



VICTORIAN WATER
INDUSTRY ASSOCIATION INC.

"Innovation, Cooperation and Sustainability"

Victorian Biosolids Task Group

NEWSLETTER NO.2

April 2009

Purpose of the Task Group

"To serve as a task group on all biosolids related issues, including (but not limited to) working with government on the development and implementation of biosolids related management frameworks, providing advice to industry on current practices and purposed initiatives, and co-ordinating comments from the water industry."

Importantly, the additional analysis has not changed the conclusions reached and presented in the Draft Position Paper. This has meant that the previously mentioned date of having the Position Paper independently reviewed by two additional referees and completed has had to be revised. The new estimate for completion and release of the Position Paper is the end of August, 2009.

*Michael Warne,
Program Manager*

National Biosolids Research Program

Michael Warne of the National Biosolids Research Program (NBRP) reported in February that the Position Paper and final report from the NBRP would be completed by the end of March. The NBRP has been doing further work and the timing will be delayed. The following report is from Michael Warne.

Two key papers from the NBRP have been submitted for publication in international peer reviewed journals. These papers are central to the case presented in the NBRP Position Paper. The first which outlines the framework used to derive the proposed biosolids guidelines for contaminants has been accepted and published (Science of the Total Environment, Volume 407, 2545-2556). If you would like a copy please email Dr Michael Warne (michael.warne@csiro.au). The second manuscript that addressed the issue of the relative bioavailability of copper and zinc in biosolids compared to metal salts was submitted and the referees have requested some additional data analysis. This has now been done and the revised manuscript will be re-submitted shortly.

The Latest from the ABP – Allen Gale

Consultancy Projects

The Australasian Biosolids partnership (ABP) is undertaking two consultancies at present:

- ◆ A consultancy "Review of the Regulatory Environment for Biosolids in Australia and New Zealand" was recently awarded to a consortium led by PSD consulting. The intent of this project is to develop recommendations for regulatory reform which will reduce, to a necessary minimum, inconsistencies in biosolids regulation in Australia and New Zealand. The project is to be completed in August.
- ◆ A consultancy "Community Attitudes to the Use and Management of Biosolids" is currently with three invited organizations, with submissions due 1 May. The intent of this project is to provide feedback on stakeholder and community attitudes to the use and disposal of biosolids; to help support the objectives of the ABP; and to aid in the development of materials aimed at providing objective and factual information on biosolids to interested members of the community.

IWA 12th Biosolids Conference, Harbin, China

The ABP has had a platform paper accepted for this international conference in Harbin, China on 8-10 August. The paper will outline the current development of the ABP and the research and other work being undertaken. The conference presents an opportunity to showcase the work being done in Australasia in public awareness with biosolids.

ABP Membership for Your Organisation

The ABP is in the process of offering membership to relevant organizations that did not join in the initial intake. If your organization is not a member then contact Andrew Speers, ABP's Project Manager at aspeers@awa.asn.au, Tel: (02) 9467 8426.

| Task Group Members | |
|--------------------|-------------------------|
| Member | Organisation |
| Michelle Carsen | South East Water |
| Karen Campisano | Melbourne Water |
| Joanna Cooper | Office of Water |
| Hieu Dang | Yarra Valley Water |
| Allen Gale (Chair) | Goulburn Valley Water |
| Doug Gardner | Wannon Water |
| Win Laing | Sustainability Victoria |
| Stephen Lansdell | EPA Victoria |
| Michael Naughton | Barwon Water |
| Steve Shinnners | Gippsland Water |
| Sam Wilkinson | VicWater |

The 5 Key Issues – Current Status

The Biosolids Task Group investigated 5 key issues for biosolids management. The issues and current status are:

- 1) **Sustainability Template** – the task group undertook to develop a sustainability template for assessing biosolids management projects. In the meantime, WERF produced an extensive document that appears to meet all our needs. A report on the WERF tool is included in a separate report by Steve Shinnners in this newsletter.
- 2) **Regulations & Reporting** – the aim is to establish consistent reporting requirements and measures across regulators. The task group has developed a reporting template, and is in the process of consulting with regulators about reporting needs and current KPI's to establish the base from which to develop improvements.
- 3) **Strategies/Policies** – the aim is to raise with government the need for clear directions for biosolids management. As a first step a letter has been sent to EPA by VicWater raising the urgent need for a review of Victoria's biosolids management guidelines and offering to provide industry support.
- 4) **Quality of Product/Risk** – the aim is to establish the risks with biosolids management and the appropriate quality to ensure satisfactory management of these risks. A scope of work for this project is currently under development. No further work will be done on developing the scope until the ABP regulations review is complete and then a gap analysis will be undertaken to determine the final scope of the project.
- 5) **Communications** – the aim is to develop communications guidelines to assist the biosolids management industry in Victoria to establish protocols that facilitate the beneficial reuse of biosolids in a safe and sustainable manner. It was resolved that this will be led by the ABP, with the Biosolids Task Group contributing to the Victorian and local situations.

Key Tasks for BTG

The key tasks for the BTG are:

- ◆ development and implementation of strategic advice on biosolids management for the Victorian water industry;
- ◆ identification and co-ordination of biosolids research activity in Victoria and input to national biosolids research programs;
- ◆ provision of links to the Australasian Biosolids Partnership;
- ◆ provision of links with regulators; and
- ◆ consider the implications of the findings of the National Biosolids Research Project and implications on EPA's Guidelines for Environmental Management-Biosolids Land Applications (Publication 943).

Barwon Water VCAT Hearing – Michael Naughton

The following article by Michael highlights the long timeframe involved in going through appeals processes for biosolids management facilities and the value in preparing well for objections. The possibility of appeals should form part of any community engagement program.

The contract for the Barwon Water Biosolids Management Project was awarded to Plenary Environment (Barwon) Pty Ltd on 31st August 2007. The contract is for the design, construction, finance and operation of a thermal drying plant for 20 years, at the Black Rock Water Reclamation Plant site. Following completion of the plant design Plenary made application to the Environment Protection Authority (EPA) for Works Approval in September 2007.

In accordance with the Environment Protection Act 1970, the EPA advertised the application and invited interested persons and/or groups to make submissions. A review of the objections was held and the EPA granted Works Approval in March 2008.

Following the issue of Works Approval an appeal was lodged with VCAT on behalf of two local interest groups. A directions hearing was held in May 2008, and the VCAT hearing took 5 days during August 2008. The tribunal handed down its decision to dismiss the appeal in September 2008.

In October 2008 one of the appellants 13th Beach Coast Watch Inc. ("Thirteenth Beach") lodged an application with the Supreme Court seeking leave to appeal the VCAT decision. The matter was listed for hearing in December 2008. The hearing was essentially to assess whether there were sufficient grounds for the appeal to proceed.

The Supreme Court hearing of the appeal by Thirteenth Beach was heard in early January 2009. Justice Cavanough handed down his decision on Monday 23rd February 2009.

The judge dismissed the appeal.

There were three questions of law considered by the court:

- 1) *Whether Thirteenth Beach had an 'interest' that could potentially be unreasonably and adversely affected by the Biosolids Drier.*
- 2) *Whether VCAT erred by limiting the scope of its review to that defined by a superseded wording of s.33B of the Environment Protection Act 1970.*
- 3) *Whether VCAT imposed too high a standard of proof on Thirteenth Beach with respect to the level of certainty that the proposed facility would adversely and unreasonably affect Thirteenth Beach's interests.*

In essence the court determined:

- 1) *Thirteenth Beach had no interests that were capable of being unreasonably and adversely affected by the proposal.*
- 2) *Although VCAT's decision did erroneously make reference to superseded wording of s.33B, this was a mere drafting slip and did not establish that VCAT had failed to take the relevant provisions of the most recent version of the Act into account.*
- 3) *VCAT's decision to grant the Works Approval was consistent with the weight of evidence in support of that decision.*

Since the dismissal of the appeal by VCAT in September 2008 construction has continued according to program with completion expected in early 2010. This is a very good outcome and everyone connected with the project is very relieved to have the legal challenge resolved.



Construction of Black Rock Water Reclamation Plant

Smart Water Biosolids Research Project – Stage One – Michelle Carsen

RMIT has recently completed an 18 month project funded by the Smart Water Fund, to investigate pathogen risk of air-dried and stored biosolids. Air-drying and storage of digested/stabilised sludge is the principal method of sludge management in Victoria. Current Victorian guidelines prescribe digestion/stabilisation with a minimum storage period of dewatered solids (>10%w/w) for three years as one method of producing Treatment Grade T1 material, which can be applied to land without restrictions related to microbiological quality. It is believed that this three year period is conservative, due to the absence of applicable data at the time that the regulations were developed. In addition, there are no recommendations for air-drying and storage for restricted treatment grade products, T2 and T3. The ability to apply biosolids to land earlier will increase the nutrient value obtained from them, and this is a key driver for the work.

The project therefore consisted of evaluating the die-off of indicator micro-organisms during the sludge drying and stockpiling processes at two wastewater treatment plants with upstream

anaerobic digestion. *E.coli*, as a bacterial indicator, showed substantial die-off during the air drying process and was removed to below the T1 validation level by the end of the drying process, without any stockpile storage. *E.coli* bacteriophage was used as an indicator for virus removal and was removed to below the limit of detection by the end of the drying process (<20 PFU/100g DW). The usefulness of *Clostridium perfringens* as an indicator for protozoan pathogens was explored but the results indicated limited utility.

Based on these stage 1 results, RMIT has been granted further funding to undertake laboratory simulations of key processes, to evaluate enteric virus and protozoa removal and to provide improved knowledge of the relationships between pathogen and microbiological indicator removal and process indicators. The project will also repeat the field sampling already undertaken to assess reproducibility and monitor process indicators. Rural and urban treatment plants will be included in further field sampling. Detailed project planning is currently underway and the ultimate aim is to provide a solid evidence base for updating of EPA Publication 943 “Guidelines for Environmental Management: Biosolids Land Application” in relation to treatment grades for air-dried and stored material and verification.

For further details, please contact Judy Blackbeard (Melbourne Water) or Michelle Carsen (South East Water) who are both members of the Smart Water Fund Technical Review Committee.

Reporting Relationships

- ◆ The task group will report to the VicWater Board through the VicWater CEO.
- ◆ The task group will make recommendations on policy matters to the VicWater Board.
- ◆ The task group will report to the VicWater Council on activities considered an undertaking as appropriate.

Water Environment Research Foundation Report – Steve Shiners

The Water Environment Research Foundation (WERF) published An Economic Framework for Evaluating the Benefits and Costs of Biosolids Management Options in 2007. The methodology for assessing the sustainability of biosolids reuse options outlined in the publication may have application for Victorian water corporations. Whilst not endorsing the document, the Biosolids Task Group would like to make its existence known to

our stakeholders. Details are available through the following links:

[Publication Profile](#)

[Executive Summary](#)

The Biosolids Task Group is interested to learn if anyone has utilised the evaluation tools outlined in this publication, or any other option assessment tools, to assess biosolids reuse opportunities.

If you have, please contact Sam Wilkinson at VicWater (sam.wilkinson@vicwater.org.au).

Key Contacts

The following are key biosolids contacts for utilities and regulators across the Victorian water industry. If you have a query regarding biosolids these people should be your first point of contact. If the contact for your organisation has changed please advise Sam Wilkinson at sam.wilkinson@vicwater.org.au.

| Organisation | Contact | Email |
|-------------------------------|-------------------|--|
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