



VICTORIAN WATER
INDUSTRY ASSOCIATION INC.

"Innovation, Cooperation and Sustainability"

Victorian Biosolids Task Group

NEWSLETTER No.5

January 2010

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."

The Latest from the Australian and New Zealand Biosolids Partnership –Michael Naughton (Barwon Water)

The Australian & New Zealand Biosolids Partnership (ANZBP) Advisory Board will meet next on March 8 in Brisbane, on the first day of the Ozwater Conference. Also the ANZBP website has a new look and feel about it so have a look at www.biosolids.com.au.

ANZBP Roadshow Seminars

As mentioned previously, with the success of the New Zealand seminar, the Advisory Board has decided to hold similar seminars for ANZBP members and potential members throughout Australia. These sessions are a valuable chance to communicate outcomes from ANZBP projects to members, as well as gain feedback about the key priority areas ANZBP can add value on (e.g. emerging research needs). A very successful seminar was held in Tasmania in November 2009. The Advisory Board is organising seminars to coincide with AWA events in each state as follows:

Victoria	February (date to be advised)
Queensland	March 8 (first day of Ozwater)
South Australia	April (date to be advised)
NSW	June (to coincide with Biosolids Specialty Conference)

Regulatory Review

ANZBP has completed its review of regulations applying in all Australian states, federally and in New Zealand. This seminal document reviews and compares all directly applicable regulations, highlights any differences and explains the rationale for these differences. It also identifies whether a consistent national or regional approach to regulation is viable. A summary is available for downloading from the ANZBP website. The full report is available only to ANZBP members. Membership enquiries can be directed to: Andrew Speers at admin@biosolids.com.au or on +61 2 9467 8426.

Community Attitudinal Survey

Stage 1 of the Community Attitudinal Survey has been completed by Urbis Pty Ltd. Stage 1 of the project was a survey of key stakeholder's views on a range of biosolids issues. A final report is expected towards the end of January 2010. Stage 2 is a survey of the community generally but focused on people in affected communities. The survey will include communities across Australia and New Zealand and will include questions to identify concerns based on cultural differences that may exist.

Literature Compendium

A project to compile a Literature Compendium is about to kick off. The contractor was sourced through Curtin University and sets out to identify published work relevant to the ANZBP's activities. The Compendium will be focussed on leading-edge treatment processes from the point of stabilisation, processing and refinement, transportation, incineration and co-generation, application, and community attitudes (e.g. well received communications campaigns and those that have failed).

Legal Register

A Biosolids Legal Register is almost completed. The register will be available to subscribers and will be web based. The register will list guidelines, regulations, and legislation pertinent to biosolids management in Australia and New Zealand, together with brief interpretations.

New Advisory Board Member

Following the resignation of David Hill from Melbourne Water from the Advisory Board, another VicWater BTG member, Karen Campisano from Melbourne Water, has been appointed to the board.

For further information on the ANZBP or any of the above please visit www.biosolids.com.au or contact the ANZBP Program Manager, Andrew Speers, at aspeers@awa.asn.au

Task Group Members	
Member	Organisation
Michelle Carsen	South East Water
Karen Campisano	Melbourne Water
Luke Richards	DSE Office of Water
Hieu Dang	Yarra Valley Water
Doug Gardner	Wannon Water
Bruce Hammond	Goulburn Valley Water
Stephen Lansdell	EPA Victoria
Michael Naughton	Barwon Water
Steve Shinnors (Chair)	Gippsland Water
Sam Wilkinson	VicWater

The 5 Key Issues – Current Status

1) **Sustainability Template** – Members are encouraged to utilise the Water Environment Research Foundation (WERF) tool, *An Economic Framework for Evaluating the Benefits and Costs of Biosolids Management Options* as a template to determine the sustainability of biosolids management options under consideration. The tool is freely available to WSAA members as part of their WERF subscriber privileges. Alternatively, it can be purchased from the WERF website (www.werf.org) for USD\$50 (electronic version) or USD\$165 (hard copy).

Paul Davodelsky of PSD Pty Ltd has contacted the group, to advise that the company has developed a model for the strategic evaluation of biosolids management options. Paul can be contacted on (02) 9449 8144, should you wish to obtain further details.

- 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. Preliminary discussions with representatives of regulatory agencies have highlighted differences in what constitutes "biosolids" for monitoring and reporting purposes. Issues identified include interchangeable and inconsistent use of the terms "sludge" and "biosolids" by regulatory agencies, and different opinions regarding whether *in situ* sludge accumulation in lagoons should be included in biosolids production and reuse data.
- 3) **Strategies/Policies** – the aim is to raise the need for clear directions for biosolids management with government. The Australian and New Zealand Biosolids Partnership (ANZBP) have completed a review of Australian and New Zealand regulations relating to biosolids management (summary available at www.biosolids.com.au/aust-nz-guidelines.php). The outcomes of this review, along with key outcomes of the National Biosolids Research Program, will inform the review of Victorian strategies and policies. The Victorian review is expected to commence in early 2010.
- 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. The ANZBP review of biosolids regulations in Australia and New Zealand is considering the quality of product to be achieved to manage

risks associated with biosolids management. A gap analysis will be undertaken by the Biosolids Task Group when the report is issued, to determine if additional quality issues need to be considered in Victoria.

- 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. The ANZBP has commenced a Community Attitudinal Survey, with the Biosolids Task Group contributing contributing information and contact details relating to biosolids management in Victoria. The next stage of the survey will involve direct interviews with key community stakeholders identified through the survey.

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).

Blending biosolids with bedding material from a local Eco-shelter piggery

In November 2008 Goulburn Valley Water was approached by Enviro2100 to look at blending biosolids with pig manure and straw which would be composted to provide an organic soil conditioner - fertiliser.

Enviro2100 collects the bedding material containing straw and pig manure from a neighbouring Eco-shelter piggery. The material is windrowed and water is added to begin the biological activity and composting process.

The windrow of composting bedding material will reach temperatures of up to 70°C for a period of 10 or more days. The windrow is turned once every 1 – 2 weeks over a period of 12 – 14 weeks. This composting process is carried out in accordance with Australian standards AS4454.



Windrowed composting piggery bedding material

When the composting process is completed and the target moisture content is achieved the final product is tested to ensure compliance with EPA guidelines.

This product is currently used as an organic fertiliser and soil conditioner on broad acre crops, pastures, orchards, and for horticulture. Studies from within the industry have found that olive growers using the composted organic product were able to mechanical harvest new plantations after 3 years which is half of the usual 6 years required from a conventional olive plantation. In addition, orchardists using the organic conditioner were finding that stone fruit had increased by one size.

Studies carried out by Melbourne University at the Dookie campus found that the organic carbon content of the compost material is high and improves water holding capacity by up to 15%. It also contains many other micro-nutrients giving a complete fertiliser mix and not just the usual NPK. It is suggested that the product promotes microbiological soil activity to improve soil health and the oxygen levels in the existing soil. Trials on pasture and cereal crops have seen an increase

of up 20% in yield with increased sugar content which is a natural deterrent to pests.

Enviro2100 are now looking to enhance the organic soil conditioner by adding biosolids to the mix. It has taken 12 months of negotiating with the EPA to get approval for the trials that are expected to commence in early 2010. Enviro2100 will store and mix biosolids with the piggery bedding material on a 1:1 ratio at the commencement of the composting process.

The final product will be sampled to verify quality and application requirements in line with EPA publications 508, 943 and Australian Standard AS4454. (Typical application rate of 3 tonne/ha.)

The soil conditioner will initially be trialled onsite and, pending results of the trial, the biosolids compost mix will be sold as part of the complete soil conditioner package.

Enviro2100 is hoping to take all the biosolids Goulburn Valley Water produces and to blend it with the compost material to produce a high quality organic soil conditioner. This long term partnership would be a win-win situation for both Enviro2100 and Goulburn Valley Water.

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 and undertaken as appropriate.

The Road to Using Biosolids

Melbourne's growing stockpile of biosolids could be significantly reduced, thanks to new research from Swinburne University of Technology.

As part of a study into sustainable infrastructure, researchers determined that biosolids - by-products of the sewage treatment process

- are suitable for use as fill material in road embankments.

According to lead researcher, Dr Arul Arulrajah, the findings could go a long way to reducing the 67,000 tonnes of biosolids that Melbourne produces each year.

"We conducted tests on the shear strengths and compressibility of untreated biosolids, as well as biosolids stabilised with additives such as cement, crushed brick and lime," he said.

"We found that biosolids, stabilised with additives, are suitable for carrying the embankment and traffic load, and can be used as fill material for road embankments."

As Melbourne's population increases, finding innovative uses for biosolids is a key challenge facing the water industry.

The Swinburne researchers' solution - to combine biosolids with a crushed brick additive - has numerous environmental benefits. Not only are the biosolids being recycled, but crushed brick that would otherwise go into landfill is also being used.

According to Arulrajah, the research has shown that biosolids can provide a sustainable resource for road embankment construction in new roads, or in the repair or expansion of existing roads.

The research was supported by the Smart Water Fund, an initiative of Melbourne's water businesses in partnership with the Victorian Government.

Review of EPA Guidelines - Biosolids Land Application

What?

EPA Victoria is undertaking a review of Publication 943, *Guidelines for Environmental Management: Biosolids Land Application, 2004* ("the Guidelines") to incorporate the key findings from the National Biosolids Research Program (NBRP).

The Guidelines are to be reviewed and updated to ensure that environmental and public health risks are appropriately managed and the information remains scientifically relevant and credible.

National Biosolids Research Program (NBRP) has recently been completed by CSIRO and made recommendations relating to metal limits, associated contaminant grades and calculating application rates. The NBRP included research from study sites across Australia and input from national and international experts. It represents the most recent and robust science for understanding metal contaminant levels and their impact on calculating acceptable biosolids application rates.

The NBRP recommended:

- Lowering the current metal limits associated with the contaminant grades in the Guidelines
- Revising the format for calculating application rates based on metal limits

Other ongoing research and projects include:

- Two Smart Water Fund research programs that are currently being undertaken by RMIT and due for completion in 2011/12. These research programs are investigating pathogen die-off rates and their implications for storage requirements in the Guidelines, and nutrient uptake rates and implications for acceptable biosolids application rates. For more information visit www.smartwater.com.au
- The Review of Biosolids Guidelines conducted by PSD Consulting for the Australian and New Zealand Biosolids Partnership (ANZBP). For more information visit www.biosolids.com.au

In consideration of ongoing research EPA Victoria will complete the review of the Guidelines in 2010 with a limited scope to include the NBRP findings related to metal contaminant levels. A more thorough review will be completed between 2011/2013 following the completion of the other ongoing research and projects described above.

When?

Consultation with VicWater Biosolids Task Group to agree the need and scope of the review was undertaken during 2009. The draft Guidelines will be developed in the coming months and EPA is aiming for them to be released for consultation by 30 June 2010 and finalised by 30 September 2010.

How?

The review and update of EPA Victoria Guidelines will focus on Section 4 "Biosolids Classification", incorporating the main findings of the NBRP. We will also investigate conducting field trials of our Draft Guidelines to ensure any changes are appropriate and workable for those using and supplying biosolids.

EPA South Australia has recently incorporated the NBRP findings into their Draft Biosolids Guidelines. In updating our Victorian Guidelines, we will learn from the South Australian process and their changes.

VicWater Biosolids Task Group is a key consultee and will act as a Reference Group through the updating process. Wider consultation will take place with other stakeholders and include an open workshop session during the formal 30 day consultation period.

The draft Guidelines and details of the consultation process will be available through the EPA website, this newsletter and the VicWater website.

For further information please contact:

Stephen Lansdell: phone (03) 9695 269 or email stephen.lansdell@epa.vic.gov.au

Cathryn Spence: phone (03) 9695 2678 or email cathryn.spence@epa.vic.gov.au

VicWater Biosolids Webpage

The Biosolids Task Group webpage on the VicWater website (www.vicwater.org.au) has recently been upgraded to better serve the biosolids working community. The purpose of the new webpage is to provide information regarding the Biosolids Task Group and its members, provide a list of biosolids contacts across water businesses and to serve as central reference repository for key biosolids documents.

To access the Biosolids Task Group, select 'Biosolids Working Group' under the 'Task and Working Groups' drop down menu on the VicWater homepage. Alternatively, click on the following link:

[VicWater Biosolids Task Group Webpage](#)

Do you have any biosolids news to share?

If you have articles for inclusions in future editions of the VicWater Biosolids Newsletter please contact VicWater at vicwater@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.

Organisation	Contact	Organisation	Contact
Barwon Water	Michael Naughton	Lower Murray Water	Keith Neaves
Central Highlands Water	Jason McGregor	Melbourne Water	Karen Campisano
City West Water	Martin Thurlow	North East Water	Tim Clune
Coliban Water	Ross Johnson	South East Water	Terry Anderson
Dept Primary Industries	David Nash	South East Water	Michelle Carsen
DSE	Luke Richards	South Gippsland Water	Lale Rogeon
East Gippsland Water	Gary Pini	VicWater	Sam Wilkinson
EPA Victoria	Stephen Lansdell	Wannon Water	Doug Gardner
Gippsland Water	Steve Shinnars	Western Water	William Rajendran
Goulburn Valley Water	Bruce Hammond	Westernport Water	Geoff Harris
Goulburn Valley Water	Stuart Harris	Yarra Valley Water	Chris Brace
GWMWater	Debra Watson		