

US EPA ARCHIVE DOCUMENT

NARRATIVE

Human health and environmental risks associated with auto salvage operations¹ are diverse and variable – arising from a broad array of physical, chemical, and biological hazards. Such hazards include the potential for fire or explosion at improperly managed sites²; the transmission of West Nile Virus³ and/or other zoonotic diseases where yard areas serve as vector-breeding habitats; soil, surface water, and groundwater contamination resulting from the improper management of solid and hazardous waste, including mercury switches; and air releases of asbestos fibers, fugitive dust, and/or volatile organic compounds.⁴ Building upon existing partnerships and incorporating knowledge from recent successes within the Rhode Island Automotive Refinishing Environmental Results Program (ERP), and Underground Storage Tank, Exterior Lead Paint Removal, and Dry Cleaning ERP initiatives now underway, the Department of Environmental Management's (DEM) non-regulatory Office of Technical and Customer Assistance (OTCA) seeks to advance the ERP concept by applying "lessons learned" to a currently under-regulated, EPA priority⁵ industry sector – auto salvage yards. OTCA's vision is to reduce environmental health risks by improving regulatory efficiency and industry compliance through a comprehensive, multi-media program patterned after the Massachusetts Department of Environmental Protection's ERP model and consisting of three parts: 1) facility certification, 2) statistically-based performance measurement, and 3) on-site compliance, pollution prevention and technical assistance. DEM regulatory stakeholders, industry representatives, and project partners will be recruited to assist OTCA in reaching a goal of 75% industry-wide voluntary certification⁶ with a 20-40% minimum measurable improvement in selected environmental business practice indicators (EBPIs)⁷ during the first year of implementation. EBPIs will be selected to assess improvements (relative to baseline conditions) in industry performance in air, water, and RCRA compliance as well as pollution prevention; the potential for release prevention, emissions reduction and human health/environmental protection will be key

¹ The US EPA estimates that the American auto salvage industry employs some 40,000 people at 7,000 facilities which receive more than 11 million vehicles each year (<http://www.epa.gov/region1/assistance/>).

² On 4 December 2003, for example, "tires exploded and about 25 vehicles caught fire" at Capozzi's Auto Sales and Salvage located in West Greenwich, Rhode Island when "flames tore through an automobile salvage yard, sending plumes of smoke into the air that were visible from Interstate 95" (<http://www.turnto10.com>).

³ For example, seven cases of human infection by the West Nile virus were reported to the Rhode Island Department of Health in the past two years (2002-2003), with one case resulting in death on 21 November 2003 (*Rhode Island Man Dies of West Nile Virus*, The Providence Journal, 26 November 2003).

⁴ Other examples include: lead (from battery cables, tire weights, lead-acid batteries), gasoline, transmission/brake/steering fluids, mercury-containing devices such as switches, scrap tires, used oil and antifreeze, auto fluff (cadmium, chromium, lead, polybrominated diphenyl ethers), cleaning solvents, refrigerants (Freon, R-12, R134a), and contaminated washwater/stormwater runoff.

⁵ "EPA's Planned Compliance Assistance Activities for Fiscal Year 2004: Preliminary Highlights of the Annual EPA Plan and Inventory," US EPA November 2003.

⁶ Currently, 107 "auto salvage companies" and 89 "auto wrecking and salvage yards" are licensed by the Rhode Island Department of Business Regulation (DBR) – <http://www.dbr.ri.gov>; additional unlicensed operations may exist.

⁷ EBPIs are "industry-specific measures designed to give a snapshot of a facility's environmental performance (MA DEP)."

considerations. Outcomes will be measured using the statistical approach developed for the RI Autobody ERP (<http://www.state.ri.us/dem/programs/benviron/assist/pdf/abstat.pdf>) including: statistically determined number and randomly selected locations for baseline and post-implementation compliance audits (given pre-specified levels of statistical confidence, power and compliance rate proportions), generally accepted methods for data analysis and EBPI comparisons, and summary reports that outline findings with appropriate descriptive statistics.

Target Priority Environmental Issues.

Building upon Rhode Island's success with the Automotive Refinishing ERP,⁸ the auto salvage yard initiative will be a multi-media, multi-agency partnership-based program with a special focus on RCRA wastes and two "priority environmental issues" identified in EPA's *Innovation Strategy* - restoration and maintenance of water quality, and the reduction in cost of wastewater infrastructure. As described above, RCRA solid and hazardous wastes generated at auto salvage yards include, for example: lead (from battery cables, tire weights, lead-acid batteries), gasoline, various vehicle fluids, mercury switches, scrap tires, used oil and antifreeze, cleaning solvents, and refrigerants. The improper management of these and other wastes/recyclable materials can 1) threaten potable water supplies (especially in rural areas that depend upon private/public wells for drinking water), 2) lead to the degradation of streams and surface waters through illegal dumping activities and nonpoint source runoff, and 3) potentially interfere with the operation of sewer conveyance systems or contribute to influent concentrations of oil, grease and heavy metals at wastewater treatment plants.

As a project partner in the proposed program, the Narragansett Bay Commission (NBC) - owner and operator of Rhode Island's two largest municipal wastewater treatment facilities servicing approximately 1/3 of the state's population and 70% of Rhode Island's industry - will play a key role in the protection and enhancement of water quality, as well as, pollution prevention efforts directed toward reducing costs associated with wastewater management/ treatment. Recently, the NBC received a \$25,000 Pollution Prevention Incentives for States grant from EPA Region I to conduct outreach and educational activities and five pollution prevention audits of salvage yard facilities located within the borders of their district. In their proposal to Region I, NBC engineers identified salvage yards as a priority sector due to their potential to generate "solid waste and wastewater containing oil and grease, heavy metals such as lead and mercury, as well as other toxic and flammable hazardous wastes/materials that may be detrimental to the health and safety of the environment and surrounding communities"; NBC noted concern over flows to the combined sewer system and surrounding environs due to storm water runoff. [Note: The NBC's focus on auto salvage yards resulted in part from recent findings during an NBC-sponsored field initiative to help restore urban portions of the Woonasquatucket River within downtown Providence. During a single day's effort, NBC staff and other volunteers removed more than

⁸ Launched in December 2002 as the first ever regulatory and assistance partnership involving state environmental and health departments, a state university, and a state vocational training institution, the Autobody ERP has already produced measurable results including: an initial 50% voluntary industry-wide response rate, the submission of 282 Return-to-Compliance Plans, facility modifications to improve vehicle wash water management, purchase of new technologies to reduce releases and worker exposure to metal-bearing sanding dust, increased number of physician examinations for workers as part of upgraded respiratory protection programs, and elimination of methylene chloride - an EPA and OSHA regulated carcinogen. Several papers describing original research conducted (including survey research, personal air/environmental monitoring, and blood lead testing) and experience gained in developing Rhode Island's voluntary, statewide Autobody ERP have been published in the peer-reviewed literature - *American Journal of Industrial Medicine* [44:312-320 (2003)], *American Industrial Hygiene Association Journal* [59:478-489 (1998); 63:741-749 (2002)], and the *Journal of Occupational and Environmental Hygiene* [in press, Jan. 2004]; a summary paper titled "Auto Body Certification Program" is also available on our web site at <http://www.state.ri.us/dem/programs/benviron/assist/abdycert/abdycert.htm>.

30 cubic yards of debris including numerous car batteries, scrap metal and more than 200 automobile tires from just several hundred square feet of river bed. While there are numerous auto salvage yards located along the Woonasquatucket, and though these facilities were not determined to be the source of the debris collected from the riverbed, the NBC nonetheless viewed these facilities as potential sources of similar waste materials and other pollutants.]

Following the Rhode Island Autobody ERP model, the auto salvage yard ERP will be launched as a voluntary program with participant benefits to include reduced inspection priority, ability to correct existing violations without fear of gravity-based fines/penalties, and free pollution prevention and compliance assistance in correcting violations. OTCA will also work with the Rhode Island Department of Health and DEM's Division of Agriculture regarding practices to eliminate West Nile Virus/mosquito breeding-grounds, the Department of Business Regulation (which currently licenses salvage yard facilities) and regulatory divisions within DEM to seek additional means to encourage program participation. As with the Autobody ERP, a pre-determined number of non-participants will be randomly selected for multi-media enforcement inspections (using, at a minimum, the same set of checklist questions developed for the program) by DEM's Office of Compliance and Inspection.

Building upon and incorporating findings from NBC's efforts (which are scheduled to begin in 2004), staff from DEM-OTCA, the University of Rhode Island's (URI) Center for Pollution Prevention, and the William Davies Career and Technical High School will join to develop a comprehensive "statewide" results-driven program. The URI Center for Pollution Prevention will play a major role in data gathering, survey research (to characterize facilities and better understand local environmental problems), steering committee organization/meeting facilitation, certification workbook/checklist development, facility baseline inspections and report writing, pollution prevention and materials recycling on-site technical assistance, statistical methodology consultation, and overall program development. The Davies Career & Technical High School will provide technical guidance and general outreach and educational support. Additionally, a Resource Conservation Challenge Partnership provides an opportunity to maximize proper management of mercury switches.

From the outset, all partners will be fully engaged in program development, including the development and review of certification workbook and checklists, consultation regarding facility audit findings, problem resolution, and industry outreach activities.

Likely Improvement in Results from Project Implementation.

Uniqueness of Approach. The Rhode Island auto salvage yard industry has historically been underregulated due to agency resource limitations. Site inspections and enforcement activities have been sporadic and limited to responding to complaints and audits of major recycling operations where incidents of environmental contamination were found to occur. Also, many auto salvage yards are in close proximity to residential areas, presenting rather unique land use conflicts. The proposed approach is unique as it will allow DEM (for the first time) to take a comprehensive, multi-media sector-based approach to environmental compliance and pollution prevention.

Building on "Lessons Learned". Rhode Island was the first state to adopt the MA DEP ERP model and the first to experiment with a voluntary, multi-agency (e.g., state Department of Health, state university and technical high school, Department of Business Regulation, and NBC) approach. Building on "lessons learned" from our ongoing Autobody ERP, while incorporating findings and successful components of other state initiatives (e.g., FL DEP's Certified Green Yards program and VT DEC's Best Management Practices for Auto Salvage Yards), and efforts by groups such as the Northeast Waste Management Officials Association), this project is strategically positioned to benefit from past experiences and holds great promise for producing quantifiable results that go well beyond what could be achieved through

traditional approaches. Project design and methodology utilized in this project will be readily transferable to other states or entities undertaking similar projects.

Quantifiable Improvements. Using the ERP approach, statistically-based performance measurements in pollution prevention and air, water, and RCRA compliance will be determined. OTCA's goal is to reduce threats posed by physical, chemical and biological hazards to the greatest extent possible with 75% industry participation and a 25-50% measurable improvement in environmental business practice indicators during the first year of implementation.

Administrative Efficiency and Program Costs. Major improvements in administrative efficiency naturally occur as a result of implementing the ERP model. Though program start-up activities are resource intensive, once implemented and fully operational, environmental and administrative benefits of sector-wide certification programs typically far outweigh up-front costs. One example is that only a representative number of yards, not every facility, will need to be inspected for regulatory compliance - statistical analyses are conducted to infer compliance rates across the entire industry sector. Additionally, DEM has never had sufficient resources to inspect every facility and when inspections have occurred they traditionally did not include the identification of pollution prevention opportunities and were not necessarily multi-media in nature. For these facilities, at which focused inspections were conducted, missed opportunities for environmental improvement almost certainly occurred. By taking a comprehensive, multi-media sector-based approach, agency staff can spend more of time on priority sectors/facilities and unlicensed operations.

Costs/Efficiency Improvements for Regulated Entities. Costs associated with the improper management of waste materials or being in noncompliance can be significant. Further, hiring consultants to develop environmental compliance programs can also present a financial burden, especially for small companies. By participating in the program, members of the regulated community can take advantage of an opportunity to come into compliance with all applicable air, water, solid and hazardous waste requirements while at the same time receiving free on-site/telephone consultation compliance assistance support. Participants will also benefit from plain-English guidance documents (certification workbook, brochure, fact sheets) and cost-saving pollution prevention technical assistance. Though regulated entities may incur some initial costs in terms of facility upgrades to come into compliance with existing regulations, long-term savings and efficiencies should be significant.

Measuring Improvement and Accountability.

Environmental Improvement Goals and Indicators. As stated above, OTCA's goal is 75% industry-wide participation with a 25-50% minimum measurable improvement in selected EBPIs during the first year of implementation. EBPIs will be selected to assess improvements (relative to baseline conditions) in industry performance in air, water, RCRA compliance as well as pollution prevention and reduction in West Nile Virus mosquito breeding-ground habitats. This is an ambitious 1st year implementation goal for a voluntary program.

Baseline Measurements. Just before the statewide ERP is formally launched, industry baseline conditions will be assessed using a comprehensive multi-media compliance and pollution prevention certification checklist. Checklist questions will be developed in consultation with regulatory divisions and will address all relevant air, water, solid and hazardous waste regulatory requirements, as well as assess pollution prevention opportunities. The number of facilities to be targeted for baseline audits will be statistically determined and locations randomly selected.

Plan, Timeline, and Commitment. As previously stated, our plan for measuring outcomes is to use the statistical approach developed for the RI Autobody ERP. With this plan comes the commitment to

conduct statistically determined baseline and post-implementation audits using generally accepted methods for data analysis and EBPI comparisons, as well as the development of summary reports that outline findings with appropriate descriptive statistics. For timeline information, please refer to “Project Schedule and Time Frame” below.

Short-term Results and Measurement. Short-term results will include the development of all program materials (workbook, checklists, brochure, fact sheets), implementation of an industry-wide survey, development of industry-specific statistical methodology, completion of baseline and post-implementation audits, analysis and presentation of measurement data, and the permanent integration of the ERP program into DEM’s infrastructure.

Long-term Results. Beyond year three, it is anticipated that DEM will have gained substantial knowledge and experience with this industry sector. Information and “lessons learned” will be applied to future iterations of the workbook, checklists and overall program structure. OTCA expects to see increasing improvements in environmental performance as the industry gains experience working with OTCA and by using ERP’s self-educational tools. It is anticipated that voluntary self-certification will be conducted every two years and that performance measurement statistics will track all future progress.

Transferring Innovation.

Documentation and Information Availability. Methods to document project outcomes include analytic and descriptive statistics, as well as qualitative measures of general program performance. As data become available, program and industry progress reports will be developed and posted on a dedicated DEM-ERP web site.

Potential for Widespread Application. As ERP gains momentum in Rhode Island, DEM expects that the ERP approach, or some variation on the model, will gain broad acceptance not only as a model for the “next generation” of environmental protection at the state level, but also at the municipal and local levels. In addition, based on Rhode Island’s experience as the first agency to include a state health department and worker health provisions (i.e., OSHA compliance) in its ERP, we believe that this expanded approach holds great promise in the human health arena.

Promotion of Organizational Change. Building on past successes, application of the ERP model to this industry sector will help to further institutionalize the concept as a new “way of doing business” into DEM’s infrastructure and strategic planning process. By involving media program representatives in the planning and implementation functions of the program, staff “buy-in” is likely to generate broad and lasting support for future similar efforts.

Consultation and Mentoring. DEM has already begun to assist other states (e.g., hosting a 1-day meeting/field visit with Delaware, participation in conference calls, and national/regional meetings) in their efforts to develop an ERP program for auto body shops. Throughout this project and beyond, DEM will continue to make all ERP materials available and assist states as requested.

Project Schedule and Time Frame

The proposed start date for the Auto Salvage Yard ERP project is January 3, 2005 - project duration is expected to be three years, after which time ERP certification materials are expected to be filed with DEM every two years. It is anticipated that survey research and program materials will be developed during year one (1/2005-12/2005), baseline audits to be completed six months into year two (6/2006), the ERP formally launched on an industry-wide basis by the end of year two (12/2006), and post-implementation audits and measurement activities scheduled for year three (2007).

Contact

Richard T. Enander, Ph.D.; Rhode Island Department of Environmental Management (DEM); Office of Technical and Customer Assistance; 235 Promenade Street, Suite 250; Providence, RI 02908-5767; Phone: (401) 222-4700, Ext. 4411; Fax: (401) 222-3810; Email: renander@dem.state.ri.us