

Pollution Prevention (P2): The Basics

Ohio EPA

Office of Compliance Assistance & Pollution
Prevention

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Presentation Summary

- Why do P2?
- Definition
- P2 practices and examples
- How P2 relates to other waste reduction concepts
- P2 services
- Recognition programs



How P2 Started?

- Beyond command and control
- Toxic Release Inventory
- Waste minimization saved businesses money



Why Do P2?

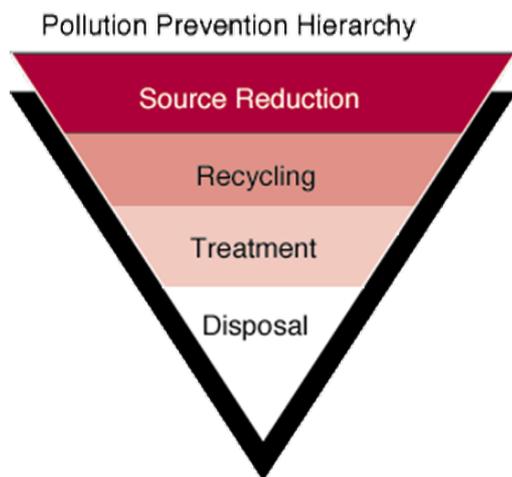
- Cost savings
- Reduce regulatory requirements
- Public recognition and other social benefits

Pollution is nothing but the resources we are not harvesting. We allow them to disperse because we've been ignorant of their value. - R. Buckminster Fuller



Federal/State P2 Laws

- Pollution Prevention Act of 1990
- 27 State P2 Laws
- Ohio P2 laws in 1988 (recycling), 1991 (planning) and 2012 (assistance)

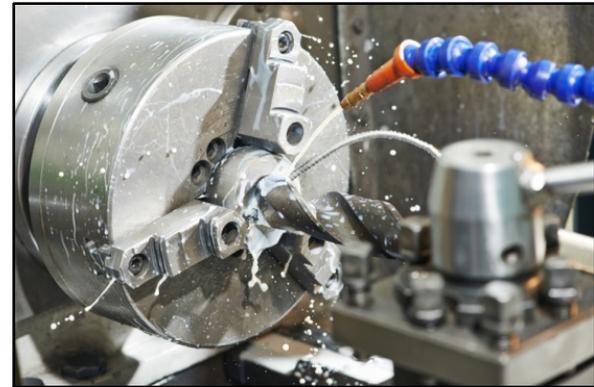


Definition of P2

- Source reduction and recycling
- Multimedia in scope
- Avoids cross-media transfers



An ounce of prevention is worth a pound of cure. – Benjamin Franklin



Source Reduction

- Less waste in the first place – reducing waste at the source of generation
- Source reduction components:
 - Product redesign or reformulation
 - Process modifications
 - Input substitution
 - Good housekeeping



P2 and Recycling

- Recycling is often considered P2
- Some related activities include:
 - Construction and Demolition Debris
 - Beneficial Reuse
 - Composting



P2 in Ohio

- Process modification
 - GM Powertrain Toledo Plant
 - Closed loop machining fluid system
 - Utilizes a “flat floor” design
 - Old system = 0.84 gallons/unit (Fluid consumption)
 - New system = 0.30 gallons/unit (**60% improvement**)



P2 in Ohio

- Process modification & input substitution
 - Crown Equipment Corp. (New Bremen, OH)
 - Installed Power Coating Line
 - Eliminated large portion of wet painting operations
 - 65% wastewater reduction & sludge (200,000 lbs.)
 - Save \$45,000 in labor, housekeeping & disposal



P2 and Sustainability

- “Development that meets the needs of the present without compromising the ability of future generations to meet their own needs”
 - Sustainable business practices increase the longevity of a business
 - Pollution prevention (P2) is the "gateway" to sustainability



Sustainability in Ohio

- GOJO Industries, Inc. – Cuyahoga Falls
 - Corporate Sustainability Goals
 - Used P2 to achieve these goals
 - P2 used to reduce solid waste and saved half a million pounds/year

Sustainable development is living on nature's income rather than its capital- Bjorn Stigson, President, World Business Council for Sustainable Development



P2 and Green Chemistry

- P2 at the molecular level
 - Design of chemical products and processes that reduce or eliminate the use/generation of hazardous substances (12 Principles)
 - Design safer chemicals and products.

If you build a better product, with superior performance and superior cost that, oh by the way, is more environmentally benign, it's a no-brainer. – John Warner



Green Chemistry in Ohio

- Product reformulation/green chemistry
 - Washing Systems, LLC
 - Eliminated toxic additive in detergent formulations
 - Meets the required cleaning performance at same cost
 - Reduced energy and water consumption by 15%.



P2 and Energy Efficiency/Water Conservation

- Energy Efficiency
 - Lighting upgrades
 - HVAC improvements
- Water Conservation
 - Flow rate reduction
 - Process water reuse



Energy Efficiency and Water Conservation in Ohio



- Defiance WWTP

- 55% energy consumption from aeration blowers
- Installed more efficient blowers (\$126,000)
- Save \$3,000 to \$5,000/month



- Frito Lay, Inc. – Wooster

- Reduced water use (39%, saved \$343,000)
 - pressure regulators
 - recycled process water



How Can OCAPP Help You?

- P2 assistance
 - E-mail/phone
 - P2 assessments
- Online resources
 - P2 documents and guidance
 - Online training and recorded webinars



Encouraging Environmental Excellence (E3) Program

- E3 Program
 - Recognizes organizations committed to environmental excellence
 - Who reduce waste, improve efficiency and work to continuously improve as an environmental steward.
 - Three levels: Bronze, Silver, and Gold



Thank You



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