

IN THE MATTER

of the Resource Management Act 1991

AND

IN THE MATTER of Proposed Private Plan Change 2 to
the Hamilton City Operative District
Plan: Te Awa Lakes Private Plan
Change

**JOINT STATEMENT OF REPLY EVIDENCE OF KORI LENTFER AND BERNIE MILNE FOR THE
APPLICANT**

(INPUTS INTO INDUSTRIAL FEASIBILITY ANALYSIS)

28 NOVEMBER 2019

1. INTRODUCTION

- 1.1** Our full names are Kori Alfred Warren Lentfer and Bernard Jack Milne.
- 1.2** Kori has the qualifications and experience set out in paragraphs 2.2 to 2.6 of his separate statement of evidence on geotechnical issues, and Bernie's qualifications and experience are as set out in section 2 of our earlier joint statement of evidence dated 29 October 2019.
- 1.3** We both reconfirm that we have read the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2014 and to the extent that we are giving expert evidence, have complied with it in preparing this evidence. We confirm that the issues addressed in this evidence are within our areas of expertise and we have not omitted to consider material facts known to us that might alter or detract from the opinions expressed in our evidence.

2. SCOPE OF EVIDENCE

- 2.1** We have been asked to provide evidence in response to the statement of Michael Martin of Babbage Consultants for Fonterra Ltd in relation to his comments on our inputs into the industrial feasibility analysis undertaken by Martin Udale of Essentia Consulting Group.
- 2.2** At section 6 of our joint statement, we recorded our responses to a list of queries raised by Mr Martin at a meeting we had with him and representatives of the Applicant just prior to the deadline for the Applicant's primary evidence. We refer to and rely on those responses here.
- 2.3** However, and to the extent that Mr Martin's evidence addresses matters which we have not yet responded to and which sit within our areas of expertise, we comment below by reference to the relevant paragraph number. To the extent that Mr Martin raises queries outside our areas of expertise, we refer to the reply evidence of Messrs Udale and Millard.

3. RESPONSE TO SUBMITTER EVIDENCE

Fonterra

Paragraph 3.12 to 3.13: Quarry Remediation & Uncontrolled Fill in Water Bodies

- 3.1 Paragraph 3.13 of Mr Martin's evidence contends that settlement from fill material would form large depressions, which would fill with surface water and render them unsuitable for pastoral use, and that any such outcome would be inconsistent with the intent of the quarry consent conditions.
- 3.2 We refer to the reply evidence of John Olliver, given earlier in this hearing, which confirms that the formation of lakes has always been a part of the rural remediation plans under the existing resource consents. On that basis, we do not see any reasons to change our earlier opinion, and there are no additional costs to be factored into the rural remediation estimate.
- 3.3 The quarry remediation to pasture land of those areas that require remediation would not include placement of deep fill. It is unlikely that more than 2m of fill will be placed, therefore it is unlikely that there would be large settlement that would create depressions. The removal and reconditioning of existing uncontrolled fill is cost prohibitive and unnecessary in light of Mr Olliver's advice above in relation to the lakes. In any event, if there was settlement the depressed area could be "topped up" to level, or the land could be left as is, so as to form a small pond or wetland.
- 3.4 Neither of these outcomes would lead to the increase in costs suggested by Mr Martin.

Paragraph 3.16: Earthworks Cut to Fill Volumes

- 3.5 Paragraph 3.16 of Mr Martin's evidence queries whether the volume of earthworks required to meet the consented maximum grade of 1v to 6h is sufficient. Mr Martin states that over 2km of the site contains banks that are steeper than this.
- 3.6 Whilst the consent requires a maximum grade of 1v to 6h, based on advice from Mr Olliver we understand that this resource consent requirement applies only to the pastoral use areas of the site, and not the gully banks or the lake edges. This is apparent in the original end use plan relied upon by Mr Martin, which itself indicates gully banks.

3.7 Based on this understanding, the earthworks required from the current situation is limited to localised smoothing of small areas. We are comfortable with the volume of earthworks proposed, but note that Andrew Millard has undertaken a sensitivity analysis by increasing the cut depth to an average of 1m across the area to be remediated which does not result in any material difference to the costs of rural remediation.

Paragraphs 3.19 – 3.23: Industrial Development, Stormwater Swale

3.8 Paragraphs 3.19 to 3.23 of Mr Martin's evidence contend that the central swale for the indicative industrial development is not required and that removal of the swale would result in significant cost savings. It is further contended that stormwater quality control could be provided by treatment devices on individual lots, within roads and / or via the wetland in the southern gully.

3.9 The central wetland swale serves both a conveyance and a treatment function. It could indeed be removed, but alternative methodologies would be necessary to achieve the same environmental outcomes, and the pros and cons of that are not fully recognised in Mr Martin's evidence.

3.10 It is not contested that water quality treatment for the southern part of the site could be addressed via the southern gully. However, the removal of the central swale would need to be offset by a wetland to provide water quality treatment for the remainder of the site and the costs of this have not been appropriately recognised in Mr Martin's evidence. Conventionally, the area required for water 'quality' treatment is greater than that required for 'quantity' treatment. Therefore, the discussion whether the swale provides for quantity management is irrelevant with respect to land occupied and construction costs, as it would have to be replaced by a wetland. It is debateable therefore the extent to which the swale removal would make additional land available for development. A swale also has the added advantage of serving as a conveyance device, in addition to a treatment device.

3.11 The contention that stormwater quality control could be provided by treatment devices in individual lots is not supported by the evidence. In our experience, that approach has been deemed unacceptable by Waikato Regional Council who traditionally require treatment devices to be vested as public assets. That is not to say that individual

treatments cannot be contrived, but it is unlikely to be supported by the Regional Council as a default option.

- 3.12 Reliance upon roading reticulation in lieu of the central swale is not fully supported either. Although technically feasible, pipe sizes within the road would need to be increased to be able to take the additional flow that would otherwise have been conveyed in the swale. Also, additional earthworks would be required to provide sufficient fall within the road to convey overland flow adequately.
- 3.13 Overall, we believe that costs associated with the proposed swale and the alternative wetland proposed by Mr Martin are broadly comparable. But we do not support the \$1.625 million additional revenue cited in paragraph 3.23 of Mr Martin's evidence because it fails to take into account the additional wetland costs that would be necessary in replacement of the swale, and the additional land that would be required.
- 3.14 We have also read the draft reply evidence of Ms Rhynd, who will giving evidence later in this hearing, in relation to Mr Martin's comments in relation to the Stormwater Management Plan prepared for the Te Awa Lakes Plan Change. Ms Rhynd has confirmed that the Stormwater Management Plan prepared for this process "*bears no correlation to the indicative design for the stormwater swale shown on the plans attached to the industrial feasibility analysis. As such, the paragraphs of the Stormwater Management Plan are not relevant to the analysis Mr Martin was requested to undertake by Fonterra*". The two are not related in any way, shape or form.
- 3.15 She goes on to say that "*A stormwater management plan was not developed for the industrial scheme plan which has been presented in the industrial feasibility analysis. A stormwater management plan for an industrial development, whilst applying the same management strategy, could have included vastly different best practicable options than those proposed for the Te Awa Lakes Stormwater Management Plan*".
- 3.16 To the extent that Ms Rhynd discusses matters within our areas of expertise, we agree with her conclusions.

Paragraph 3.24: Industrial Development – Finished Floor Levels

- 3.17 Paragraph 3.24 of Mr Martin's evidence contends that the proposed freeboard of 0.6m is conservative for an industrial development and could be reduced by at least 0.3m.

3.18 Bernie disagrees with Mr Martin's assertion because the minimum level used for surface calculations is RL 16.0m, and not RL 16.5m as wrongly stated in Mr Martin's evidence. The indicated minimum floor level is RL 16.5m. The proposed surface slopes upward from the swale at 0.5% therefore the surface is at its absolute minimum, assisted by the swale which allows the minimum level to be transferred across the whole site. In our opinion, therefore, the calculations in paragraph 3.24 of Mr Martin's evidence are flawed and there can be no additional savings to earthworks volumes.

3.19 Additionally, we note that the 1% AEP flood level for the site has been revised to 16.13m. Consequently, the proposed levels are much closer to the 1% AEP than first considered. There is no justification to lower the levels further.

Paragraphs 3.25 – 3.28: Industrial Development – Road Subgrades

3.20 Paragraphs 3.25 to 3.28 of Mr Martin's evidence contends that the allowance for subgrade improvement is overly conservative. We disagree with this for the following reasons.

3.21 Mr Martin states that more than half the roads will be constructed in controlled fill. The proposed structural fill, including the structural cap (top 2m of fill) and road subgrade material would need to be different material. In the assumed design, the structural cap would comprise mainly silt overburden which makes up most of the cut material on site. Our experience is that silt does not perform well under roads therefore subgrade improvement material (SIM) will be made up of sand. The proposed 2m is a conservative SIM thickness but is considered appropriate given the site soil variability. That being the case, we doubt that the cost savings in paragraph 3.28 of Mr Martin's evidence are practically achievable.

Paragraph 4.1: Cleanfill Operation

3.22 Paragraph 4.1 of Mr Martin's evidence contends that the industrial feasibility assessment failed to consider use of the quarry as a cleanfill site, which could have significantly reduced earthworks costs.

3.23 The importation of cleanfill to the former quarry site was considered as an option, but was discounted for the following reasons;

1. The time taken to import enough material, 10-15 years, is too great. A cleanfill operation requires full time staff and machinery, and is subject to considerable environmental monitoring and control. Bernie was advised by Perry's quarry operations team, at the time the option was raised, the costs to operate the site as a cleanfill facility were not insignificant. The quarry operations team had a good understanding of cleanfill operations and costs (including market rates), as part of the ongoing operation of the quarry.
2. The cleanfill material imported to site while the quarry was in operation is generally poor and would require considerable effort to conditioned (dried) for use as structural fill. It was considered that more than 50% of imported material would be unusable as fill, thereby creating a problem of what to do with the unsuitable material. It is also very difficult and likely impractical to segregate suitable from unsuitable materials.
3. A cleanfill operation works in conjunction with a sand quarry as cleanfill is back loaded to the quarry when sand is needed on a site, generally this is associated with undercutting. Without sand being available it is unlikely the site would present an attractive cleanfill option because operators would simply deposit cleanfill at the sand quarry they were using, rather than undertake two trips (one to deposit cleanfill, the other to collect sand).
4. Importation of cleanfill would not have been possible in winter months due to the inability to condition and dry the material before being used. This would have exacerbated the timeframe needed to re-purpose the quarry for alternative purposes.

3.24 It is our opinion therefore that as a cleanfill would not operate, there would be no cost saving for the purposes of the industrial feasibility analysis.

4. CONCLUSION

4.1 Having reviewed the evidence of Mr Martin, we remain of the opinion that from a geotechnical and civil engineering perspective the work we undertook is of a satisfactory standard and level of detail to support the industrial feasibility assessment.

Kori Lentfer & Bernie Milne

28 November 2019