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Project XL Progress Report Crompton Corporation Sistersville Facility

In 1995, the U.S. Environmental Protection Agency (EPA) embarked on a series of innovative initiatives in an effort to test new ways to achieve greater public health and environmental protection at a more reasonable cost. Through Project XL, which stands for eXcellence and Leadership, EPA enters into specific project agreements with public or private sector sponsors to test regulatory, policy, and procedural alternatives that will produce data and experiences to help the Agency make improvements in the current system of environmental protection. The goal of Project XL is to implement 50 projects that will test ways of producing superior environmental performance with improved economic efficiencies, while increasing public participation through active stakeholder processes. As of January 2001, EPA has reached its goal of 50 projects in the implementation phase. EPA Project XL Progress Reports provide overviews of the status of XL projects that are implementing Final Project Agreements (FPAs). The progress reports are available on the Internet via EPA's Project XL web site at http://www.epa.gov/Project XL. Hard copies may be obtained by contacting the Office of Policy, Economics and Innovation's (formerly Office of Reinvention) Project XL general information number at 202-260-5754. Additional information on Project XL is available on the web site or by contacting the general information number. The information and data presented in the January 2001 Progress Report is current as of December 2000.

Background

Crompton Corporation (formerly Witco Corporation) is a specialty chemical manufacturer. This XL project focuses on Crompton's chemical manufacturing plant located six miles south of Sistersville, West Virginia. Five other towns are located in the vicinity of the plant, including Ben's Run, Friendly, Middlebourne, Paden City, and St. Mary's. The population of these communities totals approximately 1,500 people. The Crompton facility is located along the east side of the Ohio River in a rural setting near the border of Tyler and Pleasants Counties. Both Tyler County (the county where the

Major Milestones

- September 29, 1995 — Crompton XL Proposal Submitted
- October 17, 1997 — Final Project Agreement Signed
- December 11, 1998 — Waste Minimization/ Pollution Prevention Study Report Completed
- July 30, 1999 — First Annual Report Submitted
- 2002 Project Reevaluation

plant is located) and Pleasants County (the down-river county) are predominantly rural, with populations totaling 10,000 and 7,500 respectively. Since the arrival of Union Carbide in the 1950's, these communities have relied on the manufacturing industry, including Crompton, for employment. Six hundred residents of Tyler and Pleasants County are employed by Crompton at the Sistersville plant.

Crompton produces a broad range of silicone and silane products including surfactants, emulsions, antifoams, and oils. The operating units are situated centrally within the facility and encompass approximately 50 acres.

The Crompton XL project strives to reduce air emissions through a combination of flexible air pollution control and waste minimization/pollution prevention (WM/PP) activities. The polyether methyl capper unit is the focus of emission control efforts. The capper unit is the site of a two-step reaction that results in one of Crompton's products, methyl-capped polyether. This project also involves the facility's generation of solid waste and two lined one-million-gallon surface impoundments that contain process wastewater.

In return for a deferral of certain air emissions standards, Crompton has achieved superior environmental performance at this facility by:

- installing a process vent incinerator that is destroying 98 percent by weight of organic compound emissions in the facility's process vent stream, resulting in a reduction of over 200,000 pounds of emissions per year;
- recovering and reusing over 400,000 pounds of methanol per year, resulting in the reduction of over 500,000 pounds of sludge per year;
- reducing methanol air emissions from the wastewater treatment unit by more than 20,000 pounds per year; and
- conducting a WM/PP study to identify opportunities for additional reductions in waste generated by the facility.

Crompton estimates annual cost savings from emission reductions and methanol recycling at approximately $16,000. When combined with other Pollution Prevention ("P2") opportunities identified by the Pollution Prevention Council, annual, recurring cost savings are $240,000 for those implemented in 1997, $25,000 for those implemented in 1998, $650,000 for those implemented in 1999, and $381,000 for those implemented during the first half of 2000. These total $1,010,000. (These savings, however, do not include the expenses of implementing the P2 measures. The actual, net savings will be less.)

The Experiment

The Crompton project tests whether regulatory flexibility will lead to reductions in air emissions and hazardous waste greater than what would be achieved by otherwise required emissions controls for the two hazardous waste surface impoundments located onsite. The project strives to reduce pollution through a combination of flexible air pollution control, waste minimization, and pollution prevention activities.

The Flexibility

As an incentive to achieve superior environmental performance at Crompton's facility, EPA and the West Virginia Division of Environmental Protection (WVDEP) have offered Crompton regulatory flexibility in the areas of pollution control technology and air emissions.

The statutory programs, and the EPA offices administering those programs, that affect the Crompton XL project are:

- Clean Air Act (CAA) programs administered by EPA's Office of Air Quality Planning and Standards;

- Resource Conservation and Recovery Act (RCRA) programs administered by EPA's Office of Solid Waste; and
- Pollution Prevention Act (PPA) programs administered by EPA's Office of Prevention, Pesticides, and Toxic Substances.

EPA's Region 3 office is also active in the development and implementation of the Crompton XL project as a member of the WM/PP Study Advisory Committee, which participated in the design of the WM/PP study and reviewed and commented on progress reports from the study.

RCRA Subpart CC contains requirements for the control of air emissions from hazardous waste tanks, surface impoundments, and containers. EPA and WVDEP agreed to a deferral of the RCRA Subpart CC organic air emission standards through a site-specific rule and consent order, respectively, applicable to Crompton's two surface impoundments. These surface impoundments are one-million-gallon reservoirs that hold process wastewater from the facility's pollution control equipment and other sources. If not deferred, the Subpart CC standards would have required Crompton to install air emission controls on these surface impoundments. Alternatively, Crompton could have replaced the existing reservoirs with open-top tanks that are not regulated under RCRA Subpart CC regulation, and air emissions would not have been reduced. However, with the deferral, Crompton has implemented both the emissions control measures on the capper unit and the WM/PP activities mentioned above.

In the first quarter of 2001, EPA plans to propose National Emission Standards for Hazardous Air Pollutants (NESHAPs) under Section 112 of the CAA that would be applicable to miscellaneous organic processes; this standard is called "the MON." The MON is anticipated to apply to a broad spectrum of chemical processes not regulated under other NESHAP rules. The MON is expected to include controls for process vents, and wastewater collection and treatment systems. It is anticipated that the MON will apply to the capper unit at the Crompton facility, and that controls on both the production unit and wastewater treatment system will be required. EPA believes that the MON will include process vent control requirements similar to those already implemented under the project. Accordingly, EPA expects to receive superior environmental benefits from the project only until such time as compliance with the technical requirements of the MON is required (the "MON compliance date"). At the expected end of the project (assumed to be late in 2004, the year in which it is expected that the MON may require control of capper unit emissions, hence approximately six years after the installation of the emissions controls), any required emission controls will be placed on the capper unit and the waste water treatment unit and voluntary methanol collection could continue. The FPA provides for re-evaluation of the project following proposal of the new standards. Crompton will prepare a project re-evaluation report within 90 days following the close of the comment period for the proposed new standards. If EPA, WVDEP, and other stakeholders agree to continue the project, the FPA will be amended to include new approaches to providing superior environmental performance.

EPA and WVDEP consider the WM/PP initiatives important to the superior environmental performance offered by the Crompton XL project. Some of the WM/PP initiatives could be undermined, however, if the requirements proposed in CAA Subpart YYY are approved. CAA Subpart YYY (New Source Performance Standards) contains proposed regulations to control VOC emissions from wastewater generated by certain process units. As proposed, these standards would generally apply to new or modified process units that generate a wastewater stream with VOC concentrations above a specified amount and that produce any of a specific list of substances. As proposed, CAA Subpart YYY would apply to certain WM/PP initiatives if Crompton begins recovering substances, such as acetic acid, listed in proposed CAA Subpart YYY. If Crompton starts recovering these substances, EPA and WVDEP will consider issuing a limited-scope "allowable exclusion/allowable increase" deferral of the regulations on a case-by-case basis, provided that EPA and WVDEP determine that this deferral will not cause an increase in actual emissions of volatile organic compounds (VOCs) or cause a net

adverse environmental impact, and that Crompton will remain in compliance with the FPA's provisions. If such a deferral is granted, EPA and WVDEP will propose regulations implementing the deferral.

Promoting Innovation and System Change

Project XL provides EPA opportunities to test and implement approaches that protect the environment and advance collaboration with stakeholders. EPA is continually identifying specific ways in which XL projects are helping to promote innovation and system change. The innovations and system changes emerging from the Crompton XL project are described below.

National Emission Standards for Hazardous Air Pollutants (NESHAP) for Miscellaneous Organic Processes. Flexibility in the control of air pollutants by Crompton's Sistersville plant shows the adaptability that is possible in complying with air regulatory requirements. These adaptations may be applicable to other plants that are facing similar emission requirements and should be investigated relative to existing and future air emissions issues. As noted previously, it is likely that the MON will apply in the future to require some level of control of emissions from the capper unit and the wastewater collection and treatment system. That event would not diminish the superior environmental performance obtained prior to the compliance date of the MON under this project. The total emission reductions and pollution prevention achieved as a result of implementation of the project during the minimum project term will be significant. As EPA works to promulgate NESHAPs applicable to miscellaneous organic processes; the Agency will gather data on, and assess the performance of, the technology used at the Sistersville plant. The partners in this project realize that a dynamic, rather than static, FPA encourages the parties to identify additional opportunities for superior environmental benefits during the course of this project. Project reevaluation provides the parties with a fluid process, during the course of the project, to identify project enhancements to achieve superior environmental results at the facility. Accordingly, the parties may determine during reevaluation that implementation of those enhancements supports continuation of the expanded project past the compliance date of the MON.

*Waste Minimization and Pollution Prevention (*WM/PP*).* Crompton committed to conducting a Waste Minimization/Pollution Prevention (WM/PP) study to identify opportunities for additional reductions in waste generated by the facility. Normally, WM/PP assessments are conducted as single events and outside of the routine business operations of companies. However, the Crompton study was an employee-driven effort that sought to integrate the pollution prevention process into the company's standard business practices, facilitate employee involvement, and implement a site-specific process tailored to the particular needs at the facility. A Pollution Prevention Council, consisting of employees from throughout the plant was established at the beginning of 1999 to help foster and communicate "P2" ideas and monitor progress. Crompton used a multiphased process to conduct the WM/PP study: (1) identifying and characterizing plantwide wastes and emissions; (2) screening and prioritizing these wastes and emissions; (3) identifying pollution prevention options; (4) screening and prioritizing pollution prevention options; (5) examining the technical and economic feasibility of these options; and (6) developing an implementation plan. As of July 2000, 370 WM/PP options have been identified, of which 26 are at some stage of study and 67 have been implemented. The 67 WM/PP initiatives that have been implemented at the Sistersville plant, have resulted in a total annual, recurring cost savings of $1,010,000 and the prevention of 2,900,000 pounds of wastes. (These savings, however, do not include the expenses of implementing the P2 measures. The actual, net savings will be less.) Crompton, also identified potential future cost savings of over $1,000,000 per year. As a result of the RCRA deferral, alone, Crompton expects future savings of about $700,000 over the life of the project. Crompton's project approach toward pollution prevention and recycling may offer an innovative model for other chemical intermediate-product manufacturers.

Innovative Technology. The Crompton XL project provides a pilot for testing the benefits of allowing regulatory flexibility in the technology used to control air emissions under RCRA regulations, in order to provide

superior and less expensive environmental protection. In return for a deferral of air emission standards for its surface impoundments, Crompton agreed to install a thermal oxidizer and route the process vents from its polyether methyl capper unit to that oxidizer for control of organic air emissions. Since the process vent incinerator was installed on Crompton's capper unit in April 1998, air emissions have been reduced by more than twice the amount that would have otherwise been achieved without Project XL. On July 15, 1998, a performance test demonstrated that the thermal oxidizer is reducing total organics in the vent stream by 99.99 percent, versus the 98 percent minimum required by the EPA.

Project Commitment Summary

This table and the environmental performance section that follows summarize progress in meeting commitments described in the FPA for Crompton's Sistersville facility in West Virginia.

Commitment	Status
Regulatory Implementation	
EPA to propose a site-specific rule to defer surface impoundment requirements under RCRA Subpart CC by December 7, 1997.	Deferral final rule published in the *Federal Register* September 15, 1998.
WVDEP to execute a Consent Order to defer surface impoundment requirements under RCRA Subpart CC by December 7, 1997.	Consent Order executed.
EPA to propose a site-specific rule to defer application of the proposed CAA Subpart YYY to wastewater collection and treatment systems, within 120 days of verifying need for deferral.	Not yet necessary.
WVDEP to execute a Consent Order to defer application of the proposed CAA Subpart YYY to wastewater collection and treatment systems, within 45 days of verifying need for deferral.	Not yet necessary.
Equipment Installation, Operation, and Monitoring	
Complete installation and initial startup of thermal incinerator by April 1, 1998.	Installation and startup completed April 1, 1998.
Conduct a performance test of thermal incinerator to determine the minimum temperature at which compliance is achieved.	Performance test completed July 15, 1998.
Monitor incinerator operating temperature and closed vent stream flow.	Ongoing.
Monitor methanol recovery by condenser unit.	Ongoing.
Develop incinerator startup, shutdown, and malfunction plan.	Complete.

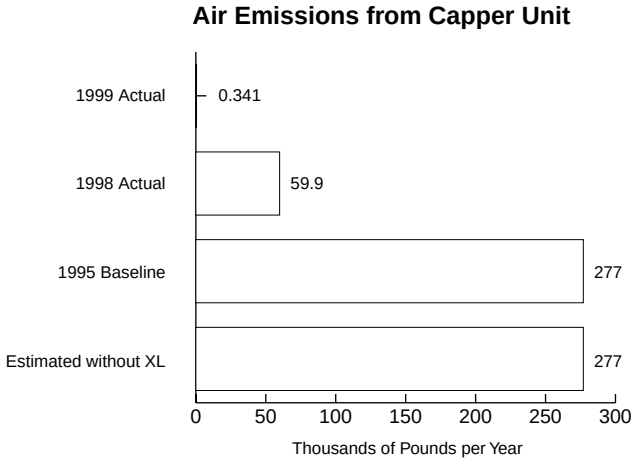
Commitment	Status
Methanol Recovery	
Begin collection of methanol from condenser unit within ten days of FPA signing.	Begun October 8, 1997.
Reuse, recycle, or incinerate 95 percent of methanol (remaining five percent to go to wastewater biotreatment unit).	100 percent of methanol collected has been reused from April 1, 1998 to June 30, 2000
Monitor amount of methanol reused, recovered, incinerated, and treated biologically in the wastewater treatment unit.	Monitoring in progress.
Waste Minimization/Pollution Prevention (WM/PP) Study	
Create study team within 45 days of FPA signing to perform WM/PP Study.	Study team formed December 16, 1997. It was made up of representatives of Crompton Corporation; a Crompton contractor, STV; Concurrent Technologies Corporation; and the Waste Reduction and Technology Transfer (WRATT) Foundation.
Identify and prioritize waste streams to be evaluated in WM/PP Study.	Presented in final WM/PP Project Report delivered December 11, 1998.
Establish advisory committee within 30 days of FPA signing to oversee WM/PP Study.	Advisory committee established December 30, 1997 to review and comment on the study team's activities and periodically review the effectiveness of WM/PP opportunities implemented. Advisory committee made up of representatives from WVDEP, EPA Region 3, local residents, Crompton Corporation, The International Chemical Workers Union Council, and West Virginia University at Parkersburg.
Submit WM/PP Progress Reports every 90 days after signing of FPA.	Three progress reports submitted on schedule. A WM/PP assessment of the facility identified numerous ways to reduce waste, which are included in the WM/PP Study final report issued December 11, 1998. CK Witco also sponsored brainstorming sessions from a cross-section of the plant's technical and operating staffs to screen, prioritize, and analyze the feasibility of WM/PP opportunities and prepare WM/PP Project implementation plans.
Prepare draft WM/PP Study Report one year after FPA signing.	Draft report issued for Advisory Committee comment on October 16, 1998. Final report completed December 11, 1998.
Implement WM/PP opportunities.	The Annual Report issued on July 31, 2000 states that 370 WM/PP opportunities have been identified. 26 of these are being studied and 67 have been implemented.

Commitment	Status
Reporting	
Prepare semiannual progress reports beginning January 31, 1999.	First semiannual progress report issued January 29, 1999. Second semiannual report issued January 14, 2000.
Prepare annual reports beginning July 31, 1999.	First annual report issued July 30, 1999. Second annual report issued July 31, 2000.
Prepare final project report within 180 days after termination of project.	Not yet necessary.
Prepare project re-evaluation report within 90 days following the close of the comment period for MON standards.	Not yet necessary.

Environmental Performance

This section summarizes progress in meeting the environmental performance described in the FPA for Crompton.

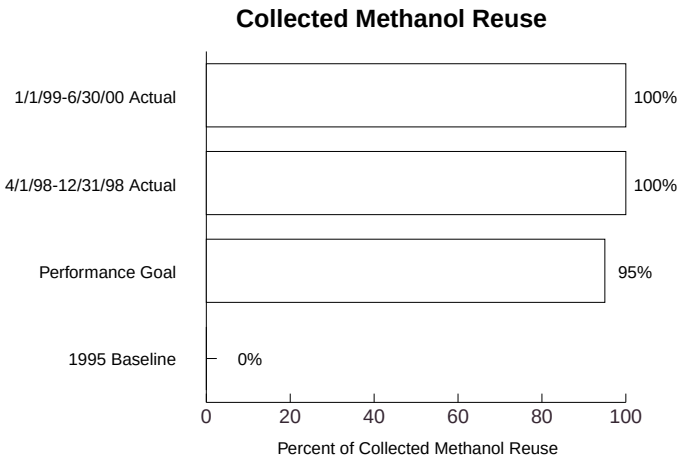
Reduce Air Emissions from Capper Unit: Methyl chloride, dimethyl ether, and methanol emissions generated in the capper unit during production of the methyl-capped polyether are being collected and routed to a new process vent incinerator installed on the capper unit. Crompton estimated the incinerator would destroy at least 98 percent of the organic compounds (by weight) in the vent stream, or about 271,000 pounds of these by-products per year.



Progress: In 1998, the capper unit emitted a total of 59,898 pounds of organic compounds. This data includes emissions from the capper prior to the incinerator startup on April 1, 1998. In 1999, the capper unit emitted a total of 341 pounds of organic compounds. Crompton estimates that 199,445 pounds would have been emitted in 1999 if the XL project had not been implemented; a reduction of 199,104 pounds. Performance tests indicate that the oxidizer is reducing total organics in the vent stream by 99.99 percent, versus the 98 percent minimum required by the agreement.

Reduce Organic Capper Unit Discharges to Wastewater Treatment System: Production of methyl-capped polyether generates excess methanol in the capper unit. Formerly, a portion of this methanol was condensed, collected, and either disposed of in the facility's wastewater treatment unit or incinerated. Under this XL project, Crompton agrees to direct a minimum of 95 percent of the collected methanol towards reuse and recycling, or subject it to thermal recovery or treatment, thus minimizing biotreatment of the methanol in wastewater treatment units. Crompton estimated that approximately 550,000 pounds of methanol that otherwise would be biotreated in the wastewater system would be transferred to tank trucks or rail cars for reuse or recycling each year.

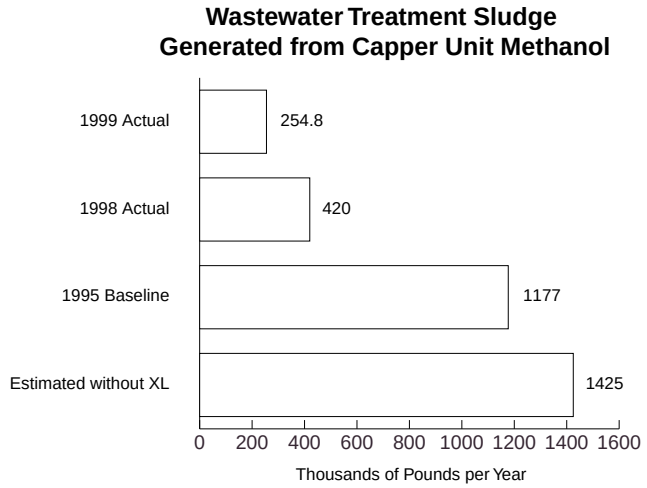
Progress: In 1998, the capper unit discharged 271,000 pounds of methanol to the wastewater treatment system, resulting in a reduction of nearly 519,000 pounds per year of methanol as compared to 1995 baseline figures. All the 424,254 pounds, or 100 percent of recovered methanol by weight, were reused, recycled, or thermally recovered or treated in 1998, exceeding the 95 percent performance standard established in the agreement.



In 1999, the capper unit generated a total of 572,000 pounds of methanol and the methanol recovery operation collected 428,000 pounds of methanol. As discussed in the FPA, a portion of the methanol generated in the capper unit cannot be economically collected, but rather goes to the onsite waste water treatment unit via a steam ejector, or to the thermal oxidizer. This accounts for the 144,000 pounds of methanol that were generated by the capper unit but not recovered. One Performance Standard of the FPA requires that "on an annual basis, the Sistersville Plant shall ensure that a minimum of 95 percent by weight of the methanol collected by the methanol recovery operation is utilized for reuse, recovery, or thermal recovery/ treatment." In 1999, 100 percent of the 428,000 pounds collected was reused. This exceeds the performance standard by five percent.

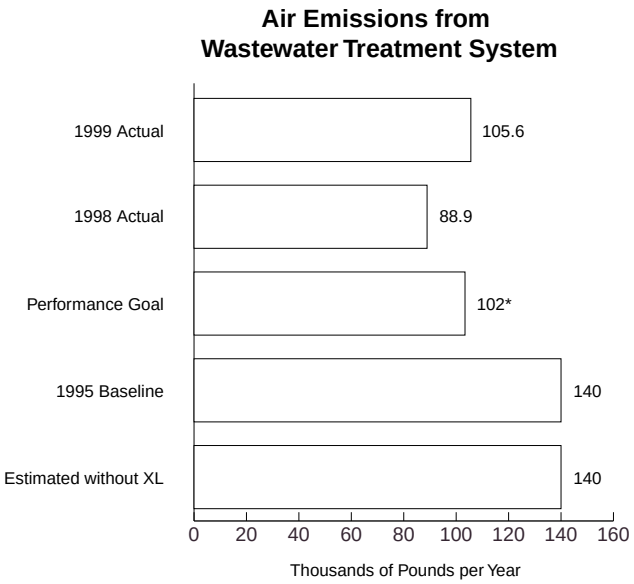
Reduce Wastewater Treatment Sludge Generated from Capper Unit Methanol: As a result of Crompton's methanol recovery and reuse efforts, the amount of sludge generated by the wastewater treatment system from capper operations, and disposed of in an onsite hazardous waste landfill was expected to decrease by an estimated 815,000 pounds per year, from an estimated 1,425,000 pounds per year to an estimated 610,000 pounds per year.

Progress: In 1998, 420,053 pounds of sludge were generated by the wastewater treatment system from capper operations representing a 757,247 pound reduction per year as compared with 1995 baseline figures. In 1999, 254,851 pounds of sludge were generated by the wastewater treatment system from capper operations. Crompton estimates that 931,782 pounds would have been generated in 1999 if the XL project had not been implemented; a reduction of 676,930 pounds.



Reduce Air Emissions from Wastewater Treatment Unit: Reducing the amount of methanol that is sent to the wastewater treatment system leads to a reduction in air emissions from the wastewater treatment system that could occur during the treatment of that methanol. Crompton estimated that as a result of its recovery and reuse of methanol, air emissions from the wastewater treatment system would be reduced by 38,000 pounds per year, from 140,300 pounds per year to 102,000 pounds per year.

Progress: In 1998, 88,932 pounds of air emissions were released by the wastewater treatment unit; a reduction of 51,368 pounds from the 1995 baseline total of 140,300 pounds. In 1999, 105,646 pounds of air emissions were released by the wastewater treatment unit. Crompton estimates that 111,892 pounds would have been released in 1999 if the XL project had not been implemented; a reduction of 6,246 pounds.



* This goal is not specified in the FPA; it is a voluntary performance goal estimated by Crompton.

Implement a Comprehensive Waste Minimization/ Pollution Prevention Project: The WM/PP Project included a study of plant operations that identified existing and future WM/PP opportunities and developed a plan to implement those that are technically and economically feasible. Through the use of an advisory committee, Crompton has involved EPA, WVDEP, The International Chemical Workers Union Council, and other stakeholders in the study and implementation phases of the WM/PP Project.

Progress: Crompton delivered the final WM/PP Study Report on December 11, 1998. Highlights of the study are described below.

A WM/PP Study Team (made up of Crompton Corporation management and employees and an independent contractor, STV Incorporated) was established to guide and conduct the daily activities of the WM/PP Study. An advisory committee (made up of representatives of the community, regulatory agencies, and the plant) was established to offer comments and suggestions throughout the process.

Four employee brainstorming sessions were a key component of the process. These sessions included representatives from a cross-section of the plant's technical and operating staffs. The goals of the brainstorming sessions were to develop criteria and methods to screen, prioritize, and analyze the feasibility of WM/PP opportunities; to increase awareness of pollution prevention; to evaluate and prioritize opportunities based on technical and economic feasibility; to prepare implementation plans; and to determine how to measure progress. In addition, a week-long survey conducted by the Waste Reduction And Technology Transfer Foundation (WRATT) helped the facility identify waste and emission sources, and suggested ways to reduce the quantity or toxicity of plant wastes.

A number of the study's pollution prevention options were determined to be technically and economically feasible; these options are currently being implemented. The WM/PP Study Report is available on the EPA website and also from Crompton. The Annual Report issued on July 31, 2000 states that 370 WM/PP opportunities have been identified, of which 26 are at some stage of study and 67 have been implemented.

Crompton Corporation Sistersville Facility (formerly Witco) Capper Operations*

Year Opportunity was Implemented	Number of New P2 Opportunities Implemented	Recurring Wastes Prevented, Latest Estimates, lbs/yr	Recurring Cost Savings*, Latest Estimates, $/yr
Air Emissions and Sludge Reduction plus Methanol Recycle (Excludes capital savings from XL project) Actual for Calendar Year 1999		1,310,921	$16,000

Data presented are based upon information found in Crompton Sistersville Plant Project XL Annual Report, July 2000.

**Note that these savings do not consider the expense of implementing them. Hence net savings will be less. It is often difficult to assign that expense. For example, a totally new process unit may cost millions of dollars to construct. If that new process produces less waste, how much of the design and construction expense ought to be assigned to the P2 benefits? In the case of a process change being done explicitly for P2 reasons, the expense is more easily determined.*

Crompton Corporation Sistersville Facility (formerly Witco) WM/PP Study Results*

Year Opportunity was Implemented	Number of New P2 Opportunities Implemented	Recurring Wastes Prevented, Latest Estimates, lbs/yr	Recurring Cost Savings*, Latest Estimates, $/yr
1997	10	376,000	$228,000
1998	11	111,000	$25,000
1999	32	930,000	$650,000
2000 Jan. – June	14	216,000	$381,000
Total	**67**	**2,943,921**	**$1,010,000**

Data presented are based upon information found in Crompton Sistersville Plant Project XL Annual Report, July 2000.

**Note that these savings do not consider the expense of implementing them. Hence net savings will be less. It is often difficult to assign that expense. For example, a totally new process unit may cost millions of dollars to construct. If that new process produces less waste, how much of the design and construction expense ought to be assigned to the P2 benefits? In the case of a process change being done explicitly for P2 reasons, the expense is more easily determined.*

Stakeholder Participation

Stakeholder involvement during the project development stage was encouraged in several ways. The methods included communicating through the media (newspaper and radio announcements), directly contacting interested parties, and offering an educational program on the regulatory programs impacted by the XL project. Stakeholders have been kept informed via mailing lists, newspaper articles, public meetings and the establishment of public files at the Sistersville Public Library and the EPA Region 3 office.

A local environmental group, the Ohio Valley Environmental Coalition, was contacted but stated that it did not have time to participate actively in the development of the XL project. However, a representative from the Natural Resources Defense Council, a national environmental interest group, participated in conference call meetings with the XL project team and provided comments during the FPA's development. There are few homes located near the facility, and therefore, few local stakeholders other than the employees of the facility expressed interest in actively participating in the development of the project. The Sistersville Plant provided stakeholders with regular project development updates by circulating meeting and conference call minutes.

As this XL project's continues implementation, the stakeholder involvement program will shift its focus to ensuring that stakeholders are apprised of the project's status, and have access to information sufficient to judge the success of this Project XL initiative. Facilitating stakeholder involvement during the term of the project likely will include holding general public meetings to present periodic status reports and making available data and other information as it is generated. Crompton has appointed a Sistersville Plant Project XL contact at the facility to serve as a resource for the community. In addition, the plant is required to make copies of semiannual and annual project reports available to all interested parties.

As of April 2000, participating stakeholders reported that they were satisfied with the stakeholder involvement process, but felt that the process was too long (two years between submittal of the first proposal and the signing of the FPA). The community representatives felt that the EPA was too stringent in their requirements, and that improvements in EPA's efficiency would save time and money for everyone involved. The community representatives stated that the rapport between the community and Crompton has always been good, but that EPA had more difficulty working within the industrial culture of the community. Representatives of the community, Crompton, EPA, and WVDEP were all disappointed by the low level of community involvement. The community representatives were not sure if this was a sign of apathy or an indication that the community trusts Crompton and is satisfied with the information that has been made available to them. The EPA and WVDEP were impressed with Crompton's initiative and respect in the community. Company representatives felt that the project was a good way for both EPA and Crompton to learn how to work together.

Six-Month Outlook

Key focus areas for successful implementation of the FPA over the next six months include the third semiannual project report due January 31, 2001, the third annual project report due July 31, 2001, and the ongoing implementation of options identified in the WM/PP. EPA is expected to propose new MON standards in the first quarter of the year 2001. As per the FPA, Crompton will prepare a project re-evaluation report within 90 days following the close of the comment period for the new standards. If EPA, WVDEP, and other stakeholders agree to continue the project, the FPA will be amended to include new approaches to providing superior environmental performance.

Contacts

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- Tad Radzinski, EPA Region 3, (215) 814-2394.
- Lucy Pontiveros, DEP, (304) 926-3638.
- Jonathan McClung, DEP, (304) 926-3638.

Information Sources

The information sources used to develop this progress report include (1) focus group discussions in December 1998 with representatives of the Federal and state regulatory agencies, Crompton, and public stakeholders involved in the project; (2) the FPA Final Project Agreement for the Crompton XL project; (3) the December 1998 final Report from the WM/PP Study undertaken by Crompton (4) the March 1999 XL Project Progress Report—OSi Specialties; (5) the First Annual Crompton XL Project Report, issued July 30, 1999; (5) the Project XL Progress Report, Crompton Corporation, December 1999; (6) the Project XL Semi-Annual report, January 14, 2000; (7) the Project XL Stakeholder Involvement Evaluation Draft Final report, April 15, 2000; (8) the Project XL Stakeholder Involvement Evaluation - Final Draft Report, May 2000; and (9) the Project XL Second Annual Report, July 31, 2000. The information sources are current through July 2000.

Glossary

Air Emissions: Pollution discharged into the atmosphere from smokestacks, other vents, and surface areas of commercial or industrial facilities; from residential chimneys; and from motor vehicle, locomotive, or aircraft exhausts.

Air Emission Standard: The maximum amount of air-polluting discharge legally allowed from a single source, either mobile or stationary.

Allowable Exclusion/Allowable Increase: Where Crompton implements a Qualifying Change to a process unit at the Facility, EPA and WVDEP expect to defer applicability of CAA Subpart YYY for the Qualifying Change.

Baseline: The measure by which future environmental performance can be compared.

Biotreatment: A process that uses bacteria to consume organic waste.

Capper Unit: The polyether methyl capper unit is the point in Crompton's production process where a two-step reaction occurs that results in the intended end product, methyl-capped polyether.

Clean Air Act (CAA): The Clean Air Act is the Federal law that regulates air emissions from area, stationary, and mobile sources. This law authorizes the U.S. Environmental Protection Agency to establish National Ambient Air Quality Standards (NAAQS) to protect public health and the environment.

CAA Subpart YYY (New Source Performance Standards): Proposed regulations to control VOC emissions from wastewater generated by certain process units. As proposed, these standards would generally apply to new or modified process units that generate a wastewater stream with VOC concentrations above a specified amount and that produce any of a specific list of substances ("Subpart YYY Substances"), such as acetic acid as a product or by-product.

Consent Order: An agreement between two parties that does not involve any judicial action.

Deferral: A legally sanctioned delay in compliance with regulations.

Dimethyl Ether: A colorless flammable gas. Used in refrigeration, as a solvent, and in chemical production. Harmful if inhaled; irritating to eyes.

Discharges: Flow of liquid or chemical emissions from a facility into water or air.

Final Project Agreement (FPA): The FPA outlines the details of the XL project and each party's commitments. The project's sponsors, EPA, state agencies, tribal governments, other regulators, and direct participant stakeholders negotiate the FPA.

Hazardous Waste: By-products of society that can pose a substantial or potential hazard to human health or the environment when improperly managed. These wastes possess at least one of four characteristics—ignitability, corrosivity, reactivity, or toxicity—or appear on special EPA lists.

Impoundment: A body of water or sludge confined by a dam, dike, floodgate, or other barrier.

Incineration: A treatment technology involving destruction of waste by controlled burning at high temperatures.

Incinerator: A furnace for burning waste under controlled conditions.

Media: Specific environments–air, water, soil–which are the subject of regulatory concern and activities.

Methanol: An alcohol that can be used as an alternative fuel or as a gasoline additive. Poisonous if ingested.

Methyl Chloride: A colorless flammable gas. Used in the production of chemicals, as a solvent and refrigerant, and as a food additive. Mildly toxic if inhaled.

Multi-media: Several environmental media, such as air, water, and land.

"The MON": The National Emission Standard for Hazardous Air Pollutants (NESHAP) for the source category "Miscellaneous Organic Chemical Production and Processes." Some examples of these processes are: explosives production, photographic chemicals production, polyester resins production, and the production of paints, coatings and adhesives.

National Ambient Air Quality Standards (NAAQS): Standards established by EPA applicable to outdoor air throughout the country.

National Emissions Standards for Hazardous Air Pollutants (NESHAPs): Emissions standards set by EPA for air pollutants not covered by National Ambient Air Quality Standards (NAAQS), that may cause an increase in fatalities or in serious, irreversible, or incapacitating illness. Primary standards are designed to protect human health, and secondary standards are designed to protect public welfare (e.g., building facades, visibility, crops, and domestic animals).

Organic Compounds: Naturally occurring (animal or plant-produced) or synthetic substances containing mainly carbon, hydrogen, nitrogen, and oxygen.

Pollution Prevention (P2): Identifying, altering, or eliminating areas, processes, and activities that create excessive waste products or pollutants. Such activities, consistent with the Pollution Prevention Act (PPA) of 1990, are conducted across all EPA programs.

Process Vent: A gas stream discharged to the atmosphere (with or without passing through a control device or recovery device) from chemical processing equipment.

Resource Conservation and Recovery Act (RCRA): RCRA gives EPA the authority to control hazardous waste from the "cradle to grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also sets forth a framework for the management of nonhazardous wastes. RCRA enables EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances. RCRA focuses only on active and future facilities and does not address abandoned sites.

RCRA Subpart CC: Requirements for the control of air emissions from hazardous waste tanks, surface impoundments, and containers. The name comes from the fact that they are found in the regulations in Subpart CC of 40 CFR Parts 264 and 265.

Sludge: A semisolid residue from air or water treatment processes; it can be a hazardous waste.

Thermal Oxidizer: An enclosed device that destroys organic compounds by thermal oxidation, i.e. reacting at elevated temperatures with oxygen.

Thermal Recovery or Treatment: In the Crompton XL project, refers to the use of collected methanol in fuels blending or as a feed to any combustion device.

Waste Minimization: Measures or techniques that reduce the amount of wastes generated during industrial production processes; term is also applied to recycling and other efforts to reduce the amount of waste going into the waste stream.

Wastewater: The spent or used water from a home, community, farm, or industry that contains dissolved or suspended matter.