

# WMRC Factsheet

## POTW Load Reduction Program

### Pollution Prevention for Industrial Users

The Illinois Waste Management and Research Center (WMRC), a nonregulatory service organization affiliated with the University of Illinois, has developed a program to partner with POTWs to assist POTW clients with the implementation of pollution prevention techniques. The program offers assistance to POTWs in the following areas:



- ❖ Compliance with environmental quality standards, including sludge disposal and toxic air emissions
- ❖ Reduction of influent contaminant transfers from wastewater to another environmental medium (e.g. land, air, surface or ground water)
- ❖ Improvements in worker safety and reductions in exposure to toxic gases
- ❖ Reduction in sludge management costs
- ❖ Reduction of BOD, TSS, FOG, heavy metals, priority pollutants, hydraulic and slug loads
- ❖ Maintenance of load levels that allow for projected demands for future sewer services

WMRC's technical assistance engineers and scientists possess considerable experience in a variety of industries including: fabricated metals, food processing, chemical manufacturing, electroplating, paints and coating, energy, transportation, and vehicle maintenance. A summary of the services offered through the Load Reduction Program is provided below.

#### Training Activities

- ❖ Provide on site pollution prevention training for POTW inspectors, staff, managers, and clients
- ❖ On site presentations at industrial facilities to identify pollution prevention options
- ❖ Conduct seminars on pollution prevention for various trade groups

#### Technical Assistance

- ❖ Detailed environmental assessments to aid industrial facility staff in identifying pollution prevention opportunities

- ❖ Work with industrial facility management or staff to develop an action plan for incorporating pollution prevention into the company's way of doing business
- ❖ Answer specific waste management and regulatory questions
- ❖ Provide case study examples of pollution prevention from our database and extensive library
- ❖ Provide technical information (manuals, reports, etc.) regarding pollution prevention

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## Testing of Alternative Technologies

- ❖ Evaluate materials and material substitutions used in a specific process and their consequent effects on waste generation
- ❖ Evaluate equipment or techniques for hazards removal on specific process units. Projects can be conducted in WMRC's Clean Technologies Lab or on site utilizing the equipment described below. Additionally, WMRC has access to equipment suppliers that can provide equipment on a trial basis.

**Alternative Cleaners Evaluation Lab**-Used to help companies evaluate more environmentally friendly chemicals and processes. Available equipment includes:

**Basket Centrifuge**-Used to remove solids from liquid and sludge wastestreams.

**Disc Centrifuge**-Effective at separating liquids with different densities.

**Ultrafiltration Unit**-Useful for separating emulsified oils from wastewaters and process solutions.

**Reverse Osmosis Unit**-Effective at removing dissolved solutes such as heavy metals from industrial process streams such as electroplating rinsewaters.

**Vacuum Evaporation Unit**-Designed to efficiently evaporate solutions at temperatures from 150 to 160° F; useful for concentrating solution with very small molecules that are beyond the capabilities of ultrafiltration or reverse osmosis systems.

## Research

- ❖ Funding of research on waste management issues or chemicals that impact POTWs
- ❖ State-of-the-art analytical lab capabilities to characterize process and waste streams

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## Benefits of Pollution Prevention for Industrial Users

- ❖ Reduction of waste monitoring, treatment and disposal costs
- ❖ Reduction of raw material usage and manufacturing costs
- ❖ Productivity increase and reduction of off-spec products
- ❖ Regulatory compliance cost reductions
- ❖ Improvements in public image and employee morale through reduced hazardous chemical emissions
- ❖ Reduction of insurance costs and potential liability associated with toxic wastes



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