of communities in the Canterbury Region and particularly the greater Christchurch area and to not access or extract to the maximum practicable extent the available high quality aggregate resource within the zone would not be a sensible use of a valuable regional resource.
67. It is not an option for the Commissioners to give preference to one industry and ask another industry to bear the consequences associated with intensification of their land use.

Kevin Bligh
9 June 2008



RESOURCE CONSENT

Pursuant to Section 105 of the Resource Management Act 1991
The Canterbury Regional Council

GRANTS TO: WINSTONE AGGREGATES LIMITED

A WATER PERMIT: take groundwater from bore M35/4497 at or about map reference M35:662-443, for industrial use.

DATE GRANTED: 30-OCT-1997 **EXPIRY DATE:** 01-JUL-2032

IN CONNECTION WITH THE FOLLOWING PROPERTY:

LOCATION: MINERS ROAD, YALDHURST

LEGAL DESCRIPTION: LOTS 1-6 DP 26999 LOT 1 DP 27763 BLK XII ROLLESTON SD

SUBJECT TO THE FOLLOWING CONDITIONS:

- 1) The rate at which water is taken from bore M35/4497, 225 millimetres diameter and 84 metres deep, shall not exceed 50.5 litres per second, with a volume not exceeding 14,999 cubic metres in any period of 5.5 consecutive days.
- 2
 - a) The volume of water taken in terms of this permit from bore M35/4497 shall not exceed 10,000 cubic metres in any 5.5 consecutive day period whenever the standing water level in bore M35/1691 (at map reference M35:636-436) is lower than 19.0 metres below ground level (51.78 metres above mean sea level).
 - b) The volume of water taken in terms of this permit from bore M35/4497 shall not exceed 4,999 cubic metres in any 5.5 consecutive day period whenever the standing water level in bore M35/1691 (at map reference M35:636-436) is lower than 21.5 metres below ground level (49.28 metres above mean sea level).

PROVIDED THAT Whenever the Canterbury Regional Council, in consultation with the Water Users Committee representing all water users who are subject to this condition, has determined upon a water sharing regime which limits the total daily abstraction from the resource in accordance with the limits set out in these conditions then the taking of water in accordance with that determination shall be deemed to be a compliance with parts (a) and (b) of this condition.

- c) The taking of water in terms of this permit from bore M35/4497 shall cease whenever the standing water level in bore M35/1691 (at map reference M35:636-436) is lower than 24.0 metres below ground level (46.78 metres above mean sea level).
- 3) When requested in writing by the Canterbury Regional Council, the hours and rate at which water is taken shall be recorded to within an accuracy of 10 percent. A copy of the records shall be provided to the Canterbury Regional Council when requested.
- 4) The Canterbury Regional Council may annually, on the last working day of June, 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 is appropriate to deal with at a later stage; or
 - (b) complying with the requirements of a relevant rule in an operative regional plan.
- 5) Charges, set in accordance with section 36 of the Resource Management Act 1991, shall be paid to the Regional Council for the carrying out of its functions in relation to the administration, monitoring and supervision of resource consents and for the carrying out of its functions under section 35 of the Act.

ISSUED AT CHRISTCHURCH ON 9 DECEMBER 1997

A handwritten signature in black ink, appearing to read 'J. Hart'.

Joanne Hart
CONSENTS ADMINISTRATION OFFICER
on behalf of the Canterbury Regional Council



Community Relations Policy

Background

As the largest producer of aggregate products in New Zealand, Winstone Aggregates is easily identified by the local communities in which we operate and throughout New Zealand society as a whole.

Adverse effects generated by our activities and the activities of other players within the industry have the potential to create negative perceptions of 'who we are' and 'what we do' among the community, including not only neighbours but Iwi, local and regional Councils, conservation groups and, to a lesser extent, suppliers and purchasers.

These negative perceptions have the potential to impact upon the business at all levels.

Purpose

Winstone Aggregates is committed to developing good relations with the community at all levels of the business.

Implementation

The purpose set out above will be implemented through the following methods:

- Ensure ongoing compliance with regulations, conditions of consent and plan requirements in line with our Environmental Policy
- Promote awareness of the importance of the aggregate industry to communities in New Zealand
- Establish relationships with the community, based on trust and integrity
- Ensure appropriate levels of community consultation and involvement are maintained which may include organised site visits, open days, mail outs, liaison groups and meetings
- Be actively involved in and support the communities in which we operate
- Respond to complaints and enquiries promptly and in an appropriate manner

At an individual site level, Community Relations Plans will be prepared to assist in implementing the methods set out above. These plans will be developed in accordance with the "Outline for Site Community Relations Plan" included as part of the Community Relations Guidelines, and will recognise the issues relevant to the individual site and how best to apply the above methods.

A handwritten signature in black ink, appearing to read "B Chote".

Bernie Chote
General Manager

Dated: October 2007

BIODIVERSITY STRATEGY AND ACTION PLAN FOR FY08

As part of its commitment to a high level of performance in environmental management, Winstone Aggregates has developed a Biodiversity Strategy and Action Plan to provide a focus for maintenance and enhancement of biodiversity.

STRATEGY

Winstone Aggregates will take an active role in turning around the decline in NZ's biodiversity and be able to demonstrate net environmental benefit across all the company's activities and at individual sites where practicable.

The objectives of the Strategy are:

- *To identify and understand ecological values on properties where Winstone operates and to manage activities in a manner which leads to better biodiversity outcomes by identifying priorities, setting targets and delivering results.*
- *To engage in sponsorships and partnerships within and outside of the company's own landholdings which contribute significantly to the maintenance and enhancement of biodiversity.*
- *To communicate the results of these initiatives to the public to demonstrate that Winstone's activities have a net environmental benefit.*
- *To give effect to the strategy through a Biodiversity Action Plan which will be reviewed annually.*

Explanation:

Winstone Aggregates acknowledges that studies of biodiversity by the Ministry for the Environment and others have clearly demonstrated that New Zealand's biodiversity is in serious decline. It has set strategies and objectives to reduce the rate of decline and ultimately attempt to reverse it. The decline in numbers of viable communities of native wildlife in New Zealand is perceived to be a serious environmental issue. This loss of biodiversity is attributed primarily to loss and degradation of habitats and also to the introduction of invasive competitive species.

Winstone Aggregates is the largest producer of aggregates in the country through its rock quarries and gravel and sand extraction operations. It has some 25 sites comprising hundreds of hectares of land.

Aggregate extraction operations involve earthworks, rock removal and processing and transport operations which must be managed to control effects on the environment such as ground and surface water quality, air quality and changes to natural habitats. This is an important contribution to maintenance and enhancement of biodiversity. However, the company also has the opportunity through significant modification of land forms and vegetation (collectively habitat) to re-establish habitat. In most cases it would mean going beyond compliance with regulatory requirements.

During quarrying, it is necessary to remove vegetation and habitat, sometimes of significant value, to access stone. On some sites it is practicable to mitigate the lost habitat by re-establishing similar habitat on the site, either outside of the operational area or at the conclusion of quarrying.

A number of sites do not have an ability to fully mitigate loss of biodiversity values. For example if the site is not owned by the company it has no control over the long-term development of the site. The company has adopted a multi-site strategy to facilitate compensation for the environmental loss at one site through habitat enhancement at other sites, either its own or through arrangement with another landowner.

In order to manage activities in a manner which leads to better biodiversity outcomes the company is committed to identifying and understanding ecological values on properties where it operates. This groundwork provides the basis for establishing priorities and setting management targets, such as pest strategies and replanting, to deliver results.

The Strategy also recognises the value of engaging in partnerships with organisations that can provide expertise, or are in need of support, to give effect to the principles of this strategy both within and outside of the company's own landholdings. By promoting and contributing to programmes to study, protect and enhance plant and animal communities, Winstone can make a significant contribution to halting the decline in biodiversity.

ACTION PLAN

This Biodiversity Action Plan is the means by which the commitment and objectives in Winstone's Biodiversity Strategy are given effect in all of the company's activities.

Objective 1: - *To identify and understand ecological values on properties where Winstone operates and to manage activities in a manner which leads to better biodiversity outcomes by identifying priorities, setting targets and delivering results.*

Initiative: *With the assistance of ecological consultants compile an inventory of bioresources (ecological values) on Winstone sites.*

Initiative: *Determine priorities for managing bioresources by identifying known and scheduled sites of ecological importance on and adjacent to our sites and by considering other bioresources in local, regional and national contexts.*

Initiative: *Introduce biodiversity strategies such as pest management into site development, end use and rehabilitation planning.*

Initiative: *Include biodiversity values and strategies in environmental training.*

Initiative: *Develop a template and best practice notes for site biodiversity management and a process for implementation.*

Implementation of this objective initially requires assistance from experts, not only to identify bioresources but to rate them in relation to local, regional and national importance, to facilitate setting management priorities. The highest priority sites will be "Sites of Significant Wildlife Interest" or "Significant Natural Areas", scheduled in district plans. Not only is it important to avoid damage to these sites from quarrying activities where practicable but also to protect them through pest control and other management initiatives.

Where appropriate, strategies are developed for establishing and maintaining new bioresources through rehabilitation, replanting or retirement. These also require active pest and plant care management.

Development of best practice notes and inclusion of biodiversity values and strategies in environmental training, along with expert assistance in identifying and rating bioresources and setting appropriate targets, ensures management of site activities will lead to better biodiversity outcomes.

Objective 2: - *To engage in sponsorships and partnerships within and outside of the company's own landholdings which contribute significantly to the maintenance and enhancement of biodiversity.*

Initiative: *Give effect to the partnership with Fish and Game Society to enhance their property at Puni by investigating the feasibility of sand extraction to develop a freshwater wetland wildlife area.*

Initiative: *Extend support for "Trees for Survival" to other schools and sites.*

Implementation of Objective 1, which is limited to the company's sites, will make a significant contribution to halting the decline in biodiversity in NZ. However, Winstone acknowledges that, by considering their sites in a local and regional context, much more can be achieved. Partnerships with neighbouring landowners and organisations, such as the DoC and ARC, responsible for management of nearby conservation areas expand the possibilities for the company to contribute to the maintenance and enhancement of biodiversity. Biodiversity is an important issue that calls for collaboration of industry with other organisations to achieve long-term successful outcomes, not achievable solely through statutory processes.

As well as local and central government officers, such as those from regional and district councils and the Department of Conservation, non-government organisations such as Fish and Game, RF&B and Iwi have specialist understanding and expertise that, through partnerships, can assist the company in achieving its biodiversity goals. The company currently has agreements with Iwi actively involved in Kaitiakitanga at several sites and an agreement with Fish and Game Society to enhance their property at Puni to develop a wetland wildlife area.

Trees for survival, which the company supports on a continuing basis, began as an initiative by Mt Roskill Rotarians. The scheme provides for plant nurseries at schools and planting trips to re-establish native vegetation on land where the owners have decided to retire the land. Winstone has funded a number of planting trips and a nursery at Waikowhai School.

Objective 3: - *To communicate the results of these initiatives to the public and our employees to demonstrate that Winstone's activities have a net environmental benefit.*

Initiative: Conveyor, media etc. (under development)

The aggregates industry is perceived by the public to generally cause adverse environmental effects at their extraction sites. This perception is a barrier to industry fulfilling its function of providing the community with aggregates for building, construction and roading, essential to everyday life. The public needs to know that leading members of the industry such as Winstone acknowledge a national biodiversity issue and have developed strategies to actively do something about the problem. Key objectives such as the achievement of net environmental benefit on the company's sites will be tangible evidence of the success of the strategy.



RESOURCE CONSENT

Pursuant to Section 105 of the Resource Management Act 1991
The Canterbury Regional Council

GRANTS TO: WINSTONE AGGREGATES LIMITED

A DISCHARGE PERMIT: to discharge contaminants into land at or about map reference M35:662-443

DATE GRANTED: 28-NOV-1997 **EXPIRY DATE:** 28-NOV-2032

IN CONNECTION WITH THE FOLLOWING PROPERTY:

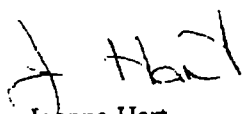
LOCATION: MINERS ROAD, YALDHURST

LEGAL DESCRIPTION: LOTS 1-6 DP 26999 LOT 1 DP 27763 BLK XII ROLLESTON SD

SUBJECT TO THE FOLLOWING CONDITIONS:

- 1) The discharge shall only be aggregate washwater and shall be discharged via a settling pond, and shall not exceed 2.73 cubic metres per day.
- 2) The Canterbury Regional Council may annually, on the last working day of November, serve notice of its intention to review the conditions of this consent for the purposes of:
 - (a) dealing with any adverse effect on the environment which may arise from the exercise of the consent and which 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) complying with the requirements of a relevant rule in an operative regional plan.
- 3) Charges, set in accordance with section 36 of the Resource Management Act 1991, shall be paid to the Regional Council for the carrying out of its functions in relation to the administration, monitoring and supervision of resource consents and for the carrying out of its functions under section 35 of the Act.

ISSUED AT CHRISTCHURCH ON 17 DECEMBER 1997


Joanne Hart
CONSENTS ADMINISTRATION OFFICER
on behalf of the Canterbury Regional Council



RESOURCE CONSENT

Pursuant to Section 105 of the Resource Management Act 1991
The Canterbury Regional Council

GRANTS TO: WINSTONE AGGREGATES LIMITED

A DISCHARGE PERMIT to discharge dust into the air from quarrying and associated activities at or about map reference M35:662-441.

DATE GRANTED 19-FEB-1997 **EXPIRY DATE** 19-FEB-2032

IN CONNECTION WITH THE FOLLOWING PROPERTY:

LOCATION MINERS ROAD, YALDHURST

LEGAL DESCRIPTION LOTS 1-6 DP 26999 LOT 1 DP 27763 BLK XII ROLLESTON SD

SUBJECT TO THE FOLLOWING CONDITIONS:

- 1) The discharge shall only be particulate from quarrying, screening, crushing, stockpiling and transporting of aggregates.
- 2) Material extracted from the quarry shall be maintained in a wetted state such that dust emission from the screening, crushing, loading and transportation of the material is minimised.
- 3) The processes resulting in discharges into air shall be operated and maintained using either the emission control mechanisms in place at the time of the application for this consent, as described in the application dated 8 October 1996, or using processes which provide at least an equivalent level of control.
- 4) The discharge shall not cause the deposition of particulate matter, which is determined to be objectionable or offensive by an enforcement officer of the Canterbury Regional Council, beyond the property boundary of the consent holder.
- 5) The Canterbury Regional Council may annually, on the last working day of January, 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 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) complying with the requirements of a relevant rule in an operative regional plan.



CANTERBURY REGIONAL COUNCIL

- 6) Charges, set in accordance with section 36 of the Resource Management Act 1991, shall be paid to the Regional Council for the carrying out of its functions in relation to the administration, monitoring and supervision of resource consents and for the carrying out of its functions under section 35 of the Act.

ISSUED AT CHRISTCHURCH ON 20 FEBRUARY 1997

A handwritten signature in black ink, appearing to read 'J. Hart'.

CONSENTS ADMINISTRATION OFFICER



Environment Policy

This policy acknowledges the FBL Safety, Health and Environment Policy and provides for implementation of the environmental commitments and directives of the policy.

Winstone Aggregates is committed to industry leadership in environmental management. We strive to manage operations to achieve sustainable economic development while avoiding, remedying and mitigating adverse effects on the environment. The Company's management is committed to leadership and providing sufficient and appropriate resources to enable its employees and contractors to fulfill their environmental responsibilities.

To further these commitments, Winstone Aggregates has resolved to:

1. Establish and maintain an Environmental Management Manual (EMM) that prescribes and provides for appropriate guidelines, standards, measures and procedures to:
 - Identify, manage and report all environmental effects, hazards and incidents
 - Identify and obtain required regulatory authorisations
 - Set objectives and targets and measure and review performance
 - Allocate responsibilities and induct and train staff and contractors.
2. Comply with all regulatory and company environmental requirements at all times.
3. Prevent pollution and work towards environmental enhancement, particularly the maintenance and restoration of biodiversity, where practicable.
4. Strive to apply the principle of Best Practicable Option, set targets, measure and review to continually improve performance.
5. Improve resource and energy efficiencies by setting targets to avoid, reduce and recycle wastes and use energy efficiently.
6. Communicate the policy and environmental achievements with all persons working for and on behalf of the company, iwi, neighbours, regulatory authorities, customers and other stakeholders and liaise with them when appropriate in an open, informative and consultative manner.

A handwritten signature in black ink, appearing to read "B Chote".

Bernie Chote
General Manager

Dated: April 2007



RESOURCE CONSENT

Pursuant to Section 105 of the Resource Management Act 1991
The Canterbury Regional Council

GRANTS TO: WINSTONE AGGREGATES LIMITED

A LAND USE CONSENT to place or erect onto land a structure for storing, transferring and using contaminants, at or about map reference M35:751-486.

DATE GRANTED 30-APR-1997 **EXPIRY DATE** 30-APR-2017

IN CONNECTION WITH THE FOLLOWING PROPERTY:

LOCATION MINERS ROAD, YALDHURST

LEGAL DESCRIPTION LOTS 1-6 DP 26999 LOT 1 DP 27763 BLK XII ROLLESTON SD

SUBJECT TO THE FOLLOWING CONDITIONS:

- 1) The volume of the diesel fuel storage tank shall not exceed 20,000 litres.
- 2) The storage system and containment system surrounding the tank shall be constructed in accordance with plan FQ2000L-V attached to this consent.
- 3) The containment system surrounding the storage tank shall be impermeable to prevent diesel leakage.
- 4) A 290 double acting solenoid valve shall be incorporated within the delivery line.
- 5) A certificate signed by the person responsible for designing the above ground storage tank facility, or a competent person, shall be submitted to the Canterbury Regional Council, to certify that the above ground storage tank facility is installed and constructed in accordance with conditions 2 and 3 of this consent.
- 6) The Canterbury Regional Council may annually, on the last working day of April, 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 is appropriate to deal with at a later stage; or
 - (b) complying with the requirements of a relevant rule in an operative regional plan.

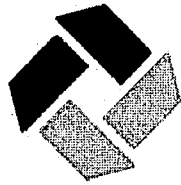


- 7) Charges, set in accordance with section 36 of the Resource Management Act 1991, shall be paid to the Regional Council for the carrying out of its functions in relation to the administration, monitoring and supervision of resource consents and for the carrying out of its functions under section 35 of the Act.

ISSUED AT CHRISTCHURCH ON 1 MAY 1997

A handwritten signature in black ink, appearing to read 'Ian A. Cumming'.

Ian A Cumming
CHIEF EXECUTIVE



WINSTONE
AGGREGATES

POLICY FOR LIAISON WITH IWI, HAPU AND WHANAU

Winstone Aggregates will recognise and respect the special relationship Maori has with the land and its ecosystems by:

- Consulting tangata whenua in a meaningful and timely manner when assessing effects of proposed or operating developments.
- Formulating reasonable and practicable protocols through consultation, which recognise and provide for the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu and other taonga and conducting operations in accordance with those protocols.
- Establishing and maintaining relationships with maori groups exercising kaitiakitanga over areas of mutual interest.
- Exploring and considering ways to assist maori in meeting kaitiaki and/or joint objectives.
- Maintaining equal opportunity employment and management policies.
- Appointing an Iwi Liaison Manager to ensure implementation of this policy and to maintain a register of contacts and relationships of maori groups.
- Providing, where appropriate and related to the company's activities, training for Winstone personnel in maoritanga.

Bernie Chote
General Manager

Dated: July 2007

RESOURCE CONSENT

Pursuant to Section 105 of the Resource Management Act 1991

The Canterbury Regional Council (known as Environment Canterbury)

GRANTS TO: WINSTONE AGGREGATES LIMITED

A DISCHARGE PERMIT: to discharge contaminants to land and into air from deposition of cleanfill material.

DATE GRANTED: 12-DEC-2001 **EXPIRY DATE:** 12-DEC-2016

IN CONNECTION WITH THE FOLLOWING PROPERTY:

LOCATION: 233 OLD WEST COAST ROAD, YALDHURST

LEGAL DESCRIPTION: LOT 1 DP 27764 LOTS 1-6 DP 26999

SUBJECT TO THE FOLLOWING CONDITIONS:

- 1) Material deposited shall only be uncontaminated soil, rock, gravel, sand, silt and clay; bricks; concrete; ceramics; weathered dry asphalt; tiles; road metal; untreated wood comprising less than one percent of any load by volume; vegetative material comprising less than five percent of any load by volume; and metals such as reinforcing rods that cannot be reasonably separated from demolition materials listed above. All other material shall be excluded from the site, including but not limited to: asbestos, wet asphalt; cables; carpet; containers; contaminated soils; dredging spoil; electrical insulation; 'Formica' board; glass; glass fibres; gypsum; hardboard; fibreboard; particle boards; chip boards; plywood; laminated wood; treated wood; hazardous materials; household waste; medical waste; radioactive waste; separated metals; wet paint; wet or dry lead-based paint; plastics; tar and tyres.
- 2) Each person delivering waste to the hardfill site shall sign a written declaration or formal agreement with the consent holder that the deposited material meets the acceptance criteria specified in condition (1). These records shall be held at the hardfill site and shall be provided to Environment Canterbury on request.
- 3) The delivery of material onto the site shall be supervised by the consent holder or their representative at all times. Loads shall be inspected randomly at the despatch office and all loads shall be inspected by the operator burying fill material. All loads shall be deposited in front of the tip face to enable inspection of loads before filling occurs.
- 4) A record of all material deposited at the site shall be kept. This record shall include the name of the person and company that delivered the material to the site, the date of deposition, the source of the material, a description of the material and the approximate quantity of material. This record shall be provided to Environment Canterbury on request and shall be held for at least five years after waste deposition has ceased at the site.
- 5) The site shall be surrounded by fencing and lockable gates to prevent as far as practicable discharge of unauthorised material occurring.
- 6) All entrances to the site shall be securely locked when the site is not supervised.

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- 7) Warning notices which can be read from a distance of five metres shall be erected and maintained at all entrances to the site. The notices shall state:
- "groundwater in this area is vulnerable to contamination and is a source of drinking water"; and
 - "all persons depositing waste at this site must have signed a declaration that only cleanfill material is delivered according to consent conditions. Disposal of waste by any other person is prohibited".
- 8) Material shall not be deposited below a level one metre above the highest recorded groundwater level on site. The base of the pit below any area of fill deposition shall be lined with clay or silt material having a depth of at least 300 millimetres.
- 9) Surface water drainage in the areas adjacent to the sites where hardfill is being deposited shall be arranged so that surface water is directed away from these sites.
- 10) Prior to this consent being exercised, three monitoring bores of minimum diameter 100mm shall be installed on the down-gradient, in relation to the direction of the groundwater flow, side of the hardfill site as generally indicated on the attached plan CRC020238. One monitoring bore of minimum diameter 100 millimetres shall be installed on the up-gradient, in relation to the direction of groundwater flow, side of the hardfill site as generally indicated on the attached Plan CRC020238. The bores shall enter the aquifer immediately underlying the site, and shall be screened over an interval of 0.5 metres above the highest recorded groundwater level at the site and 0.5 metres below the lowest recorded groundwater level at the site. The bores shall be made accessible to the Canterbury Regional Council at all times for the purpose of groundwater sampling.
- 11) (a) From the date of commencement of this consent representation samples of groundwater shall be taken three monthly from all three down-gradient bores specified in Condition (10)
- (b) All samples shall be taken by a suitably qualified and experienced person using methods approved by the American Public Health Association (APHA) or the American Society for the Testing of Materials (ASTM), for such sampling.
- 12) (a) All samples taken in accordance with Condition (11) shall be analysed to determine concentrations of contaminants and the values of parameters listed in Table 1.
- (b) Every fourth sample taken from each down-gradient bore in accordance with Condition (11) shall be analysed for volatile organic compounds, using methods approved by the United States Environmental Protection Agency or the American Public Health Association for the analysis of such compounds.
- (c) All samples taken in accordance with Condition (13) shall be analysed to determine concentrations of contaminants and the values of parameters listed in Table 2.
- (d) The laboratory carrying out analyses for the purpose of this consent shall be accredited to International Organisation for Standardisation/International Electrotechnical Commission (ISO/IEC) Guide 25: (1990) or equivalent defined by an accreditation body recognised as operating to ISO/IEC Guide 58.
- (e) The results of these analyses, the name of the person taking the samples and the date and time of sampling shall be provided to the Canterbury Regional Council within 10 working days of the receipt of the analytical results by the consent holder.
- 13) If the results of analysis of samples taken in accordance with Condition (11) show that any of the concentrations of contaminants or values of parameters determined exceed those given in Table 1, the consent holder shall:
- obtain a second sample of groundwater from the bores sampled in accordance with Condition (11), and obtain a sample of groundwater from the up-gradient bore specified in Condition (10); and
 - have these samples analysed in accordance with Condition (12).

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- 14) If the results of analysis of samples taken in accordance with Condition (11) show that petroleum hydrocarbons or other organic compounds are present, the consent holder shall:
- (i) Undertake further analysis of the sample to determine what organic compounds are present; and
 - (ii) Undertake the measures set out in Condition (15) (a) (i) to (ii).
- 15) **Mitigation Measures**
- (a) If the results of analysis of groundwater in down-gradient bores sampled in accordance with Condition 13, or part (e) of this condition show that the concentration of any contaminant analysed for or the value of any parameter exceeds the value specified in Table 2, the consent holder shall immediately:
 - (i) Notify the Canterbury Regional Council; and
 - (ii) Notify the occupiers of all adjoining properties to the south and south-east of the hardfill site; and
 - (iii) Implement all necessary measures to reduce the concentration of the contaminant in groundwater. Such measures may include: - cessation of activities that may have caused the excessive concentrations, - removal of contaminant source(s), - stabilisation or capping of contaminant source(s), - revision of stormwater management procedures,
 - (b) Any material removed in accordance with (a) shall be disposed of at an appropriate facility, and the consent holder shall provide the Canterbury Regional Council with written confirmation of such disposal within 10 working days.
 - (c) Following the implementation of any measures undertaken in compliance with (a) or (e), a validation sample shall be taken from the same bore as the previous sample was taken. The validation sample shall be analysed to determine the concentration of any contaminants for which the concentrations in Table 2 were exceeded in the previous sample. Results of this analysis shall be reported to the Canterbury Regional Council within two working days of receipt of the results by the consent holder.
 - (d) If the results obtained in accordance with (c) show that the concentrations of contaminants or parameters analysed do not exceed the maximum values specified in Table 2 then, notwithstanding Condition 11, further samples shall be taken thereafter from the same bore as the further sample was taken at the following frequencies: (i) Three monthly for the first two years after the further sample was taken in accordance with (c) and at least once every six months for the next two years; and (ii) Twelve monthly following the four year period specified in (i). Such samples shall be analysed for the contaminant or parameter that exceeded the values specified in Table 2 in the previous sample, and the results reported to the Canterbury Regional Council within 10 working days of receipt of the results by the consent holder.
 - (e) If the results obtained in accordance with (c) or (d) show the concentrations of contaminants do exceed those specified in Table 2, then the consent holder shall implement further measures as set out in (a).
- 16) (a) At the times of the first four occasions of sampling of groundwater in accordance with Condition 11 the depth to groundwater in all the bores from which samples are taken shall be determined to the nearest centimetre from a surveyed datum point.
- (b) These depths shall be recorded and provided to Environment Canterbury within 20 working days of the time when the depths were determined.
- 17) There shall be no burning of any waste material.
- 18) Concrete slurry material shall only be deposited within a bunded area that is lined with clay or silt material having a depth of at least 300 millimetres. The bunded area shall be at least 10 metres above the highest recorded groundwater level at the site and shall not be located above any fill material.

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- 19) The Canterbury Regional Council may, on any of the last five working days of October each year, 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.

ISSUED AT CHRISTCHURCH ON 12 DECEMBER 2001



Tania Harris
TEAM LEADER CONSENTS ADMINISTRATION
on behalf of the Canterbury Regional Council

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Winstone M35:658-439

PLAN CRC020238



Old Reference: 335 913 167

This information in this plan has been taken from Environment Canterbury's records. It is supplied in good faith but its accuracy or completeness is not guaranteed. If the information is to be used in support of a resource consent application it should be verified independently.

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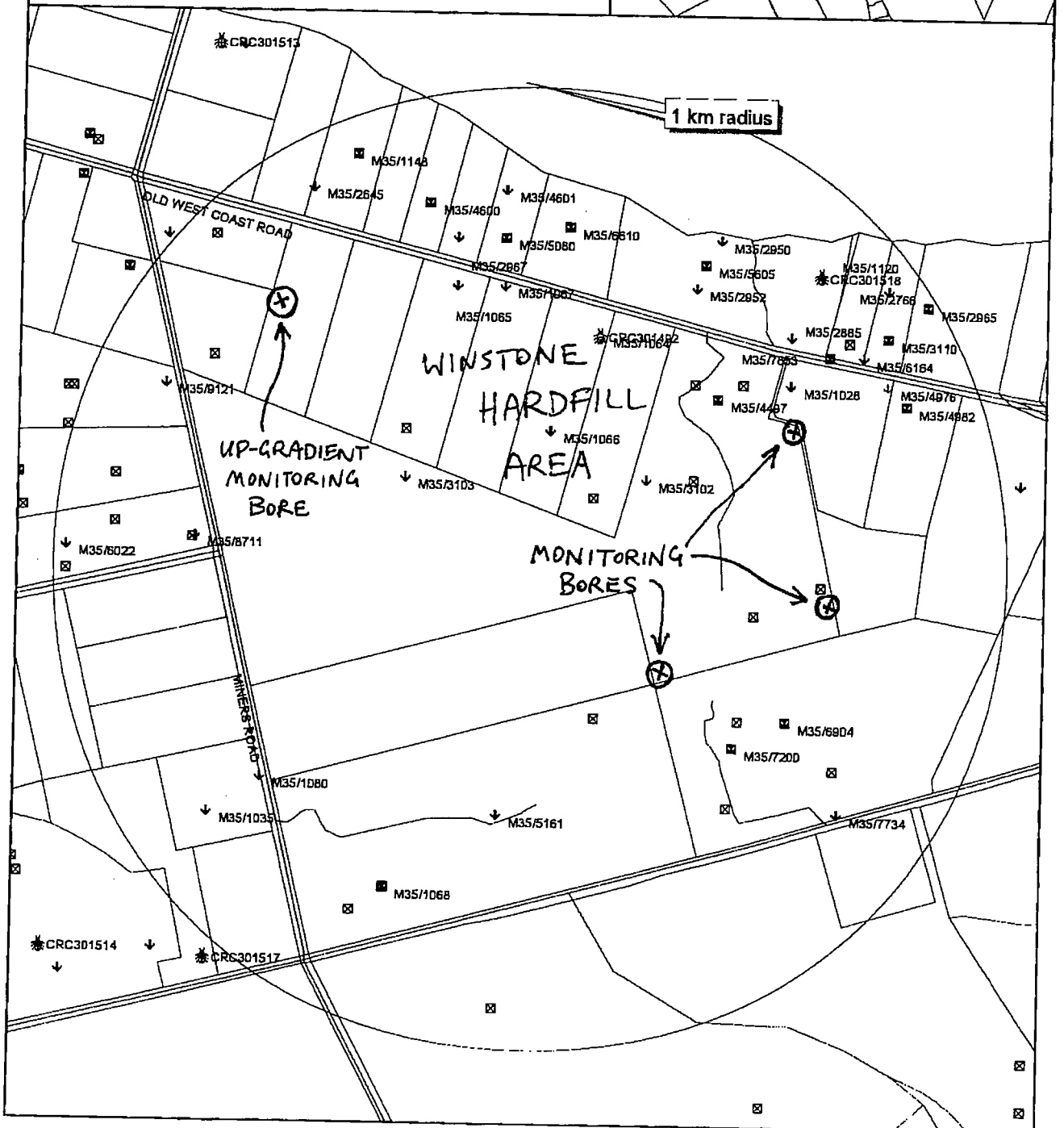
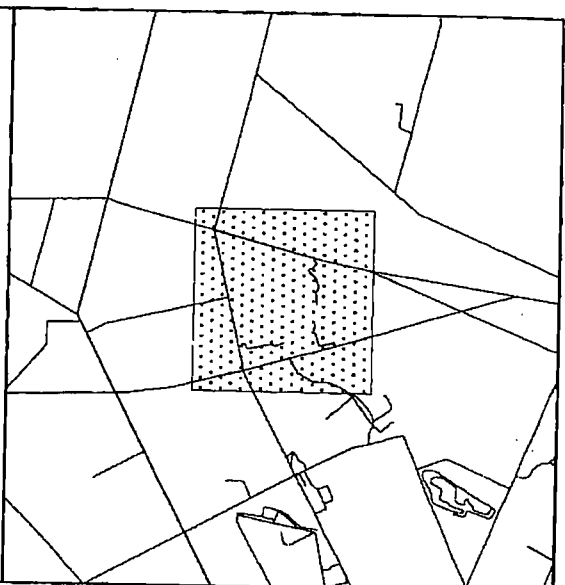
Consent locations accurate to +/-50m.

Created by the Environment Canterbury's GIS PLOT system (1999).

Created by: John Oe
Date: August 29, 2001
Scale: 1:212181

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3.1.1 Rural Q (Quarry) Zone

Updated 14 November 2005

(a) Any rural activity, mineral extraction activity or other activity which complies with:

- all of the development standards under Clause 3.2;
- all of the community standards under Clause 3.3; and
- all of the critical standards under Clause 3.4

shall be a **permitted activity**.

(b) Any rural activity, mineral extraction activity or other activity which complies with all of the critical standards and community standards, but does not comply with any one or more of the development standards under Clause 3.2, shall be a discretionary activity with exercise of the Council's discretion limited to the matter(s) subject to that standard.

(c) Any rural activity, mineral extraction activity or other activity which complies with all of the critical standards but does not comply with any one or more of the community standards under Clause 3.3, shall be a **discretionary activity**.

(d) Any rural activity, mineral extraction activity or other activity which does not comply with any one or more of the critical standards under Clause 3.4, shall be a **non-complying activity** except where specified as a **prohibited activity**.

(e) Clarification of categories of activities

The standards may also specify that an activity is discretionary (community or development standards). In the case of non-compliance with a development standard, the exercise of the Council's discretion is limited to the matter(s) subject to that standard.

Notes :

- (1) Prohibited Activities relate only to buildings subject to aircraft noise in the Pound Road Block, within the 65 dBA Ldn/95 SEL dBA air noise boundary marked on the planning maps.
- (2) "Other" activities do not include mineral extraction activities in the Rural Q (Quarry) Zone.

3.4.5 Protection of groundwater - Mineral extraction activities

Updated 14 November 2005

No extraction of sands, gravels or other materials shall take place to a depth greater than 1m above maximum recorded groundwater level.

(Maximum recorded groundwater level will be determined upon consultation with the Canterbury Regional Council.)

5.5.2 Development standard

Updated 19 September 2006

Any filling or excavation which exceeds any one of the standards relating to the volume of material in column A, the depth specified in columns C or D, or the landslope in column E of Table 1, shall be a discretionary activity with the exercise of Council's discretion limited to the matter(s) subject to the standard.

The Council shall consult with tangata whenua upon any application being required under these rules for areas containing sites of significance to tangata whenua identified in Part 10, Appendix 3 of these rules.

Applicants should note that all archaeological sites (whether recorded or unrecorded) are protected under the provisions of Part 1 of the Historic Places Act 1993 and no work may be undertaken on a site until an archaeological authority to destroy, damage or modify a site has been granted by the Trust in accordance with that Act. (Variation 48)

Rule WQL-40 Excavation of land in the Coastal Confined Gravel Aquifer System, or over an unconfined or semi-confined aquifer – restricted discretionary activity

| Activity | Conditions | Restriction of Discretion | Cross reference |
|--|---|--|---|
| <p>Except where the use of land is a prohibited activity under Rule WQL63, the use of land to excavate land:</p> <p>(a) over an unconfined or semi-confined aquifer:</p> <p>(i) where the depth of excavation;</p> <p>(1) exceeds five metres; or</p> <p>(2) is deeper than the highest groundwater level which can reasonably be expected to occur at the site, based upon the relevant and available groundwater data; and</p> <p>(3) where the volume of material excavated exceeds 100 cubic metres within any consecutive 12 month period; or</p> <p>(b) within the Coastal Confined Gravel Aquifer System, where there is less than one metre of undisturbed sediment between the base of the excavation and Aquifer 1;</p> <p>is –</p> <p>(c) a restricted discretionary activity if such use complies with all of the conditions of this Rule;</p> <p>(d) a non-complying activity if such use does not comply with any one or more of the conditions of this Rule, in which case a resource consent under Rule WQL 62 is required.</p> <p>For the purposes of this rule, excavation of land does not include the drilling or disturbance of land to construct or maintain a bore.</p> | <p>1. The use of land shall not occur within:</p> <p>(a) 100 metres of the edge of any permanently or intermittently flowing river, lake; or</p> <p>(b) 100 metres of the boundary of a wetland;</p> <p>(i) listed in <i>Schedule WTL1</i>;</p> <p><i>Moderate and higher significance wetlands</i>; or</p> <p>(ii) any other wetland unless the taking, use, damming or diversion of water is permitted under Rule WTL2 or Rule WTL3; or</p> <p>(c) a Community Drinking Water Supply Protection Zone for a well listed in Schedule WQL2, or</p> <p>(d) the Christchurch Groundwater Recharge Zone, excluding the land in Zone 1C, as shown on the Map Volume Part 1- Planning Maps.</p> | <p>Environment Canterbury has restricted its discretion to the following matters:</p> <p>1. The location, extent, and depth of the excavation.</p> <p>2. Measures to avoid, remedy or mitigate any adverse effects of the activity on:</p> <p>(a) water quality;</p> <p>(b) other users of the water resource;</p> <p>(c) a site of significance to Ngāi Tahu;</p> <p>(d) an archaeological site or a site registered with the New Zealand Historic Places Trust.</p> <p>3. Measures to avoid, remedy or mitigate any adverse effects of the excavation on adjacent landowners.</p> <p>4. Measures to prevent contaminants entering groundwater via the excavation of the land, including:</p> <p>(a) restrictions on the storage and use of hazardous substances,</p> <p>(b) the management of stormwater;</p> <p>(c) preventing leakage into groundwater;</p> <p>(d) decommissioning of bores; or</p> <p>(e) monitoring.</p> <p>5. Measures needed to rehabilitate the site following the completion of the excavation.</p> <p>6. The requirement for financial contributions, or bonds.</p> <p>7. The duration of the land use consent.</p> <p>8. Review of consent conditions.</p> | <p>Policies WQL 10 WQL12</p> |
| <p>Where rule applies</p> <p>This rule applies everywhere in the Canterbury region, excluding the Coastal marine area</p> | | | |

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| Information to be provided | Notification and service |
| An application for a resource consent under this rule must meet the information requirements set out in Section 1.3.4 and Section 4.7. | In accordance with section 94D(2) RMA 1991, an application for resource consent required by this rule does not need to be notified, and in accordance with Section 94(3) RMA 1991, notice of such an application does not need to be served on those persons identified under Section 94(1) of that Act. |

Rule WQL41 Deposition of more than twenty cubic metres of material into excavated land over an unconfined or semi-confined aquifer - controlled activity

| Activity | Conditions | Matters for Control | Cross reference |
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| <p>Except where it is authorised as a permitted activity under Rule WQL 23;</p> <p>the use of land for the deposition of more than 20 cubic metres of material in any consecutive six month period where the land into which the material is deposited :</p> <p>(a) is excavated to a depth in excess of five metres below the natural land surface; and,</p> <p>(b) is located over an unconfined or semi-confined aquifer, where the highest level of groundwater which can reasonably be expected to occur at the site based upon the relevant and available groundwater data, is less than 30 metres below the natural land surface,</p> <p>is -</p> <ol style="list-style-type: none"> a controlled activity if such use complies with all of the conditions of this Rule; a discretionary activity if such use does not comply with any one or more of conditions of this Rule, in which case a resource consent under Rule WQL 59 is required. | <ol style="list-style-type: none"> The material deposited shall comprise only: <ol style="list-style-type: none"> inert materials, being rock, stones, gravel, sand, silt, clay, or soil, provided these are uncontaminated with any hazardous substances; or concrete or cured asphalt. The volume of vegetative matter in any cubic metre of material deposited shall not exceed three percent. The material shall not be deposited into groundwater. Cured asphalt shall be placed in the land at least one metre above the highest groundwater level expected at the site. A management plan shall be prepared in accordance with Section 8.1 and Appendix B of "A Guide to the Management of Cleanfills", Ministry for the Environment, January 2002. | <p>Environment Canterbury has reserved control over the following matters in imposing any conditions :</p> <ol style="list-style-type: none"> Measures to prevent unauthorised deposition of material onto or into land. Implementation of the management plan. Records of material deposited. The monitoring of the activity and its effects of the activity on groundwater quality. Measures to avoid, remedy or mitigate any adverse effects of the deposition on: <ol style="list-style-type: none"> the use of groundwater for drinking water for humans, including community drinking water sources, or stock; and the future use of the site or any exposed groundwater on water quality. | <p>Policies WQL6 WQL8 WQL10 WQL12</p> |

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| <p>Information to be provided</p> <p>An application for a resource consent under this rule must meet the information requirements set out in Section 1.3.4 and Section 4.7.</p> | | | |
| <p>Rule WQL59 Use of land for certain activities - discretionary activity</p> | | | |
| <p>Activity</p> | <p>Conditions</p> | <p>Discretion</p> | <p>Cross reference</p> |
| <p>The following uses of land are discretionary activities, and require a land use consent:</p> <p>The use of land which may result in the discharge of nitrate-nitrogen into groundwater in Zone NN or Zone 1B shown on the Map Volume Part 1 Planning Maps, except where the use of land is authorised by a resource consent granted under Rule WQL 19, that does not comply with any one or more of the conditions of Rule WQL18;</p> <p>or</p> <p>2. The use of land for a stock holding pad, stock yards, or a farm raceway used to convey cattle or deer more than twice in any consecutive seven day period, that does not comply with any one or more of the conditions of Rule WQL25;</p> <p>or</p> <p>3. The use of land to:</p> <ul style="list-style-type: none"> (a) store human or animal effluent; or (b) store organic waste from industrial or trade processes; or (c) stockpile fermenting or decaying organic matter; <p>that does not comply with any one or more of Conditions 1, 2(a), 2(b), 2(c), 2(d), or 2(f) of Rule WQL29; or</p> <p>that does not comply with any one or more of Conditions 1, 2(a), 2(b), 2(c), 2(d), or 2(f) of Rule WQL30;</p> <p>or</p> <p>4. The use of land to construct, use, and maintain a bore for any purpose other than:</p> <ul style="list-style-type: none"> (a) taking, investigating, or monitoring of groundwater; or (b) hydrocarbon exploration or production; <p>that does not comply with any one or more of the Conditions of Rule WQL35;</p> <p>or</p> <p>5. The use of land to use and maintain a bore or water infiltration gallery, for the purpose of taking.</p> | | <p>Unlimited</p> | <p>Policies</p> <p>WQL 8 WQL 9 WQL 10 WQL 11 WQL 12</p> |

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| | <p>whichever occurs earlier.</p> <p>12. Any other bore, not located in an area specified in Condition 11 shall demonstrate compliance with Conditions 1 to 10 of this rule when an application to take water from the bore under Rules WQN13, WQN14, WQN16, or Rules WQN19 to WQN23 is received by Environment Canterbury. For the purpose of Conditions 11 and 12, to demonstrate compliance with Conditions 1 to 10, a report prepared by an appropriately qualified person shall be submitted to Environment Canterbury.</p> | |
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Rule WQL40 Excavation of land in the Coastal Confined Gravel Aquifer System, or over an unconfined or semi-confined aquifer – restricted discretionary activity

| Activity | Conditions | Restriction of Discretion | Cross reference |
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| <p>Except where the use of land is a prohibited activity under Rule WQL63, the use of land to excavate land:</p> <p>(a) over an unconfined or semi-confined aquifer:</p> <p>(i) where the depth of excavation;</p> <p>(1) exceeds five metres; or</p> <p>(2) is deeper than the highest groundwater level which can reasonably be expected to occur at the site, based upon the relevant and available groundwater data; and</p> <p>(3) where the volume of material excavated exceeds 100 cubic metres within any consecutive 12 month period; or</p> <p>(b) within the Coastal Confined Gravel Aquifer System, where there is less than one metre of undisturbed sediment between the base of the excavation and Aquifer 1;</p> <p>(c) a restricted discretionary activity if such use complies with all of the conditions of this Rule;</p> <p>(d) a discretionary activity if such use complies with conditions 1(a), (b), (c), but does not comply with condition 1(d) in which case a resource consent under Rule WQL55 is required;</p> <p>(e) a non-complying activity if, with the exception of condition 1(d), such use does not comply with any one or more of the conditions of this Rule, in which case a resource consent</p> | <p>1. The use of land shall not occur within:</p> <p>(a) 100 metres of the edge of any permanently or intermittently flowing river, lake; or</p> <p>(b) 100 metres of the boundary of a wetland;</p> <p>(i) listed in Schedule WTL1; Moderate and higher significance wetlands; or</p> <p>(ii) any other wetland unless the taking, use, damming or diversion of water is permitted under Rule WTL2 or Rule WTL3; or</p> <p>(c) a Community Drinking Water Supply Protection Zone for a well listed in Schedule WQL2, or</p> <p>(d) the Christchurch Groundwater Recharge Zone, excluding the land in Zone 1C, as shown on the Map Volume Part 1-Planning Maps.</p> <p>(d) Christchurch Groundwater Protection Sub-Zone 1B or Zone 2, as shown on the Map Volume Part 1-Planning Maps.</p> | <p>Environment Canterbury has restricted its discretion to the following matters:</p> <ol style="list-style-type: none"> The location, extent, and depth of the excavation. Measures to avoid, remedy or mitigate any adverse effects of the activity on: <ol style="list-style-type: none"> water quality; other users of the water resource; a site of significance to Ngāi Tahu; an archaeological site or a site registered with the New Zealand Historic Places Trust. Measures to avoid, remedy or mitigate any adverse effects of the excavation on adjacent landowners. Measures to prevent contaminants entering groundwater via the excavation of the land, including: <ol style="list-style-type: none"> restrictions on the storage and use of hazardous substances; the management of stormwater; preventing leakage into groundwater; decommissioning of bores; or monitoring. Measures needed to rehabilitate the site following the completion of the excavation. The requirement for financial contributions, or bonds. | <p>Policies WQL 10 WQL 12 WQL 13 WQL 14 WQL 18</p> |

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| <p>under Rule WQL 62 is required. For the purposes of this rule, excavation of land does not include the drilling or disturbance of land to construct or maintain a bore.</p> | <p>(e) <u>Christchurch Groundwater Protection Zone 1, Sub-Zone 1A, 1C or 1D as shown on the Map Volume Part 1- Planning Maps.</u></p> | <p>7. The duration of the land use consent. 8. Review of consent conditions.</p> | |
| <p>Where rule applies This rule applies everywhere in the Canterbury region, excluding the Coastal marine area</p> | | <p>Notification and service In accordance with section 94D(2) RMA 1991, an application for resource consent required by this rule does not need to be notified, and in accordance with Section 94(3) RMA 1991, notice of such an application does not need to be served on those persons identified under Section 94(1) of that Act.</p> | |
| <p>Information to be provided An application for a resource consent under this rule must meet the information requirements set out in Section 1.3.4 and Section 4.7.</p> | | | |

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Rule WQL42 Use, including storage or removal of an underground container used for a specified hazardous substance - permitted activity

| Activity | Conditions | Cross reference |
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| <p>The use of land for the use or removal of a container, or part of any container, located in or under land that is, or has been, used to store any of the following substances:</p> <ul style="list-style-type: none"> (a) petroleum hydrocarbons, including those for cooling purposes, but excluding liquefied petroleum gas, (b) chlorinated hydrocarbons, (c) agrichemicals, (d) timber preservatives, or (e) any other substance containing, arsenic, cadmium, chromium, cyanide, lead, mercury, nickel, or selenium; <p>where that substance is a hazardous substance and is classified under the Hazardous Substances and New Organisms Act 1996 with an ecotoxicity classification of 9.1A, or 9.1B, or 9.1C;</p> <p>is -</p> | <ol style="list-style-type: none"> 1. The alteration of a container is limited to the repair or replacement of, or part of, any pipe, tap, valve, hose or other fitting that is attached to the container. 2. (a) If any inventory control undertaken in accordance with Section 13.2.4.2 of the 'Controls for Stationary Containers for Hazardous Liquids and Gases' (February 2004), shows a discrepancy of greater than 0.5 percent of product, Environment Canterbury shall be notified within two working days. If requested, a copy of the most recent stock reconciliation shall be provided to Environment Canterbury within five working days. (b) <u>Within Christchurch Groundwater Protection Zones 1, or Sub-Zones 1A, 1B, 1C or 1D, if a discrepancy is identified as a result of condition 2(a), the container shall immediately be tested to detect any leakage of contaminants. The results of the leakage test shall be forwarded to Environment Canterbury within two working days of the results becoming available.</u> 3. The container shall be tested to detect any leakage of contaminants within two years of this rule being notified and thereafter, <u>or if the container is located within Christchurch Groundwater Protection Zone 1, Sub-Zones 1A, 1B, 1C or 1D, within one year of the rule being operative and thereafter:</u> <ol style="list-style-type: none"> (a) a container located in: | <p>Policies WQL2 WQL8 WQL12 WQL13 WQL14 WQL15 WQL16 WQL18 WQL19 WQL20 WQL21</p> |