

**Learning *from* Innovations in
Environmental Protection**

RESEARCH PAPER NUMBER 1

**EVALUATION of the
MASSACHUSETTS
ENVIRONMENTAL
RESULTS PROGRAM**

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JUNE 2000

Prepared for the



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Learning *from* Innovations *in* Environmental Protection:

THE RESEARCH PAPERS

This report is one in a series of independent evaluations of innovations in environmental management commissioned by the National Academy of Public Administration's Center for the Economy and the Environment. The entire series is available at the Academy's website, www.napawash.org, and will be available in print in late 2000.

The U.S. Congress initiated this study in FY 1998 when it asked the Academy to undertake an independent evaluation of some of the most promising innovations in environmental management. A panel of Academy Fellows and other experts is guiding the project. The panel selected the research topics and researchers, and encouraged the researchers to offer their own findings and recommendations. The reports in this series are the work products of the research teams; neither the Academy nor the project panel endorses their findings and recommendations. The panel will use the research reports as a foundation for its own report and recommendations to Congress and the U.S. Environmental Protection Agency later this year.

The overall project is under the direction of DeWitt John and Richard A. Minard, Jr. The U.S. Environmental Protection Agency has funded the project through contract number 68-W-98-211.

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Executive Summary

The Massachusetts Department of Environmental Protection (DEP) has designed, piloted, and now rolled out to several commercial sectors a first-in-the-nation regulatory system called the Environmental Results Program (ERP). The promise of ERP is that it will deliver superior environmental protection, increase flexibility for business, and reduce costs to the taxpayers. In practice, it is an innovative compliance-assurance system that uses annual self-certification requirements to shift the compliance assurance burden onto facilities. For the first time ever, senior-level company officials certify annually that they are—and will continue to be—in compliance with all applicable air, water, and hazardous waste management performance standards throughout a facility. DEP reviews the certifications with both random and targeted inspections, and appropriate enforcement, when necessary.

This evaluation takes a close look at ERP. Has it made a difference? Did it live up to its promise? How can it serve as a model? We found that, as anywhere, the change process can be difficult—even with committed staff and strong upper-management support. We also found encouraging improvements in compliance and positive environmental results. ERP has evolved over the four years since its inception. Today, due in large part to the types of small business sectors rolled out, there is a strong focus on compliance assistance delivery—plain-language sector-specific workbooks that help firms self-certify by explaining clearly their environmental obligations. And there is a new innovation known as Environmental Business Practice Indicators, or EBPIs, performance measures designed to benchmark and track program, sector, and facility-specific environmental performance.

So what has ERP done? It has brought a number of relatively unregulated small business sectors—dry cleaners, photo processors, and printers—to a much higher level of compliance, assuring that compliance will be on-going, via the EMS-like workbooks. Both the annual certifications and the EBPI methodology give DEP a way to monitor sector progress over time.

What has it not done? The bold vision of performance standards, a new metric that fundamentally simplifies measuring environmental results, has not come through. ERP regulations developed for the three rolled-out sectors reflect their roots in traditional requirements—and do not represent radical restructuring of rules and regulations. ERP's innovation is in making those requirements accessible and understandable to all. However with the exception of the

printing sector, ERP has not retired a large number of permits. Future ERP efforts are targeted towards greater permit-elimination, but there is considerable debate in the agency regarding the issue.

ERP did not deliver on all of its promises—but the program did deliver on many and in the process was very innovative. This report attempts to capture its complexity, its promise, and its reality. We view ERP dynamically. DEP’s experiment with ERP tools such as self-certification, permit elimination, workbooks, EBPIs, and universe identification continues. More interesting results should come from that effort. EPA should encourage and fund greater experimentation with ERP-type efforts. We strongly support the concept of ERP and recommend to the Academy a number of ways to continue the learning process. The following are our summary recommendations:

1. Support and expand self-certification experiments.

ERP is still early in its evolution and many permutations of the program are possible. EPA should encourage and/or fund quantitative evaluations of ERP components such as the program’s environmental results, EBPI procedure, and costs and benefits. Similar investments should be made in expanding the program to other sectors, including medium-size industries. Many states are looking for means to ensure compliance among small businesses rely less on resource intensive inspection and permitting programs. ERP may be one such means.

2. Reduce barriers to federal flexibility.

DEP has pursued federal regulatory flexibility for the ERP dry-cleaning sector through EPA’s XL program. That effort has been arduous, lengthy, and has produced few results. Having received approval of the “umbrella” XL agreement, Massachusetts has found that specific requests for flexibility seem to go back to square one relative to approval, and the same reinvention battles have to be re-fought. This calls into question whether the XL program is a vehicle for states to pursue reinvention efforts. States need other avenues to seek flexibility or look to Congress to provide a better climate for innovative regulatory policy initiatives.

3. Investigate mechanisms for setting performance standards and for eliminating permit trials.

Efforts to promote performance standards in ERP have produced mixed results. In the case of the small-business sectors in ERP, many firms preferred technology standards to requirements to measure environmental performance. Our research found that a thorough definition and analysis of performance standards was lacking. Similarly lacking was detailed information on the process of setting performance standards. Performance standards are a valuable policy goal and should be encouraged where they are practical. EPA and the states should look to their own programs to better understand where performance standards have worked and where they have failed. Documenting those cases would move the debate beyond normative statements that performance standards are “good”—and would provide policymakers, permit writers, and regulatory development staff with tools to encourage them.

DEP successfully eliminated permits in the printing industry, replacing them with a performance standard and certification requirement: a replacement that resembles what are known as permits-by-rule or general permits. However, attempts to push permit elimination further ran into many barriers—including federal requirements, the need to incorporate citing concerns in the process, and the tension between a performance standard and the state’s Best Available Control Technology program. Despite those barriers, there are opportunities. For example, confined animal feeding operations could benefit from the ERP workbooks, annual certifications, combination of performance and technology standards, rather than the traditional permitting approach that lacks education and a regulatory feedback loop.

4. Explore environmental business practice indicators.

DEP’s effort to measure a sector’s performance using environmental business practice indicators was one of ERP’s significant policy innovations. Rather than the traditional measures of compliance, EBPIs allow the department to look at compliance more comprehensively. DEP’s EBPIs are still unproved, however, although a contractor study on the EBPIs is forthcoming. EPA and the states should follow DEP’s efforts and encourage similar attempts to measure more comprehensively industry environmental performance.

Introduction

The Research

The National Academy of Public Administration is interested in creating a fuller understanding of innovations in state government approaches to environmental protection, especially those that concern the changing relationship between state and federal authorities and those with an emphasis on performance and on achieving measurable environmental results. Both the Academy and the Enterprise for the Environment (E4E) advocate a shift away from prescriptive regulatory approaches to a more performance-based system that utilizes the following performance-based tools:¹

- Information management systems
- Market-based controls
- Compliance assurance strategies
- Regulations that encourage choice
- New partnerships

The concept is to hold companies accountable but provide flexibility for implementation; and to provide incentives for businesses to improve environmental performance without prescriptive regulation. Both the Academy and E4E recognize the challenge in designing performance-based programs that are both nationally consistent and individually responsive. In most respects, there is very little real-world experience from which to draw lessons.

The Massachusetts ERP represents a unique opportunity to study a different regulatory system that has several years implementation behind it and which has not only been piloted but fully implemented within a large population of small-business entities. Altogether, close to 2,000 companies have self-certified under ERP since 1997; following the rollout of the IWW sector, another 8,000 companies will likely come under the ERP umbrella.

Evaluation Elements

Our research explored ERP's design and implementation; its associated costs and benefits; and—most importantly—its environmental effects in terms of increased compliance, pollution reductions, and improved knowledge of regulated universes. We were interested in delineating the essential lessons to be learned about the process of innovation, both generally and in this particular setting (e.g., How does a state work with EPA on an innovative approach such as ERP?). We considered the outstanding challenges and issues with respect to transferring the ERP model to other settings (e.g., other sectors, larger businesses, other states, national actors).

Our evaluation of ERP focused on the following:

- Extent to which permits were eliminated
- Successes and failures in moving from technology to performance standards
- Extent to which the certification process has pushed the onus for compliance assurance on industry
- Roles of critical actors in the development of the program
- Costs of resources and expenditures borne by participating facilities and DEP
- Environmental benefits expected or observed
- Transferability of the ERP

The most critical measure of the success of ERP lies in its environmental benefits. The plan's co-originator, James Gomes, president of the Environmental League of Massachusetts, put it this way: "DEP says the program's principal goal is to improve results for the Massachusetts environment. Ultimately, this is how ERP should be evaluated, both as it is developed and in its implementation."² The self-evaluation and analysis scheduled for the summer of 2000 will help quantify the program's true environmental impact and, as both DEP and EPA officials have noted, play a large role in assessing whether ERP has fulfilled its promise.

Research Methods

Our research was conducted from April through July 1999, and consisted of 65 field or telephone interviews. (A complete list of interviewees is given in Appendix B.) In addition, we reviewed background documents such as the Environmental Notification Form prepared by DEP prior to rule publication of the revised ERP sector standards; evaluations, including that of the Massachusetts Printers Partnership, the Demonstration Project Evaluation, and the EBPI Evaluation Methodology; as well as the various primary materials developed for ERP's Demonstration Project and three rollout sectors.

Our inquiries to DEP included questions on environmental results from the ERP database, as well as FTE and permit replacement numbers. The department was a forthright and cooperative research partner throughout. We also appreciated the candor with which our industry interviewees responded, as well as the valuable time they gave to us in the course of our interviews.

Basic Features Of ERP

The Massachusetts Environmental Results Program (ERP) is an industrial regulatory compliance system that requires a firm to file an annual self-certification of compliance. Compliance assistance, in the form of sector-specific workbooks and workshops, facilitates the self-certification effort by explaining in plain language a firm's environmental obligations. Pioneered by the Massachusetts Department of Environmental Protection (DEP), ERP has been "rolled out" (i.e., fully implemented) to three small-business sectors: dry cleaning, photo processing, and printing. Two additional, cross-sector rollouts are underway—firms discharging industrial wastewater (IWW sector) and firms installing or modifying boilers (combustion sector). DEP expects ERP may ultimately cover 25,000 Massachusetts facilities.

To describe the basic features of ERP, this section uses the metaphor of a personal income tax code far different from the one with which we are all familiar, one which is much less organized. Under our imaginary system, taxpayers must:

- submit income information to the Department of the Treasury
- submit information on interest deductions for mortgages to the Department of Housing and Urban Development
- submit information on their dependents to the Bureau of the Census
- submit medical expenses to the Department of Health and Human Services
- submit other information on deductions and exclusions to appropriate federal departments or bureaus.

Under that imaginary system, taxpayers would be required to submit some data annually (e.g. income data) and other data every few years (e.g., dependents). Some data would never be submitted; the government department or bureau in charge of the specific information might periodically conduct surprise "inspections" of taxpayer records.

For obvious reasons, the imaginary system is inefficient and fraught with problems. For example, how would the various government bureaus and departments share information to determine overall compliance? Under the 1040 system, the signed tax form places great onus for compliance on the shoulders of the taxpayer. The imaginary system, which lacks such a signed certification, places much of the compliance burden on government; it would have to detect omissions, errors, fraud, and evasion.

Unfortunately, the federal environmental regulatory requirements are in many ways similar to our imaginary tax system. Firms must submit different forms and reports to different regulatory branches. Air reports are sent to the air department. Hazardous waste reports are sent to hazardous waste. Water quality reports go to the local sewer authority and/or state and federal government. Toxics Release Inventory data are submitted to the federal government and to the states. Not all of those data are submitted annually: some are submitted every two years, some every five years. In addition, certain data must be kept on-site by firms and be available to inspectors. That patchwork regulatory system makes data-sharing between various government departments difficult.

Similar to the way the 1040 form consolidates the tax system, ERP consolidates and streamlines regulatory reporting. Like the 1040, ERP requires firms to compile data and submit it annually. The data submissions must be certified by a senior company official. Like the 1040, the ERP certification places the onus for compliance on the filer. ERP provides detailed work-

books that guide firms through the certification process step-by-step. The Massachusetts DEP collects the annual ERP certifications, enters the data, and uses the information to measure environmental results and to detect compliance issues such as error, fraud, and evasion. The data produced by ERP are more comprehensive and easier to use than the patchwork of regulatory data submitted under current regulatory requirements³.

ERP is innovative because it requires annual *compliance certifications*, provides *compliance assistance*, gives DEP information on the *universe of firms* in a sector, and provides data to *measure and evaluate compliance and environmental results*. However, ERP goes beyond those data activities. To understand the deeper level of reinvention promised by ERP, we return to our income tax metaphor.

The U.S. personal income tax code is considered by many to be complex, difficult to understand, and time consuming. Periodically, congressional leaders, presidential candidates, and other national figures champion tax simplification and reform. Those efforts range from a simple flat-tax proposal to reformation to achieve specific public policy goals such as encouraging citizens to save for their retirements. Like those ideas, DEP sought to change the regulatory system to focus more on environmental results. ERP's reinvention agenda includes the development of *performance-based standards*, *elimination of permits*, *increased compliance and enforcement*, *regulatory simplification*, and an increase in *publicly available data*.

The extent to which ERP was able to meet those goals is a focus of this report.

Components

- **Annual compliance certifications.** Under ERP, a senior corporate official at each facility is required to sign and submit an annual facility-wide environmental compliance certification. If a facility is not in full compliance with all requirements when it certifies, it must identify the violation(s) (e.g., exceeded a water discharge limit) and include a Return to Compliance Plan (RTC) that specifies how and when compliance will be achieved.
- **Compliance and pollution-prevention assistance.** ERP uses easy-to-read translations of the regulations as well as guidance material to provide simple explanations of environmental requirements. Style and format vary according to the particular information needs and learning styles of each segment of a targeted industry. For example, the ERP dry cleaning sector published a Korean language version of the workbook, since Koreans own roughly 40 percent of the state's dry cleaners. The workbooks also contain a good deal of practical and useful information about pollution prevention.
- **Identifying the universe of firms.** A significant focus of ERP is the compilation of a database of all firms for each ERP sector. DEP applied ERP to several small business sectors for which it had little information. Identifying the full universe of firms in a sector is necessary to ensure all firms are aware of their responsibility to submit annual compliance certifications. A complete universe aids DEP in determining facilities that might be evading certification requirements.
- **Measuring and evaluating compliance and environmental results.** DEP measures and evaluates ERP compliance and environmental results by using environmental business practice indicators, compliance inspection findings, as well as data

reported on certification forms. That evaluation methodology—which is in its infancy—uses statistical analysis and random sampling techniques to validate the performance of the program itself, and to track the performance of each of ERP sectors.

- **Performance-based standards.** ERP experimented with performance standards that apply to all facilities in a particular industry segment, or that use a particular industrial process in lieu of facility-specific permits or requirements. Those performance-based standards are meant to provide the flexibility to industry to meet regulatory limits (i.e., to avoid dictating the specific technology or approach a firm must use to meet a limit).
- **Eliminating permits.** ERP sought to introduce performance-based standards for entire classes of facilities or processes. Those standards were meant to replace case-by-case facility permits. For example, permits for offset lithographic printers were retired under ERP and replaced with raw material volatile organic compound (VOC) standards. DEP did not envision eliminating all permits since such permits are necessary for some types of facilities or operations. It did hope the permit-elimination effort would free up resources that could be targeted towards compliance and enforcement activities. While permitting requirements were eliminated in the printing sectors, most firms in the dry cleaning and many in the photo processing sectors did not require DEP permits.
- **Increased compliance and enforcement.** Since ERP is a mandated regulatory program, all ERP firms are subject to regular DEP inspections and the agency's standard enforcement protocol. The data submitted on ERP certifications, combined with a more completely identified universe of firms, provides useful information about companies that fail to certify at all, fail to certify on time, submit fraudulent or deficient certifications, or are in violation either at the time of certification or during the subsequent year.⁴
- **Regulatory Simplification.** ERP's designers hoped to replace requirements of no value with simpler and fewer performance-based requirements. The simplification was to be based on clarifying standards, consolidating reporting, and eliminating permits.
- **Publicly Available Data.** Since ERP was designed to give greater flexibility to firms through performance standards; its creators saw a need to provide greater public transparency to facility compliance. ERP was designed such that information collected on the certification could be made publicly available.

Background

The Environmental Results Program had its origin in chance conversation between Jim Gomes of the Environmental League of Massachusetts, and Jim Coull of the Massachusetts High Technology Council. The conversation occurred at the 1995 Futures Day, an annual planning event hosted by DEP for industry, environmental organizations, and local governments to share ideas and perspectives on environmental protection in the commonwealth. According to Mr. Gomes, the discussion centered on the fact that it would be better to have environmental performance standards: to identify facility-specific environmental insults, to set protective limits, but leave it up to individual facilities to meet those limits. They considered

how to certify standards, to do away with permits, to shift resources to inspections, enforcement, and compliance assurance.⁵

For Gomes, it was the link between protective standards and more “cops on the beat” to enforce those standards that was attractive. For Coull, it was the flexibility for industry to make its own compliance path choices and relief from the permitting bureaucracy. Neither saw much value in having DEP’s permit writers merely pushing paper around.

Pat Deese Stanton overheard the conversation, and brought up the ideas with Allen Bedwell, who took them to DEP commissioner David Struhs.⁶ Shortly thereafter, Struhs, Bedwell, Deese Stanton, and others at DEP initiated what became known as the Environmental Results Program.

ERP was from the outset a highly political undertaking. The original vision was a perfect match for the ideas of Governor William F. Weld, an opportunity to demonstrate that what’s good for business can also be good for the environment. Regulatory reinvention, increased flexibility, permit elimination, and reduced bureaucracy—those were hallmarks of the early ERP promise. In April 1996, at the ERP Demonstration Project kick-off, Struhs announced: “No longer will rigid and complex permits be viewed as a sign of a well-protected environment. Instead, we will judge our progress by actual environmental results.”⁷ Governor Weld then joined the president of Komteck Corporation—a firm participating in the demonstration of the project, and host of the kick-off event—in “tearing up obsolete DEP permits.”⁸

Not long after that, however, ERP experienced an alienation of the environmental community and a deepening skepticism in the DEP rank-and-file. The Environmental League of Massachusetts felt “betrayed” by Weld’s “less government” public spin on ERP. MassPIRG, an environmental advocacy organization, simply lost interest—deciding to focus its limited resources on more-pressing matters. Internally, some at DEP wondered if ERP was really revolutionary or just another way of slicing up the status quo. But there was also an overwhelming “unwillingness to let go” as one critic put it. Those tensions—internal and external—have shaped ERP since its early phase. No longer a complete “get government off the backs of businesses” scheme, ERP has since evolved into a practical toolbox of compliance assistance approaches that, taken together, appear to have led to environmental performance gains in several business sectors traditionally under-regulated by DEP.

Applications and Changes

ERP’s first test, known as the Demonstration Project, involved 18 small to medium-sized businesses in the commonwealth. The firms volunteered to participate, and to work with DEP to develop process-specific performance standards for a broad cross-section of industrial processes. The annual compliance certification, compliance assistance, performance standards, permit elimination, and regulatory simplification were prominent in the Demonstration Project.

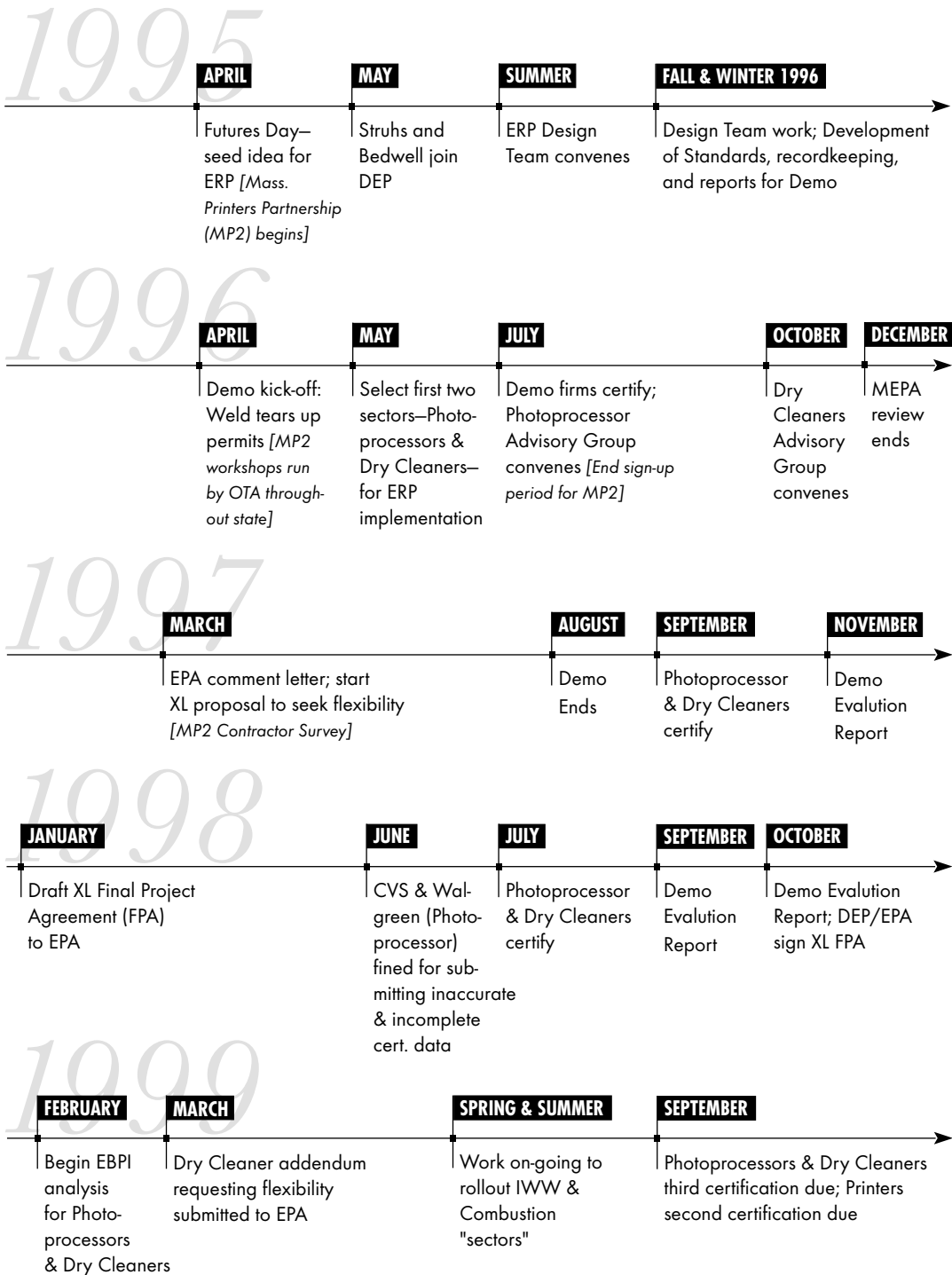
Based on lessons learned in the Demonstration Project, DEP “rolled out” ERP in 1997 to dry cleaners and photo processors. The decision to roll out ERP to such small businesses was both political and practical. The key tension was how to test the theory of ERP—to produce actual results. Some environmental organizations, in particular MassPIRG, insisted that DEP not jeopardize the environment by experimenting with a new regulatory system at large, complex firms that already had permits (even though such facilities were part of the target population envisioned by ERP’s inventors). Environmentalists feared ERP might somehow result in less environmental protection and were worried about the precedent of retiring permits at large facilities.

DEP wanted to test ERP at facilities with state-only permits, since retiring federal permits would trigger significant federal-state issues such as meeting Title V federal air pollution permit requirements. There were internal political disagreements at DEP regarding the scope of the ERP rollout. The majority of staff was not convinced that ERP would produce superior results and distrusted the Republican administration. Many in DEP questioned letting go of the department's control over permitting and thought that ERP carried the risk of "giving away the store." In 1996, DEP chose to roll out ERP to the photo processing and dry cleaning sectors, considering them somewhat "safer" and more "doable." In 1998, DEP rolled out the printing sector. In 1999 and 2000, DEP intends to roll out to industrial-process ERP sectors: one for industrial wastewater discharge permits (the IWW sector) and a second for permits required for installing or modifying boilers (the combustion sector.)

In choosing dry cleaners and photo processors as first rollout sectors, DEP chose sectors that had relatively few permits. Furthermore, they were sectors to which the department had devoted few compliance and enforcement resources. Fewer than five of the roughly 600 dry cleaners in Massachusetts had permits prior to ERP. Instead, they were subject to a permit-by-rule Reasonable Available Control Technology (RACT) standard, which was not widely known within the industry, or enforced by DEP. Massachusetts's photo processors were subject to: local publicly owned treatment works (POTW) permits; local limits imposed by sewer ordinances that do not require permits; and the DEP industrial wastewater permitting program. Only about 15 of 289 firms had the wastewater permits, however, and the requirement was not enforced. However, few photo processors had the required wastewater permits (roughly 15 of 289 firms)—while the wastewater permits were "on the books", the requirement was not enforced. The printing sector is the one that fit best with the goal of reducing permit burden, since it had permits that were retired under ERP. (Appendix A contains a detailed description of the regulatory changes for those pilot firms, as well as for firms in each of the three sector rollouts.)

The photo processing, dry cleaning, and printing sector rollouts were similar in many regards to the demonstration project: in requiring a full-facility environmental compliance certification to all applicable regulations, for example. The rollouts did differ in several important ways, however, emphasizing sector-specific workbooks and more detailed certification forms. While DEP did develop some performance standards for the rollout sectors, only a limited number of actual permits were retired. Thus the goal of shifting DEP resources from permitting to compliance and enforcement activities went unrealized. DEP also encountered difficulty developing performance standards that dramatically simplified regulatory requirements for the sectors.

ERP's implementation was strongly influenced by another DEP-industry partnership program—the Massachusetts Printers Partnership (MP2). MP2 began in 1995 just prior to ERP and focused on increasing compliance in the printing sector by creating and developing plain-language workbooks, holding assistance workshops throughout the state, and measuring the results of the compliance outreach activities through a set of performance indicators. Printers who volunteered for MP2 were offered some regulatory and/or permitting relief. Many of the same DEP staff and offices that were involved in MP2 were also involved in ERP. When DEP decided to roll out ERP to small-business sectors, the Department partially modeled ERP on MP2.

FIGURE 1**ERP Chronology**

Timeline

Figure 1 depicts the key ERP events that occurred between 1996 and 1999. The program has moved rapidly, considering the difficulty of developing a new regulatory scheme. ERP sector standards had to be developed, proposed, put out for public comment, finalized, and published; workbooks written, translated, designed, printed, and distributed; workshops and outreach designed and conducted; the universe of facilities identified and tracked; certifications mailed, received, processed, and entered into databases; inspections carried out; enforcement conducted; measurement systems designed (the EBPIs) and evaluations carried out (although not yet completed); and an XL proposal drafted, revised, redrafted, reviewed by EPA, revised, reviewed again, and finally signed.

Key Players

ERP has used a multi-stakeholder, team approach during large parts of its design and implementation. The program has a multi-stakeholder advisory design group that was quite active during the first year and a half of the program, then all but ceased to meet. The group, which comprised representatives from EPA, other governmental bodies, environmental advocacy groups, business and industry, consulting firms, and the legal community, worked closely with DEP to develop a consensus on ERP's initial design.

The Demonstration Project employed a variety of industry-government teams to develop performance standards. Each of those 12 teams had a specific focus, e.g., adhesives, surface coating, dry cleaning, industrial wastewater. Each rollout sector involved teams of DEP staff and industry representatives.⁹ Those teams were charged with fleshing out specific regulatory amendments, developing workbooks, identifying the full universe of potentially certifiable firms in their respective sectors, and designing industry-outreach approaches and delivery.

ERP has always been a program conceived and pushed from the top; the key players at DEP during its earliest days were very much “upper management.” As the program moved into full implementation, more middle managers and staff entered the mix. That is also true of the program's current “sustainability” phase.

Environmental and Compliance Results

This section reviews the environmental and compliance results for ERP's three rollout sectors. It begins with a discussion of how ERP's certification and workbooks have shifted the burden of compliance assurance from DEP to private industry. It reviews how ERP is a facsimile of a scaled-down environmental management system (EMS) in those sectors and how ERP has improved high-level management accountability for environmental performance. Next, the section examines how ERP has greatly expanded the DEP-identified universe of firms in each of those rollout sectors. Lastly, environmental results for each sector are quantified and reviewed. It is important to note, however, that the true nature of the environmental and compliance results will not be known until DEP completes its evaluation of sector-specific performance indicators.

Shifting The Burden Of Compliance Assurance

ERP's affirmative statement of compliance shifts the onus for compliance to the regulated entity. Under the typical regulatory process, firms are supposed to comply with applicable regulations, but many firms are ignorant of those regulations. Programs such as ERP have developed compliance assistance tools such as workbooks, workshops, and ombudsmen to help businesses determine rule applicability as well as the means to comply.

The ERP certification is several steps beyond those attempts to better communicate regulatory requirements. (See Appendix C for a sample certification.) Participating firms must fill out a comprehensive form that ranges from four to seven pages, and which documents their compliance. On the last page of that form, a firm must positively assert that:

- the signatory has personally examined and is familiar with the information in the certification
- the information contained in the submittal is true, accurate, and complete
- systems to maintain compliance are in place at the facility and will be maintained for the coming year, even if processes or operating procedures are changed

- the signatory is “aware that there are significant penalties including, but not limited to, possible fines and imprisonment for willfully submitting false, inaccurate, or incomplete information”

A corporate president, secretary, treasurer, or other person authorized by corporate vote; proprietor (if a sole proprietorship); or general partner (if a partnership) signs the certification.

The certification itself is possible because the various compliance requirements are clearly laid out in the ERP compliance statement and workbook. Were businesses required to certify compliance without clearly communicated, plain-language standards, the certification process would be a confusing and awkward process. That is especially true for small and medium business sectors that do not have full-time environmental staff.

The ERP certification process differs from many traditional compliance-assurance processes where regulators inspect, detect violations, and then enforce regulations; the model places the burden of assuring compliance on the regulator. The ERP approach, which is based upon a “trust but verify” model, focuses on assuring the accuracy of compliance statements and, more importantly, seeking out those entities that have not filed certifications with DEP. The ERP certification process is in some ways similar to what are known as general permits, which typically use a single regulation to apply standards to a large number of small sources. That approach obviates the need for source-specific permits. Some general permit requirements also require notification and certification (e.g. the maximum achievable control technology (MACT) standard for vapor degreasing). However, the ERP printer, dry cleaner and

DRY CLEANER ERP

One Massachusetts dry cleaning operation operates several drop-off store fronts feeding a single location with a perchloroethylene cleaning system. Prior to ERP, the owner was doing the best he could to comply with applicable laws; however, he was unsure of all of his compliance responsibilities despite participation in his trade association and review of various trade journals. The first year he filled out his certification the owner found that his discharge of boiler water blow-down onto his property (into a dry-well adjacent to the property) required a NPDES permit. “I didn’t know what an NPDES permit was, but I knew that I did not want to check the box that said I had no permit.” The other compliance option of the certification was to discharge the blow-down to a POTW. He decided to follow that route and installed a mixing tank to lower the temperature of the boiler blow-down under 140°F for discharge. Other changes made filling out the certification form included:

- instituting a record-keeping system to track perchloroethylene use (records in the past were poorly kept)
- significantly increased frequency of leak detection and repair by purchasing leak detection equipment and checking leaks weekly.

photo processors certifications and workbooks are more comprehensive in that they cover an entire facility rather than a single rule.

ERP-EMS

Since firms are required annually to certify their compliance, ERP forces them to review their compliance status annually. Only firms with the largest environmental impact are inspected with any regular frequency—but not necessarily annually. Nationally, 20 percent of major air sources and only 8 percent of large quantity generators get a yearly inspection. Under the Clean Water Act, major dischargers are subject to an annual inspection; but there is no specified inspection frequency for minor dischargers, who comprise the vast majority of CWA dischargers). Small businesses like printers, dry cleaners, and photo processors are inspected infrequently, if at all.

Perhaps the most significant policy innovation of ERP is its annual certification requirement—a process that ensures firms are likely to be in compliance more frequently. That is an effect that can be likened to having an annual environmental physical or check-up. In some cases, ERP's certification and workbooks outline frequent compliance reviews—such as weekly leak checking for dry cleaners—that keep firms on top of their compliance status. In cases where a firm finds itself out of compliance and unable to correct it before certifying, ERP requires the completion of a return-to-compliance form. The result is like components of an environmental management system wherein multimedia compliance obligations are clear and audited periodically. Those benefits were emphasized by industry—particularly by the printing sector—stating the assurance that their businesses were in compliance with all applicable regulations (multimedia) was a significant benefit of the annual ERP certification process. As one Demonstration Project participant said: “I hate having to do it (the annual certification) but like that when I'm finished, we know where our compliance (status) sits and why. We recently bought three firms and they have no basis to know they are in compliance, they just think they are.”

PRINTER COMMENTS ABOUT MP2 AND ERP

“Now I have a handle on the whole package rather than a piece here and a piece there...”

“It's (ERP) a ready-made system to check up on compliance—I'm glad it's being sent in every year...”

“Now it's time (August) to walk around and make sure everything is correct. I'm glad they're going to require it (annually).”

“Filling out the form was pretty straightforward, I had some difficulty with some of the questions. We keep all our records so tracking information down for the certification was easy.”

“Some of the record keeping was difficult to keep up. But I'm glad somebody got on the ball and said we cannot keep doing (things the way the industry traditionally has done things)...I'm glad they made it required, something they should have been doing for years.”

“Under the old permit (system we) had to do a year-end summary and send into DEP. ERP is a little easier than the old process.”

“(There were) no changes with record keeping, (I) was keeping things pretty well organized.

Now I'm glad (I have this)...one sleeps better knowing you are in compliance...I've got no real complaint (with MP2/ERP).”

For small and many medium-sized businesses, turnover in the environmental management function poses a compliance continuity problem. Interviewees commented that the EMS-like nature of ERP reduces turnover-related compliance problems. The annual certification provides a structure for new environmental personnel. That structure includes a road map to determine compliance responsibilities, a workbook that delineates how to maintain compliance, and requirements that ensure that on an annual basis the firm reviews its compliance status. (It is important to note that there significant differences between an EMS and ERP. Example differences include the commitment in a quality EMS to clear corporate environmental policies; the need for a plan to identify significant environmental aspects; and the need to set environmental goals and measure progress against them.)

The EMS nature of ERP is strongest in the printing and dry cleaning sectors whose regulatory requirements span all media and are complicated for small businesses lacking full-time environmental staff. Photo processors had mixed reactions about the EMS benefits of ERP. Photo processing operations are somewhat simple from an environmental management standpoint. Firms must control silver in wastewater discharges and manage chemical waste properly. Photo processors' views on the certification process ranged widely: from filling out forms and "forgetting about it", to having their chemical or silver-recovery vendor prepare the certification, to observations that the certification was "pretty straightforward and easy to understand ...and helped me develop a system for my nine stores."

High-Level Accountability

In addition to the aforementioned EMS characteristics, several printers and Demonstration Project firms mentioned that the required signature of a high-level owner or manager increased senior management attention to environmental management.

"It meant my boss (the president) gave me the 'keep me out of jail speech' every time that he signed it."

—Environmental manager at a medium-sized electronics firm

"In the position I'm in—I'm an employee and if I say we have to spend \$100 he (the owner) says go to hell. But with the certification requirement, now he recognizes he has to spend the money."

—Compliance person at a small printing firm

Universe Identification

The benefit of improved compliance is not restricted to facilities that DEP had traditionally regulated. Rather, an important component in ERP's design is more broadly identifying the complete universe of firms in a given sector. DEP's outreach and work with various trade associations increased the universe of firms under the department's oversight by more than 250 percent (see Table 1). That large universe lends to not only sector-wide compliance gains but also levels the playing field within a sector—a significant issue for firms complying with DEP requirements. Increasing oversight on formerly un-scrutinized or under-scrutinized firms is one of the main environmental benefits of ERP. It warrants noting that any regulatory pro-

gram could comprehensively identify the universe of firms in a sector; ERP and its close work with sector stakeholders was the catalyst in this case.

TABLE 1: ERP UNIVERSE IDENTIFICATION

SECTOR	DEP-IDENTIFIED UNIVERSE PRE-ERP	DEP-IDENTIFIED UNIVERSE POST-ERP
Printers	~250	~1100
Dry cleaners	~30	~600
Photo processors	~100	~500
Total	~380	~2200

The extent to which DEP has identified the “complete” universe for each sector is uncertain. Trade association representatives in the printing industry felt DEP has identified nearly all business in the sector. Representatives from the dry cleaning and photo processing industries were much less certain, stating that DEP has identified many—but clearly not all—of the photo processors in the commonwealth. According to the industry representatives, DEP’s universe coverage has slipped in the last few years as the department has shifted resources to new rollout sectors.

Whatever the exact figures, DEP’s capability to track environmental performance for 80 to 90 percent of the firms in a sector compared to less than one-third prior to ERP is important. The department has tabulated the overall universe into a database that includes not only those firms that should be certifying but those firms that do not have to certify—such as dry cleaner “drop-off” locations where no cleaning takes place.

Environmental Results

Pollutant reductions may be significant in several ERP sectors. The best data on actual pollutant reductions are found for the printing sector, for which two studies were performed.¹⁰ There is less quantitative data—yet compelling results—for the dry cleaning and photo processing sectors. According to interviewees, reductions were greatest during the first year of a sector’s certification. That certification was, for many firms, the first time they had comprehensively reviewed their environmental performance. Firms were quick to make changes so as to submit certifications showing full compliance.

Printing Sector

The environmental impact of printing includes silver-bearing wastewater from developing and printing operations, ink-contaminated cleanup sludge, paper and clean-up towels, and VOC emissions from solvent-based printing and cleaning materials. Of the two studies on the printing sector, neither quantified pollutant reductions such as silver in wastewater or VOC air releases. Massachusetts has roughly 1,100 printers, 418 of which participated in the Massachusetts Printers Partnership (MP2). Under ERP, roughly 900 have completed first-year certifications. DEP is undertaking enforcement for those that yet to certify.

A 1997 contractor-evaluation of the MP2 found dramatic improvements in environmental protection by firms that had participated in the partnership. Overall, 86 percent of MP2 printers said that the program influenced them to make changes. The study showed that MP2 was effective in getting printers to:

- eliminate saturated shop-towels
- try lower VOC press wash cleaning systems
- change press or screen cleaning practices
- install or modify silver recovery equipment to meet a 2 mg/l silver limit
- change press or screen cleaning solvents

Fifty-four percent of MP2 participants said the program workbook was a strong influence on their environmental practices. Nearly 70 percent of participants who attended said a MP2 workshop was a strong influence as well.

Following the first year of MP2 certifications, DEP conducted inspections at a statistically valid number of randomly selected printers before the partnership began and after the deadline for joining. Post-deadline inspections were conducted at facilities that certified, as well as at those that did not participate in the partnership. The evaluation revealed that:

- on average, overall environmental performance at a random sample of facilities that certified was about 40 percent better than that at a random sample of facilities that did not certify
- the certification itself was associated with a statistically significant increase in adherence to the particular standards to which the facility was certifying and that facilities did not falsely certify
- the management of fountain- and clean-up solution was better at certifiers than at non-certifiers
- none of the certified partnership participants used fountain solutions over the 10-percent threshold, while 40 percent of those eligible businesses that chose not to participate in the partnership used fountain solutions in excess of 10-percent alcohol

Our qualitative interviews with seven printers produced similar results. Participants in MP2 reduced VOC emissions (from blanket wash solutions for example), installed more-efficient silver recovery systems, ceased disposing of hazardous waste with their solid waste, and eliminated practices such as washing ink-contaminated press rollers in sinks.

When rolling out ERP to the printing sector, DEP estimated VOCs from printers would drop by at least 10 percent statewide. Based on total emissions of 1,688 tons per year from small printers before ERP, ERP was predicted to reduce roughly 168 tons of VOCs annually¹¹.

Dry Cleaners

Environmental impacts from dry cleaning include perchloroethylene released to air and into the work environment, wastewater (from industrial laundry machines, boiler blow-down,

SMALL PRINTER

Following the recommendation of its trade association, the printer, which has approximately 30 employees, decided to join MP2. One person with a host of responsibilities, ranging from production management and purchasing to treasurer, was responsible for environmental compliance. Through his participation in MP2, the production manager/treasurer made a host of compliance improvements:

- ceased disposing of used developer, spent fixer, waste ink, and ink and oil contaminated paper in the firm's dumpster;
- consolidated all of the firm's chemicals into one room and located them on a big plastic platform for spill containment;
- put signs around all the sinks instructing employees not to dispose of chemicals into sinks;
- ceased washing printing rollers off in sinks;
- purchased a new silver recovery unit to replace a malfunctioning unit; and
- changed blanket washes from high-VOC formulations to low-VOC formulations.

Beyond those obvious compliance changes that resulted in real environmental improvement, the production manager/treasurer cited that a significant benefit was the fact that he knows and understands his compliance responsibilities. As he stated, "I sleep better knowing I'm in compliance (with the regulations)."

and perc-water separators), and poor management of virgin and waste perchloroethylene. ERP standards apply to approximately 600 dry cleaners in the commonwealth, fewer than five of which are considered major sources—those that use more than 2,100 gallons per year for dry-to-dry machines, or more than 1,800 gallons per year for all other machines.

No comprehensive study regarding the impact of ERP on the dry cleaning sector has been conducted, though one is forthcoming. DEP did, however, estimate pollution reductions prior to enacting regulations for the sector. As a result of improved leak detection and repair (required under ERP), DEP estimated that, as an industry, dry cleaners would reduce perchloroethylene emission by roughly 500 tons per year. DEP based this estimate on EPA estimates that a dry cleaner with an inadequate leak detection and maintenance program emits about twice as much perchloroethylene as a dry cleaner with a vigilant program of leak detection and repair¹². The same EPA data indicate that on a national average an ERP-like leak detection and repair program would eliminate approximately 1.1 tons of emissions per facility—a 43-percent reduction in emissions. Taking into account the fact that Massachusetts's dry cleaning facilities are smaller than the national average, DEP estimated enforcing the leak detection and maintenance program could reduce perchloroethylene emissions by approximately 500 tons per year.¹³

DEP also predicted ERP would significantly improve hazardous waste management in the sector, yielding significant environmental benefits since perchloroethylene-laden wastes have resulted in the creation of numerous hazardous-waste sites and water-supply closings in the commonwealth.

Qualitative interviews with dry cleaners showed that several dry cleaners made significant compliance and pollution prevention changes to their operations as a result of ERP. Those changes included instituting leak detection and repair programs, changing filters more regularly, scheduled vacuuming of coils, scheduling full loads whenever possible, and eliminating illegal wastewater discharges. For several dry cleaners, the consolidation of all applicable federal and state standards into an easy to understand workbook and certification was valuable. For those firms, having the standards in a single place under an annual review significantly upgraded their environmental/compliance performance. DEP's translation of the workbooks and certification into Korean was helpful for the roughly 42 percent of Massachusetts dry cleaners who are Korean.¹⁴

While several firms and trade association representatives attested to ERP's value, there were others for whom the ERP standards made little difference. Those firms were generally larger in size, had more sophisticated management, utilized the newest and most efficient technology, and were in compliance with applicable regulations.

Photo Processors

The main environmental impact from photo processing operations concerns silver-bearing wastewater. ERP was designed to reduce silver discharges to publicly owned treatment works (POTWs) as well as reduce illegal discharges to septic systems, to the ground, or to surface water. DEP predicted ERP would also result in improved compliance with standards for storage of untreated photo processing wastewater (a hazardous waste). The ERP photo processing regulations apply to approximately 287 photo processors, all but one of them small film-development operations (minilabs) typically independently owned and operated or associated with large pharmacies or department stores.

No comprehensive study regarding the impact of ERP on the photo processing sector has been conducted¹⁵. DEP estimated the proposed discharge standards, coupled with the annual compliance certifications, would reduce overall silver discharges from photo processing minilabs by at least 99 percent¹⁶. By DEP's calculations, a 99 percent reduction would translate into a daily reduction in silver discharges in the commonwealth of between 18 and 36 grams per day. DEP's estimates of silver reductions hinge on the assumption that 15 percent of the photo processors in the Commonwealth had no silver recovery equipment. ERP regulations would force those firms to install recovery equipment capable of meeting the 2 mg/l discharge standard—thereby reducing silver discharges by 99 percent.

Qualitative interviews with eight photo processors representing 20 stores and Qualex—a photo processing support company that manages photo processing waste for roughly 400 minilabs at locations such as CVS, WalMart, and Walgreens—found that ERP did reduce silver discharges to POTWs. Those reductions were accomplished through more-frequent replacement of silver recovery canisters to meet the 2 mg/l statewide standard. Of the 20 stores we interviewed, 15 said they were changing their canisters more frequently than they had done to meet the previous standard of a 5 mg/l local limit. In other cases, the requirement for annual certification compelled a firm to more carefully monitor its silver recovery canisters and perform scheduled change outs as opposed to the traditionally haphazard method (which led to silver

exceedences in wastewater effluent). Those results were confirmed by industry experts who explained that photo processors throughout the state are paying much closer attention to silver recovery systems as a result of ERP implementation¹⁷. Qualex confirmed that its system to manage canister replacement has also improved. Several photo processors were meeting their discharge requirements prior to ERP without incident—a performance attributable to conscientious management and/or a strong POTW-inspection presence.

Our research was unable to confirm that 15 percent of photo processors had no recovery equipment prior to ERP. No photo processors we spoke with were in such a situation. Furthermore, it is unlikely that such a large number of photo processors had no silver recovery since it is economically beneficial to recover silver—even when including the capital cost of recovery equipment. In summary, while our analysis did identify real reductions in silver discharges to POTWs, we believe that reductions of the order outlined by DEP are unlikely to have occurred.

Photo processing vendors and trade association representatives felt the ERP reporting, testing, and record-keeping requirements were reasonable and resulted in reduced silver discharges to POTWs, but questioned the need for regulating the photo processing industry in the first place. Those representatives stated that they knew of no POTW in the commonwealth with a silver problem. They then, they asked, did DEP need to further regulate photo processing wastewater? Photo processors extend the argument further, claiming that the silver from photo processing wastes has extremely low toxicity, and that there are no EPA regulations regarding silver levels in POTW sludge. While there were differing opinions regarding silver toxicity, the relative risk of silver in the Massachusetts environment is slight.

Measuring Performance

DEP developed Environmental Business Practice Indicators as a way to measure, track, and assess program results and sector performance.¹⁸ EBPIs are industry-specific performance measures that provide a snapshot of a facility's environmental performance. They consist of both traditional program compliance measures, e.g., level of compliance with labeling, record keeping, equipment, monitoring, and other standards, as well as “higher value” measures that assess a source's level of environmental performance. Such measures include: use of low-VOC cleanup solutions (printers), degree of silver recovery (printers and photo processors), and level of perchloroethylene recovery (dry cleaners). \h Table 2 illustrates typical EBPIs for each of the three ERP sectors.

Printers have a number of P2-specific measures, but dry cleaners and photo processors do not, because a different philosophy was in place at the time of the first two rollouts. ERP leadership felt strongly that EBPIs ought to be about compliance—and not about “beyond compliance” or P2. The current leadership believes both ought to be tracked, since the combination gives a more complete picture of industry environmental performance.

The number of EBPIs for each sector also differs. Printers have 26 EBPI measures, including the 9 P2 measures, and dry cleaners have 16. Photo processors have only eight measures.

DEP's Use of EBPIs

Since 1998, DEP has used EBPIs to measure and evaluate the performance and environmental results of ERP. The methodology involves detailed review of certification data, in addition to the use of statistical analyses and random sampling. The department does not plan to

TABLE 2: SELECTED EBPIs FOR ERP SECTORS

CATEGORY	PRINTER EBPI	DRY CLEANER EBPI	PHOTO PROCESSOR EBPI
Hazardous Waste Requirements	<ul style="list-style-type: none"> ■ Are containers labeled as hazardous waste? ■ Are containers in good condition? ■ Does printer have sign prohibiting discharge of process chemicals down sink? 	<ul style="list-style-type: none"> ■ Is facility in compliance with quantity and time limits for hazardous waste storage? ■ Are containers stored on a crack-free surface that will contain leaks and spills? 	<ul style="list-style-type: none"> ■ Are containers closed except when wastes are added? ■ Are containers in good condition? ■ Are containers labeled “hazardous waste” ?
Industrial Wastewater Requirements (IWW)	<ul style="list-style-type: none"> ■ Is printer meeting 2 ppm silver limit or hauling? ■ Does printer discharge IWW to septic system? 	<ul style="list-style-type: none"> ■ Does facility discharge separator water to a sewer, tank, evaporator, or container—and never to septic? 	<ul style="list-style-type: none"> ■ Is facility meeting 2 ppm silver limit? ■ Is facility sampling? ■ If so, is the facility sampling the correct frequency?
Air Quality Requirements	<ul style="list-style-type: none"> ■ Are the cleanup solutions used on screen/press in compliance with applicable standards? ■ Are the fountain solutions used on offset web-fed lithographic press alcohol-free? 	<ul style="list-style-type: none"> ■ Is leak detection performed weekly, following the workbook protocol and using proper leak detection equipment? ■ Is there no odor of perc readily detectable in the facility? 	<ul style="list-style-type: none"> ■ No air EBPIs
Additional P2 Practices	<ul style="list-style-type: none"> ■ Does printer use chromium-free film developer cleaner? ■ Does printer reuse inks? ■ Does printer recycle aluminum printing plates? 	<ul style="list-style-type: none"> ■ No P2 EBPIs 	<ul style="list-style-type: none"> ■ No P2 EBPIs

inspect each ERP facility; it doesn't see that as a good use of its scarce resources. Instead, the agency is using statistics to determine the appropriate number of facilities for both random and targeted sampling. Inspection data from those facilities is then systematically compared to information supplied on those firms' annual certification forms. This comparison helps determine the accuracy of the aggregate certification data, and an industry-wide compliance rate—with appropriate confidence levels based on the statistical analysis—is generated.

DEP used the technique described above to evaluate the success of the Massachusetts Printers Partnership. DEP staff performed inspections at randomly chosen facilities both before and after program startup and used data from those inspections to calculate an industry-wide “before” EBPI score as well as two “after” scores—one for printers that “joined” the partnership by certifying compliance and one for those that did not. Using statistics, DEP then compared those scores and determined the score for certifiers—and thus their overall environmental behavior—was approximately 50 percent higher than that of both the “before” sample and the noncertifiers. There was no statistically significant difference in the scores and/or behaviors of the latter two sample groups.¹⁹

Other questions DEP expects to answer in its ongoing evaluation of ERP include²⁰:

- What is the actual environmental performance, as measured by EBPIs, for the sector? For each specific EBPI, what is the industry-wide score? Why are there differences in EBPI scores among different sectors, different groups within a sector, and among specific EBPIs?
- Do we know all of the facilities subject to regulation in each sector?
- What percentage of that universe has returned certification forms in a timely way?
- Are certification forms administratively complete or do omissions exist?
- Have forms been certified by appropriate senior-level officials?
- Is the information provided by facilities on certification forms internally consistent?
- How does information provided by facilities compare with inspection results? What is the level of accuracy of the data reported by facilities?
- Are inconsistencies attributable to the implementation of a new program or lack of clarity in the workbooks or forms, or are they evidence to initiate enforcement?

DEP's strategy to assure compliance involves: continued field presence, which means a number of targeted inspections, in addition to the random inspections associated with the EBPI evaluations, as discussed above; review and analysis of certification data and return to compliance (RTC) forms; and appropriate enforcement using the agency's standard enforcement protocol—including but not limited to—administrative actions (i.e., notices of noncompliance, administrative orders, and penalties) and referrals to DEP's Environmental Strike Force and/or the Office of the Attorney General for civil and criminal prosecution, as appropriate.²¹

DEP's regional offices target for inspections those companies that:

- are identified to be within an ERP sector and fail to respond to DEP mailings (including (NONs) or telephone calls

- trigger “red flags” during certification review (see discussion below)
- have been the subject of complaints referred to DEP for investigation and follow up (by agency staff, EPA, other companies in the sector, or concerned citizens)
- claim they are not subject to ERP²²

Results of Inspections and Enforcement Actions

According to DEP, since the inception of the program, approximately 160 NONs have been issued to dry cleaners and photo processors that have failed to certify.²³ Most facilities have responded to those actions, but approximately 12 of the NONs will lead to higher enforcement. Nonresponders²⁴ also figure prominently in targeted inspections (20 out of the 50 conducted in 1998 for the same two sectors).

Two fairly high-visibility enforcement actions have occurred in the photo processor and dry cleaner sectors. The first entailed violations in the photo processing certifications submitted for 23 Walgreens and 38 CVS stores in the first year (1997). According to DEP sources, the certifications received were essentially photocopied certifications and did not reflect site-specific action.²⁵ CVS paid a \$32,500 penalty; Walgreens \$22,500.

The other enforcement action, in March 1999, involved three dry cleaners whose certifications had been deemed “questionable” based on DEP review. The firms were inspected and found to have numerous violations, the most serious being one dry cleaner who had no control equipment on his machine and failed to conduct weekly leak tests. The cleaners were required to purchase new machines that ranged in price from \$16,000 to \$20,000.

DEP REVIEW OF CERTIFICATIONS

STEP 1: DEP reviews each certification form for completeness. If a form is not complete, DEP notifies the facility in writing and requires the missing information be provided within a specified time period.

STEP 2: Once a certification is deemed complete, DEP reviews it to ensure it is technically sufficient (i.e., the answers are internally consistent). If a response is technically deficient, DEP takes one of three paths of escalating action including field inspections and possible penalties, depending on the severity of total deficiencies in aggregate.

STEP 3: DEP reviews ERP return to compliance (RTC) plans submitted by certifiers to ensure the remedies chosen are appropriate and timely. If RTC plans are deficient, appropriate enforcement actions are taken. Even in cases where the remedy is appropriate and timely, certain violations (e.g., illegal discharges) may trigger “red flags” that result in DEP inspections.

Federal-State Authority Issues

This section explores some of the federal-state issues that have arisen during the design and execution of ERP. The most significant of those is the state's request for flexibility in the dry cleaning sector requirements that are covered by a federal air toxics Maximum Achievable Control Technology (MACT) rule. The Massachusetts-EPA Project XL Final Project Agreement (FPA), signed in October 1998, was seen as the necessary mechanism for seeking that, as well as other potential ERP sector flexibility. The FPA lays out the process and criteria for carrying out requests for flexibility, but specific requests must be submitted to EPA for approval through addenda.

The Federal Role

EPA's Region 1 and the DEP have along history of cooperation and mutual support, and EPA has been an involved stakeholder in ERP since its inception. Regional staff participated in the major ERP workgroups. For example, Region 1 reviewed and provided comment on each ERP sector's proposed regulations. Since ERP was primarily designed to address state requirements, there was little expectation that significant co-regulator issues would arise in the context of ERP.

One of the ERP sectors—dry cleaning—is, however, subject to a National Emission Standard for Hazardous Air Pollutants (NESHAP) under the federal air toxics program. That applies both to large (major) and small (area) source dry cleaners. Major source dry cleaners are not included in the ERP program, but area source dry cleaners—the vast majority of facilities—are.

Massachusetts had an existing Reasonably Achievable Control Technology (RACT) standard for dry cleaners, but it was not highly enforced.²⁶ In developing the ERP regulations for dry cleaners, the ERP workgroup looked to the federal MACT as a model. DEP wanted a simple, unified set of requirements. It was interested in increasing sector environmental performance even beyond the MACT level, so DEP actually increased the stringency of requirements. Unlike the federal MACT, which has a lower applicability cut-off so that very small sources are not covered, the ERP standard has no cut-off. The ERP standard is also more stringent than the federal MACT in requiring the use of leak-detection equipment, not the

“sniff test” which is allowed under the federal standards. Leak-testing frequency also doubles under the state ERP standard, and there is a higher paperwork burden (i.e., more monitoring logs must be kept).

DEP did not consider it necessary to apply for MACT program delegation. Based on its good relationship with Region 1, managers expected that EPA would retain the principal authority for enforcing the MACT standard and DEP would enforce the ERP requirements for dry cleaning. Such cooperation had been quite common in the environmental arena.

The Need for Regulatory Flexibility

Had the ERP dry-cleaner regulations been either more stringent than or equal to the federal MACT standard, then no flexibility request would have been necessary. In negotiations with the dry cleaners, however, DEP realized it needed to offer some regulatory relief to dry cleaners in exchange for what were significantly more-stringent state requirements. Dry cleaners wanted a show of faith that their commitment to improving environmental performance was recognized, and that in exchange for more-stringent requirements in leak detection, monitoring frequency, as well as more sources under regulation, they would get some consideration.

Some dry cleaners came to the early ERP workgroup discussions with the expectation that “everything was on the table.” They hoped for a broader reinvention of the regulations, not the “MACT-plus” they ended up getting. Some, for example, wanted a simple performance metric, such as pounds of clothes cleaned per-gallon of perchloroethylene. But as discussions went on, it became clear that wholesale regulatory reinvention was not going to happen. At one meeting, the dry cleaners approached DEP with a request to pull out of ERP, to essentially “unroll” from the program.

In consideration for the more-stringent state standard, DEP agreed to pursue at least one area of regulatory flexibility. The workgroup decided to look at the possibility of reducing the formal record-retention time for dry cleaners from five years down to three. It seemed, according to workgroup members, the least flexibility they could expect.

The Role of Project XL

We asked several of our interviewees why DEP decided to seek Project XL status for ERP, but few had an answer. Most saw the XL agreement as a long, arduous process²⁷ with little concrete result. The agreement’s chief benefit has been in the area of public relations—it has brought the concept of ERP to a wider, national audience.

Although Region 1 suggested that DEP use another mechanism for flexibility—the Clean Air Act section 112(l) MACT delegation process—the department was “adamant,” as one EPA interviewee put it, about elevating ERP to an XL. DEP believed the XL approach would not only bring high visibility to the program, but also would raise the issue of regulatory flexibility to a national audience.²⁸ The 112(l) delegation process might indeed gain flexibility for the dry cleaners,²⁹ but was not the same public relations tool as a Project XL. Moreover, DEP hoped that getting EPA to agree formally through the XL process that ERP could provide superior environmental performance, could help pave the way for more flexibility in future ERP endeavors. There was a political consideration as well: DEP managers were very interested in testing the rights of their state to make its own regulations.

The ERP-XL agreement process took three years. One EPA employee characterized the signing of the Final Project Agreement (FPA) in October 1998³⁰ as “a symbolic milestone.” An

umbrella agreement that lays out the process and criteria for specific requests for regulatory flexibility, the FPA does not in and of itself grant that flexibility. The criteria are built around a demonstration of “superior environmental performance,” but the FPA does not say concretely how such performance will be judged. Region 1 must review any addendum that contains a specific request for regulatory flexibility, and forward it to EPA headquarters for multi-office team review and approval. Coordinated through the Office of Reinvention, the headquarters team is made up of members of the Office of Enforcement and Compliance Assurance, the Office of General Counsel, and the relevant media offices. (In the dry cleaners’ case, those are the Office of Air Quality, Programs, and Standards, and both the Office of Policy and the Office of Reinvention.)

Both DEP and EPA noted that they are proud of the FPA itself, and strongly believe that—in total—the ERP approach is likely to achieve superior environmental performance in each of its sectors. It’s recognized as an innovation in improving compliance and enforcement for small sources. One EPA interviewee said he considered the Massachusetts ERP- XL one of the top-two XLs in the country, in terms of its potential for environmental gain. It is the first state XL, and has since been followed by one in New York, and by discussions of another for New Jersey.

THE DRY CLEANING ADDENDUM

As mentioned, the dry cleaning addendum requested a decrease in the federally required record retention time. It was submitted to EPA in March of 1999. Region 1 reviewed it and forwarded it to the EPA Headquarters XL team. There, the request has met some resistance. The Office of Enforcement and Compliance Assurance is concerned about setting precedent by decreasing record retention time from the standard MACT of five years, and has difficulty seeing any direct bearing on “superior environmental performance” connected with the request. “For some, this three- vs. five-year thing is either a tempest-in-a-teapot, or it’s the holy grail”, one EPA employee said.

EPA has informed DEP that, “the XL agreement does not remove the need for DEP to do a 112(l) delegation for the dry cleaner MACT, since that is a statutory requirement.” According to EPA, what the XL agreement does do is establish a process to resolve issues with that delegation. The implication is that the XL FPA paves the way on how to begin to agree on the delegation specifics. But Massachusetts could have gone to the delegation process directly. It does not need an XL to seek flexibility via program delegation. Essentially, the FPA and Addendum cannot function as Massachusetts originally envisioned, a whole separate regulatory process must now kick in—the 112(l) MACT delegation.

RECORD-RETENTION TIME ISSUES

Because the issues surrounding the requested dry cleaner flexibility are so key, we tried to lay out what we heard on both sides of the topic. Table 3 outlines various pros and cons to changing the record-retention time that we heard in our interviews.

**TABLE 3: ARGUMENTS FOR AND AGAINST
ERP DRY CLEANERS RECORD-RETENTION FLEXIBILITY**

	PRO	CON
CONSISTENCY	Important for small sources to get consistent message and not manage records differently for different programs. A common record retention requirement is three years (e.g., RCRA manifests).	All federal MACTs have five-year record retention, the maximum time frame allowed by law. Federal government cannot bring enforcement actions seeking penalties for actions more than five years old.
SMALL SOURCES	Inspector experience says small sources either have no records or all their records from startup. Enforcement experience says records of the most-recent six months to a year are sufficient to derive penalty.	Want fullest time frame available because inspectors do not get out to small sources very often. Using three-years would remove 40 percent of the available time frame for punishment.
PRECEDENT SETTING	Since flexibility is granted within context of the XL program, it should be clear flexibility is not open to everyone.	MACTs have never deviated from the five-year time frame. XL has mostly been about single-facility flexibility, site-specific experiments that do not set precedents either program-wide or sector-wide.
SUPERIOR ENVIRONMENTAL PERFORMANCE	Derives from sector participation in the entire ERP. Do not judge element by element. ERP standards for dry cleaners are more stringent; the program brings more sources into the system, promotes higher compliance via certifications and workbook process, and has potential for sector-wide superior environmental results.	No direct link between record retention and environmental performance. Do not understand what benefit dry cleaners derive from reduced record-retention, or what superior environmental results accrue.
PAPERWORK REDUCTION	It is important to offer small facilities something in exchange for higher regulatory burden. Average dry cleaner has 2500 square feet floor space, and needs every inch. Would have liked real regulatory relief but thought this was the most they could get.	The real burden is in having to keep the record, not to hold an additional two years. It would take more effort to go in and purge records than to just keep them.

The arguments reflect the tensions between regulatory flexibility and national program consistency. EPA does not want to set a precedent. The question is whether the XL program is rigorous enough to address that concern. For individual facilities in XL, EPA has been successful in maintaining the distinction between site-specific flexibility and the availability of that flexibility outside the realm of XL. With a state XL such as this, involving some 600 facilities, the stakes are higher. It is more difficult to make a case that flexibility is “site-specific.” EPA has told DEP that in order to move forward on granting the requested flexibility, Massachusetts must submit an application for delegation of the air toxic program (the 112(l) delegation).

As of April 2000, DEP had not submitted that package. According to the state, both the XL addendum and the delegation application are on hold because the project manager is out on extended leave. In fact, DEP is rethinking both the XL request and the delegation. It may not be worth pursuing, given EPA’s position on the issue of record retention. Massachusetts knows that California had a difficult time getting its dry-cleaner MACT delegation approved—in large part because of a requested flexibility in record retention.

EPA has provided DEP draft comments on the dry cleaning addendum which outline what the agency seeks in the delegation package. Key items are enforcement protocol and compliance strategy. EPA is looking for specific commitments (e.g., number of inspections, percentage of sources inspected per year), as well as projections of expected increased compliance rates. DEP is frustrated that no consideration appears to be given to the innovative nature of ERP, how it has already increased the known universe of dry cleaning facilities, that those dry cleaners are now certifying compliance annually, and are filing and carrying out Return to Compliance Plans.

It appears that EPA can only benchmark performance using the standard tool of number of inspections. In California, for example, the state had to commit to inspect 100 percent of its dry cleaners annually, in order to gain its 112(l) delegation, and the flexibility to move from a five-year to three-year record retention. California could make that commitment because inspections are sub-delegated at the local level there: fire departments and health departments have long been the “legs” of California’s environmental enforcement programs. The DEP does not have such a de-centralized regulatory structure, so there is little possibility Massachusetts could replicate the offer of inspecting all its dry cleaners. Instead, DEP is putting its effort into the EBPI methodology, hoping it can demonstrate the compliance benefits of ERP. Pending the EBPI work, DEP may—or may not—decide to move forward with the delegation package.

Permit Elimination and Performance Standards

At ERP's inception, DEP set a goal of eliminating permits and developing clear performance standards. Since then, there has been considerable debate about the extent to which ERP could result in real permit elimination. The chief permitting issue in the debate is the state's air program use of Best Achievable Control Technology (BACT) analysis. This section reviews the internal DEP debate, and examines the extent to which ERP successfully eliminated permits.

Performance standards, like permit elimination, were another cornerstone of the early ERP design. DEP wanted to throw out old notions of sector regulation and examine whether clear performance standards—ones that would measure environmental results—could be developed. This section also explores DEP's efforts to work with industry stakeholder groups to develop performance standards, noting both ERP's successes and difficulties.

Permit Elimination

BACT, Permits-by-Rule and General Permits

DEP requires all new sources and sources with increases in pollutants over a certain threshold (e.g., 1 ton for VOCs) to go through a BACT review. During that review, DEP's permit writers have the opportunity to require firms to adopt better, more-advanced technology. ERP replaces the permit-by-permit BACT review with process-specific standards. DEP air-permit staff had several concerns about implementing ERP for sources larger than dry cleaners and printers. Specifically, they were concerned:

- that, in giving up the technologically dynamic BACT requirements, DEP would not have, or allocate, sufficient resources to periodically update the ERP performance standards so as to get BACT-type improvements
- that air permits are complex, and the department would not allocate sufficient compliance and enforcement resources to ensure the certifications were done correctly

- about complying with federal requirements, since writing standards and certifications to meet federal requirements is no simple matter (for example, a small increase in VOCs (<5 tons) could trigger PSD requirements at a source).

As one DEP permit engineer explained: “EPA does not go back and revise their standards frequently enough... For example, the NESHAP MACT standards for trash incinerators (40 CFR 60) just came out in 1999. In the 80’s Massachusetts required acid gas control while it took EPA eight to ten years to come along and require (the same technology). EPA does not have the horses to continuously update the NSPS.”

DEP air-permit engineers were most concerned about “giving up” BACT for large sources—including sources near, but below Massachusetts federal thresholds for major sources (e.g., 50 tons per year for VOCs). One permit engineer stated he would be opposed because “such a large source, in five years, would not be putting in the best standards.” While BACT concerns are legitimate, DEP also recognizes that BACT has grandfathered many large sources. Applying ERP to sectors with grandfathered sources would result in a net reduction in pollutants to the environment as those older sources are brought up to improved environmental performance requirements.

Although eliminating permits for larger sources was part of the early ERP model, proponents in DEP took a pragmatic view, recognizing that it made sense to test permit-elimination on smaller sources³¹ Several permit writers commented that they thought the notion of permit elimination was a good idea because too often—and specially for small increases in pollutants—a permit writer does little more than move paperwork. They discussed several possibilities. Among them:

- Replace the permit requirement for modifications for small increases in pollution (e.g., less than 5 tons of VOCs) from an existing source with a certification requirement. The certification would, for example, require that firms certify that their emissions per unit of product would not increase (although small increases in total emissions would be allowed).
- Certify certain operations where the technology is not changing dramatically such as asphalt batching operations or combustion sources.³²

DEP has decided to apply ERP to the new or modified combustion-permitting program (known as the “combustion sector”). However, efforts to certify small increases in pollution from a source (i.e., permit modifications) were unsuccessful³³.

In many ways, the regulatory standards required by DEP resemble a “permit-by-rule” or a “general permit,” i.e., source-specific standards, based on technology or performance or some combination thereof, required of any source or firm that meets certain applicability criteria. For example, the ERP printer’s standard:

- limited the amount of VOC in solvent-based inks, coatings, and adhesives used in screen printing
- required flexographic, gravure, and letterpress printers to either limit the amount of VOC in solvent-based inks, coatings, and adhesives, or to install control technology that achieves a specified percent reduction in VOC emissions

- limited VOC emission from clean-up solutions by setting limits on the vapor pressure of solvent-based clean-up solutions
- established a silver discharge limit of 2 mg/l of silver to sewer systems and establish operation and maintenance for such systems

Three elements set the ERP standards apart from most permit-by-rule or general-permit approaches: the annual certification; the annual compliance reports that document compliance and increases/decreases in pollutants; and the application of the certification and accompanying compliance and pollutant measurements to DEP's EBPI's.

Eliminating Permits in the Rollout Sectors

In reality, ERP eliminated a significant number of permits only in the printer sector. (The dry cleaning and photo processing sectors had very few DEP permits to begin with, and few of those were eliminated under ERP.) ERP gave the printing industry the flexibility to add and remove certain equipment without the need for prior DEP approval. Before ERP and the Massachusetts Printers Partnership were introduced, firms complying with permit requirements had to submit a permit application more than 120 days in advance of construction activities. The application took roughly 30 days to prepare; DEP's review and approval took 90 days.

Once that process was completed and a firm had its permit, it could install the equipment. Under ERP, printers are allowed to add and remove equipment without notifying the DEP. No pre-construction approval is needed: a firm needs only notify DEP when completing its subsequent year's annual certification. The only time a firm is required to notify DEP of equipment modifications is in cases where the modification changes the firm's size-classification (there are three ERP size classifications: small, medium, and large). That benefit was largely for non-heat set operations, the most prevalent printing process in Massachusetts. ERP performance standards were not developed for the few heat-set printing operations in the state. As a result, printers with a heat-set press(s) previously required to have an air-pollution control device had to maintain their permit(s) under ERP.

ERP eliminated the requirement for industrial wastewater (IWW) permits for all three rollout sectors. That was insignificant, however, because so few of those firms had IWW permits at all. For example, DEP permitted only 15 of the estimated 289 photo processors prior to ERP. DEP was unlikely to fully enforce the IWW permit requirement (which requires a professional engineer's stamp and carries a one-time cost of roughly \$5,000 to \$10,000). Although one photo processor interviewed for this study was shipping waste off-site prior to ERP because he did not want the expense of an IWW permit, the general industry practice is to process photo waste without IWW permits. The printing and dry cleaning sectors were similar to the photo processors in that, while many were required to have IWW permits; very few were actually permitted—or even knew of the permit requirements.

Based on our discussions with DEP, it is unclear whether the goal of widespread permit retirement or elimination is feasible. Significant barriers include: federal permitting requirements; the need to take into account siting considerations for large-scale operations or those such as asphalt batching plants that are controversial to their communities; the preference—particularly in the air program—for the BACT process. Once DEP permit engineer added that he doubted that there that many sectors with sufficient numbers of sources for which DEP could develop “blanket performance-standards.”

Development Of Performance-Based Standards

Performance-based standards were a cornerstone of the early ERP concept. In the literature, performance-based standards are characterized as specifying how much of a pollutant a facility may emit—without specifying either the technology or techniques the facility would have to use to stay within the limit. Performance-based standards differ markedly from the strictures of technology-based standards.³⁴ They include specific per-unit-of-product emission limits and caps or plant-wide applicability limits. Those definitions, however, mask the more-complex nature of many regulatory standards that are neither pure performance standards nor pure technology standards. For example, some standards rely on raw material specifications (i.e., pounds of VOC per-gallon of applied solids for coatings), or set incentives for firms to practice best management practices in lieu of more-costly alternatives (such as EPA's pollution prevention, alternative-track regulation for water discharges from pesticide formulators and packagers).³⁵

As we discussed earlier, DEP used department-industry work groups to formulate standards. The group representing the dry cleaning industry attempted to develop a performance measure based on pounds of perchloroethylene used per-pound of clothing washed. The standard would give preference to the most up-to-date equipment in the industry (for example, equipment with the best seals and other fugitive leak-controls). Industry representatives had mixed ideas about the idea: some preferred the standard while others preferred the traditional mix of equipment design specifications, operating procedures, and compliance management practices³⁶. Neither did DEP staff have one opinion: some preferring the standard (one that is in use in California), others fearing the standard might be unenforceable. In the end, DEP adopted a traditional approach, asking dry cleaners to certify to a series of equipment design specification, equipment operating procedures, and compliance management practices. The certification statement and workbook were then used to put the various compliance requirements in plain language—and the original regulatory reinvention goal never occurred.

In the photo processing sector, DEP worked with industry to develop a performance standard for wastewater. DEP wanted a performance-based standard, while other actors wanted to use a technology/management standard depending upon the size of an operation. Smaller operations would be required to use simpler technology and few best practices, while larger operations would have to use more-expensive recovery systems and meet higher management standards. In the end, DEP stuck with its performance-standard approach.

In the demonstration projects, DEP found it difficult to develop “pure” performance standards—characterizing the 12 standards along a continuum—ranging from those aspects that most constitute a true performance standard to those that most closely constitute a technology standard (Table 4).³⁷

**TABLE 4: ENVIRONMENTAL RESULTS
PROGRAM DEMONSTRATION PROJECT STANDARDS**

EMISSION/ DISCHARGE LIMITS	MATERIAL SPECIFICATIONS	EQUIPMENT DESIGN SPECIFICATIONS	EQUIPMENT PROCEDURE/ MANAGEMENT PRACTICES
<ul style="list-style-type: none"> ■ lbs of pollution ■ ppm in discharge X volume discharges 	<ul style="list-style-type: none"> ■ % sulfur concentration in fuel ■ % VOC in solvents 	<ul style="list-style-type: none"> ■ spray nozzles ■ stage II vapor recovery systems ■ freeboard height ■ equipment type 	<ul style="list-style-type: none"> ■ application rate ■ production rate ■ trained operators ■ frequency of changing filters ■ labeling ■ material handling procedures ■ emergency response plan

Many of the 12 demonstration project standards were combinations of emission/discharge limits, material specifications, equipment design specifications, and equipment procedures/management practices. Five of them had all four of the components; none had any one aspect alone. DEP's evaluation report stated that:

“Emission and/or discharge limits were established for ten of twelve industrial processes for the ERP demonstration project firms. At the same time, the majority of those standards also specified material, equipment and/or operating requirements (e.g., low-solvent paint, high-efficiency spray nozzles, or frequency of checking for leaks). While discharge or emission-based standards can maximize operational flexibility, certain businesses (such as dry cleaners and photo processors) view equipment standards, for example, as less burdensome. In other words, those companies would rather be held to a prescribed equipment maintenance routine than to be held responsible for monitoring the actual discharges or emissions from their equipment. Relying exclusively on emission and/or discharge limits also requires a considerable investment of DEP staff time on researching the latest national and international advances in regulatory standard-setting and low-cost continuous monitoring equipment³⁸.”

There were many challenges in ERP's attempts to develop performance standards:

- reluctance on the part of regulators to relinquish the technology-forcing BACT process
- reluctance on the part of industry to accept performance standards rather than guaranteed technology standards
- the need for resources to develop and update the performance standards themselves
- mechanisms such as continuous emissions monitoring to ensure compliance with performance standards
- the difficulty of making such standards compatible with federal requirements

ERP Costs and Disclosure

Assessing the costs of implementing ERP, both for business and for DEP, is difficult. There have been no studies of ERP implementation costs; specific cost elements for ERP are not readily defined; and differentiating between start-up and maintenance costs easy. Furthermore, cost information—such as the cost for DEP to implement the program for a particular sector—can be meaningless without some sense of comparable costs for another effort such as a permitting program or a traditional compliance assistance program. Developing a complete and comparative cost picture was beyond the scope of this research effort. Instead, we present readily available basic cost information—such as that prepared for DEP’s program plan—and qualitative information from interviews.

This section also looks at the issue of public participation in ERP. Although not a specific design criteria of the program, some stakeholders (notably environmental NGOs) expected that increased public disclosure was an important check and balance to permit elimination. Industry, on the other hand, has raised concerns about making confidential business information submitted on ERP forms readily available to potential competitors. DEP has struggled with the tension between information disclosure and confidentiality. Information on the department’s public participation strategy was obtained very late in our research, and we did not have the time and resources to evaluate the subject thoroughly. Following the cost subsection, we outline the issues, concerns, and a series of public participation options.

DEP Program Costs

In FY 2000, DEP anticipates spending roughly 14 FTEs (out of its 1,100 FTEs) for five sectors covering approximately 3000 certifying facilities. DEP is running ERP with two new staff positions: the ERP program manager and the assistant program manager. Thus DEP has funded ERP largely with existing resources by shifting resources and prioritizing work. Of the 14 FTEs budgeted for FY 2000, roughly 9.5 come from the Business Compliance Division at DEP while the remaining 4.5 are from the Information Technology, Public Affairs, Consumer and Transportation, and Planning and Evaluation Offices.

DEP budgeted ERP by breaking the program into 10 categories (see Table 5 and a more-detailed task-by-task cost description in Appendix D). Those categories cover general management, outreach, data collection and maintenance, inspections and enforcement, and evaluation.

**TABLE 5: ERP PROGRAM
BUDGET CATEGORIES (FY 2000)**

PROGRAM CATEGORY	FTE REQUIREMENTS
1. Program Management, Strategic Direction, and Program Budget	1.3
2. Program Outreach	1.3
3. Sector Development	.75
4. Data System Development and Maintenance	2.7
5. Data Collection and Maintenance	2.1
6. Certification Review and Enforcement + Inspection Oversight	2.8
7. Sector Maintenance and Improvement	.4
8. Evaluation/Data Analysis	.6
9. Inspections	2.0
10. Choosing Next Sector	.1
Total	14.05

That budget does not take into account the amount of resources required to deal with those facilities under DEP's traditional system, including permitting. In addition, DEP's experience is that the time spent to develop a new sector can vary widely, depending on factors such as:

- how homogenous the sector is
- the number of potential and actual facilities in the universe
- the general size of the facilities in the universe
- how complicated the issues are
- how new the ERP concept is (i.e., whether the first ERP sector or the fifth)

For example, DEP estimates that the resources required for sector development for industrial wastewater sewer dischargers are roughly double that required for industrial boilers³⁹.

Facility Costs

There have been no studies examining the relative costs for facilities for meeting ERP standards. Industry ERP-related costs are considered to include the following categories:⁴⁰

- increased compliance evaluation and monitoring costs
- increased technical review costs
- increased reporting costs
- equivalent compliance fees

Our qualitative interviews with printers, dry cleaners, and photo processors indicated that compliance costs (including compliance evaluation, monitoring, technical review, and reporting costs) were greatest the first year a firm certified. Those labor costs were highest in each sector for firms that had not previously reviewed their compliance situation, as well as for persons new to their position as environmental manager.

Although we did not explicitly ask interviewees to estimate costs for completing the ERP certification, we did ask them to describe the effort it entailed, and in some cases to estimate the number of hours to complete the forms. Responses depended upon whether an interviewee was new to the position, and whether he had filled out the certification in a prior year. Estimates from printers ranged from two to eight hours. The dry cleaner we interviewed thought the certification was not a “big deal” since regular monitoring and maintenance of dry cleaning machines is good management practice. Photo processor responses ranged from an hour to nearly eight. Some firms chose to have their photo processing vendor prepare the forms. None of the photo processors commented that the certification effort was excessive or onerous. Following the first certification year, photo processors found the process straightforward.

Fee Reduction

While ERP was never truly about fee reduction, ERP did promise some type of fee consolidation and “relief” for the affected sectors. In fact, the fee consolidations meant a net savings for those firms already in the DEP system. For example, prior to ERP, a mid-sized printer paid a \$300 small-quantity generator-fee annually, \$150 to \$450 for air permits, and \$1,300 for an IWW permit (if discharging silver in wastewater to a POTW). Under ERP, those fees were replaced with one annual fee of \$200. For those printers who were not already participating in permitting, however, ERP could be seen as a new cost. In any event, none of the printers we interviewed discussed the fees as a major or minor benefit. Only the photo processors, whose annual fee is \$150, complained about their ERP fee.⁴¹

Public Participation

In late 1995, at the outset of the program, DEP convened a multi-stakeholder design group. The group was most active during the first eighteen months of the program, and focused on developing a consensus on ERP’s prototype design. The group’s member organizations included EPA, local governments, environmental advocacy groups, business and industry, consulting firms, and the legal community. After generating a number of documents (e.g., the ERP demonstration project plan and a scoping report on environmental impacts of facilities in the ERP universe), the group ceased to meet on a regular basis. Member organizations continue to receive information from DEP on the progress of ERP, but their formal input is no longer

solicited. However, certain individuals, mostly from the business community, have remained active in ERP work groups for specific rollouts.

DEP's Website

Information on the progress of ERP is regularly posted on the DEP website: www.state.ma.us/dep/erp. The site includes publications, ERP sector regulations, press releases, and background material. It does not include specific information on facilities participating in the program, or any data from the certifications. Blank certification forms are posted so the public can see what sort of statements facilities are certifying to; but the results are not publicly available, even in aggregate form.

ERP Sector Regulations

As with all formal rulemakings, the public can participate by commenting on proposed ERP regulations. We did not obtain information on the level of public interest or response to regulations generated during the first three rollouts. In general, public response—with the exception of affected businesses and some environmental NGOs—is very low.

Permitting and Siting

Permitting and siting are the traditional ways in which the public has been involved in the environmental protection system. The level of interest and participation can vary significantly. For example, siting a hazardous waste treatment, storage, or disposal facility almost always receives media attention, as well as citizen input and criticism. On the other hand, permitting a facility, especially one that is smaller or of little perceived environmental or public-health threat, usually draws little opposition. ERP does not presently deal with facilities involved in siting or major permit construction applications or renewals. In fact, some environmental organizations on the design team (e.g., MassPIRG) believe strongly that ERP should never be applied in large-facility situations, that such an application would jeopardize an important avenue for public participation.

ERP Information Disclosure

DEP met with ERP sector industry representatives in 1999 to discuss public disclosure of the certification data on the Internet. Some industry representatives were upset at the prospect of having what they view to be confidential business information collected from their ERP certification forms made readily available. They believe DEP has the authority to collect the information, and are aware such information is available to anyone seeking it. But they are concerned that Internet postings may make information too accessible to competitors. For example, photo processing certification-data includes information on the volume of silver bearing wastewater at each photo shop. Competitors could use that data to calculate the number of rolls a photo shop processed, and use that information to make decisions about siting new stores.

Some trade association representatives believe that putting raw certification data on the Internet serves little purpose. The data set is large and difficult to understand and, therefore, of limited value to citizens. Trade associations suggested that DEP be more creative—publicize a

list of firms that have not filed certifications, and are thus not in compliance. Industry representatives want DEP to use the certification information to aim the power of public disclosure at the “bad actors,” and not the vast majority of ERP firms that act in good faith by filling out certifications year-in and year-out. In addition to publicizing non-compliant firms, trade association representatives believe publicizing sector-wide data is a good idea.

Due to strong resistance from industry and a lack of counter-pressure from environmental NGOs, the department decided to postpone and re-examine the idea of web access to certification data,⁴² and to publish an annual report that would use EBPI indicators and other aggregated certification data to present a picture of the environmental results and compliance status of sectors in the ERP. DEP expects to publish the first report at the end of 2000.

Environmental NGOs we spoke to regarding DEP’s decision to postpone and re-examine the issue were “disappointed, but not surprised” at what they perceive as a softening of ERP public disclosure. Those environmentalists were not concerned, since ERP currently only applies to small industries. As long as ERP stays focused on sectors with relatively small environmental impact, public information disclosure will not be a major issue for environmental NGOs.

Conclusions and Recommendations

ERP confirms what many in the reinvention field know: making visionary changes in regulatory programs is exceedingly difficult; and that a committed staff with strong leadership can accomplish a lot despite the many barriers. This section presents our conclusions about ERP, as well as recommendations for improving, expanding, and evaluating the program.

Environmental And Compliance Results

Our review of ERP showed the program is a useful tool for improving compliance, producing environmental results, and to some extent, promoting pollution prevention. ERP's annual certification requirement, accompanied by a well-designed workbook, helped firms establish EMS-like procedures, accountability, and records. A valuable benefit to industry was the assurance that, once its certification was properly completed, a facility knew its compliance status. It is important to note that our positive assessment of ERP's environmental and compliance results is not absolute. More quantitative studies assessing ERP's impact need to be performed.

The two quantitative ERP studies performed to date—both on the printing sector—showed significant improvements in compliance practices, pollution prevention practices, and quantifiable emissions reductions. Our qualitative interviews confirmed those results in the printing and dry cleaning industries. Results for the photo processing industry, which indicated some photo processing waste reduction and compliance improvement, were not as compelling as those of the other two rollout sectors.

ERP derived much of its environmental compliance improvement from two areas. First, DEP created a more complete database of the universe of firms in each sector. Since many of those firms had never fully reviewed their compliance responsibilities, the compliance and environmental benefits were significant. Second, in exchange for performance-based standards and plain language workbooks, DEP and industry representatives agreed to stricter regulatory requirements. For example, ERP limits printers to low-VOC press cleaning solutions. For dry cleaners, ERP requires the weekly use of leak-testing equipment, stricter than the pre-ERP standard that required a monthly “sniff” test.⁴³

In terms of risk reduction, ERP produced the greatest results in the printing and dry cleaning industries. In printing, DEP predicted ERP would reduce VOCs by 10 percent or 168 tons per year. In the dry cleaning industry, ERP targets perchloroethylene, a hazardous air pollutant. ERP requires improved waste handling, improved equipment maintenance and operation, and better and more-frequent leak-checking—activities that will reduce emissions and should minimize the likelihood and impact of spills and workplace exposure.

Permit Elimination and Performance Standards

Permit engineers agree that for small sources many permitting duties are little more than paper-pushing exercises. DEP successfully eliminated permits in the printing sector. Nevertheless, without assurances that generic standards could be periodically updated, those same permit engineers were reluctant to forego BACT permits for even small increases in pollution. Barriers to eliminating permits for large sources were even greater, and include requirements for federal flexibility and the need to take community interests into account in the citing process.

- **Recommendation 1.** *In order to move into more innovative permit elimination areas, EPA should examine the permit elimination barriers posed by BACT since BACT-type permitting systems are prevalent in the state air programs.*

Despite those barriers, there are opportunities. One possibility is to test ERP activities in sectors with permit-by-rule or general permit requirements where there is little sector education, regulatory enforcement, or use of compliance data to steer inspection priorities. Another area to test the approach would be in small sources that require permits for small changes in pollutants: eliminating the need to process paperwork permits would be a relief to both industry and government agencies. Confined animal feeding operations, for example, could benefit from the ERP workbooks, annual certifications, combination of performance and technology standards—rather than the traditional permitting approach that lacks education and a regulatory feedback loop.

Similarly, ERP's efforts to promote performance standards seem open ended. DEP and industry experimented with, and successfully developed, several performance standards. Yet those attempts were controversial both with industry and at DEP. Several, such as those for dry cleaning, were unsuccessful. In ERP, those barriers were most prevalent in the air program. Our research found, both nationally and at the state level, that both thorough definition and clear examples of performance standards are lacking. There is little detailed information about how to develop performance standards (e.g., the range of concerns associated with setting and enforcing performance standards compared to more-traditional standards). The chief barrier mentioned in the literature concerns the cost-prohibitive nature of continuous emissions monitoring equipment—our DEP interviews showed the barriers go beyond technology, and lie in areas such as compliance assurance and the frequency with which performance standards are updated. To better promote performance standards:

- **Recommendation 2.** *EPA should develop practical guidance, case studies, and a performance-standard database for federal, state, and local regulatory staff.*
- **Recommendation 3.** *EPA and the states should study cases where performance standards have worked and where they have failed. Documenting that information would move the debate beyond normative statements that performance standards are “good,” and would provide policymakers, permit writers, and regulatory development staff better information on their potential and limitations.*

Federal-State Issues

Massachusetts pursued its XL agreement as a mechanism to obtain regulatory flexibility for current and future ERP sectors. Both EPA and DEP invested significant resources into the XL effort; but XL, as a flexibility mechanism, has been onerous for all parties. DEP must hurdle a high bar to obtain what most consider a very small record-keeping change. Considering the potential environmental gains ERP offers, DEP's struggle with EPA over a two-year change in record retention seems wasteful.

ERP's XL experience raises serious questions whether multi-facility XL agreements are possible—or if such efforts are too far from EPA's single-facility, single-exception, mental-model of what XL should be. In ERP's case, policy innovation has been slowed by the complicated issues of federal XL requirements, the federal fear of setting national precedents, and multiple interpretations of what is meant by XL's requirement to demonstrate “superior environmental results.” Such barriers can inhibit innovation and reinforce the status quo, even in cases where current regulation seems ineffective or inefficient.

From an industry perspective, the XL process represents an example of bureaucratic paralysis. Industry entered into ERP to improve compliance by making requirements understandable and protective of the environment, but DEP and EPA's inability to reach agreement on record retention has frustrated industry representatives. Such frustration undermines the partnership concept of ERP, specifically because DEP has been unable to deliver on its promise to simplify regulations in the dry cleaning industry.

EPA and DEP have invested significant resources into the XL as a flexibility mechanism—and have gained very little. States considering ERP strategies should explore other avenues for federal flexibility, such as the ECOS Joint EPA/State Agreement to Pursue Regulatory Innovation.⁴⁴ However, those avenues may also encounter the same EPA roadblocks. The following recommendations may help

- **Recommendation 4.** *EPA should streamline the ERP XL flexibility-request mechanism. Specifically, it should provide “fast-track” approval of the needed MACT 112(l) delegation for the dry cleaning sector.*
- **Recommendation 5.** *EPA should take a hard look at the XL process and try to remove barriers to multi-facility, sector-wide flexibility.*
- **Recommendation 6.** *If EPA cannot deliver states a process that provides flexibility in exchange for improved environmental results, Congress should create the necessary climate and legal framework for reinvention activities.*

Stakeholder Relationships

DEP's involvement of stakeholders in ERP's development was key to getting the program off the ground. DEP's design group garnered support for ERP—especially from environmentalists who initially questioned the newly appointed DEP Republican leadership. DEP also made widespread use of its staff to develop ERP regulations, performance standards, workbooks, an important step for achieving staff support.

Trade association representatives brought their industry along based on potential benefits such as permit elimination, level playing fields, fee reduction, simplified regulation, and performance-based standards. However, because of the department's focus on rolling out more sectors, communication with the existing ERP sectors has suffered. DEP is not investing in activi-

ties such as periodically “refreshing” the facility universe database, or discussing program changes and upgrades with trade association representatives. DEP’s relationship with some of the photo processing and dry cleaning trade association representatives has strained as the department has shifted resources towards ERP expansion and away from ERP maintenance. DEP has recently taken some steps to address the need for ERP sustainability by assigning sector managers and tasking them to develop communication plans.

Performance Measurement

DEP’s effort to measure a sector’s performance using environmental business practice indicators was one of ERP’s significant policy innovations. Rather than the traditional, simple measures of compliance (compliance, noncompliance, and significant noncompliance), EBPIs allow the department not only to look at compliance more comprehensively, but also to track it on an annual basis. Using the indicators from the certifications and from inspections, DEP hopes to measure compliance rates by firm, industry, media programs, and compliance requirements. The use of those indicators to allocate compliance and inspection resources is tantalizing.

While innovative, the EBPI methodology is still unproved. Through EPA Region 1, DEP obtained funding for a study of EBPI results in dry cleaning and photo processing. That report should shed some light on the utility of EBPIs. A request for more EPA money to evaluate performance measurement comprehensively, however, was recently turned down by headquarters.

- **Recommendation 7.** *EPA should support state innovations in the area of environmental performance measurement and compliance assessment and reconsider funding DEP’s request for a detailed EBPI analysis.*
- **Recommendation 8.** *EPA should help disseminate the EBPI methodology to other states and encourage similar attempts to measure more comprehensively industry environmental performance.*
- **Recommendation 9.** *DEP should develop new EBPIs, and refine existing ones, so they focus more on environmental results and less on traditional compliance requirements.*

Universe Identification and Enforcement Strategies

Perceptions about whether the department has completely identified the universe of firms that fall under ERP is mixed. Dry cleaning and photo processing trade associations say DEP’s efforts have been inadequate; they believe that the department has pursued enforcement against firms that have at least tried to comply with ERP’s certification requirements, not acted against firms that have avoided DEP altogether.

DEP disagrees with those characterizations of universe identification and enforcement, and points to the large number of notices of noncompliance filed against non-certifying firms. The department does admit, however, that those enforcement actions have almost exclusively been aimed at ERP certifiers. Clearly, communication between DEP and two of the first rollout sectors has degraded. Several industry representatives told us they would not recommend ERP to other sectors—not because of ERP itself but because of implementation issues such as enforcement. One photo processing industry representative suggested that DEP limit enforcement for firms trying to certify for the first few years and rely instead on “public shame” by posting names of noncompliant firms on the Internet and in the trade press.

DEP did face a great deal of initial scrutiny and mistrust of ERP from the department's rank and file who feared the leadership might be downsizing. It also encountered from EPA and environmentalists the perception that it was "giving away the store." Strong enforcement was one way to reassure those stakeholders, but doing so may have alienated industry, a key ERP partner. DEP, other states, and EPA should learn from ERP and find ways to balance the need to be "tough on violators" with evenhandedness—particularly for previously unregulated sectors that brought their industries to the table.

Program Costs

Four years into ERP there has been relatively little analysis of its costs for either private industry or for DEP. It is difficult to place DEP's ERP FTE investment within the context of other regulatory programs. What costs would have been incurred had DEP chosen a different path: the status quo, or a different method of improving compliance and environmental performance for the three-rollout sectors? To DEP's credit, in four short years, it ran the pilot program; launched three sectors and has two more nearly ready to go; prepared workbooks and certification forms; sent out, received, and processed certifications; built a database; and conducted inspections and enforcement actions. Nonetheless, it should better evaluate ERP costs and benefits.

For ERP-regulated sectors, the actual costs of completing the annual certification forms were not notable, but more research would quantify the costs. For the firms and industry representatives involved in the demonstration project and in the workbook design and rollout, costs were much higher since they invested considerable time in that design, as well as in team meetings and outreach. The costs of developing ERP-type approaches, however, could be shared between states and EPA. Rhode Island, for example, is currently considering initiating an ERP-type program with auto body industry. Once it is implemented, Massachusetts may adopt those materials and initiate the same program.

- **Recommendation 10.** *Should EPA fund state ERP programs, the agency should require grant recipients to consider how the certifications, workbooks, and regulatory standards might be used by other states to reduce program development costs.*

Lessons from ERP Sectors

ERP's most successful sector is printing. Our research found compelling anecdotal evidence of improved compliance and an appreciation of ERP's plain language workbook and certification requirement. ERP also eliminated most printing industry permits, replacing the permits with a mix of performance and technology-based standards. By eliminating permit requirements, ERP gives printers the flexibility to add or modify equipment without waiting for DEP approval. Finally, DEP's efforts to pursue the entire universe of printers had the important effect of "leveling the playing field" in the industry by minimizing the number of firms gaining competitive advantage by skirting their regulatory responsibilities. It is important to point out, however, that much of that success was built on the MP2.

Like the printing sector, the dry cleaning sector saw a host of ERP benefits. ERP provided easily understandable workbooks to a sector that was largely out of compliance. ERP leveled the playing field between those firms complying with regulations, and those knowingly or unknowingly skirting their regulatory responsibilities. ERP appears also to have led to fugitive

workplace emission-reductions of perchloroethylene, a suspected human carcinogen. But ERP did not eliminate permits in the dry cleaning sector. While DEP and industry representatives investigated performance standards for the sector, in the end they chose a traditional approach of equipment standards, maintenance requirements, and best-management practices.

The photo processing industry saw the fewest ERP benefits of the three-rollout sectors. Unlike printers and dry cleaners whose compliance requirements span all three media, photo processor regulatory issues are fairly simple: controlling silver discharges to wastewater, and properly storing and disposing of untreated silver processing waste. Thus the ERP workbook was of lesser benefit to photo processors. Some at DEP believe the photo processing certification could have been simpler and collected less information. Few photo processing permits were eliminated since few firms had DEP-required industrial wastewater permits prior to ERP. Finally, the photo processor discharge limit of 2 mg/l of silver does not function as a true performance standard since the types of recovery systems are laid out in the certification; and, while a different technology can be substituted, it is subject to more frequent sampling and DEP approval.

Summary Conclusions and Recommendations

There is much to learn about reinvention from the Massachusetts Environmental Results Program. In the light of ERP's results, its bold vision, and the significant barriers to its full realization, we believe EPA and the states should support and expand self-certification experiments. Specifically:

- **Recommendation 11.** *Other states should develop ERP programs to bring small firms into the compliance network. EPA, the states, and organizations such as ECOS can help reduce the cost of starting up those programs by working with national trade associations on standardized workbooks, certification forms, and other materials. .*
- **Recommendation 12.** *Massachusetts should continue with efforts to expand ERP to new sectors, not only the two sectors currently being developed (industrial wastewater and combustion sources), but also medium-sized business. Those efforts should build on ERP's successes and staff knowledge, and test the limits of the program.*
- **Recommendation 13.** *EPA should provide funding to Massachusetts and other states considering ERP-type programs.*

Endnotes

- 1 National Academy of Public Administration, *Resolving the Paradox of Environmental Protection: An Agenda for Congress, EPA, and the States*. Washington, DC: 1997.
- 2 James R. Gomes. "The Environmental Results Program: An Environmentalist's Perspective." Boston Law Association pre-print article, n.d..
- 3 There are many EPA-funded initiatives concerning regulatory-reporting reform. For example, the Massachusetts DEP has received an EPA grant to develop a one-stop reporting program. More information regarding those initiatives can be found at www.epa.gov/reinvent/onestop.
- 4 It is important to note that submission of a return to compliance plan (RTC) does not shield a company from enforcement. But DEP recognizes that a firm's due diligence in discovering violations, making disclosure on the RTC, and correcting them may provide evidence of a good faith effort, and may take that into account.
- 5 James R. Gomes, interview, April 30, 1999.
- 6 Deese Stanton was then director of the Business Compliance Division in the Bureau of Waste Prevention at DEP. Bedwell was the deputy commissioner of DEP, one of three managers reporting directly to the commissioner. Both Struhs and Bedwell had only recently arrived at the agency. As one DEP interviewee commented, "Neither David nor Allen came in quietly. Both were highly interested in making changes and were ready, willing, and able to shake things up."
- 7 DEP Press Release. "Weld Unveils 'Permit Free' Environmental Protection Plan." April 30, 1996.
- 8 *Id.*
- 9 For example, the dry cleaning rollout team comprised representatives from various dry cleaning firms, North East Fabricare Association, Korean Dry Cleaners Association, DEP, the Office of Technical Assistance, and U.S. EPA.
- 10 One study was performed by Abt Associates Inc.; the second study performed by DEP and compared the environmental and compliance performance of printers before and after MP2.
- 11 Attachment to Executive Order 384 Regulation Review Checklist for proposed regulations to implement ERP to the printing sector.
- 12 58 CFR 49355 EPA 40 CFR Parts 9 and 53 National Emissions Standards for Hazardous Air Pollutants or Source Categories: Perchloroethylene Dry Cleaners p. 49363.
- 13 Exactly how DEP derived 500 tons per year is uncertain. For example, 600 dry cleaners * 1.1 tons perc per year * .75 (factor to account for small dry cleaners) = 495 tons reduced per year. In addition, dry cleaning technology has advance considerably over the last 10 years, with systems that have fewer sources of fugitive leaks.
- 14 Roughly 250 of 600 dry cleaning firms. Telephone interview with Harry Cho, Fresh Clean. Peabody, MA. 7/15/99.
- 15 A DEP contractor-report comparing photo processor and dry cleaner environmental business performance indicators from pre- and post-ERP inspections is forthcoming.
- 16 DEP, Environmental Notification Form (ENF) for Photo Processing and Dry Cleaning. November, 14, 1996. An ENF—which examines impacts of proposed regulations on the environment—is required under the Massachusetts Environmental Policy Act.

- 17 Telephone interview with Harvey Fowler, Kodak, Inc. and Mike Kopanon, Precision Environmental, Inc.
- 18 The rollout sector EBPIs were developed within DEP; in general, the sectors are unaware of the specific EBPIs that are being used to evaluate their performance. The EBPIs for the MP2 evaluation were developed in conjunction with stakeholders.
- 19 DEP-EPA Final Project Agreement, July 29, 1998, p. 10.
- 20 *Id.*
- 21 *Id.*, p. 8.
- 22 DEP-EPA Final Project Agreement, July 29, 1998, p. 11.
- 23 Jeff Chormann, DEP, email of July 22, 1999.
- 24 A nonresponder is someone who was subject to DEP mailing of a certification package, but who has neither sent in a non-applicability statement (saying ERP does not apply and check a box for reason why) nor a certification. A double nonresponder is someone who failed to send in a non-applicability statement or a certification two years in a row.
- 25 The same environmental management firm, Qualex, serviced all those firms.
- 26 Since DEP's RACT, perchloroethylene has been removed as a VOC. RACT standards are designed to control VOC emissions in order to assist states in meeting State Implementation Plan (SIP) requirements. Massachusetts could have—as some states have—petitioned to have a non-VOC RACT removed from its SIP (Janet Bowen, EPA Region 1, July 23, 1999).
- 27 EPA Region 1 alone has invested a total of 2 FTE, “and a lot of blood,” bringing the FPA from early discussions to signing (Tom D'Avanzo, EPA, April 4, 1999).
- 28 David Struhs, DEP commissioner, testified twice before Congress on the need for less EPA oversight and more state flexibility in running environmental protection programs. ERP and the dry cleaning addendum figured prominently in his testimony.
- 29 California had just done that. California's approved flexibility actually included a change in record retention time from five to three years.
- 30 Although the FPA was released as approved on July 29, 1998, it was not formally signed until October.
- 31 For example, Massachusetts has two levels in its state permitting program for VOCs: 1 to 5 tons (known as a limited plan application or LPA) and >5 tons (known as a comprehensive plan application or CPA). See 310 CMR 7.02.
- 32 The ERP printing sector is a good example. According to a printing sector trade association representative, DEP realized that for certain types of printing equipment BACT was not going to change significantly in the near future. Therefore, DEP elected to “set BACT” for certain types of printing equipment. To set BACT, DEP looked at existing standards such as the draft EPA Control Technology Standards (CTG) and also performed a national database search. DEP sat down with local and national industry representatives and developed performance standards reasonable for the printers and acceptable for environmental protection. Generally speaking, these performance standards are all based on raw material inputs, e.g., change cleaning solvent to one with a lower vapor pressure
- 33 Some DEP staff argued that it would be too complex to certify small pollutant increases—for example a small increase might trigger federal requirements for a firm. DEP staff reported that certifying asphalt-batching operations is technically achievable, but local community siting-issues around asphalt plants necessitate keeping them in the permitting program.

- 34 Some technology standards specify a level of performance that can be attained with an existing technology, and are tantamount to specifying the technology. For a definition of performance and technology standards, see National Academy of Public Administration, *Setting Priorities, Getting Results: A New Direction for EPA*, pp 91-92.
- 35 The alternative track allows sources to discharge processed wastewater provided they agree to implement certain P2, recycle and reuse practices. See EPA, *Interim Guidance for Performance-Based Reduction of NPDES Permit Monitoring Frequencies* (Washington, D.C.: EPA, 1996).
- 36 For example, specifying leak detection methods and frequency, refrigerated condenser outlet temperatures, venting procedures, and sampling procedures.
- 37 Adapted from DEP. *Evaluation of the Environmental Results Program Demonstration Project*. November 13, 1997.
- 38 Massachusetts DEP. *Evaluation of the Environmental Results Program Demonstration Project*. November 13, 1997. p 6.
- 39 E-mail correspondence, Alissa Whiteman, DEP ERP program manager, July 20, 1999.
- 40 See DEP *Environmental Results Program Cost Benefit Analysis*. August 22, 1996 (revised Fall 1996). p 6.
- 41 ERP's photo processing fee-reduction was based on eliminating the \$1,300 IWW application fee (which few photo processors knew about) and replacing it with a \$150 fee.
- 42 DEP moved the ERP data Internet disclosure issue to an ongoing multi-stakeholder workgroup that is tasked with finding ways to better integrate information management within DEP, called INFO 2000. The issue of public disclosure of ERP data will be examined in that setting.
- 43 The "sniff" test is the one currently specified in the federal dry cleaning MACT standard; thus, the ERP standard is more stringent and more environmentally protective than the national standard.
- 44 See Federal Register: May 5, 1998. Volume 63, Number 86. pp. 24784-24796. Also see ECOS web site: www.sso.org/ecos.
- 45 Representing 300 photo processing stores/locations.
- 46 Representing 45 dry cleaning facilities.
- 47 Representing 8 print shops.

References

- Abt Associates Inc., *Results of the Massachusetts Printers Partnership Survey*. March 31, 1997
- DEP Press Release. "Weld Unveils 'Permit Free' Environmental Protection Plan." April 30, 1996.
- DEP, Environmental Notification Form (ENF) for Photo Processing and Dry Cleaning. November, 14, 1996.
- DEP, *Environmental Results Program Regulatory Package (for Dry Cleaners and Photo Processors)*, December 23, 1996. (Includes Executive Order 384 Regulation Review Checklist, Cost Benefit Analysis for the Environmental Results Program, Draft ERP Certification Regulations, Draft ERP Photo Processor Regulations, Draft ERP Air Pollution Control Regulations for Dry Cleaners, and Draft Dry Cleaner Industrial Wastewater Regulations.)
- DEP, Excellence and Leadership (XL) Proposal, April 1996.
- DEP. Attachment to Executive Order 384 Regulation Review Checklist for proposed regulations to implement ERP to the Printing Sector. March 21, 1997.
- DEP. Evaluation of the Environmental Results Program Demonstration Project. November 13, 1997.
- DEP. Environmental Results Program Demonstration Project Standards, August 13, 1996.
- DEP. Testimony of David B. Struhs, Commissioner Massachusetts Department of Environmental Protection, Before U.S. House of Representatives, Committee on Commerce, June 23, 1998.
- DEP. "The Environmental Results Program: The New Generation of Environmental Protection,". April, 1997
- EPA-DEP, Project XL Final Project Agreement for the Massachusetts Environmental Results Program, July 31, 1998.
- Gomes, James R. "The Environmental Results Program: An Environmentalist's Perspective." Boston Law Association pre-print, n.d.
- National Academy of Public Administration, *Resolving the Paradox of Environmental Protection: An Agenda for Congress, EPA, and the States*. Washington, DC: 1997.
- _____. *Setting Priorities, Getting Results: A New Direction for EPA*. Washington, DC. 1995.
- President's Council on Sustainable Development. "Massachusetts Department of Environmental Protection's Environmental Results Program," Shelley Metzenbaum and DEP, n.d.
- United States EPA, "Permit Improvement Team" July 1996. Federal Register 61, no. 153 (August 7, 1996): 41253.

Demonstration Project and Sector Rollout Regulatory Changes

Demonstration Project Firms

ERP Demonstration Project firms worked with DEP to develop performance standards for a variety of industrial operations, based on emission or discharge where possible, to replace existing permit requirements. Between August 1996 and August 1997, participating firms were given flexibility to make operational changes without the need for new or modified permits provided they otherwise remained in compliance with demonstration project standards. In exchange for the performance standards and operational flexibility, those firms:

- certified to DEP halfway through the year as to the status of their compliance with ERP standards and all other requirements (e.g., air, water, and waste) applicable to their facilities
- were subject to DEP “baseline” inspections prior to the start-up, as well as to a second round of inspections after certifications were submitted. (The pre- and post-inspections were used to determine changes in firm environmental performance.)

Printers

ERP regulations set standards for three printer categories (small, medium, and large) and most printing operations (e.g., non-heat set off-set lithography, screen, flexographic, gravure, and letterpress printing). ERP regulations strengthened requirements for printers by:

- limiting the amount of VOC in solvent-based inks, coatings, and adhesives used in screen printing
- requiring flexographic, gravure, and letterpress printers to either limit the amount of VOC in solvent-based inks, coatings, and adhesives, or to install control technology that achieves a specified percent reduction in VOC emissions
- limiting VOC emission from clean-up solutions by setting limits on the vapor pressure of solvent-based clean-up solutions

- setting a silver discharge limit of 2 mg/l of silver to sewer systems and establish operation and maintenance for such systems
- requiring the submittal of an annual comprehensive compliance certification

In exchange for those requirements, ERP eliminated several permit requirements and gave printers the capability to make changes to their operations—within certain parameters—without the need for a permit nor prior approval. Permit requirements eliminated by ERP included:

- sewer discharge permits
- class-A recycling permits (for free-standing “batch” silver recovery systems)
- air source registration
- air emissions plan approvals

Dry Cleaners

ERP regulations eliminated two separate standards for Massachusetts’s dry cleaners and substituted a consolidated version for both EPA’s MACT/GACT and DEP’s RACT. ERP adopts the most-stringent thresholds and operation and maintenance requirements for each set of regulations, while modifying the existing monitoring, reporting, and record keeping required. Existing requirements were made more stringent by requiring that dry cleaners use a leak detector to identify leaks rather than relying solely on sight and smell, and by submitting an annual comprehensive compliance certification.

In light of the two new requirements, DEP determined that it was sufficient to require that dry cleaners:

- maintain operating records for three years instead of five
- be relieved of certain “vague record-keeping requirements of limited environmental benefit”
- replace the requirement to obtain a DEP sewer-connection permit for washing machine discharges with a statewide environmental standard for those wastewaters

Photo Processors

ERP photo processing regulations replace case-by-case discharge standards imposed through the permitting process with statewide standards for silver-laden photo processing wastewater. Existing requirements were made more stringent by requiring that photo processors:

- discharge or ship wastewater to POTWs with no more than 2 mg/l of silver—many POTWs in the state had higher silver discharge limits prior to ERP (e.g., 5 mg/l); (Photo processors must comply with more stringent discharge standards if a lower POTW limit has been specified.)
- test their wastewater at least once a year before servicing their silver recovery unit and send the results of that test to DEP

- comply with statewide standards for storing non-hazardous (i.e., treated) photo processing wastewater prior to shipment to a POTW

In light of the those new requirements, the regulations eliminated the requirement to obtain and renew the following permits:

- industrial wastewater sewer-connection permits and plan approvals
- holding tank permits for facilities that hold non-hazardous wastewater in tanks or containers prior to shipping it off-site for treatment or disposal
- class-A hazardous-waste recycling permits for facilities using cartridge-based silver recovery systems that are not hard-piped to the photo processing operation

Interviewees

DEP (14)

Lee Dillard Adams
Doug Fine
Steven DeGabriele
John Reinhardt
Alissa Whiteman
Yi Tian
Don Squires
Seth Pickering
Bill Lamkin
John Winkler
Jeff Chormann
Tara Valasquez
Myles Brown
Suzi Peck

Ex-DEP (1)

Alan Bedwell

EPA Region 1 (5)

Martha Curran
Tom DeVanzo
George Frantz
Ann Leiby
Janet Beloin

EPA Headquarters (4)

Chad Carbone
Ted Cochin
John Silberman
Charlie Garlow

Demo Firms (6)

C.P. Clare Corporation
Komtek
Waters Corporation
Sippican
Printed Circuit Corp.
Genzyme

Rollout Firms (22)

9 Photo Processors⁴⁵
5 Dry Cleaners⁴⁶
8 Printers⁴⁷

Trade Association Representatives (5)

1 North East Fabric-Care Association:
Peter Blake
3 photo processing: Brian Noble, Mike
Kopanon, Harvey Fowler
1 printing: Printing Institute of New En-
gland (PINE) Mark Flannery)

Environmental Stakeholders (2)

Environmental League of Massachusetts
MassPirg

Sample Certification Form



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A Facility Information

Facility Name	Facility SIC Code	Facility ID #
Facility Street Address	City/Town	Zip Code
Phone #	Fax #	Federal Employer ID # (FEIN)
Contact Person Name	Title	Telephone

B Compliance Information

Answer all questions, unless you are directed to skip a question. Do not answer questions that you are directed to skip.

Hazardous Waste: Questions for all Printers

1. Over the past year did you have any spills or releases that required reporting to DEP? (See page 3, workbook section 1.5.) Yes - Submit a *Spill or Release Report Summary* No
2. Do you generate hazardous waste? (See pages 2 and 6, workbook sections 1.4, 3.1.1 and 3.1.2.) Yes No - **Skip to Question 16**
3. How much hazardous waste did you ship from your facility over the past 12 months? _____ Gallons
4. Indicate your facility's hazardous waste generator status by placing a check next to the appropriate category. (See page 6, workbook section 3.1.3.)
 - very small quantity generator (VSQG)
 - small quantity generator (SQG)
 - large quantity generator (LQG)
5. What is your facility's hazardous waste identification number? (See page 7, workbook section 3.1.6.) _____
6. Do you have appropriate documentation which shows where hazardous waste is being shipped? (See page 10, workbook section 3.1.11.) Yes No - Submit a Return To Compliance (RTC) Plan
7. Are you shipping your hazardous waste offsite as frequently as required by workbook section 3.1.9? (See page 9.) Yes No - Submit an RTC Plan
8. Is all hazardous waste stored in either a separate, marked off hazardous waste storage areas AND/OR in a workstation accumulation area? (See figure 1 on page 9, workbook section 3.1.7.) Yes No - Submit an RTC Plan
9. Are all containers of hazardous waste in good condition? (See figure 1 on page 9, workbook section 3.1.7.) Yes No - Submit an RTC Plan
10. Are all containers of hazardous waste labeled as follows:
 - a. As hazardous waste? (See page 8, workbook section 3.1.7.) Yes No - Submit an RTC Plan
 - b. With the name of the waste? (See page 8, workbook section 3.1.7.) Yes No - Submit an RTC Plan



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- c. With the hazard classification? (See page, 8, workbook section 3.1.7.) Yes No - Submit an RTC Plan
11. Are all containers of hazardous waste located on a crack-free surface? (See page 9, figure 1, workbook section 3.1.7.) Yes No - Submit an RTC Plan
12. Are used shop towels stored in closed containers? (See page 10, workbook section 3.1.10.) Yes No

Hazardous Waste: Questions for SQGs and LQGs (see page 7 workbook section 3.1.3 for definitions of SQG and LQG. See your answer to Question #4 also.) If you are a VSQG, skip to Question #16.

13. Do you have a telephone or other communication system in areas near where hazardous waste is stored or generated? (See page 11, workbook section 3.1.12.) Yes No - Submit an RTC Plan
14. Do you have a sign next to the telephone in each work area near where hazardous waste is stored or generated that tells what to do in an emergency? (See workbook section 3.1.12 and sample sign on page 42 of the workbook.) Yes No - Submit an RTC Plan
15. Do the hazardous waste containers in the storage area show the date accumulation began? (See page 9, figure 1, workbook section 3.1.7.) Yes No - Submit an RTC Plan

Industrial Wastewater: Questions for All Printers

16. Do you perform photo processing which produces a silver-bearing waste? Yes No - Skip to Question 18
17. Do you have a silver recovery unit? Yes No - Skip to Question 18
- a. How many gallons of silver bearing wastewater did you treat through your silver recovery unit in the past year? (See workbook page 47.) _____ gallons/year
- b. Is your silver recovery unit directly connected to your photoprocessing wastestream? Yes No
18. Do you discharge or ship industrial wastewater to the MWRA? Yes No

Industrial Wastewater: Questions for printers that discharge or ship industrial wastewater to a POTW outside of the MWRA service area

19. Do you discharge or ship industrial wastewater to a POTW (Publicly Owned Treatment Works) **other than** the MWRA? Yes No - Skip to Question 24
20. Do you have a sewer discharge permit from your local POTW? (Contact your sewer authority to see if you are required to obtain a sewer permit.) Yes No - Skip to Question 21
- a. Are you in compliance with the terms of that permit? Yes No - Submit an RTC Plan
21. If you answered Yes to Question 16, are you in compliance with the 2 ppm silver discharge limit? (See page 15, workbook section 3.2.4.) Yes No - Submit an RTC Plan
22. Did you collect the sample within one month prior to changing the cartridge of your silver recovery system? (See page 16, workbook section 3.2.6.) Yes No - Submit an RTC Plan



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23. Do you use film processor cleaner containing chromium compound? (See page 15, workbook section 3.2.4. Note that by May 1, 1999 you cannot use film processor cleaners containing chromium compounds.) Yes No

Industrial Wastewater: Questions for printers on septic systems

24. Are you on a septic system? Yes No - **Skip to Question 27**
25. Do you discharge industrial wastewater to the septic system? (See page 14, workbook section 3.2.2.) Yes - You must cease your discharge to the septic system **immediately** and submit an RTC Plan. No
26. Do you discharge industrial wastewater to the ground; or the surface water (i.e., storm drain, river, lake, or pond) without a permit? (See page 14, workbook section 3.2.1.) Yes - You must cease any unpermitted discharge **immediately** and Submit an RTC Plan. No

Industrial Wastewater: Questions for printers that store nonhazardous industrial wastewater

27. Do you store nonhazardous industrial wastewater in aboveground tanks or containers? Yes No - **Skip to Question 29**
28. Are you in compliance with the requirements for storing nonhazardous industrial wastewater in appropriate tanks or containers? (See page 17, workbook section 3.2.9.) Yes No - Submit an RTC Plan

Air: Questions for All Printers

29. How much press and/or screen cleaning solution did you purchase during the past 12 months? _____ Gallons
30. Indicate your facility's emission status for volatile organic compounds (VOCs) by placing a check next to your facility's category. (See page 19, workbook section 3.3.1; see also page 53 of the workbook for how to calculate VOC emissions.)
- Small
- Midsize
- Large - with \leq 25 tons VOC emissions per year
- Large - with $>$ 25 tons VOC emissions per year
31. If you are a large printer with \geq 25 tons per year VOC emissions, please provide your yearly VOC and hazardous air pollutant (HAP) emission amounts. (See page 58 in workbook for a list of HAPs; see pages 52 and 53 of the workbook for how to calculate HAP and VOC emission amounts.)
- _____ tons VOC per year
- _____ tons HAP per year

Note: Large Printers with $>$ 25 tons per year VOC emissions will separately be mailed an annual source registration form (BWP AQ-SR).



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32. Complete the chart below. *Note: See Page 38 of the workbook for process definitions*

ALL PRINTERS COMPLETE THIS SECTION <i>(Indicate the number of presses at your facility If you have no presses of a specified type, write '0'.)</i>										Large Printers Only Type of Controls				
Conforming					Nonconforming					(Check the type of controls you have)				
Lithography	Screen	Gravure	Letter Press	Flexographic	Screen	Gravure	Letter Press	Flexographic	Heatsset Lithography	Catalytic Oxidizer	Thermal Oxidizer	Carbon Adsorption	Condenser Filter	Other

Air: Questions for small printers (See page 20, workbook section 3.3.1 for definition of small printer. See your answer to Question #30 also. If you are a midsize or large printer, skip to Question #36)

- 33. Do you keep containers of cleanup solution covered when not in use? (See page 23, workbook section 3.3.3.) Yes No - Submit an RTC Plan
- 34. Are you using press/screen cleaning solution in compliance with standards in Table 1? (See page 21, workbook section 3.3.3.) Yes No - Submit an RTC Plan
- 35. Do you keep records in accordance with section 3.3.10? (See page 26 of the workbook.) Yes No - Submit an RTC Plan

Air: Questions for printers with any press(es) currently covered by a DEP air permit

Note: DEP recommends that you comply with ERP performance standards and eliminate existing permits as explained in section 5.1 of the workbook (see page 35). Most permits must be phased out by September 2001.

- 36. Are any of your presses covered by a DEP air quality permit? Yes No - If you are a small printer, skip to Section C, page 7 of this form. If you are a midsize or large printer, skip to question 42.
- 37. Are you self-converting any of those permits? (See page 35, scenarios 1 and 2, workbook section 5.0.) Yes - Indicate the number of presses covered by each permit by completing the sections below. Complete one section for each permit. No - Skip to Question 39

38. Write the # of presses covered by the permit in the box corresponding to each type of press. If no presses of a particular type are covered by the permit, write '0'. See Sample question #38, on page 55 of the workbook, for an example.

Permit Application # (A)	Lithography (B)	Screen (C)	Gravure (D)	Letterpress (E)	Flexographic (F)
1					
2					
3					
4					
5					



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39. Do you hold any DEP air quality permits that you are not self-converting? (See pages 23 and 24, workbook sections 3.3.5 and 3.3.6; see also page 36, scenario 3, workbook section 5.0.) Yes - Complete the chart(s) below No - If you are a small printer, skip to Section C, page 7 of this form. If you are a midsize or large printer, Skip to Question 42.

40. Write the # of presses covered by the permit in the box corresponding to each type of press. If no presses of a particular type are covered by the permit, write "0". See Sample question #40, on page 55 of the workbook, for an example.

Permit Application # (A)	Lithography (B)	Screen (C)	Gravure (D)	Letterpress (E)	Flexographic (F)
1					
2					
3					
4					
5					

41. Are you in compliance with the terms and conditions of the permit(s) that you are not self-converting? Yes No - Submit an RTC Plan



If You Are A Small Printer - Skip to Section C, page 7 of this form.

Air: Questions for midsize or large printers with any unpermitted or self-converted nonheatset presses, AND/OR any unpermitted or self-converted conforming screen or graphic arts operations.

42. Do you have any unpermitted or self-converted nonheatset presses, AND/OR any unpermitted or self-converted conforming screen or graphic arts operations. (See page 34, workbook section 5.0 for definition of a "self-converted" operation, see page 23, workbook section 3.3.5 for a definition of a "conforming" screen or graphic arts operation.) Yes No - Skip to Question 46
43. Are you using press/screen cleaning solution in compliance with Table 1 on page 21, workbook section 3.3.3? Yes No - Submit an RTC Plan
44. Are you using inks, coatings, adhesives and fountain solution that meet applicable standards in Table 2 on page 22, workbook section 3.3.3? Yes No - Submit an RTC Plan
45. Do you keep records in accordance with workbook section 3.3.10 on page 28? Yes No - Submit an RTC Plan



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Air: Questions for midsize or large printers with any unpermitted or self-converted heatset presses, AND/OR any unpermitted or self-converted nonconforming screen or graphic arts operations.

46. Do you have any unpermitted heatset presses or any unpermitted, nonconforming screen or graphic arts operations? (See page 23, workbook section 3.3.5 for definition of a "nonconforming operation".) Yes No



If You Answered "No" to Question 46 - Skip to Section C, page 7 of this form.

- 46a. Indicate your facility-wide VOC emissions by placing a check next to the appropriate category. (See guidance on page 53 of the workbook for how to calculate facility-wide VOC emissions.)
- Less than or equal to 10 tons per year (Answer questions 47 and 48)
- Greater than 10 tons per year (Answer questions 49 through 51).
47. Are you meeting applicable standards in Table 3 on page 24, workbook section 3.3.6 of the workbook? Yes No - Submit an RTC Plan
48. Do you keep records in accordance with "recordkeeping for heatset and nonconforming operations" on page 28, workbook, section 3.3.10? Yes No - Submit an RTC Plan
49. Do you have records to demonstrate that your facility-wide VOC emissions were less than or equal to 10 tons per year when you installed the unpermitted heatset/conforming press(es)? (See section 2.0 of the guidance on page 56 of the workbook.) Yes No - You must get a permit for any unpermitted non-conforming or heatset presses and submit an RTC Plan
50. Are you meeting applicable standards in Table 3 on page 24, workbook section 3.3.6? Yes No - Submit an RTC Plan
51. Do you keep records in accordance with "recordkeeping for heatset and nonconforming operations" on page 28, workbook, section 3.3.10? Yes No - Submit an RTC Plan



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C **Certification Statement**

Note: Complete all required Return to Compliance Plans (RTC) and Spill or Release Report Summary forms before signing this statement.

I, _____, attest under the pains and penalties of perjury:

- I. That I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this certification statement;
- II. That, based on my inquiry of those individuals responsible for obtaining the information, the information contained in this submittal is, to the best of my knowledge, true, accurate and complete;
- III. That systems to maintain compliance are in place at the facility and will be maintained for the coming year even if processes or operating procedures are changed over the course of the year; and
- IV. That I am fully authorized to make this attestation on behalf of this facility.

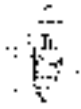
I am aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information.

Signature: _____ Date: _____

Printed Name: _____ Title: _____

Source of Signatory Authority:

- If a Corporation:
- President Secretary Treasurer
 - Vice President (If authorized by corporate vote.)
 - Representative of the above (If authorized by corporate vote and if responsible for overall operation of the facility.)
- If a Partnership: General Partner
- If a Sole Proprietorship: Proprietor



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- ✓✓ Complete a separate Return to Compliance Plan for EACH compliance question answer that requires one.
 - ✓✓ Only submit a Return to Compliance Plan for violations that you were unable to correct BEFORE certifying.
- Completing this form does not relieve the facility of its affirmative responsibility to operate in compliance with applicable regulations. Failure to operate in full compliance with the applicable regulations may result in enforcement actions which may include fines or penalties.

1. What is the Compliance Question number for which you are reporting noncompliance? _____

2. What is the specific violation (reference the workbook section # in which the requirement is explained and a description of the requirement)?

Workbook Number: _____

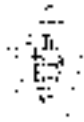
Brief description of requirement:

3. What corrective action will you take to return to compliance?

4. Return to compliance date: _____
 (month/day/year)

(Date you will be back in compliance after completing your corrective action)

Facility ID (or facility name and town) _____



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1998 Spill or Release Report Summary

- ✓✓ Complete one report for each spill or discharge. If you had more than two such events attach additional copies of this form.
- ✓✓ NOTE : only report those spills or releases that were required to be reported to DEP at the time of the event. Please see the workbook for more information on the types of spills or releases that must be reported.

Reportable Spill or Release #1

Name of pollutant released or chemical spilled _____

Date of spill or release _____
(month/day/year)

Date of report to DEP _____
(month/day/year)

Reportable Spill or Release #2

Name of pollutant released or chemical spilled _____

Date of spill or release _____
(month/day/year)

Date of report to DEP _____
(month/day/year)

Facility ID (or facility name and town) _____

Detailed ERP FY 2000 Program Budget

WORK CATEGORY	TASKS	FTE TOTAL
Program Management, Strategic Direction & Program Budget	General Management and Direction Industrial Wastewater and holding tank (IWW) fees, changes to fees for printers, dry cleaners, and photo processors (PR,DC,PP).	1.3
Program Outreach	IWW (+ holding tank) & Boiler Workbooks & Workshops Printing Certification packages and Workbooks Mailing Certification Packages to IWW, PR, DC, PP Outreach to PR, DC, PP	1.3 (0.2: Consumer & Transportation; Public Affairs)
Sector Development	IWW (+ holding tanks), Boilers	.75
Data System Development and Maintenance	IWW (+ holding tanks) & Boiler data system development & data entry Business Intelligence, Changes to PR, DC, PP forms/data system due to changes to forms and changes to Return-to Compliance (RTC) plan codes, Automated Form Processing IWW Business Objects	2.7 (2.5: Information Technology)
Data Collection & Maintenance	Dealing with Problem Certifications, Maintaining correct list of facilities (including reconciling different databases) Reconciling Facilities & Bills Data Entry of Certifications (PR, DC, PP, IW),	2.1025 (1.2: Planning & Evaluation)

WORK CATEGORY	TASKS	FTE TOTAL
Certification Review and Enforcement + Inspection Oversight	Develop Certification Review Strategy Perform Certification Review Develop IWW (+ holding tanks) Inspection Protocol Develop Non Responder & Non App Strategy (will mostly be already done due to work from reporting group) / Targeted Inspection Strategy / Identify Inspection Targets Implement Non-Respondent (NR) & Non Applicable (NR) Strategy ID Changes to Inspection Protocol to Support Evaluation Train Inspectors in IWW + Holding Tank Protocol Follow-up Enforcement (based on NRs, NAs, random and targeted inspections) Certification review	2.8025
Sector Maintenance and Improvement	Identify & implement needed changes to certification form, workbook, fee structure MACT Delegation -DC Printer SIP Revision Printers - work with regions to "de-permit" non-heat set offset presses Maintain Contact with Industry	0.4
Evaluation/Data Analysis	Prepare Report on Results of DC + PP Industry (includes write-up of methodology) Performance Perform Industry Performance Analysis for Printers Subtasks: Data entry, system development and inspection checklist review, crosswalks, checklist, certification forms, EBPIs, statistical analysis, data programming Prepare Report on Printers Industry Performance Analysis Identify EBPIs for IWW and Boilers Set Goals for Industry Performance Determine Environmental Results for PR, DC, PP	.6 (.5 unassigned)
Inspections	Round 3 Random Inspections for DC/PP/PR	2.0
Choosing Next Sector		.1
	Estimated TOTAL FTE	14.055

