Water EnvironmentWEB

WEF/U.S. EPA Biosolids Fact Sheet Project

Introduction

The Water Environment Federation (WEF), an association of more than 41,000 water quality professionals, supports the beneficial use of biosolids, the organic solid residuals produced by wastewater treatment. Likewise, the U.S. Environmental Protection Agency (U.S. EPA) supports biosolids beneficial use through a policy based on extensive research This convergence of professional opinion lead WEF and U.S. EPA to work together to inform the general public of the benefits of biosolids recycling. A decade ago, the two organizations forged a cooperative agreement, in part to provide educational materials about biosolids for professionals and the general public. Among many outcomes of the cooperative agreement is the series of biosolids fact sheets presented here. This introduction explains the origins and contents of the fact sheets and includes a short discussion on the state of the biosolids debate as observed during the project.

The WEF/EPA Cooperative Agreement

WEF's longstanding relationship with U.S. EPA is formalized by a federal cooperative agreement. At the time of the agency's original biosolids regulatory initiative, agency officials determined that their support of biosolids reuse had not been effectively communicated to the public. While nearly 50 percent of biosolids material generated in the United States is beneficially used, implementation and maintenance of such projects faced significant barriers, particularly when companies proposed to transport biosolids from urban areas to land application sites in rural areas. Many barriers arose and continued as a result of a lack of data necessary to make informed decisions.

The cooperative agreement between WEF and U.S. EPA has yielded several major efforts for biosolids education. Initial projects included manuals of operations and practices for wastewater treatment plant officials. More recently, WEF published a public-relations package featuring detailed explanations of biosolids generation and management, as well as a videotape showing land application projects in Washington state and elsewhere. Federation staff conducted a national biosolids survey and created a technical advisory board to respond to questions and issues related to biosolids management.

In regard to the Biosolids Fact Sheets, WEF was asked by U.S. EPA to assemble and evaluate information fully explaining the circumstances of several specific biosolids controversies and to translate this knowledge into readily comprehensible fact sheets. Alleged problems associated with biosolids reuse require examination to confirm or refute U.S. EPA's beneficial use policy, to indicate necessary changes in practice, and to eliminate obstacles to greater acceptance of the beneficial use of biosolids.

Development of the Fact Sheets

The topics investigated in the biosolids fact sheets were selected through an iterative, reviewed process involving U.S. EPA officials and WEF committee members. The selections provide information on many recent controversies while examining a wide range of issues often called into question by citizens concerned about biosolids recycling and reuse. The underlying purposes of the fact sheets are to remove sensationalism and extraneous allegations from these stories and to examine the facts on which the cases ultimately turned.

The fact sheets' subject matter was decided by a collaborative process between U.S. EPA and WEF. U.S. EPA Office of Wastewater scientists John M. Walker and Robert K. Bastian produced a first list of potential issues for discussion in the fact sheets. A group of 19 situations was offered under the title "Candidates for the Rest of the Story." The draft memo became the basis for selecting fact sheet topics.

WEF's Residuals and Biosolids Committee circulated the U.S. EPA memorandum and made recommendations as to which of the 19 issues merited further explanation to the general public. On February 14, 1995, the committee's recommendations were sent to WEF's Public Information office. Work then began on the issue deemed most pressing by the committee, the controversy over the Merco/Joint Venture land application site in Sierra Blanca, Texas.

The remaining fact sheets were selected according to which held highest priority for the committee and provided a substantial amount of verified information. Due to court proceedings and other unforeseeable shifts, the Residuals and Biosolids Committee likely would rate these topics in a different order today. Yet, the items selected for inclusion in the fact sheet project represent a wide range of issues and concerns which should shed light on major questions surrounding the beneficial use of biosolids in the United States.

The completed fact sheets provide a valuable resource for people involved in and concerned about the beneficial use of biosolids. Each six-page case study contains an executive summary followed by a discussion of relevant scientific and regulatory issues pertaining to the case. Tables, diagrams, and maps are included to illuminate the discussion in the text. A question-and-answer section provides quick explanations of side issues in each case. Finally, a list of individuals and printed sources consulted in writing the case study may serve as a guide to further research and as an inventory of available information on each biosolids case. The finished fact sheets summarize important biosolids cases for interested readers and for officials who must answer the public's questions about biosolids safety and beneficial properties.

Significantly, the scientific truths of many of the cases examined in the Biosolids Fact Sheets were not solved by the legal system or by other investigations. Settlements and decisions often were determined before a scientifically acceptable conclusion was reached. In these instances, we have tried to explain the major theories presented at trial or in negotiation and to explain the strengths and weaknesses of each hypothesis.

Long-range plans for the biosolids fact sheets include distribution to WEF members and other interested parties. U.S. EPA will distribute the fact sheets according to the agency's wishes and protocol. Most of the source material listed in each fact sheet was collected in print form

by the authors. This material is stored at WEF offices and is available for review by researchers from other organizations.

Although the Residuals and Biosolids Committee and U.S. EPA played a strong role in creation of the biosolids fact sheets, the final documents are the product of their authors. The authors assume responsibility for the fact sheets' contents and any mistakes or omissions contained therein. David Trouba of WEF's Public Information Department wrote the fact sheet titled "Biosolids Recycling in West Texas." Kevin M DeBell, a Project Manager at WEF, wrote the remaining nine fact sheets.

The Nature of Biosolids Debates

The completion of WEF/U.S. EPA biosolids fact sheets does not mark the end of either organizations' efforts to promote the beneficial use of biosolids. More significant initiatives are necessary to generate frank discussion of biosolids-related issues and to inform the general public about beneficial use. Conversations during the information-gathering process of the fact sheet project indicate a dearth of accurate, credible, and comprehensible knowledge about biosolids, even among some of the best-informed members of the field.

Accuracy is too often a subjective matter where biosolids are concerned. Every biosolids confrontation seems to take on a trial atmosphere. Each side shapes information to yield economic and legal gain. As details of biosolids issues lose ground to more dramatic general accusations, broad description and unsubstantiated implication become the tools of argument. Many biosolids disputes are resolved, then, not on the basis of fact but according to who most artfully argues their case. Increased availability of biosolids information has not spawned a rise in the accuracy of biosolids information

The credibility of scientific data in biosolids controversies is perceived as tainted by a proliferation of paid experts. Lawyers and others retain scientists whose theories on biosolids agree with one interpretation of a case, and present such theories as incontrovertible by virtue of the expert witness' academic degree. While many scientists produce useful information on biosolids, the credibility of their scientific advances is attacked by their opposite numbers on the other side of the biosolids debate. The argument quickly becomes circular: scientists cannot defend their findings because the experiments were rigged from the start. Moreover, federal, state, and local agencies are condemned as a regulatory cabal attempting to dupe the public into accepting unsafe practices. Such accusations undermine development of a meaningful dialogue between concerned parties on both sides of the issue. Solutions to significant issues thrive primarily in open, respectful debate supported by trustworthy information.

The attempt to share biosolids information with wide audiences demands simple explanations of technical issues. Simplification often results in misrepresentation of fact. A case in point is a list of biosolids issues titled "Partial Summary of Locations Affected by Sewage Sludge" seemingly circulated nationwide. The list consists of newspaper headlines regarding biosolids. No indication is made as to whether the allegations were proved or disproved. Dates of the events are omitted, so readers cannot know how the events relate to federal or state biosolids regulations. Several incidents attributed to biosolids beneficial use - including some investigated in WEF/U.S. EPA biosolids fact sheets - were authoritatively discredited or had

nothing to do with the contents or use of biosolids. Summary documents must abbreviate events, but participants in the highly charged debate over biosolids must strive to explain events fairly and fully, and to put them in the larger contexts of biosolids beneficial use and environmental safety.

Improvements in the accuracy and credibility of biosolids information are possible. During the development of the WEF/U.S. EPA Biosolids Fact Sheets, some contributors suggested that a response team comprising soil scientists, air experts, and water quality experts should be assembled to respond quickly to allegations of harm caused by biosolids. The team would oversee gathering of samples and establishment of monitoring equipment so standardized, accurate environmental information would be readily available.

Another commenter advocated creation of a clearinghouse for biosolids information, with documentation provided by advocates and critics of biosolids use. The considerable effort spent to gather information for the WEF/U.S. EPA biosolids fact sheets indicates that a centralized depository for such material would be a valuable resource. Relevant material in important biosolids cases seems without exception to be distributed among many participants. This material needs to be collected in a single place.

The WEF/U.S. EPA cooperative agreement calls for creation of a clearinghouse for public education and informational materials. This type of information usually is quite general. Many pressing biosolids questions, however, pertain to specific cases and events. Detailed and authoritative material on such cases, as well as on individual biosolids management facilities nationwide, should comprise the bulk of information in a biosolids clearinghouse. Furthermore, participation of members from both sides of the biosolids issue is essential to the credibility of any information clearinghouse and to its utility as a research facility for legitimate investigators.

Polarization in the biosolids debate has created a critical lapse in truthful, constructive discussion of the beneficial use of biosolids. We hope that our efforts toward objectivity and wide participation in the WEF/U.S. EPA biosolids fact sheets surmount some of the barriers to discourse and provide a meaningful step toward deeper understanding of the beneficial use of biosolids.

Acknowledgments The authors of the WEF/U.S. EPA biosolids fact sheets owe a great debt to their reviewers. All reviewers volunteered their valuable time and expertise to ensure accuracy in the final products. The project was immeasurably strengthened by the kind participation of the reviewers. For this, the authors thank all reviewers, each of whom is listed on a following page.

The authors also thank the members of WEF's Residuals and Biosolids Committee, chaired by Peter S. Machno of the King County Department of Natural Resources, for their contributions to the biosolids fact sheet project. The members of the committee dedicate many long hours to their Federation duties, and rose to the call when solicited for aid in the fact sheet effort.

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Any questions or comments should be directed to the Water Environment Federation, Government Affairs Division, (703) 684-2400.

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