

THE PUBLIC AND BIOSOLIDS – COMMUNICATE OR PERISH



Paper Presented by :

Allen Gale

Author:

Allen Gale, *Director Technical Services,*

Goulburn Valley Water



*67th Annual Water Industry Engineers and Operators' Conference
Sports and Leisure Centre - Wodonga
1 and 2 September, 2004*

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INTRODUCTION

Forget the science with biosolids management – the biggest issue facing the Australian water industry is not the science; it is public perceptions and how the industry manages these perceptions.

By way of example, the USA had been “cruising” comfortably for a decade or more based on US EPA’s Part 503 (40 CFR Part 503), which was promulgated in 1993. Over the last five years, and particularly the last two, there has been a shift in public acceptance of land application of biosolids, the roles governing its application and the credibility of US EPA with respect to biosolids management.

There currently are some 40-50 separate legal and/or public challenges to land application of biosolids across the USA. There are also some very well coordinated, educated and briefed proponents objecting to land application of biosolids on a very wide scale.

Public perceptions of biosolids being a dangerous product are resulting in a flurry of activity within the USA water industry, driving the industry towards having to produce the highest quality biosolids regardless of the application. Local authorities with little qualifications in determining what is appropriate are placing significant restrictions and/or bans on land application of biosolids. The potential outcome for the USA water industry is billions of dollars of extra expenditure on biosolids management that has not been justified.

If a similar direction eventuates in Australia then there is the potential for hundreds of millions of dollars to have to be spent by the Australian water industry. Thus, making sure public engagement is done in a coordinated and professional manner is essential to ensure the water industry has appropriate biosolids management systems that not only satisfy environmental and public health requirements but also satisfy public perception requirements.

The role of the operator, particularly in ensuring the handling and distribution of biosolids is done in a high quality, professional manner, is critical.

1.0 CURRENT POSITION WITH PUBLIC ENGAGEMENT IN AUSTRALIA

Fragmented attempts have been made to get a coordinated approach across Australia to public engagement on biosolids. However, we still have a long way to go.

Within Victoria the Department of Sustainability, and the water industry recognised the need for a coordinated biosolids management strategy for the whole State. A Working Group was established in early 2001 with the following objectives:-

- “• To develop a strategy framework for biosolids management in Victoria;
- To ensure that water authorities participate co-operatively in the development of the framework, including assessment of quantities, evaluation of options and implementation of actions;
- To incorporate a process for addressing community issues and needs related to the management of biosolids.”

The outcome was a joint strategy entitled “Moving Towards Sustainable Biosolids Management – A Cooperative Venture” (Department of Natural Resources & Environment, et al, 2003). One of the proposed actions from the strategy related to community consultation. Action 5 states “Develop a framework for community consultation / awareness of biosolids management programs”.

The strategy acknowledges that: “a comprehensive, coordinated community consultation/education program, based on scientific principles is an essential component from strategy inception. The success of such a program requires involvement by all levels of stakeholders, including the Victorian government, regulatory authorities and UWSP’s (water authorities). However, individual UWSPs (water authorities) will need to engage in the more detailed community consultation/education for discrete beneficial use programs.”

A Biosolids Communications Working Group¹ was established in late 2003 with the goal of developing a communications framework and toolkit for the sustainable use of biosolids (including a recommended strategic approach) for water authorities to adopt. The outcomes from this working group are discussed later.

2.0 WHY DO WE NEED PUBLIC ENGAGEMENT?

The water industry needs to have a coordinated public engagement process because if we don’t we will lose the high moral ground to those who have fears and misconceptions of the product we are dealing with.

Public engagement begins with we in the water industry who have got to believe in biosolids and its value rather than preaching on something that we don’t really believe in. So education must begin “at home”. By way of example, I was most surprised when at a workshop of biosolids practitioners, I handed around a sample of highly stable, dry biosolids and suggested that people run their hands through the product. It was amazing, and revealing, to see how few were prepared to do so.

If we do not believe, then how can we possibly expect the general public to believe?

The financial impacts on the water industry (and ultimately the community) of, say, being forced by public perceptions to produce highest quality biosolids are enormous.

Consider the following simplistic example for Victoria, forgetting any complications from high metals content:-

- Stockpiled Biosolids 1.8M dry tonnes
- Sludge in Lagoons 0.3M dry tonnes
- Fresh (annual) Production 70,000 dry tonnes/year

Order of magnitude costs (amortised capital and operating) for different degrees of stabilisation and drying are:

- Carting and spreading stockpiled biosolids (within 80km) \$60/dt
- Solar drying, carting and spreading lagoon biosolids \$250/dt
- Drying, carting and spreading fresh production \$150/dt
- Pelletisation (lime treatment, heat drying) carting and spreading \$500/dt

It should be noted that the higher degree of treatment with pelletisation improves bacteriological “public health” quality and appearance – it does not remove the metals. Thus this additional treatment will only affect the ‘T’ component (the treatment component), the ‘C’ component (the chemical component) will not change.

The table below compares costs:

Table 1: *Cost Comparisons T2 versus T1 Biosolids*

Component	Biosolids Quality	
	T2	T1
Stockpile	1.8M x \$60 = \$108M	1.8M x \$500 = \$900
Lagoons	0.3M x \$250 = \$75M	0.3M x \$500 = \$150M
Annual Production	70,000 x \$150 = \$11M/yr	70,000 x \$500 = \$35M

Thus, in rough terms, the additional cost to the Victorian community to have all biosolids of highest quality could be in the order of \$900M to handle its stockpiled and lagooned biosolids. The additional ongoing cost is about \$25M/yr. Based on a total of about two million customers throughout Victoria this amounts to a one off payment of \$450 per customer and ongoing costs of \$12-\$15 per year.

Is this expenditure really in the best interests of the Community?

3.0 COMMUNICATIONS STRATEGY

The Victorian Biosolids Communications Working Group has developed a communications strategy and toolkit for the sustainable use of biosolids, based on the following key objectives:-

The Communications Strategy is based on the principle that each water authority should manage its own public engagement process, as the drivers for each authority and local factors will vary from authority to authority. However, an industry-wide template, with common supporting materials, will provide guidelines to ensure consistency of approach and consistency of messages from the water industry.

Components of the strategy are:-

- Objectives;
- Research and Evaluation;
- Target Audiences;
- Key Messages;
- SWOT Analysis;
- Communications Mix;
- Timing and Key Spokespersons.

3.1 Objectives

To engage the community in an open consultation process (from the early stages of the project) to determine issues, concerns and attitudes;

To raise awareness of the benefits and issues regarding biosolids recycling;

To communicate the recycling of biosolids and detail its proposed end use.

3.2 Research and Evaluation

Community attitude and perceptions regarding biosolids recycling need to be benchmarked in the water authority's local area as early as possible, as well as developing an ongoing monitoring program to track any shifts in perception and to determine any emerging issues as recycling progresses. This may consist of adding a range of questions to existing customer satisfaction monitors, or undertaking focus groups in the affected areas.

3.3 Target Audiences

There is a wide range of individuals and groups from local to national that need different messages. The primary ones are:-

- Staff and contractors;
- Community – surrounding area and the nearest urban community (at both the process plant and at the point of use);
- Stakeholders and regulators, including Local and State Government (DHS, DSE, EPA), Local MP's (& opposition members);
- Potential Recycling Markets (eg farmers).

3.4 Key Messages

All stakeholders need to be given consistent, positive messages that put biosolids and their management, into perspective. The five key messages developed by the Working Group are:-

1. The biosolids management program will enable your Water Authority to use the valuable resource of biosolids in a sustainable way that is acceptable to the community;
2. Biosolids and recycled water are the two products of the sewage treatment process. Beneficial recycling of biosolids is desirable and achievable;
3. Biosolids are a nutrient rich fertiliser and soil conditioner suitable for agriculture, forestry and land rehabilitation;
4. Returning biosolids to the environment is essential to complete a natural nutrient cycle;
5. Regulations and quality controls are in place to ensure that biosolids are fit for purpose.

3.5 SWOT Analysis

Consideration of the Strengths, Weaknesses, Opportunities and Threats (SWOT) for an individual Authority and specific application should be undertaken initially, as part of the development and implementation of a biosolids communication program.

3.6 Communications Mix

The communications mix (ie range of communications tools) will depend on the audiences relevant to a particular water authority's application. The following matrix details some suggested audiences and related objectives, messages and communication tools, which forms the basis for individual authority activities.

Table 2: Communications Matrix

Audience	Objective	Key Message/s	Communication Tool/s
Authority Staff & Contractors	To raise awareness of the benefits and issues regarding recycling of biosolids	The 5 key messages above plus <ul style="list-style-type: none"> Regulations and quality controls are in place to ensure that biosolids are fit for purpose. 	eg. Intranet, staff newsletter, information sessions, Q&As for Customer Contact Centre
Community – process plant	To raise awareness of the benefits and issues regarding recycling of biosolids (in local area) To communicate the recycling of biosolids (in local area) and detail its proposed end use.	The 5 key messages above plus <ul style="list-style-type: none"> Details of the preferred option(s) in this community. Community input and ownership required. 	Community Engagement Strategy needed. Resulting tools may include - Community Reference Group, Community Meeting, direct mail, internet.
Community – point of end use	To raise awareness of the benefits and issues regarding recycling of biosolids (in local area) To communicate the recycling of biosolids (in local area) and detail its proposed end use.	The 5 key messages above plus <ul style="list-style-type: none"> Details of the preferred option(s) in this community. Community input and ownership required. 	Community Engagement Strategy needed - Community Reference Group, Community Meeting, direct mail
Stakeholders/regulators – local government	To engage stakeholders in an open consultation process To raise awareness of the benefits and issues regarding biosolids recycling (in local area) To communicate the recycling of biosolids (in local area) and detail its proposed end use.	Details of the preferred option(s) in this community. Community input and ownership sought. Regulations and quality controls are in place to ensure that biosolids are fit for purpose.	Face-to-face meetings, media articles
Stakeholders/regulators – state government (DHS, DSE, EPA)	To engage stakeholders in an open consultation process (in the early stages of the project) to determine issues, concerns and attitudes To raise awareness of the benefits and issues regarding biosolids recycling.	Details of the preferred option(s) in this community. Community input and ownership sought. Regulations and quality controls are in place to ensure that biosolids are fit for purpose.	Briefings

Audience	Objective	Key Message/s	Communication Tool/s
Stakeholders/ regulators – local MP & opposition	To engage stakeholders in an open consultation process (in the early stages of the project) to determine issues, concerns and attitudes To raise awareness of the benefits and issues regarding biosolids recycling (in local area) To communicate the recycling of biosolids (in local area) and detail its proposed end use.	The 5 key messages above plus Details of the preferred option(s) in this community. Community input and ownership sought.	Briefings
Potential Recycling Markets (eg farmers)	To engage potential recycling markets in an open consultation process To raise awareness of the benefits and issues regarding biosolids recycling (in specific market areas).	Plus the 5 key messages above Technical information regarding the quality of product and appropriate applications. Demonstrate the benefits of recycled biosolids (economic and environmental benefits). Details of the preferred option(s) in this community. Community input and ownership sought.	Articles, one-on-one meetings, briefings, demonstrations sites and trial sites

3.7 Timing and Key Spokespeople

In undertaking communications, the following need to be taken into account:-

1. We need “unaligned experts” to deliver the messages. Closely committed water authority officers are not appropriate nor sufficiently credible.
2. When do we first engage the key people and organisations – is it right up front or part way along? It is definitely too late when the proposal has “hit the fan”.
3. We need various levels of the water industry to be delivering messages to different audiences (eg. the Australian water industry should be consulting with food and other industry associations rather than individual water authorities doing this)

The following matrix outlines a possible program and spokesperson(s)

Stage of Project	Message to Give	Deliverer	Target Audience(s)
Pre project (ongoing)	The 5 key messages	Minister/politicians/regulators/Water Industry/Authorities	Politicians, broad community, Councils,
Pre project (ongoing)	Agricultural Benefits & Examples	Primarily Water Industry with “support” from regulators, Authorities to cover local audiences	Primary producers, produce industry associations, local media

Stage of Project	Message to Give	Deliverer	Target Audience(s)
Project Development	Need for investment in sustainable biosolids management in this region (using above messages focussed on the particular region)	Individual Authority (use the most credible person with a communications ability)	Regional community in the service area, Councils, target major customers and enlist them (“gatekeepers”), local media
Options Evaluation (pre site and process selection)	We want a sustainable solution Best solution may involve trials and demonstration sites Best solution will involve compliance with national standard safeguards This is an opportunity that can lead to new business activity Not interested in a quick fix, we want the right fix, and that will take time Investigating establishment of community monitoring group Describe the evaluation/decision making process and opportunities to contribute	Individual Authority with support from regulators (possibly need independent “expert” if in house knowledge and credibility is limited)	As above plus Politicians (particularly local ones), local environmental groups and similar stakeholders
Process selection (if this stage is required)	Choice is narrowed to a set of solutions Will test these solutions via trial – reference to working examples	Authority	To all above
Preferred System	Have sustainable model Developing end use clients Locality of processing site(s) Commencing consultation with site owners and immediate neighbours Rolling out full report of evaluations to date for interested party information	Authority Regulator to endorse model Gatekeepers to endorse	Potential end users (who we want to be our gatekeepers), immediate affected neighbours and adjacent community(s), Councils
Site Chosen	End user support Specific site(s) identified and TBL assessed Special expenditure proposed to comply with regulatory requirements Recognition of immediate neighbour uncertainties Planning approval process Site operations & management controls along with quality control	Authority Regulator to endorse model Gatekeepers to endorse	Potential end users (who we want to be our gatekeepers), immediate affected neighbours and adjacent community(s), Councils
Est. Process and Appl'n Site(s)	Implementation of safeguards Commencing end user trials	Authority	End users, neighbours
Ongoing Fully Developed Operations	Satisfying TBL outcomes identified previously Meeting regulatory requirements Satisfying user and neighbour expectations Reporting on beneficial outcomes (eg. Improved land performance)	Authority Regulator (confirmation of compliance) End Users (value from the product)	All of the above

4.0 THE OPERATOR'S ROLE

There are two key aspects for operators in the strategy:

1. Under “Communications Mix”, operators need to become familiar with the product – they need to “learn to love’ biosolids. They also need to understand and spread the 5 key messages set out above, as do all other Water Authority staff.
2. Under “Timing and Key Spokespeople” the key role for operators is at the ongoing fully developed operations stage, although operator input should be sought at the earlier development stages too. Housekeeping practices, both at the biosolids processing site and the land application site, are critical for the community’s perceptions. Similarly, the cleanliness of biosolids cartage trucks and associated equipment will materially affect community perceptions. Finally, the professionalism of operators and pride in their work is a major factor in presenting the public face of the authority.

5.0 CONCLUSIONS

1. Public engagement is the highest priority for the Australian water industry for sustainable, appropriate biosolids management, and is of higher priority than technical issues.
2. An Australia-wide coordinated approach to public engagement is essential.
3. Development of appropriate supporting materials, including key messages, Q&A’s, Facts Sheets, communication programs and the use of appropriate spokespersons will assist in getting a consistent message to all stakeholders.
4. Operators have a key role to play in ensuring that biosolids management practices are undertaken in professional manner that gives confidence to the public that biosolids are a well-managed resource rather than a waste product.

6.0 REFERENCES

Victorian Department of Natural Resources and Environment, EPA Victoria, Victorian Water Industry Association, “Moving Towards sustainable Biosolids Management – A Cooperative Venture” 2002.

Notes: ¹ The Victorian Biosolids Communications Working Group comprises Allen Gale (Goulburn Valley Water) – Chair, Janice Dart (Barwon Water), Russell Worland (South West Water, Carolyn Stanford (Coliban Water), Kerrie Grenfell (Yarra Valley Water, John Hussey/Caroline Hegart (South East Water) and Sam Costello/Hamish Reid (EPA).