ENVIRONMENTAL ISSUES COMMON TO MULTIPLE SOLID WASTE MANAGEMENT METHODS

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The paper prepared by Wollschlager and Oestmann effectively focuses attention on a frequently overlooked area of waste management planning and policy implementation, i.e., the fact that all disposal options will present some level of risk to both human health and the environment. All too often recycling and composting are tauted as methods of solving the country’s solid waste disposal problem without the negative side effects of air and water pollution. In fact, in many cases, recycling and composting are suggested as wholesale alternatives which should be implemented in place of proposed incinerators or landfills. The reasoning behind such a suggestion is usually that these alternatives will not only save land and material resources and reduce energy consumption, but also they will eliminate the potential air and water emissions associated with landfelling or incineration. While it is obvious to most that some form of disposal will always be necessary for that fraction of the waste which is neither recyclable nor compostable, and some energy will always be required regardless of the type of processing, it is not so obvious that there are indeed potential air and water emissions from recycling and composting. These emissions may be small, and the risk to human health and the environment may in fact be negligible, but the risk is certainly not zero. Every activity has some risk associated with it.

The question to be asked when considering solid waste disposal alternatives is: How does the magnitude of risk from one waste disposal option compare to the risk from another? And, even more important: Are these risks significantly different? The risk from both mass-burn and RDF incineration facilities has been well documented in numerous studies and generally found to be on the order of $0.1 \times 10^{-6}$ to $10 \times 10^{-6}$.

[See for example the report by Travis and Hattemer-Frey (1988) which examined the risk assessment documents prepared by independent scientific groups for 11 municipal waste incinerators located throughout the United States.]

This level of risk is less than many of the everyday risks presented by numerous sources such as mustard, peanut butter, coffee, cola drinks, alcohol, background radiation, and secondary smoke.

Only a limited number of quantitative risk assessments have been performed to-date for pollutant emissions from a landfill. However, the indications are that a landfill with a gas collection system in place will present a level of risk similar to that of an incinerator.

[See for example the paper by Minott (1989) which compares the health risks of resource recovery to landfelling.]

The true risks associated with recycling and composting are as yet unknown. It may well be found that the risks from these activities are smaller than the risks from incineration or recycling. However, are the risks from any of these options really significant? Probably not, if modern incineration facilities with bag-
house/scrubber air pollution control, landfills with gas collection and leachate control, and well-run recycling and composting programs are compared. Therefore, Wollschlager and Oestmann are correct in recommending a balanced and integrated approach to solid waste management that considers all options on an equal basis. Incineration and landfilling should not be dismissed as less attractive alternatives than recycling and composting for reasons of health or environment.

REFERENCES


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To enhance the paper’s overall effectiveness, a few suggestions are offered.

Additional technical data to support the conclusion on recycling and composting would be beneficial. Further researching of technical data on the emissions/effluents from recycling or composting facilities may have yielded additional data to support the text on these topics. It may have been helpful to reference full scale operations currently in place as examples where data on air and water emissions could be collected. As discussed in the paper, recycling and composting are widely accepted options which are more appealing to the masses. This report presents the reader with a broader view to include the negative environmental aspects of these options. Supplemental data would support the conclusions in the text.

The results of interviews with regulatory officials on a federal, state, or local level could also have been included in this paper. Their current views and the direction of the regulatory agencies specifically regarding the environmental impacts of recycling and composting could have been presented. These interviews may have yielded pertinent information such as current studies underway or proposed studies anticipated, if any, by the regulatory agencies to generate data. Based upon these discussions, the paper could recommend necessary steps to be taken to generate data needed for further evaluation of the environmental impacts of these options.

Under the “Recycling” heading, much emphasis is placed on the remanufacturing of materials into new products. A brief comparison of the environmental impact between manufacturing of raw materials and the remanufacturing of recyclables could have been provided.

The paper states that composting can manage 40–65% of the solid waste stream. The percentages that other options such as recycling could manage should also have been presented.

In its current form, the paper is well presented and addresses some very timely environmental issues. The suggestions mentioned herein are intended to augment an already fine paper.