

Before the Hearing Panel appointed by Canterbury Regional Council

IN THE MATTER OF The Resource Management Act
1991

AND

IN THE MATTER OF Application CRC040446 by Mr &
Mrs R J & J M Meikle for a water permit to take and use
water for irrigation.

Date of Hearing: August 11th 2008

Submitters Evidence:

Due Date: Monday 18 August 2008
Extended to: Thursday 21 August 2008
Extended to: Thursday 28 August 2008

Submitter:
Gavin Simpson

On behalf of:
W A Simpson, Gavin Simpson & Springside Farms Ltd
C/- W A Simpson
10c RD
Oamaru 9491

Submission by Gavin Simpson

1. My name is Gavin Simpson. I currently run our Tokarahi property with my parents Bill & Judy Simpson. In 2005 we celebrated the 100 year anniversary of the initial purchase date. We have farmed in a district with the Meikles for much of this time. Our operation has changed over the years in response to farming & market opportunities, constantly expanding in area or infrastructure, we currently run a mixed cropping & beef operation. Reliable irrigation is the cornerstone of our production and as such we have invested significant resources to ensure we can apply the right amount of water at the correct time.

2. There are costs that must be borne by irrigators. There are the obvious capital & running costs as well as the requirement to stand up at hearings such as these and to protect the existing water allocations and investment.

Written Submission Lodged with CRC.

- We hold an existing Otago Regional Council (ORC) consent (97451) to abstract groundwater from the Papakaio gravel aquifer for irrigation.
- We understand that the Maerewhenua basin section of the Papakaio aquifer is already fully allocated.
- We are concerned that the proposed takes will adversely affect our bores, the reliability of water supply and the recharge of the aquifer.
- We are concerned that further allocations within the Maerewhenua basin may adversely affect our ability to meet the conditions of our consent relating to static water levels.
- We also note that the proposed duration of the consents is 35 years. This far exceeds our existing ORC consent of 15 years.

Our irrigation development has been progressed on the basis that the resource has been fully allocated at least until a body of data has been acquired on the aquifers performance. Should the Canterbury Regional Council (CRC) grant further water permits from this aquifer with the knowledge the ORC has already deemed the resource fully allocated, then this extra demand may mean we are unable to meet the conditions of our consent

Background

3. In 1998 submissions were called on the proposed regional boundary change which sought to extend the Canterbury Regional Council (CRC) boundary below the Waitaki river. The proposed new boundary dissected our farm. Recognising that this would impact on the complexity of the consent process relating to our farm and the water permit that we were seeking both written & oral submissions were made to the Canterbury Regional Council Boundary Change Committee during August 1998 and the months following.
4. The following extracts from these submissions relate specifically to the water allocation process.
5. Oral Submission read before Canterbury Regional Council Boundary Change Committee on behalf of William A Simpson, Judith M Simpson & Douglas J Simpson.
² "... everyone seems to be under the impression that the proposed new boundary follows the catchment boundary. This is not so. This boundary completely ignores the Awamoko that flows in to the Waitaki at Georgetown which drains

thousands of hectares. This is the true boundary of the watershed and is the divide.” between the Waitaki and the Waiareka and the Kakanui...”

6. The Awamoko is classed as below Black Point, whereas the Maerewhenua is above Black point. The groundwater crosses the boundary with no regard to the surface catchment.

7. Extract from the written Submission made by
-William Simpson, Judith Simpson and Douglas Simpson
To: The Local Government Commission
In the matter of: Canterbury – Otago Regional Boundary Appeal

³ “... Several years ago we put down a test bore and were granted a water right by the Waitaki Catchment Commission. Last year when we wanted to upgrade this water right we applied to the O.R.C. They told us the C.R.C. had the records, so we applied to them. We were told the records could not be found. We now face the considerable expense of reapplying and re-drilling...”

8. The consent process has cost us both time and money. In 1999 after the regional council boundary changes were implemented we were attempting to renew the existing Waitaki consent (WTK 846481). The Otago Regional Council (ORC) treated the application as new and required the pump test data to be re-confirmed as a condition of the application.

Water Permit ORC97451

9. W A Simpson holds a consent (ORC 97451) which was lodged in 1997. The Resource consent was publicly notified and a hearing was held in Oamaru on 31 May 2004. The panel consisted of:

- Cr N Peat (Chair)
- Cr D Harley
- Cr W McKerrow

10. Submitters in opposition were Waitaki Riverusers Liason Group Inc, Kakanui Riverwatch Inc and JR & AM Elliott (Water Permit holder). There was an opportunity for further submission after the hearing & the ORC water permit (97451) was issued on 15 September 2004.

11. Allocation Volumes

There are a number of references in the ORC 97451 decision that deal specifically with the total allocation volume and available water. The two extracts below make reference to the aquifer being fully allocated once consent ORC97451 at was issued.

⁵ORC97451 Decision on Application.
sec 5.3 Effect on neighboring bores
para 2 "... Therefore, on the scientific analysis available it is appropriate to issue the consent for the pumping rate sought, noting that this is **the last allocation** that should be made given the estimate of the safe yield from the aquifer." (emphasis added)

⁵sec 7. Conclusion
para. 3 "...with the granting of this abstraction the total take from this aquifer from the Maerewhenua Basin is 2.2Mm³. As such, based on the information available **no further groundwater** is available for abstraction from the Maerewhenua basin. (emphasis added)

12. We believe that although costly the ORC97451 decision is robust. The sole focus of the hearing was the single groundwater application ensuring that the submitters were focused on the issues surrounding groundwater. The resource officer's reports, submitter's evidence & available groundwater studies were subjected to close scrutiny.
13. Needless to say we were somewhat bemused when the groundwater specialist Mr Rekker from the ORC offered the following comment in his memorandum for CRC040446.

s42a Report Attachment 3 page25 para 2
"... Were an application for a take of similar scale and geometric setting received by Otago Regional Council, it is likely that the Council would be inclined to grant it."

14. To suggest that ORC would be inclined to grant the water permit on the basis that it was self-limiting is contrary to the experience we have had with them. We believe that had the application been processed by ORC in 2004 it would have to go through a notified resource consent process. A resource officer would prepare a recommending report. (Similar to the s42a report) taking advice from Mr Rekker as a groundwater scientist. After submissions and a public hearing it would have been the decision of a hearing panel whether the application would have been granted a water permit, not a unilateral decision by the council.

Unallocated Volume.

15. The total allocated by ORC in 2004 was detailed as 2.2Mm³ being fully allocated. This has fallen by 82,000 m³ in the current 2008 analysis. The reduction is due largely to the calculation of annual volume on the Marchwood consent (ORC 2000.336).⁶

16. There is no annual volume specified on the permit, only a monthly limit of 11,700 m³. When the yearly amount of 141,000 m³ was calculated in 2004 the monthly allocation was multiplied by a full 12 months of the year. (there is no irrigation period specified on the permit.)
17. In advising the Marchwood annual volume of 58,000 m³ (s42a Attachment 3 Table 3 (page 26) the irrigation period seems to have used a period just short of 5 months. This explains the unallocated volume between the two hearing dates.

Self-Induced & Self Limiting Drawdown

18. In his report on the Meikle application (CRC040446) Mr Rekker adds (s42a Attachment 3 para 1 (page 26)
“...On current information I have some doubts as to the capability of the bore...”
19. The following impact on groundwater storage was supplied by ORC (s42a Attachment 3 para 2 (page 25) paragraph
“... it is my opinion that the Meikle groundwater take would have only self-limited access to the groundwater storage of the wider Maerewhenua Basin due to the hydrogeology and topography around the bore site. This factor provides some comfort in allocating groundwater resource to it.”
20. This comfort is based on an assumption as to the intended surface pumping method of the applicant. Generally a 5” bore casing is the minimum required for commonly sourced submersible & line-shaft pumps. The Meikle bore has a diameter of 4”, based on this fact the ORC officer assumes a 6m maximum drawdown from a surface pump.
s42a (Attachment 3 para 2 (page 25) paragraph
“The diameter of the bore and the rate of take sought in the application imply that the bore owner expects to fit the bore with a surface pump rather than a submersible pump unit. This would nominate the maximum self-induced drawdown to approximately 6 m below bore collar.”
21. If ORC concerns as to the capacity of the bore hold true and the water drops below the 6m suction capacity of a surface pump he recommends the water permit can be revised downwards.
s42a report Attachment 3 para 2 (page 25)
“The discretion or ability to revise the maximum instantaneous and monthly maximum take rates downwards should be retained if the pumping test fails to demonstrate the ability to pump the proposed volume.”
22. We believe that if the bore failed to yield for the duration of the irrigation season then the applicants would be advised by their consultants to enlarge the bore size & install a submersible pump at 15 meters.
23. In Canterbury there were a number of submersible pumps that had to be lowered over the last few years as historically reliable bores experienced

greater drawdowns than previously recorded. Certainly the advice from our consultants was to put the pump at the bottom of the bore.

24. The CRC bore consents division processing a future request to increase the bore diameter would almost certainly fail to recognise that the 4" bore diameter played such an important role in determining the self limiting nature of the aquifer. In granting a bore consent to enlarge the diameter of the bore by as little as 1" they could unwittingly increase the potential drawdown from 6m to 15m. The comfort the self-induced limit afforded ORC in making its recommendation would no longer hold true.
25. Given the above scenario, unless a CRC water permit specifically stated that the pumping depth is restricted to 6m then the ORC assumption would no longer be valid.
 - The applicants do not state an intended pump depth
 - The s42a report makes no mention of the assumption of a 6m pumping depth but refers to the self-limiting nature of the application several times. (sec 42, 46, 47 and 50)
26. It is the 6m pump depth that underpins the self-limiting nature of the consent and if it is not detailed with a degree of importance in the CRC water permit then the only mention of this crucial assumption is buried in the ORC memorandum attached to the s42a report.
27. If the ORC officer had confidence in the aquifer being able to sustain the level of abstraction then we would not have had to suggest alternative scenarios. Simply put he does not.
28. In reality irrigators who have invested in on farm infrastructure do not give up if the bore runs dry halfway through the second or third year. They take advice from consultants and look for possible solutions. When drawing conclusions it is unwise to assume that all variables will remain the same
29. It may be possible to revisit this assumption with ORC and have them supply an analysis and of the self induced limitation based on a 15m pumping depth.

Static Water Levels.

30. We have used the theoretical drawdown analysis on neighbouring bores contained s42a Report (Attachment 3 page 24 para. 3) to assess the potential impact on the static water conditions attached to ORC97451.
31. ORC Consent No. 97451 Static Water level conditions.

Condition 3 “The Depth to the water level from the top of the bore casing shall be monitored in the irrigation season on a monthly basis, on the first two, or last two days of every month, after at least a 48 hour shutdown of the bore...”

- 32.⁴ Condition 5. The average quarterly static water level in the irrigation well must be maintained above 92.1 meters below ground Level
33. (s42a report Appendix3 page 24). The drawdown impact was calculated using the Theis Equation for two pumping durations (90 & 150 days).
34. The table 1 below applies the theoretical drawdown with an initial static level in bore I41/0044 of 88m . This was the recorded static level on September 15 2007 which was the start of the irrigation season and represents the static level of the recharged aquifer.
35. Please note that there was an error in marking the location of I41/0060C in the s42a report and the change in geographical separation will affect the calculations supplied by ORC. The bore site is approximately 400m closer to I41/0030. a total separation distance of approximately 2.35km in total.
36. However based on the initial data as presented in the s42a report the following Table 1 shows the drawdown would have a significant impact on the ability of the ORC97451 to meet the condition 5 of the consent.

Table 1

Theoretical Impact of

Application CRC040446
Bore I41/0030,

Well ID	Consent Holder	Distance to I41/0030	Theoretical Drawdown (m)	I41/0044	Altered Static Level	Static Consent Requirement (m)	Remaining Allowable Drawdown
				Static Recorded			
90 Days							
Well I41/0044	Simpson	3.62	3.9	88	91.9	92.1	0.2
Well I41/0060C	Simpson	2.75 *	5	88	93	92.1	-0.9
150 Days							
Well I41/0044	Simpson	3.62	4.8	88	92.8	92.1	-0.7
Well I41/0060C	Simpson	2.75 *	5.9	88	93.9	92.1	-1.8

*Note that this distance has been incorrectly calculated in the preparation of the s42a report. The associated water permit application for I41/0060C identifies the site as approximately 400m closer to the I41/0030 bore.

37. If this theoretical model were to hold true then the consent conditions imposed on ORC97451 would have been reached on all but one of the scenarios. This is without any self-induced drawdown.
38. This is not detailing a worst-case scenario such as a 1 in 15 year dry year. This is a theoretical inference based on pumping conditions on any given year. This is an important consideration for us.
39. We do have our reservations on the usefulness of this theoretical model given that the data is usually presented, then qualified as a highly unlikely scenario.
40. We believe that the consent conditions on ORC97451 are reasonably tight. Only when we have irrigated for a number of seasons through both wet & dry years will we as irrigators and councils have a greater understanding as to the capacity of the aquifer. Simultaneous shut-down periods would help to ensure that the static level readings under consent ORC97451 were not being affected by CRC040446 pumping.

Consent Duration

41. Our concerns relating to the duration of the consent have been documented in our written submission & in the officer's s42a report.

Conclusion.

42. At the pre-hearing I requested that commissioner Skelton ensure that CRC accessed the resources and research of the ORC to ensure that the aquifer be managed appropriately. We are pleased that this has happened.
 43. Whilst we applaud the effort we feel that the interplay between the two councils has resulted in an unusual recommendation. The ORC groundwater specialist has concerns as to the bores capability. But he has recommended that the application proceed due to its self-limiting drawdown based on his assumption as to pumping depth. .
 44. We are also concerned as to the impact that pumping may have on our bores recovery rate and levels required to meet the condition of our permit.
 45. We feel that we have raised some valid concerns about the potential to effect on the aquifer. We have indicated that these concerns may require further analysis to ensure that the conditions imposed by our water permit are not affected by additional allocation from this aquifer.
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REFERENCES

1. Canterbury Regional Council 2008 : Application CRC040446 Section 42A Officers Report – David Just.
2. Written Submission made by William A Simpson, Judith M Simpson, Douglas J Simpson. To Canterbury Regional Council Boundary Change Committee 14/08/1998. (File Ref. CRC0019 – 150261)
3. Written Submission made by the Simpson Family in 1999 to CANTERBURY - OTAGO REGIONAL BOUNDARY : APPEAL
4. Otago Regional Council Consent No: 97451 WATER PERMIT
5. Otago Regional Council Consent 97451 - Decision on Application
6. Otago Regional Council Consent No 2003.336- Water Permit - Marchwood