410 Colombo Street, Sydenham
PO Box 13960, Christchurch 8141, New Zealand
**T:** +64 3 366 3521 // **F:** +64 3 366 3188
**E:** info@beca.com // **www.beca.com**

Water New Zealand
PO Box 1316
Wellington 6140
New Zealand

30 March 2017

**Attention: Nick Walmsley**

Dear Nick

**Beca Submission on Water NZ's Draft Organic Waste Products Good Practice Guide**

# 1 Introduction

Water New Zealand (Water NZ) has undertaken a review of the 2003 Biosolids Guidelines and this has resulted in the development of the new Draft Water New Zealand Good Practice Guide (Good Practice Guide) for the Beneficial Use of Organic Waste Products on Land. This draft guide was released for public comment in December 2016 and a series of four consultation workshops were held in Hamilton, Palmerston North, Christchurch and Queenstown in early 2017.

Beca Ltd (Beca), is a leader in water and wastewater engineering, construction, and operations. We provide consulting engineering services and full project delivery to the water and wastewater industry. Our delivery to municipal clients in New Zealand is via CH2M Beca Ltd, a joint venture company with CH2M Hill Ltd, one of the world's largest water and wastewater consulting companies.

Beca has in-depth technical experience on processing and disposal of biosolids in New Zealand. Our submission draws directly on our wide experience as designers of municipal and industrial facilities that produce wastewater sludge and biosolids.

# 2 General Comments

Currently the organic material produced by industry, primary producers, and municipal wastewater treatment plants is viewed as a waste, and only suitable for disposal. However, much of this material contains valuable compounds that can be beneficially used. The 2003 Biosolids Guidelines provided an initial framework for biosolids reuse however, over time, significant limitations were identified.

- Overall Beca supports Water NZ's review of the 2003 Biosolids Guidelines to address the limitations as a step in the right direction. Our review of the draft Good Practise Guide has identified issues that require further consideration and we recommend some fine-tuning of the draft Good Practise Guide prior to finalising
- The draft Good Practise Guide states it is a living document and thus creates the expectation that that changes will be made to reflect improvements to best practise and the ever increasing knowledge base. Thus we recommend Water NZ clearly describes the method for revision and updating, including a maximum length of time between reviews.

- General consultation on the draft Good Practise Guide was carried out at four sessions at locations across New Zealand (Queenstown, Christchurch, Palmerston North and Hamilton). Beca attended all four sessions, as we carry out work on biosolids projects across New Zealand. Attendance at the consultation sessions was variable. It is not clear what other consultation has been held with key industries (companies of groups) or with regulatory/government authorities (local and central). There was no indication on the degree of specialist input outside the project steering group. We recommend that wider consultation is undertaken, with more geographic locations and wider industry and regional government involvement.
- The purpose of the finalised Good Practise Guide is to provide national level consistency, thus enabling decision making at local government level. We recommend that, prior to finalising, effort is put into confirming alignment and consistency with other national level guidelines and legislation. We also recommend that an agreement is reached with all Regional Councils that they will consistently incorporate into their Regional Plans the Good Practice Guide so that there are no "cross regional boundary" issues arising from the application of the same organic solids to land areas which are in different regional jurisdictions.

## 3 Terminology and Definitions

- The term "biosolids" is specific to sewage sludge (derived from human waste) which is a subset of "organic products". We recommend including a definition for "organic products" as it is used in the Good Practise Guide.
- The terms "resource recovery" and "beneficial reuse" are not defined and we recommend that these terms are defined.
- We do not support the use of the term "waste" in the title and the first sentence of the guidelines. This immediately devalues the organic products, and implies limitations in use. Organic products can have useful properties, and can contain valuable compounds that can be extracted and sold as a product. We recommend removing the term "waste" from the title of the Good Practise Guide and, where possible, eliminating the term in the main body of the document. We recommend using the term "organic products" as this reflects the potential value that can be realised.
- We support the development of a new biosolids grading system for the Good Practise Guide. We recommend that any change in grading system nomenclature avoids confusion with the grading system in the 2003 Biosolids Guidelines. Any new biosolids grading system should avoid implying a pass / fail and should instead focus on how the biosolids can be used and the type of risks associated with their use. For example, human compared to environmental risks, or pathogen content compared to metals and organics content.
- We recommend that the Good Practise Guide terminology is consistent with other legalisation, such as RMA, HZNO and NES.

## 4 Database

- We support the development of a national dataset to provide a basis for comparative analysis, design and legislative purposes, so as to identify appropriate consent limits. The national database should reflect organic products from all sectors and the data should be assessable to all. Funding opportunities should be investigated to limit the cost of monitoring, especially on small to medium sized entities.

- Considerable detail is provided in Volume 2 for sampling procedures, but not for test methods or reporting. Testing of emerging contaminants is expensive and some are only being done by research laboratories. Standard test methods are not yet agreed and different tests are being used for the same chemicals, producing different results. We recommend a standard set of test methods be identified along with standards for reporting results, and signal that they should be uploaded to a "national organics solids database" (yet to be initiated).
- Emerging contaminants are specifically listed in Table 5.5. It is not clear how these have been selected. There is no obvious process to change and/or update this list over time as legislation changes. We suggest including information on the selection of the emerging contaminants. We recommend developing a method to update the list as more is known about these chemicals and suitable indicators are identified.
- Testing is expensive, and the cost could be prohibitive to some industries using their organic products, as opposed to disposing of them. Thus we recommend testing requirements should be targeted to minimise costs, with not all wastes tested for all of the contaminants. Furthermore we recommend adaptive testing whereby testing is reduced once the characteristics of an organic product is established.

## 5 Embedded References

- The purpose of embedded references, is to allow changes over time, as new information comes to light and best practice is updated to reflect this. However, this inherent changeability is likely to detract from using the Good Practise Guide as it creates uncertainty. It is possible for resource consent conditions to change as the embedded references are updated making consistency of compliance a challenge. We recommend that the use of embedded references be carefully considered, and only used when other alternatives are not considered sufficient.

## 6 Exclusions

- Dairy shed effluent is specifically excluded from the draft Good Practise Guide. We understand this is because Dairy NZ already has various guidelines in place for the reuse of this organic product. However, organic products from other agricultural streams are included, e.g. piggeries. We recommend that the Good Practise Guide is consistent with the Dairy NZ guidelines so that the other industries are not disadvantaged.
- Liquid organic products are excluded, as the Good Practise Guide targets only solid organic products. However, streams with a low solids concentration that can be pumped/irrigated (say less than 2% solids) and can classified as a liquid, and therefore would be excluded. Clarification to close this loop hole is required so that entities with organic solids for disposal do not get around the guidelines by simply diluting their organic products into a more liquid form.
- Liquid seaweed is excluded for the Good Practise Guide. We suggest clarifying what plant based wastes are included or excluded.

Yours sincerely
**Becky Macdonald**
Associate - Process Engineering

on behalf of
**Beca Limited**
Phone Number: +64 3 366 3521
Email: becky.macdonald@beca.com

**Copy**
Garry Macdonald, Business Director - Water, Beca Ltd