

WMRC Factsheet

Implementing a Pollution Prevention Program

What is pollution prevention?

Pollution prevention is any practice that reduces or eliminates the amount and/or toxicity of generated wastes released to the air, land or water before any management practices, treatment or disposal. Pollution prevention includes the design of products and processes that will lead to less waste being produced. As a total plant philosophy, a pollution prevention program examines and implements methods to reduce hazardous, special and nonhazardous waste.

Who should implement pollution prevention?

Any business that generates wastes, that want to keep one step ahead of their competitors, and that wants to improve their facilities environmental policies should incorporate pollution prevention into their business philosophy.

Why do pollution prevention?

A principle benefit of a pollution prevention program is the cost savings that can result. Also, through various pollution prevention methods such as source reduction, in-process recycling, and reducing waste stream toxicity, a pollution prevention program makes the working environment safer for all employees. Additional benefits include: protecting the environment; meeting compliance issues; reducing liability; and, promoting better community relations.

How do you start a pollution prevention program?

A pollution program is a continuous cycle through the eight continuous steps diagrammed and explained in this factsheet. Each step will help guide a company toward developing and sustaining a successful pollution prevention program.



1: Top Management Support

Begin the pollution prevention program with a corporate policy statement. This statement of commitment to pollution prevention should be endorsed by all management levels and distributed to all employees. Total company commitment generates employee enthusiasm and provides the necessary endorsement for projects developed through the program.

2: Getting Started

Develop a pollution prevention team with members from all areas and levels of the company and designate a coordinator for the team. This team sets goals, drafts a written program plan, and helps spread the word about pollution prevention to all employees. In starting up pollution prevention in the facility, include initiating employee awareness, training, and incentive programs.

3: Characterize Process

Gather background information that will help to characterize processes within the facility. This information, ranging from raw materials received to amounts of waste generated, can then be used to put together a generalized process flow diagram.

4: Assess Wastes and Identify Options

An assessment, which is a detailed study of the processes contributing to a waste stream, is then conducted. The assessment examines the processes themselves and other areas of the facility such as shipping/receiving, purchasing, and maintenance. It is important to try and conduct assessments during all shifts and at different times in the process to obtain as specific a picture as possible. Assessment results serve as the focal point for identifying options that could best reduce or eliminate specific wastes. Using the process flow diagrams and assessments as a tool, the pollution prevention team prioritizes waste streams or processes. Several factors taken into account by the team should include: type and toxicity of waste; high purchase/disposal cost; regulatory concerns; high use/release rate; potential liability; and, danger to workers and the environment. Brainstorming sessions and team discussions are productive ways to stimulate ideas for ways to change or modify processes or procedures contributing to waste generation. Technical literature and vendors can also be excellent sources of options.

5: Cost Considerations

The full cost of waste is more than just those costs associated with treatment and disposal. For example, the purchase price of raw materials, storage and inventory, air/water emissions and solid waste collections are just some of the costs that need to be considered in determining the full cost of waste. Knowing the full cost of a waste is important when determining whether a particular option under consideration will be cost effective. Each company will need to decide for itself what measures it will use to determine cost effectiveness. Nevertheless, the full cost of handling a waste should be charged back to the departments/processes that generate the waste, but not to overhead or the environmental department.

6: Select and Implement Options

Select the option to be implemented with their benefits in mind. Do they improve product quality, process efficiency, or worker safety and morale?

Do they reduce liability or regulatory concerns? Do they better relationships with regulatory agencies or the community? In addition, the options need to be evaluated for both technical and economic feasibility. Those options that are neither technically sound nor economical should be deferred into the future. Options that meet both criteria should be implemented providing capital funding, if needed, is available.

7: Program Evaluation

Periodically reevaluate the individual options implemented and the pollution prevention program as a whole, redefining goals where necessary. In addition to determining how the implemented options/program is doing, this is a good time to troubleshoot and determine why certain aspects have not worked.

8: Sustain Program

Sustain the pollution prevention program throughout the life of the facility. One key step to doing this is through publicizing success stories within the facility and company, with trade associations through case studies, and with local newspapers. Another key is to remember that at the completion of each pollution prevention project, the trip through the pollution prevention circle begins again.

Common Pollution Prevention Techniques

- ◆ Improved operating procedures
- ◆ Preventative maintenance
- ◆ Waste stream segregation
- ◆ Raw material modification/substitution
- ◆ Product redesign
- ◆ Equipment modification
- ◆ Process modification
- ◆ Wastewater reduction
- ◆ In-process recycling/reuse
- ◆ On-site recycling

For further information on implementing pollution prevention programs contact: WMRC, 1 E. Hazelwood Dr., Champaign, IL 61820, 217/333-8940, FAX 217/333-8944. Visit our home page for more information on other services at <http://www.wmrc.uiuc.edu/>