

**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**

**SUPPLEMENTARY STATEMENT OF EVIDENCE OF KEVIN BLIGH**

**Qualifications and Experience**

1. My name is Kevin Bligh. I hold the position of Resource and Development Planner with Winstone Aggregates. I have set out my qualifications and experience in my previous statement of evidence dated June 2008.

**Scope of Evidence**

2. This evidence is in addition to the evidence previously presented in June 2008 by the Gravel Extractors Group (“GEG”).
3. My evidence will cover the following matters:
  - Extent of resource remaining within the Quarry Zone or within consented areas owned by the GEG
  - Losses and Implications for the aggregate resource and the GEG of the predicted groundwater level rise from the amended proposal
  - Some contextual issues

**Background**

4. The gravel operators represented in the submission comprise Winstone Aggregates, Fulton Hogan, Isaac Construction and Road Metals. They are not all the gravel extractors in the area and I suspect the lack of involvement from others

does not reflect that they have no concern for the loss of the resource – but simply that the issue has remained undetected or was unclear to them, prior to the close of original submissions.

5. Further discussion has occurred between the GEG and Central Plains Water Trust (“CPW”) following modifications to the CPW proposal to remove the proposed storage, and associated changes in predicted groundwater increases.
6. My understanding of the amended CPW Proposal is that groundwater levels within the land owned by the Gravel Extractors Group are now expected to rise in the order of up to 1-1.5 metres. Although I note it is less than the increase originally predicted of up to 2 metres, this is still a significant increase in groundwater levels.
7. Despite the fact that we have engaged with CPW in discussions, no acceptable way has been found of modifying the CPW proposal so as to remove the effect on our operations.
8. The area of resource remaining within the Rural Quarry Zone and within consented areas owned by the GEG is currently in the order of 400 ha as follows:

Winstone	35ha
Isaac	270ha
Road Metals	15 ha
Fulton Hogan	80ha

9. In addition to these areas, there also exists large areas of resource owned by other operators either consented or zoned for quarrying.
10. As had been discussed previously, all these quarries are restricted in the depth they can quarry by limitations on quarrying depth being tied to the highest recorded groundwater level as held by ECAN records. These limitations are either in resource consents or the Christchurch City Plan as discussed in my previous statement of evidence.
11. I am aware that CPW representatives consider that by the time the scheme starts the quantities of gravel within the Quarry areas discussed above may be considerably reduced.
12. However, even based on a start date of 2014 (5 years hence), it is anticipated that the areas of remaining resource within the quarries in paragraph 5, will still be in the order of:

Winstone	26ha
Isaac	220ha
Road Metals	13ha

13. A rise in the order of 1 – 1.5 m could reduce levels in the Winstone, Road Metals and Fulton Hogan pits by approximately 20% of the available resource. The rise in ground water levels at the Isaac Quarry is likely to be of a lesser physical increase because of the distance it is located from the irrigation proposal. The depth of the resource at their site is much less than the other quarry sites and accordingly the loss of resource from even a small increase in groundwater levels is likely to be of the same magnitude in terms of percentage of resource lost.
14. In this respect it is understandable why someone taking a rather simplistic view of the situation would consider that as time goes by, the potential for the loss of resource from the existing quarries will diminish. In reality however, there will still be considerable levels of resource remaining within these pits once the scheme is implemented, if indeed consents are granted.

#### Losses

15. Working on a loss of 1 – 1.5 metres of processable resource over an area of 110 hectares, and 0.5 of a metre at the Isaac site, the estimated loss of resource were the groundwater levels to rise as predicted, would be in the order of approximately 2.75 million BCM (Bank Cubic Metres) or 3.43 million LCM (Loose Cubic Metres) resulting in a considerable loss of resource life. Based on an average selling price of \$15/m<sup>3</sup>, this would result in a direct loss of revenue in excess of \$50 million dollars.
16. 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 properties should groundwater levels rise as predicted. The ground level of the pits currently excavated would have to be raised by the equivalent of any groundwater level rise to ensure, compliance for ongoing cleanfill operations and to prevent water management, stockpiling and processing areas from being inundated when groundwater levels are high.
17. Raising floor levels will also be necessary to overcome the loss of useable land areas should these be flooded. It needs to be realised that the quarries are likely to continue to be used for aggregate processing and distribution or some other purpose after the on-site resource has been depleted. To have the floors of these sites fill with water would prevent such a use. Without raising site levels above the water table, the worked out quarry areas will have very limited uses as they will be inundated on an intermittent or permanent basis.
18. To raise the ground levels further reduces the life of the quarries for aggregate supply to the construction and roading markets. I have estimated the direct cost of raising ground levels to be approximately \$4 per BCM. This cost is made up

of the significant machine and labour costs of excavating and placing this material.

19. 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.
20. The only other possible option to raising the ground levels across these sites would in theory be to pump these areas constantly; however this comes with its own practical difficulties.
21. We have not factored in the historical use of the quarry sites for the deposition of cleanfill and other material. This will raise potential liabilities for the quarry owners in terms of the remediation of the site.

#### Contextual issues

22. Since the start of the CPW issues we raised the issue of the precious nature of the aggregate resource and the difficulties of relocating outside the Rural Q Zone. Nothing has changed in that regard. Infrastructure projects – particularly roading projects – have been announced since the original hearing and the demand for aggregates of sufficient quality will be in high demand over the medium term. Christchurch City has not made any further provision for the extension of the Quarry Zone and the river resource, to my limited knowledge will never be a substitute for the dry land operations.
23. The GEG has been working with CPW to try and resolve its concerns and will be continuing to do so. With respect, I am disappointed that CPW has to date appeared to give little consideration of how the concerns of the GEG can be resolved. In the absence of the parties being able to resolve the matter together, it is important to realise that even if the CPW project takes some years to become operational, the loss of aggregate resource will still be very significant. The potential contribution from the large land holdings owned by the GEG to the City's infrastructure development will be significantly compromised.

#### **Conclusion**

24. It is somewhat simplistic to assume that the scheme will have very little effect on the quarries simply due to the time lag to the scheme commences. The resource levels within the quarries will still be of considerable magnitude once the scheme commences and regardless of this, the land holdings themselves are likely to continue to play a key role in providing for the City's infrastructure needs well into the future.